



City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Meeting Agenda - Final Planning Commission

Monday, June 8, 2020

7:00 PM

Commission Chambers

1. Call to Order

2. Public Comments

3. Public Hearing

3a. GLUA-20-00012/CU-20-00001/SP-20-00022: Oregon City Christian Church Conditional Use Permit

Sponsors: Assistant Planner Diliانا Vassileva

Attachments: [Commission Report](#)

[GLUA-20-00012/CU-20-00001/SP-20-00022 Staff Report and Recommendation](#)

[Exhibit 1: Vicinity Map](#)

[Exhibit 2: Applicant's Narrative and Plans](#)

[Exhibit 3: Public Comments](#)

[Exhibit 4: Transportation Impact Analysis](#)

[Exhibit 5: John Replinger Letter](#)

3b. GLUA-19-00052: Application for a 16-bed Expansion to an Existing 38-bed Memory Care Facility at 914 and 950 South End Road.

Sponsors: Sr. Planner Pete Walter

Attachments: [Commission Report](#)

[Staff Report with Recommended Findings](#)

[Complete Land Use Application](#)

[Public Notices](#)

[Replinger and Associates Comments on TAL](#)

[ODOT No concerns](#)

4. General Business

4a. OC 2040 Update: Public Engagement Plan for the Oregon City Comprehensive Plan 2040 Vision and nomination for Two Members (Primary and Alternate) to Volunteer on the Project Advisory Team (PAT)

Sponsors: Sr. Planner Pete Walter

Attachments: [Commission Report](#)

www.OC2040.com

[Project Advisory Team](#)

[OC2040 Draft Community Engagement Plan-2020-05-19 \(002\)](#)

4b. Request for Letter of Support - TGM Grant - Park Place Urbanization Study

Sponsors: Community Development Director Laura Terway

Attachments: [Draft Letter of Support](#)

5. Communications

6. Adjournment

Public Comments: The following guidelines are given for citizens presenting information or raising issues relevant to the City but not listed on the agenda.

- *Complete a Comment Card prior to the meeting and submit it to the staff member.*
- *When the Chair calls your name, proceed to the speaker table and state your name and city of residence into the microphone.*
- *Each speaker is given 3 minutes to speak. To assist in tracking your speaking time, refer to the timer at the dais.*
- *As a general practice, Oregon City Officers do not engage in discussion with those making comments.*

Agenda Posted at City Hall, Pioneer Community Center, Library, and City Web site(oregon-city.legistar.com).

Video Streaming & Broadcasts: The meeting is streamed live on Oregon City's Web site at www.orcity.org and is available on demand following the meeting.

ADA: City Hall is wheelchair accessible with entry ramps and handicapped parking located on the east side of the building. Hearing devices may be requested from the City staff member prior to the meeting. Disabled individuals requiring other assistance must make their request known 48 hours preceding the meeting by contacting the City Recorder's Office at 503-657-0891.



City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: PC 20-080

Agenda Date:

Status: Agenda Ready

To: Planning Commission

Agenda #: 3a.

From: Assistant Planner Diliana Vassileva

File Type: Land Use Item

SUBJECT:

GLUA-20-00012/CU-20-00001/SP-20-00022: Oregon City Christian Church Conditional Use Permit

RECOMMENDED ACTION (Motion):

Staff recommends that the Planning Commission approve Planning Files GLUA-20-00012/CU-20-00001/SP-20-00022 with conditions.

BACKGROUND:

The subject site is located at 1179 South End Road, Oregon City and is zoned R-10. The site is approximately 8.5 acres in size and is developed with the Oregon City Christian Church and associated parking. The applicant has proposed a 14,800 SF recreation building for church and community use, which includes a community meeting rooms, gymnasium, youth group meeting spaces, and associated parking. The building is proposed to be used by the Oregon City Christian Church as well as local youth sports and recreational organizations. Though recreational facilities are a permitted use in the R-10 District, a conditional use permit is required because the proposed recreational building is associated with a religious institution which requires a conditional use permit in the R-10 District.

The applicant is also seeking a modification to building location requirements in OCMC 17.62.055.D. The code requires that new buildings are located near the street in order to encourage interaction between public and private space and pedestrian-friendly developments. Staff is recommending approval of the modification provided that the recreational building is connected to the existing building via a breezeway and a pedestrian plaza is incorporated in the area between the buildings in order to meet the intent of building location standards.

Staff recommends the Planning Commission approve the application with the conditions of approval within the staff report.



TYPE III STAFF REPORT AND RECOMMENDATION

June 8, 2020

FILE NUMBER: GLUA-20-00012/SP-20-00022/CU-20-00001: Oregon City Christian Church
Conditional Use Permit

APPLICANT: Iselin Architects
Todd Iselin
1307 7th Street
Oregon City, OR 97045

Submitted: February 24, 2020
Complete: March 20, 2020
120 Day Deadline: July 17, 2020
PC Hearing: June 8, 2020

OWNER: James L. Warnock
1179 South End Road
Oregon City, OR 97045

REPRESENTATIVE: Brent Brelje
1179 South End Road
Oregon City, OR 97045

REQUEST: The applicant has requested approval of a 14,800 SF recreational building for church and community use connected to the existing church via a breezeway, and associated parking and landscaping.

LOCATION: 1179 South End Road, Oregon City, OR 97045
Clackamas County Map 3-1E-01DD, Tax Lot 100

REVIEWER: Diliانا Vassileva, Assistant Planner
Jeremy Tamargo, Development Engineer

RECOMMENDATION: Approval with Conditions.

PROCESS: Type III decisions involve the greatest amount of discretion and evaluation of subjective approval standards, yet are not required to be heard by the city commission, except upon appeal. Applications evaluated through this process include conditional use permits. The process for these land use decisions is controlled by ORS 197.763. Notice of the application and the planning commission hearing is published and mailed to the applicant, recognized neighborhood association and property owners within three hundred feet of the subject property. Notice must be issued at least twenty days pre-hearing, and the staff report must be available at least seven days pre-hearing. At the evidentiary hearing held before the planning commission, all issues are addressed. The decision is final unless appealed and description of the requirements for perfecting an appeal. The decision of the planning commission is appealable to the city commission within fourteen days of the issuance of the final decision. The city commission hearing on appeal is on the record and no new evidence shall be allowed.

Only those persons or a city-recognized neighborhood association who have participated either orally or in writing have standing to appeal the decision of the planning commission. Grounds for appeal are limited to those issues raised either orally or in writing before the close of the public record. A city-recognized neighborhood association requesting an appeal fee waiver pursuant to OCMC 17.50.290.C must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal. The city commission decision on appeal from the planning commission is the city's final decision and is appealable to the Land Use Board of Appeals (LUBA) within twenty-one days of when it becomes final.

Conditions of Approval
Planning File GLUA-20-00012/CU-20-00001/SP-20-00022

(P) = Verify that condition of approval has been met with the Planning Division.

(DS) = Verify that condition of approval has been met with the Development Services Division.

(B) = Verify that condition of approval has been met with the Building Division.

(F) = Verify that condition of approval has been met with Clackamas Fire Department.

The following conditions of approval shall be met to the satisfaction of the City during the process of design to issuance of public improvement permit through construction in association with the proposed land use application.

1. The development shall comply with all current Oregon City Public Works design standards, specifications, codes and policies. (DS)

The following conditions of approval shall be met to the satisfaction of the City prior to issuance of public improvement permit for construction in association with the proposed land use application.

2. The developer shall submit or address all items in section 16.12.014 of the Oregon City Municipal Code based on the timing requirements contained therein and as deemed applicable by the City. (DS)
3. The developer and engineer for the project shall execute a "Developer/Engineer Agreement for Public Works Improvements" and commit to the responsibilities outlined in the agreement. (DS)
4. The developer shall provide construction plans, stamped and signed by a professional engineer licensed in the State of Oregon, containing street, grading, stormwater, sanitary sewer and water infrastructure improvements that conforms to all current Oregon City Public Works standards, specifications, codes, and policies for review and approval by the City prior to receiving a permit and beginning construction. (DS)
5. The development's contractor(s) and engineer(s) shall attend a pre-construction meeting with Oregon City staff prior to beginning construction work associated with the project. Permitted hours of construction shall be set forth by the City Engineer in the pre-construction meeting. (DS)
6. An approved fire access and water supply plan for the site shall be included on engineering plans and a document providing approval from Clackamas Fire District No. 1 shall be provided prior to receiving a permit and beginning construction. (DS)
7. The existing driveway approach on South End Road, which intersects with a public sidewalk, shall be made Americans with Disabilities Act (ADA) compliant. An approved curb ramp design will need included on engineering plans following proper engineering technical standards prior to receiving a permit and beginning construction. (DS)

8. The developer shall submit a traffic control plan for review and approval by the city. The traffic control may either be included on engineering plans or provided as a separate document prior to receiving construction permits. (DS)
9. The developer shall provide updated engineered drainage plan(s), drainage report(s), and design flow calculation report(s) stamped and signed by a licensed engineer addressing all items from the Section 9.3 & 9.4 of the Public Works Stormwater and Grading Design Standards prior to receiving a permit and beginning construction. (DS)
10. The development shall comply with the current version of the Oregon City Stormwater and Grading Design Standards. For sizing of the applicant's proposed stormwater management facility, the pre-development condition of the site shall be modeled as forest in the BMP Sizing Tool. An approved stormwater design will need included on engineering plans prior to receiving a permit and beginning construction. (DS)
11. If the applicant intends to use the existing sanitary sewer service line, it shall be at least 6" in diameter and the applicant shall provide a video inspection report to the City and Public Works will confirm if the lateral is in usable condition. Otherwise, the development shall install a new 6" service lateral. The applicant will be required to provide a two-way cleanout per City standards for the existing sanitary sewer lateral if none exists. An approved sanitary sewer connection design will need included on engineering plans prior to receiving a permit and beginning construction. (DS)
12. If the applicant intends to use the existing water service line, it shall be at least 1" in diameter and the applicant shall perform inspections to confirm that it is in usable condition to the satisfaction of the City. Otherwise, the development shall install, at a minimum, a new 1" water service line and meter to serve the development. An approved water connection design will need included on engineering plans prior to receiving a permit and beginning construction. (DS)
13. The developer shall provide an engineered grading plan prepared by a professional engineer in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards prior to receiving a permit and beginning construction. (DS)
14. A city issued erosion and sediment control permit shall be obtained prior to commencement of any earth disturbing activities. (DS)
15. Erosion and sediment control plans shall be submitted for review and approval by the City prior to issuance of an erosion and sediment control permit. (DS)
16. The developer shall obtain a 1200-C (NPDES) permit from Oregon Department of Environmental Quality (DEQ) for construction activities one acre or greater prior to receiving a permit and beginning construction. (DS)

The following conditions of approval shall be met to the satisfaction of the City prior to building permit issuance except as noted.

17. In the event that onsite trees are removed as part of this development, the applicant shall submit a tree removal and mitigation plan prior to building permit issuance, utilizing any of the compliance options in OCMC 17.41.050 and demonstrating compliance with tree removal and replanting standards in OCMC 17.41, including requirements for size, species, planting and number of mitigation trees. (P)
18. The applicant shall submit a plan for tree protection during construction for any trees impacted by construction of the proposed development. (P)
19. The applicant shall submit a revised parking lot layout which:

- a. Includes parking stalls and drive aisles which comply with the parking dimensional requirements in OCMC 17.52.030.D. (P)
 - b. Identifies the location of required carpool/vanpool parking stalls and demonstrates compliance with location requirements for carpool/vanpool parking in OCMC 17.52.030.E. (P)
 - c. All areas in the parking lot not used for parking, maneuvering or circulation shall be landscaped, including decreasing drive aisle widths and parking stall dimensions to comply with the dimensional standards in OCMC 17.52.030.D, and eliminating the paved triangular areas between landscaping planter strips and the 45-degree parking stalls. (P)
20. The applicant shall submit details of the proposed bicycle parking facilities, demonstrating compliance with all bicycle parking design standards in OCMC 17.52.040.C. (P)
21. The applicant shall submit a revised landscaping plan:
- a. In which all areas in the parking lot not used for parking, maneuvering or circulation shall be landscaped, including decreasing drive aisle widths and parking stall dimensions to comply with the dimensional standards in OCMC 17.52.030.D, and eliminating the paved triangular areas between landscaping planter strips and the 45-degree parking stalls. (P)
 - b. Which includes trees spaced no more than 30 feet apart in the perimeter parking lot landscaping of the new parking area in the northeast portion of the parking lot. (P)
 - c. Which includes parking area/building buffer landscaping between the parking lot and the proposed recreation building in accordance with one of the options in OCMC 17.52.060.D. (P)
 - d. Which includes 31 interior parking lot landscaping trees within the new and reconfigured interior parking lot landscaping areas. In the event that the additional trees cannot be accommodated within the new and reconfigured interior parking lot landscaping areas, the applicant may plant the additional trees within existing interior parking lot landscaping areas. (P)
 - e. Which includes 186 interior parking lot landscaping shrubs within the new and reconfigured parking areas. In the event that the additional shrubs cannot be accommodated within the new and reconfigured interior parking lot landscaping areas, the applicant may plant the additional shrubs within existing interior parking lot landscaping areas. (P)
 - f. Which identifies that within three years the landscaping will cover one hundred percent of the landscape area, and that no mulch, bark chips or similar materials will be used except under the canopy of shrubs and within two feet of the base of trees.
22. If a fence or retaining wall is proposed, the applicant shall demonstrate compliance with fence/wall height and location requirements in OCMC 17.54.100. (P)
23. In order to provide a more interactive site and pedestrian friendly environment, the applicant shall provide a revised plaza design prior to building permit issuance, which incorporates three of the following elements within the plaza (P):
- Pedestrian-scale lighting
 - Outdoor café
 - Bench seating for a minimum of 20 people assuming 2 feet of lineal seating area per person
 - 200 SF of landscaping planters or planter strips (not to be double-counted as building buffer/parking area landscaping)
 - Water feature

- Community bulletin/announcement board
 - Art feature
 - Children's interactive play area
 - Cobbled, patterned or paved stone or enhanced concrete
24. The applicant shall provide a revised building design which includes additional design elements or architectural features on the northern façade, such that the façade does not include a blank uninterrupted wall exceeding 30 feet in length in accordance with OCMC 17.62.055.I. (P)
 25. The applicant shall submit a revised photometric plan which demonstrates compliance with maximum lighting levels at the southern property line, and includes lighting at the proposed recreational building's entrance and in the plaza and new pedestrian circulation areas. (P)
 26. The applicant shall pay the review fees for the modifications requested (P).

The following conditions of approval shall be met to the satisfaction of the City prior to occupancy except as noted.

27. All pavement cuts and restoration within South End Road shall comply with the City of Oregon City Pavement Cut Standards. At the time of the application, the pavement restoration requirement for South End Road is the Full Standard. However, specific pavement cut standard requirements are determined at the time of construction. (DS)
28. All new franchise utilities shall be placed underground prior to occupancy. (DS)
29. The public improvements shall be constructed according to approved final engineering plans prior to occupancy. (DS)
30. The development shall provide a 10-foot-wide public utility easement (PUE) along all property lines fronting existing or proposed right-of-way prior to occupancy. (DS)
31. Improvements shall be constructed under the inspection and approval of the City. Expenses incurred thereby shall be borne by the developer and paid prior to final approval. The developer's project engineer also shall inspect construction. A certificate of completion is required prior to providing a punch list for the contractor. The punch list must be completed prior to occupancy. (DS)
32. The workmanship and materials for any work performed under permits issued by Oregon City Public Works shall be in accordance with the edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the city. (DS)
33. The applicant shall provide a 15-foot-wide easement for the existing 8-inch public water main which traverses through the site. The approved easement shall be provided to the City prior to occupancy. (DS)
34. The property owner(s) shall sign a Restrictive Covenant Non-Remonstrance Agreement for the purpose of making storm sewer, sanitary sewer, water or street improvements in the future that benefit the property and all fees associated with processing and recording the Non-Remonstrance Agreement shall be paid prior to occupancy. (DS)
35. The property owner(s) shall execute an agreement providing access to and maintenance of privately owned stormwater management facilities and pay associated recording fees. The covenant shall include a site plan identifying all privately-owned stormwater management facilities and an operation and maintenance plan for each type of stormwater facility in accordance with the Public Works Stormwater and Grading Design Standards. The Maintenance Covenant and Access Easement shall be reviewed and accepted by the City prior to occupancy. (DS)

36. The applicant shall establish a good neighbor agreement with property owners within 300 feet of the property in order to ensure that the development will not result in a disturbance to surrounding neighbors. The applicant shall provide a copy of the good neighbor agreement to the city, and the good neighbor agreement shall contain, at a minimum, the following items (P):
- a. A primary contact person for the recreational center to facilitate timely communications and address concerns from neighbors as they occur.
 - b. An invitation to a meeting for property owners within 300 feet of the subject property to discuss any concerns they may have with the use and establish a positive and productive relationship between the neighbors and the church/recreational center operators and staff.

The following conditions of approval shall be met to the satisfaction of the City within 90 days of occupancy.

37. As-built construction plans and digital copies of as-built drawings shall be filed with the City Engineer within 90 days of completing required public improvements. (DS)

The following conditions of approval shall be met prior to issuance of a building permit for future development on the subject site:

38. Future new buildings onsite shall be constructed near the street in accordance with building location and site frontage requirements within the Oregon City Municipal Code. Future expansions of the church may be permitted provided that the pedestrian plaza/courtyard is not demolished and the church and recreational building remain connected. (P)

I. BACKGROUND:

1. Existing Conditions

The subject site is located just south of the intersection of Warner Parrott Road and South End Road and is approximately 8.5 acres in size. The property has R-10 zoning and is developed with the Oregon City Christian Church and associated parking and landscaping. Surrounding properties are zoned R-10 and R-8 and are developed with single-family residential homes.

Figure 1. Vicinity Map

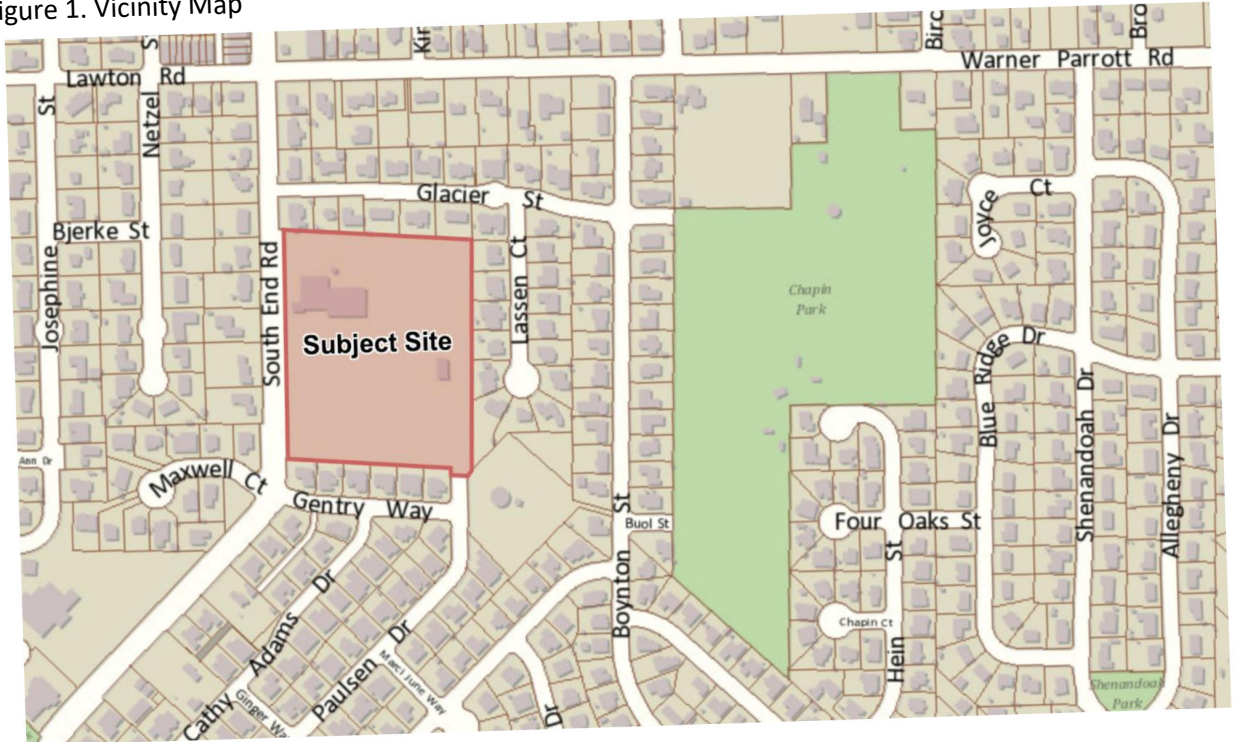


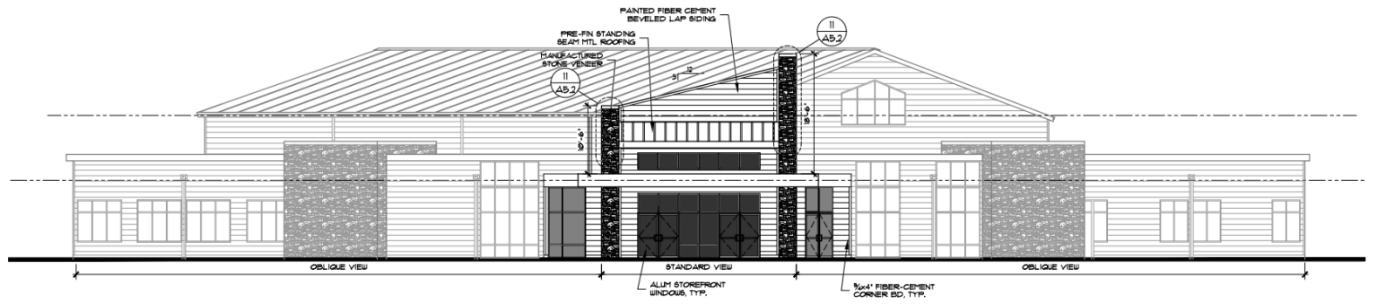
Figure 2: Existing Conditions – Aerial Image



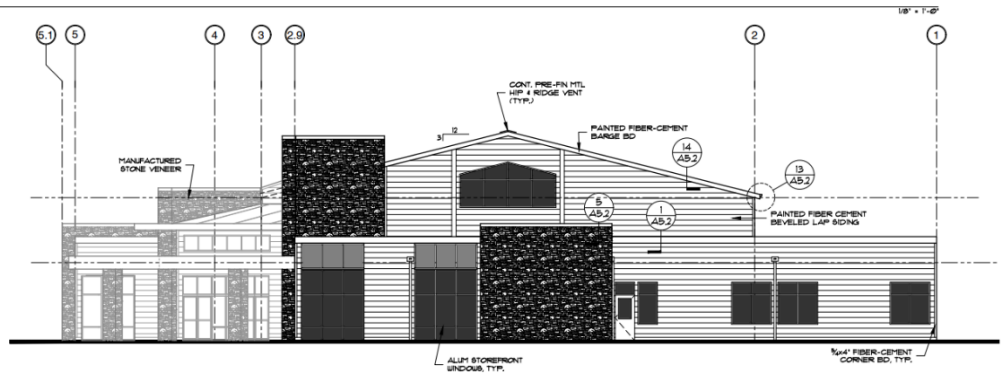
2. Project Description

The applicant has proposed a 14,800 SF recreation building for church and community use, which includes a community meeting rooms, gymnasium and, youth group meeting spaces. The building is proposed to be used by the Oregon City Christian Church as well as local youth sports and recreational organizations. The building is proposed to be located behind the church and connected the church via breezeway with a courtyard/plaza located between the two buildings. The proposal includes a 124 new parking stalls and associated landscaping.

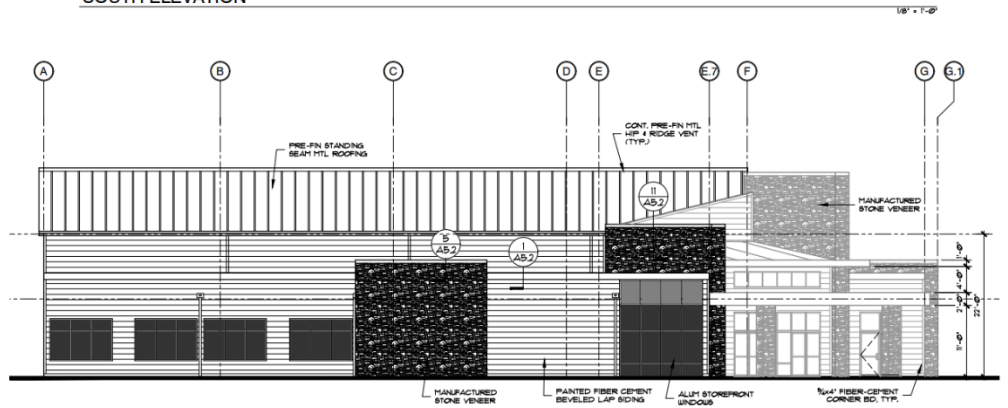
Figure 3: Proposed Site Plan



SOUTHWEST ELEVATION



SOUTH ELEVATION



WEST ELEVATION- SOUTH END RD

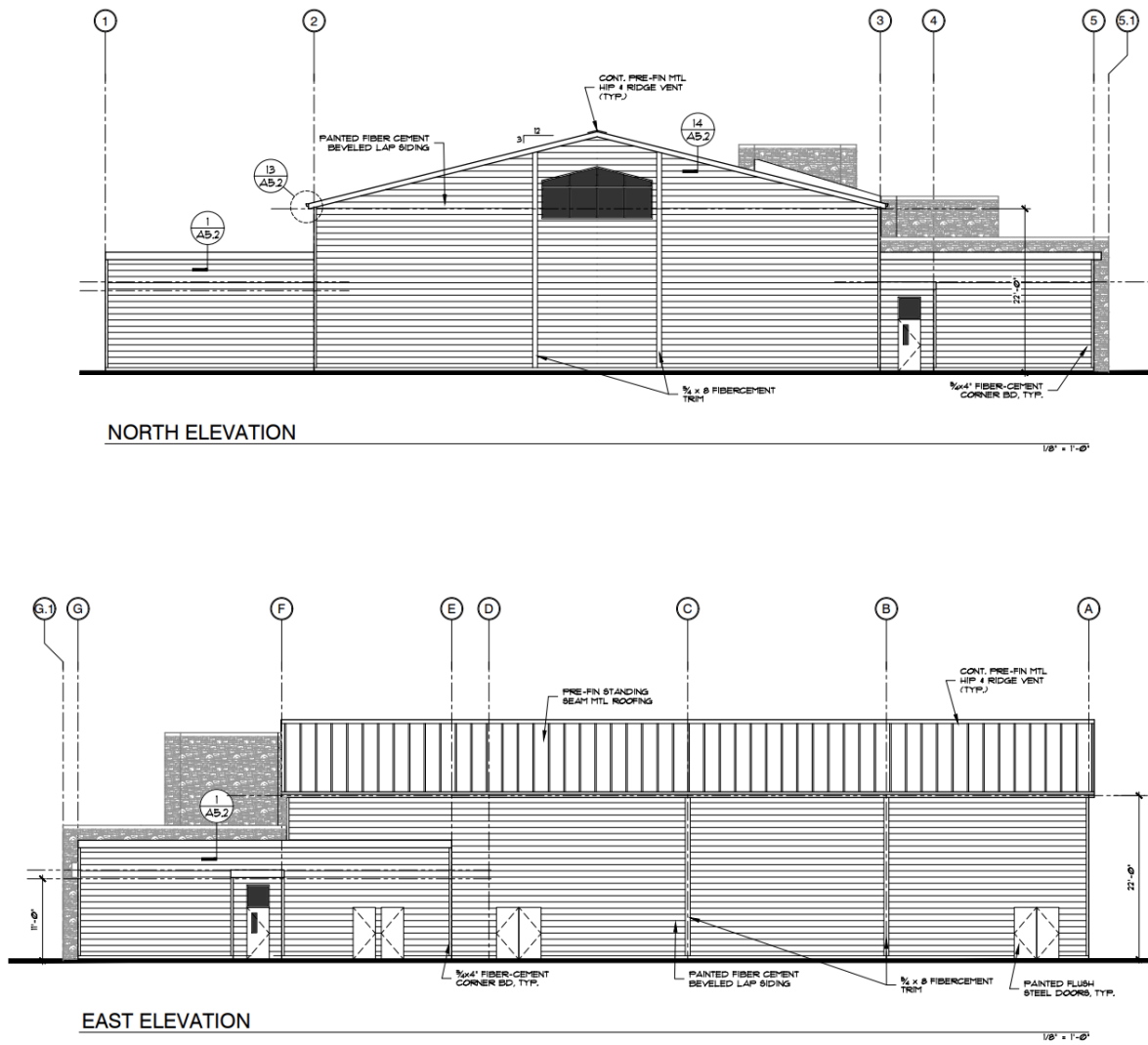
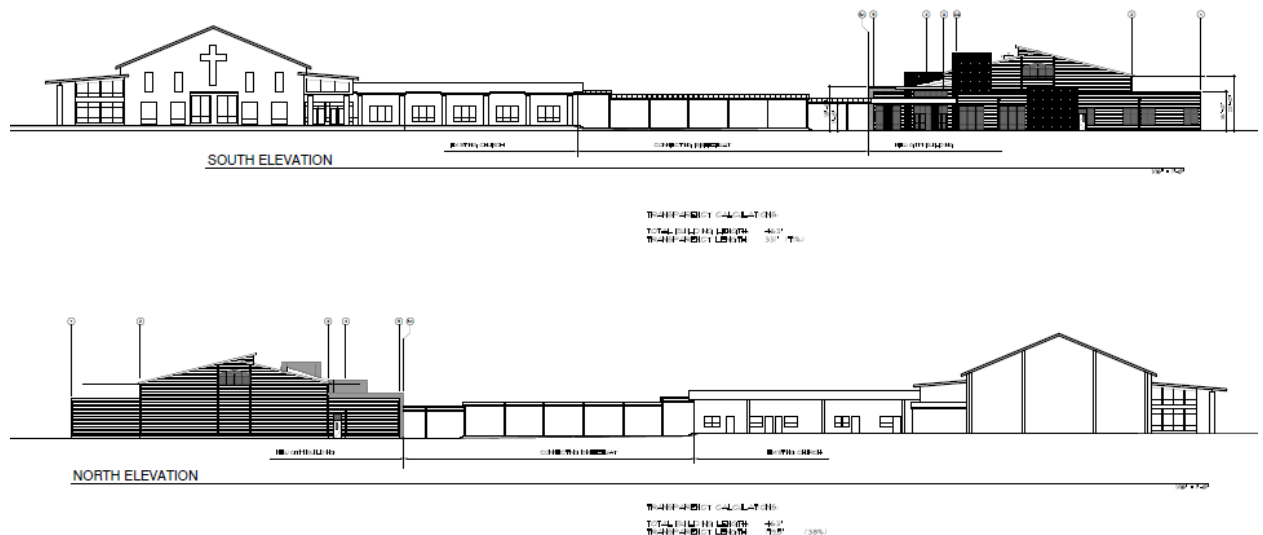


Figure 5: Proposed Building Elevations with Breezeway



3. Permits and Approvals: The applicant is responsible for obtaining approval and permits from each applicable governmental agency and department at Oregon City including but not limited to the Engineering and Building Divisions.

4. Public Comment

Public comments submitted include (Exhibit 3):

- A comment from Sandra Schaffer identifying concern about the expanded parking area which is proposed to encroach much closer to the neighborhood to the south than the current parking area. The comment specifically identified concerns about events, gatherings or other recreational activities, such as concerts or games, being held in the new parking area, and noise these events would generate being a disturbance to the neighborhood.

Staff Response: The application does not indicate that the parking area will be used for any gatherings or events. As conditioned within this report, the applicant is required to establish a good neighbor agreement with property owners within 300 feet in order to ensure that the development will not result in a disturbance to surrounding neighbors. The document is intended to identify sustainable and meaningful communication between the site and the neighborhood and may provide a basis to resolve any problems that may arise.

None of the comments provided indicate that an approval criterion has not been met or cannot be met through the Conditions of Approval attached to this Staff Report.

II. ANALYSIS AND FINDINGS:

Municipal Code Standards and Requirements: The following sections of the Oregon City Municipal Code are applicable to this land use approval:

CHAPTER

CHAPTER 12.04 STREETS, SIDEWALKS, AND PUBLIC PLACES

CHAPTER 12.08 - PUBLIC AND STREET TREES

CHAPTER 13.12 STORMWATER MANAGEMENT

CHAPTER 15.48 - GRADING, FILLING AND EXCAVATING

CHAPTER 16.12 MINIMUM PUBLIC IMPROVEMENTS AND DESIGN STANDARDS FOR DEVELOPMENT

CHAPTER 17.08 LOW DENSITY RESIDENTIAL DISTRICTS

CHAPTER 17.41 TREE PROTECTION, PRESERVATION, REMOVAL AND REPLANTING STANDARDS

CHAPTER 17.50 ADMINISTRATION AND PROCEDURES

CHAPTER 17.52 OFF-STREET PARKING AND LOADING

CHAPTER 17.54 SUPPLEMENTAL ZONING REGULATIONS AND EXCEPTIONS

CHAPTER 17.56 CONDITIONAL USES

CHAPTER 17.62 SITE PLAN AND DESIGN REVIEW

The City Code Book is available on-line at www.orcity.org.

Permits and Approvals: The applicant is responsible for obtaining approval and permits from each applicable governmental agency and department at Oregon City including but not limited to the Engineering and Building Divisions.

REQUIRED CODE RESPONSES:

CHAPTER 12.04 STREETS, SIDEWALKS, AND PUBLIC PLACES

12.04.005 - Jurisdiction and management of the public rights-of-way.

A. *The City has jurisdiction and exercises regulatory management over all public rights-of-way within the City under authority of the City Charter and state law by issuing separate public works right-of-way permits or permits as part of issued public infrastructure construction plans. No work in the public right-of-way shall be done without the proper permit. Some public rights-of-way within the city are regulated by the State of Oregon Department of Transportation (ODOT) or Clackamas County and as such, any work in these streets shall conform to their respective permitting requirements.*

B. *Public rights-of-way include, but are not limited to, streets, roads, highways, bridges, alleys, sidewalks, trails, paths, public easements and all other public ways or areas, including the subsurface under and air space over these areas.*

C. *The City has jurisdiction and exercises regulatory management over each public right-of-way whether the City has a fee, easement, or other legal interest in the right-of-way. The City has jurisdiction and regulatory management of each right-of-way whether the legal interest in the right-of-way was obtained by grant, dedication, prescription, reservation, condemnation, annexation, foreclosure or other means.*

D. *No person may occupy or encroach on a public right-of-way without the permission of the City. The City grants permission to use rights-of-way by franchises, licenses and permits.*

E. *The exercise of jurisdiction and regulatory management of a public right-of-way by the City is not official acceptance of the right-of-way, and does not obligate the City to maintain or repair any part of the right-of-way.*

Finding: Complies as Proposed. The applicant acknowledges the City's jurisdiction and management of the public right-of-way. The applicant shall receive all necessary approvals from the City prior to installation of any public improvements within the adjacent right-of-way.

12.04.025 - Driveways.

Driveways shall be reviewed in accordance with OCMC 16.12.035. Driveway requirements may be modified through the procedures in OCMC 16.12.013.

Finding: Please see findings in Section 16.12.035 of this report.

12.04.030 - Maintenance and repair.

The owner of land abutting the street where a sidewalk has been constructed shall be responsible for maintaining said sidewalk and abutting curb, if any, in good repair.

Finding: Applicable. The applicant is responsible for maintaining said existing sidewalk and abutting curb during construction and maintain all new sidewalk and curb after construction.

12.04.031 - Liability for sidewalk injuries.

A. The owner or occupant of real property responsible for maintaining the adjacent sidewalk shall be liable to any person injured because of negligence of such owner or occupant in failing to maintain the sidewalk in good condition.

B. If the City is required to pay damages for an injury to persons or property caused by the failure of an owner or occupant to perform the duty that this ordinance imposes, the owner or occupant shall compensate the City for the amount of the damages paid. The City may maintain an action in a court of competent jurisdiction to enforce this section.

Finding: Not Applicable. This is not a criterion for this development.

12.04.032 - Required sidewalk repair.

A. When the Public Works Director determines that repair of a sidewalk is necessary, written notice shall be provided to the owner of property adjacent to the defective sidewalk.

B. The notice shall require the owner of the property adjacent to the defective sidewalk to complete the repair of the sidewalk within ninety days after the service of notice. The notice shall also state that if the repair is not made by the owner, the City may do the work and the cost of the work shall be assessed against the property adjacent to the sidewalk.

1. All sidewalks hereafter constructed in the City on improved streets shall be constructed to city standards and widths required in the Oregon City Transportation System Plan and OCMC 16.12. Sidewalks and curbs are to be constructed according to plans and specifications provided by the City Engineer.

2. Sidewalks constructed on unimproved streets shall be constructed of concrete according to lines and grades established by the City Engineer. On unimproved streets, curbs do not have to be constructed.

C. The Public Works Director shall cause a copy of the notice to be served personally upon the owner of the property adjacent to the defective sidewalk, or the notice may be served by registered or certified mail, return receipt requested. If after diligent search the owner is not discovered, the Public Works Director shall cause a copy of the notice to be posted in a conspicuous place on the property, and such posting shall have the same effect as service of notice by mail or by personal service upon the owner of the property.

D. The person serving the notice shall file with the City recorder a statement stating the time, place and manner of service or notice.

Finding: Not Applicable. This is not a criterion for this development because no sidewalk repair is required.

12.04.033 - City may do work.

If repair of the sidewalk is not completed within ninety days after the service of notice, the Public Works Director shall carry out the needed work on the sidewalk. Upon completion of the work, the Public Works

Director shall submit an itemized statement of the cost of the work to the finance director. The City may, at its discretion, construct, repair or maintain sidewalks deemed to be in disrepair by the Public Works Director for the health, safety and general welfare of the residents of the City.

Finding: Not Applicable. This is not a criterion for this development because no sidewalk repair is required.

12.04.034 - Assessment of costs.

Upon receipt of the report, the Finance Director shall assess the cost of the sidewalk work against the property adjacent to the sidewalk. The assessment shall be a lien against the property and may be collected in the same manner as is provided for in the collection of street improvement assessment.

Finding: Not Applicable. This is not a criterion for this development because no sidewalk repair is required.

12.04.040 – Sidewalks—Enforcement.

Any person whose duty it is to maintain and repair any sidewalk, as provided by this chapter, and who fails to do so shall be subject to the enforcement procedures of OCMC 1.16, 1.20 and 1.24. Failure to comply with the provisions of this chapter shall be deemed a nuisance. Violation of any provision of this chapter is subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

Finding: Not Applicable. This is not a criterion for this development.

12.04.050 - Retaining walls—Required.

Every owner of a lot within the City, abutting upon an improved street, where the surface of the lot or tract of land is above the surface of the improved street and where the soil or earth from the lot, or tract of land is liable to, or does slide or fall into the street or upon the sidewalk, or both, shall build a retaining wall, the outer side of which shall be on the line separating the lot, or tract of land from the improved street, and the wall shall be so constructed as to prevent the soil or earth from the lot or tract of land from falling or sliding into the street or upon the sidewalk, or both, and the owner of any such property shall keep the wall in good repair.

Finding: Not Applicable. Applicant is not proposing construction of a retaining wall.

12.04.060 - Retaining walls—Maintenance.

When a retaining wall is necessary to keep the earth from falling or sliding onto the sidewalk or into a public street and the property owner or person in charge of that property fails or refuses to build such a wall, such shall be deemed a nuisance. The violation of any provision of this chapter is subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

Finding: Not Applicable. Applicant is not proposing construction of a retaining wall.

12.04.070 - Removal of sliding dirt.

It shall be the duty of the owner of any property as mentioned in OCMC 12.04.050, and in case the owner is a nonresident, then the agent or other person in charge of the same, to remove from the street or sidewalk or both as the case may be, any and all earth or dirt falling on or sliding into or upon the same from the property, and to build and maintain in order at all times, the retaining wall as herein required; and upon the failure, neglect or refusal of the land owner, the agent or person in charge of the same to clean away such earth or dirt, falling or sliding from the property into the street or upon the sidewalk, or both, or to build the retaining wall, shall be deemed guilty of a misdemeanor.

Finding: Not Applicable. The applicant has not proposed and is not required to remove sliding dirt with this application.

12.04.080 - Excavations—Permit required.

It shall be unlawful for any person to dig up, break, excavate, disturb, dig under or undermine any public street or alley, or any part thereof or any macadam, gravel, or other street pavement or improvement without first applying for and obtaining from the engineer a written permit so to do.

Finding: Complies as Proposed. The applicant has indicated that permits will be obtained from the City prior to any work being conducted within the right-of-way.

12.04.090 - Excavations—Permit restrictions.

The permit shall designate the portion of the street to be so taken up or disturbed, together with the purpose for making the excavation, the number of days in which the work shall be done, and the trench or excavation to be refilled and such other restrictions as may be deemed of public necessity or benefit.

Finding: Complies as Proposed. The applicant has indicated that permits will be obtained from the City prior to any work being conducted within the right-of-way.

12.04.100 - Excavations—Restoration of pavement.

Whenever any excavation shall have been made in any pavement or other street improvement on any street or alley in the City for any purpose whatsoever under the permit granted by the engineer, it shall be the duty of the person making the excavation to restore the pavement in accordance with the City of Oregon City Public Works Pavement Cut Standard in effect at the time a right-of-way permit is granted. The City Commission may adopt and modify the City of Oregon City Public Works Pavement Cut Standards by resolution as necessary to implement the requirements of this chapter.

Finding: Complies with Condition. The applicant has proposed utility work in the public right-of-way within South End Road. All pavement cuts and restoration within South End Road shall comply with the City of Oregon City Pavement Cut Standards. At the time of the application, the pavement restoration requirement for South End Road is the Full Standard. However, specific pavement cut standard requirements are determined at the time of construction. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

12.04.110 - Excavations—Nuisance—Penalty.

Any excavation in violation of this chapter shall be deemed a nuisance. Violation of any provision of this chapter is subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

Finding: Complies as Proposed. All excavations shall comply with this Chapter via the conditions of approval.

12.04.120 - Obstructions—Permit required.

A. Permanent Obstructions. It is unlawful for any person to place, put or maintain any obstruction, other than a temporary obstruction, as defined in subsection B. of this section, in any public street or alley in the City, without obtaining approval for a right-of-way permit from the City Commission by passage of a resolution.

1. The City Engineer shall provide applicants with an application form outlining the minimum submittal requirements.

2. The applicant shall submit at least the following information in the permitting process in order to allow the City Commission to adequately consider whether to allow the placement of an obstruction and whether any conditions may be attached:

- a. Site plan showing right-of-way, utilities, driveways as directed by staff;*
- b. Sight distance per OCMC 10.32, Traffic Sight Obstructions;*
- c. Traffic control plan including parking per Manual on Uniform Traffic Control Devices (MUTCD);*
- d. Alternative routes if necessary;*

- e. *Minimizing obstruction area; and*
- f. *Hold harmless/maintenance agreement.*
- 3. *If the City Commission adopts a resolution allowing the placement of a permanent obstruction in the right-of-way, the City Engineer shall issue a right-of-way permit with any conditions deemed necessary by the City Commission.*
- B. *Temporary Obstructions.*
 - 1. *A "temporary obstruction" is defined as an object placed in a public street, road or alley for a period of not more than sixty consecutive days. A "temporary obstruction" includes, but is not limited to, moving containers and debris dumpsters.*
 - 2. *The City Engineer, or designee, is authorized to grant a permit for a temporary obstruction.*
 - 3. *The City Engineer shall provide applicants with an application form outlining the minimum submittal requirements.*
 - 4. *The applicant shall submit, and the City Engineer, or designee, shall consider, at least the following items in the permitting process. Additional information may be required in the discretion of the City Engineer:*
 - a. *Site plan showing right-of-way, utilities, driveways as directed by staff;*
 - b. *Sight distance per OCMC 10.32, Traffic Sight Obstructions;*
 - c. *Traffic control plan including parking per Manual on Uniform Traffic Control Devices (MUTCD);*
 - d. *Alternative routes if necessary;*
 - e. *Minimizing obstruction area; and*
 - f. *Hold harmless/maintenance agreement.*
 - 5. *In determining whether to issue a right-of-way permit to allow a temporary obstruction, the City Engineer may issue such a permit only after finding that the following criteria have been satisfied:*
 - a. *The obstruction will not unreasonably impair the safety of people using the right-of-way and nearby residents;*
 - b. *The obstruction will not unreasonably hinder the efficiency of traffic affected by the obstruction;*
 - c. *No alternative locations are available that would not require use of the public right-of-way; and*
 - d. *Any other factor that the City Engineer deems relevant.*
 - 6. *The permittee shall post a weatherproof copy of the temporary obstruction permit in plain view from the right-of-way.*
- C. *Fees. The fee for obtaining a right-of-way permit for either a permanent obstruction or a temporary obstruction shall be set by resolution of the City Commission.*

Finding: Not Applicable. The applicant has not proposed any obstructions in the right-of-way.

12.04.130 - Obstructions—Sidewalk sales.

- A. *It is unlawful for any person to use the public sidewalks of the city for the purpose of packing, unpacking or storage of goods or merchandise or for the display of goods or merchandise for sale. It is permissible to use the public sidewalks for the process of expeditiously loading and unloading goods and merchandise.*
- B. *The City Commission may, in its discretion, designate certain areas of the City to permit the display and sale of goods or merchandise on the public sidewalks under such conditions as may be provided.*

Finding: Not Applicable. The applicant has not proposed a sidewalk sale with this application.

12.04.140 - Obstructions—Nuisance—Penalty.

Any act or omission in violation of this chapter shall be deemed a nuisance. Violation of any provision of this chapter is subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

Finding: Not Applicable. The applicant has not proposed an obstruction in the right-of-way.

12.04.150 - Street and alley vacations—Cost.

At the time of filing a petition for vacation of a street, alley or any part thereof, a fee as established by City Commission resolution shall be paid to the City. The City Commission, upon hearing such petition, may grant the same in whole or in part, or may deny the same in whole or in part, or may grant the same with such reservations as would appear to be for the public interest, including reservations pertaining to the maintenance and use of underground public utilities in the portion vacated.

Finding: Not Applicable. The applicant has not proposed a street or alley vacation with this application.

12.04.170 - Street design—Purpose and general provisions.

All development shall be in conformance with the city's public facility master plans, public works policies, standard drawings and engineering specifications. All streets shall be reviewed and approved by the city engineer prior to construction. All streets and driveway connections to another jurisdiction's facility or right-of-way must be reviewed by the appropriate jurisdiction as a condition of the preliminary plat or site planning and when required by law or intergovernmental agreement shall be approved by the appropriate jurisdiction.

Finding: Not Applicable. No new streets or driveways are proposed with this application.

12.04.194 - Traffic sight obstructions.

All streets shall comply with the Traffic Sight Obstructions in OCMC 10.32.

Finding: Not Applicable. There will be no new street intersections created by this development.

12.04.270 - Standard construction specifications.

The workmanship and materials for any work performed under permits issued per this chapter shall be in accordance with the current edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the City in accordance with this ordinance, in effect at the time of application. The exception to this requirement is where this chapter and the Public Works Street Standard Drawings provide other design details, in which case the requirements of this chapter and the Public Works Street Standard Drawings shall control. In the case of work within ODOT or Clackamas County rights-of-way, work shall be in conformance with their respective construction standards.

Finding: Complies with Condition. The workmanship and materials for any work performed under permits issued by Oregon City Public Works shall be in accordance with the edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the City. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

12.04.280 - Violation—Penalty.

Any act or omission in violation of this chapter shall be deemed a nuisance. Violation of any provision of this chapter is subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

Finding: Applicable. Any act or omission in violation of this chapter shall be deemed a nuisance. Violation of any provision of this chapter is subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

CHAPTER 12.08 - PUBLIC AND STREET TREES

12.08.015 - Street tree selection, planting and maintenance requirements.

All development shall provide street trees adjacent to all street frontages. Species and locations of trees shall be selected based upon vision clearance requirements, but shall in all cases be selected from the Oregon City Street Tree List, an approved street tree list for a jurisdiction in the metropolitan region, or be approved by a certified arborist unless otherwise approved pursuant to this section. If a setback sidewalk has already been constructed or the Public Works Department determines that the forthcoming street design shall include a setback sidewalk, then all street trees shall be installed with a planting strip or within tree wells. If existing street design includes a curb-tight sidewalk, then all street trees shall be placed according to OCMC 12.08.035.C.

A. One street tree shall be planted for every thirty-five feet of property frontage. The tree spacing shall be evenly distributed throughout the total development frontage to meet the clearance distances required in subsection (B) below. The Community Development Director may approve an alternative street tree plan, or accept fee-in-lieu of planting pursuant to OCMC 12.08.035, if site or other constraints prevent meeting the required total number of tree plantings.

Finding: Not Applicable. The application is for Site Plan and Design Review, therefore, this chapter is applicable. However, the site's frontage is already developed with street trees that are in compliance with this chapter. The applicant has not proposed removal of any street trees and they are not required to be removed to accommodate street improvements.

CHAPTER 13.12 STORMWATER MANAGEMENT

13.12.050 - Applicability and exemptions.

This chapter establishes performance standards for stormwater conveyance, quantity and quality. Additional performance standards for erosion prevention and sediment control are established in OCMC 17.47.

A. Stormwater Conveyance. The stormwater conveyance requirements of this chapter shall apply to all stormwater systems constructed with any development activity, except as follows:

- 1. The conveyance facilities are located entirely on one privately owned parcel;*
 - 2. The conveyance facilities are privately maintained; and*
 - 3. The conveyance facilities receive no stormwater runoff from outside the parcel's property limits.*
- Those facilities exempted from the stormwater conveyance requirements by the above subsection will remain subject to the requirements of the Oregon Uniform Plumbing Code. Those exempted facilities shall be reviewed by the Building Official.*

Finding: Applicable. Connection to a public stormwater conveyance system is required to serve this development.

B. Water Quality and Flow Control. The water quality and flow control requirements of this chapter shall apply to the following proposed uses or developments, unless exempted under subsection C:

- 1. Activities located wholly or partially within water quality resource areas pursuant to OCMC 17.49 that will result in the creation of more than five hundred square feet of impervious surface within the NROD or will disturb more than one thousand square feet of existing impervious surface within the NROD as part of a commercial or industrial redevelopment project. These square footage measurements will be considered cumulative for any given five-year period; or*
- 2. Activities that create or replace more than five thousand square feet of impervious surface, cumulated over any given five-year period.*

Finding: Applicable. The proposed development will create or replace more than five thousand square feet of impervious surface.

C. Exemptions. The following exemptions to subsection B of this section apply:

1. An exemption to the flow control requirements of this chapter will be granted when the development site discharges to the Willamette River, Clackamas River or Abernethy Creek; and either lies within the one hundred-year floodplain or is up to ten feet above the design flood elevation as defined in OCMC 17.42, provided that the following conditions are met:

a. The project site is drained by a conveyance system that is comprised entirely of manmade elements (e.g. pipes, ditches, culverts outfalls, outfall protection, etc.) and extends to the ordinary high water line of the exempt receiving water; and

b. The conveyance system between the project site and the exempt receiving water has sufficient hydraulic capacity and erosion stabilization measures to convey discharges from the proposed conditions of the project site and the existing conditions from non-project areas from which runoff is collected.

2. Projects in the following categories are generally exempt from the water quality and flow control requirements:

a. Stream enhancement or restoration projects approved by the City.

b. Farming practices as defined by ORS 30.960 and farm use as defined in ORS 214.000; except that buildings associated with farm practices and farm use are subject to the requirements of this chapter.

c. Actions by a public utility or any other governmental agency to remove or alleviate an emergency condition.

d. Road and parking area preservation/maintenance projects such as pothole and square cut patching, surface sealing, replacing or overlaying of existing asphalt or concrete pavement, provided the preservation/maintenance activity does not expand the existing area of impervious coverage above the thresholds in subsection B of this section.

e. Pedestrian and bicycle improvements (sidewalks, trails, pathways, and bicycle paths/lands) where no other impervious surfaces are created or replaced, built to direct stormwater runoff to adjacent vegetated areas.

f. Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics.

g. Maintenance or repair of existing utilities.

Finding: Not Applicable. No exemptions apply to the proposed development.

D. Uses Requiring Additional Management Practices. In addition to any other applicable requirements of this chapter, the following uses are subject to additional management practices, as defined in the Public Works Stormwater and Grading Design Standards:

1. Bulk petroleum storage facilities;

2. Above ground storage of liquid materials;

3. Solid waste storage areas, containers, and trash compactors for commercial, industrial, or multi-family uses;

4. Exterior storage of bulk construction materials;

5. Material transfer areas and loading docks;

6. Equipment and/or vehicle washing facilities;

7. Development on land with suspected or known contamination;

8. Covered vehicle parking for commercial or industrial uses;

9. Industrial or commercial uses locating in high traffic areas, defined as average daily count trip of two thousand five hundred or more trips per day; and

10. Land uses subject to DEQ 1200-Z Industrial Stormwater Permit Requirements.

Finding: Not Applicable. The development has not proposed use of the land that requires additional management practices as defined in the Public Works Stormwater and Grading Design Standards.

13.12.060 - Abrogation and greater restrictions.

Where the provisions of this chapter are less restrictive or conflict with comparable provisions of other portions of this code, regional, state or federal law, the provisions that are more restrictive shall govern. Where this chapter imposes restrictions that are more stringent than regional, state or federal law, the provisions of this chapter shall govern. However, nothing in this chapter shall relieve any party from the obligation to comply with any applicable federal, state or local regulations or permit requirements. Compliance with this chapter and the minimum requirements, minimum standards, and design procedures as set forth in the City adopted Public Works Stormwater and Grading Design Standards does not relieve the designer, owner, or developer of the responsibility to apply conservative and sound professional judgment to protect the health, safety and welfare of the public. It is not the intent of this chapter to make the City a guarantor or protector of public or private property in regard to land development activity.

Finding: Applicable. Findings from the provision of this chapter do not relieve the development from the obligation to comply with any applicable federal, state or local regulations or permit requirements.

13.12.080 - Submittal requirements.

A. Applications subject to stormwater conveyance, water quality, and/or flow control requirements of this chapter shall prepare engineered drainage plans, drainage reports, and design flow calculation reports in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards.

B. Each project site, which may be composed of one or more contiguous parcels of land, shall have a separate valid city approved plan and report before proceeding with construction.

Finding: Complies with Condition. The applicant's preliminary drainage plan and report shows conceptual compliance with the current version of the Oregon City Stormwater and Grading Design Standards. The applicant has proposed an expansion of the existing onsite stormwater facility to meet water quality and water quantity requirements for the new impervious area. Requirements of this code section can be met by meeting approval criteria outlined in section 13.12.090 of this report. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

13.12.090 - Approval criteria for engineered drainage plans and drainage report.

An engineered drainage plan and/or drainage report shall be approved only upon making the following findings:

A. The plan and report demonstrate how the proposed development and stormwater facilities will accomplish the purpose statements of this chapter.

B. The plan and report meet the requirements of the Public Works Stormwater and Grading Design Standards adopted by resolution under OCMC 13.12.020.

C. The storm drainage design within the proposed development includes provisions to adequately control runoff from all public and private streets and roof, footing, and area drains and ensures future extension of the current drainage system.

D. Streambank erosion protection is provided where stormwater, directly or indirectly, discharges to open channels or streams.

E. Specific operation and maintenance measures are proposed that ensure that the proposed stormwater quantity control facilities will be properly operated and maintained.

Finding: Complies with Condition. The applicant's preliminary drainage plan and report shows conceptual compliance with the current version of the Oregon City Stormwater and Grading Design Standards. The applicant has proposed an expansion of the existing onsite stormwater facility to meet water quality and water quantity requirements for the new impervious area. However, the applicant's proposed stormwater management facility for treatment and flow control is insufficiently sized. For the

purposes of hydrologic modeling, the pre-developed conditions of the site shall be modeled as the historic vegetation which existed prior to the urban settlement. According to Appendix G of the Stormwater Grading and Design Standards (SGDS), the pre-development condition of the site is forest. For sizing of the applicant's proposed stormwater management facility, the pre-development condition of the site shall be modeled as forest in the BMP Sizing Tool.

The development shall comply with the current version of the Oregon City Stormwater and Grading Design Standards. The applicant shall provide an engineered drainage plan, signed by a professional engineer in the State of Oregon, for review and approval to full address all applicable Stormwater and Grading Design Standards. The applicant's engineer shall submit a completed Site Assessment and Planning Checklist, found in Appendix B of the Stormwater and Grading Design Standards. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

13.12.100 - Alternative materials, alternative design and methods of construction.

The provisions of this chapter are not intended to prevent the use of any material, alternate design or method of construction not specifically prescribed by this chapter or the Public Works Stormwater and Grading Design Standards, provided any alternate has been approved and its use authorized by the City Engineer. The City Engineer may approve any such alternate, provided that the City Engineer finds that the proposed design is satisfactory and complies with the intent of this chapter and that the material, method, or work offered is, for the purpose intended, at least the equivalent of that prescribed by this chapter in effectiveness, suitability, strength, durability and safety. The City Engineer shall require that sufficient evidence or proof be submitted to substantiate any claims that may be made regarding its use. The details of any action granting approval of an alternate shall be recorded and entered in the City files.

Finding: Not Applicable. The applicant has not proposed alternative design methods requiring special approval by the City Engineer. However, should the applicant propose such methods with the public facilities construction plan submittal, the proposal will be reviewed and approved by the City Engineer as required.

13.12.110 - Transfer of engineering responsibility.

Project drainage plans shall always have a project engineer. If the project engineer is changed during the course of the work, the City shall be notified in writing and the work shall be stopped until the replacement engineer has agreed to accept the responsibilities of the project engineer. The new project engineer shall provide written notice of accepting project responsibility to the City within seventy-two hours of accepting the position as project engineer.

Finding: Complies with Condition. The development has not identified a project engineer for the project. The developer and engineer for the project shall execute a "Developer/Engineer Agreement for Public Works Improvements" and commit to the responsibilities outlined in the agreement. (Also written in the findings of section 16.12.014). **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

13.12.120 - Standard construction specifications.

The workmanship and materials shall be in accordance with the current edition of the "Standard Specifications for Public Works Construction," as prepared by the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the City, in effect at the time of application. The exception to this requirement is where this chapter and the Public Works Stormwater and Grading Design Standards provide other design details, in which case the requirements of this chapter and the Public Works Stormwater and Grading Design Standards shall be complied with.

Finding: Complies with Condition. The workmanship and materials for any work performed under permits issued by Oregon City Public Works shall be in accordance with the edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the city. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

13.12.140 - Maintenance of public stormwater facilities.

A. A stormwater facility that receives stormwater runoff from a public right-of-way shall be a public facility. Upon expiration of the warranty period and acceptance by the City as described below, the City shall be responsible for maintenance of those public stormwater facilities. Access for maintenance of the stormwater facilities shall be provided to the City through the granting of a stormwater easement or other means acceptable to the City.

B. Responsibility for maintenance of stormwater facilities including all landscaping, irrigation systems, structures and appurtenances shall remain with the property owner/developer for two years (known as the warranty period). The owner/developer shall provide the City a separate two-year landscaping maintenance surety bond for one hundred ten percent of the landscaping cost. Transfer of maintenance of stormwater conveyance systems shall occur when the City accepts the stormwater conveyance system.

C. The City will perform an inspection of the development's entire publicly maintained stormwater system approximately forty-five days before the two-year warranty period expires. The stormwater system shall be found to be in a clean, functional condition by the City engineer before acceptance of maintenance responsibility by the City.

Finding: Not Applicable. The applicant has not proposed any public stormwater facilities.

13.12.145 - Maintenance of private stormwater facilities.

A. An applicant shall submit an operation and maintenance plan for each proposed stormwater facilities, unless exempted in the Public Works Stormwater and Grading Design Standards. The information in the operation and maintenance plan shall satisfy the requirements of the Public Works Stormwater and Grading Design Standards.

B. Private owners are required to inspect and maintain stormwater facilities on their property in accordance with an approved operation and maintenance plan. A maintenance log is required to document facility inspections and specific maintenance activities. The log shall be available to City inspection staff upon request.

C. Failure to operate or maintain a stormwater facility according to the operation and maintenance plan may result in an enforcement action under Section 13.12.150.

Finding: Complies with Condition. The property owner(s) shall execute a "Maintenance Covenant and Access Easement for Privately Owned Stormwater Management Facilities" and pay associated recording fees. The covenant shall include a site plan identifying all privately-owned stormwater management facilities and an operation and maintenance plan for each type of stormwater facility in accordance with the Public Works Stormwater and Grading Design Standards. The Maintenance Covenant and Access Easement shall be reviewed and accepted by the City prior to recording. Private owners are required to inspect and maintain stormwater facilities on their property in accordance with an approved operation and maintenance plan. Failure to operate or maintain a stormwater facility according to the operation and maintenance plan may result in an enforcement action under Section 13.12.150. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

13.12.150 - Penalties and enforcement.

A. The City is authorized to make inspections and take such actions as required to enforce the provisions of this chapter. The City has the authority to enter onto land for the purpose of inspecting site development activities or resulting improvements. City staff will make an effort to contact the property owner before entering onto that property.

B. If the City Engineer determines a site has any unpermitted or illegal facilities placed, constructed or installed on the site, then the City Engineer shall notify the owner in writing directing the owner to submit a written plan (with construction drawings completed by a professional engineer, if otherwise required by this chapter) within ten calendar days. This plan (and drawings, if required) shall depict the restoration or stabilization of the site or correct the work that has adversely impacted adjacent or downstream property owners. The City Engineer shall review the plan (and drawings, if required) for compliance with City standards and issue comments for correction, if necessary, or issue an approval to the owner. The City shall establish a fee by resolution for such review, with all costs borne by the owner. If the required corrective work constitutes a grading permit, then the City shall collect the appropriate grading permit fee.

C. Any person, firm, corporation or entity violating any of the provisions of this chapter, whether they be the property owner, the applicant, the contractor or any other person acting with or without the authorization of the property owner or applicant, shall be subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

Finding: Applicable. The City is authorized to make inspections and take such actions as required to enforce the provisions of this chapter.

13.12.160 - Hazardous conditions.

A. *Determination and Notification.* If the City Engineer determines that any excavation, embankment, erosion/sedimentation control or drainage facility is a safety hazard; endangers property; or adversely affects the safety, use or stability of a public way, water quality resource areas (pursuant to OCMC 17.49) or drainage course, the owner(s) of the subject property and/or the person or agent in control of the property shall be required to repair or eliminate the hazard in conformance with the requirements of this chapter and the Public Works Stormwater and Grading Design Standards. At the time that the City Engineer makes the determination that a hazardous condition exists, the property owner and/or person or agent in control of the property will be notified in writing that the hazard exists.

B. *Order to Correct.* The City Engineer will order the specific work to be undertaken or will order that an engineering design be submitted for review and approval by the City Engineer, and will specify the time periods within which the hazardous conditions be repaired or eliminated. In the event that the owner and/or the person or agent in control of the property fails to comply with this order, that person shall be subject to the code enforcement procedures of OCMC 1.16, 1.20, and 1.24.

Finding: Applicable. If the City Engineer determines that a drainage facility is a safety hazard, the property owner shall be notified in writing and the City Engineer will order the specific work to be undertaken to correct the hazardous condition.

13.12.170 - Permits from other jurisdictions.

A. The Oregon State Department of Environmental Quality (DEQ) currently issues NPDES 1200-C permits for projects that cover areas of one acre or greater. No permit shall be issued for projects of this size (or any other size as modified by DEQ) without a copy of said DEQ permit being on file with Oregon City. DEQ is responsible for policing its own permits; however, if City personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the City will bring such conditions to the attention of the appropriate DEQ representatives.

Finding: Complies with Condition. The project does cover one acre or greater; therefore, the developer does require issuance of a NPDES 1200-C permit. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

B. Projects may require Oregon State Division of State Lands (DSL) and/or United States Army Corps of Engineers (USACE) permits. If such permits are required, no permission to construct will be granted until such a time as a copy of such permit is on file with the City or notice is received from those agencies that a permit is not required. DSL/USACE is responsible for enforcing its own permits; however, if City personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the City will bring such conditions to the attention of the appropriate DSL/USACE representatives.

Finding: Not Applicable. DSL and USACE permits are not required with this proposed development based on the application provided.

C. Projects may require Oregon State Department of Fish and Wildlife (ODFW) permits. When ODFW permits are required, no work will be authorized until the receipt of a copy of the ODFW permit. ODFW is responsible for policing its own permits; however, if City personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the City will bring such conditions to the attention of the appropriate ODFW representatives.

Finding: Not Applicable. ODFW permits are not required with this proposed development based on the application provided.

13.12.180 - Violation—Penalty.

Any act or omission in violation of this chapter shall be deemed a nuisance. Violation of any provision of this chapter is subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

Finding: Applicable. Any act or omission in violation of this chapter shall be deemed a nuisance.

Violation of any provision of this chapter is subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

CHAPTER 15.48 - GRADING, FILLING AND EXCAVATING

15.48.030 Applicability—Grading permit required.

A. A city-issued grading permit shall be required before the commencement of any of the following filling or grading activities:

- 1. Grading activities in excess of ten cubic yards of earth;*
- 2. Grading activities which may result in the diversion of existing drainage courses, both natural and man-made, from their natural point of entry or exit from the grading site;*
- 3. Grading and paving activities resulting in the creation of impervious surfaces greater than two thousand square feet or more in area;*
- 4. Any excavation beyond the limits of a basement or footing excavation, having an unsupported soil height greater than five feet after the completion of such a structure; or*
- 5. Grading activities involving the clearing or disturbance of one-half acres (twenty-one thousand seven hundred eighty square feet) or more of land.*

Finding: Complies with Condition. The applicant provided a preliminary grading plan demonstrating general compliance with the City's Public Works requirements for grading standards. The preliminary plan presents grading activities in excess of ten cubic yards of earth, thus triggering the requirements of Chapter 15.48. The developer shall provide an engineered grading plan prepared by a professional engineer in compliance with the submittal requirements of the Public Works Stormwater and Grading

Design Standards. City standards for grading, fill and excavation are found in Chapter 3 of the Oregon City Public Works Stormwater and Grading Design Standards. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

15.48.090 Submittal requirements.

An engineered grading plan or an abbreviated grading plan shall be prepared in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards whenever a city approved grading permit is required. In addition, a geotechnical engineering report and/or residential lot grading plan may be required pursuant to the criteria listed below.

A. Abbreviated Grading Plan. The city shall allow the applicant to submit an abbreviated grading plan in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards if the following criteria are met:

1. No portion of the proposed site is within the flood management area overlay district pursuant to [Chapter 17.42](#), the unstable soils and hillside constraints overlay district pursuant to [Chapter 17.44](#), or a water quality resource area pursuant to [Chapter 17.49](#); and

2. The proposed filling or grading activity does not involve more than fifty cubic yards of earth.

B. Engineered Grading Plan. The city shall require an engineered grading plan in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer if the proposed activities do not qualify for abbreviated grading plan.

C. Geotechnical Engineering Report. The city shall require a geotechnical engineering report in compliance with the minimum report requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer who specializes in geotechnical work when any of the following site conditions may exist in the development area:

1. When any publicly maintained facility (structure, street, pond, utility, park, etc.) will be supported by any engineered fill;

2. When an embankment for a stormwater pond is created by the placement of fill;

3. When, by excavation, the soils remaining in place are greater than three feet high and less than twenty feet wide.

D. Residential Lot Grading Plan. The city shall require a residential lot grading plan in compliance with the minimum report requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer for all land divisions creating new residential building lots or where a public improvement project is required to provide access to an existing residential lot.

Finding: Complies with Condition. The developer shall provide an engineered grading plan prepared by a professional engineer in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

CHAPTER 16.12 MINIMUM PUBLIC IMPROVEMENTS AND DESIGN STANDARDS FOR DEVELOPMENT

16.12.010 - Purpose and general provisions.

All development shall be in conformance with the policies and design standards established by this chapter and with applicable standards in the City's public facility master plans and City design standards and specifications. In reviewing applications for development, the City Engineer shall take into consideration any approved development and the remaining development potential of adjacent properties. All street, water, sanitary sewer, storm drainage and utility plans associated with any development shall be reviewed and approved by the City Engineer prior to construction. All streets, driveways or storm drainage connections to another jurisdiction's facility or right-of-way shall be

reviewed by the appropriate jurisdiction as a condition of the preliminary plat and when required by law or intergovernmental agreement shall be approved by the appropriate jurisdiction.

Finding: Applicable. All development shall be in conformance with the policies and design standards established by this chapter and with applicable standards in the City's public facility master plans and City design standards and specifications.

16.12.012 - Jurisdiction and management of the public rights-of-way.

The City has jurisdiction and exercises regulatory management over all public rights-of-way as defined and outlined within 12.04 of the Oregon City Municipal Code.

Finding: Applicable. The city has exercised its regulatory management authority by providing findings within this staff report with conditions to be met by the applicant prior to working within all public rights-of-way.

16.12.013 - Modifications.

The applicant may request and the review body may consider modification of the standards in this chapter resulting from constitutional limitations restricting the City's ability to require the dedication of property or for any other reason, based upon the criteria listed below and other criteria identified in the standard to be modified. All modifications, except for adjustments approved by the City Engineer for tree preservation purposes pursuant to 16.12.013.A, shall be processed through a Type II Land Use application and may require additional evidence from a transportation engineer or others to verify compliance. Compliance with the following criteria is required:

- A. The modification meets the intent of the standard;*
- B. The modification provides safe and efficient movement of pedestrians, motor vehicles, bicyclists and freight;*
- C. The modification is consistent with an adopted transportation or utility plan; and*
- D. The modification is complementary with a surrounding street design; or, in the alternative;*
- E. If a modification is requested for constitutional reasons, the applicant shall demonstrate the constitutional provision or provisions to be avoided by the modification and propose a modification that complies with the state or federal constitution. The City shall be under no obligation to grant a modification in excess of that which is necessary to meet its constitutional obligations.*

Finding: Not Applicable. No modification to this chapter has been requested.

16.12.014 - Administrative provisions.

An applicant shall submit the following items to the City and complete the following tasks prior to proceeding with construction of proposed development plans. These items include the following:

- A. Pre-Design Meeting;*
- B. Final Engineering Plans, Stamped and Signed by an Oregon Licensed Professional Engineer;*
- C. Stormwater Report, Stamped and Signed by an Oregon Licensed Professional Engineer;*
- D. Geotechnical Report, Stamped and Signed by an Oregon Licensed Professional Engineer (if applicable);*
- E. Engineer's Preliminary and Final Cost Estimates (also may be known as engineer's opinion of probable construction cost);*
- F. Plan Check and Inspection Fees (as set by City resolution);*
- G. Certificate of Liability Insurance for city funded public projects contracted by the City (not less than one million dollars single incident and two million dollars aggregate);*
- H. Preconstruction Meeting Notes;*
- I. Financial Guarantee(s) per OCMC 17.50.140;*
- J. Applicable Approvals/Permits from other agencies or entities;*
- K. Developer/Engineer Agreement for public works improvements.*

An applicant shall submit the following additional items to the City and complete the following tasks prior to completing construction of proposed development plans. These items include the following:

- L. Project Engineer's Certificate of Completion;*
- M. Stormwater Operation and Maintenance Easement (if applicable);*
- N. Deed of Dedication (Bargain and Sale Deed);*
- O. Recorded Plat and/or Easements (if applicable);*
- P. Recorded Non-Remonstrance Covenant Agreement;*
- Q. Land Division Compliance Agreement (if applicable);*
- R. Permanent Stabilization and/or Restoration of the impact from the development;*
- S. Fulfillment of all Conditions of Approval;*
- T. Payment of all Outstanding Fees;*
- U. Maintenance Guarantee(s). per OCMC 17.50.141;*
- V. Indemnity Agreement (if applicable);*
- W. Completed Punchlist;*
- X. As-Built Drawings;*

Details on individual items required by this subsection can be obtained by contacting Public Works. Many items, such as the engineer's cost estimate and plan check and inspection fee, maybe be submitted in conjunction with documentation for other infrastructure improvements that are done with the development (such as street, sanitary sewer, and water).

Finding: Complies with Condition. The developer shall submit or address all items in section 16.12.014 of the Oregon City Municipal Code based on the timing requirements contained therein and as deemed applicable by the City. The developer and engineer for the project shall execute a "Developer/Engineer Agreement for Public Works Improvements" and commit to the responsibilities outlined in the agreement. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.015 - Street design—Generally.

Development shall be required to provide existing or future connections to adjacent sites through the use of vehicular and pedestrian access easements where applicable. Development shall provide any necessary dedications, easements or agreements as identified in the Transportation System Plan, Trails Master Plan, and/or Parks and Recreation Master Plan and this chapter, subject to constitutional limitations. The location, width and grade of street shall be considered in relation to: existing and planned streets, topographical conditions, public convenience and safety for all modes of travel, existing and identified future transit routes and pedestrian/bicycle accessways, overlay districts, and the proposed use of land to be served by the streets. The street system shall assure an adequate traffic circulation system with intersection angles, grades, tangents and curves appropriate for the traffic to be carried considering the terrain. To the extent possible, proposed streets shall connect to all existing or approved stub streets that abut the development site. The arrangement of streets shall either:

- A. Provide for the continuation or appropriate projection of existing principal streets in the surrounding area and on adjacent parcels or conform to a plan for the area approved or adopted by the City to meet a particular situation where topographical or other conditions make continuance or conformance to existing streets impractical;*
- B. Where necessary to give access to or permit a satisfactory future development of adjoining land, streets shall be extended to the boundary of the development and the resulting dead-end street (stub) may be approved with a temporary turnaround as approved by the City Engineer. Notification that the street is planned for future extension shall be posted on the stub street until the street is extended and shall inform the public that the dead-end street may be extended in the future. Access control in accordance with OCMC 16.12.017 shall be required to preserve the objectives of street extensions.*

C. Adequate right-of-way and improvements to streets, pedestrian ways, bike routes and bikeways, and transit facilities shall be provided and be consistent with the City's Transportation System Plan. Consideration shall be given to the need for street widening and other improvements in the area of the proposed development impacted by traffic generated by the proposed development. This shall include, but not be limited to, improvements to the right-of-way, such as installation of lighting, signalization, turn lanes, median and parking strips, traffic islands, paving, curbs and gutters, sidewalks, bikeways, street drainage facilities and other facilities needed because of anticipated vehicular and pedestrian traffic generation.

Finding: Complies as Proposed. Frontage improvements were completed in 2006 under SP 06-01 for the Oregon City Christian Church development project. Based on the development pattern and future needs of the area, additional frontage improvements along South End Road are not required at this time. See Findings for 16.12.016 for the existing street section along South End Road.

16.12.016 - Street design.

All development regulated by this chapter shall provide street improvements in compliance with the standards in Table 16.12.016 depending on the street classification set forth in the Transportation System Plan and the Comprehensive Plan designation of the adjacent property, unless an alternative plan has been adopted. The table implements the adopted Transportation System Plan and illustrates the maximum design standards. These standards may be reduced with an alternative street design which may be approved based on the modification criteria in OCMC 16.12.013. The steps for reducing the street design are found in the Transportation System Plan.

Table 16.12.016 Street Design

Table 16.12.016 Street Design. To read the table select the road classification as identified in the Transportation System Plan and the Comprehensive Plan designation of the adjacent properties to find the maximum design standards for the road cross section. If the Comprehensive Plan designation for lands on either side of the street differs, the wider right-of-way standard shall apply.

Road Classification	Comprehensive Plan Designation	Right-of-Way Width	Pavement Width	Public Access	Sidewalk	Landscape Strip	Bike Lane	Street Parking	Travel Lanes	Median
Major Arterial	Mixed Use, Commercial or Public/Quasi Public	116 ft.	94 ft.	0.5 ft.	10.5 ft. sidewalk including 5 ft. x 5 ft. tree wells		6 ft.	8 ft.	(5) 12 ft. Lanes	6 ft.
	Industrial	120 ft.	88 ft.	0.5 ft.	5 ft.	10.5 ft.	6 ft.	N/A	(5) 14 ft. Lanes	6 ft.
	Residential	126 ft.	94 ft.	0.5 ft.	5 ft.	10.5 ft.	6 ft.	8 ft.	(5) 12 ft. Lanes	6 ft.

Road Classification	Comprehensive Plan Designation	Right-of-	Pavement Width	Public Access	Sidewalk	Landscape Strip	Bike Lane	Street Parking	Travel Lanes	Median

		<i>Way Width</i>								
<i>Minor Arterial</i>	<i>Mixed Use, Commercial or Public/Quasi Public</i>	116 ft.	94 ft.	0.5 ft.	10.5 ft. sidewalk including 5 ft. x 5 ft. tree wells		6 ft.	8 ft.	(5) 12 ft. Lanes	6 ft.
	<i>Industrial</i>	118 ft.	86 ft.	0.5 ft.	5 ft.	10.5 ft.	6 ft.	7 ft.	(5) 12 ft. Lanes	N/A
	<i>Residential</i>	100 ft.	68 ft.	0.5 ft.	5 ft.	10.5 ft.	6 ft.	7 ft.	(3) 12 ft. Lanes	6 ft.

<i>Road Classification</i>	<i>Comprehensive Plan Designation</i>	<i>Right-of-Way Width</i>	<i>Pavement Width</i>	<i>Public Access</i>	<i>Sidewalk</i>	<i>Landscape Strip</i>	<i>Bike Lane</i>	<i>Street Parking</i>	<i>Travel Lanes</i>	<i>Median</i>
<i>Collector</i>	<i>Mixed Use, Commercial or Public/Quasi Public</i>	86 ft.	64 ft.	0.5 ft.	10.5 ft. sidewalk including 5 ft. x 5 ft. tree wells		6 ft.	8 ft.	(3) 12 ft. Lanes	N/A
	<i>Industrial</i>	88 ft.	62 ft.	0.5 ft.	5 ft.	7.5 ft.	6 ft.	7 ft.	(3) 12 ft. Lanes	N/A
	<i>Residential</i>	85 ft.	59 ft.	0.5 ft.	5 ft.	7.5 ft.	6 ft.	7 ft.	(3) 11 ft. Lanes	N/A

<i>Road Classification</i>	<i>Comprehensive Plan Designation</i>	<i>Right-of-Way Width</i>	<i>Pavement Width</i>	<i>Public Access</i>	<i>Sidewalk</i>	<i>Landscape Strip</i>	<i>Bike Lane</i>	<i>Street Parking</i>	<i>Travel Lanes</i>	<i>Median</i>
<i>Local</i>	<i>Mixed Use, Commercial or Public/Quasi Public</i>	62 ft.	40 ft.	0.5 ft.	10.5 ft. sidewalk including 5 ft. x 5 ft. tree wells		N/A	8 ft.	(2) 12 ft. Lanes	N/A
	<i>Industrial</i>	60 ft.	38 ft.	0.5 ft.	5 ft.	5.5 ft.	(2) 19 ft. Shared Space			N/A
	<i>Residential</i>	54 ft.	32 ft.	0.5 ft.	5 ft.	5.5 ft.	(2) 16 ft. Shared Space			N/A

1. Pavement width includes, bike lane, street parking, travel lanes and median.

2. *Public access, sidewalks, landscape strips, bike lanes and on-street parking are required on both sides of the street in all designations. The right-of-way width and pavement widths identified above include the total street section.*

3. *A 0.5 foot curb is included in landscape strip or sidewalk width.*

4. *Travel lanes may be through lanes or turn lanes.*

5. *The 0.5 foot public access provides access to adjacent public improvements.*

6. *Alleys shall have a minimum right-of-way width of twenty feet and a minimum pavement width of sixteen feet. If alleys are provided, garage access shall be provided from the alley.*

7. *A raised concrete median or landscape median shall be utilized for roads identified to have access restrictions.*

Finding: Complies as Proposed. Frontage improvements were completed in 2006 under SP 06-01 for the Oregon City Christian Church development project. Based on the development pattern and future needs of the area, additional frontage improvements along South End Road are not required at this time.

As constructed per COA #15 under SP 06-01, the existing frontage improvements on the applicant's side of the centerline consist of approximately 40' right-of-way width, consisting of a 24' roadway, a 6-7' sidewalk, a 7' landscape strip and curb. The roadway on the applicant's side of the centerline along South End Road consists of an 11' travel, a 6' bike lane, and a 7' parking lane.

A. Sidewalks. The applicant shall provide for sidewalks on both sides of all public streets, on any private street if so required by the decision-maker, and in any special pedestrian way within the development. Both sidewalks and curbs are to be constructed to City standards and at widths set forth above, and according to plans and specifications provided by the City Engineer. Exceptions to this requirement may be allowed in order to accommodate topography, trees or some similar site constraint. In the case of major or minor arterials, the decision-maker may approve a development without sidewalks where sidewalks are found to be dangerous or otherwise impractical to construct or are not reasonably related to the applicant's development. The decision-maker may require the applicant to provide sidewalks concurrent with the issuance of the initial building permit within the area that is the subject of the development application. Applicants for partitions may be allowed to meet this requirement by providing the City with a financial guarantee per OCMC 16.12.110.

B. Pedestrian and Bicycle Accessways Routes. If deemed appropriate to extend pedestrian and bicycle routes, existing or planned, the decision-maker may require the installation of separate pedestrian and bicycle facilities.

Finding: Complies as Proposed. Frontage improvements were completed in 2006 under SP 06-01 for the Oregon City Christian Church development project. Based on the development pattern and future needs of the area, additional frontage improvements along South End Road are not required at this time. See Findings for 16.12.016 for the existing street section along South End Road.

C. Street Name Signs and Traffic Control Devices. The applicant shall install street signs and traffic control devices as directed by the City Engineer. Street name signs and traffic control devices shall be in conformance with all applicable city regulations and standards.

Finding: Not Applicable. Installation of street signs and traffic control devices is not anticipated for the proposed development.

D. Street Lights. The applicant shall install street lights which shall be served from an underground source of supply. Street lights shall be in conformance with all City regulations.

Finding: Complies as Proposed. Frontage improvements, including street lighting, were completed in 2006 under SP 06-01 for the Oregon City Christian Church development project.

E. Any new street proposed with a pavement width of less than thirty-two feet shall be processed through OCMC 16.12.013 and meet minimum life safety requirements, which may include fire suppression devices as determined by the Fire Marshall to assure an adequate level of fire and life safety. The modified street shall have no less than a twenty-foot wide unobstructed travel lane.

Finding: Not Applicable. No new streets are proposed or required as part of this development.

F. All development shall include vegetated planter strips that are five feet in width or larger and located between the sidewalk and curb unless otherwise approved pursuant to this chapter. All development shall utilize the vegetated planter strip for the placement of street trees or place street trees in other acceptable locations, as prescribed by OCMC 12.08. Development proposed along a collector, minor arterial, or major arterial roads may place street trees within tree wells within a wider sidewalk in lieu of a planter strip. In addition to street trees per OCMC 12.08, vegetated planter strips shall include ground cover and/or shrubs spaced four feet apart and appropriate for the location. No invasive or nuisance plant species shall be permitted.

Finding: Complies as Proposed. Frontage improvements were completed in 2006 under SP 06-01 for the Oregon City Christian Church development project. Based on the development pattern and future needs of the area, additional frontage improvements along South End Road are not required at this time. See Findings for 16.12.016 for the existing street section along South End Road.

G. Vehicle and pedestrian access easements may serve in lieu of streets when approved by the decision maker and only where dedication of a street is deemed impracticable.

Finding: Not Applicable. The decision maker has not approved access easements in lieu of streets nor has dedication of a street been deemed impracticable.

H. Vehicular and pedestrian easements shall allow for public access and shall comply with all applicable pedestrian access requirements.

Finding: Not Applicable. No vehicular or pedestrian easements are proposed.

16.12.017 - Street design—Access control.

A. A street which is dedicated to end at the boundary of the development or in the case of half-streets dedicated along a boundary shall have an access control granted to the City as a City controlled plat restriction for the purposes of controlling ingress and egress to the property adjacent to the end of the dedicated street. The access control restriction shall exist until such time as a public street is created, by dedication and accepted, extending the street to the adjacent property.

Finding: Not Applicable. No new streets with dead ends are proposed for this development.

B. The City may grant a permit for the adjoining owner to access through the access control.

Finding: Not Applicable. No new streets with dead ends are proposed for this development.

C. The plat shall contain the following access control language or similar on the face of the map at the end of each street for which access control is required: "Access Control (See plat restrictions)."

Finding: Not Applicable. No new streets with dead ends are proposed for this development.

D. Said plats shall also contain the following plat restriction note(s): "Access to (name of street or tract) from adjoining tracts (name of deed document number[s]) shall be controlled by the City of Oregon City by the recording of this plat, as shown. These access controls shall be automatically terminated upon the

acceptance of a public road dedication or the recording of a plat extending the street to adjacent property that would access through those Access Controls."

Finding: Not Applicable. No new streets with dead ends are proposed for this development.

16.12.018 - Street design—Alignment.

The centerline of streets shall be:

- A. Aligned with existing streets by continuation of the centerlines; or*
- B. Offset from the centerline by no more than five feet, provided appropriate mitigation, in the judgment of the City Engineer, is provided to ensure that the offset intersection will not pose a safety hazard.*
- C. Driveways that are at least twenty-four feet wide shall align with existing or planned streets on adjacent sites.*

Finding: Not Applicable. The applicant has not proposed any new streets.

16.12.019 - Traffic sight obstructions.

All new streets shall comply with the Traffic Sight Obstructions in Chapter 10.32.

Finding: Not Applicable. The applicant has not proposed any new streets.

16.12.020 - Street design—Intersection angles.

Except where topography requires a lesser angle, streets shall be laid out to intersect at angles as near as possible to right angles. In no case shall the acute angles be less than eighty degrees unless there is a special intersection design. An arterial or collector street intersecting with another street shall have at least one hundred feet of tangent adjacent to the intersection unless topography requires a lesser distance. Other streets, except alleys, shall have at least fifty feet of tangent adjacent to the intersection unless topography requires a lesser distance. All street intersections shall be provided with a minimum curb return radius of twenty-five feet for local streets. Larger radii shall be required for higher street classifications as determined by the City Engineer. Additional right-of-way shall be required to accommodate curb returns and sidewalks at intersections. Ordinarily, intersections should not have more than two streets at any one point.

Finding: Not Applicable. The applicant has not proposed any new streets.

16.12.021 - Street design—Grades and curves.

Grades and center line radii shall conform to standards approved by the City Engineer.

Finding: Not Applicable. The applicant has not proposed any new streets.

16.12.022 - Street design—Development abutting arterial or collector street.

Where development abuts or contains an existing or proposed arterial or collector street, the decision maker may require: access control; screen planting or wall contained in an easement or otherwise protected by a restrictive covenant in a form acceptable to the decision maker along the rear or side property line; or such other treatment it deems necessary to adequately protect residential properties or afford separation of through and local traffic. Reverse frontage lots with suitable depth may also be considered an option for residential property that has arterial frontage. Where access for development abuts and connects for vehicular access to another jurisdiction's facility then authorization by that jurisdiction may be required.

Finding: Not Applicable. The development abuts an arterial, however, the applicant has not proposed any new driveways for access to South End Road.

16.12.023 - Street design—Pedestrian and bicycle safety.

Where deemed necessary to ensure public safety, reduce traffic hazards and promote the welfare of pedestrians, bicyclists and residents of the subject area, the decision maker may require that local streets be so designed as to discourage their use by nonlocal automobile traffic.

The City Engineer may require that crosswalks include a large vegetated or sidewalk area which extends into the street pavement as far as practicable to provide safer pedestrian crossing opportunities. These curb extensions can increase the visibility of pedestrians and provide a shorter crosswalk distance as well as encourage motorists to drive slower. The City Engineer may approve an alternative design that achieves the same standard for constrained sites.

Finding: Not Applicable. The applicant has not proposed any new streets.

16.12.024 - Street design—Half street.

Half streets, while generally not acceptable, may be approved where essential to the development, when in conformance with all other applicable requirements, and where it will not create a safety hazard.

When approving half streets, the decision maker shall first determine that it will be practical to require the dedication of the other half of the street when the adjoining property is divided or developed. Where the decision maker approves a half street, the applicant shall construct a half street with at least twenty feet of pavement width and provide signage prohibiting street parking so as to make the half street safe until such time as the other half is constructed. Whenever a half street is adjacent to property capable of being divided or developed, the other half of the street shall be provided and improved when that adjacent property divides or develops. Access control may be required to preserve the objectives of half streets.

When the remainder of an existing half-street improvement is completed it shall include the following items: dedication of required right-of-way, construction of the remaining portion of the street including pavement, curb and gutter, landscape strip, sidewalk, street trees, lighting and other improvements as required for that particular street. It shall also include at a minimum the pavement replacement to the centerline of the street. Any damage to the existing street shall be repaired in accordance with the City's "Pavement Cut Standards" or as approved by the City Engineer.

Finding: Not Applicable. The applicant has not proposed any new streets.

16.12.025 - Street design—Cul-de-sacs and dead-end streets.

The City discourages the use of cul-de-sacs and permanent dead-end streets except where construction of a through street is found by the decision maker to be impracticable due to topography or some significant physical constraint such as geologic hazards, wetland, natural or historic resource areas, pre-existing dedicated open space, pre-existing development patterns, arterial access restrictions or similar situation as determined by the decision maker. This section is not intended to preclude the use of curvilinear eyebrow widening of a street where needed.

A. When permitted, access from new cul-de-sacs and permanent dead-end streets shall be limited to a maximum of twenty-five dwelling units.

B. Cul-de-sacs and permanent dead-end streets shall include pedestrian/bicycle accessways to meet minimum block width standards as prescribed in OCMC 16.12.030.

C. Cul-de-sacs shall have sufficient radius to provide adequate turn-around for emergency vehicles in accordance with fire district and city adopted street standards.

D. Permanent dead-end streets shall provide public street right-of-way/easements sufficient to provide a sufficient amount of turn-around space complete with appropriate no-parking signs or markings to accommodate waste disposal, sweepers, emergency and other long vehicles in the form of a hammerhead or other design to be approved by the decision maker.

E. In the case of dead-end stub streets that will connect to streets on adjacent sites in the future, notification that the street is planned for future extension shall be posted on the stub street until the

street is extended and shall inform the public that the dead-end street may be extended in the future. A dead-end street shall include signage or barricade meeting Manual on Uniform Traffic Control Devices (MUTCD).

Finding: Not Applicable. No cul-de-sacs or dead-end streets are proposed or required for this development.

16.12.026 - Street design—Alleys.

Alleys with public access easements on private property shall be provided in the Park Place and South End concept plan areas for the following districts R-5, R-3.5, R-2, MUC-1, MUC-2 and NC zones unless other permanent provisions for private access to off-street parking and loading facilities are approved by the decision maker. All alleys intended to provide access for emergency vehicles shall be a minimum width of twenty feet. The corners of alley intersections shall have a radius of not less than ten feet and shall conform to standards approved by the City Engineer. Access easements and maintenance agreements shall be recorded on affected properties.

Finding: Not Applicable. Alleys are not proposed or required for this development.

16.12.027 - Street design—Off-site street improvements.

During consideration of the preliminary plan for a development, the decision maker shall determine whether existing streets impacted by, adjacent to, or abutting the development meet the applicable design or dimensional requirements. Where such streets fail to meet these requirements, the decision-maker shall require the applicant to make proportional improvements sufficient to achieve conformance with minimum applicable design standards required to serve the proposed development.

Finding: Not Applicable. Off-site street improvements are not proposed or required for this development.

16.12.028 - Street design—Transit.

Streets shall be designed and laid out in a manner that promotes pedestrian and bicycle circulation. The applicant shall coordinate with transit agencies where the application impacts transit streets as identified in OCMC 17.04.1310. Pedestrian/bicycle access ways shall be provided as necessary to minimize the travel distance to transit streets and stops and neighborhood activity centers. The decision maker may require provisions, including easements, for transit facilities along transit streets where a need for bus stops, bus pullouts or other transit facilities within or adjacent to the development has been identified.

Finding: Complies as Proposed. No new streets are required or proposed and the existing streets adjacent to the development are laid out in a manner that promotes pedestrian and bicycle circulation.

16.12.029 - Excavations—Restoration of pavement.

Whenever any excavation shall have been made in any pavement or other street improvement on any street or alley in the City for any purpose whatsoever under the permit granted by the engineer, it shall be the duty of the person making the excavation to restore the pavement in accordance with the City of Oregon City Public Works Pavement Cut Standards in effect at the time the permit is granted. The City Commission may adopt and modify the City of Oregon City Public Works Pavement Cut Standards by resolution as necessary to implement the requirements of this chapter.

Finding: Complies with Condition. The applicant has proposed utility work in the public right-of-way within South End Road. All pavement cuts and restoration within South End Road shall comply with the City of Oregon City Pavement Cut Standards. At the time of the application, the pavement restoration requirement for South End Road is the Full Standard. However, specific pavement cut standard

requirements are determined at the time of construction. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.030 - Blocks—Width.

The width of blocks shall ordinarily be sufficient to allow for two tiers of lots with depths consistent with the type of land use proposed. The length, width and shape of blocks shall take into account the need for adequate building site size, convenient motor vehicle, pedestrian, bicycle and transit access, control of traffic circulation, and limitations imposed by topography and other natural features.

All new streets shall be designed as local streets unless otherwise designated as arterials and collectors in the current adopted Transportation System Plan. The maximum block spacing between streets is 530 feet and the minimum block spacing between streets is 150 feet as measured between the right-of-way centerlines except in zones GI, CI, MUE, I, and WFDD where determining the appropriate street spacing will be determined by the City Engineer. If the maximum block size is exceeded, pedestrian accessways shall be provided every 330 feet. The spacing standards within this section do not apply to alleys.

Finding: Not Applicable. Though the block length is exceeded between Gentry Way and Glacier Street, there is not an opportunity for an additional connection to the east due to existing residential development. Properties to the east are already developed and a connection to Lassen Court located behind the church could not be made.

16.12.031 - Street design—Street names.

Except for extensions of existing streets, no street name shall be used which will duplicate or be confused with the name of an existing street. Street names shall conform to the established standards in the City and shall be subject to the approval of the City.

Finding: Not Applicable. No new streets are proposed or required as part of this development.

16.12.032 – Public off-street pedestrian and bicycle accessways.

Pedestrian/bicycle accessways are intended to provide direct, safe and convenient connections between residential areas, retail and office areas, institutional facilities, industrial parks, transit streets, neighborhood activity centers, rights-of-way, and pedestrian/bicycle accessways which minimize out-of-direction travel, and transit-orientated developments where public street connections for automobiles, bicycles and pedestrians are unavailable. Pedestrian/bicycle accessways are appropriate in areas where public street options are unavailable, impractical or inappropriate. Pedestrian and bicycle accessways are required through private property or as right-of-way connecting development to the right-of-way at intervals not exceeding 330 feet of frontage; or where the lack of street continuity creates inconvenient or out of direction travel patterns for local pedestrian or bicycle trips.

Finding: Not Applicable. Public off-street pedestrian and bicycle accessways are not proposed or required as part of this development.

16.12.033 - Mobility standards.

Development shall demonstrate compliance with intersection mobility standards. When evaluating the performance of the transportation system, the City of Oregon City requires all intersections, except for the facilities identified in subsection E below, to be maintained at or below the following mobility standards during the two-hour peak operating conditions. The first hour has the highest weekday traffic volumes and the second hour is the next highest hour before or after the first hour. Except as provided otherwise below, this may require the installation of mobility improvements as set forth in the Transportation System Plan (TSP) or as otherwise identified by the City Engineer.

A. For intersections within the regional center, the following mobility standards apply:

1. During the first hour, a maximum v/c ratio of 1.10 shall be maintained. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.
 2. During the second hour, a maximum v/c ratio of 0.99 shall be maintained at signalized intersections. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.
 3. Intersections located on the Regional Center boundary shall be considered within the Regional Center.
- B. For intersections outside of the Regional Center but designated on the Arterial and Throughway Network, as defined in the Regional Transportation Plan, the following mobility standards apply:*
1. During the first hour, a maximum v/c ratio of 0.99 shall be maintained. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.
 2. During the second hour, a maximum v/c ratio of 0.99 shall be maintained at signalized intersections. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.
- C. For intersections outside the boundaries of the Regional Center and not designated on the Arterial and Throughway Network, as defined in the Regional Transportation Plan, the following mobility standards apply:*
1. For signalized intersections:
 - a. During the first hour, LOS "D" or better will be required for the intersection as a whole and no approach operating at worse than LOS "E" and a v/c ratio not higher than 1.0 for the sum of the critical movements.
 - b. During the second hour, LOS "D" or better will be required for the intersection as a whole and no approach operating at worse than LOS "E" and a v/c ratio not higher than 1.0 for the sum of the critical movements.
 2. For unsignalized intersections outside of the boundaries of the Regional Center:
 - a. For unsignalized intersections, during the peak hour, all movements serving more than twenty vehicles shall be maintained at LOS "E" or better. LOS "F" will be tolerated at movements serving no more than twenty vehicles during the peak hour.
- D. For the intersection of OR 213 & Beavercreek Road, the following mobility standards apply:*
1. During the first, second & third hours, a maximum v/c ratio of 1.00 shall be maintained. Calculation of the maximum v/c ratio will be based on an average annual weekday peak hour.
- E. Until the City adopts new performance measures that identify alternative mobility targets, the City shall exempt proposed development that is permitted, either conditionally, outright, or through detailed development master plan approval, from compliance with the above-referenced mobility standards for the following state-owned facilities:*
- I-205/OR 99E Interchange*
- State intersections located within or on the Regional Center Boundaries*
1. In the case of conceptual development approval for a master plan that impacts the above references intersections:
 - a. The form of mitigation will be determined at the time of the detailed development plan review for subsequent phases utilizing the Code in place at the time the detailed development plan is submitted; and
 - b. Only those trips approved by a detailed development plan review are vested.
 2. Development which does not comply with the mobility standards for the intersections identified in OCMC 16.12.033 shall provide for the improvements identified in the Transportation System Plan (TSP) in

an effort to improve intersection mobility as necessary to offset the impact caused by development. Where required by other provisions of the Code, the applicant shall provide a traffic impact study that includes an assessment of the development's impact on the intersections identified in this exemption and shall construct the intersection improvements listed in the TSP or required by the Code.

Finding: Complies as Proposed. The applicant's submittal included a Traffic Impact Study (TIS) dated September 20, 2018, prepared by Matt Bell, Russ Doubleday, and Chris Brehmer of Kittleson & Associates. Though the TIS submitted evaluates multiple phases of development of the property, the current development is roughly equivalent to the first two phases evaluated in the TIS. The City's Traffic Consultant, John Replinger of Replinger and Associates identified that with some adjustments due to the phasing identified in the TIS, the TIS provides a basis upon which the development proposal can be evaluated for transportation impacts. The City's Traffic Consultant reviewed the applicant's Traffic Impact Analysis and found the following:

"The TIS presents information on trip generation using the trip rates developed for the existing church facility during 2018. Trip generation rates were developed on the building square footage and applied to each individual phase of the applicant's project. For Phase 1, the engineer calculated the new building would generate 6 PM peak hour trips and 72 peak hour trips on Sunday mornings. For Phase 2, the engineer calculated the new building would generate 2 PM peak hour trips and 32 peak hour trips on Sunday mornings. Because of the difference in building size, the actual trips are about one-quarter higher than previously calculated for Phases 1 and 2 combined.

Based on the new building size and the trip rates developed by the engineer, I calculated the new building would generate 116 weekday trips; 15 weekday PM peak hour trips; 404 Sunday trips; and 131 peak hour trips on Sunday mornings. These values, rather than the ones in the TIS, should be used for calculating Systems Development Charge fees.

Traffic volumes were calculated for the intersections described in #1, above. At each location, the level of service (LOS) and delay calculations and the volume-to-capacity (v/c) ratios were provided to assess traffic operations relative to the city's operational standards. The analysis was undertaken for the PM peak hour for mid-mornings on Sundays. All intersections described in #1 were analyzed for Sundays. For weekdays, only the South End Road at Warner Parrott Road/Lawton Road intersection and the site access were analyzed. The volumes at the other intersections did not reach the threshold level requiring analysis during the weekday PM peak hour. Since the current proposal approximates a combination of Phase 1 and Phase 2, my analysis focused on assessing operations for 2022.

For Sunday morning conditions, the site access points and all of the study area intersections were predicted to easily meet city operational standards in 2022 with or without the proposed church expansion. The increase in trips from the new proposal do not alter the conclusions about the adequacy of the transportation system in 2022 with the 14,800-square foot church expansion.

Under current conditions, the intersection of South End Road at Warner Parrott Road/Lawton Road is currently operating at LOS D with a v/c ratio of 0.79 during the PM peak hour. In 2022, with regional growth and the church expansion, the weekday PM peak hour conditions are calculated to degrade to LOS E and a v/c ratio of 0.89. This meets the city's operational standard for unsignalized intersections. Most of degradation in intersection performance can be attributed to regional growth.

Site driveways are also predicted to operate acceptably with plenty of space for on-site queues, which are predicted to be minimal.

According to the TIS, the intersection of South End Road at Warner Parrott Road/Lawton Road will likely meet traffic signal warrants within a few years after 2022 with additional regional growth. Transportation System Plan Project D32, the planned upgrade of this intersection with additional turn lanes and signalization, will provide long-term operational improvement. The intersection improvement is not planned or funded. The TIS serves as a reminder that the need for it is approaching.

The engineer does not recommend mitigation for the church expansion for Phase 1 or 2. Since the current proposal is mostly consistent with that level of traffic, I concur with the conclusion that traffic from the proposal does not cause city operational standards to be exceeded.

I find that the TIS provides an adequate basis upon which to assess the impacts of the proposed development.

It is evident from the analysis that regional traffic growth will cause deterioration in the performance of the intersection of South End Road at Warner Parrott Road/Lawton Road and that traffic signal warrants will be met in the not-to-distant future. TSP Project D32 provides a means for satisfying the city's operational standards for the intersection. Based on the TIS, it appears the need for this project is approaching.

I do not recommend any off-site actions to mitigate for safety or traffic impacts of the proposed development."

16.12.035 - Driveways.

A. All new development and redevelopment shall meet the minimum driveway spacing standards identified in Table 16.12.035.A.

<i>Table 16.12.035.A Minimum Driveway Spacing Standards</i>		
<i>Street Functional Classification</i>	<i>Minimum Driveway Spacing Standards</i>	<i>Distance</i>
<i>Major Arterial Streets</i>	<i>Minimum distance from a street corner to a driveway for all uses other than detached single and two-family dwellings</i>	<i>175 ft.</i>
<i>Minor Arterial Streets</i>	<i>Minimum distance from a street corner to a driveway for all uses other than detached single and two-family dwellings</i>	<i>175 ft.</i>
<i>Collector Streets</i>	<i>Minimum distance from a street corner to a driveway for all uses other than detached single and two-family dwellings</i>	<i>100 ft.</i>
<i>Local Streets</i>	<i>Minimum distance from a street corner to a driveway for all uses other than detached single and two-family dwellings</i>	<i>25 ft.</i>

The distance from a street corner to a driveway is measured along the right-of-way from the edge of the intersection (on the same side of the road) right-of-way to the nearest portion of the driveway and the distance between driveways is measured at the nearest portions of the driveway at the right-of-way.

Finding: Complies with Condition. There is an existing driveway located along the property's frontage on South End Road. No driveway modifications are required per the applicant's traffic analysis. However, the existing driveway approach on South End Road, which intersects with a public sidewalk,

shall be made Americans with Disabilities Act (ADA) compliant. An approved curb ramp design will need included on engineering plans following proper engineering technical standards prior to receiving a permit and beginning construction. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

B. Nonresidential or multi-family residential driveways that generate high traffic volumes shall be treated as intersections and shall adhere to requirements of OCMC 16.12.020.

Finding: Complies with Condition. There is an existing driveway located along the property's frontage on South End Road. No driveway modifications are required per the applicant's traffic analysis. However, the existing driveway approach on South End Road, which intersects with a public sidewalk, shall be made Americans with Disabilities Act (ADA) compliant. An approved curb ramp design will need included on engineering plans following proper engineering technical standards prior to receiving a permit and beginning construction. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

C. One driveway may be allowed per frontage, unless otherwise restricted. In no case shall more than two driveways be allowed for any single-family attached or detached residential property, duplex, 3-4 plex, or property developed with an ADU or internal conversion with multiple frontages, unless otherwise approved by the City Engineer.

Finding: Complies as Proposed. There is one existing driveway located along the property's frontage on South End Road. No additional driveways are proposed as part of this development.

D. When a property fronts multiple roads, access shall be provided from the road with the lowest classification in the Transportation System Plan whenever possible to minimize points of access to arterials and collectors. At the discretion of the City Engineer, properties fronting a collector or arterial road may be allowed a second driveway, for the creation of a circulation pattern that eliminates reverse maneuvers for vehicles exiting a property if applied for and granted through procedures in OCMC 16.12.013. All lots proposed with a driveway and lot orientation on a collector or minor arterial shall combine driveways into one joint access per two or more lots unless the City Engineer determines that:

- 1. No driveway access may be allowed since the driveway(s) would cause a significant traffic safety hazard; or*
- 2. Allowing a single driveway access per lot will not cause a significant traffic safety hazard.*

Finding: Complies with Condition. There is an existing driveway located along the property's frontage on South End Road. No driveway modifications are required per the applicant's traffic analysis. However, the existing driveway approach on South End Road, which intersects with a public sidewalk, shall be made Americans with Disabilities Act (ADA) compliant. An approved curb ramp design will need included on engineering plans following proper engineering technical standards prior to receiving a permit and beginning construction. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

E. All driveway approaches shall be limited to the dimensions identified in Table 16.12.035.D.

Table 16.12.035.D Driveway Approach Size Standards		
<i>Property Use</i>	<i>Minimum Driveway Approach Width</i>	<i>Maximum Driveway Approach Width</i>
<i>Single-Family Attached</i>	<i>10 feet</i>	<i>12 feet</i>

Single-Family Detached in R-5 & R-3.5	10 feet	12 feet
Single-Family Detached in R-10, R-8, & R-6	12 feet	24 feet
Duplexes	12 feet	24 feet
3-4 Plexes	12 feet	24 feet
Multi-Family	18 feet	30 feet
Commercial, Industrial, Office, Institutional, Mixed Use, and/or Nonresidential	One-Way 12 feet	Two-Way 20 feet 40 feet

Driveway widths shall match the width of the driveway approach where the driveway meets sidewalk or property line but may be widened onsite (for example between the property line and the entrance to a garage). Groups of more than four parking spaces shall be so located and served by driveways so that their use will not require backing movements or other maneuvering within a street right-of-way other than an alley.

Finding: Complies with Condition. There is an existing driveway located along the property's frontage on South End Road. No driveway modifications are required per the applicant's traffic analysis. However, the existing driveway approach on South End Road, which intersects with a public sidewalk, shall be made Americans with Disabilities Act (ADA) compliant. An approved curb ramp design will need included on engineering plans following proper engineering technical standards prior to receiving a permit and beginning construction. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

F. The City Engineer reserves the right to require a reduction in the number and size of driveway approaches as far as practicable for any of the following purposes:

- 1. To provide adequate space for on-street parking;*
- 2. To facilitate street tree planting requirements;*
- 3. To assure pedestrian and vehicular safety by limiting vehicular access points; and*
- 4. To assure that adequate sight distance requirements are met.*

a. Where the decision maker determines any of these situations exist or may occur due to the approval of a proposed development for non-residential uses or attached or multi-family housing, a shared driveway shall be required and limited to twenty-four feet in width adjacent to the sidewalk or property line.

Finding: Complies with Condition. There is an existing driveway located along the property's frontage on South End Road. No driveway modifications are required per the applicant's traffic analysis. However, the existing driveway approach on South End Road, which intersects with a public sidewalk, shall be made Americans with Disabilities Act (ADA) compliant. An approved curb ramp design will need included on engineering plans following proper engineering technical standards prior to receiving a permit and beginning construction. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

G. For all driveways, the following standards apply.

- 1. Each new or redeveloped curb cut shall have an approved concrete approach or asphalted street connection where there is no concrete curb and a minimum hard surface for at least ten feet back into the property as measured from the current edge of sidewalk or street pavement to provide for controlling gravel tracking onto the public street. The hard surface may be concrete, asphalt, or other surface approved by the City Engineer.*

2. Any driveway approach built within public right-of-way shall be built and permitted per City requirements as approved by the City Engineer.
3. No driveway with a slope of greater than fifteen percent shall be permitted without approval of the City Engineer.

Finding: Complies with Condition. There is an existing driveway located along the property's frontage on South End Road. No driveway modifications are required per the applicant's traffic analysis. However, the existing driveway approach on South End Road, which intersects with a public sidewalk, shall be made Americans with Disabilities Act (ADA) compliant. An approved curb ramp design will need included on engineering plans following proper engineering technical standards prior to receiving a permit and beginning construction. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

H. Exceptions. The City Engineer reserves the right to waive these standards or not allow driveway access, if the driveway(s) would cause a significant traffic safety hazard. Narrower driveway widths may be considered where field conditions preclude use of recommended widths. When larger vehicles and trucks will be the predominant users of a particular driveway, turning templates may be utilized to develop a driveway width that can safely and expeditiously accommodate the prevalent type of ingress and egress traffic.

Finding: Complies with Condition. There is an existing driveway located along the property's frontage on South End Road. No driveway modifications are required per the applicant's traffic analysis. However, the existing driveway approach on South End Road, which intersects with a public sidewalk, shall be made Americans with Disabilities Act (ADA) compliant. An approved curb ramp design will need included on engineering plans following proper engineering technical standards prior to receiving a permit and beginning construction. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.065 - Building site—Grading.

Grading of building sites shall conform to the State of Oregon Structural Specialty Code, Title 18, any approved grading plan and any approved residential lot grading plan in accordance with the requirements of OCMC 13.12, 15.48, 16.12 and the Public Works Stormwater and Grading Design Standards, and the erosion control requirements of OCMC 17.47.

Finding: Complies with Condition. See Sections 13.12, 15.48, 16.12 and 17.47 for findings.

16.12.085 - Easements.

The following shall govern the location, improvement and layout of easements:

A. Utilities. Utility easements shall be required where necessary as determined by the City Engineer. Insofar as practicable, easements shall be continuous and aligned from block-to-block within the development and with adjoining subdivisions or partitions. Specific utility easements for water, sanitary or storm drainage shall be provided based on approved final engineering plans.

Finding: Complies with Condition. There is an existing public water main that traverses the applicant's property. The applicant shall provide a 15-foot-wide easement for the existing 8-inch public water main which runs through the site. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

B. Unusual Facilities. Easements for unusual facilities such as high voltage electric transmission lines, drainage channels and stormwater detention facilities shall be adequately sized for their intended purpose, including any necessary maintenance roads. These easements shall be shown to scale on the

preliminary and final plats or maps. If the easement is for drainage channels, stormwater detention facilities or related purposes, the easement shall comply with the requirements of the Public Works Stormwater and Grading Design Standards.

Finding: Not Applicable. The applicant has not proposed unusual facilities.

C. Watercourses. Where a development is traversed or bounded by a watercourse, drainageway, channel or stream, a stormwater easement or drainage right-of-way shall be provided which conforms substantially to the line of such watercourse, drainageway, channel or stream and is of a sufficient width to allow construction, maintenance and control for the purpose as required by the responsible agency. For those subdivisions or partitions which are bounded by a stream of established recreational value, setbacks or easements may be required to prevent impacts to the water resource or to accommodate pedestrian or bicycle paths.

Finding: Not Applicable. The development is not traversed by a watercourse.

D. Access. When easements are used to provide vehicular access to lots within a development, the construction standards, but not necessarily width standards, for the easement shall meet City specifications. The minimum width of the easement shall be 20 feet. The easements shall be improved and recorded by the applicant and inspected by the City Engineer. Access easements may also provide for utility placement.

Finding: Not Applicable. The applicant has not proposed any access easements as part of this development.

E. Resource Protection. Easements or other protective measures may also be required as the Community Development Director deems necessary to ensure compliance with applicable review criteria protecting any unusual significant natural feature or features of historic significance.

Finding: Not Applicable. The development is not traversed by a significant natural feature or features of historic significance.

16.12.090 - Minimum improvements—Procedures.

In addition to other requirements, improvements installed by the applicant either as a requirement of these or other regulations, or at the applicant's option, shall conform to the requirements of this title and be designed to City specifications and standards as set out in the City's facility master plan and Public Works Stormwater and Grading Design Standards. The improvements shall be installed in accordance with the following procedure:

A. Improvement work shall not commence until construction plans have been reviewed and approved by the City Engineer and to the extent that improvements are located in County or State right-of-way, they shall be approved by the responsible authority. To the extent necessary for evaluation of the proposal, the plans may be required before approval of the preliminary plat of a subdivision or partition. Expenses incurred thereby shall be borne by the applicant and paid for prior to final plan review.

B. Improvements shall be constructed under the inspection and approval of the City Engineer. Expenses incurred thereby shall be borne by the applicant and paid prior to final approval. Where required by the City Engineer or other City decision-maker, the applicant's project engineer also shall inspect construction.

C. Erosion control or resource protection facilities or measures are required to be installed in accordance with the requirements of OCMC 17.47, 17.49 and the Public Works Erosion and Sediment Control Standards.

D. Underground utilities, waterlines, sanitary sewers and storm drains installed in streets shall be constructed prior to the surfacing of the streets. Stubs for service connections for underground utilities,

such as, storm, water and sanitary sewer shall be placed beyond the ten-foot wide franchise utility easement within private property.

E. As-built construction plans and digital copies of as-built drawings shall be filed with the City Engineer upon completion of the improvements.

F. The City Engineer may regulate the hours of construction and access routes for construction equipment to minimize impacts on adjoining residences or neighborhoods.

Finding: Complies with Condition. The applicant indicated that construction plans for all required improvements will be presented to the city for review and approval prior to the commencement of any construction activities on the site. As required by these standards and city policy, inspections will occur during construction of these improvements. Erosion control measures will be provided and are depicted in conceptual form on the attached preliminary grading plans.

The development shall comply with all current Oregon City Public Works design standards, specifications, codes and policies. The development's engineer(s) may schedule a pre-design meeting with Oregon City staff prior to official review of the development construction plans. The applicant shall provide construction plans, stamped and signed by a professional engineer licensed in the State of Oregon, containing street, grading, stormwater, sanitary sewer and water infrastructure improvements that conforms to all current Oregon City Public Works standards, specifications, codes, and policies for review and approval by the City. The engineering plans shall provide a local benchmark onsite using the NAVD88 datum. The development's contractor(s) and engineer(s) shall attend a pre-construction meeting with Oregon City staff prior to beginning construction work associated with the project. As-builts conforming to City standards shall be provided within 90 days of completion of the public improvements.

Improvements shall be constructed under the inspection and approval of the City. Expenses incurred thereby shall be borne by the developer and paid prior to final approval. The developer's project engineer also shall inspect construction. Underground utilities, waterlines, sanitary sewers and storm drains proposed within streets shall be constructed prior to the surfacing of the streets. Stubs for service connections for underground utilities, such as, storm, water and sanitary sewer shall be placed beyond the franchise utility easement within private property.

Furthermore, the applicant shall sign a Non-Remonstrance Agreement for the purpose of making sanitary sewer, storm sewer, water or street improvements in the future that benefit the Property and assessing the cost to benefited properties pursuant to the City's capital improvement regulations in effect at the time of such improvement. Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.095 - Minimum improvements—Public facilities and services.

The following minimum improvements shall be required of all applicants for a development, unless the decision-maker determines that any such improvement is not proportional to the impact imposed on the City's public systems and facilities:

A. Transportation System. Applicants and all subsequent lot owners shall be responsible for improving the City's planned level of service on all public streets, including alleys within the development and those portions of public streets adjacent to but only partially within development. Applicants are responsible for designing and providing adequate vehicular, bicycle and pedestrian access to their developments and for accommodating future access to neighboring undeveloped properties that are suitably zoned for future development. Storm drainage facilities shall be installed and connected to off-site natural or man-

made drainageways. Upon completion of the street improvement survey, the applicant shall reestablish and protect monuments of the type required by ORS 92.060 in monument boxes with covers at every public street intersection and all points or curvature and points of tangency of their center line, and at such other points as directed by the City Engineer.

Finding: Complies with Condition. The applicant shall sign a Non-Remonstrance Agreement for the purpose of making sanitary sewer, storm sewer, water or street improvements in the future that benefit the property and assessing the cost to benefited properties pursuant to the City's capital improvement regulations in effect at the time of such improvement. The applicant shall reestablish and protect monuments of the type required by ORS 92.060 in monument boxes with covers at every public street intersection and all points or curvature and points of tangency of their center line, and at such other points as directed by the city engineer. See 16.12.016 for findings related to existing frontage improvements. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

B. Stormwater Drainage System. Applicants shall design and install drainage facilities within a development and shall connect the development's drainage system to the appropriate downstream storm drainage system as a minimum requirement for providing services to the applicant's development. The applicant shall obtain county or state approval when appropriate. Applicants are responsible for extending the appropriate storm drainage system to the development site and for providing for the connection of upgradient properties to that system. The applicant shall design the drainage facilities in accordance with City drainage master plan requirements, OCMC 13.12 and the Public Works Stormwater and Grading Design Standards.

Finding: Complies with Condition. See findings from section 13.12 for the design of stormwater management facilities to serve the development. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

C. Sanitary Sewer System. The applicant shall design and install a sanitary sewer system to serve all lots or parcels within a development in accordance with the City's sanitary sewer design standards, and shall connect those lots or parcels to the City's sanitary sewer system, except where connection is required to the county sanitary sewer system as approved by the county. Applicants are responsible for extending the City's sanitary sewer system to the development site and through the applicant's property to allow for the future connection of neighboring undeveloped properties that are suitably zoned for future development. The applicant shall obtain all required permits and approvals from all affected jurisdictions prior to final approval and prior to commencement of construction. Design shall be approved by the City Engineer before construction begins.

Finding: Complies with Condition. An 18-inch sanitary sewer main exists within South End Road with manholes located at the along the property frontage. There is an existing sanitary sewer service lateral within South End Road. If the applicant intends to use an existing sanitary sewer service line, it shall be at least 6" in diameter and the applicant shall provide a video inspection report to the City and Public Works will confirm if the lateral is in usable condition. Otherwise, the development shall install a new 6" service lateral. The applicant will be required to provide a two-way cleanout per City standards for the existing sanitary sewer lateral if none exists. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

D. Water System. The applicant shall design and install a water system to serve all lots or parcels within a development in accordance with the City public works water system design standards, and shall connect those lots or parcels to the City's water system. Applicants are responsible for extending the

City's water system to the development site and through the applicant's property to allow for the future connection of neighboring undeveloped properties that are suitably zoned for future development.

Finding: Complies with Condition. There is an existing 8-inch ductile iron water main that runs within South End Road that appears to be sufficient to serve the proposed development. There is an existing water service line which serves the property. If the applicant intends to use the existing water service line, it shall be at least 1" in diameter and the applicant shall perform inspections to confirm that it is in usable condition to the satisfaction of the City. Otherwise, the development shall install, at a minimum, a new 1" water service line and meter to serve the development. See findings for 16.12.085.A for the required onsite water line easement. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

E. Street Trees. Refer to OCMC 12.08, Street Trees.

Finding: See findings from section 12.08.

F. Bench Marks. At least one bench mark shall be located within the subdivision boundaries using datum plane specified by the City Engineer.

Finding: Not Applicable. No new streets are proposed with this development. Therefore, no new benchmarks are required

G. Other Utilities. The applicant shall make all necessary arrangements with utility companies or other affected parties for the installation of underground lines and facilities. Existing and new electrical lines and other wires, including but not limited to communication, street lighting and cable television, shall be placed underground.

Finding: Complies with Condition. All new franchise utilities shall be placed underground. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

H. Oversizing of Facilities. All facilities and improvements shall be designed to City standards as set out in the City's facility master plan, public works design standards, or other City ordinances or regulations. Compliance with facility design standards shall be addressed during final engineering. A development may be required to modify or replace existing offsite systems if necessary to provide adequate public facilities. The City may require oversizing of facilities to meet standards in the City's facility master plan or to allow for orderly and efficient development. Where oversizing is required, the applicant may request reimbursement from the City for oversizing based on the City's reimbursement policy and funds available, or provide for recovery of costs from intervening properties as they develop.

Finding: Not Applicable. The applicant is not required to oversize facilities.

I. Erosion Control Plan—Mitigation. The applicant shall be responsible for complying with all applicable provisions of OCMC 17.47 with regard to erosion control.

Finding: Applicable. See findings from section 17.47 of this report.

16.12.100 - Same—Road standards and requirements.

A. The creation of a public street and the resultant separate land parcels shall be in conformance with requirements for subdivisions or partitions and the applicable street design standards of this Chapter. However, the decision-maker may approve the creation of a public street to be established by deed without full compliance with the regulations applicable to subdivisions or partitions where any of the following conditions exist:

1. *The establishment of the public street is initiated by the City Commission and is declared essential for the purpose of general traffic circulation and the partitioning of land is an incidental effect rather than the primary objective of the street;*
2. *The tract in which the street is to be dedicated is within an isolated ownership either not over one acre or of such size and characteristics as to make it impossible to develop building sites for more than three dwelling units.*

Finding: Not Applicable. The conditions outlined in 16.12.100 do not exist for this proposed development.

B. For any public street created pursuant to subsection A of this section, a copy of a preliminary plan and the proposed deed shall be submitted to the Community Development Director and City Engineer at least ten days prior to any public hearing scheduled for the matter. The plan, deed and any additional information the applicant may submit shall be reviewed by the decision-maker and, if not in conflict with the standards of Title 16 and Title 17, may be approved with appropriate conditions.

Finding: Not Applicable. The applicant has not proposed the creation of a public street to be established by deed without full compliance with the regulations applicable to subdivisions or partitions.

16.12.105 - Same—Timing requirements.

A. Prior to applying for final plat approval, the applicant shall either complete construction of all public improvements required as part of the preliminary plat approval or guarantee the construction of those improvements. Whichever option the applicant elects shall be in accordance with OCMC 17.50.140.

Finding: Not Applicable. The city has only afforded the applicant the option to construct the public improvements according to approved final engineering plans and all applicable requirements of this Code. Improvements are required to be completed and accepted by the City Engineer prior to final plat approval per findings from section 16.12.090 of this report.

B. Construction. The applicant shall construct the public improvements according to approved final engineering plans and all applicable requirements of this Code, and under the supervision of the City Engineer. Under this option, the improvement shall be complete and accepted by the City Engineer prior to final plat approval.

Finding: Applicable. Improvements are required to be completed and accepted by the City Engineer before approval of the preliminary plat; see findings from section 16.12.090 of this report.

16.12.110 -Public improvements—Financial guarantees.

A. To ensure construction of required public improvements, the applicant shall provide the City with a performance guarantee in accordance with OCMC 17.50.140.

Finding: Applicable. Please see findings from Section 17.50.140 of this report.

B. After satisfactory completion of required public improvements and facilities, all public improvements not constructed by the City, shall be maintained and under warranty provided by the property owner or developer constructing the facilities until the City accepts the improvements at the end of the warranty period as prescribed in OCMC 17.50.141.

Finding: Applicable. Please see findings from Section 17.50.141 of this report.

16.12.120 Waiver of Remonstrance

The review authority may require a property owner to sign a waiver of remonstrance against the formation of and participation in a local improvement district where it deems such a waiver necessary to provide needed improvements reasonably related to the impacts created by the proposed development.

To ensure compliance with this chapter, the review authority may require an applicant to sign or accept a legal and enforceable covenant, contract, dedication, easement, performance guarantee, or other document, which shall be approved in form by the City Attorney.

Finding: Complies with Condition. The property owner shall sign a Restrictive Covenant Non-Remonstrance Agreement for the purpose of making storm sewer, sanitary sewer, water or street improvements in the future that benefit the property. The applicant shall pay all fees associated with processing and recording the Non-Remonstrance Agreement. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

CHAPTER 17.08 LOW DENSITY RESIDENTIAL DISTRICTS

17.08.020 - Permitted uses.

Permitted uses in the R-10, R-8 and R-6 districts are:

- A. Single-family detached residential units;*
- B. Accessory uses, buildings and dwellings;*
- C. Internal conversions;*
- D. Corner duplexes;*
- E. Cluster housing;*
- F. Residential homes;*
- G. Parks, playgrounds, playfields and community or neighborhood centers;*
- H. Home occupations;*
- I. Family day care providers;*
- J. Farms, commercial or truck gardening and horticultural nurseries on a lot not less than twenty thousand square feet in area (retail sales of materials grown on-site is permitted);*
- K. Temporary real estate offices in model homes located on and limited to sales of real estate on a single piece of platted property upon which new residential buildings are being constructed;*
- L. Transportation facilities.*

Finding: Not Applicable. Though the applicant has proposed a recreational facility which is permitted under 17.08.020.G, the proposed recreational facility is associated with a church use which requires a conditional use permit.

17.08.025 - Conditional uses.

The following uses are permitted in the R-10, R-8 and R-6 districts when authorized by and in accordance with the standards contained in OCMC 17.56:

- A. Golf courses, except miniature golf courses, driving ranges or similar commercial enterprises;*
- B. Bed and breakfast inns/boarding houses;*
- C. Cemeteries, crematories, mausoleums and columbariums;*
- D. Child care centers and nursery schools;*
- E. Emergency service facilities (police and fire), excluding correctional facilities;*
- F. Residential care facilities;*
- G. Private and/or public educational or training facilities;*
- H. Public utilities, including sub-stations (such as buildings, plants and other structures);*
- I. Religious institutions;*
- J. Assisted living facilities; nursing homes and group homes for over fifteen patients;*

Finding: Applicable. The applicant has proposed a recreational facility associated with a church which is a conditional use per OCMC 17.08.025.I.

17.08.030 - Master plans.

The following are permitted in the R-10, R-8 and R-6 districts when authorized by and in accordance with the standards contained in OCMC 17.65.

A. Single-family attached residential units.

Finding: Not Applicable. The applicant has not proposed a master plan for this development.

17.08.035 - Prohibited uses.

Prohibited uses in the R-10, R-8 and R-6 districts are:

A. Any use not expressly listed in OCMC 17.08.020, 17.08.025 or 17.08.030;

B. Marijuana businesses.

Finding: Not Applicable. No prohibited uses have been proposed.

17.08.040 - Dimensional standards.

Dimensional standards in the R-10, R-8 and R-6 districts are as follows:

Table 17.08.040

Standard	R-10	Finding:
Minimum lot size	10,000 sq. ft.	Not Applicable. No new lots have been proposed as part of this Conditional Use Permit and Site Plan and Design Review application.
Maximum height	35 ft.	Complies as Proposed. The proposed building is approximately 32 feet in height.
Maximum building lot coverage With ADU	40%, except 45%	Complies as Proposed. The total site coverage of the new recreational building, the existing church and the connecting breezeway is approximately 35,467 SF, equating to approximately 9% lot coverage (35,467/372,627= 0.9518).
Minimum lot width	65 ft.	Not Applicable. No new lots have been proposed as part of this Conditional Use Permit and Site Plan and Design Review application.
Minimum lot depth	80 ft.	Not Applicable. No new lots have been proposed as part of this Conditional Use Permit and Site Plan and Design Review application.
Minimum front yard setback	20 ft., except 15 ft. - Porch	Not Applicable. The front setback of the existing church will not change as a result of this development. The proposed recreational building is connected to the church via a breezeway.
Minimum interior side yard setback	8 ft.	Complies as Proposed. The proposed building is approximately 106 feet from the northern property line, and more than 425 feet from the southern property line. The minimum required interior side yard setback is met.
Minimum corner side yard setback	10 ft.	Not Applicable. The subject site is not a corner lot.

<i>Minimum rear yard setback</i>	<i>20 ft, except 15 ft - Porch 10 ft - ADU</i>	Complies as Proposed. The proposed building is approximately 68 feet from the rear property line.
<i>Garage setback</i>	<i>20 ft. from ROW, except 5 ft. Alley</i>	Not Applicable. No garages are proposed as part of this application.

Notes:

For land divisions, lot sizes may be reduced pursuant to OCMC 16.08.065.

Accessory structures may have reduced setbacks pursuant to OCMC 17.54.010.B.

Finding: Not Applicable. The applicant has not proposed a land division.

17.08.045 - Exceptions to setbacks.

A. Projections from buildings. Ordinary building projections such as cornices, eaves, overhangs, canopies, sunshades, gutters, chimneys, flues, sills or similar architectural features may project into the required yards up to twenty-four inches.

B. Through lot setbacks. Through lots having a frontage on two streets shall provide the required front yard on each street. The required rear yard is not necessary.

Finding: Not Applicable. The proposed building does not project into required setbacks, and the subject site is not a through lot.

17.08.050 - Density standards.

A. Density standards in the R-10, R-8 and R-6 districts are as follows:

Table 17.08.050

<i>Standard</i>	<i>R-10</i>	<i>R-8</i>	<i>R-6</i>
<i>Minimum net density</i>	<i>3.5 du/acre</i>	<i>4.4 du/acre</i>	<i>5.8 du/acre</i>
<i>Maximum net density</i>	<i>4.4 du/acre</i>	<i>5.4 du/acre</i>	<i>7.3 du/acre</i>

B. Exceptions.

1. Any dwelling units created as accessory dwelling units or internal conversions do not count towards the minimum or maximum density limits in Table 17.08.050.

2. Corner duplexes shall count as a single dwelling unit for the purposes of calculating density.

3. Cluster housing is permitted at higher densities exempt from the standards in Table 17.08.050; see OCMC 17.20.020.

Finding: Not Applicable. The applicant has not proposed a subdivision or residential development, therefore, density standards are not applicable.

CHAPTER 17.41 TREE PROTECTION, PRESERVATION, REMOVAL AND REPLANTING STANDARDS

17.41.010 - Protection of trees—Intent.

The intent of this chapter is to ensure that new development is designed in a manner that preserves trees to the maximum extent practicable. As a requirement of any Type II land use application, the siting of structures, roadways and utility easements, shall provide for the protection of tree resources to the maximum extent practicable. This chapter applies to all Land Division and Site Plan and Design Review applications.

17.41.020 - Tree protection—Applicability.

1. Applications for development subject to OCMC 16.08 (Land Divisions) or OCMC 17.62 (Site Plan and Design Review) shall demonstrate compliance with these standards as part of the review proceedings for those developments. Compliance with this chapter is required from the date a land use application is filed until a land division is recorded or other development approval is final.
2. For public capital improvement projects, the City Engineer shall demonstrate compliance with these standards pursuant to a Type I process.
3. Tree canopy removal greater than twenty-five percent on areas with greater than twenty-five percent slope, unless exempted under OCMC 17.41.040, shall be subject to these standards.
4. A heritage tree or grove which has been designated pursuant to the procedures of OCMC 12.32 shall be subject to the standards of this section.
5. A tree that has been planted pursuant to this section shall remain or shall be replaced with a new tree if removed.

Finding: Applicable. The proposal includes a site plan and design review application, therefore, this chapter is applicable.

17.41.030 - Tree protection—Conflicting code provisions.

Except as otherwise specified in this section, where these standards conflict with adopted city development codes or policies, the provision which provides the greater protection for regulated trees or groves, as defined in OCMC 17.04, shall govern.

Finding: Not Applicable. No conflicting code requirements have been identified.

17.41.040 - Exemptions.

These regulations are not intended to regulate normal cutting, pruning and maintenance of trees on private property except where trees are located on lots that are undergoing development review or are otherwise protected within the Natural Resource Overlay District (NROD) of OCMC 17.49. These standards are not intended to regulate farm and forest practices as those practices are defined under ORS 30.930, for farm or forestlands. These regulations do not apply to the removal of trees that are considered invasive species. An applicant for development may claim exemption from compliance with these standards if the development site containing the regulated grove or trees was a designated farm or forest use, tree farm, Christmas tree plantation, or other approved timber use within one year prior to development application. "Forest practices" and "forestlands" as used in this subsection shall have the meaning as set out in ORS 30.930. The Community Development Director has the authority to modify or waive compliance in this case.

Finding: Not Applicable. The exemptions within this section do not apply to this development.

17.41.050 - Compliance options.

Applicants for review shall comply with these requirements through one or a combination of the following procedures:

- A. Option 1—Mitigation. Retention and removal of trees, with subsequent mitigation by replanting pursuant to OCMC 17.41.060.
- B. Option 2—Dedicated Tract. Protection of trees or groves by placement in a tract within a new subdivision or partition plat pursuant to OCMC 17.41.080; or
- C. Option 3—Restrictive Covenant. Protection of trees or groves by recordation of a permanent restrictive covenant pursuant to OCMC 17.41.110; or
- D. Option 4—Cash-in-lieu of planting pursuant to OCMC 17.41.120.

Finding: Complies with Condition. It is unclear whether or not any tree removal is proposed. In the event that onsite trees are removed as part of this development, the applicant shall submit a tree removal and mitigation plan utilizing any of the compliance options in OCMC 17.41.050 and

demonstrating compliance with tree removal and replanting standards in OCMC 17.41, including requirements for size, species, planting and number of mitigation trees. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

17.41.130 - Regulated tree protection procedures during construction.

A. No permit for any grading or construction of public or private improvements may be released prior to verification by the Community Development Director that regulated trees designated for protection or conservation have been protected according to the following standards. No trees designated for removal shall be removed without prior written approval from the Community Development Director.

B. Tree protection shall be as recommended by a qualified arborist or, as a minimum, to include the following protective measures:

1. Except as otherwise determined by the Community Development Director, all required tree protection measures set forth in this section shall be instituted prior to any development activities, including, but not limited to clearing, grading, excavation or demolition work, and such measures shall be removed only after completion of all construction activity, including necessary landscaping and irrigation installation, and any required plat, tract, conservation easement or restrictive covenant has been recorded.

2. Approved construction fencing, a minimum of four feet tall with steel posts placed no farther than ten feet apart, shall be installed at the edge of the tree protection zone or dripline, whichever is greater. An alternative may be used with the approval of the Community Development Director.

3. Approved signs shall be attached to the fencing stating that inside the fencing is a tree protection zone, not to be disturbed unless prior approval has been obtained from the Community Development Director.

4. No construction activity shall occur within the tree protection zone, including, but not limited to; dumping or storage of materials such as building supplies, soil, waste items; nor passage or parking of vehicles or equipment.

5. The tree protection zone shall remain free of chemically injurious materials and liquids such as paints, thinners, cleaning solutions, petroleum products, and concrete or dry wall excess, construction debris, or run-off.

6. No excavation, trenching, grading, root pruning or other activity shall occur within the tree protection zone unless directed by an arborist present on site and approved by the Community Development Director.

7. No machinery repair or cleaning shall be performed within ten feet of the dripline of any trees identified for protection.

8. Digging a trench for placement of public or private utilities or other structure within the critical root zone of a tree to be protected is prohibited. Boring under or through the tree protection zone may be permitted if approved by the Community Development Director and pursuant to the approved written recommendations and on-site guidance and supervision of a certified arborist.

9. The Community Development Director may require that a certified arborist be present during any construction or grading activities that may affect the dripline of trees to be protected.

10. The Community Development Director may impose conditions to avoid disturbance to tree roots from grading activities and to protect trees and other significant vegetation identified for retention from harm. Such conditions may include, if necessary, the advisory expertise of a qualified consulting arborist or horticulturist both during and after site preparation, and a special maintenance/management program to provide protection to the resource as recommended by the arborist or horticulturist.

C. Changes in soil hydrology due to soil compaction and site drainage within tree protection areas shall be avoided. Drainage and grading plans shall include provision to ensure that drainage of the site does

not conflict with the standards of this section. Excessive site run-off shall be directed to appropriate storm drainage facilities and away from trees designated for conservation or protection.

Finding: Complies with Condition. The applicant did not submit a plan for tree protection during construction. Prior to issuance of a building permit, the applicant shall submit a plan for tree protection during construction for any trees impacted by construction of the proposed development. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

CHAPTER 17.47 - EROSION AND SEDIMENT CONTROL

17.47.030 - Applicability.

A. This chapter, which may also be referred to as "erosion control" in this Code, applies to development that may cause visible or measurable erosion on any property within the city limits of Oregon City.

B. This chapter does not apply to work necessary to protect, repair, maintain or replace existing structures, utility facilities, roadways, driveways, accessory uses and exterior improvements in response to emergencies, provided that after the emergency has passed, adverse impacts are mitigated in accordance with applicable standards.

Finding: Applicable. The applicant has proposed construction activities for a new recreational building that may cause visible or measurable erosion.

17.47.060 - Permit required.

The applicant must obtain an erosion and sediment control permit prior to, or contemporaneous with, the approval of an application for any building, land use or other city-issued permit that may cause visible or measurable erosion.

Finding: Complies with Condition. The applicant has proposed construction activities for a new recreational building that may cause visible or measurable erosion. The applicant shall provide an Erosion Prevention and Sedimentation Control Plan prior to issuance of an erosion control permit. The applicant shall obtain an erosion control permit prior to commencement of any earth disturbing activities. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

17.47.070 - Erosion and sediment control plans.

A. An application for an erosion and sediment control permit shall include an erosion and sediment control plan, which contains methods and interim measures to be used during and following construction to prevent or control erosion prepared in compliance with City of Oregon City public works standards for erosion and sediment control. These standards are incorporated herein and made a part of this title and are on file in the office of the city recorder.

B. Approval Standards. An erosion and sediment control plan shall be approved only upon making the following findings:

- 1. The erosion and sediment control plan meets the requirements of the City of Oregon City public works standards for erosion and sediment control incorporated by reference as part of this chapter;*
- 2. The erosion and sediment control plan indicates that erosion and sediment control measures will be managed and maintained during and following development. The erosion and sediment control plan indicates that erosion and sediment control measures will remain in place until disturbed soil areas are permanently stabilized by landscaping, grass, approved mulch or other permanent soil stabilizing measures.*

- C. The erosion and sediment control plan shall be reviewed in conjunction with the requested development approval. If the development does not require additional review, the manager may approve or deny the permit with notice of the decision to the applicant.*
- D. The city may inspect the development site to determine compliance with the erosion and sediment control plan and permit.*
- E. Erosion that occurs on a development site that does not have an erosion and sediment control permit, or that results from a failure to comply with the terms of such a permit, constitutes a violation of this chapter.*
- F. If the manager finds that the facilities and techniques approved in an erosion and sediment control plan and permit are not sufficient to prevent erosion, the manager shall notify the owner or his/her designated representative. Upon receiving notice, the owner or his/her designated representative shall immediately install interim erosion and sediment control measures as specified in the City of Oregon City public works standards for erosion and sediment control. Within three days from the date of notice, the owner or his/her designated representative shall submit a revised erosion and sediment control plan to the city. Upon approval of the revised plan and issuance of an amended permit, the owner or his/her designated representative shall immediately implement the revised plan.*
- G. Approval of an erosion and sediment control plan does not constitute an approval of permanent road or drainage design (e.g., size and location of roads, pipes, restrictors, channels, retention facilities, utilities, etc.).*

Finding: Complies with Condition. The applicant shall provide an Erosion Prevention and Sedimentation Control Plan to the City for approval. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

CHAPTER 17.50 ADMINISTRATION AND PROCEDURES

17.50.010 - Purpose.

This chapter provides the procedures by which Oregon City reviews and decides upon applications for all permits relating to the use of land authorized by ORS 92, 197 and 227. These permits include all form of land divisions, land use, limited land use and expedited land division and legislative enactments and amendments to the Oregon City Comprehensive Plan and Titles 16 and 17 of this code. Pursuant to ORS 227.175, any applicant may elect to consolidate applications for two or more related permits needed for a single development project. Any grading activity associated with development shall be subject to preliminary review as part of the review process for the underlying development. It is the express policy of the City of Oregon City that development review not be segmented into discrete parts in a manner that precludes a comprehensive review of the entire development and its cumulative impacts.

17.50.030 - Summary of the City's decision-making processes.

Finding: The application is being reviewed pursuant to the Type III process.

17.50.040 - Development review in overlay districts and for erosion control.

*For any development subject to regulation of Geologic Hazards Overlay District under OCMC 17.44; Natural Resource Overlay District under OCMC 17.49; Willamette River Greenway Overlay District under OCMC 17.48; Historic Overlay District under OCMC 17.40, and Erosion and Sediment Control under OCMC 17.47, compliance with the requirements of these chapters shall be reviewed as part of the review process required for the underlying development for the site. **17.50.050 – Pre-application conference.***

A Pre-application Conference. Prior to a Type II – IV or Legislative application, excluding Historic Review, being deemed complete, the applicant shall schedule and attend a pre-application conference with City staff to discuss the proposal, unless waived by the Community Development Director. The purpose of the pre-application conference is to provide an opportunity for staff to provide the applicant with

information on the likely impacts, limitations, requirements, approval standards, fees and other information that may affect the proposal.

To schedule a pre-application conference, the applicant shall contact the Planning Division, submit the required materials, and pay the appropriate conference fee.

At a minimum, an applicant should submit a short narrative describing the proposal and a proposed site plan, drawn to a scale acceptable to the City, which identifies the proposed land uses, traffic circulation, and public rights-of-way and all other required plans.

The Planning Division shall provide the applicant(s) with the identity and contact persons for all affected neighborhood associations as well as a written summary of the pre-application conference.

B. A pre-application conference shall be valid for a period of six months from the date it is held. If no application is filed within six months of the conference or meeting, the applicant shall schedule and attend another conference before the City will accept a permit application. The Community Development Director may waive the pre-application requirement if, in the Director's opinion, the development has not changed significantly and the applicable municipal code or standards have not been significantly amended. In no case shall a pre-application conference be valid for more than one year.

C. Notwithstanding any representations by City staff at a pre-application conference, staff is not authorized to waive any requirements of this code, and any omission or failure by staff to recite to an applicant all relevant applicable land use requirements shall not constitute a waiver by the City of any standard or requirement.

Finding: Complies as Proposed. The applicant held a pre-application conference on September 10, 2019 (PA 19-51). The land use application was submitted within 6 months of the pre-application conference on February 24, 2020.

17.50.055 - Neighborhood association meeting.

Neighborhood Association Meeting. The purpose of the meeting with the recognized neighborhood association is to inform the affected neighborhood association about the proposed development and to receive the preliminary responses and suggestions from the neighborhood association and the member residents.

A. Applicants applying for annexations, zone change, comprehensive plan amendments, conditional use, Planning Commission variances, subdivision, or site plan and design review (excluding minor site plan and design review), general development master plans or detailed development plans applications shall schedule and attend a meeting with the City-recognized neighborhood association in whose territory the application is proposed no earlier than one year prior to the date of application. Although not required for other projects than those identified above, a meeting with the neighborhood association is highly recommended.

B. The applicant shall request via email or regular mail a request to meet with the neighborhood association chair where the proposed development is located. The notice shall describe the proposed project. A copy of this notice shall also be provided to the chair of the Citizen Involvement Committee.

C. A meeting shall be scheduled within thirty days of the date that the notice is sent. A meeting may be scheduled later than thirty days if by mutual agreement of the applicant and the neighborhood association. If the neighborhood association does not want to, or cannot meet within thirty days, the applicant shall host a meeting inviting the neighborhood association, Citizen Involvement Committee, and all property owners within three hundred feet to attend. This meeting shall not begin before six p.m. on a weekday or may be held on a weekend and shall occur within the neighborhood association boundaries or at a City facility.

D. If the neighborhood association is not currently recognized by the City, is inactive, or does not exist, the applicant shall request a meeting with the Citizen Involvement Committee.

E. To show compliance with this section, the applicant shall submit a copy of the email or mail notice to the neighborhood association and CIC chair, a sign-in sheet of meeting attendees, and a summary of issues discussed at the meeting. If the applicant held a separately noticed meeting, the applicant shall submit a copy of the meeting flyer, postcard or other correspondence used, and a summary of issues discussed at the meeting and submittal of these materials shall be required for a complete application.

Finding: Complies as Proposed. Neighborhood association meetings are required for a Conditional Use Permit and Site Plan and Design Review applications. This section requires the applicant to submit a copy of the email correspondence with the neighborhood association, meeting sign-in sheet, and a summary of issues discussed. This is a submittal requirement, rather than an approval criterion. The South End Neighborhood Association is not currently active, therefore the applicant had scheduled a meeting with the Citizen Involvement Committee, however the meeting was cancelled after this application was deemed complete. The purpose of neighborhood association meetings is for the applicant to establish a dialogue with the neighborhood association, and to answer any questions about their development, however, there is no approval criteria tied to the neighborhood association meeting. The application was transmitted to the South End neighborhood association during the public notice period and no comments from the neighborhood association were received in response to the development. Though a neighborhood association meeting was not held, all applicable approval criteria have been met or can be met through the Conditions of Approval.

17.50.070 - Completeness review and one hundred twenty-day rule.

C. Once the Community Development Director determines the application is complete enough to process, or the applicant refuses to submit any more information, the City shall declare the application complete. Pursuant to ORS 227.178, the City will reach a final decision on an application within one hundred twenty calendar days from the date that the application is determined to be or deemed complete unless the applicant agrees to suspend the one hundred twenty calendar day time line or unless State law provides otherwise. The one hundred twenty-day period, however, does not apply in the following situations:

- 1. Any hearing continuance or other process delay requested by the applicant shall be deemed an extension or waiver, as appropriate, of the one hundred twenty-day period.*
- 2. Any delay in the decision-making process necessitated because the applicant provided an incomplete set of mailing labels for the record property owners within three hundred feet of the subject property shall extend the one hundred twenty-day period for the amount of time required to correct the notice defect.*
- 3. The one hundred twenty-day period does not apply to any application for a permit that is not wholly within the City's authority and control.*
- 4. The one hundred twenty-day period does not apply to any application for an amendment to the City's comprehensive plan or land use regulations nor to any application for a permit, the approval of which depends upon a plan amendment.*

D. A one-hundred day period applies in place of the one-hundred-twenty day period for affordable housing projects where:

- 1. The project includes five or more residential units, including assisted living facilities or group homes;*
- 2. At least 50% of the residential units will be sold or rented to households with incomes equal to or less than 60% of the median family income for Clackamas County or for the state, whichever is greater; and*
- 3. Development is subject to a covenant restricting the owner and successive owner from selling or renting any of the affordable units as housing that is not affordable for a period of 60 years from the date of the certificate of occupancy.*

E. The one hundred twenty-day period specified in OCMC 17.50.070.C or D may be extended for a specified period of time at the written request of the applicant. The total of all extensions may not exceed two hundred forty-five calendar days.

F. The approval standards that control the City's review and decision on a complete application are those which were in effect on the date the application was first submitted.

Finding: Complies as Proposed. This land use application was submitted on February 24, 2020, and deemed complete on March 20, 2020. The City has until July 17, 2020 to make a final decision.

17.50.090 - Public notices.

All public notices issued by the City announcing applications or public hearings of quasi-judicial or legislative actions, shall comply with the requirements of this section.

A. Notice of Type II Applications. Once the Community Development Director has deemed a Type II application complete, the City shall prepare and send notice of the application, by first class mail, to all record owners of property within three hundred feet of the subject property and to any city-recognized neighborhood association whose territory includes the subject property. The applicant shall provide or the City shall prepare for a fee an accurate and complete set of mailing labels for these property owners and for posting the subject property with the City-prepared notice in accordance with OCMC 17.50.100. The City's Type II notice shall include the following information:

- 1. Street address or other easily understood location of the subject property and city-assigned planning file number;*
- 2. A description of the applicant's proposal, along with citations of the approval criteria that the City will use to evaluate the proposal;*
- 3. A statement that any interested party may submit to the City written comments on the application during a fourteen-day comment period prior to the City's deciding the application, along with instructions on where to send the comments and the deadline of the fourteen-day comment period;*
- 4. A statement that any issue which is intended to provide a basis for an appeal shall be raised in writing during the fourteen-day comment period with sufficient specificity to enable the City to respond to the issue;*
- 5. A statement that the application and all supporting materials may be inspected, and copied at cost, at city hall during normal business hours;*
- 6. The name and telephone number of the planning staff person assigned to the application or is otherwise available to answer questions about the application.*
- 7. The notice shall state that a City-recognized neighborhood association requesting an appeal fee waiver pursuant to OCMC 17.50.290.C must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal.*

B. Notice of Public Hearing on a Type III or IV Quasi-Judicial Application. Notice for all public hearings concerning a quasi-judicial application shall conform to the requirements of this subsection. At least twenty days prior to the hearing, the City shall prepare and send, by first class mail, notice of the hearing to all record owners of property within three hundred feet of the subject property and to any City-recognized neighborhood association whose territory includes the subject property. The City shall also publish the notice on the City website within the City at least twenty days prior to the hearing. Pursuant to OCMC 17.50.080H., the applicant is responsible for providing an accurate and complete set of mailing labels for these property owners and for posting the subject property with the City-prepared notice in accordance with OCMC 17.50.100. Notice of the application hearing shall include the following information:

- 1. The time, date and location of the public hearing;*
- 2. Street address or other easily understood location of the subject property and city-assigned planning file number;*
- 3. A description of the applicant's proposal, along with a list of citations of the approval criteria that the City will use to evaluate the proposal;*

4. A statement that any interested party may testify at the hearing or submit written comments on the proposal at or prior to the hearing and that a staff report will be prepared and made available to the public at least seven days prior to the hearing;
5. A statement that any issue which is intended to provide a basis for an appeal to the City Commission shall be raised before the close of the public record. Issues must be raised and accompanied by statements or evidence sufficient to afford the City and all parties to respond to the issue;
6. The notice shall state that a City-recognized neighborhood association requesting an appeal fee waiver pursuant to OCMC 17.50.290C. must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal.
7. A statement that the application and all supporting materials and evidence submitted in support of the application may be inspected at no charge and that copies may be obtained at reasonable cost at the Planning Division offices during normal business hours; and
8. The name and telephone number of the planning staff person responsible for the application or is otherwise available to answer questions about the application.

C. Notice of Public Hearing on a Legislative Proposal. At least twenty days prior to a public hearing at which a legislative proposal to amend or adopt the City's land use regulations or Comprehensive Plan is to be considered, the Community Development Director shall issue a public notice that conforms to the requirements of this subsection. Notice shall be sent to affected governmental entities, special districts, providers of urban services, including Tri-Met, Oregon Department of Transportation and Metro, any affected recognized neighborhood associations and any party who has requested in writing such notice. Notice shall also be published on the City website. Notice issued under this subsection shall include the following information:

1. The time, date and location of the public hearing;
2. The City-assigned planning file number and title of the proposal;
3. A description of the proposal in sufficient detail for people to determine the nature of the change being proposed;
4. A statement that any interested party may testify at the hearing or submit written comments on the proposal at or prior to the hearing; and
5. The name and telephone number of the planning staff person responsible for the proposal and who interested people may contact for further information.

Finding: Complies as Proposed. Notice was posted onsite, sent to property owners within 300 feet, posted on the City website, and transmitted to all neighborhood associations, affected departments and agencies, and the Natural Resource Committee.

17.50.100 - Notice posting requirements.

Where this chapter requires notice of a pending or proposed permit application or hearing to be posted on the subject property, the requirements of this section shall apply.

A. City Guidance and the Applicant's Responsibility. The City shall supply all of the notices which the applicant is required to post on the subject property and shall specify the dates the notices are to be posted and the earliest date on which they may be removed. The City shall also provide a statement to be signed and returned by the applicant certifying that the notice(s) were posted at the correct time and that if there is any delay in the City's land use process caused by the applicant's failure to correctly post the subject property for the required period of time and in the correct location, the applicant agrees to extend the applicable decision-making time limit in a timely manner.

B. Number and Location. The applicant shall place the notices on each frontage of the subject property. If the property's frontage exceeds six hundred feet, the applicant shall post one copy of the notice for each six hundred feet or fraction thereof. Notices do not have to be posted adjacent to alleys or unconstructed right-of-way. Notices shall be posted within ten feet of the street and shall be visible to pedestrians and

motorists. Notices shall not be posted within the public right-of-way or on trees. The applicant shall remove all signs within ten days following the event announced in the notice.

Finding: Complies as Proposed. The subject site was posted with the land use notice signs longer than the minimum requirement.

17.50.140 – Financial guarantees.

When conditions of permit approval require a permittee to construct certain public improvements, the City shall require the permittee to provide financial guarantee for construction of the certain public improvements. Financial guarantees shall be governed by this section.

- A. Form of Guarantee. Guarantees shall be in a form approved by the City Attorney. Approvable forms of guarantee include irrevocable standby letters of credit to the benefit of the City issued by a recognized lending institution, certified checks, dedicated bank accounts or allocations of construction loans held in reserve by the lending institution for the benefit of the City. The form of guarantee shall be specified by the City Engineer and, prior to execution and acceptance by the City shall be reviewed and approved by the City Attorney. The guarantee shall be filed with the City Engineer.*
- B. Performance Guarantees. A permittee shall be required to provide a performance guarantee as follows.*
 - 1. After Final Approved Design by The City: The City may request the Permittee to submit a Performance Guarantee for construction of certain public improvements. A permittee may request the option of submitting a Performance Guarantee when prepared for temporary/final occupancy. The guarantee shall be one hundred twenty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City Engineer.*
 - 2. Before Complete Design Approval and Established Engineered Cost Estimate: The City may request a permittee to submit a Performance Guarantee for construction of certain public improvements. A permittee may request the option of submitting a performance guarantee before public improvements are designed and completed. The guarantee shall be one hundred fifty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer and approved by the City Engineer. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City Engineer.*
- C. Release of Guarantee. The guarantee shall remain in effect until the improvement is actually constructed and accepted by the City. Once the City has inspected and accepted the improvement, the City shall release the guarantee to the permittee. If the improvement is not completed to the City's satisfaction within the time limits specified in the permit approval, the City Engineer may, at their discretion, draw upon the guarantee and use the proceeds to construct or complete construction of the improvement and for any related administrative and legal costs incurred by the City in completing the construction, including any costs incurred in attempting to have the permittee complete the improvement. Once constructed and approved by the City, any remaining funds shall be refunded to the permittee. The City shall not allow a permittee to defer construction of improvements by using a performance guarantee, unless the permittee agrees to construct those improvements upon written notification by the City, or at some other mutually agreed-to time. If the permittee fails to commence construction of the required improvements within six months of being instructed to do so, the City may, without further notice, undertake the construction of the improvements and draw upon the permittee's performance guarantee to pay those costs.*

- D. *Fee-in-lieu.* When conditions of approval or the City Engineer allows a permittee to provide a fee-in-lieu of actual construction of public improvements, the fee shall be one hundred fifty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer and approved by the City Engineer. The percentage required is to ensure adequate funds for the future work involved in design, bid, contracting, and construction management and contract closeout. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City Engineer. The fee-in-lieu shall be submitted as cash, certified check, or other negotiable instrument acceptable by the City Attorney.

Finding: Not Applicable. The scope of the required public improvements for this application does not warrant the provision of a performance bond from the applicant.

17.50.141 – Public improvements – Warranty

All public improvements not constructed by the City, shall be maintained and under warranty provided by the property owner or developer constructing the facilities until the City accepts the improvements at the end of the warranty period. The warranty is to be used at the discretion of the City Engineer or designee to correct deficiencies in materials or maintenance of constructed public infrastructure, or to address any failure of engineering design.

- A. *Duration of Warranty.* Responsibility for maintenance of public improvements shall remain with the property owner or developer for a warranty period of two years.
- B. *Financial Guarantee.* Approvable forms of guarantee include irrevocable standby letters of credit to the benefit of the City issued by a recognized lending institution, bond, certified checks, dedicated bank accounts or allocations of construction loans held in reserve by the lending institution for the benefit of the City. The form of guarantee shall be specified by the City Engineer and, prior to execution and acceptance by the City shall be reviewed and approved by the City Attorney. The guarantee shall be filed with the City Engineer.
- C. *Amount of Warranty.* The amount of the warranty shall be equal to fifteen percent of the estimated cost of construction of all public improvements (including those improvements that will become owned and maintained by the City at the end of the two year maintenance period), and shall be supported by a verified engineering estimate and approved by the City Engineer. Upon expiration of the warranty period and acceptance by the City as described below, the City shall be responsible for maintenance of those improvements.
- D. *Transfer of Maintenance.* The City will perform an inspection of all public improvements approximately forty-five days before the two-year warranty period expires. The public improvements shall be found to be in a clean, functional condition by the City Engineer before acceptance of maintenance responsibility by the City. Transfer of maintenance of public improvements shall occur when the City accepts the improvements at the end of the two year warranty period.

Finding: Not Applicable. The scope of the required public improvements for this application does not warrant the provision of a warranty bond from the applicant.

CHAPTER 17.52 OFF-STREET PARKING AND LOADING

17.52.010 - Applicability.

The construction of a new structure or parking lot, or alterations to the size or use of an existing structure, parking lot or property use shall require site plan review approval and compliance with this chapter. This chapter does not apply to single-family attached, detached residential dwellings and duplexes.

Finding: Applicable. The applicant has proposed construction of a new building and expansion of the existing parking lot, therefore, this chapter applies.

17.52.015 - Planning commission adjustment of parking standards.

A. Purpose: The purpose of permitting a Planning Commission adjustment to parking standards is to provide for flexibility in modifying parking standards in all zoning districts, without permitting an adjustment that would adversely impact the surrounding or planned neighborhood. Adjustments provide flexibility to those uses which may be extraordinary, unique, or provide greater flexibility for areas that can accommodate a denser development pattern based on existing infrastructure and ability to access the site by means of walking, biking or transit. An adjustment to a minimum parking standard may be approved based on a determination by the Planning Commission that the adjustment is consistent with the purpose of this Code, and the approval criteria can be met.

B. Procedure: A request for a Planning Commission parking adjustment shall be initiated by a property owner or authorized agent by filing a land use application. The application shall be accompanied by a site plan, drawn to scale, showing the dimensions and arrangement of the proposed development and parking plan, the extent of the adjustment requested along with findings for each applicable approval criteria. A request for a parking adjustment shall be processed as a Type III application as set forth in Chapter 17.50.

C. Approval criteria for the adjustment are as follows:

1. Documentation: The applicant shall document that the individual project will require an amount of parking that is different from that required after all applicable reductions have been taken.

2. Parking analysis for surrounding uses and on-street parking availability: The applicant shall show that there is a continued fifteen percent parking vacancy in the area adjacent to the use during peak parking periods and that the applicant has permission to occupy this area to serve the use pursuant to the procedures set forth by the Community Development Director.

a. For the purposes of demonstrating the availability of on street parking as defined in OCMC 17.52.020.B.3., the applicant shall undertake a parking study during time periods specified by the Community Development Director. The time periods shall include those during which the highest parking demand is anticipated by the proposed use. Multiple observations during multiple days shall be required. Distances are to be calculated as traversed by a pedestrian that utilizes sidewalks and legal crosswalks or an alternative manner as accepted by the Community Development Director.

b. The onsite parking requirements may be reduced based on the parking vacancy identified in the parking study. The amount of the reduction in onsite parking shall be calculated as follows:

i. Vacant on-street parking spaces within three hundred feet of the site will reduce onsite parking requirements by 0.5 parking spaces; and

ii. Vacant on-street parking spaces between three hundred and six hundred feet of the site will reduce onsite parking requirements by 0.2 parking spaces.

3. Function and Use of Site: The applicant shall demonstrate that modifying the amount of required parking spaces will not significantly impact the use or function of the site and/or adjacent sites.

4. Compatibility: The proposal is compatible with the character, scale and existing or planned uses of the surrounding neighborhood.

5. Safety: The proposal does not significantly impact the safety of adjacent properties and rights-of-way.

6. Services: The proposal will not create a significant impact to public services, including fire and emergency services.

Finding: Not Applicable. The applicant has not requested a Planning Commission Parking Adjustment.

17.52.020 - Number of automobile spaces required.

A. The number of parking spaces shall comply with the minimum and maximum standards listed in Table 17.52.020. The parking requirements are based on spaces per one thousand square feet net leasable area unless otherwise stated.

Table 17.52.020		
LAND USE	PARKING REQUIREMENTS	
	MINIMUM	MAXIMUM
Elementary/Middle School	1 per classroom	1 per classroom + 1 per administrative employee + 0.25 per seat in auditorium/assembly room/stadium
High School, College, Commercial School for Adults	0.20 per # staff and students	0.30 per # staff and students
Auditorium, Meeting Room, Stadium, Religious Assembly Building, movie theater,	.25 per seat	0.5 per seat
Retail Store, Shopping Center, Restaurants	4.10	5.00
Office	2.70	3.33
Sports Club, Recreation Facilities	Case Specific	5.40

1. Multiple Uses. In the event several uses occupy a single structure or parcel of land, the total requirements for off-street parking shall be the sum of the requirements of the several uses computed separately.

2. Requirements for types of buildings and uses not specifically listed herein shall be determined by the Community Development Director, based upon the requirements of comparable uses listed.

Finding: Complies as Proposed. The existing church includes classrooms as well as a religious assembly space, and the proposed recreation building includes classrooms and a gymnasium. Though the code provides a maximum requirement for recreation facilities, this figure is meant for uses such as gyms and does not account for bleacher seating. Because the proposed building includes classrooms and bleacher seating within the gymnasium, the auditorium/meeting room/stadium/religious assembly parking numbers are being used for the church and the gymnasium, and the elementary school parking requirements are being used for the classrooms within the church and the recreational building. The applicant's narrative identified that 215 parking stalls are proposed, however, based on the site plan, it appears that only 213 parking stalls are proposed. The minimum number of parking spaces required is 122 and the maximum number of parking spaces allowed is 232, therefore, the applicant is in compliance with the minimum and maximum number of parking stalls.

LAND USE	PARKING REQUIREMENTS			
	MINIMUM	MAXIMUM	MINIMUM REQ'D	MAXIMUM ALLOWED
Elementary/Middle School	1 per classroom	1 per classroom + 1 per administrative employee + 0.25 per	12	12

		seat in auditorium/assembly room/stadium		
Auditorium, Meeting Room, Stadium, Religious Assembly Building, movie theater, (300 seats in church, 140 seats in gymnasium)	.25 per seat	0.5 per seat	110	220
TOTAL			122	232

3. Where calculation in accordance with the above list results in a fractional space, any fraction less than one-half shall be disregarded and any fraction of one-half or more shall require one space.

Finding: Complies as Proposed. Fractions were rounded in accordance with this requirement.

4. The minimum required parking spaces shall be available for the parking of operable passenger automobiles of residents, customers, patrons and employees only, and shall not be used for storage of vehicles or materials or for the parking of vehicles used in conducting the business or use.

Finding: Complies as Proposed. The applicant's narrative identified compliance with this standard.

5. A change in use within an existing habitable building located in the MUD Design District or the Willamette Falls Downtown District is exempt from additional parking requirements. Additions to an existing building and new construction are required to meet the minimum parking requirements for the areas as specified in Table 17.52.020 for the increased square footage.

Finding: Not Applicable. The subject site is not within the MUD Design District or the Willamette Falls Downtown District.

B. Parking requirements can be met either onsite, or offsite by meeting one or multiple of the following conditions:

1. *Parking may be located on the same site as the associated use which it is supporting.*

2. *Mixed Uses. If more than one type of land use occupies a single structure or parcel of land, the total requirements for off-street automobile parking shall be the sum of the requirements for all uses, unless it can be shown that the peak parking demands are actually less (e.g. the uses operate on different days or at different times of the day). In that case, the total requirements shall be reduced accordingly, up to a maximum reduction of fifty percent, as determined by the Community Development Director.*

3. *Shared Parking. Required parking facilities for two or more uses, structures, or parcels of land may be satisfied by the same parking facilities used jointly, to the extent that the owners or operators show that the need for parking facilities does not materially overlay (e.g., uses primarily of a daytime versus nighttime nature), that the shared parking facility is within one thousand feet of the potential uses, and provided that the right of joint use is evidenced by a recorded deed, lease, contract, or similar written instrument authorizing the joint use.*

4. *On-Street Parking. On-street parking may be counted toward the minimum standards when it is on the street face abutting the subject land use. An on-street parking space shall not obstruct a required clear*

vision area and it shall not violate any law or street standard. On-street parking for commercial uses shall conform to the following standards:

a. Dimensions. The following constitutes one on-street parking space:

1. Parallel parking: twenty-two feet of uninterrupted and available curb;

2. Forty-five and/or sixty-degree diagonal parking: Fifteen feet of curb;

3. Ninety-degree (perpendicular) parking: Twelve feet of curb.

4. Public Use Required for Credit. On-street parking spaces counted toward meeting the parking requirements of a specific use may not be used exclusively by that use, but shall be available for general public use at all times. Signs or other actions that limit general public use of on-street spaces are prohibited.

Finding: Not Applicable. All parking is provided onsite. The applicant has not proposed to utilize any of the off-site parking options withing this section.

C. Reduction of the Number of the Minimum Automobile Spaces Required. Any combination of the reductions below is permitted unless otherwise noted.

1. Downtown Parking Overlay. The minimum required number of parking stalls is reduced within the Downtown Parking Overlay by fifty percent.

2. Transit Oriented Development. For projects not located within the Downtown Parking Overlay District, the minimum required number of parking stalls is reduced up to twenty-five percent when:

a. In a commercial center (sixty thousand square feet or greater of retail or office use measured cumulatively within a five hundred foot radius) or

b. When adjacent to multi-family development with over eighty units or

c. Within 1,320 feet of an existing or planned public transit street and within 1,320 feet of the opposite use (commercial center or multi-family development with over eighty units).

3. Tree Preservation. The Community Development Director may grant an adjustment to any standard of this requirement provided that the adjustment preserves a designated heritage tree or grove so that the reduction in the amount of required pavement can help preserve existing healthy trees in an undisturbed, natural condition.

4. Transportation Demand Management. The Community Development Director shall reduce the required number of parking stalls up to twenty-five percent when a parking-traffic study prepared by a traffic engineer demonstrates alternative modes of transportation, including transit, bicycles, and walking, and/or special characteristics of the customer, client, employee or resident population will reduce expected vehicle use and parking space demand for this development, as compared to standard Institute of Transportation Engineers vehicle trip generation rates and further that the transportation demand management program promotes or achieves parking utilization lower than minimum city parking requirements.

A transportation demand management (TDM) program shall be developed to include strategies for reducing vehicle use and parking demand generated by the development and will be measured annually. If, at the annual assessment, the City determines the plan is not successful, the plan may be revised. If the City determines that no good-faith effort has been made to implement the plan, the City may take enforcement actions.

5. The minimum required number of stalls may be reduced by up to ten percent when the subject property is adjacent to an existing or planned fixed public transit route or within one thousand feet of an existing or planned transit stop

Finding: Not Applicable. The applicant has not requested a reduction in accordance with this section.

17.52.030 - Standards for automobile parking.

A. Access. Ingress and egress locations on public thoroughfares shall be located in the interests of public traffic safety and meet requirements of OCMC 16.12.035. Groups of more than four parking spaces shall be so located and served by driveways so that their use will require no backing movements or other maneuvering within a street right-of-way other than an alley.

Finding: Not Applicable. The existing parking lot includes access from South End Road and Paulsen Drive. Though the parking lot is expanding, no changes to access are proposed as part of this development.

B. Surfacing. Required off-street parking spaces and access aisles shall have paved surfaces adequately maintained. The use of pervious asphalt/concrete and alternative designs that reduce storm water runoff and improve water quality pursuant to the City's stormwater and low impact development design standards are encouraged.

Finding: Complies as Proposed. The proposed parking lot will be paved with asphaltic concrete, and the applicant's narrative identified that the parking lot surfaces will be adequately maintained.

C. Drainage. Drainage shall be designed in accordance with the requirements of OCMC 13.12 and the City public works stormwater and grading design standards.

Finding: Please refer to the findings within Chapter 13.12 of this report.

D. Dimensional Standards.

1. Requirements for parking developed at varying angles are according to the table included in this section. A parking space shall not be less than seven feet in height when within a building or structure, and shall have access by an all-weather surface to a street or alley. Parking stalls in compliance with the American with Disabilities Act may vary in size in order to comply with the building division requirements. Up to thirty-five percent of the minimum required parking may be compact, while the remaining required parking stalls are designed to standard dimensions. The Community Development Director may approve alternative dimensions for parking stalls in excess of the minimum requirement which comply with the intent of this chapter.

Finding: Complies with Condition. The applicant has proposed both 90 degree parking stalls and 45 degree parking stalls. The 90 degree stalls are in compliance with stall width and curb length requirements, but exceed the stall to curb and aisle width requirements. The 45 degree stalls exceed all of the dimensional requirements. Prior to issuance of a building permit, the applicant shall submit a revised parking plan with parking stalls and drive aisles which comply with the parking dimensional requirements in OCMC 17.52.030.D. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

2. Alternative parking/plan. Any applicant may propose an alternative parking plan. Such plans are often proposed to address physically constrained or smaller sites, however innovative designs for larger sites may also be considered. In such situations, the Community Development Director may approve an alternative parking lot plan with variations to parking dimensions of this section. The alternative shall be consistent with the intent of this chapter and shall create a safe space for automobiles and pedestrians while providing landscaping to the quantity and quality found within parking lot landscaping requirements.

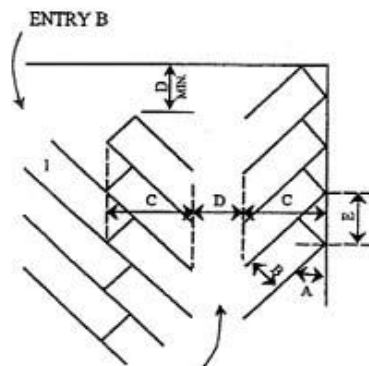
Finding: Not Applicable. The applicant has not proposed an alternative parking plan.

PARKING STANDARD

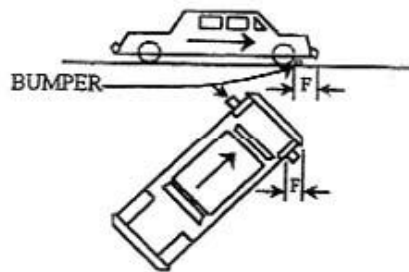
PARKING ANGLE SPACE DIMENSIONS

A Parking Angle		B Stall Width	C Stall to Curb	D Aisle Width	E Curb Length	F Overhang
0 degrees		8.5	9.0	12	20	0
30 degrees	Standard Compact	9' 8'	17.3' 14.9'	11' 11'	18' 16'	
45 degrees	Standard Compact	8.5 8.5	19.8' 17.0'	13' 13'	12.7' 11.3'	1.4
60 degrees	Standard Compact	9' 8'	21' 17.9'	18' 16'	10.4' 9.2'	1.7
90 degrees	Standard Compact	9' 8'	19.0' 16.0'	24' 22'	9' 8'	1.5

All dimensions are to the nearest tenth of a foot.



TYPICAL PARKING LAYOUT
ENTRY A



NOTE: SPACE 1 CONTINGENT UPON ENTRY B
OVERHANG

NOTE: Overhang dimensions are intended to indicate possible location from parking area edge for location of bumpers.

Finding: Please refer to the analysis in OCMC 17.52.030.D.1.

E. Carpool and Vanpool Parking. New developments with seventy-five or more parking spaces, excluding projects where seventy-five percent or more of the total floor area is residential, and new hospitals, government offices, group homes, nursing and retirement homes, schools and transit park-and-ride facilities with fifty or more parking spaces, shall identify the spaces available for employee, student and commuter parking and designate at least five percent, but not fewer than two, of those spaces for exclusive carpool and vanpool parking. Carpool and vanpool parking spaces shall be located closer to the main employee, student or commuter entrance than all other employee, student or commuter parking

spaces with the exception of ADA accessible parking spaces. The carpool/vanpool spaces shall be clearly marked "Reserved - Carpool/Vanpool Only."

Finding: Complies with Condition. A total of 114 new parking stalls are proposed, therefore, at least 6 carpool/vanpool parking stalls are required ($114 \times .05 = 5.7$). The applicant's narrative identified that the development will include nine carpool/vanpool parking stalls, however, they were not identified on the site plan and compliance with location requirements for carpool/vanpool parking stalls could not be confirmed. Prior to issuance of a building permit associated with the proposed development, the applicant shall provide a revised parking lot layout which identifies the location of required carpool/vanpool parking stalls and demonstrates compliance with location requirements for carpool/vanpool parking in OCMC 17.52.030.E. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

17.52.040 - Bicycle parking standards.

A. Purpose-Applicability. To encourage bicycle transportation to help reduce principal reliance on the automobile, and to ensure bicycle safety and security, bicycle parking shall be provided in conjunction with all uses other than exclusively residential use with less than five dwellings onsite (excluding cluster housing).

Finding: Applicable. The development includes a new building and expansion of a parking lot. Bicycle parking standards are applicable.

B. Number of Bicycle Spaces Required. For any use not specifically mentioned in Table A, the bicycle parking requirements shall be the same as the use which, as determined by the Community Development Director, is most similar to the use not specifically mentioned. Calculation of the number of bicycle parking spaces required shall be determined in the manner established in OCMC 17.52.020 for determining automobile parking space requirements. Modifications to bicycle parking requirements may be made through the site plan and design, conditional use, or master plan review process.

TABLE A Required Bicycle Parking Spaces*

Where two options for a requirement are provided, the option resulting in more bicycle parking applies. Where a calculation results in a fraction, the result is rounded up to the nearest whole number.

USE	MINIMUM BICYCLE PARKING	MINIMUM BICYCLE PARKING - COVERED - The following percentage of bicycle parking is required to be covered
Religious institutions, movie theater, auditorium or meeting room	1 per 10 auto spaces (minimum of 2)	30% (minimum of 1)
Swimming pools, gymnasiums, ball courts	1 per 10 auto spaces (minimum of 2)	30% (minimum of 1)

* Covered bicycle parking is not required for developments with two or fewer parking stalls.

Finding: Complies as Proposed. 114 parking stalls are proposed as part of the new development. Therefore, using the bicycle parking requirements for religious institutions and gymnasiums, a total of 11 bicycle parking stalls are required, three of which must be covered bicycle parking. The applicant has proposed 16 new bicycle parking stalls with the new building, and eight of them are undercover. The requirement has been satisfied.

C. Design Standards.

1. Bicycle parking facilities shall be in the form of a lockable enclosure onsite, secure room in a building onsite, a covered or uncovered rack onsite, or within the adjacent right-of-way.

Finding: Complies with Condition. The applicant's narrative identified compliance with this standard, however, details of the proposed bicycle parking fixtures were not included. Prior to issuance of a building permit with the proposed development, the applicant shall submit details of the proposed bicycle parking facilities, demonstrating compliance with all bicycle parking design standards in OCMC 17.52.040.C. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

2. Bicycle parking areas shall be clearly marked or visible from on-site buildings or the street. If a bicycle parking area is not plainly visible from the street or main building entrance, a sign shall be posted indicating the location of the bicycle parking area. Indoor bicycle parking areas shall not require stairs to access the space. If sites have more than one building, bicycle parking shall be distributed as appropriate to serve all buildings.

Finding: Complies as Proposed. The existing bicycle parking near the church is visible from the street. The new bicycle parking proposed under this development will be located near the main entrance of the new building which is located behind the existing church. The bicycle parking onsite is distributed in a way to efficiently serve both buildings.

3. All bicycle racks shall be designed so that:

- a. The bicycle frame is supported horizontally at two or more places.*
- b. The frame and at least one wheel of the bicycle can be locked to the rack with a standard U-type lock.*
- c. The user is not required to lift the bicycle onto the bicycle rack.*
- d. Each bicycle parking space is accessible without moving another bicycle.*
- e. It is a minimum of thirty inches tall and eighteen inches wide between the two points of contact.*
- f. Provides an area of six feet by two feet per bicycle.*
- g. All bicycle racks and lockers shall be securely anchored to the ground or to a structure.*

Finding: Complies with Condition. The applicant's narrative identified compliance with this standard, however, details of the proposed bicycle parking fixtures were not included. Prior to issuance of a building permit with the proposed development, the applicant shall submit details of the proposed bicycle parking facilities, demonstrating compliance with all bicycle parking design standards in OCMC 17.52.040.C. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

17.52.060 - Parking lot landscaping.

Purpose. The purpose of this code section includes the following:

- 1. To enhance and soften the appearance of parking lots;*
- 2. To limit the visual impact of parking lots from sidewalks, streets and particularly from residential areas;*
- 3. To shade and cool parking areas;*
- 4. To reduce air and water pollution;*
- 5. To reduce storm water impacts and improve water quality; and*
- 6. To establish parking lots that are more inviting to pedestrians and bicyclists.*

A. Applicability. Unless otherwise specified, construction of new parking lots and alterations of existing parking lots shall comply with parking lot landscaping standards. Parking lot landscaping requirements within this section do not apply to parking structures or parking garages, except landscaping as required in OCMC 17.62.

Finding: Applicable. The applicant has proposed an expansion of a parking lot which includes new parking lot landscaping, therefore, compliance with parking lot landscaping standards is required.

B. Development Standards.

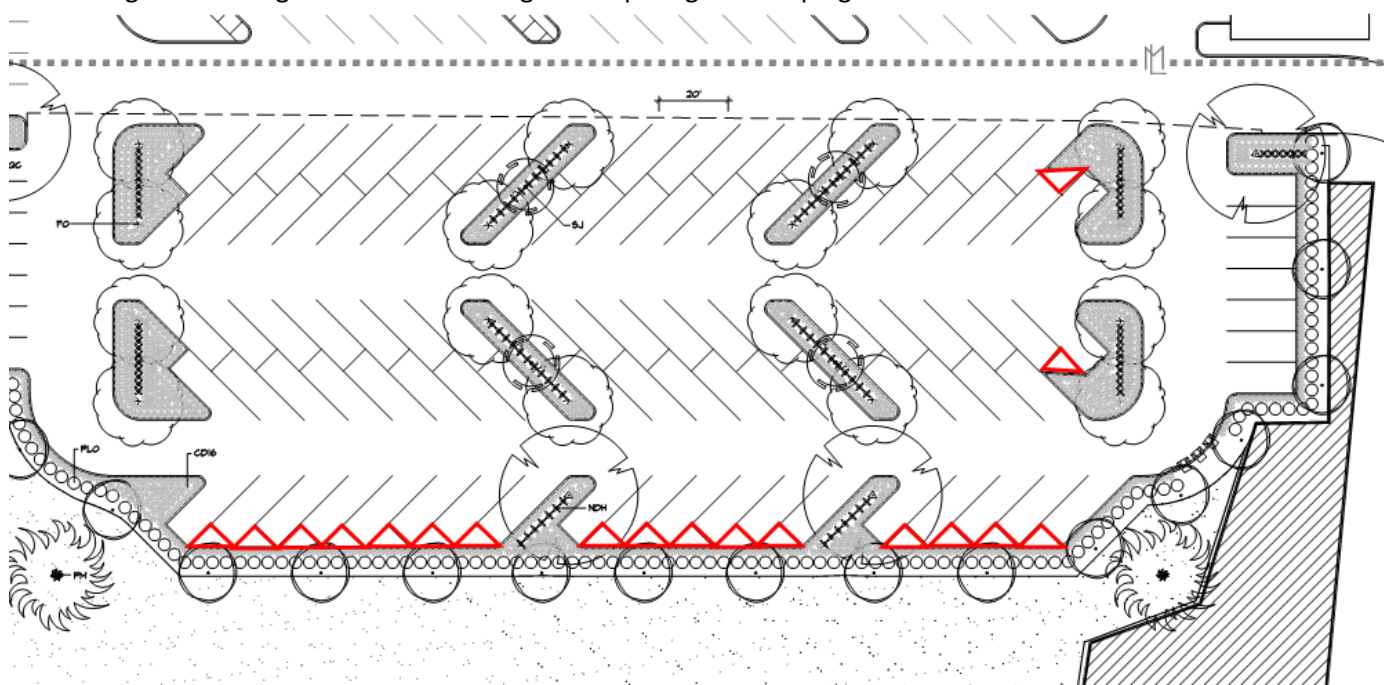
1. *The landscaping shall be located in defined landscaped areas that are uniformly distributed throughout the parking or loading area.*

Finding: Complies as Proposed. The applicant has proposed defined landscaping areas that are uniformly distributed throughout the parking lot.

2. *All areas in a parking lot not used for parking, maneuvering, or circulation shall be landscaped.*

Finding: Complies with Condition. The applicant has proposed drive aisles which are wider than the drive aisle widths allowed by OCMC 17.52.030.D, as well as parking stalls exceeding the dimensional standards in OCMC 17.52.030.D. Additionally, there are paved triangular areas between landscaping planter strips and the 45-degree parking stalls which are not used for parking, maneuvering and circulation (Figure 6).

Figure 6. Triangular Areas in Parking Lot Requiring Landscaping



Prior to issuance of a building permit, the applicant shall submit a revised parking lot layout in which all areas in the parking lot not used for parking, maneuvering or circulation shall be landscaped, including decreasing drive aisle widths and parking stall dimensions to comply with the dimensional standards in OCMC 17.52.030.D, and eliminating the paved triangular areas between landscaping planter strips and the 45-degree parking stalls. **Staff has determined that it is possible, likely and reasonable that the applicant can comply with this standard through the Conditions of Approval.**

3. *Parking lot trees shall be a mix of deciduous shade trees and coniferous trees. The trees shall be evenly distributed throughout the parking lot as both interior and perimeter landscaping.*

Finding: Complies as Proposed. The parking lot landscaping plan includes deciduous and coniferous trees evenly distributed throughout the parking lot.

4. *Required landscaping trees shall be of a minimum two-inch minimum caliper size (though it may not be standard for some tree types to be distinguished by caliper), planted according to American Nurseryman Standards, and selected from the Oregon City Street Tree List or approved by an arborist;*

Finding: Complies as Proposed. The parking lot landscaping plan includes two-inch caliper landscaping trees planted according to American Nurseryman Standards. The landscaping plan was prepared by a Registered Landscape Architect.

5. *At maturity, all of the landscaped area shall be planted in ground cover plants, which includes grasses. Mulch (as a ground cover) shall only be allowed underneath plants at full growth and within two feet of the base of a tree and is not a substitute for ground cover.*

Finding: Complies with Condition. The applicant submitted a landscaping plan prepared by a Registered Landscape Architect, however, the plan did not specify that mulch will only be utilized underneath plants at full growth and within two feet of the base of trees. Prior to issuance of a building permit, the applicant shall submit a revised landscaping plan which identifies that no mulch will be used except underneath plants at full growth and within two feet of the base of trees. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

6. *Landscaped areas shall include irrigation systems unless an alternate plan is submitted, and approved by the Community Development Director, that can demonstrate adequate maintenance;*

Finding: Complies as Proposed. The applicant's landscaping plan includes an irrigation plan and the applicant's narrative identified that the subject landscaping and irrigation system will be adequately maintained.

7. *All landscaping shall be installed according to accepted planting procedures, according to American Nurseryman Standards.*

Finding: Complies as Proposed. The applicant's landscaping plan identified that all landscaping will be installed in accordance with American Nurseryman Standards.

C. Perimeter Parking Lot Landscaping and Parking Lot Entryway/Right-of-Way Screening. *Parking lots shall include a five-foot wide landscaped buffer where the parking lot abuts the right-of-way and/or adjoining properties. In order to provide connectivity between non-single-family sites, the Community Development Director may approve an interruption in the perimeter parking lot landscaping for a single driveway where the parking lot abuts property designated as multi-family, commercial or industrial. Shared driveways and parking aisles that straddle a lot line do not need to meet perimeter landscaping requirements.*

Finding: Complies as Proposed. The parking lot includes a five-foot wide landscaped buffer where the parking lot abuts the right-of-way and/or adjoining properties.

1. *The perimeter parking lot are[a] shall include:*

a. *Trees spaced a maximum of thirty feet apart (minimum of one tree on either side of the entryway is required). When the parking lot is adjacent to a public right-of-way, the parking lot trees shall be offset from the street trees;*

Finding: Complies with Condition. The perimeter parking lot area includes trees though in some locations the spacing exceeds 30 feet. Prior to issuance of a permit associated with the proposed development, the applicant shall submit a revised landscaping plan which includes trees spaced no more than 30 feet apart in the perimeter parking lot landscaping of the new parking area in the northeast

portion of the parking lot. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

b. An evergreen hedge screen of thirty to forty-two inches high or shrubs spaced no more than four feet apart on average. The hedge/shrubs shall be parallel to and not nearer than two feet from the right-of-way line. The required screening shall be designed to allow for free access to the site and sidewalk by pedestrians. Visual breaks, no more than five feet in width, shall be provided every thirty feet within evergreen hedges abutting public right-of-ways.

Finding: Complies as Proposed. The applicant has proposed shrubs spaced no more than four feet apart on average in all new or modified perimeter parking lot landscaping areas.

D. Parking Area/Building Buffer. *Except for parking lots with fewer than five parking stalls, parking areas shall be separated from the exterior wall of a structure, exclusive of pedestrian entranceways or loading areas, by one of the following:*

- 1. Minimum five-foot wide landscaped planter strip (excluding areas for pedestrian connection) meeting the standards for perimeter parking lot area landscaping; or:*
- 2. Minimum seven foot sidewalks with shade trees spaced a maximum of thirty feet apart in three-foot by five-foot tree wells.*

Finding: Complies with Condition. The proposed development does not comply with parking area/building buffer landscaping standards for the area between the parking lot and the recreation building proposed under this application. Since the proposed breezeway does not include an exterior wall and is just a covered walkway, parking area/building buffer landscaping is not required between the breezeway and the parking lot. Prior to issuance of a building permit, the applicant shall submit a revised landscaping plan which includes parking area/building buffer landscaping between the parking lot and the proposed recreation building in accordance with one of the options in OCMC 17.52.060.D. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

E. Interior Parking Lot Landscaping.

Surface parking lots with more than five parking stalls shall include at least forty-five square feet of interior parking lot landscaping per parking stall to improve the water quality, reduce storm water runoff, and provide pavement shade. Pedestrian walkways or any impervious surface in the landscaped areas are not to be counted in the percentage. Fractions shall be rounded up when calculating the required number of plantings. Interior parking lot landscaping shall include:

Finding: Complies as Proposed. The parking lot includes a total of 213 parking stalls, requiring a total of 9,585 SF of interior parking lot landscaping. The proposed parking lot provides over 25,000 SF of interior parking lot landscaping, therefore, the standard is met.

a. A minimum of one tree per four parking spaces.

Finding: Complies with Condition. The parking lot includes a total of 213 parking stalls, however 89 of these spaces are existing and not being changed, and there are 124 new or reconfigured parking stalls requiring a total of 31 trees within the new and reconfigured interior parking lot landscaping area. The applicant has proposed 26 interior parking lot landscaping trees within the new and reconfigured parking area. Prior to issuance of a building permit, the applicant shall submit a revised landscaping plan which includes 31 interior parking lot landscaping trees within the new and reconfigured parking areas. In the event that the additional trees cannot be accommodated within the new and reconfigured interior parking lot landscaping areas, the applicant may plant the additional trees within existing

interior parking lot landscaping areas. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

b. A minimum of 1.5 shrubs per parking space.

Finding: Complies with Condition. The parking lot includes a total of 213 parking stalls, however 89 of these spaces are existing and not being changed, and there are 124 new or reconfigured parking stalls requiring a total of 186 shrubs within the new interior parking lot landscaping area. The applicant has proposed 136 interior parking lot landscaping shrubs within the new and reconfigured interior parking lot landscaping areas. Prior to issuance of a building permit, the applicant shall submit a revised landscaping plan which includes 186 interior parking lot landscaping trees within the new and reconfigured parking areas. In the event that the additional shrubs cannot be accommodated within the new and reconfigured interior parking lot landscaping areas, the applicant may plant the additional shrubs within existing interior parking lot landscaping areas. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

c. No more than eight contiguous parking spaces shall be created without providing an interior landscape strip between them. Landscape strips shall be provided between rows of parking shall be a minimum of six feet in width and a minimum of ten feet in length.

Finding: Complies as Proposed. The applicant has not proposed more than eight contiguous parking stalls without a landscaping strip which meets the dimensional requirements of this section between them.

F. Alternative landscaping plan.

Any applicant may propose an alternative landscaping plan. Such plans are often proposed to address physically constrained or smaller sites, however innovative designs for larger sites may also be considered. Alternative plans may include the use of low impact development techniques and minimized landscaping requirements. In such situations, the Community Development Director may approve variations to the landscaping standards of OCMC 17.52.060 in accordance with A and/or B below.

1. General Review Standard. The alternative shall meet the standards in OCMC 17.62.015- Modifications that will better meet design review requirements.

2. Credit for Pervious/Low Impact Development. The Community Development Director may count up to fifty percent of the square footage of any pervious hardscaped landscape material within a parking lot that is designed and approved pursuant to the City's adopted stormwater and low impact development design standards toward minimum landscaping requirements for the site. (This includes porous pavement detention, open celled block pavers, porous asphalt, porous concrete pavement, porous turf, porous gravel, etc.).

Finding: Not Applicable. The applicant has not proposed an alternative landscaping plan.

17.52.080 - Maintenance.

The owner, tenant and their agent, if any, shall be jointly and severally responsible for the maintenance of the site including but not limited to the off-street parking and loading spaces, bicycle parking and all landscaping which shall be maintained in good condition so as to present a healthy, neat and orderly appearance and shall be kept free from refuse and debris.

All plant growth in interior landscaped areas shall be controlled by pruning, trimming, or otherwise so that:

- a. It will not interfere with the maintenance or repair of any public utility;*
- b. It will not restrict pedestrian or vehicular access; and*
- c. It will not constitute a traffic hazard due to reduced visibility.*

Finding: Complies as Proposed. The applicant's narrative identifies compliance with maintenance requirements within this section.

17.52.090 - Loading areas.

A. Purpose.

The purpose of this section is to provide adequate loading areas for commercial, office, retail and industrial uses that do not interfere with the operation of adjacent streets.

B. Applicability.

OCMC 17.52.090 applies to uses that are expected to have service or delivery truck visits with a forty-foot or longer wheelbase, at a frequency of one or more vehicles per week. The City Engineer and decision maker shall determine through site plan and design review the number, size, and location of required loading areas, if any.

Finding: Not Applicable. The applicant's narrative identified that no regularly scheduled deliveries by vehicles with a forty-foot wheelbase are anticipated for the church property, therefore, these standards are not applicable.

CHAPTER 17.54 SUPPLEMENTAL ZONING REGULATIONS AND EXCEPTIONS

17.54.100 Fences, Hedges, Walls, and Retaining Walls.

A. A fence, hedge, wall, retaining wall, or combination thereof may be located on real property, not within the right-of-way, subject to all of the following:

1. A fence, hedge, wall, retaining wall, or combination thereof located in front of a building may be up to 3.5-feet in total height as measured from the finished grade at any point on the fence.

2. A fence, hedge, wall, located next to and behind the forward most building, or within more than forty feet of the right-of-way, whichever is less may be up to:

a. Six feet in total height for residential properties with less than five units as measured from the finished grade at any point on the fence; or

b. Eight feet in total height for all other uses as measured from the finished grade at any point on the fence.

3. A retaining wall or combination of a fence, hedge, wall located next to and behind the forward most building, or within more than forty feet of the right-of-way, whichever is less, may be up to (as measured from the finished grade) 8.5 feet in height from the finished grade.

4. Fences, hedges, and/or walls located within two feet above a retaining wall, as measured on a horizontal plane, shall be measured together for the purposes of determining height.

5. Property owners shall ensure compliance with the Traffic Sight Obstruction requirements in Chapter 10.32 of the Oregon City Municipal Code.

Finding: Complies with Condition. The applicant did not identify whether or not a fence is proposed. If a fence or retaining wall is proposed, the applicant shall demonstrate compliance with fence/wall height and location requirements in OCMC 17.54.100. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

CHAPTER 17.56 CONDITIONAL USES

17.56.010 - Permit—Authorization—Standards—Conditions.

A conditional use listed in this title may be permitted, enlarged or altered upon authorization of the Planning Commission in accordance with the standards and procedures of this title. Any expansion to, alteration of, or accessory use to a conditional use shall require Planning Commission or City Commission approval of a modification to the original conditional use permit unless authorized in this chapter.

Finding: Applicable. The existing church has a conditional use permit (CU 06-01), however, the existing conditional use permit does not allow for a recreational facility and a new conditional use permit application and review is required.

A. Conditional uses, because of their public convenience and necessity and their effect upon the neighborhood shall be permitted only upon the approval of the Planning Commission or City Commission after due notice and public hearing, according to procedure as provided in OCMC 17.50. The applicant shall provide evidence substantiating that all the requirements of this title relative to the proposed use are satisfied, and demonstrate that the proposed use also satisfies the following criteria:

1. The use is listed as a conditional use in the underlying district;

Finding: Complies as Proposed. Though recreational facilities are listed as a permitted use in the R-10 District, the recreational facility is associated with the church, therefore a conditional use permit is required because religious institutions are a conditional use in the R-10 District.

2. The characteristics of the site are suitable for the proposed use considering size, shape, location, topography, existence of improvements and natural features;

Finding: Complies as Proposed. The subject site is more than 8.5 acres in size and is rectangular in shape without any dramatic topography or natural features. The existing church is centrally located within the community it serves and utility infrastructure is adequate to serve the proposed development.

3. Development shall demonstrate compliance with OCMC 16.12;

Finding: Please refer to the findings within Chapter 16.12 of this report.

4. The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs or precludes the use of surrounding properties for the primary uses listed in the underlying district;

Finding: Complies with Condition. The proposed recreational building will be consistent with the existing church use. The applicant submitted several letters of support from community members for the proposed recreational building. During the public comment period for this application, staff received a comment identifying concern about the expanded parking area which is proposed to encroach much closer to the neighborhood to the south than the current parking area. The comment specifically identified concerns about events, gatherings or other recreational activities, such as concerts or games, being held in the new parking area, and noise these events would generate being a disturbance to the neighborhood. Though the applicant has not identified that any activities or gatherings would take place in the parking lot, the applicant shall establish a good neighbor agreement with property owners within 300 feet of the property, in order to ensure that the development will not result in a disturbance to surrounding neighbors. The document is intended to identify sustainable and meaningful communication between the site and the neighborhood and may provide a basis to resolve any problems that may arise. Prior to issuance of an occupancy permit for the recreational building, the applicant shall establish a good neighbor agreement with property owners within 300 feet of the property in order to ensure that the development will not result in a disturbance to surrounding neighbors. The applicant shall provide a copy of the good neighbor agreement to the city, and the good neighbor agreement shall contain, at a minimum, the following items:

a. A primary contact person for the recreational center to facilitate timely communications and address concerns from neighbors as they occur.

b. An invitation to a meeting for property owners within 300 feet of the subject property to discuss any concerns they may have with the use and establish a positive and productive relationship between the

neighbors and the church/recreational center operators and staff. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

5. The proposal satisfies the goals and policies of the city comprehensive plan which apply to the proposed use.

Finding: Complies with Conditions. The proposal satisfies the applicable goals and policies of the comprehensive plan as detailed below.

Comprehensive Plan Goals and Policies

Section 2 – Land Use

Goal 2.4 Neighborhood Livability: Provide a sense of place and identity for residents and visitors by protecting and maintaining neighborhoods as the basic unit of community life in Oregon City while implementing the goals and policies of the other sections of the Comprehensive Plan.

Policy 2.4.2: Strive to establish facilities and land uses in every neighborhood that help give vibrancy, a sense of place, and a feeling of uniqueness; such as activity centers and points of interest.

Finding: Complies with Condition. Though the proposed recreational center is for the church, it will also be used by youth sports leagues providing an activity center and point of interest within the neighborhood which will contribute to the neighborhood's vibrancy and sense of place. During the public comment period for this application, the Planning Division received a comment raising concerns about events, gatherings or other recreational activities, such as concerts or games, being held in the new parking area, and noise these events would generate being a disturbance to the neighborhood. As conditioned within this report, the applicant must establish a good neighbor agreement to ensure that the proposed recreational center will not negatively impact neighborhood livability and to provide a point of contact for neighborhood residents should any issues arise. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

Section 6 – Quality of Air, Water and Land Resources

Goal 6.1 Promote the conservation, protection and improvement of the quality of the air in Oregon City.

Policy 6.1.1: Promote land use patterns that reduce the need for distance travel by single-occupancy vehicles and increase opportunities for walking, biking and/or transit to destinations such as places of employment, shopping and education.

Finding: Complies as Proposed. Collocating the recreation center at the church property will reduce the need for distance travel by vehicles because church members that would otherwise have had to travel to an offsite location for recreational events following a church event would only need to make a single trip to the church property.

Goal 6.4 Noise: Prevent excessive noise that may jeopardize the health, welfare and safety of the citizens or degrade the quality of life.

Finding: Complies with Condition. During the public comment period for this application, the Planning Division received a comment raising concerns about events, gatherings or other recreational activities, such as concerts or games, being held in the new parking area, and noise these events would generate being a disturbance to the neighborhood. Although the applicant has not indicated that any such events would be taking place, as conditioned within this report, the applicant must establish a good neighbor agreement to ensure that the proposed recreational center will not result in a disturbance to surrounding neighbors and to provide a point of contact for neighborhood residents should any issues

arise. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

Goal 6.3 Nightlighting: Protect the night skies above Oregon City and facilities that utilize the night sky, such as the Haggart Astronomical Observatory, while providing for nightlighting at appropriate levels to ensure safety for residents, businesses, and users of transportation facilities, to reduce light trespass onto neighboring properties, to conserve energy, and to reduce light pollution via use of night-friendly lighting.

Policy 6.3.1: Minimize light pollution and reduce glare from reaching the sky and trespassing onto adjacent properties.

Policy 6.3.2: Encourage new developments to provide even and energy-efficient lighting that ensures safety and discourages vandalism. Encourage existing developments to retrofit when feasible.

Finding: Complies with Condition. Policies pertaining to light pollution and adequate lighting are implemented through the lighting standards in OCMC 17.62.065. As conditioned within this report, the applicant shall provide a revised photometric plan demonstrating compliance with lighting levels at the property line, and providing adequate lighting at building entrances and parking areas. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

Section 14: Urbanization

Goal 14.2 Orderly redevelopment of existing city areas. Reduce the need to develop land within the Urban Growth Boundary by encouraging redevelopment of underdeveloped or blighted areas within the existing city limits.

Policy 14.2.1: Maximize public investment in existing public facilities and services by encouraging redevelopment as appropriate.

Finding: Complies as Proposed. The subject site is currently underdeveloped as it is more than 8.5 acres in size but is only developed with the existing church. Public facilities and services to support the proposed recreation center are available, and development on the property is an efficient use of land and existing public infrastructure.

B. Permits for conditional uses shall stipulate restrictions or conditions which may include, but are not limited to, a definite time limit to meet such conditions, provisions for a front, side or rear yard greater than the minimum dimensional standards of the zoning ordinance, suitable landscaping, off-street parking, and any other reasonable restriction, condition or safeguard that would uphold the spirit and intent of the zoning ordinance, and mitigate adverse effect upon the neighborhood properties by reason of the use, extension, construction or alteration allowed as set forth in the findings of the Planning Commission.

Finding: Complies with Condition. During the public comment period for this application, staff received a comment identifying concern about the expanded parking area which is proposed to encroach much closer to the neighborhood to the south than the current parking area. The comment specifically identified concerns about events, gatherings or other recreational activities, such as concerts or games, being held in the new parking area, and noise these events would generate being a disturbance to the neighborhood. Though the applicant has not identified that any activities or gatherings would take place in the parking lot, the applicant shall establish a good neighbor agreement with property owners within 300 feet of the property, in order to ensure that the development will not result in a disturbance to surrounding neighbors. The document is intended to identify sustainable and meaningful communication between the site and the neighborhood and may provide a basis to resolve any problems that may arise. Prior to issuance of an occupancy permit for the recreational building, the

applicant shall establish a good neighbor agreement with property owners within 300 feet of the property in order to ensure that the development will not result in a disturbance to surrounding neighbors. The applicant shall provide a copy of the good neighbor agreement to the city, and the good neighbor agreement shall contain, at a minimum, the following items:

a. A primary contact person for the recreational center to facilitate timely communications and address concerns from neighbors as they occur.

b. An invitation to a meeting for property owners within 300 feet of the subject property to discuss any concerns they may have with the use and establish a positive and productive relationship between the neighbors and the church/recreational center operators and staff. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

C. Any conditional use shall meet the dimensional standards of the zone in which it is to be located pursuant to subsection B. of this section unless otherwise indicated, as well as the minimum conditions listed below.

Finding: Complies as Proposed. Please refer to the findings in OCMC 17.08.040 of this report. All dimensional standards of the R-10 zoning district have been met.

D. In the case of a use existing prior to the effective date of the ordinance codified in this title and classified in this title as a conditional use, any change of use expansion of lot area or expansion of structure shall conform with the requirements for conditional use.

Finding: Not Applicable. The subject site has a prior conditional use permit (CU-06-01) and does not predate the effective date of this ordinance.

E. The Planning Commission may specifically permit, upon approval of a conditional use, further expansion to a specified maximum designated by the Planning Commission without the need to return for additional review.

Finding: Not Applicable. The applicant has not requested the Planning Commission approve a future expansion to the conditional use at this time.

17.56.020 - Permit—Application.

A. A property owner or authorized agent shall initiate a request for a conditional use by filing an application with the city recorder. The applicant shall submit a site plan, drawn to scale, showing the dimensions and arrangement of the proposed development. The application shall be accompanied by the filing fee listed in OCMC 17.50.080 to defray the costs of publication, investigation and processing.

Finding: Complies as Proposed. The applicant submitted all required application materials and the application was deemed complete on March 20, 2020.

B. Before the Planning Commission or City Commission may act on a conditional use application, it shall hold a public hearing thereon, following procedure as established in OCMC 17.50.

Finding: Complies as Proposed. The application has been noticed in accordance with the requirements in OCMC 17.50 and a public hearing will be held on June 8, 2020.

17.56.025 - Minor modifications to legal conditional uses.

Minor modifications to an approved conditional use permit may be permitted. If permitted, the modification shall be reviewed as a minor site plan and design review. A minor modification to an approved conditional use permit is considered one of the following:

A. Modification to a structure for the purpose of enhancing the aesthetics of the building and there is no increase in the interior usable space;

B. A maximum addition of up to one thousand square feet to a commercial, office, institutional, public, multi-family, or industrial building provided that the addition is not more than thirty-five percent of the original building square footage; or

C. Revisions to parking alignment and/or related vehicle circulation patterns.

Finding: Not Applicable. Though the church has an existing conditional use permit, the proposed recreational building surpasses the thresholds for minor modifications to existing conditional uses identified in this section and requires a separate conditional use permit.

17.56.040 - Criteria and standards for conditional uses.

In addition to the standards listed herein in OCMC 17.56.010, which are to be considered in the approval of all conditional uses and the standards of the zone in which the conditional use is located, the following additional standards shall be applicable:

A. Building Openings. *The city may limit or prohibit building openings within fifty feet of residential property in a residential zone if the openings will cause glare, excessive noise or excessive traffic which would adversely affect adjacent residential property as set forth in the findings of the Planning Commission.*

Finding: Not Applicable. No portion of the proposed building is located within 50 feet of a residential property.

B. Additional Street Right-of-Way. *The dedication of additional right-of-way may be required where the city plan indicates need for increased width and where the street is inadequate for its use; or where the nature of the proposed development warrants increased street width.*

Finding: Not Applicable. The subject site's frontage is adequately improved and the city has not identified a need for additional right-of-way dedication or increased street width.

C. Public Utility or Communication Facility. *Such facilities as a utility substation, water storage tank, radio or television transmitter, tower, tank, power transformer, pumping station and similar structures shall be located, designed and installed with suitable regard for aesthetic values. The base of these facilities shall not be located closer to the property line than a distance equal to the height of the structure. Hydroelectric generation facilities shall not exceed ninety megawatts of generation capacity.*

Finding: Not Applicable. The proposed development does not include a public utility or communication facility.

D. Schools. *The site shall be located to best serve the intended area, shall be in conformance with the city plan, shall have adequate access, and shall be in accordance with appropriate State standards.*

Finding: Not Applicable. The proposed development does not include a school.

E. Helipad Landing Facility.

Finding: Not Applicable. The proposed development does not include a helipad landing facility.

F. Residential Care Facilities.

Finding: Not Applicable. The proposed development does not include a residential care facility.

G. Bed and Breakfast Inns.

Finding: Not Applicable. The proposed development does not include a bed and breakfast.

H. Shelters.

Finding: Not Applicable. The proposed development does not include a shelter.

17.56.060 - Revocation of conditional use permits.

The Planning Commission or the City Commission may initiate administrative action under Chapter 17.50 to revoke any conditional use permit previously issued by the city or, with regard to lands annexed by the city, those such permits issued by the county. The Planning Commission or, on review, the City Commission, may revoke such permit upon determining:

A. One or more conditions attached to the grant of the conditional use permit have not been fulfilled; and

B. The unfulfilled condition is substantially related to the issuance of the conditional use permit.

Finding: Not Applicable. The previous conditional use permit is not being revoked with this application.

17.56.070 - Periodic review of conditional use permits.

A. The City Commission may provide for the periodic review of some or all of the conditional use permits previously issued by the city, or, with regard to lands annexed by the city, those such permits issued by the county. In providing for such review, the City Commission may designate classes of such previously issued permits for which periodic review shall be undertaken.

B. Such review shall be accomplished as an administrative action under Chapter 17.50 and shall be limited to the question of whether additional conditions should be imposed on a conditional use in the light of changing circumstances and more efficient implementation of the city's comprehensive plan.

C. Notwithstanding the provisions of Chapter 17.58, any additional conditions shall be met as a requirement for continued operation of the conditional use.

Finding: Not Applicable. Staff has not identified a need for period review of this conditional use permit.

CHAPTER 17.62 SITE PLAN AND DESIGN REVIEW.

17.62.015 - Modifications that will better meet design review requirements.

The review body shall consider modification of certain site related development standards of this Chapter specified below. These modifications may be approved as part of a Type II design review process.

A. Applicability.

1. This process shall apply to modifications to:

a. Landscaping in OCMC 17.62.050.A;

b. Vehicular Connections to Adjoining Properties in OCMC 17.62.050.B.2;

c. On-site pedestrian circulation in OCMC 17.62.050.C;

d. Utility Undergrounding Requirements in OCMC 16.12.095.G;

e. Building location in OCMC 17.62.055.D;

f. Building Details in OCMC 17.62.055.I;

g. Windows in OCMC 17.62. 055.J

h. Parking Lot Landscaping in OCMC 17.52.060.

Finding: Complies with Condition. The applicant has requested the modifications identified below, however, the modification review fees have not been paid.

1. Building location in OCMC 17.62.055.D

2. Windows in OCMC 17.62.055.J

Prior to issuance of a building permit associated with the proposed development, the applicant shall pay the review fees for the modifications requested. **Staff has determined that it is possible, likely, and reasonable that the applicant can meet this standard through the Conditions of Approval.**

2. *Modifications that are denied through Type II design review may be requested as a variance through the Variance process pursuant to OCMC 17.60.020 or Master Plan Adjustment pursuant to OCMC 17.65.070 as applicable.*

3. *Rather than a modification, applicants may choose to apply for a Variance through the Variance process pursuant to OCMC 17.60.020 or Master Plan Adjustment pursuant to OCMC 17.65.070 as applicable.*

Finding: Not Applicable. The applicant has requested a modification to building location requirements and window requirements through the modification process within 17.62.015. If the Planning Commission denies the modification, the applicant may submit a Type III variance application.

B. The review body may approve requested modifications if it finds that the applicant has shown that the following approval criteria are met:

1. *The modification will result in a development that better meets the applicable design guidelines; and*
Modification for Building Location in OCMC 17.62.055.D

Finding: Complies with Condition. The applicant has requested a modification to the building location requirements in OCMC 17.62.055.D. This section requires that institutional buildings are located no further than 5 feet from the street/front property line, and that on sites with more than one hundred feet of frontage, 60% of the frontage is occupied by buildings no more than five feet from the property line. The existing church occupies approximately 15% of the property frontage (100 feet of the property's 670-foot frontage), and the church is setback more than 5 feet from the property line, though there is a pedestrian plaza between the church and the street in order to provide mitigation for the increased setback. Because the property is not in compliance with the maximum building setback and building frontage percentage requirements, new buildings should be located near the street in order to bring the property closer to compliance with these requirements. Instead the applicant has proposed to connect the proposed recreational building to the existing church via a breezeway and locate the building behind the church and away from the street. Therefore, a modification is required.

The proposed recreational building includes a gymnasium with bleacher seating and several classrooms which requires a building footprint of more than 14,500 SF. There is not adequate space to place the building near the street and to the north of the church without being reconfigured. Given that the building is a recreational building where people are expected to gather and sporting events will take place, the facility will likely exceed noise levels expected of a typical single-family residential neighborhood and may cause a disturbance to the neighbors to the north if it is located so close to those properties.

Though there is adequate space to locate the recreational building south of the existing parking lot while maintaining a sufficient buffer between the recreational building and houses to the south, this location would preclude the building from being connected to the existing church. Though the recreational building will occasionally be used by local youth sports leagues not affiliated by the church, it will primarily be used by the church youth groups who may be going back and forth between the church building and the recreational building. The breezeway allows for church visitors to easily and safely go back and forth between the church and the recreational building without having to cross the parking lot or drive aisles resulting in a more walkable development, while still providing an adequate buffer of approximately 68 feet between the recreational building and residential properties to the east. Additionally, the applicant has proposed a plaza between the two buildings north of the breezeway. In order to provide a more interactive site and pedestrian friendly environment, the applicant shall incorporate three of the following elements within the plaza:

- Pedestrian-scale lighting

- Outdoor café
- Bench seating for a minimum of 20 people assuming 2 feet of lineal seating area per person
- 200 SF of landscaping planters or planter strips (not to be double-counted as building buffer/parking area landscaping)
- Water feature
- Community bulletin/announcement board
- Art feature
- Children's interactive play area
- Cobbled, patterned or paved stone or enhanced concrete

Overall, the building location provides a development that better can meet design guidelines by creating a walkable development with easy and safe access between the church and the recreational building, as well as direct pedestrian access from the recreational building to South End Road. Additionally, the proposed building location will create an opportunity for a plaza between the two buildings providing additional site interest and a pedestrian-friendly and interactive gathering space, while maintaining an adequate buffer between residential properties to the east.

The recommendation for approval of this modification is based on the recreational building being connected to the church via the breezeway and the creation of the pedestrian plaza which contributes to a pedestrian friendly environment and interactive site. These site elements shall not be demolished to accommodate future site development, and future additions to the church or new buildings onsite shall be constructed near the street in accordance with building location and site frontage requirements within the Oregon City Municipal Code. **Staff has determined that it is possible, likely, and reasonable that the applicant can meet this standard through the Conditions of Approval.**

Modification for Windows in OCMC 17.62.055.J

Finding: Complies as Proposed. The applicant has requested a modification to the window requirement for the north façade of the building. The façade is a side façade which requires that 30% of the façade includes windows. The applicant has proposed only 19% of windows (63 feet of the 333.5-foot façade). Though the proposal is approximately 33 feet of windows short of meeting the requirement, the other side façade of the building provides 184.5 feet of windows or approximately 55% of the façade, exceeding the 30% requirement significantly. Between the two side facades, there is a total of 247.5 feet of windows on a total of 667 feet of façade length or approximately 37% of windows. The additional windows on the south side façade make up for the shortage of windows on the north side façade and result in a better development by providing an average of 37% of windows between the two side facades which exceeds the minimum 30% standard for side facades.

2. The modification meets the intent of the standard. On balance, the proposal will be consistent with the purpose of the standard for which a modification is requested.

Modification for Building Location in OCMC 17.62.055.D

Finding: Complies with Condition. The purpose of building location requirements is to create interaction between public and private space and create more walkable and pedestrian-friendly streets and developments which encourage alternative modes of transportation. Due to the location of the existing church, there is not an alternative building location onsite where the proposed recreational building could be connected to the church while maintaining an adequate buffer between the building and adjacent residential properties. This layout still provides a walkable development as the building will

have direct pedestrian access to South End Road and will allow for church visitors to easily go back and forth between the church and the recreational building without having to cross the parking lot or drive aisles, while still providing an adequate buffer of approximately 68 feet between the recreational building and residential properties to the east. Additionally, the applicant has proposed a plaza between the two buildings north of the breezeway. In order to provide a more interactive site and pedestrian friendly environment, the applicant shall incorporate three of the following elements within the plaza:

- Pedestrian-scale lighting
- Outdoor café
- Bench seating for a minimum of 20 people assuming 2 feet of lineal seating area per person
- 200 SF of landscaping planters
- Water feature
- Community bulletin/announcement board
- Art feature
- Children's interactive play area
- Cobbled, patterned or paved stone or enhanced concrete

Though the building is set further back from the street, the addition of an interactive pedestrian plaza and a connecting breezeway will result in a development that is pedestrian friendly given the constraints of the site, and meets the intent of building location standards.

The recommendation for approval of this modification is based on the recreational building being connected to the church via the breezeway and the creation of the pedestrian plaza which contributes to a pedestrian friendly environment and interactive site. These site elements shall not be demolished to accommodate future site development, and future additions to the church or new buildings onsite shall be constructed near the street in accordance with building location and site frontage requirements within the Oregon City Municipal Code. **Staff has determined that it is possible, likely, and reasonable that the applicant can meet this standard through the Conditions of Approval.**

Modification for Windows in OCMC 17.62.055.J

Finding: Complies as Proposed. The purpose of window requirements in OCMC 17.62.055.J is to provide building interest and interaction between activities within the building and pedestrians walking the site. Typically side facades would face a pedestrian walkway, however, in this case the north side façade does not include a walkway for pedestrians onsite, and the façade functions more like a rear façade since it is not readily accessible to visitors of the site. Since pedestrians would not be walking along the north façade, windows are not as essential as they are on facades adjacent to pedestrian walkways where windows are key to providing building interest and interaction between pedestrians and activities within the building. There is no requirement for windows on rear facades. Since the north façade effectively functions as a rear façade due to the lack of access to pedestrians onsite, the intent of the standard is met.

17.62.030 - When required.

Site plan and design review shall be required for all development of real property in all zones except the low and medium density residential districts, unless otherwise provided for by this title or as a condition of approval of a permit. Site plan and design review shall also apply to all conditional uses, cluster housing developments, multi-family uses, and non-residential uses in all zones. Site Plan and Design

Review does not apply to activities occurring within the right-of-way except for communication facilities pursuant to OCMC 17.80.

Site plan and design review is required for a change in use between the uses in Table 17.62.030:

Table 17.62.030

<i>Existing Use</i>	<i>Proposed Use</i>
<i>Residential</i>	<i>Nonresidential use, including but not limited to: commercial, office, industrial, retail, or institutional</i>
<i>Single-family or duplex</i>	<i>3 or more dwellings</i>

Site plan and design review shall not alter the type and category of uses permitted in the underlying zoning districts.

Finding: The applicant has proposed a new building and parking lot expansion, therefore site plan and design review is also required.

17.62.035 - Minor site plan and design review.

This section provides for a Minor Site Plan and Design Review process. Minor Site Plan review is a Type I or Type II decision, as described in OCMC 17.62.035.A., subject to administrative proceedings described in OCMC 17.50 and may be utilized as the appropriate review process only when authorized by the Community Development Director. The purpose of this type of review is to expedite design review standards for uses and activities that require only a minimal amount of review, typical of minor modifications and/or changes to existing uses or buildings.

Finding: Not Applicable. The subject development is not eligible for the Minor Site Plan and Design Review application.

17.62.050 - General Standards

All development shall comply with the following standards:

A. Landscaping.

1. Existing native vegetation is encouraged to be retained to the maximum extent practicable. All plants listed on the Oregon City Nuisance Plant List shall be removed from the site prior to issuance of a final occupancy permit for the building.

Finding: Not Applicable. The applicant's narrative identified that the site does not include any nuisance plant species.

2. Except as allowed elsewhere in Title 16 or 17 of this Code, all areas to be credited towards landscaping shall be installed with growing plant materials.

Finding: Complies as Proposed. All areas being counted towards minimum site landscaping include growing plant materials.

3. Pursuant to OCMC 17.49, landscaping requirements within the Natural Resource Overlay District, other than landscaping required for parking lots, may be met by preserving, restoring and permanently protecting native vegetation and habitat on development sites.

Finding: Not Applicable. The subject is not within the Natural Resource Overlay District.

4. A landscaping plan shall be prepared by a registered landscape architect for new or revised landscaped areas and parking lots. Landscape architect approval is not required for tree removal and/or installation if the species are chosen from an approved street tree list. A certified landscape designer, arborist, or nurseryman shall be acceptable in lieu of a landscape architect for projects with less than five hundred square feet of landscaping. All landscape plans shall include a mix of vertical (trees and shrubs) and horizontal elements (grass, groundcover, etc.) that within three years will cover one hundred percent

of the landscape area. Plant species listed on the Oregon City Nuisance Plant list are prohibited and native species are encouraged. No mulch, bark chips, or similar materials shall be allowed at the time of landscape installation except under the canopy of shrubs and within two feet of the base of trees.

Finding: Complies with Condition. The applicant submitted a landscape plan prepared by a registered landscape architect which includes vertical and horizontal elements, however, the plan does not identify that within three years the landscaping will cover one hundred percent of the landscaped area or that no mulch, bark chips, or similar materials will be allowed at the time of landscape installation except under the canopy of shrubs and within two feet of the base of trees. Prior to issuance of a building permit associated with the proposed development, the applicant shall submit a revised landscaping plan identifying that within three years the landscaping will cover one hundred percent of the landscape area, and that no mulch, bark chips or similar materials will be used except under the canopy of shrubs and within two feet of the base of trees. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

5. Landscaping shall be visible from public thoroughfares to the extent practicable.

Finding: Complies as Proposed. Proposed landscaping is visible from public thoroughfares as much as practicable.

6. The landscaping in parking areas shall not obstruct lines of sight for safe traffic operation and shall comply with all requirements of OCMC 10.32, Traffic Sight Obstructions.

Finding: Complies as Proposed. The landscaping in parking areas is located in appropriate locations and does not interfere with lines of traffic for safe traffic operations.

B. Vehicular Access and Connectivity.

1. Parking areas shall be located behind the building façade that is closest to the street, below buildings, or on one or both sides of buildings.

Complies as Proposed. The applicant has proposed a new parking area which is located to the side of and behind the existing church.

2. Existing or future connections to adjacent sites through the use of vehicular and pedestrian access easements which provide connection from the right-of-way to the adjoining property shall be provided.

3. Parcels larger than three acres shall provide streets as required in OCMC 16.12.

Finding: Not Applicable. The church property includes an existing vehicular connection to Paulsen Drive and residences in the subdivisions to the south. All of the properties in the neighborhood to the east are developed with single-family residences and there is not an opportunity for a pedestrian or vehicular connection.

4. Parking garage entries shall not be more than half of the streetscape.

Finding: Not Applicable. No parking garages are proposed as part of this development.

C. A well-marked, continuous and protected on-site pedestrian circulation system meeting the following standards shall be provided:

1. Pathways between all building entrances and the street are required. Pathways between the street and buildings fronting on the street shall be direct and not cross a drive aisle. Exceptions may be allowed by the director where steep slopes, a physically constrained site, or protected natural resources prevent a direct connection or where an indirect route would enhance the design and/or use of a common open space.

Finding: Complies as Proposed. The proposed building includes a direct connection to South End Road.

2. The pedestrian circulation system shall connect all main entrances, parking areas, bicycle parking, recreational areas, common outdoor areas, and any pedestrian amenities on the site. For buildings fronting on the street, the sidewalk may be used to meet this standard.

Finding: Complies as Proposed. The proposed pedestrian circulation system includes connections from the proposed building to the main entrance of the church, the parking area, the plaza, and the bicycle parking areas.

3. The pedestrian circulation system shall connect the principal building entrance to those of buildings on adjacent sites, except within industrial zoning designations.

Finding: Not Applicable. The property is within a residential zone and there are no commercial or institutional buildings on adjacent sites.

4. Elevated external stairways or walkways shall not extend beyond the building facade except for external stairways or walkways located in, or facing interior courtyard areas that are not visible from the street or a public access easement. This standard does not apply to sky-bridges or sky-ways.

Finding: Not Applicable. The applicant has not proposed external stairways or walkways extending beyond the building façade.

5. On-site pedestrian walkways shall be hard surfaced, well drained and at least five feet wide. Surface material shall contrast visually to adjoining surfaces. When bordering parking spaces other than spaces for parallel parking, pedestrian walkways shall be a minimum of seven feet in width unless curb stops are provided. When the pedestrian circulation system is parallel and adjacent to an auto travel lane, the walkway shall be raised or separated from the auto travel lane by a raised curb, bollards, landscaping or other physical barrier. If a raised walkway is used, the ends of the raised portions shall be equipped with curb ramps for each direction of travel. Pedestrian walkways that cross drive isles or other vehicular circulation areas shall utilize a change in textual material or height to alert the driver of the pedestrian crossing area.

Finding: Complies as Proposed. All proposed on-site pedestrian walkways are hard surfaced, well drained, and at least five feet wide. Walkways adjacent to parking spaces are seven feet wide and raised to provide a contrast from the drive aisle and parking area.

D. All development shall maintain continuous compliance with applicable federal, state, and City standards .

Finding: Complies as Proposed. The applicant's narrative identified compliance with this standard.

E. Adequate public water and sanitary sewer facilities sufficient to serve the proposed or permitted level of development shall be provided pursuant to OCMC 16.12. The applicant shall demonstrate that adequate facilities and services are presently available or can be made available concurrent with development. Service providers shall be presumed correct in the evidence, which they submit. All facilities shall be designated to City standards as set out in the City's facility master plans and public works design standards. A development may be required to modify or replace existing offsite systems if necessary to provide adequate public facilities. The City may require over sizing of facilities where necessary to meet standards in the City's facility master plan or to allow for the orderly and efficient provision of public facilities and services. Where over sizing is required, the developer may request reimbursement from the City for over sizing based on the City's reimbursement policy and fund availability, or provide for recovery of costs from intervening properties as they develop.

Finding: Please refer to the findings in Chapter 16.12 of this report.

F. If a transit agency, upon review of an application for an industrial, institutional, retail or office development, recommends that a bus stop, bus turnout lane, bus shelter, accessible bus landing pad, lighting, or transit stop connection be constructed, or that an easement or dedication be provided for one of these uses, consistent with an agency adopted or approved plan at the time of development, the review authority shall require such improvement, using designs supportive of transit use. Improvements at a major transit stop may include intersection or mid-block traffic management improvements to allow for crossings at major transit stops, as identified in the City's Transportation System Plan.

Finding: Not Applicable. The application was transmitted to TriMet and no comments requesting additional transit facilities as part of the development have been received as of the writing of this staff report.

G. Screening of Mechanical Equipment:

1. Rooftop mechanical equipment, including HVAC equipment and utility equipment that serves the structure, shall be screened from view from the adjacent street. Screening shall be accomplished through the use of parapet walls or a sight-obscuring enclosure around the equipment constructed of one of the primary materials used on the primary facades of the structure, and that is an integral part of the building's architectural design. The parapet or screen shall completely surround the rooftop mechanical equipment to an elevation equal to or greater than the highest portion of the rooftop mechanical equipment being screened. In the event such parapet wall does not fully screen all rooftop equipment, then the rooftop equipment shall be enclosed by a screen constructed of one of the primary materials used on the primary facade of the building so as to achieve complete screening.

Finding: Complies as Proposed. The proposed recreational building includes a parapet and the applicant's narrative identified that all rooftop mechanical equipment will be fully screened by the parapet.

2. Wall-mounted mechanical equipment shall not be placed on the front facade of a building or on a facade that faces a right-of-way. Wall-mounted mechanical equipment, including air conditioning or HVAC equipment and groups of multiple utility meters, that extends six inches or more from the outer building wall shall be screened from view from streets; from residential, public, and institutional properties; and from public areas of the site or adjacent sites through the use of (a) sight-obscuring enclosures constructed of one of the primary materials used on the primary facade of the structure, (b) sight-obscuring fences, or (c) trees or shrubs that block at least eighty percent of the equipment from view or (d) painting the units to match the building. Wall-mounted mechanical equipment that extends six inches or less from the outer building wall shall be designed to blend in with the color and architectural design of the subject building. Vents which extend six inches or less from the outer building wall shall exempt from this standard if painted.

Finding: Not Applicable. The applicant's narrative identified that no wall-mounted mechanical equipment is proposed, therefore, this section is not applicable.

3. Ground-mounted above-grade mechanical equipment shall be screened by ornamental fences, screening enclosures, trees, or shrubs that block at least eighty percent of the view.

Finding: Not Applicable. The applicant's narrative identified that no ground-mounted mechanical equipment is proposed, therefore, this section is not applicable.

4. This section shall not apply to the installation of solar energy panels, photovoltaic equipment or wind power generating equipment.

Finding: Not Applicable. The development does not include installation of solar energy panels, photovoltaic equipment or wind power generating equipment.

H. Building Materials.

1. *Prohibited Materials.* The following materials shall be prohibited in visible locations from the right-of-way or a public access easement unless an exception is granted by the Community Development Director based on the integration of the material into the overall design of the structure.

- i. *Vinyl or plywood siding (including T-111 or similar plywood).*
- ii. *Glass block or highly tinted, reflected, translucent or mirrored glass (except stained glass) as more than ten percent of the building facade.*
- iii. *Corrugated fiberglass.*
- iv. *Chain link fencing (except for temporary purposes such as a construction site, gates for a refuse enclosure, stormwater facilities, or when located on properties within the General Industrial District).*
- v. *Crushed colored rock/crushed tumbled glass.*
- vi. *Non-corrugated and highly reflective sheet metal.*
- vii. *Tarps, except for the protection of outside storage.*

Finding: Complies as Proposed. No prohibited building materials were identified within the applicant's submittal.

2. *Special Material Standards.* The following materials are allowed if they comply with the requirements found below:

- i. *Concrete Block.* When used for the front façade of any building, concrete blocks shall be split, rock- or ground-faced and shall not be the prominent material of the elevation. Plain concrete block or plain concrete may be used as foundation material if the foundation material is not revealed more than three feet above the finished grade level adjacent to the foundation wall.
- ii. *Metal Siding.* Metal siding shall have visible corner moldings and trim and incorporate masonry or other similar durable/permanent material near the ground level (first two feet above ground level) except when used for a temporary structure.
- iii. *Exterior insulation and finish system (EIFS) and similar troweled finishes* shall be trimmed in wood, masonry, or other approved materials and shall be sheltered from extreme weather by roof overhangs or other methods.
- iv. *Building surfaces shall be maintained in a clean condition and painted surfaces shall be maintained to prevent or repair peeling, blistered or cracking paint.*
- v. *Membrane or fabric covered storage areas are permitted as temporary structures, excluding the use of tarps.*
- vi. *Vinyl or powder coated chain link fencing is permitted for City-owned stormwater management facilities, reservoirs, and other public works facilities such as pump stations, maintenance yards, and storage yards not located within the General Industrial District.*

Finding: Not Applicable. The primary building materials are cement fiber lap siding, and stone veneer. No special materials were identified within the applicant's submittal.

17.62.055 –Institutional, office, multi-family, retail, and commercial building standards.

A. *Purpose.* The primary objective of the regulations contained in this section is to provide a range of design choices that promote creative, functional, and cohesive development that is compatible with surrounding areas. Buildings approved in compliance with these standards are intended to serve multiple tenants over the life of the building, and are not intended for a one-time occupant. The standards encourage people to spend time in the area, which also provides safety through informal surveillance. Finally, this section is intended to promote the design of an urban environment that is built to human

scale by creating buildings and streets that are attractive to pedestrians, create a sense of enclosure, provide activity and interest at the intersection of the public and private spaces, while also accommodating vehicular movement.

B. Applicability. This section applies to institutional, office, multi-family, retail and commercial buildings except accessory structures less than one thousand square feet and temporary structures. .

C. Conflicts. With the exception of standards for building orientation and building front setbacks, in the event of a conflict between a design standard in this section and a standard or requirement contained in the underlying zoning district, the standard in the zoning district shall prevail.

Finding: Applicable. The applicant has proposed an institutional building, therefore, these standards apply.

D. Siting of Structures. On sites with one hundred feet or more of frontage at least sixty percent of the site frontage width shall be occupied by buildings placed within five feet of the property line. For sites with less than one hundred feet of street frontage, at least fifty percent of the site frontage width shall be occupied by buildings placed within five feet of the property. Multi-family developments shall be placed no farther than twenty feet from the front property line. This section does not apply to properties with less than forty feet of frontage.

A larger front yard setback may be approved through site plan and design review if the setback area incorporates at least one element from the following list for every five feet of increased setback requested:

- 1. Tables, benches or other approved seating area.*
- 2. Cobbled, patterned or paved stone or enhanced concrete.*
- 3. Pedestrian scale lighting.*
- 4. Sculpture/public art.*
- 5. Fountains/Water feature.*
- 6. At least twenty square feet of landscaping or planter boxes for each tenant facade fronting on the activity area.*
- 7. Outdoor café.*
- 8. Enhanced landscaping or additional landscaping.*
- 9. Other elements, as approved by the Community Development Director, that can meet the intent of this section.*

Finding: The applicant has requested a modification to this standard. Please refer to the findings in OCMC 17.62.015.

E. Building Orientation. All buildings along the street frontage shall face the front most architecturally significant facade toward the street and have a functional primary entrance facing the street. Primary building entrances shall be clearly defined and recessed or framed by a sheltering element such as an awning, arcade or portico in order to provide shelter from the summer sun and winter weather.

Finding: Complies as Proposed. The existing church is oriented towards South End Road. The applicant has proposed a recreational building which is connected to the existing church via a breezeway. The development will not result in a non-street facing façade being more significant than the church's existing South End street-facing façade.

F. Entryways. Entrances shall include a doorway and a minimum of four of the following elements:

- 1. Display windows;*
- Recesses or projections; Peaked roof or raised parapet over the door; Canopy of at least five feet in depth; Porch; Distinct materials; Architectural details such as tile work and moldings; Pedestrian amenities such as benches, planters or planter boxes; Landscape treatments integrating arbors, low*

walls, trellis work; or Similar elements. . Trellises, canopies and fabric awnings may project up to five feet into front setbacks and public rights-of-way, provided that the base is not less than eight feet at the lowest point and no higher than ten feet above the sidewalk.

Finding: Complies as Proposed. No changes to the church's existing entryway are proposed. The recreational building is connected to the church via breezeway, however, it will also have a separate entranceway. The entranceway includes:

1. Display windows
2. Canopy of at least five feet in depth
3. Distinct materials (stone veneer)
4. Recessed entryway

The entranceway provides four elements on the list, therefore, the standard is met.

G. Corner Lots.

For buildings located at the corner of intersections, the primary entrance of the building shall be located at the corner of the building or within twenty-five feet of the corner of the building. Additionally, one of the following treatments shall be required:

1. *Incorporate prominent architectural elements, such as increased building height or massing, cupola, turrets, or pitched roof, at the corner of the building or within twenty-five feet of the corner of the building.*
2. *Chamfer the corner of the building (i.e. cut the corner at a forty-five degree angle and a minimum of ten feet from the corner) and incorporate extended weather protection (arcade or awning), special paving materials, street furnishings, or plantings in the chamfered area.*
3. *Standards 1 and 2 above do not apply to multi-family buildings or multi-family portions of residential mixed-use buildings.*

Finding: Not Applicable. The subject site is not a corner lot. These standards are not applicable.

H. Variation in Massing. For street facing facades greater than 120 feet in length a modulation is required which extends through all floors. Decks and roof overhangs may encroach up to three feet per side into the modulation. The modulation shall meet one of the following dimensional requirements:

1. *A minimum depth of two percent of the length of the façade and a minimum width of thirty percent of the length of the façade; or*
2. *A minimum depth of four percent of the length of the façade and a minimum width of twenty percent of the length of the façade.*

Finding: Not Applicable. No changes to the existing church's street-facing façade are proposed. The proposed recreational building will be connected to the existing church via a breezeway.

I. Building Design Elements.

1. *All front and side facades shall provide a design element or architectural feature that add interest and detail such that there are no blank walls of thirty feet in length or more, measured horizontally. Features that can meet this requirement include:*

- a. *Change in building material or texture;*
- b. *Window or door;*
- c. *Balcony; or*
- d. *Pillar or post*

Finding: Complies with Condition. No changes are being proposed to the existing church building. The southern and western façade of the recreational building include a change in building material and texture, as well as windows to break up the facades. The façades do not include a blank wall of 30 feet or more in length. The northern façade includes blank walls which exceed 30 feet in length without

incorporating a design element. Prior to issuance of a building permit associated with the proposed development, the applicant shall provide a revised building design which includes additional design elements or architectural features on the northern façade, such that the façade does not include a blank uninterrupted wall exceeding 30 feet in length. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

2. *Street facing facades shall include additional design features. For every thirty feet of façade length, three of the following elements are required:*

- a. *Decorative materials on more than ten percent of the total wall area (e.g., brick or stonework, shingles, wainscoting, ornamentation, and similar features);*
- b. *Decorative cornice and/or roof line (e.g., for flat roofs);*
- c. *Roof gable;*
- d. *Recessed entry;*
- e. *Covered canopy entry;*
- f. *Cupola or tower;*
- g. *Dormer;*
- h. *Balcony;*
- i. *Pillars or posts;*
- j. *Repeating pattern of building materials;*
- k. *A change in plane of at least two feet in width and six inches in depth;*
- l. *Bay or oriel window; or*
- m. *An alternative feature providing visual relief and detail as approved by the Community Development Director*

Finding: Not Applicable. No changes to the existing church's street-facing façade are proposed. The proposed recreational building will be connected to the existing church via a breezeway.

3. *Building Detail Variation. Architectural features shall be varied on different buildings within the same development. At least two of the required features on each street-facing elevation shall be distinct from the street-facing elevations of other buildings within the same development.*

Finding: Not Applicable. The proposed recreational building will be connected to the existing church via a breezeway and outdoor plaza/courtyard, therefore the recreational building will be an extension of the existing church rather than a separate building within the same development.

J. *Windows.*

1. *The minimum windows requirements are set forth in Table 17.62.055.J. Windows are measured in lineal fashion between 3.5 feet and six feet from the ground. For example, a one hundred foot long building elevation would be required to have at least sixty feet (sixty percent of one hundred feet) of windows in length between the height of 3.5 feet and six feet from the ground.*

Table 17.62.055.J Minimum Windows

<i>Use</i>	<i>Ground Floor: Front and Street Facing Facades</i>	<i>Upper floor(s): Front and Street Facing Facades</i>	<i>Ground Floor: Side(s) Facades</i>	<i>Upper Floor(s): Side(s) Facades</i>
<i>Non-Multi-Family (or Portions of Buildings Thereof)</i>	60%	10%	30%	10%

Finding: Complies as Proposed. No changes to windows on the existing church are being proposed. The proposed recreation building is a one-story building, therefore window requirements for the upper

floors are not applicable. The recreational building is connected to the church via a breezeway, however, because the breezeway has no exterior walls or windows, it counts neither towards the façade length nor the window length.

Facade	Façade Length	Window Length	Window Percentage
Front (West)	No changes proposed	No changes proposed	No changes proposed
Side (South) Ground Floor	333.5 feet	184.5 feet	55%
Side (North) Ground Floor	333.5 feet	63 feet	19%

Because the north façade does not meet the 30% window requirement, a modification is required. Please refer to the modification findings in OCMC 17.62.015.

2. Reflective, glazed, mirrored or tinted glass is limited to ten percent of the lineal footage of windows on the street facing facade. Highly reflective or glare-producing glass with a reflective factor of one-quarter or greater is prohibited on all building facades. Any glazing materials shall have a maximum fifteen percent outside visual light reflectivity value. No exception shall be made for reflective glass styles that appear transparent when internally illuminated.

Finding: Not Applicable. The applicant has not proposed reflective, mirrored or tinted glass on a street facing façade.

3. Side walls that face walkways may include false windows and door openings only when actual doors and windows are not feasible because of the nature of the use of the interior use of the building. False windows located within twenty feet of a right-of-way shall be utilized as display windows with a minimum display depth of thirty-six inches.

Finding: Not Applicable. The applicant has not proposed any false windows.

4. Multi-family windows shall incorporate window trim at least four inches in width when surrounded by horizontal or vertical lap siding.

Finding: Not Applicable. The proposal does not include a multi-family development. These standards are not applicable.

K. Roof Treatments. The maximum length of any continuous roofline on a street-facing façade shall be seventy-five feet without a cross gable or change in height of at least two feet.

Finding: Not Applicable. No changes are proposed to the church's street-facing façade. The new recreational building will be located behind the church and connected to the existing church via a breezeway and outdoor plaza/courtyard.

L. Drive-through facilities shall:

- 1. Be located at the side or rear of the building.*
- 2. Be designed to maximize queue storage on site.*

Finding: Not Applicable. The proposal does not include a drive-through facility. These standards are not applicable.

M. Special development standards along transit streets.

- 1. Purpose. This section is intended to provide direct and convenient pedestrian access to retail, office and institutional buildings from public sidewalks and transit facilities and to promote pedestrian and transit travel to commercial and institutional facilities.*

- 2. Applicability. Except as otherwise provide in this section, the requirements of this section shall apply to the construction of new retail, office and institutional buildings which front on a transit street.*

Finding: Not Applicable. The subject site does not have frontage on a transit street, therefore, these standards are not applicable.

17.62.056 - Additional standards for large retail establishments.

Retail building(s) occupying more than ten thousand gross square feet of floor area shall contribute to the establishment or enhancement of community and public spaces by providing at least two of the following:

- A. *Patio/seating area;*
- B. *Pedestrian plaza with benches;*
- C. *Transportation center;*
- D. *Window shopping walkway;*
- E. *Outdoor playground area;*
- F. *Kiosk area, water feature;*
- G. *Clock tower; or*
- H. *Other such deliberately shaped area and/or a focal feature or amenity that, in the judgment of the appropriate decision maker, adequately enhances such community and public spaces. Any such areas shall have direct access to the public sidewalk network and such features shall not be constructed of materials that are inferior to the principle materials of the building and landscape.*

Finding: Not Applicable. The development does not include a large retail establishment, therefore, these standards are not applicable.

17.62.057 - Multifamily Usable Open Space Requirements

A. *Intent. Creating areas of usable open space that are easily accessed by residents provides focal points for community recreation and interaction and adds to the overall quality of life for residents. Given the environmental and recreational benefits of common open space, it should be integrated purposefully into the overall design of a development and not merely be residual areas left over after buildings and parking lots are sited.*

Finding: Not Applicable. The development does not include a multi-family development, therefore, these standards are not applicable.

17.62.059 - Cluster housing.

All cluster housing shall comply with the standards in Chapter 17.20.020 in addition to the standards in this chapter.

Finding: Not Applicable. The development does not include a cluster housing development, therefore, these standards are not applicable.

17.62.065 - Outdoor lighting.

B. *Applicability.*

1. *General.*

a. *All exterior lighting for any type of commercial, mixed-use, industrial, or multi-family development shall comply with the standards of this section, unless excepted in subsection B.3.*

Finding: Complies as Proposed. The applicant has proposed a new building therefore, compliance with outdoor lighting standards is required.

b. *The City Engineer or Public Works Director shall have the authority to enforce these regulations on private property if any outdoor illumination is determined to present an immediate threat to the public health, safety and welfare.*

2. *Lighting Plan Requirement. All commercial, industrial, mixed-use, cottage housing and multi-family developments shall submit a proposed exterior lighting plan. The plan shall be submitted concurrently with the site plan. The exterior lighting plan shall include plans and specifications for streetlights, parking lot lights, and exterior building lights. The specifications shall include details of the pole, fixture height and design, lamp type, wattage, and spacing of lights.*

Finding: Complies as Proposed. The applicant provided a photometric plan and light fixture details in accordance with these standards.

3. *Excepted Lighting. The following types of lighting are excepted from the requirements of this section.*

- a. *Residential lighting for single-family attached and detached homes, and duplexes*
- b. *Public street and right-of-way lighting.*
- c. *Temporary decorative seasonal lighting provided that individual lamps have a light output of sixty watts or less.*
- d. *Temporary lighting for emergency or nighttime work and construction.*
- e. *Temporary lighting for theatrical, television, and performance areas, or for special public events.*
- f. *Lighting for a special district, street, or building that, according to an adopted municipal plan or ordinance, is determined to require special lighting aesthetics as part of its physical character.*
- g. *Lighting required and regulated by the Federal Aviation Administration.*

Finding: Not Applicable. The applicant has not proposed any of the excepted lighting types within this section.

C. *Design and Illumination Standards.*

1. *Outdoor lighting, if provided, shall be provided in a manner that enhances security, is appropriate for the use, avoids adverse impacts on surrounding properties, and the night sky through appropriate shielding as defined in this section. Glare shall not cause illumination on other properties in excess of a measurement of 0.5 footcandles of light as measured at the property line.*

Finding: Complies with Condition. The applicant provided a photometric plan, however, the plan submitted does not identify that the lighting levels at the southern property line. Prior to issuance of a building permit, the applicant shall submit a revised photometric plan demonstrating that the lighting levels at the southern property line do not exceed 0.5 footcandles. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

2. *Lighting shall be provided in parking lots and vehicular circulation areas.*

Finding: Complies as Proposed. The applicant provided a photometric plan which includes lighting in parking lot and vehicular circulation areas.

3. *Lighting shall be provided in pedestrian walkways, pedestrian plazas, and pedestrian circulation areas.*

Finding: Complies with Condition. The applicant provided a photometric plan, however, the plan did not identify lighting in the plaza or new pedestrian walkways. Prior to issuance of a building permit, the applicant shall submit a revised photometric plan which includes lighting in the pedestrian plaza and new pedestrian walkways and circulation areas. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

4. *Lighting shall be provided at all building entrances.*

Finding: Complies with Condition. The applicant provided a photometric plan, however, the plan did not identify lighting at the entranceway of the proposed recreational building. Prior to issuance of a building

permit, the applicant shall submit a revised photometric plan which includes lighting at the entrance of the proposed recreational building. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

5. With the exception of pedestrian scale lighting, all light sources shall be concealed or shielded with a full cut-off style fixture in order to minimize the potential for glare and unnecessary diffusion on adjacent property.

Finding: Complies as Proposed. The applicant provided details of the proposed lighting fixtures, which are cut-off style fixtures in compliance with these standards.

6. The maximum height of any lighting pole serving a multi-family residential use shall be twenty feet. The maximum height serving any other type of use shall be twenty-five feet, except in parking lots larger than five acres, the maximum height shall be thirty-five feet if the pole is located at least one hundred feet from any residential use.

Finding: Complies as Proposed. The applicant has proposed 15-foot tall lighting poles.

7. Floodlights shall not be utilized to light all or any portion of a building facade between 10 p.m. and 6 a.m.

Finding: Complies as Proposed. The applicant has not proposed any floodlights to serve the development.

8. Lighting on outdoor canopies shall be fully recessed into the canopy and shall not protrude downward beyond the ceiling of the canopy.

Finding: Complies as Proposed. The applicant's narrative identified compliance with this standard.

9. All outdoor light not necessary for security purposes shall be reduced, activated by motion sensor detectors, or turned off during non-operating hours.

Finding: Complies as Proposed. The applicant's narrative identified that all site lighting will be controlled by timer or motion sensor in accordance with this standard.

10. Light fixtures used to illuminate flags, statues, or any other objects mounted on a pole, pedestal, or platform shall use a narrow cone beam of light that will not extend beyond the illuminated object.

Finding: Not Applicable. The applicant identified that no light fixtures to illuminate flags or statues are proposed as part of this development.

11. For upward-directed architectural, landscape, and decorative lighting, direct light emissions shall not be visible above the building roofline.

Finding: Not Applicable. The applicant's narrative identified that no upward-directed lighting is proposed as part of this development.

12. No flickering or flashing lights shall be permitted, except for temporary decorative seasonal lighting.

Finding: Not Applicable. The applicant's narrative identified that no flickering or flashing lights are proposed as part of this development.

13. Lighting for outdoor recreational uses such as ball fields, playing fields, tennis courts, and similar uses, are allowed a light post height up to eighty feet in height.

Finding: Not Applicable. The development does not include outdoor recreational uses.

14. Main building entrances shall be well lighted and visible from any transit street. The minimum lighting level for building entries fronting on a transit street shall be three foot-candles.

Finding: Not Applicable. The subject site is not on a transit street.

17.62.085 - Refuse and recycling standards for commercial, industrial, office, institutional, and multi-family developments.

The purpose and intent of these provisions is to provide an efficient, safe and convenient refuse and recycling enclosure for the public as well as the local collection firm. All new development, change in property use, expansions or exterior alterations to uses, other than single-family or duplex residences, single-family attached dwellings, 3-4 plexes, internal conversions, or accessory dwelling units (ADUs), shall include a refuse and recycling enclosure. The area(s) shall be:

- A. Fully enclosed and visually screened;
- B. Located in a manner easily and safely accessible by collection vehicles;
- C. Located in a manner so as not to hinder travel lanes, walkways, streets or adjacent properties;
- D. On a level, hard surface designed to discharge surface water runoff and avoid ponding;
- E. Maintained by the property owner;
- F. Used only for purposes of storing solid waste and recyclable materials;
- G. Designed in accordance with applicable sections of the Oregon City Municipal Code (including OCMC 8.20—Solid Waste Collection and Disposal) and city adopted policies.
- H. Enclosures are encouraged to be sized appropriately to meet the needs of current and future tenants and designed with sturdy materials which are compatible to the primary structure(s).

Finding: Not Applicable. The church already has an existing garbage enclosure. No additional refuse and recycling enclosures or changes to the existing enclosure are being proposed under this application. The applicant's narrative identified that the existing enclosure is large enough to serve the church and the proposed recreational building.

CONCLUSION AND DECISION:

Based on the analysis and findings as described above, Staff concludes that the proposed Conditional Use and Site Plan and Design Review for a site located at 1179 South End Road, Oregon City, identified as Clackamas County Map 3-1E-01DD, Tax Lot 100, can meet the requirements as described in the Oregon City Municipal Code by complying with the Conditions of Approval provided in this report. Therefore, the Community Development Director recommends approval of Planning File GLUA-20-00012/CU-20-00001/SP-20-00022 with conditions, based upon the findings and exhibits contained in this staff report.

EXHIBITS:

- 1. Vicinity Map
- 2. Applicant's Narrative and Plans (On File)
- 3. Public Comments
- 4. Transportation Impact Analysis
- 5. Letter from John Replinger

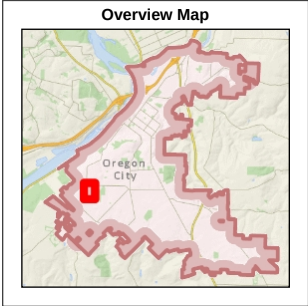
GLUA-20-00012



Legend

- Street Names
- Taxlots
- Taxlots Outside UGB
- Unimproved ROW
- City Limits
- UGB
- Basemap

Notes



The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, surveying or navigation purposes. Notification of any errors is appreciated.



0 200 Feet
1: 2,400

Oregon City Christian Church

City of Oregon City
PO Box 3040
625 Center St
Oregon City
OR 97045
(503) 657-0891
www.oregocity.org



**Application for
Conditional Use and
Site Plan Design Review**

**Oregon City Christian Church
Recreation Building
1179 South End Road
Oregon City, OR 97045**

January 3, 2020

City of Oregon City
698 Warner Parrott Rd
Oregon City, OR 97045

TABLE OF CONTENTS

A. Site Plan and Design Review Narrative	Pages
1. Project Information and Summary	3-4
2. Code Section Criteria	
• 1204 Streets, Sidewalks and Public Places	5-8
• 1208 Public and Street Trees	9
• 1312 Stormwater Management	10-19
• 1548 Grading, Fill and Excavation	20-27
• 1708 Low Density Residential Districts	28-32
• 1752 Off Street Parking	33-52
• 1756 Conditional Use	53-60
• 1762 Site Plan and Design Review	61-95
B. Drawings	
A1.0 Cover sheet/ Rendering	
A1.1 Site Plan	
A1.3 Floor Plan	
A1.5 Roof Plan	
A2.1 Elevations	
A2.2 Elevations	
A3.1 Building Sections	
A3.2 Building Sections	
ESC1.0 Erosion and Sediment Control Cover Sheet	
ESC2.0 Clearing, Erosion and Sediment Control Plan	
ESC2.1 Utility, Paving and Final Stabilization Plan	
ESC3.0 Erosion and Sediment Control Details	
C0.1 Civil Notes	
C0.2 Existing Conditions and Demolition Plan	
C1.0 Hardscape Plan	
C2.0 Grading Plan	
C3.0 Utility Plan	
C4.0 Civil Details	
C4.1 Civil Details	
L1 Planting Plan	
L2 Planting Plan	
L3 Irrigation Plan	
L4 Irrigation Plan	
V1 Site Lighting Plan	
C. Supplemental Information	
Material and Color Board	
Traffic Analysis	
Storm Drainage and Detention Calculations	
Exterior lighting Fixtures	
Community Support Letters	

Project Information:

Property Owner: Oregon City Christian Church
1179 South End Rd
Oregon City, OR 97045
Brent Brelje, Project Manager
503-863-9973
kbrelje@yahoo.com

Architect: Iselin Architects, P.C.
1307 Seventh Street
Oregon City, OR 97045
Todd Iselin, Project Architect
503-656-1942
todd@iselinarch.com

Civil Engineer: AAI Engineering
4875 SW Griffith Dr, Suite 300
Beaverton, OR 97005
Craig Harris, Engineer
503-629-5539
craigh@aaieng.com

Landscape Architect: Darrell Mulch, Landscape Architect
1907 NE 66th Ave
Portland, OR 97213
503-222-7416
Mulch.darrell@gmail.com

Site Address: 1179 South End Rd
Oregon City, OR 97045
Tax Lot 00100, Clackamas County Tax Map 3S, R1E, Section 01DD.

Site Area: 8.55 acres (372,610 s.f.)

Zone: R-10 Single Family Dwelling District

Project Summary:

This Conditional Use Application seeks approval to construct a 14,800 sq. ft. recreation building for church and community use. The recreation building will consist of a gymnasium, community meeting rooms and church youth group spaces.

Community and neighborhood centers are an allowed use within the R-10 zone, but since the proposed use will be owned and operated by the Oregon City Christian Church located on the site a conditional use is being sought for this application per OCMC 17.08.030.I which allows for a Conditional Use for Religious Institutions within the R-10 zone.

The building will be used by Church youth groups and the gymnasium will be available to local youth basketball, volleyball and other organizations. The building has been designed to allow for simultaneous multiple uses by various user groups with adequate facilities, environmental controls and exiting to accommodate the various anticipated occupants.

The proposed location of the building is approximately 90' behind the existing Church building to allow for future expansion of the existing church building to accommodate a larger sanctuary and additional office space, which will eventually be constructed connecting this structure with the existing Church.

Planned hours of operation will be Monday thru Saturday from 8 am-10 pm and Sunday from 8 am-8 pm. Use during the weekdays will likely be limited to summer months and school vacations since users are anticipated to be youth groups. It is not anticipated that the gym space will be used during normal Sunday Church services, but the actual demand for youth sports leagues may dictate concurrent use.

This proposed building combines the previously planned Phases 1 and 2 of a previously prepared master plan for the Site that was prepared, but never submitted to the City for approval. It is estimated that this proposed building will generate 92 peak hour trips based on the combined Phases 1 and 2 of the traffic study prepared by Kittelson and Associates on September 20, 2018.

The site is adequately served by existing public water, sewer and other utilities. Storm drainage is proposed to be per the current provisions of Chapter 13 of the Oregon City Municipal Code.

Conditional Use Criteria Responses:

Chapter 12.04 - STREETS, SIDEWALKS AND PUBLIC PLACES

12.04.003 - Definitions.

Whenever the words or terms and their derivatives are used in this chapter, they shall be given the meaning set forth in OCMC 17.04, unless the context dictates applying a different meaning.

12.04.005 - Jurisdiction and management of the public rights-of-way.

A. The city has jurisdiction and exercises regulatory management over all public rights-of-way within the city under authority of the city Charter and state law by issuing separate public works right-of-way permits or permits as part of issued public infrastructure construction plans. No work in the public right-of-way shall be done without the proper permit. Some public rights-of-way within the city are regulated by the state of Oregon Department of Transportation (ODOT) or Clackamas County and as such, any work in these streets shall conform to their respective permitting requirements.

B. Public rights-of-way include, but are not limited to, streets, roads, highways, bridges, alleys, sidewalks, trails, paths, public easements and all other public ways or areas, including the subsurface under and air space over these areas.

C. The city has jurisdiction and exercises regulatory management over each public right-of-way whether the city has a fee, easement, or other legal interest in the right-of-way. The city has jurisdiction and regulatory management of each right-of-way whether the legal interest in the right-of-way was obtained by grant, dedication, prescription, reservation, condemnation, annexation, foreclosure or other means.

D. No person may occupy or encroach on a public right-of-way without the permission of the city. The city grants permission to use rights-of-way by franchises, licenses and permits.

E. The exercise of jurisdiction and regulatory management of a public right-of-way by the city is not official acceptance of the right-of-way, and does not obligate the city to maintain or repair any part of the right-of-way.

Modifications to existing streets, sidewalks and public places done in conjunction with this project will be limited to restoration work required for new utility extensions to new building. Dedication, frontage improvements, driveway and utility upgrades were previously done with construction of original Church building. Only applicable sections of this Chapter are addressed for brevity.

12.04.025 - Driveways.

Driveways shall be reviewed in accordance with OCMC 16.12.035. Driveway requirements may be modified through the procedures in OCMC 16.12.013.

No driveway modifications are proposed or warranted based on the attached Traffic Analysis.

12.04.030 - Maintenance and repair.

The owner of land abutting the street where a sidewalk has been constructed shall be responsible for maintaining said sidewalk and abutting curb, if any, in good repair.

All sidewalks abutting this property are currently in good repair. If damaged during or after construction the Owner will be responsible for making repairs.

12.04.050 - Retaining walls—Required.

Every owner of a lot within the city, abutting upon an improved street, where the surface of the lot or tract of land is above the surface of the improved street and where the soil or earth from the lot, or tract of land is liable to, or does slide or fall into the street or upon the sidewalk, or both, shall build a retaining wall, the outer side of which shall be on the line separating the lot, or tract of land from the improved street, and the wall shall be so constructed as to prevent the soil or earth from the lot or tract of land from falling or sliding into the street or upon the sidewalk, or both, and the owner of any such property shall keep the wall in good repair.

No retaining walls exist or are proposed at the street. Subsection is not applicable.

12.04.080 - Excavations—Permit required.

It shall be unlawful for any person to dig up, break, excavate, disturb, dig under or undermine any public street or alley, or any part thereof or any macadam, gravel, or other street pavement or improvement without first applying for and obtaining from the engineer a written permit so to do.

Right of way permits will be obtained from the City prior to any work within the street or public right of way associated with this project.

12.04.100 - Same—Restoration of pavement.

Whenever any excavation shall have been made in any pavement or other street improvement on any street or alley in the city for any purpose whatsoever under the permit granted by the engineer, it shall be the duty of the person making the excavation to restore the pavement in

accordance with the city of Oregon City Public Works Pavement Cut Standard in effect at the time a right-of-way permit is granted. The city commission may adopt and modify the city of Oregon City Public Works Pavement Cut Standards by resolution as necessary to implement the requirements of this chapter.

All excavations at pavement or sidewalk areas will be restored in accordance with City requirements for work associated with the proposed project.

12.04.120 - Obstructions—Permit required.

A. Permanent Obstructions. It is unlawful for any person to place, put or maintain any obstruction, other than a temporary obstruction, as defined in subsection B of this section, in any public street or alley in the city, without obtaining approval for a right-of-way permit from the city commission by passage of a resolution.

No permanent obstruction of the right of way are proposed as part of this project. Subsection is not applicable.

B. Temporary Obstructions.

1. A "temporary obstruction" is defined as an object placed in a public street, road or alley for a period of not more than sixty consecutive days. A "temporary obstruction" includes, but is not limited to, moving containers and debris dumpsters.

2. The city engineer, or designee, is authorized to grant a permit for a temporary obstruction.

3. The city engineer shall provide applicants with an application form outlining the minimum submittal requirements.

4. The applicant shall submit, and the city engineer, or designee, shall consider, at least the following items in the permitting process. Additional information may be required in the discretion of the city engineer:

- a. Site plan showing right-of-way, utilities, driveways as directed by staff;
- b. Sight distance per OCMC 10.32, Traffic Sight Obstructions;
- c. Traffic control plan including parking per Manual on Uniform Traffic Control Devices (MUTCD);
- d. Alternative routes if necessary;
- e. Minimizing obstruction area; and
- f. Hold harmless/maintenance agreement.

5. In determining whether to issue a right-of-way permit to allow a temporary obstruction, the city engineer may issue such a permit only after finding that the following criteria have been satisfied:

- a. The obstruction will not unreasonably impair the safety of people using the right-of-way and nearby residents;
- b. The obstruction will not unreasonably hinder the efficiency of traffic affected by the obstruction;
- c. No alternative locations are available that would not require use of the public right-of-way; and
- d. Any other factor that the city engineer deems relevant.

6. The permittee shall post a weatherproof copy of the temporary obstruction permit in plain view from the right-of-way.

C. Fees. The fee for obtaining a right-of-way permit for either a permanent obstruction or a temporary obstruction shall be set by resolution of the city commission.

Temporary obstructions will be required for utility connections associated with the proposed project. The Owner's contractor will be responsible for obtaining all required permits and performing construction in accordance with the standards above.

12.04.130 - Same—Sidewalk sales.

No sidewalk sales are proposed. Section does not apply.

12.04.150 - Street and alley vacations—Cost.

No street or alley vacation is proposed. Section is not applicable.

12.04.170 - Street design—Purpose and general provisions.

No new streets are proposed. Section does not apply.

Chapter 12.08 - PUBLIC AND STREET TREES[2]

12.08.010 - Purpose.

The purpose of this chapter is to:

- A. Develop tree-lined streets to protect the living quality and beautify the city;
- B. Establish physical separation between pedestrians and vehicular traffic;
- C. Create opportunities for solar shading;
- D. Improve air and water quality; and
- E. Increase the community tree canopy and resource.

12.08.015 - Street tree selection, planting and maintenance requirements.

All development shall provide street trees adjacent to all street frontages. Species and locations of trees shall be selected based upon vision clearance requirements, but shall in all cases be selected from the Oregon City Street Tree List, an approved street tree list for a jurisdiction in the Metropolitan region, or be approved by a certified arborist unless otherwise approved pursuant to this section. If a setback sidewalk has already been constructed or the public works department determines that the forthcoming street design shall include a setback sidewalk, then all street trees shall be installed with a planting strip or within tree wells. If existing street design includes a curb-tight sidewalk, then all street trees shall be placed according to OCMC

12.08.035.C.

Existing street trees conforming to spacing standards below were planted at time of original Church construction. No new street trees are proposed. If any trees are damaged during construction they will be replaced in accordance with the requirements of this Chapter.

Chapter 13.12 - STORMWATER MANAGEMENT

13.12.010 - Purpose.

The purpose of this chapter is to define policies, minimum requirements, minimum standards and design procedures and permits for the construction and maintenance of stormwater conveyance and quantity and quality control facilities in order to:

- A. Minimize increased stormwater runoff rates from any development so as to minimize the impact upon any downstream natural channel that may exist between the subject area and the Willamette or Clackamas Rivers;
- B. Prevent water runoff generated by development from exceeding the capacity of downstream stormwater facilities;
- C. Reduce stormwater runoff rates and volumes, soil erosion and pollution, wherever possible, from developed and developing lands;
- D. Prevent the uncontrolled or irresponsible discharge of stormwater from new development onto adjoining public or private property;
- E. Maintain the integrity of stream channels for their biological functions, as well as for drainage and other purposes;
- F. Have stormwater conveyance facilities of adequate design to manage all volumes of water generated in the contributing drainage area, for both the existing condition and the anticipated future condition;
- G. Have all stormwater facilities:
 - 1. Designed to mimic natural hydrologic conditions, to the maximum extent practicable;
 - 2. Designed in a manner to allow economical future maintenance;
 - 3. If city owned or maintained, designed for maintenance with city owned equipment;
 - 4. Designed using materials that will ensure a minimum practical design life of seventy-five years; and
 - 5. Designed to have sufficient structural strength to resist erosion and all external loads (construction, traffic, seismic) which may be imposed;
- H. Establish maintenance easements with the owners of privately owned/maintained stormwater facilities to ensure an appropriate level of maintenance and to help minimize public safety hazards;

- I. Have all new stormwater facilities comply with applicable National Pollutant Discharge Elimination System (NPDES) requirements;
- J. Minimize the deterioration of existing watercourses, culverts, bridges, dams and other structures;
- K. Minimize increases in stormwater pollution;
- L. Allow for periodic inspections of both private and public stormwater quantity control and quality control facilities to verify that they are functioning in substantial conformance with the approved design intent; and
- M. Allow issuance of engineering permits for stormwater work in the right-of-way or public easements either as a separate public works permit or as part of overall issued public infrastructure construction plans. The various fees for these permits are approved and modified from time to time by the city commission. Failure to meet the conditions of the issued permit shall constitute a violation of the municipal code.

13.12.020 - Adoption of standards.

The city commission may establish and modify from time to time by resolution public works stormwater and grading design standards to implement the requirements of this chapter.

13.12.030 - Superseding Oregon City Drainage Master Plan Appendix A.

The policies and standards of this chapter are intended to be consistent with the applicable sections of the most current version of the Oregon City Drainage Master Plan, and applicable basin master plans, for land drainage and flood control within the Oregon City urban growth area, as adopted by the city. Appendix A of the most current version of the Oregon City Drainage Master Plan is superseded by the public works stormwater and grading design standards adopted by resolution and as periodically amended.

13.12.040 - Definitions.

Text of this section has been omitted from narrative for brevity.

13.12.050 - Applicability and exemptions.

This chapter establishes performance standards for stormwater conveyance, quantity and quality. Additional performance standards for erosion prevention and sediment control are established in OCMC 17.47.

- A. Stormwater Conveyance. The stormwater conveyance requirements of this chapter shall apply to all stormwater systems constructed with any development activity, except as follows:

1. The conveyance facilities are located entirely on one privately owned parcel;
2. The conveyance facilities are privately maintained; and
3. The conveyance facilities receive no stormwater runoff from outside the parcel's property limits.

Those facilities exempted from the stormwater conveyance requirements by the above subsection will remain subject to the requirements of the Oregon Uniform Plumbing Code. Those exempted facilities shall be reviewed by the building official.

Stormwater facilities proposed comply with the requirements of this Chapter and have been designed in accordance with City Standards.

B. Water Quality and Flow Control. The water quality and flow control requirements of this chapter shall apply to the following proposed uses or developments, unless exempted under subsection C:

1. Activities located wholly or partially within water quality resource areas pursuant to OCMC 17.49 that will result in the creation of more than five hundred square feet of impervious surface within the NROD or will disturb more than one thousand square feet of existing impervious surface within the NROD as part of a commercial or industrial redevelopment project. These square footage measurements will be considered cumulative for any given five-year period; or
2. Activities that create or replace more than five thousand square feet of impervious surface, cumulated over any given five-year period.

The proposed building and parking lot expansion exceed 5,000 s.f. All applicable requirements of this Section will be complied with.

C. Exemptions. The following exemptions to subsection B of this section apply:

1. An exemption to the flow control requirements of this chapter will be granted when the development site discharges to the Willamette River, Clackamas River or Abernethy Creek; and either lies within the one hundred-year floodplain or is up to ten feet above the design flood elevation as defined in OCMC 17.42, provided that the following conditions are met:
 - a. The project site is drained by a conveyance system that is comprised entirely of man-made elements (e.g. pipes, ditches, culverts outfalls, outfall protection, etc.) and extends to the ordinary high water line of the exempt receiving water; and
 - b. The conveyance system between the project site and the exempt receiving water has sufficient hydraulic capacity and erosion stabilization measures to convey discharges from the proposed conditions of the project site and the existing conditions from non-project areas from which runoff is collected.

2. Projects in the following categories are generally exempt from the water quality and flow control requirements:

- a. Stream enhancement or restoration projects approved by the city.
- b. Farming practices as defined by ORS 30.960 and farm use as defined in ORS 214.000; except that buildings associated with farm practices and farm use are subject to the requirements of this chapter.
- c. Actions by a public utility or any other governmental agency to remove or alleviate an emergency condition.
- d. Road and parking area preservation/maintenance projects such as pothole and square cut patching, surface sealing, replacing or overlaying of existing asphalt or concrete pavement, provided the preservation/maintenance activity does not expand the existing area of impervious coverage above the thresholds in subsection B of this section.
- e. Pedestrian and bicycle improvements (sidewalks, trails, pathways, and bicycle paths/lands) where no other impervious surfaces are created or replaced, built to direct stormwater runoff to adjacent vegetated areas.
- f. Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics.
- g. Maintenance or repair of existing utilities.

Only exemption that is applicable for this project is limited work that will be involved for utility extensions and pavement restoration. All other work associated with this project will comply with the requirements of this Chapter.

D. Uses Requiring Additional Management Practices. In addition to any other applicable requirements of this chapter, the following uses are subject to additional management practices, as defined in the public works stormwater and grading design standards:

1. Bulk petroleum storage facilities;
2. Above ground storage of liquid materials;
3. Solid waste storage areas, containers, and trash compactors for commercial, industrial, or multi-family uses;
4. Exterior storage of bulk construction materials;
5. Material transfer areas and loading docks;
6. Equipment and/or vehicle washing facilities;

7. Development on land with suspected or known contamination;
8. Covered vehicle parking for commercial or industrial uses;
9. Industrial or commercial uses locating in high traffic areas, defined as average daily count trip of two thousand five hundred or more trips per day; and
10. Land uses subject to DEQ 1200-Z Industrial Stormwater Permit Requirements.

No uses requiring additional management practices are proposed with this development. Section does not apply.

13.12.060 - Abrogation and greater restrictions.

Where the provisions of this chapter are less restrictive or conflict with comparable provisions of other portions of this code, regional, state or federal law, the provisions that are more restrictive shall govern. Where this chapter imposes restrictions that are more stringent than regional, state or federal law, the provisions of this chapter shall govern. However, nothing in this chapter shall relieve any party from the obligation to comply with any applicable federal, state or local regulations or permit requirements.

Compliance with this chapter and the minimum requirements, minimum standards, and design procedures as set forth in the city adopted public works stormwater and grading design standards does not relieve the designer, owner, or developer of the responsibility to apply conservative and sound professional judgment to protect the health, safety and welfare of the public. It is not the intent of this chapter to make the city a guarantor or protector of public or private property in regard to land development activity.

The applicant will comply with the provisions of this Chapter and those of other governing bodies.

13.12.080 - Submittal requirements.

A. Applications subject to stormwater conveyance, water quality, and/or flow control requirements of this chapter shall prepare engineered drainage plans, drainage reports, and design flow calculation reports in compliance with the submittal requirements of the public works stormwater and grading design standards.

This application includes engineered drainage plans, and drainage calculations in compliance with the City's accepted standards.

B. Each project site, which may be composed of one or more contiguous parcels of land, shall have a separate valid city approved plan and report before proceeding with construction.

All permits will be applied for and obtained prior to any construction activity for the proposed project.

13.12.090 - Approval criteria for engineered drainage plans and drainage report.

An engineered drainage plan and/or drainage report shall be approved only upon making the following findings:

- A. The plan and report demonstrate how the proposed development and stormwater facilities will accomplish the purpose statements of this chapter.
- B. The plan and report meet the requirements of the public works stormwater and grading design standards adopted by resolution under OCMC 13.12.020.
- C. The storm drainage design within the proposed development includes provisions to adequately control runoff from all public and private streets and roof, footing, and area drains and ensures future extension of the current drainage system.
- D. Streambank erosion protection is provided where stormwater, directly or indirectly, discharges to open channels or streams.
- E. Specific operation and maintenance measures are proposed that ensure that the proposed stormwater quantity control facilities will be properly operated and maintained.

No sidewalk sales are proposed. Section does not apply.

13.12.100 - Alternative materials, alternative design and methods of construction.

The provisions of this chapter are not intended to prevent the use of any material, alternate design or method of construction not specifically prescribed by this chapter or the public works stormwater and grading design standards, provided any alternate has been approved and its use authorized by the city engineer. The city engineer may approve any such alternate, provided that the city engineer finds that the proposed design is satisfactory and complies with the intent of this chapter and that the material, method, or work offered is, for the purpose intended, at least the equivalent of that prescribed by this chapter in effectiveness, suitability, strength, durability and safety. The city engineer shall require that sufficient evidence or proof be submitted to substantiate any claims that may be made regarding its use. The details of any action granting approval of an alternate shall be recorded and entered in the city files.

No alternative materials or design and methods of construction are proposed for this project. Criteria do not apply.

13.12.110 - Transfer of engineering responsibility.

Project drainage plans shall always have a project engineer. If the project engineer is changed during the course of the work, the city shall be notified in writing and the work shall be stopped

until the replacement engineer has agreed to accept the responsibilities of the project engineer. The new project engineer shall provide written notice of accepting project responsibility to the city within seventy-two hours of accepting the position as project engineer.

AAI is the engineer of record for all civil work associated with this project. If this changes for any reason the City will be notified in accordance with the provisions of this section.

13.12.120 - Standard construction specifications.

The workmanship and materials shall be in accordance with the current edition of the "Standard Specifications for Public Works Construction," as prepared by the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the city, in effect at the time of application. The exception to this requirement is where this chapter and the public works stormwater and grading design standards provide other design details, in which case the requirements of this chapter and the public works stormwater and grading design standards shall be complied with.

All workmanship and materials will be in accordance with APWA standard specifications and those acceptable to the City where modified.

13.12.140 - Maintenance of public stormwater facilities.

A. A stormwater facility that receives stormwater runoff from a public right-of-way shall be a public facility. Upon expiration of the warranty period and acceptance by the city as described below, the city shall be responsible for maintenance of those public stormwater facilities. Access for maintenance of the stormwater facilities shall be provided to the city through the granting of a stormwater easement or other means acceptable to the city.

B. Responsibility for maintenance of stormwater facilities including all landscaping, irrigation systems, structures and appurtenances shall remain with the property owner/developer for two years (known as the warranty period). The owner/developer shall provide the city a separate two-year landscaping maintenance surety bond for one hundred ten percent of the landscaping cost. Transfer of maintenance of stormwater conveyance systems shall occur when the city accepts the stormwater conveyance system.

C. The city will perform an inspection of the development's entire publicly maintained stormwater system approximately forty-five days before the two-year warranty period expires. The stormwater system shall be found to be in a clean, functional condition by the city engineer before acceptance of maintenance responsibility by the city.

No new public stormwater facilities are proposed as part of this project. Criteria above do not apply.

13.12.145 - Maintenance of private stormwater facilities.

A. An applicant shall submit an operation and maintenance plan for each proposed stormwater facilities, unless exempted in the public works stormwater and grading design standards. The information in the operation and maintenance plan shall satisfy the requirements of the public works stormwater and grading design standards.

An O and M plan will be submitted and approved by the City in accordance with City standards prior to construction of proposed stormwater facilities.

B. Private owners are required to inspect and maintain stormwater facilities on their property in accordance with an approved operation and maintenance plan. A maintenance log is required to document facility inspections and specific maintenance activities. The log shall be available to city inspection staff upon request.

C. Failure to operate or maintain a stormwater facility according to the operation and maintenance plan may result in an enforcement action under Section 13.12.150.

The Owner will be responsible for periodic inspection and maintenance of completed stormwater facilities in accordance with this section.

13.12.150 - Penalties and enforcement.

A. The city is authorized to make inspections and take such actions as required to enforce the provisions of this chapter. The city has the authority to enter onto land for the purpose of inspecting site development activities or resulting improvements. City staff will make an effort to contact the property owner before entering onto that property.

B. If the city engineer determines a site has any unpermitted or illegal facilities placed, constructed or installed on the site, then the city engineer shall notify the owner in writing directing the owner to submit a written plan (with construction drawings completed by a professional engineer, if otherwise required by this chapter) within ten calendar days. This plan (and drawings, if required) shall depict the restoration or stabilization of the site or correct the work that has adversely impacted adjacent or downstream property owners. The city engineer shall review the plan (and drawings, if required) for compliance with city standards and issue comments for correction, if necessary, or issue an approval to the owner. The city shall establish a fee by resolution for such review, with all costs borne by the owner. If the required corrective work constitutes a grading permit, then the city shall collect the appropriate grading permit fee.

C. Any person, firm, corporation or entity violating any of the provisions of this chapter, whether they be the property owner, the applicant, the contractor or any other person acting with or without the authorization of the property owner or applicant, shall be subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

13.12.160 - Hazardous conditions.

A. Determination and Notification. If the city engineer determines that any excavation, embankment, erosion/sedimentation control or drainage facility is a safety hazard; endangers property; or adversely affects the safety, use or stability of a public way, water quality resource areas (pursuant to OCMC 17.49) or drainage course, the owner(s) of the subject property and/or the person or agent in control of the property shall be required to repair or eliminate the hazard in conformance with the requirements of this chapter and the public works stormwater and grading design standards. At the time that the city engineer makes the determination that a hazardous condition exists, the property owner and/or person or agent in control of the property will be notified in writing that the hazard exists.

B. Order to Correct. The city engineer will order the specific work to be undertaken or will order that an engineering design be submitted for review and approval by the city engineer, and will specify the time periods within which the hazardous conditions be repaired or eliminated. In the event that the owner and/or the person or agent in control of the property fails to comply with this order, that person shall be subject to the code enforcement procedures of OCMC 1.16, 1.20, and 1.24.

If hazardous conditions are determined to exist in the future the Owner will work to correct such situation or be subject to code enforcement actions in accordance with this section.

13.12.170 - Permits from other jurisdictions.

A. The Oregon State Department of Environmental Quality (DEQ) currently issues NPDES 1200-C permits for projects that cover areas of one acre or greater. No permit shall be issued for projects of this size (or any other size as modified by DEQ) without a copy of said DEQ permit being on file with Oregon City. DEQ is responsible for policing its own permits; however, if city personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the city will bring such conditions to the attention of the appropriate DEQ representatives.

B. Projects may require Oregon State Division of State Lands (DSL) and/or United States Army Corps of Engineers (USACE) permits. If such permits are required, no permission to construct will be granted until such a time as a copy of such permit is on file with the city or notice is received from those agencies that a permit is not required. DSL/USACE is responsible for enforcing its own permits; however, if city personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the city will bring such conditions to the attention of the appropriate DSL/USACE representatives.

C. Projects may require Oregon State Department of Fish and Wildlife (ODFW) permits. When ODFW permits are required, no work will be authorized until the receipt of a copy of the ODFW permit. ODFW is responsible for policing its own permits; however, if city personnel

observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the city will bring such conditions to the attention of the appropriate ODFW representatives.

No permits from other jurisdictions should be necessary for this project.

13.12.180 - Violation—Penalty.

Any act or omission in violation of this chapter shall be deemed a nuisance. Violation of any provision of this chapter is subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

Chapter 15.48 - GRADING, FILLING AND EXCAVATING

15.48.010 - Purpose.

The purpose of this chapter is to mitigate, minimize or eliminate the adverse impacts caused by grading, fill and excavation activities on public or private property. It establishes policies, procedures and minimum requirements for grading and earthwork construction. It is intended to promote the general health, safety and welfare of the public and requires the applicant to follow sound land development practices.

15.48.020 - Definitions.

Text of this section has been omitted from narrative for brevity.

15.48.030 - Applicability—Grading permit required.

A. A city-issued grading permit shall be required before the commencement of any of the following filling or grading activities:

1. Grading activities in excess of ten cubic yards of earth;
2. Grading activities which may result in the diversion of existing drainage courses, both natural and man-made, from their natural point of entry or exit from the grading site;
3. Grading and paving activities resulting in the creation of impervious surfaces greater than two thousand square feet or more in area;
4. Any excavation beyond the limits of a basement or footing excavation, having an unsupported soil height greater than five feet after the completion of such a structure; or
5. Grading activities involving the clearing or disturbance of one-half acres (twenty-one thousand seven hundred eighty square feet) or more of land.

A grading permit is required for the proposed Work. It will be in conjunction with this land use application.

B. Those fill and grading activities proposed to be undertaken in conjunction with a land use application, including but not limited to subdivisions, planned unit developments, partitions and site plan reviews, are subject to the standards of this chapter. However, a separate grading permit is not required. Approval of the construction plans submitted through the land use application process shall constitute the grading permit required under this chapter.

Fill and grading proposed for this project is proposed to be approved with this land use application.

15.48.040 - Grading permit exemptions.

The following filling and grading activities shall not require the issuance of a grading permit:

- A. Excavation for utilities, or for wells or tunnels allowed under separate permit by other governmental agencies;
- B. An excavation below finished grade for basements and footings of a building, retaining wall or other structure authorized by a valid building permit. The placement of any fill material removed from such an excavation requires a grading permit if:
 - 1. It exceeds fifty cubic yards,
 - 2. More than ten cubic yards are removed from the site, or
 - 3. The fill is placed on the site to a depth greater than one foot;
- C. Farming practices as defined in ORS 30.930 and farm uses as defined in ORS 215.203, except that buildings associated with farm practices and farm uses are subject to the requirements of this chapter;
- D. Excavation for cemetery graves;
- E. Sandbagging, diking, ditching, filling or similar work when done to protect life or property during an emergency;
- F. Repaving of existing paved surfaces that does not alter existing drainage patterns;
- G. Maintenance work on public roads performed under the direction of the city, Clackamas County or Oregon State Department of Transportation personnel.

Fill and grading to be done in conjunction with the proposed project does not qualify for any exemptions listed above.

15.48.050 - Abrogation and greater restrictions.

Where the provisions of this chapter are less restrictive or conflict with comparable provisions of this code, regional, state or federal law, the provisions that are more restrictive shall govern. Where this chapter imposes restrictions that are more stringent than regional, state and federal law, the provisions of this chapter shall govern. However, nothing in this chapter shall relieve any party from the obligation to comply with any applicable federal, state or local regulations or permit requirements.

Compliance with this chapter and the minimum requirements, minimum standards, and design procedures as set forth in the city's adopted Public Works Stormwater and Grading Design Standards does not relieve the designer, owner, or developer of the responsibility to apply conservative and sound professional judgement to protect the health, safety, and welfare of the public. It is not the intent of this chapter to make the city a guarantor or protector of public or private property in regard to land development activity.

The applicant will comply with the provisions of this Chapter and those of other governing bodies.

15.48.060 - Severability.

The provisions of this chapter are severable. If any section, clause or phrase of this chapter is adjudged to be invalid by a court of competent jurisdiction, the decision of that court shall not affect the validity of the remaining portions of this chapter.

15.48.070 - Fees.

The city may set fees by resolution for review of development plans, or any other activity, which will result in a grading permit. Details on these fees can be obtained by contacting the city's engineering division.

15.48.080 - Adoption of standards.

The city commission may establish and modify from time to time by resolution Public Works Stormwater and Grading Design Standards to implement the requirements of this chapter.

15.48.090 - Submittal requirements.

An engineered grading plan or an abbreviated grading plan shall be prepared in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards whenever a city approved grading permit is required. In addition, a geotechnical engineering report and/or residential lot grading plan may be required pursuant to the criteria listed below.

A. Abbreviated Grading Plan. The city shall allow the applicant to submit an abbreviated grading plan in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards if the following criteria are met:

1. No portion of the proposed site is within the flood management area overlay district pursuant to Chapter 17.42, the unstable soils and hillside constraints overlay district pursuant to Chapter 17.44, or a water quality resource area pursuant to Chapter 17.49; and
2. The proposed filling or grading activity does not involve more than fifty cubic yards of earth.

An abbreviated grading plan is not allowed for this project since fill quantity exceeds 50 cu. yds..

B. Engineered Grading Plan. The city shall require an engineered grading plan in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer if the proposed activities do not qualify for abbreviated grading plan.

An engineered grading plan is being submitted as part of this land use application.

C. Geotechnical Engineering Report. The city shall require a geotechnical engineering report in compliance with the minimum report requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer who specializes in geotechnical work when any of the following site conditions may exist in the development area:

1. When any publicly maintained facility (structure, street, pond, utility, park, etc.) will be supported by any engineered fill;
2. When an embankment for a stormwater pond is created by the placement of fill;
3. When, by excavation, the soils remaining in place are greater than three feet high and less than twenty feet wide.

A geotechnical engineering report is not included with this application. The Owner will be engaging a geotechnical engineer to make recommendations and oversee placement of fill on site, even though not technically required under the provisions of this sub-section.

D. Residential Lot Grading Plan. The city shall require a residential lot grading plan in compliance with the minimum report requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer for all land divisions creating new residential building lots or where a public improvement project is required to provide access to an existing residential lot.

The project does not include any residential development. Criteria do not apply.

15.48.100 - Approval standards for grading permits and grading plans.

A. A grading permit shall not be issued by the city without either an approved engineered grading plan or an approved abbreviated grading plan.

B. An engineered grading plan or an abbreviated grading plan shall be approved only upon finding that the plan meets the requirements of the Public Works Stormwater and Grading Design Standards.

Approval of the submitted engineered grading plan as part of this land use is being sought with this application.

15.48.110 - Permit requirements.

A. Construction Limits. Prior to the commencement of any permitted clearing and grading activities, clearing and grading limits must be clearly and visibly identified using staking and/or flagging. Under no circumstances may areas beyond the property boundaries be disturbed without the prior approval of the owners of those properties and without the issuance by the city of all necessary permits to work within these areas. Engineering division staff will inspect clearing limits prior to commencement of site work activities.

The contractor will stake areas to be cleared and graded for city inspection prior to commencement of construction activity.

B. Changed Conditions, Stop Work Order, Permit Revisions and Permit Revocation. The city may revoke the original grading permit, require revisions to the original grading permit and/or order work stopped on the project in the following circumstances.

1. Stop Work Order. The city will order all or part of a permitted work stopped for any period of time for any of the following reasons:

- a. Failure to comply with the conditions of the grading permit;
- b. The grading permit was granted based on differing conditions or erroneous information submitted to the city by the applicant;
- c. Weather or weather-created conditions have caused off-site or downstream problems concerning drainage, water quantity or water quality;
- d. The work is hazardous to life, endangers property or adversely affects the use or stability of a public way or drainage course.

2. Revisions to Grading Permit. Revisions to the original grading permit will be required in the following circumstances:

- a. The grading permit was granted based on differing conditions or erroneous information submitted to the city by the applicant; or
- b. Full implementation of the original grading permit will not resolve an identified drainage or water quality problem or an identified hazard to life or property.

3. Revocation of Grading Permit. A grading permit will be revoked if the applicant fails to submit revisions to the grading permit as required in the above subsection within thirty days of receiving written notice from the city.

The Owner agrees to comply with all conditions and limitations above for the Grading of this project.

C. Engineers' Notification of Noncompliance. Permit noncompliance shall be reported by the project engineer or any associated professional (such as biologist, geologist, project inspector, etc.) immediately upon discovery by writing to the persons in charge of the grading work and to the city engineer. This subsection applies if work is not being done in conformance with the requirements of this chapter, the conditions of the grading permit or the recommendations of the geotechnical engineering report. Recommendations for corrective measures, if necessary, shall be submitted to the city engineer.

The Project Engineer or Geotechnical Engineer will immediately inform the City Engineer of any non-compliance in writing in accordance with this subsection.

D. Permit Time Limit. A grading permit shall expire upon approved completion of all work or six months from the date the permit was issued, whichever comes first. The city engineer will issue one six-month extension upon first request. Additional six-month extensions may be granted if the work is proceeding in accordance with an approved permit. If work is not completed at the time of expiration of the permit and the city engineer has not extended the permit expiration date, all grading permit work must cease.

It is anticipated that all grading work will be completed within 6 months of permits being issued or an extension sought.

E. Permit Expiration and Renewal. Upon the expiration of a permit without an extension, a new grading permit application must be submitted and approved prior to the resumption of work. Work not yet completed under the earlier permit will be reviewed in accordance with the most recent version of this chapter and the Public Works Stormwater and Grading Design Standards.

A new permit will be applied for if the initial permit expires in accordance with this subsection.

F. Inspections. The city's engineering division shall be called for inspection if required by the grading permit.

The Project contractor will be responsible for obtaining all necessary inspections from the City Engineering Division.

G. Completion of Work and Final Approval. Final city engineering approval shall be withheld until the following is completed and accepted by the city:

1. All grading work has been completed in accordance with the final approved grading permit and/or grading plan;
2. Final inspection and approval of work by the city;
3. Any required final reports and statements of approval from the project engineer have been submitted to and approved by the city; and
4. All engineered fills have received a certification from a professional engineer that the fill was installed in conformance with the approved grading plan. Attach soils test results that document compaction testing to the certification.

The Owner acknowledges that final approval will be withheld until the items above are complete and will ensure that Project Contractor and Engineers work with City Engineering Department to get final approval.

15.48.120 - Penalties and enforcement.

A. The city is authorized to make inspections and take such actions as required to enforce the provisions of this chapter. The city has the authority to enter onto land for the purpose of inspection of site development activities or resulting improvements. City staff will make an effort to contact the property owner before entering onto that property.

B. If the city engineer determines a site has any unpermitted or illegal facilities placed, constructed or installed on the site, then the city engineer shall notify the owner in writing directing the owner to submit a written plan (with drawings completed by a professional engineer, if otherwise required by this chapter) within ten calendar days for the restoration or stabilization of the site or correct the work that has adversely impacted adjacent or downstream property owners. The city engineer shall review the plan (and drawings, if necessary) for compliance with city standards and issue comments for correction, if necessary, or issue an approval to the owner. The city shall establish a fee by resolution for such review, with all costs borne by the owner.

C. Any person, firm, corporation or entity violating any of the provisions of this chapter, whether they be the property owner, the applicant, the contractor or any other person acting with or without the authorization of the property owner or applicant, shall be subject to the code enforcement procedures of Chapters 1.16, 1.20 and 1.24.

15.48.130 - Hazardous conditions.

A. Determination and Notification. If the city engineer determines that any excavation, embankment, erosion/sedimentation control or drainage facility has become a safety hazard, endangers property or adversely affects the safety, use or stability of a public way, a water quality resource area (pursuant to Chapter 17.49) or a drainage course, the owner(s) of the subject property and/or the person or agent in control of the property shall be required to repair or eliminate the hazard in conformance with the requirements of this chapter and the Public

Works Stormwater and Grading Design Standards. At the time that the city engineer makes the determination that a hazardous condition exists, the property owner and/or person or agent in control of the property will be notified in writing that the hazard exists.

B. Order to Correct. The city engineer will order the specific work to be undertaken or will order that an engineering design be submitted for review and approval by the city engineer, and will specify the time periods within which the hazardous conditions be repaired or eliminated. In the event that the owner and/or the person or agent in control of the property fails to comply with this order, that person shall be subject to the code enforcement procedures of Chapters 1.16, 1.20, and 1.24.

If hazardous conditions are determined to exist in the future the Owner will work to correct such situation or be subject to code enforcement actions in accordance with this section.

Chapter 17.08 – LOW DENSITY RESIDENTIAL DISTRICTS]

17.08.010 - Designated.

The R-10, R-8 and R-6 residential districts are designed for low density residential development.

17.08.020 - Permitted uses.

Permitted uses in the R-10, R-8 and R-6 districts are:

- A. Single-family detached residential units;
- B. Accessory uses, buildings and dwellings;
- C. Internal conversions;
- D. Corner duplexes;
- E. Cluster housing;
- F. Residential homes;
- G. Parks, playgrounds, playfields and community or neighborhood centers;
- H. Home occupations;
- I. Family day care providers;
- J. Farms, commercial or truck gardening and horticultural nurseries on a lot not less than twenty thousand square feet in area (retail sales of materials grown on-site is permitted);
- K. Temporary real estate offices in model homes located on and limited to sales of real estate on a single piece of platted property upon which new residential buildings are being constructed;
- L. Transportation facilities.

17.08.025 - Conditional uses.

The following uses are permitted in the R-10, R-8 and R-6 districts when authorized by and in accordance with the standards contained in OCMC 17.56:

- A. Golf courses, except miniature golf courses, driving ranges or similar commercial enterprises;
- B. Bed and breakfast inns/boarding houses;

- C. Cemeteries, crematories, mausoleums and columbariums;
- D. Child care centers and nursery schools;
- E. Emergency service facilities (police and fire), excluding correctional facilities;
- F. Residential care facilities;
- G. Private and/or public educational or training facilities;
- H. Public utilities, including sub-stations (such as buildings, plants and other structures);
- I. Religious institutions;
- J. Assisted living facilities; nursing homes and group homes for over fifteen patients.

An authorization of a Conditional Use is being sought per item I above, with the intention of eventually connecting this structure with the existing Church building.

17.08.030 - Master plans.

The following are permitted in the R-10, R-8 and R-6 districts when authorized by and in accordance with the standards contained in OCMC 17.65.

- A. Single-family attached residential units.

Criterion does not apply. No Master Plan or attached residential units are proposed with this application.

17.08.035 - Prohibited uses.

Prohibited uses in the R-10, R-8 and R-6 districts are:

- A. Any use not expressly listed in OCMC 17.08.020, 17.08.025 or 17.08.030;
- B. Marijuana businesses.

Criteria do not apply. No prohibited uses are proposed.

17.08.040 - Dimensional standards.

Dimensional standards in the R-10, R-8 and R-6 districts are as follows:

Table 17.08.040

Standard	R-10	R-8	R-6
Minimum lot size ¹	10,000 square feet	8,000 square feet	6,000 square feet
Maximum height	35 feet	35 feet	35 feet
Maximum building lot coverage With ADU	40%, except 45%	40%, except 45%	40%, except 45%
Minimum lot width	65 feet	60 feet	50 feet
Minimum lot depth	80 feet	75 feet	70 feet
Minimum front yard setback	20 feet, except 15 feet — Porch	15 feet, except 10 feet — Porch	10 feet, except 5 feet — Porch
Minimum interior side yard setback	8 feet	7 feet	5 feet
Minimum corner side yard setback	10 feet	10 feet	10 feet
Minimum rear yard setback	20 feet, except 15 feet — Porch 10 feet — ADU	20 feet, except 15 feet — Porch 10 feet — ADU	20 feet, except 15 feet — Porch 10 feet — ADU
Garage setback	20 feet from ROW, except 5 feet Alley	20 feet from ROW, except 5 feet Alley	20 feet from ROW, except 5 feet Alley

Notes:

1. For land divisions, lot sizes may be reduced pursuant to OCMC 16.08.065.
2. Accessory structures may have reduced setbacks pursuant to OCMC 17.54.010.B.

17.08.045 - Exceptions to setbacks.

A. Projections from Buildings. Ordinary building projections such as cornices, eaves, overhangs, canopies, sunshades, gutters, chimneys, flues, sills or similar architectural features may project into the required yards up to twenty-four inches.

B. Through Lot Setbacks. Through lots having a frontage on two streets shall provide the required front yard on each street. The required rear yard is not necessary.

The lot area of 372,610 sq. ft. exceeds the minimum 10,000 s.f. for the R-10 zone. No partition or sub-division is proposed as part of this application.

The lot is approximately 670 feet wide, exceeding the 65' minimum.

The existing lot is approximately 573 feet deep, exceeding the 80' minimum.

The proposed building is one story with a tall volume to accommodate the gymnasium use with a sloped roof. The ridge of the new building will be approximately 32'-6" and will be less than the 40' ridge of the existing church building.

The existing Church building is located approximately 34' behind the front property line. The new building will be located about 320' back from the front lot line.

The new building is proposed to be more than 106' from the nearest side property line.

Total building area on the site will be 34,215 s.f. with the addition of the proposed new structure. This calculates to 9.2% lot coverage.

No reduction of setbacks is required for garages, accessory buildings, front porches or ADU's with the proposed development.

17.08.050 - Density standards.

A. Density standards in the R-10, R-8 and R-6 districts are as follows:

Table 17.08.050

Standard	R-10	R-8	R-6
Minimum net density	3.5 du/acre	4.4 du/acre	5.8 du/acre
Maximum net density	4.4 du/acre	5.4 du/acre	7.3 du/acre

B. Exceptions.

1. Any dwelling units created as accessory dwelling units or internal conversions do not count towards the minimum or maximum density limits in Table 17.08.050.
2. Corner duplexes shall count as a single dwelling unit for the purposes of calculating density.
3. Cluster housing is permitted at higher densities exempt from the standards in Table 17.08.050; see OCMC 17.20.020.

The proposed development does not include any new residential units. Criterion is not applicable.

Chapter 17.52 - OFF-STREET PARKING AND LOADING

17.52.010 - Applicability.

The construction of a new structure or parking lot, or alterations to the size or use of an existing structure, parking lot or property use shall require site plan review approval and compliance with this chapter. This chapter does not apply to single-family attached, detached residential dwellings and duplexes.

17.52.015 - Planning commission adjustment of parking standards.

A. Purpose. The purpose of permitting a planning commission adjustment to parking standards is to provide for flexibility in modifying parking standards in all zoning districts, without permitting an adjustment that would adversely impact the surrounding or planned neighborhood. Adjustments provide flexibility to those uses which may be extraordinary, unique, or provide greater flexibility for areas that can accommodate a denser development pattern based on existing infrastructure and ability to access the site by means of walking, biking or transit. An adjustment to a minimum parking standard may be approved based on a determination by the planning commission that the adjustment is consistent with the purpose of this Code, and the approval criteria can be met.

B. Procedure. A request for a planning commission parking adjustment shall be initiated by a property owner or authorized agent by filing a land use application. The application shall be accompanied by a site plan, drawn to scale, showing the dimensions and arrangement of the proposed development and parking plan, the extent of the adjustment requested along with findings for each applicable approval criteria. A request for a parking adjustment shall be processed as a Type III application as set forth in Chapter 17.50.

C. Approval criteria for the adjustment are as follows:

1. Documentation. The applicant shall document that the individual project will require an amount of parking that is different from that required after all applicable reductions have been taken.

2. Parking Analysis for Surrounding Uses and On-Street Parking Availability. The applicant shall show that there is a continued fifteen percent parking vacancy in the area adjacent to the use during peak parking periods and that the applicant has permission to occupy this area to serve the use pursuant to the procedures set forth by the community development director.

a. For the purposes of demonstrating the availability of on street parking as defined in OCMC 17.52.020.B.3, the applicant shall undertake a parking study during time periods specified by the community development director. The time periods shall include those during which the highest parking demand is anticipated by the proposed use. Multiple observations during multiple days shall be required. Distances are to be calculated as traversed by a pedestrian that utilizes sidewalks and legal crosswalks or an alternative manner as accepted by the community development director.

b. The onsite parking requirements may be reduced based on the parking vacancy identified in the parking study. The amount of the reduction in onsite parking shall be calculated as follows:

i. Vacant on-street parking spaces within three hundred feet of the site will reduce onsite parking requirements by 0.5 parking spaces; and

ii. Vacant on-street parking spaces between three hundred and six hundred feet of the site will reduce onsite parking requirements by 0.2 parking spaces.

3. Function and Use of Site. The applicant shall demonstrate that modifying the amount of required parking spaces will not significantly impact the use or function of the site and/or adjacent sites.

4. Compatibility. The proposal is compatible with the character, scale and existing or planned uses of the surrounding neighborhood.

5. Safety. The proposal does not significantly impact the safety of adjacent properties and rights-of-way.

6. Services. The proposal will not create a significant impact to public services, including fire and emergency services.

No Planning Commission adjustment to required parking is proposed. Criteria above do not apply.

17.52.020 - Number of automobile spaces required.

A. The number of parking spaces shall comply with the minimum and maximum standards listed in Table 17.52.020. The parking requirements are based on spaces per one thousand square feet net leasable area unless otherwise stated.

Table 17.52.020

Land Use	Parking Requirements	
	Minimum	Maximum
Multifamily residential	1.00 per unit	2.5 per unit
3—4 plex residential	2.00	4
Hotel, motel	1.0 per guest room	1.25 per guest room

Correctional institution	1 per 7 beds	1 per 5 beds
Senior housing, including congregate care, residential care and assisted living facilities; nursing homes and other types of group homes	1 per 7 beds	1 per 5 beds
Hospital	2.00	4.00
Preschool nursery/kindergarten	2.00	3.00
Elementary/middle school	1 per classroom	1 per classroom + 1 per administrative employee + 0.25 per seat in auditorium/assembly room/stadium
High school, college, commercial school for adults	0.20 per # staff and students	0.30 per # staff and students
Auditorium, meeting room, stadium, religious assembly building, movie theater	.25 per seat	0.5 per seat
Retail store, shopping center, restaurants	4.10	5.00
Office	2.70	3.33
Medical or dental clinic	2.70	3.33
Sports club, recreation facilities	Case specific	5.40
Storage warehouse, freight terminal	0.30	0.40
Manufacturing, wholesale establishment	1.60	1.67
Light industrial, industrial park	1.3	1.60

1. Multiple Uses. In the event several uses occupy a single structure or parcel of land, the total requirements for off-street parking shall be the sum of the requirements of the several uses computed separately.

There are currently 102 Parking spaces on site to accommodate the Church. 12 of these spaces are proposed to be eliminated to provide circulation and an additional 125 spaces added for a total of 215 parking spaces. Based on Table 17.52.020 a minimum of 128 spaces and a maximum of 253 spaces are required based on the following calculation for a mixed use building:

<u>Use</u>	<u>Area/ Seats</u>	<u>Min. Ratio</u>	<u>Min.Required</u>
Exist'g Sanctuary	300 seats	.25/ seat	75 spaces
Classrooms (elem/ mid school)	12 classrooms	1/ class	12 spaces
Classrooms (pre-school)	3 classrooms	2/ class	6 spaces
Gymnasium	140 seats	.25/ seat	35 spaces
Total minimum parking			128 spaces*

<u>Use</u>	<u>Area/ Seats</u>	<u>Max. Ratio</u>	<u>Max.Allowed</u>
Exist'g Sanctuary	300 seats	.5/ seat	150 spaces
Classrooms (elem/ mid school)	12 classrooms	1/ class+ 1emp	24 spaces
Classrooms (pre-school)	3 classrooms	3/ class	9 spaces
Gymnasium	140 seats	.5/ seat	70 spaces
Total maximum parking			253 spaces*

*** If the entire proposed building were to be considered a Sports Club or Recreation Facility the maximum parking allowed is limited to 5.4 spaces/ 1,000 s.f. = 79 spaces which is equivalent to the total for bleacher seating and classroom areas in new building.**

2. Requirements for types of buildings and uses not specifically listed herein shall be determined by the community development director, based upon the requirements of comparable uses listed.

The applicant is requesting that the uses proposed for parking calculation purposes be confirmed as acceptable to the Planning Director for this land use.

3. Where calculation in accordance with the above list results in a fractional space, any fraction less than one-half shall be disregarded and any fraction of one-half or more shall require one space.

Calculations have been rounded up in determining minimum parking requirement.

4. The minimum required parking spaces shall be available for the parking of operable passenger automobiles of residents, customers, patrons and employees only, and shall not be used for storage of vehicles or materials or for the parking of vehicles used in conducting the business or use.

All parking spaces will be for the exclusive use of patrons and employees and will not be used for storage of materials or vehicles.

5. A change in use within an existing habitable building located in the MUD design district or the Willamette Falls Downtown District is exempt from additional parking requirements. Additions to an existing building and new construction are required to meet the minimum parking requirements for the areas as specified in Table 17.52.020 for the increased square footage.

The project is not in a MUD or the Willamette Falls Downtown District. Criterion does not apply.

- B. Parking requirements can be met either onsite, or offsite by meeting one or multiple of the following conditions:

1. Parking may be located on the same site as the associated use which it is supporting.

All parking is proposed on the same site as the development.

2. Mixed Uses. If more than one type of land use occupies a single structure or parcel of land, the total requirements for off-street automobile parking shall be the sum of the requirements for all uses, unless it can be shown that the peak parking demands are actually less (e.g. the uses operate on different days or at different times of the day). In that case, the total requirements shall be reduced accordingly, up to a maximum reduction of fifty percent, as determined by the community development director.

The mixed uses on the site will likely have different peak usage, but the applicant desires to have capacity to accommodate different uses simultaneously, so no reduction in parking minimum is proposed.

3. Shared Parking. Required parking facilities for two or more uses, structures, or parcels of land may be satisfied by the same parking facilities used jointly, to the extent that the owners or operators show that the need for parking facilities does not materially overlay (e.g., uses primarily of a daytime versus nighttime nature), that the shared parking facility is within one

thousand feet of the potential uses, and provided that the right of joint use is evidenced by a recorded deed, lease, contract, or similar written instrument authorizing the joint use.

No shared parking is proposed with this Conditional Use Application.

4. On-Street Parking. On-street parking may be counted toward the minimum standards when it is on the street face abutting the subject land use. An on-street parking space shall not obstruct a required clear vision area and it shall not violate any law or street standard. On-street parking for commercial uses shall conform to the following standards:

a. Dimensions. The following constitutes one on-street parking space:

1. Parallel parking: Twenty-two feet of uninterrupted and available curb;
2. Forty-five and/or sixty-degree diagonal parking: Fifteen feet of curb;
3. Ninety-degree (perpendicular) parking: Twelve feet of curb.

4. Public Use Required for Credit. On-street parking spaces counted toward meeting the parking requirements of a specific use may not be used exclusively by that use, but shall be available for general public use at all times. Signs or other actions that limit general public use of on-street spaces are prohibited.

No on-street parking is proposed to satisfy minimum standards for this project. Criteria do not apply.

C. Reduction of the Number of the Minimum Automobile Spaces Required. Any combination of the reductions below is permitted unless otherwise noted.

1. Downtown Parking Overlay. The minimum required number of parking stalls is reduced within the downtown parking overlay [district] by fifty percent.

2. Transit Oriented Development. For projects not located within the downtown parking overlay district, the minimum required number of parking stalls is reduced up to twenty-five percent when:

- a. In a commercial center (sixty thousand square feet or greater of retail or office use measured cumulatively within a five hundred foot radius);
- b. When adjacent to multi-family development with over eighty units; or
- c. Within one thousand three hundred twenty feet of an existing or planned public transit street and within one thousand three hundred twenty feet of the opposite use (commercial center or multi-family development with over eighty units).

3. Tree Preservation. The community development director may grant an adjustment to any standard of this requirement provided that the adjustment preserves a designated heritage tree or grove so that the reduction in the amount of required pavement can help preserve existing healthy trees in an undisturbed, natural condition.

The site is not located in the Downtown Parking Overlay District, is not a transit oriented development, in a commercial center or adjacent to a multi-family development with more than 80 units. No tree preservation credit is needed. Criteria above do not apply.

4. Transportation Demand Management. The community development director shall reduce the required number of parking stalls up to twenty-five percent when a parking-traffic study prepared by a traffic engineer demonstrates alternative modes of transportation, including transit, bicycles, and walking, and/or special characteristics of the customer, client, employee or resident population will reduce expected vehicle use and parking space demand for this development, as compared to standard Institute of Transportation Engineers vehicle trip generation rates and further that the transportation demand management program promotes or achieves parking utilization lower than minimum city parking requirements.

A transportation demand management (TDM) program shall be developed to include strategies for reducing vehicle use and parking demand generated by the development and will be measured annually. If, at the annual assessment, the city determines the plan is not successful, the plan may be revised. If the city determines that no good-faith effort has been made to implement the plan, the city may take enforcement actions.

No Transportation Demand Management reduction is being sought since the property is adequate for the required parking.

5. The minimum required number of stalls may be reduced by up to ten percent when the subject property is adjacent to an existing or planned fixed public transit route or within one thousand feet of an existing or planned transit stop.

No reduction in number of stalls is being sought for this use.

17.52.030 - Standards for automobile parking.

A. Access. Ingress and egress locations on public thoroughfares shall be located in the interests of public traffic safety and meet requirements of OCMC 16.12.035. Groups of more than four parking spaces shall be so located and served by driveways so that their use will require no backing movements or other maneuvering within a street right-of-way other than an alley.

The project will utilize the existing ingress and egress from South End Rd with no modifications proposed. The secondary, emergency vehicle access to the parking area from Paulsen Drive will also remain in place.

B. Surfacing. Required off-street parking spaces and access aisles shall have paved surfaces adequately maintained. The use of pervious asphalt/concrete and alternative designs that reduce storm water runoff and improve water quality pursuant to the city's stormwater and low impact development design standards are encouraged.

All new and existing parking will be paved with asphaltic concrete and be adequately maintained.

C. Drainage. Drainage shall be designed in accordance with the requirements of OCMC 13.12 and the city public works stormwater and grading design standards.

New parking area will comply with the requirements of Chapter 13.12 and be approved by the City prior to construction.

D. Dimensional Standards.

1. Requirements for parking developed at varying angles are according to the table included in this section. A parking space shall not be less than seven feet in height when within a building or structure, and shall have access by an all-weather surface to a street or alley. Parking stalls in compliance with the American with Disabilities Act may vary in size in order to comply with the building division requirements. Up to thirty-five percent of the minimum required parking may be compact, while the remaining required parking stalls are designed to standard dimensions. The community development director may approve alternative dimensions for parking stalls in excess of the minimum requirement which comply with the intent of this chapter.

All parking areas have been designed to comply with City standards and ADA requirements. 24% (30 spaces) of the proposed 125 new spaces will be compact.

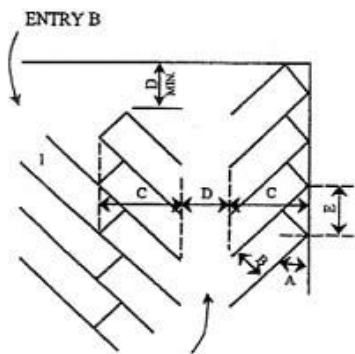
2. Alternative parking/plan. Any applicant may propose an alternative parking plan. Such plans are often proposed to address physically constrained or smaller sites, however innovative designs for larger sites may also be considered. In such situations, the community development director may approve an alternative parking lot plan with variations to parking dimensions of this section. The alternative shall be consistent with the intent of this chapter and shall create a safe space for automobiles and pedestrians while providing landscaping to the quantity and quality found within parking lot landscaping requirements.

No Alternative parking plan is proposed for this project. Criterion does not apply.

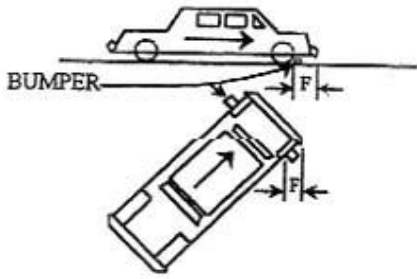
Parking Standard
Parking Angle Space Dimensions

A Parking Angle		B Stall Width	C Stall to Curb	D Aisle Width	E Curb Length	F Overhang
0 degrees		8.5	9.0	12	20	0
30 degrees	Standard Compact	9' 8'	17.3' 14.9'	11' 11'	18' 16'	
45 degrees	Standard Compact	8.5 8.5	19.8' 17.0'	13' 13'	12.7' 11.3'	1.4
60 degrees	Standard Compact	9' 8'	21' 17.9'	18' 16'	10.4' 9.2'	1.7
90 degrees	Standard Compact	9' 8'	19.0' 16.0'	24' 22'	9' 8'	1.5

All dimensions are to the nearest tenth of a foot.



TYPICAL PARKING LAYOUT
ENTRY A



NOTE: SPACE 1 CONTINGENT UPON ENTRY B
OVERHANG

NOTE: Overhang dimensions are intended to indicate possible location from parking area edge for location of bumpers.

E. Carpool and Vanpool Parking. New developments with seventy-five or more parking spaces, excluding projects where seventy-five percent or more of the total floor area is residential, and new hospitals, government offices, group homes, nursing and retirement homes, schools and transit park-and-ride facilities with fifty or more parking spaces, shall identify the spaces available for employee, student and commuter parking and designate at least five percent, but not fewer than two, of those spaces for exclusive carpool and vanpool parking. Carpool and vanpool parking spaces shall be located closer to the main employee, student or commuter entrance than all other employee, student or commuter parking spaces with the exception of ADA accessible parking spaces. The carpool/vanpool spaces shall be clearly marked "Reserved — Carpool/Vanpool Only."

Nine of the existing parking spaces (5.1%) are proposed to be signed for Carpool/ Vanpool use.

17.52.040 - Bicycle parking standards.

A. Purpose-Applicability. To encourage bicycle transportation to help reduce principal reliance on the automobile, and to ensure bicycle safety and security, bicycle parking shall be provided in conjunction with all uses other than exclusively residential use with less than five dwellings onsite (excluding cluster housing).

Bicycle parking is proposed with this project and located to ensure bicycle safety and security..

B. Number of Bicycle Spaces Required. For any use not specifically mentioned in Table A, the bicycle parking requirements shall be the same as the use which, as determined by the

community development director, is most similar to the use not specifically mentioned. Calculation of the number of bicycle parking spaces required shall be determined in the manner established in OCMC 17.52.020 for determining automobile parking space requirements. Modifications to bicycle parking requirements may be made through the site plan and design, conditional use, or master plan review process.

Table A requires 1 bicycle parking space per 10 auto spaces with a minimum of 30% of these covered. Based on the 215 proposed auto parking spaces a minimum of 22 total bicycle spaces are required with at least 7 of these covered.

Four covered bicycle parking spaces currently exist under the canopy at the south side of the Church building. Eight additional covered spaces and ten uncovered spaces are proposed at the new building to provide a total of 22 total spaces, with 8 of those located under cover.

Table A Required Bicycle Parking Spaces *

Where two options for a requirement are provided, the option resulting in more bicycle parking applies. Where a calculation results in a fraction, the result is rounded up to the nearest whole number.

Use	Minimum Bicycle Parking	Minimum Bicycle Parking — Covered — The following percentage of bicycle parking is required to be covered
Multi-family (five or more units)	1 per 10 units (minimum of 2)	50% (minimum of 1)
Correctional institution	1 per 15 auto spaces (minimum of 2)	30% (minimum of 1)
Nursing home or care facility	1 per 30 auto spaces (minimum of 2)	30% (minimum of 1)
Hospital	1 per 20 auto spaces (minimum of 2)	30% (minimum of 1)
Park-and-ride lot	1 per 5 auto spaces (minimum	50% (minimum of 1)

	of 2)	
Transit center	1 per 5 auto spaces (minimum of 2)	50% (minimum of 1)
Parks and open space	1 per 10 auto spaces (minimum of 2)	0%
Public parking lots	1 per 10 auto spaces (minimum of 2)	50% (minimum of 1)
Automobile parking structures	1 per 10 auto spaces (minimum of 4)	80% (minimum of 2)
Religious institutions, movie theater, auditorium or meeting room	1 per 10 auto spaces (minimum of 2)	30% (minimum of 1)
Libraries, museums	1 per 5 auto spaces (minimum of 2)	30% (minimum of 1)
Preschool, nursery, kindergarten	2 per classroom (minimum of 2)	50% (minimum of 1)
Elementary	4 per classroom (minimum of 2)	50% (minimum of 1)
Junior high and High school	2 per classroom (minimum of 2)	50% (minimum of 2)
College, business/commercial schools	2 per classroom (minimum of 2)	50% (minimum of 1)
Swimming pools, gymnasiums, ball courts	1 per 10 auto spaces (minimum	30% (minimum of 1)

	of 2)	
Retail stores and shopping centers	1 per 20 auto spaces (minimum of 2)	50% (minimum of 2)
Retail stores handling exclusively bulky merchandise such as automobile, boat or trailer sales or rental	1 per 40 auto spaces (minimum of 2)	0%
Bank, office	1 per 20 auto spaces (minimum of 2)	50% (minimum of 1)
Medical and dental clinic	1 per 20 auto spaces (minimum of 2)	50% (minimum of 1)
Eating and drinking establishment	1 per 20 auto spaces (minimum of 2)	0%
Gasoline service station	1 per 10 auto spaces (minimum of 2)	0%

C. Design Standards.

1. Bicycle parking facilities shall be in the form of a lockable enclosure onsite, secure room in a building onsite, a covered or uncovered rack onsite, or within the adjacent right-of-way.

All bicycle parking racks will be securely anchored to the ground and of a design acceptable to the City.

2. Bicycle parking areas shall be clearly marked or visible from on-site buildings or the street. If a bicycle parking area is not plainly visible from the street or main building entrance, a sign

shall be posted indicating the location of the bicycle parking area. Indoor bicycle parking areas shall not require stairs to access the space. If sites have more than one building, bicycle parking shall be distributed as appropriate to serve all buildings.

All bicycle parking racks are located so that they are visible from main building entries and located at each building on the site.

3. All bicycle racks shall be designed so that:
 - a. The bicycle frame is supported horizontally at two or more places.

Stationary racks to match the existing one located at the Church building are proposed for consistency. This standard ribbon type rack allows for convenient locking of the bicycle frame to the fixed rack. It complies with this standard.

- b. The frame and at least one wheel of the bicycle can be locked to the rack with a standard U-type lock.

The proposed standard ribbon type rack allows for locking of frame and one wheel of the bicycle with a standard U type lock.

- c. The user is not required to lift the bicycle onto the bicycle rack.

The proposed racks do not require the user to lift the bicycle.

- d. Each bicycle parking space is accessible without moving another bicycle.

The proposed racks allow adequate spacing so bicycles can be parked without moving adjacent bikes.

- e. It is a minimum of thirty inches tall and eighteen inches wide between the two points of contact.

The proposed racks are 30” tall and have 18” clear spacing between the verticals.

- f. Provides an area of six feet by two feet per bicycle.

The proposed bicycle parking areas provide a minimum of 2’x 6’ for each bicycle.

- g. All bicycle racks and lockers shall be securely anchored to the ground or to a structure.

New and existing bicycle racks will be embedded in concrete in accordance with manufacturer’s installation instructions.

17.52.060 - Parking lot landscaping.

Purpose. The purpose of this code section includes the following:

1. To enhance and soften the appearance of parking lots;
2. To limit the visual impact of parking lots from sidewalks, streets and particularly from residential areas;
3. To shade and cool parking areas;
4. To reduce air and water pollution;
5. To reduce storm water impacts and improve water quality; and
6. To establish parking lots that are more inviting to pedestrians and bicyclists.

A. Applicability. Unless otherwise specified, construction of new parking lots and alterations of existing parking lots shall comply with parking lot landscaping standards. Parking lot landscaping requirements within this section do not apply to parking structures or parking garages, except landscaping as required in OCMC 17.62.

B. Development Standards.

1. The landscaping shall be located in defined landscaped areas that are uniformly distributed throughout the parking or loading area.

Landscaping is distributed throughout the interior of the automobile parking and maneuvering areas and around the perimeter to limit visual impacts, provide shading, reduce stormwater impacts and minimize grading on site.

2. All areas in a parking lot not used for parking, maneuvering, or circulation shall be landscaped.

All areas in the parking lot not used for parking or maneuvering are proposed to be landscaped.

3. Parking lot trees shall be a mix of deciduous shade trees and coniferous trees. The trees shall be evenly distributed throughout the parking lot as both interior and perimeter landscaping.

All areas in the parking lot not used for parking or maneuvering are proposed to be landscaped.

4. Required landscaping trees shall be of a minimum two-inch minimum caliper size (though it may not be standard for some tree types to be distinguished by caliper), planted according to American Nurseryman Standards, and selected from the Oregon City Street Tree List or approved by an arborist.

Proposed deciduous trees are all 2” caliper and evergreen trees minimum 6’ height as specified.

5. At maturity, all of the landscaped area shall be planted in ground cover plants, which includes grasses. Mulch (as a ground cover) shall only be allowed underneath plants at full growth and within two feet of the base of a tree and is not a substitute for ground cover.

Landscaping has been designed to provide 100% coverage at maturity.

6. Landscaped areas shall include irrigation systems unless an alternate plan is submitted, and approved by the community development director, that can demonstrate adequate maintenance.

An automatic irrigation systems will be provided for all parking lot landscape areas due to the remote locations from buildings and hose bibs on site.

7. All landscaping shall be installed according to accepted planting procedures, according to American Nurseryman Standards.

All landscaping is proposed to be installed in accordance with accepted planting procedures according to American Nurseryman Standards.

C. Perimeter Parking Lot Landscaping and Parking Lot Entryway/Right-of-Way Screening. Parking lots shall include a five-foot wide landscaped buffer where the parking lot abuts the right-of-way and/or adjoining properties. In order to provide connectivity between non-single-family sites, the community development director may approve an interruption in the perimeter parking lot landscaping for a single driveway where the parking lot abuts property designated as multi-family, commercial or industrial. Shared driveways and parking aisles that straddle a lot line do not need to meet perimeter landscaping requirements.

1. The perimeter parking lot are[a] shall include:

a. Trees spaced a maximum of thirty feet apart (minimum of one tree on either side of the entryway is required). When the parking lot is adjacent to a public right-of-way, the parking lot trees shall be offset from the street trees;

New trees are proposed less than 35’ apart for the additional parking area and already existing at the original parking area and entry way.

b. An evergreen hedge screen of thirty to forty-two inches high or shrubs spaced no more than four feet apart on average. The hedge/shrubs shall be parallel to and not nearer than two feet

from the right-of-way line. The required screening shall be designed to allow for free access to the site and sidewalk by pedestrians. Visual breaks, no more than five feet in width, shall be provided every thirty feet within evergreen hedges abutting public right-of-ways.

An evergreen hedge 30"-42" with shrubs space less than 4' apart is proposed adjacent to the parking areas to continue the existing landscaping of the Church along the South End Road frontage. Visual breaks less than 5' wide are proposed along this frontage every 30'.

D. Parking Area/Building Buffer. Except for parking lots with fewer than five parking stalls, parking areas shall be separated from the exterior wall of a structure, exclusive of pedestrian entranceways or loading areas, by one of the following:

1. Minimum five-foot wide landscaped planter strip (excluding areas for pedestrian connection) meeting the standards for perimeter parking lot area landscaping; or
2. Minimum seven foot sidewalks with shade trees spaced a maximum of thirty feet apart in three-foot by five-foot tree wells.

The parking area will be separated from the proposed new recreation building with a combination of landscape areas meeting criterion 1 above and a plaza with a raised planter/ seating area with trees and ground cover complying with criterion 2 above.

E. Interior Parking Lot Landscaping. Surface parking lots with more than five parking stalls shall include at least forty-five square feet of interior parking lot landscaping per parking stall to improve the water quality, reduce storm water runoff, and provide pavement shade. Pedestrian walkways or any impervious surface in the landscaped areas are not to be counted in the percentage. Fractions shall be rounded up when calculating the required number of plantings. Interior parking lot landscaping shall include:

Interior parking lot landscaping for the 215 total stalls is required to be 9,675 s.f. The proposed parking layout provides 27,145 s.f. of area.

- a. A minimum of one tree per four parking spaces.

The existing interior parking lot landscape areas have 30 trees that were planted with original construction. The additional area includes an additional 27 trees to achieve the required 57 trees ($225/4 = 56.25$ trees).

- b. A minimum of 1.5 shrubs per parking space.

234 shrubs will be retained at the existing interior parking areas. 109 are proposed at the new interior landscape area for a total of 343 shrubs, exceeding the required 338 (225 x 1.5 shrubs).

c. No more than eight contiguous parking spaces shall be created without providing an interior landscape strip between them. Landscape strips shall be provided between rows of parking shall be a minimum of six feet in width and a minimum of ten feet in length.

No more than 8 contiguous parking spaces exist or are proposed with the site layout. Landscape islands or strips are provided that are at least 6' wide and 10' long to separate parking areas.

F. Alternative Landscaping Plan. Any applicant may propose an alternative landscaping plan. Such plans are often proposed to address physically constrained or smaller sites, however innovative designs for larger sites may also be considered. Alternative plans may include the use of low impact development techniques and minimized landscaping requirements. In such situations, the community development director may approve variations to the landscaping standards of OCMC 17.52.060 in accordance with subsection 1 and/or 2 below.

1. General Review Standard. The alternative shall meet the standards in OCMC 17.62.015-Modifications that will better meet design review requirements.

2. Credit for Pervious/Low Impact Development. The community development director may count up to fifty percent of the square footage of any pervious hardscaped landscape material within a parking lot that is designed and approved pursuant to the city's adopted stormwater and low impact development design standards toward minimum landscaping requirements for the site. (This includes porous pavement detention, open celled block pavers, porous asphalt, porous concrete pavement, porous turf, porous gravel, etc.).

Approval of an alternative landscape plan is not proposed for this project. Criteria above do not apply.

17.52.080 - Maintenance.

The owner, tenant and their agent, if any, shall be jointly and severally responsible for the maintenance of the site including but not limited to the off-street parking and loading spaces, bicycle parking and all landscaping which shall be maintained in good condition so as to present a healthy, neat and orderly appearance and shall be kept free from refuse and debris.

The Owner of the property will be responsible for maintaining installed landscaping in good condition.

All plant growth in interior landscaped areas shall be controlled by pruning, trimming, or otherwise so that:

- A. It will not interfere with the maintenance or repair of any public utility;
- B. It will not restrict pedestrian or vehicular access; and
- C. It will not constitute a traffic hazard due to reduced visibility.

The Owner will maintain all landscape areas so they don't interfere with public utilities, restrict pedestrian or vehicular traffic or create reduced visibility.

17.52.090 - Loading areas.

- A. Purpose. The purpose of this section is to provide adequate loading areas for commercial, office, retail and industrial uses that do not interfere with the operation of adjacent streets.
- B. Applicability. OCMC 17.52.090 applies to uses that are expected to have service or delivery truck visits with a forty-foot or longer wheelbase, at a frequency of one or more vehicles per week. The city engineer and decision maker shall determine through site plan and design review the number, size, and location of required loading areas, if any.

No regularly scheduled deliveries by vehicles with a 40'+ wheelbases are anticipated on this Church property. Loading spaces at the existing Church building will be adequate to serve the proposed recreation building, primarily serving as loading spaces for passenger vehicles and infrequent van type delivery trucks.

C. Standards.

1. The off-street loading space shall be large enough to accommodate the largest vehicle that is expected to serve the use without obstructing vehicles or pedestrian traffic on adjacent streets and driveways. Applicants are advised to provide complete and accurate information about the potential need for loading spaces because the city engineer or decision maker may restrict the use of other public right-of-way to ensure efficient loading areas and reduce interference with other uses.

The existing off-street loading space are intended to accommodate passenger vehicles, but is of sufficient size to accommodate 40' trucks..

2. Where parking areas are prohibited between a building and the street, loading areas or drive isles are also prohibited.

No new loading area is proposed. The existing loading area is located behind the face of the building.

3. The city engineer and decision maker, through site plan and design review, may approve a loading area adjacent to or within a street right-of-way when all of the following loading and unloading operations conditions are met:

- a. Short in duration (i.e., less than one hour);
- b. Infrequent (less than three operations daily between five a.m. and twelve a.m. or all operations between twelve a.m. and five a.m. at a location that is not adjacent to a residential zone);
- c. Does not obstruct traffic during peak traffic hours;
- d. Does not interfere with emergency response services; and
- e. Is acceptable to the applicable roadway authority.

No new loading area is proposed. Criteria do not apply.

Chapter 17.56 - CONDITIONAL USES

17.56.010 - Permit—Authorization—Standards—Conditions.

A conditional use listed in this title may be permitted, enlarged or altered upon authorization of the planning commission in accordance with the standards and procedures of this title. A conditional use permit listed in this section may be permitted, enlarged or altered upon authorization of the planning commission in accordance with the standards and procedures of this section. Any expansion to, alteration of, or accessory use to a conditional use shall require planning commission approval of a modification to the original conditional use permit.

- A. The following conditional uses, because of their public convenience and necessity and their effect upon the neighborhood shall be permitted only upon the approval of the planning commission after due notice and public hearing, according to procedure as provided in Chapter 17.50. The planning commission may allow a conditional use, provided that the applicant provides evidence substantiating that all the requirements of this title relative to the proposed use are satisfied, and demonstrates that the proposed use also satisfies the following criteria:

1. The use is listed as a conditional use in the underlying district;

The proposed use (religious institutions) is an allowed Conditional Use within the R-10 zone.

2. The characteristics of the site are suitable for the proposed use considering size, shape, location, topography, existence of improvements and natural features;

The gently sloping 8.55 acre site is well suited for the proposed development with no impact to significant natural features.

3. Development shall demonstrate compliance with Chapter 12.04, Streets, Sidewalks and Public Places;

Streets and sidewalks were improved as part of the original Church construction. No additional infrastructure improvements have been identified as being necessary for this proposed use on the site.

4. The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs or precludes the use of surrounding properties for the primary uses listed in the underlying district;

The proposed use will be consistent with the existing church use and will enhance the surrounding properties by providing recreational opportunities for the neighborhood youth.

5. The proposal satisfies the goals and policies of the city comprehensive plan which apply to the proposed use.

The proposed Conditional Use meets the goals and policies of the City Comprehensive Plan based on the following:

Goal 1: Citizen Involvement: This goal is being met through the City's Planning process for the review and approval of the proposed Conditional Use.

Goal 2: Land Use: The single family residential zone allows for religious institutions as a Conditional Use. The City recognizes the importance of "Place Making" as part of successful neighborhoods and this has historically included religious institutions which become local landmarks and gathering spots. The Site Plan Design Review process that the City administers ensures good design which enhances the neighborhood.

Goal 3: Agricultural Lands: The City recognizes that this land has been brought into the City boundaries and has not been in agricultural use for decades. Goal is not applicable to the proposed development.

Goal 4: Forest Lands: No forest lands exist on this property. Goal is not applicable.

Goal 5: Open Spaces, Scenic and Historic Places and Natural Resources: This site is not a public open space, does not have any scenic vistas or historic structures and is unlikely to contain any archeological artifacts given its location and previous agricultural use. There are no existing protected natural resources, waterways or wetlands on the site. Stormwater from the proposed development will be controlled and treated in accordance with current OCMC Chapter 13 requirements.

Goal 6: Quality of Air, Water and Land Resources: The proposed development will allow for local recreation opportunities (primarily for organized youth groups) that will hopefully minimize longer distance auto travel to other similar facilities with an overall reduction in air pollution in accordance with Policy 6.1.1. The proposed development will add additional tree canopy to the City in accordance with Policy 6.1.4. The proposed development complies with Policies 6.2.1 and 6.2.2 through the adherence to the City's requirements for erosion control and using natural open drainageways to reduce stormwater runoff and increase water quality. Policies 6.3.1- 6.3.3 are being met by providing site lighting that will be energy efficient, not produce glare or light pollution. Policies 6.4.1 and 6.4.2 are being met with the location of the proposed use along an existing high traffic corridor (South End Rd) and through the use of well insulated walls and roofs to mitigate noise impacts to neighboring residents.

Goal 7: Natural Hazards: The site is not in a slope hazard area, flood hazard area, area prone to wildfires or other high risk environment. The new structure will be designed to current wind and seismic requirements, minimizing risks due to these unpredictable events.

Goal 8: Parks and Recreation: The current Comprehensive plan goals and policies do not address the need or desire to partner with religious or other non-profit groups for development of recreation facilities like some other jurisdictions within the State. The proposed use and the pathways in the undeveloped Church property provide recreation opportunities for the neighborhood and meet the intent of policies 8.1.1 (creating active neighborhood park facilities within a reasonable distance from citizens), 8.1.6 (provide land for indoor recreational facilities and 8.1.11 (partnering with the School District to provide recreational opportunities and spaces). The Church is not a public entity, but desires to provide the recreation amenities on their property for use by the larger community.

Goal 9: Economic Development: As a non-profit the Church does not meet any of the Goals or Policies identified in the master plan for economic development specifically. The recreational amenities do; however, assist the City in retaining its population and desirability as a business location even though not specifically identified in the goals and policies of this section.

Goal 10: Housing: The proposed project does not provide any new housing units or propose demolition of any existing housing stock. Goal is not applicable.

Goal 11: Public Facilities: The proposed expansion of the Church development on this property is consistent with Policy 11.1.4 by utilizing undeveloped property within an area currently served by public utilities and transportation systems. It is also consistent with policies 11.2.4 and 11.4.3 which encourages infiltration and diversion of storm water from the waste water system and ensures that runoff from parking lot areas is mitigated.

Goal 12: Transportation: The existing transportation system is adequate to serve the proposed use. The Church will pay System Development Charges proportional to the anticipated impacts as part of the development consistent with policy 12.6.1 and 12.6.2 which directs the City to develop, maintain and provide a transportation system that support current and projected needs.

Goal 13: Energy Conservation: The proposed building has been sited such that it has a potential to integrate solar generation if it becomes economically feasible to do so in the future, will encourage carpool and transit use through dedicated carpool parking spaces and existing transit serving the site and will take full advantage of up to date technology to reduce energy use. These strategies are consistent with policies 13.2.4 and 13.2.6 of the Comprehensive Plan.

Goal 14: Urbanization: The development site is within the City boundary and requires no extension or improvements of any public infrastructure for the proposed use. The policies of this goal are not applicable.

Goal 15: Willamette Greenway: The project is not located within the Willamette Greenway. The policies of this goal are not applicable.

- B. Permits for conditional uses shall stipulate restrictions or conditions which may include, but are not limited to, a definite time limit to meet such conditions, provisions for a front, side or rear yard greater than the minimum dimensional standards of the zoning ordinance, suitable landscaping, off-street parking, and any other reasonable restriction, condition or safeguard that would uphold the spirit and intent of the zoning ordinance, and mitigate adverse effect upon the neighborhood properties by reason of the use, extension, construction or alteration allowed as set forth in the findings of the planning commission.

The proposed expansion of the religious institution with the addition of the recreation building is anticipated to be constructed within 12 months of the Conditional Use and Site Design review approval. The proposal includes exceeding the setback requirements of the underlying zone to be consistent with the surrounding single family properties, providing suitable landscaping and adequate off-street parking.

- C. Any conditional use shall meet the dimensional standards of the zone in which it is to be located pursuant to subsection B. of this section unless otherwise indicated, as well as the minimum conditions listed below.

The proposed development site exceeds the dimensional standards of the underlying zone with its 8.55 acre site. No partition or sub-division are proposed as part of this application.

- D. In the case of a use existing prior to the effective date of the ordinance codified in this title and classified in this title as a conditional use, any change of use expansion of lot area or expansion of structure shall conform with the requirements for conditional use.

The proposed expansion of the religious institution will conform with the requirement of Conditional Use.

- E. The planning commission may specifically permit, upon approval of a conditional use, further expansion to a specified maximum designated by the planning commission without the need to return for additional review.

This application seeks approval of a Conditional Use expansion for the existing religious institution use of this property.

17.56.020 - Permit—Application.

- A. A property owner or authorized agent shall initiate a request for a conditional use by filing an application with the city recorder. The applicant shall submit a site plan, drawn to scale, showing the dimensions and arrangement of the proposed development. The application shall be accompanied by the filing fee listed in Section 17.50.[0]80 to defray the costs of publication, investigation and processing.

This application seeks approval of a Conditional Use and Site Design Review approval for the proposed development and is being submitted along with required fees.

- B. Before the planning commission may act on a conditional use application, it shall hold a public hearing thereon, following procedure as established in Chapter 17.50.

The applicant will attend the public hearing once scheduled.

17.56.025 - Minor modifications to legal conditional uses.

Minor modifications to an approved conditional use permit may be permitted. If permitted, the modification shall be reviewed as a minor site plan and design review. A minor modification to an approved conditional use permit is considered one of the following:

- A. Modification to a structure for the purpose of enhancing the aesthetics of the building and there is no increase in the interior usable space;
- B. A maximum addition of up to one thousand square feet to a commercial, office, institutional, public, multi-family, or industrial building provided that the addition is not more than thirty-five percent of the original building square footage; or
- C. Revisions to parking alignment and/or related vehicle circulation patterns.

The application is not for a minor modification. Criteria above are not applicable.

17.56.040 - Criteria and standards for conditional uses.

In addition to the standards listed herein in Section 17.56.010, which are to be considered in the approval of all conditional uses and the standards of the zone in which the conditional use is located, the following additional standards shall be applicable:

- A. Building Openings. The city may limit or prohibit building openings within fifty feet of residential property in a residential zone if the openings will cause glare, excessive noise or excessive traffic which would adversely affect adjacent residential property as set forth in the findings of the planning commission.

The building is sited more than 50' from any surrounding residential property.

- B. Additional Street Right-of-Way. The dedication of additional right-of-way may be required where the city plan indicates need for increased width and where the street is

inadequate for its use; or where the nature of the proposed development warrants increased street width.

Right of way dedication was previously done with construction of Church building. No additional dedication is necessary or proposed.

- C. Public Utility or Communication Facility. Such facilities as a utility substation, water storage tank, radio or television transmitter, tower, tank, power transformer, pumping station and similar structures shall be located, designed and installed with suitable regard for aesthetic values. The base of these facilities shall not be located closer to the property line than a distance equal to the height of the structure. Hydroelectric generation facilities shall not exceed ninety megawatts of generation capacity.

No public utility or communication facility is proposed. Criterion does not apply.

- D. Schools. The site must be located to best serve the intended area, must be in conformance with the city plan, must have adequate access, and must be in accordance with appropriate State standards.

No school use is proposed with this application. Section is not applicable.

- E. Helipad Landing Facility. In evaluating a conditional use application for a helipad, the planning commission shall consider such matters as the following:
1. Size of runways and landing areas;
 2. Approaches and obstructions within the runways and landing areas;
 3. Fencing and/or screening to provide visual and noise buffering and to deflect winds or blast due to aircraft operation;
 4. Fire protection measures and equipment;
 5. Night illumination adequate for operations, and its effects upon surrounding property;
 6. Landing markers;
 7. Structural adequacy of runways, pads and other structures;
 8. Paving and ground cover materials in relation to noise and down wash.

No helipad is proposed with this application. Section is not applicable.

- F. Residential Care Facilities.
1. In addition to the general provisions of Section 17.56.020, any application shall include a description of the proposed use, including the number of residents and the nature of the condition or circumstances for which care, or a planned treatment or training program will be provided, the number of staff and the estimated length of stay per resident and the name of the agency responsible for regulating or sponsoring the use.
 2. Approval of a conditional use application for a residential care facility shall include the following minimum standards where applicable:

- a. The proposed facility shall maintain all applicable licenses required by the appropriate agencies for the use described in the application.
- b. All residential care facilities shall be subject to design review. Special considerations for this use are:
 - i. Compatibility in appearance with the surrounding area;
 - ii. Provisions of usable on-site open space appropriate to the needs of the residents and the nature of the care, treatment or training provided;
 - iii. Clearly defined property boundaries.

No residential care facility is proposed with this application. Criteria above do not apply.

- G. Bed and Breakfast Inns. Upon approval of a conditional use application for a bed and breakfast inn, the planning commission shall include the following as additional standards and criteria:
 - 1. The bed and breakfast inn shall maintain all applicable licenses required by governmental agencies for the use described in the application.
 - 2. All bed and breakfast inns shall be subject to design review. Special considerations for this use are:
 - a. Compatibility of the structure in appearance with the surrounding area;
 - b. Compatibility of the parking facilities in appearance and circulation of traffic with the surrounding area. Parking facilities shall also comply with Chapter 17.52;
 - c. Compatibility of the signage in appearance with the surrounding area. Signage shall also comply with Chapter 15.28;
 - d. The number of rooms to be used as overnight public accommodations shall not exceed four rooms in an underlying residential zone, or seven rooms in an underlying nonresidential zone;
 - e. The owner/operators shall reside in the bed and breakfast inn, or in a residence adjacent to the bed and breakfast inn.
 - f. The Planning Commission may allow up to an additional six non-guests to be served along with the guests at a meal.

No Bed and Breakfast Inn is proposed with this application. Criteria above do not apply.

17.56.060 - Revocation of conditional use permits.

The planning commission or the city commission may initiate administrative action under Chapter 17.50 to revoke any conditional use permit previously issued by the city or, with regard to lands annexed by the city, those such permits issued by the county. The planning commission or, on review, the city commission, may revoke such permit upon determining:

- A. One or more conditions attached to the grant of the conditional use permit have not been fulfilled; and
- B. The unfulfilled condition is substantially related to the issuance of the conditional use permit.

The applicant acknowledges that conditional use permits may be revoked if conditions of approval are not fulfilled.

17.56.070 - Periodic review of conditional use permits.

- A. The city commission may provide for the periodic review of some or all of the conditional use permits previously issued by the city, or, with regard to lands annexed by the city, those such permits issued by the county. In providing for such review, the city commission may designate classes of such previously issued permits for which periodic review shall be undertaken.
- B. Such review shall be accomplished as an administrative action under Chapter 17.50 and shall be limited to the question of whether additional conditions should be imposed on a conditional use in the light of changing circumstances and more efficient implementation of the city's comprehensive plan.
- C. Notwithstanding the provisions of Chapter 17.58, any additional conditions shall be met as a requirement for continued operation of the conditional use.

The applicant will comply with any reasonable conditions for periodic review that may be imposed for this application.

Chapter 17.62 - SITE PLAN AND DESIGN REVIEW

17.62.010 - Purpose.

The purposes of site plan and design review are to: encourage site planning in advance of construction; protect lives and property from potential adverse impacts of development; consider natural or man-made hazards which may impose limitations on development; conserve the city's natural beauty and visual character and minimize adverse impacts of development on the natural environment as much as is reasonably practicable; assure that development is supported with necessary public facilities and services; ensure that structures and other improvements are properly related to their sites and to surrounding sites and structure; and implement the city's comprehensive plan and land use regulations with respect to development standards and policies.

17.62.015 - Modifications that will better meet design review requirements.

The review body shall consider modification of certain site related development standards of this chapter specified below. These modifications may be approved as part of a Type II design review process.

A. Applicability.

1. This process shall apply to modifications to:
 - a. Landscaping in OCMC 17.62.050.A;
 - b. Vehicular connections to adjoining properties in OCMC 17.62.050.B.2;
 - c. On-site pedestrian circulation in OCMC 17.62.050.C;
 - d. Utility undergrounding requirements in OCMC 16.12.095.G;
 - e. Building location in OCMC 17.62.055.D;
 - f. Building details in OCMC 17.62.055.I;
 - g. Windows in OCMC 17.62.055.J;
 - h. Parking Lot Landscaping in OCMC 17.52.060.

Modifications to Building location in OCMC 17.62.055.D, window requirements per OCMC 17.62.055.J and modification to maximum ridgeline per OCMC 17.62.055.K are requested as part of this application.

The building location as dictated by the OCMC would require placing the building along South End Road and require a building massing that would not be compatible with the program requirements for a recreation type facility. It would also prevent future development of a church office building along South End Rd. Refer to additional narrative in response to OCMC 17.62.055.D.

Meeting the 30% glazing requirement for side yards is not practical for a gymnasium type facility program needs which dictate solid walls for safety and security. Glazing at areas subject to impact would present a hazard to occupants and security of the facility would be more difficult to ensure with windows at this area. Solid walls at the gym area will also minimize sound and light transmission which could impact adjacent residential properties. Refer to additional narrative in response to OCMC 17.62.055.J.

The ridgeline proposed fronting South End Rd is 125' long exceeding the 75' maximum street facing façade, but is not visible from the right of way since the existing church building is blocking this view. Refer to additional narrative response in Section OCMC 17.62.055.K.

2. Modifications that are denied through Type II design review may be requested as a variance through the variance process pursuant to OCMC 17.60.020 or master plan adjustment pursuant to OCMC 17.65.070 as applicable

Modifications are being sought rather than a variance to expedite the review process. The Owner will reserve the right to pursue a variance process for window requirements if this application for a modification is denied..

3. Rather than a modification, applicants may choose to apply for a variance through the variance process pursuant to OCMC 17.60.020 or master plan adjustment pursuant to OCMC 17.65.070 as applicable.

Modifications are being sought rather than a variance to expedite the review process. The Owner will reserve the right to pursue a variance process for window requirements if this application for a modification is denied..

B. The review body may approve requested modifications if it finds that the applicant has shown that the following approval criteria are met:

1. The modification will result in a development that better meets the applicable design guidelines; and

The proposed modifications are more appropriate for the program needs of the proposed recreation building. Refer to narrative in corresponding OCMC sections.

2. The modification meets the intent of the standard. On balance, the proposal will be consistent with the purpose of the standard for which a modification is requested.

The standards in the OCMC where modifications are being requested appear to be more applicable to typical commercial or institutional uses. We believe we are meeting the intent of these Code sections with this application. Refer to narrative in applicable OCMC sections following.

17.62.030 - When required.

Site plan and design review shall be required for all development of real property in all zones except the low and medium density residential districts, unless otherwise provided for by this title or as a condition of approval of a permit. Site plan and design review shall also apply to all conditional uses, cluster housing developments, multi-family uses, and non-residential uses in all zones. Site plan and design review does not apply to activities occurring within the right-of-way except for communication facilities pursuant to OCMC 17.80.

Site plan and design review is required for a change in use between the uses in Table 17.62.030:

Table 17.62.030

Existing Use	Proposed Use
Residential	Nonresidential use, including but not limited to: Commercial, office, industrial, retail, or institutional
Single-family or duplex	3 or more dwellings

Site plan and design review shall not alter the type and category of uses permitted in the underlying zoning districts.

This proposed development is located within the R-10 zone and requires a Conditional Use which requires site plan and design review approval.

17.62.035 - Minor site plan and design review.

This section provides for a minor site plan and design review process. Minor site plan review is a Type I or Type II decision, as described in OCMC 17.62.035.A, subject to administrative proceedings described in OCMC 17.50 and may be utilized as the appropriate review process only when authorized by the community development director. The purpose of this type of review is to expedite design review standards for uses and activities that require only a minimal amount of review, typical of minor modifications and/or changes to existing uses or buildings.

A. Type I Minor Site Plan and Design Review.

1. Applicability. Type I applications involve no discretion and are typically processed concurrently with a building permit application. The Type I process is not applicable for:
 - a. Any activity which is included with or initiates actions that require Type II—IV review.
 - b. Any increase in square footage of a conditional or nonconforming use (excluding nonconforming structures).
 - c. Any proposal in which nonconforming upgrades are required under OCMC 17.58.
 - d. Any proposal in which modifications are proposed under OCMC 17.62.015.
2. The following projects may be processed as a Type I application:
 - a. Addition of up to two hundred square feet to a commercial, institutional, or multifamily structure in which no increases are required to off-street parking. This includes a new ancillary structure, addition to an existing structure, or new interior space (excluding new drive thru). Increases of more than two hundred square feet in a twelve-month period shall be processed as Type II.
 - b. Addition of up to one thousand square feet to an industrial use in which no increases are required to off-street parking. This includes a new ancillary structure, addition to an existing structure, or new interior space (excluding ancillary retail and office). Increases of more than one thousand square feet in a twelve-month period shall be processed as Type II.
 - c. Temporary structures, excluding mobile vendors.
 - d. Removal, replacement or addition of awnings, or architectural projections to existing structures.
 - e. Addition, modification, or relocation of refuse enclosure.
 - f. Changes to amount, location, or design of bicycle parking.
 - g. Installation of mechanical equipment.
 - h. Repaving of previously approved parking lots with no change to striping.
 - i. Replacement of exterior building materials.
 - j. Addition of windows and doors, relocation of windows and doors in which transparency levels remain unchanged, or removal of windows and doors provided minimum transparency requirements are still met.
 - k. Addition or alteration of parapets or rooflines.
 - l. Modification of building entrances.

- m. Addition to or alteration of a legal nonconforming single or two-family dwelling.
 - n. Change to parking lot circulation or layout, excluding driveway modifications.
 - o. Removal or relocation of vehicle parking stalls provided total parking remains between approved minimum and maximum with no new reductions other than through the downtown parking district.
 - p. Adoption of shared parking agreements.
 - q. Changes to landscaping that do not require stormwater quality and quantity treatment under OCMC 13.12.
 - r. New or changes to existing pedestrian accessways, walkways or plazas.
 - s. Installation of or alterations to ADA accessibility site elements.
 - t. Modification or installation of a fence, hedge, or wall, or addition of a fence, hedge or wall.
 - u. Addition of or alterations to outdoor lighting.
 - v. Demolition of any structure or portion of a structure.
 - w. Tree removal.
 - x. Type I Master Plan Amendments under OCMC 17.65.080.
 - y. Mobile food carts in one location for five hours or less as identified in OCMC 17.54.115.
 - z. 3—4 plex, duplex, single-family attached dwellings, single-family detached residential unit, internal conversions, live/work dwelling and accessory dwelling unit.
 - aa. Placement of a single manufactured home within an existing space or lot in a manufactured home park.
3. Submittal Requirements. A Type I application shall include:
- a. A narrative describing the project.
 - b. Site plan drawings showing existing conditions/uses and proposed conditions/uses.
 - c. Architectural drawings, including building elevations and envelopes, if architectural work is proposed.
 - d. A completed application form.
 - e. Any other information determined necessary by the community development director.

B. Type II Minor Site Plan and Design Review.

1. Type II Minor Site Plan and Design Review applies to the following uses and activities unless those uses and activities qualify for Type I review per OCMC 17.62.035.A.:

- a. Modification of an office, commercial, industrial, institutional, public or multi-family structure that does not increase the interior usable space (for example covered walkways or entryways, addition of unoccupied features such as clock tower, etc.).
- b. Modification to parking lot layout and landscaping, or the addition of up to five parking spaces.
- c. A maximum addition of up to one thousand square feet to a commercial, office, institutional, public, multi-family, or industrial building provided that the addition is not more than thirty-five percent of the original building square footage.
- d. Mobile food carts in OCMC 17.54.115.
- e. Other land uses and activities may be added if the community development director makes written findings that the activity/use will not increase off-site impacts and is consistent with the type and/or scale of activities/uses listed above.

2. Application. The application for the Type II Minor Site Plan and Design Review shall contain the following elements:

- a. The submittal requirements of OCMC 17.50.
- b. A narrative explaining all aspects of the proposal in detail and addressing each of the applicable criteria listed in OCMC 17.62.
- c. Site plan drawings showing existing conditions/uses and proposed conditions/uses.
- d. Architectural drawings, including building elevations and envelopes, if architectural work is proposed.
- e. Additional submittal material may be required by the community development director on a case-by-case basis.

The proposed development exceeds the threshold of a Type 1 or Type 2 minor Site Plan and Design Review, since the project requires a Conditional Use. This application is for a Major Site Plan and Design Review. Criteria above are not applicable.

17.62.040 - Items required.

A complete application for site plan and design review shall be submitted. Except as otherwise in subsection I of this section, the application shall include the following:

A. A site plan or plans, to scale, containing the following:

1. Vicinity information showing streets and access points, pedestrian and bicycle pathways, transit stops and utility locations;
2. The site size, dimensions, and zoning, including dimensions and gross area of each lot or parcel and tax lot and assessor map designations for the proposed site and immediately adjoining properties;
3. Contour lines at two foot contour intervals for grades zero to ten percent, and five-foot intervals for grades over ten percent;
4. The location of natural hazard areas on and within one hundred feet of the boundaries of the site, including:
 - a. Areas indicated on floodplain maps as being within the one hundred-year floodplain,
 - b. Unstable slopes, as defined in OCMC 17.44.020,
 - c. Areas identified on the seismic conditions map in the comprehensive plan as subject to earthquake and seismic conditions;
5. The location of natural resource areas on and within one hundred feet of the boundaries of the site, including fish and wildlife habitat, existing trees (six inches or greater in caliper measured four feet above ground level), wetlands, streams, natural areas, wooded areas, areas of significant trees or vegetation, and areas designated as being within the natural resources overlay district;
6. The location of inventoried historic or cultural resources on and within one hundred feet of the boundaries of the site;
7. The location, dimensions, and setback distances of all existing permanent structures, improvements and utilities on or within twenty-five feet of the site, and the current or proposed uses of the structures;
8. The location, dimensions, square footage, building orientation and setback distances of proposed structures, improvements and utilities, and the proposed uses of the structures by square footage;
9. The location, dimension and names, as appropriate, of all existing and platted streets, other public ways, sidewalks, bike routes and bikeways, pedestrian/bicycle accessways and other

pedestrian and bicycle ways, transit street and facilities, neighborhood activity centers, and easements on and within two hundred fifty feet of the boundaries of the site;

10. The location, dimension and names, as appropriate, of all proposed streets, other public ways, sidewalks, bike routes and bikeways, pedestrian/bicycle accessways and other pedestrian and bicycle ways, transit streets and facilities, neighborhood activity centers, and easements on and within two hundred feet of the boundaries of the site;

11. All parking, circulation, loading and servicing areas, including the locations of all carpool, vanpool and bicycle parking spaces as required in OCMC 17.52;

12. Site access points for automobiles, pedestrians, bicycles and transit;

13. On-site pedestrian and bicycle circulation;

14. Outdoor common areas proposed as open space;

15. Total impervious surface created (including buildings and hard ground surfaces);

16. The proposed location, dimensions and materials of fences and walls.

A site plan showing all applicable items above is included with this application.

B. A landscaping plan, drawn to scale, showing the location and types of existing trees (six inches or greater in caliper measured four feet above ground level) and vegetation proposed to be removed and to be retained on the site, the location and design of landscaped areas, the varieties, sizes and spacings of trees and plant materials to be planted on the site, other pertinent landscape features, and irrigation systems required to maintain plant materials.

A landscape plan showing new landscaping and an as-built landscape plan from the original church construction are included with this application.

C. Architectural drawings or sketches, drawn to scale and showing floor plans, elevations accurately reflected to grade, and exterior materials of all proposed structures and other improvements as they will appear on completion of construction. The name of the adjacent street shall be identified on each applicable building elevation.

Floor plans and elevations of the proposed recreation building are included with this application.

D. An electronic materials board clearly depicting all building materials with specifications as to type, color and texture of exterior materials of proposed structures.

An electronic material board is included with the application with specifications for exterior materials proposed.

E. An erosion/sedimentation control plan, in accordance with the requirements of OCMC 17.47 and the public works erosion and sediment control standards, and a drainage plan developed in accordance with city drainage master plan requirements, OCMC 13.12 and the public works stormwater and grading design standards. The drainage plan shall identify the location of drainage patterns and drainage courses on and within one hundred feet of the boundaries of the site. Where development is proposed within an identified hazard area, these plans shall reflect concerns identified in the hydrological/geological/geotechnical development impact statement.

An erosion/ sediment control plan is included with this application addressing illustrating all pertinent information.

F. An exterior lighting plan, drawn to scale, showing type, height, and area of illumination.

An exterior lighting plan showing fixture types and illumination levels is included with this application.

G. Archeological Monitoring Recommendation. For all projects that will involve ground disturbance, the applicant shall provide:

1. A letter or email from the Oregon State Historic Preservation Office Archaeological Division indicating the level of recommended archeological monitoring on-site, or demonstrate that the applicant had notified the Oregon State Historic Preservation Office and that the Oregon State Historic Preservation Office had not commented within forty-five days of notification by the applicant; and

A copy of the letter from SHPO was previously obtained for prior development by the City. No letter has been received from Tribes.

2. A letter or email from the applicable tribal cultural resource representative of the Confederated Tribes of the Grand Ronde, Confederated Tribes of the Siletz, Confederated Tribes of the Umatilla, Confederated Tribes of the Warm Springs and the Confederated Tribes of the Yakama Nation indicating the level of recommended archeological monitoring on-site, or demonstrate that the applicant had notified the applicable tribal cultural resource representative and that the applicable tribal cultural resource representative had not commented within forty-five days of notification by the applicant.

If, after forty-five days' notice from the applicant, the Oregon State Historic Preservation Office or the applicable tribal cultural resource representative fails to provide comment, the city will not require the letter or email as part of the completeness review. For the purpose of this section,

ground disturbance is defined as the movement of native soils.

H. Such special studies or reports as the community development director may require to obtain information to ensure that the proposed development does not adversely affect the surrounding community or identified natural resource areas or create hazardous conditions for persons or improvements on the site. The community development director shall require an applicant to submit one or more development impact evaluations as may be necessary to establish that the city's traffic safety or capacity standards, natural resource, including geologic hazard and flood plain overlay districts, will be satisfied.

A traffic study is included as part of this application as required by the Community Development Director. This traffic study was completed for the previously planned, but never submitted Master Plan. The proposed development under this application includes Phases 1 and 2 of the Master Plan Traffic Study.

I. The community development director may waive the submission of information for specific requirements of this section or may require information in addition to that required by a specific provision of this section, as follows:

1. The community development director may waive the submission of information for a specific requirement upon determination either that specific information is not necessary to evaluate the application properly, or that a specific approval standard is not applicable to the application. If submission of information is waived, the community development director shall, in the decision, identify the waived requirements, explain the reasons for the waiver, and state that the waiver may be challenged on appeal and may be denied by a subsequent review authority. If the matter is forwarded to the planning commission for initial review, the information required by this paragraph shall be included in the staff report;

The applicant is not requesting any waiver for submission of information for specific requirements at this time.

2. The community development director may require information in addition to that required by a specific provision of this section upon determination that the information is needed to evaluate the application properly and that the need can be justified on the basis of a special or unforeseen circumstance as necessary to comply with the applicable standards. If additional information is required, the community development director shall, in the decision, explain the reasons for requiring the additional information.

If additional information is required as part of completeness review of this application, it will be provided by the applicant in a timely manner.

J. One full-sized copy of all architectural and site plans.

A full sized copy of all architectural, civil, landscape, and lighting plans is included with this application.

17.62.050 - General standards.

All development shall comply with the following standards:

A. Landscaping.

1. Existing native vegetation is encouraged to be retained to the maximum extent practicable. All plants listed on the Oregon City Nuisance Plant List shall be removed from the site prior to issuance of a final occupancy permit for the building.

The site contains no existing native vegetation or plants identified on the Oregon City Nuisance Plant List. Criteria does not apply.

2. Except as allowed elsewhere in Title 16 or 17 of this code, all areas to be credited towards landscaping shall be installed with growing plant materials.

All areas counted as landscaping are planted with live vegetation.

3. Pursuant to OCMC 17.49, landscaping requirements within the natural resource overlay district, other than landscaping required for parking lots, may be met by preserving, restoring and permanently protecting native vegetation and habitat on development sites.

Site is not within a natural resource overlay district. Criterion is not applicable.

4. A landscaping plan shall be prepared by a registered landscape architect for new or revised landscaped areas and parking lots. Landscape architect approval is not required for tree removal and/or installation if the species are chosen from an approved street tree list. A certified landscape designer, arborist, or nurseryman shall be acceptable in lieu of a landscape architect for projects with less than five hundred square feet of landscaping. All landscape plans shall include a mix of vertical (trees and shrubs) and horizontal elements (grass, groundcover, etc.) that within three years will cover one hundred percent of the landscape area. Plant species listed on the Oregon City Nuisance Plant list are prohibited and native species are encouraged. No mulch, bark chips, or similar materials shall be allowed at the time of landscape installation except under the canopy of shrubs and within two feet of the base of trees.

The landscape plan has been prepared by a licensed Landscape Architect. The plan provides for full coverage of landscape material within 3 years.

5. Landscaping shall be visible from public thoroughfares to the extent practicable.

Landscaping will be visible from public right of way to the extent practicable. Enhanced landscaping is also used to provide screening at parking areas and as a buffer from the proposed new building to surrounding residential properties.

6. The landscaping in parking areas shall not obstruct lines of sight for safe traffic operation and shall comply with all requirements of OCMC 10.32, Traffic Sight Obstructions.

Landscaping at parking areas has been designed to not obstruct sight lines and be easy to maintain to ensure on-going safe traffic operation.

B. Vehicular Access and Connectivity.

1. Parking areas shall be located behind the building facade that is closest to the street, below buildings, or on one or both sides of buildings.

All parking areas are located in back of the front façade of the existing Church building. New parking is no closer to South End Rd than the existing.

2. Existing or future connections to adjacent sites through the use of vehicular and pedestrian access easements which provide connection from the right-of-way to the adjoining property shall be provided.

No new connections to adjacent sites through access easements are proposed with this application. The site is abutting previously constructed sub-divisions with no future development possible under current OCMC requirements.

3. Parcels larger than three acres shall provide streets as required in OCMC 16.12.

No partition or land division is proposed with this application for continued Church use of the property. No new streets or other improvements are necessary for this development.

4. Parking garage entries shall not be more than half of the streetscape.

No structured parking is proposed. Criterion does not apply.

C. A well-marked, continuous and protected on-site pedestrian circulation system meeting the following standards shall be provided:

1. Pathways between all building entrances and the street are required. Pathways between the street and buildings fronting on the street shall be direct and not cross a drive aisle. Exceptions may be allowed by the director where steep slopes, a physically constrained site, or protected natural resources prevent a direct connection or where an indirect route would enhance the design and/or use of a common open space.

The existing concrete walkway system will be extended to connect the buildings to the street with a direct accessible path.

2. The pedestrian circulation system shall connect all main entrances, parking areas, bicycle parking, recreational areas, common outdoor areas, and any pedestrian amenities on the site. For buildings fronting on the street, the sidewalk may be used to meet this standard.

The pedestrian circulation system proposed connects all buildings on the site , parking areas and common outdoor areas.

3. The pedestrian circulation system shall connect the principal building entrance to those of buildings on adjacent sites, except within industrial zoning designations.

The pedestrian circulation system does not connect to buildings on adjacent sites since adjacent uses are all single family residential.

4. Elevated external stairways or walkways shall not extend beyond the building facade except for external stairways or walkways located in, or facing interior courtyard areas that are not visible from the street or a public access easement. This standard does not apply to sky-bridges or sky-ways.

No elevated external stairways or walkways are proposed with this project. All pedestrian connections for one story buildings on the site are at grade.

5. On-site pedestrian walkways shall be hard surfaced, well drained and at least five feet wide. Surface material shall contrast visually to adjoining surfaces. When bordering parking spaces other than spaces for parallel parking, pedestrian walkways shall be a minimum of seven feet in width unless curb stops are provided. When the pedestrian circulation system is parallel and adjacent to an auto travel lane, the walkway shall be raised or separated from the auto travel lane by a raised curb, bollards, landscaping or other physical barrier. If a raised walkway is used, the ends of the raised portions shall be equipped with curb ramps for each direction of travel. Pedestrian walkways that cross drive isles or other vehicular circulation areas shall utilize a change in textual material or height to alert the driver of the pedestrian crossing area.

All new and existing pedestrian walkways will be concrete, at least 5' wide and raised above asphalt parking and driving areas to provide separation. Walkways

adjacent to parking stalls are proposed to be 7' wide. No new pedestrian walkways are proposed crossing drive aisles.

D. All development shall maintain continuous compliance with applicable federal, state, and city standards.

The proposed development will be in compliance with applicable Federal, State and City standards.

E. Adequate public water and sanitary sewer facilities sufficient to serve the proposed or permitted level of development shall be provided pursuant to OCMC 16.12. The applicant shall demonstrate that adequate facilities and services are presently available or can be made available concurrent with development. Service providers shall be presumed correct in the evidence, which they submit. All facilities shall be designated to City standards as set out in the city's facility master plans and public works design standards. A development may be required to modify or replace existing offsite systems if necessary to provide adequate public facilities. The city may require over sizing of facilities where necessary to meet standards in the city's facility master plan or to allow for the orderly and efficient provision of public facilities and services. Where over sizing is required, the developer may request reimbursement from the city for over sizing based on the city's reimbursement policy and fund availability, or provide for recovery of costs from intervening properties as they develop.

Existing public water and sanitary sewer facilities serve the site and have adequate capacity for the proposed development. Existing infrastructure was upgraded at time of original Church construction.

F. If a transit agency, upon review of an application for an industrial, institutional, retail or office development, recommends that a bus stop, bus turnout lane, bus shelter, accessible bus landing pad, lighting, or transit stop connection be constructed, or that an easement or dedication be provided for one of these uses, consistent with an agency adopted or approved plan at the time of development, the review authority shall require such improvement, using designs supportive of transit use. Improvements at a major transit stop may include intersection or mid-block traffic management improvements to allow for crossings at major transit stops, as identified in the city's Transportation System Plan.

The site is not currently served by transit. Criteria are not applicable.

G. Screening of Mechanical Equipment.

1. Rooftop mechanical equipment, including HVAC equipment and utility equipment that serves the structure, shall be screened from view from the adjacent street. Screening shall be accomplished through the use of parapet walls or a sight-obscuring enclosure around the equipment constructed of one of the primary materials used on the primary facades of the

structure, and that is an integral part of the building's architectural design. The parapet or screen shall completely surround the rooftop mechanical equipment to an elevation equal to or greater than the highest portion of the rooftop mechanical equipment being screened. In the event such parapet wall does not fully screen all rooftop equipment, then the rooftop equipment shall be enclosed by a screen constructed of one of the primary materials used on the primary facade of the building so as to achieve complete screening.

All proposed rooftop mechanical equipment will be screened by parapet walls that will fully obscure view of equipment from normal viewing angles.

2. Wall-mounted mechanical equipment shall not be placed on the front facade of a building or on a facade that faces a right-of-way. Wall-mounted mechanical equipment, including air conditioning or HVAC equipment and groups of multiple utility meters, that extends six inches or more from the outer building wall shall be screened from view from streets; from residential, public, and institutional properties; and from public areas of the site or adjacent sites through the use of (a) sight-obscuring enclosures constructed of one of the primary materials used on the primary facade of the structure, (b) sight-obscuring fences, or (c) trees or shrubs that block at least eighty percent of the equipment from view or (d) painting the units to match the building. Wall-mounted mechanical equipment that extends six inches or less from the outer building wall shall be designed to blend in with the color and architectural design of the subject building. Vents which extend six inches or less from the outer building wall shall exempt from this standard if painted.

No wall mounted mechanical equipment is proposed. Criteria do not apply.

3. Ground-mounted above-grade mechanical equipment shall be screened by ornamental fences, screening enclosures, trees, or shrubs that block at least eighty percent of the view.

No ground mounted, above grade mechanical equipment is proposed. Criterion does not apply.

4. This section shall not apply to the installation of solar energy panels, photovoltaic equipment or wind power generating equipment.

H. Building Materials.

1. Prohibited Materials. The following materials shall be prohibited in visible locations from the right-of-way or a public access easement unless an exception is granted by the community development director based on the integration of the material into the overall design of the structure.

a. Vinyl or plywood siding (including T-111 or similar plywood).

- b. Glass block or highly tinted, reflected, translucent or mirrored glass (except stained glass) as more than ten percent of the building facade.
- c. Corrugated fiberglass.
- d. Chain link fencing (except for temporary purposes such as a construction site, gates for a refuse enclosure, stormwater facilities, or when located on properties within the general industrial district).
- e. Crushed colored rock/crushed tumbled glass.
- f. Non-corrugated and highly reflective sheet metal.
- g. Tarps, except for the protection of outside storage.

No prohibited building materials are proposed.

2. Special Material Standards. The following materials are allowed if they comply with the requirements found below:

- a. Concrete Block. When used for the front facade of any building, concrete blocks shall be split, rock- or ground-faced and shall not be the prominent material of the elevation. Plain concrete block or plain concrete may be used as foundation material if the foundation material is not revealed more than three feet above the finished grade level adjacent to the foundation wall.
- b. Metal Siding. Metal siding shall have visible corner moldings and trim and incorporate masonry or other similar durable/permanent material near the ground level (first two feet above ground level) except when used for a temporary structure.
- c. Exterior insulation and finish system (EIFS) and similar troweled finishes shall be trimmed in wood, masonry, or other approved materials and shall be sheltered from extreme weather by roof overhangs or other methods.
- d. Building surfaces shall be maintained in a clean condition and painted surfaces shall be maintained to prevent or repair peeling, blistered or cracking paint.
- e. Membrane or fabric covered storage areas are permitted as temporary structures, excluding the use of tarps.
- f. Vinyl or powder coated chain link fencing is permitted for city-owned stormwater management facilities, reservoirs, and other public works facilities such as pump stations, maintenance yards, and storage yards not located within the general industrial district.

No special materials in subsections a-c,e, or f above are proposed. All building surfaces will be maintained in a clean condition and routinely painted by the owner to ensure this condition in accordance with subsection d above.

I. Temporary Structures. Temporary structures are permitted pursuant to the following standards:

1. Structures up to two hundred square feet:
 - a. Shall not be on a property for more than three consecutive days;
 - b. Shall not be on a property more than six times per year;
 - c. Shall comply with the minimum dimensional standards of the zoning designation;
 - d. Shall be sited so as to leave the minimum number of parking spaces for the primary uses as required by OCMC 17.52 or as otherwise specified in a land use approval;
 - e. Shall not disturb ingress or egress to the site; and
 - f. Shall be exempt from all sections of OCMC 12.08, 16.12, 17.52 and 17.62 except subsections 17.62.050.I and J.

No temporary structures are proposed with this application. Criteria do not apply.

2. Temporary structures larger than two hundred square feet may be permitted up to two times per year; and:
 - a. Structures larger than two hundred square feet up to eight hundred square feet:
 - i. Shall not be on a property for more than thirty consecutive days;
 - ii. Shall comply with the minimum dimensional standards of the zoning designation;
 - iii. Shall be sited so as to leave the minimum number of parking spaces for the primary uses as required by OCMC 17.52 or as otherwise specified in a land use approval;
 - iv. Shall not disturb ingress or egress to the site; and
 - v. Shall be exempt from all sections of OCMC 12.08, 16.12, 17.52 and 17.62 except subsections 17.62.050.I and J.

No temporary structures are proposed with this application. Criteria do not apply.

- b. Structures larger than eight hundred square feet:
 - i. Shall not be on a property for more than seven consecutive days;
 - ii. Shall comply with the minimum dimensional standards of the zoning designation;
 - iii. Shall be sited so as to leave the minimum number of parking spaces for the primary uses as required by OCMC 17.52 or as otherwise specified in a land use approval;
 - iv. Shall not disturb ingress or egress to the site; and
 - v. Shall be exempt from all sections of OCMC 12.08, 16.12, 17.52 and 17.62 except subsections 17.62.050.I and J.

No temporary structures are proposed with this application. Criteria do not apply.

3. Government owned properties are exempt from all sections of OCMC 12.08, 16.12, 17.52 and 17.62 except subsections 17.62.050.H and I and the dimensional standards of the zoning designation.

The property is not government owned. Criterion does not apply.

J. Development shall comply with requirements of the following Oregon City Municipal Code chapters, as applicable, including but not limited to:

- 1. Chapter 12.04, Streets, Sidewalks and Public Places.
- 2. Chapter 12.08, Public and Street Trees.
- 3. Chapter 13.04, Water Service System.
- 4. Chapter 13.08, Sewer Regulations.
- 5. Chapter 13.12, Stormwater Management.
- 6. Chapter 16.12, Minimum Improvements and Design Standards for Development.
- 7. Chapter 17.20, Residential Design Standards for ADU's, Cluster Housing, Internal Conversions, Live/Work Units, and Manufactured Home Parks.
- 8. Chapter 17.40, Historic Overlay District.
- 9. Chapter 17.41, Tree Protection Standards.

10. Chapter 17.42, Flood Management Overlay District.
11. Chapter 17.44, Geologic Hazards.
12. Chapter 17.47, Erosion and Sediment Control.
13. Chapter 17.48, Willamette River Greenway.
14. Chapter 17.49, Natural Resource Overlay District.
15. Chapter 17.50, Administration and Procedures.
16. Chapter 17.52, Off-Street Parking and Loading.
17. Chapter 17.54, Supplemental Zoning Regulations and Exceptions.
18. Chapter 17.58, Lawful Nonconforming Uses, Structures, and Lots.
19. Chapter 17.65, Master Plans and Planned Unit Development.

The proposed development can be found in compliance with all applicable sections of OCMC listed above.

17.62.055 - Institutional, office, multi-family, retail, and commercial building standards.

A. Purpose. The primary objective of the regulations contained in this section is to provide a range of design choices that promote creative, functional, and cohesive development that is compatible with surrounding areas. Buildings approved in compliance with these standards are intended to serve multiple tenants over the life of the building, and are not intended for a one-time occupant. The standards encourage people to spend time in the area, which also provides safety through informal surveillance. Finally, this section is intended to promote the design of an urban environment that is built to human scale by creating buildings and streets that are attractive to pedestrians, create a sense of enclosure, provide activity and interest at the intersection of the public and private spaces, while also accommodating vehicular movement.

B. Applicability. This section applies to institutional, office, multi-family, retail and commercial buildings except accessory structures less than one thousand square feet and temporary structures.

The proposed recreation building and associated site improvements comply with the requirements of this section or the intent of the subsections where not in full compliance per the following narrative.

C. Conflicts. With the exception of standards for building orientation and building front setbacks, in the event of a conflict between a design standard in this section and a standard or requirement contained in the underlying zoning district, the standard in the zoning district shall prevail.

D. Siting of Structures. On sites with one hundred feet or more of frontage at least sixty percent of the site frontage width shall be occupied by buildings placed within five feet of the property line. For sites with less than one hundred feet of street frontage, at least fifty percent of the site frontage width shall be occupied by buildings placed within five feet of the property. Multi-family developments shall be placed no farther than twenty feet from the front property line. This section does not apply to properties with less than forty feet of frontage.

This site has a frontage of roughly 668', which would require over 400' of building fronting South End Rd be placed within 5' of the property line. Unless this property were subdivided or partitioned this Code Section would dictate a building at least 30,000 s.f. to accommodate the proposed recreation building which requires a minimum of 100' in either direction. It is not economically feasible for the Church to construct such a structure and they don't want to do this since it would not be compatible with the residential zone in which it is located.

The existing church building is 118' wide and set back approximately 30' from the front property line. The proposed new recreation building has a footprint that is approximately 132' x 135', which is predicated by the program for the structure. Combining the width of the existing Church with the proposed footprint for the recreation building would only achieve a total building frontage of 253', short of the 400' required by this code section.

A narrower building pushed up to the street is not feasible for a gymnasium type use. Locating the new structure adjacent to South End Road would also limit the surveillance of the parking area as well as detract from the surrounding openness of the predominately single family zone in which the property is located.

A larger front yard setback may be approved through site plan and design review if the setback area incorporates at least one element from the following list for every five feet of increased setback requested:

1. Tables, benches or other approved seating area.
2. Cobbled, patterned or paved stone or enhanced concrete.
3. Pedestrian scale lighting.
4. Sculpture/public art.

5. Fountains/water feature.
6. At least twenty square feet of landscaping or planter boxes for each tenant facade fronting on the activity area.
7. Outdoor cafe.
8. Enhanced landscaping or additional landscaping.
9. Other elements, as approved by the community development director, that can meet the intent of this section.

A larger front setback was previously approved when the church was originally constructed with the addition of enhanced landscaping, sculpture/ public art, patterned paving, and approved seating areas. No changes to the existing church building are proposed.

E. Building Orientation. All buildings along the street frontage shall face the front most architecturally significant facade toward the street and have a functional primary entrance facing the street. Primary building entrances shall be clearly defined and recessed or framed by a sheltering element such as an awning, arcade or portico in order to provide shelter from the summer sun and winter weather.

Both the existing church building and the proposed recreation building have their most architecturally significant facades facing South End Rd. Both primary entries have clearly defined entries with sheltering elements.

F. Entryways. Entrances shall include a doorway and a minimum of four of the following elements:

1. Display windows; Recesses or projections; peaked roof or raised parapet over the door; canopy of at least five feet in depth; porch; distinct materials; architectural details such as tile work and moldings; pedestrian amenities such as benches, planters or planter boxes; landscape treatments integrating arbors, low walls, trellis work; or similar elements. Trellises, canopies and fabric awnings may project up to five feet into front setbacks and public rights-of-way, provided that the base is not less than eight feet at the lowest point and no higher than ten feet above the sidewalk.

The entryway of the new building incorporates recessed doorways, a canopy more than 5' deep, porch, distinct material (stone to match existing building) and raised planter with seating area. The existing building complies with similar elements and no changes to that building are proposed.

G. Corner Lots. For buildings located at the corner of intersections, the primary entrance of the building shall be located at the corner of the building or within twenty-five feet of the corner of the building. Additionally, one of the following treatments shall be required:

1. Incorporate prominent architectural elements, such as increased building height or massing, cupola, turrets, or pitched roof, at the corner of the building or within twenty-five feet of the corner of the building.
2. Chamfer the corner of the building (i.e. cut the corner at a forty-five degree angle and a minimum of ten feet from the corner) and incorporate extended weather protection (arcade or awning), special paving materials, street furnishings, or plantings in the chamfered area.
3. Standards 1 and 2 above do not apply to multi-family buildings or multi-family portions of residential mixed-use buildings.

The site is not a corner lot. Criterion do not apply.

H. Variation in Massing. For street facing facades greater than 120 feet in length a modulation is required which extends through all floors. Decks and roof overhangs may encroach up to three feet per side into the modulation. The modulation shall meet one of the following dimensional requirements:

1. A minimum depth of two percent of the length of the facade and a minimum width of thirty percent of the length of the facade; or
2. A minimum depth of four percent of the length of the facade and a minimum width of twenty percent of the length of the facade.

The street facing façade of the proposed new building is obscured by the existing church building which is intended to be the most prominent structure on the site.

The new building has a variation in massing exceeding option 1 above with a 40' wide offset of 8'+ over the 135' length. Additional 2' offset projection beaks up remainder of this façade.

I. Building Design Elements.

1. All front and side facades shall provide a design element or architectural feature that add interest and detail such that there are no blank walls of thirty feet in length or more, measured horizontally. Features that can meet this requirement include:
 - a. Change in building material or texture;
 - b. Window or door;

- c. Balcony; or
- d. Pillar or post.

All facades have changes in building materials, windows or doors or pilasters that are designed so that no section of façade has no blank wall areas more than 30' in length.

2. Street facing facades shall include additional design features. For every thirty feet of facade length, three of the following elements are required:

- a. Decorative materials on more than ten percent of the total wall area (e.g., brick or stonework, shingles, wainscoting, ornamentation, and similar features);
- b. Decorative cornice and/or roof line (e.g., for flat roofs);
- c. Roof gable;
- d. Recessed entry;
- e. Covered canopy entry;
- f. Cupola or tower;
- g. Dormer;
- h. Balcony;
- i. Pillars or posts;
- j. Repeating pattern of building materials;
- k. A change in plane of at least two feet in width and six inches in depth;
- l. Bay or oriel window; or
- m. An alternative feature providing visual relief and detail as approved by the community development director.

Four design elements are required for the new 135' long street facing façade. This façade has 6 of the elements above: 1. 10% of the façade in stone, 2. Gable roof, 3. Recessed entry, 4. Covered canopy entry, 5. Posts and pillars, 6. A change in plan of more than 2' in width and depth more than 6" .

3. Building Detail Variation. Architectural features shall be varied on different buildings within the same development. At least two of the required features on each street-facing elevation shall be distinct from the street-facing elevations of other buildings within the same development.

The new recreation building will have similar colors and utilize similar stone for consistency, but has but has varied siding and detailing at entry ways as well as different building massing to provide variety.

J. Windows.

1. The minimum windows requirements are set forth in Table 17.62.055.J. Windows are measured in lineal fashion between 3.5 feet and six feet from the ground. For example, a one hundred foot long building elevation would be required to have at least sixty feet (sixty percent of one hundred feet) of windows in length between the height of 3.5 feet and six feet from the ground.

Table 17.62.055.J
Minimum Windows

Use	Ground Floor: Front and Street Facing Facades	Upper floor(s): Front and Street Facing Facades	Ground Floor: Side(s) Facades	Upper Floor(s): Side(s) Facades
Non-Multi-Family (or Portions of Buildings Thereof)	60%	10%	30%	10%
Multi-Family (or Portions of Buildings Thereof)	15%	15%	10%	10%

The new recreation building is part of a campus type development and the street facing façade is behind the existing church building and will not be completely visible from the street. It is anticipated that the space between the buildings will eventually be infilled with a connecting building. The recreation building is proposed to have 53% glazing (76.5' / 144.25') at this façade and 45% glazing (63.83' / 140.5') on the right side facing the parking lot. This is due to programmatic requirements, the desire to not have false windows and since this building is actually behind the existing church building which does comply with the glazing requirements.

The left and rear sides of the building; as proposed, have less than 1% glazing limited to small vision panels in exit doors. This is due to programmatic requirements for the gymnasium space where glazing would create a hazard for users, false windows would be undesirable from both a maintenance and security standpoint. There are no walkways along these sides of the building and they are not visible from parking areas or any public right of way. Glazing along these facades would also allow for more sound transmission from the recreation building to adjacent residential uses and potentially create undesirable light from within the space impacting these neighbors.

A modification to these glazing standards is being sought as part of this application since this is not a typical commercial or institutional building facing the street as appears to be the intention of this Code Section.

2. Reflective, glazed, mirrored or tinted glass is limited to ten percent of the lineal footage of windows on the street facing facade. Highly reflective or glare-producing glass with a reflective factor of one-quarter or greater is prohibited on all building facades. Any glazing materials shall have a maximum fifteen percent outside visual light reflectivity value. No exception shall be made for reflective glass styles that appear transparent when internally illuminated.

Tinted glazing is proposed to be limited to the spandrel glass transoms either side of the front entry doors. It is located is above the area for calculated glazing and is less than 1% of the street facing façade. Reflectance of this glass will be 15%.

3. Side walls that face walkways may include false windows and door openings only when actual doors and windows are not feasible because of the nature of the use of the interior use of the building. False windows located within twenty feet of a right-of-way shall be utilized as display windows with a minimum display depth of thirty-six inches.

The side and rear walls that don't meet the glazing standard are not facing walkways and not within 20' of a right of way. False windows are not desired by the Owner, so the modification to the glazing standard is requested in subsection 1 above.

4. Multi-family windows shall incorporate window trim at least four inches in width when surrounded by horizontal or vertical lap siding.

Project is not a multi family development. Criterion does not apply.

K. Roof Treatments. The maximum length of any continuous roofline on a street-facing facade shall be seventy-five feet without a cross gable or change in height of at least two feet.

The new Recreation building is blocked from view by the existing church building which fronts South End Road and therefore has been designed as more of a campus type building with this becoming a secondary elevation. The length of this roofline is 125', exceeding the allowed 75'. An adjustment is requested for this design element.

L. Drive-through facilities shall:

1. Be located at the side or rear of the building.
2. Be designed to maximize queue storage on site.

Project is not a drive through facility. Criteria do not apply.

M. Special development standards along transit streets.

1. Purpose. This section is intended to provide direct and convenient pedestrian access to retail, office and institutional buildings from public sidewalks and transit facilities and to promote pedestrian and transit travel to commercial and institutional facilities.
2. Applicability. Except as otherwise provide in this section, the requirements of this section shall apply to the construction of new retail, office and institutional buildings which front on a transit street.
3. Development Standards.
 - a. All buildings shall have at least one main building entrance oriented towards the transit street. A main building entrance is oriented toward a transit street if it is directly located on the transit street, or if it is linked to the transit street by an on-site pedestrian walkway that does not cross off-street parking or maneuvering areas.
 - i. If the site has frontage on more than one transit street, or on a transit street and a street intersecting a transit street, the building shall provide one main building entrance oriented to the transit street or to the corner where the two streets intersect.

ii. For building facades over three hundred feet in length on a transit street, two or more main building entrances shall be provided as appropriate and oriented towards the transit street.

b. In the event a requirement of this section conflicts with other requirements in Title 17, the requirements of this section shall control.

4. Exemptions. The following permitted uses are exempted from meeting the requirements of subsection 3 of this section:

a. Heavy equipment sales;

b. Motor vehicle service stations, including convenience stores associated therewith; or

c. Solid waste transfer stations.

Subsection above is not applicable. Site is not on a transit street.

17.62.056 - Additional standards for large retail establishments.

Retail building(s) occupying more than ten thousand gross square feet of floor area shall contribute to the establishment or enhancement of community and public spaces by providing at least two of the following:

A. Patio/seating area;

B. Pedestrian plaza with benches;

C. Transportation center;

D. Window shopping walkway;

E. Outdoor playground area;

F. Kiosk area, water feature;

G. Clock tower; or

H. Other such deliberately shaped area and/or a focal feature or amenity that, in the judgment of the appropriate decision maker, adequately enhances such community and public spaces. Any such areas shall have direct access to the public sidewalk network and such features shall not be constructed of materials that are inferior to the principle materials of the building and landscape.

Subsection above is not applicable. Development is not for a large retail establishment.

17.62.057 - Multifamily Usable open space requirements.

A. Intent. Creating areas of usable open space that are easily accessed by residents provides focal points for community recreation and interaction and adds to the overall quality of life for residents. Given the environmental and recreational benefits of common open space, it should be integrated purposefully into the overall design of a development and not merely be residual areas left over after buildings and parking lots are sited.

B. Open Space Required. All new multi-family developments in all zones shall provide usable open space.

1. In residential zones, each development shall provide a minimum of one hundred square feet of open space per dwelling unit.

2. In non-residential, commercial and mixed-use zones, each development shall provide a minimum of fifty square feet of open space per dwelling unit.

3. Required setback areas shall not count toward the open space requirement unless setback areas are incorporated into spaces that meet all other requirements of this section.

4. Required open space areas may be counted towards both the open space requirements and the minimum landscaping requirements in OCMC 17.62.050.A, if the spaces meet the requirements of both sections.

C. Usable Open Space Types.

1. Common open spaces shall be accessible to all residents of the development and include landscaped courtyards, decks, gardens with pathways, children's play areas, common rooftop decks and terraces, and other multipurpose recreational or green spaces. Common open spaces may be used to meet one hundred percent of the usable open space requirement. Design standards:

a. Minimum dimensions for common open space shall be twelve feet with a minimum size of two hundred square feet for developments with twenty units or less, and twenty feet with a minimum size of four hundred square feet for developments with twenty-one or more units.

b. Common open space shall feature a mix of natural and recreational amenities to make the area more functional and enjoyable for a range of users. Sites with twenty units or less shall provide a minimum of two of the following amenities, and sites with twenty-one units or more shall provide a minimum of three of the following amenities and an additional amenity for every twenty units over forty, rounded up.

1. Landscaping areas.

2. Community gardening areas.

3. Large trees expected to reach over eighteen inches dbh at maturity.
 4. Seating.
 5. Pedestrian-scaled lighting.
 6. Hard-surfaced pedestrian paths in addition to those required for internal pedestrian circulation.
 7. Paved courtyard or plaza.
 8. Gazebos or other decorative shelters.
 9. Play structures for children.
 10. Sports courts.
 11. An alternative amenity as approved by the community development director.
- c. Common open space shall be separated from ground level windows, streets, service areas and parking lots with landscaping, low-level fencing, and/or other treatments as approved by the city that enhance safety and privacy for both the common open space and dwelling units.
 - d. Common open space shall be accessible from the dwelling units and, as appropriate, from public streets and sidewalks. The space shall be oriented to encourage activity from local residents.
2. Private open space that is not open to all residents includes balconies, patios, and other outdoor multi-purpose recreational or green spaces. It may be used to meet up to fifty percent of the usable open space requirement.
 - a. Minimum dimensions for private open space shall be five feet with a minimum size of forty square feet.
 3. Indoor recreational space may be used to meet up to twenty-five percent of the usable open space requirement provided the space is:
 - a. Accessible to all dwelling units.
 - b. Designed for and includes equipment for a recreational use (e.g., exercise, group functions, etc.).

Subsection above is not applicable. Project is not a multi-family development.

17.62.059 - Cluster housing.

All cluster housing shall comply with the standards in Chapter 17.20.020 in addition to the standards in this chapter.

Subsection above is not applicable. Project does not include Cluster Housing.

17.62.065 - Outdoor lighting.

A. Purpose. The general purpose of this section is to require outdoor lighting that is adequate for safety and convenience; in scale with the activity to be illuminated and its surroundings; directed to the surface or activity to be illuminated; and designed to clearly render people and objects and contribute to a pleasant nighttime environment. Additional specific purposes are to:

1. Provide safety and personal security as well as convenience and utility in areas of public use or traverse, for uses where there is outdoor public activity during hours of darkness;
2. Control glare and excessive brightness to improve visual performance, allow better visibility with relatively less light, and protect residents from nuisance and discomfort;
3. Control trespass light onto neighboring properties to protect inhabitants from the consequences of stray light shining in inhabitants' eyes or onto neighboring properties;
4. Result in cost and energy savings to establishments by carefully directing light at the surface area or activity to be illuminated, using only the amount of light necessary;
5. Control light pollution to minimize the negative effects of misdirected light and recapture views to the night sky; and
6. Encourage energy efficient lighting with new technologies such as light emitting diodes (LED) or similar to reduce ongoing electrical demand and operating costs.

B. Applicability.

1. General.

- a. All exterior lighting for any type of commercial, mixed-use, industrial, or multi-family development shall comply with the standards of this section, unless excepted in subsection B.3.

Outdoor lighting has been designed to comply with requirements of this Section.

b. The city engineer or public works director shall have the authority to enforce these regulations on private property if any outdoor illumination is determined to present an immediate threat to the public health, safety and welfare.

Outdoor lighting shall be modified if necessary and kept in good repair by the Owner if any issues should arise resulting in Code Compliance issues.

2. Lighting Plan Requirement. All commercial, industrial, mixed-use, cottage housing and multi-family developments shall submit a proposed exterior lighting plan. The plan shall be submitted concurrently with the site plan. The exterior lighting plan shall include plans and specifications for streetlights, parking lot lights, and exterior building lights. The specifications shall include details of the pole, fixture height and design, lamp type, wattage, and spacing of lights.

A site lighting plan showing exterior building lights, details and photometrics is being submitted with this application. No modifications to existing parking lot lighting or street lighting are proposed with this applications, since all are currently functioning well.

3. Excepted Lighting. The following types of lighting are excepted from the requirements of this section:

- a. Residential lighting for single-family attached and detached homes, and duplexes.
- b. Public street and right-of-way lighting.
- c. Temporary decorative seasonal lighting provided that individual lamps have a light output of sixty watts or less.
- d. Temporary lighting for emergency or nighttime work and construction.
- e. Temporary lighting for theatrical, television, and performance areas, or for special public events.
- f. Lighting for a special district, street, or building that, according to an adopted municipal plan or ordinance, is determined to require special lighting aesthetics as part of its physical character.
- g. Lighting required and regulated by the Federal Aviation Administration.

No Excepted lighting is proposed as part of this application.

C. Design and Illumination Standards.

1. Outdoor lighting, if provided, shall be provided in a manner that enhances security, is appropriate for the use, avoids adverse impacts on surrounding properties, and the night sky

through appropriate shielding as defined in this section. Glare shall not cause illumination on other properties in excess of a measurement of 0.5 footcandles of light as measured at the property line.

Refer to Lighting Plan for compliance with glare and light trespass levels standards.

2. Lighting shall be provided in parking lots and vehicular circulation areas.

Lighting is provided at all parking and vehicular circulation areas with pole mounted fixtures.

3. Lighting shall be provided in pedestrian walkways, pedestrian plazas, and pedestrian circulation areas.

Lighting is provided at all pedestrian walkways, plazas and circulation areas with building mounted or pole mounted fixtures.

4. Lighting shall be provided at all building entrances.

Lighting is provided at all building entrances and emergency exits.

5. With the exception of pedestrian scale lighting, all light sources shall be concealed or shielded with a full cut-off style fixture in order to minimize the potential for glare and unnecessary diffusion on adjacent property.

All lights have shielded sources and cut-off style as necessary to minimize glare and prevent unwanted light trespass onto neighboring properties.

6. The maximum height of any lighting pole serving a multi-family residential use shall be twenty feet. The maximum height serving any other type of use shall be twenty-five feet, except in parking lots larger than five acres, the maximum height shall be thirty-five feet if the pole is located at least one hundred feet from any residential use.

Pole lights are proposed to be 20' high to match existing parking lot lighting.

7. Floodlights shall not be utilized to light all or any portion of a building facade between ten p.m. and six a.m.

No flood lighting is proposed. All exterior lighting will be controlled by photocell and time clock or motion detection in accordance with current Oregon Energy Code requirements.

8. Lighting on outdoor canopies shall be fully recessed into the canopy and shall not protrude downward beyond the ceiling of the canopy.

Proposed lighting at new building canopy will be recessed.

9. All outdoor light not necessary for security purposes shall be reduced, activated by motion sensor detectors, or turned off during non-operating hours.

Appropriate controls will be installed at all outdoor lighting.

10. Light fixtures used to illuminate flags, statues, or any other objects mounted on a pole, pedestal, or platform shall use a narrow cone beam of light that will not extend beyond the illuminated object.

No new spot illumination lighting is proposed with this project. Criterion does not apply.

11. For upward-directed architectural, landscape, and decorative lighting, direct light emissions shall not be visible above the building roofline.

No upward directed lighting is proposed as part of this project. No light from any building mounted lighting will project above the building roof line.

12. No flickering or flashing lights shall be permitted, except for temporary decorative seasonal lighting.

No flickering or flashing lights are proposed.

13. Lighting for outdoor recreational uses such as ball fields, playing fields, tennis courts, and similar uses, are allowed a light post height up to eighty feet in height.

No outdoor recreational lighting is proposed as part of this project.

14. Main building entrances shall be well lighted and visible from any transit street. The minimum lighting level for building entries fronting on a transit street shall be three foot-candles.

Project is not on a transit street. Criterion does not apply.

17.62.085 - Refuse and recycling standards for commercial, industrial, office, institutional, and multi-family developments.

The purpose and intent of these provisions is to provide an efficient, safe and convenient refuse and recycling enclosure for the public as well as the local collection firm. All new development, change in property use, expansions or exterior alterations to uses, other than single-family or

duplex residences, single-family attached dwellings, 3—4 plexes, internal conversions, or accessory dwelling units (ADUs), shall include a refuse and recycling enclosure. The area(s) shall be:

- A. Fully enclosed and visually screened;
- B. Located in a manner easily and safely accessible by collection vehicles;
- C. Located in a manner so as not to hinder travel lanes, walkways, streets or adjacent properties;
- D. On a level, hard surface designed to discharge surface water runoff and avoid ponding;
- E. Maintained by the property owner;
- F. Used only for purposes of storing solid waste and recyclable materials;
- G. Designed in accordance with applicable sections of the Oregon City Municipal Code (including OCMC 8.20, Solid Waste Collection and Disposal) and city adopted policies.

Enclosures are encouraged to be sized appropriately to meet the needs of current and future tenants and designed with sturdy materials which are compatible to the primary structure(s).

The existing garbage and recycling enclosure serving the Church is proposed to be retained. It is not anticipated that the new recreation building use will exceed the capacity of the existing enclosure which is more than adequate for current use.

17.62.090 - Implementation.

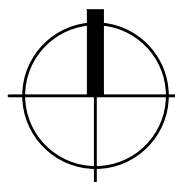
- A. Applications for site plan and design review shall be reviewed in the manner provided in OCMC 16.12 and 17.50. The building official may issue a certificate of occupancy only after the improvements required by site plan and design review approval have been completed, or a schedule for completion and a bond or other financial guarantee have been accepted by the city.
- B. In performing site plan and design review, the review authority shall consider the effect of additional financial burdens imposed by such review on the cost and availability of needed housing types. Consideration of such factors shall not prevent the imposition of conditions of approval found necessary to meet the requirements of this section. The cost of such conditions of approval shall not unduly increase the cost of housing beyond the minimum necessary to achieve the provisions of this title, nor shall such cost prevent the construction of needed housing types.
- C. The site plan and design review provisions of this chapter shall not be applied to reduce the density or height of an application for a development project that reserves at least seventy-five

percent of the gross floor area for housing where the proposed density or height is at or below what is allowed in the base zone, except in the following situations:

1. Where the reduction in density is required for development subject to historic overlay provision in OCMC 17.40; or
2. Where the reduction in density is necessary to resolve a health, safety or habitability issue, or to comply with the natural resource overlay district regulations of OCMC 17.49, the geologic hazard overlay district regulations of OCMC 17.44, or the floodplain management overlay district regulations of OCMC 17.42 or steep slope regulations.



OREGON CITY CHRISTIAN CHURCH RECREATION BUILDING



VICINITY MAP

NTS

PROJECT INFORMATION

PROJECT DESCRIPTION	NEW COMMUNITY RECREATION BUILDING/ GYPMASIUM FOR OREGON CITY CHRISTIAN CHURCH	
PROPERTY LOCATION	T3S R1E S01	
ADDRESS	1179 SOUTH END ROAD	
	OREGON CITY, OR 97045	
COUNTY	CLACKAMAS	
ZONE	R-10	
ELEVATION	471 FT	
SITE AREA	8.55 ACRES	
OCCUPANCY	A-4	
CONSTRUCTION TYPE	V-B	
BUILDING SQUARE FOOTAGE		
MAIN LEVEL FLOOR AREA	14,608 S.F.	
PARKING		
REQUIRED		
EXISTING RELIGIOUS USE	0.25-0.5 SPACES/ SEAT x 290 =	73-145 SPACES
NEW MEETING/ CLASSROOMS	0.25-0.5 SPACES/ SEAT x 339 =	85-170 SPACES
RECREATION/ SPORTS CLUB	5.4 SPACE/ 1000 S.F. MAX =	30- 42 SPACES MAXIMUM
TOTAL REQUIRED		188 -457 SPACES
EXISTING	102 SPACES	
NEW	93 SPACES	
TOTAL PROPOSED	195 SPACES	
LANDSCAPING		
REQUIRED PARKING LOT LANDSCAPING (10%)		11,400 S.F.
PROVIDED PARKING LOT LANDSCAPING (19%)		21,784 S.F.
SITE LANDSCAPING REQUIRED (15%)		55,866 S.F.
SITE LANDSCAPING PROPOSED (54%)		200,354 S.F.

DRAWING INDEX

A1.0	COVER SHEET & GENERAL NOTES
A1.1	SITE PLAN
A1.2	FIRE & LIFE SAFETY PLAN
A1.3	FLOOR PLAN & KEYNOTES
A1.4	ENLARGED FLOOR PLANS & SCHEDULES
A1.5	ROOF PLAN
A1.6	REFLECTED CEILING PLAN
A1.7	ELECTRICAL & LIGHTING PLAN
A2.1	ELEVATIONS
A2.2	ELEVATIONS
A3.1	SECTIONS
A3.2	SECTIONS
A4.1	INTERIOR ELEVATIONS
A5.1	ARCHITECTURAL DETAILS
A5.2	ARCHITECTURAL DETAILS
A5.3	ARCHITECTURAL DETAILS
A5.4	ARCHITECTURAL DETAILS
A6.1	SPECIFICATIONS
A6.2	SPECIFICATIONS
A6.3	SPECIFICATIONS
S0.1	STRUCTURAL NOTES
S1.1	FOUNDATION PLAN
S1.2	CEILING FRAMING PLAN
S1.2	ROOF FRAMING PLAN
SD1	STRUCTURAL DETAILS
SD2	STRUCTURAL DETAILS
C1.0	EXISTING CONDITIONS PLAN
C2.0	GRADING CONTROL PLAN
C3.0	UTILITY PLAN
C4.0	CIVIL DETAILS
C4.1	CIVIL DETAILS
ESC1.0	EROSION CONTOL COVER SHEET
ESC2.0	EROSION/ SEDIMENT CONTROL PLAN
ESC2.1	PAVING/ FINAL STABILIZATION PLAN
ESC3.0	EROSION CONTROL DETAILS
L1.1	LANDSCAPE PLAN
L1.2	LANDSCPE PLAN
L1.3	IRRIGATION PLAN
L1.4	IRRIGATION PLAN

PROJECT TEAM

OWNER

OREGON CITY CHRISTIAN CHURCH
1179 SOUTH END ROAD
OREGON CITY, OR 97045
CONTACT: BRENT BRELJE
kbrelje@yahoo.com
503-863-9973

ARCHITECT

ISELIN ARCHITECTS, PC
1307 7TH ST
OREGON CITY, OR 97045
CONTACT: TODD ISELIN
todd@iselinarch.com
503-656-1942

LANDSCAPE ARCHITECT

DARRELL MULCH LANDSCAPE ARCHITECT
1907 NE 66TH AVE, #168
PORTLAND, OR 97213
CONTACT: DARRELL MULCH
mulch.darrell@gmail.com
503-222-7416

CIVIL ENGINEER

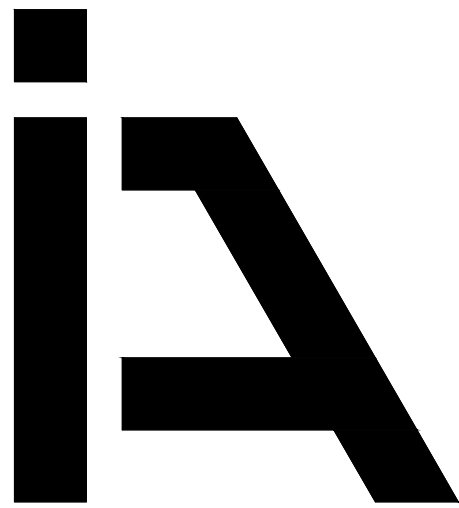
AAI ENGINEERING
4875 SW GRIFFITH DRIVE
BEAVERTON, OR 97005
CONTACT: CRAIG HARRIS
craigh@aaieng.com
503-620-3030

STRUCTURAL ENGINEER

AAI ENGINEERING
4875 SW GRIFFITH DRIVE
BEAVERTON, OR 97005
CONTACT: HAMID AFGHAN
hamid@aaieng.com
503-620-3030

TRAFFIC ENGINEER

KITTLESON AND ASSOCIATES
851 SW 6TH AVE, SUITE 600
PORTLAND, OR 97204
CONTACT: MATT BELL
mbell@kittleson.com
503-228-5230



**ISELIN
ARCHITECTS
P.C.**

1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com

NOT FOR
PRELIMINARY
CONSTRUCTION

RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH

1179 SOUTH END ROAD
OREGON CITY, OR 97045

PROJ. NO. : 1881
FILE : A-COV
DATE : 1/03/20

SHEET #

A1.0

COVER SHEET

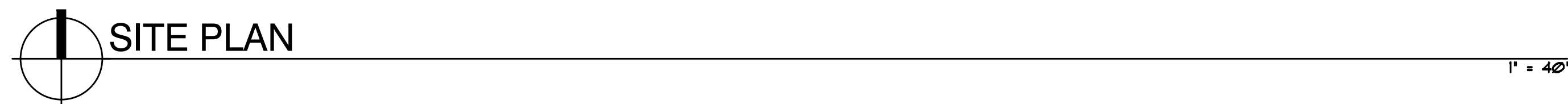
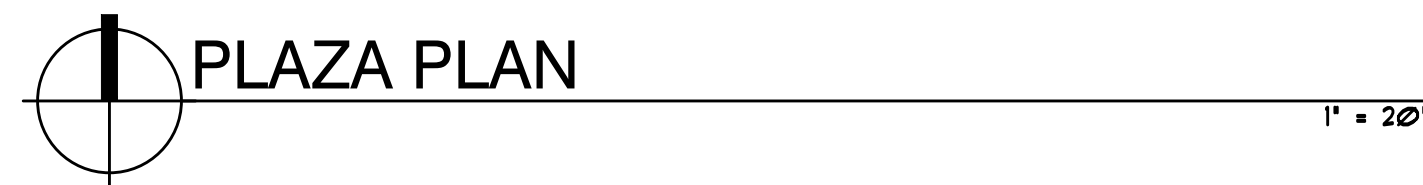


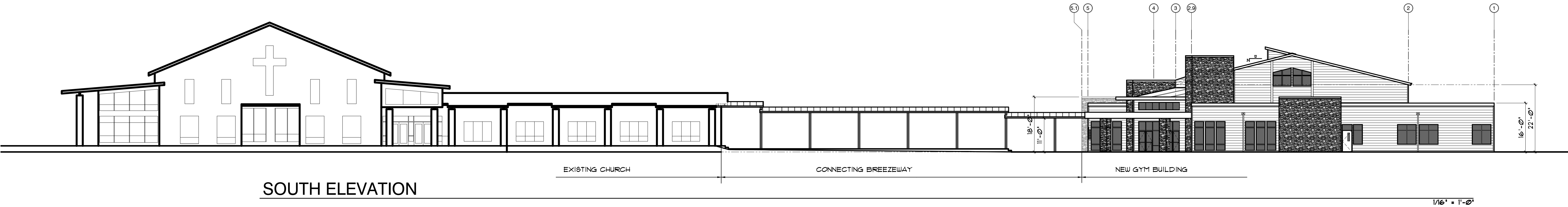
• NOT FOR •
PRELIMINARY
CONSTRUCTION

1179 SOUTH END ROAD
OREGON CITY, OR 97045

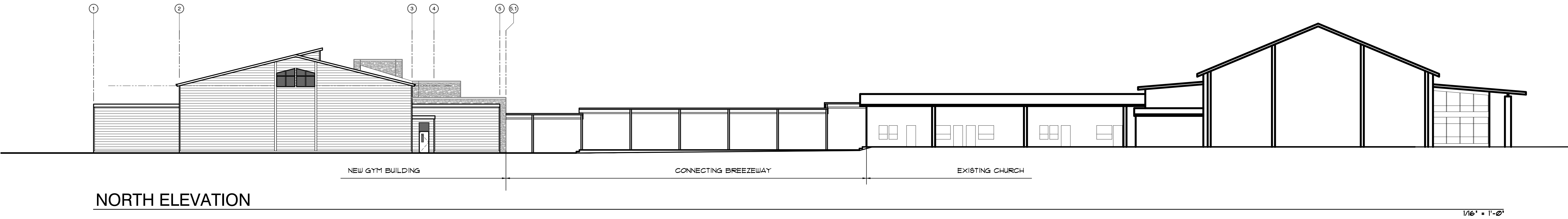
A1.1

SITE PLAN

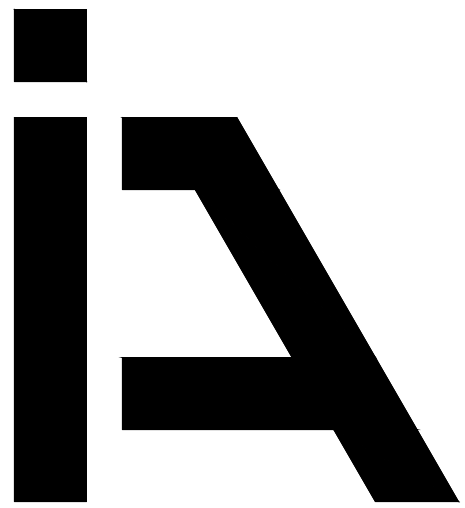




TRANSPARENCY CALCULATIONS:
TOTAL BUILDING LENGTH: 463'
TRANSPARENCY LENGTH: 331' (71%)



TRANSPARENCY CALCULATIONS:
TOTAL BUILDING LENGTH: 463'
TRANSPARENCY LENGTH: 179.5' (38%)



ISELIN
ARCHITECTS
P.C.

1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com

NOT FOR
PRELIMINARY
CONSTRUCTION

RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH
1179 SOUTH END ROAD
OREGON CITY, OR 97045

PROJ. NO. : 1881
FILE : A-ELV
DATE : 5/18/2020

SHEET #
A2.1
ELEVATIONS



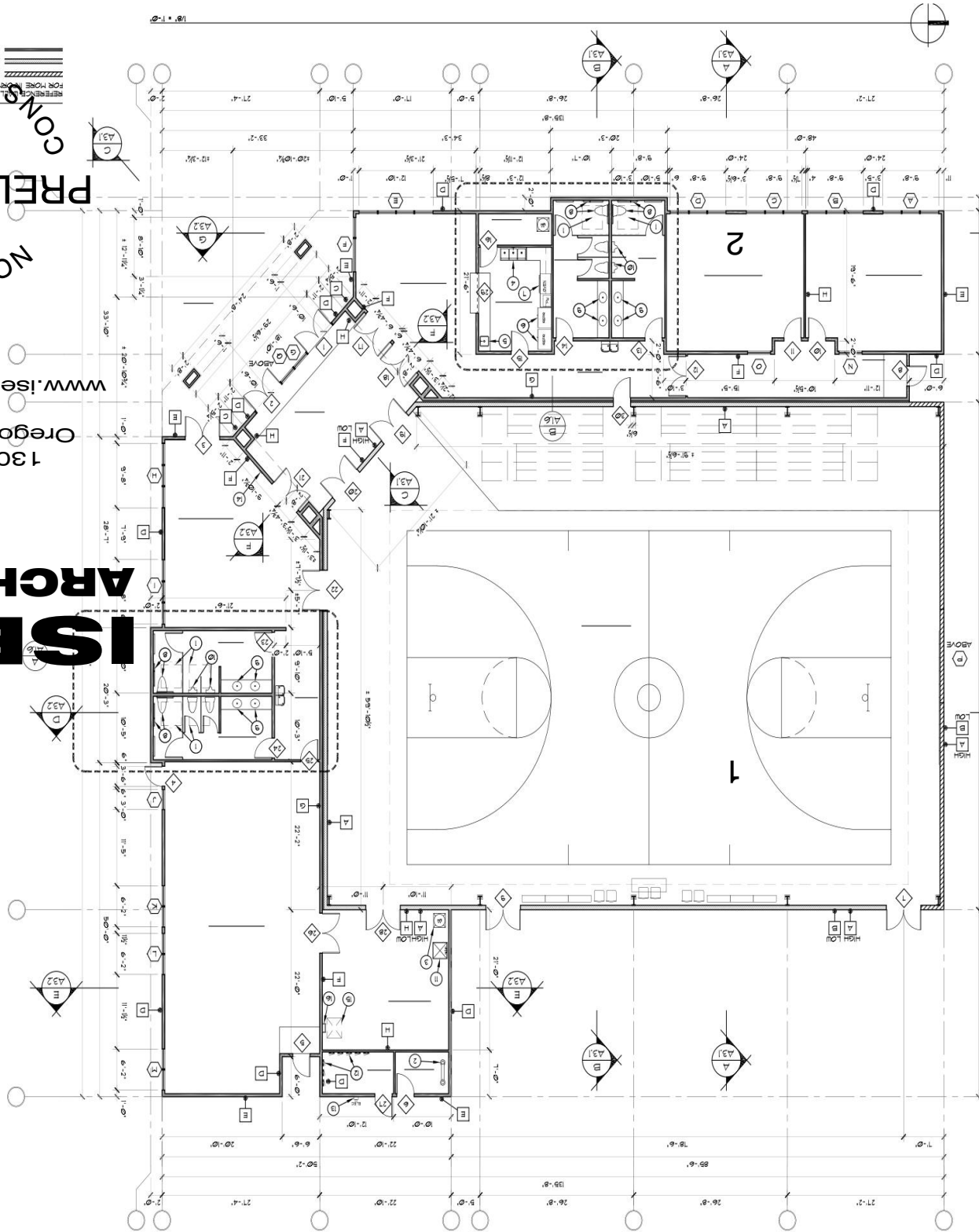
ISELIN
ARCHITECTS
P.C.

1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com

NOT FOR

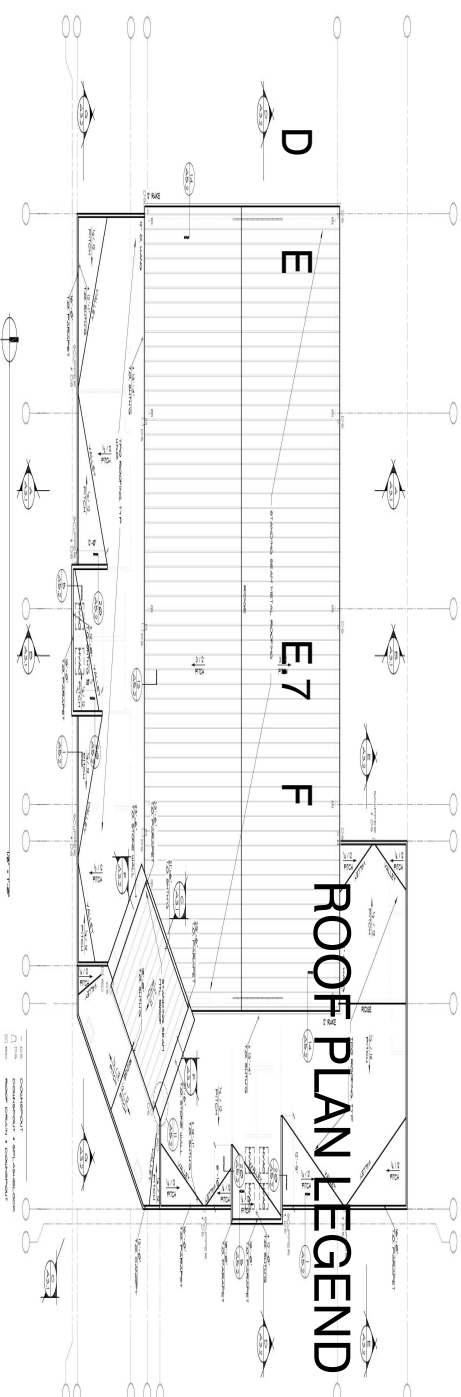
PRELIMINARY

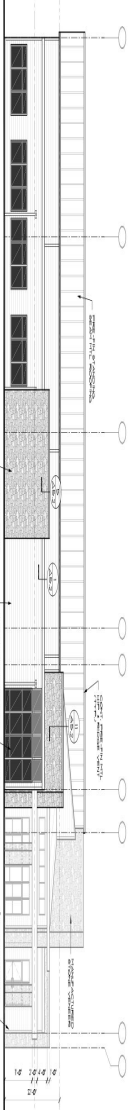
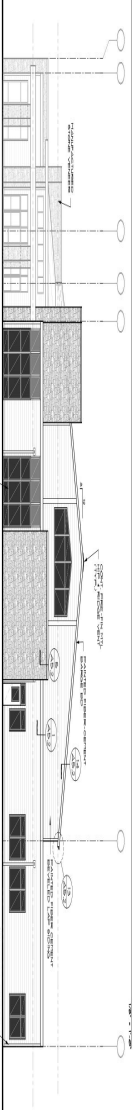
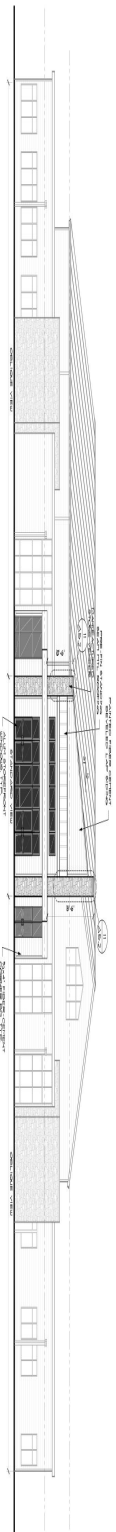
CONSTRUCTION
FOR HOME SCHEDULE
MIL BUILDING WALL ABOVE STUD WALL
STUD WALL



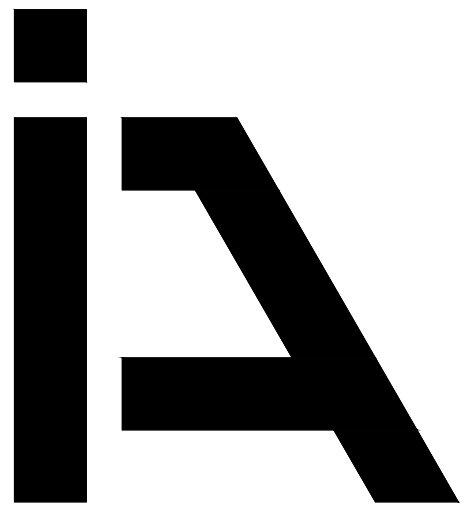


G.G.1



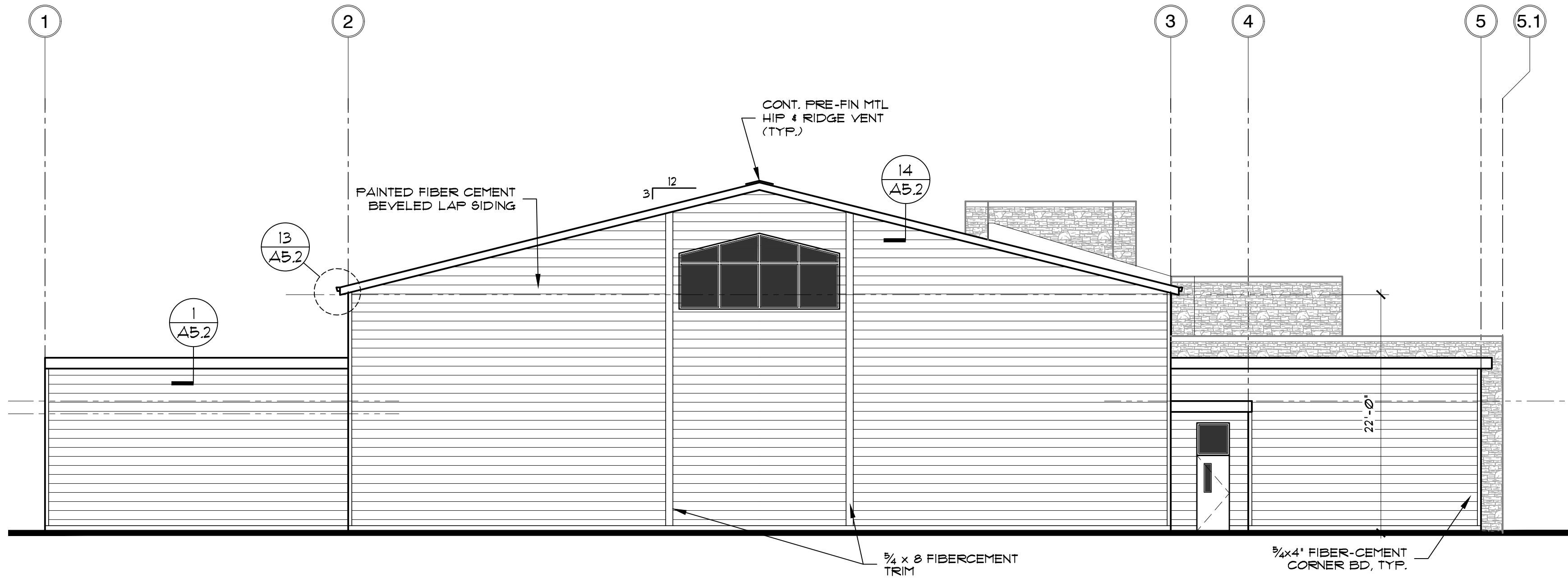


RD RD



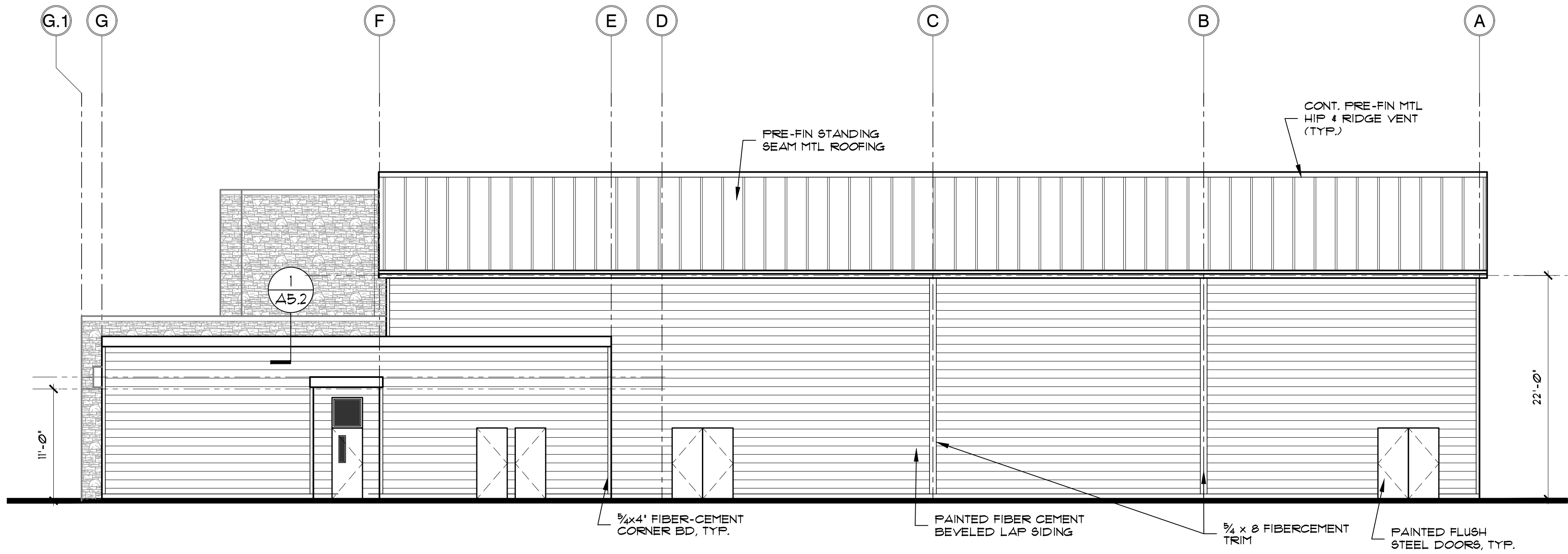
**ISELIN
ARCHITECTS
P.C.**

1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com



NORTH ELEVATION

1/8" = 1'-0"



EAST ELEVATION

1/8" = 1'-0"

RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH

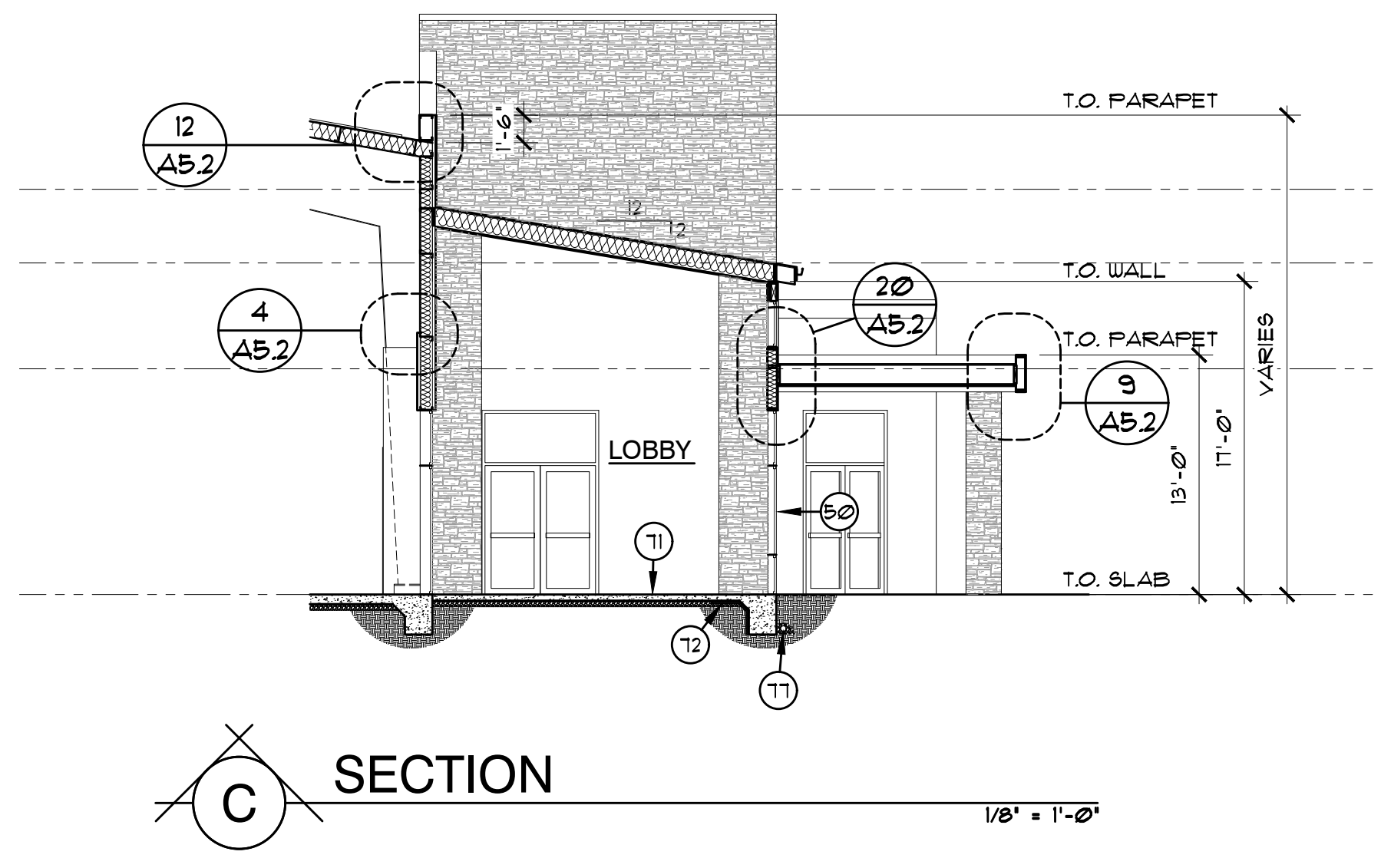
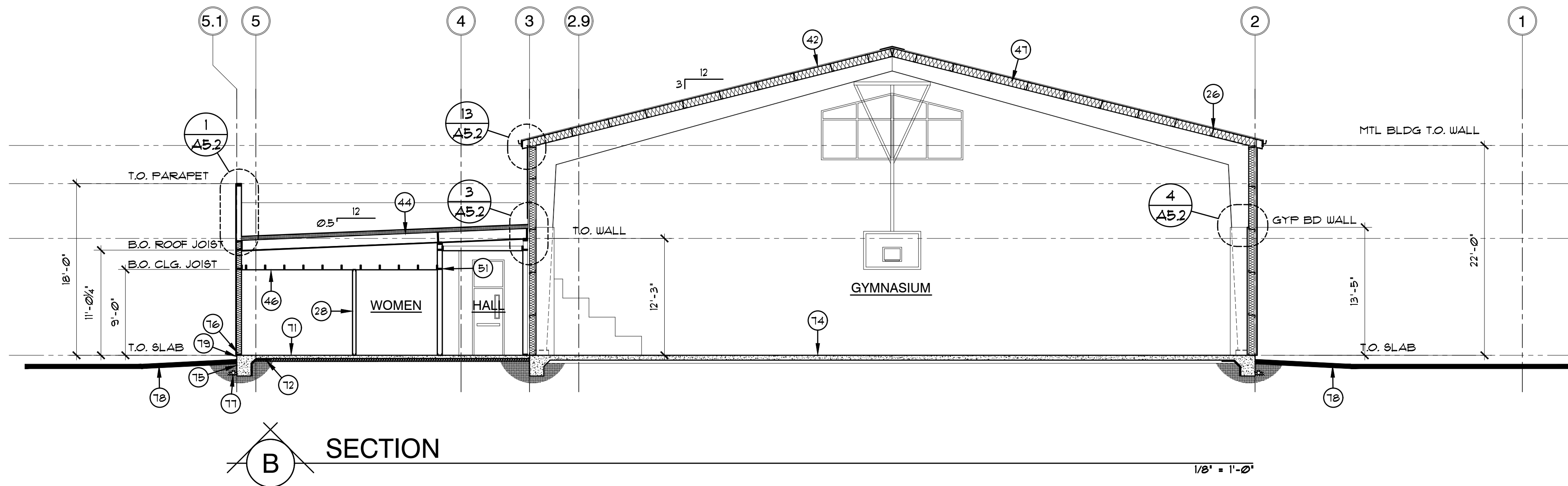
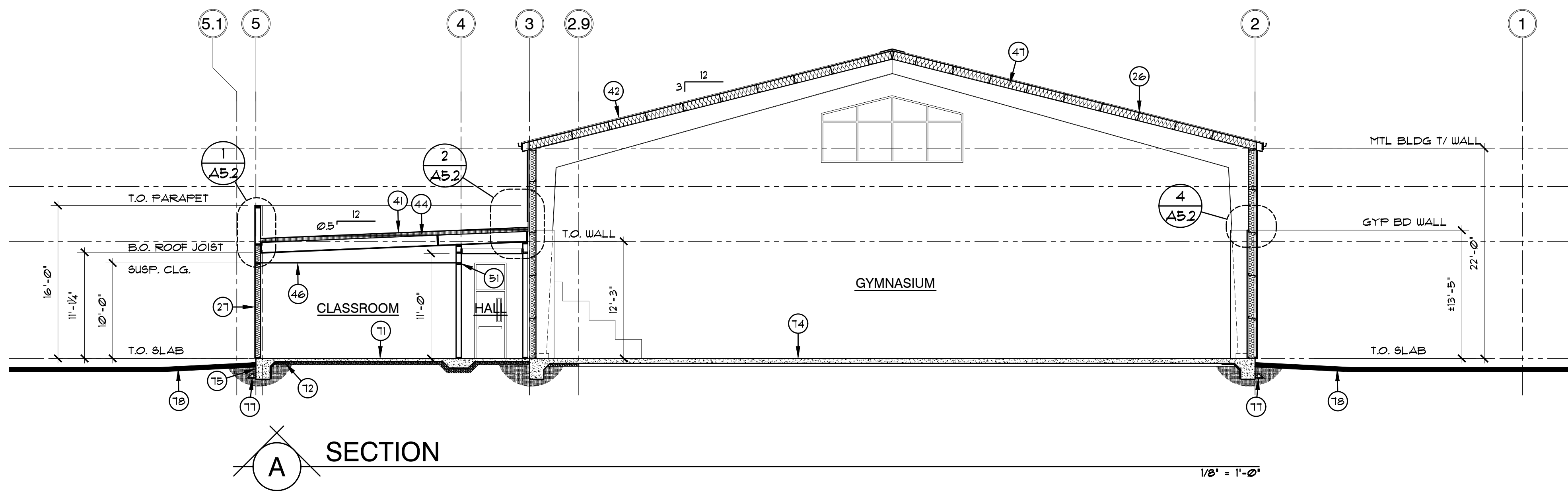
1179 SOUTH END ROAD
OREGON CITY, OR 97045

PROJ. NO. : 1881
FILE : A-ELV
DATE : 1/14/20

SHEET #

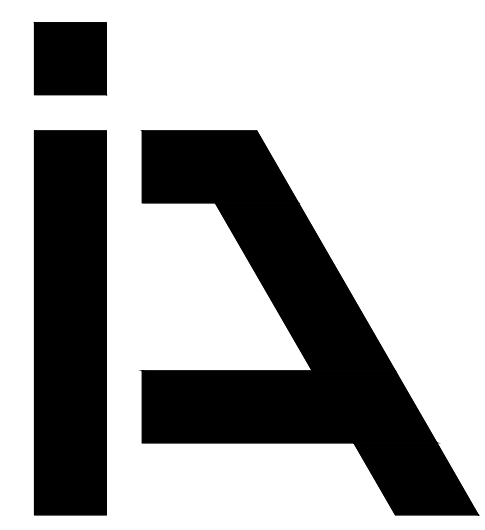
A2.2

ELEVATIONS



SECTION KEYNOTES

26. METAL BUILDING FRAME, GIRTS, FURLING AND FRAMING AS REQUIRED TO SUPPORT OPENINGS, OFF-SETS, EXTERIOR CLADDING AS ILLUSTRATED IN DRAWINGS. *DEFERRED SUBMITTAL REQUIRED. SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR ARCHITECTS REVIEW/ APPROVAL PRIOR TO PERMIT SUBMITTAL OR FABRICATION.
27. TYPICAL WOOD FRAMED EXTERIOR WALL ASSEMBLY: SIDING PER ELEVATIONS OVER SPECIFIED WEATHER RESISTANT BARRIER ON FLYWD SHING PER STRUCTURAL ON 2x6 STUDS AT 16' O.C. WITH R-21 BATT INSULATION AND 5/8" GYP BD FINISH AT INTERIOR.
28. TYPICAL NON-BEARING INTERIOR WALL ASSEMBLY: 2x4 or 3509125-33 METAL STUDS AT 16' O.C. WITH UNFACED FIBERGLASS SOUND BATT INSULATION AND 5/8" GYP BD FINISH AT EACH SIDE.
29. TYPICAL INTERIOR BEARING WALL ASSEMBLY: 2x6 STUDS @ 16' O.C. WITH UNFACED FIBERGLASS SOUND BATT INSULATION AND 5/8" GYP BD FINISH EACH SIDE INSTALLED AS REQUIRED FOR 1 HOUR ASSEMBLY.
30. - 40. NOT USED
41. TYP LOW SLOPE ROOF ASSEMBLY: FULLY ADHERED 60 MIL TPO ROOFING OVER COVER BOARD ON MIN. 4" RIGID POLYISO INSULATION (R-20 MIN.) ON 5/8" APA PANEL SPAN RATED SHEATHING ON ROOF JOISTS PER STRUCTURAL. INSTALL (2) LAYERS 5/8" TYPE 'X' GYP BD AT UNDERSIDE OF JOISTS AS REQUIRED FOR 1 HOUR ASSEMBLY. INSTALL W/ ALL ACCESSORIES & TAPERED INSULATION @ CRICKETS AS REQUIRED FOR POSITIVE DRAINAGE & MANUFACTURER'S 30 YEAR WARRANTY.
42. TYPICAL STEEP SLOPED ROOF ASSEMBLY: PRE-FINISHED STANDING SEAM METAL ROOFING INSTALLED OVER EPDM ISOLATION STRIPS OVER METAL BUILDING FRAMING.
43. 1X4 T & G CEDAR SIDING AT UNDERSIDE & 2" WIDE CONT SCREENED VENT, TYP.
44. ROOF JOIST PER STRUCTURAL.
45. RAFTERS PER FRM'G PLANS.
46. SUSPENDED CEILING SYSTEM INSTALLED PER DETAILS & IN ACCORDANCE WITH NUUGCS #401.
47. R-30 BATT INSULATION INSTALLED AT UNDERSIDE OF METAL ROOFING WITH F&K PAPER FACING AT UNDERSIDE.
48. TYP EXTERIOR HDR AT WOOD FRAME WALLS: 4X12 #1 DF-L, UNO. (REF FRM'G PLANS). FILL CAVITY W/ RIGID INSUL.
49. TYP INTERIOR HDR: 4X12 #1 DF-L, UNO. (REF FRM'G PLANS). NON-BEARING HDRS MAY BE FRAMED W/ CRIPPLES.
50. INSTALL FAN FLASHING @ WINDOWS, TYP: REF DTL 1/A5.1.
51. INSTALL FIREBL'G @ CLG & FLOOR LEVELS, HORIZONTALLY @ INTERVALS NOT EXCEEDING 10'-0", & @ INTERCONNECTIONS BTWN CONCEALED HORIZ & VERTICAL SPACES, SUCH AS @ SOFFITS OR PORCH ROOFS, TYP.



**ISELIN
ARCHITECTS
P.C.**

1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com

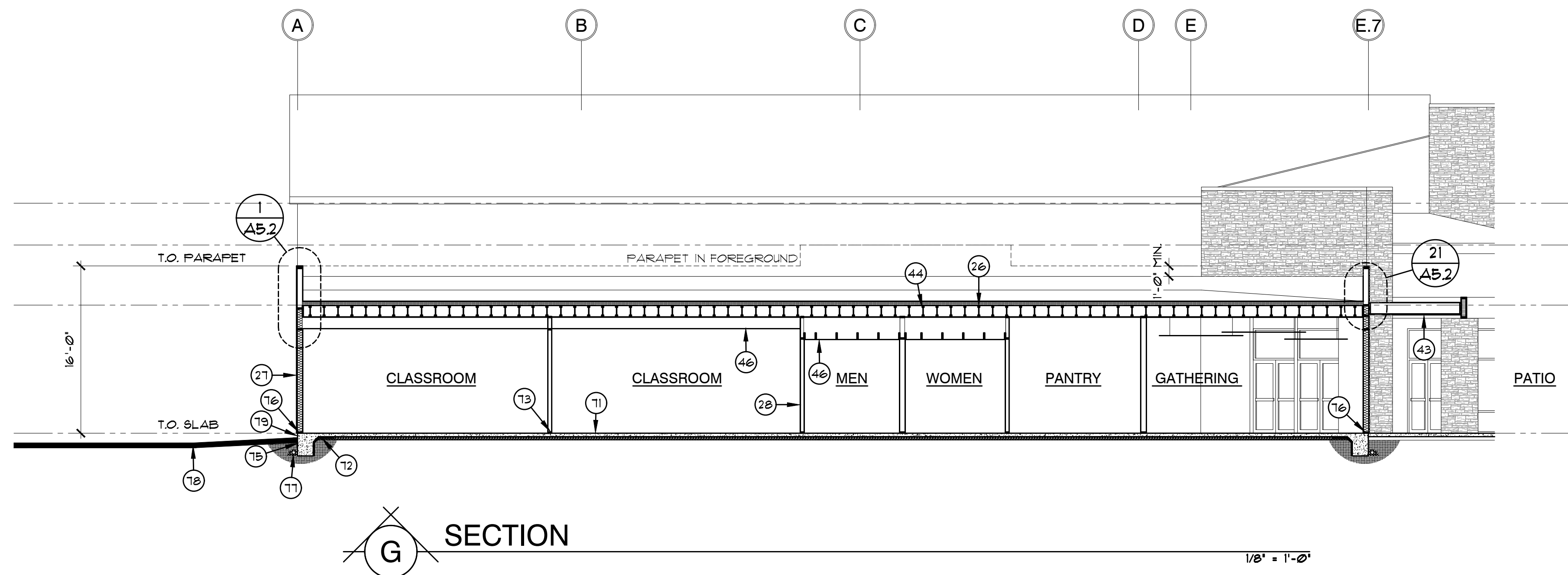
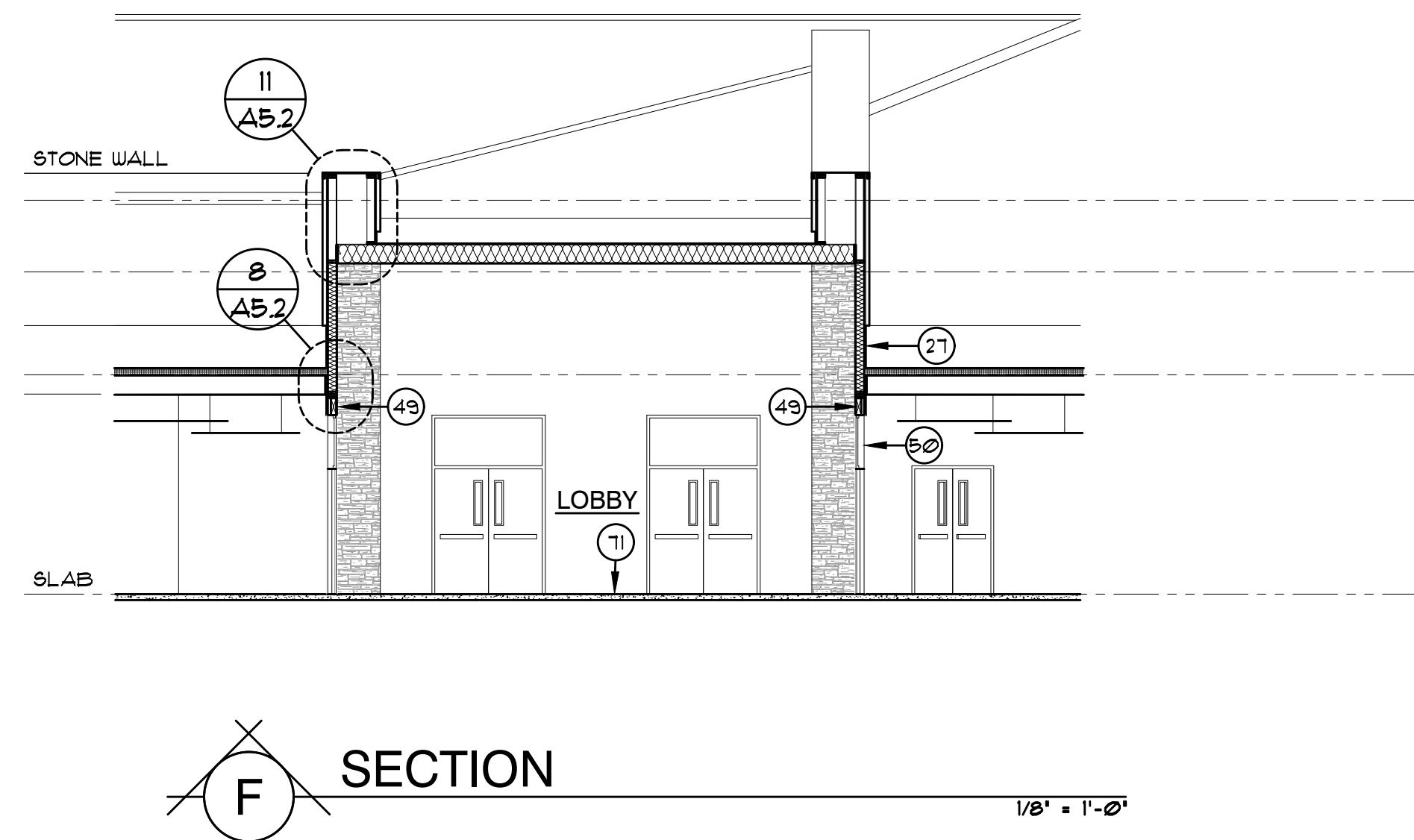
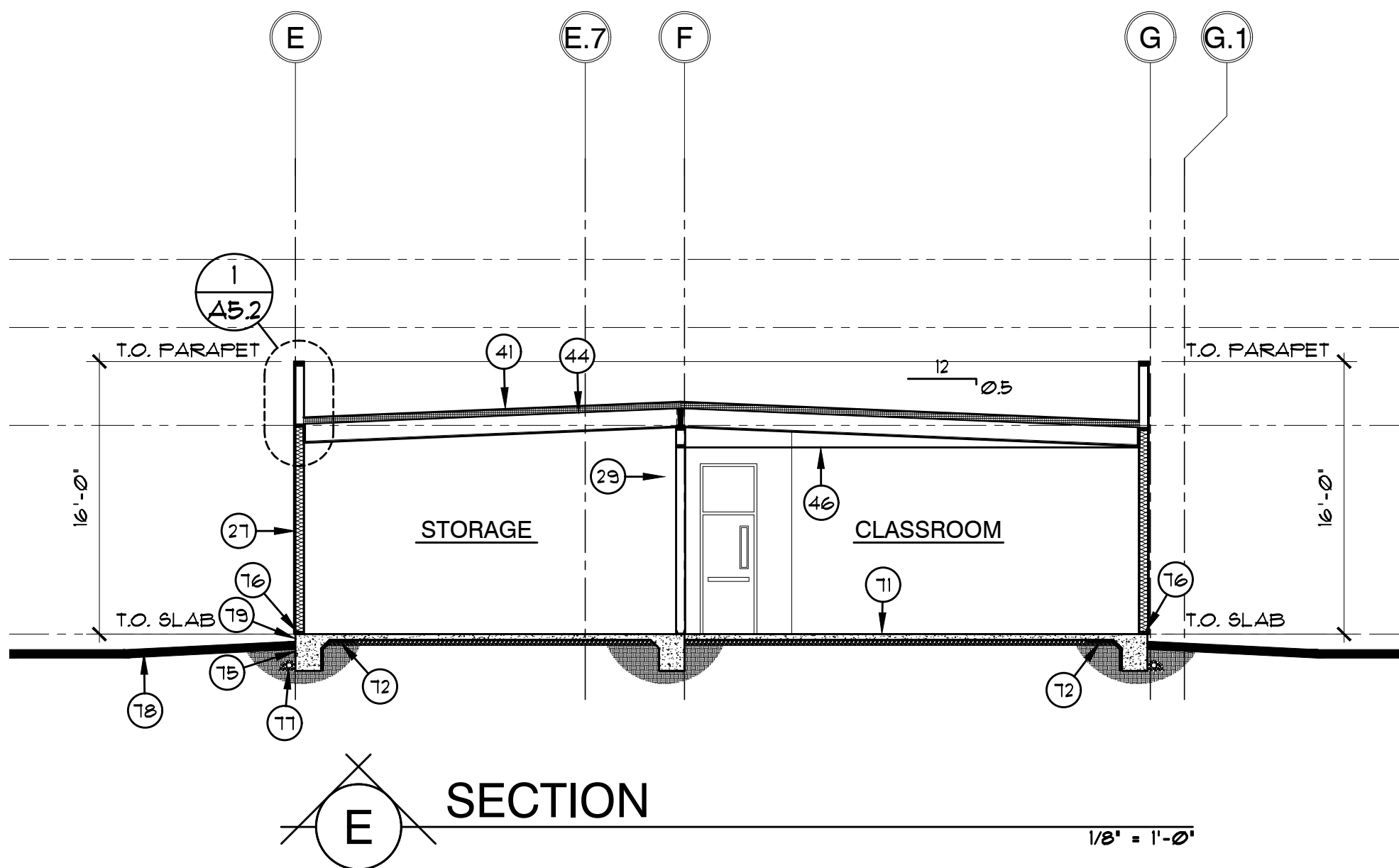
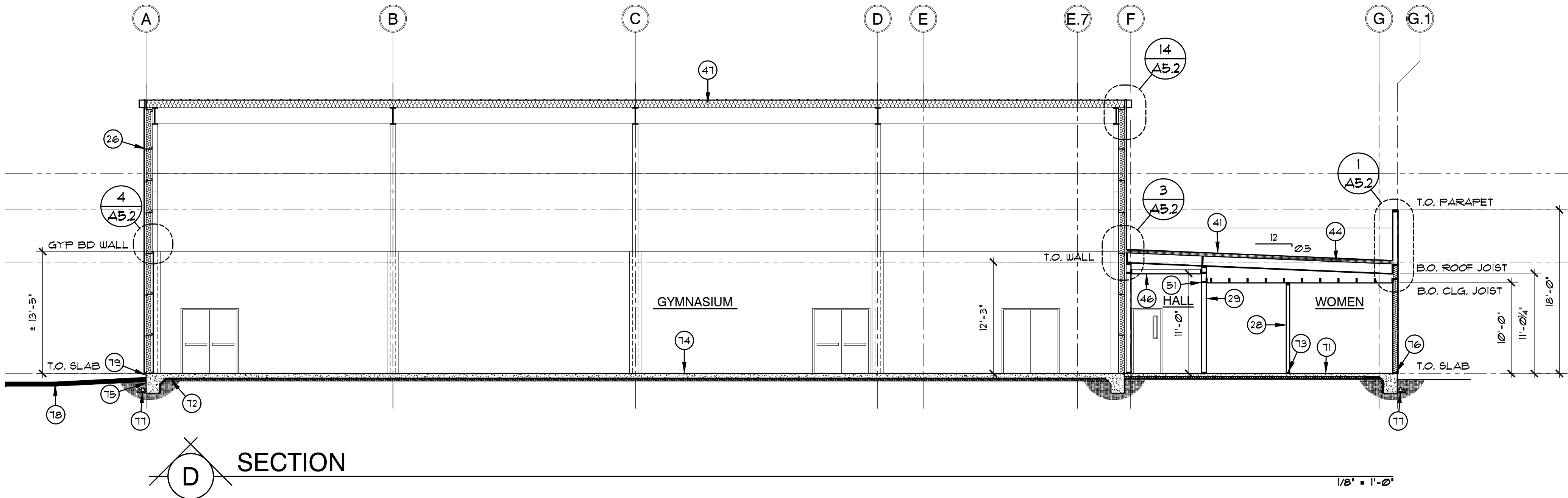
NOT FOR
PRELIMINARY
CONSTRUCTION

RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH
1179 SOUTH END ROAD
OREGON CITY, OR 97045

PROJ. NO. : 1881
FILE : A-SEC
DATE : 1/15/20

SHEET #
A3.1

SECTIONS



SECTION KEYNOTES

26. METAL BUILDING FRAME, GIRTS, FURLING AND FRAMING AS REQUIRED TO SUPPORT OPENINGS, OFF-SETS, EXTERIOR CLADDING AS ILLUSTRATED IN DRAWINGS. *DEFERRED SUBMITTAL REQUIRED. SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR ARCHITECT'S REVIEW/ APPROVAL PRIOR TO PERMIT SUBMITTAL OR FABRICATION.
27. TYPICAL WOOD FRAMED EXTERIOR WALL ASSEMBLY: SIDING PER ELEVATIONS OVER SPECIFIED WEATHER RESISTANT BARRIER ON FLYWD SHING PER STRUCTURAL ON 2x6 STUDS AT 16' O.C. WITH R-21 BATT INSULATION AND 5/8" GYP BD FINISH AT INTERIOR.
28. TYPICAL NON-BEARING INTERIOR WALL ASSEMBLY: 2x4 or 3500/25-33 METAL STUDS AT 16' O.C. WITH UNFACED FIBERGLASS SOUND BATT INSULATION AND 5/8" GYP BD FINISH AT EACH SIDE.
29. TYPICAL INTERIOR BEARING WALL ASSEMBLY: 2x6 STUDS @ 16' O.C. WITH UNFACED FIBERGLASS SOUND BATT INSULATION AND 5/8" GYP BD FINISH EACH SIDE INSTALLED AS REQUIRED FOR 1 HOUR ASSEMBLY.
30. - 40. NOT USED
41. TYP LOW SLOPE ROOF ASSEMBLY: FULLY ADHERED 60 MIL TPO ROOFING OVER BOARD ON 1/2" 4" RIGID POLYISO INSULATION (R-20 MIN) ON 5/8" APA PANEL SPAN RATED SHEATHING ON ROOF JOISTS PER STRUCTURAL. INSTALL (2) LAYERS 5/8" TYPE 'X' GYP BD AT UNDERSIDE OF JOISTS AS REQUIRED FOR 1 HOUR ASSEMBLY. INSTALL W/ ALL ACCESSORIES & TAPERED INSULATION @ CRICKETS AS REQUIRED FOR POSITIVE DRAINAGE & MANUFACTURER'S 30 YEAR WARRANTY.
42. TYPICAL STEEP SLOPED ROOF ASSEMBLY: PRE-FINISHED STANDING SEAM METAL ROOFING INSTALLED OVER EPDM ISOLATION STRIPS OVER METAL BUILDING FRAMING.
43. 1X4 T&G CEDAR SIDING AT UNDERSIDE & 2' WIDE CONT SCREENED VENT, TYP.
44. ROOF JOIST PER STRUCTURAL.
45. RAFTERS PER FRMG PLANS.
46. SUSPENDED CEILING SYSTEM INSTALLED PER DETAILS & IN ACCORDANCE WITH NUWCBS *401.
47. R-30 BATT INSULATION INSTALLED AT UNDERSIDE OF METAL ROOFING WITH F&K PAPER FACING AT UNDERSIDE.
48. TYP EXTERIOR HDR AT WOOD FRAME WALLS: 4X12 #1 DF-L, UNO. (REF FRMG PLANS). FILL CAVITY W/ RIGID INSUL.
49. TYP INTERIOR HDR: 4X12 #1 DF-L, UNO. (REF FRMG PLANS). NON-BEARING HDRS MAY BE FRAMED W/ CRIPPLES.
50. INSTALL FAN FLASHING @ WINDOWS, TYP: REF DTL 1/A5.1.
51. INSTALL FIREBLKG @ CLG & FLOOR LEVELS, HORIZONTALLY @ INTERVALS NOT EXCEEDING 10'-0", & @ INTERCONNECTIONS BTWN CONCEALED HORIZ & VERTICAL SPACES, SUCH AS @ SOFFITS OR PORCH ROOFS, TYP.
52. - 70. NOT USED

RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH

1179 SOUTH END ROAD
OREGON CITY, OR 97045

PROJ. NO. : 1881
FILE : A-SEC
DATE : 1/15/20

SHEET #

A3.2

SECTIONS



Material and Color Board



Taylor Metal Products
Standing Seam Metal Roofing
'Saddle Tan'



COBBLE STONE

Hardie ColorPlus Siding
Main Color
'Cobble Stone'



Canyon Cobble
Coronado Stone
'Wind River'

Hardie ColorPlus Siding
Accent Color
'khaki Brown'

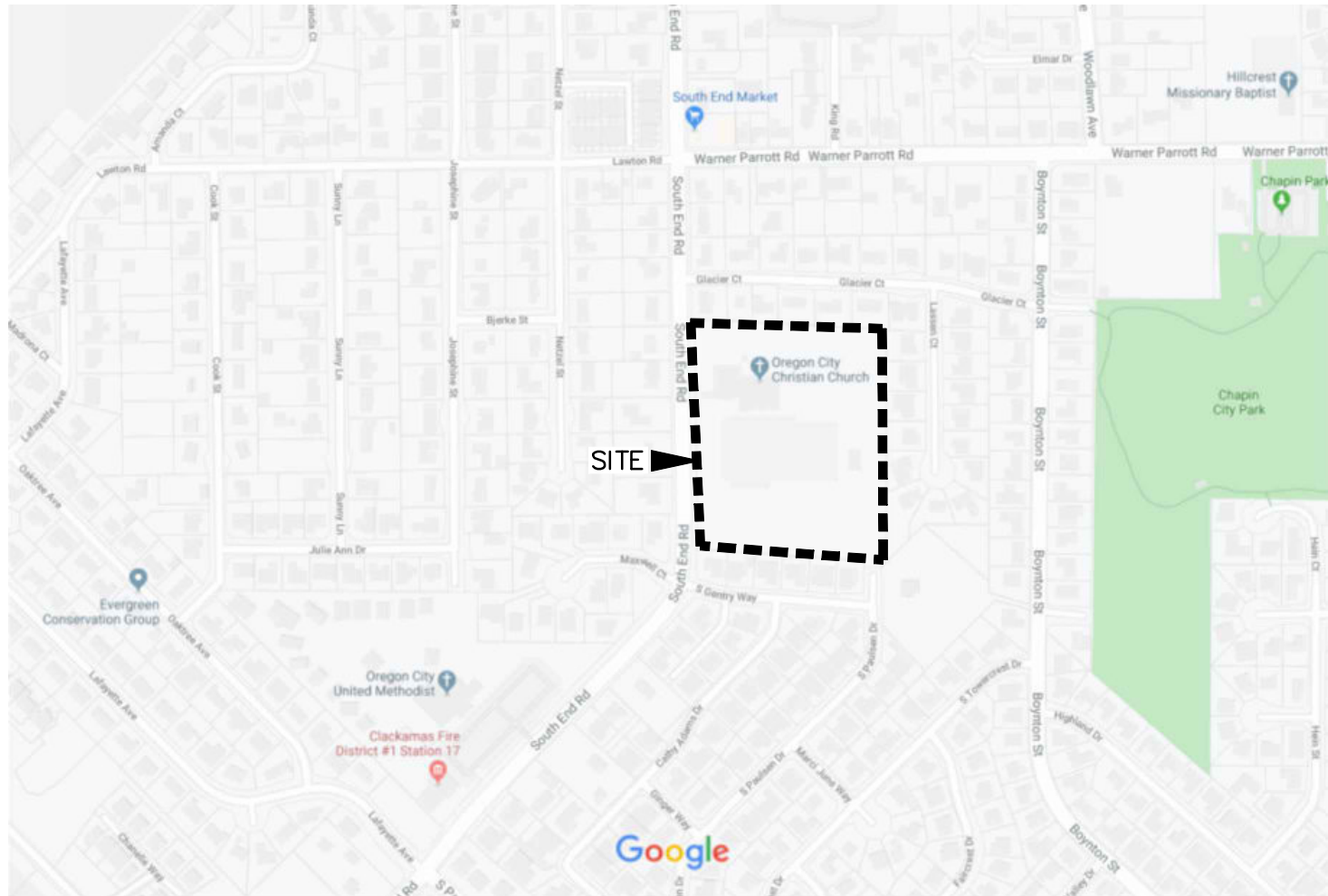


KHAKI BROWN

Oregon City Christian Church
Iselin Architects, P.C.

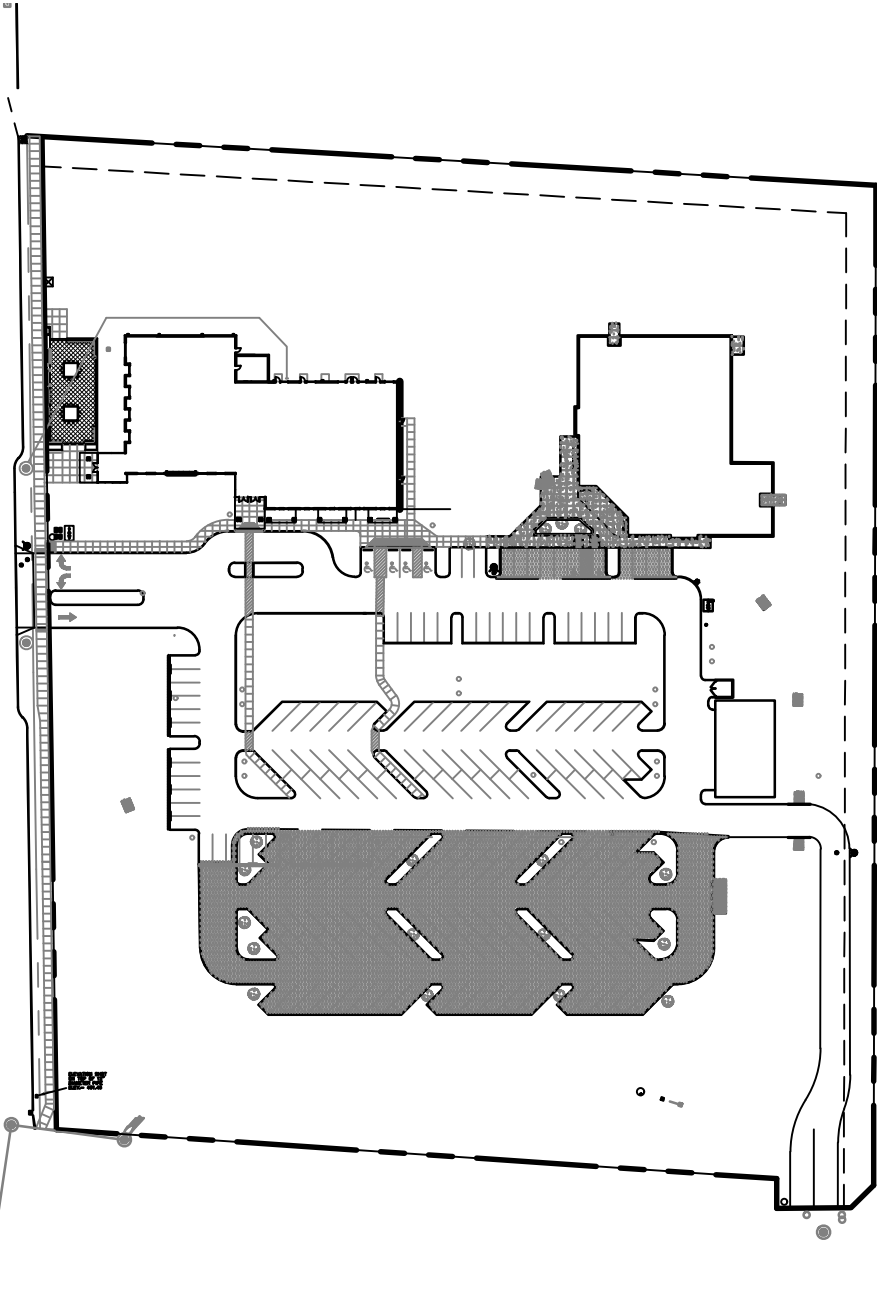
EROSION AND SEDIMENT CONTROL PLANS

OREGON CITY CHRISTIAN CHURCH OREGON CITY, OREGON



VICINITY MAP

SCALE: NTS



SITE MAPS

SCALE: NTS

PROJECT LOCATION:

1179 SOUTH END RD
OREGON CITY, OR 97045
LATITUDE = 45.335
LONGITUDE = -122.622

PROPERTY DESCRIPTION:

LOCATED IN SECTION 1, TOWNSHIP 3 SOUTH,
RANGE 1 EAST, TAX LOT 100, WILLAMETTE
MERIDIAN, CLACKAMAS COUNTY, OREGON.

ATTENTION EXCAVATORS:

OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THESE RULES FROM THE CENTER BY CALLING 503-232-1987. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CENTER. YOU MUST NOTIFY THE CENTER AT LEAST TWO BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION. CALL 503-246-6699.

OREGON CITY CHRISTIAN CHURCH

OWNER

CONTACT: BRENT BRELJE
1179 SOUTH END ROAD
OREGON CITY, OR 97045
EMAIL: KBRELJE@YAHOO.COM
PH: 503-683-9973

ISELIN ARCHITECTS, P.C.

ARCHITECT

CONTACT: TODD ISELIN
1307 7TH STREET
OREGON CITY, OR 97045
PH: 503-656-1942

AAI ENGINEERING

CIVIL ENGINEER

CONTACT: CRAIG HARRIS
4875 SW GRIFFITH DRIVE, SUITE 300
BEAVERTON, OR 97005
PH: 503-620-3030
FAX: 503-620-5539

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS

SITE CONTAINS AN EXISTING CHURCH AND PARKING AREA. SITE IS SLOPED TOWARDS THE SOUTH.

PROPOSED SITE CONDITIONS

ADDITIONAL BUILDING AND AN EXPANSION OF THE EXISTING PARKING AREA.

NATURE OF CONSTRUCTION ACTIVITY AND ESTIMATED TIME TABLE

CLEARING: APRIL 20
MASS GRADING: APRIL 20 - JUNE 20
UTILITY INSTALLATION: MAY 20 - JULY 20
FINAL STABILIZATION: SEPTEMBER 20

TOTAL SITE AREA = 8.58 ACRES
TOTAL DISTURBED AREA = 2.9 ACRES

SITE SOIL CLASSIFICATION:

8B - BORNSTEDT SILT LOAM, 0 TO 8 PERCENT SLOPES
46B - JORY STONY SILT LOAM, 3 TO 8 PERCENT SLOPES

RECEIVING WATERS

WILLAMETTE RIVER

PERMITTEE'S SITE INSPECTOR:

JONATHAN SWEET

COMPANY/AGENCY: AAI ENGINEERING, INC.

PHONE: 503-620-3030

FAX: 503-620-5539

E-MAIL: JONATHANS@AAIENG.COM

DESCRIPTION OF EXPERIENCE:

CESQA# E00-3-3041925 3+ YEARS PLANNING/DESIGNING AND 2+ YEARS

INSPECTING OF EROSION AND SEDIMENT CONTROL BMPs.

INSPECTION FREQUENCY:

SITE CONDITION	MINIMUM FREQUENCY
1. ACTIVE PERIOD	DAILY WHEN STORMWATER RUNOFF, INCLUDING RUNOFF FROM SNOWMELT, IS OCCURRING. AT LEAST ONCE EVERY 14 DAYS, REGARDLESS OF WHETHER STORMWATER RUNOFF IS OCCURRING.
2. PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY.	ONCE TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN WORKING ORDER. ANY NECESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE.
3. INACTIVE PERIODS GREATER THAN FOURTEEN (14) CONSECUTIVE CALENDAR DAYS.	ONCE EVERY MONTH.
4. PERIODS DURING WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER.	IF PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION.
5. PERIODS DURING WHICH DISCHARGE IS UNLIKELY DUE TO FROZEN CONDITIONS.	MONTHLY. RESUME MONITORING IMMEDIATELY UPON MELT, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY.

STANDARD EROSION AND SEDIMENT

CONTROL PLAN DRAWING NOTES:

- HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE INSPECTOR TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS. (SCHEDULE A.8.C.I.(3))
- ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH DEQ 1200-C PERMIT REQUIREMENTS. (SCHEDULE A.12.B AND SCHEDULE B.1)
- INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200-C PERMIT REQUIREMENTS. (SCHEDULE B.1.C AND B.2)
- RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS, RETAIN THE ESCP AT THE CONSTRUCTION SITE OR AT ANOTHER LOCATION. (SCHEDULE B.2.C)
- ALL PERMIT REGISTRANTS MUST IMPLEMENT THE ESCP. FAILURE TO IMPLEMENT ANY OF THE CONTROL MEASURES OR PRACTICES DESCRIBED IN THE ESCP IS A VIOLATION OF THE PERMIT. (SCHEDULE A.8.A)
- THE ESCP MUST BE ACCURATE AND REFLECT SITE CONDITIONS. (SCHEDULE A.12.C.I)
- SUBMISSION OF ALL ESCP REVISIONS IS NOT REQUIRED. SUBMITTAL OF THE ESCP REVISIONS IS ONLY UNDER SPECIFIC CONDITIONS. SUBMIT ALL NECESSARY REVISION TO DEQ OR AGENT WITHIN 10 DAYS. (SCHEDULE A.12.C.IV AND V)
- PHASE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION. (SCHEDULE A.7.A.II)
- IDENTIFY, MARK, AND PROTECT (BY FENCING OFF OR OTHER MEANS) CRITICAL RIPARIAN AREAS AND VEGETATION INCLUDING IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, AND VEGETATION AREAS TO BE PRESERVED. IDENTIFY VEGETATIVE BUFFER ZONES BETWEEN THE SITE AND SENSITIVE AREAS (E.G., WETLANDS), AND OTHER AREAS TO BE PRESERVED, ESPECIALLY IN PERIMETER AREAS. (SCHEDULE A.8.C.I.(1) & (2))
- PRESERVE EXISTING VEGETATION WHEN PRACTICAL AND RE-VEGETATE OPEN AREAS. RE-VEGETATE OPEN AREAS WHEN PRACTICABLE BEFORE AND AFTER GRADING OR CONSTRUCTION. IDENTIFY THE TYPE OF VEGETATIVE SEED MIX USED. (SCHEDULE A.7.A.V)
- MAINTAIN AND DELINEATE ANY EXISTING NATURAL BUFFER WITHIN THE 50-FOOT OF WATERS OF THE STATE. (SCHEDULE A.7.B.I AND 2(A)(6))
- INSTALL PERIMETER SEDIMENT CONTROL, INCLUDING STORM DRAIN INLET PROTECTION AS WELL AS ALL SEDIMENT BASINS, TRAPS, AND BARRIERS PRIOR TO LAND DISTURBANCE (SCHEDULE A.8.C.I.(5))
- CONTROL BOTH PEAK FLOW RATES AND TOTAL STORMWATER VOLUME, TO MINIMIZE EROSION AT OUTLETS AND DOWNSTREAM CHANNELS AND STREAMBANKS. (SCHEDULE A.7.C)
- CONTROL SEDIMENT AS NEEDED ALONG THE SITE PERIMETER AND AT ALL OPERATIONAL INTERNAL STORM DRAIN INLETS AT ALL TIMES DURING CONSTRUCTION, BOTH INTERNALLY AND AT THE SITE BOUNDARY. (SCHEDULE A.7.D.I)
- ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK. (SCHEDULE A.8.C.I.(6))
- APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES AND FOR ALL ROADWAYS INCLUDING GRAVEL ROADWAYS. (SCHEDULE A.8.C.II.(3))
- ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS. (SCHEDULE A.8.C.I.(7))
- CONTROL PROHIBITED DISCHARGES FROM LEAVING THE CONSTRUCTION SITE, I.E., CONCRETE WASH-OUT, WASTEWATER FROM CLEANOUT OF STUCCO, PAINT AND CURING COMPOUNDS; (SCHEDULE A.6)
- USE BMPs TO PREVENT OR MINIMIZE STORMWATER EXPOSURE TO POLLUTANTS FROM SPILLS; VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE; OTHER CLEANING AND MAINTENANCE ACTIVITIES; AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL, HYDRAULIC FLUID, AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, FERTILIZER, PESTICIDES AND HERBICIDES, PAINTS, SOLVENTS, CURING COMPOUNDS AND ADHESIVES FROM CONSTRUCTION OPERATIONS. (SCHEDULE A.7.E.I.(2))
- IMPLEMENT THE FOLLOWING BMPs WHEN APPLICABLE: WRITTEN SPILL PREVENTION AND RESPONSE PROCEDURES, EMPLOYEE TRAINING ON SPILL PREVENTION AND PROPER DISPOSAL PROCEDURES, SPILL KITS IN ALL VEHICLES, REGULAR MAINTENANCE SCHEDULE FOR VEHICLES AND MACHINERY, MATERIAL DELIVERY AND STORAGE CONTROLS, TRAINING AND SIGNAGE, AND COVERED STORAGE AREAS FOR WASTE AND SUPPLIES. (SCH. A.7.E.II.)
- USE WATER, SOIL-BINDING AGENT OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL. (SCHEDULE A.7.A.IV)
- THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE NUTRIENT RELEASES TO SURFACE WATERS. EXERCISE CAUTION WHEN USING TIME-RELEASE FERTILIZERS WITHIN ANY WATERWAY RIPARIAN ZONE. (SCHEDULE A.9.B.II)
- IF AN ACTIVE TREATMENT SYSTEM (FOR EXAMPLE, ELECTRO-COAGULATION, FLOCCULATION, FILTRATION, ETC.) FOR SEDIMENT OR OTHER POLLUTANT REMOVAL IS EMPLOYED, SUBMIT AN OPERATION AND MAINTENANCE PLAN (INCLUDING SYSTEM SCHEMATIC, LOCATION OF SYSTEM, LOCATION OF INLET, LOCATION OF DISCHARGE, DISCHARGE DISPERSION DEVICE DESIGN, AND A SAMPLING PLAN AND FREQUENCY) BEFORE OPERATING THE TREATMENT SYSTEM. OBTAIN PLAN APPROVAL BEFORE OPERATING THE TREATMENT SYSTEM. OPERATE AND MAINTAIN THE TREATMENT SYSTEM ACCORDING TO MANUFACTURER'S SPECIFICATIONS. (SCHEDULE A.9.D)
- TEMPORARILY STABILIZE SOILS AT THE END OF THE SHIFT BEFORE HOLIDAYS AND WEEKENDS, IF NEEDED. THE REGISTRANT IS RESPONSIBLE FOR ENSURING THAT SOILS ARE STABLE DURING RAIN EVENTS AT ALL TIMES OF THE YEAR. (SCHEDULE A.7.B)
- AS NEEDED BASED ON WATHER CONDITIONS, AT THE END OF EACH WORKDAY SOIL STOCKPILES MUST BE STABILIZED OR COVERED, OR OTHER BMPs MUST BE IMPLEMENTED TO PREVENT DISCHARGES TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS. (SCHEDULE A.7.E.II.(2))
- CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND BARE GROUND DURING WET WEATHER. (SCHEDULE A.7.A.I)
- SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ONE THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL. (SCHEDULE A.9.C.I)
- OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT, AND BEFORE BMP REMOVAL. (SCHEDULE A.9.C.I)
- CATCH BASINS: CLEAN BEFORE RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT. SEDIMENT BASINS AND SEDIMENT TRAPS: REMOVE TRAPPED SEDIMENTS BEFORE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT AND AT COMPLETION OF PROJECT. (SCHEDULE A.9.C.III & IV)
- WITHIN 24 HOURS, SIGNIFICANT SEDIMENT THAT HAS LEFT THE CONSTRUCTION SITE, MUST BE REMEDIATED. INVESTIGATE THE CAUSE OF THE SEDIMENT RELEASE AND IMPLEMENT STEPS TO PREVENT A REOCCURENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DIVISION OF STATE LANDS REQUIRED TIMEFRAME. (SCHEDULE A.9.B.I)
- THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGE WAYS MUST NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP MUST BE USED TO CLEANUP RELEASED SEDIMENTS. (SCHEDULE A.9.B.II)
- THE ENTIRE SITE MUST BE TEMPORARILY STABILIZED USING VEGETATION OR A HEAVY MULCH LAYER, TEMPORARY SEEDING, OR OTHER METHOD SHOULD ALL CONSTRUCTION ACTIVITIES CEASE FOR 30 DAYS OR MORE. (SCHEDULE A.7.F.I)
- PROVIDE TEMPORARY STABILIZATION FOR THAT PORTION OF THE SITE WHERE CONSTRUCTION ACTIVITIES CEASE FOR 14 DAYS OR MORE WITH A COVERING OF BLOWN STRAW AND A TACKIFIER, LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH UNTIL WORK RESUMES ON THAT PORTION OF THE SITE. (SCHEDULE A.7.F.II)
- DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, ALL TEMPORARY EROSION CONTROLS AND RETAINED SOILS MUST BE REMOVED AND DISPOSED OF PROPERLY, UNLESS DOING SO CONFLICTS WITH LOCAL REQUIREMENTS. (SCHEDULE A.8.C.I.(1) AND D.3.C.II AND III)

THE PERMITTEE IS REQUIRED TO MEET ALL THE CONDITIONS OF THE 1200-C PERMIT. THIS ESCP AND GENERAL CONDITIONS HAVE BEEN DEVELOPED TO FACILITATE COMPLIANCE WITH THE 1200-C PERMIT REQUIREMENTS. IN CASES OF DISCREPANCIES OR OMISSIONS, THE 1200-C PERMIT REQUIREMENTS SUPERCEDE REQUIREMENTS OF THIS PLAN.

BMP MATRIX FOR CONSTRUCTION PHASES

REFER TO DEQ GUIDANCE MANUAL FOR A COMPREHENSIVE LIST OF AVAILABLE BMP'S.

	CLEARING	MASS GRADING	UTILITY INSTALLATION	STREET CONSTRUCTION	FINAL STABILIZATION
EROSION PREVENTION					
PRESERVE NATURAL VEGETATION					X
GROUND COVER					
HYDRAULIC APPLICATIONS					
PLASTIC SHEETING	X	X	X	X	
MATTING					
DUST CONTROL	X	X	X	X	X
TEMPORARY PERMANENT SEEDING					X
BUFFER ZONE*					
OTHER:					
SEDIMENT CONTROL					
SEDIMENT FENCE (PERIMETER)	**X	X	X	X	X
SEDIMENT FENCE (INTERIOR)					
STRAW WATTLES		X			
FILTER BERM					
INLET PROTECTION	**X	X	X	X	X
DEWATERING					
SEDIMENT TRAP					
OTHER:					
RUN OFF CONTROL					
CONSTRUCTION ENTRANCE	**X	X	X	X	X
PIPE SLOPE DRAIN					
OUTLET PROTECTION					
SURFACE ROUGHENING					
CHECK DAMS					
OTHER:					
POLLUTION PREVENTION					
PROPER SIGNAGE	X	X	X	X	X
HAZ WASTE MGMT	X	X	X	X	
SPILL KIT ON-SITE	X	X	X	X	X
CONCRETE WASHOUT AREA			X	X	
OTHER:					

* SIGNIFIES ADDITIONAL BMP'S REQUIRED FOR WORK WITHIN 50' OF WATER OF THE STATE.
** SIGNIFIES BMP THAT WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY.

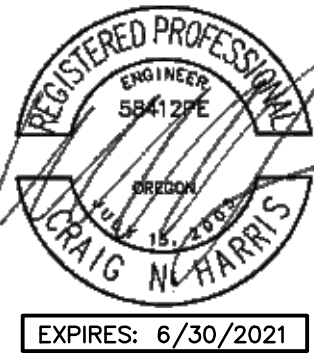
RATIONALE STATEMENT

A COMPREHENSIVE LIST OF AVAILABLE BEST MANAGEMENT PRACTICES (BMP) OPTIONS BASED ON DEQ'S GUIDANCE MANUAL HAS BEEN REVIEWED TO COMPLETE THIS EROSION AND SEDIMENT CONTROL PLAN. SOME OF THE ABOVE LISTED BMP'S WERE NOT CHOSEN BECAUSE THEY WERE DETERMINED TO NOT EFFECTIVELY MANAGE EROSION PREVENTION AND SEDIMENT CONTROL FOR THIS PROJECT BASED ON SPECIFIC SITE CONDITIONS, INCLUDING SOIL CONDITIONS TOPOGRAPHIC CONSTRAINTS, ACCESSIBILITY TO THE SITE, AND OTHER RELATED CONDITIONS, AS THE PROJECT PROGRESSES AND THERE IS A NEED TO REVISE THE ESC PLAN, AN ACTION PLAN WILL BE SUBMITTED.

INITIAL

SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
ESC1.0	EROSION AND SEDIMENT CONTROL TITLE SHEET
ESC2.0	CLEARING, EROSION AND SEDIMENT CONTROL PLAN
ESC2.1	UTILITY, PAVING AND FINAL STABILIZATION PLAN
ESC3.0	EROSION AND SEDIMENT CONTROL DETAILS



AAI
ajlian associates, inc.

ENGINEERING

4875 SW Griffith Drive | Suite 300 | Beaverton, OR 97005
503.620.3030 tel | 503.620.5539 fax | www.aaiang.com

OREGON CITY CHRISTIAN CHURCH

1179 SOUTH END RD.
OREGON CITY, OREGON

EROSION AND
SEDIMENT
CONTROL TITLE
SHEET

DATE: 07/09/19

DRAWN: DAR

CHECKED: NWS

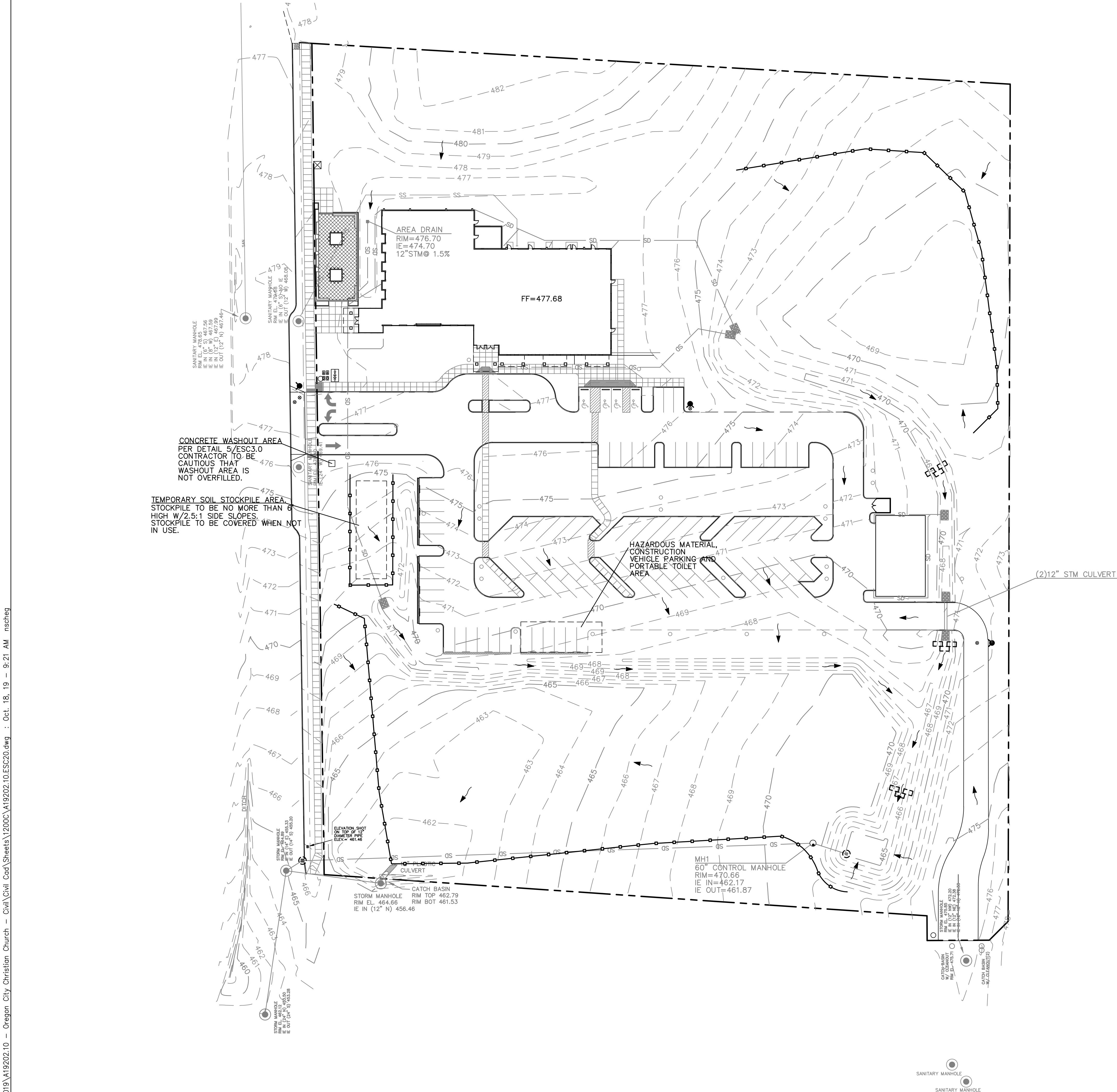
REVISIONS:

© AAI ENGINEERING INC.
2019. ALL RIGHTS RESERVED

THESE DRAWINGS ARE THE
PROPERTY OF AAI ENGINEERING INC.
AND ARE NOT TO BE USED OR
REPRODUCED IN ANY MANNER
EXCEPT WITH THE PRIOR WRITTEN
PERMISSION OF AAI ENGINEERING INC.

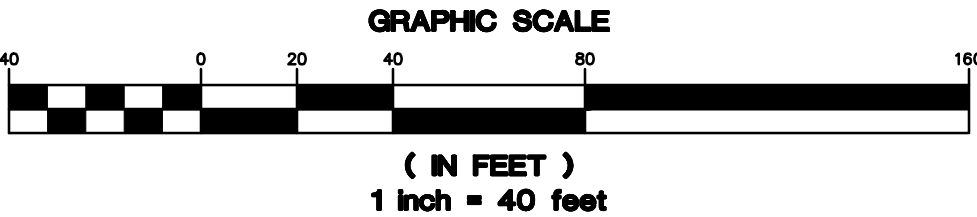
ESC1.0

JOB NUMBER: A19202.10



- PRE-CONSTRUCTION, CLEARING, AND DEMOLITION NOTES:**
1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
 2. SEDIMENT BARRIERS APPROVED FOR USE INCLUDE SEDIMENT FENCE, BERMS CONSTRUCTED OUT OF MULCH, CHIPPINGS, OR OTHER SUITABLE MATERIAL, STRAW BATTLES, OR OTHER APPROVED MATERIALS.
 3. SENSITIVE RESOURCES INCLUDING, BUT NOT LIMITED TO, TREES, WETLANDS, AND RIPARIAN PROTECTION AREAS SHALL BE CLEARLY DELINEATED WITH ORANGE CONSTRUCTION FENCING OR CHAIN LINK FENCING IN A MANNER THAT IS CLEARLY VISIBLE TO ANYONE IN THE AREA. NO ACTIVITIES ARE PERMITTED TO OCCUR BEYOND THE CONSTRUCTION BARRIER.
 4. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, STREET SWEEPING, AND VACUUMING, MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
 5. RUN-ON AND RUN-OFF CONTROLS SHALL BE IN PLACE AND FUNCTIONING PRIOR TO BEGINNING SUBSTANTIAL CONSTRUCTION ACTIVITIES. RUN-ON AND RUN-OFF CONTROL MEASURES INCLUDE: SLOPE DRAINS (WITH OUTLET PROTECTION), CHECK DAMS, SURFACE ROUGHENING, AND BANK STABILIZATION.
 6. CONTRACTOR TO INSTALL AND MAINTAIN INLET AND CURB INLET PROTECTION IN ROADWAY SOUTH OF PROJECT AS NEEDED PER DETAILS 1/ESC3.1 AND 6/ESC3.0 FOR THE DURATION OF THE PROJECT.

LEGENDS	
EXISTING CONTOUR MINOR	---102---
EXISTING CONTOUR MAJOR	---100---
SEDIMENT FENCE PER DETAIL 1/ESC3.0	---o---o---o---
FLOW ARROW	→
INLET PROTECTION PER DETAIL 4/ESC3.0	○
STRAW BALES PER DETAIL 2/ESC3.0	□□□



AAI ajljan associates, inc.
ENGINEERING
4875 SW Griffin Drive | Suite 300 | Beaverton, OR 97005
503.620.3020 tel | 503.620.5539 fax | www.aaeng.com

OREGON CITY CHRISTIAN CHURCH
1179 SOUTH END RD.
OREGON CITY, OREGON

CLEARING, EROSION AND SEDIMENT CONTROL PLAN

DATE: 07/09/19
DRAWN: DAR
CHECKED: NWS
REVISIONS:

© AAI ENGINEERING INC.
2019. ALL RIGHTS RESERVED.
THESE DRAWINGS ARE THE PROPERTY OF AAI ENGINEERING INC. AND ARE NOT TO BE USED OR REPRODUCED IN ANY MANNER, EXCEPT WITH THE PRIOR WRITTEN PERMISSION OF AAI ENGINEERING INC.

ESC2.0

JOB NUMBER: A19202.10

PRE-CONSTRUCTION, CLEARING, AND DEMOLITION NOTES:

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. SEDIMENT BARRIERS APPROVED FOR USE INCLUDE SEDIMENT FENCE, BERMS CONSTRUCTED OUT OF MULCH, CHIPPINGS, OR OTHER SUITABLE MATERIAL, STRAW WATTLES, OR OTHER APPROVED MATERIALS.
3. SENSITIVE RESOURCES INCLUDING, BUT NOT LIMITED TO, TREES, WETLANDS, AND RIPARIAN PROTECTION AREAS SHALL BE CLEARLY DELINEATED WITH ORANGE CONSTRUCTION FENCING OR CHAIN LINK FENCING IN A MANNER THAT IS CLEARLY VISIBLE TO ANYONE IN THE AREA. NO ACTIVITIES ARE PERMITTED TO OCCUR BEYOND THE CONSTRUCTION BARRIER.
4. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, STREET SWEEPING, AND VACUUMING, MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
5. RUN-ON AND RUN-OFF CONTROLS SHALL BE IN PLACE AND FUNCTIONING PRIOR TO BEGINNING SUBSTANTIAL CONSTRUCTION ACTIVITIES. RUN-ON AND RUN-OFF CONTROL MEASURES INCLUDE: SLOPE DRAINS (WITH OUTLET PROTECTION), CHECK DAMS, SURFACE ROUGHENING, AND BANK STABILIZATION.
6. CONTRACTOR TO INSTALL AND MAINTAIN INLET AND CURB INLET PROTECTION IN ROADWAY SOUTH OF PROJECT AS NEEDED PER DETAILS 1/ESC3.1 AND 6/ESC3.0 FOR THE DURATION OF THE PROJECT.

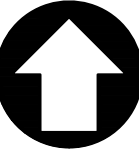
GRADING & UTILITY EROSION & SEDIMENT CONSTRUCTION NOTES

1. SEED USED FOR TEMPORARY OR PERMANENT SEEDING SHALL BE COMPOSED OF ONE OF THE FOLLOWING MIXTURES UNLESS OTHERWISE AUTHORIZED:
- A. VEGETATED CORRIDOR AREAS REQUIRE NATIVE SEED MIXES. SEE RESTORATION PLAN FOR APPROPRIATE SEED MIX.
- B. DWARF GRASS MIX (MIN. 100 LB./AC.)
1. DWARF PERENNIAL RYEGRASS (80% BY WEIGHT)
2. CREEPING RED FESCUE (20% BY WEIGHT)
- C. STANDARD HEIGHT GRASS MIX (MIN. 100LB./AC.)
1. ANNUAL RYEGRASS (40% BY WEIGHT)
2. TURF-TYPE FESCUE (60% BY WEIGHT)
2. TEMPORARY SLOPE STABILIZATION MEASURES SHALL INCLUDE: COVERING EXPOSED SOIL WITH THE PLASTIC SHEETING, STRAW MULCHING, WOOD CHIPS, OR OTHER APPROVED MEASURES.
3. STOCKPILED SOIL OR STRIPPINGS SHALL BE PLACED IN A STABLE LOCATION AND CONFIGURATION. DURING "WET WEATHER" PERIODS, STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING OR STRAW MULCH. SEDIMENT FENCE IS REQUIRED AROUND THE PERIMETER OF THE STOCKPILE.
4. EXPOSED CUT OR FILL AREAS SHALL BE STABILIZED THROUGH THE USE OF TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS OR MATS, MID-SLOPE SEDIMENT FENCES OR WATTLES, OR OTHER APPROPRIATE MEASURES. SLOPES EXCEEDING 25% MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES.
5. AREAS SUBJECT TO WIND EROSION SHALL USE APPROPRIATE DUST CONTROL MEASURES INCLUDING THE APPLICATION OF A FINE SPRAY OF WATER, PLASTIC SHEETING, STRAW MULCHING, OR OTHER APPROVED MEASURES.
6. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, TIRE WASHES, STREET SWEEPING, AND VACUUMING MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
7. ACTIVE INLETS TO STORM WATER SYSTEMS SHALL BE PROTECTED THROUGH THE USE OF APPROVED INLET PROTECTION MEASURES. ALL INLET PROTECTION MEASURES ARE TO BE REGULARLY INSPECTED AND MAINTAINED AS NEEDED.
8. SATURATED MATERIALS THAT ARE HAULED OFF-SITE MUST BE TRANSPORTED IN WATER-TIGHT TRUCKS TO ELIMINATE SPILLAGE OF SEDIMENT AND SEDIMENT-LADEN WATER.
9. AN AREA SHALL BE PROVIDED FOR THE WASHING OUT OF CONCRETE TRUCKS IN A LOCATION THAT DOES NOT PROVIDE RUN-OFF THAT CAN ENTER THE STORM WATER SYSTEM. IF THE CONCRETE WASH-OUT AREA CAN NOT BE CONSTRUCTED GREATER THAN 50' FROM ANY DISCHARGE POINT, SECONDARY MEASURES SUCH AS BERMS OR TEMPORARY SETTLING PITS MAY BE REQUIRED. THE WASH-OUT SHALL BE LOCATED WITHIN SIX FEET OF TRUCK ACCESS AND BE CLEANED WHEN IT REACHES 50% OF THE CAPACITY.
10. SWEEPINGS FROM EXPOSED AGGREGATE CONCRETE SHALL NOT BE TRANSFERRED TO THE STORM WATER SYSTEM. SWEEPINGS SHALL BE PICKED UP AND DISPOSED IN THE TRASH.
11. AVOID PAVING IN WET WEATHER WHEN PAVING CHEMICALS CAN RUN-OFF INTO THE STORM WATER SYSTEM.
12. USE BMPs SUCH AS CHECK-DAMS, BERMS, AND INLET PROTECTION TO PREVENT RUN-OFF FROM REACHING DISCHARGE POINTS.
13. COVER CATCH BASINS, MANHOLES, AND OTHER DISCHARGE POINTS WHEN APPLYING SEAL COAT, TACK COAT, ETC. TO PREVENT INTRODUCING THESE MATERIALS TO THE STORM WATER SYSTEM.

LEGENDS

EXISTING CONTOUR MINOR	— — — — — 102 — — — — —
EXISTING CONTOUR MAJOR	— — — — — 100 — — — — —
SEDIMENT FENCE PER DETAIL 1/ESC3.0	— — — — —
FLOW ARROW	→
PROPOSED ASPHALTIC CONCRETE	▨
PROPOSED CONCRETE	▣
INLET PROTECTION PER DETAIL 4/ESC3.0	⊙
STRAW BALES PER DETAIL 2/ESC3.0	⌌ ⌌ ⌌

NORTH



GRAPHIC SCALE



(IN FEET)
1 inch = 40 feet



AAI **ajrian associates, inc.**
ENGINEERING
4875 SW Griffin Drive | Suite 300 | Beaverton, OR 97005
503.620.3030 tel | 503.620.5539 fax | www.aaeng.com

OREGON CITY CHRISTIAN CHURCH
1179 SOUTH END RD.
OREGON CITY, OREGON

UTILITY, PAVING
AND FINAL
STABILIZATION
PLAN

DATE: 07/09/19

DRAWN: DAR

CHECKED: NWS

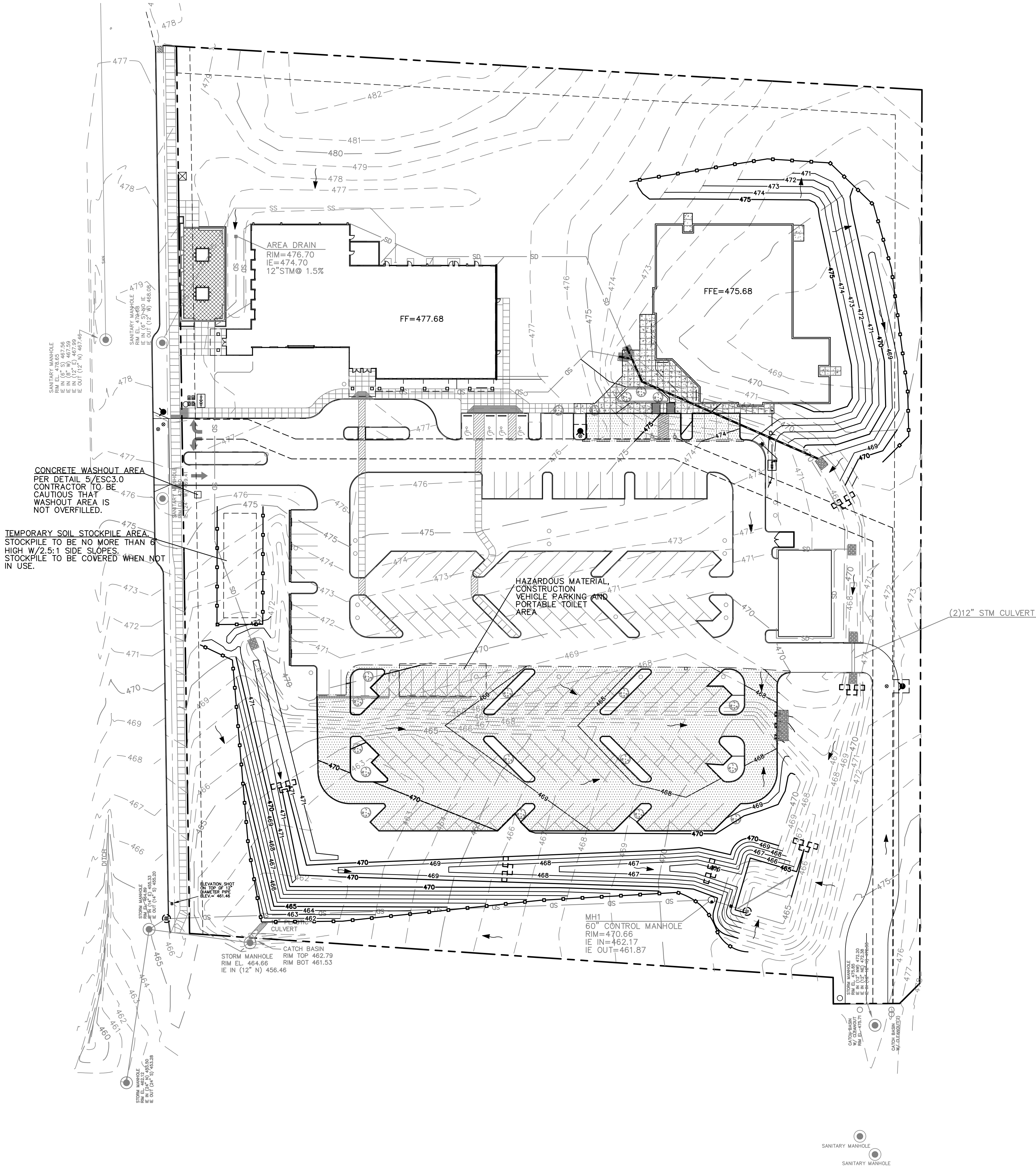
REVISIONS:

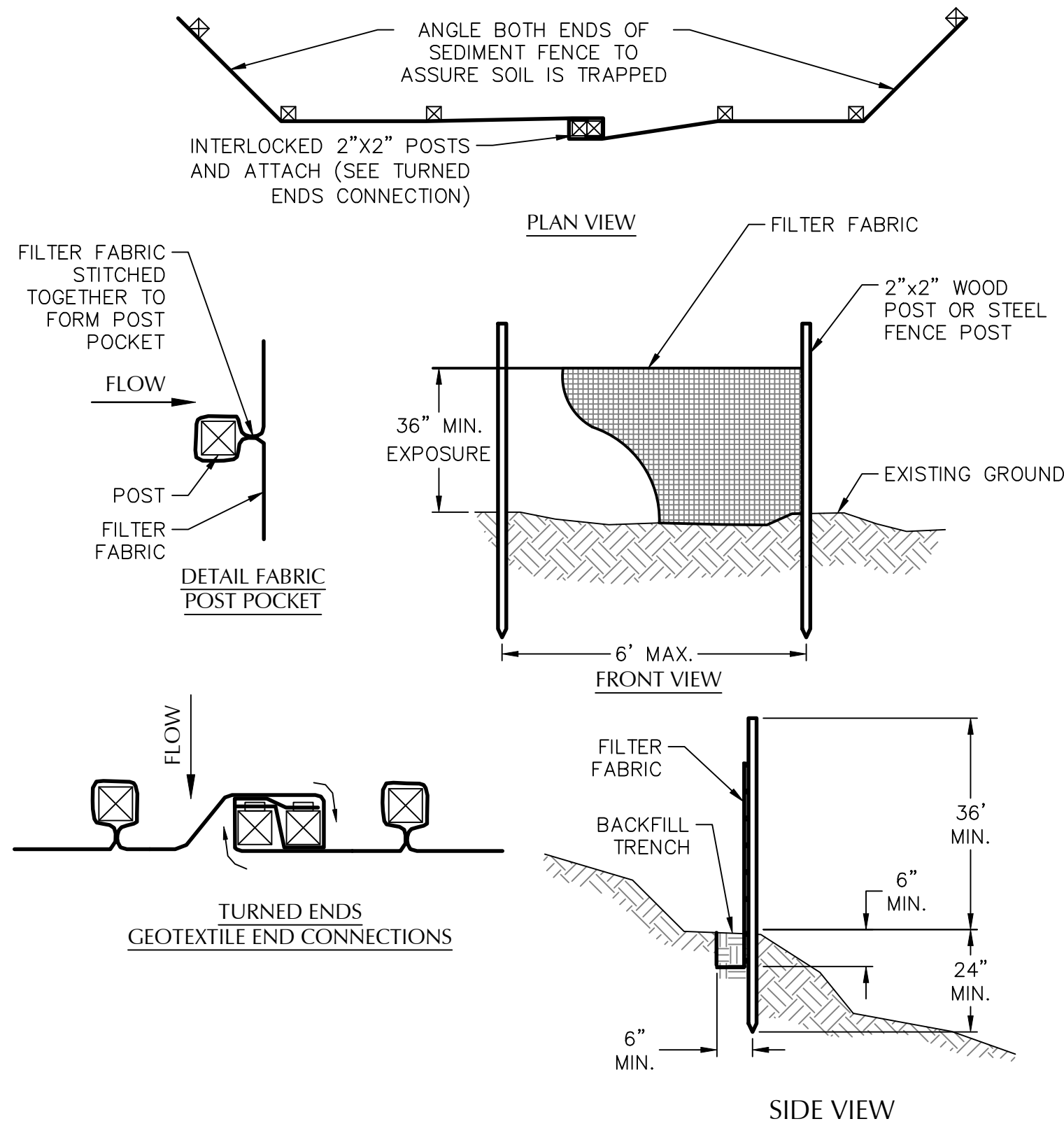
© AAI ENGINEERING INC.
2019. ALL RIGHTS RESERVED

THESE DRAWINGS ARE THE
PROPERTY OF AAI ENGINEERING INC.
AND ARE NOT TO BE USED OR
REPRODUCED IN ANY MANNER
EXCEPT WITH THE PRIOR WRITTEN
PERMISSION OF AAI ENGINEERING INC.

ESC2.1

JOB NUMBER: A19202.10

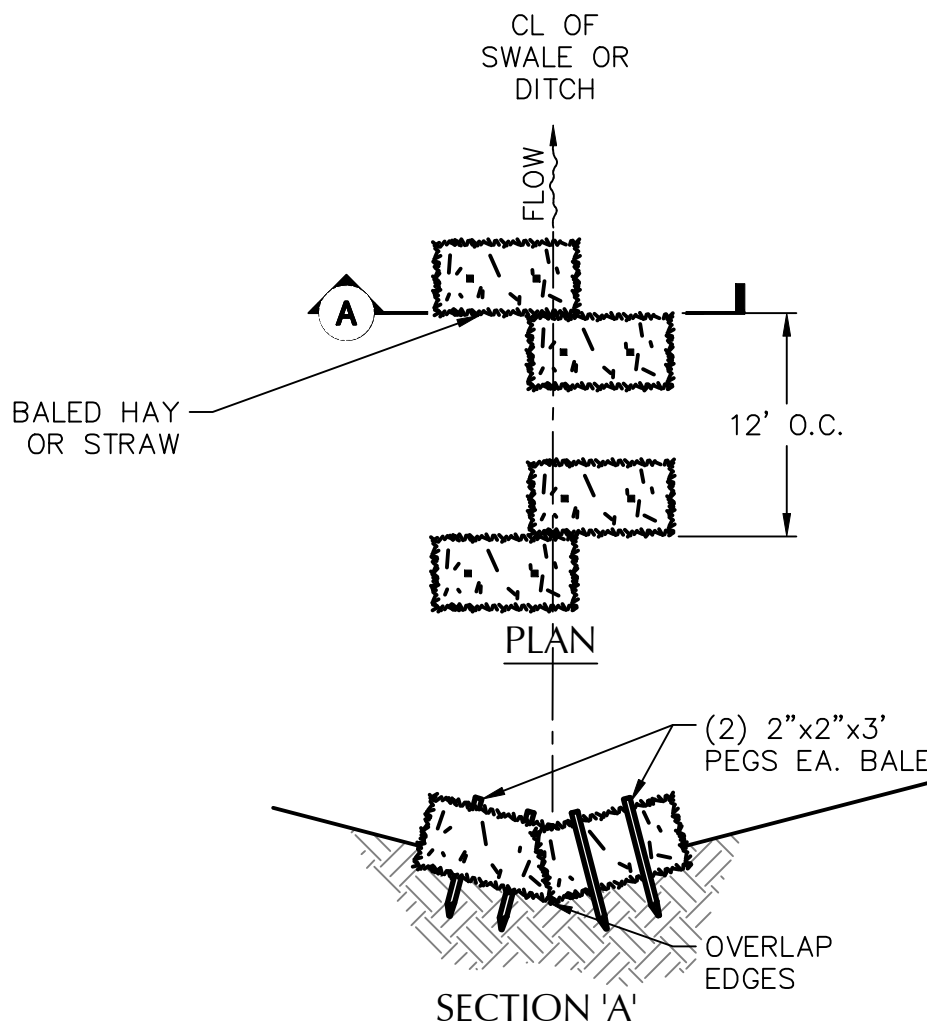




- NOTES:**
1. THE FILTER FABRIC SHALL BE (36" MIN. WIDTH) PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST, OR OVERLAP 2"x2" POSTS AND ATTACH AS SHOWN ON DETAIL SHEET.
 2. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6- FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24-INCHES.
 3. THE FILTER FABRIC SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6-INCHES. ALL EXCAVATED MATERIAL FROM FILTER FABRIC FENCE INSTALLATION, SHALL BE BACKFILLED AND COMPACTED, ALONG THE ENTIRE DISTURBED AREA.
 4. STANDARD OR HEAVY DUTY FILTER FABRIC SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2"x2" POST INSTALLATION. STITCHED LOOPS WITH STAKES SHALL BE INSTALLED ON THE DOWN-HILL SIDE OF THE SLOPED AREA.
 5. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UP-SLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED.
 6. FILTER FABRIC FENCES SHALL BE INSPECTED BY CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

1 SEDIMENT FENCE

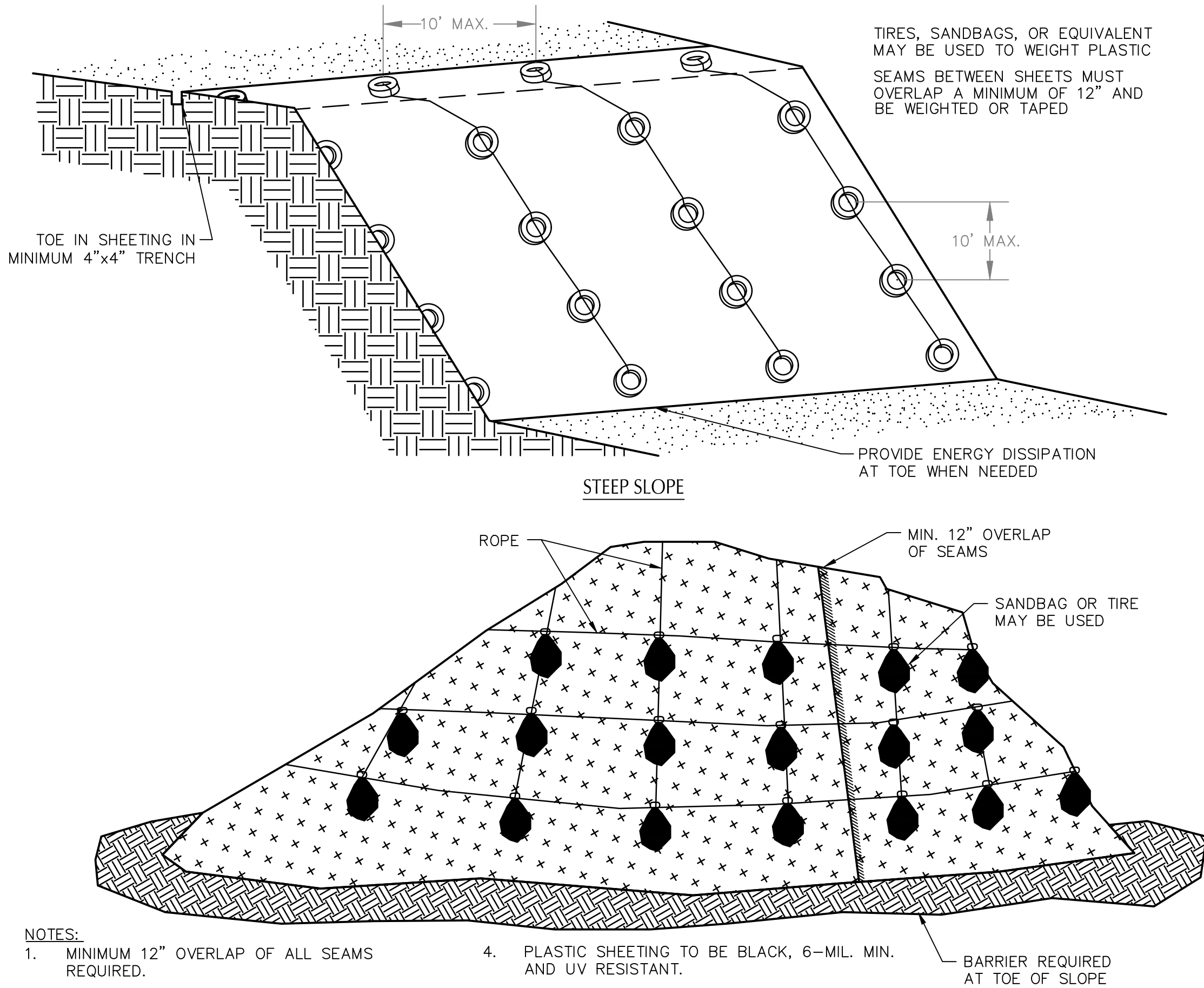
SCALE: NTS



- NOTES:**
1. EMBED BALES 4" TO 6".
 2. DRIVE STAKES MINIMUM 12" INTO GROUND SURFACE.

2 STRAW BALE SEDIMENT BARRIER IN DITCHES OR SWALES

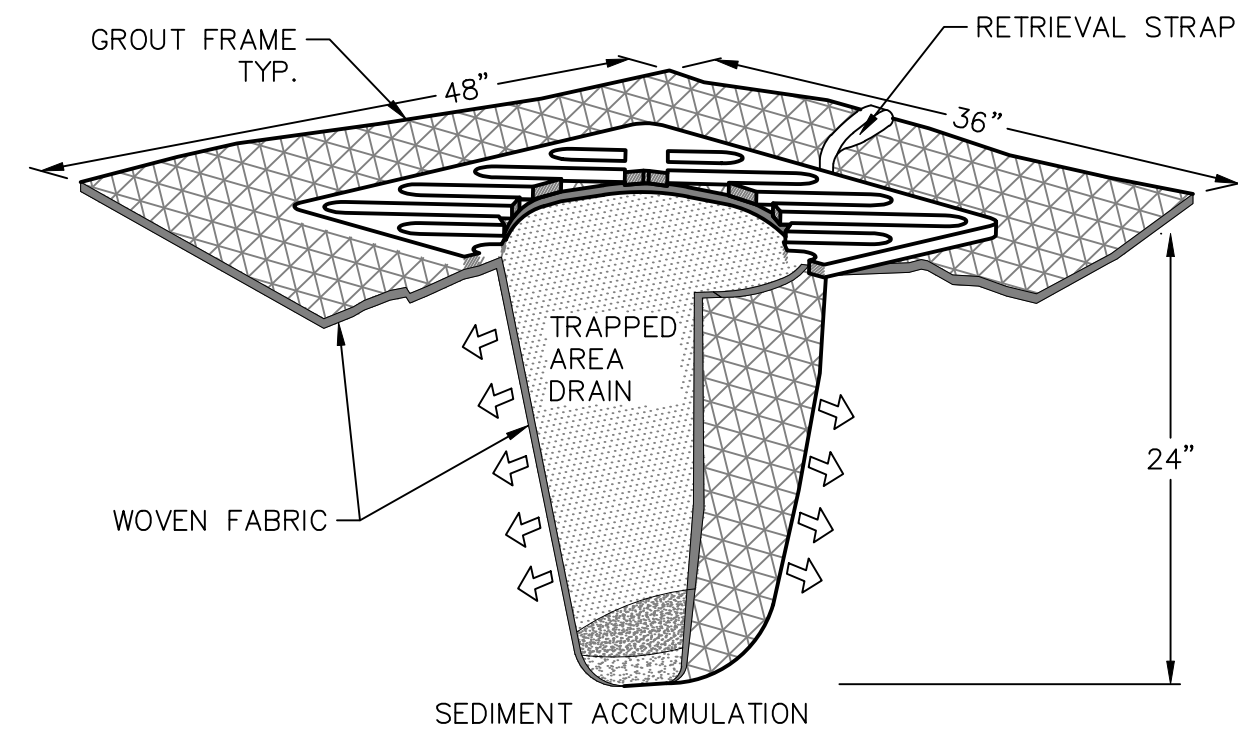
SCALE: NTS



- NOTES:**
1. MINIMUM 12" OVERLAP OF ALL SEAMS REQUIRED.
 2. BARRIER REQUIRED AT TOE OF STOCK PILE.
 3. COVERING MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.
 4. PLASTIC SHEETING TO BE BLACK, 6-MIL. MIN. AND UV RESISTANT.
 5. SIZE AND PLACEMENT OF THE STOCK PILES ARE TO BE DETERMINED BY THE CONTRACTOR IN THE FIELD.

3 PLASTIC SHEETING

SCALE: NTS

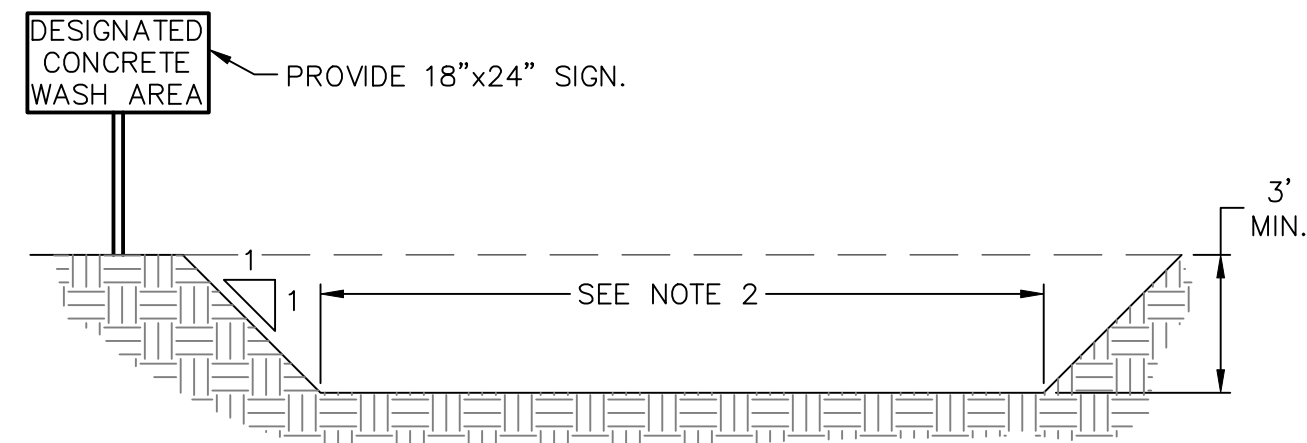


- INSTALLATION NOTES:**
1. REMOVE CATCH BASIN GRATE.
 2. CLEAN DIRT AND DEBRIS FROM GRATE LEDGE.
 3. PLACE WOVEN FABRIC INSERT FILTER SACK/FILTER FABRIC U-SHAPED BIOBAG/COMPOST SOCK OVER CATCH BASIN OPENING WITH BAG INSIDE BASIN. SEDIMENT PROTECTION MUST BE DESIGNED FOR LOW-FLOW AND CONTAIN NO OVERFLOW.
 4. REPLACE GRATE, AT THE SAME TIME PINCH INSERT FABRIC BETWEEN GRATE AND FRAME.
 5. CUT EXCESS FABRIC OFF AND LEAVE THREE TO FIVE INCHES OF FABRIC AROUND OUTSIDE SIDE OF GRATE IF INSERT IS REUSABLE.

- MAINTENANCE NOTES:**
1. DETERMINE SEDIMENT ACCUMULATION BY PROBING WITH YARDSTICK TO MEASURE SEDIMENT LEVEL.
 2. RECOMMENDED: EMPTY AND REINSTALL WHEN UNIT IS APPROXIMATELY HALF FULL (UP TO 12 INCHES SEDIMENT).
 3. RECOMMENDED: REGULARLY INSPECT INSERTS/BIOBAGS/SOCKS AND LOG OBSERVATIONS AS A BEST MANAGEMENT PRACTICE.

4 INLET SEDIMENT PROTECTION

SCALE: NTS



- NOTES:**
1. INSTALL A CONCRETE WASH OUT PIT AND A VISIBLE SIGN STATING, "DESIGNATED CONCRETE WASH AREA." LOCATE THE WASH OUT IN A PLACE THAT WILL BE ACCESSIBLE TO CONCRETE TRUCKS SIZE TO THE PROJECT.
 2. PROVIDE 3' X 3' MINIMUM WASHOUT AREA. INCREASES SIZE OR PROVIDE ADDITIONAL WASHOUTS AS REQUIRED TO ACCOMMODATE PROJECT CONDITIONS.
 3. LOCATE WASHOUTS IN AREAS THAT WILL BE ACCESSIBLE TO CONCRETE TRUCKS.
 4. FOR WASHOUTS LOCATED IN AREAS DESIGNATED TO RECEIVE HARDSCAPE, SOLIDS MAY BE BURIED IN PLACE. FOR OTHER APPLICATIONS, REMOVE AND DISPOSE OF SOLIDS.

5 CONCRETE WASHOUT

SCALE: NTS



AAI ajghan associates, inc.
ENGINEERING
4875 SW Griffin Drive | Suite 300 | Beaverton, OR 97005
503.820.3030 tel | 503.820.5539 fax | www.aaeng.com

OREGON CITY CHRISTIAN CHURCH
1179 SOUTH END RD.
OREGON CITY, OREGON

EROSION AND
SEDIMENT
CONTROL
DETAILS

DATE: 07/09/19

DRAWN: DAR

CHECKED: NWS

REVISIONS:

© AAI ENGINEERING INC. 2019. ALL RIGHTS RESERVED

THESE DRAWINGS ARE THE
PROPERTY OF AAI ENGINEERING INC.
AND ARE NOT TO BE USED OR
REPRODUCED IN ANY MANNER
EXCEPT WITH THE PRIOR WRITTEN
PERMISSION OF AAI ENGINEERING INC.

ESC3.0

JOB NUMBER: A19202.10



**ISELIN
ARCHITECTS
P.C.**

1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com



RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH

1179 SOUTH END ROAD
OREGON CITY, OR 97045

GENERAL NOTES

1. CONSTRUCTION LAYOUT (ALL ACTUAL LINES AND GRADES) SHALL BE STAKED BY A PROFESSIONAL SURVEYOR, REGISTERED IN THE STATE OF OREGON, BASED ON COORDINATES, DIMENSIONS, BEARINGS, AND ELEVATIONS, AS SHOWN, ON THE PLANS.
2. PROJECT CONTROL SHALL BE FIELD VERIFIED AND CHECKED FOR RELATIVE HORIZONTAL POSITION PRIOR TO BEGINNING CONSTRUCTION LAYOUT.
3. PROJECT CONTROL SHALL BE FIELD VERIFIED AND CHECKED FOR RELATIVE VERTICAL POSITION BASED ON THE BENCHMARK STATED HEREON, PRIOR TO BEGINNING CONSTRUCTION LAYOUT.
4. WHEN DIMENSIONS AND COORDINATE LOCATIONS ARE REPRESENTED – DIMENSIONS SHALL HOLD OVER COORDINATE LOCATION. NOTIFY THE CIVIL ENGINEER OF RECORD IMMEDIATELY UPON DISCOVERY.
5. BUILDING SETBACK DIMENSIONS FROM PROPERTY LINES SHALL HOLD OVER ALL OTHER CALLOUTS. PROPERTY LINES AND ASSOCIATED BUILDING SETBACKS SHALL BE VERIFIED PRIOR TO CONSTRUCTION LAYOUT.
6. CONTRACTOR SHALL PRESERVE AND PROTECT FROM DAMAGE ALL EXISTING MONUMENTATION DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND PAYING FOR THE REPLACEMENT OF ANY MONUMENTS DAMAGED OR REMOVED DURING CONSTRUCTION. NEW MONUMENTS SHALL BE REESTABLISHED BY A LICENSED SURVEYOR.
7. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THESE PLANS, THE PROJECT SPECIFICATIONS AND THE APPLICABLE REQUIREMENTS OF THE 2018 OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE 2017 OREGON PLUMBING SPECIALTY CODE AND REQUIREMENTS OF THE CITY OF OREGON CITY.
8. THE COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES AND REGULATIONS. ALL PERMITS, LICENSES AND INSPECTIONS REQUIRED BY THE GOVERNING AUTHORITIES FOR THE EXECUTION AND COMPLETION OF WORK SHALL BE SECURED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.
9. ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503) 232-1987). EXCAVATORS MUST NOTIFY ALL PERTINENT COMPANIES OR AGENCIES WITH UNDERGROUND UTILITIES IN THE PROJECT AREA AT LEAST 48 BUSINESS-DAY HOURS, BUT NOT MORE THAN 10 BUSINESS DAYS PRIOR TO COMMENCING AN EXCAVATION, SO UTILITIES MAY BE ACCURATELY LOCATED.
10. THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION ONLY AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE. CONTRACTOR SHALL VERIFY ELEVATIONS, PIPE SIZE, AND MATERIAL TYPES OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WITH CONSTRUCTION AND SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF AAI ENGINEERING, 72 HOURS PRIOR TO START OF CONSTRUCTION TO PREVENT GRADE AND ALIGNMENT CONFLICTS.
11. THE ENGINEER OR OWNER IS NOT RESPONSIBLE FOR THE SAFETY OF THE CONTRACTOR OR HIS CREW. ALL O.S.H.A. REGULATIONS SHALL BE STRICTLY ADHERED TO IN THE PERFORMANCE OF THE WORK.
12. TEMPORARY AND PERMANENT EROSION CONTROL MEASURES SHALL BE IMPLEMENTED. THE CONTRACTOR SHALL ADHERE TO CITY OF OREGON CITY FOR MINIMUM EROSION CONTROL MEASURES. THE ESC FACILITIES SHOWN IN THESE PLANS ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT LEAVE THE SITE.
13. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL ROADWAYS, KEEPING THEM CLEAN AND FREE OF CONSTRUCTION MATERIALS AND DEBRIS, AND PROVIDING DUST CONTROL AS REQUIRED.
14. TRAFFIC CONTROL SHALL BE PROVIDED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN TO CITY OF OREGON CITY FOR REVIEW AND APPROVAL PRIOR TO COMMENCING CONSTRUCTION.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING ALL WORK WITH THE OWNER.
16. NOTIFY CITY INSPECTOR 72 HOURS BEFORE STARTING WORK. A PRECONSTRUCTION MEETING WITH THE OWNER, THE OWNER'S ENGINEER, CONTRACTOR AND THE CITY REPRESENTATIVE SHALL BE REQUIRED.
17. THE CONTRACTOR SHALL HAVE A FULL SET OF THE CURRENT APPROVED CONSTRUCTION DOCUMENTS INCLUDING ADDENDA ON THE PROJECT SITE AT ALL TIMES.
18. THE CONTRACTOR SHALL KEEP THE ENGINEER AND JURISDICTION INFORMED OF CONSTRUCTION PROGRESS TO FACILITATE SITE OBSERVATIONS AT REQUIRED INTERVALS. 24-HOUR NOTICE IS REQUIRED.
19. EXISTING SURVEY MONUMENTS ARE TO BE PROTECTED DURING CONSTRUCTION OR REPLACED IN ACCORDANCE WITH OREGON REVISED STATUTES 209.140 – 209.155.

CONSTRUCTION NOTES

DEMOLITION

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND DISPOSAL OF EXISTING AC, CURBS, SIDEWALKS AND OTHER SITE ELEMENTS WITHIN THE SITE AREA IDENTIFIED IN THE PLANS.
2. EXCEPT FOR MATERIALS INDICATED TO BE STOCKPILED OR TO REMAIN ON OWNER'S PROPERTY, CLEARED MATERIALS SHALL BECOME CONTRACTOR'S PROPERTY, REMOVED FROM THE SITE, AND DISPOSED OF PROPERLY.
3. ITEMS INDICATED TO BE SALVAGED SHALL BE CAREFULLY REMOVED AND DELIVERED STORED AT THE PROJECT SITE AS DIRECTED BY THE OWNER.
4. ALL LANDSCAPING, PAVEMENT, CURBS AND SIDEWALKS, BEYOND THE IDENTIFIED SITE AREA, DAMAGED DURING THE CONSTRUCTION SHALL BE REPLACED TO THEIR ORIGINAL CONDITION OR BETTER.
5. CONCRETE SIDEWALKS SHOWN FOR DEMOLITION SHALL BE REMOVED TO THE NEAREST EXISTING CONSTRUCTION JOINT.
6. SAWCUT STRAIGHT MATCHLINES TO CREATE A BUTT JOINT BETWEEN THE EXISTING AND NEW PAVEMENT.

UTILITIES

1. ADJUST ALL INCIDENTAL STRUCTURES, MANHOLES, VALVE BOXES, CATCH BASINS, FRAMES AND COVERS, ETC. TO FINISHED GRADE.
2. CONTRACTOR SHALL ADJUST ALL EXISTING AND/OR NEW FLEXIBLE UTILITIES (WATER, TV, TELEPHONE, ELEC., ETC.) TO CLEAR ANY EXISTING OR NEW GRAVITY DRAIN UTILITIES (STORM DRAIN, SANITARY SEWER, ETC.) IF CONFLICT OCCURS.
3. CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR THE INSTALLATION OF OR ADJUSTMENT TO GAS, ELECTRICAL, POWER AND TELEPHONE SERVICE.
4. BEFORE BACKFILLING ANY SUBGRADE UTILITY IMPROVEMENTS CONTRACTOR SHALL SURVEY AND RECORD MEASUREMENTS OF EXACT LOCATION AND DEPTH AND SUBMIT TO ENGINEER AND OWNER.

STORM AND SANITARY

1. CONNECTIONS TO EXISTING STORM AND SANITARY SEWERS SHALL CONFORM TO THE 2018 OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 00490, "WORK ON EXISTING SEWERS AND STRUCTURES".
2. BEGIN LAYING STORM DRAIN AND SANITARY SEWER PIPE AT THE LOW POINT OF THE SYSTEM, TRUE TO GRADE AND ALIGNMENT INDICATED WITH UNBROKEN CONTINUITY OF INVERT. THE CONTRACTOR SHALL ESTABLISH LINE AND GRADE FOR THE STORM AND SANITARY SEWER PIPE USING A LASER.
3. ALL ROOF DRAIN AND CATCH BASIN LEADERS SHALL HAVE A MINIMUM SLOPE OF 1 PERCENT UNLESS NOTED OTHERWISE IN THE PLANS.

WATER

1. ALL WATER AND FIRE PROTECTION PIPE SHALL HAVE A MINIMUM 36-INCH COVER TO THE FINISH GRADE.
2. ALL WATER AND FIRE PRESSURE FITTINGS SHALL BE PROPERLY RESTRAINED WITH THRUST BLOCKS PER DETAIL.
3. ALL WATER MAIN / SANITARY SEWER CROSSINGS SHALL CONFORM TO THE OREGON STATE HEALTH DEPARTMENT REGULATIONS, CHAPTER 333.

EARTHWORKS

1. CONTRACTOR SHALL PREVENT SEDIMENTS AND SEDIMENT LADEN WATER FROM ENTERING THE STORM DRAINAGE SYSTEM.
2. TRENCH BEDDING AND BACKFILL SHALL BE AS SHOWN ON THE PIPE BEDDING AND BACKFILL DETAIL, THE PROJECT SPECIFICATIONS AND AS REQUIRED IN THE SOILS REPORT. FLOODING OR JETTING THE BACKFILLED TRENCHES WITH WATER WILL NOT BE PERMITTED.
3. SUBGRADE AND TRENCH BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698. FLOODING OR JETTING THE BACKFILLED TRENCHES WITH WATER IS NOT PERMITTED.

PAVING

1. SEE ARCHITECTURAL PLANS FOR SIDEWALK FINISHING AND SCORING PATTERNS.

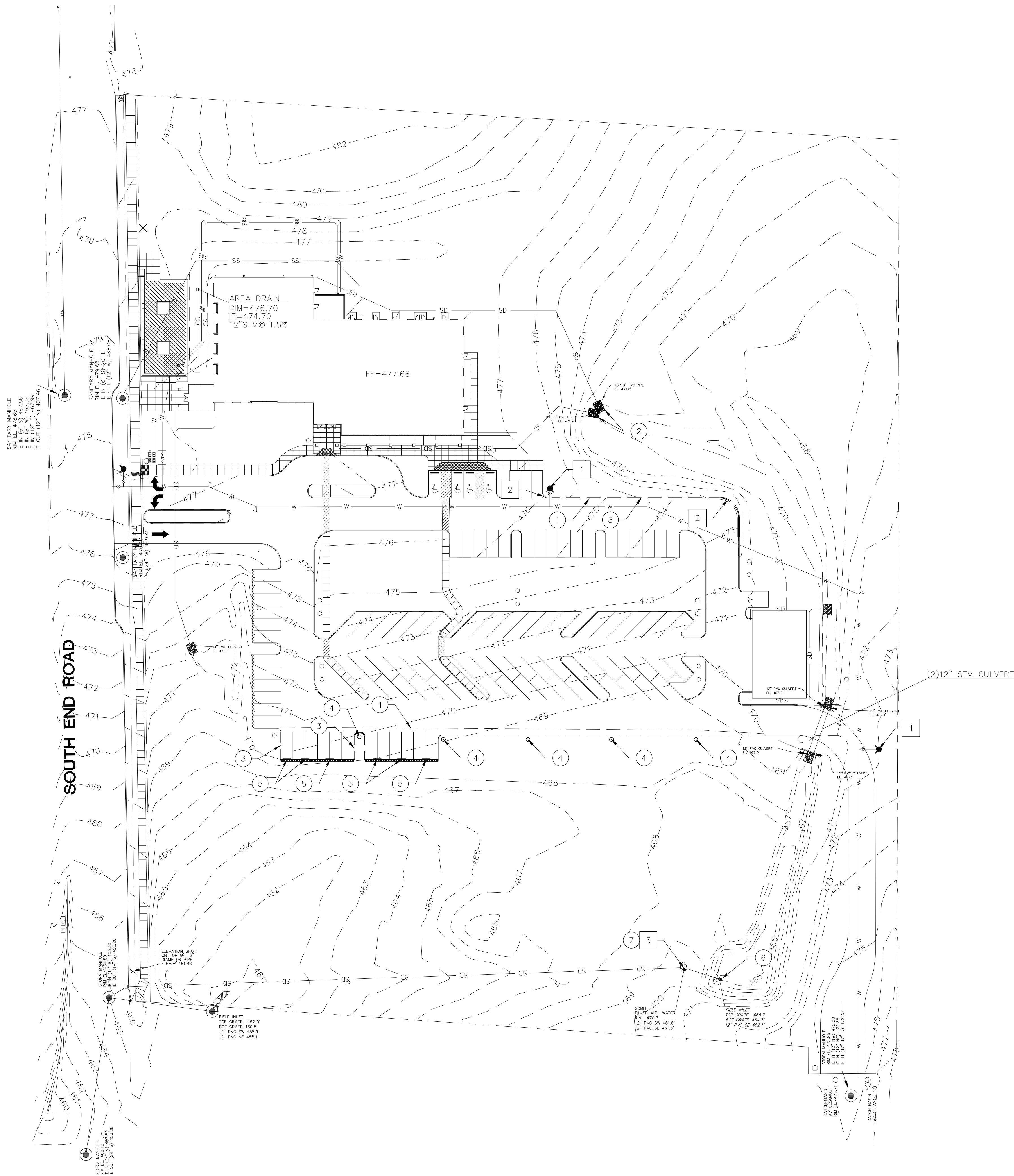
MATERIAL NOTES

1. GENERAL: MATERIALS SHALL BE NEW. THE USE OF MANUFACTURER'S NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, AND USEFULNESS. PROPOSED SUBSTITUTIONS WILL REQUIRE WRITTEN APPROVAL FROM ENGINEER PRIOR TO INSTALLATION.
2. STORM AND SANITARY SEWER PIPING SHALL BE PVC PIPE AS INDICATED IN THE PLANS. PIPES WITH LESS THAN 2' OF COVER SHALL BE C900/C905 PVC, HDPE OR DUCTILE IRON PIPE.
3. PRIVATE WATER MAINS 4-INCH DIAMETER AND LARGER SHALL BE DUCTILE IRON PIPE SCH 80; AS INDICATED IN THE PLANS.
4. PRIVATE WATER LINES 3-INCH DIAMETER AND SMALLER SHALL BE TYPE K COPPER OR PVC; AS INDICATED IN THE PLANS.
5. CONCRETE FOR CURBS, SIDEWALK AND DRIVEWAYS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.

SHEET #

C0.1

GENERAL NOTES



SHEET NOTES

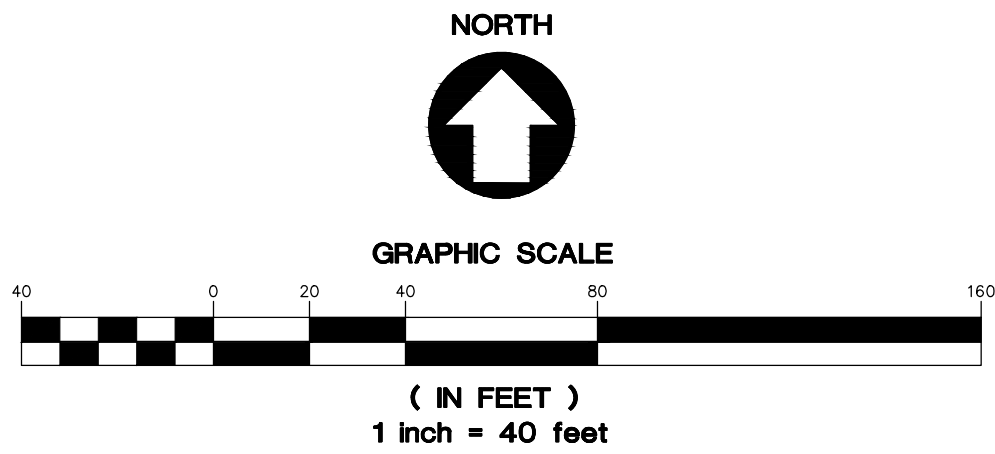
1. SEE SHEET C0.1 FOR GENERAL SHEET NOTES.
2. CONTRACTOR MAY STAGE WITHIN LIMITS OF DEMOLITION.
3. REMOVE ALL SITE COMPONENTS AND RECYCLE COMPONENTS AS REQUIRED IN THE SPECIFICATIONS.
4. ALL TRADE LICENSES AND PERMITS NECESSARY FOR THE PROCUREMENT AND COMPLETION OF THE WORK SHALL BE SECURED BY THE CONTRACTOR PRIOR TO COMMENCING DEMOLITION.
5. THE CONTRACTOR SHALL PRESERVE AND PROTECT FROM DAMAGE ALL EXISTING RIGHT-OF-WAY SURVEY MONUMENTATION DURING DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND PAYING FOR THE REPLACEMENT BY A LICENSED SURVEYOR OF ANY DAMAGED OR REMOVED MONUMENTS.
6. PROTECT ALL ITEMS ON ADJACENT PROPERTIES AND IN THE RIGHT OF WAY INCLUDING BUT NOT LIMITED TO SIGNAL EQUIPMENT, PARKING METERS, SIDEWALKS, STREET TREES, STREET LIGHTS, CURBS, PAVEMENT AND SIGNS. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ANY DAMAGED ITEMS TO ORIGINAL CONDITION.
7. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, AND OTHER FACILITIES IMMEDIATELY ADJACENT TO EXCAVATIONS FROM DAMAGES CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT AND OTHER HAZARDS.
8. SAWCUT STRAIGHT LINES IN SIDEWALK, AS NECESSARY.
9. CONTRACTOR IS RESPONSIBLE TO CONTROL DUST AND MUD DURING THE DEMOLITION PERIOD, AND DURING TRANSPORTATION OF DEMOLITION DEBRIS. ALL STREET SURFACES OUTSIDE THE CONSTRUCTION ZONE MUST BE KEPT CLEAN.
10. PROTECT ALL EXISTING UTILITY STRUCTURES AND UNDERGROUND MAINS TO REMAIN.
11. PROTECT ALL EXISTING VEGETATION TO REMAIN.

X PROTECTION NOTES

1. PROTECT HYDRANT
2. PROTECT CURB
3. PROTECT FLOW-CONTROL MANHOLE STRUCTURE, LID, LADDER STEPS, AND INLET/OUTLET PIPES.

X DEMOLITION NOTES

1. SAWCUT AND REMOVE ASPHALT
2. REMOVE RIP RAP
3. REMOVE CURB
4. REMOVE LIGHT POLE
5. REMOVE WHEEL STOP
6. REMOVE DITCH INLET AND PORTION OF STORM PIPE
7. REMOVE FLOW CONTROL TEE INSIDE MANHOLE ONCE NEW FLOW CONTROL TEE IS READY TO INSTALL



RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH

1179 SOUTH END ROAD
OREGON CITY, OR 97045

PROJ. NO. : 1881
FILE :
DATE : 7/22/19

SHEET #

C0.2

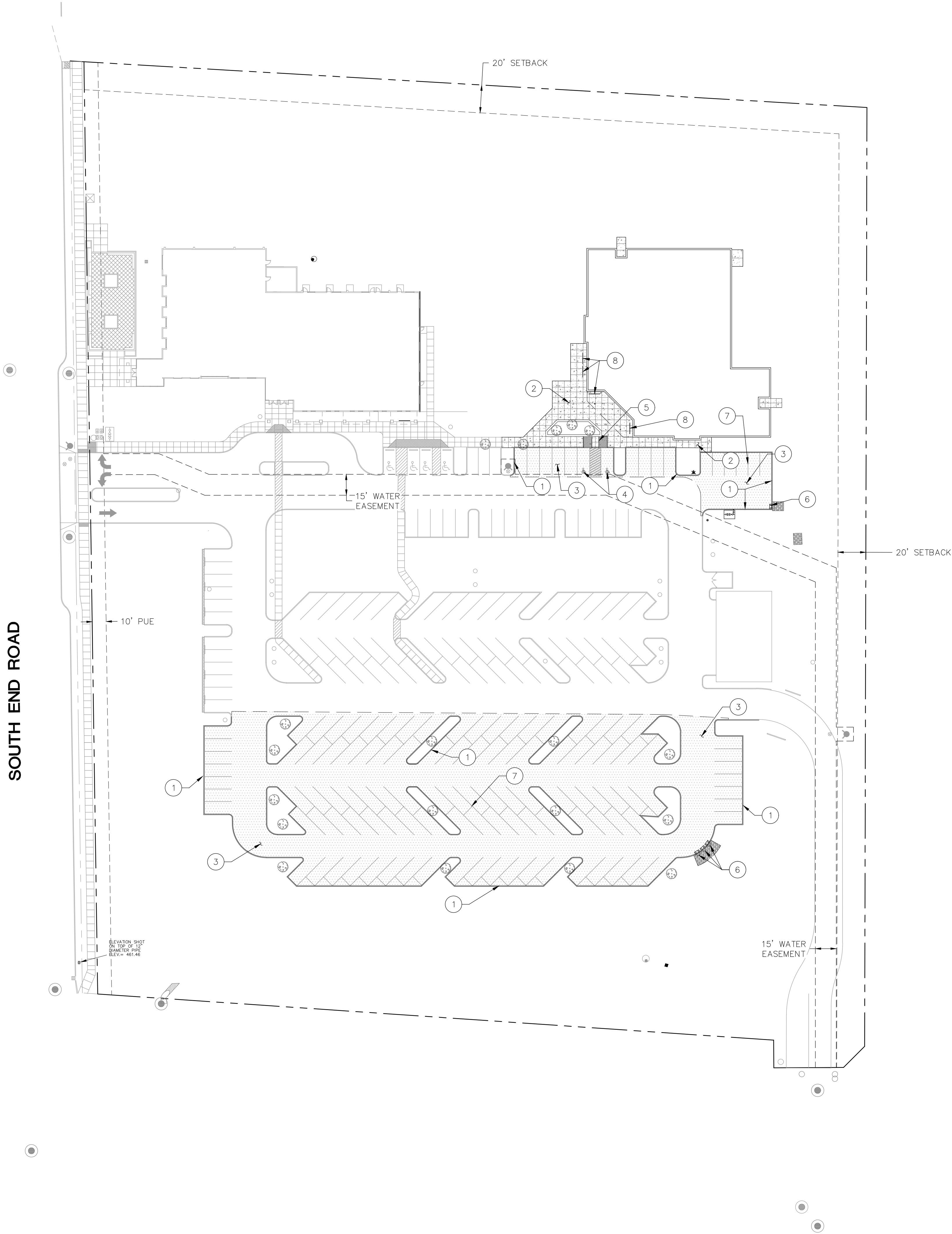
EXISTING CONDITIONS
AND DEMOLITION PLAN



ISELIN
ARCHITECTS
P.C.

1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com





SHEET NOTES

1. SEE SHEET C0.1 FOR GENERAL SHEET NOTES.
2. SEE ARCHITECTURAL PLANS FOR ADDITIONAL SITE INFORMATION.
3. THE CONTRACTOR SHALL HAVE A FULL SET OF THE CURRENT APPROVED CONSTRUCTION DOCUMENTS INCLUDING ADDENDA ON THE PROJECT SITE AT ALL TIMES.
4. THE CONTRACTOR SHALL KEEP THE ENGINEER AND JURISDICTION INFORMED OF CONSTRUCTION PROGRESS TO FACILITATE SITE OBSERVATIONS AT REQUIRED INTERVALS. 24-HOUR NOTICE IS REQUIRED.

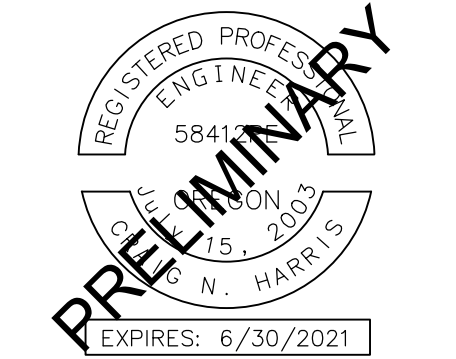
(X) CONSTRUCTION NOTES

1. INSTALL CONCRETE CURB PER DETAIL 1/C4.0.
2. INSTALL SIDEWALK PER DETAIL 2/C4.0.
3. INSTALL ASPHALT PAVEMENT PER DETAIL 3/C4.0.
4. INSTALL ADA PARKING STALL PER DETAIL 4/C4.0.
5. INSTALL ADA RAMP PER DETAIL 5/C4.0.
6. INSTALL CURB CUT SPILLWAY PER DETAIL 7/C4.0.
7. INSTALL STRIPING. SEE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.
8. INSTALL BIKE PARKING. SEE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.



**ISELIN
ARCHITECTS
P.C.**

1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com



RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH

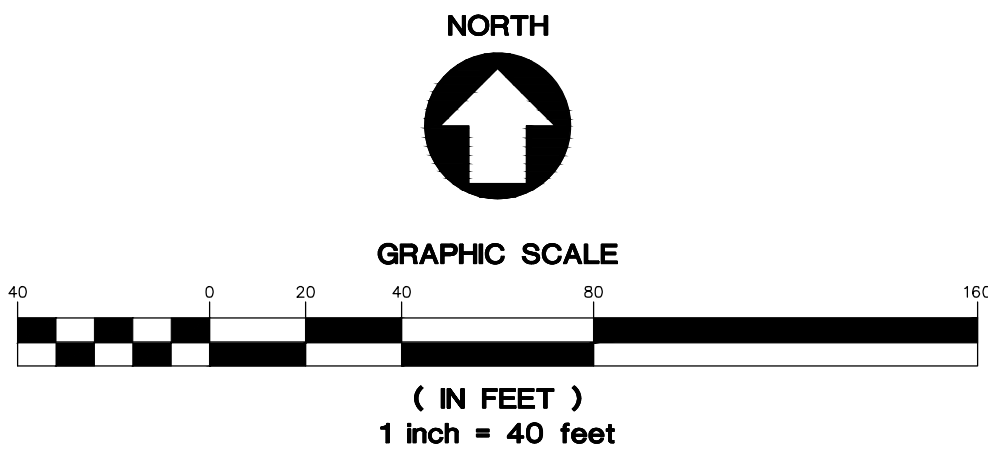
1179 SOUTH END ROAD
OREGON CITY, OR 97045

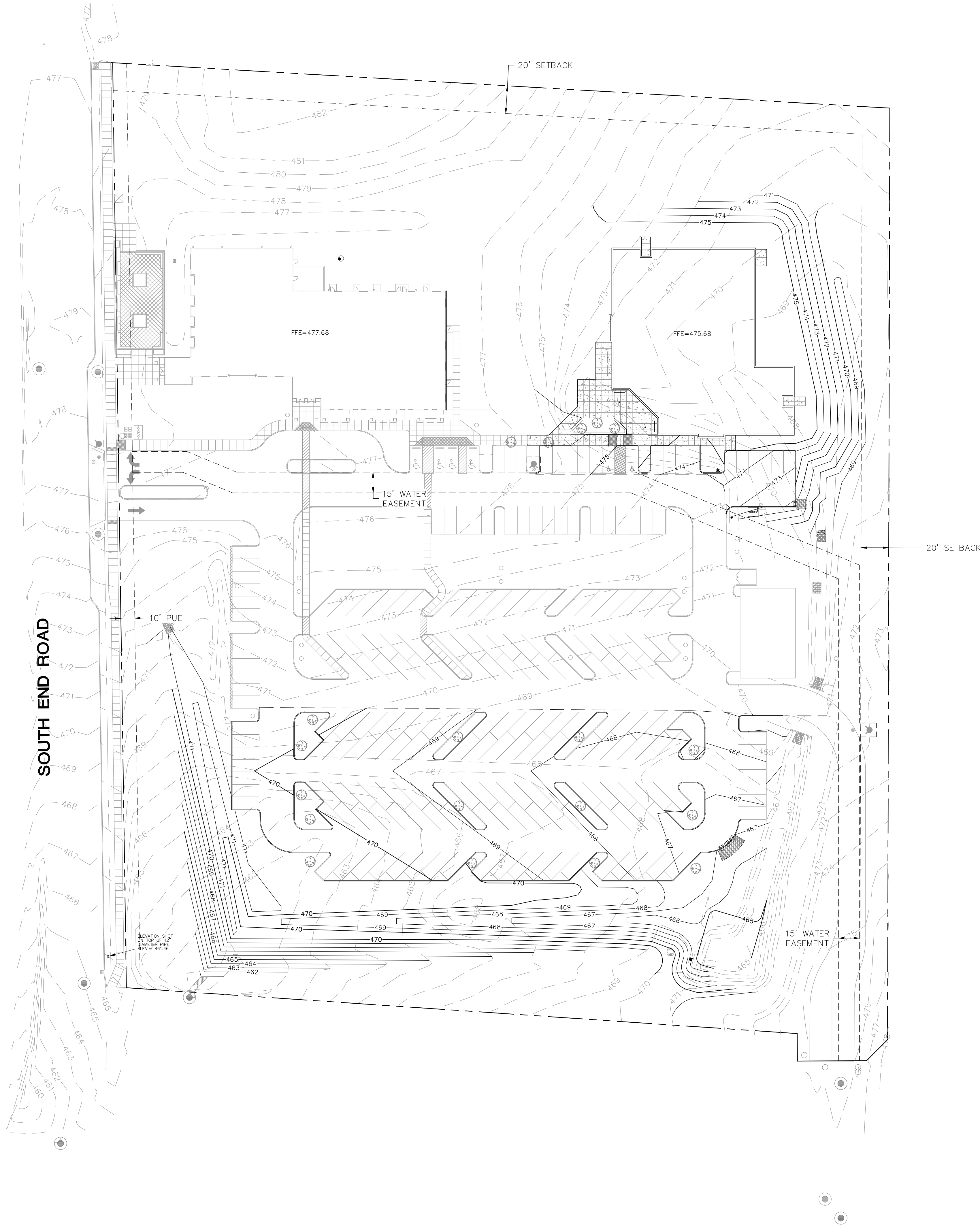
PROJ. NO. : 1881
FILE :
DATE : 7/22/19

SHEET #

C1.0

HARDSCAPE
PLAN





SHEET NOTES

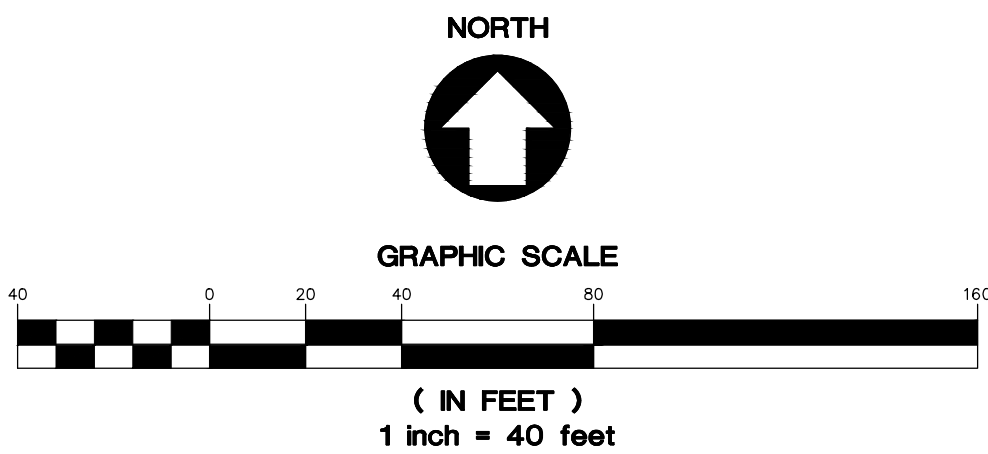
- 1. SEE SHEET C0.1 FOR GENERAL SHEET NOTES.
- 2. CURB HEIGHTS ARE 6" UNLESS NOTED OTHERWISE.
- 3. LANDINGS ON ACCESSIBLE ROUTES SHALL NOT EXCEED 2% IN ANY DIRECTION.
- 4. ALL ACCESSIBLE ROUTES SHALL COMPLY WITH CURRENT ADA ACCESSIBILITY GUIDELINES FOR BUILDING AND FACILITIES (ADAAG).
- 5. ALL WALKWAYS FROM ACCESSIBLE UNITS ARE DESIGNED TO NOT REQUIRE HANDRAILS. THEREFORE, RAMPS WITH SLOPES STEEPER THAN 5.0% AND LESS THAN 8.33% SHALL NOT EXCEED 0.5' RISE OR 6.0' LENGTH.
- 6. FINISH GRADES ARE TO BE BROUGHT TO WITHIN 0.08 FT IN 10 FT OF THE GRADES SHOWN AT SUBGRADE AND TO WITHIN 0.03 FT IN 10 FT AT FINISH GRADE. CONTRACTOR TO ALLOW FOR PLACEMENT OF REQUIRED TOPSOIL IN ROUGH GRADING.
- 7. GRADING ELEVATIONS AS SHOWN ON SITE AND LANDSCAPE PLANS ARE FINISHED GRADE WHICH INCLUDES SUBGRADE, SOIL, TOPSOIL, SOIL AMENDMENTS, ROCKERY AND RUNOFF PROTECTION. CONTRACTOR IS RESPONSIBLE TO COORDINATE GRADING WITH BOTH EXCAVATOR AND LANDSCAPE CONTRACTOR.

GRADING LABEL LEGEND

CALLOUT	DESCRIPTION
XX.XX	SPOT ELEVATION
XX	DESCRIPTION LISTED BELOW.
BS	BOTTOM OF STAIRS
BW	FINISHED GRADE AT BOTTOM OF WALL
DS	DOOR SILL
EX	EXISTING GRADE
FF	FINISHED FLOOR ELEVATION
FG	FINISH GRADE
G	GROUND
SW	SIDEWALK
TC	TOP OF CURB
TP	TOP OF PAVEMENT
TS	TOP OF STAIRS
TW	FINISHED GRADE AT TOP OF WALL

LEGEND

EXISTING CONTOUR MINOR	--- 102 ---
EXISTING CONTOUR MAJOR	___ 100 ___
PROPOSED CONTOUR MINOR	--- 102 ---
PROPOSED CONTOUR MAJOR	___ 100 ___



1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com

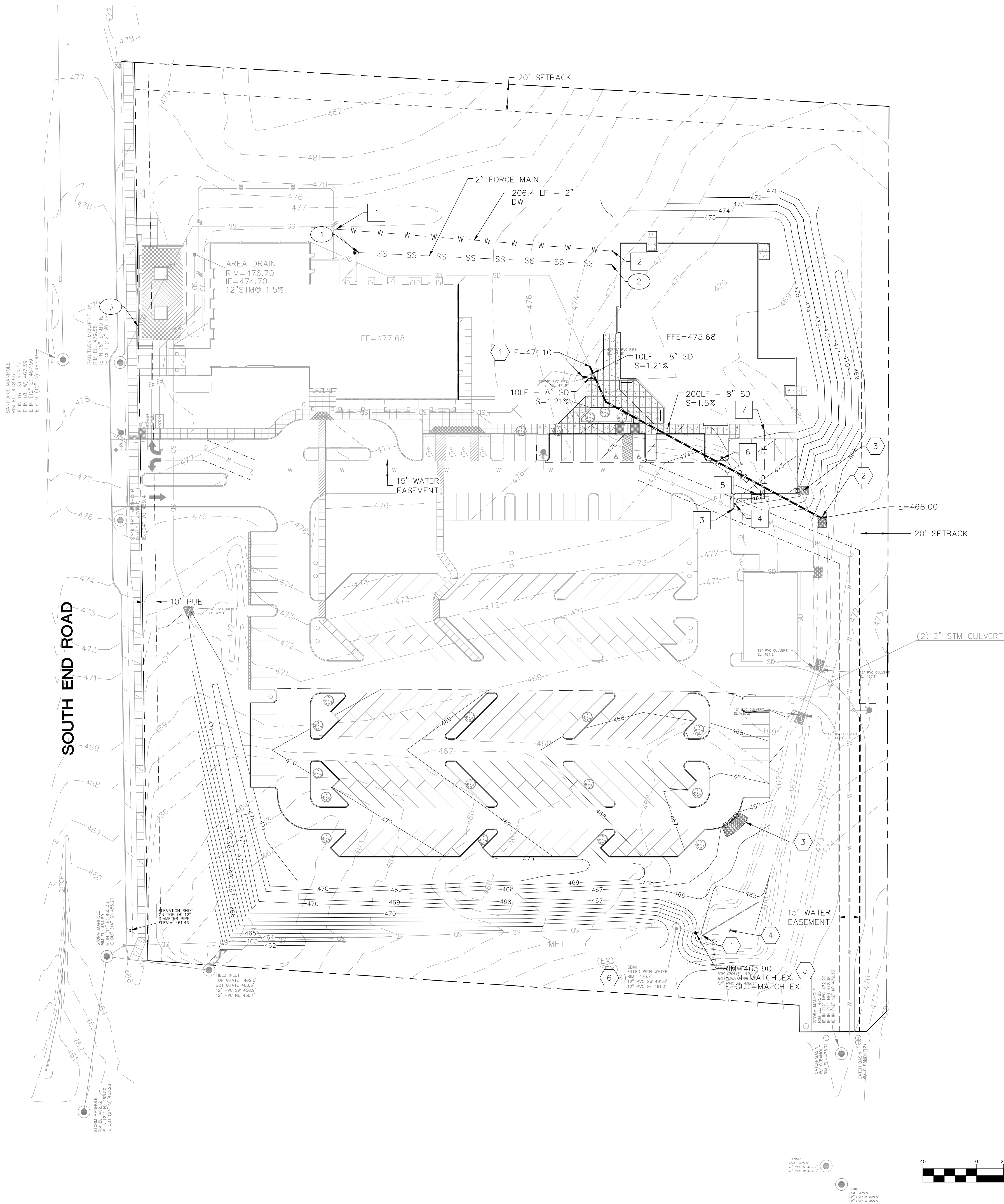


RECREATION BUILDING FOR

OREGON CITY CHRISTIAN CHURCH

1179 SOUTH END ROAD
OREGON CITY, OR 97045

PROJ. NO. : 1881
FILE :
DATE : 7/22/19

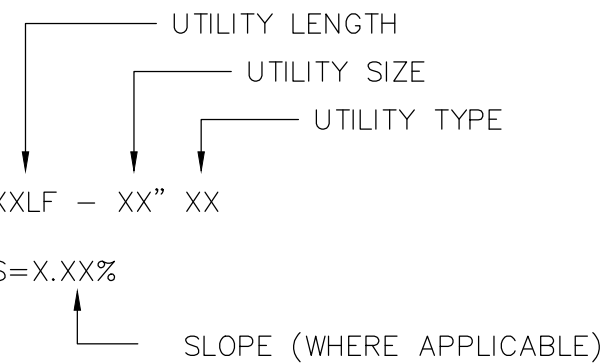


SHEET NOTES

1. SEE SHEET C0.1 FOR GENERAL SHEET NOTES.
2. STRUCTURES HORIZONTAL LOCATIONS AND PIPE INVERTS ARE BASED ON THE CENTER OF THE STRUCTURE.
3. PIPE BEDDING AND BACKFILL UTILITIES SHALL BE DONE PER DETAIL 1/C4.1.
4. ALL SANITARY PIPING SHALL BE PVC 3034 OR APPROVED EQUAL UNLESS NOTED OTHERWISE.
5. THIS PLAN IS GENERALLY DIAGRAMMATIC. IT DOES NOT SHOW EVERY JOINT, BEND, FITTING, OR ACCESSORY REQUIRED FOR CONSTRUCTION.
6. CLEAN OUTS SHALL BE INSTALLED IN CONFORMANCE WITH UPC CHAPTER SEVEN, SECTION 707 AND SECTION 719. THIS PLAN MAY NOT SHOW ALL REQUIRED CLEAN OUTS.
7. DOMESTIC WATER AND FIRE LINES AND ACCESSORIES BETWEEN THE WATER METER AND THE BUILDING SHALL BE INSTALLED BY A LICENSED PLUMBER EMPLOYED BY A LICENSED PLUMBING CONTRACTOR.
8. UTILITIES WITHIN FIVE FEET OF A BUILDING SHALL BE CONSTRUCTED OF MATERIALS APPROVED FOR INTERIOR USE AS DESCRIBED IN THE CURRENT EDITION OF THE UPC.
9. INLETS AND OUTLETS TO ON-SITE MANHOLES SHALL HAVE FLEXIBLE CONNECTION NO CLOSER THAN 12" AND NO FARTHER THAN 36" FROM THE MANHOLE.
10. CONTRACTOR TO VERIFY SANITARY AND WATER SIZING AND INVERTS WITH APPROVED PLUMBING PLANS PRIOR TO ORDERING MATERIALS OR BEGINNING CONSTRUCTION OF SAID UTILITIES.
11. INSTALL THRUST BLOCKS ON FIRE AND WATER LINES PER DETAIL 3/C4.2.

LABEL LEGEND

PIPE LABELS



STORM NOTES

1. CONNECT TO EXISTING STORM PIPE.
2. OUTFALL PER DETAIL 2/C4.1.
3. INSTALL 8'x23' RIP-RAP PAD, USING 1' DEPTH OF ODOT CLASS 50 RIP-RAP.
4. INSTALL 38'x40' VEGETATED INFILTRATION BASIN PER DETAIL 5/C4.1, AND GRADING ON SHEET C2.0.
5. INSTALL DITCH INLET OVER EXISTING STORM PIPE PER DETAIL PER DETAIL 4/C4.1.
6. INSTALL FLOW-CONTROL TEE INSIDE EXISTING MANHOLE PER DETAIL 3/C4.1.

WATER NOTES

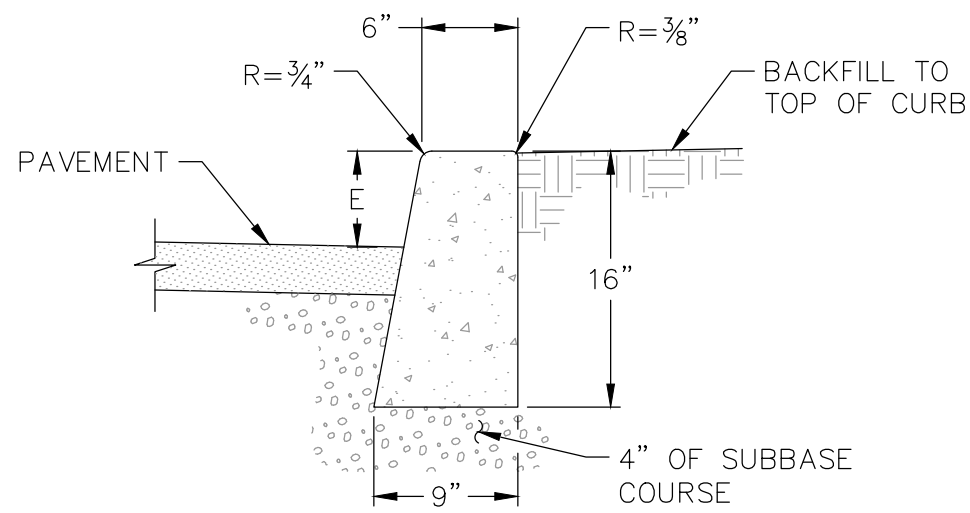
1. 2X2 TEE TO EXISTING 2" DOMESTIC WATER LINE.
2. 2" DOMESTIC WATER STUB
3. 6" TAP TO EXISTING 8" WATER LINE
4. 6" GATE VALVE
5. 6" DOUBLE CHECK DETECTOR ASSEMBLY IN CONCRETE VAULT PER DETAIL 2/C4.2
6. 4" FDC PER DETAIL 1/C4.2
7. 6" FIRE PROTECTION STUB

SANITARY NOTES

1. CONSTRUCT 48" FLAT TOP MANHOLE OVER EXISTING SANITARY
2. POINT OF CONNECTION FOR 2" FORCE MAIN
3. DOUBLE CLEANOUT REQUIRED. CONTRACTOR TO INSTALL AT PROPERTY LINE IF NOT ALREADY CONSTRUCTED.

LEGEND

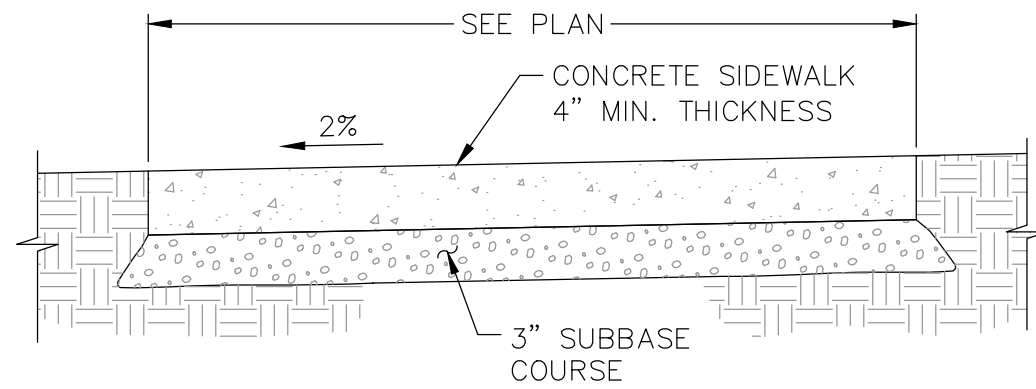
SANITARY SEWER LINE	SS	SS	SS	SS
WATER LINE	W	W	W	W
FIRE LINE	FP	FP	FP	FP
FDC LINE	FDC	FDC	FDC	FDC
STORM LINE				
PERFORATED STORM PIPE				



- NOTES:**
1. CURB EXPOSURE 'E' = 6", TYP. VARY AS SHOWN ON PLANS OR AS DIRECTED.
 2. CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMP. CONSTRUCT EXPANSION JOINTS AT 200' MAX SPACING AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY.
 3. TOPS OF ALL CURBS SHALL SLOPE TOWARD THE ROADWAY AT 2% UNLESS OTHERWISE SHOWN OR AS DIRECTED.
 4. DIMENSIONS ARE NOMINAL AND MAY VARY TO CONFORM WITH CURB MACHINE AS APPROVED BY THE ENGINEER.

1 CONCRETE CURB - STANDARD

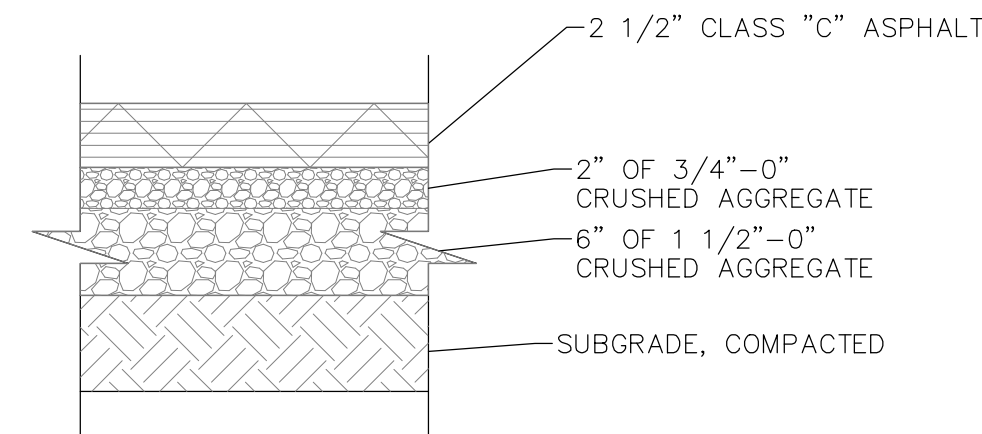
SCALE: NTS



- NOTES:**
1. CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMP. CONSTRUCT EXPANSION JOINTS AT 200' MAX SPACING, AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY, UNLESS NOTED OTHERWISE.
 2. CONCRETE SHALL BE 3000 P.S.I AT 28 DAYS, 6 SACK MIX, SLUMP RANGE OF 1-1/2" TO 3".
 3. PANELS SHALL BE 5 FEET LONG.
 4. EXPANSION JOINTS TO BE PLACED AT SIDES OF DRIVEWAY APPROACHES, UTILITY VAULTS, WHEELCHAIR RAMPS, AND AT SPACING NOT TO EXCEED 45 FEET.
 5. FOR SIDEWALKS ADJACENT TO THE CURB AND POURED AT THE SAME TIME AS THE CURB, THE JOINT BETWEEN THEM SHALL BE A TROWELED JOINT WITH A MINIMUM 1/2" RADIUS.
 6. SIDEWALK SHALL HAVE A MINIMUM THICKNESS OF 6 INCHES IF MOUNTABLE CURB IS USED OR IF SIDEWALK IS INTENDED AS PORTION OF DRIVEWAY. OTHERWISE SIDEWALK SHALL HAVE A MINIMUM THICKNESS OF 4 INCHES.
 7. DRAIN BLOCKOUTS IN CURBS SHALL BE EXTENDED TO BACK OF SIDEWALK WITH 3" DIA. PVC PIPE AT 2% SLOPE. CONTRACTION JOINT TO BE PLACED OVER PIPE.

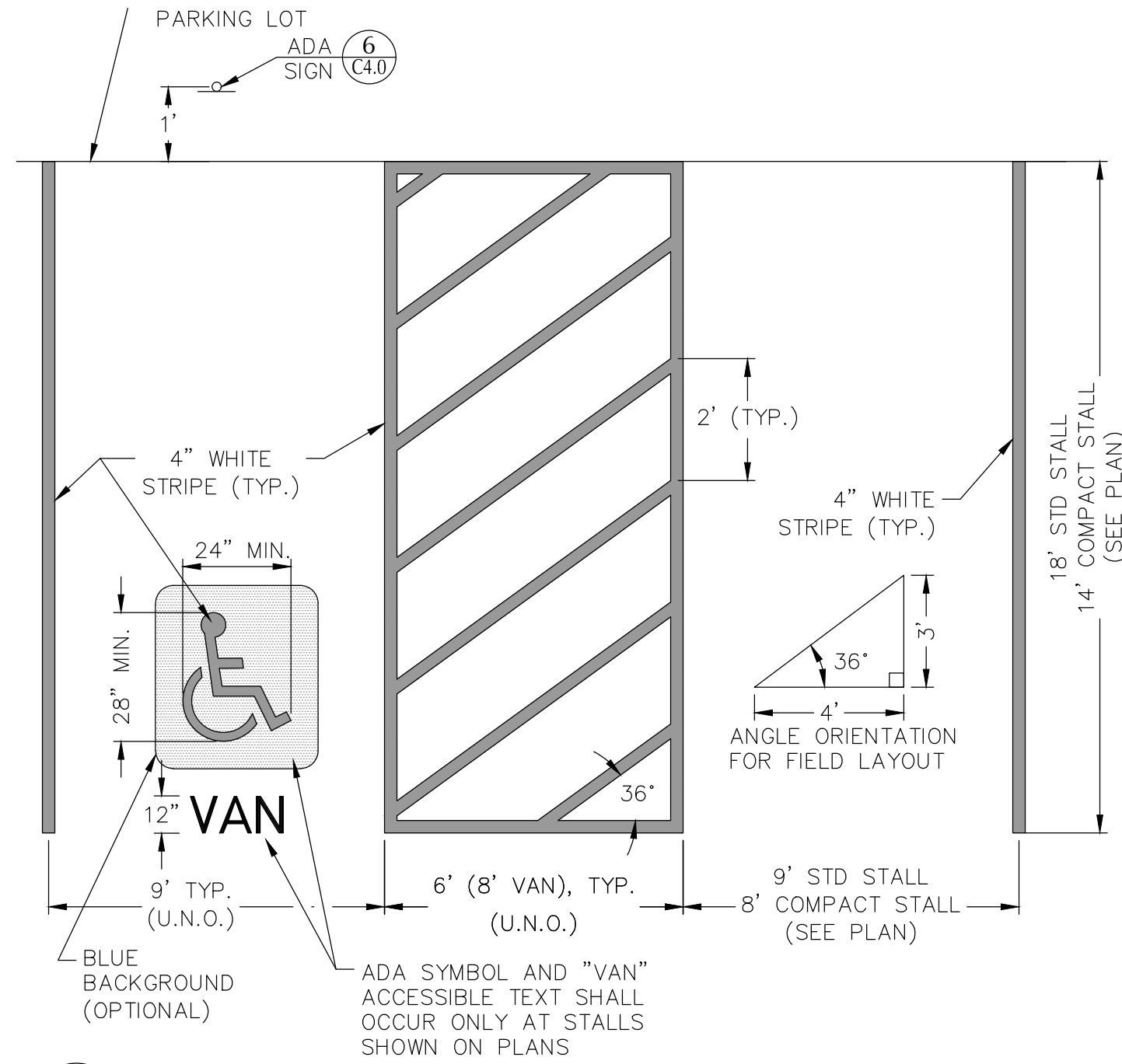
2 CONCRETE SIDEWALK

SCALE: NTS



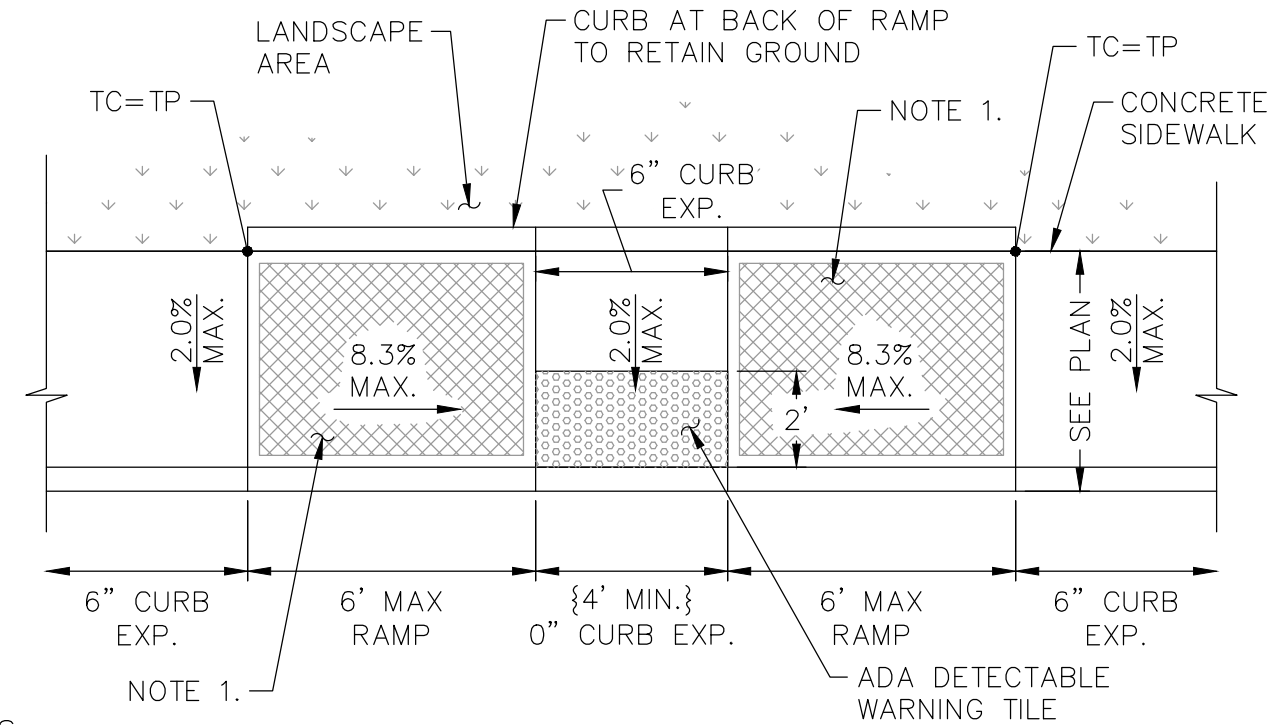
3 PARKING/DRIVE LANE (NO TRUCKS) ASPHALT SECTION

SCALE: NTS



4 TYPICAL PARKING LAYOUT

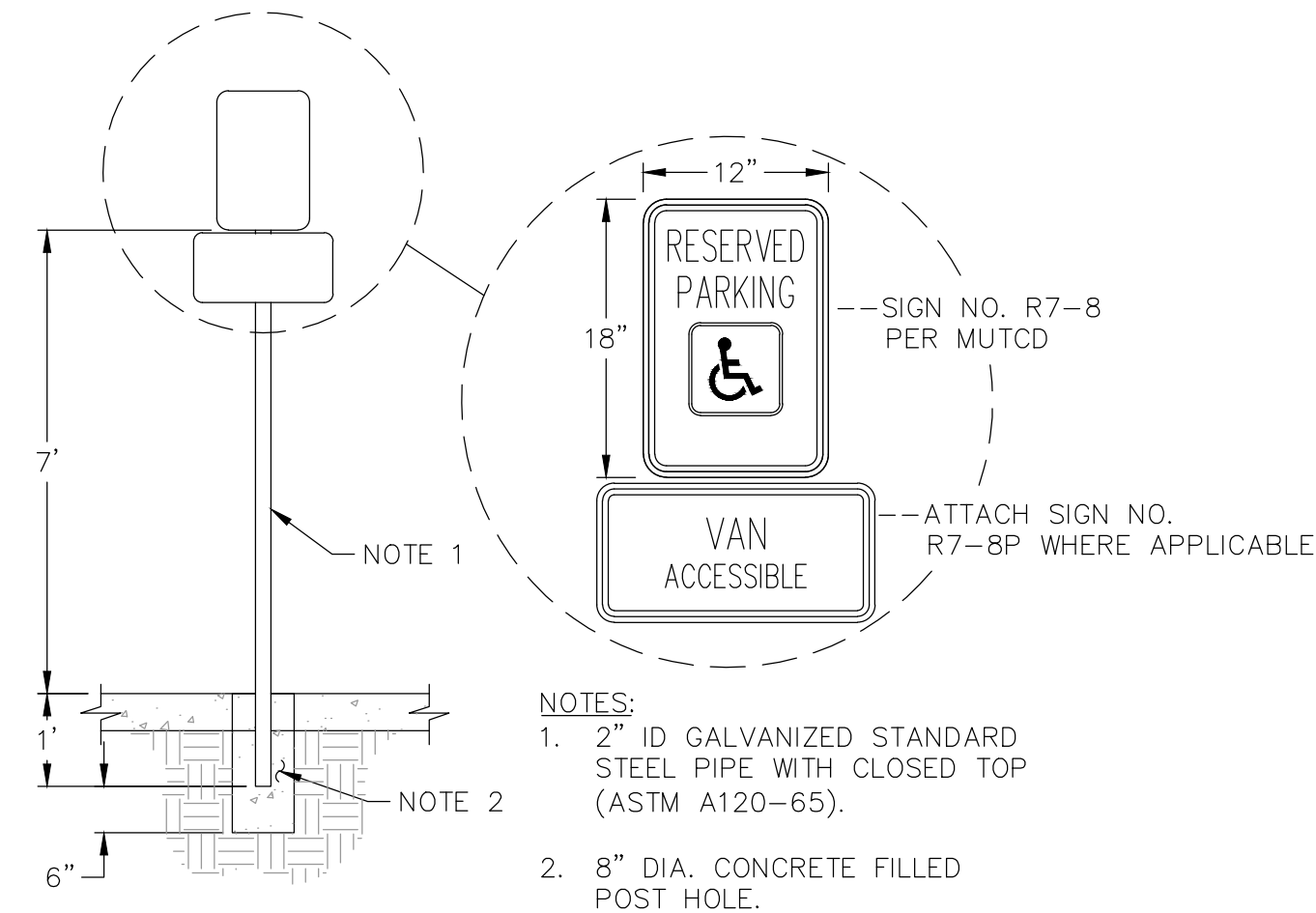
SCALE: NTS



- NOTES:**
1. PROVIDE RAMP TEXTURING WITH AN EXPANDED METAL GRATE PLACED ON AND REMOVED FROM WET CONCRETE TO LEAVE A DIAMOND PATTERN. EACH DIAMOND SHALL BE 1 1/4" LONG BY 1/2" WIDE WITH THE LONG SECTION AXIS ORIENTED PERPENDICULAR TO THE CURB. THE GROOVES SHALL BE 1/8" DEEP BY 1/4" WIDE.

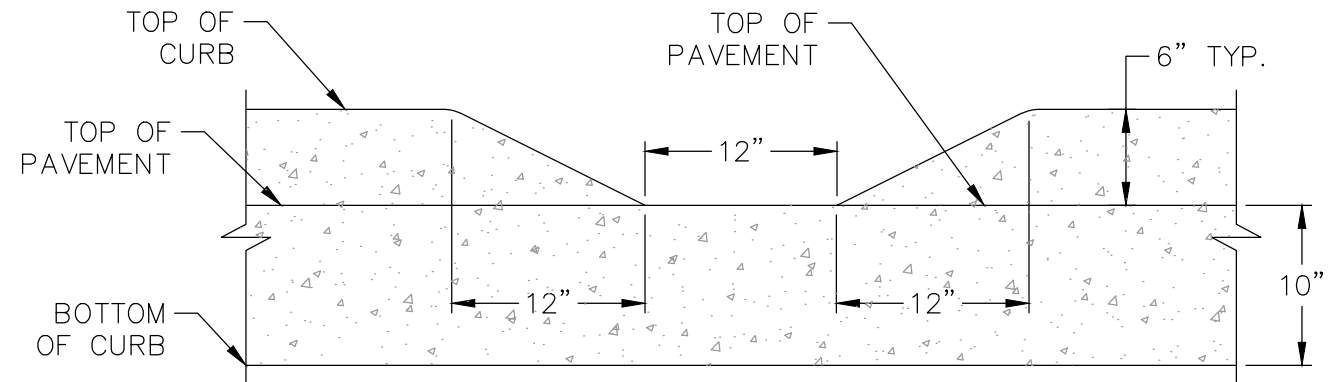
5 CURB RAMP - TYPE 5

SCALE: NTS



6 ADA PARKING SIGN - TYPE 1

SCALE: NTS



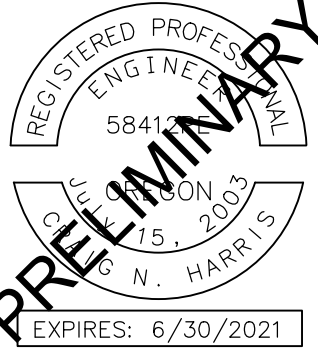
7 CURB SPILLWAY - TYPE 1

SCALE: NTS



**ISELIN
ARCHITECTS
P.C.**

1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com



RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH

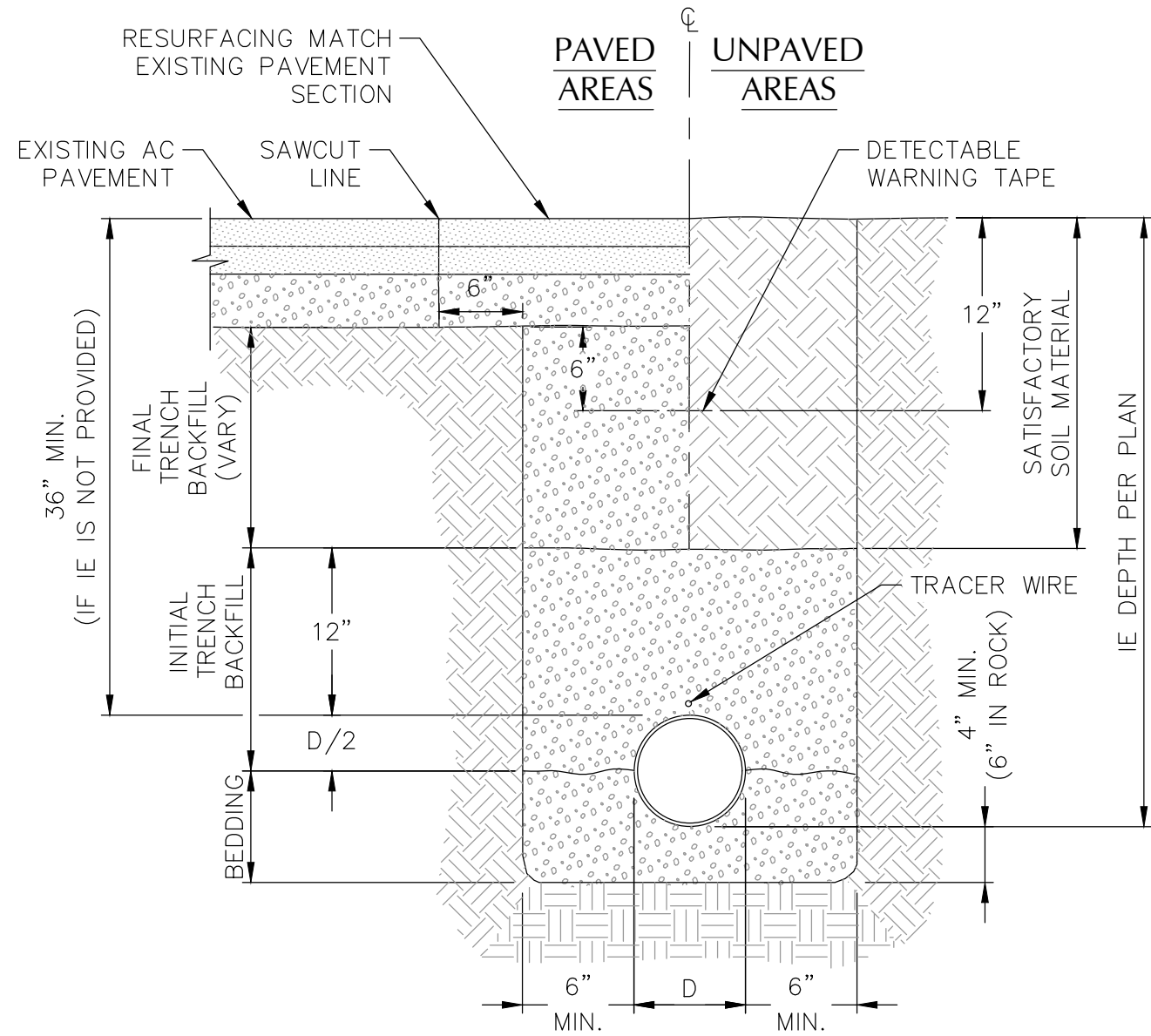
1179 SOUTH END ROAD
OREGON CITY, OR 97045

PROJ. NO. : 1881
FILE :
DATE : 7/22/19

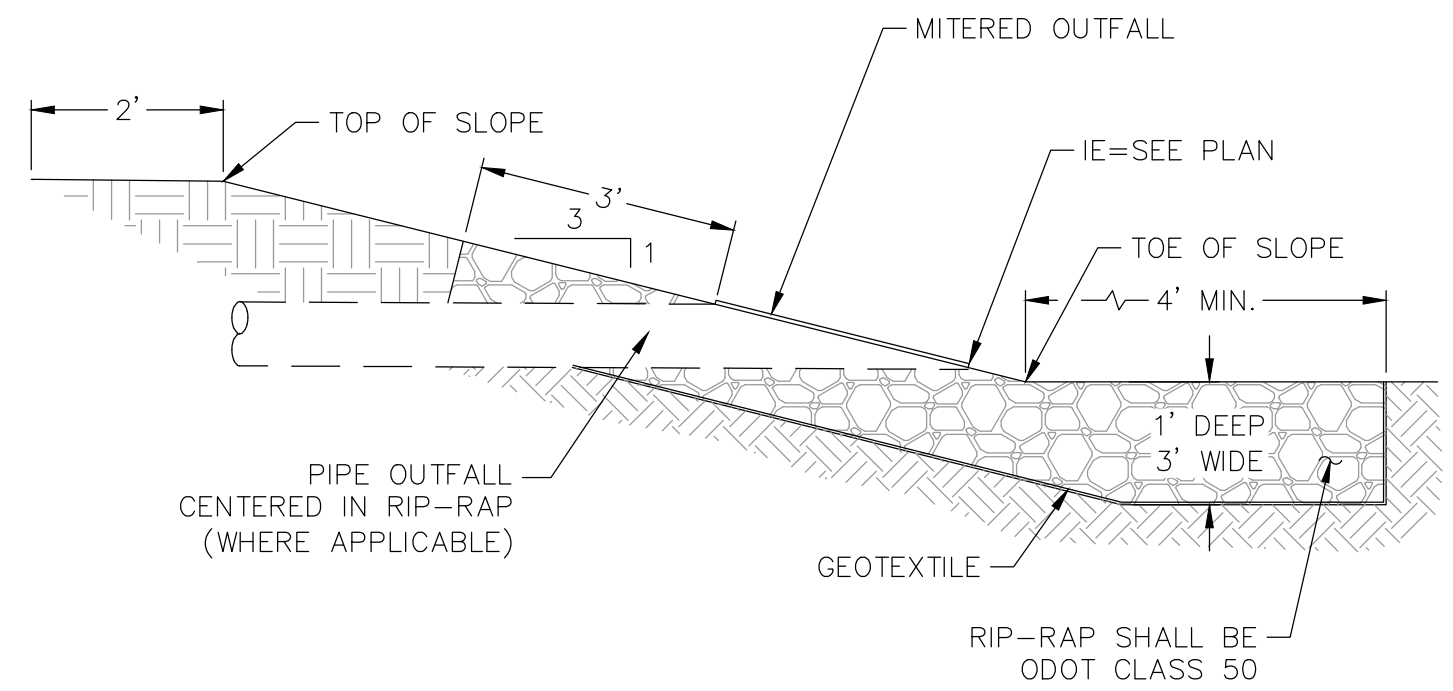
SHEET #

C4.0

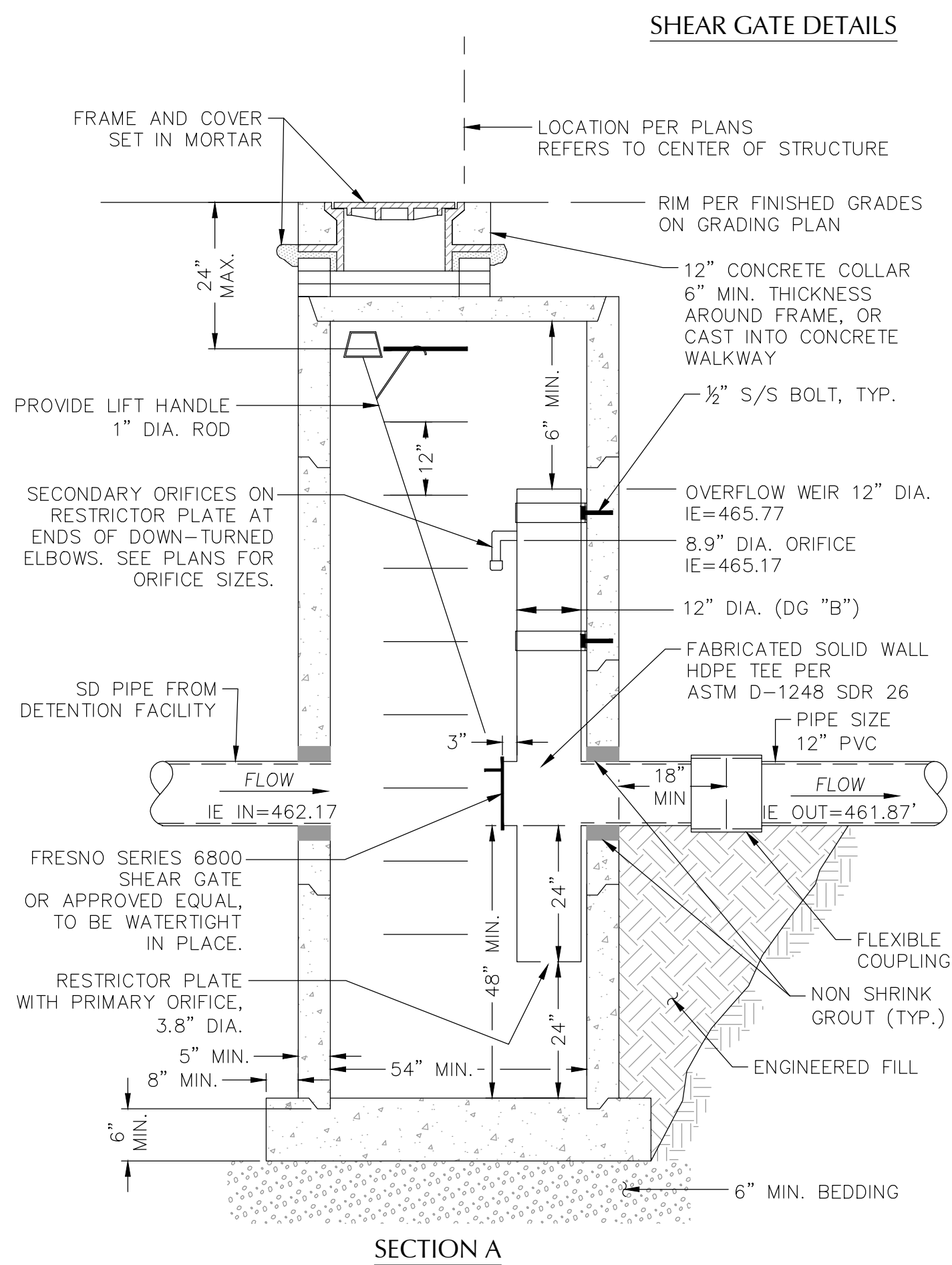
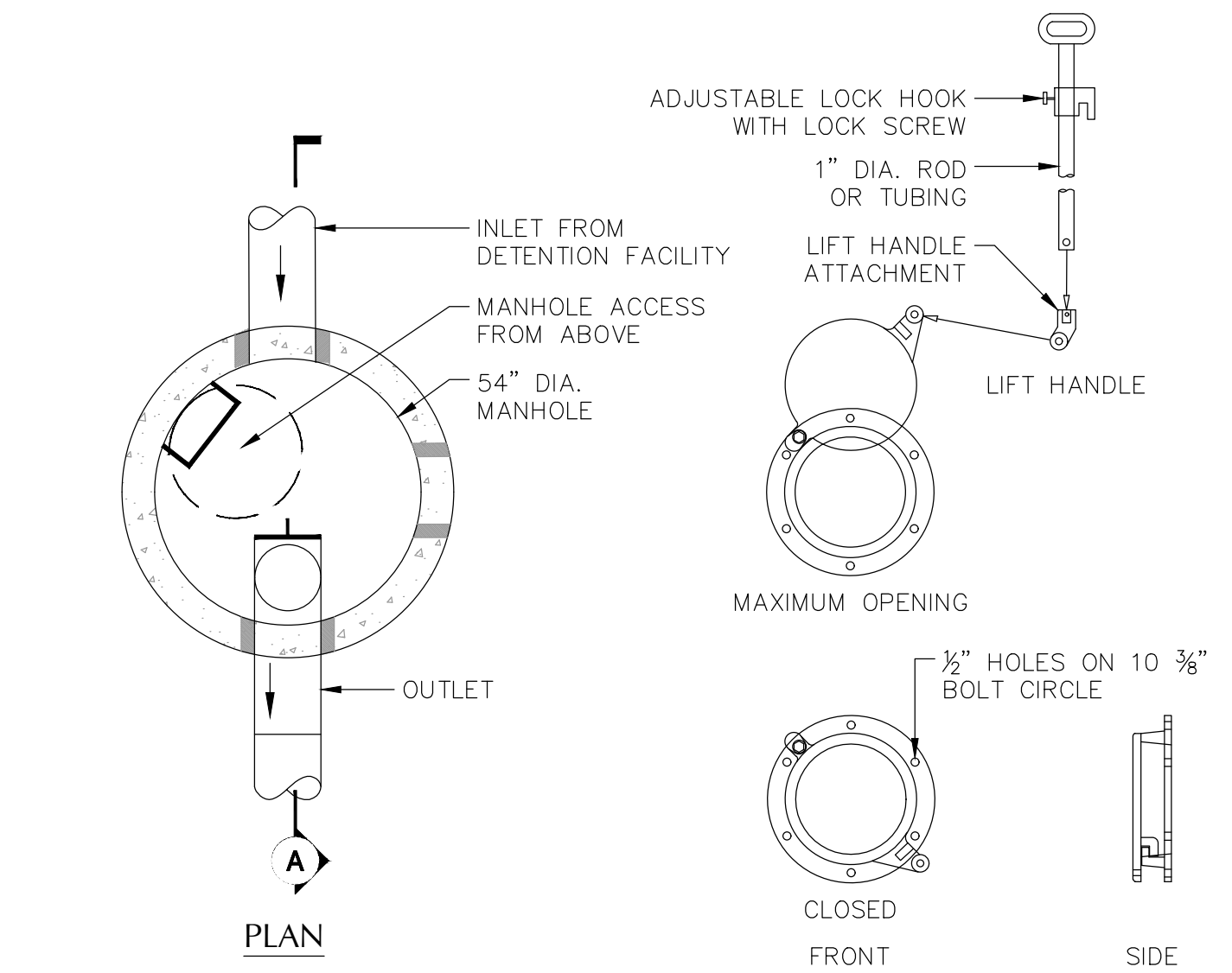
DETAILS



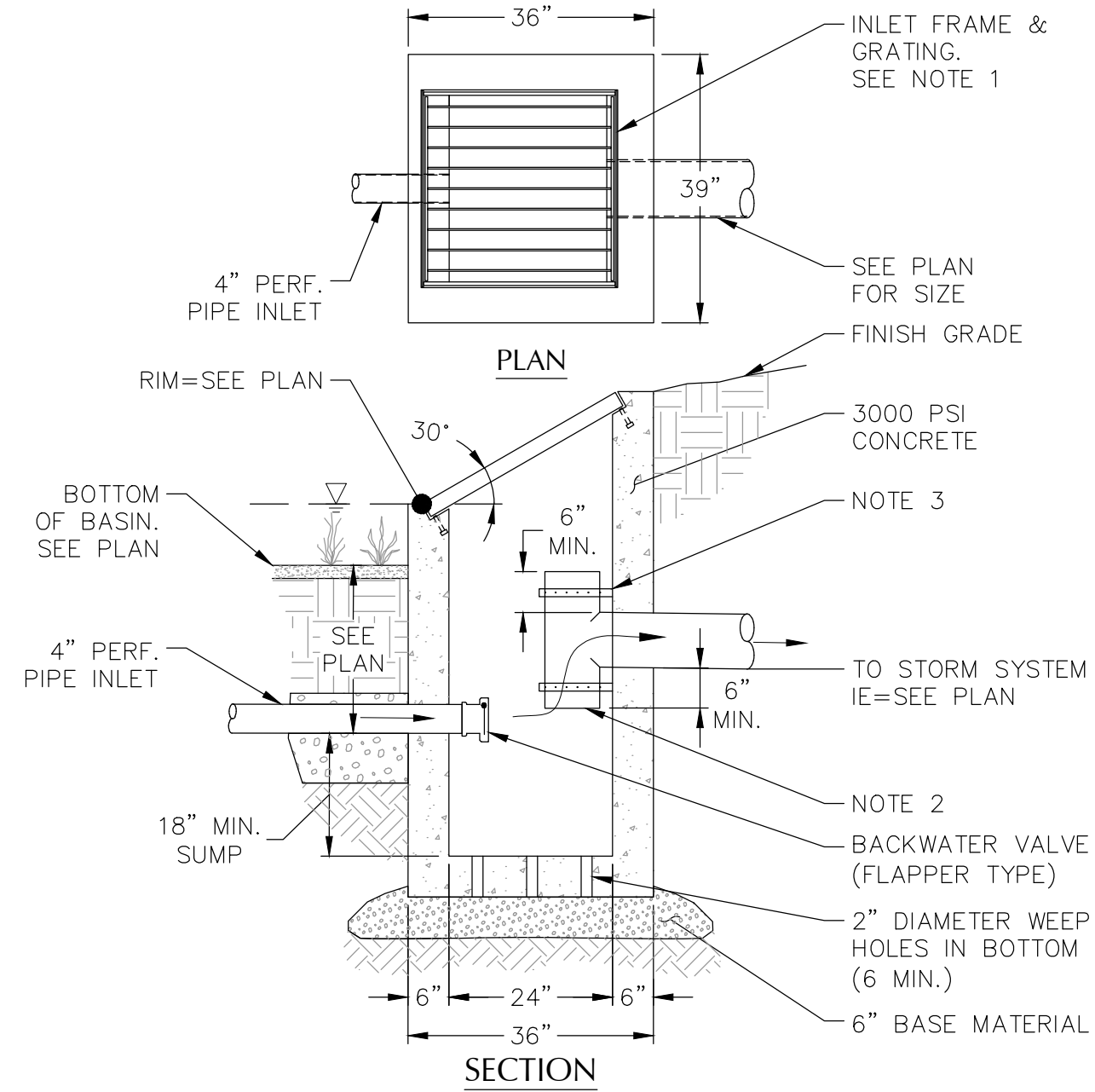
1 TYPICAL PIPE BEDDING AND BACKFILL
SCALE: NTS



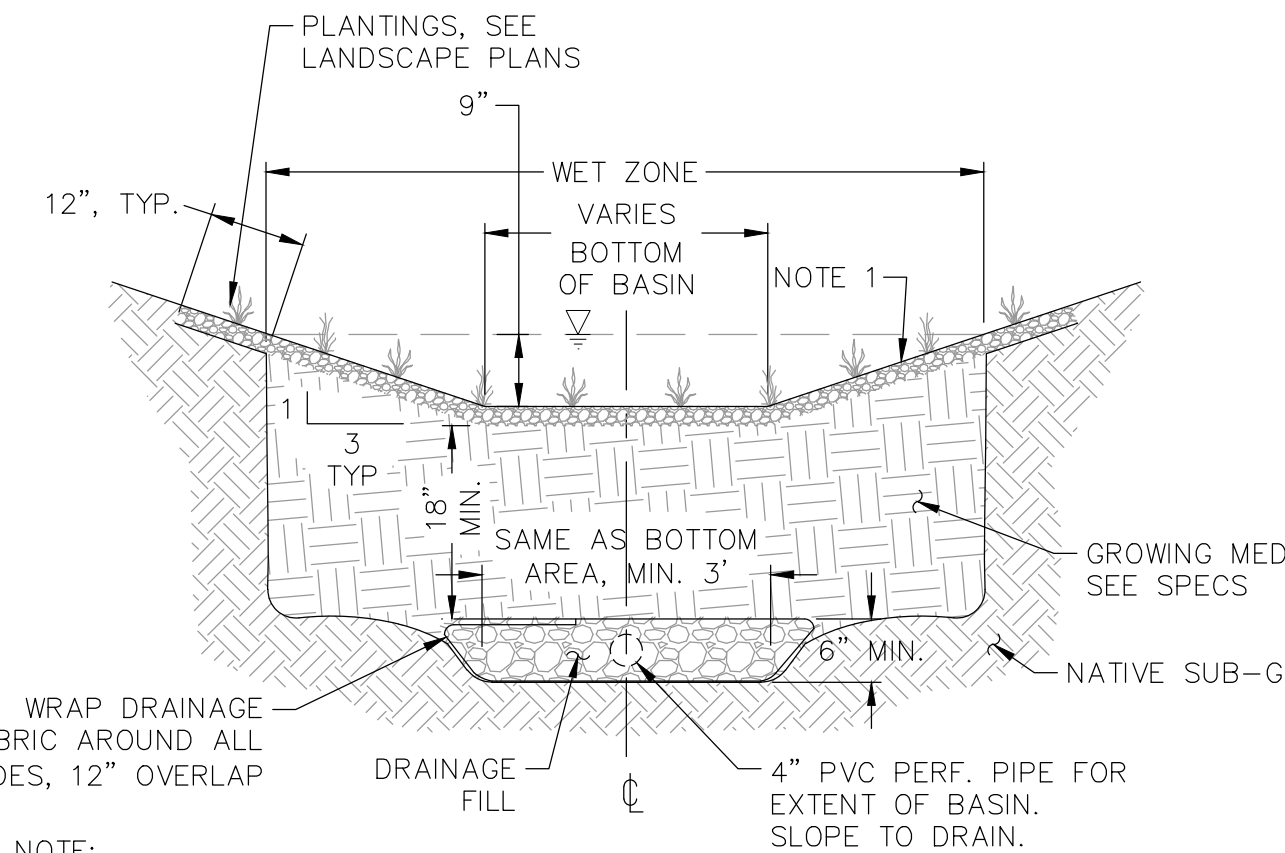
2 TYPICAL OUTFALL RIP-RAP PROTECTION
SCALE: NTS



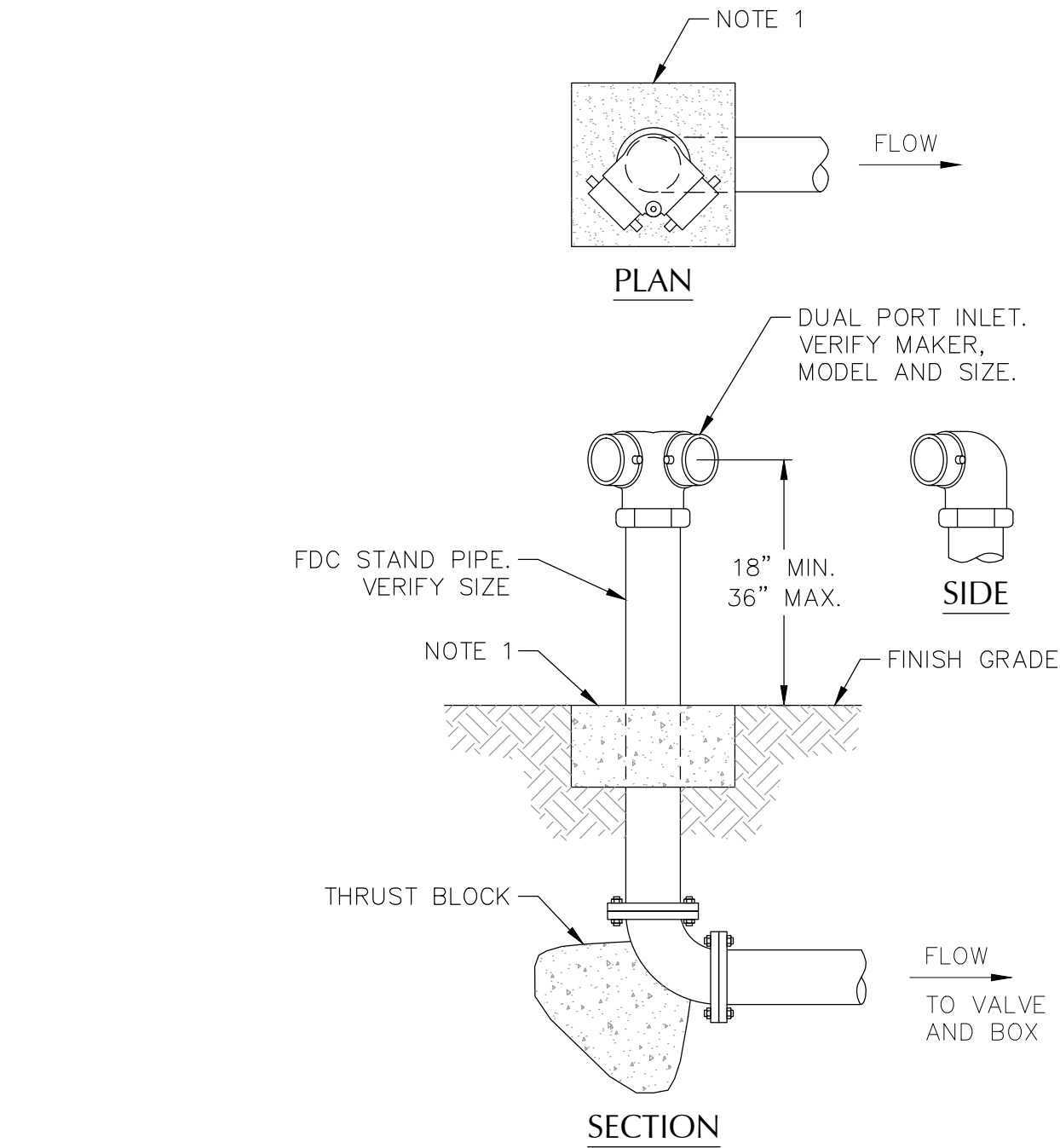
3 FLOW CONTROL MANHOLE
SCALE: NTS PER WSDOT STD PLAN B-10.40-00



4 DITCH/OVERFLOW INLET
SCALE: NTS



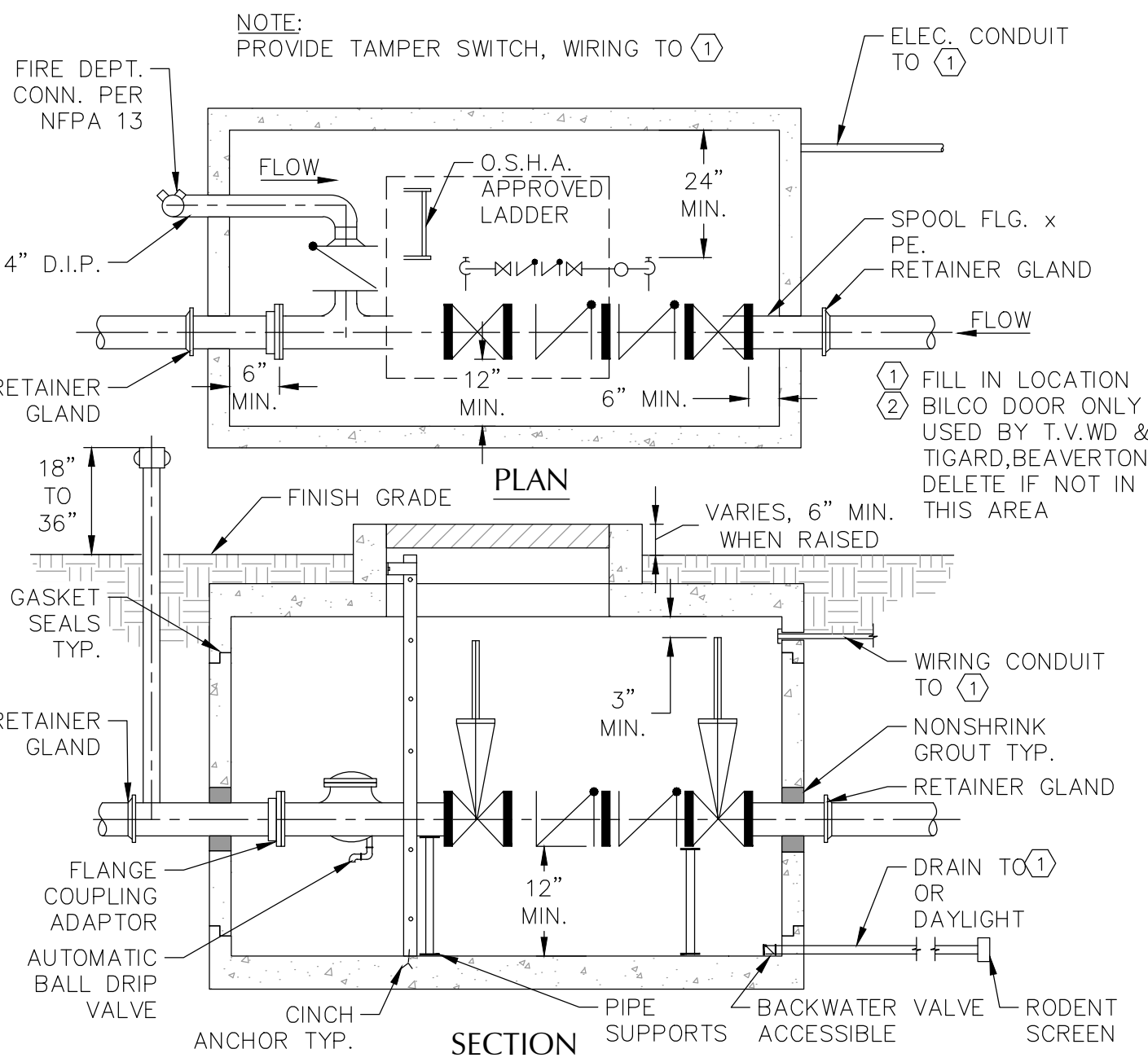
5 TYP. VEGETATED INFILTRATION BASIN (VIB)
SCALE: NTS



- NOTES:
1. CONCRETE ANCHOR PAD TO BE 12"x12"x6" THICK, UNLESS NOTED OTHERWISE. ELIMINATE IF INSTALLED IN CONCRETE PAVED AREA.
 2. USE FLANGE OR THREADED FITTINGS.
 3. CONTRACTOR SHALL PROVIDE SINGLE CHECK VALVE AND BALL DRIP VALVE IN ACCESSIBLE LOCATION INSIDE DDCV VAULT. COORDINATE WITH PLUMBING.

FIRE DEPARTMENT CONNECTION (FDC) DUAL PORT

SCALE: NTS

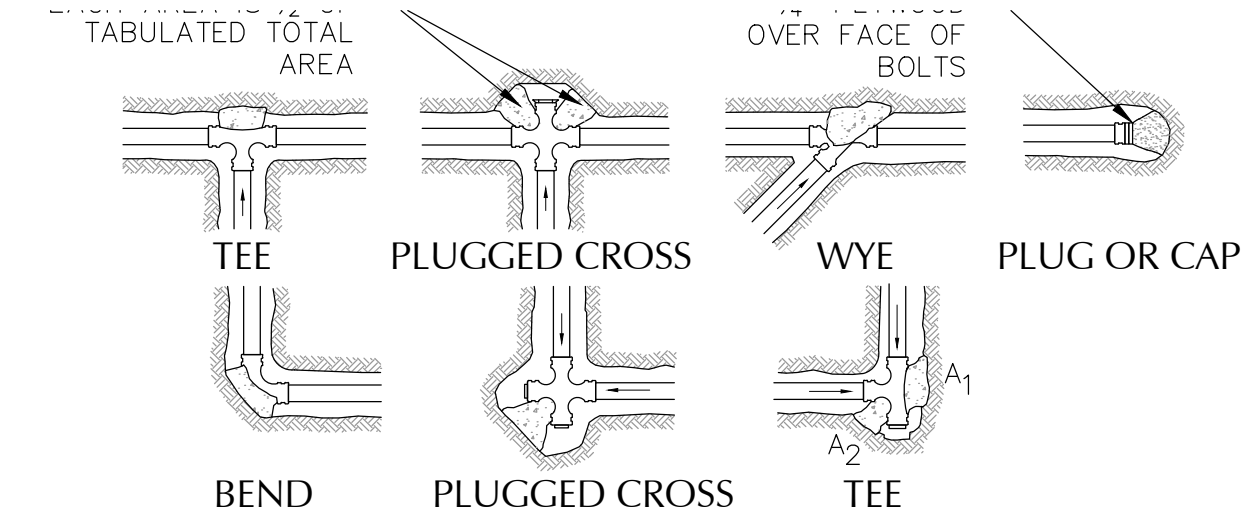


D.D.C. SIZE	UTILITY VAULT OR EQUAL	
	WITH F.D.C.	WITHOUT F.D.C.
4"	676 - WA	577 - WA
6"	687 - WA	676 - WA
8"	5106 - LA	687 - WA
10"	5106 - LA	5106 - LA

② BILCO DOOR OR EQUAL
J - 5AL
J - 5AL
JD - 3AL
JD - 3AL

DOUBLE DETECTOR CHECK FIRE SERVICE VAULT W/ DRAIN TO DAYLIGHT

SCALE: NTS



1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
3. THE REQUIRED THRUST BEARING AREAS FOR SPECIAL CONNECTIONS ARE SHOWN ENCIRCLED ON THE PLAN; e.g. ⑮ INDICATES 15 SQUARE FEET BEARING AREA REQUIRED.
4. IF NOT SHOWN ON PLANS REQUIRED BEARING AREAS AT FITTING SHALL BE AS INDICATED BELOW, ADJUST IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) AND ALLOWABLE SOIL BEARING STRESS (ES) STATED IN THE SPECIAL SPECIFICATIONS.
5. BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN ON THIS STANDARD DETAIL.

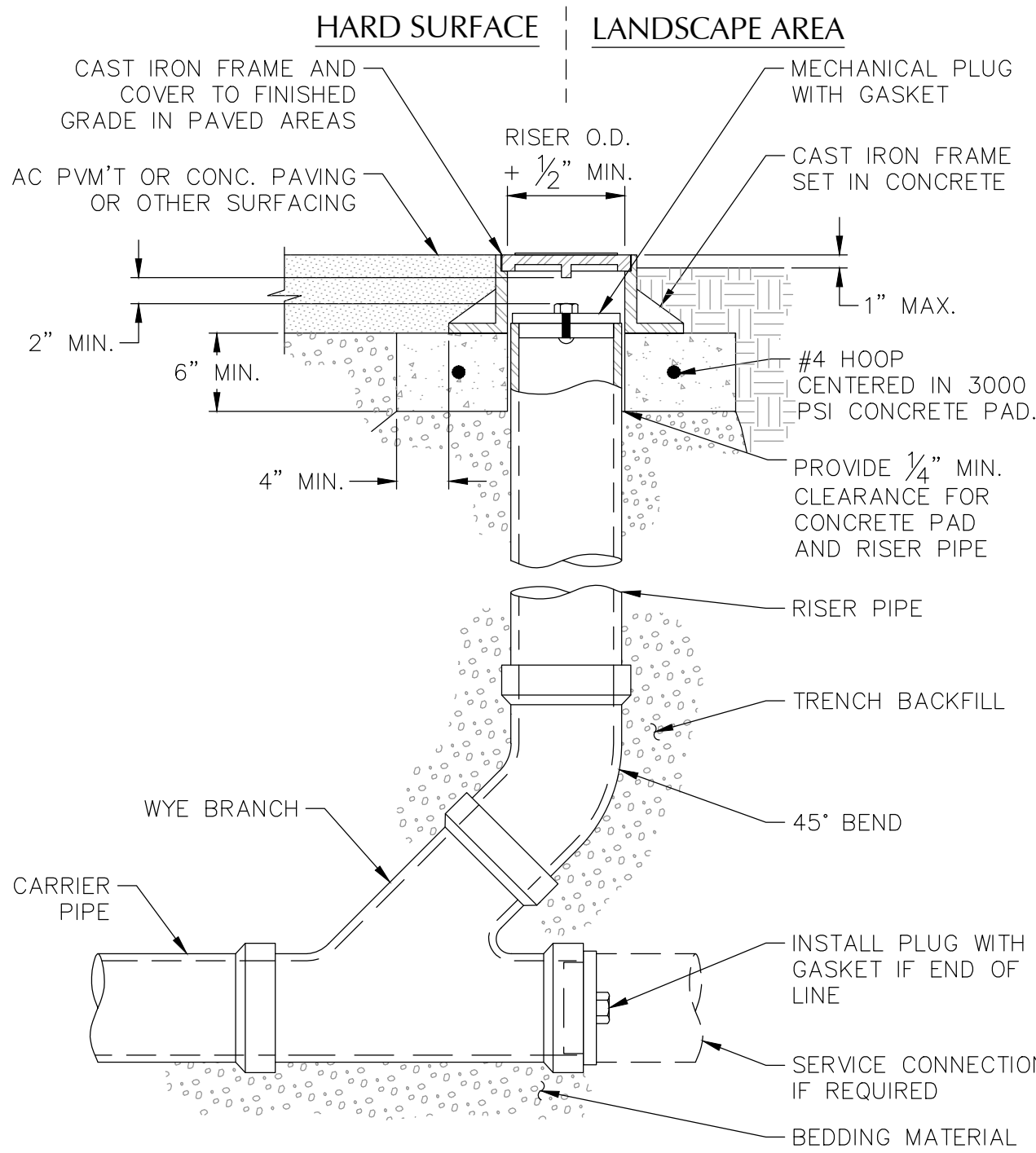
BEARING AREA OF THRUST BLOCK IN SQUARE FOOT

FITTING SIZE	TEE, WYE, PLUG, OR CAP	90° BEND PLUGGED CROSS	TEE PLUGGED ON RUN		45° BEND	22½° BEND	11½° BEND
			A1	A2			
4	1.0	1.4	1.9	1.4	1.0		
6	2.1	3.0	4.3	3.0	1.6	1.0	
8	3.8	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	8.4	11.8	8.4	4.6	2.4	1.2

NOTE:
ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 p.s.i. AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 p.s.i.. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURE AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION: BEARING AREA = (TEST PRESSURE/150)X(2000/ SOIL BEARING STRESS)X(TABLE VALUE).

THRUST BLOCK

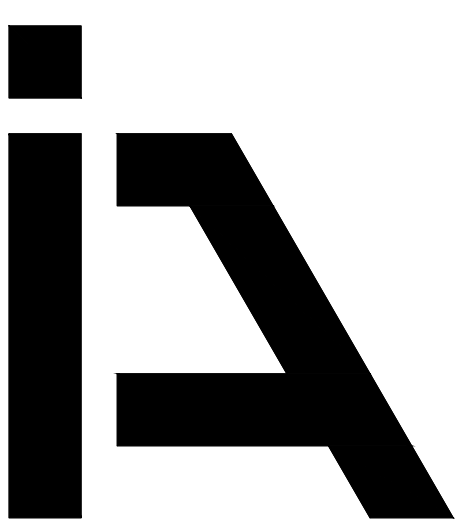
SCALE: NTS



- NOTES:
1. CAST IRON FRAME AND COVER SHALL MEET H-20 LOAD REQUIREMENT.
 2. FOR CARRIER PIPE SIZE 6"Ø AND LESS, PROVIDE RISER PIPE SIZE TO MATCH CARRIER PIPE.
 3. FOR CARRIER PIPE SIZE 8"Ø AND LARGER, RISER PIPE SHALL BE 6"Ø.

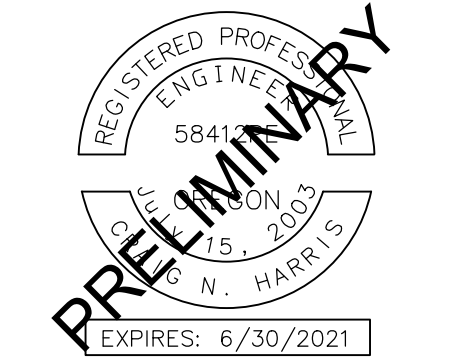
STANDARD CLEANOUT (COTG)

SCALE: NTS



**ISELIN
ARCHITECTS
P.C.**

1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com



RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH

1179 SOUTH END ROAD
OREGON CITY, OR 97045

PROJ. NO. : 1881
FILE :
DATE : 7/22/19

SHEET #

C4.2

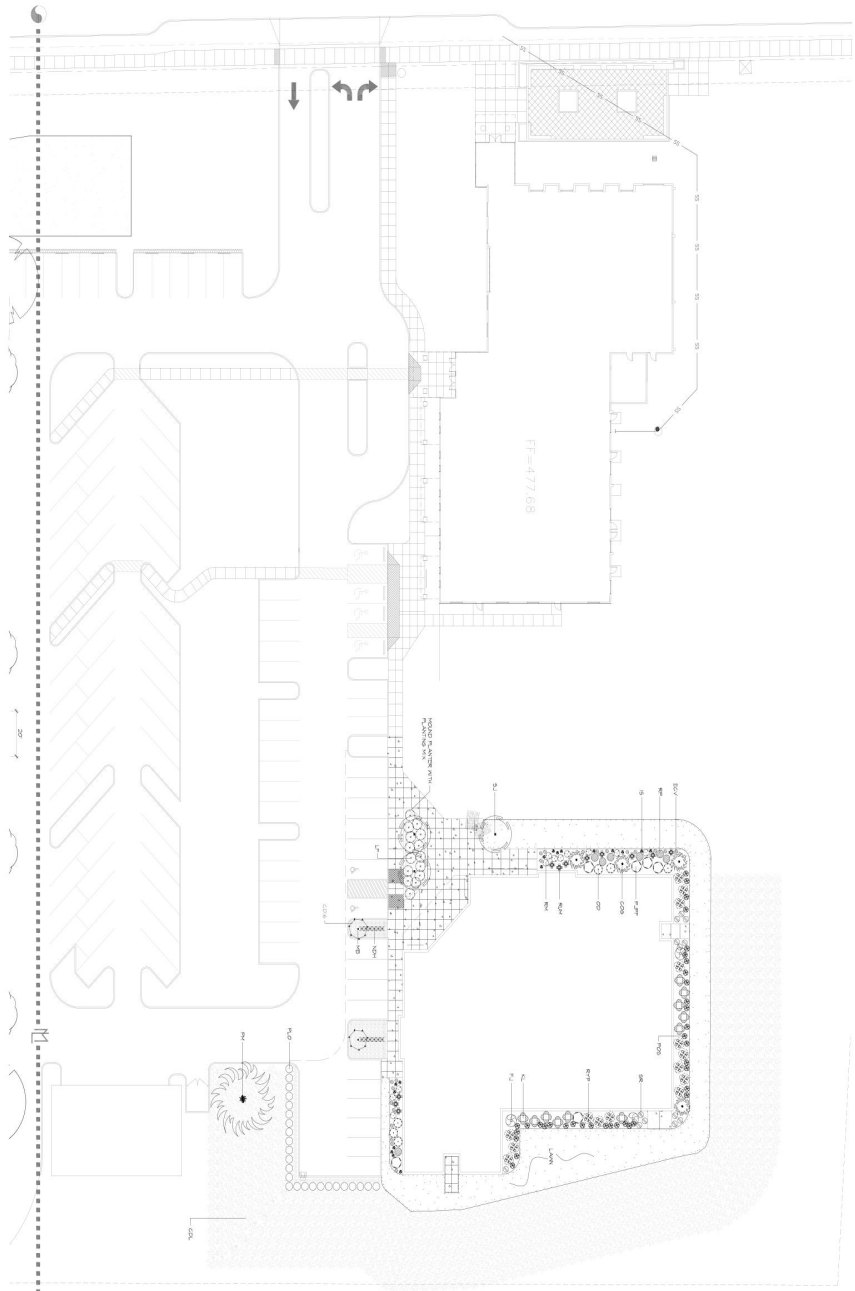
DETAILS

1. ALL PLANTING TO BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
 2. ALL PLANTING TO BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
 3. ALL PLANTING TO BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
 4. ALL PLANTING TO BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
 5. ALL PLANTING TO BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
 6. ALL PLANTING TO BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
 7. ALL PLANTING TO BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
 8. ALL PLANTING TO BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
 9. ALL PLANTING TO BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
 10. ALL PLANTING TO BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:



L2 PLANTING PLAN

L2 4



RECREATION BUILDING FOR
 OREGON CITY CHRISTIAN CHURCH
 1179 SOUTH END ROAD
 OREGON CITY, OR 97045

DATE	1/28/24
PROJECT NO.	N
REVISIONS	DN
DRAWN	DN
CHECKED	DN
APPROVED	



MULCH
 DANELL MULCH
 LANDSCAPING
 1179 SOUTH END ROAD
 OREGON CITY, OR 97045
 (503) 222-1111

SANITARY MANHOLE
RM EL. 479.65
E IN (6" S) 468.08
E OUT (12" W) 468.08

SANITARY MANHOLE
RM EL. 478.40
E (24" W) 469.41

FT=477.68

1. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE PAVEMENT UNLESS OTHERWISE NOTED.
2. THE SHOWN LOT AREA IS 10.00 ACRES. THE SHOWN LOT AREA IS 10.00 ACRES.
3. THE SHOWN LOT AREA IS 10.00 ACRES. THE SHOWN LOT AREA IS 10.00 ACRES.
4. THE SHOWN LOT AREA IS 10.00 ACRES. THE SHOWN LOT AREA IS 10.00 ACRES.



L4 IRRIGATION PLAN

RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH

1179 SOUTH END ROAD
OREGON CITY, OR 97045



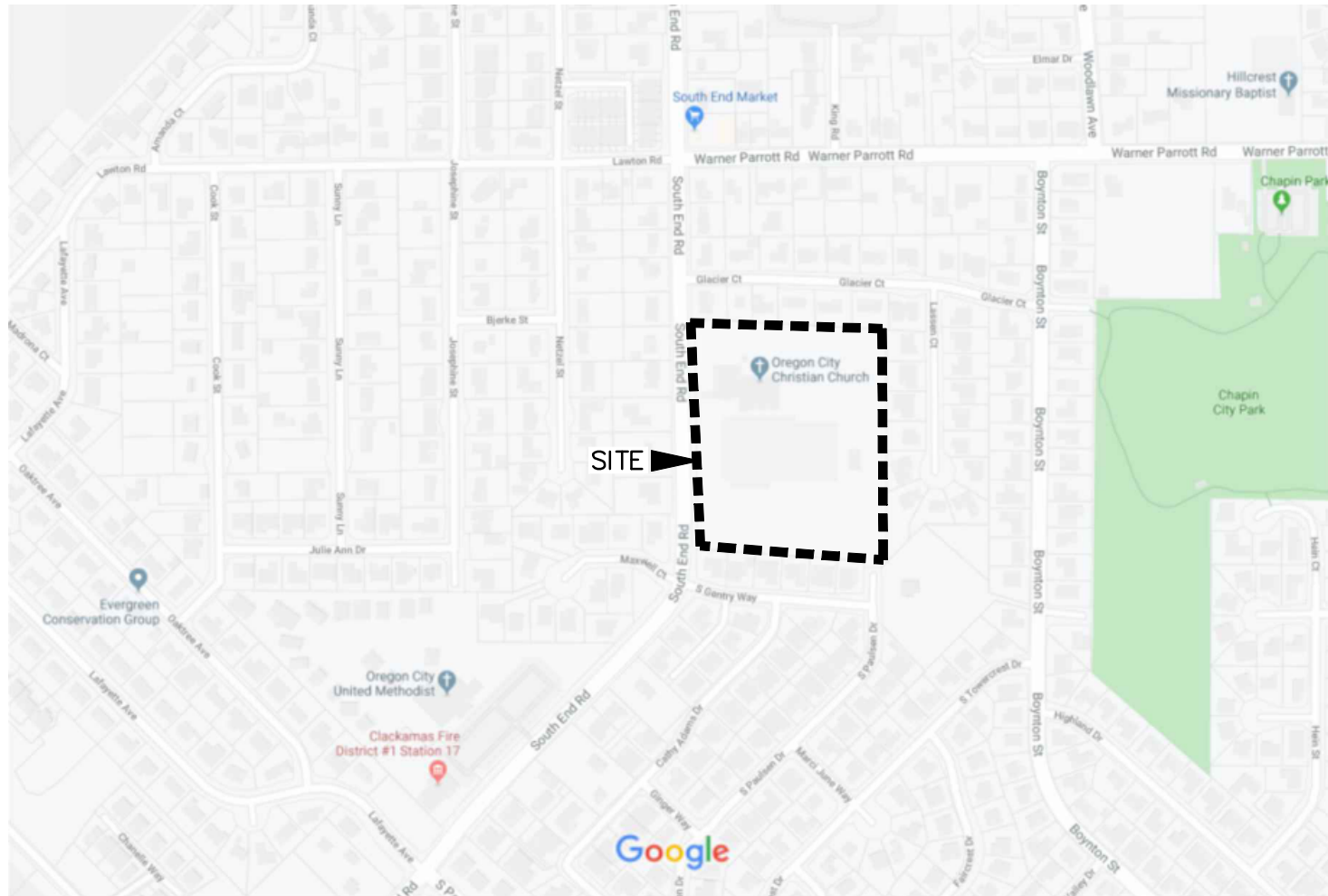
MULCH
DANIEL MULCH
LANDSCAPE ARCHITECT
1179 SOUTH END ROAD
OREGON CITY, OR 97045
TEL: 503.222.1111

DATE	12/28/14
PROJECT NO.	N
DESIGNED BY	DM
DRAWN BY	DM
CHECKED BY	DM
APPROVED BY	

SHEET
L4
4

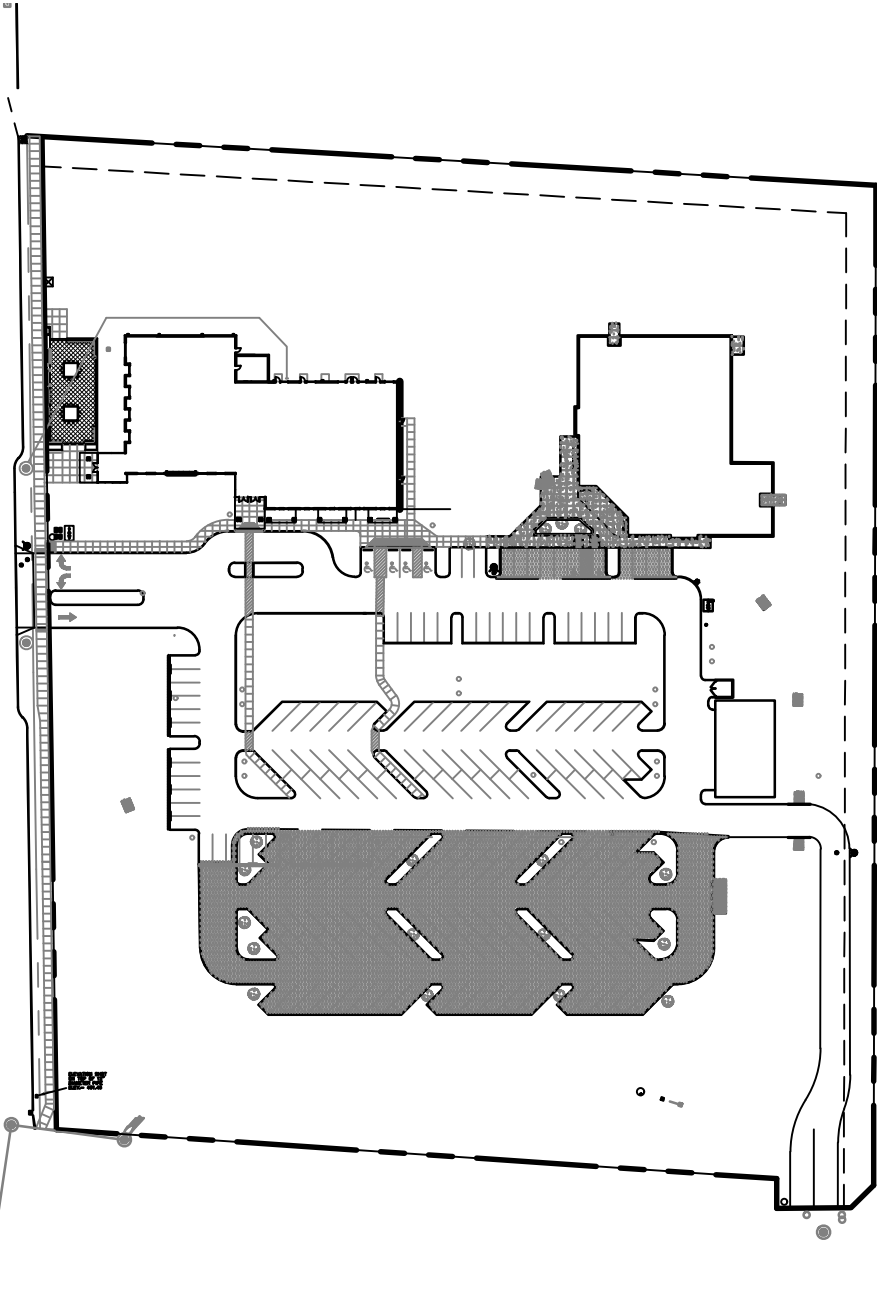
EROSION AND SEDIMENT CONTROL PLANS

OREGON CITY CHRISTIAN CHURCH OREGON CITY, OREGON



VICINITY MAP

SCALE: NTS



SITE MAPS

SCALE: NTS

PROJECT LOCATION:

1179 SOUTH END RD
OREGON CITY, OR 97045
LATITUDE = 45.335
LONGITUDE = -122.622

PROPERTY DESCRIPTION:

LOCATED IN SECTION 1, TOWNSHIP 3 SOUTH,
RANGE 1 EAST, TAX LOT 100, WILLAMETTE
MERIDIAN, CLACKAMAS COUNTY, OREGON.

ATTENTION EXCAVATORS:

OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THESE RULES FROM THE CENTER BY CALLING 503-232-1987. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CENTER. YOU MUST NOTIFY THE CENTER AT LEAST TWO BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION. CALL 503-246-6699.

OREGON CITY CHRISTIAN CHURCH

OWNER

CONTACT: BRENT BRELJE
1179 SOUTH END ROAD
OREGON CITY, OR 97045
EMAIL: KBRELJE@YAHOO.COM
PH: 503-683-9973

ISELIN ARCHITECTS, P.C.

ARCHITECT

CONTACT: TODD ISELIN
1307 7TH STREET
OREGON CITY, OR 97045
PH: 503-656-1942

AAI ENGINEERING

CIVIL ENGINEER

CONTACT: CRAIG HARRIS
4875 SW GRIFFITH DRIVE, SUITE 300
BEAVERTON, OR 97005
PH: 503-620-3030
FAX: 503-620-5539

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS

SITE CONTAINS AN EXISTING CHURCH AND PARKING AREA. SITE IS SLOPED TOWARDS THE SOUTH.

PROPOSED SITE CONDITIONS

ADDITIONAL BUILDING AND AN EXPANSION OF THE EXISTING PARKING AREA.

NATURE OF CONSTRUCTION ACTIVITY AND ESTIMATED TIME TABLE

CLEARING: APRIL 20
MASS GRADING: APRIL 20 - JUNE 20
UTILITY INSTALLATION: MAY 20 - JULY 20
FINAL STABILIZATION: SEPTEMBER 20

TOTAL SITE AREA = 8.58 ACRES
TOTAL DISTURBED AREA = 2.9 ACRES

SITE SOIL CLASSIFICATION:

8B - BORNSTEDT SILT LOAM, 0 TO 8 PERCENT SLOPES
46B - JORY STONY SILT LOAM, 3 TO 8 PERCENT SLOPES

RECEIVING WATERS

WILLAMETTE RIVER

PERMITTEE'S SITE INSPECTOR:

JONATHAN SWEET

COMPANY/AGENCY: AAI ENGINEERING, INC.

PHONE: 503-620-3030

FAX: 503-620-5539

E-MAIL: JONATHANS@AAIENG.COM

DESCRIPTION OF EXPERIENCE:

CESQA# E00-3-3041925 3+ YEARS PLANNING/DESIGNING AND 2+ YEARS

INSPECTING OF EROSION AND SEDIMENT CONTROL BMPs.

INSPECTION FREQUENCY:

SITE CONDITION	MINIMUM FREQUENCY
1. ACTIVE PERIOD	DAILY WHEN STORMWATER RUNOFF, INCLUDING RUNOFF FROM SNOWMELT, IS OCCURRING. AT LEAST ONCE EVERY 14 DAYS, REGARDLESS OF WHETHER STORMWATER RUNOFF IS OCCURRING.
2. PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY.	ONCE TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN WORKING ORDER. ANY NECESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE.
3. INACTIVE PERIODS GREATER THAN FOURTEEN (14) CONSECUTIVE CALENDAR DAYS.	ONCE EVERY MONTH.
4. PERIODS DURING WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER.	IF PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION.
5. PERIODS DURING WHICH DISCHARGE IS UNLIKELY DUE TO FROZEN CONDITIONS.	MONTHLY. RESUME MONITORING IMMEDIATELY UPON MELT, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY.

STANDARD EROSION AND SEDIMENT

CONTROL PLAN DRAWING NOTES:

- HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE INSPECTOR TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS. (SCHEDULE A.8.C.I.(3))
- ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH DEQ 1200-C PERMIT REQUIREMENTS. (SCHEDULE A.12.B AND SCHEDULE B.1)
- INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200-C PERMIT REQUIREMENTS. (SCHEDULE B.1.C AND B.2)
- RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS, RETAIN THE ESCP AT THE CONSTRUCTION SITE OR AT ANOTHER LOCATION. (SCHEDULE B.2.C)
- ALL PERMIT REGISTRANTS MUST IMPLEMENT THE ESCP. FAILURE TO IMPLEMENT ANY OF THE CONTROL MEASURES OR PRACTICES DESCRIBED IN THE ESCP IS A VIOLATION OF THE PERMIT. (SCHEDULE A.8.A)
- THE ESCP MUST BE ACCURATE AND REFLECT SITE CONDITIONS. (SCHEDULE A.12.C.I)
- SUBMISSION OF ALL ESCP REVISIONS IS NOT REQUIRED. SUBMITTAL OF THE ESCP REVISIONS IS ONLY UNDER SPECIFIC CONDITIONS. SUBMIT ALL NECESSARY REVISION TO DEQ OR AGENT WITHIN 10 DAYS. (SCHEDULE A.12.C.IV AND V)
- PHASE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION. (SCHEDULE A.7.A.II)
- IDENTIFY, MARK, AND PROTECT (BY FENCING OFF OR OTHER MEANS) CRITICAL RIPARIAN AREAS AND VEGETATION INCLUDING IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, AND VEGETATION AREAS TO BE PRESERVED. IDENTIFY VEGETATIVE BUFFER ZONES BETWEEN THE SITE AND SENSITIVE AREAS (E.G., WETLANDS), AND OTHER AREAS TO BE PRESERVED, ESPECIALLY IN PERIMETER AREAS. (SCHEDULE A.8.C.I.(1) & (2))
- PRESERVE EXISTING VEGETATION WHEN PRACTICAL AND RE-VEGETATE OPEN AREAS. RE-VEGETATE OPEN AREAS WHEN PRACTICABLE BEFORE AND AFTER GRADING OR CONSTRUCTION. IDENTIFY THE TYPE OF VEGETATIVE SEED MIX USED. (SCHEDULE A.7.A.V)
- MAINTAIN AND DELINEATE ANY EXISTING NATURAL BUFFER WITHIN THE 50-FOOT OF WATERS OF THE STATE. (SCHEDULE A.7.B.I AND (2)(A)(6))
- INSTALL PERIMETER SEDIMENT CONTROL, INCLUDING STORM DRAIN INLET PROTECTION AS WELL AS ALL SEDIMENT BASINS, TRAPS, AND BARRIERS PRIOR TO LAND DISTURBANCE (SCHEDULE A.8.C.I.(5))
- CONTROL BOTH PEAK FLOW RATES AND TOTAL STORMWATER VOLUME, TO MINIMIZE EROSION AT OUTLETS AND DOWNSTREAM CHANNELS AND STREAMBANKS. (SCHEDULE A.7.C)
- CONTROL SEDIMENT AS NEEDED ALONG THE SITE PERIMETER AND AT ALL OPERATIONAL INTERNAL STORM DRAIN INLETS AT ALL TIMES DURING CONSTRUCTION, BOTH INTERNALLY AND AT THE SITE BOUNDARY. (SCHEDULE A.7.D.I)
- ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK. (SCHEDULE A.8.C.I.(6))
- APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES AND FOR ALL ROADWAYS INCLUDING GRAVEL ROADWAYS. (SCHEDULE A.8.C.II.(3))
- ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS. (SCHEDULE A.8.C.I.(7))
- CONTROL PROHIBITED DISCHARGES FROM LEAVING THE CONSTRUCTION SITE, I.E., CONCRETE WASH-OUT, WASTEWATER FROM CLEANOUT OF STUCCO, PAINT AND CURING COMPOUNDS; (SCHEDULE A.6)
- USE BMPs TO PREVENT OR MINIMIZE STORMWATER EXPOSURE TO POLLUTANTS FROM SPILLS; VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE; OTHER CLEANING AND MAINTENANCE ACTIVITIES; AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL, HYDRAULIC FLUID, AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, FERTILIZER, PESTICIDES AND HERBICIDES, PAINTS, SOLVENTS, CURING COMPOUNDS AND ADHESIVES FROM CONSTRUCTION OPERATIONS. (SCHEDULE A.7.E.I.(2))
- IMPLEMENT THE FOLLOWING BMPs WHEN APPLICABLE: WRITTEN SPILL PREVENTION AND RESPONSE PROCEDURES, EMPLOYEE TRAINING ON SPILL PREVENTION AND PROPER DISPOSAL PROCEDURES, SPILL KITS IN ALL VEHICLES, REGULAR MAINTENANCE SCHEDULE FOR VEHICLES AND MACHINERY, MATERIAL DELIVERY AND STORAGE CONTROLS, TRAINING AND SIGNAGE, AND COVERED STORAGE AREAS FOR WASTE AND SUPPLIES. (SCH. A.7.E.II.)
- USE WATER, SOIL-BINDING AGENT OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL. (SCHEDULE A.7.A.IV)
- THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE NUTRIENT RELEASES TO SURFACE WATERS. EXERCISE CAUTION WHEN USING TIME-RELEASE FERTILIZERS WITHIN ANY WATERWAY RIPARIAN ZONE. (SCHEDULE A.9.B.II)
- IF AN ACTIVE TREATMENT SYSTEM (FOR EXAMPLE, ELECTRO-COAGULATION, FLOCCULATION, FILTRATION, ETC.) FOR SEDIMENT OR OTHER POLLUTANT REMOVAL IS EMPLOYED, SUBMIT AN OPERATION AND MAINTENANCE PLAN (INCLUDING SYSTEM SCHEMATIC, LOCATION OF SYSTEM, LOCATION OF INLET, LOCATION OF DISCHARGE, DISCHARGE DISPERSION DEVICE DESIGN, AND A SAMPLING PLAN AND FREQUENCY) BEFORE OPERATING THE TREATMENT SYSTEM. OBTAIN PLAN APPROVAL BEFORE OPERATING THE TREATMENT SYSTEM. OPERATE AND MAINTAIN THE TREATMENT SYSTEM ACCORDING TO MANUFACTURER'S SPECIFICATIONS. (SCHEDULE A.9.D)
- TEMPORARILY STABILIZE SOILS AT THE END OF THE SHIFT BEFORE HOLIDAYS AND WEEKENDS, IF NEEDED. THE REGISTRANT IS RESPONSIBLE FOR ENSURING THAT SOILS ARE STABLE DURING RAIN EVENTS AT ALL TIMES OF THE YEAR. (SCHEDULE A.7.B)
- AS NEEDED BASED ON WATHER CONDITIONS, AT THE END OF EACH WORKDAY SOIL STOCKPILES MUST BE STABILIZED OR COVERED, OR OTHER BMPs MUST BE IMPLEMENTED TO PREVENT DISCHARGES TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS. (SCHEDULE A.7.E.II.(2))
- CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND BARE GROUND DURING WET WEATHER. (SCHEDULE A.7.A.I)
- SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ONE THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL. (SCHEDULE A.9.C.I)
- OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT, AND BEFORE BMP REMOVAL. (SCHEDULE A.9.C.I)
- CATCH BASINS: CLEAN BEFORE RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT. SEDIMENT BASINS AND SEDIMENT TRAPS: REMOVE TRAPPED SEDIMENTS BEFORE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT AND AT COMPLETION OF PROJECT. (SCHEDULE A.9.C.III & IV)
- WITHIN 24 HOURS, SIGNIFICANT SEDIMENT THAT HAS LEFT THE CONSTRUCTION SITE, MUST BE REMEDIATED. INVESTIGATE THE CAUSE OF THE SEDIMENT RELEASE AND IMPLEMENT STEPS TO PREVENT A RECURRENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DIVISION OF STATE LANDS REQUIRED TIMEFRAME. (SCHEDULE A.9.B.I)
- THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGE WAYS MUST NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP MUST BE USED TO CLEANUP RELEASED SEDIMENTS. (SCHEDULE A.9.B.II)
- THE ENTIRE SITE MUST BE TEMPORARILY STABILIZED USING VEGETATION OR A HEAVY MULCH LAYER, TEMPORARY SEEDING, OR OTHER METHOD SHOULD ALL CONSTRUCTION ACTIVITIES CEASE FOR 30 DAYS OR MORE. (SCHEDULE A.7.F.I)
- PROVIDE TEMPORARY STABILIZATION FOR THAT PORTION OF THE SITE WHERE CONSTRUCTION ACTIVITIES CEASE FOR 14 DAYS OR MORE WITH A COVERING OF BLOWN STRAW AND A TACKIFIER, LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH UNTIL WORK RESUMES ON THAT PORTION OF THE SITE. (SCHEDULE A.7.F.II)
- DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, ALL TEMPORARY EROSION CONTROLS AND RETAINED SOILS MUST BE REMOVED AND DISPOSED OF PROPERLY, UNLESS DOING SO CONFLICTS WITH LOCAL REQUIREMENTS. (SCHEDULE A.8.C.I.(1) AND D.3.C.II AND III)

THE PERMITTEE IS REQUIRED TO MEET ALL THE CONDITIONS OF THE 1200-C PERMIT. THIS ESCP AND GENERAL CONDITIONS HAVE BEEN DEVELOPED TO FACILITATE COMPLIANCE WITH THE 1200-C PERMIT REQUIREMENTS. IN CASES OF DISCREPANCIES OR OMISSIONS, THE 1200-C PERMIT REQUIREMENTS SUPERCEDE REQUIREMENTS OF THIS PLAN.

BMP MATRIX FOR CONSTRUCTION PHASES

REFER TO DEQ GUIDANCE MANUAL FOR A COMPREHENSIVE LIST OF AVAILABLE BMP'S.

	CLEARING	MASS GRADING	UTILITY INSTALLATION	STREET CONSTRUCTION	FINAL STABILIZATION
EROSION PREVENTION					
PRESERVE NATURAL VEGETATION					X
GROUND COVER					
HYDRAULIC APPLICATIONS					
PLASTIC SHEETING	X	X	X	X	
MATTING					
DUST CONTROL	X	X	X	X	X
TEMPORARY PERMANENT SEEDING					X
BUFFER ZONE*					
OTHER:					
SEDIMENT CONTROL					
SEDIMENT FENCE (PERIMETER)	**X	X	X	X	X
SEDIMENT FENCE (INTERIOR)					
STRAW WATTLES		X			
FILTER BERM					
INLET PROTECTION	**X	X	X	X	X
DEWATERING					
SEDIMENT TRAP					
OTHER:					
RUN OFF CONTROL					
CONSTRUCTION ENTRANCE	**X	X	X	X	X
PIPE SLOPE DRAIN					
OUTLET PROTECTION					
SURFACE ROUGHENING					
CHECK DAMS					
OTHER:					
POLLUTION PREVENTION					
PROPER SIGNAGE	X	X	X	X	X
HAZ WASTE MGMT	X	X	X	X	
SPILL KIT ON-SITE	X	X	X	X	X
CONCRETE WASHOUT AREA			X	X	
OTHER:					

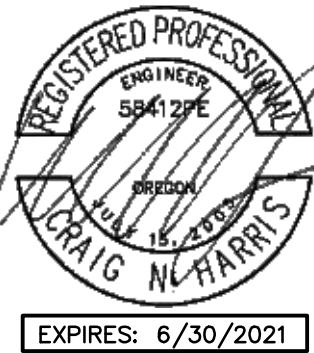
* SIGNIFIES ADDITIONAL BMP'S REQUIRED FOR WORK WITHIN 50' OF WATER OF THE STATE.
** SIGNIFIES BMP THAT WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY.

RATIONALE STATEMENT

A COMPREHENSIVE LIST OF AVAILABLE BEST MANAGEMENT PRACTICES (BMP) OPTIONS BASED ON DEQ'S GUIDANCE MANUAL HAS BEEN REVIEWED TO COMPLETE THIS EROSION AND SEDIMENT CONTROL PLAN. SOME OF THE ABOVE LISTED BMP'S WERE NOT CHOSEN BECAUSE THEY WERE DETERMINED TO NOT EFFECTIVELY MANAGE EROSION PREVENTION AND SEDIMENT CONTROL FOR THIS PROJECT BASED ON SPECIFIC SITE CONDITIONS, INCLUDING SOIL CONDITIONS TOPOGRAPHIC CONSTRAINTS, ACCESSIBILITY TO THE SITE, AND OTHER RELATED CONDITIONS, AS THE PROJECT PROGRESSES AND THERE IS A NEED TO REVISE THE ESC PLAN, AN ACTION PLAN WILL BE SUBMITTED.

INITIAL

SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
ESC1.0	EROSION AND SEDIMENT CONTROL TITLE SHEET
ESC2.0	CLEARING, EROSION AND SEDIMENT CONTROL PLAN
ESC2.1	UTILITY, PAVING AND FINAL STABILIZATION PLAN
ESC3.0	EROSION AND SEDIMENT CONTROL DETAILS



AAI
ajman associates, inc.

ENGINEERING

4875 SW Griffith Drive | Suite 300 | Beaverton, OR 97005
503.620.3030 tel | 503.620.5539 fax | www.aaieng.com

OREGON CITY CHRISTIAN CHURCH

1179 SOUTH END RD.
OREGON CITY, OREGON

EROSION AND
SEDIMENT
CONTROL TITLE
SHEET

DATE: 07/09/19

DRAWN: DAR

CHECKED: NWS

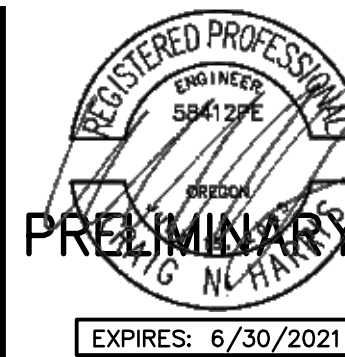
REVISIONS:

© AAI ENGINEERING INC.
2019. ALL RIGHTS RESERVED

THESE DRAWINGS ARE THE
PROPERTY OF AAI ENGINEERING INC.
AND ARE NOT TO BE USED OR
REPRODUCED IN ANY MANNER
EXCEPT WITH THE PRIOR WRITTEN
PERMISSION OF AAI ENGINEERING INC.

ESC1.0

JOB NUMBER: A19202.10



AAI ajljan associates, inc.
ENGINEERING
4875 SW Griffin Drive | Suite 300 | Beaverton, OR 97005
503.620.3020 tel | 503.620.5539 fax | www.aajeng.com

OREGON CITY CHRISTIAN CHURCH
1179 SOUTH END RD.
OREGON CITY, OREGON

CLEARING, EROSION AND SEDIMENT CONTROL PLAN

DATE: 07/09/19
DRAWN: DAR
CHECKED: NWS
REVISIONS:

© AAI ENGINEERING INC.
2019. ALL RIGHTS RESERVED.
THESE DRAWINGS ARE THE PROPERTY OF AAI ENGINEERING INC. AND ARE NOT TO BE USED OR REPRODUCED IN ANY MANNER EXCEPT WITH THE PRIOR WRITTEN PERMISSION OF AAI ENGINEERING INC.

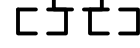
ESC2.0

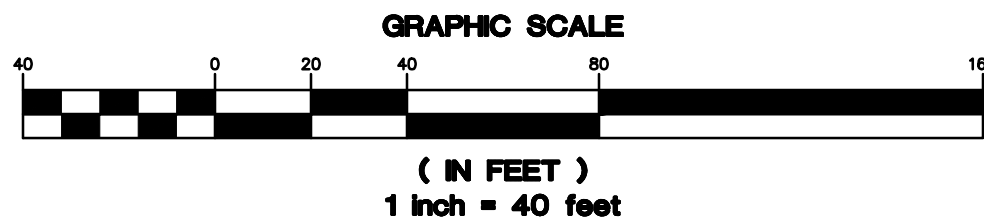
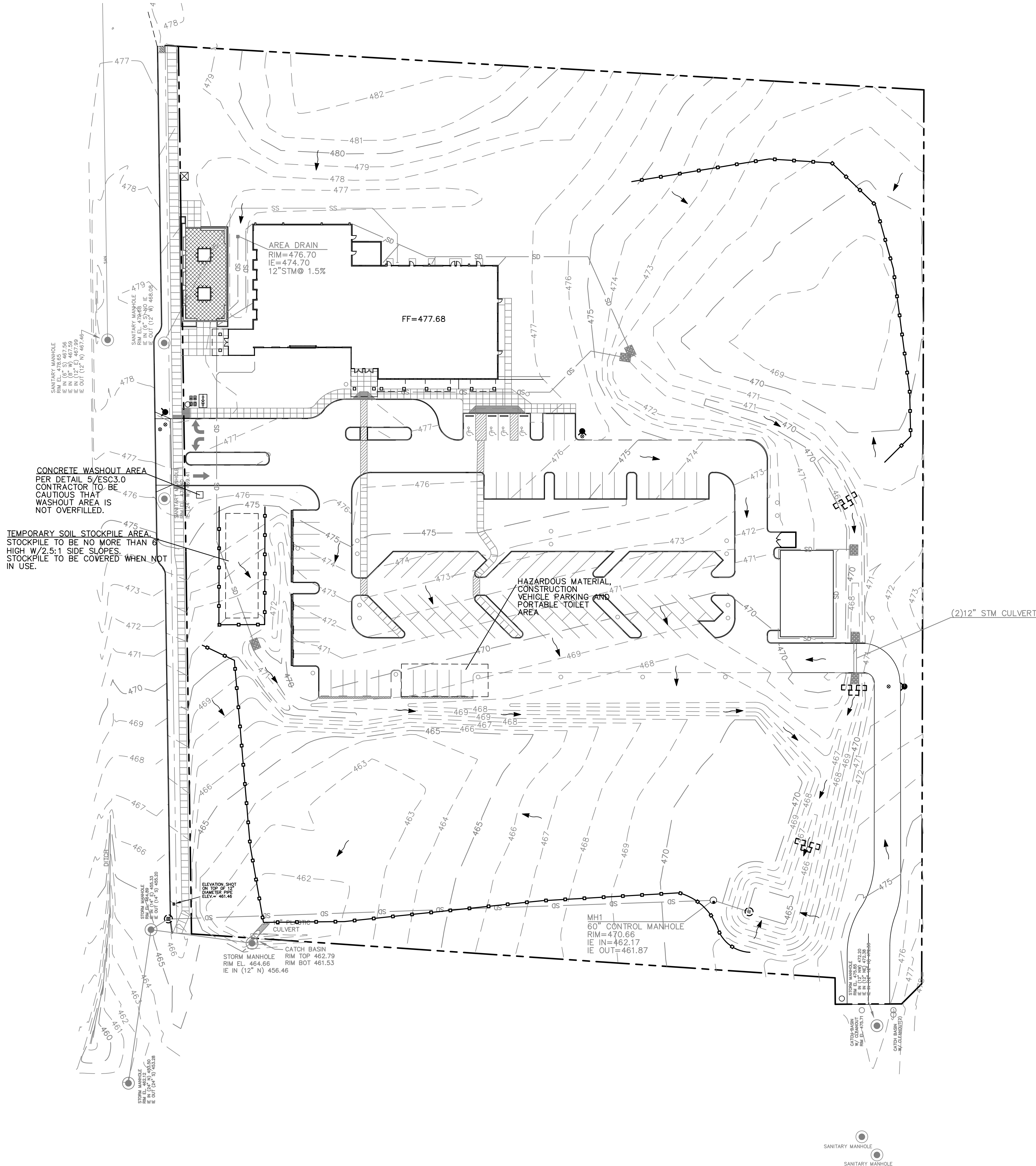
JOB NUMBER: A19202.10

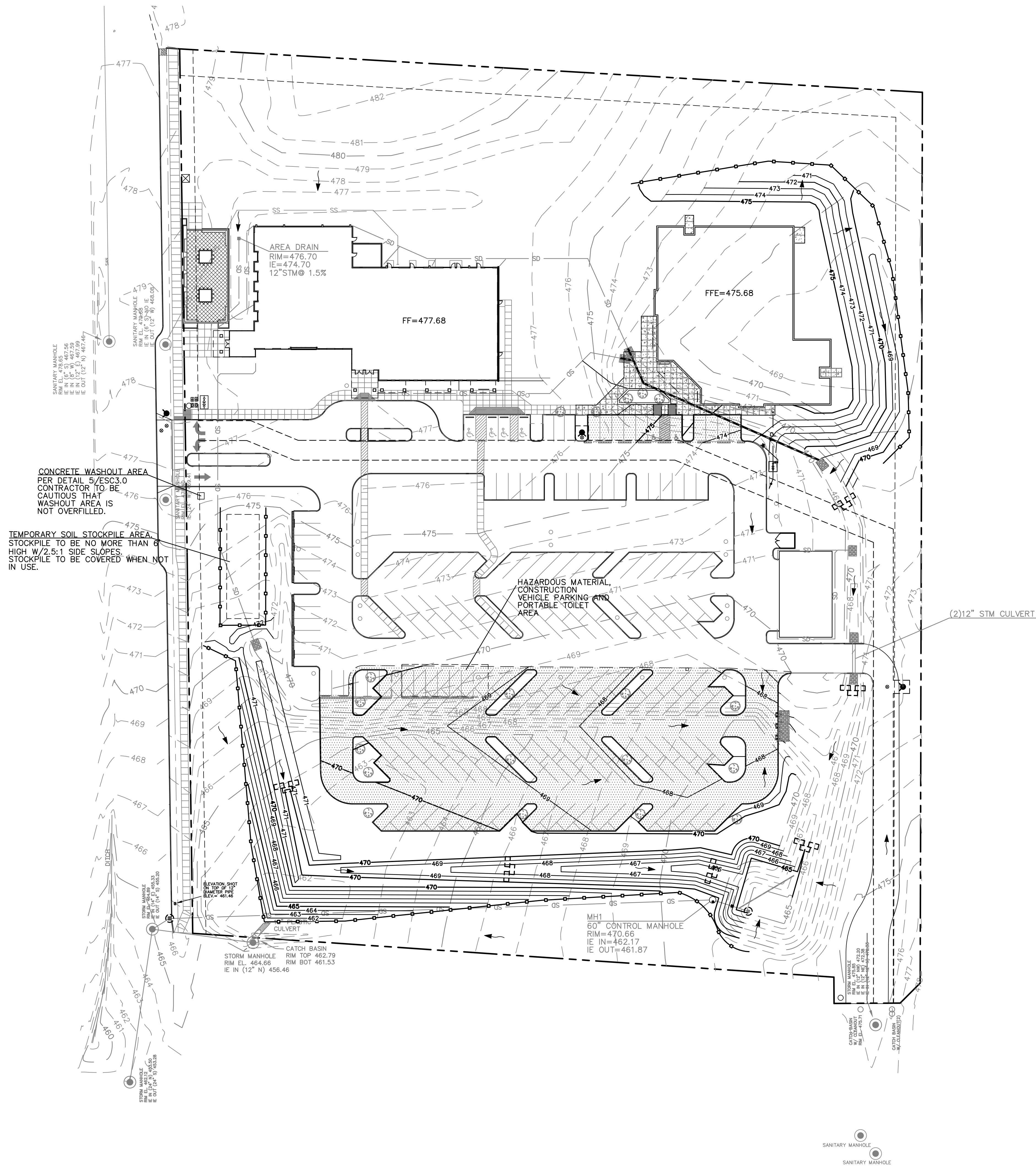
PRE-CONSTRUCTION, CLEARING, AND DEMOLITION NOTES:

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. SEDIMENT BARRIERS APPROVED FOR USE INCLUDE SEDIMENT FENCE, BERMS CONSTRUCTED OUT OF MULCH, CHIPPINGS, OR OTHER SUITABLE MATERIAL, STRAW BATTLES, OR OTHER APPROVED MATERIALS.
3. SENSITIVE RESOURCES INCLUDING, BUT NOT LIMITED TO, TREES, WETLANDS, AND RIPARIAN PROTECTION AREAS SHALL BE CLEARLY DELINEATED WITH ORANGE CONSTRUCTION FENCING OR CHAIN LINK FENCING IN A MANNER THAT IS CLEARLY VISIBLE TO ANYONE IN THE AREA. NO ACTIVITIES ARE PERMITTED TO OCCUR BEYOND THE CONSTRUCTION BARRIER.
4. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, STREET SWEEPING, AND VACUUMING, MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
5. RUN-ON AND RUN-OFF CONTROLS SHALL BE IN PLACE AND FUNCTIONING PRIOR TO BEGINNING SUBSTANTIAL CONSTRUCTION ACTIVITIES. RUN-ON AND RUN-OFF CONTROL MEASURES INCLUDE: SLOPE DRAINS (WITH OUTLET PROTECTION), CHECK DAMS, SURFACE ROUGHENING, AND BANK STABILIZATION.
6. CONTRACTOR TO INSTALL AND MAINTAIN INLET AND CURB INLET PROTECTION IN ROADWAY SOUTH OF PROJECT AS NEEDED PER DETAILS 1/ESC3.1 AND 6/ESC3.0 FOR THE DURATION OF THE PROJECT.

LEGENDS

- EXISTING CONTOUR MINOR ——— 102 ———
EXISTING CONTOUR MAJOR ——— 100 ———
SEDIMENT FENCE PER DETAIL 1/ESC3.0 ———
FLOW ARROW ———>———
INLET PROTECTION PER DETAIL 4/ESC3.0 
STRAW BALES PER DETAIL 2/ESC3.0 





PRE-CONSTRUCTION, CLEARING, AND DEMOLITION NOTES:

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. SEDIMENT BARRIERS APPROVED FOR USE INCLUDE SEDIMENT FENCE, BERMS CONSTRUCTED OUT OF MULCH, CHIPPINGS, OR OTHER SUITABLE MATERIAL, STRAW WATTLES, OR OTHER APPROVED MATERIALS.
3. SENSITIVE RESOURCES INCLUDING, BUT NOT LIMITED TO, TREES, WETLANDS, AND RIPARIAN PROTECTION AREAS SHALL BE CLEARLY DELINEATED WITH ORANGE CONSTRUCTION FENCING OR CHAIN LINK FENCING IN A MANNER THAT IS CLEARLY VISIBLE TO ANYONE IN THE AREA. NO ACTIVITIES ARE PERMITTED TO OCCUR BEYOND THE CONSTRUCTION BARRIER.
4. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, STREET SWEEPING, AND VACUUMING, MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
5. RUN-ON AND RUN-OFF CONTROLS SHALL BE IN PLACE AND FUNCTIONING PRIOR TO BEGINNING SUBSTANTIAL CONSTRUCTION ACTIVITIES. RUN-ON AND RUN-OFF CONTROL MEASURES INCLUDE: SLOPE DRAINS (WITH OUTLET PROTECTION), CHECK DAMS, SURFACE ROUGHENING, AND BANK STABILIZATION.
6. CONTRACTOR TO INSTALL AND MAINTAIN INLET AND CURB INLET PROTECTION IN ROADWAY SOUTH OF PROJECT AS NEEDED PER DETAILS 1/ESC3.1 AND 6/ESC3.0 FOR THE DURATION OF THE PROJECT.

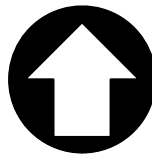
GRADING & UTILITY EROSION & SEDIMENT CONSTRUCTION NOTES

1. SEED USED FOR TEMPORARY OR PERMANENT SEEDING SHALL BE COMPOSED OF ONE OF THE FOLLOWING MIXTURES UNLESS OTHERWISE AUTHORIZED:
 - A. VEGETATED CORRIDOR AREAS REQUIRE NATIVE SEED MIXES. SEE RESTORATION PLAN FOR APPROPRIATE SEED MIX.
 - B. DWARF GRASS MIX (MIN. 100 LB./AC.)
 1. DWARF PERENNIAL RYEGRASS (80% BY WEIGHT)
 2. CREEPING RED FESCUE (20% BY WEIGHT)
 - C. STANDARD HEIGHT GRASS MIX (MIN. 100LB./AC.)
 1. ANNUAL RYEGRASS (40% BY WEIGHT)
 2. TURF-TYPE FESCUE (60% BY WEIGHT)
2. TEMPORARY SLOPE STABILIZATION MEASURES SHALL INCLUDE: COVERING EXPOSED SOIL WITH THE PLASTIC SHEETING, STRAW MULCHING, WOOD CHIPS, OR OTHER APPROVED MEASURES.
3. STOCKPILED SOIL OR STRIPPINGS SHALL BE PLACED IN A STABLE LOCATION AND CONFIGURATION. DURING "WET WEATHER" PERIODS, STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING OR STRAW MULCH. SEDIMENT FENCE IS REQUIRED AROUND THE PERIMETER OF THE STOCKPILE.
4. EXPOSED CUT OR FILL AREAS SHALL BE STABILIZED THROUGH THE USE OF TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS OR MATS, MID-SLOPE SEDIMENT FENCES OR WATTLES, OR OTHER APPROPRIATE MEASURES. SLOPES EXCEEDING 25% MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES.
5. AREAS SUBJECT TO WIND EROSION SHALL USE APPROPRIATE DUST CONTROL MEASURES INCLUDING THE APPLICATION OF A FINE SPRAY OF WATER, PLASTIC SHEETING, STRAW MULCHING, OR OTHER APPROVED MEASURES.
6. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, TIRE WASHES, STREET SWEEPING, AND VACUUMING MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
7. ACTIVE INLETS TO STORM WATER SYSTEMS SHALL BE PROTECTED THROUGH THE USE OF APPROVED INLET PROTECTION MEASURES. ALL INLET PROTECTION MEASURES ARE TO BE REGULARLY INSPECTED AND MAINTAINED AS NEEDED.
8. SATURATED MATERIALS THAT ARE HAULED OFF-SITE MUST BE TRANSPORTED IN WATER-TIGHT TRUCKS TO ELIMINATE SPILLAGE OF SEDIMENT AND SEDIMENT-LADEN WATER.
9. AN AREA SHALL BE PROVIDED FOR THE WASHING OUT OF CONCRETE TRUCKS IN A LOCATION THAT DOES NOT PROVIDE RUN-OFF THAT CAN ENTER THE STORM WATER SYSTEM. IF THE CONCRETE WASH-OUT AREA CAN NOT BE CONSTRUCTED GREATER THAN 50' FROM ANY DISCHARGE POINT, SECONDARY MEASURES SUCH AS BERMS OR TEMPORARY SETTLING PITS MAY BE REQUIRED. THE WASH-OUT SHALL BE LOCATED WITHIN SIX FEET OF TRUCK ACCESS AND BE CLEANED WHEN IT REACHES 50% OF THE CAPACITY.
10. SWEEPINGS FROM EXPOSED AGGREGATE CONCRETE SHALL NOT BE TRANSFERRED TO THE STORM WATER SYSTEM. SWEEPINGS SHALL BE PICKED UP AND DISPOSED IN THE TRASH.
11. AVOID PAVING IN WET WEATHER WHEN PAVING CHEMICALS CAN RUN-OFF INTO THE STORM WATER SYSTEM.
12. USE BMPs SUCH AS CHECK-DAMS, BERMS, AND INLET PROTECTION TO PREVENT RUN-OFF FROM REACHING DISCHARGE POINTS.
13. COVER CATCH BASINS, MANHOLES, AND OTHER DISCHARGE POINTS WHEN APPLYING SEAL COAT, TACK COAT, ETC. TO PREVENT INTRODUCING THESE MATERIALS TO THE STORM WATER SYSTEM.

LEGENDS

EXISTING CONTOUR MINOR	— 102 —
EXISTING CONTOUR MAJOR	— 100 —
SEDIMENT FENCE PER DETAIL 1/ESC3.0	— [Symbol] —
FLOW ARROW	→
PROPOSED ASPHALTIC CONCRETE	[Symbol]
PROPOSED CONCRETE	[Symbol]
INLET PROTECTION PER DETAIL 4/ESC3.0	[Symbol]
STRAW BALES PER DETAIL 2/ESC3.0	[Symbol]

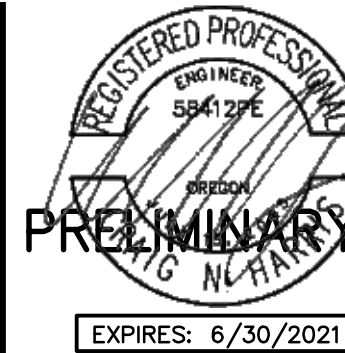
NORTH



GRAPHIC SCALE



(IN FEET)
1 inch = 40 feet



AAI ajljan associates, inc.
ENGINEERING
4875 SW Griffin Drive | Suite 300 | Beaverton, OR 97005
503.620.3030 tel | 503.620.5539 fax | www.aaieng.com

OREGON CITY CHRISTIAN CHURCH
1179 SOUTH END RD.
OREGON CITY, OREGON

UTILITY, PAVING
AND FINAL
STABILIZATION
PLAN

DATE: 07/09/19

DRAWN: DAR

CHECKED: NWS

REVISIONS:

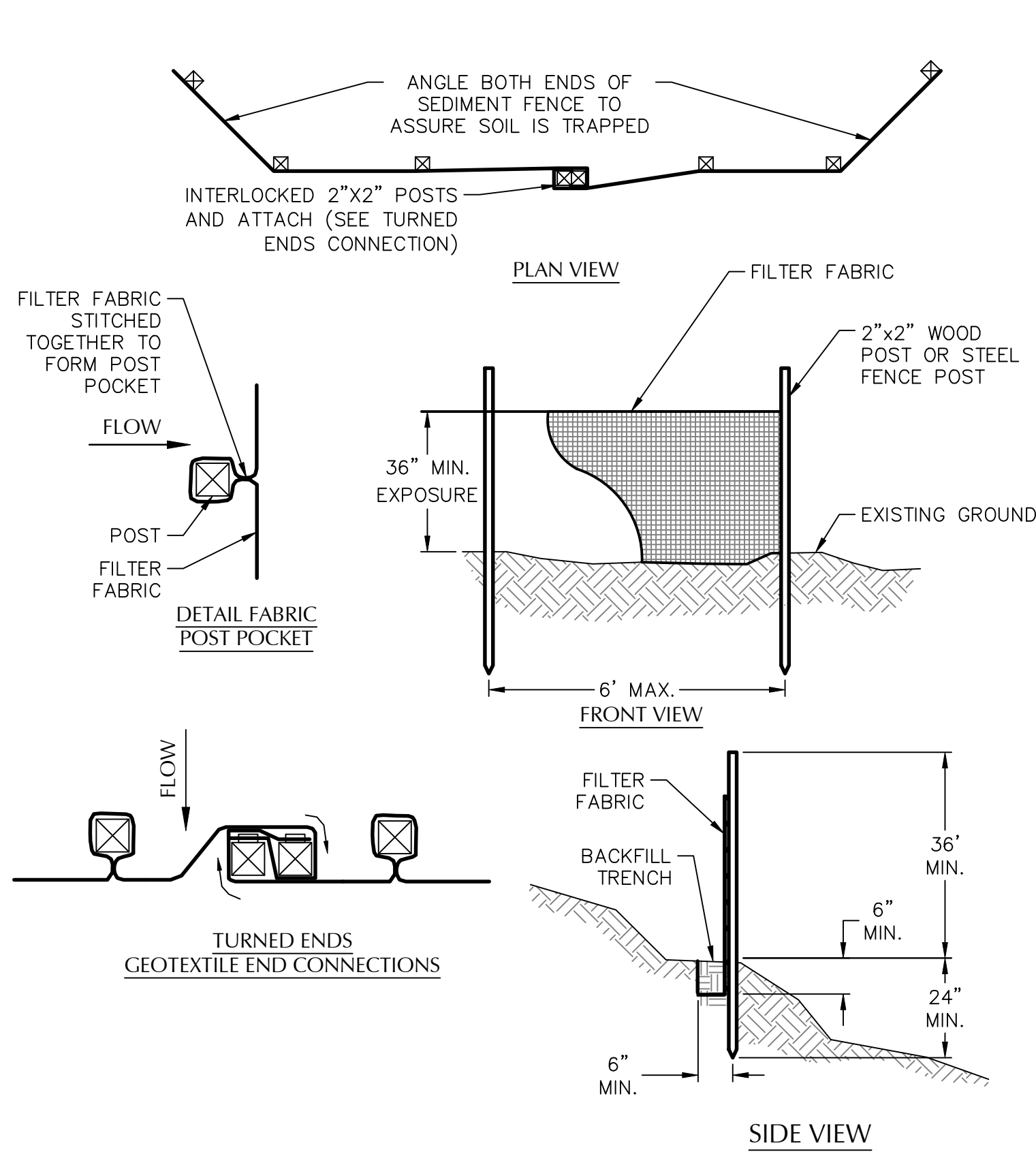
© AAI ENGINEERING INC.
2019. ALL RIGHTS RESERVED

THESE DRAWINGS ARE THE
PROPERTY OF AAI ENGINEERING INC.
AND ARE NOT TO BE USED OR
REPRODUCED IN ANY MANNER
EXCEPT WITH THE PRIOR WRITTEN
PERMISSION OF AAI ENGINEERING INC.

ESC2.1

JOB NUMBER: A19202.10

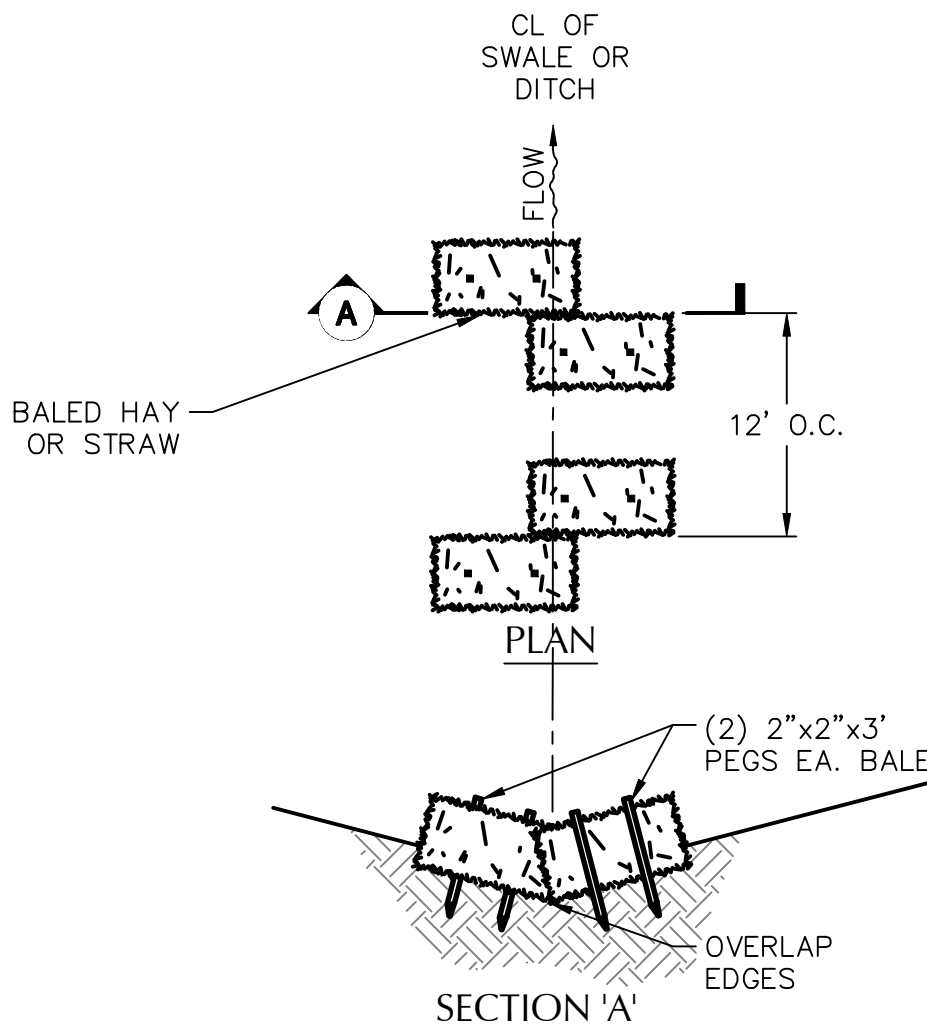
10/21/2019 - 1200C SUBMITTAL



- NOTES:**
1. THE FILTER FABRIC SHALL BE (36" MIN. WIDTH) PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST, OR OVERLAP 2"x2" POSTS AND ATTACH AS SHOWN ON DETAIL SHEET.
 2. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6- FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24-INCHES.
 3. THE FILTER FABRIC SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6-INCHES. ALL EXCAVATED MATERIAL FROM FILTER FABRIC FENCE INSTALLATION, SHALL BE BACKFILLED AND COMPACTED, ALONG THE ENTIRE DISTURBED AREA.
 4. STANDARD OR HEAVY DUTY FILTER FABRIC SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2"x2" POST INSTALLATION. STITCHED LOOPS WITH STAKES SHALL BE INSTALLED ON THE DOWN-HILL SIDE OF THE SLOPED AREA.
 5. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UP-SLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED.
 6. FILTER FABRIC FENCES SHALL BE INSPECTED BY CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

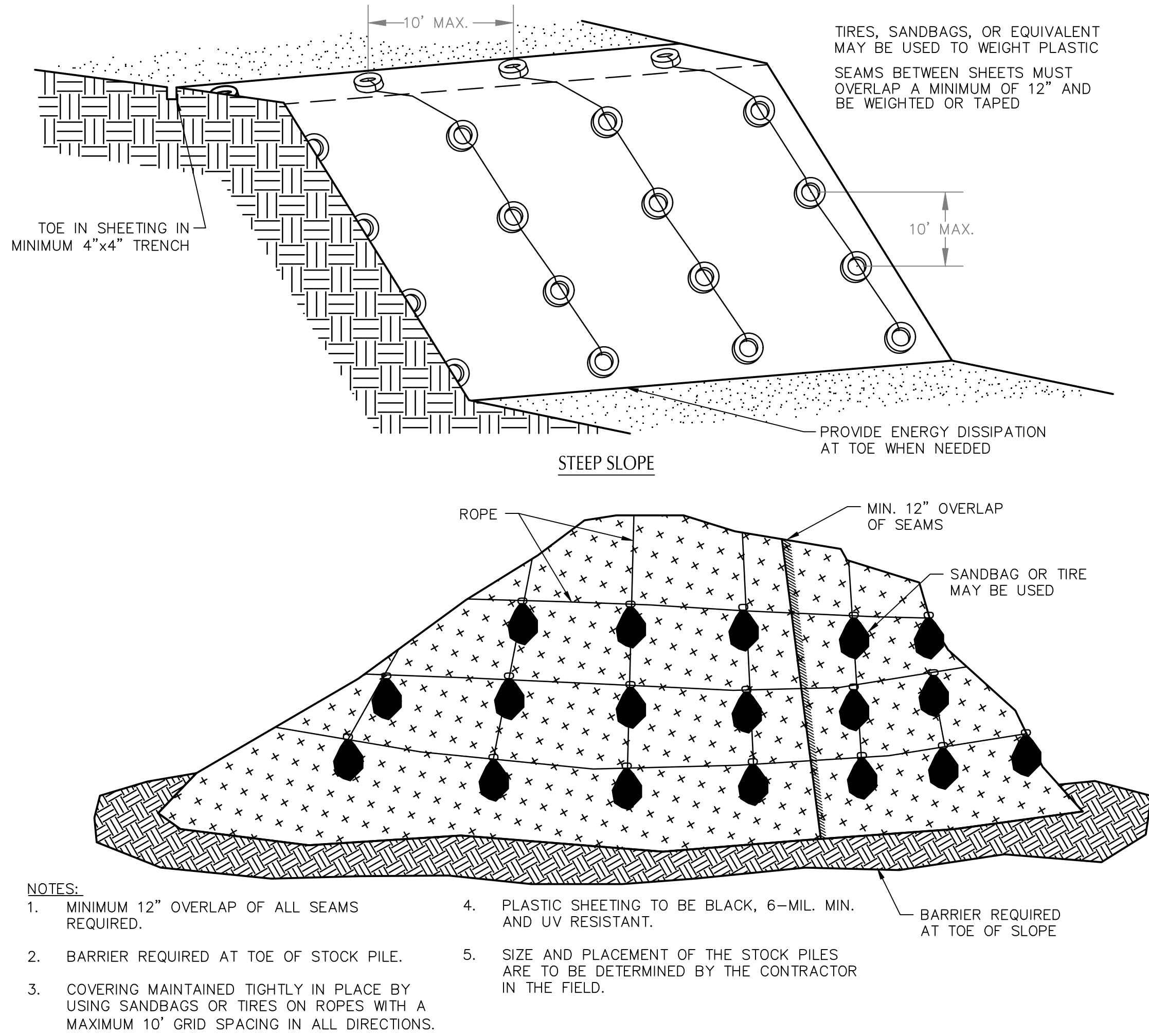
1 SEDIMENT FENCE

SCALE: NTS



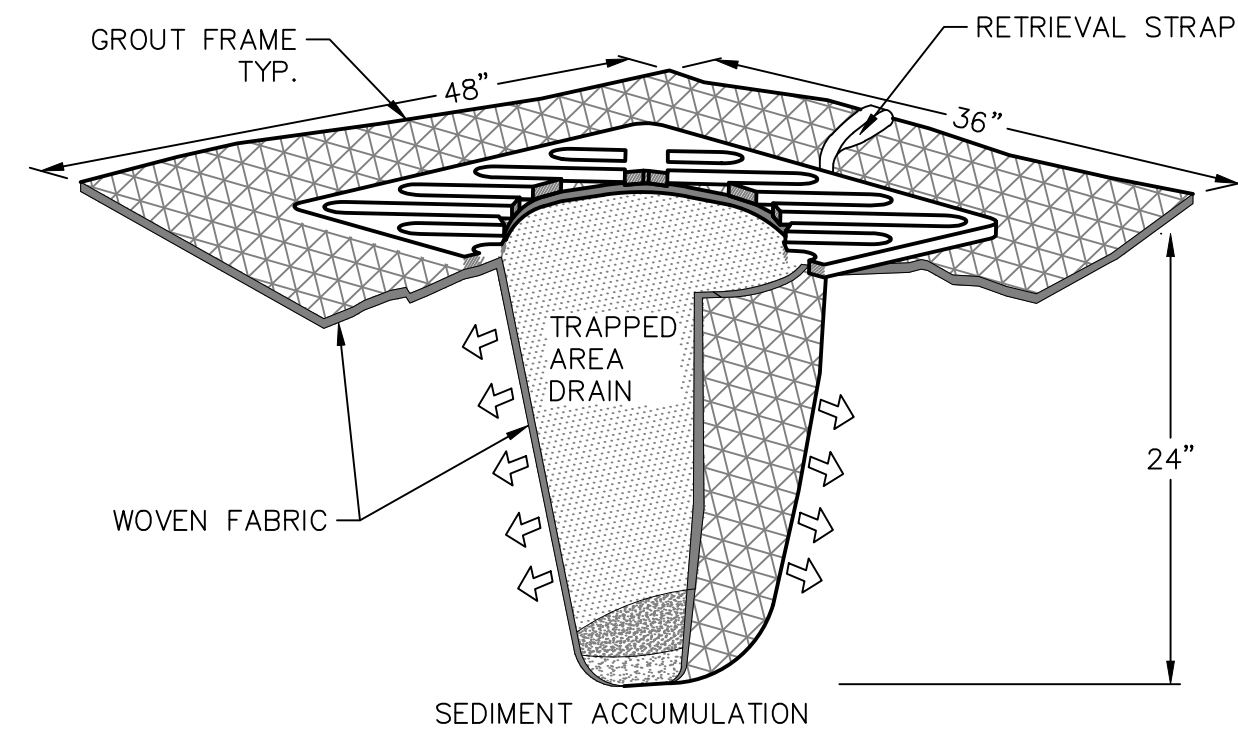
2 STRAW BALE SEDIMENT BARRIER IN DITCHES OR SWALES

SCALE: NTS



3 PLASTIC SHEETING

SCALE: NTS

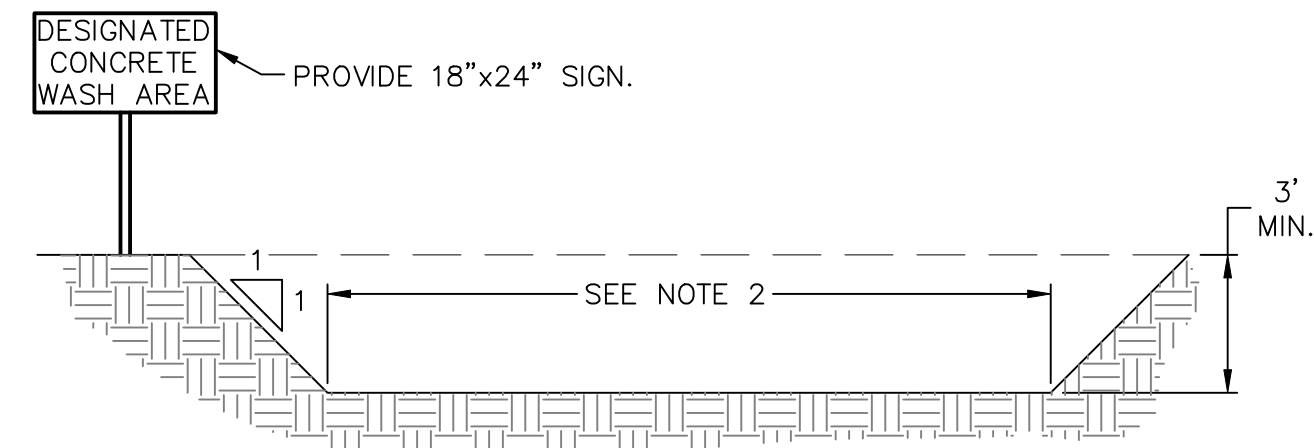


- INSTALLATION NOTES:**
1. REMOVE CATCH BASIN GRATE.
 2. CLEAN DIRT AND DEBRIS FROM GRATE LEDGE.
 3. PLACE WOVEN FABRIC INSERT FILTER SACK/FILTER FABRIC U-SHAPED BIOBAG/COMPOST SOCK OVER CATCH BASIN OPENING WITH BAG INSIDE BASIN. SEDIMENT PROTECTION MUST BE DESIGNED FOR LOW-FLOW AND CONTAIN NO OVERFLOW.
 4. REPLACE GRATE, AT THE SAME TIME PINCH INSERT FABRIC BETWEEN GRATE AND FRAME.
 5. CUT EXCESS FABRIC OFF AND LEAVE THREE TO FIVE INCHES OF FABRIC AROUND OUTSIDE SIDE OF GRATE IF INSERT IS REUSABLE.

- MAINTENANCE NOTES:**
1. DETERMINE SEDIMENT ACCUMULATION BY PROBING WITH YARDSTICK TO MEASURE SEDIMENT LEVEL.
 2. RECOMMENDED: EMPTY AND REINSTALL WHEN UNIT IS APPROXIMATELY HALF FULL (UP TO 12 INCHES SEDIMENT).
 3. RECOMMENDED: REGULARLY INSPECT INSERTS/BIOBAGS/STOCKS AND LOG OBSERVATIONS AS A BEST MANAGEMENT PRACTICE.

4 INLET SEDIMENT PROTECTION

SCALE: NTS



- NOTES:**
1. INSTALL A CONCRETE WASH OUT PIT AND A VISIBLE SIGN STATING, "DESIGNATED CONCRETE WASH AREA." LOCATE THE WASH OUT IN A PLACE THAT WILL BE ACCESSIBLE TO CONCRETE TRUCKS SIZE TO THE PROJECT.
 2. PROVIDE 3' X 3' MINIMUM WASHOUT AREA. INCREASES SIZE OR PROVIDE ADDITIONAL WASHOUTS AS REQUIRED TO ACCOMMODATE PROJECT CONDITIONS.
 3. LOCATE WASHOUTS IN AREAS THAT WILL BE ACCESSIBLE TO CONCRETE TRUCKS.
 4. FOR WASHOUTS LOCATED IN AREAS DESIGNATED TO RECEIVE HARDSCAPE, SOLIDS MAY BE BURIED IN PLACE. FOR OTHER APPLICATIONS, REMOVE AND DISPOSE OF SOLIDS.

5 CONCRETE WASHOUT

SCALE: NTS



**ISELIN
ARCHITECTS
P.C.**

1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com



RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH

1179 SOUTH END ROAD
OREGON CITY, OR 97045

GENERAL NOTES

1. CONSTRUCTION LAYOUT (ALL ACTUAL LINES AND GRADES) SHALL BE STAKED BY A PROFESSIONAL SURVEYOR, REGISTERED IN THE STATE OF OREGON, BASED ON COORDINATES, DIMENSIONS, BEARINGS, AND ELEVATIONS, AS SHOWN, ON THE PLANS.
2. PROJECT CONTROL SHALL BE FIELD VERIFIED AND CHECKED FOR RELATIVE HORIZONTAL POSITION PRIOR TO BEGINNING CONSTRUCTION LAYOUT.
3. PROJECT CONTROL SHALL BE FIELD VERIFIED AND CHECKED FOR RELATIVE VERTICAL POSITION BASED ON THE BENCHMARK STATED HEREON, PRIOR TO BEGINNING CONSTRUCTION LAYOUT.
4. WHEN DIMENSIONS AND COORDINATE LOCATIONS ARE REPRESENTED – DIMENSIONS SHALL HOLD OVER COORDINATE LOCATION. NOTIFY THE CIVIL ENGINEER OF RECORD IMMEDIATELY UPON DISCOVERY.
5. BUILDING SETBACK DIMENSIONS FROM PROPERTY LINES SHALL HOLD OVER ALL OTHER CALLOUTS. PROPERTY LINES AND ASSOCIATED BUILDING SETBACKS SHALL BE VERIFIED PRIOR TO CONSTRUCTION LAYOUT.
6. CONTRACTOR SHALL PRESERVE AND PROTECT FROM DAMAGE ALL EXISTING MONUMENTATION DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND PAYING FOR THE REPLACEMENT OF ANY MONUMENTS DAMAGED OR REMOVED DURING CONSTRUCTION. NEW MONUMENTS SHALL BE REESTABLISHED BY A LICENSED SURVEYOR.
7. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THESE PLANS, THE PROJECT SPECIFICATIONS AND THE APPLICABLE REQUIREMENTS OF THE 2018 OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE 2017 OREGON PLUMBING SPECIALTY CODE AND REQUIREMENTS OF THE CITY OF OREGON CITY.
8. THE COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES AND REGULATIONS. ALL PERMITS, LICENSES AND INSPECTIONS REQUIRED BY THE GOVERNING AUTHORITIES FOR THE EXECUTION AND COMPLETION OF WORK SHALL BE SECURED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.
9. ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503) 232-1987). EXCAVATORS MUST NOTIFY ALL PERTINENT COMPANIES OR AGENCIES WITH UNDERGROUND UTILITIES IN THE PROJECT AREA AT LEAST 48 BUSINESS-DAY HOURS, BUT NOT MORE THAN 10 BUSINESS DAYS PRIOR TO COMMENCING AN EXCAVATION, SO UTILITIES MAY BE ACCURATELY LOCATED.
10. THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION ONLY AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE. CONTRACTOR SHALL VERIFY ELEVATIONS, PIPE SIZE, AND MATERIAL TYPES OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WITH CONSTRUCTION AND SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF AAI ENGINEERING, 72 HOURS PRIOR TO START OF CONSTRUCTION TO PREVENT GRADE AND ALIGNMENT CONFLICTS.
11. THE ENGINEER OR OWNER IS NOT RESPONSIBLE FOR THE SAFETY OF THE CONTRACTOR OR HIS CREW. ALL O.S.H.A. REGULATIONS SHALL BE STRICTLY ADHERED TO IN THE PERFORMANCE OF THE WORK.
12. TEMPORARY AND PERMANENT EROSION CONTROL MEASURES SHALL BE IMPLEMENTED. THE CONTRACTOR SHALL ADHERE TO CITY OF OREGON CITY FOR MINIMUM EROSION CONTROL MEASURES. THE ESC FACILITIES SHOWN IN THESE PLANS ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT LEAVE THE SITE.
13. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL ROADWAYS, KEEPING THEM CLEAN AND FREE OF CONSTRUCTION MATERIALS AND DEBRIS, AND PROVIDING DUST CONTROL AS REQUIRED.
14. TRAFFIC CONTROL SHALL BE PROVIDED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN TO CITY OF OREGON CITY FOR REVIEW AND APPROVAL PRIOR TO COMMENCING CONSTRUCTION.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING ALL WORK WITH THE OWNER.
16. NOTIFY CITY INSPECTOR 72 HOURS BEFORE STARTING WORK. A PRECONSTRUCTION MEETING WITH THE OWNER, THE OWNER'S ENGINEER, CONTRACTOR AND THE CITY REPRESENTATIVE SHALL BE REQUIRED.
17. THE CONTRACTOR SHALL HAVE A FULL SET OF THE CURRENT APPROVED CONSTRUCTION DOCUMENTS INCLUDING ADDENDA ON THE PROJECT SITE AT ALL TIMES.
18. THE CONTRACTOR SHALL KEEP THE ENGINEER AND JURISDICTION INFORMED OF CONSTRUCTION PROGRESS TO FACILITATE SITE OBSERVATIONS AT REQUIRED INTERVALS. 24-HOUR NOTICE IS REQUIRED.
19. EXISTING SURVEY MONUMENTS ARE TO BE PROTECTED DURING CONSTRUCTION OR REPLACED IN ACCORDANCE WITH OREGON REVISED STATUTES 209.140 – 209.155.

CONSTRUCTION NOTES

DEMOLITION

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND DISPOSAL OF EXISTING AC, CURBS, SIDEWALKS AND OTHER SITE ELEMENTS WITHIN THE SITE AREA IDENTIFIED IN THE PLANS.
2. EXCEPT FOR MATERIALS INDICATED TO BE STOCKPILED OR TO REMAIN ON OWNER'S PROPERTY, CLEARED MATERIALS SHALL BECOME CONTRACTOR'S PROPERTY, REMOVED FROM THE SITE, AND DISPOSED OF PROPERLY.
3. ITEMS INDICATED TO BE SALVAGED SHALL BE CAREFULLY REMOVED AND DELIVERED STORED AT THE PROJECT SITE AS DIRECTED BY THE OWNER.
4. ALL LANDSCAPING, PAVEMENT, CURBS AND SIDEWALKS, BEYOND THE IDENTIFIED SITE AREA, DAMAGED DURING THE CONSTRUCTION SHALL BE REPLACED TO THEIR ORIGINAL CONDITION OR BETTER.
5. CONCRETE SIDEWALKS SHOWN FOR DEMOLITION SHALL BE REMOVED TO THE NEAREST EXISTING CONSTRUCTION JOINT.
6. SAWCUT STRAIGHT MATCHLINES TO CREATE A BUTT JOINT BETWEEN THE EXISTING AND NEW PAVEMENT.

UTILITIES

1. ADJUST ALL INCIDENTAL STRUCTURES, MANHOLES, VALVE BOXES, CATCH BASINS, FRAMES AND COVERS, ETC. TO FINISHED GRADE.
2. CONTRACTOR SHALL ADJUST ALL EXISTING AND/OR NEW FLEXIBLE UTILITIES (WATER, TV, TELEPHONE, ELEC., ETC.) TO CLEAR ANY EXISTING OR NEW GRAVITY DRAIN UTILITIES (STORM DRAIN, SANITARY SEWER, ETC.) IF CONFLICT OCCURS.
3. CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR THE INSTALLATION OF OR ADJUSTMENT TO GAS, ELECTRICAL, POWER AND TELEPHONE SERVICE.
4. BEFORE BACKFILLING ANY SUBGRADE UTILITY IMPROVEMENTS CONTRACTOR SHALL SURVEY AND RECORD MEASUREMENTS OF EXACT LOCATION AND DEPTH AND SUBMIT TO ENGINEER AND OWNER.

STORM AND SANITARY

1. CONNECTIONS TO EXISTING STORM AND SANITARY SEWERS SHALL CONFORM TO THE 2018 OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 00490, "WORK ON EXISTING SEWERS AND STRUCTURES".
2. BEGIN LAYING STORM DRAIN AND SANITARY SEWER PIPE AT THE LOW POINT OF THE SYSTEM, TRUE TO GRADE AND ALIGNMENT INDICATED WITH UNBROKEN CONTINUITY OF INVERT. THE CONTRACTOR SHALL ESTABLISH LINE AND GRADE FOR THE STORM AND SANITARY SEWER PIPE USING A LASER.
3. ALL ROOF DRAIN AND CATCH BASIN LEADERS SHALL HAVE A MINIMUM SLOPE OF 1 PERCENT UNLESS NOTED OTHERWISE IN THE PLANS.

WATER

1. ALL WATER AND FIRE PROTECTION PIPE SHALL HAVE A MINIMUM 36-INCH COVER TO THE FINISH GRADE.
2. ALL WATER AND FIRE PRESSURE FITTINGS SHALL BE PROPERLY RESTRAINED WITH THRUST BLOCKS PER DETAIL.
3. ALL WATER MAIN / SANITARY SEWER CROSSINGS SHALL CONFORM TO THE OREGON STATE HEALTH DEPARTMENT REGULATIONS, CHAPTER 333.

EARTHWORKS

1. CONTRACTOR SHALL PREVENT SEDIMENTS AND SEDIMENT LADEN WATER FROM ENTERING THE STORM DRAINAGE SYSTEM.
2. TRENCH BEDDING AND BACKFILL SHALL BE AS SHOWN ON THE PIPE BEDDING AND BACKFILL DETAIL, THE PROJECT SPECIFICATIONS AND AS REQUIRED IN THE SOILS REPORT. FLOODING OR JETTING THE BACKFILLED TRENCHES WITH WATER WILL NOT BE PERMITTED.
3. SUBGRADE AND TRENCH BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698. FLOODING OR JETTING THE BACKFILLED TRENCHES WITH WATER IS NOT PERMITTED.

PAVING

1. SEE ARCHITECTURAL PLANS FOR SIDEWALK FINISHING AND SCORING PATTERNS.

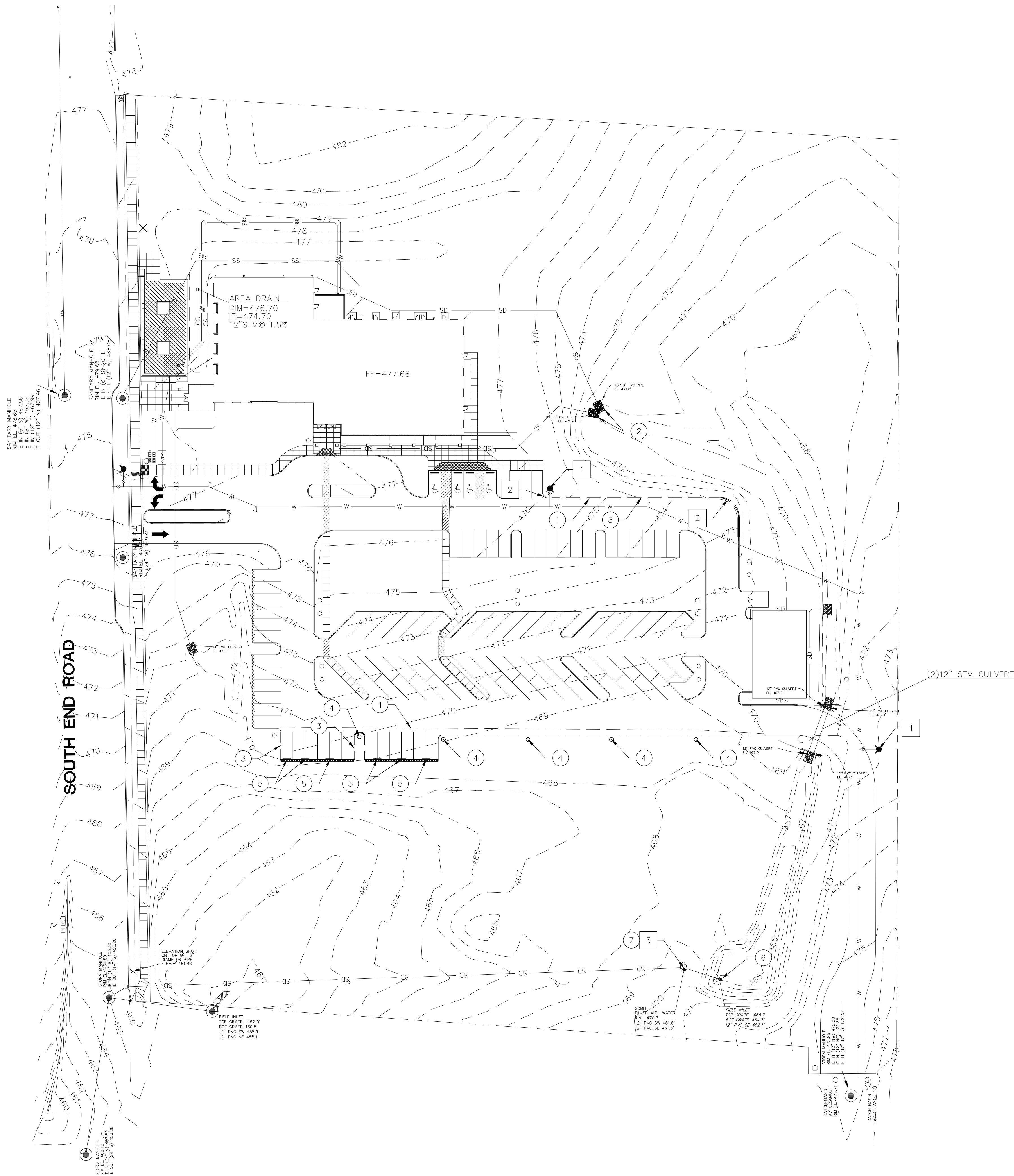
MATERIAL NOTES

1. GENERAL: MATERIALS SHALL BE NEW. THE USE OF MANUFACTURER'S NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, AND USEFULNESS. PROPOSED SUBSTITUTIONS WILL REQUIRE WRITTEN APPROVAL FROM ENGINEER PRIOR TO INSTALLATION.
2. STORM AND SANITARY SEWER PIPING SHALL BE PVC PIPE AS INDICATED IN THE PLANS. PIPES WITH LESS THAN 2' OF COVER SHALL BE C900/C905 PVC, HDPE OR DUCTILE IRON PIPE.
3. PRIVATE WATER MAINS 4-INCH DIAMETER AND LARGER SHALL BE DUCTILE IRON PIPE SCH 80; AS INDICATED IN THE PLANS.
4. PRIVATE WATER LINES 3-INCH DIAMETER AND SMALLER SHALL BE TYPE K COPPER OR PVC; AS INDICATED IN THE PLANS.
5. CONCRETE FOR CURBS, SIDEWALK AND DRIVEWAYS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.

SHEET #

C0.1

GENERAL NOTES



SHEET NOTES

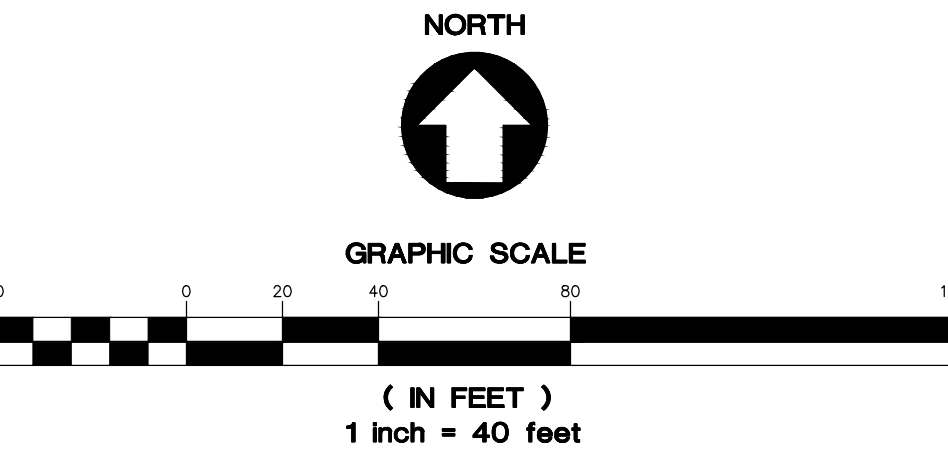
1. SEE SHEET C0.1 FOR GENERAL SHEET NOTES.
2. CONTRACTOR MAY STAGE WITHIN LIMITS OF DEMOLITION.
3. REMOVE ALL SITE COMPONENTS AND RECYCLE COMPONENTS AS REQUIRED IN THE SPECIFICATIONS.
4. ALL TRADE LICENSES AND PERMITS NECESSARY FOR THE PROCUREMENT AND COMPLETION OF THE WORK SHALL BE SECURED BY THE CONTRACTOR PRIOR TO COMMENCING DEMOLITION.
5. THE CONTRACTOR SHALL PRESERVE AND PROTECT FROM DAMAGE ALL EXISTING RIGHT-OF-WAY SURVEY MONUMENTATION DURING DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND PAYING FOR THE REPLACEMENT BY A LICENSED SURVEYOR OF ANY DAMAGED OR REMOVED MONUMENTS.
6. PROTECT ALL ITEMS ON ADJACENT PROPERTIES AND IN THE RIGHT OF WAY INCLUDING BUT NOT LIMITED TO SIGNAL EQUIPMENT, PARKING METERS, SIDEWALKS, STREET TREES, STREET LIGHTS, CURBS, PAVEMENT AND SIGNS. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ANY DAMAGED ITEMS TO ORIGINAL CONDITION.
7. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, AND OTHER FACILITIES IMMEDIATELY ADJACENT TO EXCAVATIONS FROM DAMAGES CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT AND OTHER HAZARDS.
8. SAWCUT STRAIGHT LINES IN SIDEWALK, AS NECESSARY.
9. CONTRACTOR IS RESPONSIBLE TO CONTROL DUST AND MUD DURING THE DEMOLITION PERIOD, AND DURING TRANSPORTATION OF DEMOLITION DEBRIS. ALL STREET SURFACES OUTSIDE THE CONSTRUCTION ZONE MUST BE KEPT CLEAN.
10. PROTECT ALL EXISTING UTILITY STRUCTURES AND UNDERGROUND MAINS TO REMAIN.
11. PROTECT ALL EXISTING VEGETATION TO REMAIN.

X PROTECTION NOTES

1. PROTECT HYDRANT
2. PROTECT CURB
3. PROTECT FLOW-CONTROL MANHOLE STRUCTURE, LID, LADDER STEPS, AND INLET/OUTLET PIPES.

X DEMOLITION NOTES

1. SAWCUT AND REMOVE ASPHALT
2. REMOVE RIP RAP
3. REMOVE CURB
4. REMOVE LIGHT POLE
5. REMOVE WHEEL STOP
6. REMOVE DITCH INLET AND PORTION OF STORM PIPE
7. REMOVE FLOW CONTROL TEE INSIDE MANHOLE ONCE NEW FLOW CONTROL TEE IS READY TO INSTALL



RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH

1179 SOUTH END ROAD
OREGON CITY, OR 97045

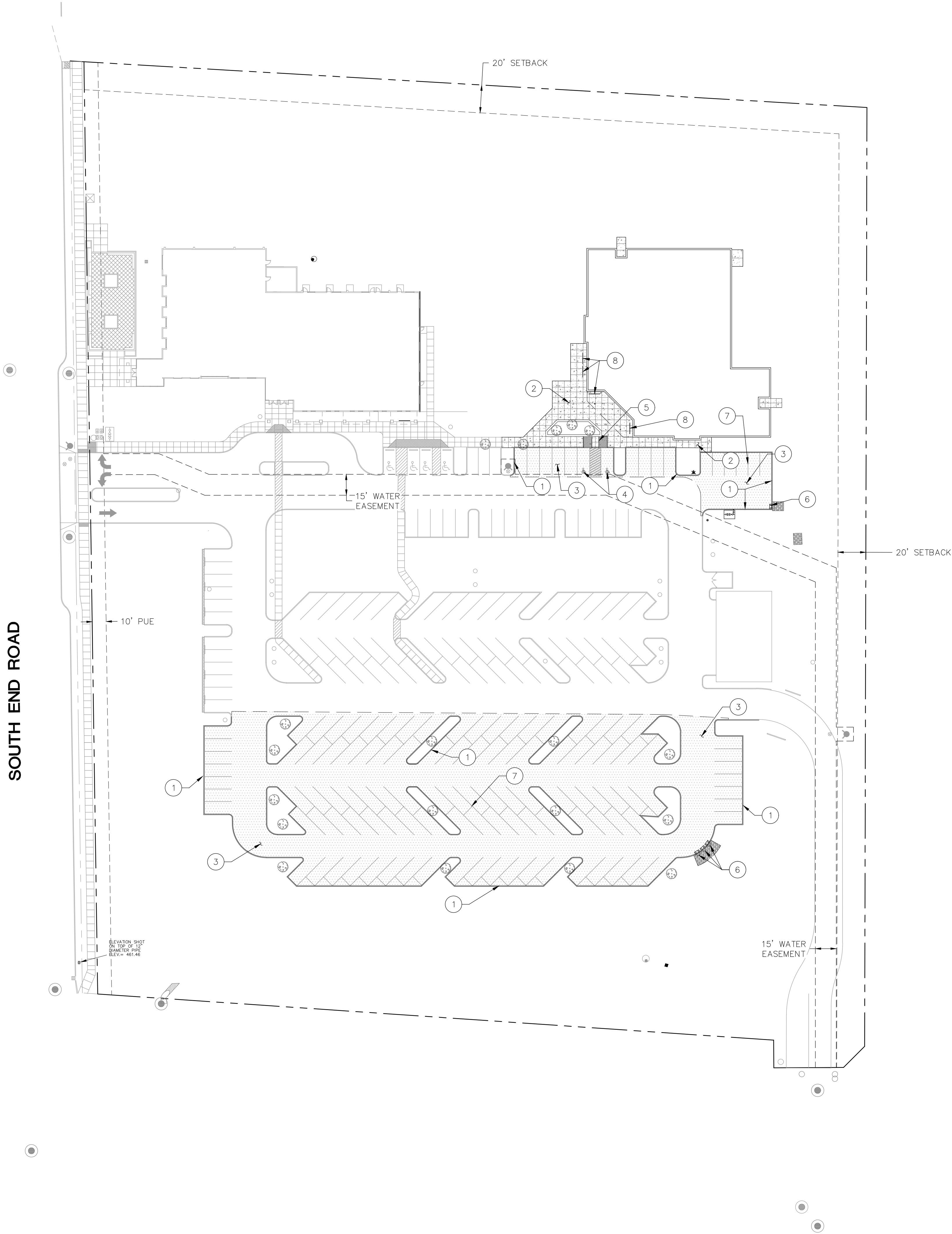
PROJ. NO. : 1881
FILE :
DATE : 7/22/19

SHEET #

C0.2

EXISTING CONDITIONS
AND DEMOLITION PLAN

1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com



SHEET NOTES

1. SEE SHEET C0.1 FOR GENERAL SHEET NOTES.
2. SEE ARCHITECTURAL PLANS FOR ADDITIONAL SITE INFORMATION.
3. THE CONTRACTOR SHALL HAVE A FULL SET OF THE CURRENT APPROVED CONSTRUCTION DOCUMENTS INCLUDING ADDENDA ON THE PROJECT SITE AT ALL TIMES.
4. THE CONTRACTOR SHALL KEEP THE ENGINEER AND JURISDICTION INFORMED OF CONSTRUCTION PROGRESS TO FACILITATE SITE OBSERVATIONS AT REQUIRED INTERVALS. 24-HOUR NOTICE IS REQUIRED.

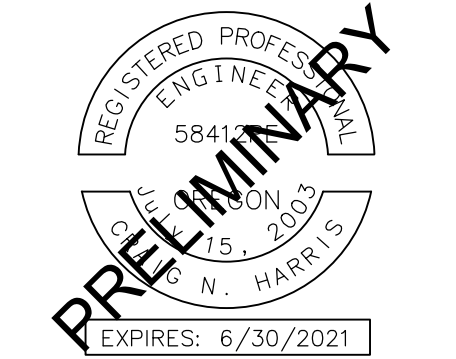
(X) CONSTRUCTION NOTES

1. INSTALL CONCRETE CURB PER DETAIL 1/C4.0.
2. INSTALL SIDEWALK PER DETAIL 2/C4.0.
3. INSTALL ASPHALT PAVEMENT PER DETAIL 3/C4.0.
4. INSTALL ADA PARKING STALL PER DETAIL 4/C4.0.
5. INSTALL ADA RAMP PER DETAIL 5/C4.0.
6. INSTALL CURB CUT SPILLWAY PER DETAIL 7/C4.0.
7. INSTALL STRIPING. SEE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.
8. INSTALL BIKE PARKING. SEE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.



**ISELIN
ARCHITECTS
P.C.**

1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com



RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH

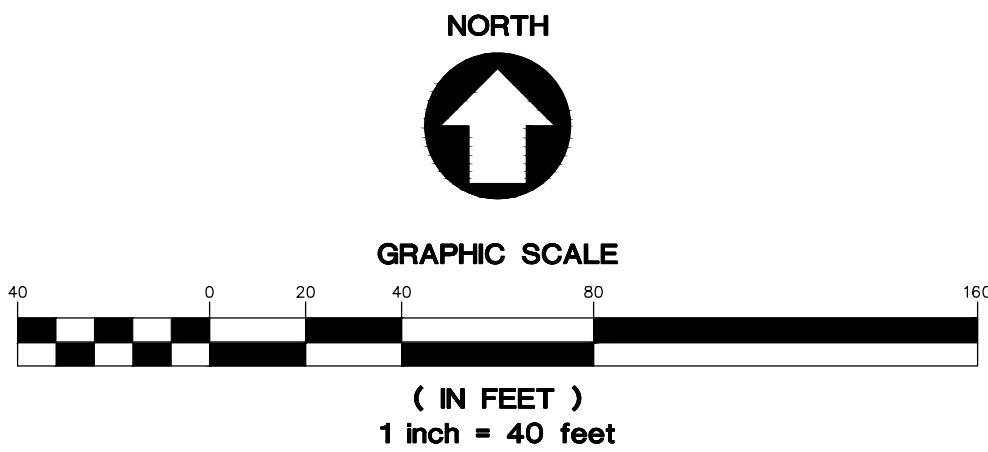
1179 SOUTH END ROAD
OREGON CITY, OR 97045

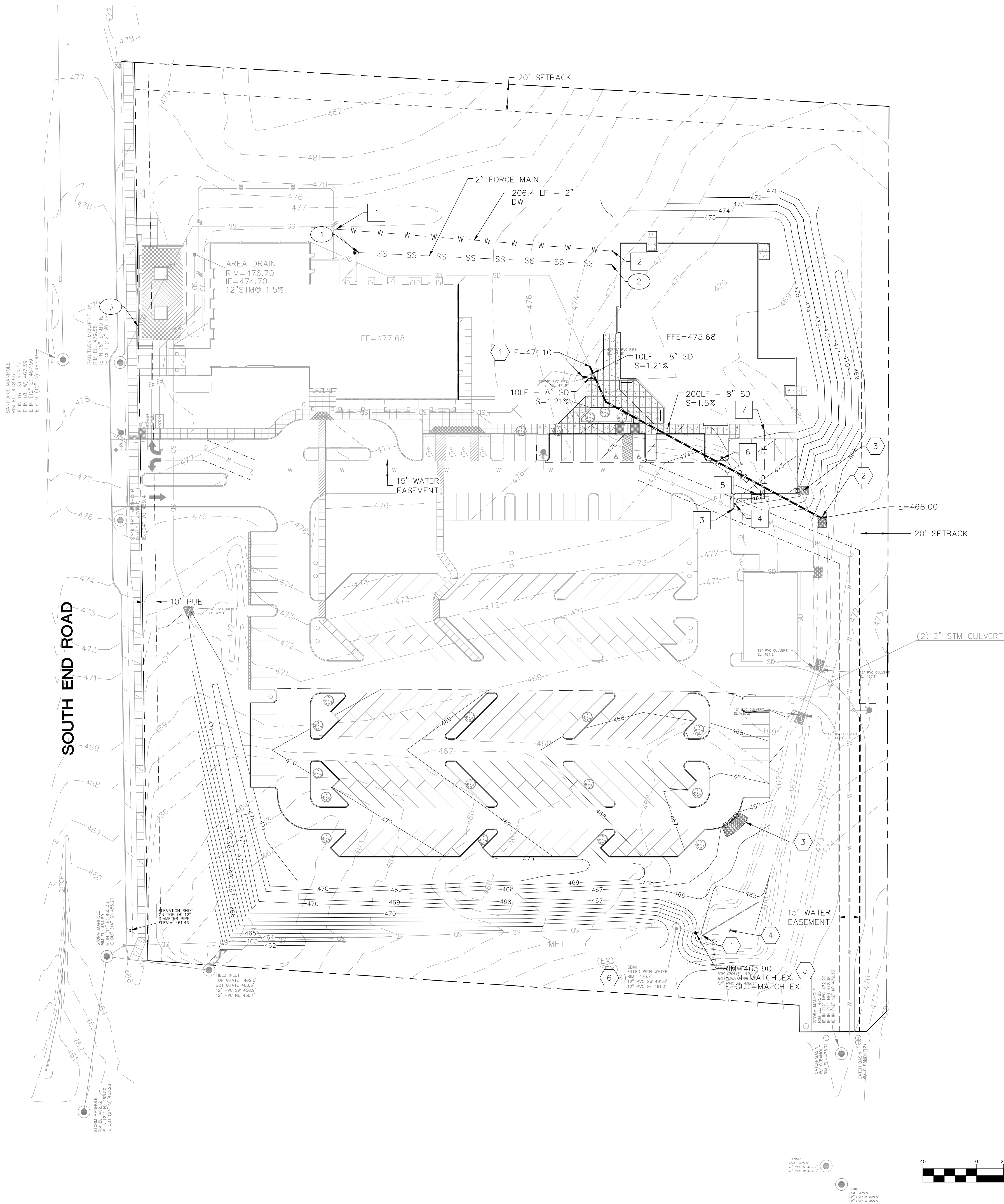
PROJ. NO. : 1881
FILE :
DATE : 7/22/19

SHEET #

C1.0

HARDSCAPE
PLAN



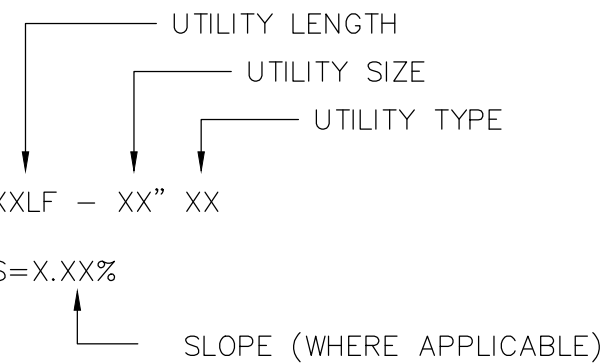


SHEET NOTES

1. SEE SHEET C0.1 FOR GENERAL SHEET NOTES.
2. STRUCTURES HORIZONTAL LOCATIONS AND PIPE INVERTS ARE BASED ON THE CENTER OF THE STRUCTURE.
3. PIPE BEDDING AND BACKFILL UTILITIES SHALL BE DONE PER DETAIL 1/C4.1.
4. ALL SANITARY PIPING SHALL BE PVC 3034 OR APPROVED EQUAL UNLESS NOTED OTHERWISE.
5. THIS PLAN IS GENERALLY DIAGRAMMATIC. IT DOES NOT SHOW EVERY JOINT, BEND, FITTING, OR ACCESSORY REQUIRED FOR CONSTRUCTION.
6. CLEAN OUTS SHALL BE INSTALLED IN CONFORMANCE WITH UPC CHAPTER SEVEN, SECTION 707 AND SECTION 719. THIS PLAN MAY NOT SHOW ALL REQUIRED CLEAN OUTS.
7. DOMESTIC WATER AND FIRE LINES AND ACCESSORIES BETWEEN THE WATER METER AND THE BUILDING SHALL BE INSTALLED BY A LICENSED PLUMBER EMPLOYED BY A LICENSED PLUMBING CONTRACTOR.
8. UTILITIES WITHIN FIVE FEET OF A BUILDING SHALL BE CONSTRUCTED OF MATERIALS APPROVED FOR INTERIOR USE AS DESCRIBED IN THE CURRENT EDITION OF THE UPC.
9. INLETS AND OUTLETS TO ON-SITE MANHOLES SHALL HAVE FLEXIBLE CONNECTION NO CLOSER THAN 12" AND NO FARTHER THAN 36" FROM THE MANHOLE.
10. CONTRACTOR TO VERIFY SANITARY AND WATER SIZING AND INVERTS WITH APPROVED PLUMBING PLANS PRIOR TO ORDERING MATERIALS OR BEGINNING CONSTRUCTION OF SAID UTILITIES.
11. INSTALL THRUST BLOCKS ON FIRE AND WATER LINES PER DETAIL 3/C4.2.

LABEL LEGEND

PIPE LABELS



STORM NOTES

1. CONNECT TO EXISTING STORM PIPE.
2. OUTFALL PER DETAIL 2/C4.1.
3. INSTALL 8'x23' RIP-RAP PAD, USING 1' DEPTH OF ODOT CLASS 50 RIP-RAP.
4. INSTALL 38'x40' VEGETATED INFILTRATION BASIN PER DETAIL 5/C4.1, AND GRADING ON SHEET C2.0.
5. INSTALL DITCH INLET OVER EXISTING STORM PIPE PER DETAIL PER DETAIL 4/C4.1.
6. INSTALL FLOW-CONTROL TEE INSIDE EXISTING MANHOLE PER DETAIL 3/C4.1.

WATER NOTES

1. 2X2 TEE TO EXISTING 2" DOMESTIC WATER LINE.
2. 2" DOMESTIC WATER STUB
3. 6" TAP TO EXISTING 8" WATER LINE
4. 6" GATE VALVE
5. 6" DOUBLE CHECK DETECTOR ASSEMBLY IN CONCRETE VAULT PER DETAIL 2/C4.2
6. 4" FDC PER DETAIL 1/C4.2
7. 6" FIRE PROTECTION STUB

SANITARY NOTES

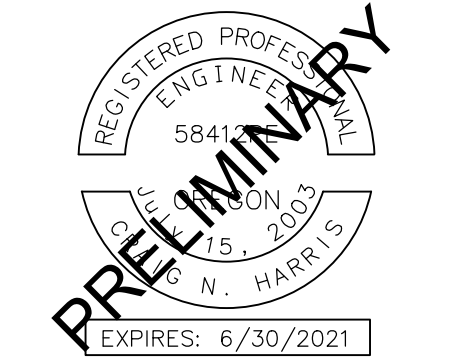
1. CONSTRUCT 48" FLAT TOP MANHOLE OVER EXISTING SANITARY
2. POINT OF CONNECTION FOR 2" FORCE MAIN
3. DOUBLE CLEANOUT REQUIRED. CONTRACTOR TO INSTALL AT PROPERTY LINE IF NOT ALREADY CONSTRUCTED.

LEGEND

SANITARY SEWER LINE	SS	SS	SS	SS
WATER LINE	W	W	W	W
FIRE LINE	FP	FP	FP	FP
FDC LINE	FDC	FDC	FDC	FDC
STORM LINE				
PERFORATED STORM PIPE				



1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com



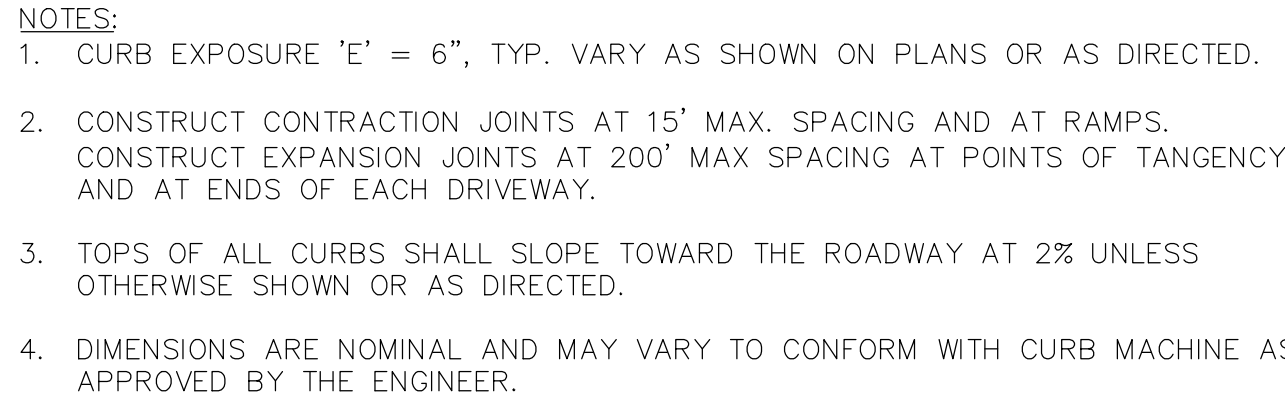
RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH
1179 SOUTH END ROAD
OREGON CITY, OR 97045

PROJ. NO. : 1881
FILE :
DATE : 7/22/19

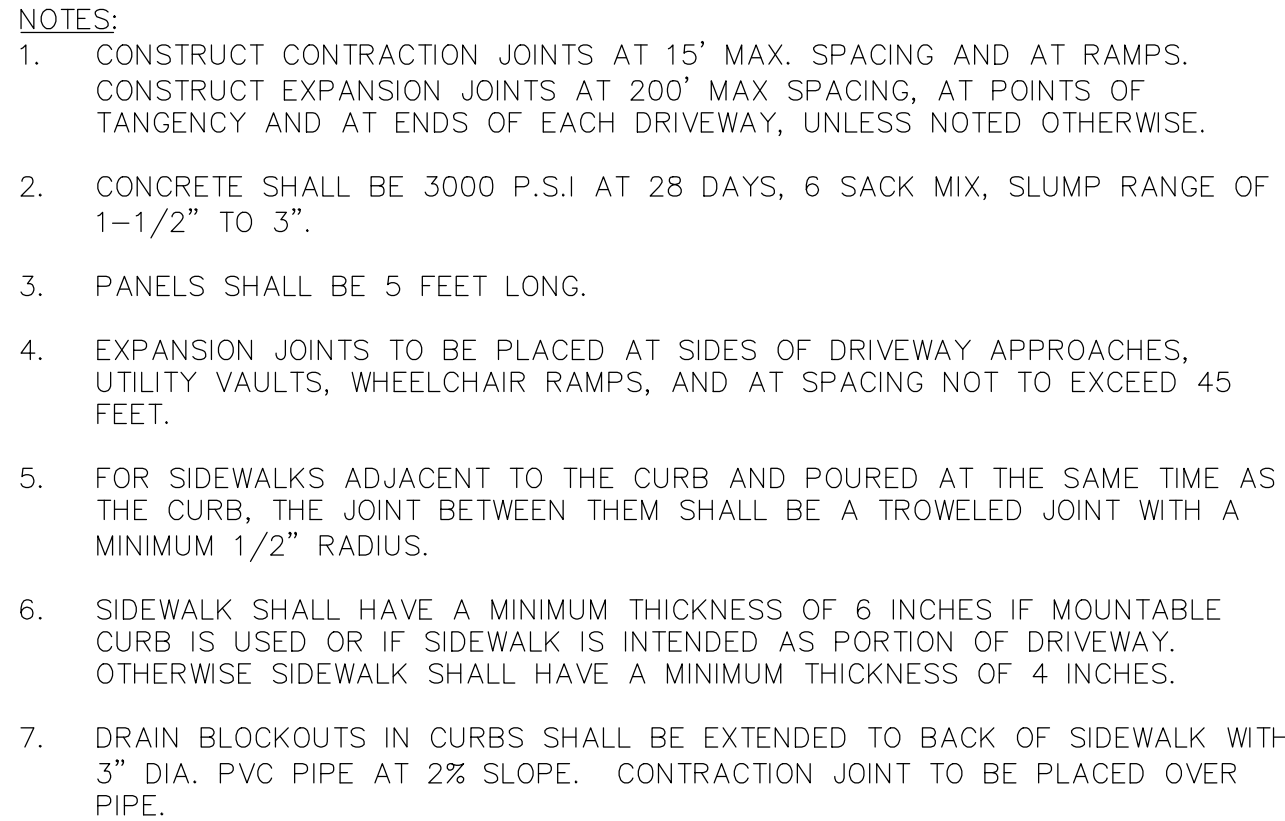
SHEET #

C3.0

UTILITY PLAN



SCALE: NTS



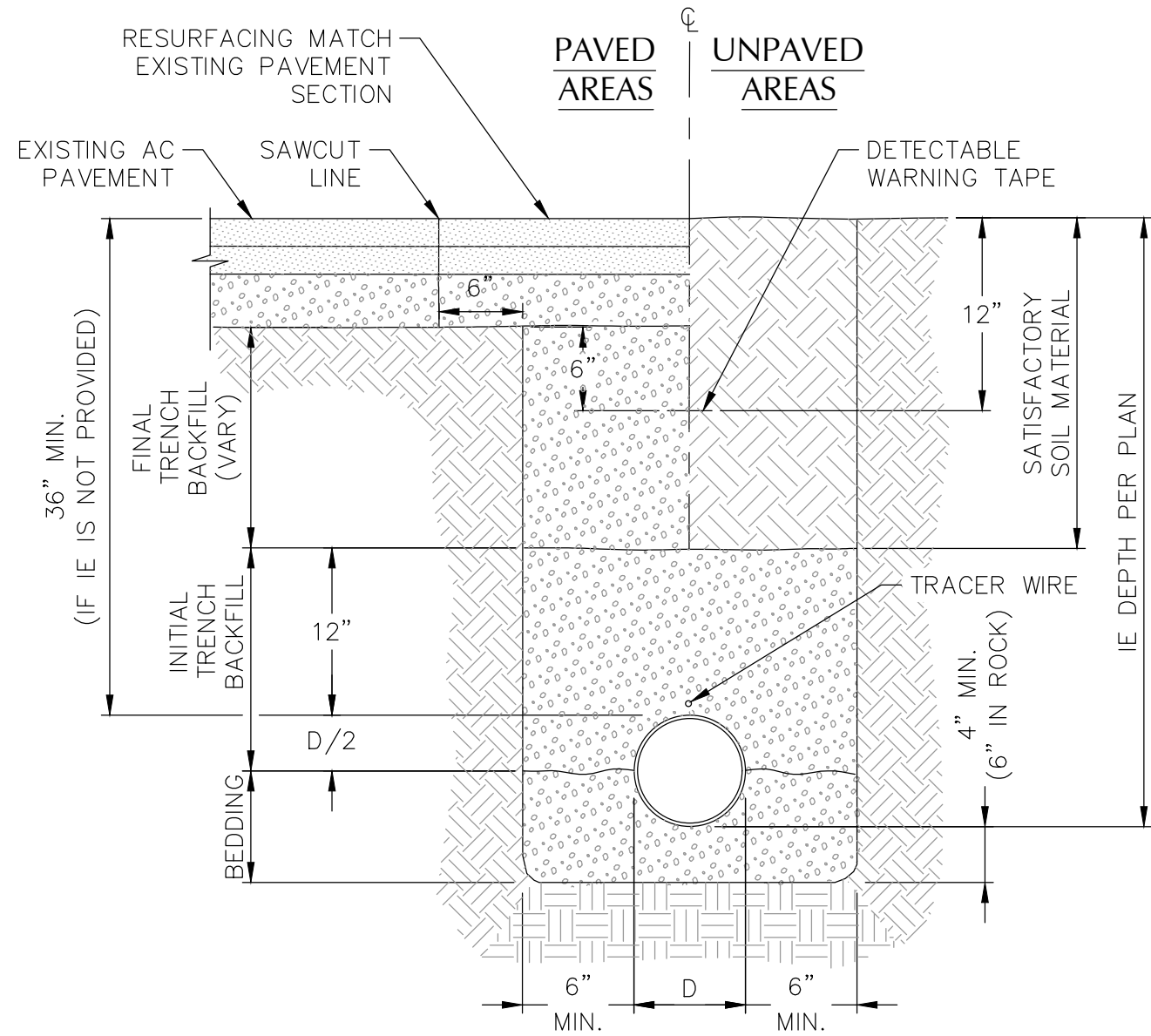
SCALE: NTS



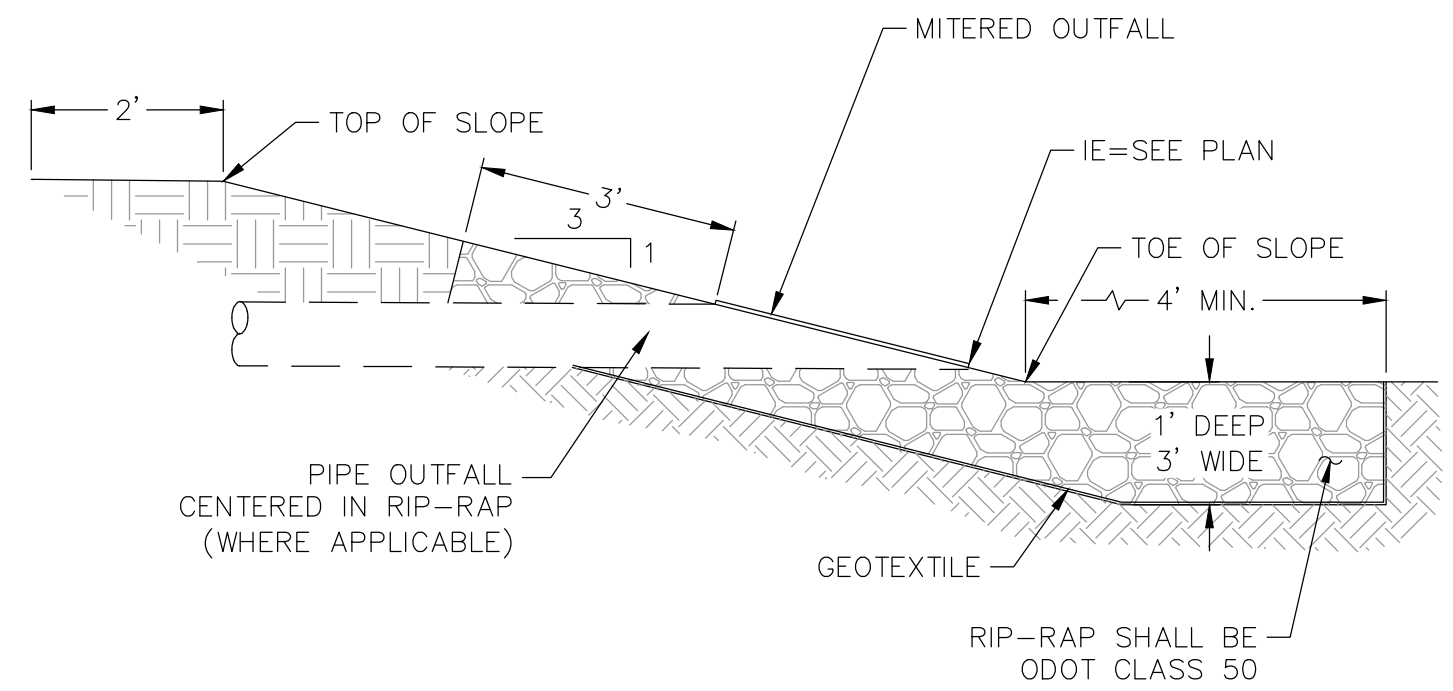
1. PROVIDE RAMP TEXTURING WITH AN EXPANDED METAL GRATE PLACED ON AND REMOVED FROM WET CONCRETE TO LEAVE A DIAMOND PATTERN. EACH DIAMOND SHALL BE 1½" LONG BY ½" WIDE WITH THE LONG SECTION AXIS ORIENTED PERPENDICULAR TO THE CURB. THE GROOVES SHALL BE ⅛" DEEP BY ¼" WIDE.

SCALE: NTS

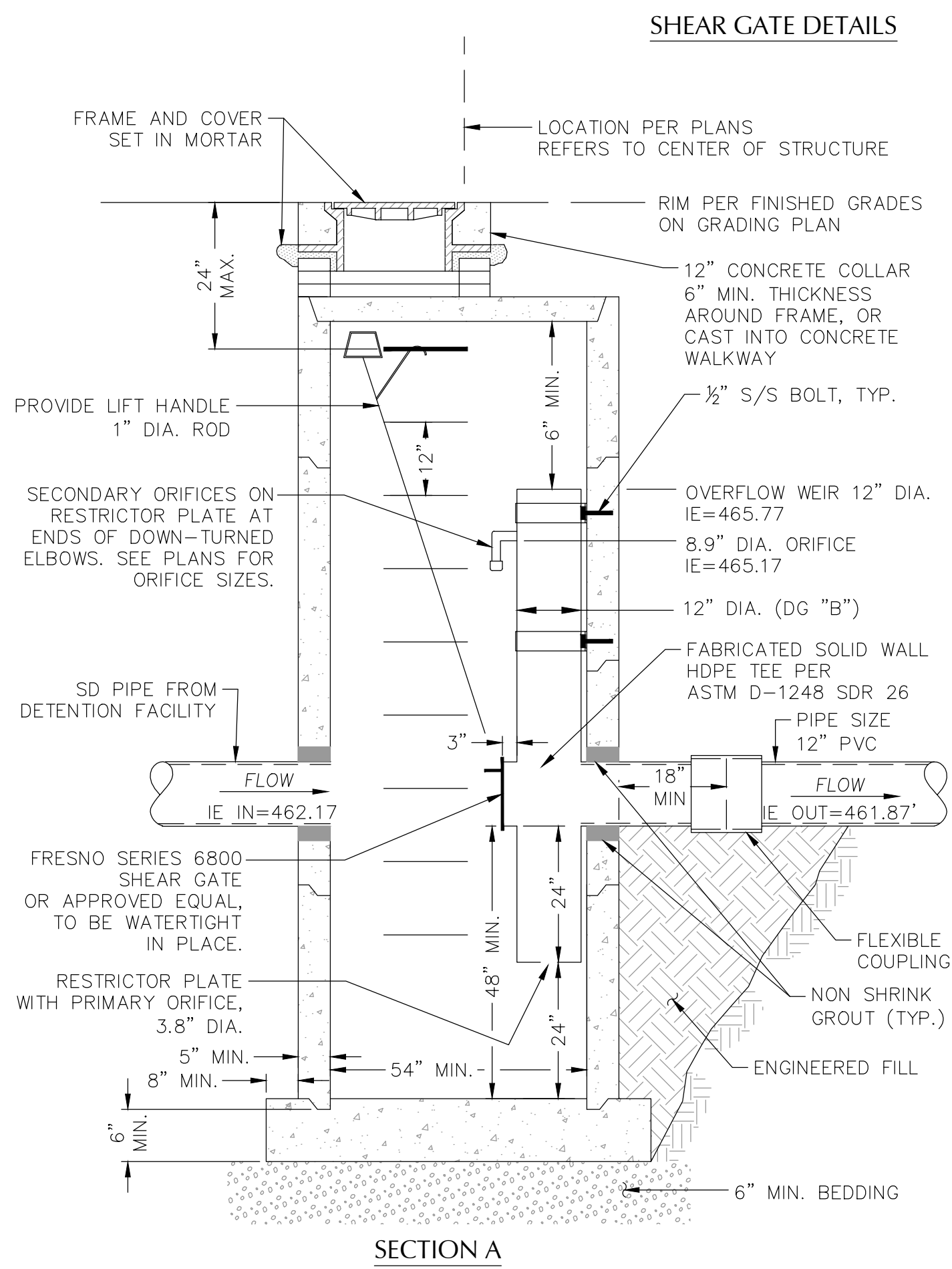
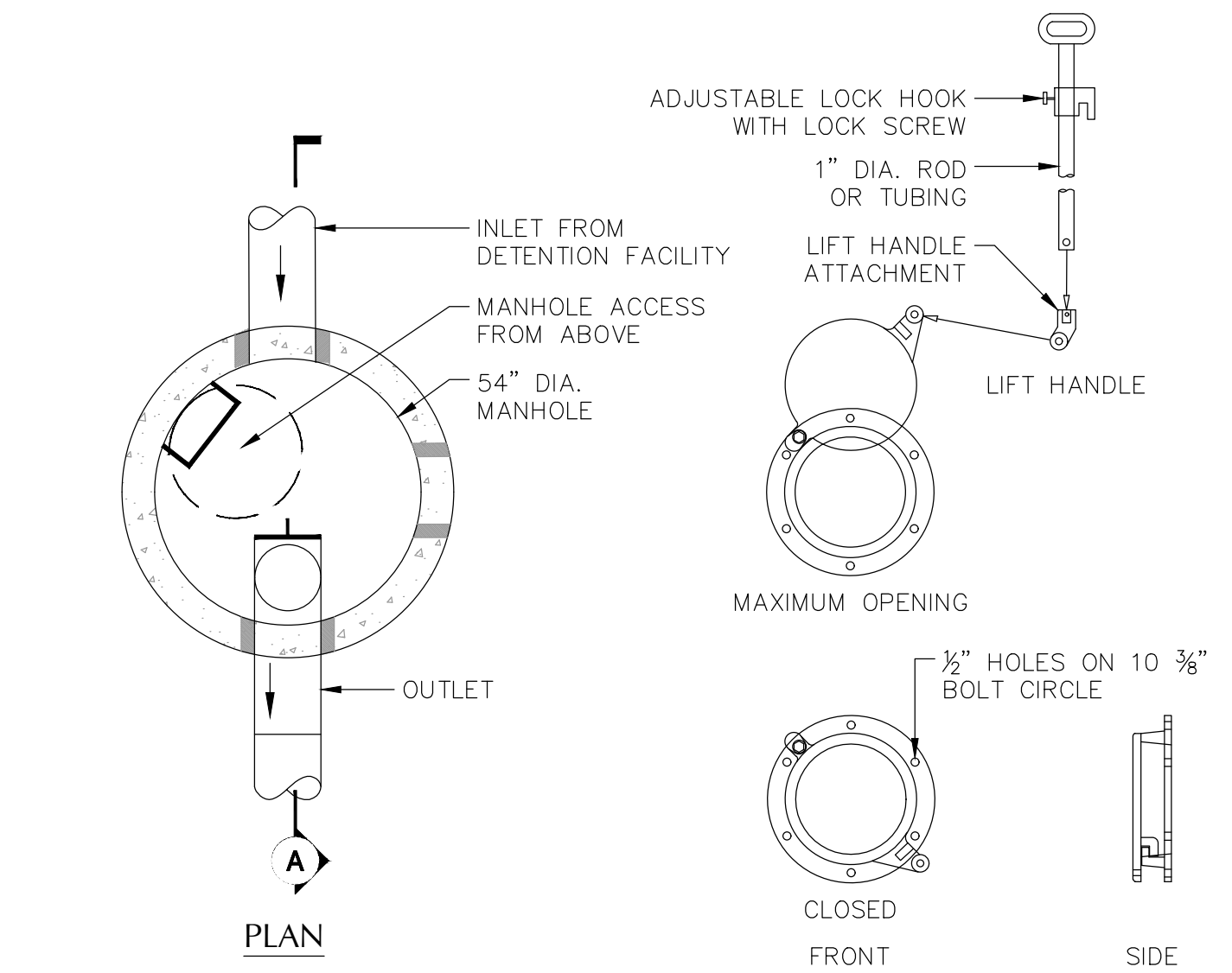




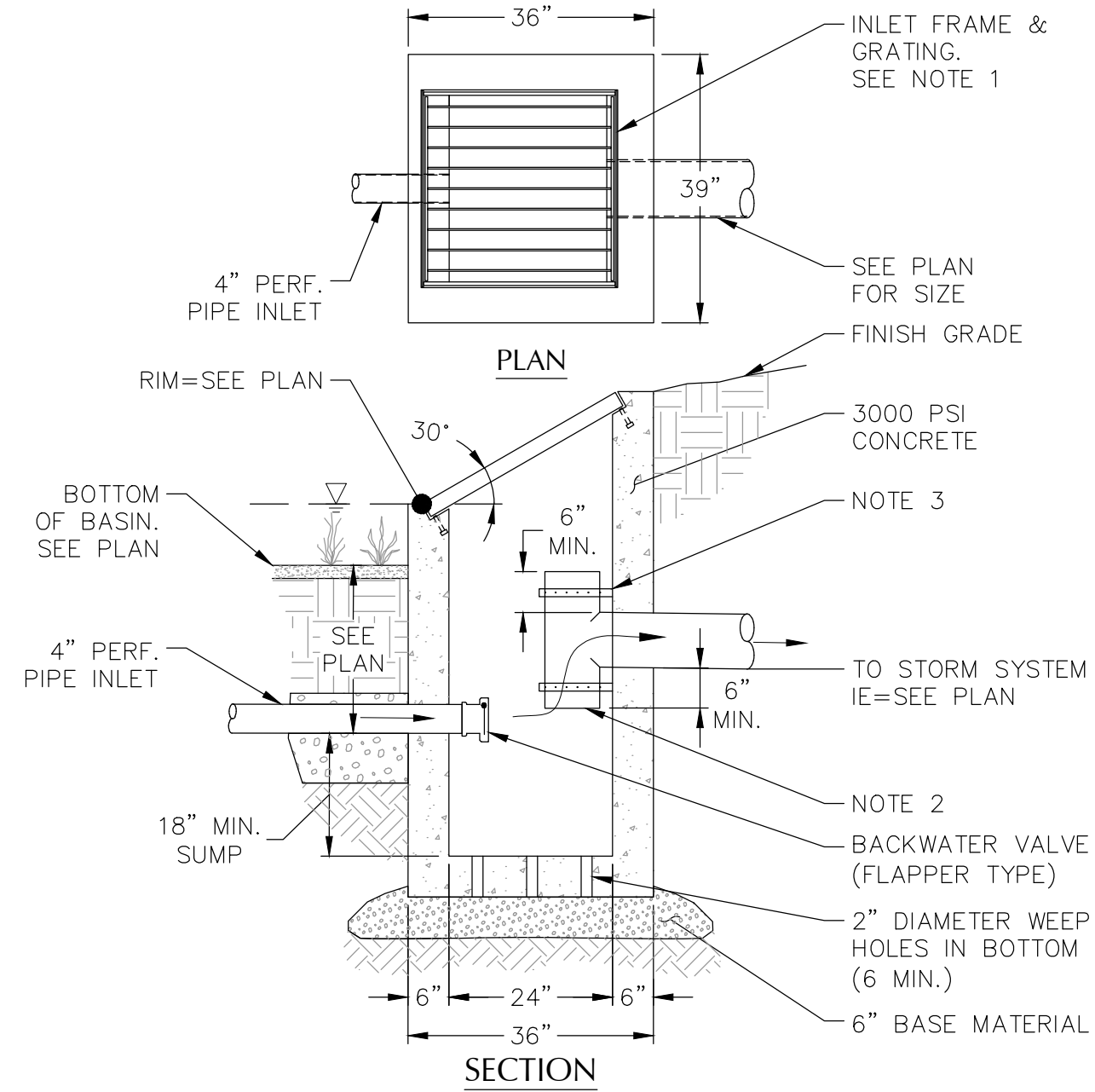
1 TYPICAL PIPE BEDDING AND BACKFILL
SCALE: NTS



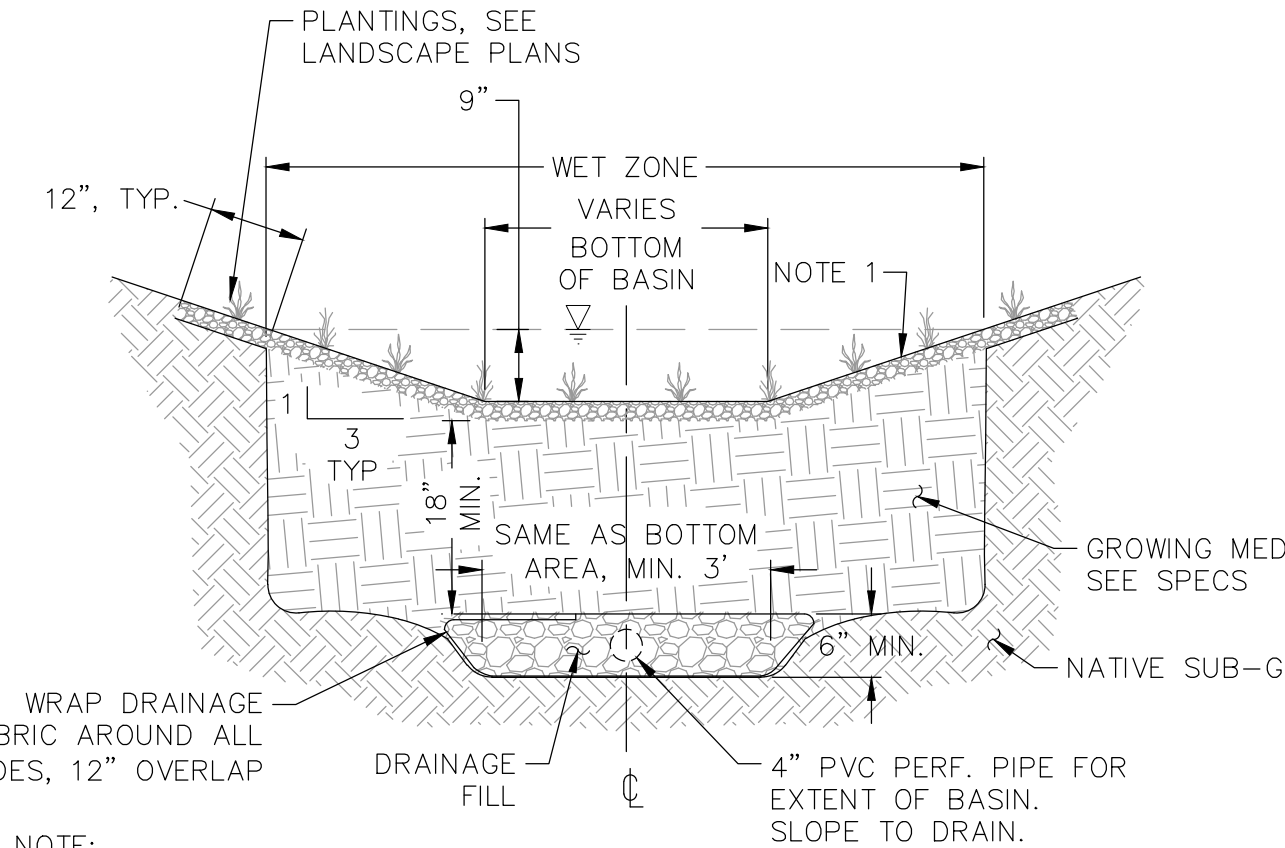
2 TYPICAL OUTFALL RIP-RAP PROTECTION
SCALE: NTS



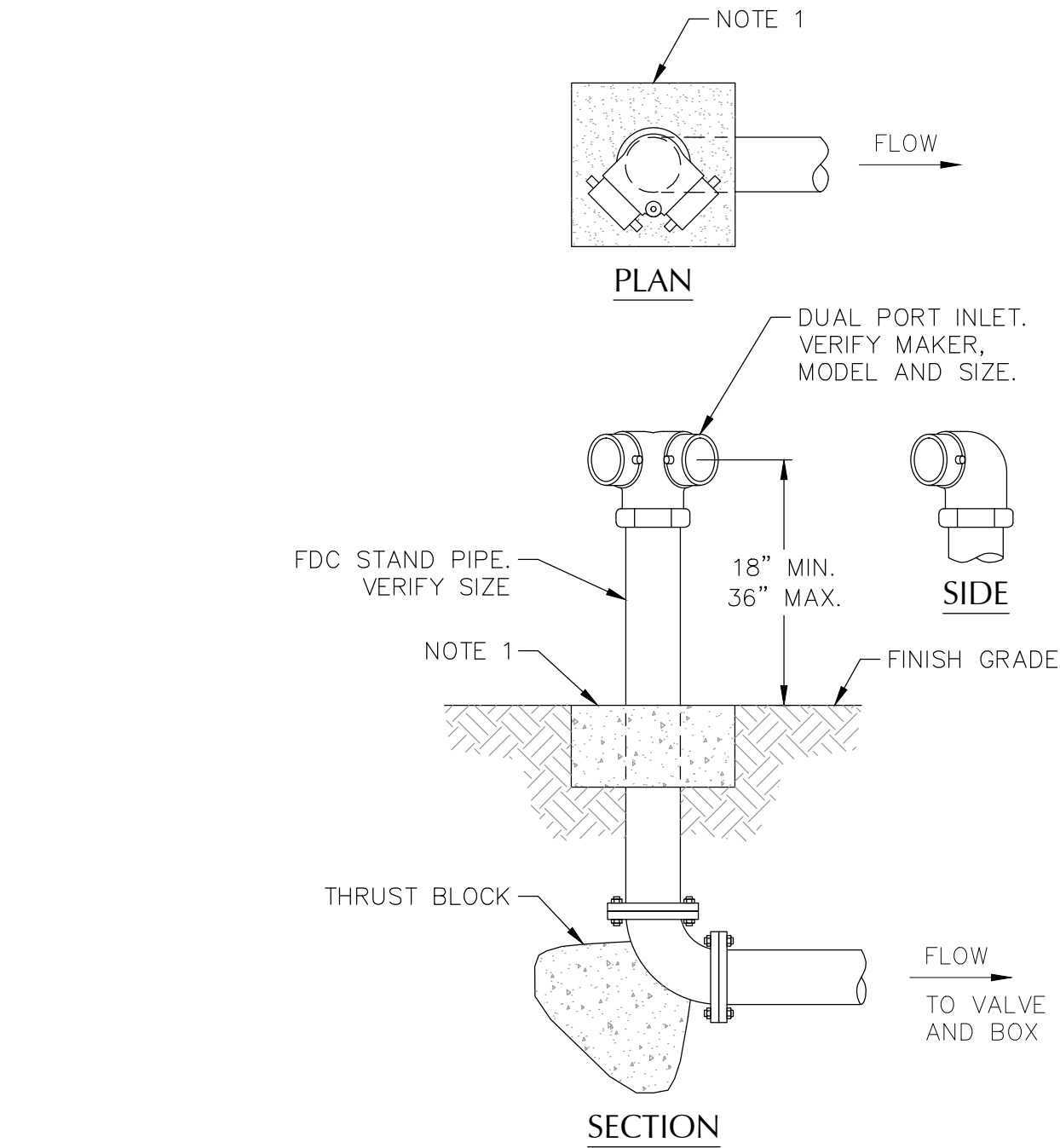
3 FLOW CONTROL MANHOLE
SCALE: NTS PER WSDOT STD PLAN B-10.40-00



4 DITCH/OVERFLOW INLET
SCALE: NTS



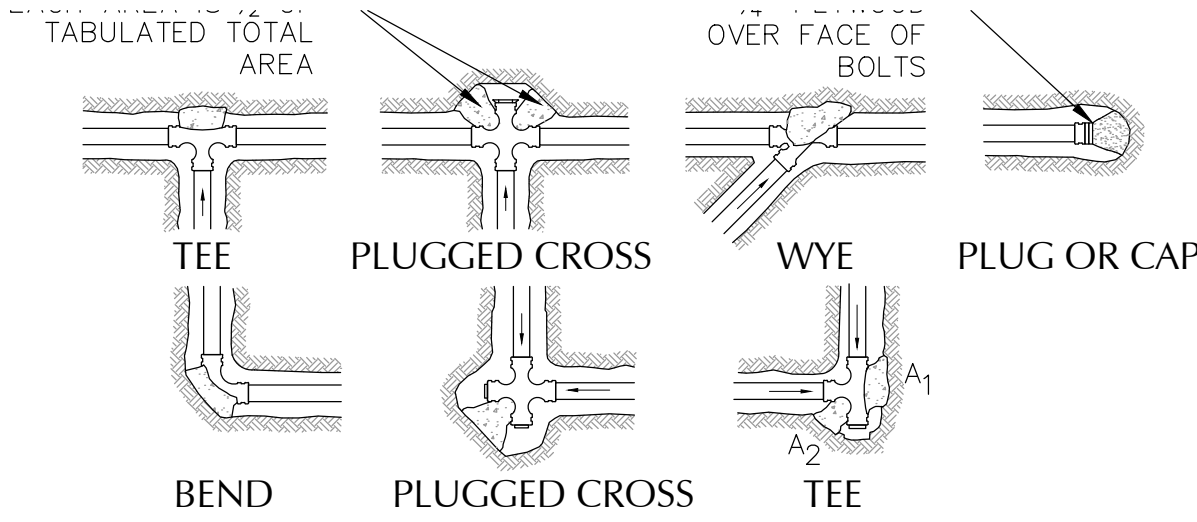
5 TYP. VEGETATED INFILTRATION BASIN (VIB)
SCALE: NTS



- NOTES:
1. CONCRETE ANCHOR PAD TO BE 12"x12"x6" THICK, UNLESS NOTED OTHERWISE. ELIMINATE IF INSTALLED IN CONCRETE PAVED AREA.
 2. USE FLANGE OR THREADED FITTINGS.
 3. CONTRACTOR SHALL PROVIDE SINGLE CHECK VALVE AND BALL DRIP VALVE IN ACCESSIBLE LOCATION INSIDE DDCV VAULT. COORDINATE WITH PLUMBING.

FIRE DEPARTMENT CONNECTION (FDC) DUAL PORT

SCALE: NTS



1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
3. THE REQUIRED THRUST BEARING AREAS FOR SPECIAL CONNECTIONS ARE SHOWN ENCIRCLED ON THE PLAN; e.g. 15 INDICATES 15 SQUARE FEET BEARING AREA REQUIRED.
4. IF NOT SHOWN ON PLANS REQUIRED BEARING AREAS AT FITTING SHALL BE AS INDICATED BELOW, ADJUST IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) AND ALLOWABLE SOIL BEARING STRESS (ES) STATED IN THE SPECIAL SPECIFICATIONS.
5. BEARING AREAS AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER BEARING AREAS AND BLOCKING DETAILS SHOWN ON THIS STANDARD DETAIL.

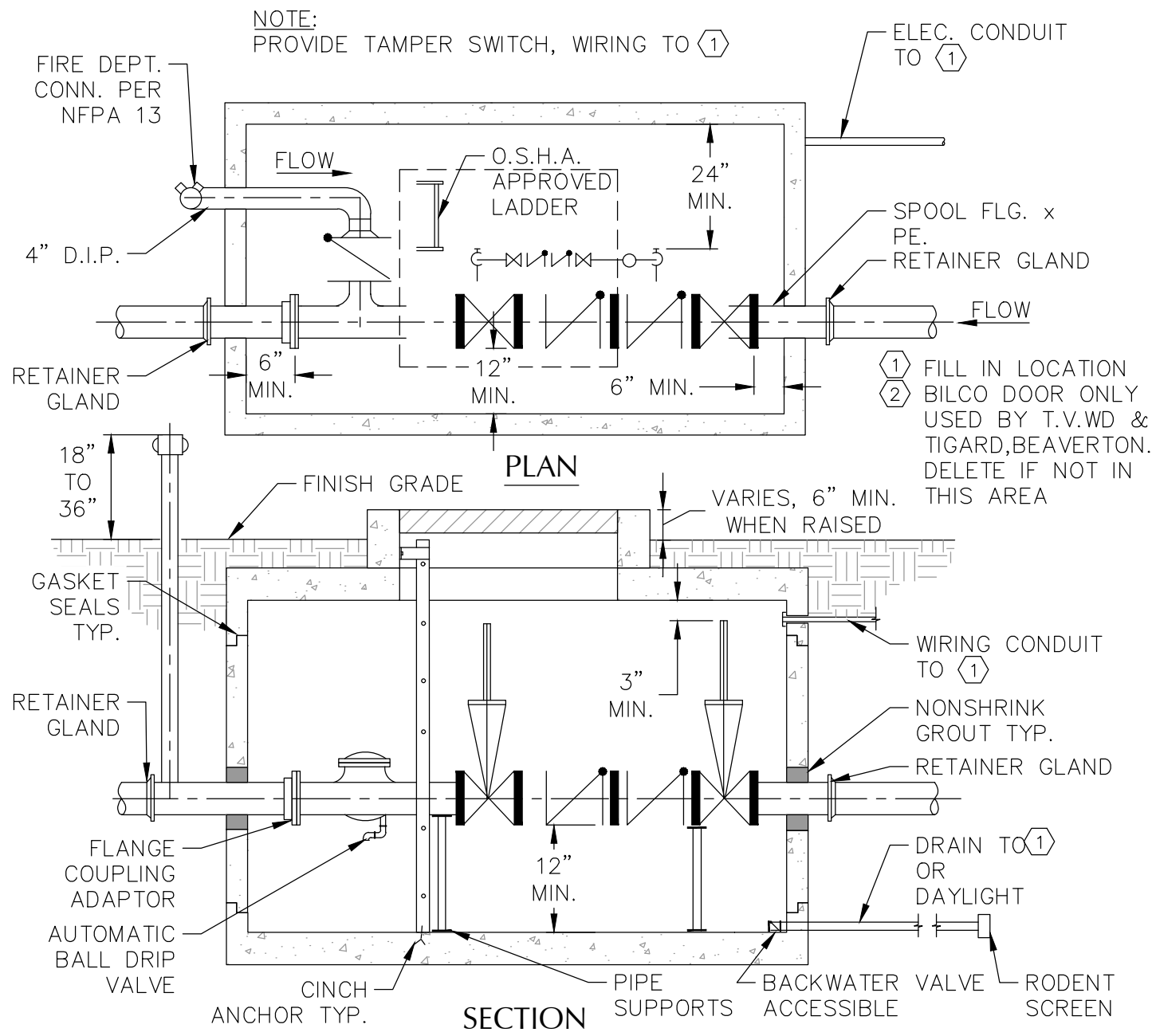
BEARING AREA OF THRUST BLOCK IN SQUARE FOOT

FITTING SIZE	TEE, WYE, PLUG, OR CAP	90° BEND PLUGGED CROSS	TEE PLUGGED ON RUN		45° BEND	22½° BEND	11¼° BEND
			A1	A2			
4	1.0	1.4	1.9	1.4	1.0		
6	2.1	3.0	4.3	3.0	1.6	1.0	
8	3.8	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	8.4	11.8	8.4	4.6	2.4	1.2

NOTE:
ABOVE BEARING AREAS BASED ON TEST PRESSURE OF 150 p.s.i. AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 p.s.i.. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURE AND SOIL BEARING STRESSES, USE THE FOLLOWING EQUATION: BEARING AREA = (TEST PRESSURE/150)X(2000/ SOIL BEARING STRESS)X(TABLE VALUE).

THRUST BLOCK

SCALE: NTS

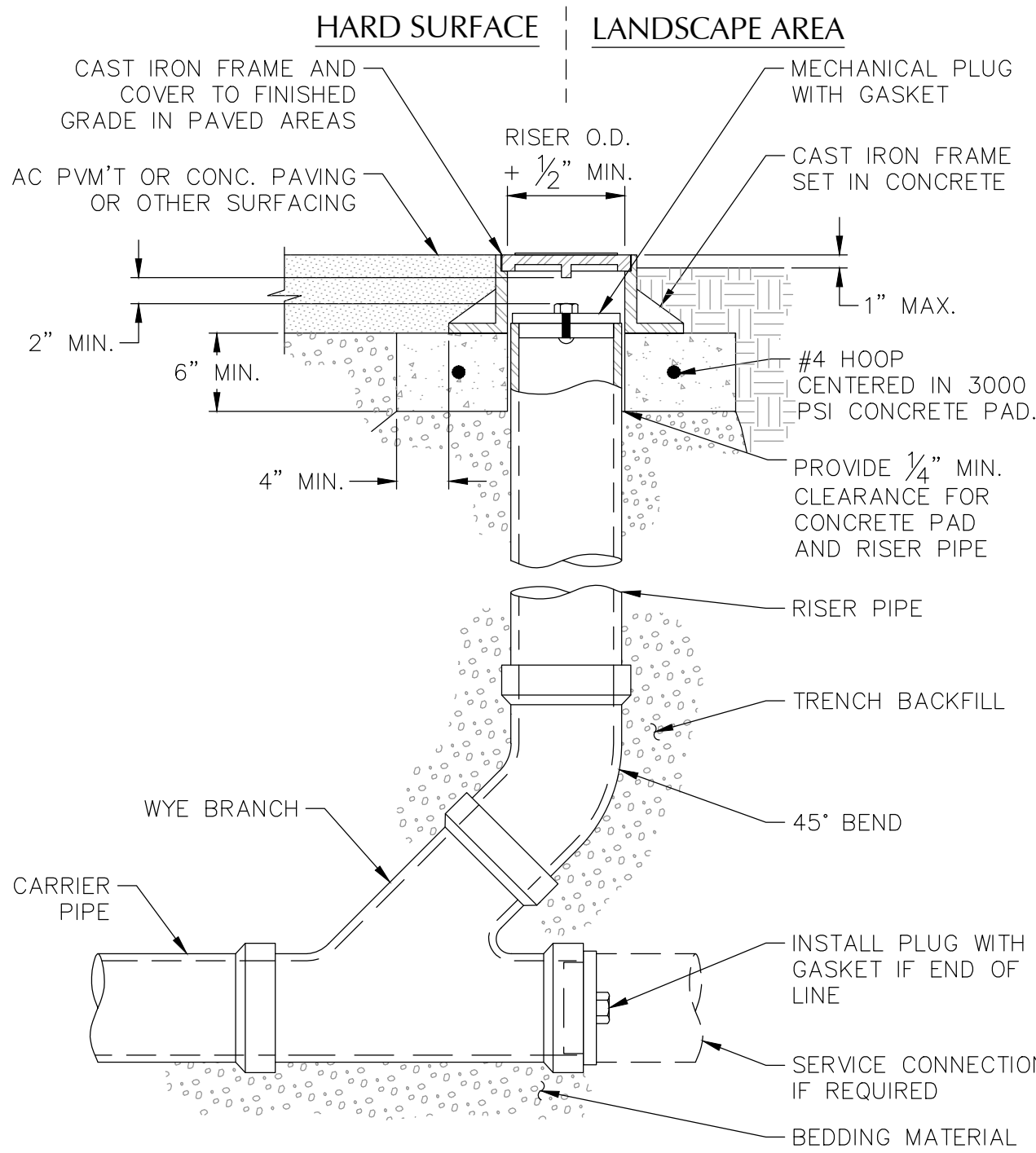


D.D.C. SIZE	UTILITY VAULT OR EQUAL	
	WITH F.D.C.	WITHOUT F.D.C.
4"	676 - WA	577 - WA
6"	687 - WA	676 - WA
8"	5106 - LA	687 - WA
10"	5106 - LA	5106 - LA

2 BILCO DOOR OR EQUAL
J - 5AL
J - 5AL
JD - 3AL
JD - 3AL

DOUBLE DETECTOR CHECK FIRE SERVICE VAULT W/ DRAIN TO DAYLIGHT

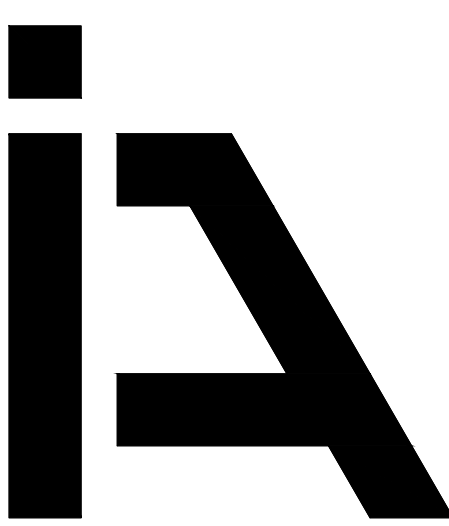
SCALE: NTS



- NOTES:
1. CAST IRON FRAME AND COVER SHALL MEET H-20 LOAD REQUIREMENT.
 2. FOR CARRIER PIPE SIZE 6"Ø AND LESS, PROVIDE RISER PIPE SIZE TO MATCH CARRIER PIPE.
 3. FOR CARRIER PIPE SIZE 8"Ø AND LARGER, RISER PIPE SHALL BE 6"Ø.
 4. RISER PIPE MATERIAL TO MATCH CARRIER PIPE MATERIAL.

STANDARD CLEANOUT (COTG)

SCALE: NTS



**ISELIN
ARCHITECTS
P.C.**

1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com



RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH

1179 SOUTH END ROAD
OREGON CITY, OR 97045

PROJ. NO. : 1881
FILE :
DATE : 7/22/19

SHEET #

C4.2

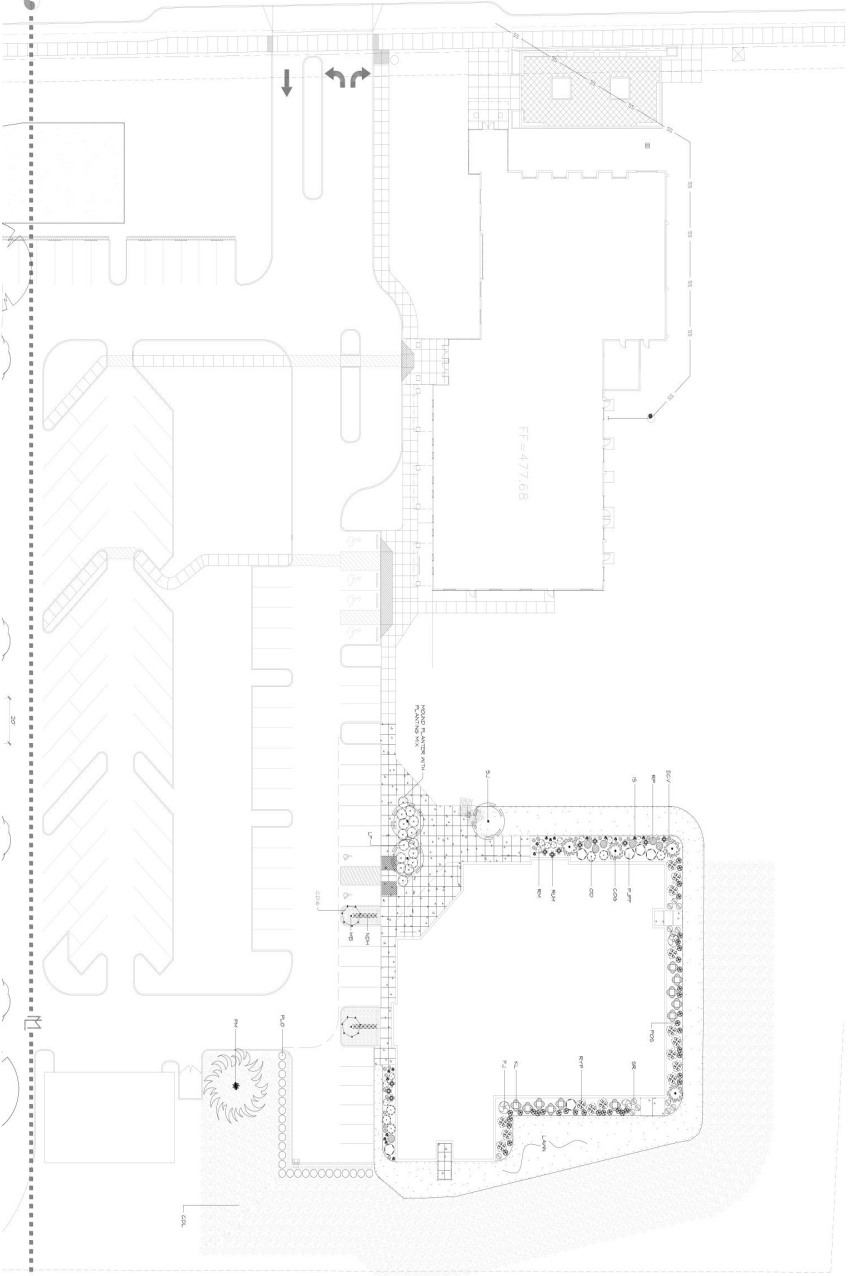
DETAILS

1. ALL PLANTING SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE
 2. OREGON CITY CHRISTIAN CHURCH, 1179 SOUTH END ROAD, OREGON CITY, OR 97045
 3. THE CITY OF OREGON CITY, OREGON, HAS REVIEWED THIS PLAN AND APPROVES IT FOR
 4. THE CITY OF OREGON CITY, OREGON, HAS REVIEWED THIS PLAN AND APPROVES IT FOR
 5. THE CITY OF OREGON CITY, OREGON, HAS REVIEWED THIS PLAN AND APPROVES IT FOR



L2 PLANTING PLAN

L2 4



RECREATION BUILDING FOR OREGON CITY CHRISTIAN CHURCH

1179 SOUTH END ROAD
 OREGON CITY, OR 97045

DATE	1/28/24
PROJECT NO.	N
REVISIONS	DN
DRAWN	DN
CHECKED	DN
APPROVED	



SANITARY MANHOLE
RIM EL. 476.40
IE (24" W) 469.41

14 Irrigation Plan

1179 SOUTH END ROAD
OREGON CITY, OR 97045

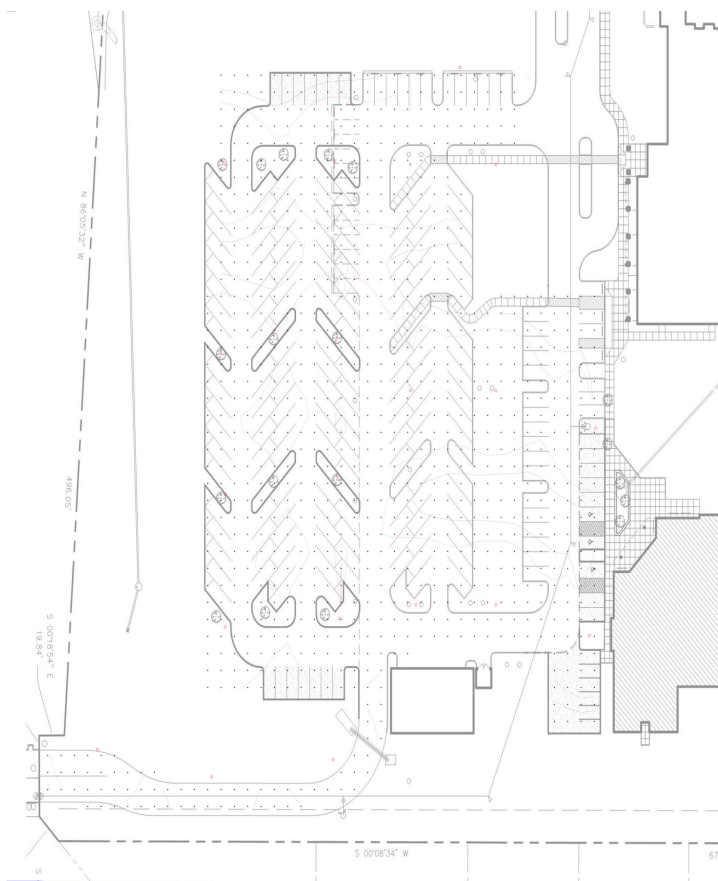
MULCH

DARRELL MULCH
LANDSCAPE
ARCHITECTURE

1807 S. 46TH AVENUE #100
PORTLAND, OREGON 97213
(503) 225-0666 TEL.

Darrell Mulch

REGISTERED
315
Darrell Mulch
OREGON
10-18-03
LANDSCAPE ARCHITECT

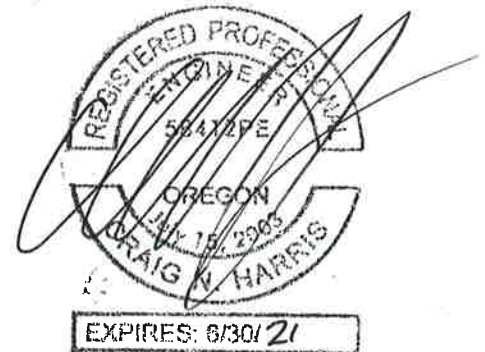




Oregon City Christian Church

STORMWATER REPORT & CALCULATIONS

1179 South End Road
Oregon City, Oregon



October 18, 2019
PROJECT NUMBER: A19202.10

AAI Engineering
4875 S.W. Griffith Drive
Suite 300
Beaverton, Oregon
PH 503.620.3030
FX 503.620.5539
EMAIL: Craigh@aaieng.com

Oregon City Christian Church

Table of Contents

I.	Project Summary	1
II.	Stormwater Management.....	1
III.	Conveyance Calculations	1
IV.	Downstream Analysis	1
V.	Operations and Maintenance	2
VI.	Engineering Conclusion	2

Appendices

Appendix A

Existing Conditions

Appendix B

Storm Plan and Details

Appendix C

WES BMP Sizing Report

Appendix D

Conveyance Calculations

Appendix E

Operations and Maintenance Form

Oregon City Christian Church

I. Project Summary

This report has been prepared to outline the existing and proposed on-site stormwater conditions for the Oregon City Christian Church project. The report is based on information provided by topographic survey.

The project is located at 1179 South End Road in Oregon City, Oregon. The site is located on a 373,897 SF lot, of which 86,537 SF is currently impervious. The site contains a church and associated parking and drive aisles.

See Appendix A – Existing Conditions.

The project proposes an additional building and an expansion to the existing parking lot. Existing stormwater management facilities will be expanded to account for the addition of 54,035 SF of impervious areas resulting from this project.

II. Stormwater Management

Stormwater management is designed in accordance with the City of Oregon City's Stormwater and Grading Design Standards, dated July 2019, and the WES BMP sizing tool.

Both Water Quality and Flow Control will be achieved using a detention pond with flow-through capability. During storm events up to and including the water quality event, runoff will be treated by fully infiltrating through 18" of growing medium, then conveyed via pipe to a public stormwater system. Storm events in excess of the water quality event are allowed to bypass the infiltration, but flows to the public system are regulated using a system of orifices to maintain post-developed flows at or below pre-developed flows as required through the WES BMP sizing tool.

See Appendix B – Storm Plan and Details, and Appendix C – WES BMP Sizing Report.

III. Conveyance Calculations

Pipes have been sized to adequately convey runoff generated during the 10-yr storm event.

See Appendix D – Conveyance Calculations.

IV. Downstream Analysis

Flow control implementation of the project results in post-developed flows that are equal to or less than pre-developed flow. Therefore, the development will not negatively affect downstream drainage.

Oregon City Christian Church

V. Operations and Maintenance

See Appendix E – Operations and Maintenance Form.

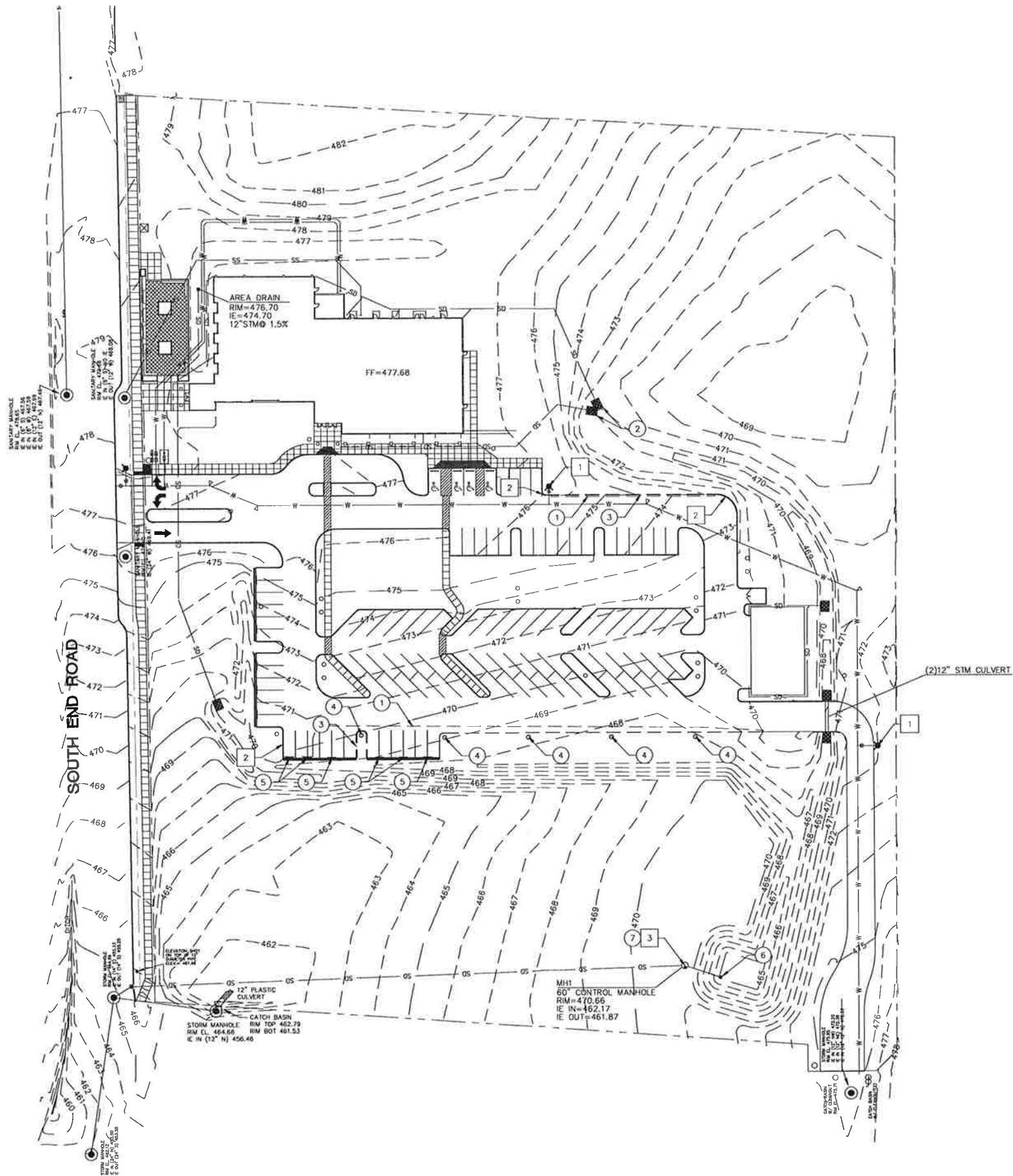
VI. Engineering Conclusion

Based on the requirements of the City of Oregon City's Stormwater and Grading Standards (dated July 2019), the proposed site facilities will be adequately designed to manage the proposed development conditions.

Oregon City Christian Church

Appendix A

Existing Conditions



SHEET NOTES

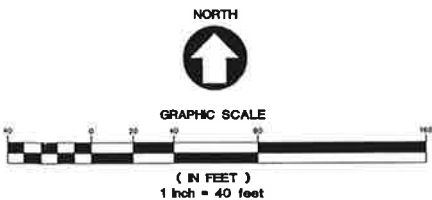
1. SEE SHEET C0.1 FOR GENERAL SHEET NOTES.
2. CONTRACTOR MAY STAGE WITHIN LIMITS OF DEMOLITION.
3. REMOVE ALL SITE COMPONENTS AND RECYCLE COMPONENTS AS REQUIRED IN THE SPECIFICATIONS.
4. ALL TRADE LICENSES AND PERMITS NECESSARY FOR THE PROCUREMENT AND COMPLETION OF THE WORK SHALL BE SECURED BY THE CONTRACTOR PRIOR TO COMMENCING DEMOLITION.
5. THE CONTRACTOR SHALL PRESERVE AND PROTECT FROM DAMAGE ALL EXISTING RIGHT-OF-WAY SURVEY MONUMENTATION DURING DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND PAYING FOR THE REPLACEMENT BY A LICENSED SURVEYOR OF ANY DAMAGED OR REMOVED MONUMENTS.
6. PROTECT ALL ITEMS ON ADJACENT PROPERTIES AND IN THE RIGHT OF WAY INCLUDING BUT NOT LIMITED TO SIGNAL EQUIPMENT, PARKING METERS, SIDEWALKS, STREET TREES, STREET LIGHTS, CURBS, PAVEMENT AND SIGNS. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ANY DAMAGED ITEMS TO ORIGINAL CONDITION.
7. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, AND OTHER FACILITIES IMMEDIATELY ADJACENT TO EXCAVATIONS FROM DAMAGES CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT AND OTHER HAZARDS.
8. SAWCUT STRAIGHT LINES IN SIDEWALK, AS NECESSARY.
9. CONTRACTOR IS RESPONSIBLE TO CONTROL DUST AND MUD DURING THE DEMOLITION PERIOD, AND DURING TRANSPORTATION OF DEMOLITION DEBRIS. ALL STREET SURFACES OUTSIDE THE CONSTRUCTION ZONE MUST BE KEPT CLEAN.
10. PROTECT ALL EXISTING UTILITY STRUCTURES AND UNDERGROUND MAINS TO REMAIN.
11. PROTECT ALL EXISTING VEGETATION TO REMAIN.

PROTECTION NOTES

1. PROTECT HYDRANT
2. PROTECT CURB
3. PROTECT FLOW-CONTROL MANHOLE STRUCTURE, LID, LADDER STEPS, AND INLET/OUTLET PIPES.

DEMOLITION NOTES

1. SAWCUT AND REMOVE ASPHALT
2. REMOVE RIP RAP
3. REMOVE CURB
4. REMOVE LIGHT POLE
5. REMOVE WHEEL STOP
6. REMOVE DITCH INLET AND PORTION OF STORM PIPE
7. REMOVE FLOW CONTROL TEE INSIDE MANHOLE ONCE NEW FLOW CONTROL TEE IS READY TO INSTALL



**ISELIN
ARCHITECTS
P.C.**

1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com



RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH

1179 SOUTH END ROAD
OREGON CITY, OR 97045

PROJ. NO. : 1881
FILE :
DATE : 7/22/19

SHEET #

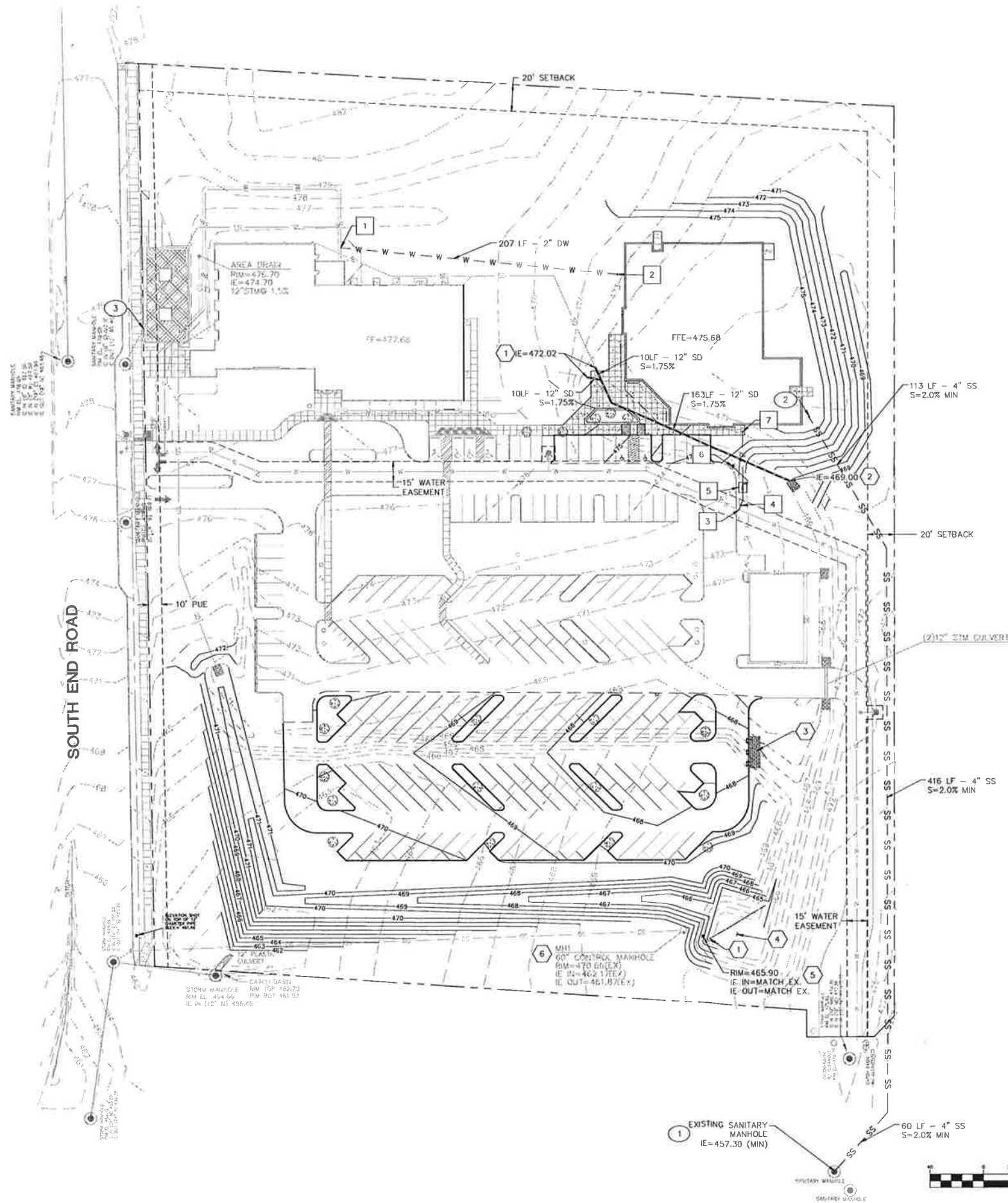
C0.2

EXISTING CONDITIONS
AND DEMOLITION PLAN

Oregon City Christian Church

Appendix B

Storm Plan and Details



- SHEET NOTES**
1. SEE SHEET C0.1 FOR GENERAL SHEET NOTES.
 2. STRUCTURES HORIZONTAL LOCATIONS AND PIPE INVERTS ARE BASED ON THE CENTER OF THE STRUCTURE.
 3. PIPE BEDDING AND BACKFILL UTILITIES SHALL BE DONE PER DETAIL 1/C4.1.
 4. ALL SANITARY PIPING SHALL BE PVC 3034 OR APPROVED EQUAL UNLESS NOTED OTHERWISE.
 5. THIS PLAN IS GENERALLY DIAGRAMMATIC. IT DOES NOT SHOW EVERY JOINT, BEND, FITTING, OR ACCESSORY REQUIRED FOR CONSTRUCTION.
 6. CLEAN OUTS SHALL BE INSTALLED IN CONFORMANCE WITH UPC CHAPTER SEVEN, SECTION 707 AND SECTION 719. THIS PLAN MAY NOT SHOW ALL REQUIRED CLEAN OUTS.
 7. DOMESTIC WATER AND FIRE LINES AND ACCESSORIES BETWEEN THE WATER METER AND THE BUILDING SHALL BE INSTALLED BY A LICENSED PLUMBER EMPLOYED BY A LICENSED PLUMBING CONTRACTOR.
 8. UTILITIES WITHIN FIVE FEET OF A BUILDING SHALL BE CONSTRUCTED OF MATERIALS APPROVED FOR INTERIOR USE AS DESCRIBED IN THE CURRENT EDITION OF THE UPC.
 9. INLETS AND OUTLETS TO ON-SITE MANHOLES SHALL HAVE FLEXIBLE CONNECTION NO CLOSER THAN 12" AND NO FARTHER THAN 36" FROM THE MANHOLE.
 10. CONTRACTOR TO VERIFY SANITARY AND WATER SIZING AND INVERTS WITH APPROVED PLUMBING PLANS PRIOR TO ORDERING MATERIALS OR BEGINNING CONSTRUCTION OF SAID UTILITIES.
 11. INSTALL THRUST BLOCKS ON FIRE AND WATER LINES PER DETAIL 3/C4.2.

- LABEL LEGEND**
- PIPE LABELS**
- UTILITY LENGTH
UTILITY SIZE
UTILITY TYPE
- XXLF - XX" XX
- S=X.XX%
- SLOPE (WHERE APPLICABLE)

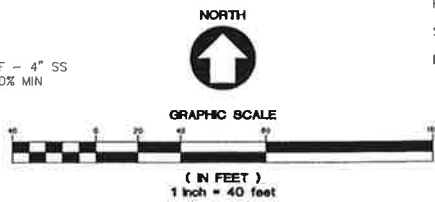
- STORM NOTES**
1. CONNECT TO EXISTING STORM PIPE.
 2. OUTFALL PER DETAIL 2/C4.1.
 3. INSTALL 8"x23" RIP-RAP PAD, USING 1' DEPTH OF ODOT CLASS 50 RIP-RAP.
 4. INSTALL 38"x40" VEGETATED INFILTRATION BASIN PER DETAIL 5/C4.1, AND GRADING ON SHEET C2.0.
 5. INSTALL DITCH INLET OVER EXISTING STORM PIPE PER DETAIL PER DETAIL 4/C4.1.
 6. INSTALL FLOW-CONTROL TEE INSIDE EXISTING MANHOLE PER DETAIL 3/C4.1.

- WATER NOTES**
1. 2X2 TEE TO EXISTING 2" DOMESTIC WATER LINE.
 2. 2" DOMESTIC WATER STUB
 3. 6" TAP TO EXISTING 8" WATER LINE
 4. 6" GATE VALVE
 5. 6" DOUBLE CHECK DETECTOR ASSEMBLY IN CONCRETE VAULT PER DETAIL 2/C4.2
 6. 4" FDC PER DETAIL 1/C4.2
 7. 6" FIRE PROTECTION STUB

- SANITARY NOTES**
1. CORE DRILL SANITARY MANHOLE FOR NEW 4" CONNECTION. CONTRACTOR TO VERIFY NEW INVERT ELEVATION AT SANITARY MANHOLE CAN BE ACCOMMODATED PRIOR TO STARTING CONSTRUCTION OR ORDERING ANY MATERIALS. NOTIFY ENGINEER OF RECORD IF THIS CONNECTION CAN NOT BE ACHIEVED.
 2. 4" SANITARY STUB. IE=469.10
 3. DOUBLE CLEANOUT REQUIRED. CONTRACTOR TO INSTALL AT PROPERTY LINE IF NOT ALREADY CONSTRUCTED.

LEGEND

SANITARY SEWER LINE	SS — SS — SS — SS —
WATER LINE	W — W — W — W —
FIRE LINE	FP — FP — FP — FP —
FDC LINE	FDC — FDC — FDC —
STORM LINE	— — — — —
PERFORATED STORM PIPE	- - - - -



ISELIN ARCHITECTS P.C.

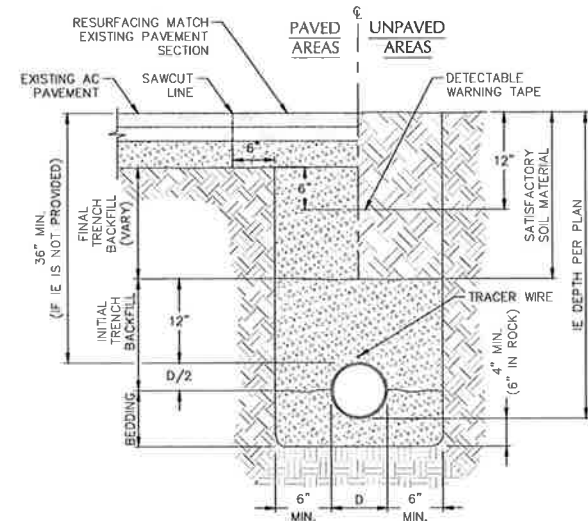
1307 Seventh Street
Oregon City, OR 97045
503-656-1942
www.iselinarchitects.com

REGISTERED PROFESSIONAL ENGINEER
5841
N. HANLEY
EXPIRES: 6/30/2021

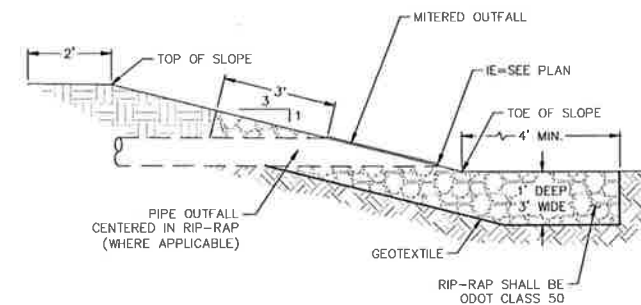
RECREATION BUILDING FOR
OREGON CITY CHRISTIAN CHURCH
1179 SOUTH END ROAD
OREGON CITY, OR 97045

PROJ. NO.: 1881
FILE:
DATE: 7/22/19

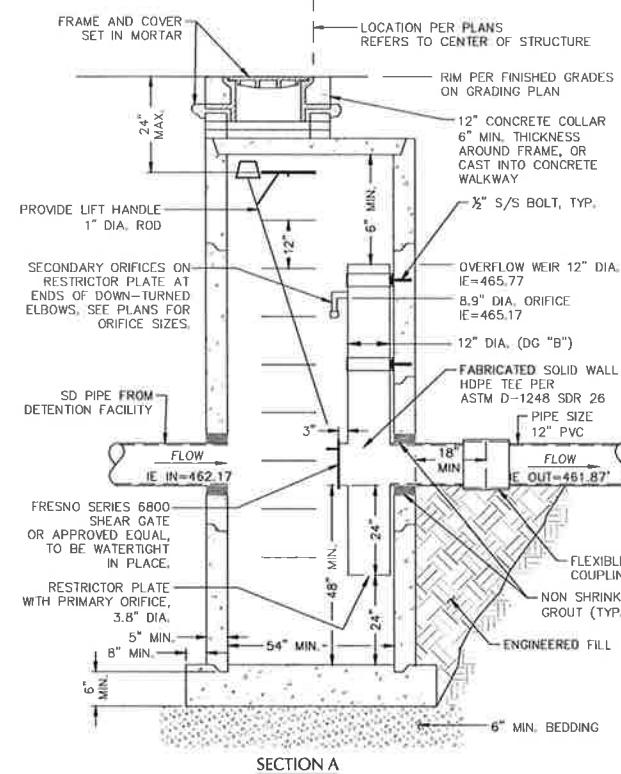
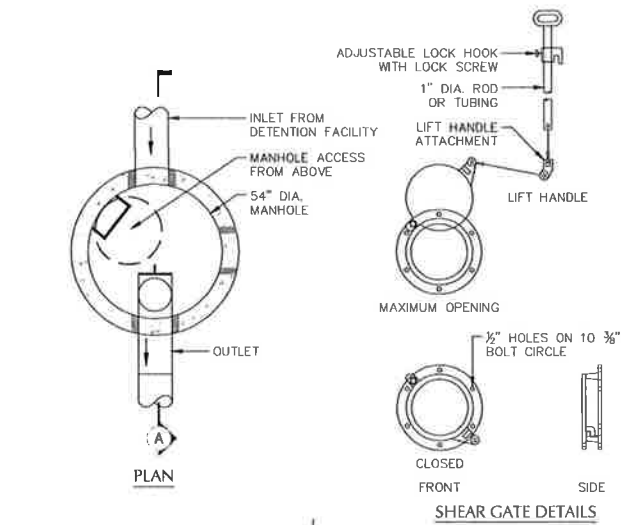
SHEET #
C3.0
UTILITY PLAN



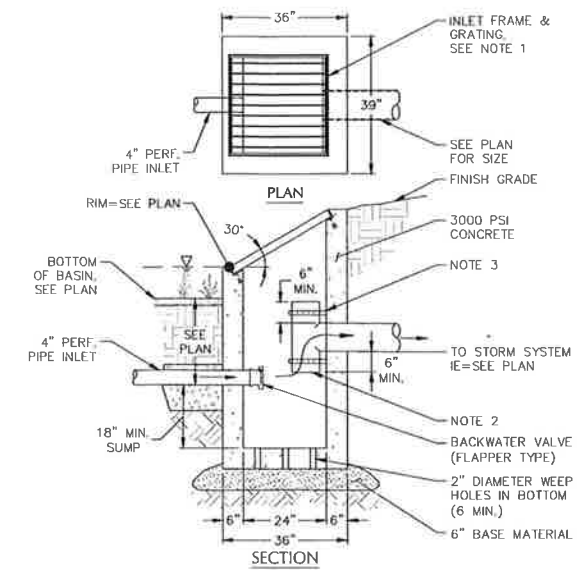
1 TYPICAL PIPE BEDDING AND BACKFILL
SCALE: NTS



2 TYPICAL OUTFALL RIP-RAP PROTECTION
SCALE: NTS

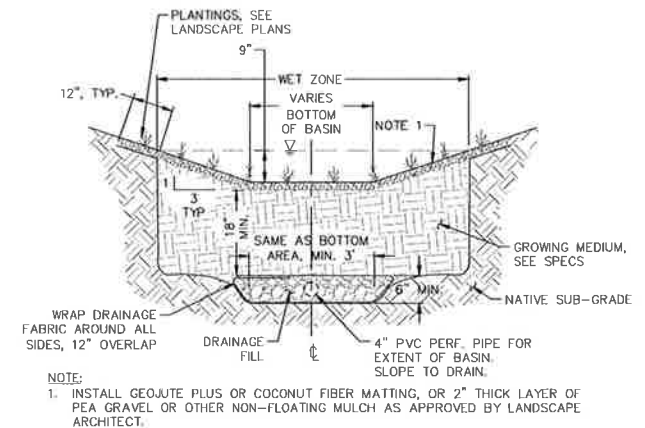


3 FLOW CONTROL MANHOLE
SCALE: NTS PER WSDOT STD PLAN B-10.40-00



- NOTES:
1. GRATING AND FRAME SHALL BE GALVANIZED STEEL MEDIUM DUTY.
2. OUTLET TEE, OPEN ON TOP AND BOTTOM.
3. SECURE OUTLET TEE WITH S/S BAND EMBEDDED 2" IN WALL, (2) SUPPORTS.

4 DITCH/OVERFLOW INLET
SCALE: NTS



5 TYP. VEGETATED INFILTRATION BASIN (VIB)
SCALE: NTS

Oregon City Christian Church

Appendix C

WES BMP Sizing Report

WES BMP Sizing Report

Project Information

Project Name	Oregon City Christian Church
Project Type	Commercial
Location	
Stormwater Management Area	373897
Project Applicant	
Jurisdiction	CCSD1NCSA

Drainage Management Area

Name	Area (sq-ft)	Pre-Project Cover	Post-Project Cover	DMA Soil Type	BMP
DMA-New Impervious	54,035	Grass	Conventional Concrete	C	Detention Pond
DMA-Perv	230,725	Grass	Grass	C	Detention Pond
DMA-Old Impervious	86,537	Impervious	Roofs	C	Detention Pond

LID Facility Sizing Details

Pond Sizing Details

Pond ID	Design Criteria(1)	Facility Soil Type	Max Depth (ft)(2)	Top Area (sq-ft)	Side Slope (1:H)	Facility Vol. (cu-ft)(3)	Water Storage Vol. (cu-ft)(4)	Adequate Size?
Detention Pond	FCWQT	Lined	5.07	2,600.0	3	6,881.2	5,258.9	Yes

1. FCWQT = Flow control and water quality treatment, WQT = Water quality treatment only

2. Depth is measured from the bottom of the facility and includes the three feet of media (drain rock, separation layer and growing media).

3. Maximum volume of the facility. Includes the volume occupied by the media at the bottom of the facility.

4. Maximum water storage volume of the facility. Includes water storage in the three feet of soil media assuming a 40 percent porosity.

Simple Pond Geometry Configuration

Pond ID: Detention Pond

Design: FlowControlAndTreatment

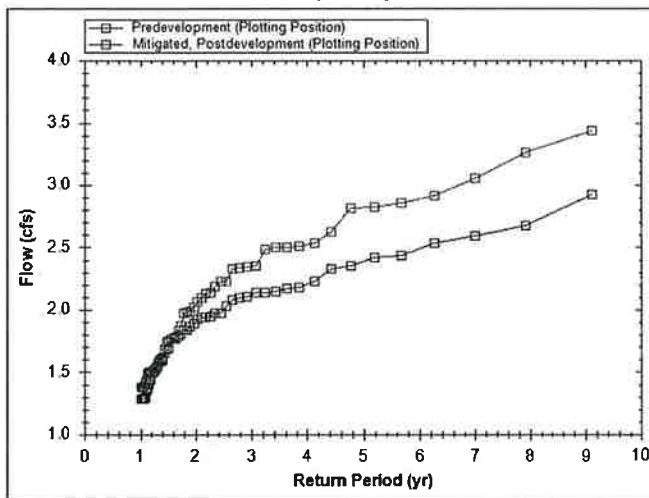
Shape Curve

Depth (ft)	Area (sq ft)
5.1	2,600.0

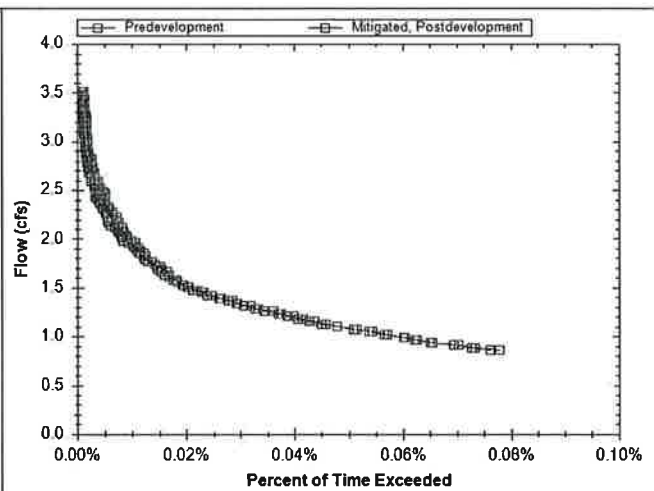
Outlet Structure Details

Lower Orifice Invert (ft)	0.0 461.87
Lower Orifice Dia (in)	3.8
Upper Orifice Invert(ft)	3.3 465.17
Upper Orifice Dia (in)	8.9
Overflow Weir Invert(ft)	3.9 465.77
Overflow Weir Length (ft)	6.3

Flow Frequency Chart



Flow Duration Chart



Oregon City Christian Church

Appendix D

Conveyance Calculations

Project Name: OC Church

Project #: A05144.11

Design Frequency: 25YR

Designed By: NWS

Date: 07.18.08 Sheet: 1 of 2

Checked By: CNH

Date: 07.18.08

Index Area	Pipe	Area (A) acres	Runoff Coeff. (c)	Equiv. Area (cA) acres	Total Drainage Area (cA) acres	Time of Concent. Or Flow Time (t) min	Total Time of Concent. (T) min	Average Rainfall Intensity (I) in/hr	Design Discharge (Q) cfs	IE (in) ft	IE (out) ft	Pipe Length (L) ft	Invert Slope (s) %	Pipe Size (D) in	Capacity Flowing Full (Q) cfs	Velocity Flowing Full (V) fps	Flow Time (t) min
DS1		0.065	0.90	0.059	0.059	5.0	5.0	4.00	0.235	476.19	475.94	28.00	0.9%	6	0.53	2.71	0.2
DS2		0.009	0.90	0.008	0.008	5.0	5.0	4.00	0.033	476.19	475.94	4.00	6.3%	6	1.41	7.16	0.0
	A		0.90		0.067	5.0	5.0	4.00	0.267	475.94	475.83	11.00	1.0%	6	0.56	2.86	0.1
DS3		0.040	0.90	0.012	0.012	5.0	5.0	4.00	0.048	476.19	475.83	18.25	2.0%	6	0.79	4.02	0.1
	B		0.90		0.079	5.0	5.0	4.00	0.315	475.83	475.44	29.30	1.3%	6	0.65	3.30	0.1
DS4		0.040	0.90	0.036	0.036	5.0	5.0	4.00	0.143	476.19	475.44	5.50	13.6%	6	2.08	10.57	0.0
	C		0.90		0.114	5.0	5.0	4.00	0.458	475.44	474.75	53.00	1.3%	6	0.64	3.27	0.3
DS5		0.040	0.90	0.036	0.036	5.0	5.0	4.00	0.143	476.19	474.75	7.80	18.5%	6	2.42	12.30	0.0
	D		0.90		0.150	5.0	5.0	4.00	0.600	474.75	471.10	136.50	2.7%	6	0.92	4.68	0.5
			0.90			5.0	5.0	4.00									
DS6		0.036	0.90	0.033	0.033	5.0	5.0	4.00	0.131	475.88	475.58	39.00	0.8%	6	0.49	2.51	0.3
DS7		0.036	0.90	0.033	0.033	5.0	5.0	4.00	0.131	475.88	475.58	2.75	10.9%	6	1.86	9.46	0.0
	E		0.90		0.066	5.0	5.0	4.00	0.262	475.58	475.34	34.25	0.7%	6	0.47	2.40	0.2
DS8		0.036	0.90	0.033	0.033	5.0	5.0	4.00	0.131	475.88	475.34	2.75	19.6%	6	2.49	12.69	0.0
	F		0.90		0.098	5.0	5.0	4.00	0.393	475.34	471.10	124.20	3.4%	6	1.04	5.29	0.4
			0.90			5.0	5.0	4.00									
			0.90			5.0	5.0	4.00									
			0.90			5.0	5.0	4.00									
			0.90			5.0	5.0	4.00									
			0.90			5.0	5.0	4.00									
			0.90			5.0	5.0	4.00									
			0.90			5.0	5.0	4.00									

2 of 3

Project Name: OC Church
Project #: A05144.11

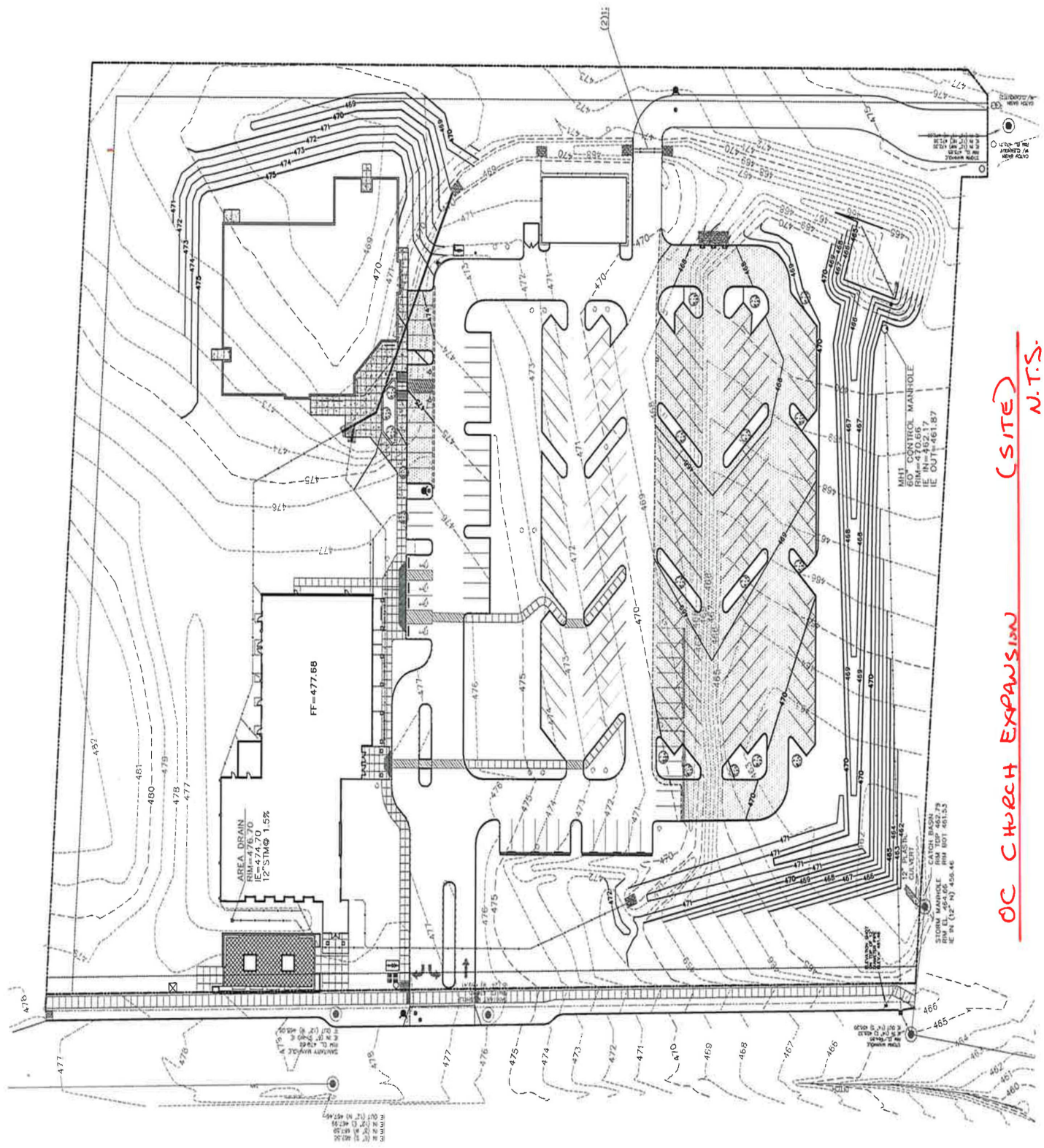
Design Frequency: 25YR

Designed By: NWS
Checked By: CNH

Date: 07.18.08 Sheet: 2 of 2
Date: 07.18.08

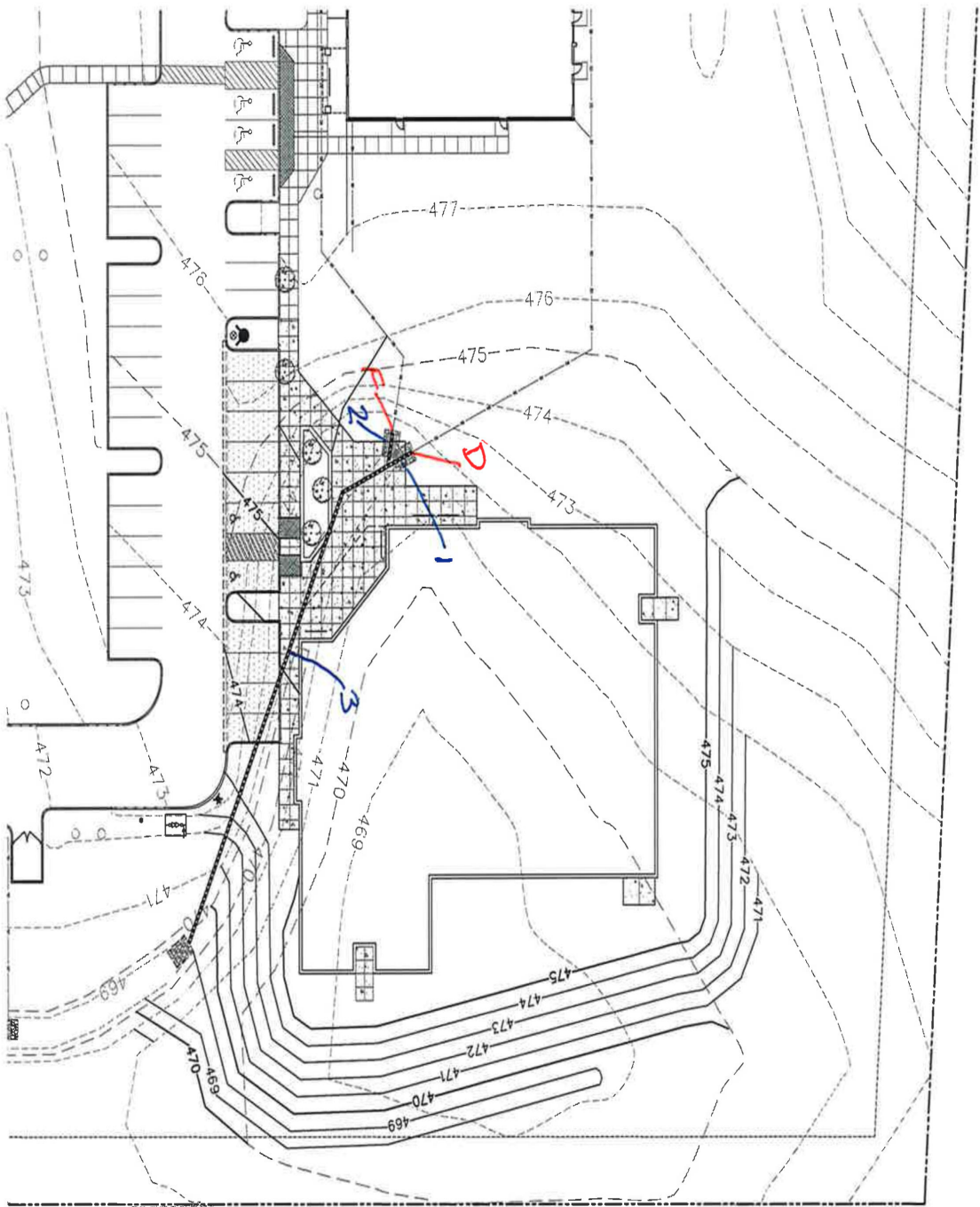
Index Area	Pipe	Area (A) acres	Runoff Coeff. (c)	Equiv. Area (cA) acres	Total Drainage Area (cA) acres	Time of Concent. Or Flow Time (t) min	Total Time of Concent. (T) min	Average Rainfall Intensity (I) in/hr	Design Discharge (Q) cfs	IE (in) ft	IE (out) ft	Pipe Length (L) ft	Invert Slope (s) %	Pipe Size (D) in	Capacity Flowing Full (Q) cfs	Velocity Flowing Full (V) fps	Flow Time (t) min
AD1		0.377	0.74	0.279	0.279	5.0	5.0	4.00	1.117	474.70	473.59	74.25	1.5%	12	4.37	5.56	0.2
			0.90			5.0	5.0	4.00									
DS9		0.030	0.90	0.027	0.027	5.0	5.0	4.00	0.108	475.68	475.05	63.00	1.0%	6	0.56	2.86	0.4
DS10		0.030	0.90	0.027	0.027	5.0	5.0	4.00	0.108	475.68	475.05	6.25	10.1%	6	1.79	9.09	0.0
	G		0.90		0.054	5.0	5.0	4.00	0.216	475.05	473.59	23.75	6.1%	6	1.39	7.10	0.1
	H		0.90		0.333	5.0	5.0	4.00	1.333	473.59	473.04	37.00	1.5%	12	4.35	5.54	0.1
DS11		0.030	0.90	0.027	0.027	5.0	5.0	4.00	0.108	475.68	473.04	35.50	7.4%	6	1.53	7.81	0.1
	I		0.90		0.360	5.0	5.0	4.00	1.441	473.04	471.16	125.50	1.5%	12	4.37	5.56	0.4
			0.90			5.0	5.0	4.00									
DS12		0.030	0.90	0.027	0.027	5.0	5.0	4.00	0.107	469.00	468.54	53.20	0.9%	4	0.18	2.03	0.4
DS13		0.030	0.90	0.027	0.027	5.0	5.0	4.00	0.107	469.00	468.54	119.00	0.4%	4	0.12	1.36	1.5
	J		0.90		0.054	5.0	5.0	4.00	0.215	468.54	467.82	8.75	8.2%	4	0.55	6.27	0.0
	K		0.90			5.0	5.0	4.00	0.650	467.55	467.35	23.00	0.9%	12	3.33	4.24	0.1
	K1		0.90			5.0	5.0	4.00	0.650	467.55	467.35	23.00	0.9%	12	3.33	4.24	0.1
			0.90			5.0	5.0	4.00									
	M		0.90			5.0	5.0	4.00	4.240	461.87	456.94	410.75	1.2%	15	7.09	5.78	1.2
	N		0.90			5.0	5.0	4.00	4.240	456.74	455.81	17.70	5.3%	15	14.84	12.09	0.0
			0.90			5.0	5.0	4.00									
			0.90			5.0	5.0	4.00									
			0.90			5.0	5.0	4.00									
			0.90			5.0	5.0	4.00									

Σ of Σ



OC CHURCH EXPANSION (SITE) N.T.S.

OC Church Expansion (Blue-ups)
1"=50'



[illegible]

Oregon City Christian Church

Appendix E

Operations and Maintenance Form

Vegetated Swales Operations & Maintenance Plan

What to Look For	What to Do
Structural Components , including inlets and outlets/overflows, shall freely convey stormwater.	
Clogged inlets or outlets	-Remove sediment and debris from catch basins, trench drains, curb inlets and pipes to maintain at least 50% conveyance capacity at all times.
Cracked Drain Pipes	-Replace/seal cracks. Replace when repair is insufficient.
Check Dams	-Maintain 4 - 10 inch deep rock check dams at design intervals.
Vegetation	
Dead or strained vegetation	-Replant per original planting plan, or substitute from Appendix A. -Irrigate as needed. Mulch banks annually. DO NOT apply fertilizers, herbicides, or pesticides.
Tall Grass and Vegetation	-Cut back to 4-6 inches, 1-2 times per year. Remove cuttings.
Weeds	-Manually remove weeds. Remove all plant debris.
Growing/Filter Medium , including soil and gravels, shall sustain healthy plant cover and infiltrate within 72 hours.	
Gullies	-Fill, lightly compact, and plant vegetation to disperse flow.
Erosion	-Restore or create outfalls, check dams, or splash blocks where necessary.
Slope Slippage	-Stabilize slope.
Ponding	-Rake, till, or amend to restore infiltration rate.

Annual Maintenance Schedule:

Summer. Make any structural repairs. Improve filter medium as needed. Clear drain. Irrigate as needed.

Fall. Replant exposed soil and replace dead plants. Remove sediment and plant debris.

Winter. Monitor infiltration/flow-through rates. Clear inlets and outlets/overflows to maintain conveyance.

Spring. Remove sediment and plant debris. Replant exposed soil and replace dead plants. Mulch.

All seasons. Weed as necessary. Clean scuppers or curb cuts as needed.

Maintenance Records: Record date, description, and contractor (if applicable) for all structural repairs, landscape maintenance, and facility cleanout activities. Keep work orders and invoices on file and make available upon request of the inspector.

Access: Maintain ingress/egress to design standards.

Infiltration/Flow Control: All facilities shall drain within 72 hours. Record time/date, weather, and site conditions when ponding occurs.

Pollution Prevention: All sites shall implement best management practices to prevent hazardous or solid wastes or excessive oil and sediment from contaminating stormwater. Contact emergency response agencies for immediate assistance responding to spills. Record time/date, weather, and site conditions if site activities contaminate stormwater.

Vectors (Mosquitoes & Rodents): Stormwater facilities shall not harbor mosquito larvae or rats that pose a threat to public health or that undermine the facility structure. Monitor standing water for small wiggling sticks perpendicular to the water's surface. Note holes/burrows in and around facilities. Call Clackamas County Vector Control for immediate assistance to eradicate vectors. Record time/date, weather, and site conditions when vector activity observed.

Vegetated Swale - O&M Plan
Figure C-9



**OREGON CITY
STORMWATER AND
GRADING
DESIGN STANDARDS**

Detention Pond Operations & Maintenance Plan

Detention Ponds remove pollutants through several processes: sedimentation, filtration, and biological processes. The facility owner must keep a log, recording all inspection dates, observations, and maintenance activities. The following items shall be inspected and maintained as stated:

What to Look For	What to Do
Structural Components, including inlets and outlets/overflows, shall freely convey stormwater.	
Clogged inlets or outlets	-Remove sediment and debris from catch basins, trench drains, curb inlets and pipes to maintain at least 50% conveyance capacity at all times.
Cracked Drain Pipes	-Repair/seal cracks. Replace when repair is insufficient.
Clogged Control Structures	-Remove accumulated sediment and debris.
Vegetation shall cover 90% of the facility.	
Dead or strained vegetation	-Replant per original planting plan, or substitute from Appendix A. -Irrigate as needed. Mulch banks annually. DO NOT apply fertilizers, herbicides, or pesticides.
Tall Grass and Vegetation	-Cut back grass and prune overgrowth 1-2 times per year. Remove cuttings.
Weeds	-Manually remove weeds. Remove all plant debris.
Growing/Filter Medium, including soil and gravels, shall sustain healthy plant cover and infiltrate within 72 hours.	
Gullies	-Fill, lightly compact, and plant vegetation to disperse flow.
Erosion	-Replace splash blocks or inlet gravel/rock.
Slope Slippage	-Stabilize 3:1 Slopes/banks with plantings from Appendix A.
Ponding	-Rake, till, or amend to restore infiltration rate.

Annual Maintenance Schedule:

All facility components, vegetation, and source controls shall be inspected for proper operations and structural stability. These inspections shall occur, at a minimum, quarterly for the first 2 years from the date of installation, and 2 times per year thereafter, and within 48 hours after each major storm event.

Access: Maintain ingress/egress to design standards.

Infiltration/Flow Control: All facilities shall drain within 72 hours. Record time/date, weather, and site conditions when ponding occurs.

Pollution Prevention: All sites shall implement best management practices to prevent hazardous or solid wastes or excessive oil and sediment from contaminating stormwater. Contact emergency response agencies for immediate assistance responding to spills. Record time/date, weather, and site conditions if site activities contaminate stormwater.

Vectors (Mosquitoes & Rodents): Stormwater facilities shall not harbor mosquito larvae or rats that pose a threat to public health or that undermine the facility structure. Monitor standing water for small wiggling sticks perpendicular to the water's surface. Note holes/burrows in and around facilities. Call Clackamas County Vector Control for immediate assistance to eradicate vectors. Record time/date, weather, and site conditions when vector activity observed.



MEMORANDUM

Date:	September 20, 2018	Project #: 22856.0
To:	Pete Walter, City of Oregon City John Replinger, PE, Replinger & Associates, LLC	
From:	Matt Bell, Russ Doubleday, and Chris Brehmer, PE	
Project:	Oregon City Christian Church Master Plan	
Subject:	Traffic Impact Study	

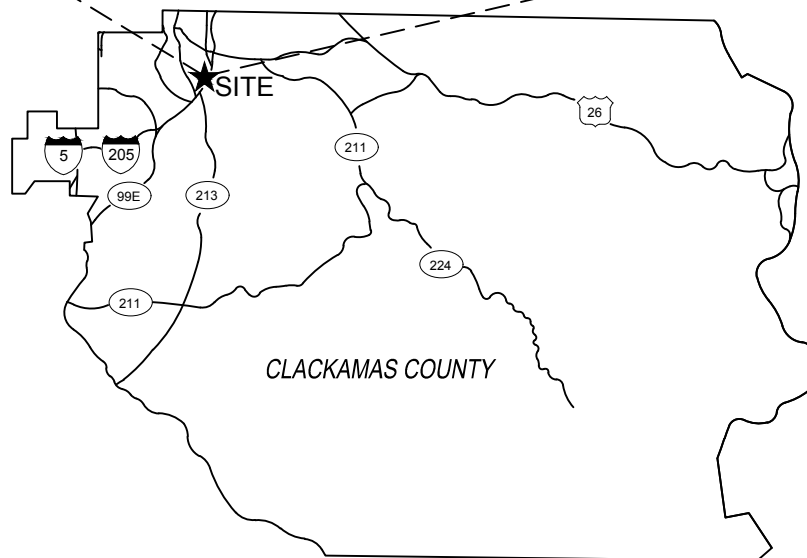
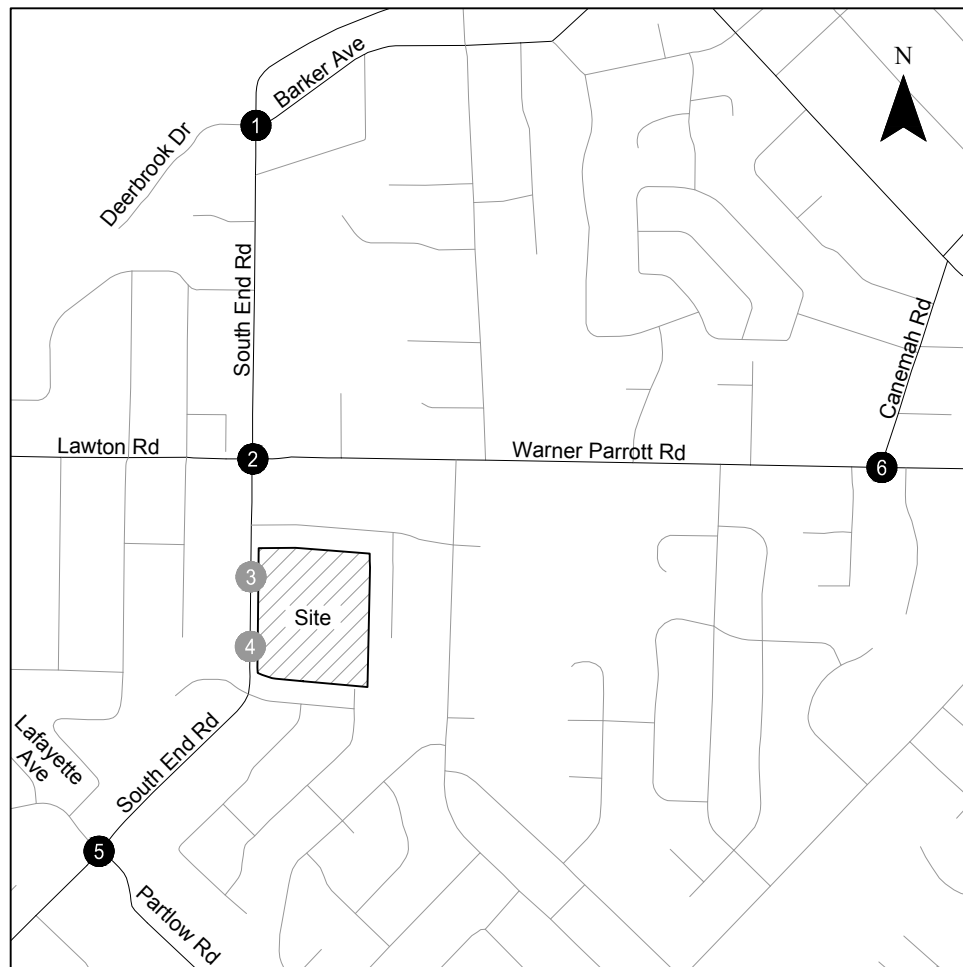
The Oregon City Christian Church recently developed a Master Plan that identifies the vision and long-term goals for future development of the church campus located along the east side of South End Road in Oregon City. Figure 1 illustrates the site vicinity map. The Master Plan includes phased construction of a new recreation center, a new student ministry center, a new administrative building, and renovation of the existing worship center and a new worship center and café. The Master Plan also includes expansion of the existing parking facilities and a new driveway along the southern boundary of the site. Figure 2 illustrates the conceptual master plan. Construction of the new facilities is expected to occur in four phases over a 10-year period as follows:

- Phase 1 is expected to occur in 2020 and include a new 8,168 square-foot (sf) recreation center, new parking facilities, and a new driveway along the southern boundary of the site;
- Phase 2 is expected to occur in 2022 and include a new 3,602 sf student ministry center;
- Phase 3 is expected to occur in 2025 and include a new 4,077 sf administrative building; and
- Phase 4 is expected to occur in 2030 and include renovation of the existing worship center and construction of the new worship center and café.
 - The size of the new worship center and café has not been determined; however, the church is planning to accommodate up to 600 parishioners.

The results of this study indicate that the Oregon City Christian Church Master Plan can be developed while maintaining acceptable traffic operations and safety at the study intersections, assuming provision of the following recommended mitigation measures:

- Subject to City direction, the Phase 3 and Phase 4 site development should pay a proportionate share contribution toward future installation of a traffic signal at the South End Road/Warner Parrott Road intersection prior to completion of the two respective development phases. Alternatively, the need for the South End Road/Warner Parrott Road intersection improvements associated with Phase 3 and Phase 4 site development could be re-evaluated prior to the two respective development phases.
- Adequate intersection sight distance should be provided at the site driveways on South End Road in accordance with City of Oregon City standards.

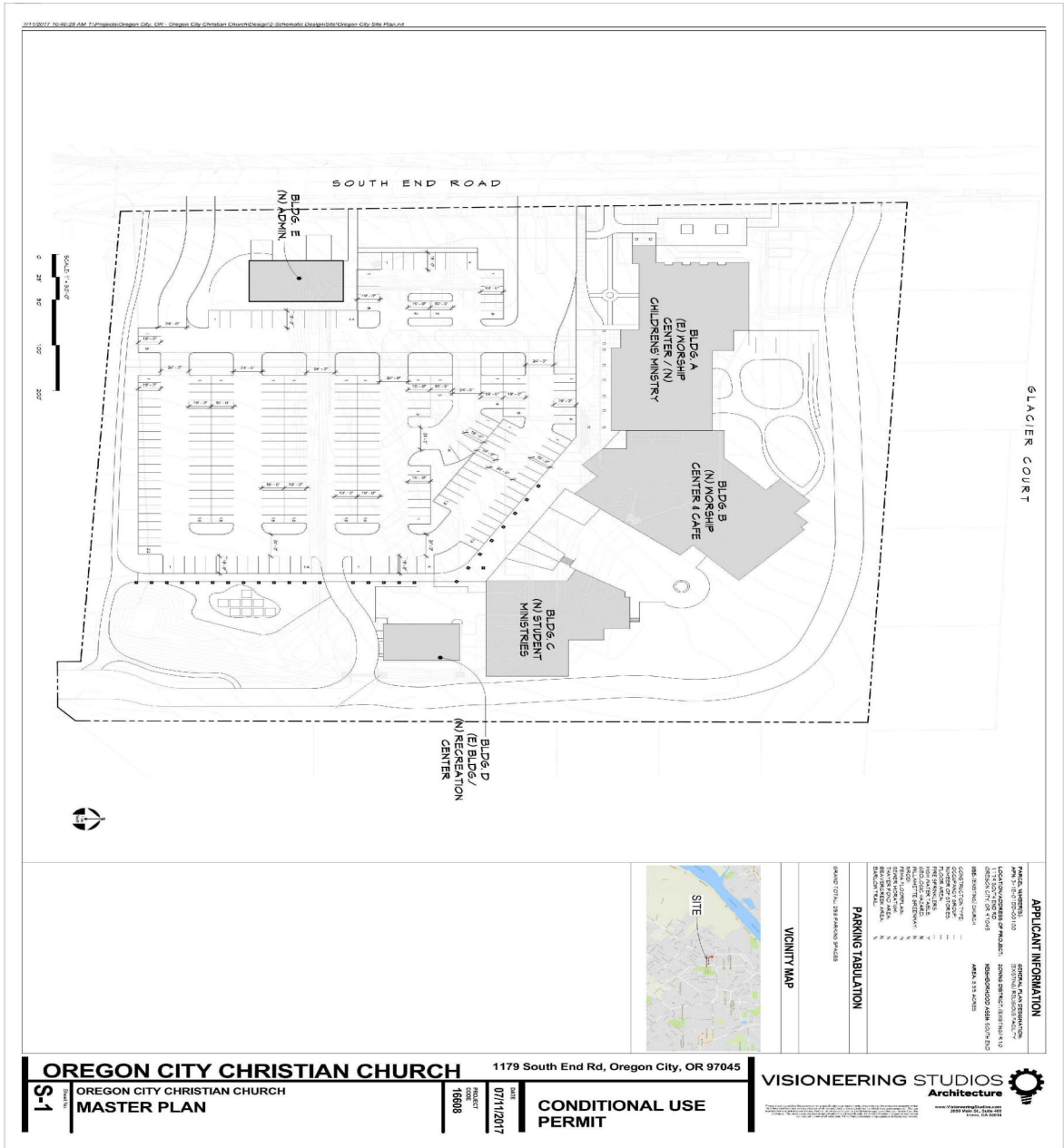
Additional details of the study methodology, findings, and recommendations are provided below.



- - Study Intersection
- - Site Driveway

**Site Vicinity Map
Oregon City, OR**

**Figure
1**



SCOPE OF THE REPORT

This analysis determines the transportation-related impacts associated with the Oregon City Christian Church Master Plan and was prepared in accordance with the City of Oregon City's Guidelines for Transportation Impact Analyses (TIA Guidelines – Reference 1). The study intersections and scope of this project were selected based on the TIA guidelines and direction provide by City staff. *Appendix "A" contains the scoping memo prepared for this study.* The operational analyses were performed at the following intersections:

1. South End Road/Barker Avenue
2. South End Road/Warner Parrott Road
3. South End Road/Existing Church Driveway (Dwy 1)
4. South End Road/Future Church Driveway (Dwy 2)
5. South End Road/Partlow Road
6. Canemah Road/Warner Parrott Road

This report evaluates these transportation issues:

- Year 2018 existing land-use and transportation-system conditions within the site vicinity during the weekday PM and Sunday mid-day peak periods;
- Planned developments and transportation improvements in the study area;
- Trip generation and distribution estimates for each phase of the Master Plan;
- Year 2020 background traffic conditions (without the Master Plan) during the weekday PM and Sunday mid-day peak periods;
- Year 2020 total traffic conditions (with full build-out and occupancy of Phase 1 of the Master Plan) during the weekday PM and Sunday mid-day peak periods;
- Year 2022 background traffic conditions (with Phase 1 of the Master Plan) during the weekday PM and Sunday mid-day peak periods;
- Year 2022 total traffic conditions (with full build-out and occupancy of Phases 1-2 of the Master Plan) during the weekday PM and Sunday mid-day peak periods;
- Year 2025 background traffic conditions (with Phases 1-2 of the Master Plan) during the weekday PM and Sunday mid-day peak periods;
- Year 2025 total traffic conditions (with full build-out and occupancy of Phases 1-3 of the Master Plan) during the weekday PM and Sunday mid-day peak periods;
- Year 2030 background traffic conditions (with Phases 1-3 of the Master Plan) during the weekday PM and Sunday mid-day peak periods;
- Year 2030 total traffic conditions (with full build-out and occupancy of Phases 1-4 of the Master Plan) during the weekday PM and Sunday mid-day peak periods;
- On-site traffic operations and circulation.

EXISTING CONDITIONS

The existing conditions analysis identifies the site conditions and current physical and operational characteristics of the roadways within the study area. These conditions will be compared with future conditions later in this report. Kittelson & Associates, Inc. (Kittelson) staff visited and inventoried the Oregon City Christian Church campus and study intersections in August 2018. At that time, Kittelson collected information regarding site conditions, adjacent land uses, existing traffic operations, and transportation facilities in the study area.

Site Conditions and Adjacent Land Uses

The Oregon City Christian Church campus currently has a worship center that houses all administrative and other accessory uses to the church. The campus includes a 96-stall parking lot and a maintenance/storage shed. Access to the campus is provided by a single driveway located along the east side of South End Road. A gated emergency access is provided in the southeast corner of the campus that connects to Paulsen Drive¹.

The campus property is currently zoned R-10 (single-family residential), which allows religious institutions as a conditional use. Properties to the north, east, and west are also zoned R-10, while properties to the south are zoned R-8. The majority of adjacent properties have residential land uses consistent with the underlying zoning. The Oregon City United Methodist Church and Clackamas Fire Station 17 are located to the south along the west side of South End Road.

Transportation Facilities

Table 1 summarizes the existing transportation facilities and roadways in the study area.

Table 1: Existing Transportation Facilities and Roadways in the Study Area

Roadway	Functional Classification ¹	Number of Lanes	Posted Speed (mph)	Sidewalks	Bicycle Lanes	On-Street Parking
South End Road	Minor Arterial	2	35	Yes	Yes	Yes
Barker Avenue	Collector	2	25	No	No	No
Warner Parrott Road	Minor Arterial	2	30	Yes	Yes	Yes
S Partlow Road	Collector	2	25	Yes	Yes	No
Canemah Road	Collector	2	25	No	No	No

1. Per the Oregon City Transportation System Plan (TSP – Reference 2).

¹ Prior conditional use approval related to the gated access allows for use associated with church activities but is subject to a monitoring condition. In the event the church proposes to use the emergency access before and after worship services in the future, the church should coordinate with City staff to confirm the nature and extent of monitoring necessary to evaluate potential impacts to the adjacent neighborhood as well as other pertinent requirements, if any.

Roadway Facilities

South End Road borders the church campus to the west and connects the campus to several major roadways, including Warner Parrott Road, Barker Avenue, and OR 99E via S 2nd Avenue to the north and Partlow Road and OR 99E to the south. Warner Parrott Road also connects the campus to several major roadways, including Canemah Road, Linn Avenue, Leland Road, and Warner Milne Road to the east. Figure 3 illustrates the existing lane configurations and traffic control devices at the study intersections.

Pedestrian and Bicycle Facilities

Sidewalks and on-street bike lanes are currently provided along both sides of South End Road, Warner Parrott Road, and Partlow Road; however, there are several gaps in the sidewalk and bike lane networks. Continuous sidewalks with planted landscape buffers are provided along South End Road adjacent to the campus. The sidewalks appear to be in good shape and of appropriate width per Oregon City standards.

Transit Facilities

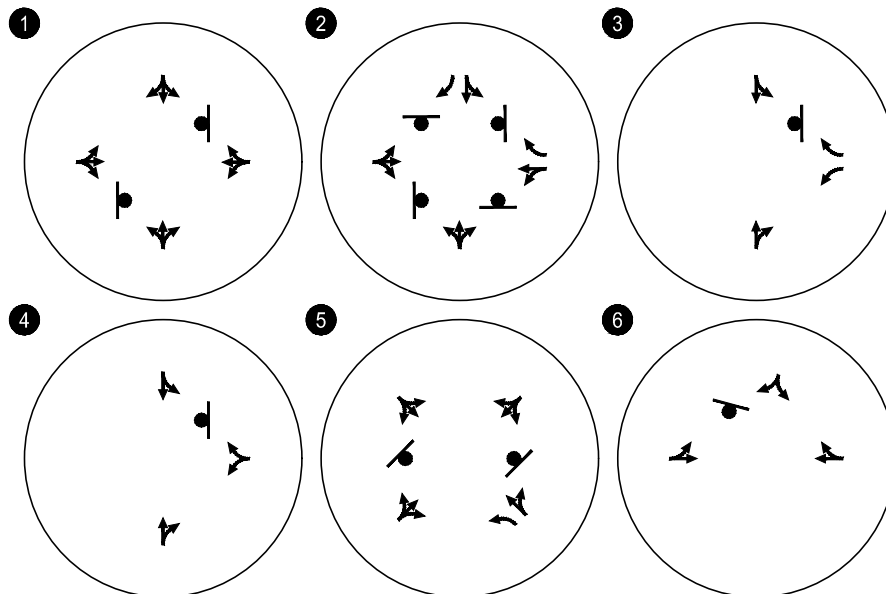
Local transit service is not provided in the study area. The closest transit service is provided to the east along Linn Avenue and Warner Milne Road. TriMet Bus Line 33 provides frequent service between Clackamas Town Center and Clackamas Community College Monday through Friday from 5:00 AM to 2:00 AM and from 6:00 AM to 2:00 AM Saturdays and Sundays. TriMet's Southeast Service Enhancement Plan identifies the area surrounding the campus as a Community/Jobs Connector Service Area and plans to provide future shuttle service to the area (TriMet – Reference 3).

Traffic Volumes and Peak Hour Operations

Turning movement counts were conducted at the study intersections in August 2018. The counts were conducted at the South End Road/Warner Parrott Road intersection and the site driveway on a typical mid-week day during the evening (4:00 to 6:00 PM) peak time period and at all study intersections on a typical Sunday morning (8:00 AM to 12:00 PM). The system-wide weekday PM and Sunday peak hours were found to occur from 5:00 to 6:00 PM and 10:15 to 11:15 AM, respectively. Figure 4 summarizes the year 2018 existing turning-movement counts at the study intersection for the weekday PM and Sunday peak hours. *Appendix "B" contains the traffic count worksheets used in this study.*

Current Levels of Service

All level-of-service analyses described in this report were performed in accordance with the procedures stated in the *Highway Capacity Manual* (HCM – Reference 4). *A description of level of service and the criteria by which they are determined is presented in Appendix "C".* Appendix "C" also indicates how level of service is measured and what is generally considered an acceptable range.



-  - STOP SIGN
-  - TRAFFIC SIGNAL

**Existing Lane Configurations &
Traffic Control Devices
Oregon City, OR**

**Figure
3**



Figure
4

Per the TIA Guidelines, Oregon City requires all signalized intersections located outside the Regional Center to operate at Level of Service (LOS) "D" or better for the intersection as a whole and no approach operating at worse than LOS "E" and a v/c ratio higher than 1.0 for the sum of critical movements. Oregon City requires all unsignalized intersection to operate at LOS "E" or better for the poorest operating approach and with no movement serving more than 20 peak hour vehicles operating worse than LOS "E". Therefore, LOS "F" is tolerated for minor movements during the peak hour.

All intersection level-of-service analyses used the peak 15-minute flow rates that occur during the weekday PM and Sunday mid-day peak hours. Using the peak 15-minute flow rates ensures that this analysis is based on a reasonable worst-case scenario. For this reason, the analysis reflects conditions that are only likely to occur for 15 minutes out of each average peak hour.

Figure 4 summarizes the year 2018 existing traffic conditions at the study intersections during the weekday PM and Sunday peak hours. As shown, all of the study intersections currently operate acceptably per their applicable mobility standards. *Appendix "D" includes the year 2018 existing traffic conditions worksheets.*

Traffic Safety

The crash history of the study intersections was reviewed in an effort to identify potential safety issues in the study area. The Oregon Department of Transportation (ODOT) provided the five most recent years of crash data available for the study intersections, which includes the period from January 1, 2012, through December 31, 2016. Table 2 summarizes the crash data over the five-year period.

Table 2: Intersection Crash History (January 1, 2012 through December 31, 2016)

Intersection	Crash Type					Crash Severity			Total	Crash Rates (Crashes /MEV)	ODOT 90 th Percentile Rate
	Rear-End	Turn	Angle	Ped/ Bike	Other	PDO ¹	Injury	Fatality			
South End Road/ Barker Avenue	-	-	-	-	-	0	0	-	0	0.00	0.408
South End Road/ Warner Parrott Road	2	2	4	-	-	6	2	-	8	0.376	0.408
South End Road/ S Partlow Road	1	2	-	-	-	2	1	-	3	0.258	0.408
Canemah Road/ Warner Parrott Road	3	1	-	-	-	1	3	-	4	0.345	0.293

Source: ODOT
MEV=Million Entering Vehicles

The crash rates shown in Table 2 were compared to the 90th percentile rates for similar facilities shown in Table 4-1 of the ODOT Analysis Procedures Manual (APM). Per the APM, any intersection that has a crash rate equal to or greater than the corresponding 90th percentile rate is considered a high-risk intersection and is recommended for further review. Based on these criteria, no intersection is recommended for further crash pattern review. *Appendix "E" contains the crash data provided by ODOT.*

TRANSPORTATION IMPACT ANALYSIS

The transportation impact analysis identifies how the study area's transportation system will operate in the year each phase of the Master Plan is expected to be fully built. The impact of traffic generated by each phase of the Master Plan was examined as follows:

- Planned developments and transportation improvements in the site vicinity were identified.
- Background traffic conditions (with and without the Master Plan) were analyzed at the study intersections during the weekday PM and Sunday peak hours.
 - Background conditions were developed by applying a 1.9-percent annual growth rate to the existing traffic volumes to account for regional growth in the site vicinity.
- Site-generated trips were estimated for build-out of each phase of the Master Plan.
- Site trip-distribution patterns were identified and used to assign the site-generated trips to the study intersections.
- Total traffic conditions (with full build-out and occupancy of the Master Plan) were analyzed at the study intersections and site-access driveways during the weekday PM and Sunday peak hours.
- On-site circulation issues and site-access operations were evaluated.

YEAR 2020 BACKGROUND TRAFFIC CONDITIONS

The year 2020 background traffic conditions analysis identifies how the study area's transportation system will operate in the year Phase 1 of the Master Plan is expected to be fully built, 2020. This analysis includes traffic attributed to planned developments within the study area and to general growth in the region but does not include traffic from Phase 1 of the Master Plan.

Planned Developments and Transportation Improvements

Kittelson identified and reviewed the planned developments and transportation improvements within the study area. Based on discussions with City staff, there are no approved developments within the study area that impact the study intersections; however, there are two transportation projects identified in the TSP that could. Both projects are identified on the "likely to be funded" project list as medium-term priority. Projects identified as medium-term priority are recommended for implementation within 5 to 10 years of adoption of the TSP (2013). The projects include:

- Project D32: South End Road/Warner Parrott Road Operational Enhancement – Install a traffic signal with dedicated left-turn lanes for the South End Road approaches to Warner Parrott Road.
- Project D33: South End Road/Lafayette Avenue-Partlow Road Operational Enhancement – Install a single-lane roundabout.

Traffic Volumes

The growth rate used in this analysis was determined based on a review of historic traffic volumes provided in the TSP and direction provided by City staff. The TSP shows an increase of approximately 1.90 percent per year at several intersections within the south part of the City. Therefore, the year 2020 background traffic volumes were developed by applying a 3.8 percent growth rate (1.90 percent per year for two years) to the existing traffic volumes shown in Figure 4. Figure 5 illustrates the resulting forecast year 2020 background traffic volumes at the study intersection during the weekday PM and Sunday peak hours.

Level-of-Service Analysis

Figure 5 summarizes the year 2020 background traffic conditions at the study intersections during the weekday PM and Sunday peak hours. As shown, all of the study intersections are forecast to operate acceptably per their applicable mobility standards. *Appendix "F" includes the year 2020 background traffic conditions worksheets.*

PHASE 1 DEVELOPMENT PLAN

Phase 1 of the Master Plan includes construction of a new 8,168 sf recreation center, new parking facilities, and a new driveway along the southern boundary of the site. The new parking facilities will increase the parking supply from 96 stalls to 258 total stalls; the additional stalls will accommodate full build-out of the Mater Plan. The new driveway will connect with South End Road approximately 400-feet south of the existing driveway. Full build-out and occupancy of Phase 1 is expected to occur in 2020.

Trip Generation

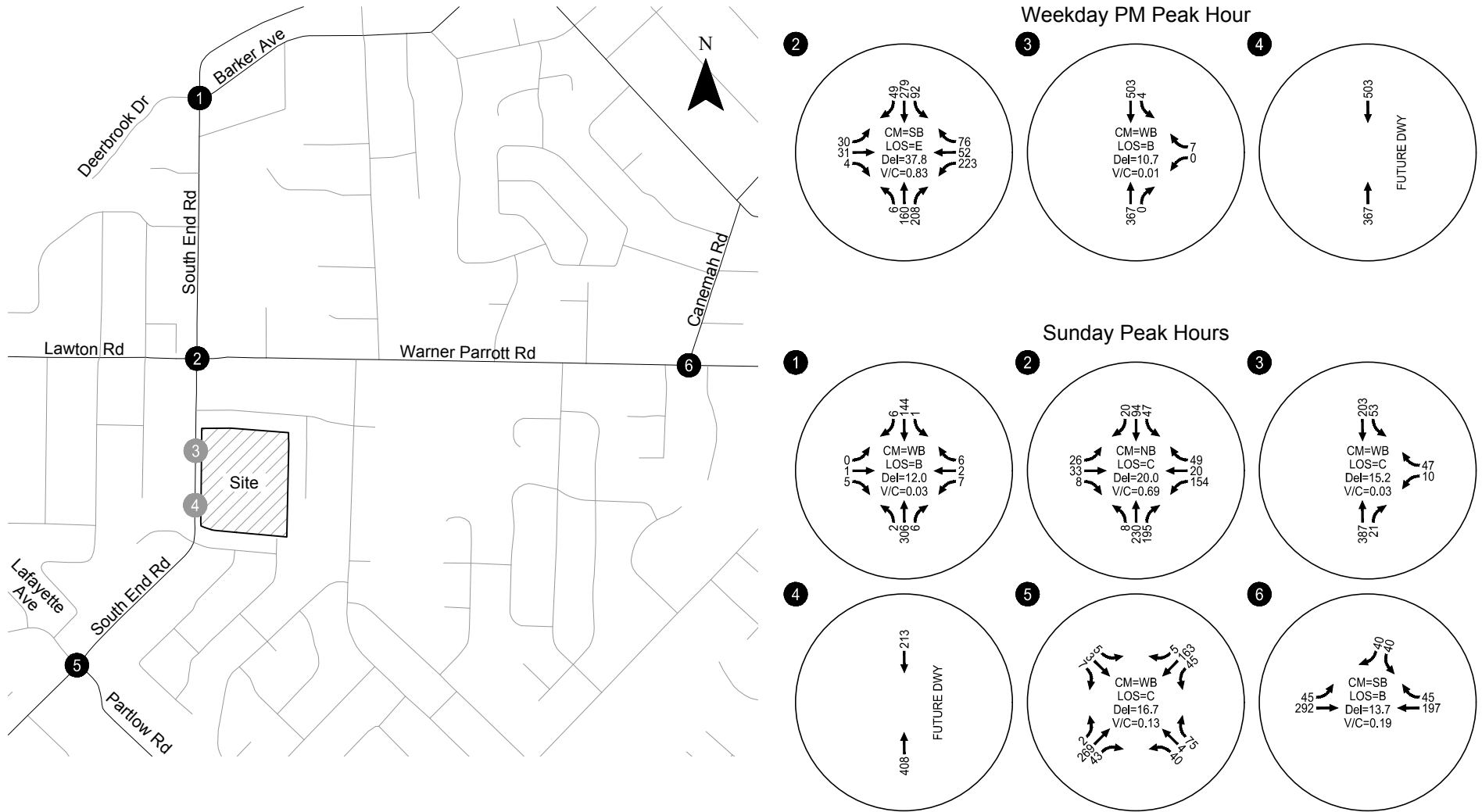
Trip generation estimates were prepared for Phase 1 of the Master Plan based on a trip generation study conducted at the church in July 2018. *Appendix "A" contains additional information related to the trip generation study.* Table 3 summarizes the daily, weekday PM, Sunday, and Sunday peak hour trips associated with Phase 1 of the Master Plan.

Table 3: Phase 1 Trip Generation

Phase	Size	Daily Trips (Weekday)	Weekday PM Peak Hour of Adjacent Street			Daily Trips (Sunday)	Sunday Peak Hour of Generator		
			Total	In	Out		Total	In	Out
1	8,168 sf	64	6	3	3	222	72	32	40

Site Trip Distribution/Trip Assignment

A trip distribution pattern was developed for the Master Plan based on existing traffic patterns and the location of major trip origins and destinations in the Oregon City area. Figure 6 illustrates the estimated trip distribution pattern.



**Year 2020 Background Traffic Conditions
Weekday PM and Sunday Peak Hours
Oregon City, OR**

**Figure
5**



Figure
6

The site-generated trips shown in Table 3 were distributed to the study area roadways according to the trip distribution pattern shown in Figure 6. Figure 6 also illustrates the assignment of site-generated trips at the study intersections during the weekday PM and Sunday peak hours.

YEAR 2020 TOTAL TRAFFIC CONDITIONS

The total traffic conditions analysis forecasts how the study area's transportation system will operate with traffic generated by Phase 1 of the Master Plan. The year 2020 background traffic volumes shown in Figure 5 were added to the site-generated trips shown in Figure 6 to arrive at the total traffic volumes shown in Figure 7.

Intersection Level of Service

Figure 7 summarizes the year 2020 Phase 1 total traffic conditions analysis results at the study intersections during the weekday PM and Sunday peak hours. As shown, all of the study intersections and site driveways are forecast to operate acceptably per their applicable mobility standards. *Appendix "G" includes the year 2020 total traffic conditions worksheets.*

YEAR 2022 BACKGROUND TRAFFIC CONDITIONS

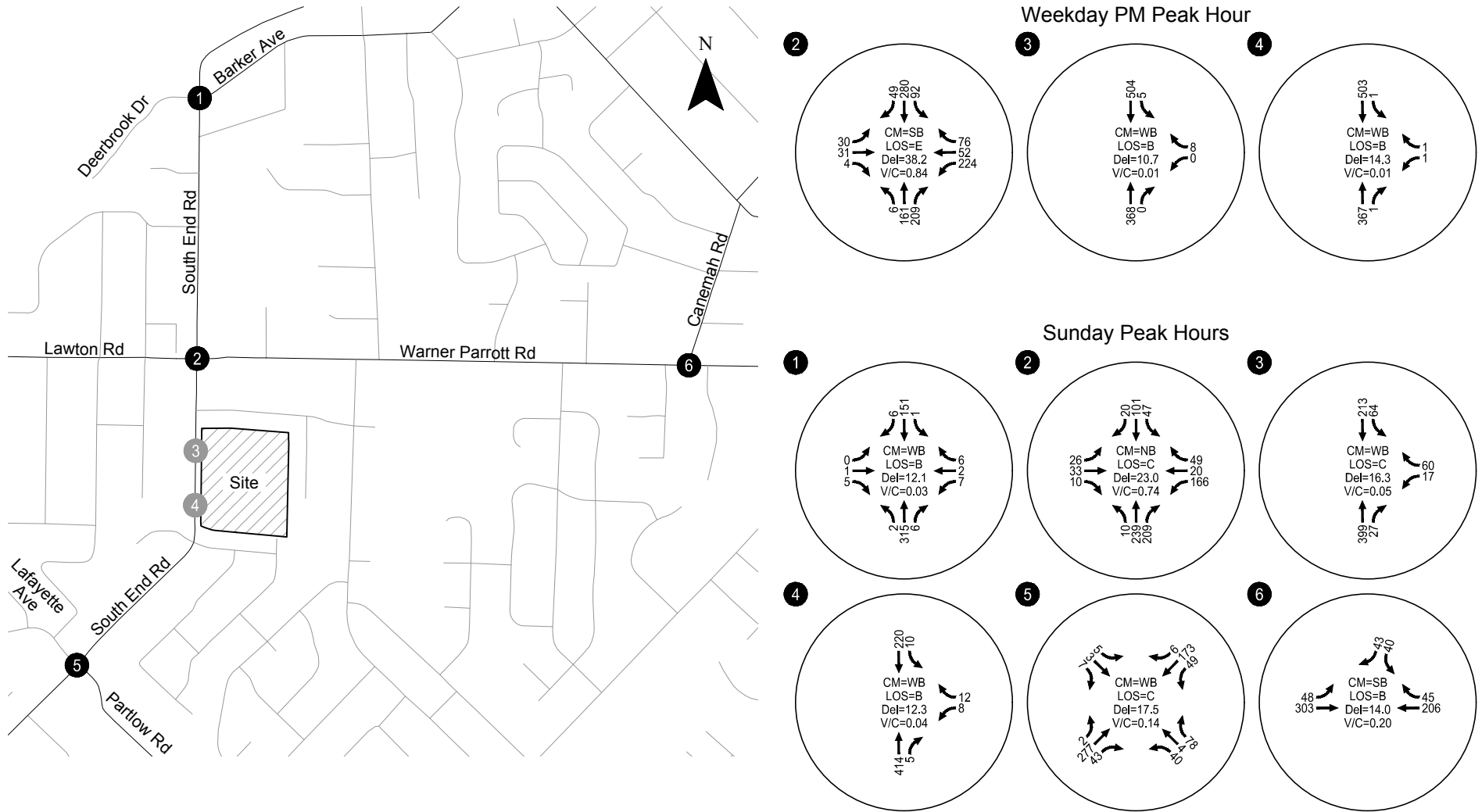
The year 2022 background traffic conditions analysis identifies how the study area's transportation system will operate in the year Phase 2 of the Master Plan is expected to be fully built, 2022. This analysis includes traffic attributed to Phase 1 of the Master Plan and to general growth in the region but does not include traffic from Phase 2 of the Master Plan.

Traffic Volumes

The year 2022 background traffic volumes were developed by applying a 7.6 percent growth rate (1.90 percent per year for four years) to the existing traffic volumes shown in Figure 4 and by adding the Phase 1 site-generated trips shown in Figure 6. Figure 8 illustrates the resulting forecast year 2022 background traffic volumes at the study intersection during the weekday PM and Sunday peak hours.

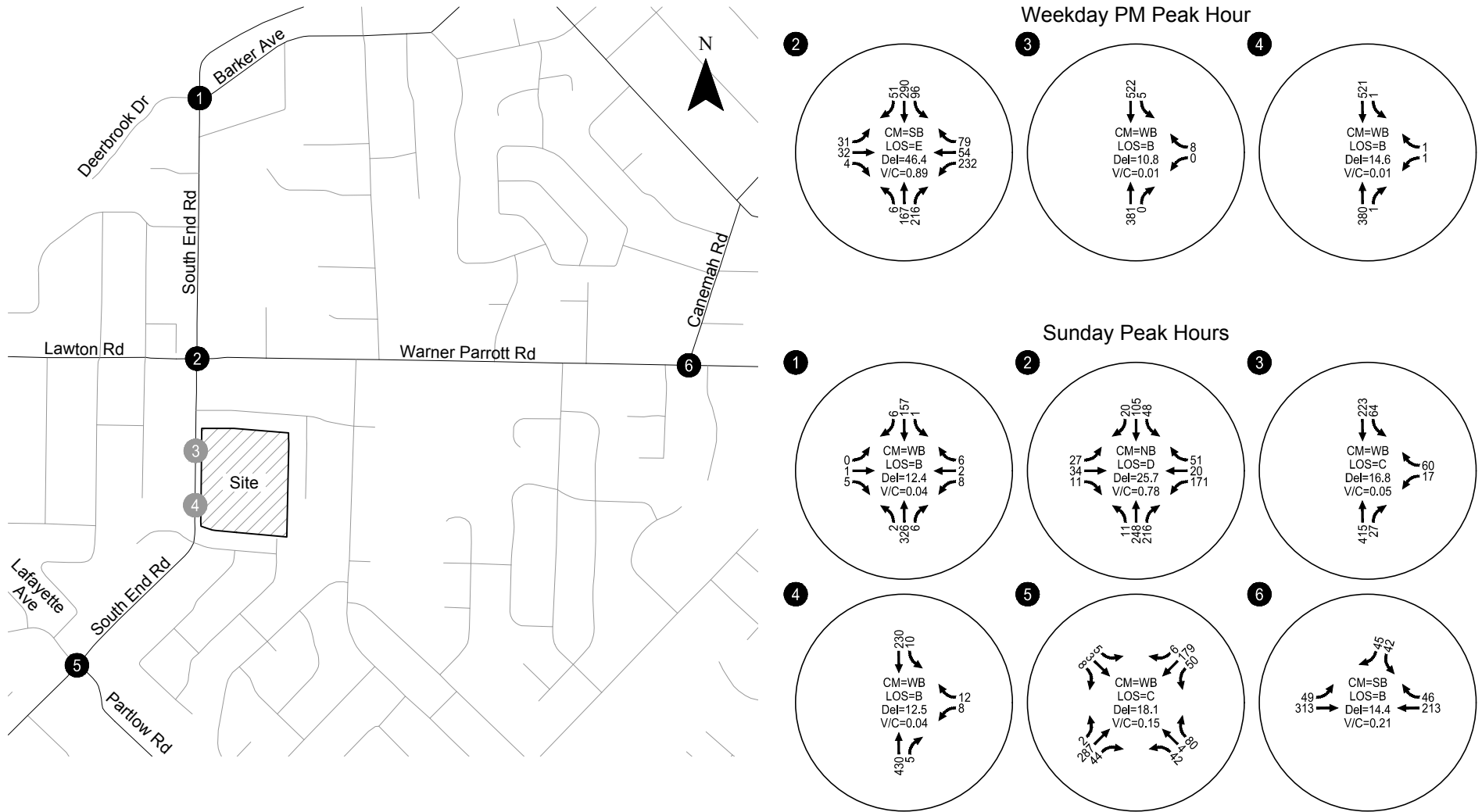
Level-of-Service Analysis

Figure 8 summarizes the year 2022 background traffic conditions at the study intersections during the weekday PM and Sunday mid-day peak hours. As shown, all of the study intersections are forecast to operate acceptably per their applicable mobility standards. *Appendix "H" includes the year 2022 background traffic conditions worksheets.*



**Year 2020 Phase 1 Total Traffic Conditions
Weekday PM and Sunday Peak Hours
Oregon City, OR**

Figure
7



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION AVERAGE LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = VOLUME-TO-CAPACITY RATIO

**Year 2022 Background Traffic Conditions
 Weekday PM and Sunday Peak Hours
 Oregon City, OR**

Figure
8

PHASE 2 DEVELOPMENT PLAN

Phase 2 of the Master Plan includes construction of a new 3,602 sf student ministry center. Full build-out and occupancy of Phase 2 is expected to occur in 2022.

Trip Generation

Trip generation estimates were prepared for Phase 2 of the Master Plan based on a trip generation study conducted at the church in July 2018. *Appendix "A" contains additional information related to the trip generation study.* Table 4 summarizes the daily, weekday PM, Sunday, and Sunday peak hour trips associated with Phase 2 of the Master Plan.

Table 4: Phase 2 Trip Generation

Phase	Size	Daily Trips (Weekday)	Weekday PM Peak Hour of Adjacent Street			Daily Trips (Sunday)	Sunday Peak Hour of Generator		
			Total	In	Out		Total	In	Out
2	3,602 sf	28	2	1	1	98	32	14	18

Site Trip Distribution/Trip Assignment

The site-generated trips shown in Table 4 were distributed to the study area roadways according to the trip distribution pattern shown in Figure 9. Figure 9 also illustrates the assignment of Phase 2 site-generated trips at the study intersections during the weekday PM and Sunday peak hours.

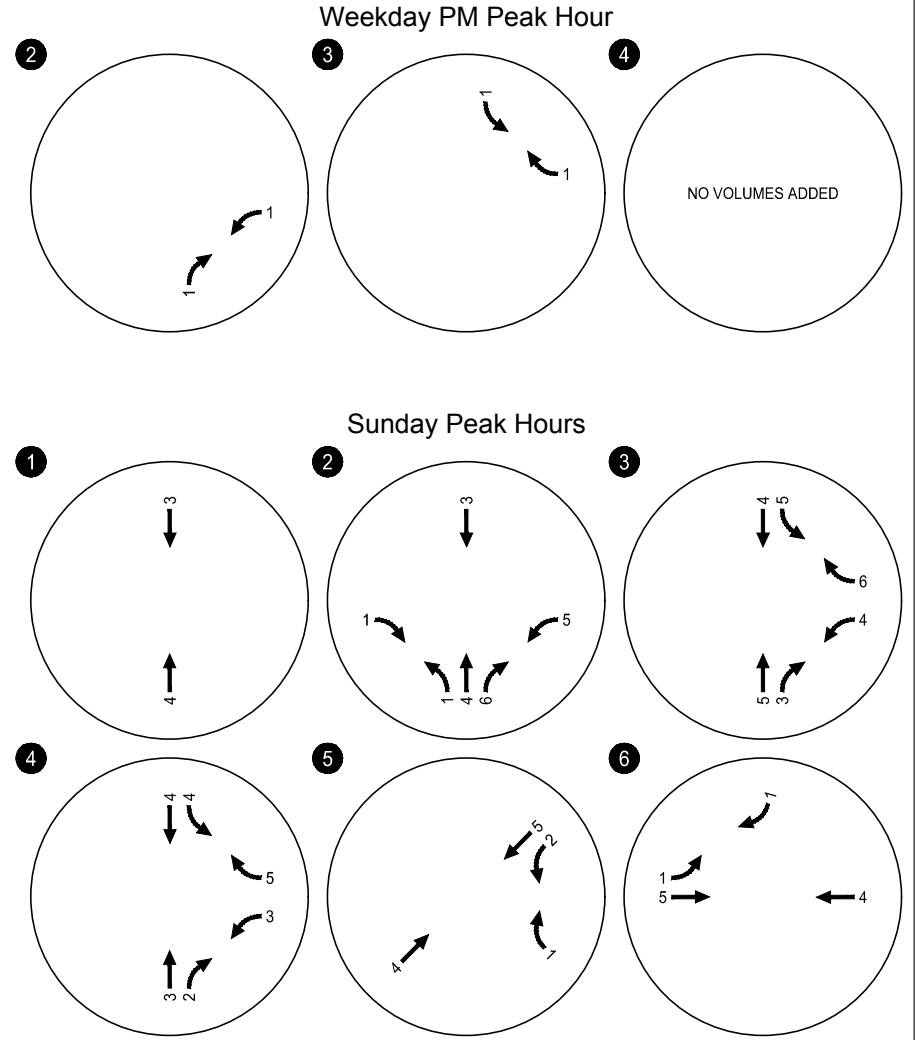
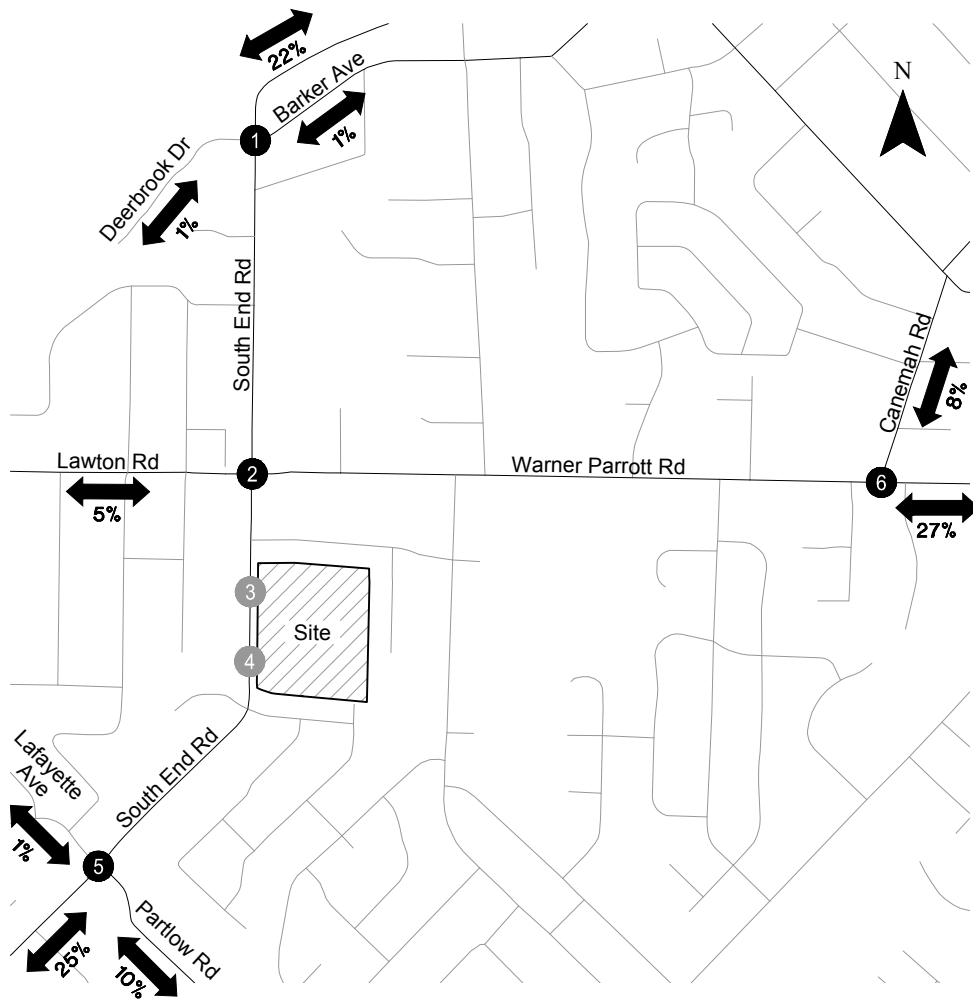
YEAR 2022 TOTAL TRAFFIC CONDITIONS

The total traffic conditions analysis forecasts how the study area's transportation system will operate with traffic generated by Phases 1-2 of the Master Plan. The year 2022 background traffic volumes shown in Figure 8 were added to the site-generated trips shown in Figure 9 to arrive at the total traffic volumes shown in Figure 10.

Intersection Level of Service

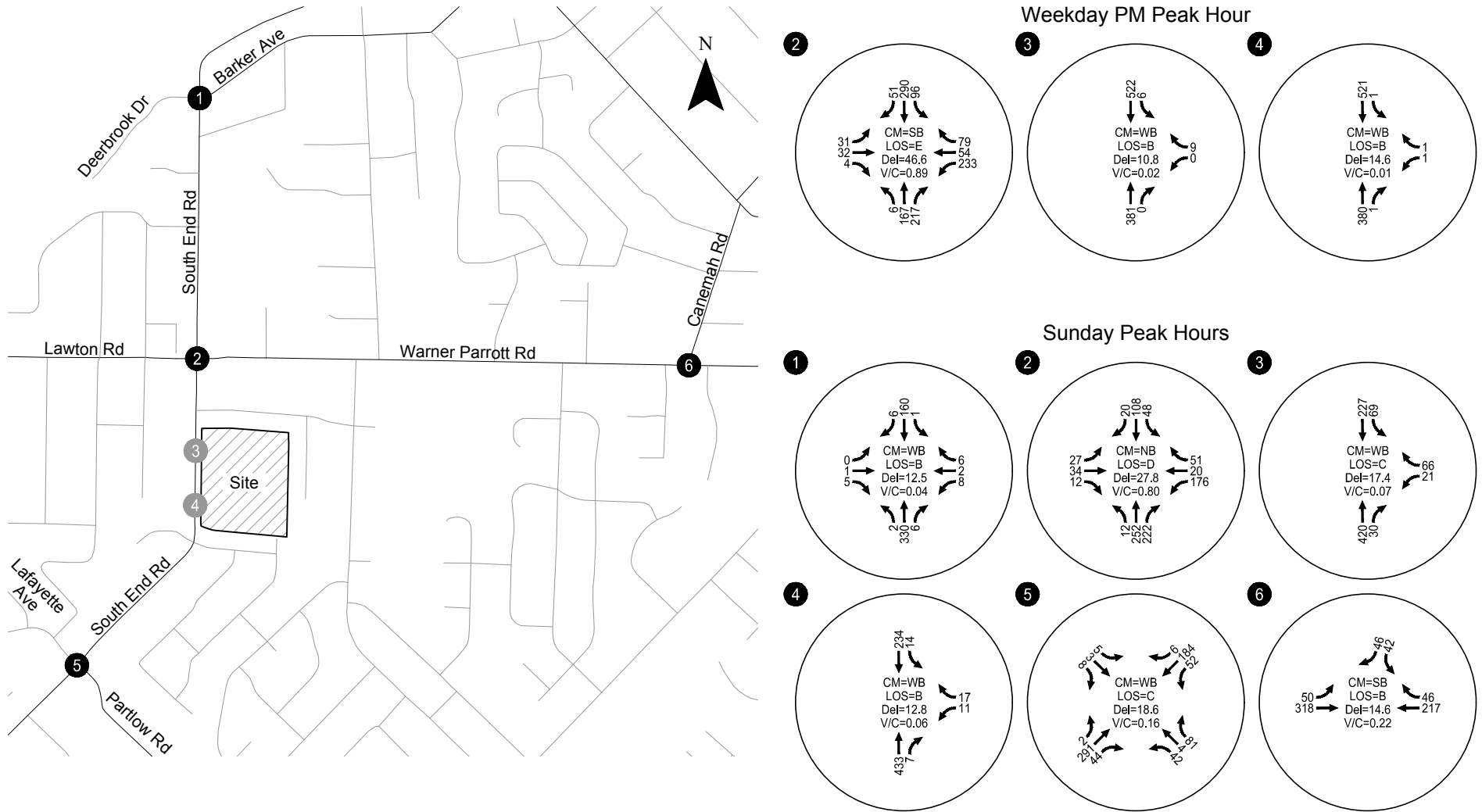
Figure 10 summarizes the year 2022 Phases 1-2 total traffic conditions analysis results at the study intersections during the weekday PM and Sunday peak hours. As shown, all of the study intersections and site driveways are forecast to operate acceptably per their applicable mobility standards. *Appendix "I" includes the year 2022 total traffic conditions worksheets.*

H:\121\22856 - Oregon City Christian Church Master Plan\report\figs\22856_Fig1.dwg Sep 12, 2018 - 5:53pm - mbell Layout Tab: Fig09



**Estimated Trip Distribution Pattern & Phase 2 Site-generated Trips
Weekday PM and Sunday Peak Hours
Oregon City, OR**

**Figure
9**



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION AVERAGE LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = VOLUME-TO-CAPACITY RATIO

**Year 2022 Phase 1-2 Total Traffic Conditions
 Weekday PM and Sunday Peak Hours
 Oregon City, OR**

**Figure
 10**

YEAR 2025 BACKGROUND TRAFFIC CONDITIONS

The year 2025 background traffic conditions analysis identifies how the study area's transportation system will operate in the year Phase 3 of the Master Plan is expected to be fully built, 2025. This analysis includes traffic attributed to Phases 1-2 of the Master Plan and to general growth in the region but does not include traffic from Phase 3 of the Master Plan.

Traffic Volumes

The year 2025 background traffic volumes were developed by applying a 13.3 percent growth rate (1.90 percent per year for seven years) to the existing traffic volumes shown in Figure 4 and by adding the Phase 1 site-generated trips shown in Figure 6 and the Phase 2 site-generated trips shown in Figure 9. Figure 11 illustrates the resulting forecast year 2025 background traffic volumes at the study intersection during the weekday PM and Sunday peak hours.

Level-of-Service Analysis

Figure 11 summarizes the year 2025 background traffic conditions at the study intersections during the weekday PM and Sunday peak hours. As shown, all of the study intersections are forecast to operate acceptably per their applicable mobility standards with the exception of the South End Road/Warner Parrott Road intersection. *Appendix "J" includes the year 2025 background traffic conditions worksheets.*

South End Road/Warner Parrott Road

The northbound and southbound approaches to the South End Road/Warner Parrott Road intersection are projected to operate at LOS "F" and near capacity during the weekday PM peak hour. A preliminary signal warrant analysis indicates that a traffic signal is expected to be warranted. This finding is consistent with the Oregon City Transportation System Plan and its identified Project D32². Figure 12 summarizes the year 2025 background traffic condition at the study intersections during the weekday PM and Sunday peak hours assuming installation of a traffic signal at the intersection (but without the additional left-turn lanes identified in TSP Project D32). *Appendix "K" includes the year 2025 background traffic conditions (mitigated) worksheets.*

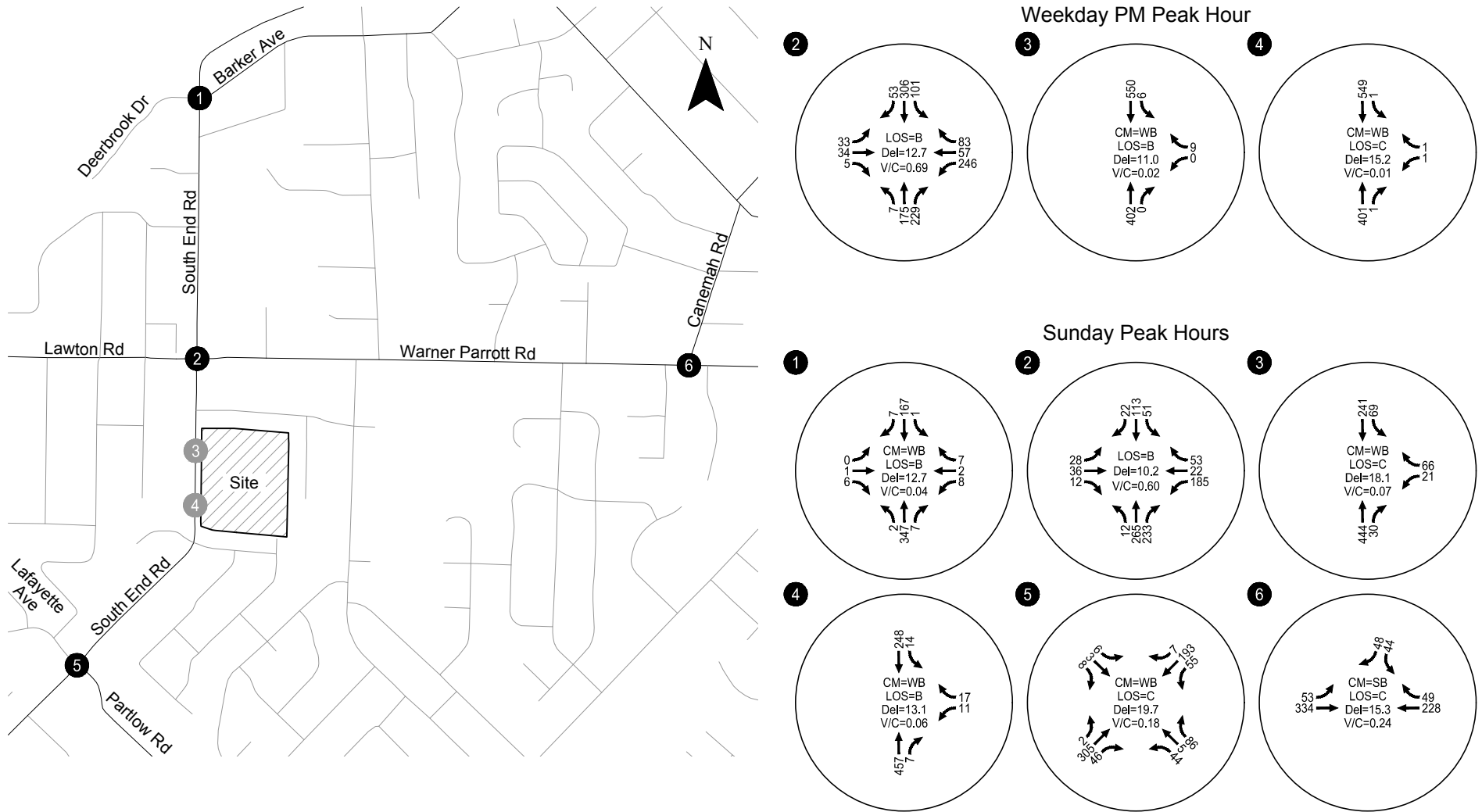
² As previously noted, project D32 is the South End Road/Warner Parrott Road Operational Enhancement – Install a traffic signal with dedicated left-turn lanes for the South End Road approaches to Warner Parrott Road



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION AVERAGE LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = VOLUME-TO-CAPACITY RATIO

**Year 2025 Background Traffic Conditions
 Weekday PM and Sunday Peak Hours
 Oregon City, OR**

Figure
11



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION AVERAGE LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = VOLUME-TO-CAPACITY RATIO

Year 2025 Background Traffic Conditions - Mitigated Weekday PM and Sunday Peak Hours Oregon City, OR

Figure
12

PHASE 3 DEVELOPMENT PLAN

Phase 3 of the Master Plan includes construction of a new 4,077 sf administrative building. Full build-out and occupancy of Phase 3 is expected to occur in 2025.

Trip Generation

Recognizing there is already an administrative function on-site today, a trip generation estimate was prepared for Phase 3 of the Master Plan based on information provided in the standard reference manual, *Trip Generation, 10th Edition*, published by the Institute of Transportation Engineers (ITE – Reference 5). ITE Land Use Code 710 (General Office) was used as a basis for the analysis. Table 5 summarizes the daily, weekday PM, Sunday, and Sunday peak hour trips associated with Phase 3 of the Master Plan.

Table 5: Phase 3 Trip Generation

Phase	Size	Daily Trips (Weekday)	Weekday PM Peak Hour of Adjacent Street			Daily Trips (Sunday)	Sunday Peak Hour of Generator		
			Total	In	Out		Total	In	Out
3	3,602 sf	40	5	1	4	3	1	1	0

Site Trip Distribution/Trip Assignment

The site-generated trips shown in Table 5 were distributed to the study area roadways according to the trip distribution pattern shown in Figure 13. Figure 13 also illustrates the assignment of Phase 3 site-generated trips at the study intersections during the weekday PM and Sunday peak hours.

YEAR 2025 TOTAL TRAFFIC CONDITIONS

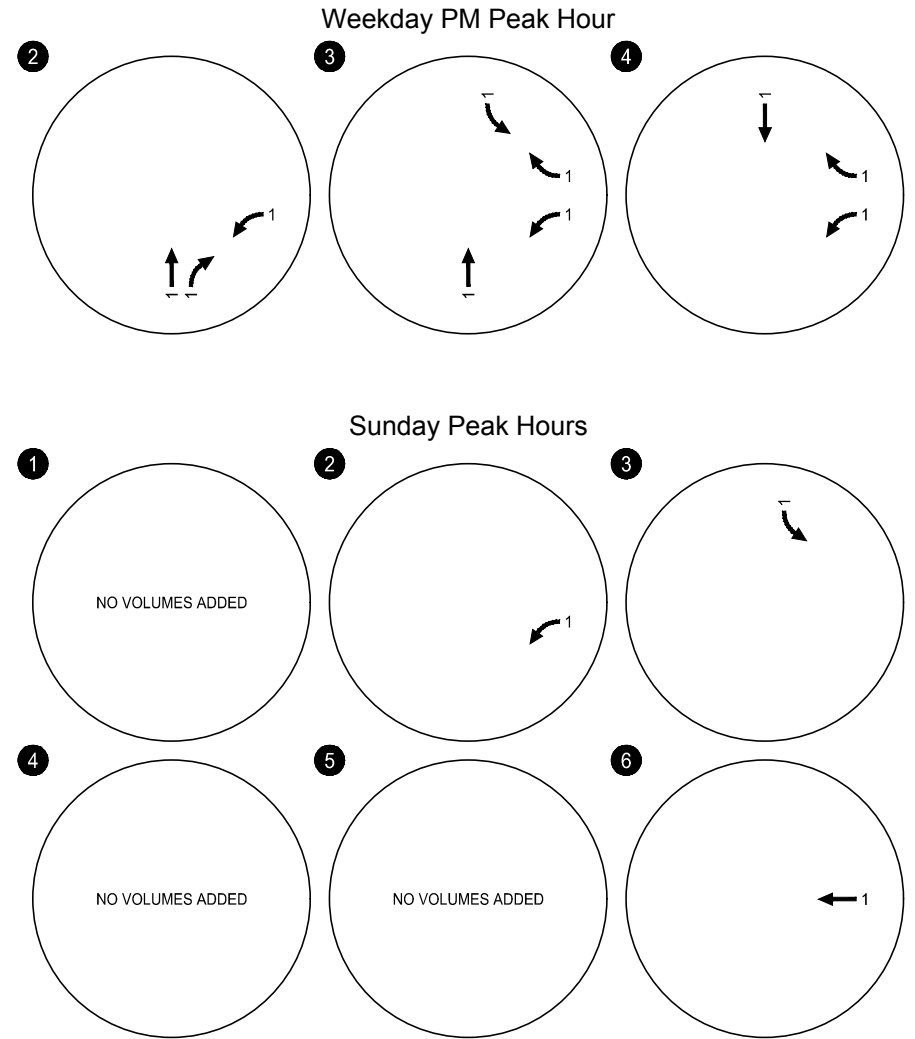
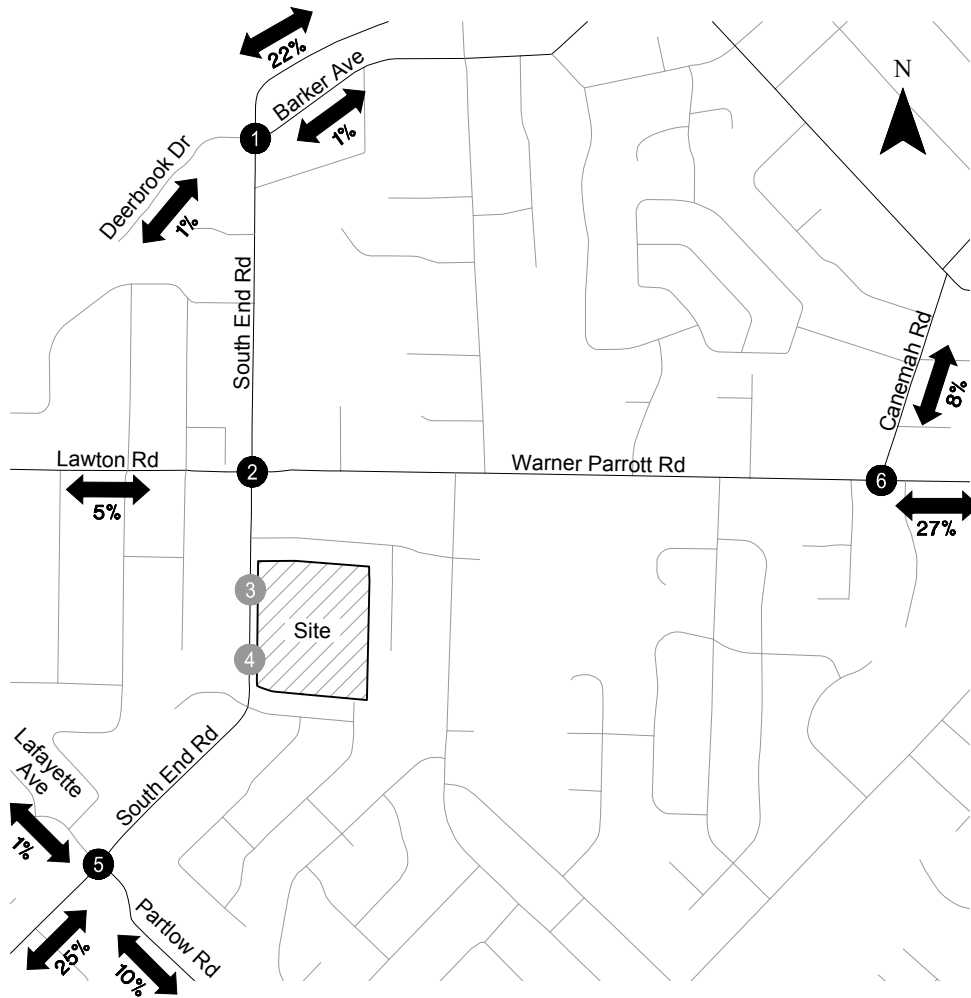
The total traffic conditions analysis forecasts how the study area's transportation system will operate with traffic generated by Phases 1-3 of the Master Plan. The year 2025 background traffic volumes shown in Figure 12 were added to the site-generated trips shown in Figure 13 to arrive at the total traffic volumes shown in Figure 14.

Intersection Level of Service

Figure 14 summarizes the year 2025 Phases 1-3 total traffic conditions analysis results at the study intersections during the weekday PM and Sunday peak hours. As shown, all of the study intersections and site driveway are forecast to operate acceptably per their applicable mobility standards assuming provision of a traffic signal at the South End Road/Warner Parrott Road intersection.

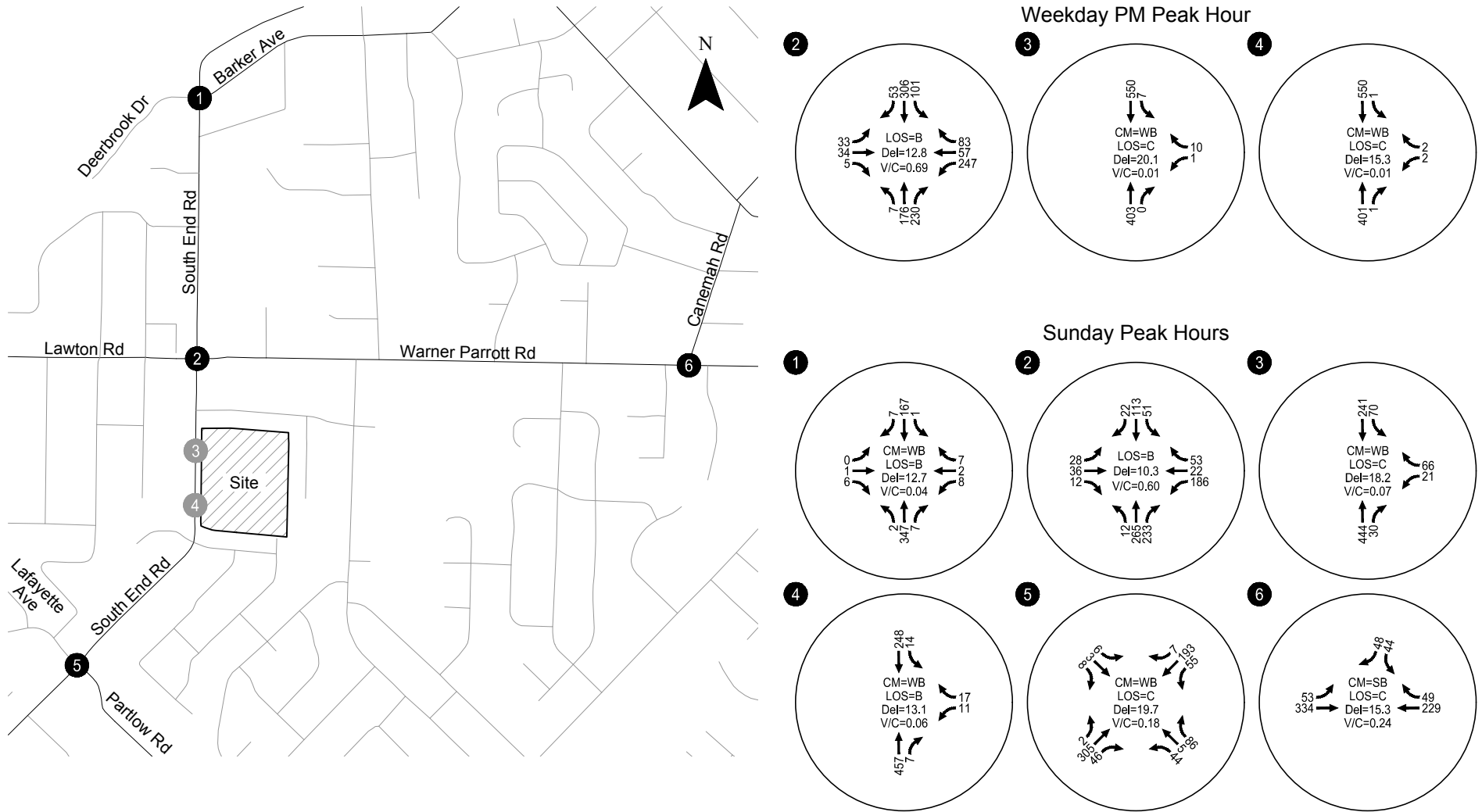
Subject to City direction, the Church Master Plan Phase 3 traffic impacts to the South End Road/Warner Parrott Road intersection could potentially be mitigated through payment of a proportionate share towards the City's Transportation System Plan Project D32. Alternatively, the need for intersection improvements associated with site development could be re-evaluated prior to Phase 3 development. *Appendix "L" includes the year 2025 total traffic conditions worksheets.*

H:\121\22856 - Oregon City Christian Church Master Plan\report\figs\122856_Fig1.dwg Sep 12, 2018 - 5:45pm - mbell Layout Tab: Fig13



**Estimated Trip Distribution Pattern & Phase 3 Site-generated Trips
Weekday PM and Sunday Peak Hours
Oregon City, OR**

**Figure
13**



**Year 2025 Phase 1-3 Total Traffic Conditions
Weekday PM and Sunday Peak Hours
Oregon City, OR**

**Figure
14**

YEAR 2030 BACKGROUND TRAFFIC CONDITIONS

The year 2030 background traffic conditions analysis identifies how the study area's transportation system will operate in the year Phase 4 of the Master Plan is expected to be fully built, 2030. This analysis includes traffic attributed to Phases 1-3 of the Master Plan and to general growth in the region but does not include traffic from Phase 4 of the Master Plan.

Traffic Volumes

The year 2030 background traffic volumes were developed by applying a 22.8 percent growth rate (1.90 percent per year for 12 years) to the existing traffic volumes shown in Figure 4 and by adding the Phase 1 site-generated trips shown in Figure 6, the Phase 2 site-generated trips shown in Figure 9, and the Phase 3 site-generated trips shown in Figure 13. Figure 15 illustrates the resulting forecast year 2030 background traffic volumes at the study intersection during the weekday PM and Sunday peak hours.

Level-of-Service Analysis

Figure 15 summarizes the year 2030 background traffic conditions at the study intersections during the weekday PM and Sunday peak hours. As shown, all of the study intersections are forecast to operate acceptably per their applicable mobility standards. *Appendix "M" includes the year 2030 background traffic conditions worksheets.*

PHASE 4 DEVELOPMENT PLAN

Phase 4 of the Master Plan includes renovation of the existing worship center and construction of the new worship center and café. While the size of the new worship center and café has not been determined; the church is planning to develop the new worship center to accommodate up to 600 parishioners. Full build-out and occupancy of Phase 4 is expected to occur in 2030.

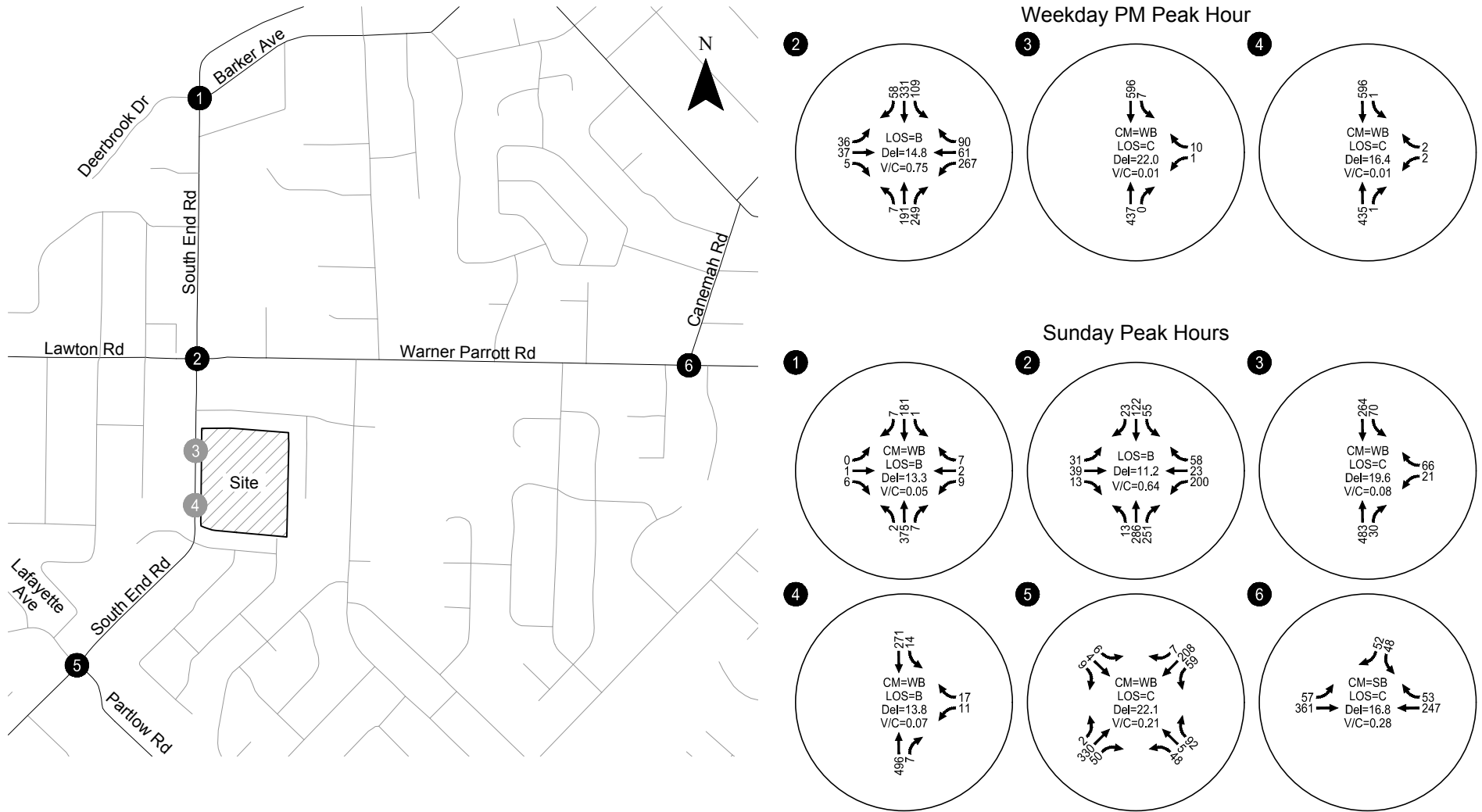
Trip Generation

Trip generation estimates were prepared for Phase 4 of the Master Plan based on a trip generation study conducted at the church in July 2018. *Appendix "A" contains additional information related to the trip generation study.* Table 6 summarizes the daily, weekday PM, Sunday, and Sunday peak hour trips associated with Phase 4 of the Master Plan.

Table 6: Phase 4 Trip Generation

Phase	Size	Daily Trips (Weekday)	Weekday PM Peak Hour of Adjacent Street			Daily Trips (Sunday)	Sunday Peak Hour of Generator		
			Total	In	Out		Total	In	Out
4	17,000 sf ¹	134	12	6	6	464	149	66	83

1. While the size of the new worship center and café has not been determined, the church is planning to accommodate up to 600 parishioners. This represents a 100 percent increase in the churches current seating capacity (300), which is accommodated by their current 17,000 square-foot building.



**Year 2030 Background Traffic Conditions
Weekday PM and Sunday Peak Hours
Oregon City, OR**

**Figure
15**

Site Trip Distribution/Trip Assignment

The site-generated trips shown in Table 6 were distributed to the study area roadways according to the trip distribution pattern shown in Figure 16. Figure 16 also illustrates the assignment of Phase 4 site-generated trips at the study intersections during the weekday PM and Sunday peak hours.

YEAR 2030 TOTAL TRAFFIC CONDITIONS

The total traffic conditions analysis forecasts how the study area's transportation system will operate with traffic generated by Phases 1-4 of the Master Plan. The year 2030 background traffic volumes shown in Figure 15 were added to the site-generated trips shown in Figure 16 to arrive at the total traffic volumes shown in Figure 17.

Intersection Level of Service

Figure 17 summarizes the year 2030 total traffic conditions analysis results at the study intersections during the weekday PM and Sunday peak hours. As shown, all of the study intersections are forecast to operate acceptably per their applicable mobility standards.

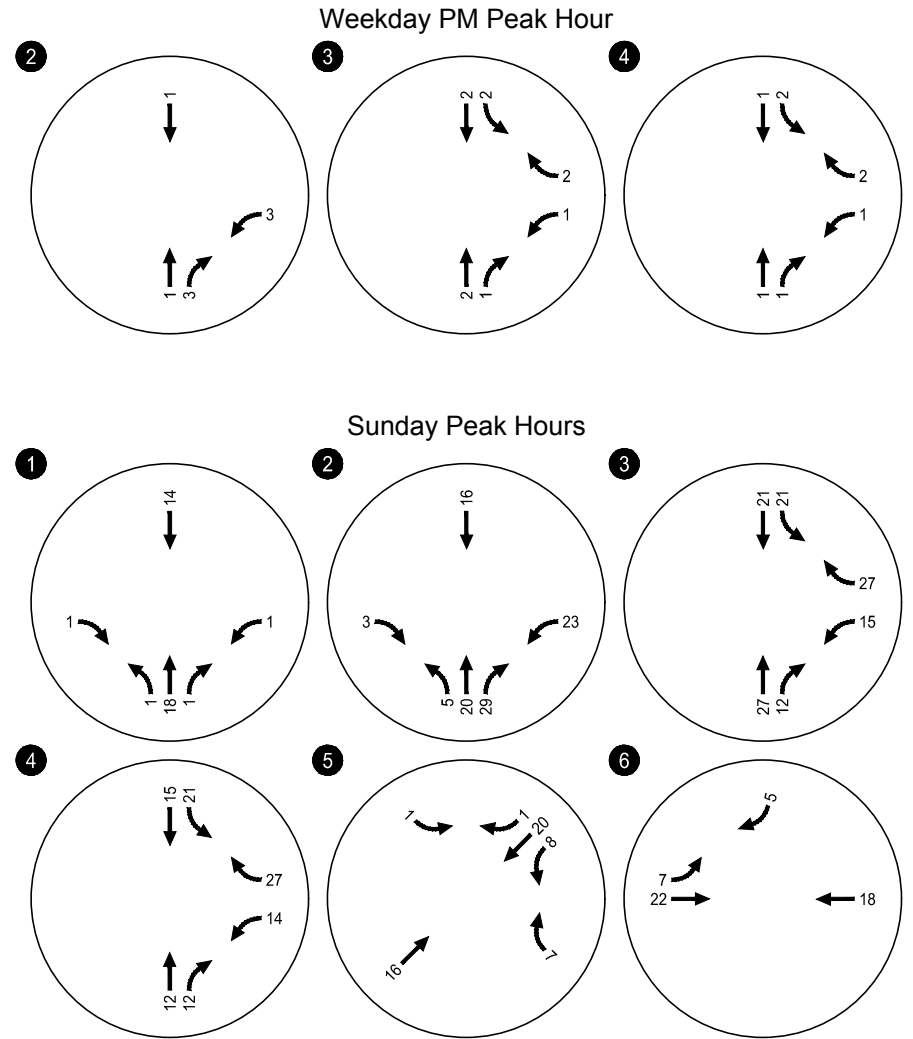
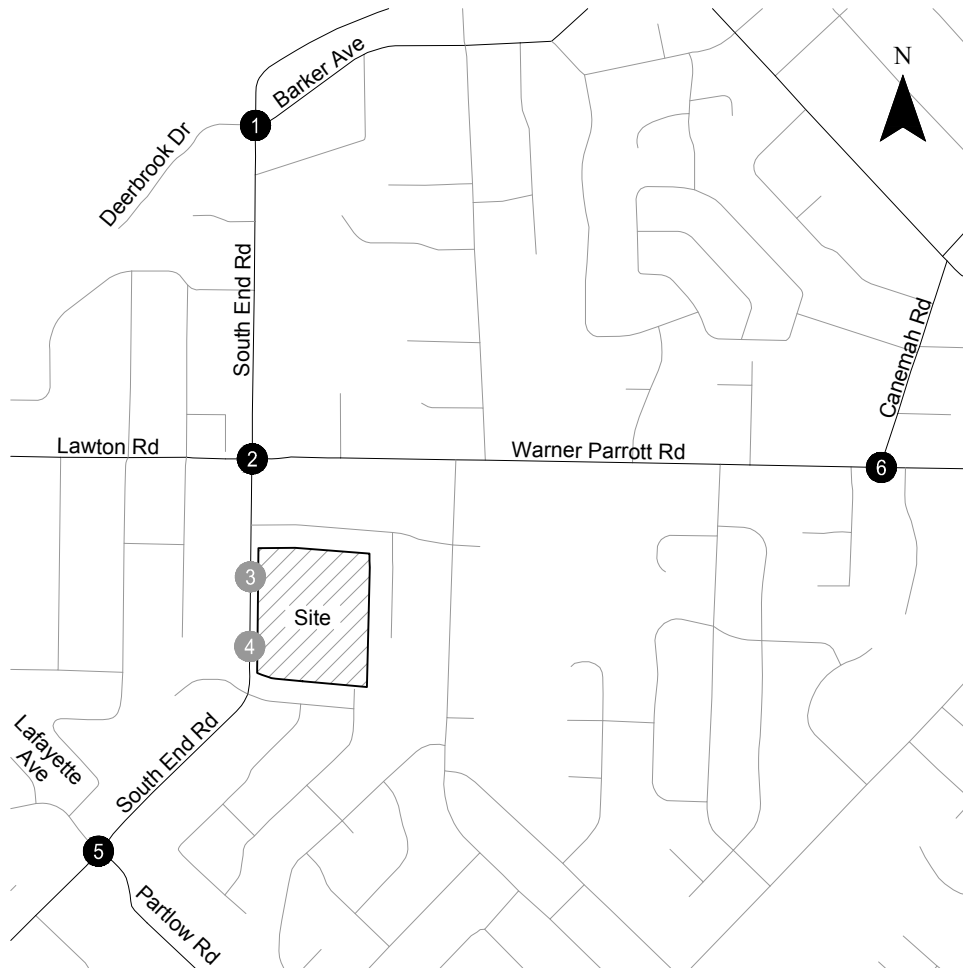
Subject to City direction, the Church Master Plan Phase 4 traffic impacts to the South End Road/Warner Parrott Road intersection could potentially be mitigated through payment of a proportionate share towards the City's Transportation System Plan Project D32. Alternatively, the need for the South End Road/Warner Parrott Road intersection improvements associated with site development could be re-evaluated prior to Phase 4 development. *Appendix "N" includes the year 2030 total traffic conditions worksheets.*

SITE-ACCESS OPERATIONS

Figure 2 illustrates the conceptual site plan. As shown, access to the site is planned to be provided by one full movement driveway toward the northern end of the site and one full movement driveway toward the southern end of the site. Both driveways are expected to operate acceptably in the future under stop control and queues at the driveways are not expected to exceed one vehicle entering the site. While the Synchro analysis shows that queues exiting the site are also not expected to exceed one vehicle, the site provides storage for up to four vehicles per lane.

We recommend that adequate intersection sight distance should be provided at both site driveways in accordance with City of Oregon City standards.

H:\12\12856 - Oregon City Christian Church Master Plan\report\figs\12856_Fig1.dwg Sep 12, 2018 - 5:40pm - mbell Layout Tab: Fig.16



**Estimated Trip Distribution Pattern & Phase 4 Site-generated Trips
Weekday PM and Sunday Peak Hours
Oregon City, OR**

**Figure
16**



**Year 2030 Phase 1-4 Total Traffic Conditions
Weekday PM and Sunday Peak Hours
Oregon City, OR**

**Figure
17**

CONCLUSIONS AND RECOMMENDATIONS

The results of this study indicate that the Oregon City Christian Church Master Plan can be developed while maintaining acceptable traffic operations and safety at the study intersections, assuming provision of the recommended mitigation measures. The findings of this analysis and our recommendations are discussed below.

FINDINGS

Year 2018 Existing Traffic Conditions

- All of the study intersections operate acceptably during the weekday PM and Sunday peak hours.
- A review of historical crash data did not reveal any patterns or trends in the site vicinity that require mitigation associated with this project.

Year 2020 Background Traffic Conditions

- All of the study intersections are forecast to operate acceptably during the weekday PM and Sunday peak hours.

Phase 1 Development Plan

- Phase 1 of the Master Plan includes construction of a new 8,168 sf recreation center, new parking facilities, and a new driveway along the southern boundary of the site.
- Phase 1 is estimated to generate 64 weekday daily trips, including 6 trips (3 inbound, 3 outbound) during the weekday PM peak hour, and 222 Sunday daily trips, including 72 trips (32 inbound, 40 outbound) during the Sunday peak hour.

Year 2020 Total Traffic Conditions (Master Plan Phase 1)

- All of the study intersections and site driveways are forecast to operate acceptably during the weekday PM and Sunday peak hours.

Year 2022 Background Traffic Conditions

- All of the study intersections are forecast to operate acceptably during the weekday PM and Sunday peak hours.

Phase 2 Development Plan

- Phase 2 of the Master Plan includes construction of a new 3,602 sf student ministry center.

- Phase 2 is estimated to generate 28 weekday daily trips, including 2 trips (1 inbound, 1 outbound) during the weekday PM peak hour, and 98 Sunday daily trips, including 32 trips (14 inbound, 18 outbound) during the Sunday peak hour.

Year 2022 Total Traffic Conditions (Master Plan Phases 1 & 2)

- All of the study intersections and site driveways are forecast to operate acceptably during the weekday PM and Sunday peak hours.

Year 2025 Background Traffic Conditions

- All but one of the study intersections are forecast to operate acceptably during the weekday PM and Sunday peak hours.
- The northbound and southbound approaches to the South End Road/Warner Parrott Road intersection are projected to operate at LOS “F” and near capacity during the weekday PM peak hour. A preliminary signal warrant analysis indicates that a traffic signal is expected to be warranted.
 - The City of Oregon City Transportation Plan project D32 includes installation of a traffic signal with dedicated left-turn lanes for the South End Road approaches to Warner Parrott Road in the 2018 to 2023 horizon period. Project D32 is not currently programmed or funded.
 - Signalization of the intersection without the additional turn lanes would restore acceptable peak hour operations.

Phase 3 Development Plan

- Phase 3 of the Master Plan includes construction of a new 4,077 sf administrative building.
- Phase 3 is estimated to generate 40 weekday daily trips, including 5 trips (1 inbound, 4 outbound) during the weekday PM peak hour, and 3 Sunday daily trips, including 1 trip (1 inbound, 0 outbound) during the Sunday peak hour.

Year 2025 Total Traffic Conditions (Master Plan Phases 1-3)

- All of the study intersections and site driveways are forecast to operate acceptably per their applicable mobility standards assuming provision of a traffic signal at the South End Road/Warner Parrott Road intersection.
 - The Church Master Plan Phase 3 traffic impacts to the South End Road/Warner Parrott Road intersection could potentially be mitigated through payment of a proportionate share towards the City’s Transportation System Plan Project D32. Alternatively, the need for the South End Road/Warner Parrott Road intersection improvements associated with site development could be re-evaluated prior to Phase 3 development.

Year 2030 Background Traffic Conditions

- All of the study intersections are forecast to operate acceptably during the weekday PM and Sunday peak hours.

Phase 4 Development Plan

- Phase 4 of the Master Plan includes renovation of the existing worship center and construction of the new worship center and café.
- Phase 4 is estimated to generate 134 weekday daily trips, including 12 trips (6 inbound, 6 outbound) during the weekday PM peak hour, and 464 Sunday daily trips, including 149 trip (66 inbound, 83 outbound) during the Sunday peak hour.

Year 2030 Total Traffic Conditions (Master Plan Phase 1-4)

- All of the study intersections and site driveway are forecast to operate acceptably per their applicable mobility standards.
 - The Church Master Plan Phase 4 traffic impacts to the South End Road/Warner Parrott Road intersection could potentially be mitigated through payment of a proportional share towards the City's Transportation System Plan Project D32. Alternatively, the need for the South End Road/Warner Parrott Road intersection improvements associated with site development could be re-evaluated prior to Phase 4 development.

Site Access Operations

- The two site driveways on South End Road will operate acceptably with stop control approaching South End Road.
- Queues at the site driveways are not expected to exceed 25 feet entering or exiting the site.

RECOMMENDATIONS

The following list summarizes the mitigation measures recommended as part of this proposed development.

- Subject to City direction, the Phase 3 and Phase 4 site development should pay a proportionate share contribution toward future installation of a traffic signal at the South End Road/Warner Parrott Road intersection prior to completion of the two respective development phases. Alternatively, the need for the South End Road/Warner Parrott Road intersection improvements associated with Phase 3 and Phase 4 site development could be re-evaluated prior to the two respective development phases.
- Adequate intersection sight distance should be provided at both site driveways on South End Road in accordance with City of Oregon City standards.

REFERENCES

1. Oregon City. *Guidelines for Transportation Impact Analyses*. 2005.
2. Oregon City. *Oregon City Transportation System Plan*. 2013.
3. TriMet: <https://trimet.org/>
4. Transportation Research Board. *Highway Capacity Manual*. 2000 and 2010.
5. Institute of Transportation Engineers. *Trip Generation Manual, 10th Edition*. 2017.

Appendix A Scoping Letter

MEMORANDUM

Date: August 23, 2018

Project #: 22856.0

To: Pete Walter, City of Oregon City
John Replinger, P.E., Replinger & Associates, LLC

CC: Brent Brelje, Oregon City Christian Church

From: Matt Bell and Chris Brehmer, P.E., Kittelson & Associates, Inc.

Project: Oregon City Christian Church Master Plan

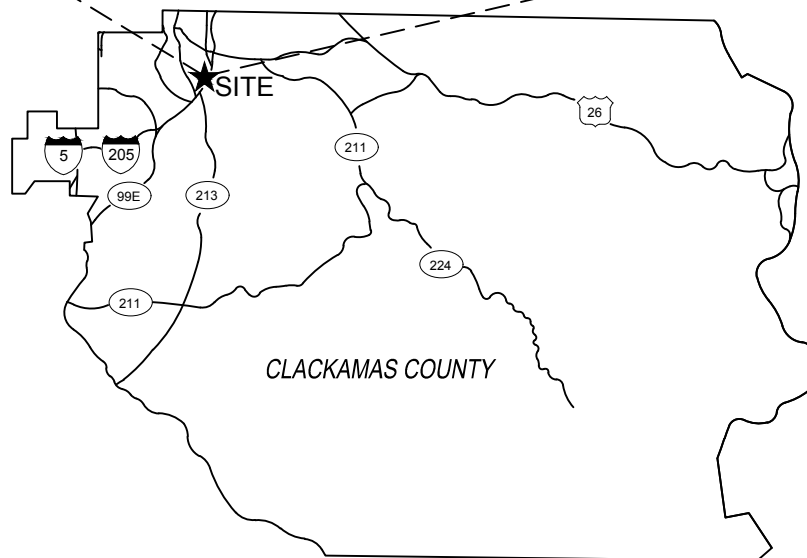
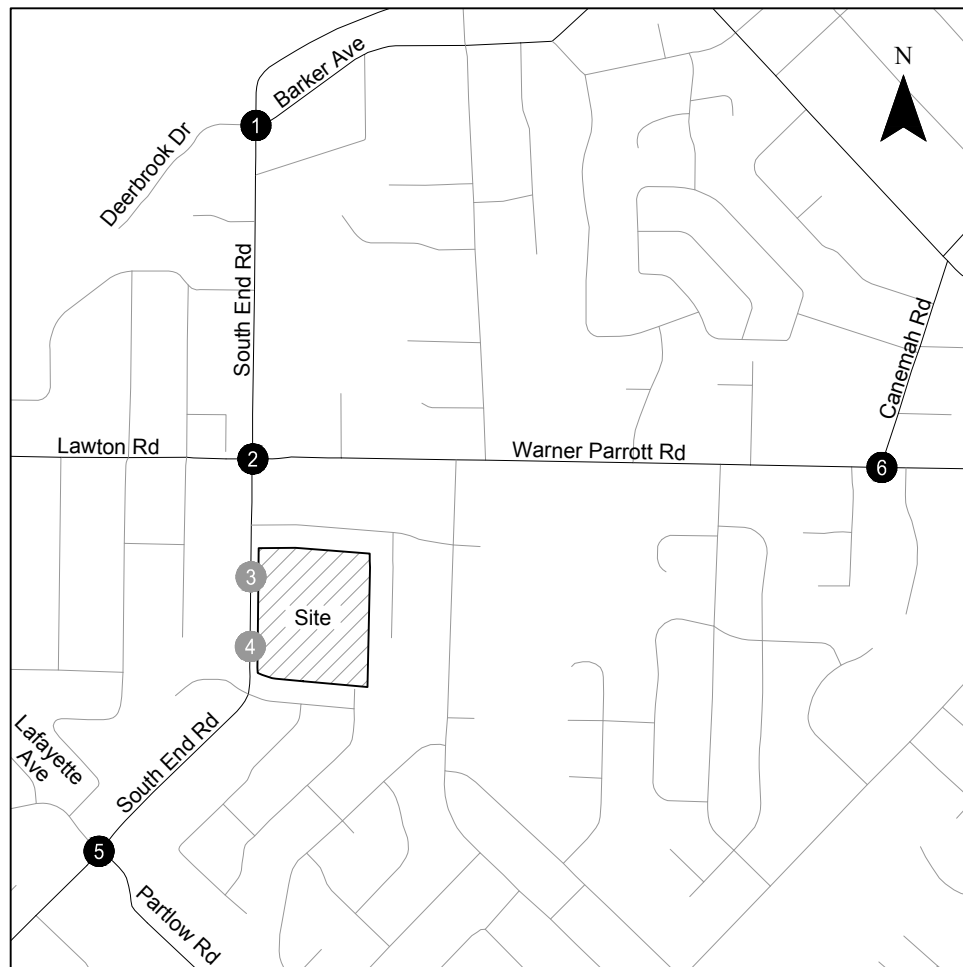
Subject: Transportation Impact Study – Key Assumptions

This memorandum summarizes key assumptions associated with preparing a Transportation Impact Study (TIS) for the proposed Oregon City Christian Church Master Plan. These assumptions are based on a review of the proposed Master Plan, the City of Oregon City Guidelines for Transportation Impact Analyses (TIA Guidelines), and pre-application conference notes prepared by City of Oregon City, and discussions with the project team.

Project Background

The proposed Oregon City Christian Church Master Plan identifies the vision and long-term goals for the existing church campus located along the east side of South End Road in Oregon City. Figure 1 illustrates the site vicinity map. The Master Plan includes renovation of the existing worship center and phased construction of a new recreation center, a new student ministry center, a new administrative building, and a new worship center and café. The Master Plan also includes expansion of the existing parking facilities and a new driveway along the southern boundary of the site. Figure 2 illustrates the conceptual site plan. Construction of the new facilities is expected to occur in four phases over a 10-year period as follows:

- Phase 1 is expected to occur in 2020 and include a new 8,168 square-foot recreation center, new parking facilities, and a new driveway along the southern boundary of the site;
- Phase 2 is expected to occur in 2022 and include new 3,602 square-foot student ministry center;
- Phase 3 is expected to occur in 2025 and include a new 4,077 square-foot administrative building; and
- Phase 4 is expected to occur in 2030 and include renovation of the existing worship center and construction of the new worship center and café.
 - The size of the new worship center and café has not been determined; however, the church is planning to develop the new worship center to accommodate up to 600 parishioners.



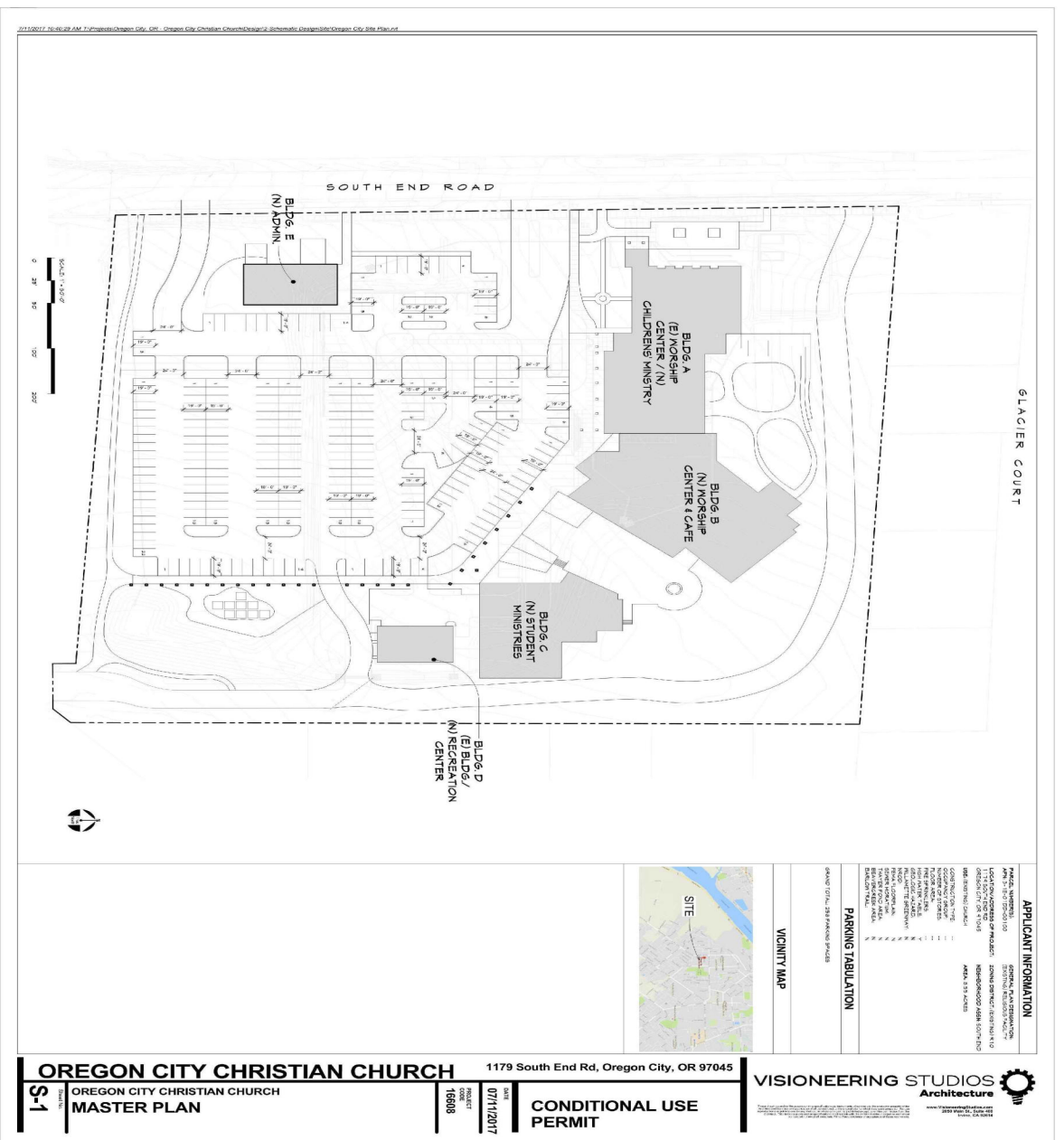
- # - Study Intersection
- # - Site Driveway

**Site Vicinity Map
Oregon City, OR**

**Figure
1**



Conceptual Master Plan Oregon City, OR



The TIS will include an evaluation of traffic operations during each phase of the Master Plan as necessary to determine the transportation-related impacts and potential off-site mitigations.

Trip Generation

Trip generation estimates were prepared for Phases 1, 2, and 4 of the Master Plan based on data collected at the existing church over three consecutive mid-week days (Tuesday, Wednesday, and Thursday) and one weekend day (Sunday). The data includes the total number of vehicles that entered and exited the main entrance to the church in 15-minute increments. Supplemental data provided by the church includes the size of the existing worship center and the total number of people that participated in events on Sunday. The data was used to develop trip rates per 1,000 square-feet of building space and per attendee.

Recognizing there is already an administrative function on-site today, a trip generation estimate was prepared for Phase 3 of the master plan (new administrative building) based on information provided in the standard reference manual, *Trip Generation, 10th Edition*, published by the Institute of Transportation Engineers (ITE). ITE Land Use Code 710 (General Office) was used as a basis for the analysis.

The existing church and ITE trip rates were used to develop trip generation estimates for the Master Plan. Table 1 summarizes the daily, weekday AM, weekday PM, Sunday, and Sunday peak hour trips associated with each phase of the Master Plan. *Attachment A contains additional information related to the trip generation rates.*

Table 1: Trip Generation

Phase	Size	Daily Trips (Weekday)	Weekday AM Peak Hour of Adjacent Street			Weekday PM Peak Hour of Adjacent Street			Daily Trips (Sunday)	Sunday Peak Hour of Generator		
			Total	In	Out	Total	In	Out		Total	In	Out
1	8,168 SF	64	3	2	1	6	3	3	222	72	32	40
2	3,602 SF	28	1	1	0	2	1	1	98	32	14	18
3	4,077 SF	40	5	4	1	5	1	4	3	1	1	0
4	17,000 SF ¹	134	7	3	4	12	6	6	464	149	66	83
Total Phase 1-4 Trips		266	16	10	6	25	11	14	787	254	113	141

1. While the size of the new worship center and café has not been determined, the church is planning to accommodate up to 600 parishioners. This represents a 100 percent increase in the churches current seating capacity (300), which is accommodated by their current 17,000 square-foot building.

Trip Distribution/Assignment

The trips shown in Table 1 will be distributed onto the study area roadways based on existing traffic patterns and the location of major trip origins and destinations in the study area. The trips will be assigned to the site driveways and study intersections in accordance with the trip distribution pattern.

Study Area

The study area for the TIS will include the major streets (collector and above) located adjacent to the proposed development site along with the site access driveways and several major intersections. The intersections were determined based on a review of the City's functional classification plan, a review of historical traffic data within the study area, and guidance provided in the TIA Guidelines. The intersections include:

1. South End Road/Barker Avenue
2. South End Road/Warner Parrot Road
3. South End Road/Existing Church Driveway (Dwy 1)
4. South End Road/Future Church Driveway (Dwy 2)
5. South End Road/Partlow Road
6. Canemah Road/Warner Parrot Road

Analysis Years

The analysis years for the TIS reflect each phase of the Master Plan. The analysis years include:

- Existing traffic conditions
- Year 2020 Background traffic conditions, without the proposed development
- Year 2020 Total Traffic Conditions, with Phase 1 of the proposed development
- Year 2022 Background traffic conditions, with Phase 1 of the proposed development
- Year 2022 Total Traffic Conditions, with Phase 1-2 of the proposed development
- Year 2025 Background Traffic Conditions, with Phase 1-2 of the proposed development
- Year 2025 Total Traffic Conditions, with Phase 1-3 of the proposed development
- Year 2030 Background Traffic Conditions, with Phase 1-3 of the proposed development
- Year 2030 Total Traffic Conditions, with Phase 1-4 of the proposed development

It may be determined that some phases do not result in significant impacts to the transportation system. These phases may be combined with other phases in the TIS if appropriate to simplify the City's review and approval conditions.

Analysis Periods

The analysis periods for the TIS were determined based on the type of use, the type of adjacent uses, the trip generation estimate provided above, and guidance provided in the TIA Guidelines. The TIS will include an evaluation of the weekday evening (4:00 to 6:00 PM) peak period at the site driveways and the South End Road/Warner Parrot Road intersection and the Sunday mid-day (8:00 to 12:00) peak period at the site driveways and all six study intersections identified above.

Analysis Tools and Methodology

The TIA will evaluate traffic operations at the study intersections based on the methodologies identified in the 2010 Highway Capacity Manual (HCM – Reference 1). Synchro 9 will be used to evaluate traffic operations at the study intersections. Synchro 9 is a software tool designed to assist with operations analysis in accordance with 2010 HCM methodologies.

Performance Measures

Traffic operations at the study intersections will be evaluated based on the applicable performance measures. Per the TIA Guidelines, all of the unsignalized study intersections are expected to operate at Level of Service (LOS) “E” or better for the poorest operating approach and with no movement serving more than 20 peak hour vehicles operating at worse than LOS “E”. In other words, LOS “F” will be tolerated for minor movements during a peak hour.

Next Steps

We trust this memorandum provides adequate documentation of the key assumptions associated with the TIS for the proposed Oregon City Church Master Plan development.

We request that the City provide written confirmation regarding the proposed methodology and project assumptions as soon as possible so that we may proceed with our analysis. In addition, we would appreciate the City providing timing of planned improvements at the study intersections, information on planned developments and in-process trips that could impact the study intersections, and an approved background growth rate that should be incorporated into the traffic analysis.

Reference

1. Transportation Research Board. *Highway Capacity Manual*. 2010.

Attachment A Trip Generation Rates

TRIP GENERATION STUDY

Trip generation data was collected at the main entrance to the Oregon City Christian Church over three consecutive mid-week days (Tuesday, Wednesday, and Thursday) and one weekend day (Sunday) in July 2018. The data includes the total number of vehicles that entered and exited the main entrance to the church in 15-minute increments. Supplemental data provided by the church includes the size of the existing building and the total number of people that participated in events on Sunday. The data was used to develop trip rates per 1,000 square-feet of building space and per attendee as described below.

Mid-week Trip Rates

The mid-week data shows an average of 133 daily trips at the main entrance to the church over the three-day period, including 6 trips (3 inbound, 3 outbound) during the weekday AM peak hour and 11 trips (5 inbound, 6 outbound) during the weekday PM peak hour. Trip rates were developed for the church by dividing the daily, weekday AM, and weekday PM peak hours trips by the gross square-feet of the existing church (i.e. 133 daily trips / 17,000 square-feet = 7.82 trips per 1,000 square-feet). Table A-1 summarizes the mid-week trip rates developed for the church and compares the rates to data provided in the standard reference manual, *Trip Generation Manual*, published by the Institute of Transportation Engineers (ITE). As shown, the calculated rates are similar to the ITE rates during all time periods.

Table A-1: Trip Rates per 1,000 square-feet

Trip Rates	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Total	In	Out	Total	In	Out
Calculated Rates	7.82	0.39	50%	50%	0.69	46%	54%
<i>Trip Generation Manual</i>	6.95	0.33	60%	40%	0.49	45%	55%

Sunday Trip Rates

The Sunday data shows a total of 463 daily trips at the main entrance to the driveway, including 149 trips (66 inbound, 83 outbound) during the peak hour. Trip rates (per 1,000 square-feet) were developed for the church by dividing the daily and peak hour trips by the gross square-feet of the existing church (i.e. 463 daily trips / 17,000 square-feet = 27.24 trips per 1,000 square-feet). Table A-2 summarizes the Sunday trip rates developed for the church and compares the rates to data provided in ITE. As shown, the calculated rates are similar to the ITE rates during both time periods.

Table A-2: Trip Rates per 1,000 square-feet

Trip Rates	Daily	Sunday Peak Hour		
		Total	In	Out
Calculated Rates	27.24	8.76	44%	56%
<i>Trip Generation Manual</i>	27.63	9.99	48%	52%

Supplemental data provided by the church shows that 190 parishioners were present for the 9:00 a.m. service and 221 were present for the 10:45 a.m. service. Trip rates (per attendee) were developed for the church by dividing the daily and peak hours trips by the total number of parishioners (i.e. 463 daily trips / 411 daily attendees = 1.13 trips per attendee). Table A-3 summarizes the Sunday trip rates developed for the church and compares the rates to data provided in ITE. As shown, the calculated rate for the peak hour is similar to the ITE rate; however, ITE does not provide a daily rate per attendee.

Table A-3: Trip Rates per Attendee

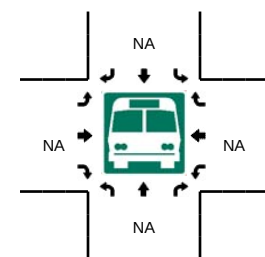
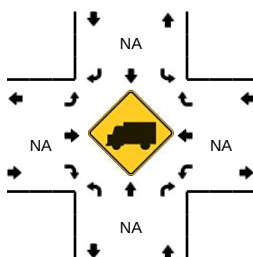
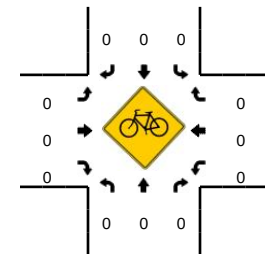
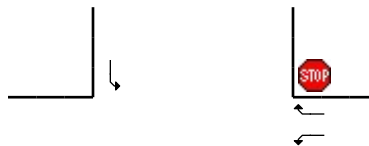
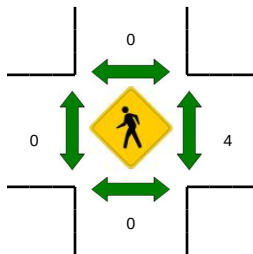
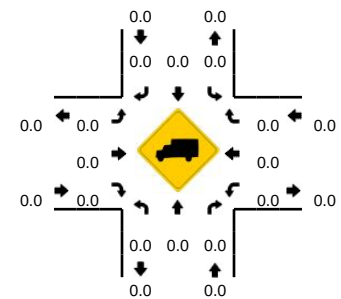
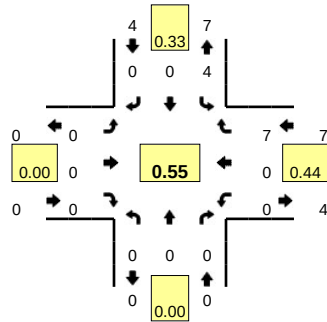
Trip Rates	Daily	Sunday Peak Hour		
		Total	In	Out
Calculated Rates	1.13	0.67	44%	56%
<i>Trip Generation Manual</i>	NA	0.53	50%	50%

Appendix B Traffic Counts

LOCATION: South End Rd -- Oregon City Christian Church Dwy
CITY/STATE: Oregon City, OR

QC JOB #: 14771002
DATE: Thu, Aug 16 2018

Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:35 PM -- 5:50 PM



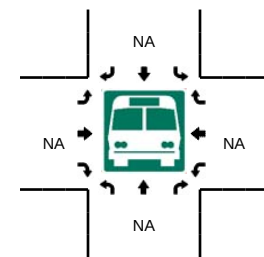
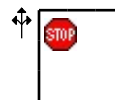
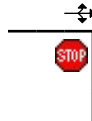
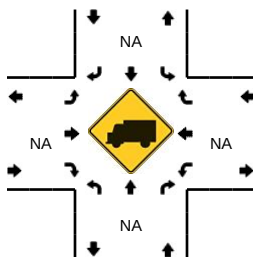
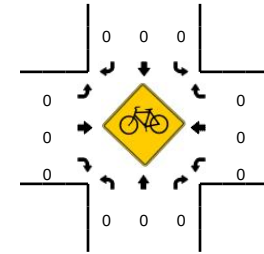
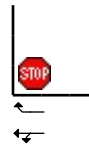
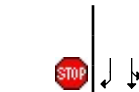
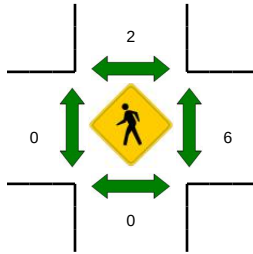
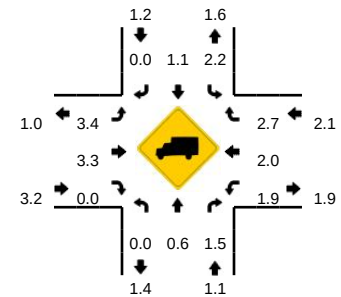
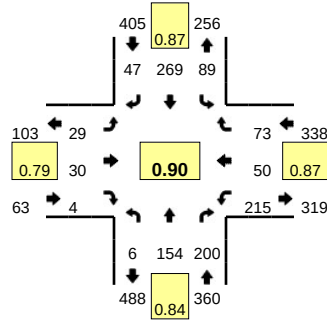
5-Min Count Period Beginning At	South End Rd (Northbound)				South End Rd (Southbound)				Oregon City Christian Church (Eastbound)				Oregon City Christian Church (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:40 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	3	
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
4:50 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:05 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	7
5:10 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	8
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	9
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	10
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	11
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	13
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	11
5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	12
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	4	0	0	0	0	0	0	0	0	0	16	0	20	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: South End Rd -- Warner Parrot Rd
CITY/STATE: Oregon City, OR

QC JOB #: 14771001
DATE: Thu, Aug 16 2018

Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:10 PM -- 5:25 PM



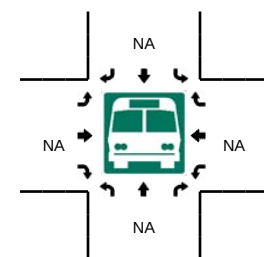
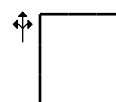
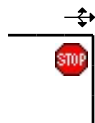
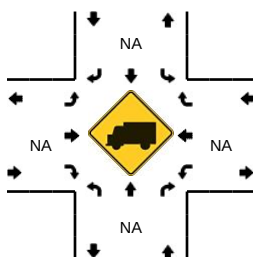
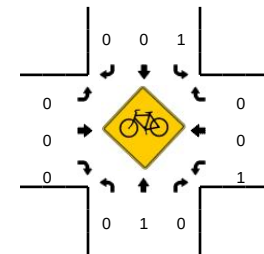
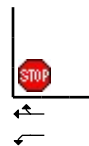
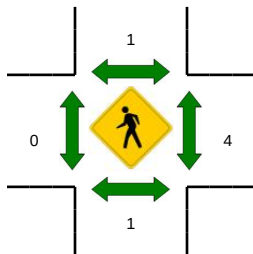
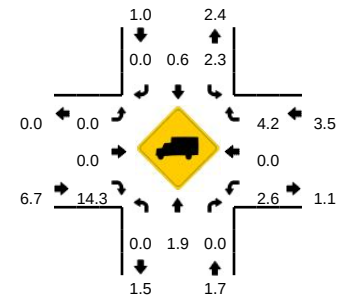
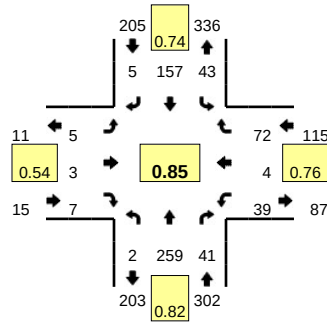
5-Min Count Period Beginning At	South End Rd (Northbound)				South End Rd (Southbound)				Warner Parrot Rd (Eastbound)				Warner Parrot Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	8	12	0	4	16	2	0	3	1	0	0	20	4	7	0	77	
4:05 PM	0	21	5	0	7	20	0	0	1	6	1	0	19	4	5	0	89	
4:10 PM	0	14	15	0	11	24	3	0	0	5	0	0	10	6	6	0	94	
4:15 PM	0	10	12	0	7	19	2	0	1	4	0	0	20	9	4	0	88	
4:20 PM	0	12	17	0	7	25	4	0	2	0	0	0	17	3	5	0	92	
4:25 PM	0	10	7	0	8	22	4	0	0	1	0	0	7	1	7	0	67	
4:30 PM	0	13	10	0	4	13	2	0	1	2	0	0	18	5	6	0	74	
4:35 PM	0	17	13	0	9	18	0	0	1	3	0	0	16	6	5	0	88	
4:40 PM	0	9	14	0	7	23	5	0	1	1	0	0	19	3	6	0	88	
4:45 PM	0	8	14	0	9	24	3	0	2	3	0	0	15	2	2	0	82	
4:50 PM	0	6	12	0	7	24	6	0	0	0	0	0	25	2	9	0	91	
4:55 PM	0	14	13	0	7	21	3	0	3	6	1	0	14	4	2	0	88	1018
5:00 PM	0	11	21	0	3	16	6	0	2	2	0	0	22	3	5	0	91	1032
5:05 PM	1	11	11	0	5	22	2	0	2	2	0	0	16	5	3	0	80	1023
5:10 PM	0	6	19	0	9	28	5	0	2	3	0	0	17	5	8	0	102	1031
5:15 PM	2	13	14	0	7	25	5	0	0	4	2	0	18	4	9	0	103	1046
5:20 PM	1	11	26	0	10	22	6	0	4	1	1	0	19	7	10	0	118	1072
5:25 PM	0	19	15	0	7	20	3	0	0	1	0	0	16	4	8	0	93	1098
5:30 PM	0	16	19	0	8	24	5	0	5	2	0	0	18	2	5	0	104	1128
5:35 PM	0	22	15	0	8	22	3	0	2	1	1	0	19	4	6	0	103	1143
5:40 PM	2	16	17	0	7	24	1	0	3	3	0	0	23	8	4	0	108	1163
5:45 PM	0	11	11	0	4	23	4	0	5	3	0	0	13	1	6	0	81	1162
5:50 PM	0	11	17	0	9	15	3	0	1	4	0	0	13	5	4	0	82	1153
5:55 PM	0	7	15	0	12	28	4	0	3	4	0	0	21	2	5	0	101	1166
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	12	120	236	0	104	300	64	0	24	32	12	0	216	64	108	0	1292	
Heavy Trucks	0	0	0	0	0	4	0	0	0	0	0	0	0	4	0	0	8	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: South End Rd -- Lafayette Ave/S Partlow Rd
CITY/STATE: Oregon City, OR

QC JOB #: 14771006
DATE: Sun, Aug 19 2018

Peak-Hour: 10:15 AM -- 11:15 AM
Peak 15-Min: 10:50 AM -- 11:05 AM



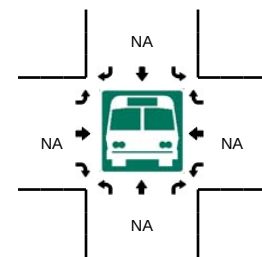
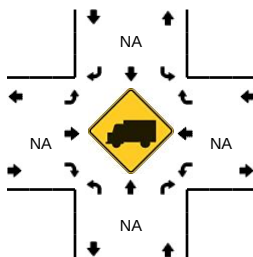
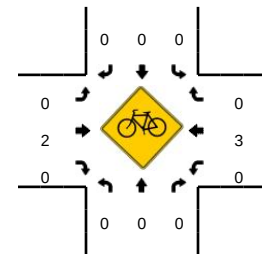
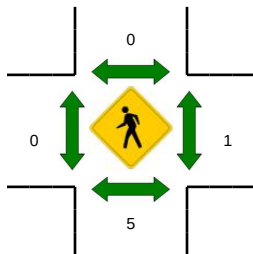
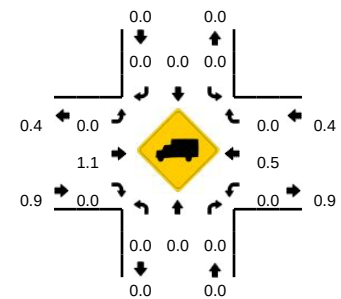
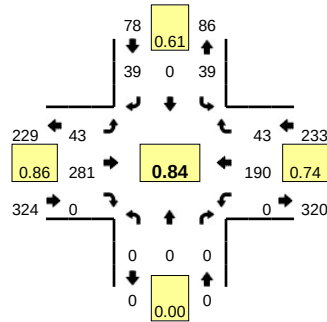
5-Min Count Period Beginning At	South End Rd (Northbound)				South End Rd (Southbound)				Lafayette Ave/S Partlow Rd (Eastbound)				Lafayette Ave/S Partlow Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:45 AM	1	18	1	0	6	10	0	0	1	0	1	0	4	0	5	0	47	440
9:50 AM	0	26	2	0	3	12	0	0	0	0	0	0	6	0	8	0	57	458
9:55 AM	0	14	3	0	1	15	0	0	1	0	0	0	2	0	9	0	45	475
10:00 AM	0	19	4	0	4	9	2	0	2	1	0	0	2	0	6	0	49	493
10:05 AM	0	18	2	0	2	14	1	0	0	1	0	0	3	1	1	0	43	501
10:10 AM	1	15	3	0	4	16	0	0	0	0	3	0	3	0	5	0	50	519
10:15 AM	1	20	5	0	3	12	0	0	1	0	0	0	4	0	2	0	48	528
10:20 AM	0	24	7	0	6	8	0	0	1	0	0	0	2	0	9	0	57	544
10:25 AM	0	22	4	0	2	10	1	0	0	1	0	0	5	2	7	0	54	567
10:30 AM	0	32	3	0	1	16	1	0	0	0	0	0	2	1	5	0	61	594
10:35 AM	0	22	6	0	4	10	1	0	0	0	0	0	1	0	8	0	52	603
10:40 AM	0	23	4	0	3	11	0	0	0	1	0	0	3	0	4	0	49	612
10:45 AM	1	16	1	0	3	9	0	0	0	0	1	0	2	0	3	0	36	601
10:50 AM	0	30	3	0	3	17	0	0	0	0	0	0	5	0	6	0	64	608
10:55 AM	0	16	3	0	6	21	0	0	2	0	3	0	5	1	7	0	64	627
11:00 AM	0	19	3	0	6	16	0	0	1	0	0	0	4	0	10	0	59	637
11:05 AM	0	23	2	0	1	14	1	0	0	0	1	0	3	0	4	0	49	643
11:10 AM	0	12	0	0	5	13	1	0	0	1	2	0	3	0	7	0	44	637
11:15 AM	0	19	1	0	8	10	0	0	2	0	0	0	4	0	7	0	51	640
11:20 AM	0	17	3	0	5	16	1	0	0	0	0	0	1	0	5	0	48	631
11:25 AM	0	17	1	0	6	12	0	0	1	2	1	0	4	1	3	0	48	625
11:30 AM	5	14	3	0	1	10	0	0	0	1	1	0	0	0	7	0	42	606
11:35 AM	0	20	3	0	0	9	0	0	1	0	0	0	5	0	10	0	48	602
11:40 AM	0	18	7	0	3	14	2	0	0	0	2	0	1	0	4	0	51	604
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	260	36	0	60	216	0	0	12	0	12	0	56	4	92	0	748	
Heavy Trucks	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	8	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Canemah Rd -- Warner Parrot Rd
CITY/STATE: Oregon City, OR

QC JOB #: 14771007
DATE: Sun, Aug 19 2018

Peak-Hour: 10:15 AM -- 11:15 AM
Peak 15-Min: 10:30 AM -- 10:45 AM



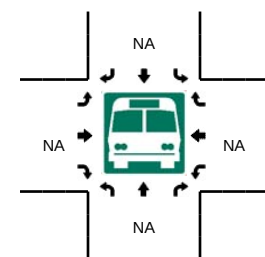
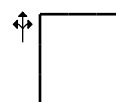
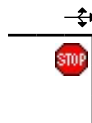
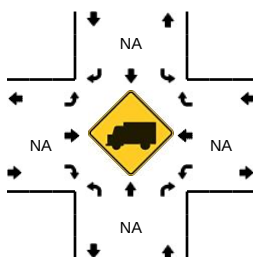
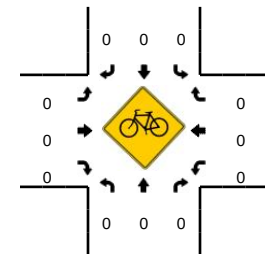
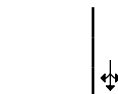
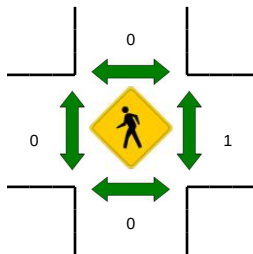
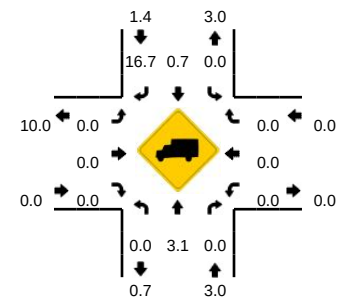
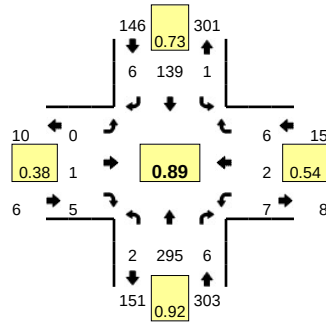
5-Min Count Period Beginning At	Canemah Rd (Northbound)				Canemah Rd (Southbound)				Warner Parrot Rd (Eastbound)				Warner Parrot Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:45 AM	0	0	0	0	5	0	1	0	5	22	0	0	0	18	1	0	52	432
9:50 AM	0	0	0	0	3	0	4	0	3	17	0	0	0	14	3	0	44	432
9:55 AM	0	0	0	0	3	0	5	0	1	19	0	0	0	18	2	0	48	433
10:00 AM	0	0	0	0	4	0	2	0	3	16	0	0	0	14	2	0	41	447
10:05 AM	0	0	0	0	3	0	3	0	1	17	0	0	0	12	4	0	40	461
10:10 AM	0	0	0	0	2	0	3	0	1	14	0	0	0	12	6	0	38	468
10:15 AM	0	0	0	0	3	0	2	0	6	26	0	0	0	8	6	0	51	482
10:20 AM	0	0	0	0	3	0	2	0	1	23	0	0	0	18	6	0	53	504
10:25 AM	0	0	0	0	8	0	7	0	5	33	0	0	0	8	2	0	63	527
10:30 AM	0	0	0	0	4	0	3	0	6	20	0	0	0	24	6	0	63	561
10:35 AM	0	0	0	0	7	0	3	0	3	26	0	0	0	22	1	0	62	587
10:40 AM	0	0	0	0	2	0	5	0	5	26	0	0	0	21	5	0	64	619
10:45 AM	0	0	0	0	3	0	2	0	2	20	0	0	0	17	7	0	51	618
10:50 AM	0	0	0	0	1	0	4	0	1	20	0	0	0	19	1	0	46	620
10:55 AM	0	0	0	0	5	0	2	0	2	20	0	0	0	17	2	0	48	620
11:00 AM	0	0	0	0	1	0	5	0	5	13	0	0	0	5	1	0	30	609
11:05 AM	0	0	0	0	1	0	2	0	2	31	0	0	0	10	2	0	48	617
11:10 AM	0	0	0	0	1	0	2	0	5	23	0	0	0	21	4	0	56	635
11:15 AM	0	0	0	0	1	0	4	0	6	13	0	0	0	14	1	0	39	623
11:20 AM	0	0	0	0	3	0	2	0	1	26	0	0	0	13	2	0	47	617
11:25 AM	0	0	0	0	4	0	1	0	2	18	0	0	0	20	2	0	47	601
11:30 AM	0	0	0	0	7	0	2	0	1	14	0	0	0	8	3	0	35	573
11:35 AM	0	0	0	0	1	0	1	0	4	21	0	0	0	16	5	0	48	559
11:40 AM	0	0	0	0	0	0	0	0	4	31	0	0	0	22	3	0	60	555
Peak 15-Min Flowrates																		
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	0	0	0	0	52	0	44	0	56	288	0	0	0	268	48	0	756	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians		12				0				0				0			12	
Bicycles	0	0	0		0	0	0		0	1	0		0	2	0		3	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: South End Rd -- Deerbrook Dr/Barker Ave
CITY/STATE: Oregon City, OR

QC JOB #: 14771003
DATE: Sun, Aug 19 2018

Peak-Hour: 10:15 AM -- 11:15 AM
Peak 15-Min: 10:20 AM -- 10:35 AM



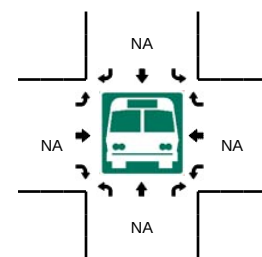
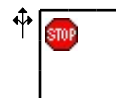
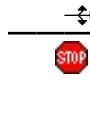
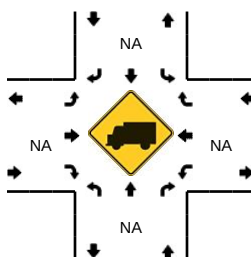
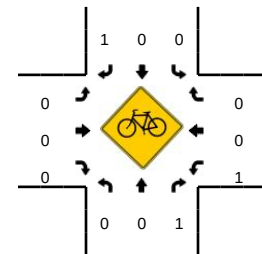
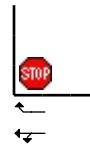
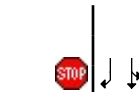
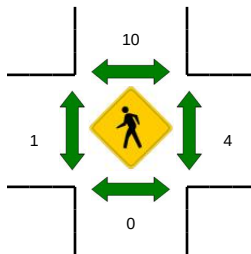
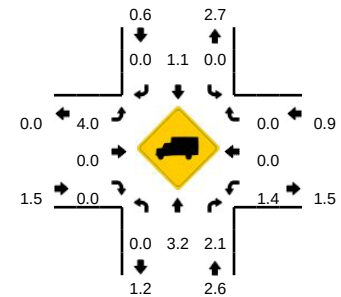
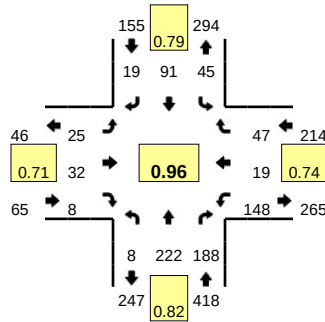
5-Min Count Period Beginning At	South End Rd (Northbound)				South End Rd (Southbound)				Deerbrook Dr/Barker Ave (Eastbound)				Deerbrook Dr/Barker Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:45 AM	1	16	0	0	1	18	0	0	0	0	0	0	0	0	1	0	37	364
9:50 AM	0	28	2	0	0	23	1	0	0	0	0	0	1	0	0	0	55	391
9:55 AM	0	13	0	0	0	16	1	0	0	0	0	1	1	0	0	0	32	387
10:00 AM	0	24	1	0	0	13	0	0	1	0	0	0	1	0	2	0	42	413
10:05 AM	0	19	0	0	0	16	1	0	0	0	0	0	0	0	1	0	37	423
10:10 AM	0	19	0	0	1	17	0	0	0	0	0	1	3	0	0	0	41	432
10:15 AM	0	29	0	0	1	6	0	0	0	0	0	0	0	0	0	0	36	436
10:20 AM	0	34	1	0	0	11	0	0	0	0	2	0	2	1	0	0	51	453
10:25 AM	0	18	0	0	0	15	0	0	0	0	1	0	0	0	1	0	35	453
10:30 AM	0	22	0	0	0	20	2	0	0	1	0	0	0	0	1	0	46	469
10:35 AM	0	27	1	0	0	13	0	0	0	0	0	0	1	0	2	0	44	480
10:40 AM	0	19	0	0	0	9	1	0	0	0	0	0	1	0	1	0	31	487
10:45 AM	1	22	0	0	0	13	1	0	0	0	0	0	1	0	1	0	39	489
10:50 AM	0	23	2	0	0	13	0	0	0	0	1	0	0	1	0	0	40	474
10:55 AM	0	24	1	0	0	12	1	0	0	0	0	0	0	0	0	0	38	480
11:00 AM	0	20	0	0	0	11	1	0	0	0	0	1	1	0	0	0	34	472
11:05 AM	1	28	1	0	0	10	0	0	0	0	0	0	1	0	0	0	41	476
11:10 AM	0	29	0	0	0	6	0	0	0	0	0	0	0	0	0	0	35	470
11:15 AM	0	23	1	0	1	14	0	0	1	0	0	0	1	0	0	0	41	475
11:20 AM	0	24	0	0	1	19	0	0	0	0	0	0	0	0	1	0	45	469
11:25 AM	0	24	1	0	0	14	1	0	0	0	0	0	0	0	1	0	41	475
11:30 AM	0	31	0	0	0	10	0	0	0	0	0	1	0	0	0	0	42	471
11:35 AM	0	27	1	0	0	6	2	0	1	0	0	0	0	0	1	0	38	465
11:40 AM	0	22	0	0	0	13	0	0	1	0	0	0	0	0	0	0	36	470
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	296	4	0	0	184	8	0	0	4	12	0	8	4	8	0	528	
Heavy Trucks	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: South End Rd -- Warner Parrot Rd
CITY/STATE: Oregon City, OR

QC JOB #: 14771004
DATE: Sun, Aug 19 2018

Peak-Hour: 10:15 AM -- 11:15 AM
Peak 15-Min: 10:30 AM -- 10:45 AM



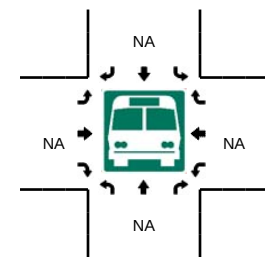
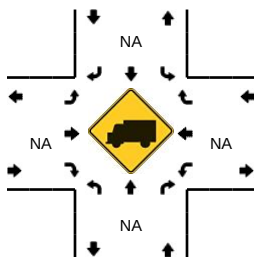
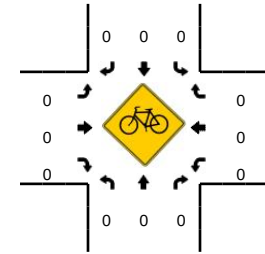
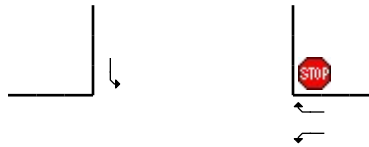
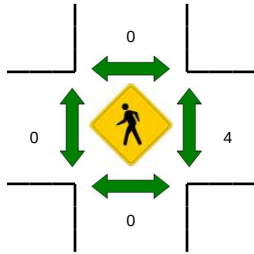
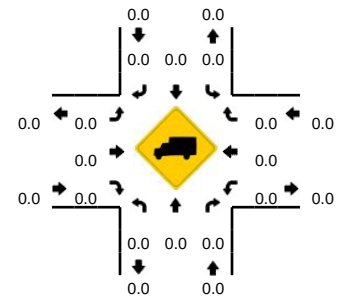
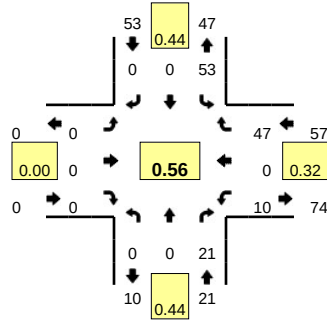
5-Min Count Period Beginning At	South End Rd (Northbound)				South End Rd (Southbound)				Warner Parrot Rd (Eastbound)				Warner Parrot Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:45 AM	0	14	15	0	2	17	0	0	1	5	0	0	5	1	8	0	68	598
9:50 AM	1	22	13	0	4	14	1	0	2	4	0	0	9	1	11	0	82	626
9:55 AM	0	9	10	0	3	11	0	0	1	3	0	0	9	2	8	0	56	622
10:00 AM	0	18	10	0	6	8	1	0	1	5	0	0	10	0	11	0	70	660
10:05 AM	1	14	8	0	6	9	1	0	1	1	0	0	7	4	5	0	57	671
10:10 AM	0	14	9	0	4	9	1	0	2	3	0	0	8	4	6	0	60	686
10:15 AM	2	23	20	0	7	4	1	0	6	3	2	0	7	2	3	0	80	717
10:20 AM	1	24	18	0	4	3	4	0	1	3	2	0	10	1	3	0	74	745
10:25 AM	2	13	24	0	6	8	1	0	0	3	1	0	6	1	2	0	67	762
10:30 AM	0	20	17	0	5	12	3	0	0	1	0	0	16	0	4	0	78	797
10:35 AM	0	15	12	0	3	11	0	0	0	4	1	0	15	3	4	0	68	806
10:40 AM	1	14	21	0	5	5	0	0	1	3	0	0	19	2	6	0	77	837
10:45 AM	0	8	11	0	2	9	3	0	3	5	0	0	13	3	7	0	64	833
10:50 AM	0	26	9	0	2	7	4	0	1	1	0	0	16	1	2	0	69	820
10:55 AM	0	15	11	0	0	11	2	0	1	4	2	0	15	0	3	0	64	828
11:00 AM	1	16	13	0	3	8	1	0	8	1	0	0	9	1	3	0	64	822
11:05 AM	1	24	16	0	4	10	0	0	3	4	0	0	10	1	5	0	78	843
11:10 AM	0	24	16	0	4	3	0	0	1	0	0	0	12	4	5	0	69	852
11:15 AM	0	19	14	0	4	8	1	0	1	6	0	0	6	2	2	0	63	835
11:20 AM	3	16	11	0	4	12	2	0	1	1	1	0	12	1	8	0	72	833
11:25 AM	1	16	8	0	4	8	0	0	5	2	0	0	7	2	7	0	60	826
11:30 AM	1	13	3	0	4	4	2	0	5	1	0	0	8	1	6	0	48	796
11:35 AM	0	20	12	0	4	4	0	0	3	7	0	0	7	2	2	0	61	789
11:40 AM	0	16	13	0	1	8	0	0	5	5	1	0	6	6	3	0	64	776
Peak 15-Min Flowrates																		
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	4	196	200	0	52	112	12	0	4	32	4	0	200	20	56	0	892	
Heavy Trucks	0	12	4		0	4	0		0	0	0		0	0	0		20	
Pedestrians	0				16				0				0				16	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: South End Rd -- Oregon City Christian Church Dwy
CITY/STATE: Oregon City, OR

QC JOB #: 14771005
DATE: Sun, Aug 19 2018

Peak-Hour: 10:15 AM -- 11:15 AM
Peak 15-Min: 10:15 AM -- 10:30 AM



5-Min Count Period Beginning At	South End Rd (Northbound)				South End Rd (Southbound)				Oregon City Christian Church (Eastbound)				Oregon City Christian Church (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	46
9:50 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	35
9:55 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	18
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
10:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	13
10:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	6	0	8	19
10:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	5	0	17	0	24	42
10:20 AM	0	0	2	0	4	0	0	0	0	0	0	0	3	0	10	0	19	61
10:25 AM	0	0	3	0	3	0	0	0	0	0	0	0	1	0	9	0	16	76
10:30 AM	0	0	6	0	10	0	0	0	0	0	0	0	1	0	3	0	20	95
10:35 AM	0	0	3	0	9	0	0	0	0	0	0	0	0	0	2	0	14	109
10:40 AM	0	0	2	0	11	0	0	0	0	0	0	0	0	0	4	0	17	125
10:45 AM	0	0	1	0	6	0	0	0	0	0	0	0	0	0	1	0	8	132
10:50 AM	0	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	7	137
10:55 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	138
11:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	3	141
11:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	139
11:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	131
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	108
11:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89
11:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53
11:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39
11:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	20	0	36	0	0	0	0	0	0	0	36	0	144	0	236	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

Appendix C Level of Service Concept

LEVEL OF SERVICE CONCEPT

Level of service (LOS) is a concept developed to quantify the degree of comfort (including such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles) afforded to drivers as they travel through an intersection or roadway segment. Six grades are used to denote the various level of service from “A” to “F”.¹

Signalized Intersections

The six level-of-service grades are described qualitatively for signalized intersections in Table C1. Additionally, Table C2 identifies the relationship between level of service and average control delay per vehicle. Control delay is defined to include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Using this definition, Level of Service “D” is generally considered to represent the minimum acceptable design standard.

Table C1: Level-of-Service Definitions (Signalized Intersections)

Level of Service	Average Delay per Vehicle
A	Very low average control delay, less than 10 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Average control delay is greater than 10 seconds per vehicle and less than or equal to 20 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for a level of service A, causing higher levels of average delay.
C	Average control delay is greater than 20 seconds per vehicle and less than or equal to 35 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Average control delay is greater than 35 seconds per vehicle and less than or equal to 55 seconds per vehicle. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle length, or high volume/capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Average control delay is greater than 55 seconds per vehicle and less than or equal to 80 seconds per vehicle. This is usually considered to be the limit of acceptable delay. These high delay values generally (but not always) indicate poor progression, long cycle lengths, and high volume/capacity ratios. Individual cycle failures are frequent occurrences.
F	Average control delay is in excess of 80 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation. It may also occur at high volume/capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such high delay values.

¹ Most of the material in this appendix is adapted from the Transportation Research Board, Highway Capacity Manual, (2010).

Table C2: Level-of-Service Criteria for Signalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	<10.0
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

UNSIGNALIZED INTERSECTIONS

Unsignalized intersections include two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections. The 2010 Highway Capacity Manual (HCM) provides models for estimating control delay at both TWSC and AWSC intersections. A qualitative description of the various service levels associated with an unsignalized intersection is presented in Table C3. A quantitative definition of level of service for unsignalized intersections is presented in Table C4. Using this definition, Level of Service “E” is generally considered to represent the minimum acceptable design standard.

Table C3: Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Delay per Vehicle to Minor Street
A	- Nearly all drivers find freedom of operation. - Very seldom is there more than one vehicle in queue.
B	- Some drivers begin to consider the delay an inconvenience. - Occasionally there is more than one vehicle in queue.
C	- Many times there is more than one vehicle in queue. - Most drivers feel restricted, but not objectionably so.
D	- Often there is more than one vehicle in queue. - Drivers feel quite restricted.
E	- Represents a condition in which the demand is near or equal to the probable maximum number of vehicles that can be accommodated by the movement. - There is almost always more than one vehicle in queue. - Drivers find the delays approaching intolerable levels.
F	- Forced flow. - Represents an intersection failure condition that is caused by geometric and/or operational constraints external to the intersection.

Table C4: Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	<10.0
B	>10.0 and ≤ 15.0
C	>15.0 and ≤ 25.0
D	>25.0 and ≤ 35.0
E	>35.0 and ≤ 50.0
F	>50.0

It should be noted that the level-of-service criteria for unsignalized intersections are somewhat different than the criteria used for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from different kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Additionally, there are a number of driver behavior considerations that combine to make delays at signalized intersections less galling than at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, while drivers on the minor street approaches to TWSC intersections must remain attentive to the task of identifying acceptable gaps and

vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized intersections than signalized intersections. For these reasons, it is considered that the control delay threshold for any given level of service is less for an unsignalized intersection than for a signalized intersection. While overall intersection level of service is calculated for AWSC intersections, level of service is only calculated for the minor approaches and the major street left turn movements at TWSC intersections. No delay is assumed to the major street through movements. For TWSC intersections, the overall intersection level of service remains undefined: level of service is only calculated for each minor street lane.

In the performance evaluation of TWSC intersections, it is important to consider other measures of effectiveness (MOEs) in addition to delay, such as v/c ratios for individual movements, average queue lengths, and 95th-percentile queue lengths. By focusing on a single MOE for the worst movement only, such as delay for the minor-street left turn, users may make inappropriate traffic control decisions. The potential for making such inappropriate decisions is likely to be particularly pronounced when the HCM level-of-service thresholds are adopted as legal standards, as is the case in many public agencies.

Appendix D Year 2018 Existing Traffic Conditions Worksheets

Existing Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak

09/12/2018

Intersection	
Intersection Delay, s/veh	25.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	29	30	4	215	50	73	6	154	200	89	269	47
Future Vol, veh/h	29	30	4	215	50	73	6	154	200	89	269	47
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	0	2	2	3	0	1	2	2	1	0
Mvmt Flow	32	33	4	239	56	81	7	171	222	99	299	52
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	13.5	21	28.2	29.4
HCM LOS	B	C	D	D

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	46%	81%	0%	25%	0%
Vol Thru, %	43%	48%	19%	0%	75%	0%
Vol Right, %	56%	6%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	360	63	265	73	358	47
LT Vol	6	29	215	0	89	0
Through Vol	154	30	50	0	269	0
RT Vol	200	4	0	73	0	47
Lane Flow Rate	400	70	294	81	398	52
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.757	0.169	0.644	0.152	0.791	0.091
Departure Headway (Hd)	6.809	8.669	7.87	6.735	7.16	6.299
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	532	412	459	531	505	567
Service Time	4.869	6.766	5.631	4.495	4.92	4.058
HCM Lane V/C Ratio	0.752	0.17	0.641	0.153	0.788	0.092
HCM Control Delay	28.2	13.5	23.9	10.7	32	9.7
HCM Lane LOS	D	B	C	B	D	A
HCM 95th-tile Q	6.6	0.6	4.4	0.5	7.3	0.3

Existing Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	7	353	0	4	484
Future Vol, veh/h	0	7	353	0	4	484
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	8	392	0	4	538

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	943	396	0	0	396	0
Stage 1	396	-	-	-	-	-
Stage 2	547	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	294	658	-	-	1174	-
Stage 1	684	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	291	655	-	-	1174	-
Mov Cap-2 Maneuver	291	-	-	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	581	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	655	1174
HCM Lane V/C Ratio	-	-	0.012	0.004
HCM Control Delay (s)	-	0	10.6	8.1
HCM Lane LOS	-	A	B	A
HCM 95th %tile Q(veh)	-	-	0	0

Existing Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↔			↔
Traffic Vol, veh/h	0	0	353	0	0	484
Future Vol, veh/h	0	0	353	0	0	484
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	0	392	0	0	538

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	934	396	0	0	396
Stage 1	396	-	-	-	-
Stage 2	538	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	297	658	-	-	1174
Stage 1	684	-	-	-	-
Stage 2	589	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	296	655	-	-	1174
Mov Cap-2 Maneuver	296	-	-	-	-
Stage 1	681	-	-	-	-
Stage 2	589	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1174
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Existing Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	1	5	7	2	6	2	295	6	1	139	6
Future Vol, veh/h	0	1	5	7	2	6	2	295	6	1	139	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	6	8	2	7	2	331	7	1	156	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	506	506	160	505	505	336	163	0	0	339	0	0
Stage 1	162	162	-	340	340	-	-	-	-	-	-	-
Stage 2	344	344	-	165	165	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	480	472	890	481	473	711	1428	-	-	1231	-	-
Stage 1	845	768	-	679	643	-	-	-	-	-	-	-
Stage 2	676	640	-	842	766	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	473	470	890	476	471	710	1428	-	-	1231	-	-
Mov Cap-2 Maneuver	473	470	-	476	471	-	-	-	-	-	-	-
Stage 1	843	767	-	677	641	-	-	-	-	-	-	-
Stage 2	666	638	-	835	765	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	11.8	0	0.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1428	-	-	775 547	1231	-	-
HCM Lane V/C Ratio	0.002	-	-	0.009 0.031	0.001	-	-
HCM Control Delay (s)	7.5	0	-	9.7 11.8	7.9	0	-
HCM Lane LOS	A	A	-	A B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0 0.1	0	-	-

Existing Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	14.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	25	32	8	148	19	47	8	222	188	45	91	19
Future Vol, veh/h	25	32	8	148	19	47	8	222	188	45	91	19
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	4	0	0	1	0	0	0	3	2	0	1	0
Mvmt Flow	26	33	8	154	20	49	8	231	196	47	95	20
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	10.8	11.9	18.4	10.6
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	38%	89%	0%	33%	0%
Vol Thru, %	53%	49%	11%	0%	67%	0%
Vol Right, %	45%	12%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	418	65	167	47	136	19
LT Vol	8	25	148	0	45	0
Through Vol	222	32	19	0	91	0
RT Vol	188	8	0	47	0	19
Lane Flow Rate	435	68	174	49	142	20
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.659	0.127	0.327	0.076	0.244	0.029
Departure Headway (Hd)	5.45	6.752	6.772	5.595	6.198	5.336
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	662	530	531	639	579	670
Service Time	3.482	4.806	4.514	3.337	3.941	3.079
HCM Lane V/C Ratio	0.657	0.128	0.328	0.077	0.245	0.03
HCM Control Delay	18.4	10.8	12.8	8.8	10.9	8.2
HCM Lane LOS	C	B	B	A	B	A
HCM 95th-tile Q	4.9	0.4	1.4	0.2	1	0.1

Existing Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection

Int Delay, s/veh 1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	47	371	21	53	194
Future Vol, veh/h	10	47	371	21	53	194
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	10	49	386	22	55	202

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	714	401	0	0	412
Stage 1	401	-	-	-	-
Stage 2	313	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	401	653	-	-	1158
Stage 1	681	-	-	-	-
Stage 2	746	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	378	651	-	-	1158
Mov Cap-2 Maneuver	378	-	-	-	-
Stage 1	678	-	-	-	-
Stage 2	706	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 378 651 1158	-	-
HCM Lane V/C Ratio	-	- 0.028 0.075 0.048	-	-
HCM Control Delay (s)	-	- 14.8 11 8.3	0	0
HCM Lane LOS	-	- B B A A		
HCM 95th %tile Q(veh)	-	- 0.1 0.2 0.1	-	-

Existing Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	0	0	392	0	0	204
Future Vol, veh/h	0	0	392	0	0	204
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	0	0	408	0	0	213

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	625	412	0	0	412	0
Stage 1	412	-	-	-	-	-
Stage 2	213	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	452	644	-	-	1158	-
Stage 1	673	-	-	-	-	-
Stage 2	827	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	450	642	-	-	1158	-
Mov Cap-2 Maneuver	450	-	-	-	-	-
Stage 1	670	-	-	-	-	-
Stage 2	827	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1158	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0	-

Existing Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔			↔	
Traffic Vol, veh/h	5	3	7	39	4	72	2	259	41	43	157	5
Future Vol, veh/h	5	3	7	39	4	72	2	259	41	43	157	5
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	6	4	8	46	5	85	2	305	48	51	185	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	668	651	189	634	630	334	191	0	0	357	0	0
Stage 1	289	289	-	338	338	-	-	-	-	-	-	-
Stage 2	379	362	-	296	292	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	375	390	823	390	401	703	1395	-	-	1202	-	-
Stage 1	723	677	-	674	644	-	-	-	-	-	-	-
Stage 2	647	629	-	710	675	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	314	369	822	367	380	700	1394	-	-	1201	-	-
Mov Cap-2 Maneuver	314	369	-	367	380	-	-	-	-	-	-	-
Stage 1	722	645	-	670	640	-	-	-	-	-	-	-
Stage 2	563	625	-	665	643	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.1		12.9		0.1		1.7	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1394	-	-	461 367 670	1201	-	-
HCM Lane V/C Ratio	0.002	-	-	0.038 0.125 0.133	0.042	-	-
HCM Control Delay (s)	7.6	0	-	13.1 16.2 11.2	8.1	0	-
HCM Lane LOS	A	A	-	B C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.4 0.5	0.1	-	-

Existing Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	281	190	43	39	39
Future Vol, veh/h	43	281	190	43	39	39
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	51	335	226	51	46	46
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	277	0	-	0	690	252
Stage 1	-	-	-	-	252	-
Stage 2	-	-	-	-	438	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1298	-	-	-	414	792
Stage 1	-	-	-	-	795	-
Stage 2	-	-	-	-	655	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1298	-	-	-	394	792
Mov Cap-2 Maneuver	-	-	-	-	394	-
Stage 1	-	-	-	-	795	-
Stage 2	-	-	-	-	624	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		13.3		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1298	-	-	-	526	
HCM Lane V/C Ratio	0.039	-	-	-	0.177	
HCM Control Delay (s)	7.9	0	-	-	13.3	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6	

Appendix E ODOT Crash Data

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Canemah Rd & Warner Parrott Rd
January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2016														
TURNING MOVEMENTS	0	1	0	1	0	1	0	0	1	1	0	1	0	0
2016 TOTAL	0	1	0	1	0	1	0	0	1	1	0	1	0	0
YEAR: 2015														
REAR-END	0	0	1	1	0	0	0	0	1	0	1	1	0	0
2015 TOTAL	0	0	1	1	0	0	0	0	1	0	1	1	0	0
YEAR: 2012														
REAR-END	0	2	0	2	0	2	0	2	0	2	0	2	0	0
2012 TOTAL	0	2	0	2	0	2	0	2	0	2	0	2	0	0
FINAL TOTAL	0	3	1	4	0	3	0	2	2	3	1	4	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

Canemah Rd & Warner Parrott Rd
January 1, 2012 through December 31, 2016

SER#	S D					DATE	FC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	SPCL USE		MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A S		PED LOC ERROR	ACTN	EVENT	CAUSE	
	INVEST	ELG	HRL	LAT/LONG	DISTNC										VEH TYPE	TRLR QTY OWNER					G E LICNS RES	X					
01312	N	N	N		04/08/2012	16		CANEMAH RD	INTER	3-LEG	N		CLR	S-1STOP	01	NONE	0	STRGHT									07
NONE					Sun	1P	0	WARNER-PARROTT RD	W		UNKNOWN		N	DRY	REAR		PRVTE	W E						000		00	
No	45	20	14.57	-122 36 36.69				1	06	0		N	DAY	INJ		PSNGR CAR			01	DRVR	NONE	64 M	OR-Y	026	000		07
																					OR<25						
																								012		00	
																			01	DRVR	INJB	65 M	OR-Y	000	000		00
																					OR<25						
03180	N	N	N		08/27/2012	16		CANEMAH RD	INTER	3-LEG	N		CLR	S-1STOP	01	NONE	0	STRGHT									07
NONE					Mon	8A	0	WARNER-PARROTT RD	W		UNKNOWN		N	DRY	REAR		RENTL	W E					000		00		
No	45	20	14.57	-122 36 36.69				1	06	0		N	DAY	INJ		UNKNOWN			01	DRVR	NONE	00 F	OTH-Y	026	000		07
																					N-RES						
																								011		00	
																			01	DRVR	INJC	53 F	OR-Y	000	000		00
																					OR<25						
04488	N	N	N		10/30/2015	16		CANEMAH RD	INTER	3-LEG	N		RAIN	S-1STOP	01	NONE	0	STRGHT									29
NONE					Fri	6P	0	WARNER-PARROTT RD	W		UNKNOWN		N	WET	REAR		PRVTE	W E					000		00		
No	45	20	14.62	-122 36 36.56				1	06	0		N	DUSK	PDO		PSNGR CAR			01	DRVR	NONE	16 M	OR-Y	026	000		29
																					OR<25						
																								012		00	
																			01	DRVR	NONE	28 M	OR-Y	000	000		00
																					OR<25						
05511	N	N	N	N N	11/26/2016	16		CANEMAH RD	INTER	3-LEG	N		CLD	ANGL-OTH	01	NONE	0	STRGHT									02
CITY					Sat	7A	0	WARNER-PARROTT RD	CN		STOP SIGN		N	WET	TURN		PRVTE	E W					000		00		
No	45	20	14.62	-122 36 36.56				1	01	0		N	DAY	INJ		PSNGR CAR			01	DRVR	NONE	41 M	OR-Y	000	000		00
																					OR<25						
																								015		00	
																			01	DRVR	INJB	16 F	OR-Y	028	000		02
																					OR<25						

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPESouth End Rd & Barker Ave
January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD

YEAR:

TOTAL

FINAL TOTAL

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

South End Rd & Partlow Rd / Lafayette Rd
January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2016														
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2016 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2014														
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	1	0	1	0	0
2014 TOTAL	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR: 2012														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2012 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	1	2	3	0	1	0	2	1	3	0	3	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

South End Rd & Partlow Rd / Lafayette Rd
January 1, 2012 through December 31, 2016

SER#	INVEST	UNLOC?	S P D C	D R S L K	W O R K	DATE DAY/TIME LAT/LONG	FC DISTNC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G E X	S E LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE		
01409	NO RPT	NO	N	N	N	04/10/2012 Tue 11A	16 0	LAFAYETTE AVE SOUTH END RD 1	INTER NE 06	CROSS 0	N UNKNOWN	N N	CLR DRY DAY	S-1STOP REAR PDO	01 PSNGR CAR	NONE PRVTE CAR	0 NE SW		01	DRVR	NONE	85	M	OR-Y OR<25	026	000	000	07 00 07
			45	19	53.83	-122 37 32.90									02 PSNGR CAR	STOP NE SW CAR		01	DRVR	NONE	67	F	OR-Y OR<25	000	011 000		00 00	
01556	NONE	No	N	N	N	04/23/2014 Wed 6P	16 0	PARTLOW RD SOUTH END RD 1	INTER CN 04	CROSS 0	N UNKNOWN	N N	RAIN WET DAY	O-1 L-TURN TURN PDO	01 PSNGR CAR	NONE PRVTE CAR	0 SW NE		01	DRVR	NONE	60	M	OR-Y OR<25	000	000	000	02 00 00
			45	19	53.83	-122 37 32.90									02 PSNGR CAR	TURN-L NE SE CAR		01	DRVR	NONE	19	F	OR-Y OR<25	028,004	000	000	00 02	
02915	CITY	No	N	N	N	06/28/2016 Tue 4P	16 0	PARTLOW RD SOUTH END RD 1	INTER CN 04	CROSS 0	N UNKNOWN	N N	CLR DRY DAY	O-1 L-TURN TURN INJ	01 PSNGR CAR	NONE PRVTE CAR	0 SW NE		01	DRVR	INJC	41	F	OR-Y OR<25	000	000	000	02 00 00
			45	19	53.83	-122 37 32.90									02 PSNGR CAR	TURN-L NE SE CAR		01	DRVR	NONE	28	F	OR-Y OR<25	028,004	000	000	00 02	

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

South End Rd & Warner Parrott Rd / Lawton Rd
January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2016														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
REAR-END	0	0	1	1	0	0	0	0	1	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	1	0	1	0	0
2016 TOTAL	0	0	3	3	0	0	0	1	2	3	0	3	0	0
YEAR: 2015														
ANGLE	0	0	1	1	0	0	0	0	0	1	0	1	0	0
REAR-END	0	1	0	1	0	1	0	0	0	1	0	1	0	0
2015 TOTAL	0	1	1	2	0	1	0	0	0	2	0	2	0	0
YEAR: 2013														
ANGLE	0	0	2	2	0	0	0	1	1	0	2	2	0	0
TURNING MOVEMENTS	0	1	0	1	0	2	0	1	0	1	0	1	0	0
2013 TOTAL	0	1	2	3	0	2	0	2	1	1	2	3	0	0
FINAL TOTAL	0	2	6	8	0	3	0	3	3	6	2	8	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

South End Rd & Warner Parrott Rd / Lawton Rd
January 1, 2012 through December 31, 2016

SER#	P E L G H R	D C S L K	W	DATE	FC	CITY STREET	RD CHAR	INT-TYP	INT-REL	OFF-RD	WTHR	CRASH TYP	SPCL USE	MOVE	A S	PED	ACTN	EVENT	CAUSE				
INVEST	E L G H R	D C S L K		DAY/TIME	DISTNC	SECOND STREET	DIRECT	(MEDIAN)	TRAF-	RNDBT	SURF	COLL TYP	OWNER	FROM	G E LICNS	LOC							
UNLOC?				LAT/LONG		INTERSECTION SEQ #	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	VEH TYPE	TO	P#	TYPE	SVRTY	E X RES				
00122	N N N			01/11/2013	16	LAWTON RD	INTER	CROSS	N		FOG	ANGL-OTH	01	NONE	0	STRGHT							
NONE				Fri 8A	0	SOUTH END RD	CN		FLASHBCN-R	N	ICE	ANGL		PRVTE	W E				015				
No	45	20	14.21	-122 37 22.44		1	04	0		N	DAWN	PDO		PSNGR CAR		01	DRVR	NONE	16 M OR-Y OR<25	028	000	002	
													02	NONE	0	TURN-R							
														PRVTE	S E				015				
														PSNGR CAR		01	DRVR	NONE	16 M OR-Y OR<25	000	000	000	
05900	N N N			12/15/2016	16	SOUTH END RD	INTER	CROSS	N		CLR	S-STRGHT	01	NONE	9	STRGHT							
NONE				Thu 2P	0	WARNER-PARROTT RD	E		FLASHBCN-R	N	ICE	REAR		N/A		E W			000				
No	45	20	14.21	-122 37 22.44		1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00 U UNK UNK	000	000	000	
													02	NONE	9	STRGHT							
														N/A		E W			006				
														PSNGR CAR		01	DRVR	NONE	00 U UNK UNK	000	000	000	
03380	N N N			08/18/2015	16	SOUTH END RD	INTER	CROSS	N		UNK	S-1STOP	01	NONE	0	STRGHT							
NONE				Tue 3P	0	WARNER-PARROTT RD	S		UNKNOWN	N	UNK	REAR		UNKN		S N			000				
No	45	20	14.21	-122 37 22.44		1	06	0		N	DAY	INJ		UNKNOWN			01	DRVR	NONE	00 U UNK UNK	026	000	29
													02	NONE	0	STOP							
														PRVTE	S N				011				
														PSNGR CAR		01	DRVR	INJC	45 M OR-Y OR<25	000	000	000	
01077	N N N			03/08/2016	16	SOUTH END RD	INTER	CROSS	N		RAIN	O-1 L-TURN	01	NONE	9	STRGHT							
NO RPT				Tue 1P	0	WARNER-PARROTT RD	CN		STOP SIGN	N	WET	TURN		N/A		E W			000				
No	45	20	14.21	-122 37 22.44		1	02	0		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	00 U UNK UNK	000	000	000
													02	NONE	9	TURN-L							
														N/A		W N			000				
														SCHL BUS			01	DRVR	NONE	00 U UNK UNK	000	000	000
02411	N N N			06/07/2013	16	SOUTH END RD	INTER	CROSS	N		CLR	ANGL-OTH	01	NONE	0	TURN-L							
NO RPT				Fri 8P	0	WARNER-PARROTT RD	CN		FLASHBCN-R	N	DRY	TURN		PRVTE	E S				015				
No	45	20	14.21	-122 37 22.44		1	04	0		N	DAY	INJ		PSNGR CAR			01	DRVR	NONE	39 F OR-Y OR<25	002	000	008
																	02	PSNG	INJC	16 F		000	000
													02	NONE	0	TURN-R							
														PRVTE	S E				015				
														PSNGR CAR		01	DRVR	INJC	41 F OR-Y OR<25	000	000	000	
04076	N N N			10/24/2013	16	SOUTH END RD	INTER	CROSS	N		FOG	ANGL-OTH	01	NONE	0	STRGHT							
NONE				Thu 7A	0	WARNER-PARROTT RD	CN		FLASHBCN-R	N	DRY	ANGL		PRVTE	W E				015				
No	45	20	14.21	-122 37 22.44		1	04	0		N	DAWN	PDO		PSNGR CAR			01	DRVR	NONE	00 F OR-Y UNK	028	000	002

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

South End Rd between Glacier Ct and Gentry Wy / Maxwell Ct
January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	0	1	0	0	0
2015 TOTAL	0	0	1	1	0	0	0	0	1	0	1	0	0	0
FINAL TOTAL	0	0	1	1	0	0	0	0	1	0	1	0	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

CITY OF OREGON CITY, CLACKAMAS COUNTY

South End Rd between Glacier Ct and Gentry Wy / Maxwell Ct
January 1, 2012 through December 31, 2016

SER#	P	E	A	U	C	O	DATE	FC	CITY STREET	FIRST STREET	RD CHAR	INT-TYP	INT-REL	OFF-RD	WTHR	CRASH TYP	SPCL USE	TRLR QTY	MOVE	A	S	PED	ACTN	EVENT	CAUSE					
INVEST	E	L	G	H	R		DAY/TIME		SECOND STREET		DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL TYP	OWNER	FROM												
UNLOC?	D	C	S	L	K		LAT/LONG	DISTNC	INTERSECTION SEQ #		LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	VEH TYPE	TO	P#	TYPE	SVRTRY	E	X	RES	LOC	ERROR			
05070	N	N	N				11/30/2015	16	SOUTH END RD		ALLEY		N		RAIN	ANGL-OTH	01	NONE	0	STRGHT										02
NONE							Mon 7A	325	GLACIER CT		S	(NONE)	UNKNOWN	N	WET	TURN		PRVTE	N S										00	
No	45	20		7.62			-122 37 22.34		1		07			N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	63	M	OR-Y		000		000	00
												(02)																		

ACTION CODE TRANSLATION LIST		
ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
014	EMR V PKD	EMERGENCY VEHICLE LEGALLY PARKED IN THE ROADWAY
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRACT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY

ACTION CODE TRANSLATION LIST		
ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
088	OTHER	OTHER ACTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST		
CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED)
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED ROAD
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHING
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER
51	FAIL LN	FAILED TO MAINTAIN LANE
52	OFF RD	RAN OFF ROAD

COLLISION TYPE CODE TRANSLATION LIST		
COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST		
CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1 L-TURN	FROM OPPOSITE DIRECTION-ONE LEFT TURN,ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER LICENSE CODE TRANSLATION LIST			DRIVER RESIDENCE CODE TRANSLATION LIST		
LIC CODE	SHORT DESC	LONG DESCRIPTION	RES CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)	1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
1	OR-Y	VALID OREGON LICENSE	2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY	3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
3	SUSP	SUSPENDED/REVOKED	4	N-RES	NON-RESIDENT
4	EXP	EXPIRED	9	UNK	UNKNOWN IF OREGON RESIDENT
8	N-VAL	OTHER NON-VALID LICENSE			
9	UNK	UNKNOWN IF DRIVER WAS LICENSED AT TIME OF CRASH			

ERROR CODE TRANSLATION LIST		
ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

ERROR	SHORT	
CODE	DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST		
EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHICLE)
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRG L PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE

EVENT CODE TRANSLATION LIST		
EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)

FUNCTIONAL CLASSIFICATION TRANSLATION LIST		
FUNC CLASS	DESCRIPTION	
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE	
02	RURAL PRINCIPAL ARTERIAL - OTHER	
06	RURAL MINOR ARTERIAL	
07	RURAL MAJOR COLLECTOR	
08	RURAL MINOR COLLECTOR	
09	RURAL LOCAL	
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE	
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP	
14	URBAN PRINCIPAL ARTERIAL - OTHER	
16	URBAN MINOR ARTERIAL	
17	URBAN MAJOR COLLECTOR	
18	URBAN MINOR COLLECTOR	
19	URBAN LOCAL	
78	UNKNOWN RURAL SYSTEM	
79	UNKNOWN RURAL NON-SYSTEM	
98	UNKNOWN URBAN SYSTEM	
99	UNKNOWN URBAN NON-SYSTEM	

HIGHWAY COMPONENT TRANSLATION LIST	
CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY
2	INJA	INCAPACITATING INJURY - BLEEDING, BROKEN BONES
3	INJB	NON-INCAPACITATING INJURY
4	INJC	POSSIBLE INJURY - COMPLAINT OF PAIN
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE
9	NONE	PARTICIPANT UNINJURED, OVER THE AGE OF 4

LIGHT CONDITION CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST	
CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY
9	PARKNG	PARKING MANEUVER

NON-MOTORIST LOCATION CODE TRANSLATION LIST	
CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE
18	OTHER, NOT IN ROADWAY
99	UNKNOWN LOCATION

ROAD CHARACTER CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

PARTICIPANT TYPE CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYANCE
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OBJECT
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN OBJECT
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMP
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING
095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
00	PDO	NOT COLLECTED FOR PDO CRASHES
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

Appendix F 2020 Background Traffic Conditions Worksheets

Year 2020 Background Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	1	5	7	2	6	2	306	6	1	144	6
Future Vol, veh/h	0	1	5	7	2	6	2	306	6	1	144	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	6	8	2	7	2	344	7	1	162	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	523	523	165	524	524	348	169	0	0	352	0	0
Stage 1	167	167	-	353	353	-	-	-	-	-	-	-
Stage 2	356	356	-	171	171	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	468	462	885	467	461	700	1421	-	-	1218	-	-
Stage 1	840	764	-	668	634	-	-	-	-	-	-	-
Stage 2	666	633	-	836	761	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	461	460	885	462	459	699	1421	-	-	1218	-	-
Mov Cap-2 Maneuver	461	460	-	462	459	-	-	-	-	-	-	-
Stage 1	838	763	-	666	632	-	-	-	-	-	-	-
Stage 2	656	631	-	829	760	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	12	0	0.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1421	-	-	767	534	1218	-
HCM Lane V/C Ratio	0.002	-	-	0.009	0.032	0.001	-
HCM Control Delay (s)	7.5	0	-	9.7	12	8	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

Year 2020 Background Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	15.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	26	33	8	154	20	49	8	230	195	47	94	20
Future Vol, veh/h	26	33	8	154	20	49	8	230	195	47	94	20
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	4	0	0	1	0	0	0	3	2	0	1	0
Mvmt Flow	27	34	8	160	21	51	8	240	203	49	98	21
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	11	12.3	20	10.8
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	39%	89%	0%	33%	0%
Vol Thru, %	53%	49%	11%	0%	67%	0%
Vol Right, %	45%	12%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	433	67	174	49	141	20
LT Vol	8	26	154	0	47	0
Through Vol	230	33	20	0	94	0
RT Vol	195	8	0	49	0	20
Lane Flow Rate	451	70	181	51	147	21
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.69	0.133	0.345	0.08	0.256	0.031
Departure Headway (Hd)	5.511	6.865	6.854	5.676	6.284	5.42
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	654	521	524	630	571	659
Service Time	3.547	4.926	4.601	3.423	4.031	3.167
HCM Lane V/C Ratio	0.69	0.134	0.345	0.081	0.257	0.032
HCM Control Delay	20	11	13.2	8.9	11.2	8.3
HCM Lane LOS	C	B	B	A	B	A
HCM 95th-tile Q	5.5	0.5	1.5	0.3	1	0.1

Year 2020 Background Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	47	387	21	53	203
Future Vol, veh/h	10	47	387	21	53	203
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	10	49	403	22	55	211

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	740	418	0	0	429	0
Stage 1	418	-	-	-	-	-
Stage 2	322	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	387	639	-	-	1141	-
Stage 1	669	-	-	-	-	-
Stage 2	739	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	364	637	-	-	1141	-
Mov Cap-2 Maneuver	364	-	-	-	-	-
Stage 1	666	-	-	-	-	-
Stage 2	698	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 364 637 1141	-	-
HCM Lane V/C Ratio	-	- 0.029 0.077 0.048	-	-
HCM Control Delay (s)	-	- 15.2 11.1 8.3	0	
HCM Lane LOS	-	- C B A	A	
HCM 95th %tile Q(veh)	-	- 0.1 0.2 0.2	-	

Year 2020 Background Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	0	0	408	0	0	213
Future Vol, veh/h	0	0	408	0	0	213
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	0	0	425	0	0	222
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	651	429	0	0	429	0
Stage 1	429	-	-	-	-	-
Stage 2	222	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	436	630	-	-	1141	-
Stage 1	661	-	-	-	-	-
Stage 2	820	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	434	628	-	-	1141	-
Mov Cap-2 Maneuver	434	-	-	-	-	-
Stage 1	658	-	-	-	-	-
Stage 2	820	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1141	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Year 2020 Background Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Traffic Vol, veh/h	5	3	7	40	4	75	2	269	43	45	163	5
Future Vol, veh/h	5	3	7	40	4	75	2	269	43	45	163	5
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	6	4	8	47	5	88	2	316	51	53	192	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	695	677	196	657	654	347	198	0	0	371	0	0
Stage 1	301	301	-	350	350	-	-	-	-	-	-	-
Stage 2	394	376	-	307	304	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	359	377	816	377	389	692	1387	-	-	1188	-	-
Stage 1	712	669	-	664	636	-	-	-	-	-	-	-
Stage 2	635	620	-	701	667	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	297	356	815	354	367	689	1386	-	-	1187	-	-
Mov Cap-2 Maneuver	297	356	-	354	367	-	-	-	-	-	-	-
Stage 1	711	636	-	660	632	-	-	-	-	-	-	-
Stage 2	548	616	-	655	634	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.5		13.1		0		1.7	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1386	-	-	443 354 660	1187	-	-
HCM Lane V/C Ratio	0.002	-	-	0.04 0.133 0.141	0.045	-	-
HCM Control Delay (s)	7.6	0	-	13.5 16.7 11.3	8.2	0	-
HCM Lane LOS	A	A	-	B C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.5 0.5	0.1	-	-

Year 2020 Background Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	292	197	45	40	40
Future Vol, veh/h	45	292	197	45	40	40
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	54	348	235	54	48	48
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	288	0	-	0	717	261
Stage 1	-	-	-	-	261	-
Stage 2	-	-	-	-	456	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1286	-	-	-	399	783
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	643	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1286	-	-	-	378	783
Mov Cap-2 Maneuver	-	-	-	-	378	-
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	610	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		13.7		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1286	-	-	-	510	
HCM Lane V/C Ratio	0.042	-	-	-	0.187	
HCM Control Delay (s)	7.9	0	-	-	13.7	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7	

Year 2020 Background Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	29.6
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	30	31	4	223	52	76	6	160	208	92	279	49
Future Vol, veh/h	30	31	4	223	52	76	6	160	208	92	279	49
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	0	2	2	3	0	1	2	2	1	0
Mvmt Flow	33	34	4	248	58	84	7	178	231	102	310	54
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	14.1	23.1	33	34.5
HCM LOS	B	C	D	D

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	46%	81%	0%	25%	0%
Vol Thru, %	43%	48%	19%	0%	75%	0%
Vol Right, %	56%	6%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	374	65	275	76	371	49
LT Vol	6	30	223	0	92	0
Through Vol	160	31	52	0	279	0
RT Vol	208	4	0	76	0	49
Lane Flow Rate	416	72	306	84	412	54
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.804	0.182	0.681	0.162	0.838	0.098
Departure Headway (Hd)	6.965	9.054	8.023	6.886	7.317	6.454
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	519	399	449	518	495	552
Service Time	5.041	7.054	5.8	4.662	5.091	4.228
HCM Lane V/C Ratio	0.802	0.18	0.682	0.162	0.832	0.098
HCM Control Delay	33	14.1	26.4	11	37.8	9.9
HCM Lane LOS	D	B	D	B	E	A
HCM 95th-tile Q	7.6	0.7	5	0.6	8.4	0.3

Year 2020 Background Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	7	367	0	4	503
Future Vol, veh/h	0	7	367	0	4	503
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	8	408	0	4	559

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	980	412	0	0	412	0
Stage 1	412	-	-	-	-	-
Stage 2	568	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	279	644	-	-	1158	-
Stage 1	673	-	-	-	-	-
Stage 2	571	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	277	642	-	-	1158	-
Mov Cap-2 Maneuver	277	-	-	-	-	-
Stage 1	670	-	-	-	-	-
Stage 2	568	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	642	1158
HCM Lane V/C Ratio	-	-	0.012	0.004
HCM Control Delay (s)	-	0	10.7	8.1
HCM Lane LOS	-	A	B	A
HCM 95th %tile Q(veh)	-	-	0	0

Year 2020 Background Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↔			↔
Traffic Vol, veh/h	0	0	367	0	0	503
Future Vol, veh/h	0	0	367	0	0	503
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	0	408	0	0	559

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	971	412	0	0	412
Stage 1	412	-	-	-	-
Stage 2	559	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	283	644	-	-	1158
Stage 1	673	-	-	-	-
Stage 2	576	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	282	642	-	-	1158
Mov Cap-2 Maneuver	282	-	-	-	-
Stage 1	670	-	-	-	-
Stage 2	576	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1158
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Appendix G Year 2020 Total Traffic Conditions Worksheets

Year 2020 Total Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	30
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	30	31	4	224	52	76	6	161	209	92	280	49
Future Vol, veh/h	30	31	4	224	52	76	6	161	209	92	280	49
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	0	2	2	3	0	1	2	2	1	0
Mvmt Flow	33	34	4	249	58	84	7	179	232	102	311	54
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	14.1	23.3	33.6	34.9
HCM LOS	B	C	D	D

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	46%	81%	0%	25%	0%
Vol Thru, %	43%	48%	19%	0%	75%	0%
Vol Right, %	56%	6%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	376	65	276	76	372	49
LT Vol	6	30	224	0	92	0
Through Vol	161	31	52	0	280	0
RT Vol	209	4	0	76	0	49
Lane Flow Rate	418	72	307	84	413	54
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.81	0.182	0.685	0.162	0.841	0.098
Departure Headway (Hd)	6.976	9.082	8.037	6.9	7.329	6.467
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	518	397	448	518	492	551
Service Time	5.053	7.082	5.813	4.675	5.107	4.244
HCM Lane V/C Ratio	0.807	0.181	0.685	0.162	0.839	0.098
HCM Control Delay	33.6	14.1	26.7	11	38.2	10
HCM Lane LOS	D	B	D	B	E	A
HCM 95th-tile Q	7.8	0.7	5.1	0.6	8.5	0.3

Year 2020 Total Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	8	368	0	5	504
Future Vol, veh/h	0	8	368	0	5	504
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	9	409	0	6	560

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	984	413	0	0	413	0
Stage 1	413	-	-	-	-	-
Stage 2	571	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	278	643	-	-	1157	-
Stage 1	672	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	275	641	-	-	1157	-
Mov Cap-2 Maneuver	275	-	-	-	-	-
Stage 1	669	-	-	-	-	-
Stage 2	564	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	641	1157
HCM Lane V/C Ratio	-	-	0.014	0.005
HCM Control Delay (s)	-	0	10.7	8.1
HCM Lane LOS	-	A	B	A
HCM 95th %tile Q(veh)	-	-	0	0

Year 2020 Total Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	1	1	367	1	1	503
Future Vol, veh/h	1	1	367	1	1	503
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	1	1	408	1	1	559

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	973	412	0	0	413	0
Stage 1	412	-	-	-	-	-
Stage 2	561	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	282	644	-	-	1157	-
Stage 1	673	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	281	642	-	-	1157	-
Mov Cap-2 Maneuver	281	-	-	-	-	-
Stage 1	670	-	-	-	-	-
Stage 2	574	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	391	1157
HCM Lane V/C Ratio	-	-	0.006	0.001
HCM Control Delay (s)	-	-	14.3	8.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0	0

Year 2020 Total Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	1	5	7	2	6	2	315	6	1	151	6
Future Vol, veh/h	0	1	5	7	2	6	2	315	6	1	151	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	6	8	2	7	2	354	7	1	170	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	541	541	173	542	542	358	176	0	0	362	0	0
Stage 1	175	175	-	363	363	-	-	-	-	-	-	-
Stage 2	366	366	-	179	179	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	455	451	876	454	450	691	1412	-	-	1208	-	-
Stage 1	832	758	-	660	628	-	-	-	-	-	-	-
Stage 2	657	626	-	827	755	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	448	449	876	449	448	690	1412	-	-	1208	-	-
Mov Cap-2 Maneuver	448	449	-	449	448	-	-	-	-	-	-	-
Stage 1	830	757	-	658	626	-	-	-	-	-	-	-
Stage 2	647	624	-	820	754	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.8		12.1		0		0.1	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1412	-	-	756	522	1208	-
HCM Lane V/C Ratio	0.002	-	-	0.009	0.032	0.001	-
HCM Control Delay (s)	7.6	0	-	9.8	12.1	8	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

Year 2020 Total Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	17.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	26	33	10	166	20	49	10	239	209	47	101	20
Future Vol, veh/h	26	33	10	166	20	49	10	239	209	47	101	20
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	4	0	0	1	0	0	0	3	2	0	1	0
Mvmt Flow	27	34	10	173	21	51	10	249	218	49	105	21
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	11.2	12.9	23	11.2
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	38%	89%	0%	32%	0%
Vol Thru, %	52%	48%	11%	0%	68%	0%
Vol Right, %	46%	14%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	458	69	186	49	148	20
LT Vol	10	26	166	0	47	0
Through Vol	239	33	20	0	101	0
RT Vol	209	10	0	49	0	20
Lane Flow Rate	477	72	194	51	154	21
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.741	0.14	0.376	0.082	0.274	0.032
Departure Headway (Hd)	5.595	7.02	6.983	5.801	6.401	5.544
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	644	509	513	616	560	643
Service Time	3.639	5.094	4.739	3.556	4.16	3.303
HCM Lane V/C Ratio	0.741	0.141	0.378	0.083	0.275	0.033
HCM Control Delay	23	11.2	13.9	9.1	11.6	8.5
HCM Lane LOS	C	B	B	A	B	A
HCM 95th-tile Q	6.5	0.5	1.7	0.3	1.1	0.1

Year 2020 Total Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	60	399	27	64	213
Future Vol, veh/h	17	60	399	27	64	213
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	18	63	416	28	67	222
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	789	434	0	0	448	0
Stage 1	434	-	-	-	-	-
Stage 2	355	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	362	626	-	-	1123	-
Stage 1	658	-	-	-	-	-
Stage 2	714	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	336	624	-	-	1123	-
Mov Cap-2 Maneuver	336	-	-	-	-	-
Stage 1	655	-	-	-	-	-
Stage 2	665	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.5	0	1.9			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 336 624 1123	-	-		
HCM Lane V/C Ratio	-	- 0.053 0.1 0.059	-	-		
HCM Control Delay (s)	-	- 16.3 11.4 8.4	0			
HCM Lane LOS	-	- C B A A				
HCM 95th %tile Q(veh)	-	- 0.2 0.3 0.2	-	-		

Year 2020 Total Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	8	12	414	5	10	220
Future Vol, veh/h	8	12	414	5	10	220
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	8	13	431	5	10	229
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	688	438	0	0	440	0
Stage 1	438	-	-	-	-	-
Stage 2	250	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	415	623	-	-	1131	-
Stage 1	655	-	-	-	-	-
Stage 2	796	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	409	621	-	-	1131	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	653	-	-	-	-	-
Stage 2	788	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.3	0	0.4			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	514	1131	-	
HCM Lane V/C Ratio	-	-	0.041	0.009	-	
HCM Control Delay (s)	-	-	12.3	8.2	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Year 2020 Total Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔			↔	
Traffic Vol, veh/h	5	3	7	40	4	78	2	277	43	49	173	6
Future Vol, veh/h	5	3	7	40	4	78	2	277	43	49	173	6
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	6	4	8	47	5	92	2	326	51	58	204	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	727	707	208	689	686	356	211	0	0	380	0	0
Stage 1	322	322	-	360	360	-	-	-	-	-	-	-
Stage 2	405	385	-	329	326	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	342	363	803	359	373	684	1372	-	-	1178	-	-
Stage 1	694	655	-	656	630	-	-	-	-	-	-	-
Stage 2	626	614	-	682	652	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	280	341	802	335	350	681	1371	-	-	1177	-	-
Mov Cap-2 Maneuver	280	341	-	335	350	-	-	-	-	-	-	-
Stage 1	693	618	-	652	626	-	-	-	-	-	-	-
Stage 2	536	610	-	633	615	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.9	13.5	0	1.8
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1371	-	-	424 335 651 1177	-	-	-
HCM Lane V/C Ratio	0.002	-	-	0.042 0.14 0.148 0.049	-	-	-
HCM Control Delay (s)	7.6	0	-	13.9 17.5 11.5 8.2	0	-	-
HCM Lane LOS	A	A	-	B C B A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.5 0.5 0.2	-	-	-

Year 2020 Total Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	48	303	206	45	40	43
Future Vol, veh/h	48	303	206	45	40	43
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	57	361	245	54	48	51
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	299	0	-	0	748	272
Stage 1	-	-	-	-	272	-
Stage 2	-	-	-	-	476	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1274	-	-	-	383	772
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	629	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1274	-	-	-	362	772
Mov Cap-2 Maneuver	-	-	-	-	362	-
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	594	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		14		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1274	-	-	-	499	
HCM Lane V/C Ratio	0.045	-	-	-	0.198	
HCM Control Delay (s)	8	0	-	-	14	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7	

Appendix H Year 2022 Background Traffic Conditions Worksheets

Year 2022 Background Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	1	5	8	2	6	2	326	6	1	157	6
Future Vol, veh/h	0	1	5	8	2	6	2	326	6	1	157	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	6	9	2	7	2	366	7	1	176	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	561	561	180	560	560	371	183	0	0	374	0	0
Stage 1	182	182	-	375	375	-	-	-	-	-	-	-
Stage 2	379	379	-	185	185	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	441	439	868	442	440	679	1404	-	-	1196	-	-
Stage 1	824	753	-	650	621	-	-	-	-	-	-	-
Stage 2	647	618	-	821	751	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	434	437	868	437	438	678	1404	-	-	1196	-	-
Mov Cap-2 Maneuver	434	437	-	437	438	-	-	-	-	-	-	-
Stage 1	822	752	-	648	619	-	-	-	-	-	-	-
Stage 2	637	616	-	814	750	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	12.4	0	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1404	-	-	745 504	1196	-	-
HCM Lane V/C Ratio	0.002	-	-	0.009 0.036	0.001	-	-
HCM Control Delay (s)	7.6	0	-	9.9 12.4	8	0	-
HCM Lane LOS	A	A	-	A B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0 0.1	0	-	-

Year 2022 Background Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	18.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	27	34	11	171	20	51	11	248	216	48	105	20
Future Vol, veh/h	27	34	11	171	20	51	11	248	216	48	105	20
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	4	0	0	1	0	0	0	3	2	0	1	0
Mvmt Flow	28	35	11	178	21	53	11	258	225	50	109	21
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	11.5	13.2	25.7	11.5
HCM LOS	B	B	D	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	38%	90%	0%	31%	0%
Vol Thru, %	52%	47%	10%	0%	69%	0%
Vol Right, %	45%	15%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	475	72	191	51	153	20
LT Vol	11	27	171	0	48	0
Through Vol	248	34	20	0	105	0
RT Vol	216	11	0	51	0	20
Lane Flow Rate	495	75	199	53	159	21
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.777	0.148	0.391	0.087	0.287	0.033
Departure Headway (Hd)	5.653	7.127	7.073	5.888	6.484	5.629
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	638	500	507	606	551	632
Service Time	3.705	5.216	4.84	3.654	4.254	3.398
HCM Lane V/C Ratio	0.776	0.15	0.393	0.087	0.289	0.033
HCM Control Delay	25.7	11.5	14.3	9.2	11.9	8.6
HCM Lane LOS	D	B	B	A	B	A
HCM 95th-tile Q	7.4	0.5	1.8	0.3	1.2	0.1

Year 2022 Background Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	60	415	27	64	223
Future Vol, veh/h	17	60	415	27	64	223
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	18	63	432	28	67	232
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	816	450	0	0	464	0
Stage 1	450	-	-	-	-	-
Stage 2	366	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	349	613	-	-	1108	-
Stage 1	647	-	-	-	-	-
Stage 2	706	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	324	611	-	-	1108	-
Mov Cap-2 Maneuver	324	-	-	-	-	-
Stage 1	645	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.7	0	1.9			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 324 611 1108			-	
HCM Lane V/C Ratio	-	- 0.055 0.102 0.06			-	
HCM Control Delay (s)	-	- 16.8 11.6 8.5			0	
HCM Lane LOS	-	- C B A			A	
HCM 95th %tile Q(veh)	-	- 0.2 0.3 0.2			-	

Year 2022 Background Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↔			↔
Traffic Vol, veh/h	8	12	430	5	10	230
Future Vol, veh/h	8	12	430	5	10	230
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	8	13	448	5	10	240
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	715	455	0	0	457	0
Stage 1	455	-	-	-	-	-
Stage 2	260	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	400	609	-	-	1114	-
Stage 1	643	-	-	-	-	-
Stage 2	788	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	394	607	-	-	1114	-
Mov Cap-2 Maneuver	394	-	-	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.5	0	0.3			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	499	1114	-	
HCM Lane V/C Ratio	-	-	0.042	0.009	-	
HCM Control Delay (s)	-	-	12.5	8.3	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Year 2022 Background Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔			↔	
Traffic Vol, veh/h	5	3	8	42	4	80	2	287	44	50	179	6
Future Vol, veh/h	5	3	8	42	4	80	2	287	44	50	179	6
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	6	4	9	49	5	94	2	338	52	59	211	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	751	730	215	711	707	369	218	0	0	393	0	0
Stage 1	332	332	-	372	372	-	-	-	-	-	-	-
Stage 2	419	398	-	339	335	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	330	352	796	347	363	672	1364	-	-	1166	-	-
Stage 1	686	648	-	646	622	-	-	-	-	-	-	-
Stage 2	616	606	-	673	646	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	268	330	795	323	340	669	1363	-	-	1165	-	-
Mov Cap-2 Maneuver	268	330	-	323	340	-	-	-	-	-	-	-
Stage 1	685	610	-	642	618	-	-	-	-	-	-	-
Stage 2	524	602	-	622	609	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.9		13.8		0		1.8	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1363	-	-	423 323 640	1165	-	-
HCM Lane V/C Ratio	0.002	-	-	0.045 0.153 0.154	0.05	-	-
HCM Control Delay (s)	7.6	0	-	13.9 18.1 11.6	8.3	0	-
HCM Lane LOS	A	A	-	B C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.5 0.5	0.2	-	-

Year 2022 Background Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	49	313	213	46	42	45
Future Vol, veh/h	49	313	213	46	42	45
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	58	373	254	55	50	54
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	308	0	-	0	771	281
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	490	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1264	-	-	-	371	763
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	620	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1264	-	-	-	349	763
Mov Cap-2 Maneuver	-	-	-	-	349	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	584	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		14.4		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1264	-	-	-	485	
HCM Lane V/C Ratio	0.046	-	-	-	0.214	
HCM Control Delay (s)	8	0	-	-	14.4	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8	

Year 2022 Background Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	35.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	31	32	4	232	54	79	6	167	216	96	290	51
Future Vol, veh/h	31	32	4	232	54	79	6	167	216	96	290	51
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	0	2	2	3	0	1	2	2	1	0
Mvmt Flow	34	36	4	258	60	88	7	186	240	107	322	57
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	14.6	25.8	39.9	42.2
HCM LOS	B	D	E	E

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	46%	81%	0%	25%	0%
Vol Thru, %	43%	48%	19%	0%	75%	0%
Vol Right, %	56%	6%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	389	67	286	79	386	51
LT Vol	6	31	232	0	96	0
Through Vol	167	32	54	0	290	0
RT Vol	216	4	0	79	0	51
Lane Flow Rate	432	74	318	88	429	57
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.857	0.194	0.723	0.172	0.893	0.104
Departure Headway (Hd)	7.141	9.387	8.195	7.056	7.492	6.627
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	506	385	439	506	480	537
Service Time	5.232	7.387	5.985	4.844	5.28	4.414
HCM Lane V/C Ratio	0.854	0.192	0.724	0.174	0.894	0.106
HCM Control Delay	39.9	14.6	29.8	11.3	46.4	10.2
HCM Lane LOS	E	B	D	B	E	B
HCM 95th-tile Q	9	0.7	5.7	0.6	9.8	0.3

Year 2022 Background Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	8	381	0	5	522
Future Vol, veh/h	0	8	381	0	5	522
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	9	423	0	6	580

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1018	427	0	0	427	0
Stage 1	427	-	-	-	-	-
Stage 2	591	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	265	632	-	-	1143	-
Stage 1	662	-	-	-	-	-
Stage 2	557	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	262	630	-	-	1143	-
Mov Cap-2 Maneuver	262	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	553	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	630	1143
HCM Lane V/C Ratio	-	-	0.014	0.005
HCM Control Delay (s)	-	-	0	10.8
HCM Lane LOS	-	-	A	B
HCM 95th %tile Q(veh)	-	-	0	0

Year 2022 Background Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	1	1	380	1	1	521
Future Vol, veh/h	1	1	380	1	1	521
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	1	1	422	1	1	579

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1008	427	0	0	427	0
Stage 1	427	-	-	-	-	-
Stage 2	581	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	269	632	-	-	1143	-
Stage 1	662	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	268	630	-	-	1143	-
Mov Cap-2 Maneuver	268	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	562	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	376	1143
HCM Lane V/C Ratio	-	-	0.006	0.001
HCM Control Delay (s)	-	-	14.6	8.2
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0	0

Appendix I Year 2022 Total Traffic Conditions Worksheets

Year 2022 Total Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	5	8	2	6	2	330	6	1	160	6
Future Vol, veh/h	0	1	5	8	2	6	2	330	6	1	160	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	6	9	2	7	2	371	7	1	180	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	568	568	183	569	569	375	187	0	0	379	0	0
Stage 1	185	185	-	380	380	-	-	-	-	-	-	-
Stage 2	383	383	-	189	189	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	437	435	865	436	435	676	1399	-	-	1191	-	-
Stage 1	821	751	-	646	617	-	-	-	-	-	-	-
Stage 2	644	616	-	817	748	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	430	433	865	431	433	675	1399	-	-	1191	-	-
Mov Cap-2 Maneuver	430	433	-	431	433	-	-	-	-	-	-	-
Stage 1	819	750	-	644	615	-	-	-	-	-	-	-
Stage 2	634	614	-	810	747	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.9		12.5		0		0	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1399	-	-	742 499	1191	-	-
HCM Lane V/C Ratio	0.002	-	-	0.009 0.036	0.001	-	-
HCM Control Delay (s)	7.6	0	-	9.9 12.5	8	0	-
HCM Lane LOS	A	A	-	A B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0 0.1	0	-	-

Year 2022 Total Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	20.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	27	34	12	176	20	51	12	252	222	48	108	20
Future Vol, veh/h	27	34	12	176	20	51	12	252	222	48	108	20
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	4	0	0	1	0	0	0	3	2	0	1	0
Mvmt Flow	28	35	13	183	21	53	13	263	231	50	113	21
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	11.6	13.6	27.8	11.7
HCM LOS	B	B	D	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	37%	90%	0%	31%	0%
Vol Thru, %	52%	47%	10%	0%	69%	0%
Vol Right, %	46%	16%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	486	73	196	51	156	20
LT Vol	12	27	176	0	48	0
Through Vol	252	34	20	0	108	0
RT Vol	222	12	0	51	0	20
Lane Flow Rate	506	76	204	53	162	21
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.801	0.152	0.405	0.088	0.295	0.033
Departure Headway (Hd)	5.693	7.2	7.135	5.947	6.541	5.688
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	633	494	502	599	546	625
Service Time	3.748	5.295	4.904	3.716	4.317	3.464
HCM Lane V/C Ratio	0.799	0.154	0.406	0.088	0.297	0.034
HCM Control Delay	27.8	11.6	14.7	9.3	12.1	8.7
HCM Lane LOS	D	B	B	A	B	A
HCM 95th-tile Q	8	0.5	1.9	0.3	1.2	0.1

Year 2022 Total Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	66	420	30	69	227
Future Vol, veh/h	21	66	420	30	69	227
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	22	69	438	31	72	236
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	837	457	0	0	473	0
Stage 1	457	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	339	608	-	-	1099	-
Stage 1	642	-	-	-	-	-
Stage 2	696	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	312	606	-	-	1099	-
Mov Cap-2 Maneuver	312	-	-	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	644	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	13.1	0	2			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 312 606 1099	-	-		
HCM Lane V/C Ratio	-	- 0.07 0.113 0.065	-	-		
HCM Control Delay (s)	-	- 17.4 11.7 8.5	0			
HCM Lane LOS	-	- C B A A				
HCM 95th %tile Q(veh)	-	- 0.2 0.4 0.2	-			

Year 2022 Total Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	11	17	433	7	14	234
Future Vol, veh/h	11	17	433	7	14	234
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	11	18	451	7	15	244

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	732	459	0
Stage 1	459	-	-
Stage 2	273	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	391	606	-
Stage 1	641	-	-
Stage 2	778	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	383	604	-
Mov Cap-2 Maneuver	383	-	-
Stage 1	639	-	-
Stage 2	766	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.8	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	492	1110
HCM Lane V/C Ratio	-	-	0.059	0.013
HCM Control Delay (s)	-	-	12.8	8.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Year 2022 Total Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Traffic Vol, veh/h	5	3	8	42	4	81	2	291	44	52	184	6
Future Vol, veh/h	5	3	8	42	4	81	2	291	44	52	184	6
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	6	4	9	49	5	95	2	342	52	61	216	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	766	745	221	727	723	373	224	0	0	398	0	0
Stage 1	342	342	-	377	377	-	-	-	-	-	-	-
Stage 2	424	403	-	350	346	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	322	345	790	338	355	669	1357	-	-	1161	-	-
Stage 1	677	642	-	642	619	-	-	-	-	-	-	-
Stage 2	612	603	-	664	639	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	260	322	789	314	332	666	1356	-	-	1160	-	-
Mov Cap-2 Maneuver	260	322	-	314	332	-	-	-	-	-	-	-
Stage 1	676	603	-	638	615	-	-	-	-	-	-	-
Stage 2	519	600	-	613	601	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	14.1		14		0		1.8	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1356	-	-	414 314 636	1160	-	-
HCM Lane V/C Ratio	0.002	-	-	0.045 0.157 0.157	0.053	-	-
HCM Control Delay (s)	7.7	0	-	14.1 18.6 11.7	8.3	0	-
HCM Lane LOS	A	A	-	B C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.6 0.6	0.2	-	-

Year 2022 Total Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	318	217	46	42	46
Future Vol, veh/h	50	318	217	46	42	46
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	60	379	258	55	50	55
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	313	0	-	0	785	286
Stage 1	-	-	-	-	286	-
Stage 2	-	-	-	-	499	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1259	-	-	-	364	758
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	614	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1259	-	-	-	342	758
Mov Cap-2 Maneuver	-	-	-	-	342	-
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	577	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		14.6		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1259	-	-	-	480	
HCM Lane V/C Ratio	0.047	-	-	-	0.218	
HCM Control Delay (s)	8	0	-	-	14.6	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8	

Year 2022 Total Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	35.6
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	31	32	4	233	54	79	6	167	217	96	290	51
Future Vol, veh/h	31	32	4	233	54	79	6	167	217	96	290	51
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	0	2	2	3	0	1	2	2	1	0
Mvmt Flow	34	36	4	259	60	88	7	186	241	107	322	57
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	14.7	26	40.5	42.4
HCM LOS	B	D	E	E

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	46%	81%	0%	25%	0%
Vol Thru, %	43%	48%	19%	0%	75%	0%
Vol Right, %	56%	6%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	390	67	287	79	386	51
LT Vol	6	31	233	0	96	0
Through Vol	167	32	54	0	290	0
RT Vol	217	4	0	79	0	51
Lane Flow Rate	433	74	319	88	429	57
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.861	0.195	0.727	0.172	0.894	0.105
Departure Headway (Hd)	7.151	9.406	8.202	7.062	7.504	6.639
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	503	384	440	505	480	536
Service Time	5.243	7.406	5.995	4.854	5.295	4.43
HCM Lane V/C Ratio	0.861	0.193	0.725	0.174	0.894	0.106
HCM Control Delay	40.5	14.7	30.1	11.3	46.6	10.2
HCM Lane LOS	E	B	D	B	E	B
HCM 95th-tile Q	9.1	0.7	5.8	0.6	9.9	0.3

Year 2022 Total Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	381	0	6	522
Future Vol, veh/h	0	9	381	0	6	522
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	10	423	0	7	580

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1020	427	0	0	427	0
Stage 1	427	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	264	632	-	-	1143	-
Stage 1	662	-	-	-	-	-
Stage 2	556	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	261	630	-	-	1143	-
Mov Cap-2 Maneuver	261	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	551	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	630	1143
HCM Lane V/C Ratio	-	-	0.016	0.006
HCM Control Delay (s)	-	-	0	10.8
HCM Lane LOS	-	-	A	B
HCM 95th %tile Q(veh)	-	-	0	0

Year 2022 Total Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	1	1	380	1	1	521
Future Vol, veh/h	1	1	380	1	1	521
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	1	1	422	1	1	579
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1008	427	0	0	427	0
Stage 1	427	-	-	-	-	-
Stage 2	581	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	269	632	-	-	1143	-
Stage 1	662	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	268	630	-	-	1143	-
Mov Cap-2 Maneuver	268	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	562	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	14.6	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	376	1143	-	
HCM Lane V/C Ratio	-	-	0.006	0.001	-	
HCM Control Delay (s)	-	-	14.6	8.2	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Appendix J Year 2025 Background Traffic Conditions Worksheets

Year 2025 Background Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	49.9
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	33	34	5	246	57	83	7	175	229	101	306	53
Future Vol, veh/h	33	34	5	246	57	83	7	175	229	101	306	53
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	0	2	2	3	0	1	2	2	1	0
Mvmt Flow	37	38	6	273	63	92	8	194	254	112	340	59
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	15.8	32.5	58.9	61.8
HCM LOS	C	D	F	F

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	46%	81%	0%	25%	0%
Vol Thru, %	43%	47%	19%	0%	75%	0%
Vol Right, %	56%	7%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	411	72	303	83	407	53
LT Vol	7	33	246	0	101	0
Through Vol	175	34	57	0	306	0
RT Vol	229	5	0	83	0	53
Lane Flow Rate	457	80	337	92	452	59
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.957	0.221	0.802	0.19	0.992	0.115
Departure Headway (Hd)	7.546	9.924	8.58	7.435	7.894	7.026
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	480	361	421	482	461	509
Service Time	5.599	8.012	6.33	5.185	5.645	4.777
HCM Lane V/C Ratio	0.952	0.222	0.8	0.191	0.98	0.116
HCM Control Delay	58.9	15.8	38.2	11.9	68.4	10.7
HCM Lane LOS	F	C	E	B	F	B
HCM 95th-tile Q	11.8	0.8	7.2	0.7	12.8	0.4

Year 2025 Background Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	402	0	6	550
Future Vol, veh/h	0	9	402	0	6	550
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	10	447	0	7	611

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1075	451	0	0	451	0
Stage 1	451	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	245	613	-	-	1120	-
Stage 1	646	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	242	611	-	-	1120	-
Mov Cap-2 Maneuver	242	-	-	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	533	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	611	1120
HCM Lane V/C Ratio	-	-	0.016	0.006
HCM Control Delay (s)	-	-	0	11
HCM Lane LOS	-	-	A	B
HCM 95th %tile Q(veh)	-	-	0.1	0

Year 2025 Background Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	1	1	401	1	1	549
Future Vol, veh/h	1	1	401	1	1	549
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	1	1	446	1	1	610

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1062	450	0	0	451
Stage 1	450	-	-	-	-
Stage 2	612	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	250	613	-	-	1120
Stage 1	647	-	-	-	-
Stage 2	545	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	249	611	-	-	1120
Mov Cap-2 Maneuver	249	-	-	-	-
Stage 1	645	-	-	-	-
Stage 2	544	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	354	1120
HCM Lane V/C Ratio	-	-	0.006	0.001
HCM Control Delay (s)	-	-	15.2	8.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0	0

Year 2025 Background Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	6	8	2	7	2	347	7	1	167	7
Future Vol, veh/h	0	1	6	8	2	7	2	347	7	1	167	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	7	9	2	8	2	390	8	1	188	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	597	597	192	597	597	395	196	0	0	399	0	0
Stage 1	194	194	-	399	399	-	-	-	-	-	-	-
Stage 2	403	403	-	198	198	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	418	419	855	418	419	659	1389	-	-	1171	-	-
Stage 1	812	744	-	631	606	-	-	-	-	-	-	-
Stage 2	628	603	-	808	741	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	410	417	855	413	417	658	1389	-	-	1171	-	-
Mov Cap-2 Maneuver	410	417	-	413	417	-	-	-	-	-	-	-
Stage 1	810	743	-	629	604	-	-	-	-	-	-	-
Stage 2	617	601	-	800	740	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.9		12.7		0		0	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1389	-	-	743	488	1171	-
HCM Lane V/C Ratio	0.002	-	-	0.011	0.039	0.001	-
HCM Control Delay (s)	7.6	0	-	9.9	12.7	8.1	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

Year 2025 Background Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	23.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	28	36	12	185	22	53	12	265	233	51	113	22
Future Vol, veh/h	28	36	12	185	22	53	12	265	233	51	113	22
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	4	0	0	1	0	0	0	3	2	0	1	0
Mvmt Flow	29	38	13	193	23	55	13	276	243	53	118	23
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	12	14.4	33.9	12.2
HCM LOS	B	B	D	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	37%	89%	0%	31%	0%
Vol Thru, %	52%	47%	11%	0%	69%	0%
Vol Right, %	46%	16%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	510	76	207	53	164	22
LT Vol	12	28	185	0	51	0
Through Vol	265	36	22	0	113	0
RT Vol	233	12	0	53	0	22
Lane Flow Rate	531	79	216	55	171	23
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.855	0.165	0.436	0.093	0.317	0.037
Departure Headway (Hd)	5.794	7.511	7.273	6.086	6.685	5.83
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	622	481	492	584	533	608
Service Time	3.865	5.511	5.06	3.872	4.482	3.626
HCM Lane V/C Ratio	0.854	0.164	0.439	0.094	0.321	0.038
HCM Control Delay	33.9	12	15.6	9.5	12.6	8.9
HCM Lane LOS	D	B	C	A	B	A
HCM 95th-tile Q	9.5	0.6	2.2	0.3	1.4	0.1

Year 2025 Background Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	66	444	30	69	241
Future Vol, veh/h	21	66	444	30	69	241
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	22	69	463	31	72	251

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	877	482	0	0	498	0
Stage 1	482	-	-	-	-	-
Stage 2	395	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	322	588	-	-	1076	-
Stage 1	625	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	296	586	-	-	1076	-
Mov Cap-2 Maneuver	296	-	-	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	632	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	1.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 296 586 1076	-	-
HCM Lane V/C Ratio	-	- 0.074 0.117 0.067	-	-
HCM Control Delay (s)	-	- 18.1 12 8.6	0	
HCM Lane LOS	-	- C B A A		
HCM 95th %tile Q(veh)	-	- 0.2 0.4 0.2	-	-

Year 2025 Background Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	11	17	457	7	14	248
Future Vol, veh/h	11	17	457	7	14	248
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	11	18	476	7	15	258

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	772	484	0	0	487
Stage 1	484	-	-	-	-
Stage 2	288	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	371	587	-	-	1086
Stage 1	624	-	-	-	-
Stage 2	766	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	364	585	-	-	1086
Mov Cap-2 Maneuver	364	-	-	-	-
Stage 1	622	-	-	-	-
Stage 2	754	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	472	1086
HCM Lane V/C Ratio	-	-	0.062	0.013
HCM Control Delay (s)	-	-	13.1	8.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Year 2025 Background Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔			↔	
Traffic Vol, veh/h	6	3	8	44	5	86	2	305	46	55	193	7
Future Vol, veh/h	6	3	8	44	5	86	2	305	46	55	193	7
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	7	4	9	52	6	101	2	359	54	65	227	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	806	783	232	763	760	391	235	0	0	417	0	0
Stage 1	361	361	-	395	395	-	-	-	-	-	-	-
Stage 2	445	422	-	368	365	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	303	328	778	320	338	653	1344	-	-	1142	-	-
Stage 1	662	629	-	628	608	-	-	-	-	-	-	-
Stage 2	596	592	-	650	627	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	239	305	777	296	314	650	1343	-	-	1141	-	-
Mov Cap-2 Maneuver	239	305	-	296	314	-	-	-	-	-	-	-
Stage 1	661	587	-	624	604	-	-	-	-	-	-	-
Stage 2	497	589	-	596	586	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.1		14.6		0		1.8	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1343	-	-	376 296 614	1141	-	-
HCM Lane V/C Ratio	0.002	-	-	0.053 0.175 0.174	0.057	-	-
HCM Control Delay (s)	7.7	0	-	15.1 19.7 12.1	8.3	0	-
HCM Lane LOS	A	A	-	C C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2 0.6 0.6	0.2	-	-

Year 2025 Background Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	53	334	228	49	44	48
Future Vol, veh/h	53	334	228	49	44	48
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	63	398	271	58	52	57
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	330	0	-	0	826	301
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	525	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1241	-	-	-	345	743
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	598	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1241	-	-	-	323	743
Mov Cap-2 Maneuver	-	-	-	-	323	-
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	559	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		15.3		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1241	-	-	-	458	
HCM Lane V/C Ratio	0.051	-	-	-	0.239	
HCM Control Delay (s)	8.1	0	-	-	15.3	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.9	

Appendix K Year 2025 Background Traffic Conditions Worksheets
(Mitigated)

Year 2025 Background Traffic Conditions (Mitigated)
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	34	5	246	57	83	7	175	229	101	306	53
Future Volume (vph)	33	34	5	246	57	83	7	175	229	101	306	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Lane Util. Factor		1.00			1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.98		0.98			1.00	1.00
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	1.00
Frt		0.99			1.00	0.85		0.92			1.00	0.85
Flt Protected		0.98			0.96	1.00		1.00			0.99	1.00
Satd. Flow (prot)		1788			1790	1533		1703			1852	1615
Flt Permitted		0.79			0.71	1.00		0.99			0.81	1.00
Satd. Flow (perm)		1448			1325	1533		1690			1526	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	37	38	6	273	63	92	8	194	254	112	340	59
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	81	0	0	336	92	0	456	0	0	452	59
Confl. Peds. (#/hr)	2					2			6	6		
Heavy Vehicles (%)	3%	3%	0%	2%	2%	3%	0%	1%	2%	2%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)		16.4			16.4	16.4		20.1			20.1	20.1
Effective Green, g (s)		16.4			16.4	16.4		20.1			20.1	20.1
Actuated g/C Ratio		0.36			0.36	0.36		0.44			0.44	0.44
Clearance Time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		521			477	552		746			674	713
v/s Ratio Prot												
v/s Ratio Perm		0.06			c0.25	0.06		0.27			c0.30	0.04
v/c Ratio		0.16			0.70	0.17		0.61			0.67	0.08
Uniform Delay, d1		9.9			12.5	9.9		9.7			10.1	7.4
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.1			4.7	0.1		1.5			2.6	0.1
Delay (s)		10.0			17.2	10.0		11.2			12.7	7.4
Level of Service		A			B	B		B			B	A
Approach Delay (s)		10.0			15.6			11.2			12.1	
Approach LOS		A			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.7		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			45.5		Sum of lost time (s)				9.0			
Intersection Capacity Utilization			80.2%		ICU Level of Service				D			
Analysis Period (min)			15									

c Critical Lane Group

Year 2025 Background Traffic Conditions (Mitigated)
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	402	0	6	550
Future Vol, veh/h	0	9	402	0	6	550
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	10	447	0	7	611

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1075	451	0	0	451	0
Stage 1	451	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	245	613	-	-	1120	-
Stage 1	646	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	242	611	-	-	1120	-
Mov Cap-2 Maneuver	242	-	-	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	533	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	611	1120
HCM Lane V/C Ratio	-	-	0.016	0.006
HCM Control Delay (s)	-	-	0	11
HCM Lane LOS	-	-	A	B
HCM 95th %tile Q(veh)	-	-	0.1	0

Year 2025 Background Traffic Conditions (Mitigated)
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	1	1	401	1	1	549
Future Vol, veh/h	1	1	401	1	1	549
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	1	1	446	1	1	610

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1062	450	0	0	451
Stage 1	450	-	-	-	-
Stage 2	612	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	250	613	-	-	1120
Stage 1	647	-	-	-	-
Stage 2	545	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	249	611	-	-	1120
Mov Cap-2 Maneuver	249	-	-	-	-
Stage 1	645	-	-	-	-
Stage 2	544	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	354	1120
HCM Lane V/C Ratio	-	-	0.006	0.001
HCM Control Delay (s)	-	-	15.2	8.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0	0

Year 2025 Background Traffic Conditions (Mitigated)
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	1	6	8	2	7	2	347	7	1	167	7
Future Vol, veh/h	0	1	6	8	2	7	2	347	7	1	167	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	7	9	2	8	2	390	8	1	188	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	597	597	192	597	597	395	196	0	0	399	0	0
Stage 1	194	194	-	399	399	-	-	-	-	-	-	-
Stage 2	403	403	-	198	198	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	418	419	855	418	419	659	1389	-	-	1171	-	-
Stage 1	812	744	-	631	606	-	-	-	-	-	-	-
Stage 2	628	603	-	808	741	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	410	417	855	413	417	658	1389	-	-	1171	-	-
Mov Cap-2 Maneuver	410	417	-	413	417	-	-	-	-	-	-	-
Stage 1	810	743	-	629	604	-	-	-	-	-	-	-
Stage 2	617	601	-	800	740	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	12.7	0	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1389	-	-	743	488	1171	-
HCM Lane V/C Ratio	0.002	-	-	0.011	0.039	0.001	-
HCM Control Delay (s)	7.6	0	-	9.9	12.7	8.1	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

Year 2025 Background Traffic Conditions (Mitigated)
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	36	12	185	22	53	12	265	233	51	113	22
Future Volume (vph)	28	36	12	185	22	53	12	265	233	51	113	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Lane Util. Factor		1.00			1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.97		0.99			1.00	0.98
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	1.00
Frt		0.98			1.00	0.85		0.94			1.00	0.85
Flt Protected		0.98			0.96	1.00		1.00			0.98	1.00
Satd. Flow (prot)		1793			1803	1564		1718			1857	1581
Flt Permitted		0.85			0.69	1.00		0.99			0.79	1.00
Satd. Flow (perm)		1558			1303	1564		1708			1498	1581
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	29	38	12	193	23	55	12	276	243	53	118	23
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	80	0	0	216	55	0	532	0	0	171	23
Confl. Peds. (#/hr)	10					10	1		4	4		1
Heavy Vehicles (%)	4%	0%	0%	1%	0%	0%	0%	3%	2%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)		13.0			13.0	13.0		21.2			21.2	21.2
Effective Green, g (s)		13.0			13.0	13.0		21.2			21.2	21.2
Actuated g/C Ratio		0.30			0.30	0.30		0.49			0.49	0.49
Clearance Time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		468			392	470		838			735	775
v/s Ratio Prot												
v/s Ratio Perm		0.05			c0.17	0.04		c0.31			0.11	0.01
v/c Ratio		0.17			0.55	0.12		0.63			0.23	0.03
Uniform Delay, d1		11.1			12.7	10.9		8.1			6.3	5.7
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.2			1.7	0.1		1.6			0.2	0.0
Delay (s)		11.3			14.3	11.1		9.7			6.5	5.7
Level of Service		B			B	B		A			A	A
Approach Delay (s)		11.3			13.7			9.7			6.4	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			10.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			43.2				Sum of lost time (s)			9.0		
Intersection Capacity Utilization			61.3%				ICU Level of Service			B		
Analysis Period (min)			15									

c Critical Lane Group

Year 2025 Background Traffic Conditions (Mitigated)
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	66	444	30	69	241
Future Vol, veh/h	21	66	444	30	69	241
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	22	69	463	31	72	251

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	877	482	0	0	498	0
Stage 1	482	-	-	-	-	-
Stage 2	395	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	322	588	-	-	1076	-
Stage 1	625	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	296	586	-	-	1076	-
Mov Cap-2 Maneuver	296	-	-	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	632	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	1.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 296 586 1076		-
HCM Lane V/C Ratio	-	- 0.074 0.117 0.067		-
HCM Control Delay (s)	-	- 18.1 12 8.6		0
HCM Lane LOS	-	- C B A A		
HCM 95th %tile Q(veh)	-	- 0.2 0.4 0.2		-

Year 2025 Background Traffic Conditions (Mitigated)
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	11	17	457	7	14	248
Future Vol, veh/h	11	17	457	7	14	248
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	11	18	476	7	15	258

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	772	484	0	0	487
Stage 1	484	-	-	-	-
Stage 2	288	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	371	587	-	-	1086
Stage 1	624	-	-	-	-
Stage 2	766	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	364	585	-	-	1086
Mov Cap-2 Maneuver	364	-	-	-	-
Stage 1	622	-	-	-	-
Stage 2	754	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	472	1086
HCM Lane V/C Ratio	-	-	0.062	0.013
HCM Control Delay (s)	-	-	13.1	8.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Year 2025 Background Traffic Conditions (Mitigated)
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Traffic Vol, veh/h	6	3	8	44	5	86	2	305	46	55	193	7
Future Vol, veh/h	6	3	8	44	5	86	2	305	46	55	193	7
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	7	4	9	52	6	101	2	359	54	65	227	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	806	783	232	763	760	391	235	0	0	417	0	0
Stage 1	361	361	-	395	395	-	-	-	-	-	-	-
Stage 2	445	422	-	368	365	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	303	328	778	320	338	653	1344	-	-	1142	-	-
Stage 1	662	629	-	628	608	-	-	-	-	-	-	-
Stage 2	596	592	-	650	627	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	239	305	777	296	314	650	1343	-	-	1141	-	-
Mov Cap-2 Maneuver	239	305	-	296	314	-	-	-	-	-	-	-
Stage 1	661	587	-	624	604	-	-	-	-	-	-	-
Stage 2	497	589	-	596	586	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.1		14.6		0		1.8	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1343	-	-	376 296 614	1141	-	-
HCM Lane V/C Ratio	0.002	-	-	0.053 0.175 0.174	0.057	-	-
HCM Control Delay (s)	7.7	0	-	15.1 19.7 12.1	8.3	0	-
HCM Lane LOS	A	A	-	C C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2 0.6 0.6	0.2	-	-

Year 2025 Background Traffic Conditions (Mitigated)
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	53	334	228	49	44	48
Future Vol, veh/h	53	334	228	49	44	48
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	63	398	271	58	52	57
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	330	0	-	0	826	301
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	525	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1241	-	-	-	345	743
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	598	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1241	-	-	-	323	743
Mov Cap-2 Maneuver	-	-	-	-	323	-
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	559	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		15.3		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1241	-	-	-	458	
HCM Lane V/C Ratio	0.051	-	-	-	0.239	
HCM Control Delay (s)	8.1	0	-	-	15.3	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.9	

Appendix L Year 2025 Total Traffic Conditions Worksheets

Year 2025 Total Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	6	8	2	7	2	347	7	1	167	7
Future Vol, veh/h	0	1	6	8	2	7	2	347	7	1	167	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	7	9	2	8	2	390	8	1	188	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	597	597	192	597	597	395	196	0	0	399	0	0
Stage 1	194	194	-	399	399	-	-	-	-	-	-	-
Stage 2	403	403	-	198	198	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	418	419	855	418	419	659	1389	-	-	1171	-	-
Stage 1	812	744	-	631	606	-	-	-	-	-	-	-
Stage 2	628	603	-	808	741	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	410	417	855	413	417	658	1389	-	-	1171	-	-
Mov Cap-2 Maneuver	410	417	-	413	417	-	-	-	-	-	-	-
Stage 1	810	743	-	629	604	-	-	-	-	-	-	-
Stage 2	617	601	-	800	740	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.9		12.7		0		0	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1389	-	-	743	488	1171	-
HCM Lane V/C Ratio	0.002	-	-	0.011	0.039	0.001	-
HCM Control Delay (s)	7.6	0	-	9.9	12.7	8.1	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

Year 2025 Total Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	36	12	186	22	53	12	265	233	51	113	22
Future Volume (vph)	28	36	12	186	22	53	12	265	233	51	113	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Lane Util. Factor		1.00			1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.97		0.99			1.00	0.98
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	1.00
Frt		0.98			1.00	0.85		0.94			1.00	0.85
Flt Protected		0.98			0.96	1.00		1.00			0.98	1.00
Satd. Flow (prot)		1793			1803	1564		1718			1857	1581
Flt Permitted		0.85			0.69	1.00		0.99			0.79	1.00
Satd. Flow (perm)		1558			1303	1564		1708			1498	1581
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	29	38	12	194	23	55	12	276	243	53	118	23
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	80	0	0	217	55	0	532	0	0	171	23
Confl. Peds. (#/hr)	10					10	1		4	4		1
Heavy Vehicles (%)	4%	0%	0%	1%	0%	0%	0%	3%	2%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)		13.1			13.1	13.1		21.2			21.2	21.2
Effective Green, g (s)		13.1			13.1	13.1		21.2			21.2	21.2
Actuated g/C Ratio		0.30			0.30	0.30		0.49			0.49	0.49
Clearance Time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		471			394	473		836			733	774
v/s Ratio Prot												
v/s Ratio Perm		0.05			c0.17	0.04		c0.31			0.11	0.01
v/c Ratio		0.17			0.55	0.12		0.64			0.23	0.03
Uniform Delay, d1		11.1			12.6	10.9		8.2			6.4	5.7
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.2			1.7	0.1		1.6			0.2	0.0
Delay (s)		11.3			14.3	11.0		9.8			6.5	5.7
Level of Service		B			B	B		A			A	A
Approach Delay (s)		11.3			13.6			9.8			6.4	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			10.3		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			43.3		Sum of lost time (s)					9.0		
Intersection Capacity Utilization			61.3%		ICU Level of Service					B		
Analysis Period (min)			15									

c Critical Lane Group

Year 2025 Total Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	66	444	30	70	241
Future Vol, veh/h	21	66	444	30	70	241
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	22	69	463	31	73	251

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	879	482	0	0	498	0
Stage 1	482	-	-	-	-	-
Stage 2	397	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	321	588	-	-	1076	-
Stage 1	625	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	295	586	-	-	1076	-
Mov Cap-2 Maneuver	295	-	-	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	629	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	1.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 295 586 1076	-	-
HCM Lane V/C Ratio	-	- 0.074 0.117 0.068	-	-
HCM Control Delay (s)	-	- 18.2 12 8.6	0	
HCM Lane LOS	-	- C B A A		
HCM 95th %tile Q(veh)	-	- 0.2 0.4 0.2	-	-

Year 2025 Total Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	11	17	457	7	14	248
Future Vol, veh/h	11	17	457	7	14	248
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	11	18	476	7	15	258
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	772	484	0	0	487	0
Stage 1	484	-	-	-	-	-
Stage 2	288	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	371	587	-	-	1086	-
Stage 1	624	-	-	-	-	-
Stage 2	766	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	364	585	-	-	1086	-
Mov Cap-2 Maneuver	364	-	-	-	-	-
Stage 1	622	-	-	-	-	-
Stage 2	754	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	13.1	0	0.4			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	472	1086	-	
HCM Lane V/C Ratio	-	-	0.062	0.013	-	
HCM Control Delay (s)	-	-	13.1	8.4	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0	-	

Year 2025 Total Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔			↔	
Traffic Vol, veh/h	6	3	8	44	5	86	2	305	46	55	193	7
Future Vol, veh/h	6	3	8	44	5	86	2	305	46	55	193	7
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	7	4	9	52	6	101	2	359	54	65	227	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	806	783	232	763	760	391	235	0	0	417	0	0
Stage 1	361	361	-	395	395	-	-	-	-	-	-	-
Stage 2	445	422	-	368	365	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	303	328	778	320	338	653	1344	-	-	1142	-	-
Stage 1	662	629	-	628	608	-	-	-	-	-	-	-
Stage 2	596	592	-	650	627	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	239	305	777	296	314	650	1343	-	-	1141	-	-
Mov Cap-2 Maneuver	239	305	-	296	314	-	-	-	-	-	-	-
Stage 1	661	587	-	624	604	-	-	-	-	-	-	-
Stage 2	497	589	-	596	586	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.1		14.6		0		1.8	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1343	-	-	376 296 614	1141	-	-
HCM Lane V/C Ratio	0.002	-	-	0.053 0.175 0.174	0.057	-	-
HCM Control Delay (s)	7.7	0	-	15.1 19.7 12.1	8.3	0	-
HCM Lane LOS	A	A	-	C C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2 0.6 0.6	0.2	-	-

Year 2025 Total Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	53	334	229	49	44	48
Future Vol, veh/h	53	334	229	49	44	48
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	63	398	273	58	52	57
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	331	0	-	0	827	302
Stage 1	-	-	-	-	302	-
Stage 2	-	-	-	-	525	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1240	-	-	-	344	742
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	598	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1240	-	-	-	322	742
Mov Cap-2 Maneuver	-	-	-	-	322	-
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	559	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		15.3		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1240	-	-	-	457	
HCM Lane V/C Ratio	0.051	-	-	-	0.24	
HCM Control Delay (s)	8.1	0	-	-	15.3	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.9	

Year 2025 Total Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	34	5	247	57	83	7	176	230	101	306	53
Future Volume (vph)	33	34	5	247	57	83	7	176	230	101	306	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Lane Util. Factor		1.00			1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.98		0.98			1.00	1.00
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	1.00
Frt		0.99			1.00	0.85		0.92			1.00	0.85
Flt Protected		0.98			0.96	1.00		1.00			0.99	1.00
Satd. Flow (prot)		1788			1790	1533		1703			1852	1615
Flt Permitted		0.79			0.71	1.00		0.99			0.81	1.00
Satd. Flow (perm)		1448			1325	1533		1690			1522	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	37	38	6	274	63	92	8	196	256	112	340	59
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	81	0	0	337	92	0	460	0	0	452	59
Confl. Peds. (#/hr)	2					2			6	6		
Heavy Vehicles (%)	3%	3%	0%	2%	2%	3%	0%	1%	2%	2%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)		16.5			16.5	16.5		20.1			20.1	20.1
Effective Green, g (s)		16.5			16.5	16.5		20.1			20.1	20.1
Actuated g/C Ratio		0.36			0.36	0.36		0.44			0.44	0.44
Clearance Time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		523			479	554		744			670	711
v/s Ratio Prot												
v/s Ratio Perm		0.06			c0.25	0.06		0.27			c0.30	0.04
v/c Ratio		0.15			0.70	0.17		0.62			0.67	0.08
Uniform Delay, d1		9.8			12.5	9.9		9.8			10.1	7.4
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.1			4.7	0.1		1.5			2.7	0.1
Delay (s)		10.0			17.1	10.0		11.3			12.8	7.5
Level of Service		A			B	B		B			B	A
Approach Delay (s)		10.0			15.6			11.3			12.2	
Approach LOS		A			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.8		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			45.6		Sum of lost time (s)					9.0		
Intersection Capacity Utilization			80.4%		ICU Level of Service					D		
Analysis Period (min)			15									

c Critical Lane Group

Year 2025 Total Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	10	403	0	7	550
Future Vol, veh/h	1	10	403	0	7	550
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	1	11	448	0	8	611

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1079	452	0	0	452	0
Stage 1	452	-	-	-	-	-
Stage 2	627	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	244	612	-	-	1119	-
Stage 1	645	-	-	-	-	-
Stage 2	536	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	240	610	-	-	1119	-
Mov Cap-2 Maneuver	240	-	-	-	-	-
Stage 1	643	-	-	-	-	-
Stage 2	530	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 240 610 1119	-	-
HCM Lane V/C Ratio	-	- 0.005 0.018 0.007	-	-
HCM Control Delay (s)	-	- 20.1 11 8.2	0	
HCM Lane LOS	-	- C B A A		
HCM 95th %tile Q(veh)	-	- 0 0.1 0	-	-

Year 2025 Total Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↔			↔
Traffic Vol, veh/h	2	2	401	1	1	550
Future Vol, veh/h	2	2	401	1	1	550
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	2	2	446	1	1	611
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1063	450	0	0	451	0
Stage 1	450	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	249	613	-	-	1120	-
Stage 1	647	-	-	-	-	-
Stage 2	544	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	248	611	-	-	1120	-
Mov Cap-2 Maneuver	248	-	-	-	-	-
Stage 1	645	-	-	-	-	-
Stage 2	543	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	15.3	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	353	1120	-	
HCM Lane V/C Ratio	-	-	0.013	0.001	-	
HCM Control Delay (s)	-	-	15.3	8.2	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Appendix M Year 2030 Background Traffic Conditions Worksheets

Year 2030 Background Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	6	9	2	7	2	375	7	1	181	7
Future Vol, veh/h	0	1	6	9	2	7	2	375	7	1	181	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	7	10	2	8	2	421	8	1	203	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	645	645	207	644	644	426	211	0	0	430	0	0
Stage 1	210	210	-	431	431	-	-	-	-	-	-	-
Stage 2	435	435	-	213	213	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	388	393	839	389	394	633	1372	-	-	1140	-	-
Stage 1	797	732	-	607	586	-	-	-	-	-	-	-
Stage 2	604	584	-	794	730	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	381	391	839	384	392	632	1372	-	-	1140	-	-
Mov Cap-2 Maneuver	381	391	-	384	392	-	-	-	-	-	-	-
Stage 1	795	731	-	605	584	-	-	-	-	-	-	-
Stage 2	593	582	-	786	729	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	13.3	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1372	-	-	721 454	1140	-	-
HCM Lane V/C Ratio	0.002	-	-	0.011 0.045	0.001	-	-
HCM Control Delay (s)	7.6	0	-	10 13.3	8.2	0	-
HCM Lane LOS	A	A	-	B B	A A	-	-
HCM 95th %tile Q(veh)	0	-	-	0 0.1	0	-	-

Year 2030 Background Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	39	13	200	23	58	13	286	251	55	122	23
Future Volume (vph)	31	39	13	200	23	58	13	286	251	55	122	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Lane Util. Factor		1.00			1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.97		0.99			1.00	0.98
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	1.00
Frt		0.98			1.00	0.85		0.94			1.00	0.85
Flt Protected		0.98			0.96	1.00		1.00			0.98	1.00
Satd. Flow (prot)		1793			1802	1563		1718			1857	1581
Flt Permitted		0.85			0.69	1.00		0.99			0.78	1.00
Satd. Flow (perm)		1545			1293	1563		1708			1471	1581
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	32	41	14	208	24	60	14	298	261	57	127	24
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	87	0	0	232	60	0	573	0	0	184	24
Confl. Peds. (#/hr)	10					10	1		4	4		1
Heavy Vehicles (%)	4%	0%	0%	1%	0%	0%	0%	3%	2%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)		13.9			13.9	13.9		22.4			22.4	22.4
Effective Green, g (s)		13.9			13.9	13.9		22.4			22.4	22.4
Actuated g/C Ratio		0.31			0.31	0.31		0.49			0.49	0.49
Clearance Time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		474			396	479		844			727	781
v/s Ratio Prot												
v/s Ratio Perm		0.06			c0.18	0.04		c0.34			0.13	0.02
v/c Ratio		0.18			0.59	0.13		0.68			0.25	0.03
Uniform Delay, d1		11.5			13.3	11.3		8.7			6.6	5.9
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.2			2.2	0.1		2.2			0.2	0.0
Delay (s)		11.7			15.5	11.4		10.9			6.8	5.9
Level of Service		B			B	B		B			A	A
Approach Delay (s)		11.7			14.6			10.9			6.7	
Approach LOS		B			B			B			A	
Intersection Summary												
HCM 2000 Control Delay			11.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			45.3				Sum of lost time (s)			9.0		
Intersection Capacity Utilization			68.2%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

Year 2030 Background Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	66	483	30	70	264
Future Vol, veh/h	21	66	483	30	70	264
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	22	69	503	31	73	275

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	944	523	0	0	538	0
Stage 1	523	-	-	-	-	-
Stage 2	421	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	293	558	-	-	1040	-
Stage 1	599	-	-	-	-	-
Stage 2	667	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	268	556	-	-	1040	-
Mov Cap-2 Maneuver	268	-	-	-	-	-
Stage 1	597	-	-	-	-	-
Stage 2	612	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.1	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 268 556 1040	-	-
HCM Lane V/C Ratio	-	- 0.082 0.124 0.07	-	-
HCM Control Delay (s)	-	- 19.6 12.4 8.7	0	
HCM Lane LOS	-	- C B A	A	
HCM 95th %tile Q(veh)	-	- 0.3 0.4 0.2	-	-

Year 2030 Background Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	11	17	496	7	14	271
Future Vol, veh/h	11	17	496	7	14	271
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	11	18	517	7	15	282

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	835	524	0	0	528	0
Stage 1	524	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	340	557	-	-	1049	-
Stage 1	598	-	-	-	-	-
Stage 2	748	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	333	555	-	-	1049	-
Mov Cap-2 Maneuver	333	-	-	-	-	-
Stage 1	596	-	-	-	-	-
Stage 2	735	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.8	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	440	1049
HCM Lane V/C Ratio	-	-	0.066	0.014
HCM Control Delay (s)	-	-	13.8	8.5
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Year 2030 Background Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔			↔	
Traffic Vol, veh/h	6	4	9	48	5	92	2	330	50	59	208	7
Future Vol, veh/h	6	4	9	48	5	92	2	330	50	59	208	7
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	7	5	11	56	6	108	2	388	59	69	245	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	868	844	250	822	818	423	253	0	0	451	0	0
Stage 1	388	388	-	426	426	-	-	-	-	-	-	-
Stage 2	480	456	-	396	392	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	275	302	760	292	313	627	1324	-	-	1109	-	-
Stage 1	640	612	-	604	589	-	-	-	-	-	-	-
Stage 2	571	572	-	627	610	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	211	278	759	267	288	624	1323	-	-	1108	-	-
Mov Cap-2 Maneuver	211	278	-	267	288	-	-	-	-	-	-	-
Stage 1	639	567	-	600	586	-	-	-	-	-	-	-
Stage 2	466	569	-	568	565	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	16.1		15.7		0		1.8	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1323	-	-	347 267 589	1108	-	-
HCM Lane V/C Ratio	0.002	-	-	0.064 0.212 0.194	0.063	-	-
HCM Control Delay (s)	7.7	0	-	16.1 22.1 12.6	8.5	0	-
HCM Lane LOS	A	A	-	C C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2 0.8 0.7	0.2	-	-

Year 2030 Background Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	57	361	247	53	48	52
Future Vol, veh/h	57	361	247	53	48	52
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	68	430	294	63	57	62
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	357	0	-	0	892	326
Stage 1	-	-	-	-	326	-
Stage 2	-	-	-	-	566	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1213	-	-	-	315	720
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	572	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1213	-	-	-	292	720
Mov Cap-2 Maneuver	-	-	-	-	292	-
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	530	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		16.8		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1213	-	-	-	423	
HCM Lane V/C Ratio	0.056	-	-	-	0.281	
HCM Control Delay (s)	8.1	0	-	-	16.8	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.2	-	-	-	1.1	

Year 2030 Background Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	37	5	267	61	90	7	191	249	109	331	58
Future Volume (vph)	36	37	5	267	61	90	7	191	249	109	331	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Lane Util. Factor		1.00			1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.98		0.98			1.00	1.00
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	1.00
Frt		0.99			1.00	0.85		0.92			1.00	0.85
Flt Protected		0.98			0.96	1.00		1.00			0.99	1.00
Satd. Flow (prot)		1789			1790	1532		1702			1852	1615
Flt Permitted		0.78			0.71	1.00		0.99			0.79	1.00
Satd. Flow (perm)		1427			1317	1532		1690			1473	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	40	41	6	297	68	100	8	212	277	121	368	64
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	87	0	0	365	100	0	497	0	0	489	64
Confl. Peds. (#/hr)	2					2			6	6		
Heavy Vehicles (%)	3%	3%	0%	2%	2%	3%	0%	1%	2%	2%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)		17.8			17.8	17.8		21.8			21.8	21.8
Effective Green, g (s)		17.8			17.8	17.8		21.8			21.8	21.8
Actuated g/C Ratio		0.37			0.37	0.37		0.45			0.45	0.45
Clearance Time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		522			482	561		758			660	724
v/s Ratio Prot												
v/s Ratio Perm		0.06			c0.28	0.07		0.29			c0.33	0.04
v/c Ratio		0.17			0.76	0.18		0.66			0.74	0.09
Uniform Delay, d1		10.4			13.5	10.4		10.5			11.1	7.7
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.2			6.7	0.2		2.1			4.5	0.1
Delay (s)		10.5			20.2	10.6		12.5			15.5	7.7
Level of Service		B			C	B		B			B	A
Approach Delay (s)		10.5			18.1			12.5			14.6	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			14.8		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			48.6		Sum of lost time (s)					9.0		
Intersection Capacity Utilization			85.4%		ICU Level of Service					E		
Analysis Period (min)			15									

c Critical Lane Group

Year 2030 Background Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	10	437	0	7	596
Future Vol, veh/h	1	10	437	0	7	596
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	1	11	486	0	8	662

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1168	490	0	0	490
Stage 1	490	-	-	-	-
Stage 2	678	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	216	582	-	-	1084
Stage 1	620	-	-	-	-
Stage 2	508	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	213	580	-	-	1084
Mov Cap-2 Maneuver	213	-	-	-	-
Stage 1	618	-	-	-	-
Stage 2	502	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 213 580 1084	-	-
HCM Lane V/C Ratio	-	- 0.005 0.019 0.007	-	-
HCM Control Delay (s)	-	- 22 11.3 8.3	0	
HCM Lane LOS	-	- C B A	A	
HCM 95th %tile Q(veh)	-	- 0 0.1 0	-	-

Year 2030 Background Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	2	2	435	1	1	596
Future Vol, veh/h	2	2	435	1	1	596
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	2	2	483	1	1	662

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1152	488	0
Stage 1	488	-	-
Stage 2	664	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	221	584	-
Stage 1	621	-	-
Stage 2	516	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	220	582	-
Mov Cap-2 Maneuver	220	-	-
Stage 1	619	-	-
Stage 2	515	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	319	1086
HCM Lane V/C Ratio	-	-	0.014	0.001
HCM Control Delay (s)	-	-	16.4	8.3
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0	0

Appendix N Year 2030 Total Traffic Conditions Worksheets

Year 2030 Total Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	37	5	270	61	90	7	192	252	109	332	58
Future Volume (vph)	36	37	5	270	61	90	7	192	252	109	332	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Lane Util. Factor		1.00			1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.98		0.98			1.00	1.00
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	1.00
Frt		0.99			1.00	0.85		0.92			1.00	0.85
Flt Protected		0.98			0.96	1.00		1.00			0.99	1.00
Satd. Flow (prot)		1789			1790	1532		1702			1852	1615
Flt Permitted		0.78			0.71	1.00		0.99			0.78	1.00
Satd. Flow (perm)		1426			1317	1532		1689			1468	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	40	41	6	300	68	100	8	213	280	121	369	64
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	87	0	0	368	100	0	501	0	0	490	64
Confl. Peds. (#/hr)	2					2			6	6		
Heavy Vehicles (%)	3%	3%	0%	2%	2%	3%	0%	1%	2%	2%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)		17.9			17.9	17.9		21.8			21.8	21.8
Effective Green, g (s)		17.9			17.9	17.9		21.8			21.8	21.8
Actuated g/C Ratio		0.37			0.37	0.37		0.45			0.45	0.45
Clearance Time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		524			484	563		756			657	722
v/s Ratio Prot												
v/s Ratio Perm		0.06			c0.28	0.07		0.30			c0.33	0.04
v/c Ratio		0.17			0.76	0.18		0.66			0.75	0.09
Uniform Delay, d1		10.4			13.5	10.4		10.6			11.2	7.7
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.2			6.9	0.2		2.2			4.6	0.1
Delay (s)		10.5			20.4	10.6		12.8			15.8	7.8
Level of Service		B			C	B		B			B	A
Approach Delay (s)		10.5			18.3			12.8			14.8	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.0		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			48.7		Sum of lost time (s)						9.0	
Intersection Capacity Utilization			85.9%		ICU Level of Service						E	
Analysis Period (min)			15									

c Critical Lane Group

Year 2030 Total Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	12	439	1	9	598
Future Vol, veh/h	2	12	439	1	9	598
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	2	13	488	1	10	664

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1176	492	0	0	493	0
Stage 1	492	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	213	581	-	-	1081	-
Stage 1	619	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	209	579	-	-	1081	-
Mov Cap-2 Maneuver	209	-	-	-	-	-
Stage 1	617	-	-	-	-	-
Stage 2	497	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 209 579 1081	-	-
HCM Lane V/C Ratio	-	- 0.011 0.023 0.009	-	-
HCM Control Delay (s)	-	- 22.4 11.4 8.4	0	
HCM Lane LOS	-	- C B A	A	
HCM 95th %tile Q(veh)	-	- 0 0.1 0	-	-

Year 2030 Total Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak

09/12/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	3	4	436	2	3	597
Future Vol, veh/h	3	4	436	2	3	597
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	3	4	484	2	3	663
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1160	490	0	0	491	0
Stage 1	490	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	218	582	-	-	1083	-
Stage 1	620	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	216	580	-	-	1083	-
Mov Cap-2 Maneuver	216	-	-	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	510	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	15.9	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	337	1083	-	
HCM Lane V/C Ratio	-	-	0.023	0.003	-	
HCM Control Delay (s)	-	-	15.9	8.3	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Year 2030 Total Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	7	10	2	7	3	393	8	1	195	7
Future Vol, veh/h	0	1	7	10	2	7	3	393	8	1	195	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	8	11	2	8	3	442	9	1	219	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	683	683	223	684	683	447	227	0	0	452	0	0
Stage 1	225	225	-	454	454	-	-	-	-	-	-	-
Stage 2	458	458	-	230	229	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	366	374	822	365	374	616	1353	-	-	1119	-	-
Stage 1	782	721	-	589	573	-	-	-	-	-	-	-
Stage 2	587	570	-	777	718	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	359	372	822	359	372	615	1353	-	-	1119	-	-
Mov Cap-2 Maneuver	359	372	-	359	372	-	-	-	-	-	-	-
Stage 1	780	720	-	587	571	-	-	-	-	-	-	-
Stage 2	575	568	-	768	717	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	13.9	0.1	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1353	-	-	714	426	1119	-
HCM Lane V/C Ratio	0.002	-	-	0.013	0.05	0.001	-
HCM Control Delay (s)	7.7	0	-	10.1	13.9	8.2	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-

Year 2030 Total Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	39	16	223	23	58	18	306	280	55	138	23
Future Volume (vph)	31	39	16	223	23	58	18	306	280	55	138	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Lane Util. Factor		1.00			1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.97		0.99			1.00	0.98
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	1.00
Frt		0.97			1.00	0.85		0.94			1.00	0.85
Flt Protected		0.98			0.96	1.00		1.00			0.99	1.00
Satd. Flow (prot)		1788			1801	1561		1716			1859	1581
Flt Permitted		0.85			0.68	1.00		0.99			0.78	1.00
Satd. Flow (perm)		1538			1285	1561		1701			1471	1581
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	32	41	17	232	24	60	19	319	292	57	144	24
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	90	0	0	256	60	0	630	0	0	201	24
Confl. Peds. (#/hr)	10					10	1		4	4		1
Heavy Vehicles (%)	4%	0%	0%	1%	0%	0%	0%	3%	2%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)		15.0			15.0	15.0		24.9			24.9	24.9
Effective Green, g (s)		15.0			15.0	15.0		24.9			24.9	24.9
Actuated g/C Ratio		0.31			0.31	0.31		0.51			0.51	0.51
Clearance Time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		471			394	478		866			749	805
v/s Ratio Prot												
v/s Ratio Perm		0.06			c0.20	0.04		c0.37			0.14	0.02
v/c Ratio		0.19			0.65	0.13		0.73			0.27	0.03
Uniform Delay, d1		12.5			14.7	12.2		9.4			6.8	6.0
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.2			3.7	0.1		3.1			0.2	0.0
Delay (s)		12.7			18.4	12.3		12.4			7.0	6.0
Level of Service		B			B	B		B			A	A
Approach Delay (s)		12.7			17.2			12.4			6.9	
Approach LOS		B			B			B			A	
Intersection Summary												
HCM 2000 Control Delay			12.7				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			48.9				Sum of lost time (s)			9.0		
Intersection Capacity Utilization			76.4%				ICU Level of Service			D		
Analysis Period (min)			15									

c Critical Lane Group

Year 2030 Total Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	93	510	42	91	285
Future Vol, veh/h	36	93	510	42	91	285
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	38	97	531	44	95	297
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1043	557	0	0	579	0
Stage 1	557	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	256	534	-	-	1005	-
Stage 1	578	-	-	-	-	-
Stage 2	623	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	226	532	-	-	1005	-
Mov Cap-2 Maneuver	226	-	-	-	-	-
Stage 1	576	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	16.3	0	2.2			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 226 532 1005	-	-		
HCM Lane V/C Ratio	-	- 0.166 0.182 0.094	-	-		
HCM Control Delay (s)	-	- 24.1 13.3 9	-	0		
HCM Lane LOS	-	- C B A A	-	-		
HCM 95th %tile Q(veh)	-	- 0.6 0.7 0.3	-	-		

Year 2030 Total Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	25	44	508	19	35	286
Future Vol, veh/h	25	44	508	19	35	286
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	26	46	529	20	36	298
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	914	543	0	0	553	0
Stage 1	543	-	-	-	-	-
Stage 2	371	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	306	544	-	-	1027	-
Stage 1	586	-	-	-	-	-
Stage 2	702	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	292	542	-	-	1027	-
Mov Cap-2 Maneuver	292	-	-	-	-	-
Stage 1	584	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	15.5	0	0.9			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	414	1027	-	
HCM Lane V/C Ratio	-	-	0.174	0.035	-	
HCM Control Delay (s)	-	-	15.5	8.6	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-	

Year 2030 Total Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Traffic Vol, veh/h	7	4	9	48	5	99	2	346	50	67	228	8
Future Vol, veh/h	7	4	9	48	5	99	2	346	50	67	228	8
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	8	5	11	56	6	116	2	407	59	79	268	9

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	934	906	274	884	880	441	278	0	0	470	0	0
Stage 1	431	431	-	445	445	-	-	-	-	-	-	-
Stage 2	503	475	-	439	435	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	248	278	737	265	288	612	1296	-	-	1092	-	-
Stage 1	607	586	-	590	578	-	-	-	-	-	-	-
Stage 2	555	561	-	595	584	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	184	253	736	239	262	609	1295	-	-	1091	-	-
Mov Cap-2 Maneuver	184	253	-	239	262	-	-	-	-	-	-	-
Stage 1	606	536	-	587	575	-	-	-	-	-	-	-
Stage 2	443	558	-	531	534	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.9	16.7	0	1.9
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1295	-	-	303 239 573	1091	-	-
HCM Lane V/C Ratio	0.002	-	-	0.078 0.236 0.214	0.072	-	-
HCM Control Delay (s)	7.8	0	-	17.9 24.7 13	8.6	0	-
HCM Lane LOS	A	A	-	C C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3 0.9 0.8	0.2	-	-

Year 2030 Total Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	64	383	265	53	48	57
Future Vol, veh/h	64	383	265	53	48	57
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	76	456	315	63	57	68
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	379	0	-	0	956	347
Stage 1	-	-	-	-	347	-
Stage 2	-	-	-	-	609	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1191	-	-	-	289	701
Stage 1	-	-	-	-	720	-
Stage 2	-	-	-	-	547	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1191	-	-	-	264	701
Mov Cap-2 Maneuver	-	-	-	-	264	-
Stage 1	-	-	-	-	720	-
Stage 2	-	-	-	-	501	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.2	0		18.1		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1191	-	-	-	399	
HCM Lane V/C Ratio	0.064	-	-	-	0.313	
HCM Control Delay (s)	8.2	0	-	-	18.1	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.2	-	-	-	1.3	

Richard & Dawn Kassebaum
16081 S. Moore Rd.
Oregon City, OR 97045
503.632.5985 ♦ 503.632.5950 Fax
rich@bluestonehomes.net ♦ dawn@bluestonehomes.net

October 11, 2019

Oregon City Planning Department
Oregon City, OR 97045

RE: proposed new construction at Oregon City Christian Church

To Whom It May Concern:

This letter is to communicate our support for the future construction plans for a new gym currently under review for Oregon City Christian Church, 1179 South End Rd., Oregon City.

We are long-time residents of Oregon City and have been active attendees and participants at OCCC for the past six years. My husband and I are excited about the plans for the construction of a gym on the property. We embrace the values of OCCC to not only serve the youth of the congregation, but to also provide a new gym space that can be utilized by the Oregon City community in general.

We are the parents of three children who played sports for Oregon City Schools as well as through the community education youth programs. We heard many stories from coaches that gym space for teams was a sought-after resource in the community – there just wasn't enough space for all the teams seeking a venue to practice and hold games. Often younger aged teams had to practice at a later in the evening time than was ideal for their age group due to lack of space.

We believe that the new gym space will be a great resource for the whole community, and we ask that you approve the construction plans to bring this hoped-for resource to reality!

Sincerely,



Richard & Dawn Kassebaum

Oregon City MOPS



October 2019

Oregon City Planning Department
698 Warner Parrott Road
Oregon City, OR 97045

To Whom It May Concern:

We are writing to inform you of our relationship & experience with Oregon City Christian Church. Before we can share our experience with OCC, we'd like to share a bit about who we are and where we came from.

Our group is Oregon City MOPS (Mothers Of Pre-Schoolers) and we were started in 2016 by Courtney Goodwin who was at the time the Women's Ministry Leader at Oregon City Evangelical Church (OCEC). After being housed at OCEC for 2 years, we found ourselves in need of a new home. As we discussed our options here in Oregon City, we felt led to investigate Oregon City Christian Church. After meeting with Pastor Swatman, connecting with other staff and elders, getting a tour of the facility and researching their mission in our community, we knew this would be a great fit for our group!

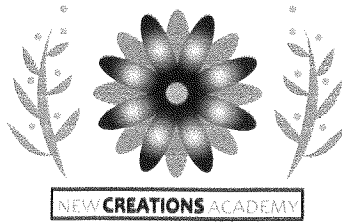
It was clear that OCC's heart is to reach out in our community and be able to offer space and time for groups like ours to minister to local needs. One of those local needs is dealing with postpartum depression (PPD). PPD affects 1 in 9 women and can have long lasting effects on not only the woman experiencing it, but also on her partner's mental health as well as the development of her child. While MOPS is much more diverse than one issue such as PPD, our group is committed to reaching out to mamas in our community and offering support in those critical first weeks/months of postpartum and continuing that support through the next few years prior to kiddos going off to school. Without an adequate place to meet, we aren't able to do that.

During the past year-and-a-half we have worked with the staff in transitioning our group and building a new childcare program for our Thursday morning meetings. While the staff has been outstanding in working with us, their building has provided a few limitations. Although our group is relatively young, we continue to have a waiting list each year due to physical space restrictions - we simply don't have room for more mamas or kiddos to join us. *This is part of why we are so excited about the possibility of OCC expanding their facilities!* Not only would this allow the congregation to grow and house their own programs, but it would allow other community programs like MOPS to grow as well.

We would like to recommend that Oregon City Christian be granted the proper permits and requests in order to make this expansion possible!

Sincerely,

Oregon City MOPS



October 23, 2019

Planning Department
Oregon City, OR

Ladies & Gentlemen:

I'm writing on behalf of Oregon City Christian Church in reference to their OneMore Gym Building Project. A few months ago, we approached Oregon City Christian because their facility is centrally-located, well-maintained, and positively beautiful. Our hope was to offer fine arts training for Oregon City children and their parents, and to find space that was of sufficient size, and low enough in cost that we could get started.

Oregon City Christian welcomed us and made it possible for us to begin, and include students for whom family budgets would otherwise restrict their artistic training. We are growing and they are extremely helpful in our growth. They have been generous with their lovely building, encouraged us, supported our efforts, and made our students and families feel comfortable.

As a group from the community that uses space in their current facility, we whole-heartedly endorse their goals. Like everything Oregon City Christian does, this building project will surely be conducted with the benefit of the community in mind. We expect it will yield additional space and a beautiful resource ready to accommodate the needs of many community groups and organizations.

We hope to continue meeting at Oregon City Christian for many more months, allowing us to continue teaching fine arts to children and their parents. The new facility will surely provide further opportunities for our students to develop their artistic skill, and benefit the community.

Sincerely,

Gia Gallegos
Operations Manager
New Creations Academy

Diliana Vassileva

From: Pete Walter
Sent: Thursday, May 21, 2020 2:30 PM
To: Diliana Vassileva
Subject: FW: GLUA-20-00012 CU-20-00001 SP-20-00022: Oregon City Christian Church

From: S SCHAEFFER <sschaeffer3@msn.com>
Sent: Wednesday, May 6, 2020 7:38 PM
To: Pete Walter <pwalter@orcity.org>
Subject: GLUA-20-00012 CU-20-00001 SP-20-00022: Oregon City Christian Church

Attn: Pete Walter, AICP, Senior Planner

I am contacting you regarding the application to construct a recreation building on the Oregon City Christian Church property.

After looking over the drawing and reading the application I am concerned about the current driveway exiting the back of the property on to Paulsen Drive. I want to insure that this will not open up for regular recreation use or become a major conduit for the rec center or for the greatly enlarged parking lot and activities that might be held there.

We have a quiet neighborhood and I live right on the corner where this exits. I also want to clarify that the large new parking lot will only be for parking and not activities. When they have held a few events there (concert, games) it is very loud and drove me inside and not able to enjoy the peace of my backyard. We are a quiet neighborhood with an older population.

While I understand their mission to provide member activities, it is not what our neighborhood signed up for when we purchased our homes.

Thank you for information you can provide.

Sandra Schaeffer
18725 Paulsen Drive
503-650-6513

MEMORANDUM

Date:	September 20, 2018	Project #: 22856.0
To:	Pete Walter, City of Oregon City John Replinger, PE, Replinger & Associates, LLC	
From:	Matt Bell, Russ Doubleday, and Chris Brehmer, PE	
Project:	Oregon City Christian Church Master Plan	
Subject:	Traffic Impact Study	

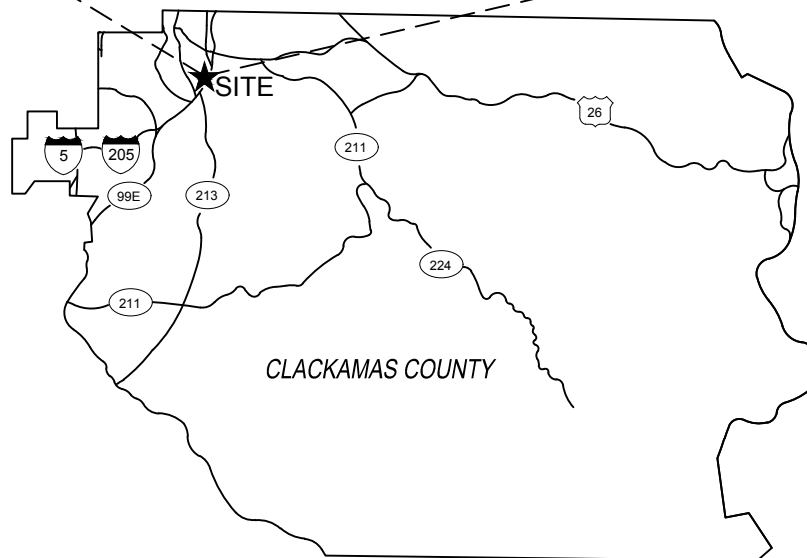
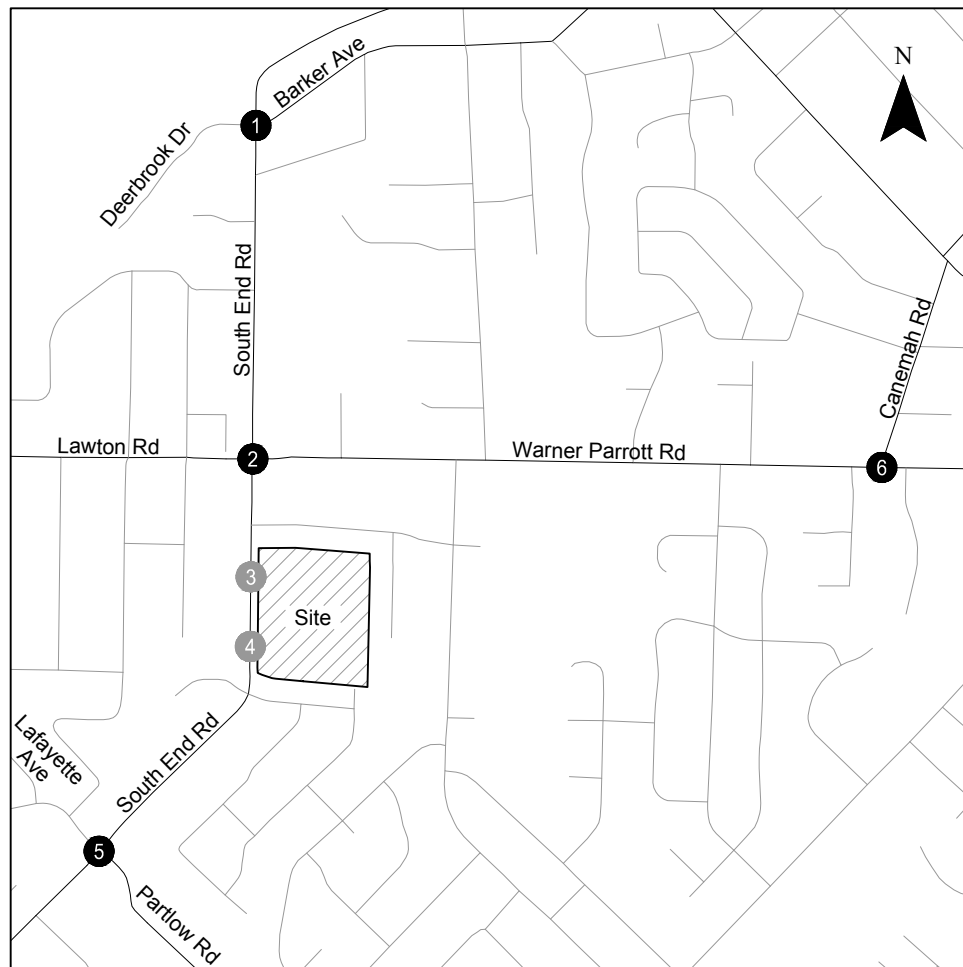
The Oregon City Christian Church recently developed a Master Plan that identifies the vision and long-term goals for future development of the church campus located along the east side of South End Road in Oregon City. Figure 1 illustrates the site vicinity map. The Master Plan includes phased construction of a new recreation center, a new student ministry center, a new administrative building, and renovation of the existing worship center and a new worship center and café. The Master Plan also includes expansion of the existing parking facilities and a new driveway along the southern boundary of the site. Figure 2 illustrates the conceptual master plan. Construction of the new facilities is expected to occur in four phases over a 10-year period as follows:

- Phase 1 is expected to occur in 2020 and include a new 8,168 square-foot (sf) recreation center, new parking facilities, and a new driveway along the southern boundary of the site;
- Phase 2 is expected to occur in 2022 and include a new 3,602 sf student ministry center;
- Phase 3 is expected to occur in 2025 and include a new 4,077 sf administrative building; and
- Phase 4 is expected to occur in 2030 and include renovation of the existing worship center and construction of the new worship center and café.
 - The size of the new worship center and café has not been determined; however, the church is planning to accommodate up to 600 parishioners.

The results of this study indicate that the Oregon City Christian Church Master Plan can be developed while maintaining acceptable traffic operations and safety at the study intersections, assuming provision of the following recommended mitigation measures:

- Subject to City direction, the Phase 3 and Phase 4 site development should pay a proportionate share contribution toward future installation of a traffic signal at the South End Road/Warner Parrott Road intersection prior to completion of the two respective development phases. Alternatively, the need for the South End Road/Warner Parrott Road intersection improvements associated with Phase 3 and Phase 4 site development could be re-evaluated prior to the two respective development phases.
- Adequate intersection sight distance should be provided at the site driveways on South End Road in accordance with City of Oregon City standards.

Additional details of the study methodology, findings, and recommendations are provided below.



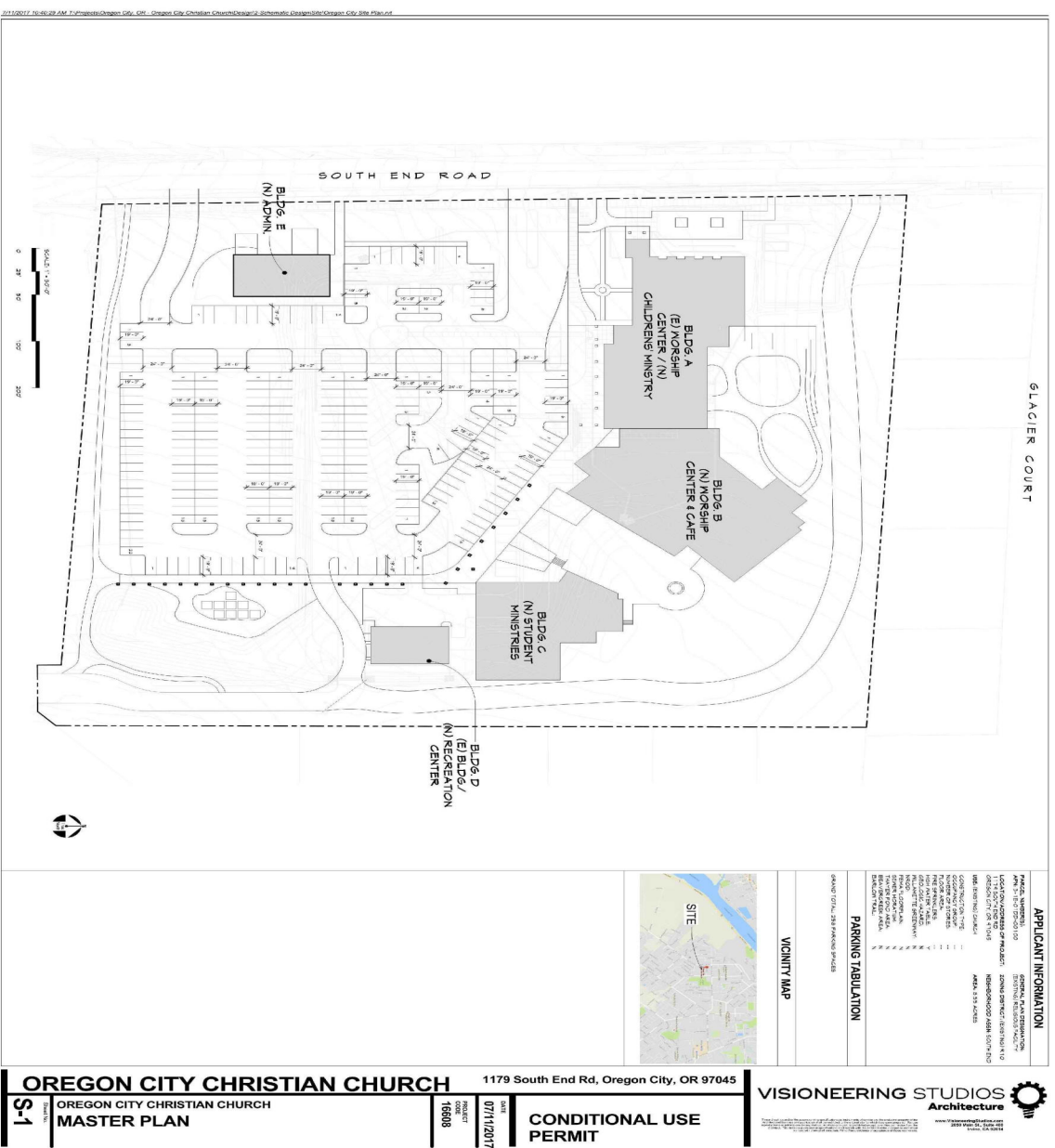
- - Study Intersection
- - Site Driveway

**Site Vicinity Map
Oregon City, OR**

**Figure
1**



Conceptual Master Plan Oregon City, OR



SCOPE OF THE REPORT

This analysis determines the transportation-related impacts associated with the Oregon City Christian Church Master Plan and was prepared in accordance with the City of Oregon City's Guidelines for Transportation Impact Analyses (TIA Guidelines – Reference 1). The study intersections and scope of this project were selected based on the TIA guidelines and direction provide by City staff. *Appendix "A" contains the scoping memo prepared for this study.* The operational analyses were performed at the following intersections:

1. South End Road/Barker Avenue
2. South End Road/Warner Parrott Road
3. South End Road/Existing Church Driveway (Dwy 1)
4. South End Road/Future Church Driveway (Dwy 2)
5. South End Road/Partlow Road
6. Canemah Road/Warner Parrott Road

This report evaluates these transportation issues:

- Year 2018 existing land-use and transportation-system conditions within the site vicinity during the weekday PM and Sunday mid-day peak periods;
- Planned developments and transportation improvements in the study area;
- Trip generation and distribution estimates for each phase of the Master Plan;
- Year 2020 background traffic conditions (without the Master Plan) during the weekday PM and Sunday mid-day peak periods;
- Year 2020 total traffic conditions (with full build-out and occupancy of Phase 1 of the Master Plan) during the weekday PM and Sunday mid-day peak periods;
- Year 2022 background traffic conditions (with Phase 1 of the Master Plan) during the weekday PM and Sunday mid-day peak periods;
- Year 2022 total traffic conditions (with full build-out and occupancy of Phases 1-2 of the Master Plan) during the weekday PM and Sunday mid-day peak periods;
- Year 2025 background traffic conditions (with Phases 1-2 of the Master Plan) during the weekday PM and Sunday mid-day peak periods;
- Year 2025 total traffic conditions (with full build-out and occupancy of Phases 1-3 of the Master Plan) during the weekday PM and Sunday mid-day peak periods;
- Year 2030 background traffic conditions (with Phases 1-3 of the Master Plan) during the weekday PM and Sunday mid-day peak periods;
- Year 2030 total traffic conditions (with full build-out and occupancy of Phases 1-4 of the Master Plan) during the weekday PM and Sunday mid-day peak periods;
- On-site traffic operations and circulation.

EXISTING CONDITIONS

The existing conditions analysis identifies the site conditions and current physical and operational characteristics of the roadways within the study area. These conditions will be compared with future conditions later in this report. Kittelson & Associates, Inc. (Kittelson) staff visited and inventoried the Oregon City Christian Church campus and study intersections in August 2018. At that time, Kittelson collected information regarding site conditions, adjacent land uses, existing traffic operations, and transportation facilities in the study area.

Site Conditions and Adjacent Land Uses

The Oregon City Christian Church campus currently has a worship center that houses all administrative and other accessory uses to the church. The campus includes a 96-stall parking lot and a maintenance/storage shed. Access to the campus is provided by a single driveway located along the east side of South End Road. A gated emergency access is provided in the southeast corner of the campus that connects to Paulsen Drive¹.

The campus property is currently zoned R-10 (single-family residential), which allows religious institutions as a conditional use. Properties to the north, east, and west are also zoned R-10, while properties to the south are zoned R-8. The majority of adjacent properties have residential land uses consistent with the underlying zoning. The Oregon City United Methodist Church and Clackamas Fire Station 17 are located to the south along the west side of South End Road.

Transportation Facilities

Table 1 summarizes the existing transportation facilities and roadways in the study area.

Table 1: Existing Transportation Facilities and Roadways in the Study Area

Roadway	Functional Classification ¹	Number of Lanes	Posted Speed (mph)	Sidewalks	Bicycle Lanes	On-Street Parking
South End Road	Minor Arterial	2	35	Yes	Yes	Yes
Barker Avenue	Collector	2	25	No	No	No
Warner Parrott Road	Minor Arterial	2	30	Yes	Yes	Yes
S Partlow Road	Collector	2	25	Yes	Yes	No
Canemah Road	Collector	2	25	No	No	No

1. Per the Oregon City Transportation System Plan (TSP – Reference 2).

¹ Prior conditional use approval related to the gated access allows for use associated with church activities but is subject to a monitoring condition. In the event the church proposes to use the emergency access before and after worship services in the future, the church should coordinate with City staff to confirm the nature and extent of monitoring necessary to evaluate potential impacts to the adjacent neighborhood as well as other pertinent requirements, if any.

Roadway Facilities

South End Road borders the church campus to the west and connects the campus to several major roadways, including Warner Parrott Road, Barker Avenue, and OR 99E via S 2nd Avenue to the north and Partlow Road and OR 99E to the south. Warner Parrott Road also connects the campus to several major roadways, including Canemah Road, Linn Avenue, Leland Road, and Warner Milne Road to the east. Figure 3 illustrates the existing lane configurations and traffic control devices at the study intersections.

Pedestrian and Bicycle Facilities

Sidewalks and on-street bike lanes are currently provided along both sides of South End Road, Warner Parrott Road, and Partlow Road; however, there are several gaps in the sidewalk and bike lane networks. Continuous sidewalks with planted landscape buffers are provided along South End Road adjacent to the campus. The sidewalks appear to be in good shape and of appropriate width per Oregon City standards.

Transit Facilities

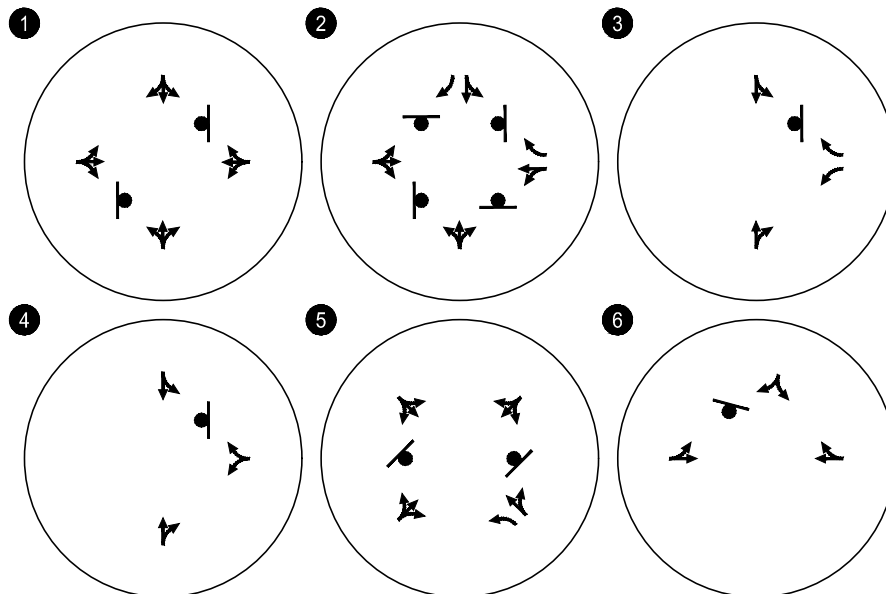
Local transit service is not provided in the study area. The closest transit service is provided to the east along Linn Avenue and Warner Milne Road. TriMet Bus Line 33 provides frequent service between Clackamas Town Center and Clackamas Community College Monday through Friday from 5:00 AM to 2:00 AM and from 6:00 AM to 2:00 AM Saturdays and Sundays. Trimet's Southeast Service Enhancement Plan identifies the area surrounding the campus as a Community/Jobs Connector Service Area and plans to provide future shuttle service to the area (TriMet – Reference 3).

Traffic Volumes and Peak Hour Operations

Turning movement counts were conducted at the study intersections in August 2018. The counts were conducted at the South End Road/Warner Parrott Road intersection and the site driveway on a typical mid-week day during the evening (4:00 to 6:00 PM) peak time period and at all study intersections on a typical Sunday morning (8:00 AM to 12:00 PM). The system-wide weekday PM and Sunday peak hours were found to occur from 5:00 to 6:00 PM and 10:15 to 11:15 AM, respectively. Figure 4 summarizes the year 2018 existing turning-movement counts at the study intersection for the weekday PM and Sunday peak hours. *Appendix "B" contains the traffic count worksheets used in this study.*

Current Levels of Service

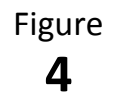
All level-of-service analyses described in this report were performed in accordance with the procedures stated in the *Highway Capacity Manual* (HCM – Reference 4). *A description of level of service and the criteria by which they are determined is presented in Appendix "C".* Appendix "C" also indicates how level of service is measured and what is generally considered an acceptable range.



-  - STOP SIGN
-  - TRAFFIC SIGNAL

**Existing Lane Configurations &
Traffic Control Devices
Oregon City, OR**

**Figure
3**



Per the TIA Guidelines, Oregon City requires all signalized intersections located outside the Regional Center to operate at Level of Service (LOS) “D” or better for the intersection as a whole and no approach operating at worse than LOS “E” and a v/c ratio higher than 1.0 for the sum of critical movements. Oregon City requires all unsignalized intersection to operate at LOS “E” or better for the poorest operating approach and with no movement serving more than 20 peak hour vehicles operating worse than LOS “E”. Therefore, LOS “F” is tolerated for minor movements during the peak hour.

All intersection level-of-service analyses used the peak 15-minute flow rates that occur during the weekday PM and Sunday mid-day peak hours. Using the peak 15-minute flow rates ensures that this analysis is based on a reasonable worst-case scenario. For this reason, the analysis reflects conditions that are only likely to occur for 15 minutes out of each average peak hour.

Figure 4 summarizes the year 2018 existing traffic conditions at the study intersections during the weekday PM and Sunday peak hours. As shown, all of the study intersections currently operate acceptably per their applicable mobility standards. *Appendix “D” includes the year 2018 existing traffic conditions worksheets.*

Traffic Safety

The crash history of the study intersections was reviewed in an effort to identify potential safety issues in the study area. The Oregon Department of Transportation (ODOT) provided the five most recent years of crash data available for the study intersections, which includes the period from January 1, 2012, through December 31, 2016. Table 2 summarizes the crash data over the five-year period.

Table 2: Intersection Crash History (January 1, 2012 through December 31, 2016)

Intersection	Crash Type					Crash Severity			Total	Crash Rates (Crashes /MEV)	ODOT 90 th Percentile Rate
	Rear-End	Turn	Angle	Ped/ Bike	Other	PDO ¹	Injury	Fatality			
South End Road/ Barker Avenue	-	-	-	-	-	0	0	-	0	0.00	0.408
South End Road/ Warner Parrott Road	2	2	4	-	-	6	2	-	8	0.376	0.408
South End Road/ S Partlow Road	1	2	-	-	-	2	1	-	3	0.258	0.408
Canemah Road/ Warner Parrott Road	3	1	-	-	-	1	3	-	4	0.345	0.293

Source: ODOT
MEV=Million Entering Vehicles

The crash rates shown in Table 2 were compared to the 90th percentile rates for similar facilities shown in Table 4-1 of the ODOT Analysis Procedures Manual (APM). Per the APM, any intersection that has a crash rate equal to or greater than the corresponding 90th percentile rate is considered a high-risk intersection and is recommended for further review. Based on these criteria, no intersection is recommended for further crash pattern review. *Appendix “E” contains the crash data provided by ODOT.*

TRANSPORTATION IMPACT ANALYSIS

The transportation impact analysis identifies how the study area's transportation system will operate in the year each phase of the Master Plan is expected to be fully built. The impact of traffic generated by each phase of the Master Plan was examined as follows:

- Planned developments and transportation improvements in the site vicinity were identified.
- Background traffic conditions (with and without the Master Plan) were analyzed at the study intersections during the weekday PM and Sunday peak hours.
 - Background conditions were developed by applying a 1.9-percent annual growth rate to the existing traffic volumes to account for regional growth in the site vicinity.
- Site-generated trips were estimated for build-out of each phase of the Master Plan.
- Site trip-distribution patterns were identified and used to assign the site-generated trips to the study intersections.
- Total traffic conditions (with full build-out and occupancy of the Master Plan) were analyzed at the study intersections and site-access driveways during the weekday PM and Sunday peak hours.
- On-site circulation issues and site-access operations were evaluated.

YEAR 2020 BACKGROUND TRAFFIC CONDITIONS

The year 2020 background traffic conditions analysis identifies how the study area's transportation system will operate in the year Phase 1 of the Master Plan is expected to be fully built, 2020. This analysis includes traffic attributed to planned developments within the study area and to general growth in the region but does not include traffic from Phase 1 of the Master Plan.

Planned Developments and Transportation Improvements

Kittelson identified and reviewed the planned developments and transportation improvements within the study area. Based on discussions with City staff, there are no approved developments within the study area that impact the study intersections; however, there are two transportation projects identified in the TSP that could. Both projects are identified on the "likely to be funded" project list as medium-term priority. Projects identified as medium-term priority are recommended for implementation within 5 to 10 years of adoption of the TSP (2013). The projects include:

- Project D32: South End Road/Warner Parrott Road Operational Enhancement – Install a traffic signal with dedicated left-turn lanes for the South End Road approaches to Warner Parrott Road.
- Project D33: South End Road/Lafayette Avenue-Partlow Road Operational Enhancement – Install a single-lane roundabout.

Traffic Volumes

The growth rate used in this analysis was determined based on a review of historic traffic volumes provided in the TSP and direction provided by City staff. The TSP shows an increase of approximately 1.90 percent per year at several intersections within the south part of the City. Therefore, the year 2020 background traffic volumes were developed by applying a 3.8 percent growth rate (1.90 percent per year for two years) to the existing traffic volumes shown in Figure 4. Figure 5 illustrates the resulting forecast year 2020 background traffic volumes at the study intersection during the weekday PM and Sunday peak hours.

Level-of-Service Analysis

Figure 5 summarizes the year 2020 background traffic conditions at the study intersections during the weekday PM and Sunday peak hours. As shown, all of the study intersections are forecast to operate acceptably per their applicable mobility standards. *Appendix "F" includes the year 2020 background traffic conditions worksheets.*

PHASE 1 DEVELOPMENT PLAN

Phase 1 of the Master Plan includes construction of a new 8,168 sf recreation center, new parking facilities, and a new driveway along the southern boundary of the site. The new parking facilities will increase the parking supply from 96 stalls to 258 total stalls; the additional stalls will accommodate full build-out of the Mater Plan. The new driveway will connect with South End Road approximately 400-feet south of the existing driveway. Full build-out and occupancy of Phase 1 is expected to occur in 2020.

Trip Generation

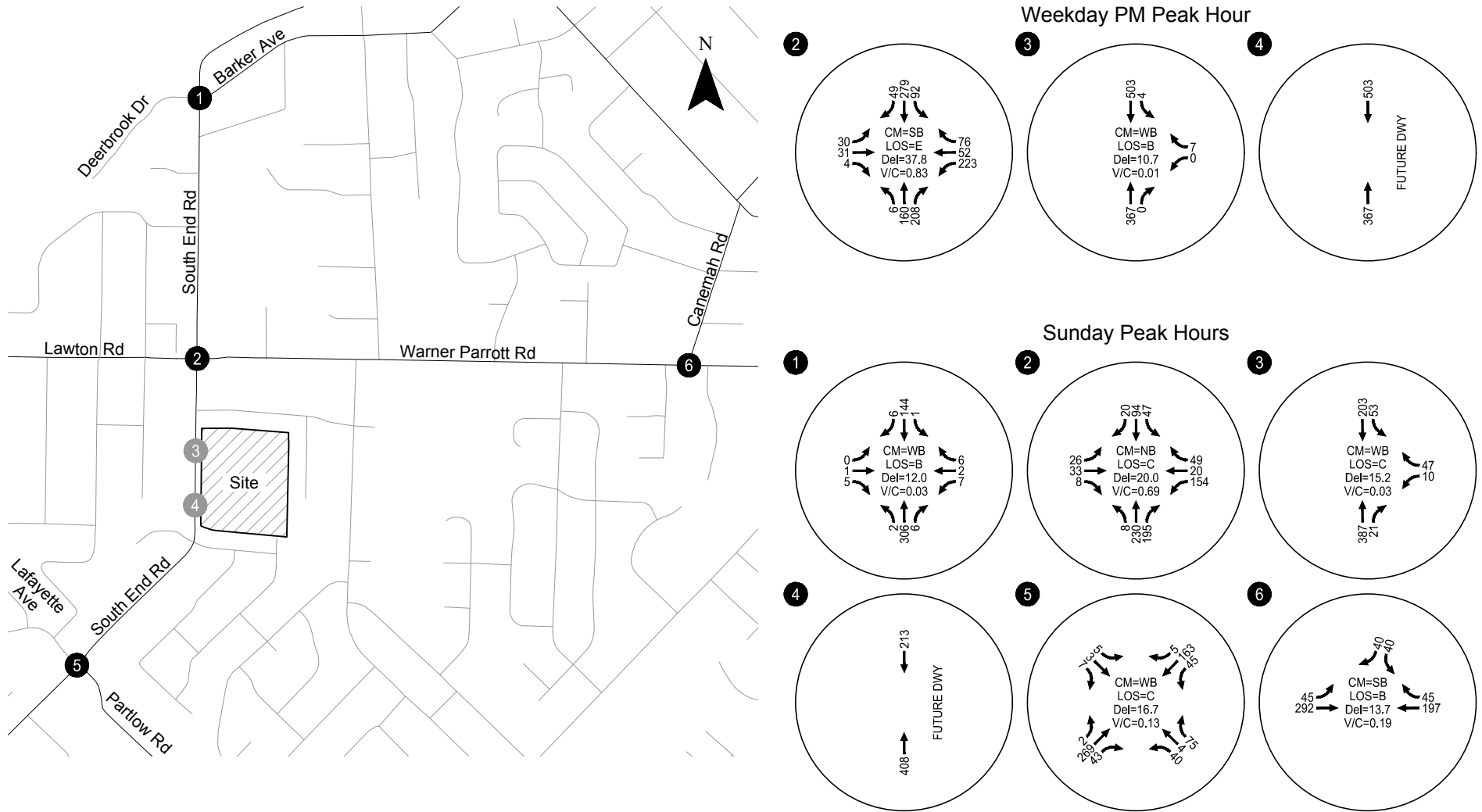
Trip generation estimates were prepared for Phase 1 of the Master Plan based on a trip generation study conducted at the church in July 2018. *Appendix "A" contains additional information related to the trip generation study.* Table 3 summarizes the daily, weekday PM, Sunday, and Sunday peak hour trips associated with Phase 1 of the Master Plan.

Table 3: Phase 1 Trip Generation

Phase	Size	Daily Trips (Weekday)	Weekday PM Peak Hour of Adjacent Street			Daily Trips (Sunday)	Sunday Peak Hour of Generator		
			Total	In	Out		Total	In	Out
1	8,168 sf	64	6	3	3	222	72	32	40

Site Trip Distribution/Trip Assignment

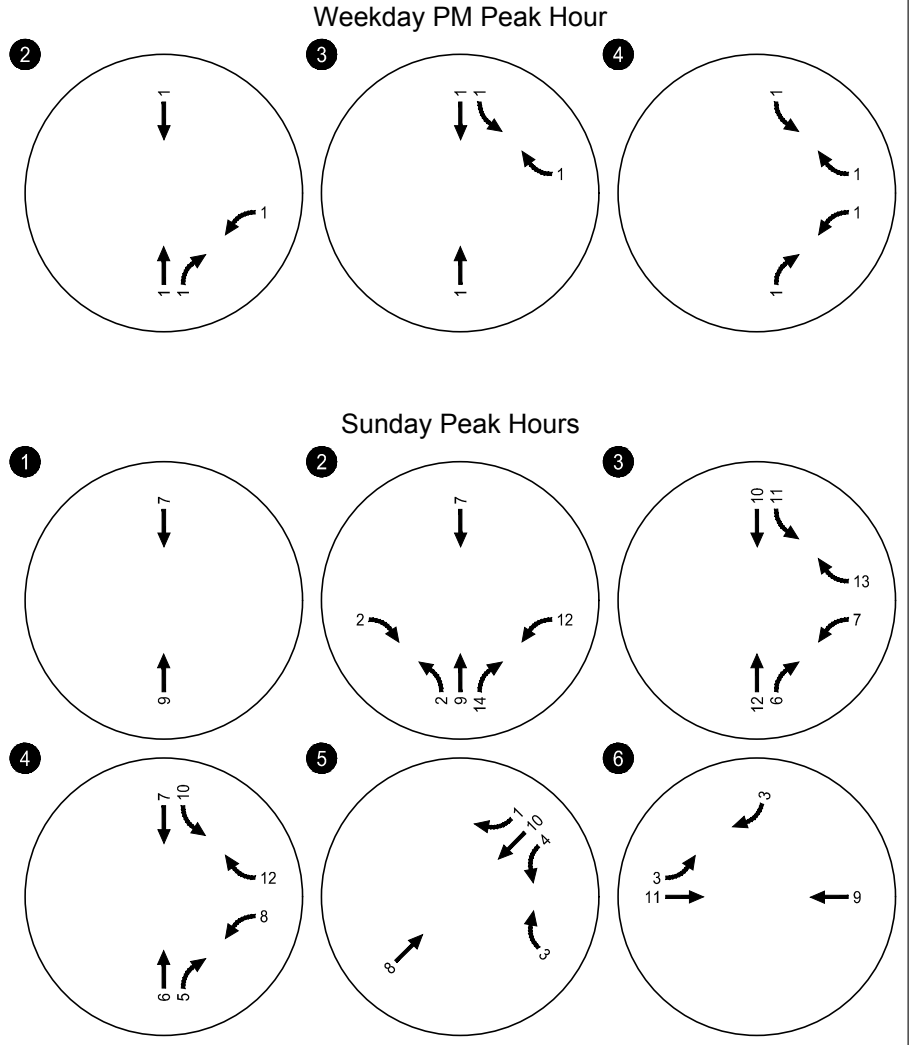
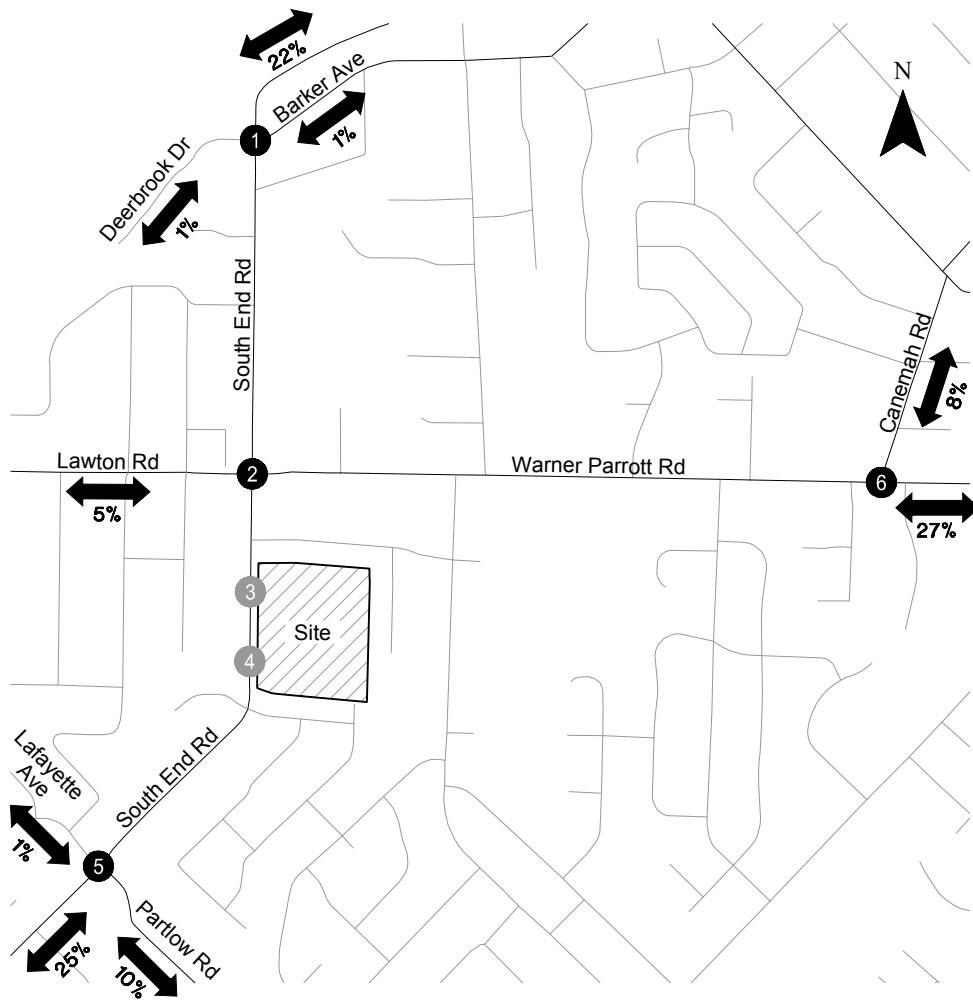
A trip distribution pattern was developed for the Master Plan based on existing traffic patterns and the location of major trip origins and destinations in the Oregon City area. Figure 6 illustrates the estimated trip distribution pattern.



**Year 2020 Background Traffic Conditions
Weekday PM and Sunday Peak Hours
Oregon City, OR**

**Figure
5**

H:\121\22856 - Oregon City Christian Church Master Plan\report\figs\22856_Fig1.dwg Sep 12, 2018 - 5:44pm - mbell Layout Tab: Fig06



**Estimated Trip Distribution Pattern & Phase 1 Site-generated Trips
Weekday PM and Sunday Peak Hours
Oregon City, OR**

**Figure
6**

The site-generated trips shown in Table 3 were distributed to the study area roadways according to the trip distribution pattern shown in Figure 6. Figure 6 also illustrates the assignment of site-generated trips at the study intersections during the weekday PM and Sunday peak hours.

YEAR 2020 TOTAL TRAFFIC CONDITIONS

The total traffic conditions analysis forecasts how the study area's transportation system will operate with traffic generated by Phase 1 of the Master Plan. The year 2020 background traffic volumes shown in Figure 5 were added to the site-generated trips shown in Figure 6 to arrive at the total traffic volumes shown in Figure 7.

Intersection Level of Service

Figure 7 summarizes the year 2020 Phase 1 total traffic conditions analysis results at the study intersections during the weekday PM and Sunday peak hours. As shown, all of the study intersections and site driveways are forecast to operate acceptably per their applicable mobility standards. *Appendix "G" includes the year 2020 total traffic conditions worksheets.*

YEAR 2022 BACKGROUND TRAFFIC CONDITIONS

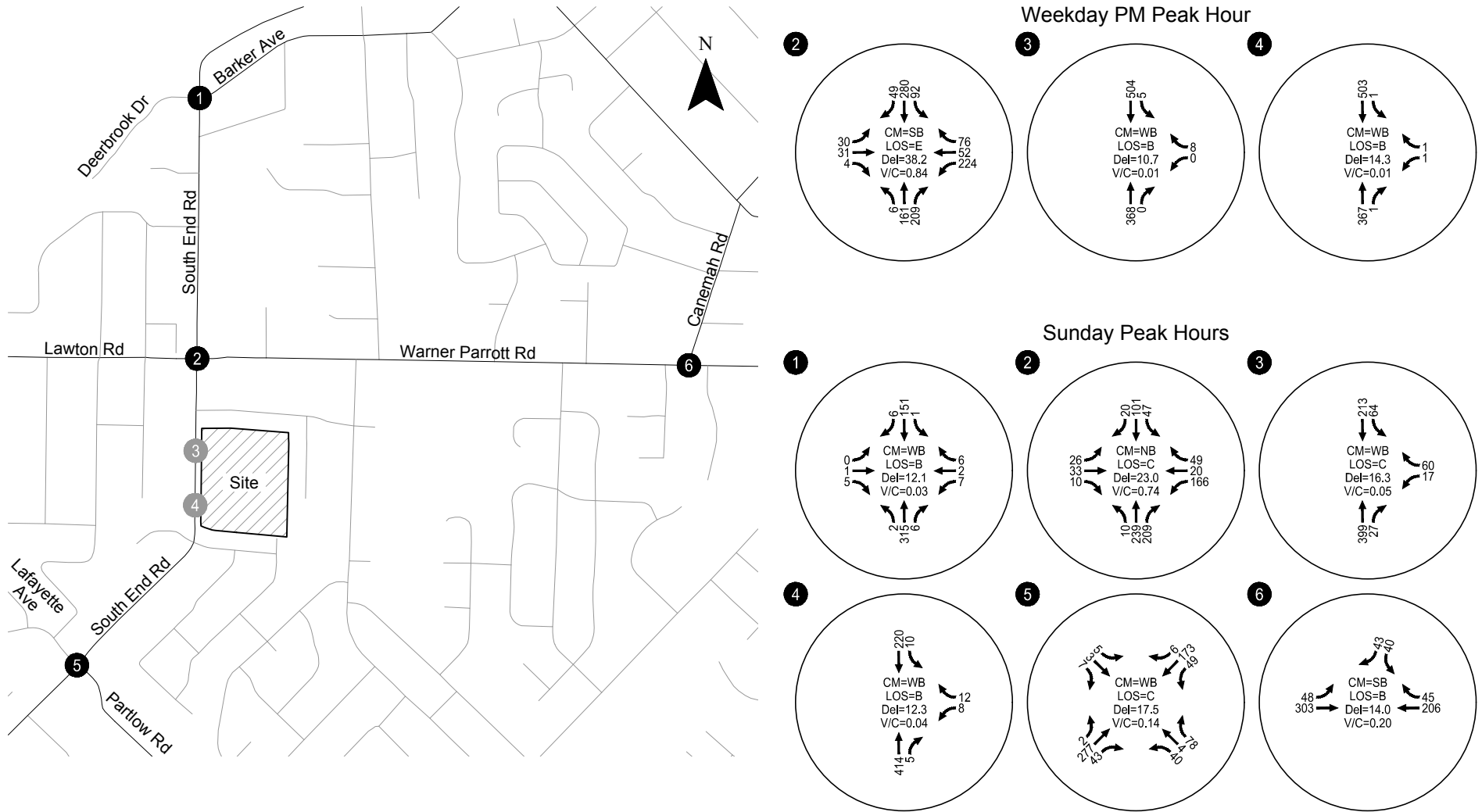
The year 2022 background traffic conditions analysis identifies how the study area's transportation system will operate in the year Phase 2 of the Master Plan is expected to be fully built, 2022. This analysis includes traffic attributed to Phase 1 of the Master Plan and to general growth in the region but does not include traffic from Phase 2 of the Master Plan.

Traffic Volumes

The year 2022 background traffic volumes were developed by applying a 7.6 percent growth rate (1.90 percent per year for four years) to the existing traffic volumes shown in Figure 4 and by adding the Phase 1 site-generated trips shown in Figure 6. Figure 8 illustrates the resulting forecast year 2022 background traffic volumes at the study intersection during the weekday PM and Sunday peak hours.

Level-of-Service Analysis

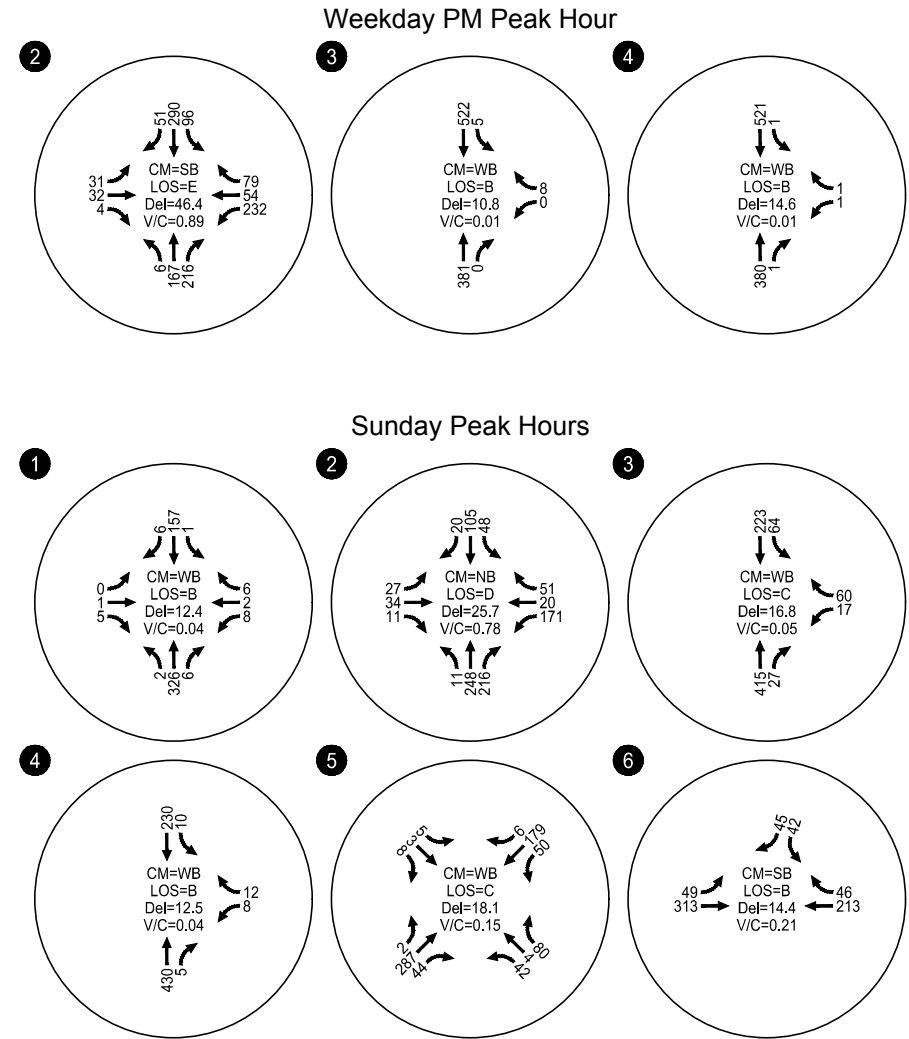
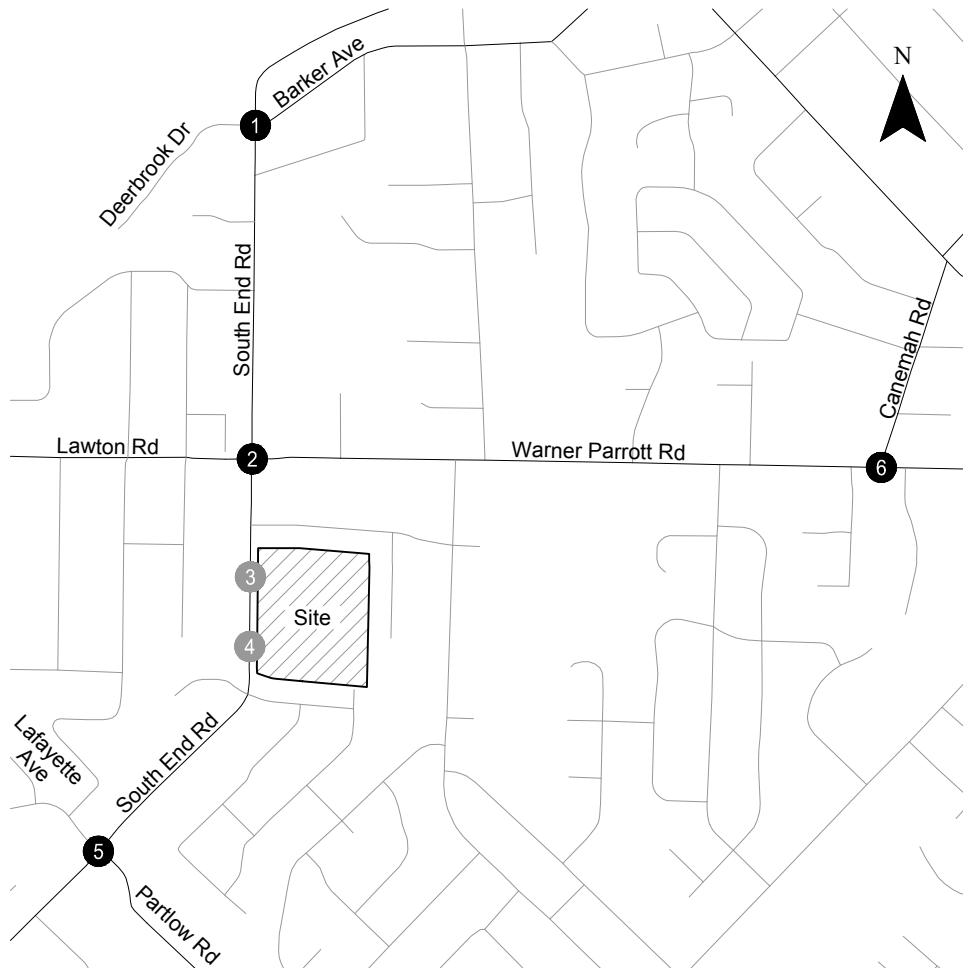
Figure 8 summarizes the year 2022 background traffic conditions at the study intersections during the weekday PM and Sunday mid-day peak hours. As shown, all of the study intersections are forecast to operate acceptably per their applicable mobility standards. *Appendix "H" includes the year 2022 background traffic conditions worksheets.*



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION AVERAGE LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = VOLUME-TO-CAPACITY RATIO

**Year 2020 Phase 1 Total Traffic Conditions
 Weekday PM and Sunday Peak Hours
 Oregon City, OR**

Figure
7



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION AVERAGE LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = VOLUME-TO-CAPACITY RATIO

**Year 2022 Background Traffic Conditions
 Weekday PM and Sunday Peak Hours
 Oregon City, OR**

**Figure
 8**

PHASE 2 DEVELOPMENT PLAN

Phase 2 of the Master Plan includes construction of a new 3,602 sf student ministry center. Full build-out and occupancy of Phase 2 is expected to occur in 2022.

Trip Generation

Trip generation estimates were prepared for Phase 2 of the Master Plan based on a trip generation study conducted at the church in July 2018. *Appendix "A" contains additional information related to the trip generation study.* Table 4 summarizes the daily, weekday PM, Sunday, and Sunday peak hour trips associated with Phase 2 of the Master Plan.

Table 4: Phase 2 Trip Generation

Phase	Size	Daily Trips (Weekday)	Weekday PM Peak Hour of Adjacent Street			Daily Trips (Sunday)	Sunday Peak Hour of Generator		
			Total	In	Out		Total	In	Out
2	3,602 sf	28	2	1	1	98	32	14	18

Site Trip Distribution/Trip Assignment

The site-generated trips shown in Table 4 were distributed to the study area roadways according to the trip distribution pattern shown in Figure 9. Figure 9 also illustrates the assignment of Phase 2 site-generated trips at the study intersections during the weekday PM and Sunday peak hours.

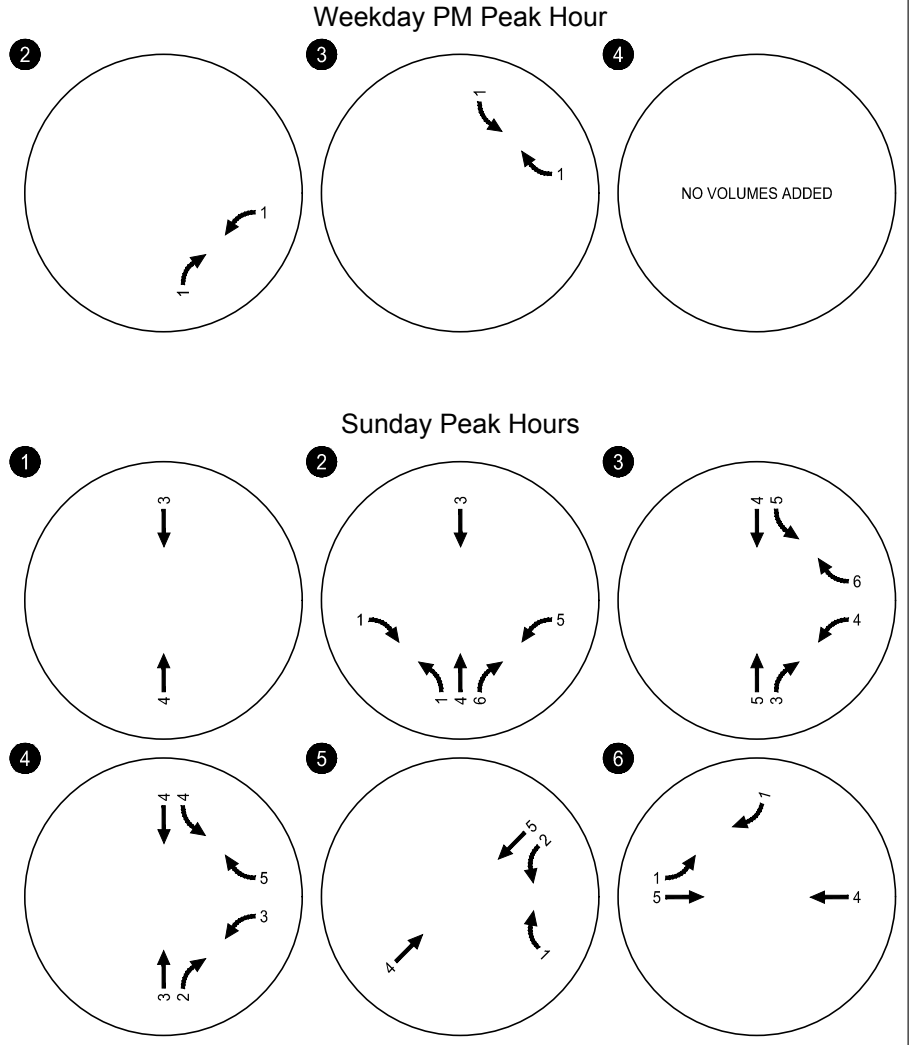
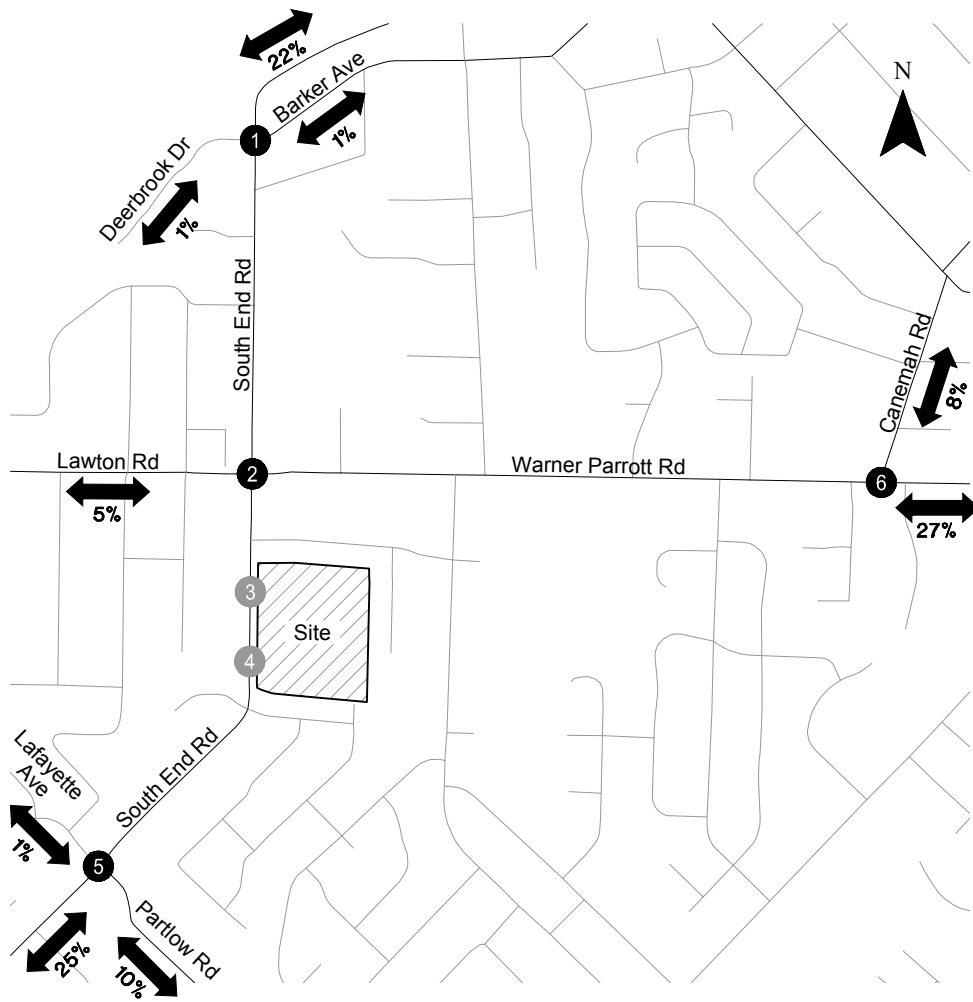
YEAR 2022 TOTAL TRAFFIC CONDITIONS

The total traffic conditions analysis forecasts how the study area's transportation system will operate with traffic generated by Phases 1-2 of the Master Plan. The year 2022 background traffic volumes shown in Figure 8 were added to the site-generated trips shown in Figure 9 to arrive at the total traffic volumes shown in Figure 10.

Intersection Level of Service

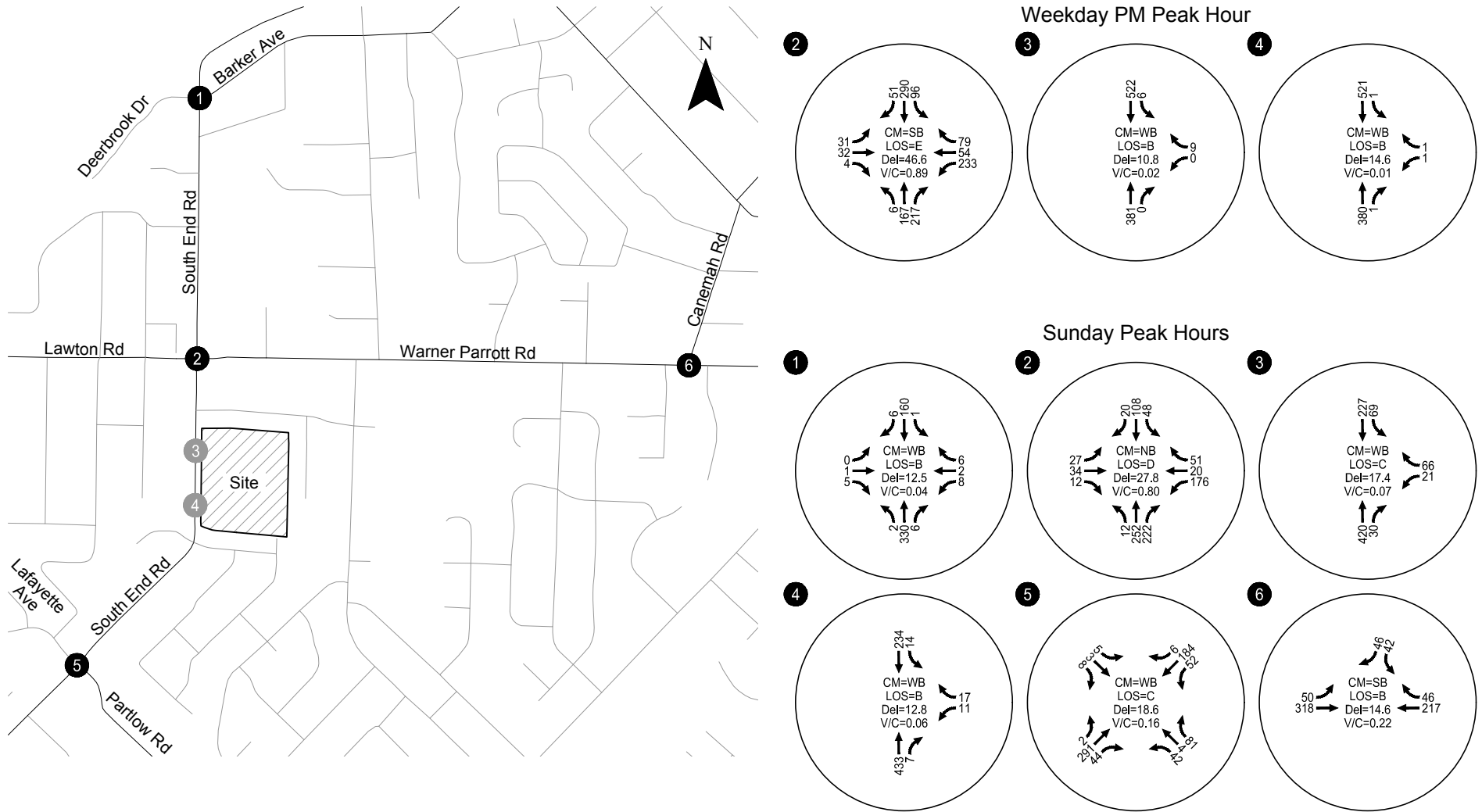
Figure 10 summarizes the year 2022 Phases 1-2 total traffic conditions analysis results at the study intersections during the weekday PM and Sunday peak hours. As shown, all of the study intersections and site driveways are forecast to operate acceptably per their applicable mobility standards. *Appendix "I" includes the year 2022 total traffic conditions worksheets.*

H:\121\22856 - Oregon City Christian Church Master Plan\report\figs\22856_Fig1.dwg Sep 12, 2018 - 5:53pm - mbell Layout Tab: Fig09



**Estimated Trip Distribution Pattern & Phase 2 Site-generated Trips
Weekday PM and Sunday Peak Hours
Oregon City, OR**

**Figure
9**



**Year 2022 Phase 1-2 Total Traffic Conditions
Weekday PM and Sunday Peak Hours
Oregon City, OR**

**Figure
10**

YEAR 2025 BACKGROUND TRAFFIC CONDITIONS

The year 2025 background traffic conditions analysis identifies how the study area's transportation system will operate in the year Phase 3 of the Master Plan is expected to be fully built, 2025. This analysis includes traffic attributed to Phases 1-2 of the Master Plan and to general growth in the region but does not include traffic from Phase 3 of the Master Plan.

Traffic Volumes

The year 2025 background traffic volumes were developed by applying a 13.3 percent growth rate (1.90 percent per year for seven years) to the existing traffic volumes shown in Figure 4 and by adding the Phase 1 site-generated trips shown in Figure 6 and the Phase 2 site-generated trips shown in Figure 9. Figure 11 illustrates the resulting forecast year 2025 background traffic volumes at the study intersection during the weekday PM and Sunday peak hours.

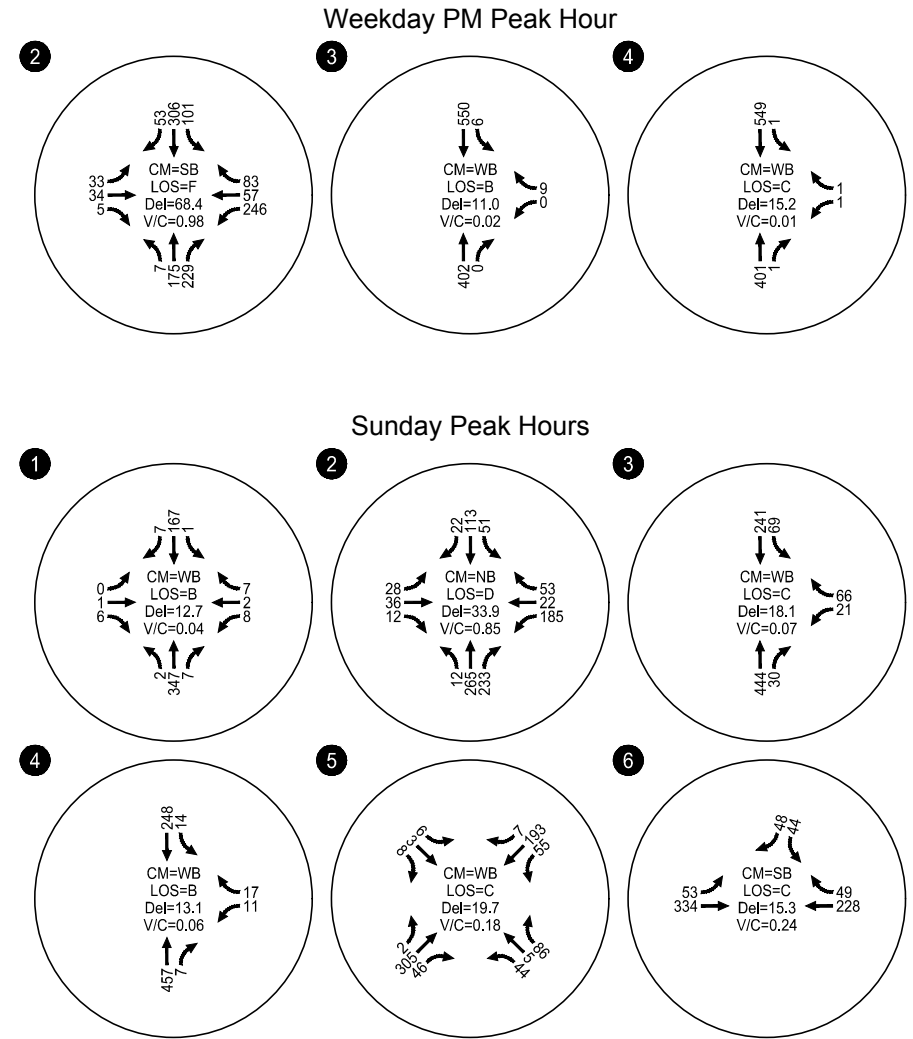
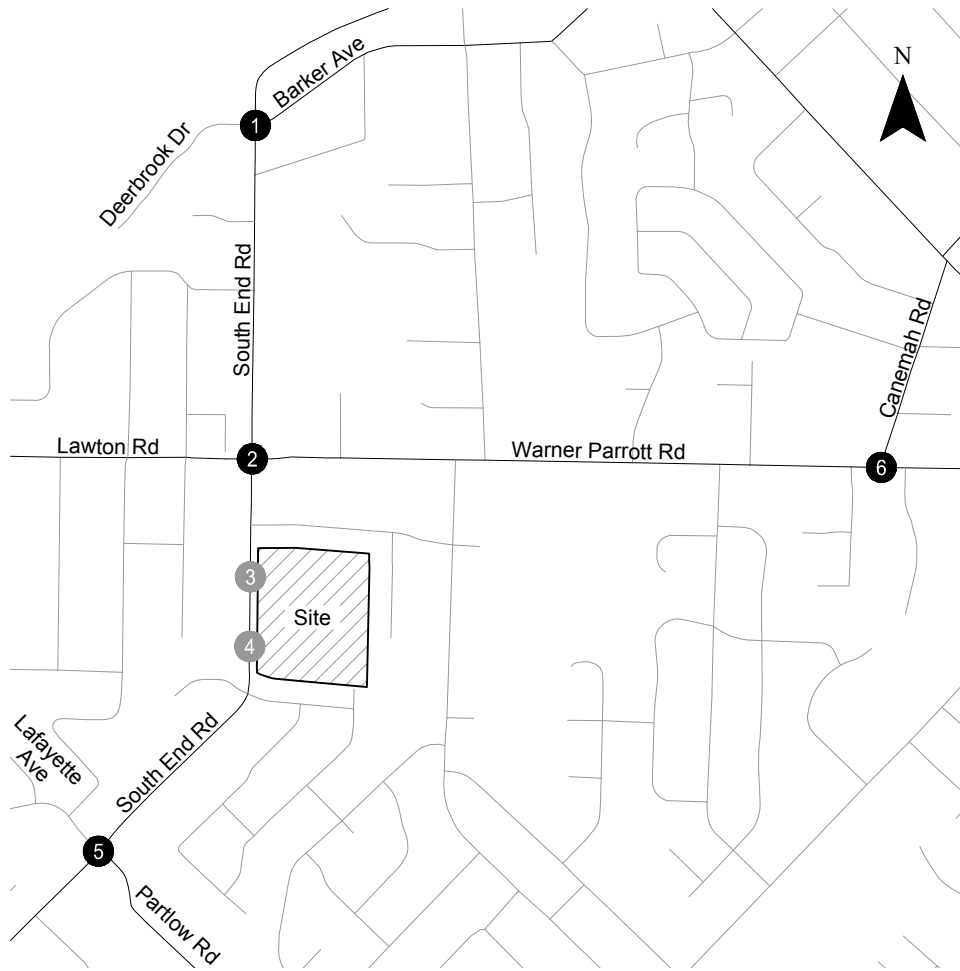
Level-of-Service Analysis

Figure 11 summarizes the year 2025 background traffic conditions at the study intersections during the weekday PM and Sunday peak hours. As shown, all of the study intersections are forecast to operate acceptably per their applicable mobility standards with the exception of the South End Road/Warner Parrott Road intersection. *Appendix "J" includes the year 2025 background traffic conditions worksheets.*

South End Road/Warner Parrott Road

The northbound and southbound approaches to the South End Road/Warner Parrott Road intersection are projected to operate at LOS "F" and near capacity during the weekday PM peak hour. A preliminary signal warrant analysis indicates that a traffic signal is expected to be warranted. This finding is consistent with the Oregon City Transportation System Plan and its identified Project D32². Figure 12 summarizes the year 2025 background traffic condition at the study intersections during the weekday PM and Sunday peak hours assuming installation of a traffic signal at the intersection (but without the additional left-turn lanes identified in TSP Project D32). *Appendix "K" includes the year 2025 background traffic conditions (mitigated) worksheets.*

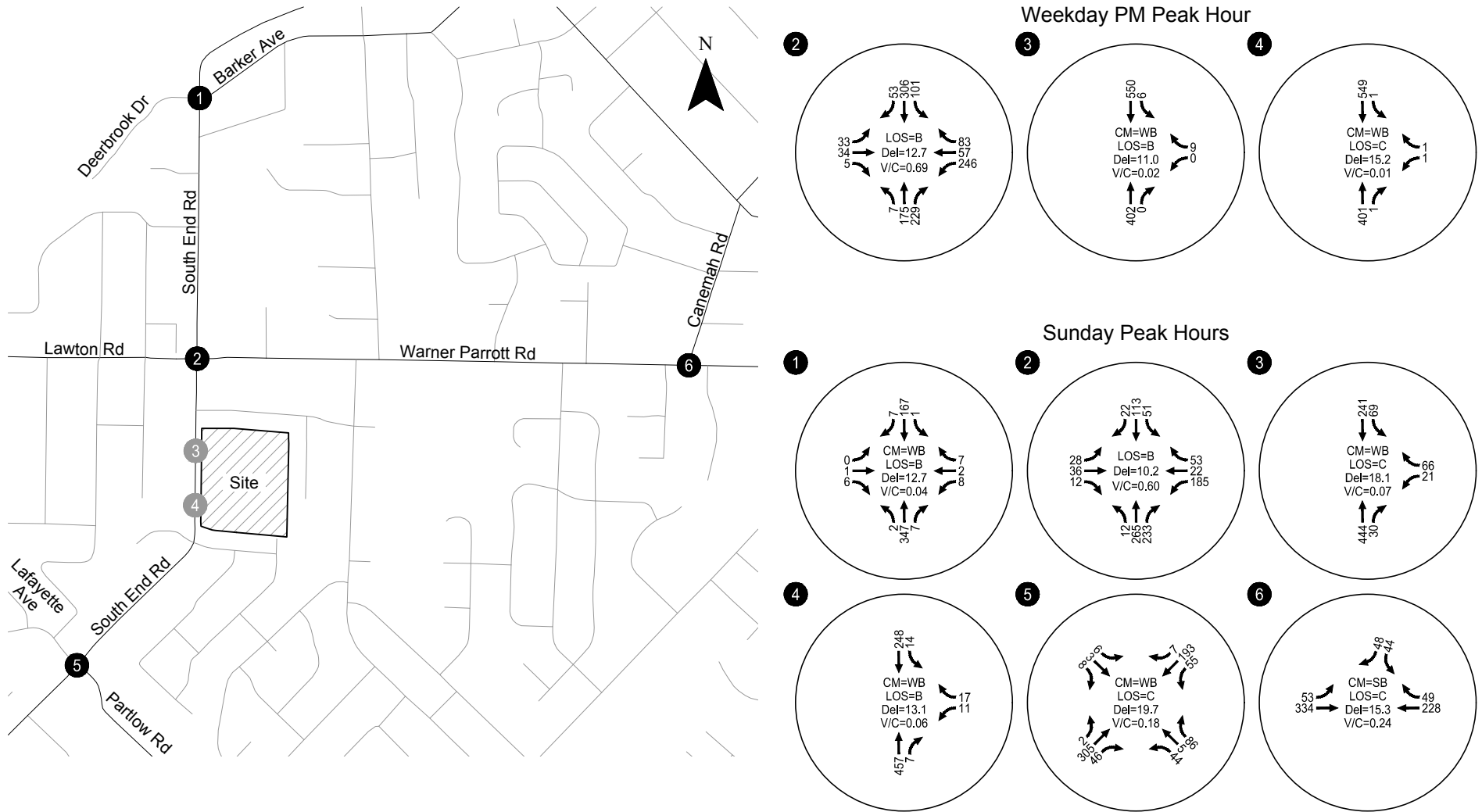
² As previously noted, project D32 is the South End Road/Warner Parrott Road Operational Enhancement – Install a traffic signal with dedicated left-turn lanes for the South End Road approaches to Warner Parrott Road



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION AVERAGE LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = VOLUME-TO-CAPACITY RATIO

**Year 2025 Background Traffic Conditions
 Weekday PM and Sunday Peak Hours
 Oregon City, OR**

**Figure
 11**



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION AVERAGE LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = VOLUME-TO-CAPACITY RATIO

Year 2025 Background Traffic Conditions - Mitigated Weekday PM and Sunday Peak Hours Oregon City, OR

Figure
12

PHASE 3 DEVELOPMENT PLAN

Phase 3 of the Master Plan includes construction of a new 4,077 sf administrative building. Full build-out and occupancy of Phase 3 is expected to occur in 2025.

Trip Generation

Recognizing there is already an administrative function on-site today, a trip generation estimate was prepared for Phase 3 of the Master Plan based on information provided in the standard reference manual, *Trip Generation, 10th Edition*, published by the Institute of Transportation Engineers (ITE – Reference 5). ITE Land Use Code 710 (General Office) was used as a basis for the analysis. Table 5 summarizes the daily, weekday PM, Sunday, and Sunday peak hour trips associated with Phase 3 of the Master Plan.

Table 5: Phase 3 Trip Generation

Phase	Size	Daily Trips (Weekday)	Weekday PM Peak Hour of Adjacent Street			Daily Trips (Sunday)	Sunday Peak Hour of Generator		
			Total	In	Out		Total	In	Out
3	3,602 sf	40	5	1	4	3	1	1	0

Site Trip Distribution/Trip Assignment

The site-generated trips shown in Table 5 were distributed to the study area roadways according to the trip distribution pattern shown in Figure 13. Figure 13 also illustrates the assignment of Phase 3 site-generated trips at the study intersections during the weekday PM and Sunday peak hours.

YEAR 2025 TOTAL TRAFFIC CONDITIONS

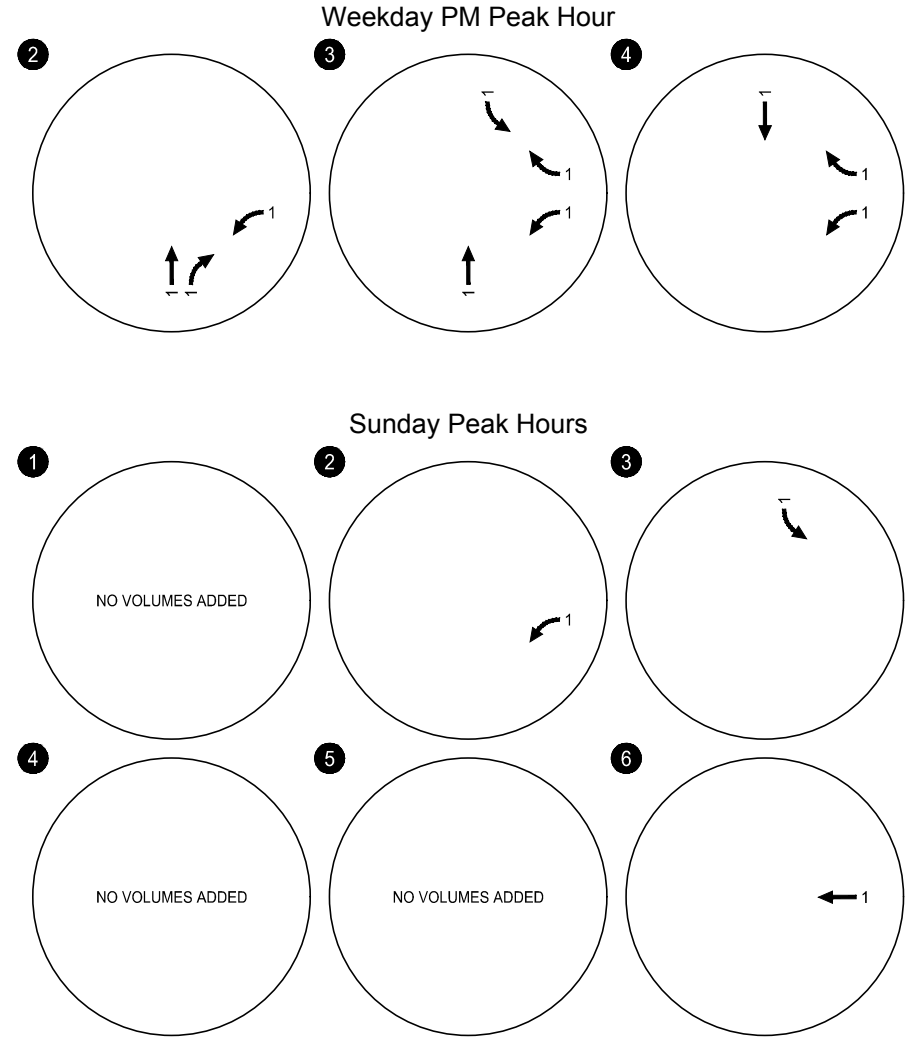
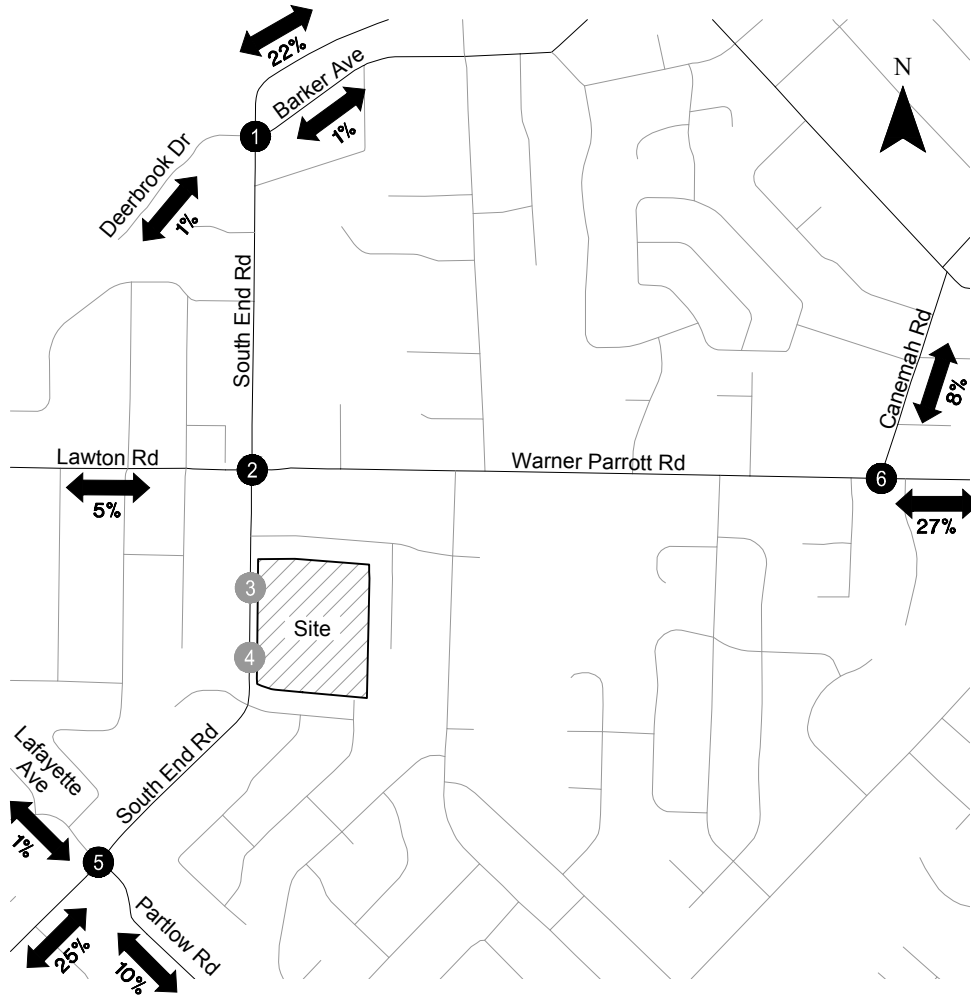
The total traffic conditions analysis forecasts how the study area’s transportation system will operate with traffic generated by Phases 1-3 of the Master Plan. The year 2025 background traffic volumes shown in Figure 12 were added to the site-generated trips shown in Figure 13 to arrive at the total traffic volumes shown in Figure 14.

Intersection Level of Service

Figure 14 summarizes the year 2025 Phases 1-3 total traffic conditions analysis results at the study intersections during the weekday PM and Sunday peak hours. As shown, all of the study intersections and site driveway are forecast to operate acceptably per their applicable mobility standards assuming provision of a traffic signal at the South End Road/Warner Parrott Road intersection.

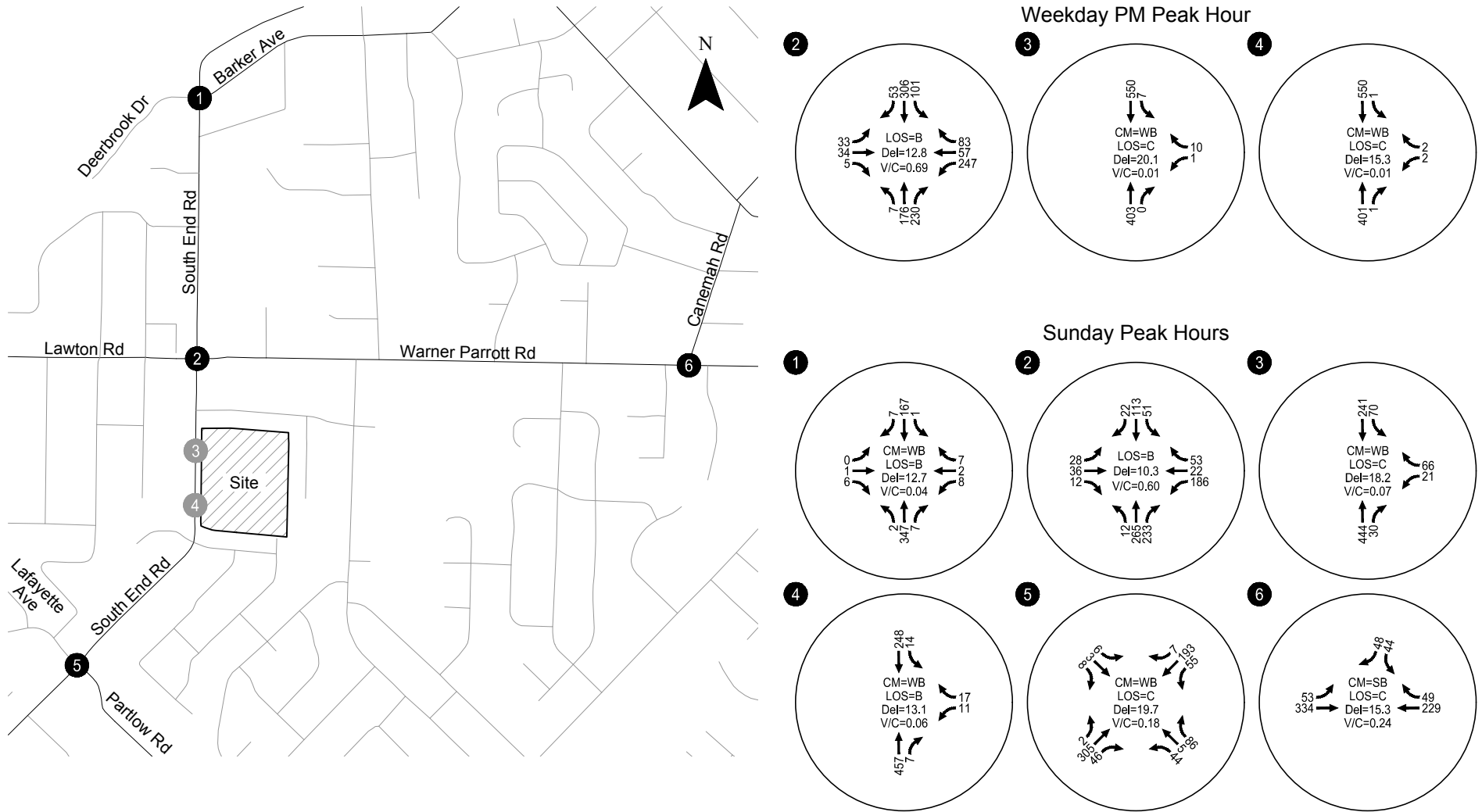
Subject to City direction, the Church Master Plan Phase 3 traffic impacts to the South End Road/Warner Parrott Road intersection could potentially be mitigated through payment of a proportionate share towards the City’s Transportation System Plan Project D32. Alternatively, the need for intersection improvements associated with site development could be re-evaluated prior to Phase 3 development. *Appendix “L” includes the year 2025 total traffic conditions worksheets.*

H:\121\22856 - Oregon City Christian Church Master Plan\report\figs\122856_Fig1.dwg Sep 12, 2018 - 5:45pm - mbell Layout Tab: Fig13



**Estimated Trip Distribution Pattern & Phase 3 Site-generated Trips
Weekday PM and Sunday Peak Hours
Oregon City, OR**

**Figure
13**



**Year 2025 Phase 1-3 Total Traffic Conditions
Weekday PM and Sunday Peak Hours
Oregon City, OR**

**Figure
14**

YEAR 2030 BACKGROUND TRAFFIC CONDITIONS

The year 2030 background traffic conditions analysis identifies how the study area's transportation system will operate in the year Phase 4 of the Master Plan is expected to be fully built, 2030. This analysis includes traffic attributed to Phases 1-3 of the Master Plan and to general growth in the region but does not include traffic from Phase 4 of the Master Plan.

Traffic Volumes

The year 2030 background traffic volumes were developed by applying a 22.8 percent growth rate (1.90 percent per year for 12 years) to the existing traffic volumes shown in Figure 4 and by adding the Phase 1 site-generated trips shown in Figure 6, the Phase 2 site-generated trips shown in Figure 9, and the Phase 3 site-generated trips shown in Figure 13. Figure 15 illustrates the resulting forecast year 2030 background traffic volumes at the study intersection during the weekday PM and Sunday peak hours.

Level-of-Service Analysis

Figure 15 summarizes the year 2030 background traffic conditions at the study intersections during the weekday PM and Sunday peak hours. As shown, all of the study intersections are forecast to operate acceptably per their applicable mobility standards. *Appendix "M" includes the year 2030 background traffic conditions worksheets.*

PHASE 4 DEVELOPMENT PLAN

Phase 4 of the Master Plan includes renovation of the existing worship center and construction of the new worship center and café. While the size of the new worship center and café has not been determined; the church is planning to develop the new worship center to accommodate up to 600 parishioners. Full build-out and occupancy of Phase 4 is expected to occur in 2030.

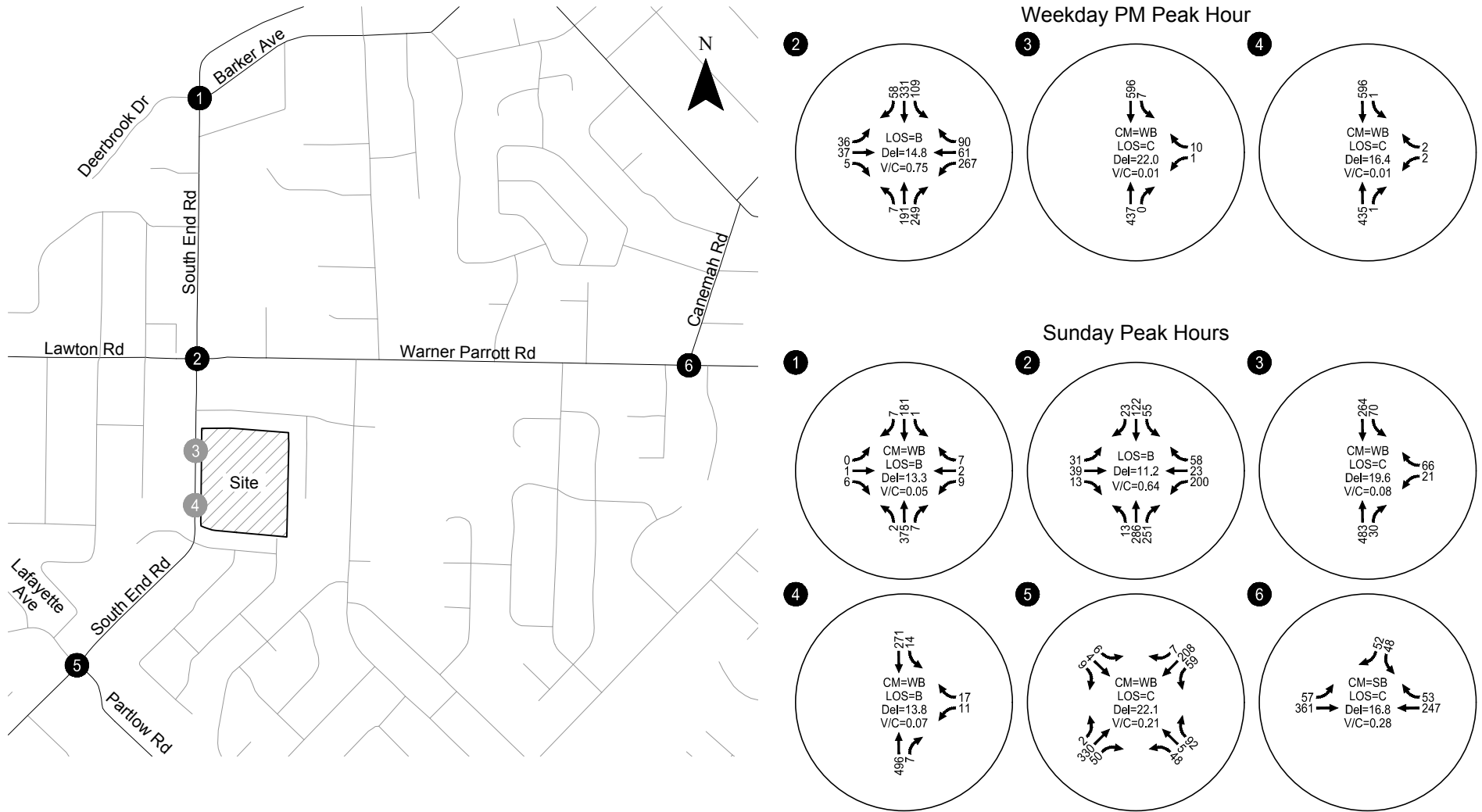
Trip Generation

Trip generation estimates were prepared for Phase 4 of the Master Plan based on a trip generation study conducted at the church in July 2018. *Appendix "A" contains additional information related to the trip generation study.* Table 6 summarizes the daily, weekday PM, Sunday, and Sunday peak hour trips associated with Phase 4 of the Master Plan.

Table 6: Phase 4 Trip Generation

Phase	Size	Daily Trips (Weekday)	Weekday PM Peak Hour of Adjacent Street			Daily Trips (Sunday)	Sunday Peak Hour of Generator		
			Total	In	Out		Total	In	Out
4	17,000 sf ¹	134	12	6	6	464	149	66	83

1. While the size of the new worship center and café has not been determined, the church is planning to accommodate up to 600 parishioners. This represents a 100 percent increase in the churches current seating capacity (300), which is accommodated by their current 17,000 square-foot building.



**Year 2030 Background Traffic Conditions
Weekday PM and Sunday Peak Hours
Oregon City, OR**

**Figure
15**

Site Trip Distribution/Trip Assignment

The site-generated trips shown in Table 6 were distributed to the study area roadways according to the trip distribution pattern shown in Figure 16. Figure 16 also illustrates the assignment of Phase 4 site-generated trips at the study intersections during the weekday PM and Sunday peak hours.

YEAR 2030 TOTAL TRAFFIC CONDITIONS

The total traffic conditions analysis forecasts how the study area's transportation system will operate with traffic generated by Phases 1-4 of the Master Plan. The year 2030 background traffic volumes shown in Figure 15 were added to the site-generated trips shown in Figure 16 to arrive at the total traffic volumes shown in Figure 17.

Intersection Level of Service

Figure 17 summarizes the year 2030 total traffic conditions analysis results at the study intersections during the weekday PM and Sunday peak hours. As shown, all of the study intersections are forecast to operate acceptably per their applicable mobility standards.

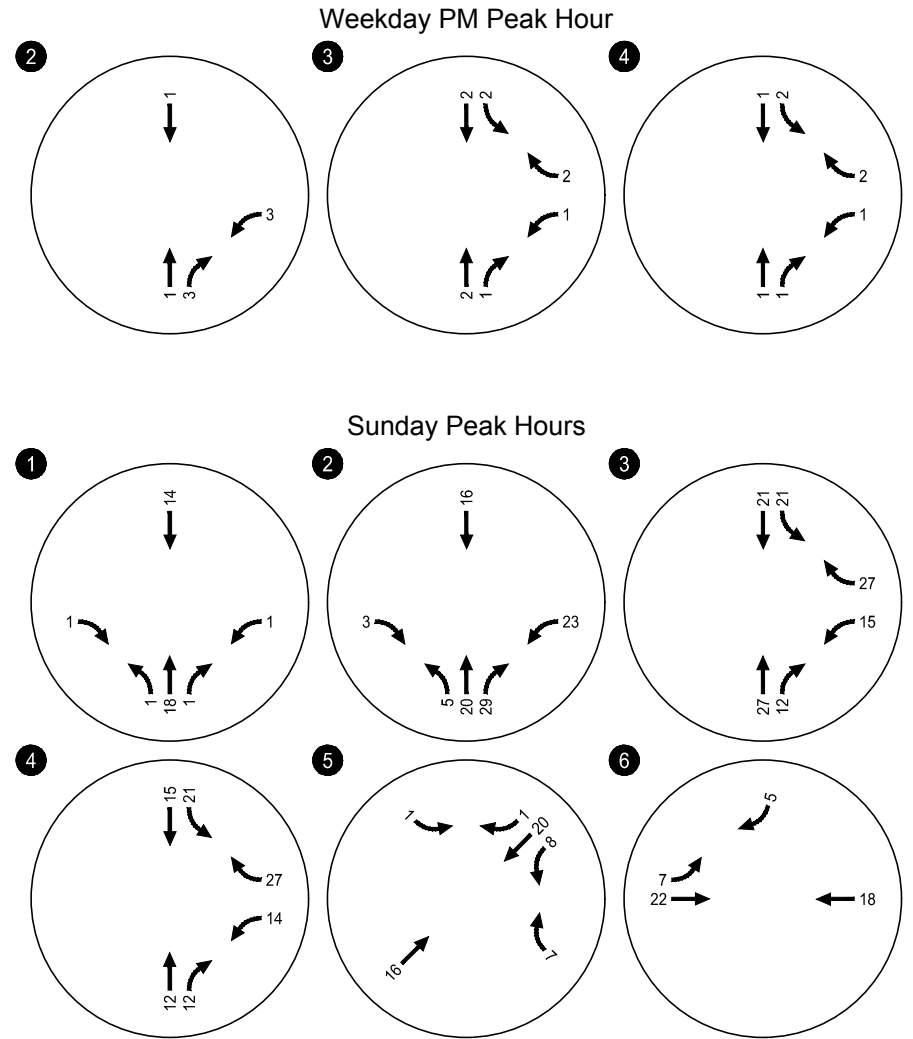
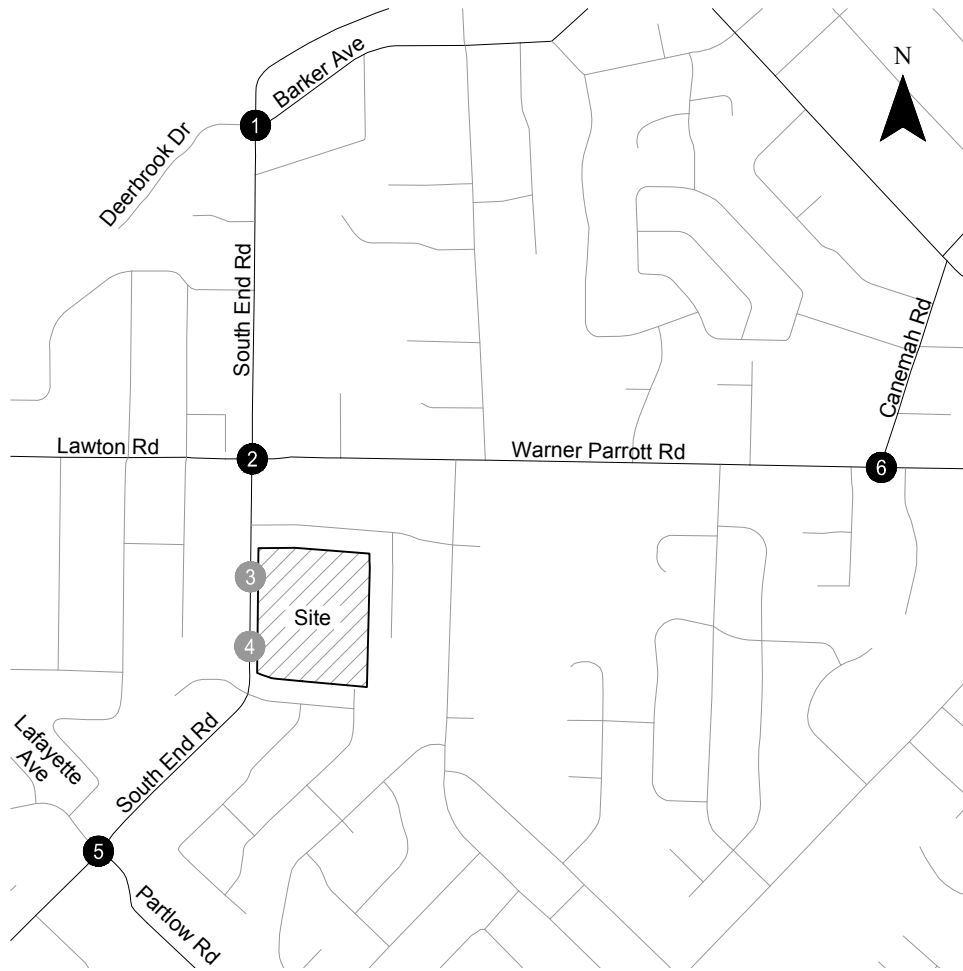
Subject to City direction, the Church Master Plan Phase 4 traffic impacts to the South End Road/Warner Parrott Road intersection could potentially be mitigated through payment of a proportionate share towards the City's Transportation System Plan Project D32. Alternatively, the need for the South End Road/Warner Parrott Road intersection improvements associated with site development could be re-evaluated prior to Phase 4 development. *Appendix "N" includes the year 2030 total traffic conditions worksheets.*

SITE-ACCESS OPERATIONS

Figure 2 illustrates the conceptual site plan. As shown, access to the site is planned to be provided by one full movement driveway toward the northern end of the site and one full movement driveway toward the southern end of the site. Both driveways are expected to operate acceptably in the future under stop control and queues at the driveways are not expected to exceed one vehicle entering the site. While the Synchro analysis shows that queues exiting the site are also not expected to exceed one vehicle, the site provides storage for up to four vehicles per lane.

We recommend that adequate intersection sight distance should be provided at both site driveways in accordance with City of Oregon City standards.

H:\12\12856 - Oregon City Christian Church Master Plan\report\figs\12856_Fig1.dwg Sep 12, 2018 - 5:40pm - mbell Layout Tab: Fig.16



**Estimated Trip Distribution Pattern & Phase 4 Site-generated Trips
Weekday PM and Sunday Peak Hours
Oregon City, OR**

**Figure
16**



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION AVERAGE LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = VOLUME-TO-CAPACITY RATIO

**Year 2030 Phase 1-4 Total Traffic Conditions
 Weekday PM and Sunday Peak Hours
 Oregon City, OR**

**Figure
 17**

CONCLUSIONS AND RECOMMENDATIONS

The results of this study indicate that the Oregon City Christian Church Master Plan can be developed while maintaining acceptable traffic operations and safety at the study intersections, assuming provision of the recommended mitigation measures. The findings of this analysis and our recommendations are discussed below.

FINDINGS

Year 2018 Existing Traffic Conditions

- All of the study intersections operate acceptably during the weekday PM and Sunday peak hours.
- A review of historical crash data did not reveal any patterns or trends in the site vicinity that require mitigation associated with this project.

Year 2020 Background Traffic Conditions

- All of the study intersections are forecast to operate acceptably during the weekday PM and Sunday peak hours.

Phase 1 Development Plan

- Phase 1 of the Master Plan includes construction of a new 8,168 sf recreation center, new parking facilities, and a new driveway along the southern boundary of the site.
- Phase 1 is estimated to generate 64 weekday daily trips, including 6 trips (3 inbound, 3 outbound) during the weekday PM peak hour, and 222 Sunday daily trips, including 72 trips (32 inbound, 40 outbound) during the Sunday peak hour.

Year 2020 Total Traffic Conditions (Master Plan Phase 1)

- All of the study intersections and site driveways are forecast to operate acceptably during the weekday PM and Sunday peak hours.

Year 2022 Background Traffic Conditions

- All of the study intersections are forecast to operate acceptably during the weekday PM and Sunday peak hours.

Phase 2 Development Plan

- Phase 2 of the Master Plan includes construction of a new 3,602 sf student ministry center.

- Phase 2 is estimated to generate 28 weekday daily trips, including 2 trips (1 inbound, 1 outbound) during the weekday PM peak hour, and 98 Sunday daily trips, including 32 trips (14 inbound, 18 outbound) during the Sunday peak hour.

Year 2022 Total Traffic Conditions (Master Plan Phases 1 & 2)

- All of the study intersections and site driveways are forecast to operate acceptably during the weekday PM and Sunday peak hours.

Year 2025 Background Traffic Conditions

- All but one of the study intersections are forecast to operate acceptably during the weekday PM and Sunday peak hours.
- The northbound and southbound approaches to the South End Road/Warner Parrott Road intersection are projected to operate at LOS “F” and near capacity during the weekday PM peak hour. A preliminary signal warrant analysis indicates that a traffic signal is expected to be warranted.
 - The City of Oregon City Transportation Plan project D32 includes installation of a traffic signal with dedicated left-turn lanes for the South End Road approaches to Warner Parrott Road in the 2018 to 2023 horizon period. Project D32 is not currently programmed or funded.
 - Signalization of the intersection without the additional turn lanes would restore acceptable peak hour operations.

Phase 3 Development Plan

- Phase 3 of the Master Plan includes construction of a new 4,077 sf administrative building.
- Phase 3 is estimated to generate 40 weekday daily trips, including 5 trips (1 inbound, 4 outbound) during the weekday PM peak hour, and 3 Sunday daily trips, including 1 trip (1 inbound, 0 outbound) during the Sunday peak hour.

Year 2025 Total Traffic Conditions (Master Plan Phases 1-3)

- All of the study intersections and site driveways are forecast to operate acceptably per their applicable mobility standards assuming provision of a traffic signal at the South End Road/Warner Parrott Road intersection.
 - The Church Master Plan Phase 3 traffic impacts to the South End Road/Warner Parrott Road intersection could potentially be mitigated through payment of a proportionate share towards the City’s Transportation System Plan Project D32. Alternatively, the need for the South End Road/Warner Parrott Road intersection improvements associated with site development could be re-evaluated prior to Phase 3 development.

Year 2030 Background Traffic Conditions

- All of the study intersections are forecast to operate acceptably during the weekday PM and Sunday peak hours.

Phase 4 Development Plan

- Phase 4 of the Master Plan includes renovation of the existing worship center and construction of the new worship center and café.
- Phase 4 is estimated to generate 134 weekday daily trips, including 12 trips (6 inbound, 6 outbound) during the weekday PM peak hour, and 464 Sunday daily trips, including 149 trip (66 inbound, 83 outbound) during the Sunday peak hour.

Year 2030 Total Traffic Conditions (Master Plan Phase 1-4)

- All of the study intersections and site driveway are forecast to operate acceptably per their applicable mobility standards.
 - The Church Master Plan Phase 4 traffic impacts to the South End Road/Warner Parrott Road intersection could potentially be mitigated through payment of a proportional share towards the City's Transportation System Plan Project D32. Alternatively, the need for the South End Road/Warner Parrott Road intersection improvements associated with site development could be re-evaluated prior to Phase 4 development.

Site Access Operations

- The two site driveways on South End Road will operate acceptably with stop control approaching South End Road.
- Queues at the site driveways are not expected to exceed 25 feet entering or exiting the site.

RECOMMENDATIONS

The following list summarizes the mitigation measures recommended as part of this proposed development.

- Subject to City direction, the Phase 3 and Phase 4 site development should pay a proportionate share contribution toward future installation of a traffic signal at the South End Road/Warner Parrott Road intersection prior to completion of the two respective development phases. Alternatively, the need for the South End Road/Warner Parrott Road intersection improvements associated with Phase 3 and Phase 4 site development could be re-evaluated prior to the two respective development phases.
- Adequate intersection sight distance should be provided at both site driveways on South End Road in accordance with City of Oregon City standards.

REFERENCES

1. Oregon City. *Guidelines for Transportation Impact Analyses*. 2005.
2. Oregon City. *Oregon City Transportation System Plan*. 2013.
3. TriMet: <https://trimet.org/>
4. Transportation Research Board. *Highway Capacity Manual*. 2000 and 2010.
5. Institute of Transportation Engineers. *Trip Generation Manual, 10th Edition*. 2017.

Appendix A Scoping Letter

MEMORANDUM

Date: August 23, 2018

Project #: 22856.0

To: Pete Walter, City of Oregon City
John Replinger, P.E., Replinger & Associates, LLC

CC: Brent Brelje, Oregon City Christian Church

From: Matt Bell and Chris Brehmer, P.E., Kittelson & Associates, Inc.

Project: Oregon City Christian Church Master Plan

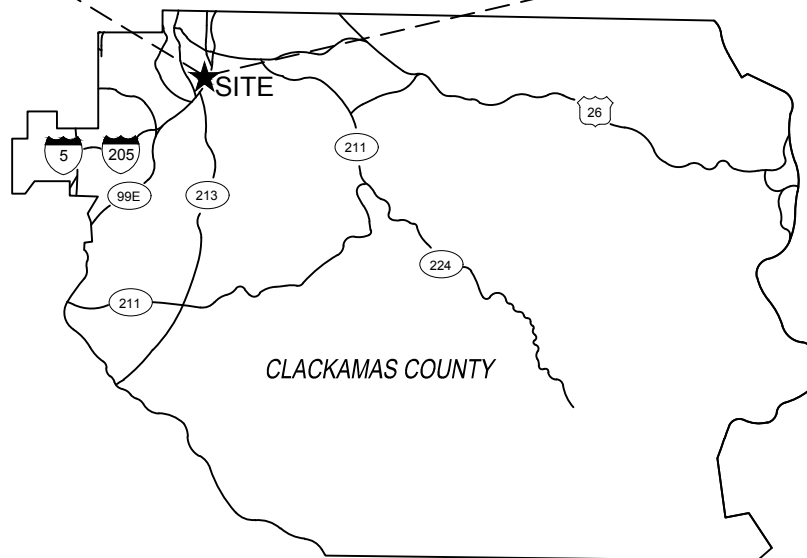
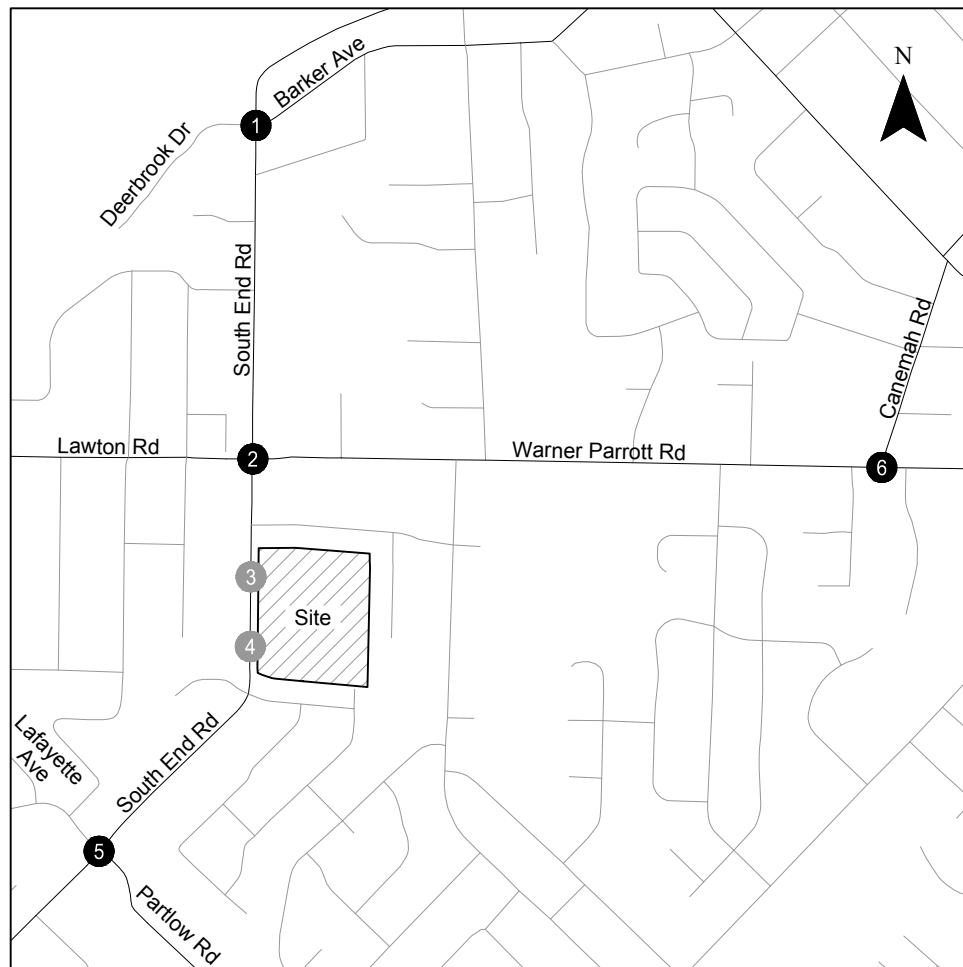
Subject: Transportation Impact Study – Key Assumptions

This memorandum summarizes key assumptions associated with preparing a Transportation Impact Study (TIS) for the proposed Oregon City Christian Church Master Plan. These assumptions are based on a review of the proposed Master Plan, the City of Oregon City Guidelines for Transportation Impact Analyses (TIA Guidelines), and pre-application conference notes prepared by City of Oregon City, and discussions with the project team.

Project Background

The proposed Oregon City Christian Church Master Plan identifies the vision and long-term goals for the existing church campus located along the east side of South End Road in Oregon City. Figure 1 illustrates the site vicinity map. The Master Plan includes renovation of the existing worship center and phased construction of a new recreation center, a new student ministry center, a new administrative building, and a new worship center and café. The Master Plan also includes expansion of the existing parking facilities and a new driveway along the southern boundary of the site. Figure 2 illustrates the conceptual site plan. Construction of the new facilities is expected to occur in four phases over a 10-year period as follows:

- Phase 1 is expected to occur in 2020 and include a new 8,168 square-foot recreation center, new parking facilities, and a new driveway along the southern boundary of the site;
- Phase 2 is expected to occur in 2022 and include new 3,602 square-foot student ministry center;
- Phase 3 is expected to occur in 2025 and include a new 4,077 square-foot administrative building; and
- Phase 4 is expected to occur in 2030 and include renovation of the existing worship center and construction of the new worship center and café.
 - The size of the new worship center and café has not been determined; however, the church is planning to develop the new worship center to accommodate up to 600 parishioners.



- # - Study Intersection
- # - Site Driveway

**Site Vicinity Map
Oregon City, OR**

**Figure
1**



Conceptual Master Plan Oregon City, OR



The TIS will include an evaluation of traffic operations during each phase of the Master Plan as necessary to determine the transportation-related impacts and potential off-site mitigations.

Trip Generation

Trip generation estimates were prepared for Phases 1, 2, and 4 of the Master Plan based on data collected at the existing church over three consecutive mid-week days (Tuesday, Wednesday, and Thursday) and one weekend day (Sunday). The data includes the total number of vehicles that entered and exited the main entrance to the church in 15-minute increments. Supplemental data provided by the church includes the size of the existing worship center and the total number of people that participated in events on Sunday. The data was used to develop trip rates per 1,000 square-feet of building space and per attendee.

Recognizing there is already an administrative function on-site today, a trip generation estimate was prepared for Phase 3 of the master plan (new administrative building) based on information provided in the standard reference manual, *Trip Generation, 10th Edition*, published by the Institute of Transportation Engineers (ITE). ITE Land Use Code 710 (General Office) was used as a basis for the analysis.

The existing church and ITE trip rates were used to develop trip generation estimates for the Master Plan. Table 1 summarizes the daily, weekday AM, weekday PM, Sunday, and Sunday peak hour trips associated with each phase of the Master Plan. *Attachment A contains additional information related to the trip generation rates.*

Table 1: Trip Generation

Phase	Size	Daily Trips (Weekday)	Weekday AM Peak Hour of Adjacent Street			Weekday PM Peak Hour of Adjacent Street			Daily Trips (Sunday)	Sunday Peak Hour of Generator		
			Total	In	Out	Total	In	Out		Total	In	Out
1	8,168 SF	64	3	2	1	6	3	3	222	72	32	40
2	3,602 SF	28	1	1	0	2	1	1	98	32	14	18
3	4,077 SF	40	5	4	1	5	1	4	3	1	1	0
4	17,000 SF ¹	134	7	3	4	12	6	6	464	149	66	83
Total Phase 1-4 Trips		266	16	10	6	25	11	14	787	254	113	141

1. While the size of the new worship center and café has not been determined, the church is planning to accommodate up to 600 parishioners. This represents a 100 percent increase in the churches current seating capacity (300), which is accommodated by their current 17,000 square-foot building.

Trip Distribution/Assignment

The trips shown in Table 1 will be distributed onto the study area roadways based on existing traffic patterns and the location of major trip origins and destinations in the study area. The trips will be assigned to the site driveways and study intersections in accordance with the trip distribution pattern.

Study Area

The study area for the TIS will include the major streets (collector and above) located adjacent to the proposed development site along with the site access driveways and several major intersections. The intersections were determined based on a review of the City's functional classification plan, a review of historical traffic data within the study area, and guidance provided in the TIA Guidelines. The intersections include:

1. South End Road/Barker Avenue
2. South End Road/Warner Parrot Road
3. South End Road/Existing Church Driveway (Dwy 1)
4. South End Road/Future Church Driveway (Dwy 2)
5. South End Road/Partlow Road
6. Canemah Road/Warner Parrot Road

Analysis Years

The analysis years for the TIS reflect each phase of the Master Plan. The analysis years include:

- Existing traffic conditions
- Year 2020 Background traffic conditions, without the proposed development
- Year 2020 Total Traffic Conditions, with Phase 1 of the proposed development
- Year 2022 Background traffic conditions, with Phase 1 of the proposed development
- Year 2022 Total Traffic Conditions, with Phase 1-2 of the proposed development
- Year 2025 Background Traffic Conditions, with Phase 1-2 of the proposed development
- Year 2025 Total Traffic Conditions, with Phase 1-3 of the proposed development
- Year 2030 Background Traffic Conditions, with Phase 1-3 of the proposed development
- Year 2030 Total Traffic Conditions, with Phase 1-4 of the proposed development

It may be determined that some phases do not result in significant impacts to the transportation system. These phases may be combined with other phases in the TIS if appropriate to simplify the City's review and approval conditions.

Analysis Periods

The analysis periods for the TIS were determined based on the type of use, the type of adjacent uses, the trip generation estimate provided above, and guidance provided in the TIA Guidelines. The TIS will include an evaluation of the weekday evening (4:00 to 6:00 PM) peak period at the site driveways and the South End Road/Warner Parrot Road intersection and the Sunday mid-day (8:00 to 12:00) peak period at the site driveways and all six study intersections identified above.

Analysis Tools and Methodology

The TIA will evaluate traffic operations at the study intersections based on the methodologies identified in the 2010 Highway Capacity Manual (HCM – Reference 1). Synchro 9 will be used to evaluate traffic operations at the study intersections. Synchro 9 is a software tool designed to assist with operations analysis in accordance with 2010 HCM methodologies.

Performance Measures

Traffic operations at the study intersections will be evaluated based on the applicable performance measures. Per the TIA Guidelines, all of the unsignalized study intersections are expected to operate at Level of Service (LOS) “E” or better for the poorest operating approach and with no movement serving more than 20 peak hour vehicles operating at worse than LOS “E”. In other words, LOS “F” will be tolerated for minor movements during a peak hour.

Next Steps

We trust this memorandum provides adequate documentation of the key assumptions associated with the TIS for the proposed Oregon City Church Master Plan development.

We request that the City provide written confirmation regarding the proposed methodology and project assumptions as soon as possible so that we may proceed with our analysis. In addition, we would appreciate the City providing timing of planned improvements at the study intersections, information on planned developments and in-process trips that could impact the study intersections, and an approved background growth rate that should be incorporated into the traffic analysis.

Reference

1. Transportation Research Board. *Highway Capacity Manual*. 2010.

Attachment A Trip Generation Rates

TRIP GENERATION STUDY

Trip generation data was collected at the main entrance to the Oregon City Christian Church over three consecutive mid-week days (Tuesday, Wednesday, and Thursday) and one weekend day (Sunday) in July 2018. The data includes the total number of vehicles that entered and exited the main entrance to the church in 15-minute increments. Supplemental data provided by the church includes the size of the existing building and the total number of people that participated in events on Sunday. The data was used to develop trip rates per 1,000 square-feet of building space and per attendee as described below.

Mid-week Trip Rates

The mid-week data shows an average of 133 daily trips at the main entrance to the church over the three-day period, including 6 trips (3 inbound, 3 outbound) during the weekday AM peak hour and 11 trips (5 inbound, 6 outbound) during the weekday PM peak hour. Trip rates were developed for the church by dividing the daily, weekday AM, and weekday PM peak hours trips by the gross square-feet of the existing church (i.e. 133 daily trips / 17,000 square-feet = 7.82 trips per 1,000 square-feet). Table A-1 summarizes the mid-week trip rates developed for the church and compares the rates to data provided in the standard reference manual, *Trip Generation Manual*, published by the Institute of Transportation Engineers (ITE). As shown, the calculated rates are similar to the ITE rates during all time periods.

Table A-1: Trip Rates per 1,000 square-feet

Trip Rates	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Total	In	Out	Total	In	Out
Calculated Rates	7.82	0.39	50%	50%	0.69	46%	54%
<i>Trip Generation Manual</i>	6.95	0.33	60%	40%	0.49	45%	55%

Sunday Trip Rates

The Sunday data shows a total of 463 daily trips at the main entrance to the driveway, including 149 trips (66 inbound, 83 outbound) during the peak hour. Trip rates (per 1,000 square-feet) were developed for the church by dividing the daily and peak hour trips by the gross square-feet of the existing church (i.e. 463 daily trips / 17,000 square-feet = 27.24 trips per 1,000 square-feet). Table A-2 summarizes the Sunday trip rates developed for the church and compares the rates to data provided in ITE. As shown, the calculated rates are similar to the ITE rates during both time periods.

Table A-2: Trip Rates per 1,000 square-feet

Trip Rates	Daily	Sunday Peak Hour		
		Total	In	Out
Calculated Rates	27.24	8.76	44%	56%
<i>Trip Generation Manual</i>	27.63	9.99	48%	52%

Supplemental data provided by the church shows that 190 parishioners were present for the 9:00 a.m. service and 221 were present for the 10:45 a.m. service. Trip rates (per attendee) were developed for the church by dividing the daily and peak hours trips by the total number of parishioners (i.e. 463 daily trips / 411 daily attendees = 1.13 trips per attendee). Table A-3 summarizes the Sunday trip rates developed for the church and compares the rates to data provided in ITE. As shown, the calculated rate for the peak hour is similar to the ITE rate; however, ITE does not provide a daily rate per attendee.

Table A-3: Trip Rates per Attendee

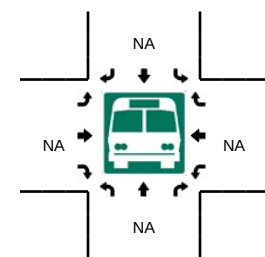
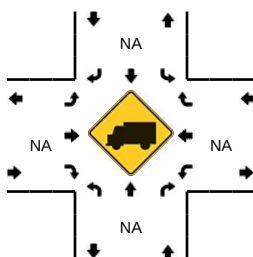
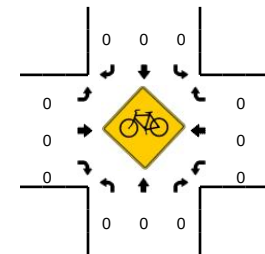
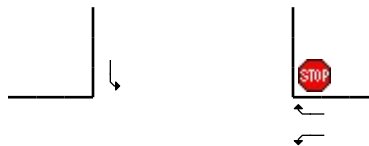
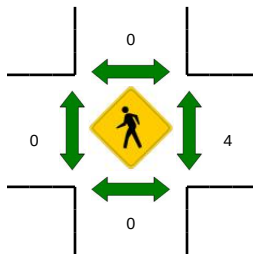
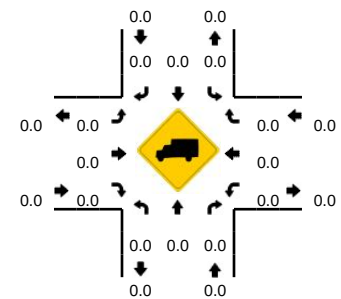
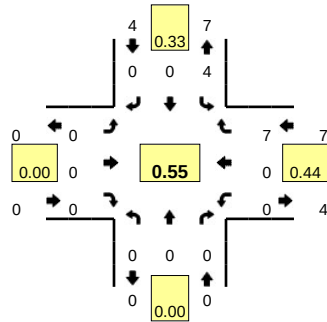
Trip Rates	Daily	Sunday Peak Hour		
		Total	In	Out
Calculated Rates	1.13	0.67	44%	56%
<i>Trip Generation Manual</i>	NA	0.53	50%	50%

Appendix B Traffic Counts

LOCATION: South End Rd -- Oregon City Christian Church Dwy
CITY/STATE: Oregon City, OR

QC JOB #: 14771002
DATE: Thu, Aug 16 2018

Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:35 PM -- 5:50 PM



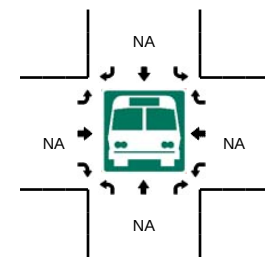
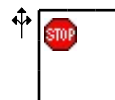
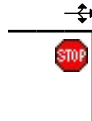
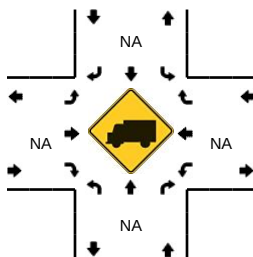
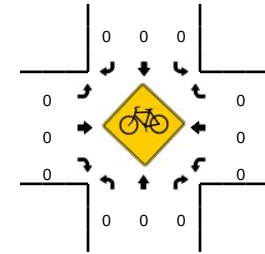
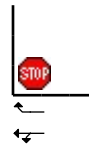
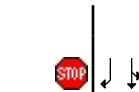
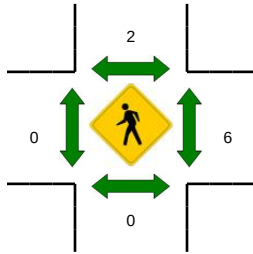
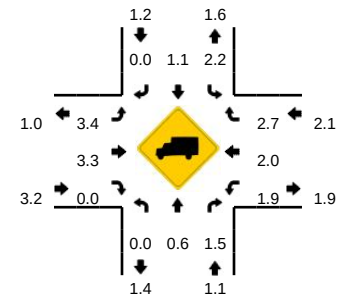
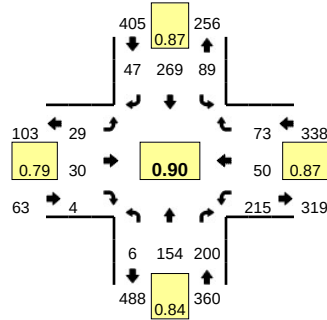
5-Min Count Period Beginning At	South End Rd (Northbound)				South End Rd (Southbound)				Oregon City Christian Church (Eastbound)				Oregon City Christian Church (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:40 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	3	
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
4:50 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:05 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	7
5:10 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	8
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	9
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	10
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	11
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	13
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	11
5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	12
5:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	4	0	0	0	0	0	0	0	0	0	16	0	20	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

LOCATION: South End Rd -- Warner Parrot Rd
CITY/STATE: Oregon City, OR

QC JOB #: 14771001
DATE: Thu, Aug 16 2018

Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:10 PM -- 5:25 PM



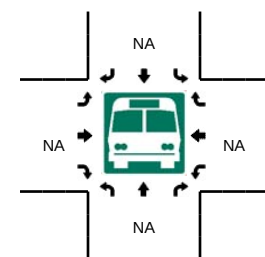
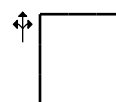
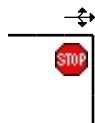
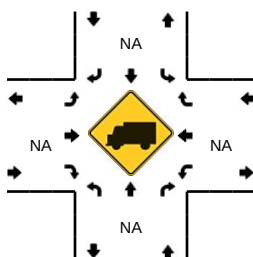
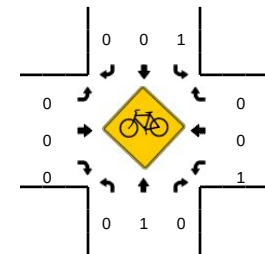
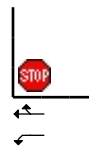
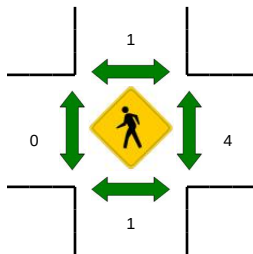
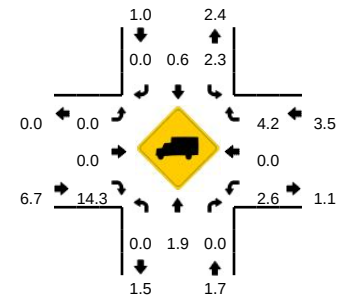
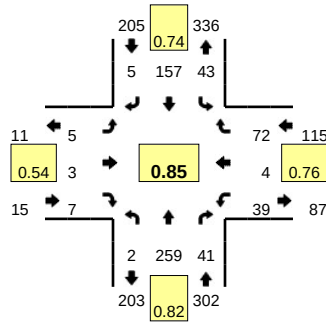
5-Min Count Period Beginning At	South End Rd (Northbound)				South End Rd (Southbound)				Warner Parrot Rd (Eastbound)				Warner Parrot Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	8	12	0	4	16	2	0	3	1	0	0	20	4	7	0	77	
4:05 PM	0	21	5	0	7	20	0	0	1	6	1	0	19	4	5	0	89	
4:10 PM	0	14	15	0	11	24	3	0	0	5	0	0	10	6	6	0	94	
4:15 PM	0	10	12	0	7	19	2	0	1	4	0	0	20	9	4	0	88	
4:20 PM	0	12	17	0	7	25	4	0	2	0	0	0	17	3	5	0	92	
4:25 PM	0	10	7	0	8	22	4	0	0	1	0	0	7	1	7	0	67	
4:30 PM	0	13	10	0	4	13	2	0	1	2	0	0	18	5	6	0	74	
4:35 PM	0	17	13	0	9	18	0	0	1	3	0	0	16	6	5	0	88	
4:40 PM	0	9	14	0	7	23	5	0	1	1	0	0	19	3	6	0	88	
4:45 PM	0	8	14	0	9	24	3	0	2	3	0	0	15	2	2	0	82	
4:50 PM	0	6	12	0	7	24	6	0	0	0	0	0	25	2	9	0	91	
4:55 PM	0	14	13	0	7	21	3	0	3	6	1	0	14	4	2	0	88	1018
5:00 PM	0	11	21	0	3	16	6	0	2	2	0	0	22	3	5	0	91	1032
5:05 PM	1	11	11	0	5	22	2	0	2	2	0	0	16	5	3	0	80	1023
5:10 PM	0	6	19	0	9	28	5	0	2	3	0	0	17	5	8	0	102	1031
5:15 PM	2	13	14	0	7	25	5	0	0	4	2	0	18	4	9	0	103	1046
5:20 PM	1	11	26	0	10	22	6	0	4	1	1	0	19	7	10	0	118	1072
5:25 PM	0	19	15	0	7	20	3	0	0	1	0	0	16	4	8	0	93	1098
5:30 PM	0	16	19	0	8	24	5	0	5	2	0	0	18	2	5	0	104	1128
5:35 PM	0	22	15	0	8	22	3	0	2	1	1	0	19	4	6	0	103	1143
5:40 PM	2	16	17	0	7	24	1	0	3	3	0	0	23	8	4	0	108	1163
5:45 PM	0	11	11	0	4	23	4	0	5	3	0	0	13	1	6	0	81	1162
5:50 PM	0	11	17	0	9	15	3	0	1	4	0	0	13	5	4	0	82	1153
5:55 PM	0	7	15	0	12	28	4	0	3	4	0	0	21	2	5	0	101	1166
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	12	120	236	0	104	300	64	0	24	32	12	0	216	64	108	0	1292	
Heavy Trucks	0	0	0	0	0	4	0	0	0	0	0	0	0	4	0	0	8	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: South End Rd -- Lafayette Ave/S Partlow Rd
CITY/STATE: Oregon City, OR

QC JOB #: 14771006
DATE: Sun, Aug 19 2018

Peak-Hour: 10:15 AM -- 11:15 AM
Peak 15-Min: 10:50 AM -- 11:05 AM



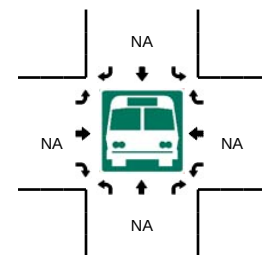
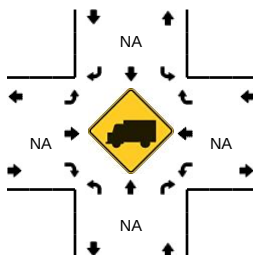
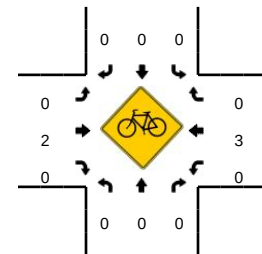
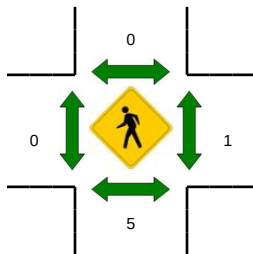
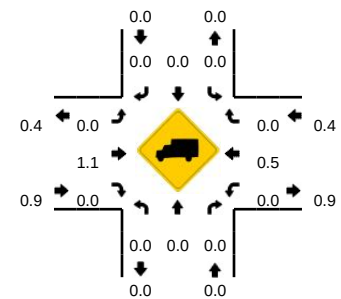
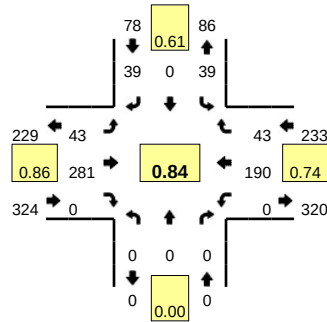
5-Min Count Period Beginning At	South End Rd (Northbound)				South End Rd (Southbound)				Lafayette Ave/S Partlow Rd (Eastbound)				Lafayette Ave/S Partlow Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:45 AM	1	18	1	0	6	10	0	0	1	0	1	0	4	0	5	0	47	440
9:50 AM	0	26	2	0	3	12	0	0	0	0	0	0	6	0	8	0	57	458
9:55 AM	0	14	3	0	1	15	0	0	1	0	0	0	2	0	9	0	45	475
10:00 AM	0	19	4	0	4	9	2	0	2	1	0	0	2	0	6	0	49	493
10:05 AM	0	18	2	0	2	14	1	0	0	1	0	0	3	1	1	0	43	501
10:10 AM	1	15	3	0	4	16	0	0	0	0	3	0	3	0	5	0	50	519
10:15 AM	1	20	5	0	3	12	0	0	1	0	0	0	4	0	2	0	48	528
10:20 AM	0	24	7	0	6	8	0	0	1	0	0	0	2	0	9	0	57	544
10:25 AM	0	22	4	0	2	10	1	0	0	1	0	0	5	2	7	0	54	567
10:30 AM	0	32	3	0	1	16	1	0	0	0	0	0	2	1	5	0	61	594
10:35 AM	0	22	6	0	4	10	1	0	0	0	0	0	1	0	8	0	52	603
10:40 AM	0	23	4	0	3	11	0	0	0	1	0	0	3	0	4	0	49	612
10:45 AM	1	16	1	0	3	9	0	0	0	0	1	0	2	0	3	0	36	601
10:50 AM	0	30	3	0	3	17	0	0	0	0	0	0	5	0	6	0	64	608
10:55 AM	0	16	3	0	6	21	0	0	2	0	3	0	5	1	7	0	64	627
11:00 AM	0	19	3	0	6	16	0	0	1	0	0	0	4	0	10	0	59	637
11:05 AM	0	23	2	0	1	14	1	0	0	0	1	0	3	0	4	0	49	643
11:10 AM	0	12	0	0	5	13	1	0	0	1	2	0	3	0	7	0	44	637
11:15 AM	0	19	1	0	8	10	0	0	2	0	0	0	4	0	7	0	51	640
11:20 AM	0	17	3	0	5	16	1	0	0	0	0	0	1	0	5	0	48	631
11:25 AM	0	17	1	0	6	12	0	0	1	2	1	0	4	1	3	0	48	625
11:30 AM	5	14	3	0	1	10	0	0	0	1	1	0	0	0	7	0	42	606
11:35 AM	0	20	3	0	0	9	0	0	1	0	0	0	5	0	10	0	48	602
11:40 AM	0	18	7	0	3	14	2	0	0	0	2	0	1	0	4	0	51	604
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	260	36	0	60	216	0	0	12	0	12	0	56	4	92	0	748	
Heavy Trucks	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	8	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Canemah Rd -- Warner Parrot Rd
CITY/STATE: Oregon City, OR

QC JOB #: 14771007
DATE: Sun, Aug 19 2018

Peak-Hour: 10:15 AM -- 11:15 AM
Peak 15-Min: 10:30 AM -- 10:45 AM



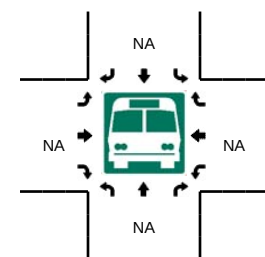
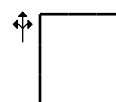
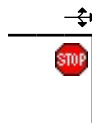
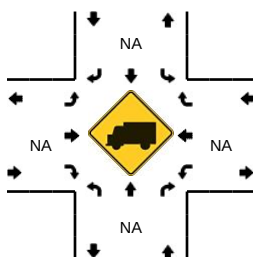
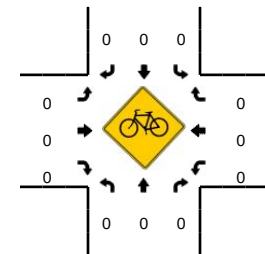
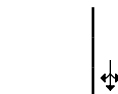
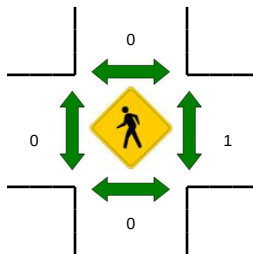
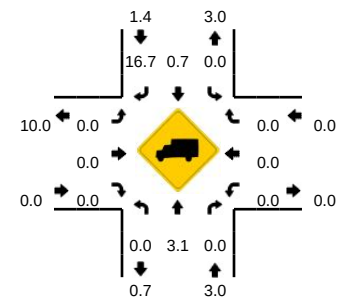
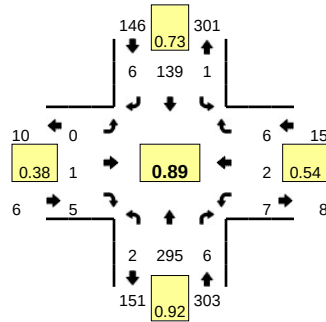
5-Min Count Period Beginning At	Canemah Rd (Northbound)				Canemah Rd (Southbound)				Warner Parrot Rd (Eastbound)				Warner Parrot Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:45 AM	0	0	0	0	5	0	1	0	5	22	0	0	0	18	1	0	52	432
9:50 AM	0	0	0	0	3	0	4	0	3	17	0	0	0	14	3	0	44	432
9:55 AM	0	0	0	0	3	0	5	0	1	19	0	0	0	18	2	0	48	433
10:00 AM	0	0	0	0	4	0	2	0	3	16	0	0	0	14	2	0	41	447
10:05 AM	0	0	0	0	3	0	3	0	1	17	0	0	0	12	4	0	40	461
10:10 AM	0	0	0	0	2	0	3	0	1	14	0	0	0	12	6	0	38	468
10:15 AM	0	0	0	0	3	0	2	0	6	26	0	0	0	8	6	0	51	482
10:20 AM	0	0	0	0	3	0	2	0	1	23	0	0	0	18	6	0	53	504
10:25 AM	0	0	0	0	8	0	7	0	5	33	0	0	0	8	2	0	63	527
10:30 AM	0	0	0	0	4	0	3	0	6	20	0	0	0	24	6	0	63	561
10:35 AM	0	0	0	0	7	0	3	0	3	26	0	0	0	22	1	0	62	587
10:40 AM	0	0	0	0	2	0	5	0	5	26	0	0	0	21	5	0	64	619
10:45 AM	0	0	0	0	3	0	2	0	2	20	0	0	0	17	7	0	51	618
10:50 AM	0	0	0	0	1	0	4	0	1	20	0	0	0	19	1	0	46	620
10:55 AM	0	0	0	0	5	0	2	0	2	20	0	0	0	17	2	0	48	620
11:00 AM	0	0	0	0	1	0	5	0	5	13	0	0	0	5	1	0	30	609
11:05 AM	0	0	0	0	1	0	2	0	2	31	0	0	0	10	2	0	48	617
11:10 AM	0	0	0	0	1	0	2	0	5	23	0	0	0	21	4	0	56	635
11:15 AM	0	0	0	0	1	0	4	0	6	13	0	0	0	14	1	0	39	623
11:20 AM	0	0	0	0	3	0	2	0	1	26	0	0	0	13	2	0	47	617
11:25 AM	0	0	0	0	4	0	1	0	2	18	0	0	0	20	2	0	47	601
11:30 AM	0	0	0	0	7	0	2	0	1	14	0	0	0	8	3	0	35	573
11:35 AM	0	0	0	0	1	0	1	0	4	21	0	0	0	16	5	0	48	559
11:40 AM	0	0	0	0	0	0	0	0	4	31	0	0	0	22	3	0	60	555
Peak 15-Min Flowrates																		
	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	0	0	0	52	0	44	0	56	288	0	0	0	268	48	0	756	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians		12				0				0				0			12	
Bicycles	0	0	0		0	0	0		0	1	0		0	2	0		3	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: South End Rd -- Deerbrook Dr/Barker Ave
CITY/STATE: Oregon City, OR

QC JOB #: 14771003
DATE: Sun, Aug 19 2018

Peak-Hour: 10:15 AM -- 11:15 AM
Peak 15-Min: 10:20 AM -- 10:35 AM



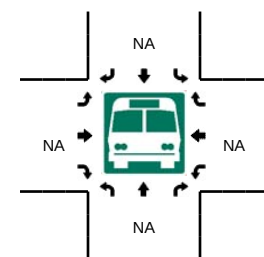
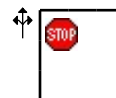
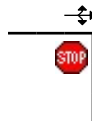
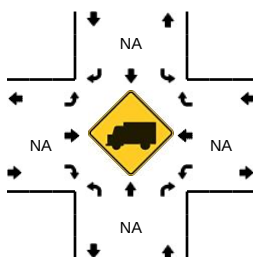
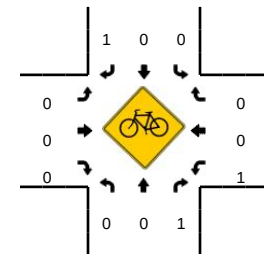
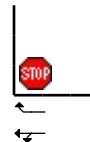
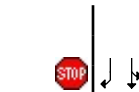
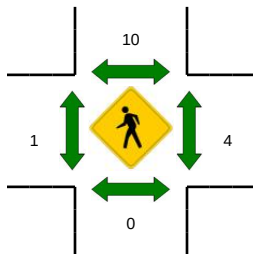
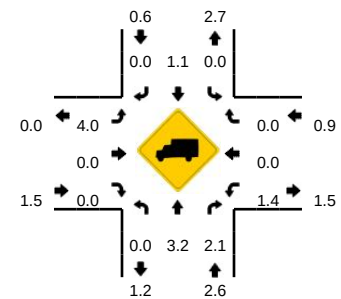
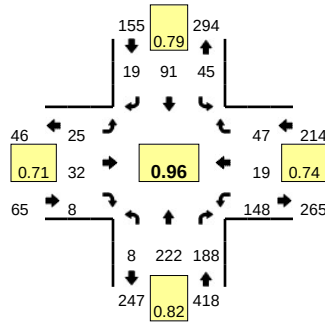
5-Min Count Period Beginning At	South End Rd (Northbound)				South End Rd (Southbound)				Deerbrook Dr/Barker Ave (Eastbound)				Deerbrook Dr/Barker Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:45 AM	1	16	0	0	1	18	0	0	0	0	0	0	0	0	1	0	37	364
9:50 AM	0	28	2	0	0	23	1	0	0	0	0	0	1	0	0	0	55	391
9:55 AM	0	13	0	0	0	16	1	0	0	0	0	1	1	0	0	0	32	387
10:00 AM	0	24	1	0	0	13	0	0	1	0	0	0	1	0	2	0	42	413
10:05 AM	0	19	0	0	0	16	1	0	0	0	0	0	0	0	1	0	37	423
10:10 AM	0	19	0	0	1	17	0	0	0	0	0	1	3	0	0	0	41	432
10:15 AM	0	29	0	0	1	6	0	0	0	0	0	0	0	0	0	0	36	436
10:20 AM	0	34	1	0	0	11	0	0	0	0	2	0	2	1	0	0	51	453
10:25 AM	0	18	0	0	0	15	0	0	0	0	1	0	0	0	1	0	35	453
10:30 AM	0	22	0	0	0	20	2	0	0	1	0	0	0	0	1	0	46	469
10:35 AM	0	27	1	0	0	13	0	0	0	0	0	0	1	0	2	0	44	480
10:40 AM	0	19	0	0	0	9	1	0	0	0	0	0	1	0	1	0	31	487
10:45 AM	1	22	0	0	0	13	1	0	0	0	0	0	1	0	1	0	39	489
10:50 AM	0	23	2	0	0	13	0	0	0	0	1	0	0	1	0	0	40	474
10:55 AM	0	24	1	0	0	12	1	0	0	0	0	0	0	0	0	0	38	480
11:00 AM	0	20	0	0	0	11	1	0	0	0	0	1	1	0	0	0	34	472
11:05 AM	1	28	1	0	0	10	0	0	0	0	0	0	1	0	0	0	41	476
11:10 AM	0	29	0	0	0	6	0	0	0	0	0	0	0	0	0	0	35	470
11:15 AM	0	23	1	0	1	14	0	0	1	0	0	0	1	0	0	0	41	475
11:20 AM	0	24	0	0	1	19	0	0	0	0	0	0	0	0	1	0	45	469
11:25 AM	0	24	1	0	0	14	1	0	0	0	0	0	0	0	1	0	41	475
11:30 AM	0	31	0	0	0	10	0	0	0	0	0	1	0	0	0	0	42	471
11:35 AM	0	27	1	0	0	6	2	0	1	0	0	0	0	0	1	0	38	465
11:40 AM	0	22	0	0	0	13	0	0	1	0	0	0	0	0	0	0	36	470
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	296	4	0	0	184	8	0	0	4	12	0	8	4	8	0	528	
Heavy Trucks	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: South End Rd -- Warner Parrot Rd
CITY/STATE: Oregon City, OR

QC JOB #: 14771004
DATE: Sun, Aug 19 2018

Peak-Hour: 10:15 AM -- 11:15 AM
Peak 15-Min: 10:30 AM -- 10:45 AM



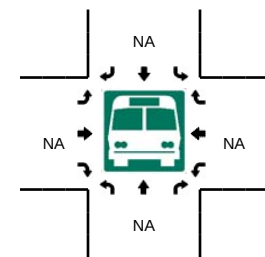
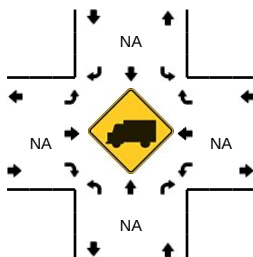
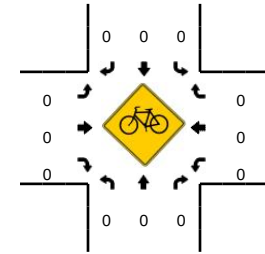
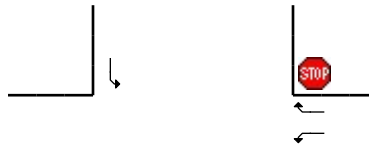
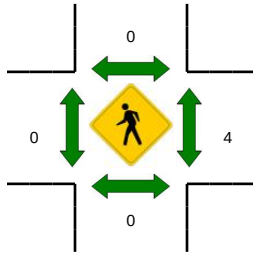
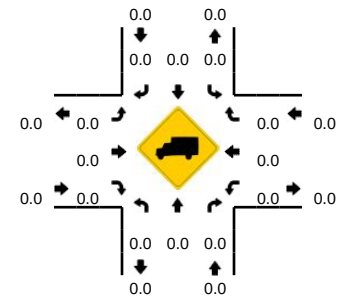
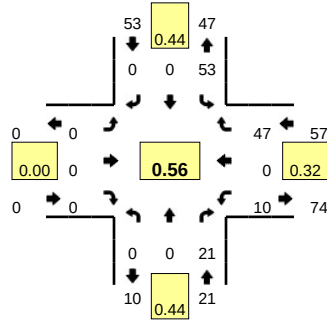
5-Min Count Period Beginning At	South End Rd (Northbound)				South End Rd (Southbound)				Warner Parrot Rd (Eastbound)				Warner Parrot Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:45 AM	0	14	15	0	2	17	0	0	1	5	0	0	5	1	8	0	68	598
9:50 AM	1	22	13	0	4	14	1	0	2	4	0	0	9	1	11	0	82	626
9:55 AM	0	9	10	0	3	11	0	0	1	3	0	0	9	2	8	0	56	622
10:00 AM	0	18	10	0	6	8	1	0	1	5	0	0	10	0	11	0	70	660
10:05 AM	1	14	8	0	6	9	1	0	1	1	0	0	7	4	5	0	57	671
10:10 AM	0	14	9	0	4	9	1	0	2	3	0	0	8	4	6	0	60	686
10:15 AM	2	23	20	0	7	4	1	0	6	3	2	0	7	2	3	0	80	717
10:20 AM	1	24	18	0	4	3	4	0	1	3	2	0	10	1	3	0	74	745
10:25 AM	2	13	24	0	6	8	1	0	0	3	1	0	6	1	2	0	67	762
10:30 AM	0	20	17	0	5	12	3	0	0	1	0	0	16	0	4	0	78	797
10:35 AM	0	15	12	0	3	11	0	0	0	4	1	0	15	3	4	0	68	806
10:40 AM	1	14	21	0	5	5	0	0	1	3	0	0	19	2	6	0	77	837
10:45 AM	0	8	11	0	2	9	3	0	3	5	0	0	13	3	7	0	64	833
10:50 AM	0	26	9	0	2	7	4	0	1	1	0	0	16	1	2	0	69	820
10:55 AM	0	15	11	0	0	11	2	0	1	4	2	0	15	0	3	0	64	828
11:00 AM	1	16	13	0	3	8	1	0	8	1	0	0	9	1	3	0	64	822
11:05 AM	1	24	16	0	4	10	0	0	3	4	0	0	10	1	5	0	78	843
11:10 AM	0	24	16	0	4	3	0	0	1	0	0	0	12	4	5	0	69	852
11:15 AM	0	19	14	0	4	8	1	0	1	6	0	0	6	2	2	0	63	835
11:20 AM	3	16	11	0	4	12	2	0	1	1	1	0	12	1	8	0	72	833
11:25 AM	1	16	8	0	4	8	0	0	5	2	0	0	7	2	7	0	60	826
11:30 AM	1	13	3	0	4	4	2	0	5	1	0	0	8	1	6	0	48	796
11:35 AM	0	20	12	0	4	4	0	0	3	7	0	0	7	2	2	0	61	789
11:40 AM	0	16	13	0	1	8	0	0	5	5	1	0	6	6	3	0	64	776
Peak 15-Min Flowrates																		
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	4	196	200	0	52	112	12	0	4	32	4	0	200	20	56	0	892	
Heavy Trucks	0	12	4		0	4	0		0	0	0		0	0	0		20	
Pedestrians	0				16				0				0				16	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: South End Rd -- Oregon City Christian Church Dwy
CITY/STATE: Oregon City, OR

QC JOB #: 14771005
DATE: Sun, Aug 19 2018

Peak-Hour: 10:15 AM -- 11:15 AM
Peak 15-Min: 10:15 AM -- 10:30 AM



5-Min Count Period Beginning At	South End Rd (Northbound)				South End Rd (Southbound)				Oregon City Christian Church (Eastbound)				Oregon City Christian Church (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	46
9:50 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	35
9:55 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	18
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
10:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	13
10:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	6	0	8	19
10:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	5	0	17	0	24	42
10:20 AM	0	0	2	0	4	0	0	0	0	0	0	0	3	0	10	0	19	61
10:25 AM	0	0	3	0	3	0	0	0	0	0	0	0	1	0	9	0	16	76
10:30 AM	0	0	6	0	10	0	0	0	0	0	0	0	1	0	3	0	20	95
10:35 AM	0	0	3	0	9	0	0	0	0	0	0	0	0	0	2	0	14	109
10:40 AM	0	0	2	0	11	0	0	0	0	0	0	0	0	0	4	0	17	125
10:45 AM	0	0	1	0	6	0	0	0	0	0	0	0	0	0	1	0	8	132
10:50 AM	0	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	7	137
10:55 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	138
11:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	3	141
11:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	139
11:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	131
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	108
11:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89
11:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53
11:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39
11:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	20	0	36	0	0	0	0	0	0	0	36	0	144	0	236	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

Appendix C Level of Service Concept

LEVEL OF SERVICE CONCEPT

Level of service (LOS) is a concept developed to quantify the degree of comfort (including such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles) afforded to drivers as they travel through an intersection or roadway segment. Six grades are used to denote the various level of service from “A” to “F”.¹

Signalized Intersections

The six level-of-service grades are described qualitatively for signalized intersections in Table C1. Additionally, Table C2 identifies the relationship between level of service and average control delay per vehicle. Control delay is defined to include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Using this definition, Level of Service “D” is generally considered to represent the minimum acceptable design standard.

Table C1: Level-of-Service Definitions (Signalized Intersections)

Level of Service	Average Delay per Vehicle
A	Very low average control delay, less than 10 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Average control delay is greater than 10 seconds per vehicle and less than or equal to 20 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for a level of service A, causing higher levels of average delay.
C	Average control delay is greater than 20 seconds per vehicle and less than or equal to 35 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Average control delay is greater than 35 seconds per vehicle and less than or equal to 55 seconds per vehicle. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle length, or high volume/capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Average control delay is greater than 55 seconds per vehicle and less than or equal to 80 seconds per vehicle. This is usually considered to be the limit of acceptable delay. These high delay values generally (but not always) indicate poor progression, long cycle lengths, and high volume/capacity ratios. Individual cycle failures are frequent occurrences.
F	Average control delay is in excess of 80 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation. It may also occur at high volume/capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such high delay values.

¹ Most of the material in this appendix is adapted from the Transportation Research Board, Highway Capacity Manual, (2010).

Table C2: Level-of-Service Criteria for Signalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	<10.0
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

UNSIGNALIZED INTERSECTIONS

Unsignalized intersections include two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections. The 2010 Highway Capacity Manual (HCM) provides models for estimating control delay at both TWSC and AWSC intersections. A qualitative description of the various service levels associated with an unsignalized intersection is presented in Table C3. A quantitative definition of level of service for unsignalized intersections is presented in Table C4. Using this definition, Level of Service “E” is generally considered to represent the minimum acceptable design standard.

Table C3: Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Delay per Vehicle to Minor Street
A	- Nearly all drivers find freedom of operation. - Very seldom is there more than one vehicle in queue.
B	- Some drivers begin to consider the delay an inconvenience. - Occasionally there is more than one vehicle in queue.
C	- Many times there is more than one vehicle in queue. - Most drivers feel restricted, but not objectionably so.
D	- Often there is more than one vehicle in queue. - Drivers feel quite restricted.
E	- Represents a condition in which the demand is near or equal to the probable maximum number of vehicles that can be accommodated by the movement. - There is almost always more than one vehicle in queue. - Drivers find the delays approaching intolerable levels.
F	- Forced flow. - Represents an intersection failure condition that is caused by geometric and/or operational constraints external to the intersection.

Table C4: Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	<10.0
B	>10.0 and ≤ 15.0
C	>15.0 and ≤ 25.0
D	>25.0 and ≤ 35.0
E	>35.0 and ≤ 50.0
F	>50.0

It should be noted that the level-of-service criteria for unsignalized intersections are somewhat different than the criteria used for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from different kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Additionally, there are a number of driver behavior considerations that combine to make delays at signalized intersections less galling than at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, while drivers on the minor street approaches to TWSC intersections must remain attentive to the task of identifying acceptable gaps and

vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized intersections than signalized intersections. For these reasons, it is considered that the control delay threshold for any given level of service is less for an unsignalized intersection than for a signalized intersection. While overall intersection level of service is calculated for AWSC intersections, level of service is only calculated for the minor approaches and the major street left turn movements at TWSC intersections. No delay is assumed to the major street through movements. For TWSC intersections, the overall intersection level of service remains undefined: level of service is only calculated for each minor street lane.

In the performance evaluation of TWSC intersections, it is important to consider other measures of effectiveness (MOEs) in addition to delay, such as v/c ratios for individual movements, average queue lengths, and 95th-percentile queue lengths. By focusing on a single MOE for the worst movement only, such as delay for the minor-street left turn, users may make inappropriate traffic control decisions. The potential for making such inappropriate decisions is likely to be particularly pronounced when the HCM level-of-service thresholds are adopted as legal standards, as is the case in many public agencies.

Appendix D Year 2018 Existing Traffic Conditions Worksheets

Existing Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	25.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	29	30	4	215	50	73	6	154	200	89	269	47
Future Vol, veh/h	29	30	4	215	50	73	6	154	200	89	269	47
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	0	2	2	3	0	1	2	2	1	0
Mvmt Flow	32	33	4	239	56	81	7	171	222	99	299	52
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	13.5	21	28.2	29.4
HCM LOS	B	C	D	D

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	46%	81%	0%	25%	0%
Vol Thru, %	43%	48%	19%	0%	75%	0%
Vol Right, %	56%	6%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	360	63	265	73	358	47
LT Vol	6	29	215	0	89	0
Through Vol	154	30	50	0	269	0
RT Vol	200	4	0	73	0	47
Lane Flow Rate	400	70	294	81	398	52
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.757	0.169	0.644	0.152	0.791	0.091
Departure Headway (Hd)	6.809	8.669	7.87	6.735	7.16	6.299
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	532	412	459	531	505	567
Service Time	4.869	6.766	5.631	4.495	4.92	4.058
HCM Lane V/C Ratio	0.752	0.17	0.641	0.153	0.788	0.092
HCM Control Delay	28.2	13.5	23.9	10.7	32	9.7
HCM Lane LOS	D	B	C	B	D	A
HCM 95th-tile Q	6.6	0.6	4.4	0.5	7.3	0.3

Existing Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	7	353	0	4	484
Future Vol, veh/h	0	7	353	0	4	484
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	8	392	0	4	538

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	943	396	0	0	396	0
Stage 1	396	-	-	-	-	-
Stage 2	547	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	294	658	-	-	1174	-
Stage 1	684	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	291	655	-	-	1174	-
Mov Cap-2 Maneuver	291	-	-	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	581	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	655	1174
HCM Lane V/C Ratio	-	-	0.012	0.004
HCM Control Delay (s)	-	0	10.6	8.1
HCM Lane LOS	-	A	B	A
HCM 95th %tile Q(veh)	-	-	0	0

Existing Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T			T
Traffic Vol, veh/h	0	0	353	0	0	484
Future Vol, veh/h	0	0	353	0	0	484
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	0	392	0	0	538

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	934	396	0	0	396
Stage 1	396	-	-	-	-
Stage 2	538	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	297	658	-	-	1174
Stage 1	684	-	-	-	-
Stage 2	589	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	296	655	-	-	1174
Mov Cap-2 Maneuver	296	-	-	-	-
Stage 1	681	-	-	-	-
Stage 2	589	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1174	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0	-

Existing Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	5	7	2	6	2	295	6	1	139	6
Future Vol, veh/h	0	1	5	7	2	6	2	295	6	1	139	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	6	8	2	7	2	331	7	1	156	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	506	506	160	505	505	336	163	0	0	339	0	0
Stage 1	162	162	-	340	340	-	-	-	-	-	-	-
Stage 2	344	344	-	165	165	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	480	472	890	481	473	711	1428	-	-	1231	-	-
Stage 1	845	768	-	679	643	-	-	-	-	-	-	-
Stage 2	676	640	-	842	766	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	473	470	890	476	471	710	1428	-	-	1231	-	-
Mov Cap-2 Maneuver	473	470	-	476	471	-	-	-	-	-	-	-
Stage 1	843	767	-	677	641	-	-	-	-	-	-	-
Stage 2	666	638	-	835	765	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	11.8	0	0.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1428	-	-	775 547	1231	-	-
HCM Lane V/C Ratio	0.002	-	-	0.009 0.031	0.001	-	-
HCM Control Delay (s)	7.5	0	-	9.7 11.8	7.9	0	-
HCM Lane LOS	A	A	-	A B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0 0.1	0	-	-

Existing Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	14.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	25	32	8	148	19	47	8	222	188	45	91	19
Future Vol, veh/h	25	32	8	148	19	47	8	222	188	45	91	19
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	4	0	0	1	0	0	0	3	2	0	1	0
Mvmt Flow	26	33	8	154	20	49	8	231	196	47	95	20
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	10.8	11.9	18.4	10.6
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	38%	89%	0%	33%	0%
Vol Thru, %	53%	49%	11%	0%	67%	0%
Vol Right, %	45%	12%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	418	65	167	47	136	19
LT Vol	8	25	148	0	45	0
Through Vol	222	32	19	0	91	0
RT Vol	188	8	0	47	0	19
Lane Flow Rate	435	68	174	49	142	20
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.659	0.127	0.327	0.076	0.244	0.029
Departure Headway (Hd)	5.45	6.752	6.772	5.595	6.198	5.336
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	662	530	531	639	579	670
Service Time	3.482	4.806	4.514	3.337	3.941	3.079
HCM Lane V/C Ratio	0.657	0.128	0.328	0.077	0.245	0.03
HCM Control Delay	18.4	10.8	12.8	8.8	10.9	8.2
HCM Lane LOS	C	B	B	A	B	A
HCM 95th-tile Q	4.9	0.4	1.4	0.2	1	0.1

Existing Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection

Int Delay, s/veh 1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	47	371	21	53	194
Future Vol, veh/h	10	47	371	21	53	194
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	10	49	386	22	55	202

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	714	401	0	0	412
Stage 1	401	-	-	-	-
Stage 2	313	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	401	653	-	-	1158
Stage 1	681	-	-	-	-
Stage 2	746	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	378	651	-	-	1158
Mov Cap-2 Maneuver	378	-	-	-	-
Stage 1	678	-	-	-	-
Stage 2	706	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 378 651 1158	-	-
HCM Lane V/C Ratio	-	- 0.028 0.075 0.048	-	-
HCM Control Delay (s)	-	- 14.8 11 8.3	0	0
HCM Lane LOS	-	- B B A A		
HCM 95th %tile Q(veh)	-	- 0.1 0.2 0.1	-	-

Existing Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	0	0	392	0	0	204
Future Vol, veh/h	0	0	392	0	0	204
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	0	0	408	0	0	213

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	625	412	0	0	412	0
Stage 1	412	-	-	-	-	-
Stage 2	213	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	452	644	-	-	1158	-
Stage 1	673	-	-	-	-	-
Stage 2	827	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	450	642	-	-	1158	-
Mov Cap-2 Maneuver	450	-	-	-	-	-
Stage 1	670	-	-	-	-	-
Stage 2	827	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1158	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0	-

Existing Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔			↔	
Traffic Vol, veh/h	5	3	7	39	4	72	2	259	41	43	157	5
Future Vol, veh/h	5	3	7	39	4	72	2	259	41	43	157	5
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	6	4	8	46	5	85	2	305	48	51	185	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	668	651	189	634	630	334	191	0	0	357	0	0
Stage 1	289	289	-	338	338	-	-	-	-	-	-	-
Stage 2	379	362	-	296	292	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	375	390	823	390	401	703	1395	-	-	1202	-	-
Stage 1	723	677	-	674	644	-	-	-	-	-	-	-
Stage 2	647	629	-	710	675	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	314	369	822	367	380	700	1394	-	-	1201	-	-
Mov Cap-2 Maneuver	314	369	-	367	380	-	-	-	-	-	-	-
Stage 1	722	645	-	670	640	-	-	-	-	-	-	-
Stage 2	563	625	-	665	643	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.1		12.9		0.1		1.7	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1394	-	-	461 367 670	1201	-	-
HCM Lane V/C Ratio	0.002	-	-	0.038 0.125 0.133	0.042	-	-
HCM Control Delay (s)	7.6	0	-	13.1 16.2 11.2	8.1	0	-
HCM Lane LOS	A	A	-	B C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.4 0.5	0.1	-	-

Existing Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	281	190	43	39	39
Future Vol, veh/h	43	281	190	43	39	39
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	51	335	226	51	46	46
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	277	0	-	0	690	252
Stage 1	-	-	-	-	252	-
Stage 2	-	-	-	-	438	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1298	-	-	-	414	792
Stage 1	-	-	-	-	795	-
Stage 2	-	-	-	-	655	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1298	-	-	-	394	792
Mov Cap-2 Maneuver	-	-	-	-	394	-
Stage 1	-	-	-	-	795	-
Stage 2	-	-	-	-	624	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		13.3		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1298	-	-	-	526	
HCM Lane V/C Ratio	0.039	-	-	-	0.177	
HCM Control Delay (s)	7.9	0	-	-	13.3	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6	

Appendix E ODOT Crash Data

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Canemah Rd & Warner Parrott Rd
January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2016														
TURNING MOVEMENTS	0	1	0	1	0	1	0	0	1	1	0	1	0	0
2016 TOTAL	0	1	0	1	0	1	0	0	1	1	0	1	0	0
YEAR: 2015														
REAR-END	0	0	1	1	0	0	0	0	1	0	1	1	0	0
2015 TOTAL	0	0	1	1	0	0	0	0	1	0	1	1	0	0
YEAR: 2012														
REAR-END	0	2	0	2	0	2	0	2	0	2	0	2	0	0
2012 TOTAL	0	2	0	2	0	2	0	2	0	2	0	2	0	0
FINAL TOTAL	0	3	1	4	0	3	0	2	2	3	1	4	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

Canemah Rd & Warner Parrott Rd
January 1, 2012 through December 31, 2016

SER#	P E L G H R	D A U C O	W DATE	CITY STREET	INT-TYP	RD CHAR	INT-REL	OFF-RD	WTHR	CRASH TYP	SPCL USE	MOVE	A S	PED	ACTN	EVENT	CAUSE
INVEST	E L G H R		DAY/TIME	SECOND STREET	(MEDIAN)	DIRECT	TRAF-	RNDBT	SURF	COLL TYP	OWNER	FROM	G E LICNS	LOC			
UNLOC?	D C S L K		LAT/LONG	INTERSECTION SEQ #	(#LANES)	LOCTN	CONTL	DRVWY	LIGHT	SVRTY	V#	VEH TYPE	TO	P#	TYPE	SVRTY	E X RES
01312	N N N		04/08/2012	CANEMAH RD	3-LEG	INTER	N	N	CLR	S-1STOP	01	NONE	0	STRGHT			
NONE			Sun 1P 0	WARNER-PARROTT RD		W	UNKNOWN	N	DRY	REAR		PRVTE	W E				000
No	45	20	14.57	1	0	06		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	64 M OR-Y OR<25
																	000
																	007
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000
																	000

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPESouth End Rd & Barker Ave
January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD

YEAR:

TOTAL

FINAL TOTAL

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

South End Rd & Partlow Rd / Lafayette Rd
January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2016														
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2016 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2014														
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	1	0	1	0	0
2014 TOTAL	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR: 2012														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2012 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	1	2	3	0	1	0	2	1	3	0	3	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF OREGON CITY, CLACKAMAS COUNTY

South End Rd & Partlow Rd / Lafayette Rd
January 1, 2012 through December 31, 2016

SER#	INVEST	UNLOC?	S P	D R	S W	DATE	FC	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CONTL	OFF-RD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A G	S E	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
01409	NO RPT	No	N	N	N	04/10/2012	16	LAFAYETTE AVE SOUTH END RD 1	INTER NE 06	CROSS 0	N UNKNOWN	N N	CLR DRY DAY	S-1STOP REAR PDO	01 PSNGR CAR	NONE PRVTE NE SW	0	STRGHT	01	DRVR	NONE	85	M	OR-Y OR<25	026	000 000	07 00 07
															02 PSNGR CAR	NONE PRVTE NE SW	0	STOP	01	DRVR	NONE	67	F	OR-Y OR<25	000	011 000	00 00
01556	NONE	No	N	N	N	04/23/2014	16	PARTLOW RD SOUTH END RD 1	INTER CN 04	CROSS 0	N UNKNOWN	N N	RAIN WET DAY	O-1 L-TURN TURN PDO	01 PSNGR CAR	NONE PRVTE SW NE	0	STRGHT	01	DRVR	NONE	60	M	OR-Y OR<25	000	000 000	02 00 00
															02 PSNGR CAR	NONE PRVTE NE SE	0	TURN-L	01	DRVR	NONE	19	F	OR-Y OR<25	028,004	000 000	00 02
02915	CITY	No	N	N	N	06/28/2016	16	PARTLOW RD SOUTH END RD 1	INTER CN 04	CROSS 0	N UNKNOWN	N N	CLR DRY DAY	O-1 L-TURN TURN INJ	01 PSNGR CAR	NONE PRVTE SW NE	0	STRGHT	01	DRVR	INJC	41	F	OR-Y OR<25	000	000 000	02 00 00
															02 PSNGR CAR	NONE PRVTE NE SE	0	TURN-L	01	DRVR	NONE	28	F	OR-Y OR<25	028,004	000 000	00 02

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

South End Rd & Warner Parrott Rd / Lawton Rd
January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2016														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
REAR-END	0	0	1	1	0	0	0	0	1	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	1	0	1	0	0
2016 TOTAL	0	0	3	3	0	0	0	1	2	3	0	3	0	0
YEAR: 2015														
ANGLE	0	0	1	1	0	0	0	0	0	1	0	1	0	0
REAR-END	0	1	0	1	0	1	0	0	0	1	0	1	0	0
2015 TOTAL	0	1	1	2	0	1	0	0	0	2	0	2	0	0
YEAR: 2013														
ANGLE	0	0	2	2	0	0	0	1	1	0	2	2	0	0
TURNING MOVEMENTS	0	1	0	1	0	2	0	1	0	1	0	1	0	0
2013 TOTAL	0	1	2	3	0	2	0	2	1	1	2	3	0	0
FINAL TOTAL	0	2	6	8	0	3	0	3	3	6	2	8	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

South End Rd & Warner Parrott Rd / Lawton Rd
January 1, 2012 through December 31, 2016

SER#	P E L G H R	D A U C O	R S W	DATE	FC	CITY STREET	RD CHAR	INT-TYP	INT-REL	OFF-RD	WTHR	CRASH TYP	SPCL USE	MOVE	A S	PED	ERROR	ACTN	EVENT	CAUSE			
INVEST UNLOC?	E L G H R	D C S L K		DAY/TIME	DISTNC	SECOND STREET	DIRECT	(MEDIAN)	TRAF-	RNDBT	SURF	COLL TYP	OWNER	FROM	G E LICNS	LOC							
				LAT/LONG		INTERSECTION SEQ #	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	VEH TYPE	TO	P#	TYPE	SVRTY	E X RES				
00122	N N N			01/11/2013	16	LAWTON RD	INTER	CROSS	N		FOG	ANGL-OTH	01	NONE	0	STRGHT				02			
NONE				Fri 8A	0	SOUTH END RD	CN		FLASHBCN-R	N	ICE	ANGL		PRVTE	W E				015	00			
No	45	20	14.21	-122 37 22.44		1	04	0		N	DAWN	PDO		PSNGR CAR		01	DRVR	NONE	16 M OR-Y OR<25	028	000	02	
													02	NONE	0	TURN-R							
														PRVTE	S E				015	00			
														PSNGR CAR		01	DRVR	NONE	16 M OR-Y OR<25	000	000	00	
05900	N N N			12/15/2016	16	SOUTH END RD	INTER	CROSS	N		CLR	S-STRGHT	01	NONE	9	STRGHT				29			
NONE				Thu 2P	0	WARNER-PARROTT RD	E		FLASHBCN-R	N	ICE	REAR		N/A		E W			000	00			
No	45	20	14.21	-122 37 22.44		1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00 U UNK UNK	000	000	00	
													02	NONE	9	STRGHT							
														N/A		E W			006	00			
														PSNGR CAR		01	DRVR	NONE	00 U UNK UNK	000	000	00	
03380	N N N			08/18/2015	16	SOUTH END RD	INTER	CROSS	N		UNK	S-1STOP	01	NONE	0	STRGHT				29			
NONE				Tue 3P	0	WARNER-PARROTT RD	S		UNKNOWN	N	UNK	REAR		UNKN		S N			000	00			
No	45	20	14.21	-122 37 22.44		1	06	0		N	DAY	INJ		UNKNOWN			01	DRVR	NONE	00 U UNK UNK	026	000	29
													02	NONE	0	STOP							
														PRVTE	S N				011	00			
														PSNGR CAR		01	DRVR	INJC	45 M OR-Y OR<25	000	000	00	
01077	N N N			03/08/2016	16	SOUTH END RD	INTER	CROSS	N		RAIN	O-1 L-TURN	01	NONE	9	STRGHT				02			
NO RPT				Tue 1P	0	WARNER-PARROTT RD	CN		STOP SIGN	N	WET	TURN		N/A		E W			000	00			
No	45	20	14.21	-122 37 22.44		1	02	0		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	00 U UNK UNK	000	000	00
													02	NONE	9	TURN-L							
														N/A		W N			000	00			
														SCHL BUS			01	DRVR	NONE	00 U UNK UNK	000	000	00
02411	N N N			06/07/2013	16	SOUTH END RD	INTER	CROSS	N		CLR	ANGL-OTH	01	NONE	0	TURN-L				08			
NO RPT				Fri 8P	0	WARNER-PARROTT RD	CN		FLASHBCN-R	N	DRY	TURN		PRVTE		E S			015	00			
No	45	20	14.21	-122 37 22.44		1	04	0		N	DAY	INJ		PSNGR CAR			01	DRVR	NONE	39 F OR-Y OR<25	002	000	08
																	02	PSNG	INJC	16 F		000	00
													02	NONE	0	TURN-R							
														PRVTE	S E				015	00			
														PSNGR CAR		01	DRVR	INJC	41 F OR-Y OR<25	000	000	00	
04076	N N N			10/24/2013	16	SOUTH END RD	INTER	CROSS	N		FOG	ANGL-OTH	01	NONE	0	STRGHT				02			
NONE				Thu 7A	0	WARNER-PARROTT RD	CN		FLASHBCN-R	N	DRY	ANGL		PRVTE	W E				015	00			
No	45	20	14.21	-122 37 22.44		1	04	0		N	DAWN	PDO		PSNGR CAR			01	DRVR	NONE	00 F OR-Y UNK	028	000	02

CITY OF OREGON CITY, CLACKAMAS COUNTY

South End Rd & Warner Parrott Rd / Lawton Rd
January 1, 2012 through December 31, 2016

[illegible]

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
 CRASH SUMMARIES BY YEAR BY COLLISION TYPE

South End Rd between Glacier Ct and Gentry Wy / Maxwell Ct
 January 1, 2012 through December 31, 2016

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2015														
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	0	1	0	0	0
2015 TOTAL	0	0	1	1	0	0	0	0	1	0	1	0	0	0
FINAL TOTAL	0	0	1	1	0	0	0	0	1	0	1	0	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

ACTION CODE TRANSLATION LIST		
ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
014	EMR V PKD	EMERGENCY VEHICLE LEGALLY PARKED IN THE ROADWAY
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRACT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY

ACTION CODE TRANSLATION LIST		
ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
088	OTHER	OTHER ACTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST		
CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED)
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED ROAD
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHING
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER
51	FAIL LN	FAILED TO MAINTAIN LANE
52	OFF RD	RAN OFF ROAD

COLLISION TYPE CODE TRANSLATION LIST		
COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST		
CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1 L-TURN	FROM OPPOSITE DIRECTION-ONE LEFT TURN,ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER LICENSE CODE TRANSLATION LIST			DRIVER RESIDENCE CODE TRANSLATION LIST		
LIC CODE	SHORT DESC	LONG DESCRIPTION	RES CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)	1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
1	OR-Y	VALID OREGON LICENSE	2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY	3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
3	SUSP	SUSPENDED/REVOKED	4	N-RES	NON-RESIDENT
4	EXP	EXPIRED	9	UNK	UNKNOWN IF OREGON RESIDENT
8	N-VAL	OTHER NON-VALID LICENSE			
9	UNK	UNKNOWN IF DRIVER WAS LICENSED AT TIME OF CRASH			

ERROR CODE TRANSLATION LIST		
ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

ERROR	SHORT	
CODE	DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST		
EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHICLE)
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST		
EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRG L PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE

EVENT CODE TRANSLATION LIST		
EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)

FUNCTIONAL CLASSIFICATION TRANSLATION LIST		
FUNC CLASS	DESCRIPTION	
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE	
02	RURAL PRINCIPAL ARTERIAL - OTHER	
06	RURAL MINOR ARTERIAL	
07	RURAL MAJOR COLLECTOR	
08	RURAL MINOR COLLECTOR	
09	RURAL LOCAL	
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE	
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP	
14	URBAN PRINCIPAL ARTERIAL - OTHER	
16	URBAN MINOR ARTERIAL	
17	URBAN MAJOR COLLECTOR	
18	URBAN MINOR COLLECTOR	
19	URBAN LOCAL	
78	UNKNOWN RURAL SYSTEM	
79	UNKNOWN RURAL NON-SYSTEM	
98	UNKNOWN URBAN SYSTEM	
99	UNKNOWN URBAN NON-SYSTEM	

HIGHWAY COMPONENT TRANSLATION LIST	
CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY
2	INJA	INCAPACITATING INJURY - BLEEDING, BROKEN BONES
3	INJB	NON-INCAPACITATING INJURY
4	INJC	POSSIBLE INJURY - COMPLAINT OF PAIN
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE
9	NONE	PARTICIPANT UNINJURED, OVER THE AGE OF 4

LIGHT CONDITION CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST	
CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY
9	PARKNG	PARKING MANEUVER

NON-MOTORIST LOCATION CODE TRANSLATION LIST	
CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE
18	OTHER, NOT IN ROADWAY
99	UNKNOWN LOCATION

ROAD CHARACTER CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

PARTICIPANT TYPE CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYANCE
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OBJECT
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN OBJECT
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMP
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING
095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
00	PDO	NOT COLLECTED FOR PDO CRASHES
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST		
CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

Appendix F 2020 Background Traffic Conditions Worksheets

Year 2020 Background Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	1	5	7	2	6	2	306	6	1	144	6
Future Vol, veh/h	0	1	5	7	2	6	2	306	6	1	144	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	6	8	2	7	2	344	7	1	162	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	523	523	165	524	524	348	169	0	0	352	0	0
Stage 1	167	167	-	353	353	-	-	-	-	-	-	-
Stage 2	356	356	-	171	171	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	468	462	885	467	461	700	1421	-	-	1218	-	-
Stage 1	840	764	-	668	634	-	-	-	-	-	-	-
Stage 2	666	633	-	836	761	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	461	460	885	462	459	699	1421	-	-	1218	-	-
Mov Cap-2 Maneuver	461	460	-	462	459	-	-	-	-	-	-	-
Stage 1	838	763	-	666	632	-	-	-	-	-	-	-
Stage 2	656	631	-	829	760	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.7		12		0		0.1	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1421	-	-	767	534	1218	-
HCM Lane V/C Ratio	0.002	-	-	0.009	0.032	0.001	-
HCM Control Delay (s)	7.5	0	-	9.7	12	8	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

Year 2020 Background Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	15.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	26	33	8	154	20	49	8	230	195	47	94	20
Future Vol, veh/h	26	33	8	154	20	49	8	230	195	47	94	20
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	4	0	0	1	0	0	0	3	2	0	1	0
Mvmt Flow	27	34	8	160	21	51	8	240	203	49	98	21
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	11	12.3	20	10.8
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	39%	89%	0%	33%	0%
Vol Thru, %	53%	49%	11%	0%	67%	0%
Vol Right, %	45%	12%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	433	67	174	49	141	20
LT Vol	8	26	154	0	47	0
Through Vol	230	33	20	0	94	0
RT Vol	195	8	0	49	0	20
Lane Flow Rate	451	70	181	51	147	21
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.69	0.133	0.345	0.08	0.256	0.031
Departure Headway (Hd)	5.511	6.865	6.854	5.676	6.284	5.42
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	654	521	524	630	571	659
Service Time	3.547	4.926	4.601	3.423	4.031	3.167
HCM Lane V/C Ratio	0.69	0.134	0.345	0.081	0.257	0.032
HCM Control Delay	20	11	13.2	8.9	11.2	8.3
HCM Lane LOS	C	B	B	A	B	A
HCM 95th-tile Q	5.5	0.5	1.5	0.3	1	0.1

Year 2020 Background Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	47	387	21	53	203
Future Vol, veh/h	10	47	387	21	53	203
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	10	49	403	22	55	211

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	740	418	0	0	429	0
Stage 1	418	-	-	-	-	-
Stage 2	322	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	387	639	-	-	1141	-
Stage 1	669	-	-	-	-	-
Stage 2	739	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	364	637	-	-	1141	-
Mov Cap-2 Maneuver	364	-	-	-	-	-
Stage 1	666	-	-	-	-	-
Stage 2	698	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 364 637 1141	-	-
HCM Lane V/C Ratio	-	- 0.029 0.077 0.048	-	-
HCM Control Delay (s)	-	- 15.2 11.1 8.3	0	
HCM Lane LOS	-	- C B A	A	
HCM 95th %tile Q(veh)	-	- 0.1 0.2 0.2	-	

Year 2020 Background Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	0	0	408	0	0	213
Future Vol, veh/h	0	0	408	0	0	213
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	0	0	425	0	0	222
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	651	429	0	0	429	0
Stage 1	429	-	-	-	-	-
Stage 2	222	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	436	630	-	-	1141	-
Stage 1	661	-	-	-	-	-
Stage 2	820	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	434	628	-	-	1141	-
Mov Cap-2 Maneuver	434	-	-	-	-	-
Stage 1	658	-	-	-	-	-
Stage 2	820	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1141	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

Year 2020 Background Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Traffic Vol, veh/h	5	3	7	40	4	75	2	269	43	45	163	5
Future Vol, veh/h	5	3	7	40	4	75	2	269	43	45	163	5
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	6	4	8	47	5	88	2	316	51	53	192	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	695	677	196	657	654	347	198	0	0	371	0	0
Stage 1	301	301	-	350	350	-	-	-	-	-	-	-
Stage 2	394	376	-	307	304	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	359	377	816	377	389	692	1387	-	-	1188	-	-
Stage 1	712	669	-	664	636	-	-	-	-	-	-	-
Stage 2	635	620	-	701	667	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	297	356	815	354	367	689	1386	-	-	1187	-	-
Mov Cap-2 Maneuver	297	356	-	354	367	-	-	-	-	-	-	-
Stage 1	711	636	-	660	632	-	-	-	-	-	-	-
Stage 2	548	616	-	655	634	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.5		13.1		0		1.7	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1386	-	-	443 354 660	1187	-	-
HCM Lane V/C Ratio	0.002	-	-	0.04 0.133 0.141	0.045	-	-
HCM Control Delay (s)	7.6	0	-	13.5 16.7 11.3	8.2	0	-
HCM Lane LOS	A	A	-	B C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.5 0.5	0.1	-	-

Year 2020 Background Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	292	197	45	40	40
Future Vol, veh/h	45	292	197	45	40	40
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	54	348	235	54	48	48
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	288	0	-	0	717	261
Stage 1	-	-	-	-	261	-
Stage 2	-	-	-	-	456	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1286	-	-	-	399	783
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	643	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1286	-	-	-	378	783
Mov Cap-2 Maneuver	-	-	-	-	378	-
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	610	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		13.7		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1286	-	-	-	510	
HCM Lane V/C Ratio	0.042	-	-	-	0.187	
HCM Control Delay (s)	7.9	0	-	-	13.7	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7	

Year 2020 Background Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	29.6
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	30	31	4	223	52	76	6	160	208	92	279	49
Future Vol, veh/h	30	31	4	223	52	76	6	160	208	92	279	49
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	0	2	2	3	0	1	2	2	1	0
Mvmt Flow	33	34	4	248	58	84	7	178	231	102	310	54
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	14.1	23.1	33	34.5
HCM LOS	B	C	D	D

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	46%	81%	0%	25%	0%
Vol Thru, %	43%	48%	19%	0%	75%	0%
Vol Right, %	56%	6%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	374	65	275	76	371	49
LT Vol	6	30	223	0	92	0
Through Vol	160	31	52	0	279	0
RT Vol	208	4	0	76	0	49
Lane Flow Rate	416	72	306	84	412	54
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.804	0.182	0.681	0.162	0.838	0.098
Departure Headway (Hd)	6.965	9.054	8.023	6.886	7.317	6.454
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	519	399	449	518	495	552
Service Time	5.041	7.054	5.8	4.662	5.091	4.228
HCM Lane V/C Ratio	0.802	0.18	0.682	0.162	0.832	0.098
HCM Control Delay	33	14.1	26.4	11	37.8	9.9
HCM Lane LOS	D	B	D	B	E	A
HCM 95th-tile Q	7.6	0.7	5	0.6	8.4	0.3

Year 2020 Background Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	7	367	0	4	503
Future Vol, veh/h	0	7	367	0	4	503
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	8	408	0	4	559

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	980	412	0	0	412	0
Stage 1	412	-	-	-	-	-
Stage 2	568	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	279	644	-	-	1158	-
Stage 1	673	-	-	-	-	-
Stage 2	571	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	277	642	-	-	1158	-
Mov Cap-2 Maneuver	277	-	-	-	-	-
Stage 1	670	-	-	-	-	-
Stage 2	568	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	642	1158
HCM Lane V/C Ratio	-	-	0.012	0.004
HCM Control Delay (s)	-	0	10.7	8.1
HCM Lane LOS	-	A	B	A
HCM 95th %tile Q(veh)	-	-	0	0

Year 2020 Background Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↔			↔
Traffic Vol, veh/h	0	0	367	0	0	503
Future Vol, veh/h	0	0	367	0	0	503
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	0	408	0	0	559

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	971	412	0	0	412
Stage 1	412	-	-	-	-
Stage 2	559	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	283	644	-	-	1158
Stage 1	673	-	-	-	-
Stage 2	576	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	282	642	-	-	1158
Mov Cap-2 Maneuver	282	-	-	-	-
Stage 1	670	-	-	-	-
Stage 2	576	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1158
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Appendix G Year 2020 Total Traffic Conditions Worksheets

Year 2020 Total Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	30
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	30	31	4	224	52	76	6	161	209	92	280	49
Future Vol, veh/h	30	31	4	224	52	76	6	161	209	92	280	49
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	0	2	2	3	0	1	2	2	1	0
Mvmt Flow	33	34	4	249	58	84	7	179	232	102	311	54
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	14.1	23.3	33.6	34.9
HCM LOS	B	C	D	D

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	46%	81%	0%	25%	0%
Vol Thru, %	43%	48%	19%	0%	75%	0%
Vol Right, %	56%	6%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	376	65	276	76	372	49
LT Vol	6	30	224	0	92	0
Through Vol	161	31	52	0	280	0
RT Vol	209	4	0	76	0	49
Lane Flow Rate	418	72	307	84	413	54
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.81	0.182	0.685	0.162	0.841	0.098
Departure Headway (Hd)	6.976	9.082	8.037	6.9	7.329	6.467
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	518	397	448	518	492	551
Service Time	5.053	7.082	5.813	4.675	5.107	4.244
HCM Lane V/C Ratio	0.807	0.181	0.685	0.162	0.839	0.098
HCM Control Delay	33.6	14.1	26.7	11	38.2	10
HCM Lane LOS	D	B	D	B	E	A
HCM 95th-tile Q	7.8	0.7	5.1	0.6	8.5	0.3

Year 2020 Total Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	8	368	0	5	504
Future Vol, veh/h	0	8	368	0	5	504
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	9	409	0	6	560

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	984	413	0	0	413	0
Stage 1	413	-	-	-	-	-
Stage 2	571	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	278	643	-	-	1157	-
Stage 1	672	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	275	641	-	-	1157	-
Mov Cap-2 Maneuver	275	-	-	-	-	-
Stage 1	669	-	-	-	-	-
Stage 2	564	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	641	1157
HCM Lane V/C Ratio	-	-	0.014	0.005
HCM Control Delay (s)	-	0	10.7	8.1
HCM Lane LOS	-	A	B	A
HCM 95th %tile Q(veh)	-	-	0	0

Year 2020 Total Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↔			↔
Traffic Vol, veh/h	1	1	367	1	1	503
Future Vol, veh/h	1	1	367	1	1	503
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	1	1	408	1	1	559
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	973	412	0	0	413	0
Stage 1	412	-	-	-	-	-
Stage 2	561	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	282	644	-	-	1157	-
Stage 1	673	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	281	642	-	-	1157	-
Mov Cap-2 Maneuver	281	-	-	-	-	-
Stage 1	670	-	-	-	-	-
Stage 2	574	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	14.3	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	391	1157	-	
HCM Lane V/C Ratio	-	-	0.006	0.001	-	
HCM Control Delay (s)	-	-	14.3	8.1	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Year 2020 Total Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	5	7	2	6	2	315	6	1	151	6
Future Vol, veh/h	0	1	5	7	2	6	2	315	6	1	151	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	6	8	2	7	2	354	7	1	170	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	541	541	173	542	542	358	176	0	0	362	0	0
Stage 1	175	175	-	363	363	-	-	-	-	-	-	-
Stage 2	366	366	-	179	179	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	455	451	876	454	450	691	1412	-	-	1208	-	-
Stage 1	832	758	-	660	628	-	-	-	-	-	-	-
Stage 2	657	626	-	827	755	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	448	449	876	449	448	690	1412	-	-	1208	-	-
Mov Cap-2 Maneuver	448	449	-	449	448	-	-	-	-	-	-	-
Stage 1	830	757	-	658	626	-	-	-	-	-	-	-
Stage 2	647	624	-	820	754	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.8		12.1		0		0.1	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1412	-	-	756	522	1208	-
HCM Lane V/C Ratio	0.002	-	-	0.009	0.032	0.001	-
HCM Control Delay (s)	7.6	0	-	9.8	12.1	8	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

Year 2020 Total Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	17.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	26	33	10	166	20	49	10	239	209	47	101	20
Future Vol, veh/h	26	33	10	166	20	49	10	239	209	47	101	20
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	4	0	0	1	0	0	0	3	2	0	1	0
Mvmt Flow	27	34	10	173	21	51	10	249	218	49	105	21
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	11.2	12.9	23	11.2
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	38%	89%	0%	32%	0%
Vol Thru, %	52%	48%	11%	0%	68%	0%
Vol Right, %	46%	14%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	458	69	186	49	148	20
LT Vol	10	26	166	0	47	0
Through Vol	239	33	20	0	101	0
RT Vol	209	10	0	49	0	20
Lane Flow Rate	477	72	194	51	154	21
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.741	0.14	0.376	0.082	0.274	0.032
Departure Headway (Hd)	5.595	7.02	6.983	5.801	6.401	5.544
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	644	509	513	616	560	643
Service Time	3.639	5.094	4.739	3.556	4.16	3.303
HCM Lane V/C Ratio	0.741	0.141	0.378	0.083	0.275	0.033
HCM Control Delay	23	11.2	13.9	9.1	11.6	8.5
HCM Lane LOS	C	B	B	A	B	A
HCM 95th-tile Q	6.5	0.5	1.7	0.3	1.1	0.1

Year 2020 Total Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	60	399	27	64	213
Future Vol, veh/h	17	60	399	27	64	213
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	18	63	416	28	67	222

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	789	434	0	0	448	0
Stage 1	434	-	-	-	-	-
Stage 2	355	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	362	626	-	-	1123	-
Stage 1	658	-	-	-	-	-
Stage 2	714	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	336	624	-	-	1123	-
Mov Cap-2 Maneuver	336	-	-	-	-	-
Stage 1	655	-	-	-	-	-
Stage 2	665	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	1.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 336 624 1123	-	-
HCM Lane V/C Ratio	-	- 0.053 0.1 0.059	-	-
HCM Control Delay (s)	-	- 16.3 11.4 8.4	0	
HCM Lane LOS	-	- C B A A		
HCM 95th %tile Q(veh)	-	- 0.2 0.3 0.2	-	-

Year 2020 Total Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	8	12	414	5	10	220
Future Vol, veh/h	8	12	414	5	10	220
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	8	13	431	5	10	229
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	688	438	0	0	440	0
Stage 1	438	-	-	-	-	-
Stage 2	250	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	415	623	-	-	1131	-
Stage 1	655	-	-	-	-	-
Stage 2	796	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	409	621	-	-	1131	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	653	-	-	-	-	-
Stage 2	788	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.3	0	0.4			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	514	1131	-	
HCM Lane V/C Ratio	-	-	0.041	0.009	-	
HCM Control Delay (s)	-	-	12.3	8.2	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Year 2020 Total Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔			↔	
Traffic Vol, veh/h	5	3	7	40	4	78	2	277	43	49	173	6
Future Vol, veh/h	5	3	7	40	4	78	2	277	43	49	173	6
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	6	4	8	47	5	92	2	326	51	58	204	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	727	707	208	689	686	356	211	0	0	380	0	0
Stage 1	322	322	-	360	360	-	-	-	-	-	-	-
Stage 2	405	385	-	329	326	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	342	363	803	359	373	684	1372	-	-	1178	-	-
Stage 1	694	655	-	656	630	-	-	-	-	-	-	-
Stage 2	626	614	-	682	652	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	280	341	802	335	350	681	1371	-	-	1177	-	-
Mov Cap-2 Maneuver	280	341	-	335	350	-	-	-	-	-	-	-
Stage 1	693	618	-	652	626	-	-	-	-	-	-	-
Stage 2	536	610	-	633	615	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.9		13.5		0		1.8	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1371	-	-	424 335 651 1177	-	-	-
HCM Lane V/C Ratio	0.002	-	-	0.042 0.14 0.148 0.049	-	-	-
HCM Control Delay (s)	7.6	0	-	13.9 17.5 11.5 8.2	0	-	-
HCM Lane LOS	A	A	-	B C B A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.5 0.5 0.2	-	-	-

Year 2020 Total Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection

Int Delay, s/veh 2.3

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations						
Traffic Vol, veh/h	48	303	206	45	40	43
Future Vol, veh/h	48	303	206	45	40	43
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	57	361	245	54	48	51

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	299	0	-	0	748	272
Stage 1	-	-	-	-	272	-
Stage 2	-	-	-	-	476	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1274	-	-	-	383	772
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	629	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1274	-	-	-	362	772
Mov Cap-2 Maneuver	-	-	-	-	362	-
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	594	-

Approach EB WB SB

HCM Control Delay, s	1.1	0	14
HCM LOS			B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h)	1274	-	-	-	499
HCM Lane V/C Ratio	0.045	-	-	-	0.198
HCM Control Delay (s)	8	0	-	-	14
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

Appendix H Year 2022 Background Traffic Conditions Worksheets

Year 2022 Background Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	5	8	2	6	2	326	6	1	157	6
Future Vol, veh/h	0	1	5	8	2	6	2	326	6	1	157	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	6	9	2	7	2	366	7	1	176	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	561	561	180	560	560	371	183	0	0	374	0	0
Stage 1	182	182	-	375	375	-	-	-	-	-	-	-
Stage 2	379	379	-	185	185	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	441	439	868	442	440	679	1404	-	-	1196	-	-
Stage 1	824	753	-	650	621	-	-	-	-	-	-	-
Stage 2	647	618	-	821	751	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	434	437	868	437	438	678	1404	-	-	1196	-	-
Mov Cap-2 Maneuver	434	437	-	437	438	-	-	-	-	-	-	-
Stage 1	822	752	-	648	619	-	-	-	-	-	-	-
Stage 2	637	616	-	814	750	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	12.4	0	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1404	-	-	745 504	1196	-	-
HCM Lane V/C Ratio	0.002	-	-	0.009 0.036	0.001	-	-
HCM Control Delay (s)	7.6	0	-	9.9 12.4	8	0	-
HCM Lane LOS	A	A	-	A B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0 0.1	0	-	-

Year 2022 Background Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	18.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	27	34	11	171	20	51	11	248	216	48	105	20
Future Vol, veh/h	27	34	11	171	20	51	11	248	216	48	105	20
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	4	0	0	1	0	0	0	3	2	0	1	0
Mvmt Flow	28	35	11	178	21	53	11	258	225	50	109	21
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	11.5	13.2	25.7	11.5
HCM LOS	B	B	D	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	38%	90%	0%	31%	0%
Vol Thru, %	52%	47%	10%	0%	69%	0%
Vol Right, %	45%	15%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	475	72	191	51	153	20
LT Vol	11	27	171	0	48	0
Through Vol	248	34	20	0	105	0
RT Vol	216	11	0	51	0	20
Lane Flow Rate	495	75	199	53	159	21
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.777	0.148	0.391	0.087	0.287	0.033
Departure Headway (Hd)	5.653	7.127	7.073	5.888	6.484	5.629
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	638	500	507	606	551	632
Service Time	3.705	5.216	4.84	3.654	4.254	3.398
HCM Lane V/C Ratio	0.776	0.15	0.393	0.087	0.289	0.033
HCM Control Delay	25.7	11.5	14.3	9.2	11.9	8.6
HCM Lane LOS	D	B	B	A	B	A
HCM 95th-tile Q	7.4	0.5	1.8	0.3	1.2	0.1

Year 2022 Background Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	60	415	27	64	223
Future Vol, veh/h	17	60	415	27	64	223
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	18	63	432	28	67	232

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	816	450	0	0	464	0
Stage 1	450	-	-	-	-	-
Stage 2	366	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	349	613	-	-	1108	-
Stage 1	647	-	-	-	-	-
Stage 2	706	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	324	611	-	-	1108	-
Mov Cap-2 Maneuver	324	-	-	-	-	-
Stage 1	645	-	-	-	-	-
Stage 2	657	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	1.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 324 611 1108	-	-
HCM Lane V/C Ratio	-	- 0.055 0.102 0.06	-	-
HCM Control Delay (s)	-	- 16.8 11.6 8.5	0	
HCM Lane LOS	-	- C B A	A	
HCM 95th %tile Q(veh)	-	- 0.2 0.3 0.2	-	-

Year 2022 Background Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	8	12	430	5	10	230
Future Vol, veh/h	8	12	430	5	10	230
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	8	13	448	5	10	240

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	715	455	0	0	457
Stage 1	455	-	-	-	-
Stage 2	260	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	400	609	-	-	1114
Stage 1	643	-	-	-	-
Stage 2	788	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	394	607	-	-	1114
Mov Cap-2 Maneuver	394	-	-	-	-
Stage 1	641	-	-	-	-
Stage 2	780	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	499	1114
HCM Lane V/C Ratio	-	-	0.042	0.009
HCM Control Delay (s)	-	-	12.5	8.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Year 2022 Background Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Traffic Vol, veh/h	5	3	8	42	4	80	2	287	44	50	179	6
Future Vol, veh/h	5	3	8	42	4	80	2	287	44	50	179	6
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	6	4	9	49	5	94	2	338	52	59	211	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	751	730	215	711	707	369	218	0	0	393	0	0
Stage 1	332	332	-	372	372	-	-	-	-	-	-	-
Stage 2	419	398	-	339	335	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	330	352	796	347	363	672	1364	-	-	1166	-	-
Stage 1	686	648	-	646	622	-	-	-	-	-	-	-
Stage 2	616	606	-	673	646	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	268	330	795	323	340	669	1363	-	-	1165	-	-
Mov Cap-2 Maneuver	268	330	-	323	340	-	-	-	-	-	-	-
Stage 1	685	610	-	642	618	-	-	-	-	-	-	-
Stage 2	524	602	-	622	609	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.9		13.8		0		1.8	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1363	-	-	423 323 640	1165	-	-
HCM Lane V/C Ratio	0.002	-	-	0.045 0.153 0.154	0.05	-	-
HCM Control Delay (s)	7.6	0	-	13.9 18.1 11.6	8.3	0	-
HCM Lane LOS	A	A	-	B C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.5 0.5	0.2	-	-

Year 2022 Background Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	49	313	213	46	42	45
Future Vol, veh/h	49	313	213	46	42	45
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	58	373	254	55	50	54
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	308	0	-	0	771	281
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	490	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1264	-	-	-	371	763
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	620	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1264	-	-	-	349	763
Mov Cap-2 Maneuver	-	-	-	-	349	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	584	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		14.4		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1264	-	-	-	485	
HCM Lane V/C Ratio	0.046	-	-	-	0.214	
HCM Control Delay (s)	8	0	-	-	14.4	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8	

Year 2022 Background Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	35.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	31	32	4	232	54	79	6	167	216	96	290	51
Future Vol, veh/h	31	32	4	232	54	79	6	167	216	96	290	51
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	0	2	2	3	0	1	2	2	1	0
Mvmt Flow	34	36	4	258	60	88	7	186	240	107	322	57
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	14.6	25.8	39.9	42.2
HCM LOS	B	D	E	E

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	46%	81%	0%	25%	0%
Vol Thru, %	43%	48%	19%	0%	75%	0%
Vol Right, %	56%	6%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	389	67	286	79	386	51
LT Vol	6	31	232	0	96	0
Through Vol	167	32	54	0	290	0
RT Vol	216	4	0	79	0	51
Lane Flow Rate	432	74	318	88	429	57
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.857	0.194	0.723	0.172	0.893	0.104
Departure Headway (Hd)	7.141	9.387	8.195	7.056	7.492	6.627
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	506	385	439	506	480	537
Service Time	5.232	7.387	5.985	4.844	5.28	4.414
HCM Lane V/C Ratio	0.854	0.192	0.724	0.174	0.894	0.106
HCM Control Delay	39.9	14.6	29.8	11.3	46.4	10.2
HCM Lane LOS	E	B	D	B	E	B
HCM 95th-tile Q	9	0.7	5.7	0.6	9.8	0.3

Year 2022 Background Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	8	381	0	5	522
Future Vol, veh/h	0	8	381	0	5	522
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	9	423	0	6	580

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1018	427	0	0	427	0
Stage 1	427	-	-	-	-	-
Stage 2	591	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	265	632	-	-	1143	-
Stage 1	662	-	-	-	-	-
Stage 2	557	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	262	630	-	-	1143	-
Mov Cap-2 Maneuver	262	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	553	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	630	1143
HCM Lane V/C Ratio	-	-	0.014	0.005
HCM Control Delay (s)	-	-	0	10.8
HCM Lane LOS	-	-	A	B
HCM 95th %tile Q(veh)	-	-	0	0

Year 2022 Background Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak

09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	1	1	380	1	1	521
Future Vol, veh/h	1	1	380	1	1	521
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	1	1	422	1	1	579
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1008	427	0	0	427	0
Stage 1	427	-	-	-	-	-
Stage 2	581	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	269	632	-	-	1143	-
Stage 1	662	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	268	630	-	-	1143	-
Mov Cap-2 Maneuver	268	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	562	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	14.6	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	376	1143	-	
HCM Lane V/C Ratio	-	-	0.006	0.001	-	
HCM Control Delay (s)	-	-	14.6	8.2	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Appendix I Year 2022 Total Traffic Conditions Worksheets

Year 2022 Total Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	1	5	8	2	6	2	330	6	1	160	6
Future Vol, veh/h	0	1	5	8	2	6	2	330	6	1	160	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	6	9	2	7	2	371	7	1	180	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	568	568	183	569	569	375	187	0	0	379	0	0
Stage 1	185	185	-	380	380	-	-	-	-	-	-	-
Stage 2	383	383	-	189	189	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	437	435	865	436	435	676	1399	-	-	1191	-	-
Stage 1	821	751	-	646	617	-	-	-	-	-	-	-
Stage 2	644	616	-	817	748	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	430	433	865	431	433	675	1399	-	-	1191	-	-
Mov Cap-2 Maneuver	430	433	-	431	433	-	-	-	-	-	-	-
Stage 1	819	750	-	644	615	-	-	-	-	-	-	-
Stage 2	634	614	-	810	747	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	12.5	0	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1399	-	-	742 499	1191	-	-
HCM Lane V/C Ratio	0.002	-	-	0.009 0.036	0.001	-	-
HCM Control Delay (s)	7.6	0	-	9.9 12.5	8	0	-
HCM Lane LOS	A	A	-	A B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0 0.1	0	-	-

Year 2022 Total Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

Intersection

Intersection Delay, s/veh 20.1
Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	27	34	12	176	20	51	12	252	222	48	108	20
Future Vol, veh/h	27	34	12	176	20	51	12	252	222	48	108	20
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	4	0	0	1	0	0	0	3	2	0	1	0
Mvmt Flow	28	35	13	183	21	53	13	263	231	50	113	21
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	11.6	13.6	27.8	11.7
HCM LOS	B	B	D	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	37%	90%	0%	31%	0%
Vol Thru, %	52%	47%	10%	0%	69%	0%
Vol Right, %	46%	16%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	486	73	196	51	156	20
LT Vol	12	27	176	0	48	0
Through Vol	252	34	20	0	108	0
RT Vol	222	12	0	51	0	20
Lane Flow Rate	506	76	204	53	162	21
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.801	0.152	0.405	0.088	0.295	0.033
Departure Headway (Hd)	5.693	7.2	7.135	5.947	6.541	5.688
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	633	494	502	599	546	625
Service Time	3.748	5.295	4.904	3.716	4.317	3.464
HCM Lane V/C Ratio	0.799	0.154	0.406	0.088	0.297	0.034
HCM Control Delay	27.8	11.6	14.7	9.3	12.1	8.7
HCM Lane LOS	D	B	B	A	B	A
HCM 95th-tile Q	8	0.5	1.9	0.3	1.2	0.1

Year 2022 Total Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	66	420	30	69	227
Future Vol, veh/h	21	66	420	30	69	227
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	22	69	438	31	72	236
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	837	457	0	0	473	0
Stage 1	457	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	339	608	-	-	1099	-
Stage 1	642	-	-	-	-	-
Stage 2	696	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	312	606	-	-	1099	-
Mov Cap-2 Maneuver	312	-	-	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	644	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	13.1	0	2			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 312 606 1099	-	-		
HCM Lane V/C Ratio	-	- 0.07 0.113 0.065	-	-		
HCM Control Delay (s)	-	- 17.4 11.7 8.5	0			
HCM Lane LOS	-	- C B A A				
HCM 95th %tile Q(veh)	-	- 0.2 0.4 0.2	-			

Year 2022 Total Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	17	433	7	14	234
Future Vol, veh/h	11	17	433	7	14	234
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	11	18	451	7	15	244

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	732	459	0	0	462
Stage 1	459	-	-	-	-
Stage 2	273	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	391	606	-	-	1110
Stage 1	641	-	-	-	-
Stage 2	778	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	383	604	-	-	1110
Mov Cap-2 Maneuver	383	-	-	-	-
Stage 1	639	-	-	-	-
Stage 2	766	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.8	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	492	1110
HCM Lane V/C Ratio	-	-	0.059	0.013
HCM Control Delay (s)	-	-	12.8	8.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Year 2022 Total Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Traffic Vol, veh/h	5	3	8	42	4	81	2	291	44	52	184	6
Future Vol, veh/h	5	3	8	42	4	81	2	291	44	52	184	6
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	6	4	9	49	5	95	2	342	52	61	216	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	766	745	221	727	723	373	224	0	0	398	0	0
Stage 1	342	342	-	377	377	-	-	-	-	-	-	-
Stage 2	424	403	-	350	346	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	322	345	790	338	355	669	1357	-	-	1161	-	-
Stage 1	677	642	-	642	619	-	-	-	-	-	-	-
Stage 2	612	603	-	664	639	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	260	322	789	314	332	666	1356	-	-	1160	-	-
Mov Cap-2 Maneuver	260	322	-	314	332	-	-	-	-	-	-	-
Stage 1	676	603	-	638	615	-	-	-	-	-	-	-
Stage 2	519	600	-	613	601	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.1	14	0	1.8
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1356	-	-	414 314 636	1160	-	-
HCM Lane V/C Ratio	0.002	-	-	0.045 0.157 0.157	0.053	-	-
HCM Control Delay (s)	7.7	0	-	14.1 18.6 11.7	8.3	0	-
HCM Lane LOS	A	A	-	B C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.6 0.6	0.2	-	-

Year 2022 Total Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	318	217	46	42	46
Future Vol, veh/h	50	318	217	46	42	46
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	60	379	258	55	50	55
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	313	0	-	0	785	286
Stage 1	-	-	-	-	286	-
Stage 2	-	-	-	-	499	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1259	-	-	-	364	758
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	614	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1259	-	-	-	342	758
Mov Cap-2 Maneuver	-	-	-	-	342	-
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	577	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		14.6		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1259	-	-	-	480	
HCM Lane V/C Ratio	0.047	-	-	-	0.218	
HCM Control Delay (s)	8	0	-	-	14.6	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8	

Year 2022 Total Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	35.6
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	31	32	4	233	54	79	6	167	217	96	290	51
Future Vol, veh/h	31	32	4	233	54	79	6	167	217	96	290	51
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	0	2	2	3	0	1	2	2	1	0
Mvmt Flow	34	36	4	259	60	88	7	186	241	107	322	57
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	14.7	26	40.5	42.4
HCM LOS	B	D	E	E

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	46%	81%	0%	25%	0%
Vol Thru, %	43%	48%	19%	0%	75%	0%
Vol Right, %	56%	6%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	390	67	287	79	386	51
LT Vol	6	31	233	0	96	0
Through Vol	167	32	54	0	290	0
RT Vol	217	4	0	79	0	51
Lane Flow Rate	433	74	319	88	429	57
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.861	0.195	0.727	0.172	0.894	0.105
Departure Headway (Hd)	7.151	9.406	8.202	7.062	7.504	6.639
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	503	384	440	505	480	536
Service Time	5.243	7.406	5.995	4.854	5.295	4.43
HCM Lane V/C Ratio	0.861	0.193	0.725	0.174	0.894	0.106
HCM Control Delay	40.5	14.7	30.1	11.3	46.6	10.2
HCM Lane LOS	E	B	D	B	E	B
HCM 95th-tile Q	9.1	0.7	5.8	0.6	9.9	0.3

Year 2022 Total Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	381	0	6	522
Future Vol, veh/h	0	9	381	0	6	522
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	10	423	0	7	580

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1020	427	0	0	427	0
Stage 1	427	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	264	632	-	-	1143	-
Stage 1	662	-	-	-	-	-
Stage 2	556	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	261	630	-	-	1143	-
Mov Cap-2 Maneuver	261	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	551	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	630	1143
HCM Lane V/C Ratio	-	-	0.016	0.006
HCM Control Delay (s)	-	-	0	10.8
HCM Lane LOS	-	-	A	B
HCM 95th %tile Q(veh)	-	-	0	0

Year 2022 Total Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	1	1	380	1	1	521
Future Vol, veh/h	1	1	380	1	1	521
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	1	1	422	1	1	579
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1008	427	0	0	427	0
Stage 1	427	-	-	-	-	-
Stage 2	581	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	269	632	-	-	1143	-
Stage 1	662	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	268	630	-	-	1143	-
Mov Cap-2 Maneuver	268	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	562	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	14.6	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	376	1143	-	
HCM Lane V/C Ratio	-	-	0.006	0.001	-	
HCM Control Delay (s)	-	-	14.6	8.2	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Appendix J Year 2025 Background Traffic Conditions Worksheets

Year 2025 Background Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	49.9
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	↔
Traffic Vol, veh/h	33	34	5	246	57	83	7	175	229	101	306	53
Future Vol, veh/h	33	34	5	246	57	83	7	175	229	101	306	53
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	0	2	2	3	0	1	2	2	1	0
Mvmt Flow	37	38	6	273	63	92	8	194	254	112	340	59
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	15.8	32.5	58.9	61.8
HCM LOS	C	D	F	F

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	46%	81%	0%	25%	0%
Vol Thru, %	43%	47%	19%	0%	75%	0%
Vol Right, %	56%	7%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	411	72	303	83	407	53
LT Vol	7	33	246	0	101	0
Through Vol	175	34	57	0	306	0
RT Vol	229	5	0	83	0	53
Lane Flow Rate	457	80	337	92	452	59
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.957	0.221	0.802	0.19	0.992	0.115
Departure Headway (Hd)	7.546	9.924	8.58	7.435	7.894	7.026
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	480	361	421	482	461	509
Service Time	5.599	8.012	6.33	5.185	5.645	4.777
HCM Lane V/C Ratio	0.952	0.222	0.8	0.191	0.98	0.116
HCM Control Delay	58.9	15.8	38.2	11.9	68.4	10.7
HCM Lane LOS	F	C	E	B	F	B
HCM 95th-tile Q	11.8	0.8	7.2	0.7	12.8	0.4

Year 2025 Background Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	402	0	6	550
Future Vol, veh/h	0	9	402	0	6	550
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	10	447	0	7	611

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1075	451	0	0	451	0
Stage 1	451	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	245	613	-	-	1120	-
Stage 1	646	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	242	611	-	-	1120	-
Mov Cap-2 Maneuver	242	-	-	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	533	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	611	1120
HCM Lane V/C Ratio	-	-	0.016	0.006
HCM Control Delay (s)	-	-	0	11
HCM Lane LOS	-	-	A	B
HCM 95th %tile Q(veh)	-	-	0.1	0

Year 2025 Background Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	1	1	401	1	1	549
Future Vol, veh/h	1	1	401	1	1	549
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	1	1	446	1	1	610

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1062	450	0	0	451
Stage 1	450	-	-	-	-
Stage 2	612	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	250	613	-	-	1120
Stage 1	647	-	-	-	-
Stage 2	545	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	249	611	-	-	1120
Mov Cap-2 Maneuver	249	-	-	-	-
Stage 1	645	-	-	-	-
Stage 2	544	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	354	1120
HCM Lane V/C Ratio	-	-	0.006	0.001
HCM Control Delay (s)	-	-	15.2	8.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0	0

Year 2025 Background Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	6	8	2	7	2	347	7	1	167	7
Future Vol, veh/h	0	1	6	8	2	7	2	347	7	1	167	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	7	9	2	8	2	390	8	1	188	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	597	597	192	597	597	395	196	0	0	399	0	0
Stage 1	194	194	-	399	399	-	-	-	-	-	-	-
Stage 2	403	403	-	198	198	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	418	419	855	418	419	659	1389	-	-	1171	-	-
Stage 1	812	744	-	631	606	-	-	-	-	-	-	-
Stage 2	628	603	-	808	741	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	410	417	855	413	417	658	1389	-	-	1171	-	-
Mov Cap-2 Maneuver	410	417	-	413	417	-	-	-	-	-	-	-
Stage 1	810	743	-	629	604	-	-	-	-	-	-	-
Stage 2	617	601	-	800	740	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.9		12.7		0		0	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1389	-	-	743	488	1171	-
HCM Lane V/C Ratio	0.002	-	-	0.011	0.039	0.001	-
HCM Control Delay (s)	7.6	0	-	9.9	12.7	8.1	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

Year 2025 Background Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

Intersection	
Intersection Delay, s/veh	23.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	28	36	12	185	22	53	12	265	233	51	113	22
Future Vol, veh/h	28	36	12	185	22	53	12	265	233	51	113	22
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	4	0	0	1	0	0	0	3	2	0	1	0
Mvmt Flow	29	38	13	193	23	55	13	276	243	53	118	23
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	12	14.4	33.9	12.2
HCM LOS	B	B	D	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	2%	37%	89%	0%	31%	0%
Vol Thru, %	52%	47%	11%	0%	69%	0%
Vol Right, %	46%	16%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	510	76	207	53	164	22
LT Vol	12	28	185	0	51	0
Through Vol	265	36	22	0	113	0
RT Vol	233	12	0	53	0	22
Lane Flow Rate	531	79	216	55	171	23
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.855	0.165	0.436	0.093	0.317	0.037
Departure Headway (Hd)	5.794	7.511	7.273	6.086	6.685	5.83
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	622	481	492	584	533	608
Service Time	3.865	5.511	5.06	3.872	4.482	3.626
HCM Lane V/C Ratio	0.854	0.164	0.439	0.094	0.321	0.038
HCM Control Delay	33.9	12	15.6	9.5	12.6	8.9
HCM Lane LOS	D	B	C	A	B	A
HCM 95th-tile Q	9.5	0.6	2.2	0.3	1.4	0.1

Year 2025 Background Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	66	444	30	69	241
Future Vol, veh/h	21	66	444	30	69	241
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	22	69	463	31	72	251

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	877	482	0	0	498	0
Stage 1	482	-	-	-	-	-
Stage 2	395	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	322	588	-	-	1076	-
Stage 1	625	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	296	586	-	-	1076	-
Mov Cap-2 Maneuver	296	-	-	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	632	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	1.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 296 586 1076		-
HCM Lane V/C Ratio	-	- 0.074 0.117 0.067		-
HCM Control Delay (s)	-	- 18.1 12 8.6		0
HCM Lane LOS	-	- C B A A		
HCM 95th %tile Q(veh)	-	- 0.2 0.4 0.2		-

Year 2025 Background Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	11	17	457	7	14	248
Future Vol, veh/h	11	17	457	7	14	248
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	11	18	476	7	15	258

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	772	484	0	0	487
Stage 1	484	-	-	-	-
Stage 2	288	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	371	587	-	-	1086
Stage 1	624	-	-	-	-
Stage 2	766	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	364	585	-	-	1086
Mov Cap-2 Maneuver	364	-	-	-	-
Stage 1	622	-	-	-	-
Stage 2	754	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	472	1086
HCM Lane V/C Ratio	-	-	0.062	0.013
HCM Control Delay (s)	-	-	13.1	8.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Year 2025 Background Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Traffic Vol, veh/h	6	3	8	44	5	86	2	305	46	55	193	7
Future Vol, veh/h	6	3	8	44	5	86	2	305	46	55	193	7
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	7	4	9	52	6	101	2	359	54	65	227	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	806	783	232	763	760	391	235	0	0	417	0	0
Stage 1	361	361	-	395	395	-	-	-	-	-	-	-
Stage 2	445	422	-	368	365	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	303	328	778	320	338	653	1344	-	-	1142	-	-
Stage 1	662	629	-	628	608	-	-	-	-	-	-	-
Stage 2	596	592	-	650	627	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	239	305	777	296	314	650	1343	-	-	1141	-	-
Mov Cap-2 Maneuver	239	305	-	296	314	-	-	-	-	-	-	-
Stage 1	661	587	-	624	604	-	-	-	-	-	-	-
Stage 2	497	589	-	596	586	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.1		14.6		0		1.8	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1343	-	-	376 296 614	1141	-	-
HCM Lane V/C Ratio	0.002	-	-	0.053 0.175 0.174	0.057	-	-
HCM Control Delay (s)	7.7	0	-	15.1 19.7 12.1	8.3	0	-
HCM Lane LOS	A	A	-	C C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2 0.6 0.6	0.2	-	-

Year 2025 Background Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	53	334	228	49	44	48
Future Vol, veh/h	53	334	228	49	44	48
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	63	398	271	58	52	57
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	330	0	-	0	826	301
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	525	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1241	-	-	-	345	743
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	598	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1241	-	-	-	323	743
Mov Cap-2 Maneuver	-	-	-	-	323	-
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	559	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		15.3		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1241	-	-	-	458	
HCM Lane V/C Ratio	0.051	-	-	-	0.239	
HCM Control Delay (s)	8.1	0	-	-	15.3	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.9	

Appendix K Year 2025 Background Traffic Conditions Worksheets
(Mitigated)

Year 2025 Background Traffic Conditions (Mitigated)
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	34	5	246	57	83	7	175	229	101	306	53
Future Volume (vph)	33	34	5	246	57	83	7	175	229	101	306	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Lane Util. Factor		1.00			1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.98		0.98			1.00	1.00
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	1.00
Frt		0.99			1.00	0.85		0.92			1.00	0.85
Flt Protected		0.98			0.96	1.00		1.00			0.99	1.00
Satd. Flow (prot)		1788			1790	1533		1703			1852	1615
Flt Permitted		0.79			0.71	1.00		0.99			0.81	1.00
Satd. Flow (perm)		1448			1325	1533		1690			1526	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	37	38	6	273	63	92	8	194	254	112	340	59
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	81	0	0	336	92	0	456	0	0	452	59
Confl. Peds. (#/hr)	2					2			6	6		
Heavy Vehicles (%)	3%	3%	0%	2%	2%	3%	0%	1%	2%	2%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)		16.4			16.4	16.4		20.1			20.1	20.1
Effective Green, g (s)		16.4			16.4	16.4		20.1			20.1	20.1
Actuated g/C Ratio		0.36			0.36	0.36		0.44			0.44	0.44
Clearance Time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		521			477	552		746			674	713
v/s Ratio Prot												
v/s Ratio Perm		0.06			c0.25	0.06		0.27			c0.30	0.04
v/c Ratio		0.16			0.70	0.17		0.61			0.67	0.08
Uniform Delay, d1		9.9			12.5	9.9		9.7			10.1	7.4
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.1			4.7	0.1		1.5			2.6	0.1
Delay (s)		10.0			17.2	10.0		11.2			12.7	7.4
Level of Service		A			B	B		B			B	A
Approach Delay (s)		10.0			15.6			11.2			12.1	
Approach LOS		A			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.7		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			45.5		Sum of lost time (s)					9.0		
Intersection Capacity Utilization			80.2%		ICU Level of Service					D		
Analysis Period (min)			15									

c Critical Lane Group

Year 2025 Background Traffic Conditions (Mitigated)
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	402	0	6	550
Future Vol, veh/h	0	9	402	0	6	550
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	10	447	0	7	611

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1075	451	0	0	451	0
Stage 1	451	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	245	613	-	-	1120	-
Stage 1	646	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	242	611	-	-	1120	-
Mov Cap-2 Maneuver	242	-	-	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	533	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	611	1120
HCM Lane V/C Ratio	-	-	0.016	0.006
HCM Control Delay (s)	-	-	0	11
HCM Lane LOS	-	-	A	B
HCM 95th %tile Q(veh)	-	-	0.1	0

Year 2025 Background Traffic Conditions (Mitigated)
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	1	401	1	1	549
Future Vol, veh/h	1	1	401	1	1	549
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	1	1	446	1	1	610

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1062	450	0	0	451
Stage 1	450	-	-	-	-
Stage 2	612	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	250	613	-	-	1120
Stage 1	647	-	-	-	-
Stage 2	545	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	249	611	-	-	1120
Mov Cap-2 Maneuver	249	-	-	-	-
Stage 1	645	-	-	-	-
Stage 2	544	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	354	1120
HCM Lane V/C Ratio	-	-	0.006	0.001
HCM Control Delay (s)	-	-	15.2	8.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0	0

Year 2025 Background Traffic Conditions (Mitigated)
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	1	6	8	2	7	2	347	7	1	167	7
Future Vol, veh/h	0	1	6	8	2	7	2	347	7	1	167	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	7	9	2	8	2	390	8	1	188	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	597	597	192	597	597	395	196	0	0	399	0	0
Stage 1	194	194	-	399	399	-	-	-	-	-	-	-
Stage 2	403	403	-	198	198	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	418	419	855	418	419	659	1389	-	-	1171	-	-
Stage 1	812	744	-	631	606	-	-	-	-	-	-	-
Stage 2	628	603	-	808	741	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	410	417	855	413	417	658	1389	-	-	1171	-	-
Mov Cap-2 Maneuver	410	417	-	413	417	-	-	-	-	-	-	-
Stage 1	810	743	-	629	604	-	-	-	-	-	-	-
Stage 2	617	601	-	800	740	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	12.7	0	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1389	-	-	743	488	1171	-
HCM Lane V/C Ratio	0.002	-	-	0.011	0.039	0.001	-
HCM Control Delay (s)	7.6	0	-	9.9	12.7	8.1	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

Year 2025 Background Traffic Conditions (Mitigated)
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	36	12	185	22	53	12	265	233	51	113	22
Future Volume (vph)	28	36	12	185	22	53	12	265	233	51	113	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Lane Util. Factor		1.00			1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.97		0.99			1.00	0.98
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	1.00
Frt		0.98			1.00	0.85		0.94			1.00	0.85
Flt Protected		0.98			0.96	1.00		1.00			0.98	1.00
Satd. Flow (prot)		1793			1803	1564		1718			1857	1581
Flt Permitted		0.85			0.69	1.00		0.99			0.79	1.00
Satd. Flow (perm)		1558			1303	1564		1708			1498	1581
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	29	38	12	193	23	55	12	276	243	53	118	23
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	80	0	0	216	55	0	532	0	0	171	23
Confl. Peds. (#/hr)	10					10	1		4	4		1
Heavy Vehicles (%)	4%	0%	0%	1%	0%	0%	0%	3%	2%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)		13.0			13.0	13.0		21.2			21.2	21.2
Effective Green, g (s)		13.0			13.0	13.0		21.2			21.2	21.2
Actuated g/C Ratio		0.30			0.30	0.30		0.49			0.49	0.49
Clearance Time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		468			392	470		838			735	775
v/s Ratio Prot												
v/s Ratio Perm		0.05			c0.17	0.04		c0.31			0.11	0.01
v/c Ratio		0.17			0.55	0.12		0.63			0.23	0.03
Uniform Delay, d1		11.1			12.7	10.9		8.1			6.3	5.7
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.2			1.7	0.1		1.6			0.2	0.0
Delay (s)		11.3			14.3	11.1		9.7			6.5	5.7
Level of Service		B			B	B		A			A	A
Approach Delay (s)		11.3			13.7			9.7			6.4	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			10.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			43.2				Sum of lost time (s)			9.0		
Intersection Capacity Utilization			61.3%				ICU Level of Service			B		
Analysis Period (min)			15									

c Critical Lane Group

Year 2025 Background Traffic Conditions (Mitigated)
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	66	444	30	69	241
Future Vol, veh/h	21	66	444	30	69	241
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	22	69	463	31	72	251

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	877	482	0	0	498	0
Stage 1	482	-	-	-	-	-
Stage 2	395	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	322	588	-	-	1076	-
Stage 1	625	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	296	586	-	-	1076	-
Mov Cap-2 Maneuver	296	-	-	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	632	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	1.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 296 586 1076		-
HCM Lane V/C Ratio	-	- 0.074 0.117 0.067		-
HCM Control Delay (s)	-	- 18.1 12 8.6		0
HCM Lane LOS	-	- C B A A		
HCM 95th %tile Q(veh)	-	- 0.2 0.4 0.2		-

Year 2025 Background Traffic Conditions (Mitigated)
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	17	457	7	14	248
Future Vol, veh/h	11	17	457	7	14	248
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	11	18	476	7	15	258

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	772	484	0	0	487
Stage 1	484	-	-	-	-
Stage 2	288	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	371	587	-	-	1086
Stage 1	624	-	-	-	-
Stage 2	766	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	364	585	-	-	1086
Mov Cap-2 Maneuver	364	-	-	-	-
Stage 1	622	-	-	-	-
Stage 2	754	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	472	1086
HCM Lane V/C Ratio	-	-	0.062	0.013
HCM Control Delay (s)	-	-	13.1	8.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Year 2025 Background Traffic Conditions (Mitigated)
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔			↔	
Traffic Vol, veh/h	6	3	8	44	5	86	2	305	46	55	193	7
Future Vol, veh/h	6	3	8	44	5	86	2	305	46	55	193	7
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	7	4	9	52	6	101	2	359	54	65	227	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	806	783	232	763	760	391	235	0	0	417	0	0
Stage 1	361	361	-	395	395	-	-	-	-	-	-	-
Stage 2	445	422	-	368	365	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	303	328	778	320	338	653	1344	-	-	1142	-	-
Stage 1	662	629	-	628	608	-	-	-	-	-	-	-
Stage 2	596	592	-	650	627	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	239	305	777	296	314	650	1343	-	-	1141	-	-
Mov Cap-2 Maneuver	239	305	-	296	314	-	-	-	-	-	-	-
Stage 1	661	587	-	624	604	-	-	-	-	-	-	-
Stage 2	497	589	-	596	586	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.1		14.6		0		1.8	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1343	-	-	376 296 614	1141	-	-
HCM Lane V/C Ratio	0.002	-	-	0.053 0.175 0.174	0.057	-	-
HCM Control Delay (s)	7.7	0	-	15.1 19.7 12.1	8.3	0	-
HCM Lane LOS	A	A	-	C C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2 0.6 0.6	0.2	-	-

Year 2025 Background Traffic Conditions (Mitigated)
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection

Int Delay, s/veh 2.4

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations 

Traffic Vol, veh/h 53 334 228 49 44 48

Future Vol, veh/h 53 334 228 49 44 48

Conflicting Peds, #/hr 0 0 0 0 1 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 84 84 84 84 84 84

Heavy Vehicles, % 0 1 1 0 0 0

Mvmt Flow 63 398 271 58 52 57

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 330 0 - 0 826 301

Stage 1 - - - - 301 -

Stage 2 - - - - 525 -

Critical Hdwy 4.1 - - - 6.4 6.2

Critical Hdwy Stg 1 - - - - 5.4 -

Critical Hdwy Stg 2 - - - - 5.4 -

Follow-up Hdwy 2.2 - - - 3.5 3.3

Pot Cap-1 Maneuver 1241 - - - 345 743

Stage 1 - - - - 755 -

Stage 2 - - - - 598 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1241 - - - 323 743

Mov Cap-2 Maneuver - - - - 323 -

Stage 1 - - - - 755 -

Stage 2 - - - - 559 -

Approach EB WB SB

HCM Control Delay, s 1.1 0 15.3

HCM LOS C

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 1241 - - - 458

HCM Lane V/C Ratio 0.051 - - - 0.239

HCM Control Delay (s) 8.1 0 - - 15.3

HCM Lane LOS A A - - C

HCM 95th %tile Q(veh) 0.2 - - - 0.9

Appendix L Year 2025 Total Traffic Conditions Worksheets

Year 2025 Total Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	1	6	8	2	7	2	347	7	1	167	7
Future Vol, veh/h	0	1	6	8	2	7	2	347	7	1	167	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	7	9	2	8	2	390	8	1	188	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	597	597	192	597	597	395	196	0	0	399	0	0
Stage 1	194	194	-	399	399	-	-	-	-	-	-	-
Stage 2	403	403	-	198	198	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	418	419	855	418	419	659	1389	-	-	1171	-	-
Stage 1	812	744	-	631	606	-	-	-	-	-	-	-
Stage 2	628	603	-	808	741	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	410	417	855	413	417	658	1389	-	-	1171	-	-
Mov Cap-2 Maneuver	410	417	-	413	417	-	-	-	-	-	-	-
Stage 1	810	743	-	629	604	-	-	-	-	-	-	-
Stage 2	617	601	-	800	740	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.9		12.7		0		0	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1389	-	-	743	488	1171	-
HCM Lane V/C Ratio	0.002	-	-	0.011	0.039	0.001	-
HCM Control Delay (s)	7.6	0	-	9.9	12.7	8.1	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

Year 2025 Total Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	36	12	186	22	53	12	265	233	51	113	22
Future Volume (vph)	28	36	12	186	22	53	12	265	233	51	113	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Lane Util. Factor		1.00			1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.97		0.99			1.00	0.98
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	1.00
Frt		0.98			1.00	0.85		0.94			1.00	0.85
Flt Protected		0.98			0.96	1.00		1.00			0.98	1.00
Satd. Flow (prot)		1793			1803	1564		1718			1857	1581
Flt Permitted		0.85			0.69	1.00		0.99			0.79	1.00
Satd. Flow (perm)		1558			1303	1564		1708			1498	1581
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	29	38	12	194	23	55	12	276	243	53	118	23
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	80	0	0	217	55	0	532	0	0	171	23
Confl. Peds. (#/hr)	10					10	1		4	4		1
Heavy Vehicles (%)	4%	0%	0%	1%	0%	0%	0%	3%	2%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)		13.1			13.1	13.1		21.2			21.2	21.2
Effective Green, g (s)		13.1			13.1	13.1		21.2			21.2	21.2
Actuated g/C Ratio		0.30			0.30	0.30		0.49			0.49	0.49
Clearance Time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		471			394	473		836			733	774
v/s Ratio Prot												
v/s Ratio Perm		0.05			c0.17	0.04		c0.31			0.11	0.01
v/c Ratio		0.17			0.55	0.12		0.64			0.23	0.03
Uniform Delay, d1		11.1			12.6	10.9		8.2			6.4	5.7
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.2			1.7	0.1		1.6			0.2	0.0
Delay (s)		11.3			14.3	11.0		9.8			6.5	5.7
Level of Service		B			B	B		A			A	A
Approach Delay (s)		11.3			13.6			9.8			6.4	
Approach LOS		B			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			10.3		HCM 2000 Level of Service						B	
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			43.3		Sum of lost time (s)						9.0	
Intersection Capacity Utilization			61.3%		ICU Level of Service						B	
Analysis Period (min)			15									

c Critical Lane Group

Year 2025 Total Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	66	444	30	70	241
Future Vol, veh/h	21	66	444	30	70	241
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	22	69	463	31	73	251
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	879	482	0	0	498	0
Stage 1	482	-	-	-	-	-
Stage 2	397	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	321	588	-	-	1076	-
Stage 1	625	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	295	586	-	-	1076	-
Mov Cap-2 Maneuver	295	-	-	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	629	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	13.5	0	1.9			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 295 586 1076		-		
HCM Lane V/C Ratio	-	- 0.074 0.117 0.068		-		
HCM Control Delay (s)	-	- 18.2 12 8.6		0		
HCM Lane LOS	-	- C B A A				
HCM 95th %tile Q(veh)	-	- 0.2 0.4 0.2		-		

Year 2025 Total Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	11	17	457	7	14	248
Future Vol, veh/h	11	17	457	7	14	248
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	11	18	476	7	15	258
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	772	484	0	0	487	0
Stage 1	484	-	-	-	-	-
Stage 2	288	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	371	587	-	-	1086	-
Stage 1	624	-	-	-	-	-
Stage 2	766	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	364	585	-	-	1086	-
Mov Cap-2 Maneuver	364	-	-	-	-	-
Stage 1	622	-	-	-	-	-
Stage 2	754	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	13.1	0	0.4			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	472	1086	-	
HCM Lane V/C Ratio	-	-	0.062	0.013	-	
HCM Control Delay (s)	-	-	13.1	8.4	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0	-	

Year 2025 Total Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔			↔	
Traffic Vol, veh/h	6	3	8	44	5	86	2	305	46	55	193	7
Future Vol, veh/h	6	3	8	44	5	86	2	305	46	55	193	7
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	7	4	9	52	6	101	2	359	54	65	227	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	806	783	232	763	760	391	235	0	0	417	0	0
Stage 1	361	361	-	395	395	-	-	-	-	-	-	-
Stage 2	445	422	-	368	365	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	303	328	778	320	338	653	1344	-	-	1142	-	-
Stage 1	662	629	-	628	608	-	-	-	-	-	-	-
Stage 2	596	592	-	650	627	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	239	305	777	296	314	650	1343	-	-	1141	-	-
Mov Cap-2 Maneuver	239	305	-	296	314	-	-	-	-	-	-	-
Stage 1	661	587	-	624	604	-	-	-	-	-	-	-
Stage 2	497	589	-	596	586	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.1		14.6		0		1.8	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1343	-	-	376 296 614	1141	-	-
HCM Lane V/C Ratio	0.002	-	-	0.053 0.175 0.174	0.057	-	-
HCM Control Delay (s)	7.7	0	-	15.1 19.7 12.1	8.3	0	-
HCM Lane LOS	A	A	-	C C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2 0.6 0.6	0.2	-	-

Year 2025 Total Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	53	334	229	49	44	48
Future Vol, veh/h	53	334	229	49	44	48
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	63	398	273	58	52	57
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	331	0	-	0	827	302
Stage 1	-	-	-	-	302	-
Stage 2	-	-	-	-	525	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1240	-	-	-	344	742
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	598	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1240	-	-	-	322	742
Mov Cap-2 Maneuver	-	-	-	-	322	-
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	559	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		15.3		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1240	-	-	-	457	
HCM Lane V/C Ratio	0.051	-	-	-	0.24	
HCM Control Delay (s)	8.1	0	-	-	15.3	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.9	

Year 2025 Total Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	34	5	247	57	83	7	176	230	101	306	53
Future Volume (vph)	33	34	5	247	57	83	7	176	230	101	306	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Lane Util. Factor		1.00			1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.98		0.98			1.00	1.00
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	1.00
Frt		0.99			1.00	0.85		0.92			1.00	0.85
Flt Protected		0.98			0.96	1.00		1.00			0.99	1.00
Satd. Flow (prot)		1788			1790	1533		1703			1852	1615
Flt Permitted		0.79			0.71	1.00		0.99			0.81	1.00
Satd. Flow (perm)		1448			1325	1533		1690			1522	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	37	38	6	274	63	92	8	196	256	112	340	59
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	81	0	0	337	92	0	460	0	0	452	59
Confl. Peds. (#/hr)	2					2			6	6		
Heavy Vehicles (%)	3%	3%	0%	2%	2%	3%	0%	1%	2%	2%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)		16.5			16.5	16.5		20.1			20.1	20.1
Effective Green, g (s)		16.5			16.5	16.5		20.1			20.1	20.1
Actuated g/C Ratio		0.36			0.36	0.36		0.44			0.44	0.44
Clearance Time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		523			479	554		744			670	711
v/s Ratio Prot												
v/s Ratio Perm		0.06			c0.25	0.06		0.27			c0.30	0.04
v/c Ratio		0.15			0.70	0.17		0.62			0.67	0.08
Uniform Delay, d1		9.8			12.5	9.9		9.8			10.1	7.4
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.1			4.7	0.1		1.5			2.7	0.1
Delay (s)		10.0			17.1	10.0		11.3			12.8	7.5
Level of Service		A			B	B		B			B	A
Approach Delay (s)		10.0			15.6			11.3			12.2	
Approach LOS		A			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.8		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			45.6		Sum of lost time (s)				9.0			
Intersection Capacity Utilization			80.4%		ICU Level of Service				D			
Analysis Period (min)			15									

c Critical Lane Group

Year 2025 Total Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	10	403	0	7	550
Future Vol, veh/h	1	10	403	0	7	550
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	1	11	448	0	8	611

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1079	452	0	0	452	0
Stage 1	452	-	-	-	-	-
Stage 2	627	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	244	612	-	-	1119	-
Stage 1	645	-	-	-	-	-
Stage 2	536	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	240	610	-	-	1119	-
Mov Cap-2 Maneuver	240	-	-	-	-	-
Stage 1	643	-	-	-	-	-
Stage 2	530	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 240 610 1119	-	-
HCM Lane V/C Ratio	-	- 0.005 0.018 0.007	-	-
HCM Control Delay (s)	-	- 20.1 11 8.2	0	
HCM Lane LOS	-	- C B A A		
HCM 95th %tile Q(veh)	-	- 0 0.1 0	-	-

Year 2025 Total Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak

09/12/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	2	2	401	1	1	550
Future Vol, veh/h	2	2	401	1	1	550
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	2	2	446	1	1	611
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1063	450	0	0	451	0
Stage 1	450	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	249	613	-	-	1120	-
Stage 1	647	-	-	-	-	-
Stage 2	544	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	248	611	-	-	1120	-
Mov Cap-2 Maneuver	248	-	-	-	-	-
Stage 1	645	-	-	-	-	-
Stage 2	543	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	15.3	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	353	1120	-	
HCM Lane V/C Ratio	-	-	0.013	0.001	-	
HCM Control Delay (s)	-	-	15.3	8.2	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Appendix M Year 2030 Background Traffic Conditions Worksheets

Year 2030 Background Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	6	9	2	7	2	375	7	1	181	7
Future Vol, veh/h	0	1	6	9	2	7	2	375	7	1	181	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	7	10	2	8	2	421	8	1	203	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	645	645	207	644	644	426	211	0	0	430	0	0
Stage 1	210	210	-	431	431	-	-	-	-	-	-	-
Stage 2	435	435	-	213	213	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	388	393	839	389	394	633	1372	-	-	1140	-	-
Stage 1	797	732	-	607	586	-	-	-	-	-	-	-
Stage 2	604	584	-	794	730	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	381	391	839	384	392	632	1372	-	-	1140	-	-
Mov Cap-2 Maneuver	381	391	-	384	392	-	-	-	-	-	-	-
Stage 1	795	731	-	605	584	-	-	-	-	-	-	-
Stage 2	593	582	-	786	729	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	13.3	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1372	-	-	721 454	1140	-	-
HCM Lane V/C Ratio	0.002	-	-	0.011 0.045	0.001	-	-
HCM Control Delay (s)	7.6	0	-	10 13.3	8.2	0	-
HCM Lane LOS	A	A	-	B B	A A	-	-
HCM 95th %tile Q(veh)	0	-	-	0 0.1	0	-	-

Year 2030 Background Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	39	13	200	23	58	13	286	251	55	122	23
Future Volume (vph)	31	39	13	200	23	58	13	286	251	55	122	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Lane Util. Factor		1.00			1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.97		0.99			1.00	0.98
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	1.00
Frt		0.98			1.00	0.85		0.94			1.00	0.85
Flt Protected		0.98			0.96	1.00		1.00			0.98	1.00
Satd. Flow (prot)		1793			1802	1563		1718			1857	1581
Flt Permitted		0.85			0.69	1.00		0.99			0.78	1.00
Satd. Flow (perm)		1545			1293	1563		1708			1471	1581
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	32	41	14	208	24	60	14	298	261	57	127	24
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	87	0	0	232	60	0	573	0	0	184	24
Confl. Peds. (#/hr)	10					10	1		4	4		1
Heavy Vehicles (%)	4%	0%	0%	1%	0%	0%	0%	3%	2%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)		13.9			13.9	13.9		22.4			22.4	22.4
Effective Green, g (s)		13.9			13.9	13.9		22.4			22.4	22.4
Actuated g/C Ratio		0.31			0.31	0.31		0.49			0.49	0.49
Clearance Time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		474			396	479		844			727	781
v/s Ratio Prot												
v/s Ratio Perm		0.06			c0.18	0.04		c0.34			0.13	0.02
v/c Ratio		0.18			0.59	0.13		0.68			0.25	0.03
Uniform Delay, d1		11.5			13.3	11.3		8.7			6.6	5.9
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.2			2.2	0.1		2.2			0.2	0.0
Delay (s)		11.7			15.5	11.4		10.9			6.8	5.9
Level of Service		B			B	B		B			A	A
Approach Delay (s)		11.7			14.6			10.9			6.7	
Approach LOS		B			B			B			A	
Intersection Summary												
HCM 2000 Control Delay			11.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			45.3				Sum of lost time (s)			9.0		
Intersection Capacity Utilization			68.2%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

Year 2030 Background Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	66	483	30	70	264
Future Vol, veh/h	21	66	483	30	70	264
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	22	69	503	31	73	275

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	944	523	0	0	538	0
Stage 1	523	-	-	-	-	-
Stage 2	421	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	293	558	-	-	1040	-
Stage 1	599	-	-	-	-	-
Stage 2	667	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	268	556	-	-	1040	-
Mov Cap-2 Maneuver	268	-	-	-	-	-
Stage 1	597	-	-	-	-	-
Stage 2	612	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.1	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 268 556 1040	-	-
HCM Lane V/C Ratio	-	- 0.082 0.124 0.07	-	-
HCM Control Delay (s)	-	- 19.6 12.4 8.7	0	
HCM Lane LOS	-	- C B A A		
HCM 95th %tile Q(veh)	-	- 0.3 0.4 0.2	-	-

Year 2030 Background Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	11	17	496	7	14	271
Future Vol, veh/h	11	17	496	7	14	271
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	11	18	517	7	15	282
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	835	524	0	0	528	0
Stage 1	524	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	340	557	-	-	1049	-
Stage 1	598	-	-	-	-	-
Stage 2	748	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	333	555	-	-	1049	-
Mov Cap-2 Maneuver	333	-	-	-	-	-
Stage 1	596	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	13.8	0	0.4			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	440	1049	-	
HCM Lane V/C Ratio	-	-	0.066	0.014	-	
HCM Control Delay (s)	-	-	13.8	8.5	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0	-	

Year 2030 Background Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔			↔			↔	
Traffic Vol, veh/h	6	4	9	48	5	92	2	330	50	59	208	7
Future Vol, veh/h	6	4	9	48	5	92	2	330	50	59	208	7
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	7	5	11	56	6	108	2	388	59	69	245	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	868	844	250	822	818	423	253	0	0	451	0	0
Stage 1	388	388	-	426	426	-	-	-	-	-	-	-
Stage 2	480	456	-	396	392	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	275	302	760	292	313	627	1324	-	-	1109	-	-
Stage 1	640	612	-	604	589	-	-	-	-	-	-	-
Stage 2	571	572	-	627	610	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	211	278	759	267	288	624	1323	-	-	1108	-	-
Mov Cap-2 Maneuver	211	278	-	267	288	-	-	-	-	-	-	-
Stage 1	639	567	-	600	586	-	-	-	-	-	-	-
Stage 2	466	569	-	568	565	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	16.1		15.7		0		1.8	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1323	-	-	347 267 589	1108	-	-
HCM Lane V/C Ratio	0.002	-	-	0.064 0.212 0.194	0.063	-	-
HCM Control Delay (s)	7.7	0	-	16.1 22.1 12.6	8.5	0	-
HCM Lane LOS	A	A	-	C C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2 0.8 0.7	0.2	-	-

Year 2030 Background Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	57	361	247	53	48	52
Future Vol, veh/h	57	361	247	53	48	52
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	68	430	294	63	57	62
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	357	0	-	0	892	326
Stage 1	-	-	-	-	326	-
Stage 2	-	-	-	-	566	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1213	-	-	-	315	720
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	572	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1213	-	-	-	292	720
Mov Cap-2 Maneuver	-	-	-	-	292	-
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	530	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		16.8		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1213	-	-	-	423	
HCM Lane V/C Ratio	0.056	-	-	-	0.281	
HCM Control Delay (s)	8.1	0	-	-	16.8	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.2	-	-	-	1.1	

Year 2030 Background Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	37	5	267	61	90	7	191	249	109	331	58
Future Volume (vph)	36	37	5	267	61	90	7	191	249	109	331	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Lane Util. Factor		1.00			1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.98		0.98			1.00	1.00
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	1.00
Frt		0.99			1.00	0.85		0.92			1.00	0.85
Flt Protected		0.98			0.96	1.00		1.00			0.99	1.00
Satd. Flow (prot)		1789			1790	1532		1702			1852	1615
Flt Permitted		0.78			0.71	1.00		0.99			0.79	1.00
Satd. Flow (perm)		1427			1317	1532		1690			1473	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	40	41	6	297	68	100	8	212	277	121	368	64
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	87	0	0	365	100	0	497	0	0	489	64
Confl. Peds. (#/hr)	2					2			6	6		
Heavy Vehicles (%)	3%	3%	0%	2%	2%	3%	0%	1%	2%	2%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)		17.8			17.8	17.8		21.8			21.8	21.8
Effective Green, g (s)		17.8			17.8	17.8		21.8			21.8	21.8
Actuated g/C Ratio		0.37			0.37	0.37		0.45			0.45	0.45
Clearance Time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		522			482	561		758			660	724
v/s Ratio Prot												
v/s Ratio Perm		0.06			c0.28	0.07		0.29			c0.33	0.04
v/c Ratio		0.17			0.76	0.18		0.66			0.74	0.09
Uniform Delay, d1		10.4			13.5	10.4		10.5			11.1	7.7
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.2			6.7	0.2		2.1			4.5	0.1
Delay (s)		10.5			20.2	10.6		12.5			15.5	7.7
Level of Service		B			C	B		B			B	A
Approach Delay (s)		10.5			18.1			12.5			14.6	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			14.8		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			48.6		Sum of lost time (s)					9.0		
Intersection Capacity Utilization			85.4%		ICU Level of Service					E		
Analysis Period (min)			15									

c Critical Lane Group

Year 2030 Background Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	10	437	0	7	596
Future Vol, veh/h	1	10	437	0	7	596
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	1	11	486	0	8	662

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1168	490	0	0	490	0
Stage 1	490	-	-	-	-	-
Stage 2	678	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	216	582	-	-	1084	-
Stage 1	620	-	-	-	-	-
Stage 2	508	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	213	580	-	-	1084	-
Mov Cap-2 Maneuver	213	-	-	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	502	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 213 580 1084	-	-
HCM Lane V/C Ratio	-	- 0.005 0.019 0.007	-	-
HCM Control Delay (s)	-	- 22 11.3 8.3	0	
HCM Lane LOS	-	- C B A A		
HCM 95th %tile Q(veh)	-	- 0 0.1 0	-	-

Year 2030 Background Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	2	2	435	1	1	596
Future Vol, veh/h	2	2	435	1	1	596
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	2	2	483	1	1	662

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1152	488	0	0	488
Stage 1	488	-	-	-	-
Stage 2	664	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	221	584	-	-	1086
Stage 1	621	-	-	-	-
Stage 2	516	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	220	582	-	-	1086
Mov Cap-2 Maneuver	220	-	-	-	-
Stage 1	619	-	-	-	-
Stage 2	515	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	319	1086
HCM Lane V/C Ratio	-	-	0.014	0.001
HCM Control Delay (s)	-	-	16.4	8.3
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0	0

Appendix N Year 2030 Total Traffic Conditions Worksheets

Year 2030 Total Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Weekday PM Peak
09/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	37	5	270	61	90	7	192	252	109	332	58
Future Volume (vph)	36	37	5	270	61	90	7	192	252	109	332	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Lane Util. Factor		1.00			1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.98		0.98			1.00	1.00
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	1.00
Frt		0.99			1.00	0.85		0.92			1.00	0.85
Flt Protected		0.98			0.96	1.00		1.00			0.99	1.00
Satd. Flow (prot)		1789			1790	1532		1702			1852	1615
Flt Permitted		0.78			0.71	1.00		0.99			0.78	1.00
Satd. Flow (perm)		1426			1317	1532		1689			1468	1615
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	40	41	6	300	68	100	8	213	280	121	369	64
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	87	0	0	368	100	0	501	0	0	490	64
Confl. Peds. (#/hr)	2					2			6	6		
Heavy Vehicles (%)	3%	3%	0%	2%	2%	3%	0%	1%	2%	2%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)		17.9			17.9	17.9		21.8			21.8	21.8
Effective Green, g (s)		17.9			17.9	17.9		21.8			21.8	21.8
Actuated g/C Ratio		0.37			0.37	0.37		0.45			0.45	0.45
Clearance Time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		524			484	563		756			657	722
v/s Ratio Prot												
v/s Ratio Perm		0.06			c0.28	0.07		0.30			c0.33	0.04
v/c Ratio		0.17			0.76	0.18		0.66			0.75	0.09
Uniform Delay, d1		10.4			13.5	10.4		10.6			11.2	7.7
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.2			6.9	0.2		2.2			4.6	0.1
Delay (s)		10.5			20.4	10.6		12.8			15.8	7.8
Level of Service		B			C	B		B			B	A
Approach Delay (s)		10.5			18.3			12.8			14.8	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.0				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			48.7				Sum of lost time (s)			9.0		
Intersection Capacity Utilization			85.9%				ICU Level of Service			E		
Analysis Period (min)			15									

c Critical Lane Group

Year 2030 Total Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Weekday PM Peak
09/12/2018

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	12	439	1	9	598
Future Vol, veh/h	2	12	439	1	9	598
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	2	13	488	1	10	664

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1176	492	0	0	493	0
Stage 1	492	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	213	581	-	-	1081	-
Stage 1	619	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	209	579	-	-	1081	-
Mov Cap-2 Maneuver	209	-	-	-	-	-
Stage 1	617	-	-	-	-	-
Stage 2	497	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 209 579 1081	-	-
HCM Lane V/C Ratio	-	- 0.011 0.023 0.009	-	-
HCM Control Delay (s)	-	- 22.4 11.4 8.4	0	
HCM Lane LOS	-	- C B A	A	A
HCM 95th %tile Q(veh)	-	- 0 0.1 0	0	-

Year 2030 Total Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Weekday PM Peak

09/12/2018

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	3	4	436	2	3	597
Future Vol, veh/h	3	4	436	2	3	597
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	3	4	484	2	3	663
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1160	490	0	0	491	0
Stage 1	490	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	218	582	-	-	1083	-
Stage 1	620	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	216	580	-	-	1083	-
Mov Cap-2 Maneuver	216	-	-	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	510	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	15.9	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	337	1083	-	
HCM Lane V/C Ratio	-	-	0.023	0.003	-	
HCM Control Delay (s)	-	-	15.9	8.3	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Year 2030 Total Traffic Conditions
1: South End Rd & Deerbrook Dr/Barker Ave

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	7	10	2	7	3	393	8	1	195	7
Future Vol, veh/h	0	1	7	10	2	7	3	393	8	1	195	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	1	17
Mvmt Flow	0	1	8	11	2	8	3	442	9	1	219	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	683	683	223	684	683	447	227	0	0	452	0	0
Stage 1	225	225	-	454	454	-	-	-	-	-	-	-
Stage 2	458	458	-	230	229	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	366	374	822	365	374	616	1353	-	-	1119	-	-
Stage 1	782	721	-	589	573	-	-	-	-	-	-	-
Stage 2	587	570	-	777	718	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	359	372	822	359	372	615	1353	-	-	1119	-	-
Mov Cap-2 Maneuver	359	372	-	359	372	-	-	-	-	-	-	-
Stage 1	780	720	-	587	571	-	-	-	-	-	-	-
Stage 2	575	568	-	768	717	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.1		13.9		0.1		0	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1353	-	-	714	426	1119	-
HCM Lane V/C Ratio	0.002	-	-	0.013	0.05	0.001	-
HCM Control Delay (s)	7.7	0	-	10.1	13.9	8.2	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-

Year 2030 Total Traffic Conditions
2: South End Rd & Lawton Rd/Warner Parrott Rd

Sunday Mid-day Peak
09/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	39	16	223	23	58	18	306	280	55	138	23
Future Volume (vph)	31	39	16	223	23	58	18	306	280	55	138	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Lane Util. Factor		1.00			1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00	0.97		0.99			1.00	0.98
Flpb, ped/bikes		1.00			1.00	1.00		1.00			1.00	1.00
Frt		0.97			1.00	0.85		0.94			1.00	0.85
Flt Protected		0.98			0.96	1.00		1.00			0.99	1.00
Satd. Flow (prot)		1788			1801	1561		1716			1859	1581
Flt Permitted		0.85			0.68	1.00		0.99			0.78	1.00
Satd. Flow (perm)		1538			1285	1561		1701			1471	1581
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	32	41	17	232	24	60	19	319	292	57	144	24
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	90	0	0	256	60	0	630	0	0	201	24
Confl. Peds. (#/hr)	10					10	1		4	4		1
Heavy Vehicles (%)	4%	0%	0%	1%	0%	0%	0%	3%	2%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		6
Actuated Green, G (s)		15.0			15.0	15.0		24.9			24.9	24.9
Effective Green, g (s)		15.0			15.0	15.0		24.9			24.9	24.9
Actuated g/C Ratio		0.31			0.31	0.31		0.51			0.51	0.51
Clearance Time (s)		4.5			4.5	4.5		4.5			4.5	4.5
Vehicle Extension (s)		3.0			3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		471			394	478		866			749	805
v/s Ratio Prot												
v/s Ratio Perm		0.06			c0.20	0.04		c0.37			0.14	0.02
v/c Ratio		0.19			0.65	0.13		0.73			0.27	0.03
Uniform Delay, d1		12.5			14.7	12.2		9.4			6.8	6.0
Progression Factor		1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2		0.2			3.7	0.1		3.1			0.2	0.0
Delay (s)		12.7			18.4	12.3		12.4			7.0	6.0
Level of Service		B			B	B		B			A	A
Approach Delay (s)		12.7			17.2			12.4			6.9	
Approach LOS		B			B			B			A	
Intersection Summary												
HCM 2000 Control Delay			12.7				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			48.9				Sum of lost time (s)			9.0		
Intersection Capacity Utilization			76.4%				ICU Level of Service			D		
Analysis Period (min)			15									

c Critical Lane Group

Year 2030 Total Traffic Conditions
3: South End Rd & Oregon City Christian Church Dwy 1

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	93	510	42	91	285
Future Vol, veh/h	36	93	510	42	91	285
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	125	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	38	97	531	44	95	297
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1043	557	0	0	579	0
Stage 1	557	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	256	534	-	-	1005	-
Stage 1	578	-	-	-	-	-
Stage 2	623	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	226	532	-	-	1005	-
Mov Cap-2 Maneuver	226	-	-	-	-	-
Stage 1	576	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	16.3	0	2.2			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 226 532 1005	-	-		
HCM Lane V/C Ratio	-	- 0.166 0.182 0.094	-	-		
HCM Control Delay (s)	-	- 24.1 13.3 9	-	0		
HCM Lane LOS	-	- C B A A	-	-		
HCM 95th %tile Q(veh)	-	- 0.6 0.7 0.3	-	-		

Year 2030 Total Traffic Conditions
4: South End Rd & Oregon City Christian Church Dwy 2

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	25	44	508	19	35	286
Future Vol, veh/h	25	44	508	19	35	286
Conflicting Peds, #/hr	0	0	0	4	4	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	3	0	0	1
Mvmt Flow	26	46	529	20	36	298
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	914	543	0	0	553	0
Stage 1	543	-	-	-	-	-
Stage 2	371	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	306	544	-	-	1027	-
Stage 1	586	-	-	-	-	-
Stage 2	702	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	292	542	-	-	1027	-
Mov Cap-2 Maneuver	292	-	-	-	-	-
Stage 1	584	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	15.5	0	0.9			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	414	1027	-	
HCM Lane V/C Ratio	-	-	0.174	0.035	-	
HCM Control Delay (s)	-	-	15.5	8.6	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-	

Year 2030 Total Traffic Conditions
5: South End Rd & Lafayette Ave/S Partlow Rd

Sunday Mid-day Peak
09/12/2018

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕			↕	
Traffic Vol, veh/h	7	4	9	48	5	99	2	346	50	67	228	8
Future Vol, veh/h	7	4	9	48	5	99	2	346	50	67	228	8
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	14	3	0	4	0	2	0	2	1	0
Mvmt Flow	8	5	11	56	6	116	2	407	59	79	268	9

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	934	906	274	884	880	441	278	0	0	470	0	0
Stage 1	431	431	-	445	445	-	-	-	-	-	-	-
Stage 2	503	475	-	439	435	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.34	7.13	6.5	6.24	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.426	3.527	4	3.336	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	248	278	737	265	288	612	1296	-	-	1092	-	-
Stage 1	607	586	-	590	578	-	-	-	-	-	-	-
Stage 2	555	561	-	595	584	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	184	253	736	239	262	609	1295	-	-	1091	-	-
Mov Cap-2 Maneuver	184	253	-	239	262	-	-	-	-	-	-	-
Stage 1	606	536	-	587	575	-	-	-	-	-	-	-
Stage 2	443	558	-	531	534	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	17.9		16.7		0		1.9	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1295	-	-	303 239 573	1091	-	-
HCM Lane V/C Ratio	0.002	-	-	0.078 0.236 0.214	0.072	-	-
HCM Control Delay (s)	7.8	0	-	17.9 24.7 13	8.6	0	-
HCM Lane LOS	A	A	-	C C B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3 0.9 0.8	0.2	-	-

Year 2030 Total Traffic Conditions
6: Warner Parrott Rd & Camenah Rd

Sunday Mid-day Peak
09/12/2018

Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	64	383	265	53	48	57
Future Vol, veh/h	64	383	265	53	48	57
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	76	456	315	63	57	68
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	379	0	-	0	956	347
Stage 1	-	-	-	-	347	-
Stage 2	-	-	-	-	609	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1191	-	-	-	289	701
Stage 1	-	-	-	-	720	-
Stage 2	-	-	-	-	547	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1191	-	-	-	264	701
Mov Cap-2 Maneuver	-	-	-	-	264	-
Stage 1	-	-	-	-	720	-
Stage 2	-	-	-	-	501	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.2	0		18.1		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1191	-	-	-	399	
HCM Lane V/C Ratio	0.064	-	-	-	0.313	
HCM Control Delay (s)	8.2	0	-	-	18.1	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.2	-	-	-	1.3	

REPLINGER & ASSOCIATES LLC
TRANSPORTATION ENGINEERING

May 14, 2020

Ms. Diliانا Vassileva
City of Oregon City
PO Box 3040
Oregon City, OR 97045

SUBJECT: REVIEW OF TRANSPORTATION IMPACT STUDY – OREGON CITY CHRISTIAN CHURCH EXPANSION – GLUA20-12

Dear Ms. Vassileva:

In response to your request, I have reviewed the materials submitted in support of the proposed expansion of the Oregon City Christian Church on South End Road. The relevant materials included the site plan and the Transportation Impact Study (TIS). The TIS is dated September 20, 2018 and was prepared under the direction of Christopher Brehmer, PE of Kittelson & Associates.

The church complex is located on the east side of South End Road between Glacier Court and S Gentry Way. The proposed development consists of a 14,800-square foot recreation building consisting of a gymnasium, community meeting rooms and church youth group spaces.

According to the applicant's project narrative, the current proposal approximates the first two phases analyzed in the September 2018 TIS submitted in support of the application.

The TIS examined the following four phases:

- Phase 1 is expected to occur in 2020 and include a new 8,168 square-foot recreation center, new parking facilities, and a new driveway along the southern boundary of the site;
- Phase 2 is expected to occur in 2022 and include a new 3,602 square-foot student ministry center;
- Phase 3 is expected to occur in 2025 and include a new 4,077 square-foot administrative building; and
- Phase 4 is expected to occur in 2030 and include renovation of the existing worship center and construction of the new worship center and café. The building sizes of the final phase have not been determined but are planned to serve 600 parishioners.

The current proposal is somewhat larger than the first two phases examined in the TIS, but with certain adjustments, the TIS does provide a basis upon which the development proposal can be evaluated for transportation impacts. These adjustments are discussed at relevant points below.

Comments

1. Study Area. The study addresses the appropriate intersections. The engineer examined traffic patterns and traffic volumes and evaluated six locations. The key locations were:

- South End Road at Deerbrook Drive/Barker Avenue
- South End Road at Warner Parrott Road/Lawton Road
- South End Road at Lafayette Avenue/S Partlow Road
- Warner Parrott Road at Canemah Road
- Two site accesses on South End Road

The study area is appropriate.

2. Traffic Counts. The traffic counts were conducted in August 2018 at the intersections identified in #1, above. Traffic counts were conducted during the PM weekday and Sunday mornings. The base year traffic volumes appear reasonable.

3. Trip Generation. The TIS presents information on trip generation using the trip rates developed for the existing church facility during 2018. Trip generation rates were developed on the building square footage and applied to each individual phase of the applicant's project. For Phase 1, the engineer calculated the new building would generate 6 PM peak hour trips and 72 peak hour trips on Sunday mornings. For Phase 2, the engineer calculated the new building would generate 2 PM peak hour trips and 32 peak hour trips on Sunday mornings. Because of the difference in building size, the actual trips are about one-quarter higher than previously calculated for Phases 1 and 2 combined.

Based on the new building size and the trip rates developed by the engineer, I calculated the new building would generate 116 weekday trips; 15 weekday PM peak hour trips; 404 Sunday trips; and 131 peak hour trips on Sunday mornings. These values, rather than the ones in the TIS, should be used for calculating Systems Development Charge fees.

4. Trip Distribution. The engineer's trip distribution was based on an analysis of existing traffic patterns and likely origins and destinations throughout the city. The distribution shows 27 percent of traffic going to and from the east on Warner Parrott Road; 8 percent to and from the north on Canemah Road; 22 percent to and from the north on South End Road; 10 percent to and from the southeast on Partlow Road; 25 percent to and from the south on South End Road; smaller percentages are distributed to various other streets. The distribution of trips to the street network appears reasonable.

5. Traffic Growth. To account for background traffic growth, the traffic counts were adjusted by 1.9 percent annually. The base year for Phase 1 was 2020 and 2022 for Phase 2. The traffic growth assumptions and methodology appear reasonable.

- 6. *Analysis.*** Traffic volumes were calculated for the intersections described in #1, above. At each location, the level of service (LOS) and delay calculations and the volume-to-capacity (v/c) ratios were provided to assess traffic operations relative to the city's operational standards. The analysis was undertaken for the PM peak hour for mid-mornings on Sundays. All intersections described in #1 were analyzed for Sundays. For weekdays, only the South End Road at Warner Parrott Road/Lawton Road intersection and the site access were analyzed. The volumes at the other intersections did not reach the threshold level requiring analysis during the weekday PM peak hour. Since the current proposal approximates a combination of Phase 1 and Phase 2, my analysis focused on assessing operations for 2022.

For Sunday morning conditions, the site access points and all of the study area intersections were predicted to easily meet city operational standards in 2022 with or without the proposed church expansion. The increase in trips from the new proposal do not alter the conclusions about the adequacy of the transportation system in 2022 with the 14,800-square foot church expansion.

Under current conditions, the intersection of South End Road at Warner Parrott Road/Lawton Road is currently operating at LOS D with a v/c ratio of 0.79 during the PM peak hour. In 2022, with regional growth and the church expansion, the weekday PM peak hour conditions are calculated to degrade to LOS E and a v/c ratio of 0.89. This meets the city's operational standard for unsignalized intersections. Most of degradation in intersection performance can be attributed to regional growth.

Site driveways are also predicted to operate acceptably with plenty of space for on-site queues, which are predicted to be minimal.

According to the TIS, the intersection of South End Road at Warner Parrott Road/Lawton Road will likely meet traffic signal warrants within a few years after 2022 with additional regional growth. Transportation System Plan Project D32, the planned upgrade of this intersection with additional turn lanes and signalization, will provide long-term operational improvement. The intersection improvement is not planned or funded. The TIS serves as a reminder that the need for it is approaching.

The engineer does not recommend mitigation for the church expansion for Phase 1 or 2. Since the current proposal is mostly consistent with that level of traffic, I concur with the conclusion that traffic from the proposal does not cause city operational standards to be exceeded.

- 7. *Turn Lanes at Site Entrance(s).*** Traffic volumes are low enough on South End Road and turning into the site that a left-turn lane for access to the site is not warranted.

- 8. Crash Information.** The TIS provides crash information for the most recent five-year period for the study area intersections. During the five-year period, eight crashes were reported at the intersection of South End Road at Warner Parrott Road/Lawton Road; four were reported at the intersection of Warner Parrott Road/Canemah Road; and three were reported at the intersection of South End Road/Partlow Road/Lafayette Avenue. None were reported at the intersection of South End Road/Barker Avenue/ Deerbrook Drive. The crash rate at each location was modest. The engineer concluded that no safety-related mitigation was recommended. I concur.
- 9. Pedestrian and Bicycle Facilities.** The TIS describes pedestrian and bicycle facilities in the area.
- 10. Site Plan and Access.** As noted above, the church plans a second access to South End Road to the south of the existing site access. The new access provides access to the expanded parking lot proposed between the buildings and the street. A gated emergency access is provided in the southeast corner of the campus that connects to Paulsen Drive. Use of this access is subject to monitoring as a condition of a prior land use action. No use of this access was assumed for this analysis.
- 11. Intersection Spacing.** No new intersections would be created by this development proposal. A second driveway intersecting South End Road is proposed between the existing driveway and Gentry Way.
- 12. Sight Distance.** The engineer measured recommends that sight distance be provided at both access points on South End Road. Landscaping, signage, and above-ground utilities along the site frontage and near the site driveway should be located and maintained to provide adequate sight distance.
- 13. Consistency with the Transportation System Plan (TSP).** The site frontage appears to meet applicable standards or will be improved in connection with the project.
- The TIS indicates that the intersection of South End Road at Warner Parrott Road/Lawton Road will meet city operational standards with the proposed expansion though it is calculated to operate at near maximum. As indicated in #7, above, the analysis indicates deteriorating performance of the intersection of South End Road at Warner Parrott Road/Lawton Road due to regional growth. TSP Project D32, an upgrade and signalization of the intersection, provides for improved operations of the intersection. The project is not currently programmed or funded.
- 14. Conclusions and Recommendations.** The engineer concludes that traffic operations would be adequate at all locations during Sunday peak periods. During the weekday PM peak period, the performance of the intersection of South End Road at Warner Parrott Road/Lawton Road is expected to deteriorate but will meet the city's operational standards.

Ms. Dilia Vassileva
May 14, 2020
Page 5

Separation between the site driveway and the nearest intersection is adequate. The engineer concludes no safety mitigation is necessary and does not recommend mitigation for traffic impacts from the proposal. I concur with the engineer's conclusions and recommendations.

Conclusion and Recommendations

I find that the TIS provides an adequate basis upon which to assess the impacts of the proposed development.

It is evident from the analysis that regional traffic growth will cause deterioration in the performance of the intersection of South End Road at Warner Parrott Road/Lawton Road and that traffic signal warrants will be met in the not-to-distant future. TSP Project D32 provides a means for satisfying the city's operational standards for the intersection. Based on the TIS, it appears the need for this project is approaching.

I do not recommend any off-site actions to mitigate for safety or traffic impacts of the proposed development.

If you have any questions or need any further information concerning this review, please contact me at replinger-associates@comcast.net.

Sincerely,

A handwritten signature in cursive script that reads "John Replinger".

John Replinger, PE
Principal



City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: PC 20-081

Agenda Date: 6/8/2020

Status: Agenda Ready

To: Planning Commission

Agenda #: 3b.

From: Sr. Planner Pete Walter

File Type: Land Use Item

SUBJECT:

GLUA-19-00052: Application for a 16-bed Expansion to an Existing 38-bed Memory Care Facility at 914 and 950 South End Road.

RECOMMENDED ACTION (Motion):

Approval with Conditions.

EXECUTIVE SUMMARY:

The applicant requests approval for 16-bed expansion of an existing assisted living memory care facility at 914 South End Rd. The property is zoned R-10 Low-Density Residential, and the expansion requires Conditional Use approval. The application includes Site Plan and Design Review, a Minor Variance for lot coverage, and a Property Line Abandonment between parcels 3100 and 3301.

BACKGROUND:

GLUA-19-00052 consists of the following files:

CU-19-00052: Conditional Use

SP-19-00140: Site Plan and Design Review

VAR-19-00015: Minor Variance

LL-19-00008: Lot Line Abandonment

The proposal is for a 16-bed memory care addition at 914 South End Road that will be physically connected to the existing 38-bed facility sited at 950 South End Rd. This will consist of minor alteration of the existing building by adding walls near the kitchen and back-of-house area as proposed. The lots will be combined through a lot line abandonment. The addition will be one-story and approximately 8000 square feet.

The proposed building footprint would exceed the allowable lot coverage for the R-10 Low Density Residential Zone. The applicant is requesting an administrative variance to increase the total lot coverage by 6.2% from the maximum allowed in the R-10 zone from 40% to 46.2%, a 15.5% increase.

The proposed setbacks for the new addition are as follows: rear - 20' 1/8", north side - 10', front - 20' 1/2".

OPTIONS:

1. Approve the application with conditions as recommended by Staff in the staff report.
2. Approve the application with any modified conditions recommended by the Planning Commission.
3. Deny the application based on modified findings suggested by the Planning Commission.



PLANNING COMMISSION TYPE III STAFF RECOMMENDATION

June 1st, 2020

HEARING DATE: June 8th, 2020

FILE NUMBERS: GLUA-19-00052:
CU-19-00052: Conditional Use
SP-19-00140: Site Plan and Design Review
VAR-19-00015: Minor Variance
LL-19-00008: Lot Line Abandonment

Application Submitted: 12/20/2019
Application Complete: 01/29/2020
120-Day Deadline: 5/28/2020
120-Day Extension: 6/27/2020

APPLICANT: Lenity Architecture, LLC, 3150 Kettle Court SE, Salem, OR 97301

OWNER: River Terrace Memory Care LLC, 415 SE 28th Ave, Portland, OR 97214

REQUEST: Approval for 16-bed expansion of an existing assisted living memory care facility at 914 South End Rd. The property is zoned R-10 Low-Density Residential, and the expansion requires Conditional Use approval. The application includes Site Plan and Design Review, a Minor Variance for lot coverage, and a Property Line Abandonment between parcels 3100 and 3301.

LOCATION: 914 and 950 South End Road, Oregon City, OR 97045
Clackamas County Map: 3-1E-01AD, Tax Lots 3300 and 3301

REVIEWERS: Pete Walter, AICP, Senior Planner
Sang Pau, Public Works Development Services

RECOMMENDATION: Approval with Conditions.

PROCESS: Type III decisions involve the greatest amount of discretion and evaluation of subjective approval standards, yet are not required to be heard by the city commission, except upon appeal. Applications evaluated through this process include conditional use permits. The process for these land use decisions is controlled by ORS 197.763. Notice of the application and the planning commission hearing is published and mailed to the applicant, recognized neighborhood association and property owners within three hundred feet of the subject property. Notice must be issued at least twenty days pre-hearing, and the staff report must be available at least seven days pre-hearing. At the evidentiary hearing held before the planning commission, all issues are addressed. The decision is final unless appealed and description of the requirements for perfecting an appeal. The decision of the planning commission is appealable to the city commission within fourteen days of the issuance of the final

decision. The city commission hearing on appeal is on the record and no new evidence shall be allowed. Only those persons or a city-recognized neighborhood association who have participated either orally or in writing have standing to appeal the decision of the planning commission. Grounds for appeal are limited to those issues raised either orally or in writing before the close of the public record. A city-recognized neighborhood association requesting an appeal fee waiver pursuant to OCMC 17.50.290.C must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal. The city commission decision on appeal from the planning commission is the city's final decision and is appealable to the Land Use Board of Appeals (LUBA) within twenty-one days of when it becomes final.

Recommended Conditions of Approval

Planning File GLUA-19-00052:
CU-19-00052: Conditional Use
SP-19-00140: Site Plan and Design Review
VAR-19-00015: Minor Variance
LL-19-00008: Lot Line Abandonment

(P) = Verify that condition of approval has been met with the Planning Division.
(DS) = Verify that condition of approval has been met with the Development Services Division.
(B) = Verify that condition of approval has been met with the Building Division.

The following conditions shall be met prior to issuance of the Building permit associated with the proposed application.

1. The development shall comply with all current Oregon City Public Works design standards, specifications, codes, and policies. (DS)
2. The applicant shall submit or address all items in section 16.12.014 of the Oregon City Municipal Code based on the timing requirements contained therein and as deemed applicable by the City. (DS)
3. The developer and engineer for the project shall execute a "Developer/Engineer Agreement for Public Works Improvements" and commit to the responsibilities outlined in the agreement. (DS)
4. The development shall provide construction plans, stamped and signed by a professional engineer licensed in the State of Oregon, containing street, grading, stormwater, sanitary sewer and water infrastructure improvements that conforms to all current Oregon City Public Works standards, specifications, codes, and policies for review and approval by the City. (DS)
5. The development's contractor(s) and engineer(s) shall attend a pre-construction meeting with Oregon City staff prior to beginning construction work associated with the development.
6. The development shall construct and provide one foot of right-of-way dedication along the property frontage of South End Road for the following frontage improvements:

Beginning at the existing edge of road pavement, a 0.5' curb, a 5-foot-wide planter strip, a 5-foot-wide sidewalk and 0.5' of buffer behind the sidewalk. (DS)
7. Pavement cuts or other improvement made in a City street or alley shall be done in accordance with the City of Oregon City Public Works Pavement Cut Standards and restored in accordance with the City of Oregon City Public Works Pavement Cut Standards. (DS)

8. Permitted hours of construction shall be set forth by the City Engineer in the pre-construction meeting. (DS)
9. The development shall extend a 12" storm main connecting to the existing downgradient storm sewer within South End Road to, and through, the south edge of the development to provide for the connection of upgradient properties to that system. (DS)
10. The engineering plans shall provide a local benchmark, onsite, using the NAVD88 datum. (DS)
11. The applicant shall provide updated engineered drainage plan(s), drainage report(s), and design flow calculation report(s) stamped and signed by a licensed engineer addressing all items from the Section 9 of the Public Works Stormwater and Grading Design Standards. (DS)
12. A city issued erosion and sediment control permit shall be obtained prior to commencement of any earth disturbing activities. (DS)
13. Erosion and sediment control plans shall be submitted for review and approval by the City prior to issuance of an erosion and sediment control permit. (DS)
14. A Performance Guarantee which is equal to 120% of the estimated cost for construction of public improvements as shown in city approved construction plans shall be provided. The estimated costs shall be supported by a verified engineering estimate and approved by the city engineer. The guarantee shall be in a form identified in Code 17.50.140.A of the Oregon City Municipal Code. The guarantee shall remain in effect until the construction of all required improvements are completed and accepted by the city. (DS)
15. Prior to issuance of a building permit, the applicant shall provide revised plans indicating a minimum of three elements from the pedestrian amenity options list in OCMC 17.65.055.D(1)-(9) within the front setback area. (P)
16. Prior to issuance of a building permit, the applicant shall complete the application for lot line abandonment to vacate the existing lot line between parcels 3-1E-01AD-03100 and 3-1E-01AD-03301.

The following conditions shall be met prior to issuance of an occupancy permit associated with the proposed application.

17. The development shall provide a 10-foot-wide public utility easement along all property lines fronting existing or proposed right-of-way. (DS)
18. Improvements shall be constructed under the inspection and approval of the City. Expenses incurred thereby shall be borne by the applicant and paid prior to final approval. The applicant's project engineer also shall inspect construction. (DS)
19. The workmanship and materials for any work performed under permits issued by Oregon City Public Works shall be in accordance with the edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the city. (DS)
20. Underground utilities, waterlines, sanitary sewers and storm drains proposed to be installed in streets shall be constructed prior to the surfacing of the streets. Stubs for service connections for underground utilities, such as, storm, water and sanitary sewer shall be placed beyond the ten-foot wide franchise utility easement within private property. (DS)

21. All new franchise utilities shall be placed underground. (DS)
22. Public improvements shall be constructed according to approved final engineering plans. (DS)
23. The property owner(s) shall sign a Restrictive Covenant Non-Remonstrance Agreement for the purpose of making storm sewer, sanitary sewer, water or street improvements in the future that benefit the property and all fees associated with processing and recording the Non-Remonstrance Agreement shall be paid. (DS)
24. The property owner(s) shall execute an agreement providing access to and maintenance of the privately owned stormwater management facilities and pay associated recording fees. The agreement shall include a site plan identifying all privately-owned stormwater management facilities and an operation and maintenance plan for each type of stormwater facility in accordance with the Public Works Stormwater and Grading Design Standards. The agreement shall run with the land and be applicable to subsequent property owners. The Maintenance Covenant and Access Easement shall be reviewed and accepted by the City prior to recording. (DS)
25. Maintenance Guarantee equal to fifteen percent of the estimated cost for construction of public improvements as shown in city approved construction plans shall be provided. The estimated costs shall be supported by a verified engineering estimate approved by the City Engineer. The guarantee shall be in a form identified in Code 17.50.140.A of the Oregon City Municipal Code. The maintenance guarantee shall warrant to the City of Oregon City that construction of public improvements will remain, for a period of twenty-four (24) months from the date of acceptance, free from defects in materials and workmanship. (DS)
26. As-built construction plans and digital copies of as-built drawings shall be filed with the City Engineer within 90 days of completing improvements. (DS)
27. Prior to issuance of a certificate of occupancy, the applicant shall provide evidence of licensure by the Oregon Department of Human Services (DHS) to operate the facility. This shall include information about the number of staff, the estimated length of stay per resident and the name of the agency responsible for regulating or sponsoring the use. The proposed facility shall maintain all applicable licenses required by the appropriate agencies for the use described in the application. (P)
28. Prior to issuance of a certificate of occupancy for the building, the applicant shall demonstrate compliance with Chapter 10.32, Traffic Sight Obstructions. (P)

I. BACKGROUND:

1. Existing Conditions

The one-acre site addressed as 950 South End Rd is located at the northwest corner of the intersection of South End Rd and Amanda Court, approximately 900 feet north of the intersection of South End Rd and Warner Parrott Road. The property is developed with a 38-bed memory care facility that was constructed in 2016 and expanded in 2018. The property has a driveway entrance from South End Rd, which exits onto Amanda Court via a covered entrance or Porte Cochere. The property has a second driveway on Amanda Court serving nine off-street parking stalls at the rear of the building. Both frontages of the property were improved with additional street width and pavement, sidewalks, curb, gutter, planter strips with street trees and other public improvements when the building was constructed in 2016.

914 South End Road is a 0.26-acre lot which abuts the existing facility to the north and is currently developed with a one-story single-family home constructed in 1974. Currently there is no sidewalk in front of the home.

Both lots are zoned R-10 Low Density Residential.

South End Road is classified as a Minor Arterial Road and Amanda Court is classified as a Local Street. On-street parking is permitted on South End Road and Amanda Court.

A detailed existing conditions plan was provided in the applicant's submittal.

Ownership Dispute / Property Lines

There is an ongoing legal dispute regarding the ownership of a strip of land located between the existing facility and Amanda Ct. This private dispute arose following the City's original approval of the facility in 2014. The applicant completed an ALTA / NSPS land title survey prepared by a licensed Oregon surveyor dated June 3, 2019, which indicates that the owner and applicant's southern property line is located very close to abutting the existing structure. Exclusive of easements granted to the City of Oregon City for public and franchise utilities, public street and sidewalk, and road and utility right-of-way as indicated on the survey, the property line is much closer to the existing structure than previously indicated.

To staff's knowledge this issue is still under litigation.

The property dispute does not affect the new addition because it is located on a separate property abutting the existing development. The applicant intends to combine both parcels through a lot line abandonment between 914 and 950 South End Road.

The scope of this report is limited to the City's adopted review criteria. City staff and the Planning Commission's responsibility is to review the submitted application against the approval criteria in the adopted code.

Figure 1. Vicinity Map and Aerial View (2019)



The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, surveying or navigation purposes. Notification of any errors is appreciated.

Map created 4/10/2020



0 200 400 Feet
1: 2,400

2. Project Description

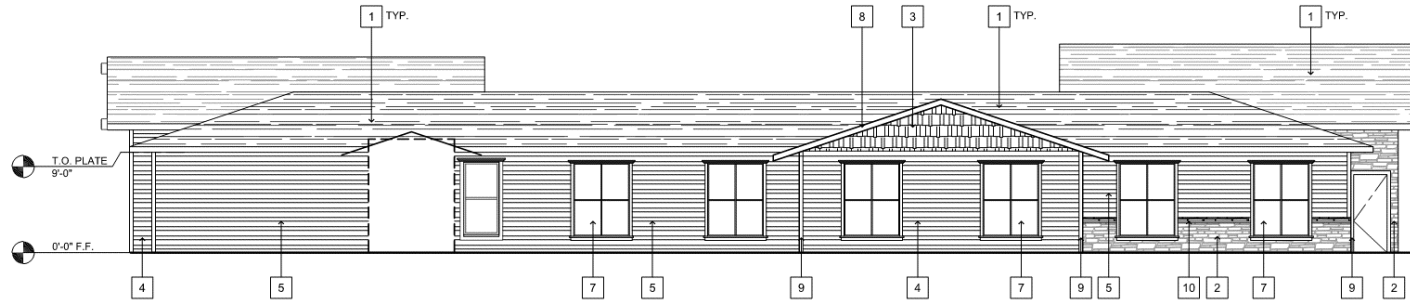
The proposal is for a 16-bed memory care addition that will be physically connected to existing facility and sited at 914 South End Rd. Minor alteration of existing building by adding walls near kitchen and back-of-house area is proposed. The lots will be combined through a lot line abandonment. The addition will be one-story and approximately 8000 square feet.

The proposed building footprint would exceed the allowable lot coverage for the R-10 Low Density Residential Zone. The applicant is requesting an administrative variance to increase the total lot coverage by 6.2% from the maximum allowed in the R-10 zone from 40% to 46.2%, a 15.5% increase.

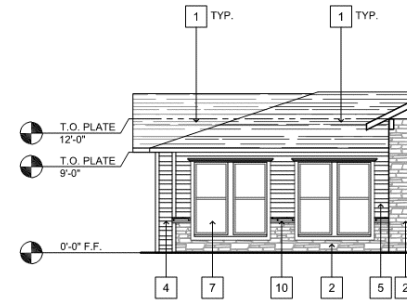
The proposed setbacks for the new addition are as follows: rear – 20' 1/8", north side – 10', front – 20' 1/2".

The site plan for Amanda Court illustrates a proposed development. The existing building is a two-story structure with a central courtyard. A new one-story building addition is planned to the north of the existing building. The plan includes various setbacks: a 20-foot building setback to the north, a 20-foot setback to the east, and a 20-foot setback to the south. A retaining wall with wrought iron fence is shown along the western property line. The parking area includes a new parking lot to the west, a parking island, and a bike parking area. The site is bounded by Amanda Court to the south and South End Road to the east. Property lines are defined by bearings and distances, such as S89°18'32"E 294.00' and S00°40'12"W 72.37'. The plan also shows existing features like a driveway, trash storage area, and a covered entrance.

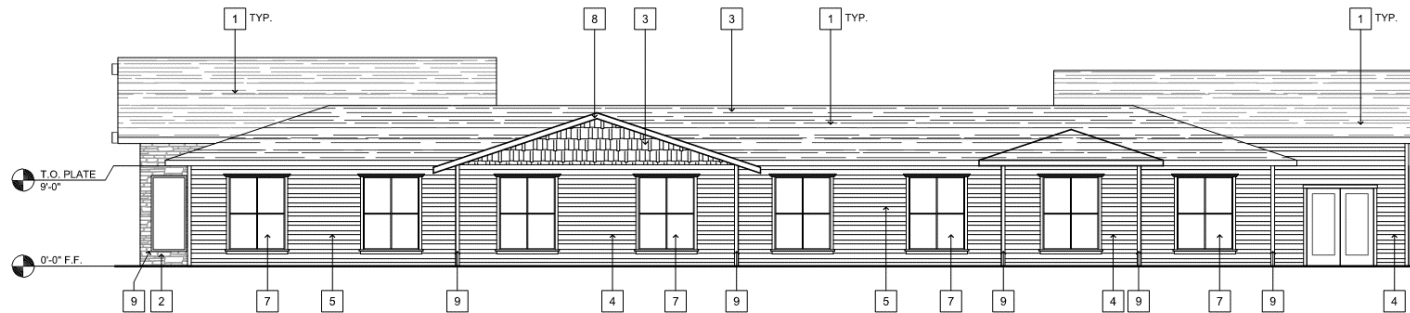
Figure 3: Proposed Building Elevations – Not to Scale



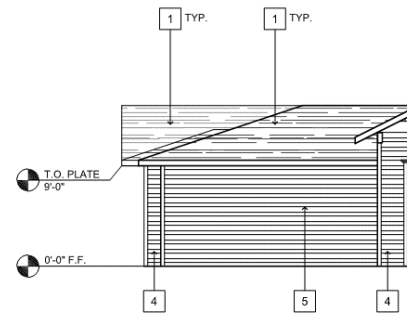
A SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



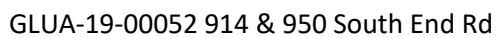
B EAST ELEVATION
SCALE: 1/8" = 1'-0"



C NORTH ELEVATION
SCALE: 1/8" = 1'-0"



D WEST ELEVATION
SCALE: 1/8" = 1'-0"



3. Permits and Approvals: The applicant is responsible for obtaining approval and permits from each applicable governmental agency and department at Oregon City including but not limited to the Engineering and Building Divisions.

4. Public Comments

No public comments were submitted before this staff report was published. Any public comments received will be forwarded to the Planning Commission and entered formally into the record at the public hearing.

None of the comments provided indicate that an approval criterion has not been met or cannot be met through the Conditions of Approval attached to this Staff Report.

II. ANALYSIS AND FINDINGS:

Municipal Code Standards and Requirements: The following sections of the Oregon City Municipal Code are applicable to this land use approval:

CHAPTER	PAGE
Chapter 12.04 Streets, Sidewalks, And Public Places	11
Chapter 12.08 Public And Street Trees.....	12
Chapter 13.12 Stormwater Management	15
Chapter 15.48 - Grading, Filling And Excavating	20
Chapter 16.12 Minimum Public Improvements And Design Standards For Development.....	21
Chapter 17.08 Low Density Residential Districts	42
Chapter 17.41 Tree Protection, Preservation, Removal And Replanting Standards.....	45
Chapter 17.47 – Erosion And Sediment Control	45
Chapter 17.50 Administration And Procedures	46
Chapter 17.52 Off-Street Parking And Loading.....	55
Chapter 17.54 Supplemental Zoning Regulations And Exceptions	62
Chapter 17.56 Conditional Uses	63
Comprehensive Plan – Applicable Goals And Policies	66
Chapter 17.60 Variances	75
Chapter 17.62 Site Plan And Design Review	77

The City Code Book is available on-line at www.orcity.org.

Permits and Approvals: The applicant is responsible for obtaining approval and permits from each applicable governmental agency and department at Oregon City including but not limited to the Engineering and Building Divisions.

CHAPTER 12.04 STREETS, SIDEWALKS, AND PUBLIC PLACES

12.04.005 - Jurisdiction and management of the public rights-of-way.

A. The City has jurisdiction and exercises regulatory management over all public rights-of-way within the City under authority of the City Charter and state law by issuing separate public works right-of-way permits or permits as part of issued public infrastructure construction plans. No work in the public right-of-way shall be done without the proper permit. Some public rights-of-way within the city are regulated by the State of Oregon Department of Transportation (ODOT) or Clackamas County and as such, any work in these streets shall conform to their respective permitting requirements.

B. Public rights-of-way include, but are not limited to, streets, roads, highways, bridges, alleys, sidewalks, trails, paths, public easements and all other public ways or areas, including the subsurface under and air space over these areas.

C. The City has jurisdiction and exercises regulatory management over each public right-of-way whether the City has a fee, easement, or other legal interest in the right-of-way. The City has jurisdiction and regulatory management of each right-of-way whether the legal interest in the right-of-way was obtained by grant, dedication, prescription, reservation, condemnation, annexation, foreclosure or other means.

D. No person may occupy or encroach on a public right-of-way without the permission of the City. The City grants permission to use rights-of-way by franchises, licenses and permits.

E. The exercise of jurisdiction and regulatory management of a public right-of-way by the City is not official acceptance of the right-of-way, and does not obligate the City to maintain or repair any part of the right-of-way.

Finding: It is understood that the City has management and jurisdiction of the right-of-way.

12.04.025 - Driveways.

Driveways shall be reviewed in accordance with OCMC 16.12.035. Driveway requirements may be modified through the procedures in OCMC 16.12.013.

Finding: See findings from section 16.12.035 of this report.

12.04.100 - Excavations—Restoration of pavement.

Whenever any excavation shall have been made in any pavement or other street improvement on any street or alley in the City for any purpose whatsoever under the permit granted by the engineer, it shall be the duty of the person making the excavation to restore the pavement in accordance with the City of Oregon City Public Works Pavement Cut Standard in effect at the time a right-of-way permit is granted. The City Commission may adopt and modify the City of Oregon City Public Works Pavement Cut Standards by resolution as necessary to implement the requirements of this chapter.

Finding: Complies as conditioned. The development proposes excavation in pavement within City right-of-way for the installation of new storm and sewer pipes. Pavement cuts or other improvement made in a City street or alley shall be done in accordance with the City of Oregon City Public Works Pavement Cut Standards and restored in accordance with the City of Oregon City Public Works Pavement Cut Standards. (Also conditioned in section 16.12.029) **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

12.04.170 - Street design—Purpose and general provisions.

All development shall be in conformance with the city's public facility master plans, public works policies, standard drawings and engineering specifications. All streets shall be reviewed and approved by the city engineer prior to construction. All streets and driveway connections to another jurisdiction's facility or right-of-way must be reviewed by the appropriate jurisdiction as a condition of the preliminary plat or site planning and when required by law or intergovernmental agreement shall be approved by the appropriate jurisdiction.

Finding: See findings from section 16.12.015 of this report.

12.04.194 - Traffic sight obstructions.

12.04.270 - Standard construction specifications.

The workmanship and materials for any work performed under permits issued per this chapter shall be in accordance with the current edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the City in accordance with this ordinance, in effect at the time of application. The exception to this requirement is where this chapter and the Public Works Street Standard Drawings provide other design details, in which case the requirements of this chapter and the Public Works Street Standard Drawings shall control. In the case of work within ODOT or Clackamas County rights-of-way, work shall be in conformance with their respective construction standards.

Finding: Complies as conditioned. The workmanship and materials for any work performed in the public right-of-way shall be in accordance with the current edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the City in accordance with this ordinance, in effect at the time of application. (Also written in the findings of section 16.12.010) **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

CHAPTER 12.08 PUBLIC AND STREET TREES

12.08.015 - Street tree selection, planting and maintenance requirements.

All development shall provide street trees adjacent to all street frontages. Species and locations of trees shall be selected based upon vision clearance requirements, but shall in all cases be selected from the Oregon City Street Tree List, an approved street tree list for a jurisdiction in the metropolitan region, or be approved by a certified arborist unless otherwise approved pursuant to this section. If a setback sidewalk has already been constructed or the Public Works Department determines that the forthcoming street design shall include a setback sidewalk, then all street trees shall be installed with a planting strip or within tree wells. If existing street design includes a curb-tight sidewalk, then all street trees shall be placed according to OCMC 12.08.035.C.

Finding: Complies as proposed. In accordance with this standard the applicant has proposed to plant 2 new Newport Flowering Plum street trees which are indicated on the applicant's landscaping plans. The addition has 72' of street frontage on South End Road. $72 \div 35 = 2.05$. The tree species is on the city's recommended street tree list and is appropriate for planting in tree wells. The standard is met.

A. One street tree shall be planted for every thirty-five feet of property frontage. The tree spacing shall be evenly distributed throughout the total development frontage to meet the clearance distances required in subsection (B) below. The Community Development Director may approve an alternative street tree plan, or accept fee-in-lieu of planting pursuant to OCMC 12.08.035, if site or other constraints prevent meeting the required total number of tree plantings.

Finding: Complies as proposed. See response above.

B. The following clearance distances shall be maintained when planting trees:

- 1. Fifteen feet from streetlights;*
- 2. Five feet from fire hydrants;*
- 3. Twenty feet from intersections;*
- 4. Five feet from all public utilities (i.e. sewer, storm and water lines, utility meters, etc.);*

Finding: Complies as proposed. The submitted street tree plan appears to comply with this standard. Compliance will be checked again prior to issuance of a public improvement permit.

C. All street trees planted in conjunction with development shall be a minimum of two inches in caliper at six inches above the root crown and installed to city specifications. Larger caliper size trees may be approved if recommended by a certified arborist or registered landscape architect.

Finding: Complies as proposed. The applicant has proposed 2" caliper street trees.

D. All established trees shall be pruned tight to the trunk to a height that provides adequate clearance for street cleaning equipment and ensures ADA complaint clearance for pedestrians.

Finding: Complies as proposed. The applicant has indicated that the street trees will be limbed at 7' which provides adequate clearance for pedestrians.

E. All trees planted within the right-of-way shall be planted with root barriers at least eighteen inches in depth adjacent to the sidewalk and curb to ensure proper root growth and reduce potential damage to sidewalks, curbs and gutters.

Finding: Complies as proposed. Compliance will be checked at the time of installation in accordance with this requirement and with the City's Public Works standards and specifications.

F. All trees planted beneath powerlines shall be selected based on what is appropriate for the location. In addition, the tree species shall be approved by the associated franchise powerline utility company.

Finding: Not applicable. No overhead powerlines are proposed on the development frontage.

G. Tree species, spacing and selection for stormwater facilities in the public right-of-way and in storm water facilities shall conform to requirements of OCMC 13.12 and the adopted Stormwater and Grading Design Standards and be approved by the City Engineer.

Finding: Not applicable. See findings under Chapter 13.12.

H. Any public or street trees planted within the Natural Resource Overlay District shall conform to the applicable requirements of OCMC 17.49 - Natural Resources Overlay District (NROD).

Finding: Not applicable. The development is not located within the NROD.

12.08.025 - General tree maintenance.

Abutting property owners shall be responsible for the maintenance and replacement of street trees and planting strips. Topping of trees is prohibited, unless under recommendation of a certified arborist, or other qualified professional. Trees shall be trimmed appropriately. Maintenance shall include watering during dry periods, trimming of established trees to remove dead branches and dangerous limbs and to maintain a minimum seven-foot clearance above all sidewalks, eight-foot clearance in clear vision areas pursuant to OCMC 10.32, and ten-foot clearance above the street. Planter strips shall be kept clear of weeds, obstructing vegetation and trash.

Finding: Complies as proposed. The property will be maintained including the street tree plantings and planter strips by a landscape maintenance company.

12.08.030 - Public property tree maintenance.

The City shall have the right to plant, prune, maintain and remove trees, plants and shrubs in all public rights-of-way and public grounds, as may be necessary to ensure public safety or to preserve and enhance the symmetry or other desirable characteristics of such public areas. The Public Works Department and Parks and Recreation Department may recommend to the Community Development Director the removal of any tree or part thereof which is in an unsafe condition or may be injurious to above or below-ground public utilities, structures or other public improvements. Removed trees shall be replaced in accordance with this chapter or the mitigation requirements of the OCMC 17.49 - Natural Resources Overlay District (NROD), if the tree to be removed is within the NROD.

Finding: Not applicable. This standard pertains to the City's authority to address public safety concerns that may arise pertaining to street trees. It is not an approval criterion.

12.08.035 - Tree removal and replacement.

Existing street trees, trees in the right-of-way, and trees on public property shall be retained and protected during development unless removal is specified as part of a land use approval or in conjunction with a public capital improvement project, in accordance with OCMC 17.41. Tree removal shall be mitigated by the following:

A. A diseased or hazardous street tree, as determined by a registered arborist and approved by the City, may be removed, if replaced with one new tree for each diseased or hazardous tree. Hazardous trees which have raised the adjacent sidewalk in a manner which does not comply with the Americans with Disabilities Act may be removed and replaced without approval of an arborist.

B. A non-diseased, non-hazardous street tree that is removed shall be replaced in accordance with the Table 12.08.035. All replaced street trees shall have a minimum 1.5-inch caliper trunk measured six inches above the root crown.

Table 12.08.035

REPLACEMENT SCHEDULE FOR TREES DETERMINED TO BE DEAD, DISEASED OR HAZARDOUS BY A CERTIFIED ARBORIST		REPLACEMENT SCHEDULE FOR TREES NOT DETERMINED TO BE DEAD, DISEASED OR HAZARDOUS BY A CERTIFIED ARBORIST	
DIAMETER OF TREE TO BE REMOVED (INCHES OF DIAMETER AT 4-FT HEIGHT)	NUMBER OF REPLACEMENT TREES TO BE PLANTED	DIAMETER OF TREE TO BE REMOVED (INCHES OF DIAMETER AT 4-FT HEIGHT)	NUMBER OF REPLACEMENT TREES TO BE PLANTED
ANY DIAMETER	1 TREE	LESS THAN 6"	1 TREE
		6" TO 12"	2 TREES
		13" TO 18"	3 TREES
		19" TO 24"	4 TREES
		25" TO 30"	5 TREES
		31" AND OVER	8 TREES

C. For the purposes of this chapter, removed trees shall be replaced by trees within the right-of-way abutting the frontage subject to the clearance distances required under OCMC 12.08.015(B). If a sufficient location to replant tree(s) is not available, the Community Development Director may allow:

1. Off-site installation of replacement trees within the right-of-way or on public property;
2. Planting of replacement trees or designation of existing trees on the abutting property within ten feet of the right-of-way as street trees. Designated street trees shall be a minimum of two inches in caliper and shall comply with the requirements in section B. In order to assure protection and replacement of the trees on private property, a covenant shall be recorded identifying the tree(s) as subject to the protections and replacement requirements in this chapter; or
3. If sufficient space to replant tree(s) is not available, the Community Development Director may allow a fee in-lieu of planting the tree(s) to be placed into a City fund dedicated to obtaining trees, planting trees and/or tree education in Oregon City.

D. Trees that are listed as invasive or nuisance species as defined in OCMC 17.04.605 may be removed without replacement.

Finding: Not applicable. The applicant has not proposed to remove any street trees.

12.08.045 – Gifts, fee-in-lieu of planting, and funding.

The City of Oregon City may accept gifts, which are specifically designated for the purpose of planting or maintaining trees within the City. The Community Development Director may allow a fee -in-lieu of planting the tree(s) to be placed into a city fund dedicated to planting trees in Oregon City. The Community Development Director may determine the type, caliper and species of the trees purchased with the fund. The cost of each tree may be adjusted annually based upon current market prices for materials and labor as calculated by the

Community Development Director. A separate fund shall be established and maintained for revenues and expenditures created by activities specified in this chapter. The Natural Resources Committee shall have authority on behalf of the City to seek grants and alternative funding for tree projects. Funds from such grant awards shall be administered by the City pursuant to this section.

Finding: Not applicable. The applicant has not proposed fee-in-lieu of planting of street trees.

CHAPTER 13.12 STORMWATER MANAGEMENT

13.12.050 - Applicability and exemptions.

This chapter establishes performance standards for stormwater conveyance, quantity and quality. Additional performance standards for erosion prevention and sediment control are established in OCMC 17.47.

A. Stormwater Conveyance. The stormwater conveyance requirements of this chapter shall apply to all stormwater systems constructed with any development activity, except as follows:

- 1. The conveyance facilities are located entirely on one privately owned parcel;*
- 2. The conveyance facilities are privately maintained; and*
- 3. The conveyance facilities receive no stormwater runoff from outside the parcel's property limits.*

Those facilities exempted from the stormwater conveyance requirements by the above subsection will remain subject to the requirements of the Oregon Uniform Plumbing Code. Those exempted facilities shall be reviewed by the Building Official.

Finding: Applicable. Connection to a public stormwater conveyance system is required to serve this development.

B. Water Quality and Flow Control. The water quality and flow control requirements of this chapter shall apply to the following proposed uses or developments, unless exempted under subsection C:

- 1. Activities located wholly or partially within water quality resource areas pursuant to OCMC 17.49 that will result in the creation of more than five hundred square feet of impervious surface within the NROD or will disturb more than one thousand square feet of existing impervious surface within the NROD as part of a commercial or industrial redevelopment project. These square footage measurements will be considered cumulative for any given five-year period; or*
- 2. Activities that create or replace more than five thousand square feet of impervious surface, cumulated over any given five-year period.*

Finding: Applicable. The proposed development will create or replace more than 5000 square feet of impervious area.

C. Exemptions. The following exemptions to subsection B of this section apply:

- 1. An exemption to the flow control requirements of this chapter will be granted when the development site discharges to the Willamette River, Clackamas River or Abernethy Creek; and either lies within the one hundred-year floodplain or is up to ten feet above the design flood elevation as defined in OCMC 17.42, provided that the following conditions are met:*
 - a. The project site is drained by a conveyance system that is comprised entirely of manmade elements (e.g. pipes, ditches, culverts outfalls, outfall protection, etc.) and extends to the ordinary high water line of the exempt receiving water; and*
 - b. The conveyance system between the project site and the exempt receiving water has sufficient hydraulic capacity and erosion stabilization measures to convey discharges from the proposed conditions of the project site and the existing conditions from non-project areas from which runoff is collected.*
- 2. Projects in the following categories are generally exempt from the water quality and flow control requirements:*
 - a. Stream enhancement or restoration projects approved by the City.*
 - b. Farming practices as defined by ORS 30.960 and farm use as defined in ORS 214.000; except that buildings associated with farm practices and farm use are subject to the requirements of this chapter.*
 - c. Actions by a public utility or any other governmental agency to remove or alleviate an emergency condition.*
 - d. Road and parking area preservation/maintenance projects such as pothole and square cut patching, surface sealing, replacing or overlaying of existing asphalt or concrete pavement, provided the preservation/maintenance*

activity does not expand the existing area of impervious coverage above the thresholds in subsection B of this section.

e. Pedestrian and bicycle improvements (sidewalks, trails, pathways, and bicycle paths/lands) where no other impervious surfaces are created or replaced, built to direct stormwater runoff to adjacent vegetated areas.

f. Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics.

g. Maintenance or repair of existing utilities.

Finding: Not applicable. No exemptions apply to the proposed development.

D. Uses Requiring Additional Management Practices. In addition to any other applicable requirements of this chapter, the following uses are subject to additional management practices, as defined in the Public Works Stormwater and Grading Design Standards:

1. Bulk petroleum storage facilities;

2. Above ground storage of liquid materials;

3. Solid waste storage areas, containers, and trash compactors for commercial, industrial, or multi-family uses;

4. Exterior storage of bulk construction materials;

5. Material transfer areas and loading docks;

6. Equipment and/or vehicle washing facilities;

7. Development on land with suspected or known contamination;

8. Covered vehicle parking for commercial or industrial uses;

9. Industrial or commercial uses locating in high traffic areas, defined as average daily count trip of two thousand five hundred or more trips per day; and

10. Land uses subject to DEQ 1200-Z Industrial Stormwater Permit Requirements.

Finding: Not applicable. The development has not proposed use of the land that requires additional management practices as defined in the Public Works Stormwater and Grading Design Standards.

13.12.060 - Abrogation and greater restrictions.

Where the provisions of this chapter are less restrictive or conflict with comparable provisions of other portions of this code, regional, state or federal law, the provisions that are more restrictive shall govern. Where this chapter imposes restrictions that are more stringent than regional, state or federal law, the provisions of this chapter shall govern. However, nothing in this chapter shall relieve any party from the obligation to comply with any applicable federal, state or local regulations or permit requirements.

Compliance with this chapter and the minimum requirements, minimum standards, and design procedures as set forth in the City adopted Public Works Stormwater and Grading Design Standards does not relieve the designer, owner, or developer of the responsibility to apply conservative and sound professional judgment to protect the health, safety and welfare of the public. It is not the intent of this chapter to make the City a guarantor or protector of public or private property in regard to land development activity.

Finding: Applicable. Findings from the provision of this chapter does not relieve the development from the obligation to comply with any applicable federal, state or local regulations or permit requirements.

13.12.080 - Submittal requirements.

A. Applications subject to stormwater conveyance, water quality, and/or flow control requirements of this chapter shall prepare engineered drainage plans, drainage reports, and design flow calculation reports in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards.

B. Each project site, which may be composed of one or more contiguous parcels of land, shall have a separate valid city approved plan and report before proceeding with construction.

Finding: Complies as Conditioned. The applicant's preliminary drainage plan and report shows compliance with stormwater conveyance, water quality, and/or flow control requirements of the Oregon City Stormwater and Grading Design Standards. However, the applicant did not address all items identified in Section 9 (Submittal Requirements) of the Public Works Stormwater and Grading Design

Standards. To meet requirements of this code section, the development shall meet conditions in section 13.12.090 of this report. (See findings from section 13.12.090 of this report.)

13.12.090 - Approval criteria for engineered drainage plans and drainage report.

An engineered drainage plan and/or drainage report shall be approved only upon making the following findings:

A. The plan and report demonstrate how the proposed development and stormwater facilities will accomplish the purpose statements of this chapter.

B. The plan and report meet the requirements of the Public Works Stormwater and Grading Design Standards adopted by resolution under OCMC 13.12.020.

C. The storm drainage design within the proposed development includes provisions to adequately control runoff from all public and private streets and roof, footing, and area drains and ensures future extension of the current drainage system.

D. Streambank erosion protection is provided where stormwater, directly or indirectly, discharges to open channels or streams.

E. Specific operation and maintenance measures are proposed that ensure that the proposed stormwater quantity control facilities will be properly operated and maintained.

Finding: Complies as Conditioned. The applicant's preliminary drainage plan and report shows general compliance with stormwater conveyance, water quality, and flow control requirements of the Oregon City Stormwater and Grading Design Standards. However, the applicant did not address all items identified in Section 9 (Submittal Requirements) of the Public Works Stormwater and Grading Design Standards (E.G. Downstream Analysis). The applicant shall provide updated engineered drainage plan(s), drainage report(s), and design flow calculation report(s) stamped and signed by a licensed engineer addressing all items from the Section 9 of the Public Works Stormwater and Grading Design Standards.

Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.

13.12.100 - Alternative materials, alternative design and methods of construction.

The provisions of this chapter are not intended to prevent the use of any material, alternate design or method of construction not specifically prescribed by this chapter or the Public Works Stormwater and Grading Design Standards, provided any alternate has been approved and its use authorized by the City Engineer. The City Engineer may approve any such alternate, provided that the City Engineer finds that the proposed design is satisfactory and complies with the intent of this chapter and that the material, method, or work offered is, for the purpose intended, at least the equivalent of that prescribed by this chapter in effectiveness, suitability, strength, durability and safety. The City Engineer shall require that sufficient evidence or proof be submitted to substantiate any claims that may be made regarding its use. The details of any action granting approval of an alternate shall be recorded and entered in the City files.

Finding: Not Applicable. The applicant has not proposed alternative design methods requiring special approval by the City Engineer. However, should the applicant propose such methods with the public facilities construction plan submittal, the proposal will be reviewed and approved by the City Engineer as required.

13.12.110 - Transfer of engineering responsibility.

Project drainage plans shall always have a project engineer. If the project engineer is changed during the course of the work, the City shall be notified in writing and the work shall be stopped until the replacement engineer has agreed to accept the responsibilities of the project engineer. The new project engineer shall provide written notice of accepting project responsibility to the City within seventy-two hours of accepting the position as project engineer.

Finding: Complies as Conditioned. There appears to be project engineer assigned for the project. The developer and engineer for the project shall execute a "Developer/Engineer Agreement for Public Works Improvements" which identifies the responsibilities of the project engineer as defined by the City. (Also

written in the findings of section 16.12.014) **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

13.12.120 - Standard construction specifications.

The workmanship and materials shall be in accordance with the current edition of the "Standard Specifications for Public Works Construction," as prepared by the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the City, in effect at the time of application. The exception to this requirement is where this chapter and the Public Works Stormwater and Grading Design Standards provide other design details, in which case the requirements of this chapter and the Public Works Stormwater and Grading Design Standards shall be complied with.

Finding: Complies as Conditioned. The workmanship and materials for any work performed under permits issued by Oregon City Public Works shall be in accordance with the edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the city. (Also written in the findings of section 16.12.010) **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

13.12.140 - Maintenance of public stormwater facilities.

A. A stormwater facility that receives stormwater runoff from a public right-of-way shall be a public facility. Upon expiration of the warranty period and acceptance by the City as described below, the City shall be responsible for maintenance of those public stormwater facilities. Access for maintenance of the stormwater facilities shall be provided to the City through the granting of a stormwater easement or other means acceptable to the City.

Finding: Not Applicable. There are no public stormwater management facilities associated with this project.

B. Responsibility for maintenance of stormwater facilities including all landscaping, irrigation systems, structures and appurtenances shall remain with the property owner/developer for two years (known as the warranty period). The owner/developer shall provide the City a separate two-year landscaping maintenance surety bond for one hundred ten percent of the landscaping cost. Transfer of maintenance of stormwater conveyance systems shall occur when the City accepts the stormwater conveyance system.

Finding: Not Applicable. There are no public stormwater management facilities associated with this project.

C. The City will perform an inspection of the development's entire publicly maintained stormwater system approximately forty-five days before the two-year warranty period expires. The stormwater system shall be found to be in a clean, functional condition by the City engineer before acceptance of maintenance responsibility by the City.

Finding: Not Applicable. There are no public stormwater management facilities associated with this project.

13.12.145 - Maintenance of private stormwater facilities.

A. An applicant shall submit an operation and maintenance plan for each proposed stormwater facilities, unless exempted in the Public Works Stormwater and Grading Design Standards. The information in the operation and maintenance plan shall satisfy the requirements of the Public Works Stormwater and Grading Design Standards.

B. Private owners are required to inspect and maintain stormwater facilities on their property in accordance with an approved operation and maintenance plan. A maintenance log is required to document facility inspections and specific maintenance activities. The log shall be available to City inspection staff upon request.

C. Failure to operate or maintain a stormwater facility according to the operation and maintenance plan may result in an enforcement action under Section 13.12.150.

Finding: Complies with Condition. The applicant has proposed private stormwater planters on the development property to treat and manage stormwater runoff from the site. Private owners are required to inspect and maintain stormwater facilities on their property in accordance with an approved operation and maintenance plan. The property owner(s) shall execute an agreement providing access to and maintenance of the privately owned stormwater management facilities and pay associated recording fees. The agreement shall include a site plan identifying all privately-owned stormwater management facilities and an operation and maintenance plan for each type of stormwater facility in accordance with the Public Works Stormwater and Grading Design Standards. The agreement shall run with the land and be applicable to subsequent property owners. The Maintenance Covenant and Access Easement shall be reviewed and accepted by the City prior to recording. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

13.12.150 - Penalties and enforcement.

A. The City is authorized to make inspections and take such actions as required to enforce the provisions of this chapter. The City has the authority to enter onto land for the purpose of inspecting site development activities or resulting improvements. City staff will make an effort to contact the property owner before entering onto that property.

B. If the City Engineer determines a site has any unpermitted or illegal facilities placed, constructed or installed on the site, then the City Engineer shall notify the owner in writing directing the owner to submit a written plan (with construction drawings completed by a professional engineer, if otherwise required by this chapter) within ten calendar days. This plan (and drawings, if required) shall depict the restoration or stabilization of the site or correct the work that has adversely impacted adjacent or downstream property owners. The City Engineer shall review the plan (and drawings, if required) for compliance with City standards and issue comments for correction, if necessary, or issue an approval to the owner. The City shall establish a fee by resolution for such review, with all costs borne by the owner. If the required corrective work constitutes a grading permit, then the City shall collect the appropriate grading permit fee.

C. Any person, firm, corporation or entity violating any of the provisions of this chapter, whether they be the property owner, the applicant, the contractor or any other person acting with or without the authorization of the property owner or applicant, shall be subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

Finding: Please refer to the findings within section 13.12.145.C of this report.

13.12.160 - Hazardous conditions.

A. Determination and Notification. If the City Engineer determines that any excavation, embankment, erosion/sedimentation control or drainage facility is a safety hazard; endangers property; or adversely affects the safety, use or stability of a public way, water quality resource areas (pursuant to OCMC 17.49) or drainage course, the owner(s) of the subject property and/or the person or agent in control of the property shall be required to repair or eliminate the hazard in conformance with the requirements of this chapter and the Public Works Stormwater and Grading Design Standards. At the time that the City Engineer makes the determination that a hazardous condition exists, the property owner and/or person or agent in control of the property will be notified in writing that the hazard exists.

B. Order to Correct. The City Engineer will order the specific work to be undertaken or will order that an engineering design be submitted for review and approval by the City Engineer, and will specify the time periods within which the hazardous conditions be repaired or eliminated. In the event that the owner and/or the person or agent in control of the property fails to comply with this order, that person shall be subject to the code enforcement procedures of OCMC 1.16, 1.20, and 1.24.

Finding: Not applicable. The City Engineer has not determined that any excavation, embankment, erosion/sedimentation control or drainage facility is a safety hazard; endangers property; or adversely affects the safety, use or stability of a public way, water quality resource areas (pursuant to OCMC 17.49) or drainage course.

13.12.170 - Permits from other jurisdictions.

A. The Oregon State Department of Environmental Quality (DEQ) currently issues NPDES 1200-C permits for projects that cover areas of one acre or greater. No permit shall be issued for projects of this size (or any other size as modified by DEQ) without a copy of said DEQ permit being on file with Oregon City. DEQ is responsible for policing its own permits; however, if City personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the City will bring such conditions to the attention of the appropriate DEQ representatives.

Finding: Not applicable. The project does not cover an area of one acre or greater.

B. Projects may require Oregon State Division of State Lands (DSL) and/or United States Army Corps of Engineers (USACE) permits. If such permits are required, no permission to construct will be granted until such a time as a copy of such permit is on file with the City or notice is received from those agencies that a permit is not required. DSL/USACE is responsible for enforcing its own permits; however, if City personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the City will bring such conditions to the attention of the appropriate DSL/USACE representatives.

Finding: Not Applicable. The project does not impact any land which requires DSL or USACE approval.

C. Projects may require Oregon State Department of Fish and Wildlife (ODFW) permits. When ODFW permits are required, no work will be authorized until the receipt of a copy of the ODFW permit. ODFW is responsible for policing its own permits; however, if City personnel observe conditions that are believed to be in violation of any such permit, and cannot get corrections made, the City will bring such conditions to the attention of the appropriate ODFW representatives.

Finding: Not Applicable. The project does not impact any land which requires ODFW approval.

13.12.180 - Violation—Penalty.

Any act or omission in violation of this chapter shall be deemed a nuisance. Violation of any provision of this chapter is subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

Finding: Not Applicable. The city has identified any acts or omission in violation of Chapter 13.12.

CHAPTER 15.48 - GRADING, FILLING AND EXCAVATING

15.48.030 Applicability—Grading permit required.

A. A city-issued grading permit shall be required before the commencement of any of the following filling or grading activities:

- 1. Grading activities in excess of ten cubic yards of earth;*
- 2. Grading activities which may result in the diversion of existing drainage courses, both natural and man-made, from their natural point of entry or exit from the grading site;*
- 3. Grading and paving activities resulting in the creation of impervious surfaces greater than two thousand square feet or more in area;*
- 4. Any excavation beyond the limits of a basement or footing excavation, having an unsupported soil height greater than five feet after the completion of such a structure; or*
- 5. Grading activities involving the clearing or disturbance of one-half acres (twenty-one thousand seven hundred eighty square feet) or more of land.*

B. Those fill and grading activities proposed to be undertaken in conjunction with a land use application, including but not limited to subdivisions, planned unit developments, partitions and site plan reviews, are subject to the standards of this chapter. However, a separate grading permit is not required. Approval of the construction plans submitted through the land use application process shall constitute the grading permit required under this chapter.

Finding: Complies as proposed. Fill and grading activities are proposed to be undertaken in conjunction with a land use application. A separate grading permit is not required. Approval of the

construction plans submitted through the land use application process shall constitute the grading permit required under this chapter.

15.48.090 Submittal requirements.

An engineered grading plan or an abbreviated grading plan shall be prepared in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards whenever a city approved grading permit is required. In addition, a geotechnical engineering report and/or residential lot grading plan may be required pursuant to the criteria listed below.

A. Abbreviated Grading Plan. The city shall allow the applicant to submit an abbreviated grading plan in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards if the following criteria are met:

1. No portion of the proposed site is within the flood management area overlay district pursuant to [Chapter 17.42](#), the unstable soils and hillside constraints overlay district pursuant to [Chapter 17.44](#), or a water quality resource area pursuant to [Chapter 17.49](#); and

2. The proposed filling or grading activity does not involve more than fifty cubic yards of earth.

B. Engineered Grading Plan. The city shall require an engineered grading plan in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer if the proposed activities do not qualify for abbreviated grading plan.

C. Geotechnical Engineering Report. The city shall require a geotechnical engineering report in compliance with the minimum report requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer who specializes in geotechnical work when any of the following site conditions may exist in the development area:

1. When any publicly maintained facility (structure, street, pond, utility, park, etc.) will be supported by any engineered fill;

2. When an embankment for a stormwater pond is created by the placement of fill;

3. When, by excavation, the soils remaining in place are greater than three feet high and less than twenty feet wide.

D. Residential Lot Grading Plan. The city shall require a residential lot grading plan in compliance with the minimum report requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer for all land divisions creating new residential building lots or where a public improvement project is required to provide access to an existing residential lot.

Finding: Complies as proposed. Fill and grading activities are proposed to be undertaken in conjunction with a land use application. A separate grading permit is not required. Approval of the construction plans submitted through the land use application process shall constitute the grading permit required under this chapter.

CHAPTER 16.12 MINIMUM PUBLIC IMPROVEMENTS AND DESIGN STANDARDS FOR DEVELOPMENT

16.12.010 - Purpose and general provisions.

All development shall be in conformance with the policies and design standards established by this chapter and with applicable standards in the City's public facility master plans and City design standards and specifications. In reviewing applications for development, the City Engineer shall take into consideration any approved development and the remaining development potential of adjacent properties. All street, water, sanitary sewer, storm drainage and utility plans associated with any development shall be reviewed and approved by the City Engineer prior to construction. All streets, driveways or storm drainage connections to another jurisdiction's facility or right-of-way shall be reviewed by the appropriate jurisdiction as a condition of the preliminary plat and when required by law or intergovernmental agreement shall be approved by the appropriate jurisdiction.

Finding: Complies with Condition. Compliance with the “proposed and general provisions” of chapter 16.12 can be met by adhering to the following: The development shall comply with all current Oregon City Public Works design standards, specifications, codes, and policies. The workmanship and materials

for any work performed under permits issued by Oregon City Public Works shall be in accordance with the edition of the "Oregon Standard Specifications for Construction" as prepared by the Oregon Department of Transportation (ODOT) and the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the city. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.011 - Applicability.

A. Compliance with this chapter is required for all development including land divisions, site plan and design review, master plan, detailed development plan and conditional use applications and all public improvements. Minor Site Plan and Design Review applications shall not be subject to this chapter unless improvements are proposed within the right-of-way.

B. Compliance with this chapter is also required for new construction or additions which exceed fifty percent of the existing square footage of all single and two-family dwellings living space. Garages, carports, sheds, and porches may not be included in the calculation if these spaces are not living spaces. Accessory dwelling units are not subject to compliance with this chapter. All applicable single and two-family dwellings shall provide any necessary dedications, easements or agreements as identified in the transportation system plan and this chapter, subject to constitutional limitations. In addition, the street frontage shall be improved to include the following priorities for improvements:

- 1. Improve street pavement, construct curbs, gutters, sidewalks and planter strips; and*
- 2. Plant street trees.*

The cost of compliance with the standards identified in 16.12.011.B.1 and 16.12.011.B.2 is calculated based on the square footage valuation from the State of Oregon Building Codes Division and limited to ten percent of the total construction costs. The value of the alterations and improvements is based on the total construction costs for a complete project rather than costs of various project component parts subject to individual building permits. The entire proposed construction project cost includes engineering and consulting fees and construction costs. It does not include permit fees, recording fees, or any work associated with drafting or recording dedications or easements.

Finding: Applicable. The development is a "site plan and design review" application as referenced in 16.12.011.A; therefore, public improvements and street trees are required where appropriate.

16.12.012 - Jurisdiction and management of the public rights-of-way.

The City has jurisdiction and exercises regulatory management over all public rights-of-way as defined and outlined within 12.04 of the Oregon City Municipal Code.

Finding: Applicable. The city has exercised its regulatory management authority by providing findings within this staff report with conditions to be met by the applicant prior to working within all public rights-of-way.

16.12.013 - Modifications.

The applicant may request and the review body may consider modification of the standards in this chapter resulting from constitutional limitations restricting the City's ability to require the dedication of property or for any other reason, based upon the criteria listed below and other criteria identified in the standard to be modified. All modifications shall be processed through a Type II Land Use application and may require additional evidence from a transportation engineer or others to verify compliance. Compliance with the following criteria is required:

A. The modification meets the intent of the standard;

Finding: Complies as proposed. It has been determined by the City that the proposed modification meets the intent of the standard because it provides improvements that are complementary with a surrounding street design. Also, the dimensional requirements specified in Table 16.12.016 are not complementary with the existing street design and the surrounding properties have already been developed. Therefore, it is not possible for future development to meet requirements specified in Table

16.12.016; right-of-way for those properties from surrounding properties would need to be increased by the City via eminent domain.

B. The modification provides safe and efficient movement of pedestrians, motor vehicles, bicyclists and freight;

Finding: Compiles as proposed. The City's Transportation System Plan only indicates improvements for efficient movement of pedestrians along the frontage of South End Road (in the form of sidewalk) which has been proposed by the applicant (see findings from 16.12.013 .D). There are existing accommodations for efficient movement of motor vehicles and bicyclists on South End Road. The City's Transportation System Plan did not indicate improvements for efficient movement of freight for South End Road.

C. The modification is consistent with an adopted transportation or utility plan; and

Finding: Compiles as proposed. The modification is consistent with an adopted transportation which identifies pedestrian improvements along South End Road. The applicant has proposed the addition of sidewalk to meet the adopted transportation plan. The modification does not request a deviation from an adopted utility plan.

D. The modification is complementary with a surrounding street design; or, in the alternative;

Finding: Complies as conditioned. The development property is adjacent to two properties, one to the north and one to the south. The property to the north does not have an improve frontage but appears to be part of previous subdivision development. The applicant has proposed the following frontage improvements along South End Road that does not meet standards from Table 16.12.016 but matches the frontage improvements of the property to the south (the modification is consistent with an adopted transportation):

- A 0.5' curb, a 5-foot-wide planter strip, a 5-foot-wide sidewalk and 0.5' of buffer behind the sidewalk.

The following condition has been provided to ensure the applicant constructs the aforementioned frontage improvements. The development shall construct and provide one foot of right-of-way dedication along the property frontage of South End Road for the following frontage improvements:

- Beginning at the existing edge of road pavement, a 0.5' curb, a 5-foot-wide planter strip, a 5-foot-wide sidewalk and 0.5' of buffer behind the sidewalk.

Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.

E. If a modification is requested for constitutional reasons, the applicant shall demonstrate the constitutional provision or provisions to be avoided by the modification and propose a modification that complies with the state or federal constitution. The City shall be under no obligation to grant a modification in excess of that which is necessary to meet its constitutional obligations.

Finding: Not Applicable. The modification has not been requested for constitutional reasons.

16.12.014 - Administrative provisions.

An applicant shall submit the following items to the City and complete the following tasks prior to proceeding with construction of proposed development plans. These items include the following:

A. Pre-Design Meeting;

B. Final Engineering Plans, Stamped and Signed by an Oregon Licensed Professional Engineer;

C. Stormwater Report, Stamped and Signed by an Oregon Licensed Professional Engineer;

D. Geotechnical Report, Stamped and Signed by an Oregon Licensed Professional Engineer (if applicable);

E. Engineer's Preliminary and Final Cost Estimates (also may be known as engineer's opinion of probable construction cost);

- F. Plan Check and Inspection Fees (as set by City resolution);*
- G. Certificate of Liability Insurance for city funded public projects contracted by the City (not less than one million dollars single incident and two million dollars aggregate);*
- H. Preconstruction Meeting Notes;*
- I. Financial Guarantee(s) per OCMC 17.50.140;*
- J. Applicable Approvals/Permits from other agencies or entities;*
- K. Developer/Engineer Agreement for public works improvements.*

An applicant shall submit the following additional items to the City and complete the following tasks prior to completing construction of proposed development plans. These items include the following:

- L. Project Engineer's Certificate of Completion;*
- M. Stormwater Operation and Maintenance Easement (if applicable);*
- N. Deed of Dedication (Bargain and Sale Deed);*
- O. Recorded Plat and/or Easements (if applicable);*
- P. Recorded Non-Remonstrance Covenant Agreement;*
- Q. Land Division Compliance Agreement (if applicable);*
- R. Permanent Stabilization and/or Restoration of the impact from the development;*
- S. Fulfillment of all Conditions of Approval;*
- T. Payment of all Outstanding Fees;*
- U. Maintenance Guarantee(s). per OCMC 17.50.141;*
- V. Indemnity Agreement (if applicable);*
- W. Completed Punchlist;*
- X. As-Built Drawings;*

Details on individual items required by this subsection can be obtained by contacting Public Works. Many items, such as the engineer's cost estimate and plan check and inspection fee, maybe be submitted in conjunction with documentation for other infrastructure improvements that are done with the development (such as street, sanitary sewer, and water).

Finding: Complies with Condition. The applicant shall submit or address all items in section 16.12.014 of the Oregon City Municipal Code based on the timing requirements contained therein and as deemed applicable by the City.

The developer and engineer for the project shall execute a “Developer/Engineer Agreement for Public Works Improvements” and commit to the responsibilities outlined in the agreement.

The development shall provide construction plans, stamped and signed by a professional engineer licensed in the State of Oregon, containing street, grading, stormwater, sanitary sewer and water infrastructure improvements that conforms to all current Oregon City Public Works standards, specifications, codes, and policies for review and approval by the City.

The development’s contractor(s) and engineer(s) shall attend a pre-construction meeting with Oregon City staff prior to beginning construction work associated with the development. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.015 - Street design—Generally.

Development shall be required to provide existing or future connections to adjacent sites through the use of vehicular and pedestrian access easements where applicable. Development shall provide any necessary dedications, easements or agreements as identified in the Transportation System Plan, Trails Master Plan, and/or Parks and Recreation Master Plan and this chapter, subject to constitutional limitations. The location, width and grade of street shall be considered in relation to: existing and planned streets, topographical conditions, public convenience and safety for all modes of travel, existing and identified future transit routes and pedestrian/bicycle accessways, overlay districts, and the proposed use of land to be served by the streets. The street system shall assure an adequate traffic circulation system with intersection angles, grades, tangents and curves appropriate for the traffic

to be carried considering the terrain. To the extent possible, proposed streets shall connect to all existing or approved stub streets that abut the development site. The arrangement of streets shall either:

A. Provide for the continuation or appropriate projection of existing principal streets in the surrounding area and on adjacent parcels or conform to a plan for the area approved or adopted by the City to meet a particular situation where topographical or other conditions make continuance or conformance to existing streets impractical;

B. Where necessary to give access to or permit a satisfactory future development of adjoining land, streets shall be extended to the boundary of the development and the resulting dead-end street (stub) may be approved with a temporary turnaround as approved by the City Engineer. Notification that the street is planned for future extension shall be posted on the stub street until the street is extended and shall inform the public that the dead-end street may be extended in the future. Access control in accordance with OCMC 16.12.017 shall be required to preserve the objectives of street extensions.

C. Adequate right-of-way and improvements to streets, pedestrian ways, bike routes and bikeways, and transit facilities shall be provided and be consistent with the City's Transportation System Plan. Consideration shall be given to the need for street widening and other improvements in the area of the proposed development impacted by traffic generated by the proposed development. This shall include, but not be limited to, improvements to the right-of-way, such as installation of lighting, signalization, turn lanes, median and parking strips, traffic islands, paving, curbs and gutters, sidewalks, bikeways, street drainage facilities and other facilities needed because of anticipated vehicular and pedestrian traffic generation.

Finding: Complies as proposed. The applicant's proposal of sidewalk improvements provide for the continuation and appropriate projection of existing principal streets in the surrounding area and on adjacent parcels. The existing street design permits future development of adjoining land and no street extension is required. The plans submitted with the land use application show proposed sidewalk and curb improvements. The development street frontage has adequate lighting and does not require additional lighting. The city has not identified that improvements to signalization, street drainage facilities and other facilities to be needed. **See findings and condition from section 16.12.016 regarding other street improvements.**

16.12.016 - Street design.

All development regulated by this chapter shall provide street improvements in compliance with the standards in Table 16.12.016 depending on the street classification set forth in the Transportation System Plan and the Comprehensive Plan designation of the adjacent property, unless an alternative plan has been adopted. The table implements the adopted Transportation System Plan and illustrates the maximum design standards. These standards may be reduced with an alternative street design which may be approved based on the modification criteria in OCMC 16.12.013. The steps for reducing the street design are found in the Transportation System Plan.

Table 16.12.016 Street Design

Table 16.12.016 Street Design. To read the table select the road classification as identified in the Transportation System Plan and the Comprehensive Plan designation of the adjacent properties to find the maximum design standards for the road cross section. If the Comprehensive Plan designation for lands on either side of the street differs, the wider right-of-way standard shall apply.

Road Classification	Comprehensive Plan Designation	Right-of-Way Width	Pavement Width	Public Access	Sidewalk	Landscape Strip	Bike Lane	Street Parking	Travel Lanes	Median
Minor Arterial	Mixed Use, Commercial or Public/Quasi Public	116 ft.	94 ft.	0.5 ft.	10.5 ft. sidewalk including 5 ft. x 5 ft. tree wells		6 ft.	8 ft.	(5) 12 ft. Lanes	6 ft.

	Industrial	118 ft.	86 ft.	0.5 ft.	5 ft.	10.5 ft.	6 ft.	7 ft.	(5) 12 ft. Lanes	N/A
	Residential	100 ft.	68 ft.	0.5 ft.	5 ft.	10.5 ft.	6 ft.	7 ft.	(3) 12 ft. Lanes	6 ft.

1. Pavement width includes, bike lane, street parking, travel lanes and median.
2. Public access, sidewalks, landscape strips, bike lanes and on-street parking are required on both sides of the street in all designations. The right-of-way width and pavement widths identified above include the total street section.
3. A 0.5 foot curb is included in landscape strip or sidewalk width.
4. Travel lanes may be through lanes or turn lanes.
5. The 0.5 foot public access provides access to adjacent public improvements.
6. Alleys shall have a minimum right-of-way width of twenty feet and a minimum pavement width of sixteen feet. If alleys are provided, garage access shall be provided from the alley.
7. A raised concrete median or landscape median shall be utilized for roads identified to have access restrictions.

Finding: Complies as conditioned. South End Road is classified as a “Minor Arterial” road within a residentially zoned area. South End Road has right-of-way (ROW) that is, approximately, 60-foot-wide along the property’s frontage, with approximately 30 feet on the subject property side of the centerline. Existing improvements on the subject property side of the centerline of the road consist of approximately 20’ of pavement and curb without sidewalk. The applicant has proposed a street design which does not meet standards from Table 16.12.016 (68 feet of pavement). Therefore, improvements proposed for the project are subject to the modification process identified in section 16.12.013. **See findings from section 16.12.013.**

A. Sidewalks. The applicant shall provide for sidewalks on both sides of all public streets, on any private street if so required by the decision-maker, and in any special pedestrian way within the development. Both sidewalks and curbs are to be constructed to City standards and at widths set forth above, and according to plans and specifications provided by the City Engineer. Exceptions to this requirement may be allowed in order to accommodate topography, trees or some similar site constraint. In the case of major or minor arterials, the decision-maker may approve a development without sidewalks where sidewalks are found to be dangerous or otherwise impractical to construct or are not reasonably related to the applicant's development. The decision-maker may require the applicant to provide sidewalks concurrent with the issuance of the initial building permit within the area that is the subject of the development application. Applicants for partitions may be allowed to meet this requirement by providing the City with a financial guarantee per OCMC 16.12.110.

Finding: Complies as proposed. The plans submitted with the land use application show proposed sidewalk improvements along the entirety of the development property frontage.

B. Pedestrian and Bicycle Accessways Routes. If deemed appropriate to extend pedestrian and bicycle routes, existing or planned, the decision-maker may require the installation of separate pedestrian and bicycle facilities.

Finding: Complies as proposed. The applicant shows the installation of separate pedestrian and bicycle facilities.

C. Street Name Signs and Traffic Control Devices. The applicant shall install street signs and traffic control devices as directed by the City Engineer. Street name signs and traffic control devices shall be in conformance with all applicable city regulations and standards.

Finding: Not applicable. The City Engineer has not given direction to install new street signs or traffic control devices associated with this development.

D. Street Lights. The applicant shall install street lights which shall be served from an underground source of supply. Street lights shall be in conformance with all City regulations.

Finding: Not applicable. There are existing streetlights along the frontage of the development.

E. Any new street proposed with a pavement width of less than thirty-two feet shall be processed through OCMC 16.12.013 and meet minimum life safety requirements, which may include fire suppression devices as determined by the Fire Marshall to assure an adequate level of fire and life safety. The modified street shall have no less than a twenty-foot wide unobstructed travel lane.

Finding: Not applicable. No new streets are required or proposed with this development.

F. All development shall include vegetated planter strips that are five feet in width or larger and located between the sidewalk and curb unless otherwise approved pursuant to this chapter. All development shall utilize the vegetated planter strip for the placement of street trees or place street trees in other acceptable locations, as prescribed by OCMC 12.08. Development proposed along a collector, minor arterial, or major arterial roads may place street trees within tree wells within a wider sidewalk in lieu of a planter strip. In addition to street trees per OCMC 12.08, vegetated planter strips shall include ground cover and/or shrubs spaced four feet apart and appropriate for the location. No invasive or nuisance plant species shall be permitted.

Finding: Complies as proposed. The applicant has proposed a five-foot-wide planter strip for the placement of street trees. **See section 12.08 regarding placement of street trees.**

G. Vehicle and pedestrian access easements may serve in lieu of streets when approved by the decision maker and only where dedication of a street is deemed impracticable.

Finding: Not applicable. The decision maker has not approved access easements in lieu of streets nor has dedication of a street been deemed impracticable.

H. Vehicular and pedestrian easements shall allow for public access and shall comply with all applicable pedestrian access requirements.

Finding: Not applicable. No vehicular or pedestrian easements are proposed.

16.12.017 - Street design—Access control.

A. A street which is dedicated to end at the boundary of the development or in the case of half-streets dedicated along a boundary shall have an access control granted to the City as a City controlled plat restriction for the purposes of controlling ingress and egress to the property adjacent to the end of the dedicated street. The access control restriction shall exist until such time as a public street is created, by dedication and accepted, extending the street to the adjacent property.

Finding: Not applicable. No new streets with dead ends are proposed for this development.

B. The City may grant a permit for the adjoining owner to access through the access control.

Finding: Not applicable. No new streets with dead ends are proposed for this development.

C. The plat shall contain the following access control language or similar on the face of the map at the end of each street for which access control is required: "Access Control (See plat restrictions)."

Finding: Not applicable. No new streets with dead ends are proposed for this development.

D. Said plats shall also contain the following plat restriction note(s): "Access to (name of street or tract) from adjoining tracts (name of deed document number[s]) shall be controlled by the City of Oregon City by the recording of this plat, as shown. These access controls shall be automatically terminated upon the acceptance of a public road dedication or the recording of a plat extending the street to adjacent property that would access through those Access Controls."

Finding: Not applicable. No new streets with dead ends are proposed for this development.

16.12.018 - Street design—Alignment.

The centerline of streets shall be:

- A. Aligned with existing streets by continuation of the centerlines; or*
- B. Offset from the centerline by no more than five feet, provided appropriate mitigation, in the judgment of the City Engineer, is provided to ensure that the offset intersection will not pose a safety hazard.*
- C. Driveways that are at least twenty-four feet wide shall align with existing or planned streets on adjacent sites.*

Finding: Not applicable. No new street or driveway that is opposite of an existing street has been proposed.

16.12.019 - Traffic sight obstructions.

All new streets shall comply with the Traffic Sight Obstructions in Chapter 10.32.

Finding: Not applicable. No new streets are proposed for this development.

16.12.020 - Street design—Intersection angles.

Except where topography requires a lesser angle, streets shall be laid out to intersect at angles as near as possible to right angles. In no case shall the acute angles be less than eighty degrees unless there is a special intersection design. An arterial or collector street intersecting with another street shall have at least one hundred feet of tangent adjacent to the intersection unless topography requires a lesser distance. Other streets, except alleys, shall have at least fifty feet of tangent adjacent to the intersection unless topography requires a lesser distance. All street intersections shall be provided with a minimum curb return radius of twenty-five feet for local streets. Larger radii shall be required for higher street classifications as determined by the City Engineer. Additional right-of-way shall be required to accommodate curb returns and sidewalks at intersections. Ordinarily, intersections should not have more than two streets at any one point.

Finding: Not applicable. No new intersections are being created.

16.12.021 - Street design—Grades and curves.

Grades and center line radii shall conform to standards approved by the City Engineer.

Finding: Not applicable. No new streets are proposed for this development.

16.12.022 - Street design—Development abutting arterial or collector street.

Where development abuts or contains an existing or proposed arterial or collector street, the decision maker may require: access control; screen planting or wall contained in an easement or otherwise protected by a restrictive covenant in a form acceptable to the decision maker along the rear or side property line; or such other treatment it deems necessary to adequately protect residential properties or afford separation of through and local traffic. Reverse frontage lots with suitable depth may also be considered an option for residential property that has arterial frontage. Where access for development abuts and connects for vehicular access to another jurisdiction's facility then authorization by that jurisdiction may be required.

Finding: Not applicable. Access to the existing street is not proposed. The decision maker has not required: access control; screen planting or wall contained in an easement or otherwise protected by a restrictive covenant in a form acceptable to the decision maker along the rear or side property line.

16.12.023 - Street design—Pedestrian and bicycle safety.

Where deemed necessary to ensure public safety, reduce traffic hazards and promote the welfare of pedestrians, bicyclists and residents of the subject area, the decision maker may require that local streets be so designed as to discourage their use by nonlocal automobile traffic.

The City Engineer may require that crosswalks include a large vegetated or sidewalk area which extends into the street pavement as far as practicable to provide safer pedestrian crossing opportunities. These curb extensions can increase the visibility of pedestrians and provide a shorter crosswalk distance as well as encourage motorists to drive slower. The City Engineer may approve an alternative design that achieves the same standard for constrained sites.

Finding: Not applicable. The street fronting the development is not a local street; it is an arterial. The development does not front an existing or proposed crosswalk.

16.12.024 - Street design—Half street.

Half streets, while generally not acceptable, may be approved where essential to the development, when in conformance with all other applicable requirements, and where it will not create a safety hazard. When approving half streets, the decision maker shall first determine that it will be practical to require the dedication of the other half of the street when the adjoining property is divided or developed. Where the decision maker approves a half street, the applicant shall construct a half street with at least twenty feet of pavement width and provide signage prohibiting street parking so as to make the half street safe until such time as the other half is constructed. Whenever a half street is adjacent to property capable of being divided or developed, the other half of the street shall be provided and improved when that adjacent property divides or develops. Access control may be required to preserve the objectives of half streets.

When the remainder of an existing half-street improvement is completed it shall include the following items: dedication of required right-of-way, construction of the remaining portion of the street including pavement, curb and gutter, landscape strip, sidewalk, street trees, lighting and other improvements as required for that particular street. It shall also include at a minimum the pavement replacement to the centerline of the street. Any damage to the existing street shall be repaired in accordance with the City's "Pavement Cut Standards" or as approved by the City Engineer.

Finding: Not applicable. Half streets have not been proposed for this development.

16.12.025 - Street design—Cul-de-sacs and dead-end streets.

The City discourages the use of cul-de-sacs and permanent dead-end streets except where construction of a through street is found by the decision maker to be impracticable due to topography or some significant physical constraint such as geologic hazards, wetland, natural or historic resource areas, pre-existing dedicated open space, pre-existing development patterns, arterial access restrictions or similar situation as determined by the decision maker. This section is not intended to preclude the use of curvilinear eyebrow widening of a street where needed.

A. When permitted, access from new cul-de-sacs and permanent dead-end streets shall be limited to a maximum of twenty-five dwelling units.

Finding: Not applicable. No cul-de-sacs or dead-end streets are proposed or required for this development.

B. Cul-de-sacs and permanent dead-end streets shall include pedestrian/bicycle accessways to meet minimum block width standards as prescribed in OCMC 16.12.030.

Finding: Not applicable. No cul-de-sacs or dead-end streets are proposed or required for this development.

C. Cul-de-sacs shall have sufficient radius to provide adequate turn-around for emergency vehicles in accordance with fire district and city adopted street standards.

Finding: Not applicable. No cul-de-sacs or dead-end streets are proposed or required for this development.

D. Permanent dead-end streets shall provide public street right-of-way/easements sufficient to provide a sufficient amount of turn-around space complete with appropriate no-parking signs or markings to accommodate waste disposal, sweepers, emergency and other long vehicles in the form of a hammerhead or other design to be approved by the decision maker.

Finding: Not applicable. No cul-de-sacs or dead-end streets are proposed or required for this development.

E. In the case of dead-end stub streets that will connect to streets on adjacent sites in the future, notification that the street is planned for future extension shall be posted on the stub street until the street is extended and shall inform the public that the dead-end street may be extended in the future. A dead-end street shall include signage or barricade meeting Manual on Uniform Traffic Control Devices (MUTCD).

Finding: Not applicable. No dead-end streets are proposed or required for this development.

16.12.026 - Street design—Alleys.

Alleys with public access easements on private property shall be provided in the Park Place and South End concept plan areas for the following districts R-5, R-3.5, R-2, MUC-1, MUC-2 and NC zones unless other permanent provisions for private access to off-street parking and loading facilities are approved by the decision maker. All alleys intended to provide access for emergency vehicles shall be a minimum width of twenty feet. The corners of alley intersections shall have a radius of not less than ten feet and shall conform to standards approved by the City Engineer. Access easements and maintenance agreements shall be recorded on affected properties.

Finding: Not applicable. Alleys are not proposed or required for this development.

16.12.027 - Street design—Off-site street improvements.

During consideration of the preliminary plan for a development, the decision maker shall determine whether existing streets impacted by, adjacent to, or abutting the development meet the applicable design or dimensional requirements. Where such streets fail to meet these requirements, the decision-maker shall require the applicant to make proportional improvements sufficient to achieve conformance with minimum applicable design standards required to serve the proposed development.

Finding: Not applicable. Off-site street improvements are not proposed or required for this development.

16.12.028 - Street design—Transit.

Streets shall be designed and laid out in a manner that promotes pedestrian and bicycle circulation. The applicant shall coordinate with transit agencies where the application impacts transit streets as identified in OCMC 17.04.1310. Pedestrian/bicycle access ways shall be provided as necessary to minimize the travel distance to transit streets and stops and neighborhood activity centers. The decision maker may require provisions, including easements, for transit facilities along transit streets where a need for bus stops, bus pullouts or other transit facilities within or adjacent to the development has been identified.

Finding: Complies as proposed. No new street are required or proposed and the existing streets adjacent to the development are laid out in a manner that promotes pedestrian and bicycle circulation.

16.12.029 - Excavations—Restoration of pavement.

Whenever any excavation shall have been made in any pavement or other street improvement on any street or alley in the City for any purpose whatsoever under the permit granted by the engineer, it shall be the duty of the person making the excavation to restore the pavement in accordance with the City of Oregon City Public Works Pavement Cut Standards in effect at the time the permit is granted. The City Commission may adopt and modify the City of Oregon City Public Works Pavement Cut Standards by resolution as necessary to implement the requirements of this chapter.

Finding: Complies as conditioned. The development requires excavation in pavement within City right-of-way for the installation of a new water service connection, storm and sewer pipes within a city road. Pavement cuts or other improvement made in a City street or alley shall be done in accordance with the City of Oregon City Public Works Pavement Cut Standards and restored in accordance with the City of Oregon City Public Works Pavement Cut Standards. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.030 - Blocks—Width.

The width of blocks shall ordinarily be sufficient to allow for two tiers of lots with depths consistent with the type of land use proposed. The length, width and shape of blocks shall take into account the need for adequate building site size, convenient motor vehicle, pedestrian, bicycle and transit access, control of traffic circulation, and limitations imposed by topography and other natural features.

All new streets shall be designed as local streets unless otherwise designated as arterials and collectors in the current adopted Transportation System Plan. The maximum block spacing between streets is 530 feet and the minimum block spacing between streets is 150 feet as measured between the right-of-way centerlines except in zones GI, CI, MUE, I, and WFDD where determining the appropriate street spacing will be determined by the City Engineer. If the maximum block size is exceeded, pedestrian accessways shall be provided every 330 feet. The spacing standards within this section do not apply to alleys.

Finding: Not applicable. The development property is zone as MUE and is exempt from block length requirement.

16.12.031 - Street design—Street names.

Except for extensions of existing streets, no street name shall be used which will duplicate or be confused with the name of an existing street. Street names shall conform to the established standards in the City and shall be subject to the approval of the City.

Finding: Not applicable. No new street names have been proposed.

16.12.032 – Public off-street pedestrian and bicycle accessways.

Pedestrian/bicycle accessways are intended to provide direct, safe and convenient connections between residential areas, retail and office areas, institutional facilities, industrial parks, transit streets, neighborhood activity centers, rights-of-way, and pedestrian/bicycle accessways which minimize out-of-direction travel, and transit-orientated developments where public street connections for automobiles, bicycles and pedestrians are unavailable.

Pedestrian/bicycle accessways are appropriate in areas where public street options are unavailable, impractical or inappropriate. Pedestrian and bicycle accessways are required through private property or as right-of-way connecting development to the right-of-way at intervals not exceeding 330 feet of frontage; or where the lack of street continuity creates inconvenient or out of direction travel patterns for local pedestrian or bicycle trips.

Finding: Complies as proposed. Public street connections for automobiles, bicycles and pedestrians are available. The development proposes to add sidewalk along the frontage of the development where there is currently none.

A. Entry points shall align with pedestrian crossing points along adjacent streets and with adjacent street intersections.

Finding: Complies as proposed. No off-street pedestrian and bicycle accessways are proposed or required.

B. Accessways shall be free of horizontal obstructions and have a nine foot six inch high vertical clearance to accommodate bicyclists. To safely accommodate both pedestrians and bicycles, accessway right-of-way widths shall be as follows:

1. Accessways shall have a fifteen- foot wide right-of-way with a seven-foot wide paved surface with a minimum four-foot planter strip on either side.

2. If an accessway also provides secondary fire access, the right-of-way width shall be at least twenty- four feet wide with a - sixteen foot paved surface between four-foot planter strips on either side.

Finding: Complies as proposed. No off-street pedestrian and bicycle accessways are proposed or required.

C. Accessways shall be direct with at least one end point of the accessway always visible from any point along the accessway. On-street parking shall be prohibited within fifteen feet of the intersection of the accessway with public streets to preserve safe sight distance and promote safety.

Finding: Complies as proposed. No off-street pedestrian and bicycle accessways are proposed or required.

D. To enhance pedestrian and bicycle safety, accessways shall be lighted with pedestrian-scale lighting. Accessway lighting shall be to a minimum level of one-half-foot-candles, a one and one-half foot-candle average, and a maximum to minimum ratio of seven-to-one and shall be oriented not to shine upon adjacent properties. Street lighting shall be provided at both entrances.

Finding: Complies as proposed. No off-street pedestrian and bicycle accessways are proposed or required.

E. Accessways shall comply with Americans with Disabilities Act (ADA).

Finding: Complies as proposed. No off-street pedestrian and bicycle accessways are proposed or required.

F. The planter strips on either side of the accessway shall be landscaped along adjacent property by installation of the following:

- 1. Either an evergreen hedge screen of thirty to forty-two inches high or shrubs spaced no more than four feet apart on average; and*
- 2. Ground cover covering one hundred percent of the exposed ground. No bark mulch shall be allowed except under the canopy of shrubs and within two feet of the base of trees; and*
- 3. A two-inch minimum caliper tree for every thirty-five feet along the accessway. Trees may be planted on either side of the accessway, provided they are spaced no more than thirty-five feet apart; and*
- 4. In satisfying the requirements of this section, evergreen plant materials that grow over forty-two inches in height shall be avoided. All plant materials shall be selected from the Oregon City Native Plant List.*

Finding: Complies as proposed. No off-street pedestrian and bicycle accessways are proposed or required.

G. Accessways shall be designed to prohibit unauthorized motorized traffic. Curbs and removable, lockable bollards are suggested mechanisms to achieve this.

Finding: Complies as proposed. No off-street pedestrian and bicycle accessways are proposed or required.

H. Accessway surfaces shall be paved with all-weather materials as approved by the City. Pervious materials are encouraged. Accessway surfaces shall be designed to drain stormwater runoff to the side or sides of the accessway. Minimum cross slope shall be two percent.

Finding: Complies as proposed. No off-street pedestrian and bicycle accessways are proposed or required.

I. In parks, greenways or other natural resource areas, accessways may be approved with a five-foot wide gravel path with wooden, brick or concrete edgings.

Finding: Complies as proposed. No off-street pedestrian and bicycle accessways are proposed or required.

J. The decision maker may approve an alternative accessway design due to existing site constraints through the modification process set forth in OCMC 16.12.013.

Finding: Complies as proposed. No off-street pedestrian and bicycle accessways are proposed or required.

K. Ownership, liability and maintenance of accessways. To ensure that all pedestrian/bicycle accessways will be adequately maintained over time, the City Engineer shall require one of the following:

1. Dedicate the accessways to the public as public right-of-way prior to the final approval of the development; or
2. The developer incorporates the accessway into a recorded easement or tract that specifically requires the property owner and future property owners to provide for the ownership, liability and maintenance of the accessway.

Finding: Complies as proposed. No off-street pedestrian and bicycle accessways are proposed or required.

16.12.033 - Mobility standards.

Development shall demonstrate compliance with intersection mobility standards. When evaluating the performance of the transportation system, the City of Oregon City requires all intersections, except for the facilities identified in subsection E below, to be maintained at or below the following mobility standards during the two-hour peak operating conditions. The first hour has the highest weekday traffic volumes and the second hour is the next highest hour before or after the first hour. Except as provided otherwise below, this may require the installation of mobility improvements as set forth in the Transportation System Plan (TSP) or as otherwise identified by the City Engineer.

A. For intersections within the regional center, the following mobility standards apply:

1. During the first hour, a maximum v/c ratio of 1.10 shall be maintained. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.

2. During the second hour, a maximum v/c ratio of 0.99 shall be maintained at signalized intersections. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.

3. Intersections located on the Regional Center boundary shall be considered within the Regional Center.

B. For intersections outside of the Regional Center but designated on the Arterial and Throughway Network, as defined in the Regional Transportation Plan, the following mobility standards apply:

1. During the first hour, a maximum v/c ratio of 0.99 shall be maintained. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.

2. During the second hour, a maximum v/c ratio of 0.99 shall be maintained at signalized intersections. For signalized intersections, this standard applies to the intersection as a whole. For unsignalized intersections, this standard applies to movements on the major street. There is no performance standard for the minor street approaches.

C. For intersections outside the boundaries of the Regional Center and not designated on the Arterial and Throughway Network, as defined in the Regional Transportation Plan, the following mobility standards apply:

1. For signalized intersections:

a. During the first hour, LOS "D" or better will be required for the intersection as a whole and no approach operating at worse than LOS "E" and a v/c ratio not higher than 1.0 for the sum of the critical movements.

b. During the second hour, LOS "D" or better will be required for the intersection as a whole and no approach operating at worse than LOS "E" and a v/c ratio not higher than 1.0 for the sum of the critical movements.

2. For unsignalized intersections outside of the boundaries of the Regional Center:

a. For unsignalized intersections, during the peak hour, all movements serving more than twenty vehicles shall be maintained at LOS "E" or better. LOS "F" will be tolerated at movements serving no more than twenty vehicles during the peak hour.

D. For the intersection of OR 213 & Beaver Creek Road, the following mobility standards apply:

1. During the first, second & third hours, a maximum v/c ratio of 1.00 shall be maintained. Calculation of the maximum v/c ratio will be based on an average annual weekday peak hour.

E. Until the City adopts new performance measures that identify alternative mobility targets, the City shall exempt proposed development that is permitted, either conditionally, outright, or through detailed development master plan approval, from compliance with the above-referenced mobility standards for the following state-owned facilities:

I-205/OR 99E Interchange

State intersections located within or on the Regional Center Boundaries

1. In the case of conceptual development approval for a master plan that impacts the above references intersections:

a. The form of mitigation will be determined at the time of the detailed development plan review for subsequent phases utilizing the Code in place at the time the detailed development plan is submitted; and

b. Only those trips approved by a detailed development plan review are vested.

2. Development which does not comply with the mobility standards for the intersections identified in OCMC 16.12.033 shall provide for the improvements identified in the Transportation System Plan (TSP) in an effort to improve intersection mobility as necessary to offset the impact caused by development. Where required by other provisions of the Code, the applicant shall provide a traffic impact study that includes an assessment of the development's impact on the intersections identified in this exemption and shall construct the intersection improvements listed in the TSP or required by the Code.

Finding: Complies as proposed.

The applicant's proposal has very little impact to overall traffic in the area. The application was reviewed by John Replinger, PE, City transportation consultant, who based his analysis on the Transportation Analysis Letter (TAL) prepared by Frank Charbonneau, PE, PTOE of Charbonneau Engineering LLC, (Exhibit 2).

The TAL presented information on trip generation for a 16-bed assisted living facility. The trip generation rates were taken from the Institute of Transportation Engineers' Trip Generation. The engineer used the trip generation rates for land use category 254 – assisted living facility. The engineer predicted that the expansion of the facility would produce a net increase of 2 AM peak hour trips; 3 PM peak hour trips; and 33 additional weekday trips. The expansion from 38 beds to 54 beds is insignificant.

No change in access location is proposed in connection with the expansion. The three existing access locations are acceptable.

Mr. Replinger concluded, "I find that the TAL meets city requirements and that the 16-bed expansion of the facility will have insignificant transportation impacts. There is no need for any mitigation measures in connection with the expansion."

Accident data for the intersections on South End Road at Amanda Court and Netzel Street at Amanda Court was obtained from the Oregon Department of Transportation. The data documented that no crashes were reported during the five-year period reviewed. Therefore, no safety mitigation is necessary on South End Road near the project site vicinity. Based on the results of the traffic analysis and the limited trip generation it is recommended that the City of Oregon City support the proposed development without requiring any changes to the area's transportation system.

The City concurs with the findings presented in the transportation analysis provided by the applicant.

16.12.035 - Driveways.

A. All new development and redevelopment shall meet the minimum driveway spacing standards identified in Table 16.12.035.A.

Table 16.12.035.A Minimum Driveway Spacing Standards		
Street Functional Classification	Minimum Driveway Spacing Standards	Distance

Major Arterial Streets	Minimum distance from a street corner to a driveway for all uses other than detached single and two-family dwellings	175 ft.
Minor Arterial Streets	Minimum distance from a street corner to a driveway for all uses other than detached single and two-family dwellings	175 ft.
Collector Streets	Minimum distance from a street corner to a driveway for all uses other than detached single and two-family dwellings	100 ft.
Local Streets	Minimum distance from a street corner to a driveway for all uses other than detached single and two-family dwellings	25 ft.

The distance from a street corner to a driveway is measured along the right-of-way from the edge of the intersection (on the same side of the road) right-of-way to the nearest portion of the driveway and the distance between driveways is measured at the nearest portions of the driveway at the right-of-way.

Finding: Not applicable. The development proposes no new driveway and the existing driveway is proposed to be removed.

B. Nonresidential or multi-family residential driveways that generate high traffic volumes shall be treated as intersections and shall adhere to requirements of OCMC 16.12.020.

Finding: Not applicable. The development proposes no new driveway and the existing driveway is proposed to be removed.

C. One driveway may be allowed per frontage, unless otherwise restricted. In no case shall more than two driveways be allowed for any single-family attached or detached residential property, duplex, 3-4 plex, or property developed with an ADU or internal conversion with multiple frontages, unless otherwise approved by the City Engineer.

Finding: Not applicable. The development proposes no new driveway and the existing driveway is proposed to be removed.

D. When a property fronts multiple roads, access shall be provided from the road with the lowest classification in the Transportation System Plan whenever possible to minimize points of access to arterials and collectors. At the discretion of the City Engineer, properties fronting a collector or arterial road may be allowed a second driveway, for the creation of a circulation pattern that eliminates reverse maneuvers for vehicles exiting a property if applied for and granted through procedures in OCMC 16.12.013. All lots proposed with a driveway and lot orientation on a collector or minor arterial shall combine driveways into one joint access per two or more lots unless the City Engineer determines that:

- 1. No driveway access may be allowed since the driveway(s) would cause a significant traffic safety hazard; or*
- 2. Allowing a single driveway access per lot will not cause a significant traffic safety hazard.*

Finding: Not applicable. The development proposes no new driveway and the existing driveway is proposed to be removed.

E. All driveway approaches shall be limited to the dimensions identified in Table 16.12.035.D.

Table 16.12.035.D Driveway Approach Size Standards		
Property Use	Minimum Driveway Approach Width	Maximum Driveway Approach Width
Single-Family Attached	10 feet	12 feet
Single-Family Detached in R-5 & R-3.5	10 feet	12 feet

Single-Family Detached in R-10, R-8, & R-6	12 feet		24 feet
Duplexes	12 feet		24 feet
3-4 Plexes	12 feet		24 feet
Multi-Family	18 feet		30 feet
Commercial, Industrial, Office, Institutional, Mixed Use, and/or Nonresidential	One-Way 12 feet	Two-Way 20 feet	40 feet

Driveway widths shall match the width of the driveway approach where the driveway meets sidewalk or property line but may be widened onsite (for example between the property line and the entrance to a garage). Groups of more than four parking spaces shall be so located and served by driveways so that their use will not require backing movements or other maneuvering within a street right-of-way other than an alley.

Finding: Not applicable. The development proposes no new driveway and the existing driveway is proposed to be removed.

F. The City Engineer reserves the right to require a reduction in the number and size of driveway approaches as far as practicable for any of the following purposes:

1. To provide adequate space for on-street parking;
2. To facilitate street tree planting requirements;
3. To assure pedestrian and vehicular safety by limiting vehicular access points; and
4. To assure that adequate sight distance requirements are met.

a. Where the decision maker determines any of these situations exist or may occur due to the approval of a proposed development for non-residential uses or attached or multi-family housing, a shared driveway shall be required and limited to twenty-four feet in width adjacent to the sidewalk or property line.

Finding: Not applicable. The City Engineer has not exercised the right to require a reduction in the number and size of driveway approaches.

1. Each new or redeveloped curb cut shall have an approved concrete approach or asphalted street connection where there is no concrete curb and a minimum hard surface for at least ten feet back into the property as measured from the current edge of sidewalk or street pavement to provide for controlling gravel tracking onto the public street. The hard surface may be concrete, asphalt, or other surface approved by the City Engineer.

2. Any driveway approach built within public right-of-way shall be built and permitted per City requirements as approved by the City Engineer.

3. No driveway with a slope of greater than fifteen percent shall be permitted without approval of the City Engineer.

Finding: Not applicable. No new or redeveloped curbs affiliated with street connections are proposed.

H. Exceptions. The City Engineer reserves the right to waive these standards or not allow driveway access, if the driveway(s) would cause a significant traffic safety hazard. Narrower driveway widths may be considered where field conditions preclude use of recommended widths. When larger vehicles and trucks will be the predominant users of a particular driveway, turning templates may be utilized to develop a driveway width that can safely and expeditiously accommodate the prevalent type of ingress and egress traffic.

Finding: Not applicable. The development proposes no new driveway and the existing driveway is proposed to be removed.

16.12.065 - Building site—Grading.

Grading of building sites shall conform to the State of Oregon Structural Specialty Code, Title 18, any approved grading plan and any approved residential lot grading plan in accordance with the requirements of OCMC

13.12, 15.48, 16.12 and the Public Works Stormwater and Grading Design Standards, and the erosion control requirements of OCMC 17.47.

Finding: See findings from section 15.48 of this report.

16.12.085 - Easements.

The following shall govern the location, improvement and layout of easements:

A. Utilities. Utility easements shall be required where necessary as determined by the City Engineer. Insofar as practicable, easements shall be continuous and aligned from block-to-block within the development and with adjoining subdivisions or partitions. Specific utility easements for water, sanitary or storm drainage shall be provided based on approved final engineering plans.

Finding: Complies as conditioned. A utility easement is determined by the City Engineer to be required along the development property frontage for the placement of franchise utilities under the jurisdiction of the city. The development shall provide a 10-foot-wide public utility easement along all property lines fronting existing or proposed right-of-way. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

B. Unusual Facilities. Easements for unusual facilities such as high voltage electric transmission lines, drainage channels and stormwater detention facilities shall be adequately sized for their intended purpose, including any necessary maintenance roads. These easements shall be shown to scale on the preliminary and final plats or maps. If the easement is for drainage channels, stormwater detention facilities or related purposes, the easement shall comply with the requirements of the Public Works Stormwater and Grading Design Standards.

Finding: Not applicable. There are no unusual facilities requiring easements within the development property.

C. Watercourses. Where a development is traversed or bounded by a watercourse, drainageway, channel or stream, a stormwater easement or drainage right-of-way shall be provided which conforms substantially to the line of such watercourse, drainageway, channel or stream and is of a sufficient width to allow construction, maintenance and control for the purpose as required by the responsible agency. For those subdivisions or partitions which are bounded by a stream of established recreational value, setbacks or easements may be required to prevent impacts to the water resource or to accommodate pedestrian or bicycle paths.

Finding: Not applicable. There are no watercourses requiring easements within the development property.

D. Access. When easements are used to provide vehicular access to lots within a development, the construction standards, but not necessarily width standards, for the easement shall meet City specifications. The minimum width of the easement shall be 20 feet. The easements shall be improved and recorded by the applicant and inspected by the City Engineer. Access easements may also provide for utility placement.

Finding: Not applicable. There are no watercourses requiring easements within the development property.

E. Resource Protection. Easements or other protective measures may also be required as the Community Development Director deems necessary to ensure compliance with applicable review criteria protecting any unusual significant natural feature or features of historic significance.

Finding: Not applicable. No resource protection easements are required for this development.

16.12.090 - Minimum improvements—Procedures.

In addition to other requirements, improvements installed by the applicant either as a requirement of these or other regulations, or at the applicant's option, shall conform to the requirements of this title and be designed to City specifications and standards as set out in the City's facility master plan and Public Works Stormwater and Grading Design Standards. The improvements shall be installed in accordance with the following procedure:

A. Improvement work shall not commence until construction plans have been reviewed and approved by the City Engineer and to the extent that improvements are located in County or State right-of-way, they shall be approved by the responsible authority. To the extent necessary for evaluation of the proposal, the plans may be required before approval of the preliminary plat of a subdivision or partition. Expenses incurred thereby shall be borne by the applicant and paid for prior to final plan review.

Finding: Complies as conditioned. The development shall provide construction plans, stamped and signed by a professional engineer licensed in the State of Oregon, containing street, grading, stormwater, sanitary sewer and water infrastructure improvements that conforms to all current Oregon City Public Works standards, specifications, codes, and policies for review and approval by the City. (also written as a condition in 16.12.014) **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

B. Improvements shall be constructed under the inspection and approval of the City Engineer. Expenses incurred thereby shall be borne by the applicant and paid prior to final approval. Where required by the City Engineer or other City decision-maker, the applicant's project engineer also shall inspect construction.

Finding: Complies as Conditioned. Improvements shall be constructed under the inspection and approval of the City. Expenses incurred thereby shall be borne by the applicant and paid prior to final approval. The applicant's project engineer also shall inspect construction. Inspection fees are identified in section 16.12.014; see section 16.12.014 of this report for associated findings. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

C. Erosion control or resource protection facilities or measures are required to be installed in accordance with the requirements of OCMC 17.47, 17.49 and the Public Works Erosion and Sediment Control Standards.

Finding: See findings from section 17.47 & 17.49 of this report.

D. Underground utilities, waterlines, sanitary sewers and storm drains installed in streets shall be constructed prior to the surfacing of the streets. Stubs for service connections for underground utilities, such as, storm, water and sanitary sewer shall be placed beyond the ten-foot wide franchise utility easement within private property.

Finding: Complies as conditioned. Underground utilities, waterlines, sanitary sewers and storm drains proposed to be installed in streets shall be constructed prior to the surfacing of the streets. Stubs for service connections for underground utilities, such as, storm, water and sanitary sewer shall be placed beyond the ten-foot wide franchise utility easement within private property. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

E. As-built construction plans and digital copies of as-built drawings shall be filed with the City Engineer upon completion of the improvements.

Finding: Complies as conditioned: As-built construction plans and digital copies of as-built drawings shall be filed with the City Engineer within 90 days of completing improvements. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

F. The City Engineer may regulate the hours of construction and access routes for construction equipment to minimize impacts on adjoining residences or neighborhoods.

Finding: Complies with Condition. Permitted hours of construction shall be set forth by the City Engineer in the pre-construction meeting. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.095 - Minimum improvements—Public facilities and services.

The following minimum improvements shall be required of all applicants for a development, unless the decision-maker determines that any such improvement is not proportional to the impact imposed on the City's public systems and facilities:

A. Transportation System. Applicants and all subsequent lot owners shall be responsible for improving the City's planned level of service on all public streets, including alleys within the development and those portions of public streets adjacent to but only partially within development. Applicants are responsible for designing and providing adequate vehicular, bicycle and pedestrian access to their developments and for accommodating future access to neighboring undeveloped properties that are suitably zoned for future development. Storm drainage facilities shall be installed and connected to off-site natural or man-made drainageways. Upon completion of the street improvement survey, the applicant shall reestablish and protect monuments of the type required by ORS 92.060 in monument boxes with covers at every public street intersection and all points of curvature and points of tangency of their center line, and at such other points as directed by the City Engineer.

Finding: Complies as proposed. See finding from section 16.12.016 regarding required improvements to the City's Transportation System.

B. Stormwater Drainage System. Applicants shall design and install drainage facilities within a development and shall connect the development's drainage system to the appropriate downstream storm drainage system as a minimum requirement for providing services to the applicant's development. The applicant shall obtain county or state approval when appropriate. Applicants are responsible for extending the appropriate storm drainage system to the development site and for providing for the connection of upgradient properties to that system. The applicant shall design the drainage facilities in accordance with City drainage master plan requirements, OCMC 13.12 and the Public Works Stormwater and Grading Design Standards.

Finding: Complies as conditioned. A 12" storm main exists in South End Road north of the subject property. The applicant proposes to extend a storm main from the existing storm drainage system so that proposed drainage facilities within the development can connect to the appropriate downstream storm drainage system. However, the applicant did not propose the storm main to run through the entirety of the development's frontage. The development shall extend a 12" storm main connecting to the existing downgradient storm sewer within South End Road to, and through, the south edge of the development to provide for the connection of upgradient properties to that system. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

C. Sanitary Sewer System. The applicant shall design and install a sanitary sewer system to serve all lots or parcels within a development in accordance with the City's sanitary sewer design standards, and shall connect those lots or parcels to the City's sanitary sewer system, except where connection is required to the county sanitary sewer system as approved by the county. Applicants are responsible for extending the City's sanitary sewer system to the development site and through the applicant's property to allow for the future connection of neighboring undeveloped properties that are suitably zoned for future development. The applicant shall obtain all required permits and approvals from all affected jurisdictions prior to final approval and prior to commencement of construction. Design shall be approved by the City Engineer before construction begins.

Finding: Complies as proposed. The existing sanitary sewer system is able to serve the development in accordance with the City's sanitary sewer design standards. The existing sewer system allows for the future connection of neighboring undeveloped properties that are suitably zoned for future development.

D. Water System. The applicant shall design and install a water system to serve all lots or parcels within a development in accordance with the City public works water system design standards, and shall connect those lots or parcels to the City's water system. Applicants are responsible for extending the City's water system to the development site and through the applicant's property to allow for the future connection of neighboring undeveloped properties that are suitably zoned for future development.

Finding: Complies as proposed. The existing water system is able to serve the development in accordance with the City's water system design standards. The existing water system allows for the future connection of neighboring undeveloped properties that are suitably zoned for future development.

E. Street Trees. Refer to OCMC 12.08, Street Trees.

Finding: See findings from section 12.08.

F. Bench Marks. At least one bench mark shall be located within the subdivision boundaries using datum plane specified by the City Engineer.

Finding: Complies as conditioned. The engineering plans shall provide a local benchmark, onsite, using the NAVD88 datum. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

G. Other Utilities. The applicant shall make all necessary arrangements with utility companies or other affected parties for the installation of underground lines and facilities. Existing and new electrical lines and other wires, including but not limited to communication, street lighting and cable television, shall be placed underground.

Finding: Complies as conditioned. There are no existing overhead utilities adjacent to the property frontage. All new franchise utilities shall be placed underground. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

H. Oversizing of Facilities. All facilities and improvements shall be designed to City standards as set out in the City's facility master plan, public works design standards, or other City ordinances or regulations. Compliance with facility design standards shall be addressed during final engineering. A development may be required to modify or replace existing offsite systems if necessary to provide adequate public facilities. The City may require oversizing of facilities to meet standards in the City's facility master plan or to allow for orderly and efficient development. Where oversizing is required, the applicant may request reimbursement from the City for oversizing based on the City's reimbursement policy and funds available, or provide for recovery of costs from intervening properties as they develop.

Finding: Not applicable. The City has not required oversizing of facilities to meet standards in the City's facility master plan or to allow for orderly and efficient development.

I. Erosion Control Plan—Mitigation. The applicant shall be responsible for complying with all applicable provisions of OCMC 17.47 with regard to erosion control.

Finding: See findings from section 17.47 of this report

16.12.100 - Same—Road standards and requirements.

A. The creation of a public street and the resultant separate land parcels shall be in conformance with requirements for subdivisions or partitions and the applicable street design standards of this Chapter. However, the decision-maker may approve the creation of a public street to be established by deed without full compliance with the regulations applicable to subdivisions or partitions where any of the following conditions exist:

- 1. The establishment of the public street is initiated by the City Commission and is declared essential for the purpose of general traffic circulation and the partitioning of land is an incidental effect rather than the primary objective of the street;*
- 2. The tract in which the street is to be dedicated is within an isolated ownership either not over one acre or of such size and characteristics as to make it impossible to develop building sites for more than three dwelling units.*

Finding: Not applicable. The creation of new public streets is not proposed or required.

B. For any public street created pursuant to subsection A of this section, a copy of a preliminary plan and the proposed deed shall be submitted to the Community Development Director and City Engineer at least ten days prior to any public hearing scheduled for the matter. The plan, deed and any additional information the applicant may submit shall be reviewed by the decision-maker and, if not in conflict with the standards of Title 16 and Title 17, may be approved with appropriate conditions.

Finding: Not applicable. The applicant has not proposed the creation of a public street pursuant to subsection A of this section

16.12.105 - Same—Timing requirements.

A. Prior to applying for final plat approval, the applicant shall either complete construction of all public improvements required as part of the preliminary plat approval or guarantee the construction of those improvements. Whichever option the applicant elects shall be in accordance with OCMC 17.50.140.

Finding: Not applicable. The city has only afforded the applicant the option to construct the public improvements according to approved final engineering plans and all applicable requirements of this Code.

B. Construction. The applicant shall construct the public improvements according to approved final engineering plans and all applicable requirements of this Code, and under the supervision of the City Engineer. Under this option, the improvement shall be complete and accepted by the City Engineer prior to final plat approval.

Finding: Complies as conditioned. Public improvements shall be constructed according to approved final engineering plans. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.110 -Public improvements—Financial guarantees.

A. To ensure construction of required public improvements, the applicant shall provide the City with a performance guarantee in accordance with OCMC 17.50.140.

Finding: Please see findings from Section 17.50.140 of this report.

B. After satisfactory completion of required public improvements and facilities, all public improvements not constructed by the City, shall be maintained and under warranty provided by the property owner or developer constructing the facilities until the City accepts the improvements at the end of the warranty period as prescribed in OCMC 17.50.141.

Finding: Please see findings from Section 17.50.141 of this report.

16.12.120 Waiver of Remonstrance

The review authority may require a property owner to sign a waiver of remonstrance against the formation of and participation in a local improvement district where it deems such a waiver necessary to provide needed improvements reasonably related to the impacts created by the proposed development. To ensure compliance with this chapter, the review authority may require an applicant to sign or accept a legal and enforceable covenant, contract, dedication, easement, performance guarantee, or other document, which shall be approved in form by the City Attorney.

Finding: Complies as Proposed/Complies with Condition. The property owner(s) shall sign a Restrictive Covenant Non-Remonstrance Agreement for the purpose of making storm sewer, sanitary sewer, water or street improvements in the future that benefit the property and all fees associated with processing and recording the Non-Remonstrance Agreement shall be paid. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

16.12.125 - Violation—Penalty.

Any act or omission in violation of this chapter shall be deemed a nuisance. Violation of any provision of this chapter is subject to the code enforcement procedures of OCMC 1.16, 1.20 and 1.24.

Finding: Not applicable. There is no known act or omission in violation of this chapter. The city will initiate code enforcement procedures of OCMC 1.16, 1.20 and 1.24 if violations occur.

CHAPTER 16.20 - PROPERTY LINE ADJUSTMENTS AND ABANDONMENT PROCESS AND STANDARDS

16.20.010 - Purpose and general provisions.

The community development director under the applicable provisions in Chapter 17.50 shall process applications for property line adjustments and abandonments as a Typel decision. Approval shall be granted only upon determination by the community development director that all applicable requirements of this title and ORS Chapter 92 have been met.

16.20.040 - Adjustment/abandonment approval standards.

All parcels resulting from a lot line adjustment or abandonment shall conform to the applicable requirements of Title OCMC 16 and 17 including the standards within the zoning designation such as, but not limited to, lot width, depth, lot coverage, subdivision density requirements, setbacks, as well as access and frontage requirements, ORS 92.010 to ORS 92.160, and any other city regulation deemed applicable by the community development director or state law. In no case shall a lot line adjustment result in a parcel that is unbuildable due to the presence of an overlay district or other physical constraint unless the parcel is recorded as a "tract" as defined by OCMC 17.04.1303.

The community development director shall determine if the applicant's submission complies with these standards, and issue to the applicant a notice of decision consistent with OCMC 17.50.120. The community development Director decision is final and not appealable to any other decision-maker within the city.

Finding: Complies with conditions. The applicant has proposed to vacate the property line between 914 and 950 South End Road in order that the addition to the existing facility will all be on one property. Prior to issuance of a building permit, the applicant shall complete the application for property line abandonment to vacate the existing lot line between parcels 3-1E-01AD-03100 and 3-1E-01AD-03301. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

CHAPTER 17.08 LOW DENSITY RESIDENTIAL DISTRICTS

17.08.020 - Permitted uses.

Permitted uses in the R-10, R-8 and R-6 districts are:

- A. Single-family detached residential units;*
- B. Accessory uses, buildings and dwellings;*
- C. Internal conversions;*
- D. Corner duplexes;*
- E. Cluster housing;*
- F. Residential homes;*
- G. Parks, playgrounds, playfields and community or neighborhood centers;*
- H. Home occupations;*
- I. Family day care providers;*
- J. Farms, commercial or truck gardening and horticultural nurseries on a lot not less than twenty thousand square feet in area (retail sales of materials grown on-site is permitted);*
- K. Temporary real estate offices in model homes located on and limited to sales of real estate on a single piece of platted property upon which new residential buildings are being constructed;*
- L. Transportation facilities.*

Finding: Not applicable. The current memory care facility is a conditional use.

17.08.025 - Conditional uses.

The following uses are permitted in the R-10, R-8 and R-6 districts when authorized by and in accordance with the standards contained in OCMC 17.56:

- A. Golf courses, except miniature golf courses, driving ranges or similar commercial enterprises;
- B. Bed and breakfast inns/boarding houses;
- C. Cemeteries, crematories, mausoleums and columbariums;
- D. Child care centers and nursery schools;
- E. Emergency service facilities (police and fire), excluding correctional facilities;
- F. Residential care facilities;
- G. Private and/or public educational or training facilities;
- H. Public utilities, including sub-stations (such as buildings, plants and other structures);
- I. Religious institutions;
- J. Assisted living facilities; nursing homes and group homes for over fifteen patients;

Finding: The existing memory care facility at 950 South End Rd is permitted as a conditional use under (J). The existing facility was approved as a conditional use (Files CU 14-01, SP 14-09, VR 14-01, and LL 14-05) in 2014. The expansion of sixteen additional beds requires conditional use approval.

17.08.030 - Master plans.

The following are permitted in the R-10, R-8 and R-6 districts when authorized by and in accordance with the standards contained in OCMC 17.65.

- A. Single-family attached residential units.

Finding: Not applicable. The application does not include a master plan.

17.08.035 - Prohibited uses.

Prohibited uses in the R-10, R-8 and R-6 districts are:

- A. Any use not expressly listed in OCMC 17.08.020, 17.08.025 or 17.08.030;
- B. Marijuana businesses.

Finding: Not applicable. The applicant has not proposed a prohibited use.

17.08.040 - Dimensional standards.

Dimensional standards in the R-10, R-8 and R-6 districts are as follows:

Table 17.08.040

Standard	R-10	Proposed	Complies?
Minimum lot size ¹	10,000 sq. ft.	50,591 sq. ft	Yes
Maximum height	35 ft.	<35 ft. (20' 11" to highest roof peak)	Yes
Maximum building lot coverage With ADU	40%, except 45%	46.2%	Minor variance requested
Minimum lot width	65 ft.	192 ft.	Yes
Minimum lot depth	80 ft.	154 ft.	Yes
Minimum front yard setback	20 ft., except 15 ft. - Porch	21' 0.5"	Yes
Minimum interior side yard setback	8 ft.	10' 0.5"	Yes

Minimum corner side yard setback	10 ft.	Existing	N/A
Minimum rear yard setback	20 ft, except 15 ft - Porch 10 ft - ADU	20' 0.5"	Yes
Garage setback	20 ft. from ROW, except 5 ft. Alley	N/A	N/A

Notes:

For land divisions, lot sizes may be reduced pursuant to OCMC 16.08.065.

Accessory structures may have reduced setbacks pursuant to OCMC 17.54.010.B.

Finding: Complies with conditions. The proposed addition complies with the dimensional standards for the R-10 zone, except for lot coverage. The existing Memory Care building footprint is 16,405 square feet. The proposed Memory Care addition would consist of 6,996 square feet for a total of 23,401 square feet. The proposed lot area with the addition of the parcel located at 914 South End Road would result in a combined lot size of 50,591 square feet. Therefore, the resulting lot coverage would be 46.2%. A minor administrative variance is requested in order to construct a building that exceeds the maximum lot coverage. **See findings under section 17.60 - Variances.**

17.08.045 - Exceptions to setbacks.

A. Projections from buildings. Ordinary building projections such as cornices, eaves, overhangs, canopies, sunshades, gutters, chimneys, flues, sills or similar architectural features may project into the required yards up to twenty-four inches.

B. Through lot setbacks. Through lots having a frontage on two streets shall provide the required front yard on each street. The required rear yard is not necessary.

Finding: Complies as proposed. The proposed addition and the existing structure eaves may project into the required yards up to 24 inches.

17.08.050 - Density standards.

A. Density standards in the R-10, R-8 and R-6 districts are as follows:

Table 17.08.050

Standard	R-10	R-8	R-6
Minimum net density	3.5 du/acre	4.4 du/acre	5.8 du/acre
Maximum net density	4.4 du/acre	5.4 du/acre	7.3 du/acre

B. Exceptions.

1. Any dwelling units created as accessory dwelling units or internal conversions do not count towards the minimum or maximum density limits in Table 17.08.050.

2. Corner duplexes shall count as a single dwelling unit for the purposes of calculating density.

3. Cluster housing is permitted at higher densities exempt from the standards in Table 17.08.050; see OCMC 17.20.020.

Finding: Not applicable. This standard applies to the required density of individual dwelling units associated with permitted residential uses in the R-10 zone. The applicant has not proposed a permitted use. The applicant has proposed a Conditional Use.

CHAPTER 17.41 TREE PROTECTION, PRESERVATION, REMOVAL AND REPLANTING STANDARDS

17.41.010 - Protection of trees—Intent.

The intent of this chapter is to ensure that new development is designed in a manner that preserves trees to the maximum extent practicable. As a requirement of any Type II land use application, the siting of structures, roadways and utility easements, shall provide for the protection of tree resources to the maximum extent practicable. This chapter applies to all Land Division and Site Plan and Design Review applications.

Finding: See finding under “Applicability” below.

17.41.020 - Tree protection—Applicability.

- 1. Applications for development subject to OCMC 16.08 (Land Divisions) or OCMC 17.62 (Site Plan and Design Review) shall demonstrate compliance with these standards as part of the review proceedings for those developments. Compliance with this chapter is required from the date a land use application is filed until a land division is recorded or other development approval is final.*
- 2. For public capital improvement projects, the City Engineer shall demonstrate compliance with these standards pursuant to a Type I process.*
- 3. Tree canopy removal greater than twenty-five percent on areas with greater than twenty-five percent slope, unless exempted under OCMC 17.41.040, shall be subject to these standards.*
- 4. A heritage tree or grove which has been designated pursuant to the procedures of OCMC 12.32 shall be subject to the standards of this section.*
- 5. A tree that has been planted pursuant to this section shall remain or shall be replaced with a new tree if removed.*

Finding: Not applicable. The applicant’s submitted narrative states that there are no trees located on the development site. The owner confirmed that they legally removed the trees that were on the property at 914 South End Road prior to submittal of this land use application. The applicants submitted existing conditions plan also confirms that there are no trees on the property. Therefore, further findings for compliance with this chapter are not required.

CHAPTER 17.47 – EROSION AND SEDIMENT CONTROL

17.47.030 - Applicability.

- A. This chapter, which may also be referred to as "erosion control" in this Code, applies to development that may cause visible or measurable erosion on any property within the city limits of Oregon City.*
- B. This chapter does not apply to work necessary to protect, repair, maintain or replace existing structures, utility facilities, roadways, driveways, accessory uses and exterior improvements in response to emergencies, provided that after the emergency has passed, adverse impacts are mitigated in accordance with applicable standards.*

Finding: Applicable. The applicant has proposed construction activities that may cause visible or measurable erosion on the development property.

17.47.060 - Permit required.

The applicant must obtain an erosion and sediment control permit prior to, or contemporaneous with, the approval of an application for any building, land use or other city-issued permit that may cause visible or measurable erosion.

Finding: Complies with Condition. The applicant seeks approval of an application for land use which requires construction that may cause visible or measurable erosion. A city issued erosion and sediment control permit shall be obtained prior to commencement of any earth disturbing activities. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

17.47.070 - Erosion and sediment control plans.

A. An application for an erosion and sediment control permit shall include an erosion and sediment control plan, which contains methods and interim measures to be used during and following construction to prevent or control erosion prepared in compliance with City of Oregon City public works standards for erosion and sediment control. These standards are incorporated herein and made a part of this title and are on file in the office of the city recorder.

B. Approval Standards. An erosion and sediment control plan shall be approved only upon making the following findings:

1. The erosion and sediment control plan meets the requirements of the City of Oregon City public works standards for erosion and sediment control incorporated by reference as part of this chapter;

2. The erosion and sediment control plan indicates that erosion and sediment control measures will be managed and maintained during and following development. The erosion and sediment control plan indicates that erosion and sediment control measures will remain in place until disturbed soil areas are permanently stabilized by landscaping, grass, approved mulch or other permanent soil stabilizing measures.

C. The erosion and sediment control plan shall be reviewed in conjunction with the requested development approval. If the development does not require additional review, the manager may approve or deny the permit with notice of the decision to the applicant.

D. The city may inspect the development site to determine compliance with the erosion and sediment control plan and permit.

E. Erosion that occurs on a development site that does not have an erosion and sediment control permit, or that results from a failure to comply with the terms of such a permit, constitutes a violation of this chapter.

F. If the manager finds that the facilities and techniques approved in an erosion and sediment control plan and permit are not sufficient to prevent erosion, the manager shall notify the owner or his/her designated representative. Upon receiving notice, the owner or his/her designated representative shall immediately install interim erosion and sediment control measures as specified in the City of Oregon City public works standards for erosion and sediment control. Within three days from the date of notice, the owner or his/her designated representative shall submit a revised erosion and sediment control plan to the city. Upon approval of the revised plan and issuance of an amended permit, the owner or his/her designated representative shall immediately implement the revised plan.

G. Approval of an erosion and sediment control plan does not constitute an approval of permanent road or drainage design (e.g., size and location of roads, pipes, restrictors, channels, retention facilities, utilities, etc.).

Finding: Complies with Condition. Erosion and sediment control plans shall be submitted for review and approval by the City prior to issuance of an erosion and sediment control permit. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

CHAPTER 17.50 ADMINISTRATION AND PROCEDURES

17.50.010 - Purpose.

This chapter provides the procedures by which Oregon City reviews and decides upon applications for all permits relating to the use of land authorized by ORS 92, 197 and 227. These permits include all form of land divisions, land use, limited land use and expedited land division and legislative enactments and amendments to the Oregon City Comprehensive Plan and Titles 16 and 17 of this code. Pursuant to ORS 227.175, any applicant may elect to consolidate applications for two or more related permits needed for a single development project. Any grading activity associated with development shall be subject to preliminary review as part of the review process for the underlying development. It is the express policy of the City of Oregon City that development review not be segmented into discrete parts in a manner that precludes a comprehensive review of the entire development and its cumulative impacts.

17.50.030 - Summary of the City's decision-making processes.

The following decision-making processes chart shall control the City's review of the indicated permits:

Table 17.50.030: PERMIT APPROVAL PROCESS

PERMIT TYPE	I	II	III	IV	Expedited Land Division
Conditional Use			X		
Lot Line Adjustment and Abandonment	X				
Site Plan and Design Review	X	X			
Variance		X	X		

1 If any provision or element of the Master Plan/Planned Unit Development requires a deferred Type III procedure, the Detailed Development Plan shall be processed through a Type III procedure.

A. Type I decisions do not require interpretation or the exercise of policy or legal judgment in evaluating approval criteria. Because no discretion is involved, Type I decisions do not qualify as a land use, or limited land use, decision. The decision-making process requires no notice to any party other than the applicant. The Community Development Director's decision is final and not appealable by any party through the normal City land use process.

Finding: Not applicable. This is a Type III decision.

B. Type II decisions involve the exercise of limited interpretation and discretion in evaluating approval criteria, similar to the limited land use decision-making process under state law. Applications evaluated through this process are assumed to be allowable in the underlying zone, and the inquiry typically focuses on what form the use will take or how it will look. Notice of application and an invitation to comment is mailed to the applicant, recognized active neighborhood association(s) and property owners within three hundred feet. The Community Development Director accepts comments for a minimum of fourteen days and renders a decision. The Community Development Director's decision is appealable to the City Commission, by any party who submitted comments in writing before the expiration of the comment period. Review by the City Commission shall be on the record pursuant to OCMC 17.50.190 under ORS 197.195(5). The City Commission decision is the City's final decision and is subject to review by the Land Use Board of Appeals (LUBA) within twenty-one days of when it becomes final.

Finding: Not applicable. This is a Type III decision.

C. Type III decisions involve the greatest amount of discretion and evaluation of subjective approval standards, yet are not required to be heard by the City Commission, except upon appeal. In the event that any decision is not classified, it shall be treated as a Type III decision. The process for these land use decisions is controlled by ORS 197.763. Notice of the application and the Planning Commission or the Historic Review Board hearing is published and mailed to the applicant, recognized neighborhood association(s) and property owners within three hundred feet. Notice shall be issued at least twenty days pre-hearing, and the staff report shall be available at least seven days pre-hearing. At the evidentiary hearing held before the Planning Commission or the Historic Review Board, all issues are addressed. The decision of the Planning Commission or Historic Review Board is appealable to the City Commission, on the record pursuant to OCMC 17.50.190. The City Commission decision on appeal from is the City's final decision and is subject to review by LUBA within twenty-one days of when it becomes final, unless otherwise provided by state law.

Finding: Applicable. This application was processed as a Type III decision.

D. Type IV decisions include only quasi-judicial plan amendments and zone changes. These applications involve the greatest amount of discretion and evaluation of subjective approval standards and shall be heard by the City Commission for final action. The process for these land use decisions is controlled by ORS 197.763. Notice of the application and Planning Commission hearing is published and mailed to the applicant, recognized neighborhood association(s) and property owners within three hundred feet. Notice shall be issued at least twenty days pre-hearing, and the staff report shall be available at least seven days pre-hearing. At the evidentiary hearing held before the Planning Commission, all issues are addressed. If the Planning Commission denies the application, any party with standing (i.e., anyone who appeared before the Planning Commission either in person or in writing within the comment period) may appeal the Planning Commission denial to the City Commission. If the Planning

Commission denies the application and no appeal has been received within fourteen days of the issuance of the final decision, then the action of the Planning Commission becomes the final decision of the City. If the Planning Commission votes to approve the application, that decision is forwarded as a recommendation to the City Commission for final consideration. In either case, any review by the City Commission is on the record and only issues raised before the Planning Commission may be raised before the City Commission. The City Commission decision is the City's final decision and is subject to review by LUBA within twenty-one days of when it becomes final.

Finding: Not applicable. This is a Type III decision.

E. The expedited land division (ELD) process is set forth in ORS 197.360 to 197.380. To qualify for this type of process, the development shall meet the basic criteria in ORS 197.360(1)(a) or (b). While the decision-making process is controlled by state law, the approval criteria are found in this code. The Community Development Director has twenty-one days within which to determine whether an application is complete. Once deemed complete, the Community Development Director has sixty-three days within which to issue a decision. Notice of application and opportunity to comment is mailed to the applicant, recognized neighborhood association and property owners within one hundred feet of the subject site. The Community Development Director will accept written comments on the application for fourteen days and then issues a decision. State law prohibits a hearing. Any party who submitted comments may call for an appeal of the Community Development Director's decision before a hearings referee. The referee need not hold a hearing; the only requirement is that the determination be based on the evidentiary record established by the Community Development Director and that the process be "fair." The referee applies the City's approval standards, and has forty-two days within which to issue a decision on the appeal. The referee is charged with the general objective to identify means by which the application can satisfy the applicable requirements without reducing density. The referee's decision is appealable only to the court of appeals pursuant to ORS 197.375(8) and 36.355(1).

Finding: Not applicable. This is a Type III decision.

F. Decisions, completeness reviews, appeals, and notices in this Chapter shall be calculated according to OCMC 1.04.070 and shall be based on calendar days, not business days.

Finding: Applicable. The timeline for decision making for this application is based on calendar days, not business days.

17.50.040 - Development review in overlay districts and for erosion control.

For any development subject to regulation of Geologic Hazards Overlay District under OCMC 17.44; Natural Resource Overlay District under OCMC 17.49; Willamette River Greenway Overlay District under OCMC 17.48; Historic Overlay District under OCMC 17.40, and Erosion and Sediment Control under OCMC 17.47, compliance with the requirements of these chapters shall be reviewed as part of the review process required for the underlying development for the site.

Finding: Not applicable. The site is not located within any overlay districts. See section 17.47 findings regarding erosion control.

17.50.050 – Pre-application conference.

A Pre-application Conference. Prior to a Type II – IV or Legislative application, excluding Historic Review, being deemed complete, the applicant shall schedule and attend a pre-application conference with City staff to discuss the proposal, unless waived by the Community Development Director. The purpose of the pre-application conference is to provide an opportunity for staff to provide the applicant with information on the likely impacts, limitations, requirements, approval standards, fees and other information that may affect the proposal.

To schedule a pre-application conference, the applicant shall contact the Planning Division, submit the required materials, and pay the appropriate conference fee.

At a minimum, an applicant should submit a short narrative describing the proposal and a proposed site plan, drawn to a scale acceptable to the City, which identifies the proposed land uses, traffic circulation, and public rights-of-way and all other required plans.

The Planning Division shall provide the applicant(s) with the identity and contact persons for all affected neighborhood associations as well as a written summary of the pre-application conference.

B. A pre-application conference shall be valid for a period of six months from the date it is held. If no application is filed within six months of the conference or meeting, the applicant shall schedule and attend another conference before the City will accept a permit application. The Community Development Director may waive the pre-application requirement if, in the Director's opinion, the development has not changed significantly and the applicable municipal code or standards have not been significantly amended. In no case shall a pre-application conference be valid for more than one year.

C. Notwithstanding any representations by City staff at a pre-application conference, staff is not authorized to waive any requirements of this code, and any omission or failure by staff to recite to an applicant all relevant applicable land use requirements shall not constitute a waiver by the City of any standard or requirement.

Finding: Complies. The applicant attended the required pre-application conference and included the conference summary notes in the application.

17.50.055 - Neighborhood association meeting.

Neighborhood Association Meeting. The purpose of the meeting with the recognized neighborhood association is to inform the affected neighborhood association about the proposed development and to receive the preliminary responses and suggestions from the neighborhood association and the member residents.

A. Applicants applying for annexations, zone change, comprehensive plan amendments, conditional use, Planning Commission variances, subdivision, or site plan and design review (excluding minor site plan and design review), general development master plans or detailed development plans applications shall schedule and attend a meeting with the City-recognized neighborhood association in whose territory the application is proposed no earlier than one year prior to the date of application. Although not required for other projects than those identified above, a meeting with the neighborhood association is highly recommended.

B. The applicant shall request via email or regular mail a request to meet with the neighborhood association chair where the proposed development is located. The notice shall describe the proposed project. A copy of this notice shall also be provided to the chair of the Citizen Involvement Committee.

C. A meeting shall be scheduled within thirty days of the date that the notice is sent. A meeting may be scheduled later than thirty days if by mutual agreement of the applicant and the neighborhood association. If the neighborhood association does not want to, or cannot meet within thirty days, the applicant shall host a meeting inviting the neighborhood association, Citizen Involvement Committee, and all property owners within three hundred feet to attend. This meeting shall not begin before six p.m. on a weekday or may be held on a weekend and shall occur within the neighborhood association boundaries or at a City facility.

D. If the neighborhood association is not currently recognized by the City, is inactive, or does not exist, the applicant shall request a meeting with the Citizen Involvement Committee.

E. To show compliance with this section, the applicant shall submit a copy of the email or mail notice to the neighborhood association and CIC chair, a sign-in sheet of meeting attendees, and a summary of issues discussed at the meeting. If the applicant held a separately noticed meeting, the applicant shall submit a copy of the meeting flyer, postcard or other correspondence used, and a summary of issues discussed at the meeting and submittal of these materials shall be required for a complete application.

Complies. The applicant attended the required neighborhood association meeting with Caulfield Neighborhood Association and included the meeting summary notes in the application.

17.50.070 - Completeness review and one hundred twenty-day rule.

C. Once the Community Development Director determines the application is complete enough to process, or the applicant refuses to submit any more information, the City shall declare the application complete. Pursuant to ORS 227.178, the City will reach a final decision on an application within one hundred twenty calendar days from the date that the application is determined to be or deemed complete unless the applicant agrees to suspend the one hundred twenty calendar day time line or unless State law provides otherwise. The one hundred twenty-day period, however, does not apply in the following situations:

1. Any hearing continuance or other process delay requested by the applicant shall be deemed an extension or waiver, as appropriate, of the one hundred twenty-day period.

2. Any delay in the decision-making process necessitated because the applicant provided an incomplete set of mailing labels for the record property owners within three hundred feet of the subject property shall extend the one hundred twenty-day period for the amount of time required to correct the notice defect.

3. The one hundred twenty-day period does not apply to any application for a permit that is not wholly within the City's authority and control.

4. The one hundred twenty-day period does not apply to any application for an amendment to the City's comprehensive plan or land use regulations nor to any application for a permit, the approval of which depends upon a plan amendment.

D. A one-hundred day period applies in place of the one-hundred-twenty day period for affordable housing projects where:

1. The project includes five or more residential units, including assisted living facilities or group homes;

2. At least 50% of the residential units will be sold or rented to households with incomes equal to or less than 60% of the median family income for Clackamas County or for the state, whichever is greater; and

3. Development is subject to a covenant restricting the owner and successive owner from selling or renting any of the affordable units as housing that is not affordable for a period of 60 years from the date of the certificate of occupancy.

E. The one hundred twenty-day period specified in OCMC 17.50.070.C or D may be extended for a specified period of time at the written request of the applicant. The total of all extensions may not exceed two hundred forty-five calendar days.

F. The approval standards that control the City's review and decision on a complete application are those which were in effect on the date the application was first submitted.

Finding: Complies. The application was submitted on December 20, 2019 and deemed complete for processing on January 29, 2020. For various reasons the public hearing has been continued. The applicant has granted an extension of the 120-day decision deadline for this application until June 27, 2020.

17.50.080 - Complete application—Required information.

Unless stated elsewhere in OCMC 16 or 17, a complete application includes all the materials listed in this subsection. The Community Development Director may waive the submission of any of these materials if not deemed to be applicable to the specific review sought. Likewise, within thirty days of when the application is first submitted, the Community Development Director may require additional information, beyond that listed in this subsection or elsewhere in Titles 12, 14, 15, 16, or 17, such as a traffic study or other report prepared by an appropriate expert. In any event, the applicant is responsible for the completeness and accuracy of the application and all of the supporting documentation, and the City will not deem the application complete until all information required by the Community Development Director is submitted. At a minimum, the applicant shall submit the following:

A. One copy of a completed application form that includes the following information:

1. An accurate address and tax map and location of all properties that are the subject of the application;

2. Name, address, telephone number and authorization signature of all record property owners or contract owners, and the name, address and telephone number of the applicant, if different from the property owner(s);

B. A complete list of the permit approvals sought by the applicant;

C. A complete and detailed narrative description of the proposed development;

D. A discussion of the approval criteria for all permits required for approval of the development proposal that explains how the criteria are or can be met or are not applicable, and any other information indicated by staff at the pre-application conference as being required;

E. One copy of all architectural drawings and site plans shall be submitted for Type II-IV applications. One paper copy of all application materials shall be submitted for Type I applications;

F. For all Type II – IV applications, the following is required:

1. An electronic copy of all materials.

2. Mailing labels or associated fee for notice to all parties entitled under OCMC 17.50.090 to receive mailed notice of the application. The applicant shall use the names and addresses of property owners within the notice area indicated on the most recent property tax rolls;

3. Documentation indicating there are no liens favoring the City on the subject site.
4. A receipt from the county assessor's office indicating that all taxes for the lot or parcels involved are paid in full for the preceding tax year.
5. A current preliminary title report or trio for the subject property(ies);
- G. All required application fees;
- H. Annexation agreements, traffic or technical studies (if applicable);
- I. Additional documentation, as needed and identified by the Community Development Director.

Finding: Complies. The application included all requested information and was deemed complete on January 29, 2020.

17.50.090 - Public notices.

All public notices issued by the City announcing applications or public hearings of quasi-judicial or legislative actions, shall comply with the requirements of this section.

A. Notice of Type II Applications. Once the Community Development Director has deemed a Type II application complete, the City shall prepare and send notice of the application, by first class mail, to all record owners of property within three hundred feet of the subject property and to any city-recognized neighborhood association whose territory includes the subject property. The applicant shall provide or the City shall prepare for a fee an accurate and complete set of mailing labels for these property owners and for posting the subject property with the City-prepared notice in accordance with OCMC 17.50.100. The City's Type II notice shall include the following information:

1. Street address or other easily understood location of the subject property and city-assigned planning file number;
2. A description of the applicant's proposal, along with citations of the approval criteria that the City will use to evaluate the proposal;
3. A statement that any interested party may submit to the City written comments on the application during a fourteen-day comment period prior to the City's deciding the application, along with instructions on where to send the comments and the deadline of the fourteen-day comment period;
4. A statement that any issue which is intended to provide a basis for an appeal shall be raised in writing during the fourteen-day comment period with sufficient specificity to enable the City to respond to the issue;
5. A statement that the application and all supporting materials may be inspected, and copied at cost, at city hall during normal business hours;
6. The name and telephone number of the planning staff person assigned to the application or is otherwise available to answer questions about the application.
7. The notice shall state that a City-recognized neighborhood association requesting an appeal fee waiver pursuant to OCMC 17.50.290.C must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal.

B. Notice of Public Hearing on a Type III or IV Quasi-Judicial Application. Notice for all public hearings concerning a quasi-judicial application shall conform to the requirements of this subsection. At least twenty days prior to the hearing, the City shall prepare and send, by first class mail, notice of the hearing to all record owners of property within three hundred feet of the subject property and to any City-recognized neighborhood association whose territory includes the subject property. The City shall also publish the notice on the City website within the City at least twenty days prior to the hearing. Pursuant to OCMC 17.50.080H., the applicant is responsible for providing an accurate and complete set of mailing labels for these property owners and for posting the subject property with the City-prepared notice in accordance with OCMC 17.50.100. Notice of the application hearing shall include the following information:

1. The time, date and location of the public hearing;
2. Street address or other easily understood location of the subject property and city-assigned planning file number;
3. A description of the applicant's proposal, along with a list of citations of the approval criteria that the City will use to evaluate the proposal;
4. A statement that any interested party may testify at the hearing or submit written comments on the proposal at or prior to the hearing and that a staff report will be prepared and made available to the public at least seven days prior to the hearing;

5. A statement that any issue which is intended to provide a basis for an appeal to the City Commission shall be raised before the close of the public record. Issues must be raised and accompanied by statements or evidence sufficient to afford the City and all parties to respond to the issue;
 6. The notice shall state that a City-recognized neighborhood association requesting an appeal fee waiver pursuant to OCMC 17.50.290C. must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal.
 7. A statement that the application and all supporting materials and evidence submitted in support of the application may be inspected at no charge and that copies may be obtained at reasonable cost at the Planning Division offices during normal business hours; and
 8. The name and telephone number of the planning staff person responsible for the application or is otherwise available to answer questions about the application.
- C. Notice of Public Hearing on a Legislative Proposal.* At least twenty days prior to a public hearing at which a legislative proposal to amend or adopt the City's land use regulations or Comprehensive Plan is to be considered, the Community Development Director shall issue a public notice that conforms to the requirements of this subsection. Notice shall be sent to affected governmental entities, special districts, providers of urban services, including Tri-Met, Oregon Department of Transportation and Metro, any affected recognized neighborhood associations and any party who has requested in writing such notice. Notice shall also be published on the City website. Notice issued under this subsection shall include the following information:
1. The time, date and location of the public hearing;
 2. The City-assigned planning file number and title of the proposal;
 3. A description of the proposal in sufficient detail for people to determine the nature of the change being proposed;
 4. A statement that any interested party may testify at the hearing or submit written comments on the proposal at or prior to the hearing; and
 5. The name and telephone number of the planning staff person responsible for the proposal and who interested people may contact for further information.

Finding: Complies. Public notice was mailed to property owners of record within 300 feet of the subject properties on January 31st, 2020, announcing the first evidentiary hearing date of February 28th, 2020. The Planning Commission continued the public hearing to the date certain of March 23rd, 2020, then continued the public hearing again to the date certain of May 11th, 2020. At each continuance the public was provided the opportunity to comment. Notice was emailed to affected government entities and districts as well as the South End Neighborhood Association and the CIC on January 31st, 2020. The property was posted with the required land use notices on February 18th, 2020. An additional public notice was also provided to Dan Muresan, the party who is disputing ownership of the strip of land discussed on Page 5, on April 17, 2020.

17.50.100 - Notice posting requirements.

Where this chapter requires notice of a pending or proposed permit application or hearing to be posted on the subject property, the requirements of this section shall apply.

A. City Guidance and the Applicant's Responsibility. The City shall supply all of the notices which the applicant is required to post on the subject property and shall specify the dates the notices are to be posted and the earliest date on which they may be removed. The City shall also provide a statement to be signed and returned by the applicant certifying that the notice(s) were posted at the correct time and that if there is any delay in the City's land use process caused by the applicant's failure to correctly post the subject property for the required period of time and in the correct location, the applicant agrees to extend the applicable decision-making time limit in a timely manner.

B. Number and Location. The applicant shall place the notices on each frontage of the subject property. If the property's frontage exceeds six hundred feet, the applicant shall post one copy of the notice for each six hundred feet or fraction thereof. Notices do not have to be posted adjacent to alleys or unconstructed right-of-way. Notices shall be posted within ten feet of the street and shall be visible to pedestrians and motorists. Notices shall not be

posted within the public right-of-way or on trees. The applicant shall remove all signs within ten days following the event announced in the notice.

Finding: Complies. The property was posted with the required land use notices on February 18th, 2020.

17.50.120 - Quasi-judicial hearing process.

All public hearings pertaining to quasi-judicial permits, whether before the Planning Commission, Historic Review Board, or City Commission, shall comply with the procedures of this section. In addition, all public hearings held pursuant to this chapter shall comply with the Oregon Public Meetings Law, the applicable provisions of ORS 197.763 and any other applicable law.

A. Once the Community Development Director determines that an application for a Type III or IV decision is complete, the Planning Division shall schedule a hearing before the Planning Commission or Historic Review Board, as applicable. Once the Community Development Director determines that an appeal of a Type II, Type III or Type IV decision has been properly filed under OCMC 17.50.190, the Planning Division shall schedule a hearing pursuant to OCMC 17.50.190.

B. Notice of the Type III or IV hearing shall be issued at least twenty days prior to the hearing in accordance with OCMC 17.50.090B.

C. Written notice of an appeal hearing shall be sent by regular mail no later than fourteen days prior to the date of the hearing to the appellant, the applicant if different from the appellant, the property owner(s) of the subject site, all persons who testified either orally or in writing before the hearing body and all persons that requested in writing to be notified.

D. The Community Development Director shall prepare a staff report on the application which lists the applicable approval criteria, describes the application and the applicant's development proposal, summarizes all relevant city department, agency and public comments, describes all other pertinent facts as they relate to the application and the approval criteria and makes a recommendation as to whether each of the approval criteria are met.

E. At the beginning of the initial public hearing at which any quasi-judicial application or appeal is reviewed, a statement describing the following shall be announced to those in attendance:

1. That the hearing will proceed in the following general order: staff report, applicant's presentation, testimony in favor of the application, testimony in opposition to the application, rebuttal, record closes, commission deliberation and decision;

2. That all testimony and evidence submitted, orally or in writing, shall be directed toward the applicable approval criteria. If any person believes that other criteria apply in addition to those addressed in the staff report, those criteria shall be listed and discussed on the record. The meeting chairperson may reasonably limit oral presentations in length or content depending upon time constraints. Any party may submit written materials of any length while the public record is open;

3. Failure to raise an issue on the record with sufficient specificity and accompanied by statements or evidence sufficient to afford the City and all parties to respond to the issue, will preclude appeal on that issue to the Land Use Board of Appeals;

4. Any party wishing a continuance or to keep open the record shall make that request while the record is still open; and

5. That the commission chair shall call for any ex-parte contacts, conflicts of interest or bias before the beginning of each hearing item.

6. For appeal hearings, only those persons who participated either orally or in writing in the decision or review will be allowed to participate either orally or in writing on the appeal.

F. Requests for continuance and to keep open the record: The hearing may be continued to allow the submission of additional information or for deliberation without additional information. New notice of a continued hearing need not be given so long as a time-certain and location is established for the continued hearing. Similarly, hearing may be closed but the record kept open for the submission of additional written material or other documents and exhibits. The chairperson may limit the factual and legal issues that may be addressed in any continued hearing or open record period.

Finding: Complies. The quasi-judicial public hearing before the Planning Commission and any subsequent appeal to the City Commission will be conducted in accordance with this section.

17.50.140 – Financial guarantees.

When conditions of permit approval require a permittee to construct certain public improvements, the City shall require the permittee to provide financial guarantee for construction of the certain public improvements. Financial guarantees shall be governed by this section.

- A. *Form of Guarantee. Guarantees shall be in a form approved by the City Attorney. Approvable forms of guarantee include irrevocable standby letters of credit to the benefit of the City issued by a recognized lending institution, certified checks, dedicated bank accounts or allocations of construction loans held in reserve by the lending institution for the benefit of the City. The form of guarantee shall be specified by the City Engineer and, prior to execution and acceptance by the City shall be reviewed and approved by the City Attorney. The guarantee shall be filed with the City Engineer.*
- B. *Performance Guarantees. A permittee shall be required to provide a performance guarantee as follows.*
 - 1. *After Final Approved Design by The City: The City may request the Permittee to submit a Performance Guarantee for construction of certain public improvements. A permittee may request the option of submitting a Performance Guarantee when prepared for temporary/final occupancy. The guarantee shall be one hundred twenty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City Engineer.*
 - 2. *Before Complete Design Approval and Established Engineered Cost Estimate: The City may request a permittee to submit a Performance Guarantee for construction of certain public improvements. A permittee may request the option of submitting a performance guarantee before public improvements are designed and completed. The guarantee shall be one hundred fifty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer and approved by the City Engineer. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City Engineer.*
- C. *Release of Guarantee. The guarantee shall remain in effect until the improvement is actually constructed and accepted by the City. Once the City has inspected and accepted the improvement, the City shall release the guarantee to the permittee. If the improvement is not completed to the City's satisfaction within the time limits specified in the permit approval, the City Engineer may, at their discretion, draw upon the guarantee and use the proceeds to construct or complete construction of the improvement and for any related administrative and legal costs incurred by the City in completing the construction, including any costs incurred in attempting to have the permittee complete the improvement. Once constructed and approved by the City, any remaining funds shall be refunded to the permittee. The City shall not allow a permittee to defer construction of improvements by using a performance guarantee, unless the permittee agrees to construct those improvements upon written notification by the City, or at some other mutually agreed-to time. If the permittee fails to commence construction of the required improvements within six months of being instructed to do so, the City may, without further notice, undertake the construction of the improvements and draw upon the permittee's performance guarantee to pay those costs.*
- D. *Fee-in-lieu. When conditions of approval or the City Engineer allows a permittee to provide a fee-in-lieu of actual construction of public improvements, the fee shall be one hundred fifty percent of the estimated cost of constructing the public improvements as submitted by the permittee's engineer and approved by the City Engineer. The percentage required is to ensure adequate funds for the future work involved in design, bid, contracting, and construction management and contract closeout. The engineer's estimated costs shall be supported by a verified engineering estimate and approved by the City Engineer. The fee-in-lieu shall be submitted as cash, certified check, or other negotiable instrument acceptable by the City Attorney.*

Finding: Complies as Conditioned. A Performance Guarantee which is equal to 120% of the estimated cost for construction of public improvements as shown in city approved construction plans shall be provided. The estimated costs shall be supported by a verified engineering estimate and approved by the city engineer. The guarantee shall be in a form identified in Code 17.50.140.A of the Oregon City Municipal Code. The guarantee shall remain in effect until the construction of all required improvements are completed and accepted by the city. The City engineer has not allowed the permittee to provide a fee-in-lieu of actual construction of public improvements. **Staff has determined that it is**

possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.

17.50.141 – Public improvements – Warranty

All public improvements not constructed by the City, shall be maintained and under warranty provided by the property owner or developer constructing the facilities until the City accepts the improvements at the end of the warranty period. The warranty is to be used at the discretion of the City Engineer or designee to correct deficiencies in materials or maintenance of constructed public infrastructure, or to address any failure of engineering design.

- A. Duration of Warranty. Responsibility for maintenance of public improvements shall remain with the property owner or developer for a warranty period of two years.*
- B. Financial Guarantee. Approvable forms of guarantee include irrevocable standby letters of credit to the benefit of the City issued by a recognized lending institution, bond, certified checks, dedicated bank accounts or allocations of construction loans held in reserve by the lending institution for the benefit of the City. The form of guarantee shall be specified by the City Engineer and, prior to execution and acceptance by the City shall be reviewed and approved by the City Attorney. The guarantee shall be filed with the City Engineer.*
- C. Amount of Warranty. The amount of the warranty shall be equal to fifteen percent of the estimated cost of construction of all public improvements (including those improvements that will become owned and maintained by the City at the end of the two year maintenance period), and shall be supported by a verified engineering estimate and approved by the City Engineer. Upon expiration of the warranty period and acceptance by the City as described below, the City shall be responsible for maintenance of those improvements.*
- D. Transfer of Maintenance. The City will perform an inspection of all public improvements approximately forty-five days before the two-year warranty period expires. The public improvements shall be found to be in a clean, functional condition by the City Engineer before acceptance of maintenance responsibility by the City. Transfer of maintenance of public improvements shall occur when the City accepts the improvements at the end of the two year warranty period.*

Finding: Complies as Conditioned. Maintenance Guarantee equal to fifteen percent of the estimated cost for construction of public improvements as shown in city approved construction plans shall be provided. The estimated costs shall be supported by a verified engineering estimate approved by the City Engineer. The guarantee shall be in a form identified in Code 17.50.140.A of the Oregon City Municipal Code. The maintenance guarantee shall warrant to the City of Oregon City that construction of public improvements will remain, for a period of twenty-four (24) months from the date of acceptance, free from defects in materials and workmanship. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

CHAPTER 17.52 OFF-STREET PARKING AND LOADING

17.52.010 - Applicability.

The construction of a new structure or parking lot, or alterations to the size or use of an existing structure, parking lot or property use shall require site plan review approval and compliance with this chapter. This chapter does not apply to single-family attached, detached residential dwellings and duplexes.

Finding: applicable. The application involves alterations to the size of an existing commercial structure; therefore this chapter is applicable.

17.52.015 - Planning commission adjustment of parking standards.

Finding: Not applicable. The applicant has not requested an adjustment of parking standards.

17.52.020 - Number of automobile spaces required.

A. The number of parking spaces shall comply with the minimum and maximum standards listed in Table 17.52.020. The parking requirements are based on spaces per one thousand square feet net leasable area unless otherwise stated.

Table 17.52.020			
LAND USE	PARKING REQUIREMENTS		Proposed
	MINIMUM	MAXIMUM	
Senior housing, including congregate care, residential care and assisted living facilities; nursing homes and other types of group homes	1 per 7 beds	1 per 5 beds	
Office	2.70	3.33	

1. Multiple Uses. In the event several uses occupy a single structure or parcel of land, the total requirements for off-street parking shall be the sum of the requirements of the several uses computed separately.

2. Requirements for types of buildings and uses not specifically listed herein shall be determined by the Community Development Director, based upon the requirements of comparable uses listed.

3. Where calculation in accordance with the above list results in a fractional space, any fraction less than one-half shall be disregarded and any fraction of one-half or more shall require one space.

4. The minimum required parking spaces shall be available for the parking of operable passenger automobiles of residents, customers, patrons and employees only, and shall not be used for storage of vehicles or materials or for the parking of vehicles used in conducting the business or use.

5. A change in use within an existing habitable building located in the MUD Design District or the Willamette Falls Downtown District is exempt from additional parking requirements. Additions to an existing building and new construction are required to meet the minimum parking requirements for the areas as specified in Table 17.52.020 for the increased square footage.

B. Parking requirements can be met either onsite, or offsite by meeting one or multiple of the following conditions:

1. Parking may be located on the same site as the associated use which it is supporting.

2. Mixed Uses. If more than one type of land use occupies a single structure or parcel of land, the total requirements for off-street automobile parking shall be the sum of the requirements for all uses, unless it can be shown that the peak parking demands are actually less (e.g. the uses operate on different days or at different times of the day). In that case, the total requirements shall be reduced accordingly, up to a maximum reduction of fifty percent, as determined by the Community Development Director.

3. Shared Parking. Required parking facilities for two or more uses, structures, or parcels of land may be satisfied by the same parking facilities used jointly, to the extent that the owners or operators show that the need for parking facilities does not materially overlay (e.g., uses primarily of a daytime versus nighttime nature), that the shared parking facility is within one thousand feet of the potential uses, and provided that the right of joint use is evidenced by a recorded deed, lease, contract, or similar written instrument authorizing the joint use.

4. On-Street Parking. On-street parking may be counted toward the minimum standards when it is on the street face abutting the subject land use. An on-street parking space shall not obstruct a required clear vision area and it shall not violate any law or street standard. On-street parking for commercial uses shall conform to the following standards:

a. Dimensions. The following constitutes one on-street parking space:

1. Parallel parking: twenty-two feet of uninterrupted and available curb;

2. Forty-five and/or sixty-degree diagonal parking: Fifteen feet of curb;

3. Ninety-degree (perpendicular) parking: Twelve feet of curb.

4. Public Use Required for Credit. On-street parking spaces counted toward meeting the parking requirements of a specific use may not be used exclusively by that use, but shall be available for general public use at all times. Signs or other actions that limit general public use of on-street spaces are prohibited.

C. Reduction of the Number of the Minimum Automobile Spaces Required. Any combination of the reductions below is permitted unless otherwise noted.

1. *Downtown Parking Overlay. The minimum required number of parking stalls is reduced within the Downtown Parking Overlay by fifty percent.*
2. *Transit Oriented Development. For projects not located within the Downtown Parking Overlay District, the minimum required number of parking stalls is reduced up to twenty-five percent when:*
 - a. *In a commercial center (sixty thousand square feet or greater of retail or office use measured cumulatively within a five hundred foot radius) or*
 - b. *When adjacent to multi-family development with over eighty units or*
 - c. *Within 1,320 feet of an existing or planned public transit street and within 1,320 feet of the opposite use (commercial center or multi-family development with over eighty units).*
3. *Tree Preservation. The Community Development Director may grant an adjustment to any standard of this requirement provided that the adjustment preserves a designated heritage tree or grove so that the reduction in the amount of required pavement can help preserve existing healthy trees in an undisturbed, natural condition.*
4. *Transportation Demand Management. The Community Development Director shall reduce the required number of parking stalls up to twenty-five percent when a parking-traffic study prepared by a traffic engineer demonstrates alternative modes of transportation, including transit, bicycles, and walking, and/or special characteristics of the customer, client, employee or resident population will reduce expected vehicle use and parking space demand for this development, as compared to standard Institute of Transportation Engineers vehicle trip generation rates and further that the transportation demand management program promotes or achieves parking utilization lower than minimum city parking requirements.*
A transportation demand management (TDM) program shall be developed to include strategies for reducing vehicle use and parking demand generated by the development and will be measured annually. If, at the annual assessment, the City determines the plan is not successful, the plan may be revised. If the City determines that no good-faith effort has been made to implement the plan, the City may take enforcement actions.
5. *The minimum required number of stalls may be reduced by up to ten percent when the subject property is adjacent to an existing or planned fixed public transit route or within one thousand feet of an existing or planned transit stop.*

Finding: Complies as proposed. The existing facility has eight spaces at the rear and one ADA van space at the front of the property. The proposed development consists of two primary uses, senior housing and office (note – office is existing). The senior housing parking ratio is based on the number of beds. The proposed addition would add 16 beds. Therefore, a minimum of 2 and a maximum of 3 additional parking stalls would be required for the senior housing use. The site plan indicates the additional 3 spaces added to the north of the existing spaces. All required parking will be off-street, although there is on-street parking available as well.

17.52.030 - Standards for automobile parking.

- A. *Access. Ingress and egress locations on public thoroughfares shall be located in the interests of public traffic safety and meet requirements of OCMC 16.12.035. Groups of more than four parking spaces shall be so located and served by driveways so that their use will require no backing movements or other maneuvering within a street right-of-way other than an alley.*
- B. *Surfacing. Required off-street parking spaces and access aisles shall have paved surfaces adequately maintained. The use of pervious asphalt/concrete and alternative designs that reduce storm water runoff and improve water quality pursuant to the City's stormwater and low impact development design standards are encouraged.*
- C. *Drainage. Drainage shall be designed in accordance with the requirements of OCMC 13.12 and the City public works stormwater and grading design standards.*
- D. *Dimensional Standards.*
 1. *Requirements for parking developed at varying angles are according to the table included in this section. A parking space shall not be less than seven feet in height when within a building or structure, and shall have access by an all-weather surface to a street or alley. Parking stalls in compliance with the American with Disabilities Act may vary in size in order to comply with the building division requirements. Up to thirty-five percent of the minimum required parking may be compact, while the remaining required parking stalls are designed to standard*

dimensions. The Community Development Director may approve alternative dimensions for parking stalls in excess of the minimum requirement which comply with the intent of this chapter.

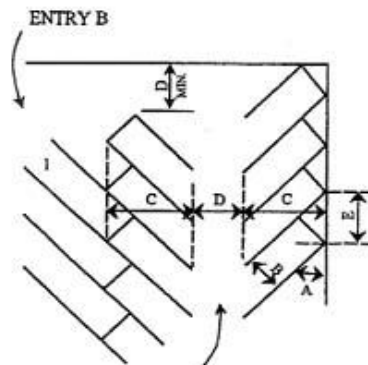
2. *Alternative parking/plan.* Any applicant may propose an alternative parking plan. Such plans are often proposed to address physically constrained or smaller sites, however innovative designs for larger sites may also be considered. In such situations, the Community Development Director may approve an alternative parking lot plan with variations to parking dimensions of this section. The alternative shall be consistent with the intent of this chapter and shall create a safe space for automobiles and pedestrians while providing landscaping to the quantity and quality found within parking lot landscaping requirements.

PARKING STANDARD

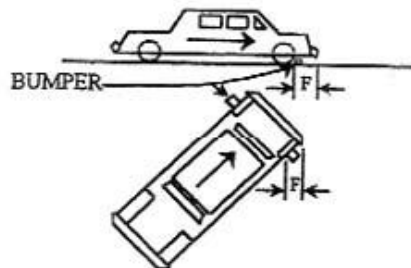
PARKING ANGLE SPACE DIMENSIONS

A Parking Angle		B Stall Width	C Stall to Curb	D Aisle Width	E Curb Length	F Overhang
0 degrees		8.5	9.0	12	20	0
30 degrees	Standard Compact	9' 8'	17.3' 14.9'	11' 11'	18' 16'	
45 degrees	Standard Compact	8.5 8.5	19.8' 17.0'	13' 13'	12.7' 11.3'	1.4
60 degrees	Standard Compact	9' 8'	21' 17.9'	18' 16'	10.4' 9.2'	1.7
90 degrees	Standard Compact	9' 8'	19.0' 16.0'	24' 22'	9' 8'	1.5

All dimensions are to the nearest tenth of a foot.



TYPICAL PARKING LAYOUT
ENTRY A



NOTE: SPACE 1 CONTINGENT UPON ENTRY B
OVERHANG

NOTE: Overhang dimensions are intended to indicate possible location from parking area edge for location of bumpers.

E. *Carpool and Vanpool Parking.* New developments with seventy-five or more parking spaces, excluding projects where seventy-five percent or more of the total floor area is residential, and new hospitals, government offices,

group homes, nursing and retirement homes, schools and transit park-and-ride facilities with fifty or more parking spaces, shall identify the spaces available for employee, student and commuter parking and designate at least five percent, but not fewer than two, of those spaces for exclusive carpool and vanpool parking. Carpool and vanpool parking spaces shall be located closer to the main employee, student or commuter entrance than all other employee, student or commuter parking spaces with the exception of ADA accessible parking spaces. The carpool/vanpool spaces shall be clearly marked "Reserved - Carpool/Vanpool Only."

Finding: Complies as proposed. The new spaces will be oriented at 90 degrees to the drive aisle and will measure 9' wide by 19' deep with overhang. The existing drive aisle is 22' wide and will be extended to serve the additional spaces. The parking lot is small, and the proposed dimensions are adequate. No carpool or vanpool parking is required, although there is an existing van accessible space next to the front entrance to the existing building, which will remain.

17.52.040 - Bicycle parking standards.

A. Purpose-Applicability. To encourage bicycle transportation to help reduce principal reliance on the automobile, and to ensure bicycle safety and security, bicycle parking shall be provided in conjunction with all uses other than exclusively residential use with less than five dwellings onsite (excluding cluster housing).

B. Number of Bicycle Spaces Required. For any use not specifically mentioned in Table A, the bicycle parking requirements shall be the same as the use which, as determined by the Community Development Director, is most similar to the use not specifically mentioned. Calculation of the number of bicycle parking spaces required shall be determined in the manner established in OCMC 17.52.020 for determining automobile parking space requirements. Modifications to bicycle parking requirements may be made through the site plan and design, conditional use, or master plan review process.

TABLE A Required Bicycle Parking Spaces*

Where two options for a requirement are provided, the option resulting in more bicycle parking applies. Where a calculation results in a fraction, the result is rounded up to the nearest whole number.

USE	MINIMUM BICYCLE PARKING	MINIMUM BICYCLE PARKING - COVERED - The following percentage of bicycle parking is required to be covered
Nursing home or care facility	1 per 30 auto spaces (minimum of 2)	30% (minimum of 1)
Bank, office	1 per 20 auto spaces (minimum of 2)	50% (minimum of 1)
Medical and dental clinic	1 per 20 auto spaces (minimum of 2)	50% (minimum of 1)

* Covered bicycle parking is not required for developments with two or fewer parking stalls.

C. Design Standards.

1. Bicycle parking facilities shall be in the form of a lockable enclosure onsite, secure room in a building onsite, a covered or uncovered rack onsite, or within the adjacent right-of-way.

Finding: Complies as proposed. The applicant has proposed a covered area for bicycle parking between the existing building and proposed addition.

2. Bicycle parking areas shall be clearly marked or visible from on-site buildings or the street. If a bicycle parking area is not plainly visible from the street or main building entrance, a sign shall be posted indicating the location of the bicycle parking area. Indoor bicycle parking areas shall not require stairs to access the space. If sites have more than one building, bicycle parking shall be distributed as appropriate to serve all buildings.

Finding: Complies as proposed. Bicycle parking has been proposed in an area that is clearly visible from the public way approaching the front of building and adjacent to sidewalk/driveway.

3. All bicycle racks shall be designed so that:

- a. The bicycle frame is supported horizontally at two or more places.
- b. The frame and at least one wheel of the bicycle can be locked to the rack with a standard U-type lock.
- c. The user is not required to lift the bicycle onto the bicycle rack.
- d. Each bicycle parking space is accessible without moving another bicycle.
- e. It is a minimum of thirty inches tall and eighteen inches wide between the two points of contact.
- f. Provides an area of six feet by two feet per bicycle.
- g. All bicycle racks and lockers shall be securely anchored to the ground or to a structure.

Finding: Complies as proposed. Two bicycle racks are proposed between the addition and existing building. Bicycle racks are stationary “U” style racks providing two horizontal points of contact with a bicycle frame.

17.52.060 - Parking lot landscaping.

Purpose. The purpose of this code section includes the following:

1. To enhance and soften the appearance of parking lots;
2. To limit the visual impact of parking lots from sidewalks, streets and particularly from residential areas;
3. To shade and cool parking areas;
4. To reduce air and water pollution;
5. To reduce storm water impacts and improve water quality; and
6. To establish parking lots that are more inviting to pedestrians and bicyclists.

A. Applicability. Unless otherwise specified, construction of new parking lots and alterations of existing parking lots shall comply with parking lot landscaping standards. Parking lot landscaping requirements within this section do not apply to parking structures or parking garages, except landscaping as required in OCMC 17.62.

Finding: The applicant has proposed to expand the existing parking lot by three spaces, therefore this section applies.

B. Development Standards.

1. The landscaping shall be located in defined landscaped areas that are uniformly distributed throughout the parking or loading area.
2. All areas in a parking lot not used for parking, maneuvering, or circulation shall be landscaped.
3. Parking lot trees shall be a mix of deciduous shade trees and coniferous trees. The trees shall be evenly distributed throughout the parking lot as both interior and perimeter landscaping.
4. Required landscaping trees shall be of a minimum two-inch minimum caliper size (though it may not be standard for some tree types to be distinguished by caliper), planted according to American Nurseryman Standards, and selected from the Oregon City Street Tree List or approved by an arborist;
5. At maturity, all of the landscaped area shall be planted in ground cover plants, which includes grasses. Mulch (as a ground cover) shall only be allowed underneath plants at full growth and within two feet of the base of a tree and is not a substitute for ground cover.
6. Landscaped areas shall include irrigation systems unless an alternate plan is submitted, and approved by the Community Development Director, that can demonstrate adequate maintenance;
7. All landscaping shall be installed according to accepted planting procedures, according to American Nurseryman Standards.

Finding: Complies as proposed. The parking lot landscaping is uniformly distributed around the parking lot. The only change in the parking lot landscaping is the addition of a landscape island to break up the run of parking spaces. There will be 5 parking spaces on each side of the landscape island. 4 existing Big Leaf Maple trees are located west of the parking area. The landscape island includes a 2” caliper Eastern Redbud tree, and it will be irrigated per the applicant’s plans. Existing perimeter buffer landscaping and parking lot / entryway landscaping will be preserved.

C. Perimeter Parking Lot Landscaping and Parking Lot Entryway/Right-of-Way Screening. *Parking lots shall include a five-foot wide landscaped buffer where the parking lot abuts the right-of-way and/or adjoining properties. In order to provide connectivity between non-single-family sites, the Community Development Director may approve an interruption in the perimeter parking lot landscaping for a single driveway where the parking lot abuts property designated as multi-family, commercial or industrial. Shared driveways and parking aisles that straddle a lot line do not need to meet perimeter landscaping requirements.*

1. The perimeter parking lot are[a] shall include:

- a. Trees spaced a maximum of thirty feet apart (minimum of one tree on either side of the entryway is required). When the parking lot is adjacent to a public right-of-way, the parking lot trees shall be offset from the street trees;*
- b. An evergreen hedge screen of thirty to forty-two inches high or shrubs spaced no more than four feet apart on average. The hedge/shrubs shall be parallel to and not nearer than two feet from the right-of-way line. The required screening shall be designed to allow for free access to the site and sidewalk by pedestrians. Visual breaks, no more than five feet in width, shall be provided every thirty feet within evergreen hedges abutting public right-of-ways.*

Finding: Complies as proposed. See finding under B above.

D. Parking Area/Building Buffer. *Except for parking lots with fewer than five parking stalls, parking areas shall be separated from the exterior wall of a structure, exclusive of pedestrian entrances or loading areas, by one of the following:*

- 1. Minimum five-foot wide landscaped planter strip (excluding areas for pedestrian connection) meeting the standards for perimeter parking lot area landscaping; or:*
- 2. Minimum seven foot sidewalks with shade trees spaced a maximum of thirty feet apart in three-foot by five-foot tree wells.*

Finding: Complies as proposed. See finding under B above. No parking is proposed adjacent to the addition.

E. Interior Parking Lot Landscaping.

Surface parking lots with more than five parking stalls shall include at least forty-five square feet of interior parking lot landscaping per parking stall to improve the water quality, reduce storm water runoff, and provide pavement shade. Pedestrian walkways or any impervious surface in the landscaped areas are not to be counted in the percentage. Fractions shall be rounded up when calculating the required number of plantings. Interior parking lot landscaping shall include:

- a. A minimum of one tree per four parking spaces.*
- b. A minimum of 1.5 shrubs per parking space.*
- c. No more than eight contiguous parking spaces shall be created without providing an interior landscape strip between them. Landscape strips shall be provided between rows of parking shall be a minimum of six feet in width and a minimum of ten feet in length.*

Finding: Complies as proposed. See finding under B above.

F. Alternative landscaping plan.

Any applicant may propose an alternative landscaping plan. Such plans are often proposed to address physically constrained or smaller sites, however innovative designs for larger sites may also be considered. Alternative plans may include the use of low impact development techniques and minimized landscaping requirements. In such situations, the Community Development Director may approve variations to the landscaping standards of OCMC 17.52.060 in accordance with A and/or B below.

Finding: Not applicable. The applicant has not proposed an alternative landscaping plan.

17.52.080 - Maintenance.

The owner, tenant and their agent, if any, shall be jointly and severally responsible for the maintenance of the site including but not limited to the off-street parking and loading spaces, bicycle parking and all landscaping which

shall be maintained in good condition so as to present a healthy, neat and orderly appearance and shall be kept free from refuse and debris.

All plant growth in interior landscaped areas shall be controlled by pruning, trimming, or otherwise so that:

- a. It will not interfere with the maintenance or repair of any public utility;*
- b. It will not restrict pedestrian or vehicular access; and*
- c. It will not constitute a traffic hazard due to reduced visibility.*

Finding: Complies as proposed. The applicant indicates that the property and all landscaping will be maintained in accordance with this standard.

17.52.090 - Loading areas.

A. Purpose.

The purpose of this section is to provide adequate loading areas for commercial, office, retail and industrial uses that do not interfere with the operation of adjacent streets.

B. Applicability.

OCMC 17.52.090 applies to uses that are expected to have service or delivery truck visits with a forty-foot or longer wheelbase, at a frequency of one or more vehicles per week. The City Engineer and decision maker shall determine through site plan and design review the number, size, and location of required loading areas, if any.

Finding: Not applicable. The development is not expected to have service or delivery truck visits with a forty-foot or longer wheelbase, at a frequency of one or more vehicles per week.

C. Standards.

1. The off-street loading space shall be large enough to accommodate the largest vehicle that is expected to serve the use without obstructing vehicles or pedestrian traffic on adjacent streets and driveways. Applicants are advised to provide complete and accurate information about the potential need for loading spaces because the City Engineer or decision maker may restrict the use of other public right-of-way to ensure efficient loading areas and reduce interference with other uses.

Finding: Not applicable. The development has not proposed off-street loading.

2. Where parking areas are prohibited between a building and the street, loading areas or drive isles are also prohibited.

Finding: Not applicable. The development has not proposed loading areas.

3. The City Engineer and decision maker, through site plan and design review, may approve a loading area adjacent to or within a street right-of-way when all of the following loading and unloading operations conditions are met:

- a. Short in duration (i.e., less than one hour);*
- b. Infrequent (less than three operations daily between 5:00 a.m. and 12:00 a.m. or all operations between 12:00 a.m. and 5:00 a.m. at a location that is not adjacent to a residential zone);*
- c. Does not obstruct traffic during peak traffic hours;*
- d. Does not interfere with emergency response services; and*
- e. Is acceptable to the applicable roadway authority.*

Finding: Not applicable. The development has not proposed loading areas and will not be allowed to have loading areas adjacent to or within a street right-of-way

CHAPTER 17.54 SUPPLEMENTAL ZONING REGULATIONS AND EXCEPTIONS

17.54.100 Fences, Hedges, Walls, and Retaining Walls.

A. A fence, hedge, wall, retaining wall, or combination thereof may be located on real property, not within the right-of-way, subject to all of the following:

- 1. A fence, hedge, wall, retaining wall, or combination thereof located in front of a building may be up to 3.5-feet in total height as measured from the finished grade at any point on the fence.*

2. A fence, hedge, wall, located next to and behind the forward most building, or within more than forty feet of the right-of-way, whichever is less may be up to:

a. Six feet in total height for residential properties with less than five units as measured from the finished grade at any point on the fence; or

b. Eight feet in total height for all other uses as measured from the finished grade at any point on the fence.

3. A retaining wall or combination of a fence, hedge, wall located next to and behind the forward most building, or within more than forty feet of the right-of-way, whichever is less, may be up to (as measured from the finished grade) 8.5 feet in height from the finished grade.

4. Fences, hedges, and/or walls located within two feet above a retaining wall, as measured on a horizontal plane, shall be measured together for the purposes of determining height.

5. Property owners shall ensure compliance with the Traffic Sight Obstruction requirements in Chapter 10.32 of the Oregon City Municipal Code.

Finding: Complies as proposed. The site plan indicates that the existing 6' cedar fence along the north property line will be relocated around the new addition lot. The existing front yard fence on the north side of the addition will remain.

B. When no other practicable alternative exists, the City Engineer may permit a fence, hedge, wall, retaining wall, or combination thereof to be located within the right-of-way subject to all of the following:

1. A Revocable Permanent Obstruction in the Right of Way permit is granted per OCMC 12.04.120;

2. Retaining walls, fences, or hedges comply with OCMC 17.54.100.A, unless determined to be impracticable by the City Engineer.

3. The abutting property owner shall ensure compliance with the Traffic Sight Obstruction requirements in Chapter 10.32 of the Oregon City Municipal Code.

Finding: Not applicable. The applicant has not proposed a fence, hedge or wall in the right-of-way.

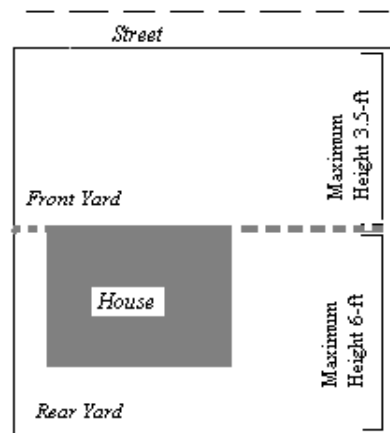
C. It is unlawful for any person to erect any electric fence or any fence constructed in whole or in part of barbed wire or to use barbed wire, except as erected in connection with security installations at a minimum height of six feet, providing further that prior written approval has been granted by the City Manager.

Finding: Not applicable. The applicant has not proposed any electric or barbed wire fences.

Residential Height Requirements

Any fence, hedge or wall located in front of may be up to 3.5-feet in total height.

A fence, hedge or wall located next to and behind your home may be up to 6-feet in total height.



CHAPTER 17.56 CONDITIONAL USES

17.56.010 - Permit—Authorization—Standards—Conditions.

A conditional use listed in this title may be permitted, enlarged or altered upon authorization of the Planning Commission in accordance with the standards and procedures of this title. A conditional use permit listed in this

section may be permitted, enlarged or altered upon authorization of the Planning Commission in accordance with the standards and procedures of this section. Any expansion to, alteration of, or accessory use to a conditional use shall require Planning Commission approval of a modification to the original conditional use permit.

Finding: The

A. The following conditional uses, because of their public convenience and necessity and their effect upon the neighborhood shall be permitted only upon the approval of the Planning Commission after due notice and public hearing, according to procedure as provided in OCMC 17.50. The Planning Commission may allow a conditional use, provided that the applicant provides evidence substantiating that all the requirements of this title relative to the proposed use are satisfied, and demonstrates that the proposed use also satisfies the following criteria:

1. The use is listed as a conditional use in the underlying district;

Finding: Complies as Proposed. In the R-10 zone, under Oregon City Municipal Code (OCMC) Section 17.08.03.J Assisted living facilities; nursing homes and group homes for over fifteen patients are listed as “Conditional Uses”.

2. The characteristics of the site are suitable for the proposed use considering size, shape, location, topography, existence of improvements and natural features;

Finding: Complies as proposed. The proposed expansion can be accommodated given the suitable characteristics of the site as discussed below.

Under the initial approval in 2014, then with a second approval for a 7-bed expansion in 2018, the Planning Commission concurred with the applicant that the site is large enough to accommodate the current residential care facility of 38 beds while providing adequate outdoor space, landscaping, and parking for the use. The flat topography is appropriate for a handicap accessible building and its location on the corner of Amanda Ct. and South End Road lends itself to easy pedestrian and vehicle access. This type of facility operates best as a one level facility where the residents receiving care are on the ground level. It makes for easy ingress and egress and provides easy access to the onsite landscape and outdoor recreation areas by the residents who will primarily require wheelchair maneuverability. The residential feel of the area creates a home-like environment for residents by allowing them to reside in a quiet, residential area rather than in a commercialized zone. At the same time, the property is located on a major street and even though it is located in a low density residential area, the main access road (South End Rd.) provides easy access to the site without having traffic travel through neighborhood side streets or local access roads. This will minimize any traffic impacts the use may have on the site and surrounding homes in the neighborhood. The site is well served by public utilities which can satisfy the needs of the size of the proposed development. The facility’s architecture, placement of parking, landscaping, pedestrian improvements, etc. will be an improvement to a growing area and maintain continuity with recent developments such as that of nearby churches, fire station, homes, and the multi-family development on the corner of South End Rd. and Warner Parrott Rd; becoming part of the fabric of the surrounding neighborhood and creating dwellings for the elderly and handicapped within a residential setting in Oregon City. The proposed development will bring several improvements to the site, street, and neighborhood. It will provide a needed housing type for the elderly and disabled. Finally the project will create several new jobs.

The following additional findings are pertinent to the proposed expansion of 16-beds.

Size: The applicant's proposal includes an additional 16 beds for an existing assisted living facility for 38 beds for a total of 54 beds, with existing office and storage space on the second floor of the existing building. The Oregon City Municipal Code and Comprehensive Plan do not provide a limitation or specific criteria to determine the number of people who may live in an assisted living facility, the size limitations for assisted living facilities or the size of offices associated with conditional uses. Site data are indicated on the site plans in a table shown here.

Except for slightly exceeding the maximum lot coverage of 40%, the proposed expansion complies with the R-10 zone dimensional standards.

Scale, Architecture and Massing of the Building: The scale, architecture and massing of the building is appropriate to accommodate the proposed expansion of the use as a residential care facility.

Shape: 914 South End Road is a 0.26-acre (11,325.6 sq. ft.) lot which abuts the existing facility to the north and is currently developed with a one-story single-family home constructed in 1974. The lot is rectangular and measures approximately 155 feet in depth and 72.5 feet in width. The applicant's new building addition will build onto the existing house and remodel it to a total 6,996 square feet, bringing the total building footprint

for the existing and proposed addition to 23,401 sq. ft. The scale of the proposed structure continues to comply with the dimensional standards of the R-10 zoning designation (setbacks, height, etc.) and is thus of a residential scale. The variance for lot coverage is minor (6 percent) and will have a negligible effect on the overall residential scale of the building. The development is buffered from adjacent neighbors by placing the building within the middle of the site, surrounding the site by a 6-foot tall wood fence, and installing a landscaping buffer of high screening shrubbery (6' tall and higher).

Location: The subject site is located adjacent to South End Road, a minor arterial in the Transportation System Plan. No new site access is proposed to the addition which will use the existing access. The site can be easily accessed from the arterial road and does not require any access through existing neighborhoods. All vehicular traffic (with the exception of emergency vehicles) through the site will

PROJECT DATA		
SITE DATA:	950 SOUTH END ROAD	ZONED R-10
PROPERTY AREA:	.91 ACRES	39,343 SQ. FT.
ASSESSORS PARCEL ID NUMBER		3-1E-01AD-03100
SITE DATA:	914 SOUTH END ROAD	ZONED R-10
PROPERTY AREA:	.26 ACRES	11,248 SQ. FT.
ASSESSORS PARCEL ID NUMBER		3-1E-01AD-03301
SITE DATA:	914 & 950 SOUTH END ROAD (COMBINED)	
PROPERTY AREA:	1.17 ACRES	50,591 SQ. FT.
SITE AREA BREAKDOWN:		
EXISTING MC BUILDING:	16,405 SQ.FT.	(32%)
ADDITION MC BUILDING:	6,996 SQ.FT.	(14%)
BUILDING FOOTPRINTS TOTAL:	23,401 SQ.FT.	(46.2%)
PATIOS / WALKS:	8,882 SQ.FT.	(17.5%)
DRIVES / PARKING:	7,177 SQ.FT.	(14.2%)
OPEN SPACE:	11,131 SQ.FT.	(22.1%)
TOTAL	50,591 SQ.FT.	(100%)
IMPERVIOUS AREA:	39,460 SQ.FT.	(77.9%)
PERVIOUS AREA:	11,131 SQ.FT.	(22.1%)
PARKING BREAKDOWN:		
OPEN SPACES		10
ACCESSIBLE SPACES		01
TOTAL SPACES		11
FLOOR TO AREA RATIO:		
EXISTING MC BUILDING: (1ST & 2ND)	16,405 + 1,980 =	18,385 SQ.FT.
ADDITION MC BUILDING:	6,996 SQ.FT.	
	25,381 SQ.FT.	
	25,381 / 50,591 =	50.1

enter and exit the property via South End Road. In addition, the site is located directly on South End Road which is a transit street. The use of the transit system may be supported by the visitors and staff of the proposed use. Significantly, the residents, due to their incapacity, do not drive.

Topography: The subject site is generally flat and does not have any major topographic constraints that would limit the ability to develop the site.

Existence of Improvements: The existing lot at 914 South End Road is developed with a single-family residence. There are no sidewalks or street trees located along the frontage of the site. The applicant's proposed addition will efficiently extend the frontage improvements including sidewalks, street trees and an additional bike lane. The public works department has no conflicts with the proposal.

Natural Features: The subject site is not within an environmental overlay district.

Staff has determined it is possible, likely and reasonable the applicant can meet this standard by complying with the recommended conditions of approval.

4. The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs or precludes the use of surrounding properties for the primary uses listed in the underlying district;

Finding: Complies as proposed. For the same reasons stated under standard A.2 above, the proposed expansion will not substantially limit, impair or preclude the use of surrounding properties to continue as single-family dwellings or any other permitted land use allowed by the R-10 zone district.

COMPREHENSIVE PLAN – APPLICABLE GOALS AND POLICIES

5. The proposal satisfies the goals and policies of the city comprehensive plan which apply to the proposed use.

Finding: Finding: The applicable Comprehensive Plan Goals and Policies are as follows:

Goal 1.1 Citizen Involvement Program *Implement a Citizen Involvement Program that will provide an active and systematic process for citizen participation in all phases of the land-use decision-making process to enable citizens to consider and act upon a broad range of issues affecting the livability, community sustainability, and quality of neighborhoods and the community as a whole.*

Policy 1.1.1 - *Utilize neighborhood associations as the vehicle for neighborhood-based input to meet the requirements of the Land Conservation and Development Commission (LCDC) Statewide Planning Goal 1, Citizen Involvement. The Citizen Involvement Committee (CIC) shall serve as the officially recognized citizen committee needed to meet LCDC Statewide Planning Goal 1.*

Goal 1.2 Community and Comprehensive Planning - *Ensure that citizens, neighborhood groups, and affected property owners are involved in all phases of the comprehensive planning program.*
Policy 1.2.1 - *Encourage citizens to participate in appropriate government functions and land-use planning.*

Goal 1.3 Community Education - *Provide education for individuals, groups, and communities to ensure effective participation in decision-making processes that affect the livability of neighborhoods.*

Goal 1.4 Community Involvement - Provide complete information for individuals, groups, and communities to participate in public policy planning and implementation of policies.

Policy 1.4.1 - Notify citizens about community involvement opportunities when they occur.

Finding: Complies as Proposed. The proposed use and building addition were presented to the Citizen Involvement Committee (CIC) at their December 2nd, 2019 regular meeting. The South End Neighborhood Association is currently inactive. A copy of the meeting agenda and e-mail from Christina Robertson-Gardiner as evidence of compliance with the above criteria is included with the application. Notice of the application identifying the approval process and applicable criteria was sent to the Citizen Involvement Committee, property owners within 300 feet of the site, and posted onsite and online. The public is provided the opportunity to review the application and comment in writing and person throughout the Planning Commission hearings for this Type III process.

Goal 2.4 Neighborhood Livability - Provide a sense of place and identity for residents and visitors by protecting and maintaining neighborhoods as the basic unit of community life in Oregon City while implementing the goals and policies of the other sections of the Comprehensive Plan.

Policy 2.4.2 Strive to establish facilities and land uses in every neighborhood that help give vibrancy, a sense of place, and a feeling of uniqueness; such as activity centers and points of interest.

Policy 2.4.4 Where environmental constraints reduce the amount of buildable land, and/or where adjacent land differs in uses or density, implement Comprehensive Plan and zoning designations that encourage compatible transitional uses.

Policy 2.4.5 - Ensure a process is developed to prevent barriers in the development of neighborhood schools, senior and childcare facilities, parks, and other uses that serve the needs of the immediate area and the residents of Oregon City.

Goal 2.7 Oregon City Comprehensive Plan Land-Use Map- Maintain the Oregon City Comprehensive Plan Land-Use Map as the official long-range planning guide for land-use development of the city by type, density and location.

Policy 2.7.1 Maintain a sufficient land supply within the city limits and the Urban Growth Boundary to meet local, regional, and state requirements for accommodating growth.

Policy 2.7.2 Use the following 11 land-use classifications on the Oregon City Comprehensive Plan Land-Use Map to determine the zoning classifications that may be applied to parcels:

- Low Density Residential (LR)
- High Density Residential (HR)
- Mixed Use Corridor (MUC)
- Mixed Use Downtown (MUD)
- Public and Quasi-Public (QP)
- Future Urban Holding (FUH)
- Medium Density Residential (MR)
- Commercial (C)
- Mixed Use Employment (MUE)
- Industrial (I)
- Parks (P)

Finding: Complies as proposed. The proposal retains the existing Comprehensive Plan designation of Low Density Residential, and a Conditional Use under that designation allows for an assisted care facility (nursing home). Language in the above policies suggests that the proposed expansion may be denser than contemplated by the comprehensive plan designation. The site could have been utilized for single-family residential use, which would typically have fewer residents, but the zoning code does not include limitation on family size or even define what constitutes as a family in any zone including residential zones. Approval of the expansion would allow a use that serves needy seniors of the immediate area and Oregon City. The proposed development does not limit the ability of other residents within the area to continue to access city services, utilize the transportation system or continue existing uses within the area. In addition, Section 2 of the Comprehensive Plan generally encourages promotion of infill and higher density redevelopment to encourage more efficient land use. Further, the expanded facility will be available to serve the residents of the immediate area and the residents of Oregon City. The Conditional Use process provides criteria to allow approval of care facilities with more than 15 people. The facility will become a part of the residential fabric within the area and create another level of housing opportunity for disabled residents. The criteria identified for the Conditional Use do not provide barriers to construction of additional housing choices that cannot be mitigated through compliance with the applicable approval criteria and conditions of approval.

***Policy 6.1.1** Promote land-use patterns that reduce the need for distance travel by single-occupancy vehicles and increase opportunities for walking, biking and/or transit to destinations such as places of employment, shopping and education.*

***Goal 6.3 Nightlighting** Protect the night skies above Oregon City and facilities that utilize the night sky, such as the Haggart Astronomical Observatory, while providing for nightlighting at appropriate levels to ensure safety for residents, businesses, and users of transportation facilities, to reduce light trespass onto neighboring properties, to conserve energy, and to reduce light pollution via use of night-friendly lighting.*

***Policy 6.3.1** - Minimize light pollution and reduce glare from reaching the sky and trespassing onto adjacent properties.*

***Policy 6.3.2** -Encourage new developments to provide even and energy-efficient lighting that ensures safety and discourages vandalism. Encourage existing developments to retrofit when feasible.*

Finding: Complies with Condition. Please refer to the findings for Outdoor Lighting in section 17.62.065 earlier in this report. The proposed lighting plan will comply with the Oregon City Municipal Code with the suggested conditions of approval. **Staff has determined it is possible, likely, and reasonable the applicant can meet this standard by complying with the recommended conditions of approval.**

***Goal 6.4 Noise-** Prevent excessive noise that may jeopardize the health, welfare, and safety of the citizens or degrade the quality of life.*

***Policy 6.4.1-** Provide for noise abatement features such as sound-walls, soil berms, vegetation, and setbacks, to buffer neighborhoods from vehicular noise and industrial uses.*

Finding: Complies as proposed. Staff anticipates that the proposed use will produce less noise than that generated by three single-family homes if they were developed on the same property. Excessive noise is

typically addressed through the nuisance / code enforcement process if a complaint is lodged. Primary sources of noise from the facility could result from employee and visitor vehicle traffic - which is predicted to be quite low for the proposed land use as discussed in the transportation analysis, and landscaping maintenance (mowing, weed trimmers and leaf blowers) - which would typically occur intermittently during daily business hours throughout the week. As shown on the landscaping plans, the primary entrance to the building will continue to orient toward South End Road, there will be limited-access doorways (for emergency access only) the building, and the site will conform to the minimum setbacks for the R-10 zone. Finally, high screening shrubs and trees are proposed as well as a 6' cedar privacy fence.

Goal 9.1 Improve Oregon City's Economic Health - Provide a vital, diversified, innovative economy including an adequate supply of goods and services and employment opportunities to work toward an economically reasonable, ecologically sound and socially equitable economy.

Goal 9.4 Education, Skills And Workforce Training- Ensure that the major employers in Oregon City are able to find qualified and skilled workers to meet their needs.

Finding: Complies as Proposed. The proposed development would provide some short-term construction and long-term employment opportunities within Oregon City.

Goal 10.1 Diverse Housing Opportunities - Provide for the planning, development and preservation of a variety of housing types and lot sizes.

Policy 10.1.3 - Designate residential land for a balanced variety of densities and types of housing, such as single-family attached and detached, and a range of multi-family densities and types, including mixed-use development.

Policy 10.1.4- Aim to reduce the isolation of income groups within communities by encouraging diversity in housing types within neighborhoods consistent with the Clackamas County Consolidated Plan, while ensuring that needed affordable housing is provided.

Finding: Complies as Proposed. The proposed expansion would provide an opportunity for an expanded assisted living facility within Oregon City. Although the City has designated this site as "R-10," a zone that does not allow multi-family residential developments (though the density may be similar, the applicant has not proposed a multi-family development), this restriction must be weighed against the shortfall of assisted living facilities in the City and the number of housing units projected in Oregon City's Comprehensive Plan. This proposal would add housing that would help the City achieve its goals. Further, the proposed assisted living facility sited within an existing residential neighborhoods provides an important opportunity for residents of Oregon City to age in place and stay connected to the neighborhood, familiar local activities, community events, friends and family, thus reducing the isolation of income groups.

Policy 11.1.4 - Support development on underdeveloped or vacant buildable land within the city where public facilities and services are available or can be provided and where land-use compatibility can be found relative to the environment, zoning, and Comprehensive Plan goals.

Policy 11.1.6 - Enhance efficient use of existing public facilities and services by encouraging development at maximum levels permitted in the Comprehensive Plan, implementing minimum residential densities, and adopting an Accessory Dwelling Unit Ordinance to infill vacant land.

Finding: Complies as Proposed. The project provides for full development of existing underdeveloped property within the Urban Growth Boundary. The proposed development and the design of the facility on the site results in a more efficient use of the site and existing public facilities and services by accommodating a more intensive use through the conditional use process.

***Policy 11.4.3** - Ensure parking lot designs that mitigate stormwater impacts. Take measures to reduce waterflow and increase water absorption through the use of bioswales, vegetated landscaped islands with curb cuts to allow water inflow, and tree planting.*

***Policy 11.4.5** - Design stormwater facilities to discharge surfacewater at pre-development rates and enhance stormwater quality in accordance with criteria in City of Oregon City Public Works Stormwater and Grading Design Standards.*

Finding: Complies as proposed. The applicant has proposed a new stormwater facility in accordance with the standards mentioned above at the front of the site that will be adequate to handle the expansion of impervious surface associated with the addition.

***Goal 11.6 Transportation Infrastructure** - Optimize the City's investment in transportation infrastructure.*

***Policy 11.6.1** - Make investments to accommodate multi-modal traffic as much as possible to include bike lanes, bus turnouts and shelters, sidewalks, etc., especially on major and minor arterial roads, and in regional and employment centers.*

Finding: Complies as proposed. The site is located on South End Road which is designated as a Minor Arterial in the Oregon City Transportation System Plan (TSP), and Amanda Court which is a local street. The site is also designated as a transit corridor in the TSP, although it is not currently served by Tri-Met. Tri-Met was provided notice but did not provide comment on this application. Sidewalks will be extended to meet current city standards along the frontage of the property, including a bike lane on the west side of South End Road.

***Goal 12.1 Land Use-Transportation Connection** - Ensure that the mutually supportive nature of land use and transportation is recognized in planning for the future of Oregon City.*

***Policy 12.1.1** - Maintain and enhance citywide transportation functionality by emphasizing multi-modal travel options for all types of land uses.*

***Policy 12.1.4** - Provide walkable neighborhoods. They are desirable places to live, work, learn and play, and therefore a key component of smart growth.*

***Goal 12.3 Multi-Modal Travel Options**- Develop and maintain a transportation system that provides and encourages a variety of multi-modal travel options to meet the mobility needs of all Oregon City residents.*

***Policy 12.3.2** - Provide an interconnected and accessible pedestrian system that links residential areas with major pedestrian generators such as employment centers, public facilities, and recreational areas.*

Policy 12.3.3 - Provide a well-defined and accessible bicycle network that links residential areas, major bicycle generators, employment centers, recreational areas, and the arterial and collector roadway network.

Goal 12.5 Safety - Develop and maintain a transportation system that is safe.

Policy 12.5.1 - Identify improvements that are needed to increase the safety of the transportation system for all users.

Finding: Complies as proposed. The applicant's proposal has very little impact to overall traffic in the area. The application was reviewed by John Replinger, PE, City transportation consultant, who based his analysis on the Transportation Analysis Letter (TAL) prepared by Frank Charbonneau, PE, PTOE of Charbonneau Engineering LLC, (Exhibit 2).

The TAL presented information on trip generation for a 16-bed assisted living facility. The trip generation rates were taken from the Institute of Transportation Engineers' Trip Generation. The engineer used the trip generation rates for land use category 254 – assisted living facility. The engineer predicted that the expansion of the facility would produce a net increase of 2 AM peak hour trips; 3 PM peak hour trips; and 33 additional weekday trips. The expansion from 38 beds to 54 beds is insignificant.

No change in access location is proposed in connection with the expansion. The three existing access locations are acceptable.

Mr. Replinger concluded, "I find that the TAL meets city requirements and that the 16-bed expansion of the facility will have insignificant transportation impacts. There is no need for any mitigation measures in connection with the expansion."

The site is located on South End Road which is designated as a Minor Arterial in the Oregon City Transportation System Plan (TSP), and Amanda Court which is a local street. The site is also designated as a transit corridor in the TSP, although it is not currently served by Tri-Met. Tri-Met was provided notice but did not provide comment on this application. Sidewalks have been constructed to current city standards along the frontage of the property on both streets, including a bike lane on the west side South End Road. The Comprehensive Plan states that higher density housing and non-residential uses should be clustered around collectors and arterials. This project meets this plan goal because South End Road is an arterial. The pedestrian and bicycle improvements that have been installed with the project will assure that the proposed addition to the use contributes to safe, multi-modal travel options and walkability.

Goal 13.2 Energy Conservation- Plan public and private development to conserve energy.

Policy 13.2.1- Promote mixed-use development, increased densities near activity centers, and home-based occupations (where appropriate).

Finding: Complies as Proposed. The proposed addition and land use helps to concentrate residential density along a designated arterial transit corridor, which is appropriate for the location. The nature of the land use is such that it will not greatly increase traffic since most of the occupants will not own cars and cannot drive. Section 13 of the Comprehensive Plan recognizes that zoning regulations often segregate types of land use – industrial, commercial and residential to separate incompatible uses. The

result is often longer travel distances from work to home and to other destinations. Regulations that instead promote mixed-use, compact development, residential cluster, increased landscaping for cooling purposes, water quality, and home-based occupations can promote energy conservation. The applicant's proposal would provide a development that conserves energy resources.

Policy 13.2.5- Construct bikeways and sidewalks, and require connectivity of these facilities to reduce the use of petroleum-fueled transportation.

Finding: Complies as proposed. See findings under Goal 12.1, 12.3 and 12.5 above.

Goal 14.2¹ Orderly Redevelopment of Existing City Areas- Reduce the need to develop land within the Urban Growth Boundary by encouraging redevelopment of underdeveloped or blighted areas within the existing city limits.

Policy 14.2.1 - Maximize public investment in existing public facilities and services by encouraging redevelopment as appropriate.

Policy 14.2.2 - Encourage redevelopment of city areas currently served by public facilities through regulatory and financial incentives.

Policy 14.3.1 - Maximize new public facilities and services by encouraging new development within the Urban Growth Boundary at maximum densities allowed by the Comprehensive Plan.

Finding: Complies as Proposed. The proposed addition to this project provides for full development of a residential property within the Urban Growth Boundary. The proposed development results in a more efficient use of the site and existing public facilities and services by accommodating a more intensive use through the Conditional Use process. Further, the proposed development addresses some of the challenges facing Oregon City, including ensuring an adequate supply of housing for an aging population.

B. Permits for conditional uses shall stipulate restrictions or conditions which may include, but are not limited to, a definite time limit to meet such conditions, provisions for a front, side or rear yard greater than the minimum dimensional standards of the zoning ordinance, suitable landscaping, off-street parking, and any other reasonable restriction, condition or safeguard that would uphold the spirit and intent of the zoning ordinance, and mitigate adverse effect upon the neighborhood properties by reason of the use, extension, construction or alteration allowed as set forth in the findings of the Planning Commission.

Finding: Complies with Conditions. Staff has provided standard conditions of approval related to public improvements and on-site landscaping. The applicant recognizes that staff or the Planning Commission may include such conditions and restrictions.

Staff has determined it is possible, likely and reasonable the applicant can meet this standard by complying with the recommended conditions of approval.

C. Any conditional use shall meet the dimensional standards of the zone in which it is to be located pursuant to subsection B. of this section unless otherwise indicated, as well as the minimum conditions listed below.

¹ Staff determined that Section 15 of the Comprehensive Plan does not apply to this proposal because Section 15 governs the Willamette River Greenway which is not affected by this application.

Finding: Complies with Conditions. Except for the minor variance request for lot coverage, all other dimensional standards are met. See variance findings under 17.60.

D. In the case of a use existing prior to the effective date of the ordinance codified in this title and classified in this title as a conditional use, any change of use expansion of lot area or expansion of structure shall conform with the requirements for conditional use.

Finding: Complies as proposed. The proposed addition is a requires a new conditional use application since it is a major addition to an existing conditional use (file CU 14-01) and has been reviewed for conformance with the conditional use criteria.

E. The Planning Commission may specifically permit, upon approval of a conditional use, further expansion to a specified maximum designated by the Planning Commission without the need to return for additional review.

Finding: Not applicable. The applicant has not requested that the Planning Commission approve a future expansion to the conditional use.

17.56.020 - Permit—Application.

A. A property owner or authorized agent shall initiate a request for a conditional use by filing an application with the city recorder. The applicant shall submit a site plan, drawn to scale, showing the dimensions and arrangement of the proposed development. The application shall be accompanied by the filing fee listed in OCMC 17.50.080 to defray the costs of publication, investigation and processing.

Finding: Complies as proposed. The applicant submitted the application and all required supplemental information which was deemed complete on January 29, 2020.

B. Before the Planning Commission may act on a conditional use application, it shall hold a public hearing thereon, following procedure as established in OCMC 17.50.

Finding: Notice of the initial March 9 public hearing for this application was provided on January 29, 2020. Due to COVID-19, the public hearing was continued several times until June 10, 2020.

17.56.025 - Minor modifications to legal conditional uses.

Minor modifications to an approved conditional use permit may be permitted. If permitted, the modification shall be reviewed as a minor site plan and design review. A minor modification to an approved conditional use permit is considered one of the following:

A. Modification to a structure for the purpose of enhancing the aesthetics of the building and there is no increase in the interior usable space;

B. A maximum addition of up to one thousand square feet to a commercial, office, institutional, public, multi-family, or industrial building provided that the addition is not more than thirty-five percent of the original building square footage; or

C. Revisions to parking alignment and/or related vehicle circulation patterns.

Finding: Not applicable. The proposed addition did not qualify as a minor modification.

17.56.040 - Criteria and standards for conditional uses.

In addition to the standards listed herein in OCMC 17.56.010, which are to be considered in the approval of all conditional uses and the standards of the zone in which the conditional use is located, the following additional standards shall be applicable:

A. Building Openings. The city may limit or prohibit building openings within fifty feet of residential property in a residential zone if the openings will cause glare, excessive noise or excessive traffic which would adversely affect adjacent residential property as set forth in the findings of the Planning Commission.

Finding: Complies as proposed. The applicant did not respond to this criterion. The new building will exceed the 8' minimum side yard setback with a setback of 10 feet on the north side of the building. The

proposed openings within fifty feet of adjacent residential properties are standard residential type windows and doors, which will not create anymore glare than is typical of the types of windows that are as used in the surrounding residential homes. The building use proposed - residential care facility for memory care patients, is a quiet and has low traffic use. The residents of this facility will be mainly bed bound or wheelchair bound. The facility is also a secure facility for the safety of the residents where residents cannot open doors without staff assistance. Most outdoor recreation will occur in the interior courtyard. The windows of the facility are operable, but they will be closed for most of the time, except for when open-air ventilation is desired, and have alert sensors notifying staff when a window is opened. Therefore, excessive noise or excessive traffic will not be an issue on the surrounding properties. Further, the subject property has only (1) neighboring site with a structure built on it adjacent and within 50' of the development to the north. On the east side the property abuts South End Rd. with a church across the street. On the south side is a narrow and non-buildable strip of land, which is used for street and sidewalk improvements on abutting Amanda Court. The proposed rear patio will be at grade rather than raised which will maintain a 20' setback to the rear of the building. Substantial screening through a combination of landscaping and a 6' privacy fence provides additional buffering.

B. Additional Street Right-of-Way. The dedication of additional right-of-way may be required where the city plan indicates need for increased width and where the street is inadequate for its use; or where the nature of the proposed development warrants increased street width.

Finding: See findings under Chapter 16.12. Additional street dedication is proposed along South End Rd.

F. Residential Care Facilities.

1. In addition to the general provisions of OCMC 17.56.020, any application shall include a description of the proposed use, including the number of residents and the nature of the condition or circumstances for which care, or a planned treatment or training program will be provided, the number of staff and the estimated length of stay per resident and the name of the agency responsible for regulating or sponsoring the use.

2. Approval of a conditional use application for a residential care facility shall include the following minimum standards where applicable:

a. The proposed facility shall maintain all applicable licenses required by the appropriate agencies for the use described in the application.

b. All residential care facilities shall be subject to design review. Special considerations for this use are:

i. Compatibility in appearance with the surrounding area;

ii. Provisions of usable on-site open space appropriate to the needs of the residents and the nature of the care, treatment or training provided;

iii. Clearly defined property boundaries.

Finding: Complies with Conditions. The applicant provided some description of the proposed care facility which will be licensed by the state. The new building will house 16 additional residents who require close attendance and memory care. It is anticipated that many of the residents will have mobility issues and require walkers or wheelchairs. The proposed facility is subject to the Site Plan and Design Review standards in OCMC 17.62 as discussed earlier in this report. The provision of useable on-site open space appears appropriate to the needs of the residents and the nature of the care and treatment provided, in the form of a large rear patio, a music/activity room, dining areas and a sunroom. The applicant shall provide to the Community Development Director information about the number of staff and the estimated length of stay per resident and the name of the agency responsible for regulating or sponsoring the use. The proposed facility shall maintain all applicable licenses required by the appropriate agencies for the use described in the application. **The applicant can assure compliance with this standard through the recommended Conditions of Approval.**

17.56.060 - Revocation of conditional use permits.

The Planning Commission or the City Commission may initiate administrative action under Chapter 17.50 to revoke any conditional use permit previously issued by the city or, with regard to lands annexed by the city, those such permits issued by the county. The Planning Commission or, on review, the City Commission, may revoke such permit upon determining:

A. One or more conditions attached to the grant of the conditional use permit have not been fulfilled; and

B. The unfulfilled condition is substantially related to the issuance of the conditional use permit.

Finding: Not applicable. No revocation of the previously issued conditional use permit is proposed.

17.56.070 - Periodic review of conditional use permits.

A. The City Commission may provide for the periodic review of some or all of the conditional use permits previously issued by the city, or, with regard to lands annexed by the city, those such permits issued by the county. In providing for such review, the City Commission may designate classes of such previously issued permits for which periodic review shall be undertaken.

B. Such review shall be accomplished as an administrative action under Chapter 17.50 and shall be limited to the question of whether additional conditions should be imposed on a conditional use in the light of changing circumstances and more efficient implementation of the city's comprehensive plan.

C. Notwithstanding the provisions of Chapter 17.58, any additional conditions shall be met as a requirement for continued operation of the conditional use.

Finding: Not applicable. This is not an approval criterion. No additional circumstances have arisen which would merit periodic review of this conditional use at this time.

CHAPTER 17.60 VARIANCES

D. Minor variances, as defined in subsection E. of this section, shall be processed as a Type II decision, shall be reviewed pursuant to the requirements in OCMC 17.50.030B., and shall address the criteria identified in OCMC 17.60.030, Variance — Grounds.

Finding: Applicable. The applicant requests a Minor Variance for an increase in the total building lot coverage as the proposed lot coverage is under the 25% increase threshold. The proposed addition would add a 6,996 square foot building with 16 residential units and supporting offices/common spaces. The proposed lot coverage is 46.2% which is 6.2% above the 40% lot coverage.

E. For the purposes of this section, minor variances shall be defined as follows:

1. Variances to setback and yard requirements to allow additions to existing buildings so that the additions follow existing building lines;

2. Variances to width, depth and frontage requirements of up to twenty percent;

3. Variances to residential yard/setback requirements of up to twenty-five percent;

4. Variances to nonresidential yard/setback requirements of up to ten percent;

5. Variances to lot area requirements of up to five percent;

6. Variance to lot coverage requirements of up to twenty-five percent;

7. Variances to the minimum required parking stalls of up to five percent; and

8. Variances to the floor area requirements and minimum required building height in the mixed-use districts.

9. Variances to design and/or architectural standards for single family dwellings, duplexes, single-family attached dwellings, internal conversions, accessory dwelling units, and 3-4 plexes in OCMC 17.14, 17.16, 17.20, 17.21, and 17.22.

Finding: The total combined site area of 950 and 914 South End Road measures 50,591 square feet and the proposed addition to the building would have a footprint of 23,401 square feet or 46.2% of the site. The maximum allowable lot coverage of 40% is equal to 20,236.4 square feet. The applicant has proposed lot coverage that exceeds the allowable lot coverage by 3,164.6 square feet.

For this site, the code allows a 25% increase of up to 5,059.1 square feet to the existing building as a minor variance. The application qualifies for a minor variance to lot coverage since it is well under the 25% threshold ($3,164 < 5,059$). However, for the reasons discussed under (D) above, it is being reviewed as a Type III application.

17.60.030 - Variance—Grounds.

A variance may be granted only in the event that all of the following conditions exist:

A. That the variance from the requirements is not likely to cause substantial damage to adjacent properties by reducing light, air, safe access or other desirable or necessary qualities otherwise protected by this title;

Finding: Complies as proposed. The applicant stated that the building is located on a corner lot and the expansion to the north will not negatively affect neighbor residences. The north building expansions are within the required setbacks for the site and will not affect the buildings any more than a legally conforming building to the zoning code. Given that the proposed building addition complies with the setbacks for the R-10 zone and is well under the height limit of thirty-five feet, it is unlikely that the slight increase in lot coverage of 6.2% over the 40% limit would reduce light, air, safe access or other desirable or necessary qualities protected under the zoning code.

B. That the request is the minimum variance that would alleviate the hardship;

Finding: Complies as proposed. The applicant stated that the building addition will provide the necessary room for additional residents. Given the need to add these units and the existing design of the building, the applicant believes that this is the least amount of coverage required to provide a comfortable space for the residents of the building. Furthermore, the building is a commercial use in residential zoning. Site Plan and Design Review Standards in OCMC 17.62.050.A.1 allows a lot coverage of 85% (including parking) for a commercial use building. The building size is the minimum necessary to provide the number of suites, common areas, and internal circulation of the building. Given the hardship imposed by the relatively small lot, the applicant has proposed a small increase over the 40% maximum permitted. It should be noted that the code already allows lot coverage of up to 45% for Accessory Dwelling Units in this zone without a variance. Given the nature of the proposed use, the request is the minimum that will alleviate the hardship.

C. Granting the variance will equal or exceed the purpose of the regulation to be modified.

Finding: Complies as proposed. The lot coverage standard of 40% is a residential dimensional standard that helps to assure light, space and separation between residential structures in the low-density residential R-10 zone district. The variance will have very minimal effect on the purpose of the regulation. The addition is a single story, less than the height allowed in the zoning designation. Given these factors, and the very small additional lot coverage in comparison to the stated need for the variance, staff believes the purposed of the regulation to be modified is still met.

D. Any impacts resulting from the adjustment are mitigated;

Finding: Complies as proposed. The applicant did not propose any mitigation for the adjustment. The building is within the required setbacks per zoning requirements and will not impact the buildings surrounding any more than a conforming building. The site plan includes significant screening landscaping and a six-foot privacy fence. Staff anticipates that the proposed use will not produce any

more noise or visual impacts than that of a typical residential use. No further mitigation is recommended.

E. No practical alternatives have been identified which would accomplish the same purpose and not require a variance; and

Finding: Complies as proposed. Given the existing nature of the building and the need for the additional units, the applicant stated that this is the only way to provide adequate units for the residents. The interior spaces, care requirements and other functions of the proposed use require state certification and compliance with a variety of health regulations that are beyond the scope of the zoning code. The proposed floor plan appears to provide adequate space for the proposed use and staff can think of no reason to dispute the applicant's assertion otherwise.

F. The variance conforms to the comprehensive plan and the intent of the ordinance being varied.

Finding: Complies as proposed. See findings under section 17.54 – Conditional Use, page 70 for the proposed project's consistency with the applicable Goals and Policies of the adopted Comprehensive Plan.

CHAPTER 17.62 SITE PLAN AND DESIGN REVIEW

17.62.010 - Purpose.

The purposes of site plan and design review are to: encourage site planning in advance of construction; protect lives and property from potential adverse impacts of development; consider natural or man-made hazards which may impose limitations on development; conserve the city's natural beauty and visual character and minimize adverse impacts of development on the natural environment as much as is reasonably practicable; assure that development is supported with necessary public facilities and services; ensure that structures and other improvements are properly related to their sites and to surrounding sites and structure; and implement the city's comprehensive plan and land use regulations with respect to development standards and policies.

17.62.015 - Modifications that will better meet design review requirements.

The review body shall consider modification of certain site related development standards of this Chapter specified below. These modifications may be approved as part of a Type II design review process.

A. Applicability.

1. This process shall apply to modifications to:

- a. Landscaping in OCMC 17.62.050.A;*
- b. Vehicular Connections to Adjoining Properties in OCMC 17.62.050.B.2;*
- c. On-site pedestrian circulation in OCMC 17.62.050.C;*
- d. Utility Undergrounding Requirements in OCMC 16.12.095.G;*
- e. Building location in OCMC 17.62.055.D;*
- f. Building Details in OCMC 17.62.050.B.9.055.I;*
- g. Windows in OCMC 17.62.050.B.10.055.*
- h. Parking Lot Landscaping in OCMC 17.52.060.*

Finding: Not applicable. The applicant has not sought a modification of any site plan and design review standard pursuant to this section. The applicant has sought a minor variance for lot coverage. See findings under section 17.68.

17.62.030 - When required.

Site plan and design review shall be required for all development of real property in all zones except the low and medium density residential districts, unless otherwise provided for by this title or as a condition of approval of a permit. Site plan and design review shall also apply to all conditional uses, cluster housing developments, multi-

family uses, and non-residential uses in all zones. Site Plan and Design Review does not apply to activities occurring within the right-of-way except for communication facilities pursuant to OCMC 17.80.

Site plan and design review is required for a change in use between the uses in Table 17.62.030:

Table 17.62.030

Existing Use	Proposed Use
Residential	Nonresidential use, including but not limited to: commercial, office, industrial, retail, or institutional
Single-family or duplex	3 or more dwellings

Site plan and design review shall not alter the type and category of uses permitted in the underlying zoning districts.

Finding: Applicable. The application is associated with a Conditional Use in a residential zone; therefore, Site Plan and Design Review is required.

17.62.035 - Minor site plan and design review.

This section provides for a Minor Site Plan and Design Review process. Minor Site Plan review is a Type I or Type II decision, as described in OCMC 17.62.035.A., subject to administrative proceedings described in OCMC 17.50 and may be utilized as the appropriate review process only when authorized by the Community Development Director. The purpose of this type of review is to expedite design review standards for uses and activities that require only a minimal amount of review, typical of minor modifications and/or changes to existing uses or buildings.

A. Type I Minor Site Plan and Design Review.

1. Applicability. Type I applications involve no discretion and are typically processed concurrently with a building permit application. The Type I process is not applicable for:

- a. Any activity which is included with or initiates actions that require Type II-IV review.
- b. Any increase in square footage of a conditional or nonconforming use (excluding nonconforming structures).
- c. Any proposal in which nonconforming upgrades are required under OCMC 17.58.
- d. Any proposal in which modifications are proposed under OCMC 17.62.015.

2. The following projects may be processed as a Type I application:

....

Finding: Not applicable. This application exceeds the thresholds specified for a Type I Minor Site Plan and Design Review application.

B. Type II Minor Site Plan and Design Review.

1. Type II Minor Site Plan and Design Review applies to the following uses and activities unless those uses and activities qualify for Type I review per OCMC 17.62.035.A.:

- a. Modification of an office, commercial, industrial, institutional, public or multi-family structure that does not increase the interior usable space (for example covered walkways or entryways, addition of unoccupied features such as clock tower, etc.).
- b. Modification to parking lot layout and landscaping, or the addition of up to five parking spaces.
- c. A maximum addition of up to one thousand square feet to a commercial, office, institutional, public, multi-family, or industrial building provided that the addition is not more than thirty-five percent of the original building square footage.
- d. Mobile food carts in OCMC 17.54.115.
- e. Other land uses and activities may be added if the Community Development Director makes written findings that the activity/use will not increase off-site impacts and is consistent with the type and/or scale of activities/uses listed above.

Finding: Not applicable. This application exceeds the thresholds specified for a Type II Minor Site Plan and Design Review application.

17.62.040 – Items required.

A complete application for Site Plan and Design Review shall be submitted. Except as otherwise in subsection I of this section, the application shall include the following:

A. A site plan or plans, to scale, containing the following:

- 1. Vicinity information showing streets and access points, pedestrian and bicycle pathways, transit stops and utility locations;*
- 2. The site size, dimensions, and zoning, including dimensions and gross area of each lot or parcel and tax lot and assessor map designations for the proposed site and immediately adjoining properties;*
- 3. Contour lines at two foot contour intervals for grades zero to ten percent, and five-foot intervals for grades over ten percent;*
- 4. The location of natural hazard areas on and within one hundred feet of the boundaries of the site, including:*
 - a. Areas indicated on floodplain maps as being within the one-hundred-year floodplain,*
 - b. Unstable slopes, as defined in OCMC 17.44.020,*
 - c. Areas identified on the seismic conditions map in the comprehensive plan as subject to earthquake and seismic conditions;*
- 5. The location of natural resource areas on and within one hundred feet of the boundaries of the site, including fish and wildlife habitat, existing trees (six inches or greater in caliper measured four feet above ground level), wetlands, streams, natural areas, wooded areas, areas of significant trees or vegetation, and areas designated as being within the natural resources overlay district;*
- 6. The location of inventoried historic or cultural resources on and within one hundred feet of the boundaries of the site;*
- 7. The location, dimensions, and setback distances of all existing permanent structures, improvements and utilities on or within twenty five feet of the site, and the current or proposed uses of the structures;*
- 8. The location, dimensions, square footage, building orientation and setback distances of proposed structures, improvements and utilities, and the proposed uses of the structures by square footage;*
- 9. The location, dimension and names, as appropriate, of all existing and platted streets, other public ways, sidewalks, bike routes and bikeways, pedestrian/bicycle accessways and other pedestrian and bicycle ways, transit street and facilities, neighborhood activity centers, and easements on and within two hundred fifty feet of the boundaries of the site;*
- 10. The location, dimension and names, as appropriate, of all proposed streets, other public ways, sidewalks, bike routes and bikeways, pedestrian/bicycle accessways and other pedestrian and bicycle ways, transit streets and facilities, neighborhood activity centers, and easements on and within two hundred feet of the boundaries of the site;*
- 11. All parking, circulation, loading and servicing areas, including the locations of all carpool, vanpool and bicycle parking spaces as required in OCMC 17.52;*
- 12. Site access points for automobiles, pedestrians, bicycles and transit;*
- 13. On-site pedestrian and bicycle circulation;*
- 14. Outdoor common areas proposed as open space;*
- 15. Total impervious surface created (including buildings and hard ground surfaces);*
- 16. The proposed location, dimensions and materials of fences and walls.*

Finding: Complies as proposed. The application included all items required for an adequate review pursuant to this section and was deemed complete on January 29, 2020. There are no natural resource areas within 100 feet of the site, and the site is not located within the geologic hazard overlay.

B. A landscaping plan, drawn to scale, showing the location and types of existing trees (six inches or greater in caliper measured four feet above ground level) and vegetation proposed to be removed and to be retained on the site, the location and design of landscaped areas, the varieties, sizes and spacings of trees and plant materials to be planted on the site, other pertinent landscape features, and irrigation systems required to maintain plant materials.

Finding: Complies as proposed. A landscape plan (L1.1) with irrigation plan was provided which depicts the proposed site landscaping. No trees exist on the site.

C. Architectural drawings or sketches, drawn to scale and showing floor plans, elevations accurately reflected to grade, and exterior materials of all proposed structures and other improvements as they will appear on completion of construction. The name of the adjacent street shall be identified on each applicable building elevation.

Finding: Complies. Detailed architectural drawings, flood plans, and elevations were provided with the application. Adjacent streets are indicated on the plans.

D. An electronic materials board clearly depicting all building materials with specifications as to type, color and texture of exterior materials of proposed structures.

Finding: Complies. The plans indicate the proposed exterior building materials.

E. An erosion/sedimentation control plan, in accordance with the requirements of OCMC 17.47 and the Public Works Erosion and Sediment Control Standards, and a drainage plan developed in accordance with city drainage master plan requirements, OCMC 13.12 and the Public Works Stormwater and Grading Design Standards. The drainage plan shall identify the location of drainage patterns and drainage courses on and within one hundred feet of the boundaries of the site. Where development is proposed within an identified hazard area, these plans shall reflect concerns identified in the hydrological/geological/geotechnical development impact statement.

Finding: Complies. An erosion control plan was provided.

F. An exterior lighting plan, drawn to scale, showing type, height, and area of illumination.

Finding: Complies. The applicant provided an exterior lighting (photometric) plan.

G. Archeological Monitoring Recommendation. For all projects that will involve ground disturbance, the applicant shall provide:

1. A letter or email from the Oregon State Historic Preservation Office Archaeological Division indicating the level of recommended archeological monitoring on-site, or demonstrate that the applicant had notified the Oregon State Historic Preservation Office and that the Oregon State Historic Preservation Office had not commented within forty-five days of notification by the applicant; and

2. A letter or email from the applicable tribal cultural resource representative of the Confederated Tribes of the Grand Ronde, Confederated Tribes of the Siletz, Confederated Tribes of the Umatilla, Confederated Tribes of the Warm Springs and the Confederated Tribes of the Yakama Nation indicating the level of recommended archeological monitoring on-site, or demonstrate that the applicant had notified the applicable tribal cultural resource representative and that the applicable tribal cultural resource representative had not commented within forty-five days of notification by the applicant.

If, after forty-five days' notice from the applicant, the Oregon State Historic Preservation Office or the applicable tribal cultural resource representative fails to provide comment, the City will not require the letter or email as part of the completeness review. For the purpose of this section, ground disturbance is defined as the movement of native soils.

Finding: Complies. A copy of the pre-application proposal was sent to SHPO and current tribal contacts. SHPO provided a letter citing the applicable ORS standards (SHPO Case No. 19-0713) which were included with the land use application.

H. Such special studies or reports as the Community Development Director may require to obtain information to ensure that the proposed development does not adversely affect the surrounding community or identified natural resource areas or create hazardous conditions for persons or improvements on the site. The Community Development Director shall require an applicant to submit one or more development impact evaluations as may be necessary to establish that the City's traffic safety or capacity standards, natural resource, including geologic hazard and flood plain overlay districts, will be satisfied.

Finding: Complies with Conditions. The proposed operation requires licensing by the state agency Oregon Department of Human Services (DHS) which regulates the operation of assisted living facilities including memory care facilities. As part of the Conditional Use criteria, prior to issuance of a certificate of occupancy, the applicant shall provide evidence of licensure by the Oregon Department of Human Services to operate the facility. The purpose of this recommended condition is to assure that the proposed development does not adversely affect persons or improvements on the site. No additional

species studies or reports are necessary. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

I. The Community Development Director may waive the submission of information for specific requirements of this section or may require information in addition to that required by a specific provision of this section, as follows:

1. The Community Development Director may waive the submission of information for a specific requirement upon determination either that specific information is not necessary to evaluate the application properly, or that a specific approval standard is not applicable to the application. If submission of information is waived, the Community Development Director shall, in the decision, identify the waived requirements, explain the reasons for the waiver, and state that the waiver may be challenged on appeal and may be denied by a subsequent review authority. If the matter is forwarded to the Planning Commission for initial review, the information required by this paragraph shall be included in the staff report;

Finding: Not applicable. No requirements have been waived.

2. The Community Development Director may require information in addition to that required by a specific provision of this section upon determination that the information is needed to evaluate the application properly and that the need can be justified on the basis of a special or unforeseen circumstance as necessary to comply with the applicable standards. If additional information is required, the Community Development Director shall, in the decision, explain the reasons for requiring the additional information.

Finding: See finding under (H) above.

J. One full-sized copy of all architectural and site plans.

Finding: The applicant provided one full-size copy of all architectural and site plans.

17.62.050 - General Standards

All development shall comply with the following standards:

A. Landscaping.

1. Existing native vegetation is encouraged to be retained to the maximum extent practicable. All plants listed on the Oregon City Nuisance Plant List shall be removed from the site prior to issuance of a final occupancy permit for the building.

2. Except as allowed elsewhere in Title 16 or 17 of this Code, all areas to be credited towards landscaping shall be installed with growing plant materials.

3. Pursuant to OCMC 17.49, landscaping requirements within the Natural Resource Overlay District, other than landscaping required for parking lots, may be met by preserving, restoring and permanently protecting native vegetation and habitat on development sites.

4. A landscaping plan shall be prepared by a registered landscape architect for new or revised landscaped areas and parking lots. Landscape architect approval is not required for tree removal and/or installation if the species are chosen from an approved street tree list. A certified landscape designer, arborist, or nurseryman shall be acceptable in lieu of a landscape architect for projects with less than five hundred square feet of landscaping. All landscape plans shall include a mix of vertical (trees and shrubs) and horizontal elements (grass, groundcover, etc.) that within three years will cover one hundred percent of the landscape area. Plant species listed on the Oregon City Nuisance Plant list are prohibited and native species are encouraged. No mulch, bark chips, or similar materials shall be allowed at the time of landscape installation except under the canopy of shrubs and within two feet of the base of trees.

5. Landscaping shall be visible from public thoroughfares to the extent practicable.

6. The landscaping in parking areas shall not obstruct lines of sight for safe traffic operation and shall comply with all requirements of OCMC 10.32, Traffic Sight Obstructions.

Finding: Complies with Conditions. A landscaping plan has been provided with the application drawing package. The plan was prepared by an Oregon Registered Landscape Architect. See sheet L1.1. The subject properties are outside of Downtown Design District. The plan indicates a mix of trees and shrubs as well as other ground covers and indicates 100% coverage. According to the landscaping plan, the total

site area is 50,591 square feet. 15% of the site = 7,589 square feet. Staff calculated that approximately 9,200 square feet of the site will be landscaped with growing materials. The front of the proposed addition will be generously landscaped with a mix of native plant materials to provide visual interest near the right-of-way. Parking lot landscaping (new parking island) has been excluded from the 15% minimum site landscaping requirement. The applicant did not address compliance with Chapter 10.32, Traffic Sight Obstructions, however, the applicant can show that compliance with Chapter 10.32 is met prior to issuance of a certificate of occupancy for the building. **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

B. Vehicular Access and Connectivity.

- 1. Parking areas shall be located behind the building façade that is closest to the street, below buildings, or on one or both sides of buildings.*
- 2. Existing or future connections to adjacent sites through the use of vehicular and pedestrian access easements which provide connection from the right-of-way to the adjoining property shall be provided.*
- 3. Parcels larger than three acres shall provide streets as required in OCMC 16.12.*
- 4. Parking garage entries shall not be more than half of the streetscape.*

Finding: Complies as proposed. The existing parking lot to be expanded is located at the rear of the existing building. The front of the existing building has a driveway and covered entry that is accessible for emergency vehicles. The rear of the of the building includes a parking area that is less than 150 feet in depth and complies with the minimum aisle width for single-loaded, 90-degree parking spaces. Compliance with the parking standards is provided under section 17.52. The subject properties are not located within the abovementioned Districts in the criterion above. The subject properties do not abut an alley. Existing driveway is located off the side street, Amanda Court. No changes are proposed to existing driveways.

C. A well-marked, continuous and protected on-site pedestrian circulation system meeting the following standards shall be provided:

- 1. Pathways between all building entrances and the street are required. Pathways between the street and buildings fronting on the street shall be direct and not cross a drive aisle. Exceptions may be allowed by the director where steep slopes, a physically constrained site, or protected natural resources prevent a direct connection or where an indirect route would enhance the design and/or use of a common open space.*
- 2. The pedestrian circulation system shall connect all main entrances, parking areas, bicycle parking, recreational areas, common outdoor areas, and any pedestrian amenities on the site. For buildings fronting on the street, the sidewalk may be used to meet this standard.*
- 3. The pedestrian circulation system shall connect the principal building entrance to those of buildings on adjacent sites, except within industrial zoning designations.*
- 4. Elevated external stairways or walkways shall not extend beyond the building facade except for external stairways or walkways located in, or facing interior courtyard areas that are not visible from the street or a public access easement. This standard does not apply to sky-bridges or sky-ways.*
- 5. On-site pedestrian walkways shall be hard surfaced, well drained and at least five feet wide. Surface material shall contrast visually to adjoining surfaces. When bordering parking spaces other than spaces for parallel parking, pedestrian walkways shall be a minimum of seven feet in width unless curb stops are provided. When the pedestrian circulation system is parallel and adjacent to an auto travel lane, the walkway shall be raised or separated from the auto travel lane by a raised curb, bollards, landscaping or other physical barrier. If a raised walkway is used, the ends of the raised portions shall be equipped with curb ramps for each direction of travel. Pedestrian walkways that cross drive isles or other vehicular circulation areas shall utilize a change in textual material or height to alert the driver of the pedestrian crossing area.*

Finding: Complies as proposed. The site plans indicate direct, hard surfaced pathways at least 5 feet wide connecting the building entrances and the street at the front and south side of the building. The existing building was already reviewed for compliance with this standard. A crushed gravel pathway is proposed within the northern side yard that does not connect to any building entrance; therefore, it is not considered part of the on-site pedestrian system. However, the standards (1 through 5) are met for all other paths. The pathways indicated on the site plan connect all building main entrances, parking areas, common areas and pedestrian amenities on site, either on-site or via the public sidewalk. No new pathways are proposed to cross vehicle drive aisles or border parking spaces.

D. All development shall maintain continuous compliance with applicable federal, state, and City standards .

Finding: Complies as proposed. This standard is an on-going maintenance obligation of the property owner, who has indicated their intent and willingness to comply with all applicable standards.

E. Adequate public water and sanitary sewer facilities sufficient to serve the proposed or permitted level of development shall be provided pursuant to OCMC 16.12. The applicant shall demonstrate that adequate facilities and services are presently available or can be made available concurrent with development. Service providers shall be presumed correct in the evidence, which they submit. All facilities shall be designated to City standards as set out in the City's facility master plans and public works design standards. A development may be required to modify or replace existing offsite systems if necessary to provide adequate public facilities. The City may require over sizing of facilities where necessary to meet standards in the City's facility master plan or to allow for the orderly and efficient provision of public facilities and services. Where over sizing is required, the developer may request reimbursement from the City for over sizing based on the City's reimbursement policy and fund availability, or provide for recovery of costs from intervening properties as they develop.

Finding: See findings from section 16.12.095.C and 16.12.095.D regarding public water and sanitary sewer facilities.

F. If a transit agency, upon review of an application for an industrial, institutional, retail or office development, recommends that a bus stop, bus turnout lane, bus shelter, accessible bus landing pad, lighting, or transit stop connection be constructed, or that an easement or dedication be provided for one of these uses, consistent with an agency adopted or approved plan at the time of development, the review authority shall require such improvement, using designs supportive of transit use. Improvements at a major transit stop may include intersection or mid-block traffic management improvements to allow for crossings at major transit stops, as identified in the City's Transportation System Plan.

Finding: Not applicable. No transit agency has recommended that a bus stop, bus turnout lane, bus shelter, accessible bus landing pad, lighting, or transit stop connection be constructed, or that an easement or dedication be provided for this proposal.

G. Screening of Mechanical Equipment:

1. Rooftop mechanical equipment, including HVAC equipment and utility equipment that serves the structure, shall be screened from view from the adjacent street. Screening shall be accomplished through the use of parapet walls or a sight-obscuring enclosure around the equipment constructed of one of the primary materials used on the primary facades of the structure, and that is an integral part of the building's architectural design. The parapet or screen shall completely surround the rooftop mechanical equipment to an elevation equal to or greater than the highest portion of the rooftop mechanical equipment being screened. In the event such parapet wall does not fully screen all rooftop equipment, then the rooftop equipment shall be enclosed by a screen constructed of one of the primary materials used on the primary facade of the building so as to achieve complete screening.

Finding: Complies as proposed. The applicant stated that all mechanical equipment will be screened from view with landscaping or architectural features.

2. *Wall-mounted mechanical equipment shall not be placed on the front facade of a building or on a facade that faces a right-of-way. Wall-mounted mechanical equipment, including air conditioning or HVAC equipment and groups of multiple utility meters, that extends six inches or more from the outer building wall shall be screened from view from streets; from residential, public, and institutional properties; and from public areas of the site or adjacent sites through the use of (a) sight-obscuring enclosures constructed of one of the primary materials used on the primary facade of the structure, (b) sight-obscuring fences, or (c) trees or shrubs that block at least eighty percent of the equipment from view or (d) painting the units to match the building. Wall-mounted mechanical equipment that extends six inches or less from the outer building wall shall be designed to blend in with the color and architectural design of the subject building. Vents which extend six inches or less from the outer building wall shall exempt from this standard if painted.*

Finding: Not applicable. The applicant indicates that there will not be any wall-mounted mechanical equipment on the front façade.

3. *Ground-mounted above-grade mechanical equipment shall be screened by ornamental fences, screening enclosures, trees, or shrubs that block at least eighty percent of the view.*

Finding: Complies as proposed. The applicant indicated that any ground mounted mechanical equipment will be screened in accordance with this standard.

4. *This section shall not apply to the installation of solar energy panels, photovoltaic equipment or wind power generating equipment.*

Finding: Not applicable. No solar or wind power equipment is proposed.

H. Building Materials.

1. *Prohibited Materials. The following materials shall be prohibited in visible locations from the right-of-way or a public access easement unless an exception is granted by the Community Development Director based on the integration of the material into the overall design of the structure.*

- i. *Vinyl or plywood siding (including T-111 or similar plywood).*
- ii. *Glass block or highly tinted, reflected, translucent or mirrored glass (except stained glass) as more than ten percent of the building facade.*
- iii. *Corrugated fiberglass.*
- iv. *Chain link fencing (except for temporary purposes such as a construction site, gates for a refuse enclosure, stormwater facilities, or when located on properties within the General Industrial District).*
- v. *Crushed colored rock/crushed tumbled glass.*
- vi. *Non-corrugated and highly reflective sheet metal.*
- vii. *Tarps, except for the protection of outside storage.*

Finding: Not applicable. None of the listed prohibited materials are proposed. The proposed building materials are a mix of stone, Hardie siding, shake siding, and composition roof that will match the colors and style of the existing building.

2. *Special Material Standards. The following materials are allowed if they comply with the requirements found below:*

- i. *Concrete Block. When used for the front façade of any building, concrete blocks shall be split, rock- or ground-faced and shall not be the prominent material of the elevation. Plain concrete block or plain concrete may be used as foundation material if the foundation material is not revealed more than three feet above the finished grade level adjacent to the foundation wall.*
- ii. *Metal Siding. Metal siding shall have visible corner moldings and trim and incorporate masonry or other similar durable/permanent material near the ground level (first two feet above ground level) except when used for a temporary structure.*
- iii. *Exterior insulation and finish system (EIFS) and similar troweled finishes shall be trimmed in wood, masonry, or other approved materials and shall be sheltered from extreme weather by roof overhangs or other methods.*

- iv. *Building surfaces shall be maintained in a clean condition and painted surfaces shall be maintained to prevent or repair peeling, blistered or cracking paint.*
- v. *Membrane or fabric covered storage areas are permitted as temporary structures, excluding the use of tarps.*
- vi. *Vinyl or powder coated chain link fencing is permitted for City-owned stormwater management facilities, reservoirs, and other public works facilities such as pump stations, maintenance yards, and storage yards not located within the General Industrial District.*

Finding: Not applicable. None of the listed prohibited materials are proposed.

17.62.055 – Institutional, office, multi-family, retail, and commercial building standards.

A. *Purpose.* The primary objective of the regulations contained in this section is to provide a range of design choices that promote creative, functional, and cohesive development that is compatible with surrounding areas. Buildings approved in compliance with these standards are intended to serve multiple tenants over the life of the building, and are not intended for a one-time occupant. The standards encourage people to spend time in the area, which also provides safety through informal surveillance. Finally, this section is intended to promote the design of an urban environment that is built to human scale by creating buildings and streets that are attractive to pedestrians, create a sense of enclosure, provide activity and interest at the intersection of the public and private spaces, while also accommodating vehicular movement.

B. *Applicability.* This section applies to institutional, office, multi-family, retail and commercial buildings except accessory structures less than one thousand square feet and temporary structures. .

C. *Conflicts.* With the exception of standards for building orientation and building front setbacks, in the event of a conflict between a design standard in this section and a standard or requirement contained in the underlying zoning district, the standard in the zoning district shall prevail.

Finding: Applicable. The proposed development is considered a commercial building and is subject to these standards. The property is in the R-10 low-density residential zone and the dimensional standards of the R-10 zone prevail.

D. *Siting of Structures.* On sites with one hundred feet or more of frontage at least sixty percent of the site frontage width shall be occupied by buildings placed within five feet of the property line. For sites with less than one hundred feet of street frontage, at least fifty percent of the site frontage width shall be occupied by buildings placed within five feet of the property. Multi-family developments shall be placed no farther than twenty feet from the front property line. This section does not apply to properties with less than forty feet of frontage.

A larger front yard setback may be approved through site plan and design review if the setback area incorporates at least one element from the following list for every five feet of increased setback requested:

1. *Tables, benches or other approved seating area.*
2. *Cobbled, patterned or paved stone or enhanced concrete.*
3. *Pedestrian scale lighting.*
4. *Sculpture/public art.*
5. *Fountains/Water feature.*
6. *At least twenty square feet of landscaping or planter boxes for each tenant facade fronting on the activity area.*
7. *Outdoor café.*
8. *Enhanced landscaping or additional landscaping.*
9. *Other elements, as approved by the Community Development Director, that can meet the intent of this section.*

Finding: Complies with condition. The property has approximately 72' of frontage. The proposed building addition will be setback approximately 20 feet from the front property line along South End Rd. A 10-foot wide public utility easement (PUE) is required. Additionally, 10-foot wide storm planters will be installed in the front of the property to treat stormwater, behind the PUE. The proposed setback of 20' feet from the front property line will accommodate these required features. The applicant stated that they have proposed at least three (3) pedestrian enhancement elements from the list above be incorporated into the site design to enhance the front appearance and create a more pedestrian friendly

environment. However, staff could only identify two elements on the proposed plans, consisting of enhanced landscaping and pedestrian scale lighting. Prior to issuance of a building permit, the applicant shall provide revised plans indicating a minimum of three elements from OCMC 17.65.055.D(1)-(9). **Staff has determined that it is possible, likely and reasonable that the applicant can meet this standard through the Conditions of Approval.**

E. Building Orientation.

All buildings along the street frontage shall face the front most architecturally significant facade toward the street and have a functional primary entrance facing the street. Primary building entrances shall be clearly defined and recessed or framed by a sheltering element such as an awning, arcade or portico in order to provide shelter from the summer sun and winter weather.

Finding: Complies as proposed. The proposed addition is physically connected to the existing building via a structural breezeway. The existing building has a prominent main entrance. Operationally, all visitors, staff, and residents will be directed to the main entrance of the existing building for security and resident safety.

F. Entryways. Entrances shall include a doorway and a minimum of four of the following elements:

1. Display windows;

Recesses or projections; Peaked roof or raised parapet over the door; Canopy of at least five feet in depth; Porch; Distinct materials; Architectural details such as tile work and moldings; Pedestrian amenities such as benches, planters or planter boxes; Landscape treatments integrating arbors, low walls, trellis work; or Similar elements. . Trellises, canopies and fabric awnings may project up to five feet into front setbacks and public rights-of-way, provided that the base is not less than eight feet at the lowest point and no higher than ten feet above the sidewalk.

Finding: Complies as proposed. The existing main entrance includes the required elements and was approved in 2014.

G. Corner Lots.

For buildings located at the corner of intersections, the primary entrance of the building shall be located at the corner of the building or within twenty-five feet of the corner of the building. Additionally, one of the following treatments shall be required:

1. Incorporate prominent architectural elements, such as increased building height or massing, cupola, turrets, or pitched roof, at the corner of the building or within twenty-five feet of the corner of the building.

2. Chamfer the corner of the building (i.e. cut the corner at a forty-five degree angle and a minimum of ten feet from the corner) and incorporate extended weather protection (arcade or awning), special paving materials, street furnishings, or plantings in the chamfered area.

3. Standards 1 and 2 above do not apply to multi-family buildings or multi-family portions of residential mixed-use buildings.

Finding: Not applicable. No changes are proposed to the location of the primary entrance.

H. Variation in Massing. For street facing facades greater than 120 feet in length a modulation is required which extends through all floors. Decks and roof overhangs may encroach up to three feet per side into the modulation. The modulation shall meet one of the following dimensional requirements:

1. A minimum depth of two percent of the length of the façade and a minimum width of thirty percent of the length of the façade; or

2. A minimum depth of four percent of the length of the façade and a minimum width of twenty percent of the length of the façade.

Finding: Complies as proposed. The combined width of the front façade including both the existing building and proposed addition measures approximately 185 feet. The existing building was already reviewed and approved for compliance with this standard, so this standard applies to the addition

façade which is approximately 65 feet wide. The required minimum depth of the modulation is 1' 3" and the applicant has proposed 4' 3". The required minimum width of the modulation is 19' 6" and the applicant has proposed 24' 7". Massing of the proposed addition is also broken up with varying wall planes, gables, and roof heights.

I. Building Design Elements.

1. All front and side facades shall provide a design element or architectural feature that add interest and detail such that there are no blank walls of thirty feet in length or more, measured horizontally. Features that can meet this requirement include:

- a. Change in building material or texture;*
- b. Window or door;*
- c. Balcony; or*
- d. Pillar or post*

Finding: Complies as proposed. As shown on the elevation drawings, there are no blank walls of thirty feet in length or more. Windows are regularly spaced approximately eight feet apart on the north and south (side) elevations. The front façade includes large windows along most of the façade (See "Windows" standard below). Additionally, stone masonry tile and decorative shingles are used as an accent.

2. Street facing facades shall include additional design features. For every thirty feet of façade length, three of the following elements are required:

- a. Decorative materials on more than ten percent of the total wall area (e.g., brick or stonework, shingles, wainscoting, ornamentation, and similar features);*
- b. Decorative cornice and/or roof line (e.g., for flat roofs);*
- c. Roof gable;*
- d. Recessed entry;*
- e. Covered canopy entry;*
- f. Cupola or tower;*
- g. Dormer;*
- h. Balcony;*
- i. Pillars or posts;*
- j. Repeating pattern of building materials;*
- k. A change in plane of at least two feet in width and six inches in depth;*
- l. Bay or oriel window; or*

m. An alternative feature providing visual relief and detail as approved by the Community Development Director

Finding: Complies as proposed. The 65-foot wide front façade has a wall area of approximately 970 square feet and includes approximately 270 (22%) of decorative stonework, shingles and ornamentation (element a). A large and prominent gable is proposed (element c). A repeating pattern of building and trim materials is provided at intervals less than 30 feet (element j).

3. Building Detail Variation. Architectural features shall be varied on different buildings within the same development. At least two of the required features on each street-facing elevation shall be distinct from the street-facing elevations of other buildings within the same development.

Finding: Not applicable. This is an addition to an existing building.

J. Windows.

1. The minimum windows requirements are set forth in Table 17.62.055.J. Windows are measured in lineal fashion between 3.5 feet and six feet from the ground. For example, a one hundred foot long building elevation would be required to have at least sixty feet (sixty percent of one hundred feet) of windows in length between the height of 3.5 feet and six feet from the ground.

Table 17.62.055.J
Minimum Windows

Use	Ground Floor: Front and Street Facing Facades	Upper floor(s): Front and Street Facing Facades	Ground Floor: Side(s) Facades	Upper Floor(s): Side(s) Facades
Non-Multi-Family (or Portions of Buildings Thereof)	60%	10%	30%	10%
Multi-Family (or Portions of Buildings Thereof)	15%	15%	10%	10%

Finding: Complies as proposed. The 65-foot long front façade has windows for 43' 7" feet of its length (67%). The north side elevation is 113' 11" feet in length and has windows for approximately 40 feet (35%). The south side elevation is approximately 111' 11" in length and has windows for approximately 33 feet (30%). The standard is met.

2. *Reflective, glazed, mirrored or tinted glass is limited to ten percent of the lineal footage of windows on the street facing facade. Highly reflective or glare-producing glass with a reflective factor of one-quarter or greater is prohibited on all building facades. Any glazing materials shall have a maximum fifteen percent outside visual light reflectivity value. No exception shall be made for reflective glass styles that appear transparent when internally illuminated.*

Finding: Complies as proposed. The applicant indicates that the glass to be used is transparent. Plans indicate the glazing will be clear low-E solar blocking glass.

3. *Side walls that face walkways may include false windows and door openings only when actual doors and windows are not feasible because of the nature of the use of the interior use of the building. False windows located within twenty feet of a right-of-way shall be utilized as display windows with a minimum display depth of thirty-six inches.*

Finding: Not applicable. No false windows or doors are proposed.

4. *Multi-family windows shall incorporate window trim at least four inches in width when surrounded by horizontal or vertical lap siding.*

Finding: Not applicable. This is not a multi-family building.

K. *Roof Treatments. The maximum length of any continuous roofline on a street-facing façade shall be seventy-five feet without a cross gable or change in height of at least two feet.*

Finding: Complies as proposed. The total roof length is approximately 70 feet long and is interrupted at two intervals by a large cross gable that starts 22 feet in from the roof edge.

L. *Drive-through facilities shall:*

1. *Be located at the side or rear of the building.*
2. *Be designed to maximize queue storage on site.*

Finding: Not applicable. The project has a previously approved drive-through Porte Cochere entrance at the front of the existing building which was approved through a variance application (VR 14-01). No new drive through facilities are proposed.

M. *Special development standards along transit streets.*

1. *Purpose. This section is intended to provide direct and convenient pedestrian access to retail, office and institutional buildings from public sidewalks and transit facilities and to promote pedestrian and transit travel to commercial and institutional facilities.*

2. *Applicability.* Except as otherwise provide in this section, the requirements of this section shall apply to the construction of new retail, office and institutional buildings which front on a transit street.

3. *Development Standards.*

a. All buildings shall have at least one main building entrance oriented towards the transit street. A main building entrance is oriented toward a transit street if it is directly located on the transit street, or if it is linked to the transit street by an on-site pedestrian walkway that does not cross off-street parking or maneuvering areas.

i. If the site has frontage on more than one transit street, or on a transit street and a street intersecting a transit street, the building shall provide one main building entrance oriented to the transit street or to the corner where the two streets intersect.

ii. For building facades over three hundred feet in length on a transit street, two or more main building entrances shall be provided as appropriate and oriented towards the transit street.

b. In the event a requirement of this section conflicts with other requirements in Title 17, the requirements of this section shall control.

Finding: Complies as proposed. The existing main entrance is located at the existing building and will continue to function as the feature. No changes proposed to the existing main entry.

17.62.065 - Outdoor lighting.

A. *Purpose.* The general purpose of this section is to require outdoor lighting that is adequate for safety and convenience; in scale with the activity to be illuminated and its surroundings; directed to the surface or activity to be illuminated; and designed to clearly render people and objects and contribute to a pleasant nighttime environment. Additional specific purposes are to:

1. Provide safety and personal security as well as convenience and utility in areas of public use or traverse, for uses where there is outdoor public activity during hours of darkness;

2. Control glare and excessive brightness to improve visual performance, allow better visibility with relatively less light, and protect residents from nuisance and discomfort;

3. Control trespass light onto neighboring properties to protect inhabitants from the consequences of stray light shining in inhabitants' eyes or onto neighboring properties;

4. Result in cost and energy savings to establishments by carefully directing light at the surface area or activity to be illuminated, using only the amount of light necessary; and

5. Control light pollution to minimize the negative effects of misdirected light and recapture views to the night sky.

6. Encourage energy efficient lighting with new technologies such as Light Emitting Diodes (LED) or similar to reduce ongoing electrical demand and operating costs.

B. *Applicability.*

1. *General.*

a. All exterior lighting for any type of commercial, mixed-use, industrial, or multi-family development shall comply with the standards of this section, unless excepted in subsection B.3.

Finding: The applicant's proposal includes outdoor lighting which is subject to review under this section.

b. The City Engineer or Public Works Director shall have the authority to enforce these regulations on private property if any outdoor illumination is determined to present an immediate threat to the public health, safety and welfare.

2. *Lighting Plan Requirement.* All commercial, industrial, mixed-use, cottage housing and multi-family developments shall submit a proposed exterior lighting plan. The plan shall be submitted concurrently with the site plan. The exterior lighting plan shall include plans and specifications for streetlights, parking lot lights, and exterior building lights. The specifications shall include details of the pole, fixture height and design, lamp type, wattage, and spacing of lights.

Finding: Complies as proposed. All proposed exterior site lighting and fixture details are shown on the lighting site plan (see E 1.1).

3. *Excepted Lighting.* The following types of lighting are excepted from the requirements of this section.

a. Residential lighting for single-family attached and detached homes, and duplexes

- b. *Public street and right-of-way lighting.*
- c. *Temporary decorative seasonal lighting provided that individual lamps have a light output of sixty watts or less.*
- d. *Temporary lighting for emergency or nighttime work and construction.*
- e. *Temporary lighting for theatrical, television, and performance areas, or for special public events.*
- f. *Lighting for a special district, street, or building that, according to an adopted municipal plan or ordinance, is determined to require special lighting aesthetics as part of its physical character.*
- g. *Lighting required and regulated by the Federal Aviation Administration.*

Finding: Not applicable. The applicant has not proposed any of the listed excepted lighting types.

C. Design and Illumination Standards.

1. *Outdoor lighting, if provided, shall be provided in a manner that enhances security, is appropriate for the use, avoids adverse impacts on surrounding properties, and the night sky through appropriate shielding as defined in this section. Glare shall not cause illumination on other properties in excess of a measurement of 0.5 foot-candles of light as measured at the property line.*
2. *Lighting shall be provided in parking lots and vehicular circulation areas.*
3. *Lighting shall be provided in pedestrian walkways, pedestrian plazas, and pedestrian circulation areas.*
4. *Lighting shall be provided at all building entrances.*
5. *With the exception of pedestrian scale lighting, all light sources shall be concealed or shielded with a full cut-off style fixture in order to minimize the potential for glare and unnecessary diffusion on adjacent property.*
6. *The maximum height of any lighting pole serving a multi-family residential use shall be twenty feet. The maximum height serving any other type of use shall be twenty-five feet, except in parking lots larger than five acres, the maximum height shall be thirty-five feet if the pole is located at least one hundred feet from any residential use.*
7. *Floodlights shall not be utilized to light all or any portion of a building facade between 10 p.m. and 6 a.m.*
8. *Lighting on outdoor canopies shall be fully recessed into the canopy and shall not protrude downward beyond the ceiling of the canopy.*
9. *All outdoor light not necessary for security purposes shall be reduced, activated by motion sensor detectors, or turned off during non-operating hours.*
10. *Light fixtures used to illuminate flags, statues, or any other objects mounted on a pole, pedestal, or platform shall use a narrow cone beam of light that will not extend beyond the illuminated object.*
11. *For upward-directed architectural, landscape, and decorative lighting, direct light emissions shall not be visible above the building roofline.*
12. *No flickering or flashing lights shall be permitted, except for temporary decorative seasonal lighting.*
13. *Lighting for outdoor recreational uses such as ball fields, playing fields, tennis courts, and similar uses, are allowed a light post height up to eighty feet in height.*
14. *Main building entrances shall be well lighted and visible from any transit street. The minimum lighting level for building entries fronting on a transit street shall be three foot-candles.*

Finding: Complies as proposed. The applicant's lighting plan includes a combination of wall-mounted LED fixtures and bollard-style LED lighting for pathways. Full-cutoff style fixtures are proposed for most locations except for the five low-voltage SWD type wall mounted fixtures, which are to be mounted at 8' high and use a low-glare frosted lens. The photometric plans indicate that there will be zero illumination at the property lines and no glare on adjacent properties.

17.62.085 - Refuse and recycling standards for commercial, industrial, office, institutional, and multi-family developments.

The purpose and intent of these provisions is to provide an efficient, safe and convenient refuse and recycling enclosure for the public as well as the local collection firm. All new development, change in property use, expansions or exterior alterations to uses, other than single-family or duplex residences, single-family attached dwellings, 3-4 plexes, internal conversions, or accessory dwelling units (ADUs), shall include a refuse and recycling enclosure. The area(s) shall be:

- A. Fully enclosed and visually screened;
- B. Located in a manner easily and safely accessible by collection vehicles;
- C. Located in a manner so as not to hinder travel lanes, walkways, streets or adjacent properties;
- D. On a level, hard surface designed to discharge surface water runoff and avoid ponding;
- E. Maintained by the property owner;
- F. Used only for purposes of storing solid waste and recyclable materials;
- G. Designed in accordance with applicable sections of the Oregon City Municipal Code (including OCMC 8.20—Solid Waste Collection and Disposal) and city adopted policies.
- H. Enclosures are encouraged to be sized appropriately to meet the needs of current and future tenants and designed with sturdy materials which are compatible to the primary structure(s).

Finding: Not applicable. No changes are proposed to the existing trash and recycling enclosure area which is located behind an alcove to the right of the main front entrance.

17.62.090 – Implementation.

A. Applications for site plan and design review shall be reviewed in the manner provided in OCMC 16.12 and 17.50. The Building Official may issue a certificate of occupancy only after the improvements required by Site Plan and Design Review approval have been completed, or a schedule for completion and a bond or other financial guarantee have been accepted by the City.

Finding: Complies as proposed. This application was reviewed pursuant to the procedures specified.

B. In performing Site Plan and Design Review, the review authority shall consider the effect of additional financial burdens imposed by such review on the cost and availability of needed housing types. Consideration of such factors shall not prevent the imposition of conditions of approval found necessary to meet the requirements of this section. The cost of such conditions of approval shall not unduly increase the cost of housing beyond the minimum necessary to achieve the provisions of this title, nor shall such cost prevent the construction of needed housing types.

Finding: Not applicable. The definition of “needed housing” applies to development of land for low-income and cost-burdened residential dwelling, including land zoned for high density residential use pursuant to ORS 197.303. This application is not considered needed housing.

C. The Site Plan and Design Review provisions of this chapter shall not be applied to reduce the density or height of an application for a development project that reserves at least seventy-five percent of the gross floor area for housing where the proposed density or height is at or below what is allowed in the base zone, except in the following situations:

1. Where the reduction in density is required for development subject to historic overlay provision in OCMC 17.40; or
2. Where the reduction in density is necessary to resolve a health, safety or habitability issue, or to comply with the Natural Resource Overlay District regulations of OCMC 17.49, the Geologic Hazard Overlay District regulations of OCMC 17.44, or the Floodplain Management Overlay District regulations of OCMC 17.42 or steep slope regulations.

Finding: Not applicable. No reduction of density is requested.

III. SUMMARY AND RECOMMENDATION

Staff has reviewed the criteria for files GLUA-19-00052: CU-19-00052, SP-19-00140, VAR-19-00015, LL-19-00008 and provided findings that the criteria have been met or can be met with conditions of approval and recommends the Planning Commission approve the application with the conditions identified within this report.



LAND USE APPLICATION FORM

Type I (OCMC 17.50.030.A)

- ☐ Compatibility Review
- ☐ Lot Line Adjustment
- ☐ Non-Conforming Use Review
- ☐ Natural Resource (NROD) Verification
- ☐ Site Plan and Design Review
- ☐ Extension of Approval

Type II (OCMC 17.50.030.B)

- ☐ Detailed Development Review
- ☐ Geotechnical Hazards
- ☐ Minor Partition (<4 lots)
- ☐ Minor Site Plan & Design Review
- ☐ Non-Conforming Use Review
- ☐ Site Plan and Design Review
- ☐ Subdivision (4+ lots)
- ☐ Minor Variance
- ☐ Natural Resource (NROD) Review

Type III / IV (OCMC 17.50.030.C)

- ☐ Annexation
- ☐ Code Interpretation / Similar Use
- ☐ Concept Development Plan
- ☐ Conditional Use
- ☐ Comprehensive Plan Amendment (Text/Map)
- ☐ Detailed Development Plan
- ☐ Historic Review
- ☐ Municipal Code Amendment
- ☐ Variance
- ☐ Zone Change

File Number(s):

GLUA-19-00052 CU-19-05 SP-19-140 VAR-19-00015
LL-19-08

Proposed Land Use or Activity: 16 bed Memory Care Addition consisting of approximately 6,996 square feet

Project Name: River Terrace Memory Care Addition Number of Lots Proposed (If Applicable): 1 (consolidate two lots)

Physical Address of Site: 914 and 950 South End Road

Clackamas County Map and Tax Lot Number(s): 31E01AD03301, 31E01AD03100

Applicant(s):

Applicant(s) Signature: _____

Applicant(s) Name Printed: Sam Thomas - Lenity Architecture, Inc. Date: 12/20/2019

Mailing Address: 3150 Kettle Court SE

Phone: (503) 399-1090 Fax: _____ Email: samt@lenityarchitecture.com

Property Owner(s):

Property Owner(s) Signature: 

Property Owner(s) Name Printed: Jeffrey Wellington Date: 12/20/2019

Mailing Address: 415 SE 28th Ave, Portland, OR 97214

Phone: 651-226-7645 Fax: _____ Email: jeffrey.wellington@gmail.com

Representative(s):

Representative(s) Signature: _____

Representative (s) Name Printed: _____ Date: _____

Mailing Address: _____

Phone: _____ Fax: _____ Email: _____

All signatures represented must have the full legal capacity and hereby authorize the filing of this application and certify that the information and exhibits herewith are correct and indicate the parties willingness to comply with all code requirements.

TYPE III – SITE PLAN AND DESIGN REVIEW, VARIANCE, & LOT CONSOLIDATION

Written Statement

12/20/2019

APPLICANT: Sam Thomas, Lenity Architecture, Inc.
3150 Kettle Court SE, Salem, OR 97301

OWNER: River Terrace, LLC
415 SE 28th Ave, Portland, OR 97214

REQUEST: Site Plan & Design Review, Variance, & Lot Consolidation

LOCATION: 914 and 950 South End Rd (31E01AD03301, 31E01AD03100)

I. BACKGROUND:

1. Existing Conditions

31-bed Memory Care constructed in 2016 including 9 off-street parking stalls.

2. Project Description

16-bed Memory Care addition that will be physically connected to existing facility and sited at 914 South End Rd. Minor alteration of existing building by adding walls near kitchen and back-of-house area.

II. RESPONSES TO THE OREGON CITY MUNICIPAL CODE:

CHAPTER 17.08 - R-10 SINGLE FAMILY DWELLING DISTRICT

17.08.040 Dimensional standards. Dimensional standards in the R-10 district are:

A. Minimum lot areas, ten thousand square feet;

Applicant's Response: The new total combined area after lot consolidation would be approximately 50,591 square feet (1.16 acres +/-). The application complies with this criterion.

B. Minimum lot width, sixty-five feet;

Applicant's Response: The new front lot width adjacent to South End Road after the proposed lot consolidation would be approximately 192 feet.

C. Minimum lot depth, eighty feet;

Applicant's Response: The minimum lot depth after the proposed lot consolidation would be approximately 154 feet.

D. Maximum building height, two and one-half stories, not to exceed thirty-five feet;

Applicant's Response: The proposed new building addition height is a single-story building and no portion will be above 35 feet in height.

E. Minimum required setbacks: Setbacks if an existing structure is being retained.

- 1. Front yard, twenty feet minimum setback,*
- 2. Front porch, fifteen feet minimum setback,*
- 3. Attached and detached garage, twenty feet minimum setback from the public right-of-way where access is taken, except for alleys. Detached garages on an alley shall be setback a minimum of five feet in residential areas.*
- 4. Interior side yard, ten feet minimum setback for at least one side yard; eight feet minimum setback for the other side yard,*
- 5. Corner side yard, fifteen feet minimum setback,*
- 6. Rear yard, twenty feet minimum setback,*
- 7. Rear porch, fifteen feet minimum setback.*

Applicant's Response: The proposed front yard setback of the new building addition is 21 feet, 1/2 inch, which exceeds the minimum 20 feet required. The proposed Interior (north) Side Yard Setback would be 10 feet, 1/2 inch, which exceeds the 10' minimum required. The proposed rear yard adjacent to the new building addition would be approximately 20 feet, 1/2 inch, which exceeds the minimum of 20 feet. The southern interior property line is proposed to be vacated to consolidate both parcels.

G. Maximum lot coverage: The footprint of all structures two hundred square feet or greater shall cover a maximum of forty percent of the lot area. If an existing structure is being retained.

Applicant's Response: The existing Memory Care building footprint is 16,405 square feet. The proposed Memory Care addition would consist of 6,996 square feet for a total of 23,401 square feet. The proposed lot area with the addition of the parcel located at 914 South End Road would result in a combined lot size of 50,591 square feet. Therefore, the resulting lot coverage would be 46.2%. A variance is requested in order to construct a building that exceeds the maximum lot coverage per the R-10 zoning district.

CHAPTER 17.62 SITE PLAN AND DESIGN REVIEW

17.62.15 Modifications that will better meet design review requirements.

The review body may consider modification of site-related development standards. These modifications are done as part of design review and are not required to go through the Variance process pursuant to section 17.60.020. Adjustments to use-related development standards (such as floor area ratios, intensity of use, size of the use, number of units, or concentration of uses) are required to go through the Variance process pursuant to section 17.60.020. Modifications that are denied through design review may be requested as Variance through the Variance process pursuant to section 17.60.020. The review body may approve requested modifications if it finds that the applicant has shown that the following approval criteria are met:

Applicant's Response: The applicant is requesting an administrative variance to increase the total lot coverage by 6.2% from the maximum allowed in the R-10 zone from 40% to 46.2%, a 15.5% increase.

17.62.15.A. The modification will result in a development that better meets design guidelines; and

Applicant's Response: The proposed lot coverage increase will provide a building that better meets resident needs by providing the room sizes, internal circulation, and common spaces necessary for memory care functions. The project will mitigate the increased lot coverage by providing enhanced landscaping at the front of the building adjacent to South End Road.

17.62.15.B. The modification meets the intent of the standard. On balance, the proposal will be

consistent with the purpose of the standard for which a modification is requested.

Applicant's Response: The proposed lot coverage increase request is minor in nature and consistent with the purpose of standard in the R-10 zone.

17.62.020 - Preapplication conference.

Prior to filing for site plan and design review approval, the applicant shall confer with the community development director pursuant to Section 17.50.030. The community development director shall identify and explain the relevant review procedures and standards.

Applicant's Response: A pre-application meeting was held on March 29, 2019. A copy of the pre-application meeting notes are attached to this application. An extension was granted by Laura Terway via e-mail which is attached to this application.

17.62.050 - Standards.

A. All development shall comply with the following standards:

1. Landscaping, A minimum of fifteen percent of the lot shall be landscaped. Existing native vegetation shall be retained to the maximum extent practicable. All plants listed on the Oregon City Nuisance Plant List shall be removed from the site prior to issuance of a final occupancy permit for the building.

Applicant's Response: A landscape plan (L1.1) has been provided herein and depicts the proposed site landscaping. Any existing nuisance plants, if found, will be removed. The total site landscaping is 22%, which is above the minimum of 15%.

a. Except as allowed elsewhere in the zoning and land division chapters of this Code, all areas to be credited towards landscaping must be installed with growing plant materials. A reduction of up to twenty-five percent of the overall required landscaping may be approved by the community development director if the same or greater amount of pervious material is incorporated in the non-parking lot portion of the site plan (pervious material within parking lots are regulated in OCMC17.52.070).

Applicant's Response: As shown on the landscape plan (L1.1), all areas credited towards landscaping are growing plant material.

Pursuant to Chapter 17.49, landscaping requirements within the Natural Resource Overlay District, other than landscaping required for parking lots, may be met by preserving, restoring and permanently protecting native vegetation and habitat on development sites.

Applicant's Response: The subject properties are outside of the Natural Resource Overlay District.

b. A landscaping plan shall be prepared by a registered landscape architect for new or revised landscaped areas. Landscape architect approval is not required for tree removal and/or installation if the species are chosen from an approved street tree list. A certified landscape designer, arborist, or nurseryman shall be acceptable in lieu of a landscape architect for projects with less than 500 square feet of landscaping. All landscape plans shall include a mix of vertical (trees and shrubs) and horizontal elements (grass, groundcover, etc.) that within three years will cover one hundred percent of the Landscape area. No mulch, bark chips, or similar materials shall be allowed at the time of landscape installation except under the canopy of shrubs and within two feet of the base of trees. The community development department shall maintain a list of trees, shrubs and vegetation acceptable for landscaping.

Applicant's Response: A landscaping plan has been provided with the application drawing package. See sheet L1.1.

- c. *For properties within the Downtown Design District landscaping shall be required to the extent practicable up to the ten percent requirement.*

Applicant's Response: The subject properties are outside of Downtown Design District.

- d. *Landscaping shall be visible from public thoroughfares to the extent practicable.*

Applicant's Response: The front of the proposed addition will be generously landscape with a mix of native plant materials to provide visual interest near the right-of-way.

- e. *Interior parking lot landscaping shall not be counted toward the fifteen percent minimum, unless otherwise permitted by the dimensional standards of the underlying zone district.*

Applicant's Response: Parking lot landscaping (new parking island) has been excluded from the 15% minimum site landscaping requirement.

2. *Vehicular Access and Connectivity.*

- a. *Parking areas shall be located behind buildings, below buildings, or on one or both sides of buildings.*

Applicant's Response: The existing parking lot to be expanded is located at the rear of the existing building.

- b. *Ingress and egress locations on thoroughfares shall be located in the interest of public safety. Access for emergency services (fire and police) shall be provided.*

Applicant's Response: The front of the existing building has a driveway and covered entry that is accessible for emergency vehicles. The rear of the of the building includes a parking area that is less than 150 feet and complies with the minimum aisle width for single-loaded, 90-degree parking spaces.

- c. *Alleys or vehicular access easements shall be provided in the following Districts: R-2, MUC-1, MUC-2, MUD and NC zones unless other permanent provisions for access to off-street parking and loading facilities are approved by the decision-maker. The corners of alley intersections shall have a radius of not less than ten feet.*

Applicant's Response:

The subject properties are not located within the abovementioned Districts in the criterion above. This criterion is not applicable to this request.

d. Sites abutting an alley shall be required to gain vehicular access from the alley unless deemed impracticable by the community development director.

Applicant's Response: The subject properties do not abut an alley.

e. Where no alley access is available, the development shall be configured to allow only one driveway per frontage. On corner lots, the driveway(s) shall be located off of the side street (unless the side street is an arterial) and away from the street intersection. Shared driveways shall be required as needed to accomplish the requirements of this section. The location and design of pedestrian access from the sidewalk shall be emphasized so as to be clearly visible and distinguishable from the vehicular access to the site. Special landscaping, paving, lighting, and architectural treatments may be required to accomplish this requirement.

Applicant's Response: Existing driveway is located off of the side street, Amanda Court.

f. Driveways that are at least twenty-four feet wide shall align with existing or planned streets on adjacent sites.

Applicant's Response: No changes proposed to existing driveways.

g. Development shall be required to provide existing or future connections to adjacent sites through the use of vehicular and pedestrian access easements where applicable. Such easements shall be required in addition to applicable street dedications as required in Chapter 12.04.

Applicant's Response: No through access needed for adjacent residential sites.

h. Vehicle and pedestrian access easements may serve in lieu of streets when approved by the decision maker only where dedication of a street is deemed impracticable by the city.

Applicant's Response: No access easements proposed.

i. Vehicular and pedestrian easements shall allow for public access and shall comply with all applicable pedestrian access requirements.

Applicant's Response: During preliminary comments (pre-app) from City Staff, a 1' ROW dedication and 10' PUE will be required and provided as a condition of approval.

j. In the case of dead-end stub streets that will connect to streets on adjacent sites in the future, notification that the street is planned for future extension shall be posted on the stub street until the street is extended and shall inform the public that the dead-end street may be extended in the future.

Applicant's Response: No stub street proposed.

k. Parcels larger than three acres shall provide streets as required in Chapter 12.04. The streets shall connect with existing or planned streets adjacent to the site.

Applicant's Response: Parcel is under 3 acres.

l. Parking garage entries shall not dominate the streetscape. They shall be designed and situated to be ancillary to the use and architecture of the ground floor. This standard applies to both public garages and any individual private garages, whether they front on a street or private interior access road.

Applicant's Response: No parking garage proposed.

m. Buildings containing above-grade structured parking shall screen such parking areas with landscaping or landscaped berms, or incorporate contextual architectural elements that complement adjacent buildings or buildings in the area. Upper level parking garages shall use articulation or fenestration treatments that break up the massing of the garage and/or add visual interest.

Applicant's Response: No above-grade parking structures are proposed with this development.

3. Building structures shall be complimentary to the surrounding area. All exterior surfaces shall present a finished appearance. All sides of the building shall include materials and design characteristics consistent with those on the front. Use of inferior or lesser quality materials for side or rear facades or decking shall be prohibited.

a. Alterations, additions and new construction located within the McLoughlin Conservation District, Canemah National Register District, and the Downtown Design District and when abutting a designated Historic Landmark shall utilize materials and a design that incorporates the architecture of the subject building as well as the surrounding district or abutting Historic Landmark. Historic materials such as doors, windows and siding shall be retained or replaced with in kind materials unless the community development director determines that the materials cannot be retained and the new design and materials are compatible with the subject building, and District or Landmark. The community development director may utilize the Historic Review Board's Guidelines for New Construction (2006) to develop findings to show compliance with this section.

b. In historic areas and where development could have a significant visual impact, the review authority may request the advisory opinions of appropriate experts designated by the community development director from the design fields of architecture, landscaping and urban planning. The applicant shall pay the costs associated with obtaining such independent professional advice; provided, however, that the review authority shall seek to minimize those costs to the extent practicable.

Applicant's Response: The building addition will match the materials, detailing, and colors of the existing building. The subject properties are not located in a District or historic area as referenced in the criterion above.

4. Grading shall be in accordance with the requirements of Chapter 15.48 and the public works stormwater and grading design standards.

Applicant's Response: The proposed grading plan depicts the site work needed for the building addition and has been developed in conformance with City Standards. Likewise, stormwater will be conveyed to a public storm sewer as shown on the proposed Utility Plan (C3.0).

5. Development subject to the requirements of the Geologic Hazard overlay district shall comply with the requirements of that district.

Applicant's Response: Site outside of Geologic Hazard overlay district.

6. Drainage shall be provided in accordance with city's drainage master plan, Chapter 13.12, and the public works stormwater and grading design standards.

Applicant's Response: As indicated above, the stormwater generated on site will be conveyed through a new stormwater lateral and connect to a public system further north on South End Rd.

7. *Parking, including carpool, vanpool and bicycle parking, shall comply with city off-street parking standards, Chapter 17.52.*

Applicant's Response: The proposed parking lot expansion will include three (3) new parking spaces and one existing parking stall will be converted into a landscape island to break up the row of parking per City requirements. The proposed parking lot meets the dimensional requirements of Chapter 15.52.

8. *Sidewalks and curbs shall be provided in accordance with the city's transportation master plan and street design standards. Upon application, the community development director may waive this requirement in whole or in part in those locations where there is no probable need, or comparable alternative location provisions for pedestrians are made.*

Applicant's Response: A new sidewalk and two (2) street trees are proposed that are consistent with the improvements in front of the existing building.

9. *A well-marked, continuous and protected on-site pedestrian circulation system meeting the following standards shall be provided:*

a. Pathways between all building entrances and the street are required. Pathways between the street and buildings fronting on the street shall be direct. Exceptions may be allowed by the director where steep slopes or protected natural resources prevent a direct connection or where an indirect route would enhance the design and/or use of a common open space.

Applicant's Response: The proposed site plan shows that there are direct pathways between building entrances and the street.

b. The pedestrian circulation system shall connect all main entrances on the site. For buildings fronting on the street, the sidewalk may be used to meet this standard. Pedestrian connections to other areas of the site, such as parking areas, recreational areas, common outdoor areas, and any pedestrian amenities shall be required.

Applicant's Response: There is only one door near the frontage of the proposed building addition. It will be used for emergency exiting only. For building security and resident safety, all visitors, residents, and staff will enter through the main entrance of the existing building. An ADA path will connect the emergency exit door to the public sidewalk.

c. Elevated external stairways or walkways, that provide pedestrian access to multiple dwelling units located above the ground floor of any building are prohibited. The community development director may allow exceptions for external stairways or walkways located in, or facing interior courtyard areas provided they do not compromise visual access from dwelling units into the courtyard.

Applicant's Response: No elevated walkways/stairways proposed.

d. The pedestrian circulation system shall connect the main entrances of adjacent buildings on the same site.

Applicant's Response: The existing buildings main entrance will function as the access point for the addition.

e. The pedestrian circulation system shall connect the principal building entrance to those of buildings on adjacent commercial and residential sites where practicable. Walkway linkages to adjacent developments shall not be required within industrial developments or to industrial developments or to vacant

industrially-zoned land.

Applicant's Response: The proposed addition is physically connected to the existing building. The existing buildings main entrance connects directly to a public sidewalk.

f. On-site pedestrian walkways shall be hard surfaced, well drained and at least five feet wide. Surface material shall contrast visually to adjoining surfaces. When bordering parking spaces other than spaces for parallel parking, pedestrian walkways shall be a minimum of seven feet in width unless curb stops are provided. When the pedestrian circulation system is parallel and adjacent to an auto travel lane, the walkway shall be raised or separated from the auto travel lane by a raised curb, bollards, landscaping or other physical barrier. If a raised walkway is used, the ends of the raised portions shall be equipped with curb ramps for each direction of travel. Pedestrian walkways that cross drive aisles or other vehicular circulation areas shall utilize a change in textual material or height to alert the driver of the pedestrian crossing area.

Applicant's Response: Walkways proposed will be hard surfaced, well drained, and a minimum of five (5) feet wide.

10. There shall be provided adequate means to ensure continued maintenance and necessary normal replacement of private common facilities and areas, drainage ditches, streets and other ways, structures, recreational facilities, landscaping, fill and excavation areas, screening and fencing, groundcover, garbage storage areas and other facilities not subject to periodic maintenance by the city or other public agency.

Applicant's Response: The community will have maintenance personnel on staff.

11. Site planning shall conform to the requirements of OCMC Chapter 17.41 Tree Protection.

Applicant's Response: The proposed development site at 914 South End Rd does not contain any existing trees. Proposed development at 950 South End Rd will conform to the requirements of OCMC Chapter 17.41 Tree Protection.

12. Development shall be planned, designed, constructed and maintained to protect water resources and habitat conservation areas in accordance with the requirements of the city's Natural Resources Overlay District, Chapter 17.49, as applicable.

Applicant's Response: The subject properties are outside of Natural Resources Overlay District.

13. All development shall maintain continuous compliance with applicable federal, state, and city standards pertaining to air and water quality, odor, heat, glare, noise and vibrations, outdoor storage, radioactive materials, toxic or noxious matter, and electromagnetic interference. Prior to issuance of a building permit, the community development director or building official may require submission of evidence demonstrating compliance with such standards and receipt of necessary permits. The review authority may regulate the hours of construction or operation to minimize adverse impacts on adjoining residences, businesses or neighborhoods. The emission of odorous gases or other matter in such quantity as to be readily detectable at any point beyond the property line of the use creating the odors or matter is prohibited.

Applicant's Response: Construction will adhere to applicable codes.

14. Adequate public water and sanitary sewer facilities sufficient to serve the proposed or permitted level of development shall be provided. The applicant shall demonstrate that adequate facilities and services

are presently available or can be made available concurrent with development. Service providers shall be presumed correct in the evidence, which they submit. All facilities shall be designated to city standards as set out in the city's facility master plans and public works design standards. A development maybe required to modify or replace existing offsite systems if necessary to provide adequate public facilities. The city may require over sizing of facilities where necessary to meet standards in the city's facility master plan or to allow for the orderly and efficient provision of public facilities and services. Where over sizing is required, the developer may request reimbursement from the city for over sizing based on the city's reimbursement policy and fund availability, or provide for recovery of costs from intervening properties as they develop.

Applicant's Response: Per Development Services Pre-application notes, the development has adequate water and sewer facilities. A new stormwater connection will be made to convey runoff to storm planters at the front of the addition and then to the public stormwater system.

15. Adequate right-of-way and improvements to streets, pedestrian ways, bike routes and bikeways, and transit facilities shall be provided and be consistent with the city's transportation master plan and design standards and this title. Consideration shall be given to the need for street widening and other improvements in the area of the proposed development impacted by traffic generated by the proposed development. This shall include, but not be limited to, improvements to the right-of-way, such as installation of lighting, signalization, turn lanes, median and parking strips, traffic islands, paving, curbs and gutters, sidewalks, bikeways, street drainage facilities and other facilities needed because of anticipated vehicular and pedestrian traffic generation. Compliance with [Chapter] 12.04, Streets, Sidewalks and Public Places shall be sufficient to achieve right-of-way and improvement adequacy.

Applicant's Response: Proposed right-of-way improvements will be consistent with the requirements of the existing building and standards indicated on in the pre-app notes.

16. If a transit agency, upon review of an application for an industrial, institutional, retail or office development, recommends that a bus stop, bus turnout lane, bus shelter, accessible bus landing pad, lighting, or transit stop connection be constructed, or that an easement or dedication be provided for one of these uses, consistent with an agency adopted or approved plan at the time of development, the review authority shall require such improvement, using designs supportive of transit use. Improvements at a major transit stop may include intersection or mid-block traffic management improvements to allow for crossings at major transit stops, as identified in the transportation system plan.

Applicant's Response: A transit stop easement or dedication will be provided if deemed necessary by the transportation authority.

17. All utility lines shall be placed underground.

Applicant's Response: The proposed development will place all utility lines underground.

18. Access and facilities for physically handicapped people shall be incorporated into the site and building design consistent with applicable federal and state requirements, with particular attention to providing continuous, uninterrupted access routes.

Applicant's Response: Access routes in and around the subject properties will be consistent with ADA standards.

19. For a residential development, site layout shall achieve at least eighty percent of the maximum density of the base zone for the net developable area. Net developable area excludes all areas for required right-of-way dedication, land protected from development through Natural Resource or

Geologic Hazards protection, and required open space or park dedication.

Applicant's Response: The proposed development is not a single -family residential development. The above criterion does not apply to this proposal.

20. Screening of Mechanical Equipment:

a. Rooftop mechanical equipment, including HVAC equipment and utility equipment that serves the structure, shall be screened. Screening shall be accomplished through the use of parapet walls or a sight-obscuring enclosure around the equipment constructed of one of the primary materials used on the primary facades of the structure, and that is an integral part of the building's architectural design. The parapet or screen shall completely surround the rooftop mechanical equipment to an elevation equal to or greater than the highest portion of the rooftop mechanical equipment being screened. In the event such parapet wall does not fully screen all rooftop equipment, then the rooftop equipment shall be enclosed by a screen constructed of one of the primary materials used on the primary facade of the building so as to achieve complete screening.

Applicant's Response: All mechanical equipment will be screened from view with landscaping or architectural features.

b. Wall-mounted mechanical equipment shall not be placed on the front facade of a building or on a facade that faces a right-of-way. Wall-mounted mechanical equipment, including air conditioning or HVAC equipment and groups of multiple utility meters, that extends six inches or more from the outer building wall shall be screened from view from streets; from residential, public, and institutional properties; and from public areas of the site or adjacent sites through the use of (a) sight-obscuring enclosures constructed of one of the primary materials used on the primary facade of the structure, (b) sight-obscuring fences, or (c) trees or shrubs that block at least eighty percent of the equipment from view or (d) painting the units to match the building. Wall-mounted mechanical equipment that extends six inches or less from the outer building wall shall be designed to blend in with the color and architectural design of the subject building.

Applicant's Response: There are no plans for wall-mounted mechanical equipment facing the front of the proposed development.

c. Ground-mounted above-grade mechanical equipment shall be screened by ornamental fences, screening enclosures, trees, or shrubs that block at least eighty percent of the view. Placement and type of screening shall be determined by the community development director.

Applicant's Response: Landscaping will be provided to screen new ground-mounted mechanical equipment.

d. This section shall not apply to the installation of solar energy panels, photovoltaic equipment or wind power generating equipment.

Applicant's Response: The proposed development does include utilization of solar equipment for electricity generation.

21. Building Materials.

a. Preferred building materials. Building exteriors shall be constructed from high quality, durable materials. Preferred exterior building materials that reflect the city's desired traditional character are as follows:

i. Brick.

- ii. Basalt stone or basalt veneer.
- iii. Narrow horizontal wood or composite siding (generally five inches wide or less); wider siding will be considered where there is a historic precedent.
- iv. Board and batten siding.
- v. Other materials subject to approval by the community development director.
- vi. Plywood with battens or fiber/composite panels with concealed fasteners and contiguous aluminum sections at each joint that are either horizontally or vertically aligned.
- vii. Stucco shall be trimmed in wood, masonry, or other approved materials and shall be sheltered from extreme weather by roof overhangs or other methods.

Applicant's Response: The proposed building materials are a mix of stone, Hardie siding, shake siding, and composition roof that will match the colors and style of the existing building.

b. Prohibited materials. The following materials shall be prohibited in visible locations from the right-of-way or a public access easement unless an exception is granted by the community development director based on the integration of the material into the overall design of the structure.

- i. Vinyl or plywood siding (including T-111 or similar plywood).
- ii. Glass block or highly tinted, reflected, translucent or mirrored glass (except stained glass) as more than ten percent of the building facade.
- iii. Corrugated fiberglass.
- iv. Chain link fencing (except for temporary purposes such as a construction site, gates for a refuse enclosure, stormwater facilities, or within the General Industrial District).
- [v.] Crushed colored rock/crushed tumbled glass.
- [vi.] Non-corrugated and highly reflective sheet metal.

Applicant's Response: The proposed building does not include the use of any materials from the list above.

c. Special material standards: The following materials are allowed if they comply with the requirements found below:

1. Concrete block. When used for the front facade of any building, concrete blocks shall be split, rock- or ground-faced and shall not be the prominent material of the elevation. Plain concrete block or plain concrete may be used as foundation material if the foundation material is not revealed more than three feet above the finished grade level adjacent to the foundation wall.
2. Metal siding. Metal siding shall have visible corner moldings and trim and incorporate masonry or other similar durable/permanent material near the ground level (first two feet above ground level).
3. Exterior Insulation and Finish System (EIFS) and similar troweled finishes shall be trimmed in wood, masonry, or other approved materials and shall be sheltered from extreme weather by roof overhangs or other methods.
4. Building surfaces shall be maintained in a clean condition and painted surfaces shall be maintained to prevent or repair peeling, blistered or cracking paint.

Applicant's Response: None of the materials listed above are proposed for the addition building construction.

22. Conditions of Approval. The review authority may impose such conditions as it deems necessary to ensure compliance with these standards and other applicable review criteria, including standards set out in city overlay districts, the city's master plans, and city public works design standards. Such conditions shall apply as described in Sections 17.50.310, 17.50.320 and 17.50.330. The review authority may require a property owner to sign a waiver of remonstrance against the formation of and participation in a local improvement district where it deems such a waiver necessary to provide needed improvements reasonably related to the impacts created by the proposed development. To ensure compliance with this

chapter, the review authority may require an applicant to sign or accept a legal and enforceable covenant, contract, dedication, easement, performance guarantee, or other document, which shall be approved in form by the city attorney.

Applicant's Response: The owner will acknowledge and accept conditions of approval as part of the potential approvals.

23. Development shall conform to the requirements of OCMC Chapter 17.58 Nonconforming Uses, Structures, and Lots.

Applicant's Response: The proposed development will comply with Chapter 17.58.

17.62.55 - Institutional and commercial building standards.

A. Purpose. The primary objective of the regulations contained in this section is to provide a range of design choices that promote creative, functional, and cohesive development that is compatible with surrounding areas. Buildings approved through this process are intended to serve multiple tenants over the life of the building, and are not intended for a one-time occupant. The standards encourage people to spend time in the area, which also provides safety through informal surveillance. Finally, this section is intended to promote the design of an urban environment that is built to human scale by creating buildings and streets that are attractive to pedestrians, create a sense of enclosure, provide activity and interest at the intersection of the public and private spaces, while also accommodating vehicular movement.

B. Applicability. In addition to Section 17.62.050 requirements, institutional and commercial buildings shall comply with design standards contained in this section.

Applicant's Response: The proposed building addition will match the previously approved building design to the extent practical.

C. Relationship between zoning district design standards and requirements of this section.

1. Building design shall contribute to the uniqueness of the underlying zoning district by applying appropriate materials, elements, features, color range and activity areas tailored specifically to the site and its context.

Applicant's Response: Building additions to match previously approved design in architectural vocabulary.

2. A standardized prototype or franchise design shall be modified if necessary to meet the provisions of this section.

Applicant's Response: Standardized prototype or franchise design not proposed with this development.

3. In the case of a multiple building development, each individual building shall include predominant characteristics, architectural vocabulary and massing shared by all buildings in the development so that the development forms a cohesive place within the underlying zoning district or community.

Applicant's Response: Building additions to match previously approved design.

4. With the exception of standards for building orientation and building front setbacks, in the event of a conflict between a design standard in this section and a standard or requirement contained in the underlying zoning district, the standard in the zoning district shall prevail.

Applicant's Response: It is understood that the building front setbacks are determined by the design standards and not the base zone (R-10) standard.

On sites with one hundred feet or more of frontage at least sixty percent of the site frontage width shall be occupied by buildings placed within five feet of the property line, unless a greater setback is accepted under the provisions of Section 17.62.055D. For sites with less than one hundred feet of street frontage, at least fifty percent of the site frontage width shall be occupied by buildings placed within five feet of the property line unless a greater setback is accepted under the provisions of Section 17.62.055D.

Applicant's Response: The proposed building addition will be setback approximately 20 feet from the front property line along South End Rd. A 10' PUE has been requested by the City. Additionally, 10' wide storm planters will be installed in the front of the property to treat storm water. The applicant/owner are requesting a setback of 20' feet from the front property line in order to accommodate these practical requirements. Additionally, elements from the criteria below will be incorporated in to the site design to enhance the front appearance.

D. Relationship of Buildings to Streets and Parking.

1. Buildings shall be placed no farther than five feet from the front property line. A larger front yard setback may be approved through site plan and design review if the setback area incorporates at least one element from the following list for every five feet of increased setback requested:

- a. Tables, benches or other approved seating area.*
- b. Cobbled, patterned or paved stone or enhanced concrete.*
- c. Pedestrian scale lighting.*
- d. Sculpture/public art.*
- e. Fountains/Water feature.*
- f. At least twenty square feet of landscaping or planter boxes for each tenant facade fronting on the activity area.*
- g. Outdoor café.*
- h. Enhanced landscaping or additional landscaping.*
- i. Other elements, as approved by the community development director, that can meet the intent of this section.*

Applicant's Response: Based on the criteria above, 3 elements should be selected as the building is 15' further than the required 5' from the property line. The proposed development will incorporate pedestrian scale lighting along the walkway (see E1.1), enhanced landscaping, and planter boxes.

2. The front most architecturally significant facade shall be oriented toward the street and shall be accessed from a public sidewalk. Primary building entrances shall be clearly defined and recessed or framed by a sheltering element such as an awning, arcade or portico in order to provide shelter from the summer sun and winter weather.

Applicant's Response: The proposed addition is physically connected to the existing building which has a main entrance. Operationally, all visitors, staff, and residents will be directed to the main entrance of the existing building for security and resident safety.

3. Entryways. The primary entranceway for each commercial or retail establishment shall face the major street. The entrance may be recessed behind the property line a maximum of five feet unless a larger setback is approved pursuant to Section 17.62.055.D.1 and shall be accessed from a public sidewalk. Primary building entrances shall be clearly defined, highly visible and recessed or framed by a sheltering element including at least four of the following elements, listed below.

- a. Canopies or porticos;*
- b. Overhangs;*
- c. Recesses/projections;*
- d. Arcades;*

- e. Raised corniced parapets over the door;*
- f. Peaked roof forms;*
- g. Arches;*
- h. Outdoor patios;*
- i. Display windows;*
- j. Architectural details such as tile work and moldings which are integrated into the building structure and design;*
- k. Integral planters or wing walls that incorporate landscaped areas and/or places for sitting.*
- l. Planter boxes and street furniture placed in the right-of-way shall be approved for use according to materials, scale and type.*

Applicant's Response: The primary entranceway is located at the existing building. The proposed addition will not include a main entry for resident safety and security.

4. Where additional stores will be located in the large retail establishment, each such store shall have at least one exterior customer entrance, which shall conform to the same requirements. (Ord. 01-1002 §2, 2001)

Applicant's Response: The proposed development does not include a retail establishment.

5. Trellises, canopies and fabric awnings may project up to five feet into front setbacks and public rights-of-way, provided that the base is not less than eight feet at the lowest point and no higher than ten feet above the sidewalk. Awnings shall be no longer than a single storefront.

Applicant's Response: No trellises, canopies, or fabric awnings are proposed.

E. Corner Lots.

For buildings located at the corner of intersections, the primary entrance of the building shall be located at the corner of the building or within twenty-five feet of the corner of the building. Additionally, one of the following treatments shall be required:

- 1. Incorporate prominent architectural elements, such as increased building height or massing, cupola, turrets, or pitched roof, at the corner of the building or within twenty-five feet of the corner of the building.*
- 2. Chamfer the corner of the building (i.e. cut the corner at a forty-five-degree angle and a minimum of ten feet from the corner) and incorporate extended weather protection (arcade or awning), special paving materials, street furnishings, or plantings in the chamfered area.*

Applicant's Response: The primary entrance will be maintained at the existing building.

F. Commercial First Floor Frontage.

In order to ensure that the ground floor of structures have adequate height to function efficiently for retail uses, the first floor height to finished ceiling of new infill buildings in the mixed use and neighborhood commercial districts shall be no lower than fourteen feet floor to floor. Where appropriate, the exterior facade at the ceiling level of new structures shall include banding, a change of materials or relief which responds to the cornice lines and window location of existing buildings that abut new structures.

Applicant's Response: The proposed development does not include any retail uses.

G. Variation in Massing.

- 1. A single, large, dominant building mass shall be avoided in new buildings and, to the extent reasonably feasible, in development projects involving changes to the mass of existing buildings.*

Applicant's Response: Massing of the proposed addition is broken up with varying wall plans, gables, and roof heights.

2. Horizontal masses shall not exceed a height: width ratio of one-to-three without substantial variation in massing that includes a change in height and projecting or recessed elements.

Applicant's Response: The proposed maximum horizontal building length is 113 feet and the maximum building height from finished grade would be approximately 18 feet, 9 inches. Therefore, the height-to-width ratio would be 18.75 feet / 113 feet = approximately 1:6. The proposed building design includes variations in the roof forms and heights and variations in wall heights to break up the massing and provide visual interest. The building addition has been designed with 3 massing elements on the front façade. The gable changes height and the height-to width-ratios are less than 1:3.

3. Changes in mass shall be related to entrances, the integral structure and/or the organization of interior spaces and activities and not merely for cosmetic effect.

Applicant's Response: The front façade has a pop-out at the sunroom area to break up the mass and provide large windows.

H. Minimum Wall Articulation.

1. Facades shall add architectural interest and variety and avoid the effect of a single, long or massive wall with no relation to human size. No wall that faces a street or connecting walkway shall have a blank, uninterrupted length exceeding thirty feet without including, but not be limited to, at least two of the following:

- i. Change in plane,*
- ii Change in texture or masonry pattern or color,*
- iii. Windows, treillage with landscaping appropriate for establishment on a trellis.*
- iv. An equivalent element that subdivides the wall into human scale proportions.*

Applicant's Response: The side elevations of the building have articulation to break up the mass of the building. There is a change in plane at least every 30 feet.

2. Facades greater than one hundred feet in length, measured horizontally, shall incorporate wall plane projections or recesses having a depth of at least three percent of the length of the facade and extending at least twenty percent of the length of the facade. No uninterrupted length of any facade shall exceed one hundred horizontal feet.

Applicant's Response: The side elevations of the building have articulation to break up the mass of the building. Building steps are approximately 2 feet deep.

3. Ground floor facades that face public streets shall have arcades, display windows, entry areas, awnings or other such features along no less than sixty percent of their horizontal length.

Applicant's Response: The proposal does not include retail uses, therefore, this criterion does not apply.

4. Building facades must include a repeating pattern that includes any one or more of the following elements:

- a. Color change;*
- b. Texture change;*
- c. Material module change.*

Applicant's Response: The proposed building will include color and texture changes consistent with the style of the existing building.

5. Facades shall have an expression of architectural or structural bays through a change in plane no less than twelve inches in width, such as an offset, reveal or projecting rib.

Applicant's Response: Wall planes include offsets for resident suites that are at least 12 inches in width. The building addition design will match the existing building in style and detail.

6. Facades shall have at least one of elements subsections H.4. or H.5. of this section repeat horizontally. All elements shall repeat at intervals of no more than thirty feet, either horizontally or vertically.

Applicant's Response: Proposed building facades will include color and texture changes that repeat at intervals of no more than 30 feet, both horizontally and vertically.

I. Facade Transparency.

1. Transparent windows or doors facing the street are required. The main front elevation shall provide at least sixty percent windows or transparency at the pedestrian level. Facades on corner lots shall provide at least sixty percent windows or transparency on all corner-side facades. All other side elevations shall provide at least thirty percent transparency. The transparency is measured in lineal fashion. For example, a one hundred-foot long building elevation shall have at least sixty feet (sixty percent of one hundred feet) of transparency in length. Reflective, glazed, mirrored or tinted glass is limited to ten percent of the lineal footage of windows on the street facing facade. Highly reflective or glare-producing glass with a reflective factor of one-quarter or greater is prohibited on all building facades. Any glazing materials shall have a maximum fifteen percent outside visual light reflectivity value. No exception shall be made for reflective glass styles that appear transparent when internally illuminated.

Applicant's Response: Over 60% of the front façade includes transparent windows that face the street at a pedestrian level.

2. Side or rear walls that face walkways may include false windows and door openings only when actual doors and windows are not feasible because of the nature of the use of the interior use of the building. False windows located within twenty feet of a right-of-way shall be utilized as display windows with a minimum display depth of thirty-six inches.

Applicant's Response: No false windows are proposed.

J. Roof Treatments.

1. All facades shall have a recognizable "top" consisting of, but not limited to:

a. Cornice treatments, other than just colored "stripes" or "bands," with integrally textured materials such as stone or other masonry or differently colored materials; or

b. Sloping roof with overhangs and brackets; or

c. Stepped parapets;

d. Special architectural features, such as bay windows, decorative roofs and entry features may project up to three feet into street rights-of-way, provided that they are not less than nine feet above the sidewalk.

2. Mixed use buildings: For flat roofs or facades with a horizontal eave, fascia, or parapet, the minimum vertical dimension of roofline modulation is the greater of two feet or 0.1 multiplied by the wall height (finish grade to top of wall). The maximum length of any continuous roofline shall be seventy-five feet.

3. Other roof forms consistent with the design standards herein may satisfy this standard if the individual segments of the roof with no change in slope or discontinuity are less than forty feet in width (measured

horizontally).

Applicant's Response: Proposed roofing at new addition to match existing.

K. Drive-through facilities shall:

- 1. Be located at the side or rear of the building.*
- 2. Be designed to maximize queue storage on site.*

Applicant's Response: No drive-through facilities proposed.

17.62.56 - Additional standards for large retail establishments.

A. This section is intended to ensure that large retail building development is compatible with its surrounding area.

B. Large retail establishment shall mean a retail building occupying more than ten thousand gross square feet of floor area.

C. In addition to Sections [17.62.050](#) and [17.62.055](#) requirements, large retail buildings shall comply with design standards contained in this section.

Applicant's Response: Proposal is not a large retail establishment.

D. Development Standards.

1. Roofs. Roofs shall include at least two of the following features:

- a. Parapets concealing flat roofs and rooftop equipment from public view. The average height of such parapets shall not exceed fifteen percent of the height of the supporting wall and such parapets shall not at any point exceed one-third of the height of the supporting wall. Such parapets shall feature three-dimensional cornice treatment;*
- b. Overhanging eaves, extending no less than three feet past the supporting walls;*
- c. Sloping roofs that do not exceed the average height of the supporting walls, with an average slope greater than or equal to one foot of vertical rise for every three feet of horizontal run and less than or equal to one foot of vertical rise for every one foot of horizontal run;*
- d. Three or more roof slope planes.*

Applicant's Response: Proposed roof treatment on addition to match existing originally approved design and incorporate a residential mansard roof for mechanical screening. Additionally, screening will be added as required. Overhangs are 2 feet deep maximum.

2. Site Design and Relationship to Surrounding Community. Retail buildings occupying more than twenty-five thousand gross square feet of floor area shall contribute to the establishment or enhancement of community and public spaces by providing at least two of the following:

- a. Patio/seating area;*
- b. Pedestrian plaza with benches;*
- c. Transportation center;*
- d. Window shopping walkway;*
- e. Outdoor playground area;*
- f. Kiosk area, water feature;*
- g. Clock tower;*
- h. Or other such deliberately shaped area and/or a focal feature or amenity that, in the judgment of the appropriate decision maker, adequately enhances such community and public spaces. Any such areas shall have direct access to the public sidewalk network and such features shall not be constructed of materials that are inferior to the principle materials of the building and landscape.*

Applicant's Response: Proposal is not a large retail establishment.

17.62.57 - Multi-family standards.

Applicant's Response: Proposal is not multi-family.

17.62.059 - Cottage housing.

Applicant's Response: Proposal is not cottage housing.

17.62.065 - Outdoor lighting.

B. Applicability.

1. General.

a. All exterior lighting for any type of commercial, mixed-use, industrial or multi-family development shall comply with the standards of this section, unless excepted in subsection B.3.

b. The city engineer/public works director shall have the authority to enforce these regulations on private property if any outdoor illumination is determined to present an immediate threat to the public health, safety and welfare.

Applicant's Response: All proposed exterior site lighting and fixture details are shown on the lighting site plan (see E 1.1).

2. Lighting Plan Requirement.

All commercial, industrial, mixed-use, cottage housing and multi-family developments shall submit a proposed exterior lighting plan. The plan must be submitted concurrently with the site plan. The exterior lighting plan shall include plans and specifications for streetlights, parking lot lights, and exterior building lights. The specifications shall include details of the pole, fixture height and design, lamp type, wattage, and spacing of lights.

Applicant's Response: All proposed exterior site lighting and fixture details are shown on the lighting site plan (see E 1.1).

3. Excepted Lighting.

The following types of lighting are excepted from the requirements of this section.

a. Residential lighting for single-family attached and detached homes, and duplexes.

b. Public street and right-of-way lighting.

c. Temporary decorative seasonal lighting provided that individual lamps have a light output of sixty watts or less.

d. Temporary lighting for emergency or nighttime work and construction.

e. Temporary lighting for theatrical, television, and performance areas, or for special public events.

f. Lighting for a special district, street, or building that, according to an adopted municipal plan or ordinance, is determined to require special lighting aesthetics as part of its physical character.

g. Lighting required and regulated by the Federal Aviation Administration.

Applicant's Response: All proposed exterior site lighting and fixture details are shown on the lighting site plan (see E 1.1).

C. General Review Standard. If installed, all exterior lighting shall meet the functional security needs of the proposed land use without adversely affecting adjacent properties or the community. For purposes of this section, properties that comply with the design standards of subsection D. below shall be deemed to not adversely affect adjacent properties or the community.

Applicant’s Response: All proposed exterior site lighting and fixture details are shown on the lighting site plan (see E 1.1).

D. Design and Illumination Standards.

General Outdoor Lighting Standard and Glare Prohibition.

1. Any light source or lamp that emits more than nine hundred lumens (thirteen watt compact fluorescent or sixty watt incandescent) shall be concealed or shielded with a full cut-off style fixture in order to minimize the potential for glare and unnecessary diffusion on adjacent property.

Applicant’s Response:

All proposed exterior site lighting is shown on the exterior lighting plan (see E 1.1). Fixtures will be shielded with a full-cut-off. See attached cutsheets for additional details.

2. The maximum height of any lighting pole serving a multi-family residential use shall be twenty feet. The maximum height serving any other type of use shall be twenty-five feet, except in parking lots larger than five acres, the maximum height shall be thirty-five feet if the pole is located at least one hundred feet from any residential use.

Applicant’s Response:

All proposed exterior site lighting and fixture details are shown on the lighting site plan (see E 1.1).

The proposed development does not include any lighting poles within the parking area or elsewhere on the site.

3. Lighting levels:

Table 1-17.62.065. Foot-candle Levels

<i>Location</i>	<i>Min</i>	<i>Max</i>	<i>Avg</i>
<i>Pedestrian Walkways in Parking Lots</i>		<i>10:1 max/min ratio</i>	<i>0.5</i>
<i>Pedestrian Accessways/Walkways</i>	<i>0.5</i>	<i>7:1 max/min ratio</i>	<i>1.5</i>
<i>Building Entrances</i>	<i>3</i>		
<i>Bicycle Parking Areas</i>	<i>3</i>		
<i>Abutting property</i>	<i>N/A</i>	<i>0.5</i>	

Applicant’s Response: All proposed exterior site lighting and fixture details are shown on the lighting site plan (see E 1.1).

4. Pedestrian Accessways. To enhance pedestrian and bicycle safety, pedestrian accessways required pursuant to OCMC 12.28 shall be lighted with pedestrian-scale lighting. Accessway lighting shall be to a minimum level of one-half foot-candles, a one and one-half foot-candle average, and a maximum to minimum ratio of seven-to-one and shall be oriented not to shine upon adjacent properties. Street lighting shall be provided at both entrances.

Applicant’s Response: All proposed exterior site lighting and fixture details are shown on the lighting site plan (see E 1.1).

5. *Floodlights shall not be utilized to light all or any portion of a building facade between ten p.m. and six a.m.*

Applicant's Response: No floodlights are proposed for this development.

6. *Lighting on outdoor canopies shall be fully recessed into the canopy and shall not protrude downward beyond the ceiling of the canopy.*

Applicant's Response: No canopies or canopy lights are proposed for this development

7. *All outdoor light not necessary for security purposes shall be reduced, activated by motion sensor detectors, or turned off during non-operating hours.*

Applicant's Response: The site lighting will comply with the above criterion.

8. *Light fixtures used to illuminate flags, statues, or any other objects mounted on a pole, pedestal, or platform shall use a narrow cone beam of light that will not extend beyond the illuminated object.*

Applicant's Response: The proposed site lighting does not include the illumination of flags, statues, or any other objects mounted on a pole, pedestal, or platform. The site lighting will comply with the above criterion.

9. *For upward-directed architectural, landscape, and decorative lighting, direct light emissions shall not be visible above the building roofline.*

Applicant's Response: The site lighting will comply with the above criterion.

10. *No flickering or flashing lights shall be permitted, except for temporary decorative seasonal lighting.*

Applicant's Response: The site lighting will comply with the above criterion.

11. *Wireless Sites. Unless required by the Federal Aviation Administration or the Oregon Aeronautics Division, artificial lighting of wireless communication towers and antennas shall be prohibited. Strobe lighting of wireless communication facilities is prohibited unless required by the Federal Aviation Administration. Security lighting for equipment shelters or cabinets and other on-the-ground auxiliary equipment on wireless communication facilities shall be initiated by motion detecting lighting.*

Applicant's Response: No wireless towers are proposed with this development

12. *Lighting for outdoor recreational uses such as ball fields, playing fields, tennis courts, and similar uses, provided that such uses comply with the following standards:*
 - i. *Maximum permitted light post height: eighty feet.*

Applicant's Response: No outdoor active recreational uses are proposed.

17.62.080 - *Special development standards along transit streets.*

B. *Applicability. Except as otherwise provide in this section, the requirements of this section shall apply to the construction of new retail, office and institutional buildings which front on a transit street.*

Applicant's Response: No changes proposed to the existing main entry.

C. Development Standards.

1. All buildings shall have at least one main building entrance oriented towards the transit street. A main building entrance is oriented toward a transit street if it is directly located on the transit street, or if it is linked to the transit street by an on-site pedestrian walkway that does not cross off-street parking or maneuvering areas.

Applicant's Response: An existing main entrance is located at the existing building and will continue to function as the feature. No changes proposed to the existing main entry.

a. If the site has frontage on more than one transit street, or on a transit street and a street intersecting a transit street, the building shall provide one main building entrance oriented to the transit street or to the corner where the two streets intersect.

Applicant's Response: No changes proposed to the existing main entry.

b. For building facades over three hundred feet in length on a transit street, two or more main building entrances shall be provided as appropriate and oriented towards the transit street.

Applicant's Response: No changes proposed to the existing main entry.

2. Main building entrances shall be well lighted and visible from the transit street. The minimum lighting level for building entries shall be three foot-candles. Lighting shall be a pedestrian scale with the source light shielded to reduce glare.

Applicant's Response: No changes proposed to the existing main entry or lighting.

3. In the event a requirement of this section conflicts with other requirements in [Title 17](#), the requirements of this section shall control.

Applicant's Response: No changes proposed to the existing main entry or lighting.

D. Exemptions. The following permitted uses are exempted from meeting the requirements of subsection C. of this section:

- 1. Heavy equipment sales;*
- 2. Motor vehicle service stations, including convenience stores associated therewith;*
- 3. Solid waste transfer stations; and*
- 4. Truck stops, including convenience stores, eating or drinking establishments, overnight accommodations or other similar services associated therewith. A use found by the community development director to be similar to the exempt uses above.*

Applicant's Response: Use is not one listed in this section.

17.62.085 - Refuse and recycling standards for commercial, industrial, and multi-family developments. The purpose and intent of these provisions is to provide an efficient, safe and convenient refuse and recycling enclosure for the public as well as the local collection firm. All new development, change in property use, expansions or exterior alterations to uses other than single-family or duplex residences shall include a refuse and recycling enclosure. The area(s) shall be:

A. Sized appropriately to meet the needs of current and expected tenants, including an expansion area if necessary;

- B. Designed with sturdy materials, which are compatible to the primary structure(s);*
- C. Fully enclosed and visually screened;*
- D. Located in a manner easily and safely accessible by collection vehicles;*
- E. Located in a manner so as not to hinder travel lanes, walkways, streets or adjacent properties;*
- F. On a level, hard surface designed to discharge surface water runoff and avoid ponding;*
- G. Maintained by the property owner;*
- H. Used only for purposes of storing solid waste and recyclable materials;*
- I. Designed in accordance with applicable sections of the Oregon City Municipal Code (including Chapter 8.20—Solid Waste Collection and Disposal) and city adopted policies.*

Applicant's Response: No changes proposed to existing trash and recycling enclosure.

CHAPTER 17.52 OFF-STREET PARKING AND LOADING

17.52.015 - Planning commission adjustment of parking standards.

A. Purpose: The purpose of permitting a planning commission adjustment to parking standards is to provide for flexibility in modifying parking standards in all zoning districts, without permitting an adjustment that would adversely impact the surrounding or planned neighborhood. The purpose of an adjustment is to provide flexibility to those uses which may be extraordinary, unique or to provide greater flexibility for areas that can accommodate a denser development pattern based on existing infrastructure and ability to access the site by means of walking, biking or transit. An adjustment to a minimum or maximum parking standard may be approved based on a determination by the planning commission that the adjustment is consistent with the purpose of this Code, and the approval criteria can be met.

B. Procedure: A request for a planning commission parking adjustment shall be initiated by a property owner or authorized agent by filing a land use application. The application shall be accompanied by a site plan, drawn to scale, showing the dimensions and arrangement of the proposed development and parking plan, the extent of the adjustment requested along with findings for each applicable approval criteria. A request for a parking adjustment shall be processed as a Type III application as set forth in Chapter 17.50.

C. Approval criteria for the adjustment are as follows:

1. Documentation: The applicant shall document that the individual project will require an amount of parking that is different from that required after all applicable reductions have been taken.

2. Parking analysis for surrounding uses and on-street parking availability: The applicant must show that there is a continued fifteen percent parking vacancy in the area adjacent to the use during peak parking periods and that the applicant has permission to occupy this area to serve the use pursuant to the procedures set forth by the community development director.

a. For the purposes of demonstrating the availability of on street parking as defined in [Section] 17.52.020.B.3., the applicant shall undertake a parking study during time periods specified by the community development director. The time periods shall include those during which the highest parking demand is anticipated by the proposed use. Multiple observations during multiple days shall be required. Distances are to be calculated as traversed by a pedestrian that utilizes sidewalks and legal crosswalks or an alternative manner as accepted by the community development director.

b. The onsite parking requirements may be reduced based on the parking vacancy identified in the parking study. The amount of the reduction in onsite parking shall be calculated as follows:

i. Vacant on-street parking spaces within three hundred feet of the site will reduce onsite parking requirements by 0.5 parking spaces; and

ii. Vacant on-street parking spaces between three hundred and six hundred feet of the [site] will reduce onsite parking requirements by 0.2 parking spaces.

3. Function and Use of Site: The applicant shall demonstrate that modifying the amount of required parking spaces will not significantly impact the use or function of the site and/or adjacent sites.

4. *Compatibility: The proposal is compatible with the character, scale and existing or planned uses of the surrounding neighborhood.*

5. *Safety: The proposal does not significantly impact the safety of adjacent properties and rights-of-way.*

6. *Services: The proposal will not create a significant impact to public services, including fire and emergency services.*

Applicant's Response:

A total of three (3) new parking stalls will be added for a total of eleven (11) auto parking spaces. This ratio complies with 17.52.020 based on the uses of "Senior housing, including congregate care, residential care and assisted living facilities; nursing homes and other types of group homes".

17.52.020 - Number of automobile spaces required.

A. The number of parking spaces shall comply with the minimum and maximum standards listed in Table 17.52.020. The parking requirements are based on spaces per one thousand square feet net leasable area unless otherwise stated.

Table 17.52.020		
LAND USE	PARKING REQUIREMENTS	
	MINIMUM	MAXIMUM

<i>Multi-Family: Studio</i>	<i>1.00 per unit</i>	<i>1.5 per unit</i>
<i>Multi-Family: 1 bedroom</i>	<i>1.25 per unit</i>	<i>2.00 per unit</i>
<i>Multi-Family: 2 bedroom</i>	<i>1.5 per unit</i>	<i>2.00 per unit</i>
<i>Multi-Family: 3 bedroom</i>	<i>1.75 per unit</i>	<i>2.50 per unit</i>
<i>Hotel, Motel</i>	<i>1.0 per guest room</i>	<i>1.25 per guest room</i>
<i>Correctional Institution</i>	<i>1 per 7 beds</i>	<i>1 per 5 beds</i>
<i>Senior housing, including congregate care, residential care and assisted living facilities; nursing homes and other types of group homes</i>	<i>1 per 7 beds</i>	<i>1 per 5 beds</i>
<i>Hospital</i>	<i>2.00</i>	<i>4.00</i>
<i>Preschool Nursery/Kindergarten</i>	<i>2.00</i>	<i>3.00</i>
<i>Elementary/Middle School</i>	<i>1 per classroom</i>	<i>1 per classroom + 1 per administrative employee + 0.25 per seat in auditorium/assembly room/stadium</i>
<i>High School, College, Commercial School for Adults</i>	<i>0.20 per # staff and students</i>	<i>0.30 per # staff and students</i>
<i>Auditorium, Meeting Room, Stadium, Religious Assembly Building, movie theater,</i>	<i>.25 per seat</i>	<i>0.5 per seat</i>
<i>Retail Store, Shopping Center, Restaurants</i>	<i>4.10</i>	<i>5.00</i>
<i>Office</i>	<i>2.70</i>	<i>3.33</i>
<i>Medical or Dental Clinic</i>	<i>2.70</i>	<i>3.33</i>
<i>Sports Club, Recreation Facilities</i>	<i>Case Specific</i>	<i>5.40</i>
<i>Storage Warehouse, Freight Terminal</i>	<i>0.30</i>	<i>0.40</i>

<i>Manufacturing, Wholesale Establishment</i>	<i>1.60</i>	<i>1.67</i>
<i>Light Industrial, Industrial Park</i>	<i>1.3</i>	<i>1.60</i>

1. *Multiple Uses. In the event several uses occupy a single structure or parcel of land, the total requirements for off-street parking shall be the sum of the requirements of the several uses computed separately.*

Applicant's Response: The proposed development consists of two primary uses; senior housing and office. The senior housing parking ratio is based on the number of beds. The proposed addition would add 16 beds. Therefore, a minimum of 2 and a maximum of 3 additional parking stalls would be required for the senior housing use.

2. *Requirements for types of buildings and uses not specifically listed herein shall be determined by the community development director, based upon the requirements of comparable uses listed.*

Applicant's Response: The proposed uses are described as "Senior housing" and "office" in the above table.

3. *Where calculation in accordance with the above list results in a fractional space, any fraction less than one-half shall be disregarded and any fraction of one-half or more shall require one space.*

Applicant's Response: A total of eleven (11) parking spaces are proposed for both the senior housing and office uses for the proposed development.

4. *The minimum required parking spaces shall be available for the parking of operable passenger automobiles of residents, customers, patrons and employees only, and shall not be used for storage of vehicles or materials or for the parking of vehicles used in conducting the business or use.*

Applicant's Response: No vehicle or material storage is proposed in the parking lot area.

5. *A change in use within an existing habitable building located in the MUD Design District or the Willamette Falls Downtown District is exempt from additional parking requirements. Additions to an existing building and new construction are required to meet the minimum parking requirements for the areas as specified in Table 17.52.020 for the increased square footage.*

Applicant's Response: Subject properties are not within the Districts mentioned above.

B. Parking requirements can be met either onsite, or offsite by meeting the following conditions:

1. *Mixed Uses. If more than one type of land use occupies a single structure or parcel of land, the total requirements for off-street automobile parking shall be the sum of the requirements for all uses, unless it can be shown that the peak parking demands are actually less (e.g. the uses operate on different days or at different times of the day). In that case, the total requirements shall be reduced accordingly, up to a maximum reduction of fifty percent, as determined by the community development director.*

2. *Shared Parking. Required parking facilities for two or more uses, structures, or parcels of land may be satisfied by the same parking facilities used jointly, to the extent that the owners or operators show that the need for parking facilities does not materially overlay (e.g., uses primarily of a daytime versus nighttime nature), that the shared parking facility is within one thousand feet of the potential uses, and provided that the right of joint use is evidenced by a recorded deed, lease, contract, or similar written instrument authorizing the joint use.*

3. *On-Street Parking. On-street parking may be counted toward the minimum standards when it is on*

the street face abutting the subject land use. An on-street parking space must not obstruct a required clear vision area and it shall not violate any law or street standard. On-street parking for commercial uses shall conform to the following standards:

a. Dimensions. The following constitutes one on-street parking space:

- 1. Parallel parking, each [twenty-two] feet of uninterrupted and available curb;*
- 2. [Forty-five/sixty] degree diagonal, each with [fifteen] feet of curb;*
- 3. Ninety degree (perpendicular) parking, each with [twelve] feet of curb.*
- 4. Public Use Required for Credit. On-street parking spaces counted toward meeting the parking requirements of a specific use may not be used exclusively by that use, but shall be available for general public use at all times. Signs or other actions that limit general public use of on-street spaces are prohibited.*

Applicant's Response: All required auto parking stalls will be contained within the parking lot on site.

C. Reduction of the Number of Automobile Spaces Required. The required number of parking stalls may be reduced in the Downtown Parking Overlay District: Fifty percent reduction in the minimum number of spaces required is allowed prior to seeking further reductions in [sub]sections 2. and 3. below:

1. Transit Oriented Development. For projects not located within the Downtown Parking Overlay District, the community development director may reduce the required number of parking stalls up to twenty-five percent when it is determined that a project in a commercial center (sixty thousand square feet or greater of retail or office use measured cumulatively within a five hundred-foot radius) or multi-family development with over eighty units, is adjacent to or within one thousand three hundred twenty feet of an existing or planned public transit street and is within one thousand three hundred twenty feet of the opposite use (commercial center or multi-family development with over eighty units).

2. Reduction in Parking for Tree Preservation. The community development director may grant an adjustment to any standard of this requirement provided that the adjustment preserves a regulated tree or grove so that the reduction in the amount of required pavement can help preserve existing healthy trees in an undisturbed, natural condition. The amount of reduction must take into consideration any unique site conditions and the impact of the reduction on parking needs for the use, and must be approved by the community development director. This reduction is discretionary.

3. Transportation Demand Management. The community development director may reduce the required number of parking stalls up to twenty-five percent when a parking-traffic study prepared by a traffic engineer demonstrates:

a. Alternative modes of transportation, including transit, bicycles, and walking, and/or special characteristics of the customer, client, employee or resident population will reduce expected vehicle use and parking space demand for this development, as compared to standard Institute of Transportation Engineers vehicle trip generation rates and further that the transportation demand management program promotes or achieves parking utilization lower than minimum city parking requirements.

b. Transportation demand management (TDM) program has been developed for approval by, and is approved by the city engineer. The plan will contain strategies for reducing vehicle use and parking demand generated by the development and will be measured annually. If, at the annual assessment, the city determines the plan is not successful, the plan may be revised. If the city determines that no good-faith effort has been made to implement the plan, the city may take enforcement actions.

Applicant's Response: No parking reductions are requested as part of this application.

4. The minimum required number of stalls may be reduced by up to 10% when the subject property is adjacent to an existing or planned fixed public transit route or within 1,000 feet of an existing or planned transit stop.

Applicant's Response: No parking reductions are requested as part of this application.

17.52.030 - Standards for automobile parking.

A. Access. Ingress and egress locations on public thoroughfares shall be located in the interests of public traffic safety. Groups of more than four parking spaces shall be so located and served by driveways so that their use will require no backing movements or other maneuvering within a street right-of-way other than an alley. No driveway with a slope of greater than fifteen percent shall be permitted without approval of the city engineer.

Applicant's Response: Parking area is designed so that no vehicle backs into a public right-of-way. Additionally, no driveway will have a slope greater than 15%.

B. Surfacing. Required off-street parking spaces and access aisles shall have paved surfaces adequately maintained. The use of pervious asphalt/concrete and alternative designs that reduce storm water runoff and improve water quality pursuant to the city's stormwater and low impact development design standards are encouraged.

Applicant's Response: Parking lot expansion to match existing pervious pavement.

C. Drainage. Drainage shall be designed in accordance with the requirements of Chapter 13.12 and the city public works stormwater and grading design standards.

Applicant's Response: Drainage will comply with the requirements of Chapter 13.12

D. Dimensional Standards.

1. Requirements for parking developed at varying angles are according to the table included in this section. A parking space shall not be less than seven feet in height when within a building or structure, and shall have access by an all-weather surface to a street or alley. Parking stalls in compliance with the American with Disabilities Act may vary in size in order to comply with the building division requirements. Up to thirty-five percent of the minimum required parking may be compact, while the remaining required parking stalls are designed to standard dimensions. The community development director may approve alternative dimensions for parking stalls in excess of the minimum requirement which comply with the intent of this chapter.

2. Alternative parking/plan. Any applicant may propose an alternative parking plan. Such plans are often proposed to address physically constrained or smaller sites, however innovative designs for larger sites may also be considered. In such situations, the community development director may approve an alternative parking lot plan with variations to parking dimensions of this section. The alternative shall be consistent with the intent of this chapter and shall create a safe space for automobiles and pedestrians while providing landscaping to the quantity and quality found within parking lot landscaping requirements.

PARKING

STANDARD

PARKING ANGLE SPACE DIMENSIONS

A Parking Angle		B Stall Width	C Stall Curb	to	D Aisle Width	E Curb Length	F Overhang

0 degrees		8.5	9.0	12	20	0
30 degrees	Standard Compact	9' 8'	17.3' 14.9'	11' 11'	18' 16'	
45 degrees	Standard Compact	8.5 8.5	19.8' 17.0'	13' 13'	12.7' 11.3'	1.4
60 degrees	Standard Compact	9' 8'	21' 17.9'	18' 16'	10.4' 9.2'	1.7
90 degrees	Standard Compact	9' 8'	19.0' 16.0'	24' 22'	9' 8'	1.5

Applicant's Response: Parking stall dimensions will comply with the table above (see A1.1)

E. Carpool and Vanpool Parking. New developments with seventy-five or more parking spaces, and new hospitals, government offices, group homes, nursing and retirement homes, schools and transit park-and-ride facilities with fifty or more parking spaces, shall identify the spaces available for employee, student and commuter parking and designate at least five percent, but not fewer than two, of those spaces for exclusive carpool and vanpool parking. Carpool and vanpool parking spaces shall be located closer to the main employee, student or commuter entrance than all other employee, student or commuter parking spaces with the exception of ADA accessible parking spaces. The carpool/vanpool spaces shall be clearly marked "Reserved - Carpool/Vanpool Only."

Applicant's Response: Parking lot would develop 11 total parking spaces, which is less than 75 spaces.

17.52.040 - Bicycle parking standards.

A. Purpose-Applicability. To encourage bicycle transportation to help reduce principal reliance on the automobile, and to ensure bicycle safety and security, bicycle parking shall be provided in conjunction with all uses other than single-family dwellings or duplexes.

Applicant's Response: Two bicycle racks are proposed between the addition and existing building.

B. Number of Bicycle Spaces Required. For any use not specifically mentioned in Table A, the bicycle parking requirements shall be the same as the use which, as determined by the community development director, is most similar to the use not specifically mentioned. Calculation of the number of bicycle parking spaces required shall be determined in the manner established in Section 17.52.020 for determining automobile parking space requirements. Modifications to bicycle parking requirements may be made through the site plan and design, conditional use, or master plan review process.

*TABLE A Required Bicycle Parking Spaces**

Where two options for a requirement are provided, the option resulting in more bicycle parking applies. Where a calculation results in a fraction, the result is rounded up to the nearest whole number.

** Covered bicycle parking is not required for developments with two or fewer stalls.*

USE	PROPOSED	MINIMUM BICYCLE PARKING	MINIMUM BICYCLE PARKING - COVERED
Multi-family	244 units	1 per 10 units	50% (min. of 1)

		24 Required	12 Required
Office	15 Auto Parking Stalls Minimum	1 per 20 auto spaces (min. of 2) 1 Required	50% (min. of 2) 1 Required
Restaurant	4 Auto Parking Stalls Minimum	1 per 20 auto spaces 1 Required	0%
Parks and Open Space	14 automobile parking stalls	1 per 10 auto parking stall 1 Required	0%

* Covered bicycle parking is not required for developments with two or fewer stalls.

C. Security of Bicycle Parking. Bicycle parking facilities shall be secured. Acceptable secured bicycle parking area shall be in the form of a lockable enclosure onsite, secure room in a building onsite, a covered or uncovered rack onsite, bicycle parking within the adjacent right-of-way or another form of secure parking where the bicycle can be stored, as approved by the decision maker. All bicycle racks and lockers shall be securely anchored to the ground or to a structure. Bicycle racks shall be designed so that bicycles may be securely locked to them without undue inconvenience and, when in the right-of-way shall comply with clearance and ADA requirements.

Applicant's Response: Two bicycle racks are proposed between the addition and existing building.

D. Bicycle parking facilities shall offer security in the form of either a lockable enclosure or a stationary rack to which the bicycle can be locked. All bicycle racks and lockers shall be securely anchored to the ground or to a structure. Bicycle racks shall be designed so that bicycles may be securely locked to them without undue inconvenience.

Applicant's Response: Two bicycle racks are proposed between the addition and existing building. Bicycle racks are stationary "U" style racks providing two-points of contact with a bicycle frame.

Location of Bicycle Parking:

1. Bicycle parking shall be located on-site, in one or more convenient, secure and accessible location. The city engineer and the community development Director may permit the bicycle parking to be provided within the right-of-way provided adequate clear zone and ADA requirements are met. If sites have more than one building, bicycle parking shall be distributed as appropriate to serve all buildings. If a building has two or more main building entrances, the review authority may require bicycle parking to be distributed to serve all main building entrances, as it deems appropriate.

Applicant's Response: Bicycle racks are located near the existing buildings main entrance

2. Bicycle parking areas shall be clearly marked or visible from on-site buildings or the street. If a bicycle parking area is not plainly visible from the street or main building entrance, a sign must be posted indicating the location of the bicycle parking area. Indoor bicycle parking areas shall not require stairs to access the space unless approved by the community development director.

Applicant's Response: Bicycle parking has been sited in an area that is clearly visible from the public way approaching the front of building and adjacent to sidewalk/driveway.

3. All bicycle parking areas shall be located to avoid conflicts with pedestrian and motor vehicle movement.

a. Bicycle parking areas shall be separated from motor vehicle parking and maneuvering areas and from arterial streets by a barrier or a minimum of five feet.

b. Bicycle parking areas shall not obstruct pedestrian walkways; provided, however, that the review authority may allow bicycle parking in the right-of-way where this does not conflict with pedestrian accessibility.

Applicant's Response: Bicycle parking will not obstruct pedestrian walkways and is 5 feet minimum distance from accessible parking stall.

17.52.040.D.4. Accessibility.

a. Outdoor bicycle areas shall be connected to main building entrances by pedestrian accessible walkways.

Applicant's Response: Bicycle parking area is connected to main building entrance by pedestrian accessible walkway.

17.52.40.D.4. .17 *Outdoor bicycle parking areas shall have direct access to a right-of-way.*

Applicant's Response: Bicycle parking areas have direct access to a public right-of-way along South End Road.

17.52.40.D.4. .17 *Outdoor bicycle parking should be no farther from the main building entrance than the distance to the closest vehicle space, or fifty feet, whichever is less, unless otherwise determined by the community development director, city engineer, or planning commission.*

Applicant's Response: The outdoor bicycle parking area is located 50 feet from the main entrance.

17.52.060 - Parking lot landscaping.

A. Development Standards.

1. The landscaping shall be located in defined landscaped areas that are uniformly distributed throughout the parking or loading area.

Applicant's Response: Parking lot landscaping is uniformly distributed around the parking lot. The only change in the parking lot landscaping is the addition of a landscape island to break up the run of parking spaces.

2. All areas in a parking lot not used for parking, maneuvering, or circulation shall be landscaped.

Applicant's Response: Areas in the parking lot not used for parking, maneuvering or circulation will be landscaped.

3. Parking lot trees shall be a mix of deciduous shade trees and coniferous trees. The trees shall be evenly distributed throughout the parking lot as both interior and perimeter landscaping to provide shade.

Applicant's Response: A Redbud tree is proposed in the landscape island, which is centrally located within the parking area.

4. Required landscaping trees shall be of a minimum two-inch minimum caliper size (though it may not be standard for some tree types to be distinguished by caliper), planted according to American Nurseryman Standards, and selected from the Oregon City Street Tree List;

Applicant's Response: Landscaping trees will be a minimum of 2" caliper.

5. *Landscaped areas shall include irrigation systems unless an alternate plan is submitted, and approved by the community development director, that can demonstrate adequate maintenance;*

Applicant's Response: All landscaped areas will be on a controlled irrigation system.

1. *All plant materials, including trees, shrubbery and ground cover should be selected for their appropriateness to the site, drought tolerance, year-round greenery and coverage and staggered flowering periods. Species found on the Oregon City Native Plant List are strongly encouraged and species found on the Oregon City Nuisance Plant List are prohibited.*

Applicant's Response: See proposed Landscape Plan (L1.1) for specific plant details.

6. *The landscaping in parking areas shall not obstruct lines of sight for safe traffic operation and shall comply with all requirements of Chapter 10.32, Traffic Sight Obstructions.*

Applicant's Response: Landscaping will not obstruct sight lines.

7. *Landscaping shall incorporate design standards in accordance with [Chapter 13.12](#), Stormwater Management.*

Applicant's Response: Landscaping was selected in accordance with Chapter 13.12.

B. Perimeter Parking Lot Landscaping and Parking Lot Entryway/Right-of-Way Screening. Parking lots shall include a five-foot wide landscaped buffer where the parking lot abuts the right-of-way and/or adjoining properties. In order to provide connectivity between non-single-family sites, the community development director may approve an interruption in the perimeter parking lot landscaping for a single driveway where the parking lot abuts property designated as multi-family, commercial or industrial. Shared driveways and parking aisles that straddle a lot line do not need to meet perimeter landscaping requirements.

Applicant's Response: A 5-foot landscape buffer will be maintained along the parking lot perimeter.

1. *The perimeter parking lot are[a] shall include:*

a. *Trees spaced a maximum of thirty-five feet apart (minimum of one tree on either side of the entryway is required). When the parking lot is adjacent to a public right-of-way, the parking lot trees shall be offset from the street trees;*

Applicant's Response: Existing trees near the existing parking area will be preserved and comply with the criterion above.

b. *Ground cover, such as wild flowers, spaced a maximum of 16-inches on center covering one hundred percent of the exposed ground within three years. No bark mulch shall be allowed except under the canopy of shrubs and within two feet of the base of trees; and*

Applicant's Response: Proposed landscaping will comply with condition above.

c. *An evergreen hedge screen of thirty to forty-two inches high or shrubs spaced no more than four feet apart on average. The hedge/shrubs shall be parallel to and not nearer than two feet from the right-of-way line. The required screening shall be designed to allow for free access to the site and sidewalk by pedestrians. Visual breaks, no more than five feet in width, shall be provided every thirty feet within evergreen hedges abutting public right-of-ways.*

Applicant's Response: No new hedges are proposed near the existing parking area.

C. Parking Area/Building Buffer. Parking areas shall be separated from the exterior wall of a structure, exclusive of pedestrian entranceways or loading areas, by one of the following:

1. Minimum five-foot wide landscaped planter strip (excluding areas for pedestrian connection) abutting either side of a parking lot sidewalk with:

Applicant's Response: No parking area is proposed adjacent to the building addition.

a. Trees spaced a maximum of thirty-five feet apart;

Applicant's Response: No parking area is proposed adjacent to the building addition.

b. Ground cover such as wild flowers, spaced a maximum of sixteen-inches on center covering one hundred percent of the exposed ground within three years. No bark mulch shall be allowed except under the canopy of shrubs and within two feet of the base of trees; and

Applicant's Response: No parking area is proposed adjacent to the building addition.

c. An evergreen hedge of thirty to forty-two inches or shrubs placed no more than four feet apart on average; or

Applicant's Response: No parking area is proposed adjacent to the building addition.

2. Seven-foot sidewalks with shade trees spaced a maximum of thirty-five feet apart in three-foot by five-foot tree wells.

Applicant's Response: No parking area is proposed adjacent to the building addition.

D. Interior Parking Lot Landscaping. Surface parking lots shall have a minimum ten percent of the interior of the gross area of the parking lot devoted to landscaping to improve the water quality, reduce storm water runoff, and provide pavement shade. Interior parking lot landscaping shall not be counted toward the fifteen percent minimum total site landscaping required by [Section 17.62.050\(1\)](#) unless otherwise permitted by the dimensional standards of the underlying zone district. Pedestrian walkways or any impervious surface in the landscaped areas are not to be counted in the percentage. Interior parking lot landscaping shall include:

a. A minimum of one tree per six parking spaces.

Applicant's Response: A new landscape island is proposed that will break up the parking run. There will be 5 parking spaces on each side of the landscape island. 4 existing Big Leaf Maple trees are located west of the parking area.

b. Ground cover, such as wild flowers, spaced a maximum of sixteen-inches on center covering one hundred percent of the exposed ground within three years. No bark mulch shall be allowed except under the canopy of shrubs and within two feet of the base of trees.

Applicant's Response: The landscaping around the existing parking area will be preserved and will comply the above criterion.

c. Shrubs spaced no more than four feet apart on average.

Applicant's Response: The landscaping around the existing parking area will be preserved and will comply the above criterion.

No more than eight contiguous parking spaces shall be created without providing an interior landscape strip between them. Landscape strips shall be provided between rows of parking shall be a minimum of six feet in width and a minimum of ten feet in length.

Applicant's Response: A new landscape island is proposed that will break up the parking run. There will be 5 parking spaces on each side of the landscape island

d. Pedestrian walkways shall have shade trees spaced a maximum of every thirty-five feet in a minimum three-foot by five-foot tree wells; or

Trees spaced every thirty-five feet, shrubs spaced no more than four feet apart on average, and ground cover covering one hundred percent of the exposed ground. No bark mulch shall be allowed except under the canopy of shrubs and within two feet of the base of trees.

Applicant's Response: The 4 existing Big Leaf Maple trees around the existing parking area will be preserved and will comply the above criterion.

E. Installation.

- 1. All landscaping shall be installed according to accepted planting procedures, according to American Nurseryman Standards.*
- 2. The site, soils and proposed irrigation systems shall be appropriate for the healthy and long-term maintenance of the proposed plant species.*
- 3. Certificates of occupancy shall not be issued unless the landscaping requirements have been met or other arrangements have been made and approved by the city, such as the posting of a surety.*

Applicant's Response: Proposed landscaping will comply the criteria above.

17.52.070 - Alternative landscaping plan.

Any applicant may propose an alternative landscaping plan. Such plans are often proposed to address physically constrained or smaller sites, however innovative designs for larger sites may also be considered. Alternative plans may include the use of low impact development techniques and minimized landscaping requirements. In such situations, the community development director may approve variations to the landscaping standards of [section 17.52.060](#).

A. General Review Standard. The alternative shall be meet or exceed the intent of this chapter and shall create a safe space for automobiles and pedestrians. The alternative landscaping plan shall be prepared by a licensed landscape architect.

B. Credit for Pervious/Low Impact Development. The community development director may count up to fifty percent of the square footage of any pervious hardscaped landscape material within a parking lot that is designed and approved pursuant to the city's adopted stormwater and low impact development design standards toward minimum landscaping requirements for the site. (This includes porous pavement detention, open celled block pavers, porous asphalt, porous concrete pavement, porous turf, porous gravel, etc).

Applicant's Response: See Landscape Plan (L1.1) for specific plant details.

17.52.080 - Maintenance.

The owner, tenant and their agent, if any, shall be jointly and severally responsible for the maintenance of the site including but not limited to the off-street parking and loading spaces, bicycle parking and all landscaping which shall be maintained in good condition so as to present a healthy, neat and orderly appearance and shall be kept free from refuse and debris.

All plant growth in interior landscaped areas shall be controlled by pruning, trimming, or otherwise so that:

- a. It will not interfere with the maintenance or repair of any public utility;*
- b. It will not restrict pedestrian or vehicular access; and*
- c. It will not constitute a traffic hazard due to reduced visibility.*

Applicant's Response: Building ownership will hire and retain a professional landscaping crew to maintain site landscaping.

CHAPTER 12.04 - STREETS SIDEWALKS AND PUBLIC PLACES

12.04.003 - Applicability.

A. Compliance with this chapter is required for all land divisions, site plan and design review, master plan, detailed development plan and conditional use applications and all public improvements.

B. Compliance with this chapter is also required for new construction or additions which exceed fifty percent of the existing square footage, of all single and two-family dwellings. All applicable single and two-family dwellings shall provide any necessary dedications, easements or agreements as identified in the transportation system plan and this chapter. In addition, the frontage of the site shall comply with the following prioritized standards identified in this chapter:

- 1. Improve street pavement, construct curbs, gutters, sidewalks and planter strips; and*
- 2. Plant street trees.*

The cost of compliance with the standards identified in 12.04.003.B.1 and 12.04.003.B.2 is limited to ten percent of the total construction costs. The value of the alterations and improvements as determined by the community development director is based on the entire project and not individual building permits. It is the responsibility of the applicant to submit to the community development director the value of the required improvements. Additional costs may be required to comply with other applicable requirements associated with the proposal such as access or landscaping requirements.

Applicant's Response: Right-of-way improvements, which include new sidewalks and street trees will be constructed as part of this development

12.04.005 - Jurisdiction and management of the public rights-of-way.

A. The city has jurisdiction and exercises regulatory management over all public rights-of-way within the city under authority of the City Charter and state law by issuing separate public works right-of-way permits or permits as part of issued public infrastructure construction plans. No work in the public right-of-way shall be done without the proper permit. Some public rights-of-way within the city are regulated by the State of Oregon Department of Transportation (ODOT) or Clackamas County and as such, any work in these streets shall conform to their respective permitting requirements.

B. Public rights-of-way include, but are not limited to, streets, roads, highways, bridges, alleys, sidewalks, trails, paths, public easements and all other public ways or areas, including the subsurface under and air space over these areas.

C. The city has jurisdiction and exercises regulatory management over each public right-of-way whether the city has a fee, easement, or other legal interest in the right-of-way. The city has jurisdiction and regulatory management of each right-of-way whether the legal interest in the right-of-way was obtained by grant, dedication, prescription, reservation, condemnation, annexation, foreclosure or other means.

D. No person may occupy or encroach on a public right-of-way without the permission of the city. The city grants permission to use rights-of-way by franchises, licenses and permits.

E. The exercise of jurisdiction and regulatory management of a public right-of-way by the city is not official acceptance of the right-of-way, and does not obligate the city to maintain or repair any part of

the right-of-way.

Applicant's Response: A one-foot dedication will be made to the City in compliance with request for ultimate ROW widths per conversations and pre-app comments generated by City Staff.

Chapter 12.08 - PUBLIC AND STREET TREES^[2]

12.08.015 - Street tree planting and maintenance requirements.

All new construction or major redevelopment shall provide street trees adjacent to all street frontages. Species of trees shall be selected based upon vision clearance requirements, but shall in all cases be selected from the Oregon City Street Tree List or be approved by a certified arborist. If a setback sidewalk has already been constructed or the Development Services determines that the forthcoming street design shall include a setback sidewalk, then all street trees shall be installed with a planting strip. If existing street design includes a curb-tight sidewalk, then all street trees shall be placed within the front yard setback, exclusive of any utility easement.

Applicant's Response: Two new street trees will be planted in the public right-of-way.

A. One street tree shall be planted for every thirty-five feet of property frontage. The tree spacing shall be evenly distributed throughout the total development frontage. The community development director may approve an alternative street tree plan if site or other constraints prevent meeting the placement of one street tree per thirty- five feet of property frontage.

Applicant's Response: Two new street trees will be planted in the public right-of-way, spaced 35 feet apart along the property frontage.

B. The following clearance distances shall be maintained when planting trees:

- 1. Fifteen feet from streetlights;*
- 2. Five feet from fire hydrants;*
- 3. Twenty feet from intersections;*
- 4. A minimum of five feet (at mature height) below powerlines.*

Applicant's Response: New street trees will meet above clearance requirements.

C. All trees shall be a minimum of two inches in caliper at six inches above the root crown and installed to city specifications.

Applicant's Response: New street trees will be a minimum of 2" caliper.

D. All established trees shall be pruned tight to the trunk to a height that provides adequate clearance for street cleaning equipment and ensures ADA complaint clearance for pedestrians.

Applicant's Response: New street trees will be maintained and pruned per above standard

12.08.020 - Street tree species selection.

The community development director may specify the species of street trees required to be planted if there is an established planting scheme adjacent to a lot frontage, if there are obstructions in the planting strip, or if overhead power lines are present.

Applicant's Response: New street trees will be Newport Flowering Plum (*Prunus cerasifera* 'Newport') to match street trees in front of existing building.

12.08.035 - Public tree removal.

Existing street trees shall be retained and protected during construction unless removal is specified as part of a land use approval or in conjunction with a public facilities construction project, as approved by the community development director. A diseased or hazardous street tree, as determined by a registered arborist and verified by the City, may be removed if replaced. A non-diseased, non-hazardous street tree that is removed shall be replaced in accordance with the Table 12.08.035.

All new street trees will have a minimum two-inch caliper trunk measured six inches above the root crown. The community development director may approve off-site installation of replacement trees where necessary due to planting constraints. The community development director may additionally allow a fee in-lieu of planting the tree(s) to be placed into a city fund dedicated to planting trees in Oregon City in accordance with Oregon City Municipal Code 12.08.

Table 12.08.035

Replacement Schedule for Trees Determined to be Dead, Diseased or Hazardous by a Certified		Replacement Schedule for Trees Not Determined to be Dead, Diseased or Hazardous by a Certified	
Diameter of tree to be Removed (Inches of diameter at 4-ft height)	Number of Replacement Trees to be Planted	Diameter of tree to be Removed (Inches of diameter at 4-ft height)	Number of Replacement Trees to be Planted
Any Diameter	1 Tree	Less than 6"	1 Tree
		6" to 12"	2 Trees
		13" to 18"	3 Trees
		19" to 24"	4 Trees
		25" to 30"	5 Trees
		31" and over	8 Trees

Applicant's Response: No trees on proposed building addition site.

12.08.040 - Heritage Trees and Groves.

A. Purpose. Certain trees, because of their age, species, natural resource value, ecological or historical association, are of special importance to the city. These trees may live on private or public property.

1. The purpose of this chapter is to recognize, foster appreciation and provide for voluntary protection of Heritage Trees.

2. In particular, the following trees are shall be considered significant, and therefore eligible for heritage tree nomination in Oregon City, if they meet the minimum size requirements of the table below:

Tree Eligibility based on Size

Species	Common Name	Size (d.b.h)
<i>Quercus garryana</i>	Oregon white oak	8"
<i>Pseudotsuga menziesii</i>	Douglas-fir	18"
<i>Thuja plicata</i>	Western red cedar	12"

<i>Pinus ponderosa</i>	<i>Ponderosa pine</i>	12"
<i>Taxus brevifolia</i>	<i>Western yew</i>	6"
<i>Other deciduous and horticultural tree species</i>		20"
<i>Other evergreen and conifer trees</i>		18"

D. Criteria.

1. The city commission may designate a tree or grove as a Heritage Tree or Heritage Grove if the commission determines that the following criteria are met:

- a. The tree or grove is of landmark importance to the City of Oregon City due to age, size, species, horticultural quality or historic importance; or*
- b. It is listed as a State Heritage Tree, as designated by the state division of forest resources; or*
- c. It is a rare species, or provides a habitat for rare species of plants, animals or birds; and*
- d. The tree is not irreparably damaged, diseased, hazardous or unsafe, or the applicant is willing to have the tree treated by an arborist and the treatment will alleviate the damage, disease or hazard;*

E. Protection of Heritage Trees and Groves.

1. No Heritage Tree or Grove may be removed, topped, or otherwise altered unless permitted by this section.

2. An application to remove a Heritage Tree or Grove shall demonstrate that the burden imposed on the property owner, or, if the tree is located within the public right-of-way under city jurisdiction, then the burden imposed on the city by the continued presence of the tree outweighs the public benefit provided by the tree. For the purposes of making this determination, the following tree impacts shall not be considered unreasonable burdens on the property owner, or if appropriate, the city:

- a. View obstruction;*
- b. Routine pruning, leaf raking and other maintenance activities; and*
- c. Infrastructure impacts or tree hazards that can be controlled or avoided by appropriate pruning or maintenance.*

3. Unless the tree is permitted to be removed due to poor health or hazard pursuant to Section 12.08.042, the applicant shall be required to mitigate for the loss of the tree pursuant to Table 12.08.042.

4. Any person who removes a Heritage Tree or Grove in violation of this chapter shall be subject to the penalties provided in this chapter.

F. Recognition of Heritage Trees and Groves.

1. A Heritage Tree plaque may be designed and furnished by the city to the property owner, or if the tree is in the public right-of-way, to the appropriate city official, of a designated Heritage Tree or Grove. The city may charge a fee to cover the costs of the providing the plaque. The plaque shall be posted at a location at or near the tree or grove and, if feasible, visible from a public right-of-way.

2. The community development director shall maintain a list and map of designated Heritage Trees and Groves.

G. Removal of Heritage Tree or Grove Designation.

1. A Heritage Tree or Grove may be removed from designation if it dies or is removed pursuant to this chapter. If removed from private property, the city shall record a document extinguishing the covenant.

Applicant's Response: No heritage trees exist on site.

12.08.045 - Gifts and funding.

The City of Oregon City may accept gifts, which are specifically designated for the purpose of planting or maintaining trees within the city. the community development director may allow a fee in-lieu of planting the

tree(s) to be placed into a city fund dedicated to planting trees in Oregon City. The community

development director may determine the type, caliper and species of the trees purchased with the fund. The cost of each tree may be adjusted annually based upon current market prices for materials and labor as calculated by the community development director. A separate fund shall be established and maintained for revenues and expenditures created by activities specified in this chapter. The natural resources committee shall have authority on behalf of the city to seek grants and alternative funding for tree projects. Funds from such grant awards shall be administered by the city pursuant to this section.

Applicant's Response: No gifts proposed.

Chapter 13.12 - STORMWATER MANAGEMENT

13.12.050 - Applicability and exemptions.

This chapter establishes performance standards for stormwater conveyance, quantity and quality. Additional performance standards for erosion prevention and sediment control are established in OCMC 17.47.

- A. Stormwater Conveyance. The stormwater conveyance requirements of this chapter shall apply to all stormwater systems constructed with any development activity, except as follows:*
- 1. The conveyance facilities are located entirely on one privately owned parcel;*
 - 2. The conveyance facilities are privately maintained; and*
 - 3. The conveyance facilities receive no stormwater runoff from outside the parcel's property limits.*

Those facilities exempted from the stormwater conveyance requirements by the above subsection will remain subject to the requirements of the Oregon Uniform Plumbing Code. Those exempted facilities shall be reviewed by the building official.

Applicant's Response: A new stormwater lateral will be installed to collect water from new impervious area, treated on-site in planters, and conveyed to public stormwater system.

- B. Water Quality and Flow Control. The water quality and flow control requirements of this chapter shall apply to the following proposed uses or developments, unless exempted under subsection C:*
- 1. Activities located wholly or partially within water quality resource areas pursuant to Chapter 17.49 that will result in the creation of more than five hundred square feet of impervious surface within the WQRA or will disturb more than one thousand square feet of existing impervious surface within the WQRA as part of a commercial or industrial redevelopment project. These square footage measurements will be considered cumulative for any given five-year period; or*
 - 2. Activities that create or replace more than five thousand square feet of impervious surface per parcel or lot, cumulated over any given five-year period.*

Applicant's Response: A new stormwater lateral will be installed to collect water from new impervious area, treated on-site in planters, and conveyed to public stormwater system.

- C. Exemptions. The following exemptions to subsection B of this section apply:*
- 1. An exemption to the flow control requirements of this chapter will be granted when the development site discharges to the Willamette River, Clackamas River or Abernethy Creek; and either lies within the one hundred-year floodplain or is up to ten feet above the design flood elevation as defined in Chapter 17.42, provided that the following conditions are met:*
 - a. The project site is drained by a conveyance system that is comprised entirely of manmade elements (e.g. pipes, ditches, culverts outfalls, outfall protection, etc.) and extends to the ordinary high water line of the exempt receiving water; and*
 - b. The conveyance system between the project site and the exempt receiving water has*

sufficient hydraulic capacity and erosion stabilization measures to convey discharges from the proposed conditions of the project site and the existing conditions from non-project areas from which runoff is collected.

2. *Projects in the following categories are generally exempt from the water quality and flow control requirements:*
 - a. *Stream enhancement or restoration projects approved by the city.*
 - b. *Farming practices as defined by ORS 30.960 and farm use as defined in ORS 214.000; except that buildings associated with farm practices and farm use are subject to the requirements of this chapter.*
 - c. *Actions by a public utility or any other governmental agency to remove or alleviate an emergency condition.*
 - d. *Road and parking area preservation/maintenance projects such as pothole and square cut patching, surface sealing, replacing or overlaying of existing asphalt or concrete pavement, provided the preservation/maintenance activity does not expand the existing area of impervious coverage above the thresholds in subsection B of this section.*
 - e. *Pedestrian and bicycle improvements (sidewalks, trails, pathways, and bicycle paths/lands) where no other impervious surfaces are created or replaced, built to direct stormwater runoff to adjacent vegetated areas.*
 - f. *Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics.*
 - g. *Maintenance or repair of existing utilities.*

Applicant's Response: A new stormwater lateral will be installed to collect water from new impervious area, treated on-site in planters, and conveyed to public stormwater system.

- D. Uses Requiring Additional Management Practices. In addition to any other applicable requirements of this chapter, the following uses are subject to additional management practices, as defined in the Public Works Stormwater and Grading Design Standards:*
1. *Bulk petroleum storage facilities;*
 2. *Above ground storage of liquid materials;*
 3. *Solid waste storage areas, containers, and trash compactors for commercial, industrial, or multi-family uses;*
 4. *Exterior storage of bulk construction materials;*
 5. *Material transfer areas and loading docks;*
 6. *Equipment and/or vehicle washing facilities;*
 7. *Development on land with suspected or known contamination;*
 8. *Covered vehicle parking for commercial or industrial uses;*
 9. *Industrial or commercial uses locating in high traffic areas, defined as average daily count trip of two thousand five hundred or more trips per day; and*
 10. *Land uses subject to DEQ 1200-Z Industrial Stormwater Permit Requirements.*

Applicant's Response: None of the land uses or conditions above apply to the proposed development.

13.12.080 - Submittal requirements.

- A. *Applications subject to stormwater conveyance, water quality, and/or flow control requirements of this chapter shall prepare engineered drainage plans, drainage reports, and design flow calculation reports in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards.*
- B. *Each project site, which may be composed of one or more contiguous parcels of land, shall have a separate valid city approved plan and report before proceeding with construction.*

Applicant's Response: On-site and off-site civil improvement plans depicting the stormwater system to serve the proposed development have been included in this application.

13.12.090 - Approval criteria for engineered drainage plans and drainage report.

An engineered drainage plan and/or drainage report shall be approved only upon making the following findings:

- A. The plan and report demonstrate how the proposed development and stormwater facilities will accomplish the purpose statements of this chapter.*
- B. The plan and report meet the requirements of the Public Works Stormwater and Grading Design Standards adopted by resolution under Section 13.12.020.*
- C. The storm drainage design within the proposed development includes provisions to adequately control runoff from all public and private streets and roof, footing, and area drains and ensures future extension of the current drainage system.*
- D. Streambank erosion protection is provided where stormwater, directly or indirectly, discharges to open channels or streams.*
- E. Specific operation and maintenance measures are proposed that ensure that the proposed stormwater quantity control facilities will be properly operated and maintained.*

Applicant's Response: An engineered drainage plan and stormwater report is being submitted with this application for review.

13.12.100 - Alternative materials, alternative design and methods of construction.

The provisions of this chapter are not intended to prevent the use of any material, alternate design or method of construction not specifically prescribed by this chapter or the Public Works Stormwater and Grading Design Standards, provided any alternate has been approved and its use authorized by the city engineer. The city engineer may approve any such alternate, provided that the city engineer finds that the proposed design is satisfactory and complies with the intent of this chapter and that the material, method, or work offered is, for the purpose intended, at least the equivalent of that prescribed by this chapter in effectiveness, suitability, strength, durability and safety. The city engineer shall require that sufficient evidence or proof be submitted to substantiate any claims that may be made regarding its use. The details of any action granting approval of an alternate shall be recorded and entered in the city files.

Applicant's Response: On-site and off-site civil improvement plans depicting the stormwater system to serve the proposed development have been included in this application.

13.12.120 - Standard construction specifications.

The workmanship and materials shall be in accordance with the edition of the "Standard Specifications for Public Works Construction," as prepared by the Oregon Chapter of American Public Works Association (APWA) and as modified and adopted by the city, in effect at the time of application. The exception to this requirement is where this chapter and the Public Works Stormwater and Grading Design Standards provide other design details, in which case the requirements of this chapter and the Public Works Stormwater and Grading Design Standards shall be complied with.

Applicant's Response: On-site and off-site civil improvement plans depicting the stormwater system to serve the proposed development have been included in this application.

CHAPTER 15.48 - GRADING, FILLING AND EXCAVATING

15.48.030 Applicability—Grading permit required.

- 1. A city-issued grading permit shall be required before the commencement of any of the following filling or grading activities:*
- 2. Grading activities in excess of ten cubic yards of earth;*
- 3. Grading activities which may result in the diversion of existing drainage courses, both natural and*

man-made, from their natural point of entry or exit from the grading site;

4. Grading and paving activities resulting in the creation of impervious surfaces greater than two thousand square feet or more in area;

5. Any excavation beyond the limits of a basement or footing excavation, having an unsupported soil height greater than five feet after the completion of such a structure; or

6. Grading activities involving the clearing or disturbance of one-half acres (twenty-one thousand seven hundred eighty square feet) or more of land.

Applicant's Response: A grading permit will be sought for the proposed development. Conceptual grading plans have been submitted with this application.

15.48.090 Submittal requirements.

An engineered grading plan or an abbreviated grading plan shall be prepared in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards whenever a city approved grading permit is required. In addition, a geotechnical engineering report and/or residential lot grading plan may be required pursuant to the criteria listed below.

A. Abbreviated Grading Plan. The city shall allow the applicant to submit an abbreviated grading plan in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards if the following criteria are met:

1. No portion of the proposed site is within the flood management area overlay district pursuant to Chapter 17.42, the unstable soils and hillside constraints overlay district pursuant to Chapter 17.44, or a water quality resource area pursuant to Chapter 17.49; and

2. The proposed filling or grading activity does not involve more than fifty cubic yards of earth.

B. Engineered Grading Plan. The city shall require an engineered grading plan in compliance with the submittal requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer if the proposed activities do not qualify for abbreviated grading plan.

C. Geotechnical Engineering Report. The city shall require a geotechnical engineering report in compliance with the minimum report requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer who specializes in geotechnical work when any of the following site conditions may exist in the development area:

1. When any publicly maintained facility (structure, street, pond, utility, park, etc.) will be supported by any engineered fill;

2. When an embankment for a stormwater pond is created by the placement of fill;

3. When, by excavation, the soils remaining in place are greater than three feet high and less than twenty feet wide.

D. Residential Lot Grading Plan. The city shall require a residential lot grading plan in compliance with the minimum report requirements of the Public Works Stormwater and Grading Design Standards to be prepared by a professional engineer for all land divisions creating new residential building lots or where a public improvement project is required to provide access to an existing residential lot.

Applicant's Response: A grading permit will be sought for the proposed development. Conceptual grading plans have been submitted with this application.

CHAPTER 17.47 - EROSION AND SEDIMENT CONTROL

17.47.070 Erosion and sediment control plans.

A. An application for an erosion and sediment control permit shall include an erosion and sediment control plan, which contains methods and interim measures to be used during and following construction to prevent or control erosion prepared in compliance with City of Oregon City public works standards for erosion and sediment control. These standards are incorporated herein and made a part of this title and are on file in the office of the city recorder.

Applicant's Response: Erosion and sediment control plan will be developed and submitted as part of the site improvement plans during the building permit process.

CHAPTER 17.41 - TREE PROTECTION STANDARDS

17.41.020 - Tree protection—Applicability.

1. Applications for development subject to Chapters 16.08 or 16.12 (Subdivision or Minor Partition) or Chapter

17.62 (Site Plan and Design Review) shall demonstrate compliance with these standards as part of the review proceedings for those developments.

2. For public capital improvement projects, the city engineer shall demonstrate compliance with these standards pursuant to a Type II process.

3. Tree canopy removal greater than twenty-five percent on sites greater than twenty-five percent slope, unless exempted under Section 17.41.040, shall be subject to these standards.

4. A heritage tree or grove which has been designated pursuant to the procedures of Chapter 12.08.050 shall be subject to the standards of this section.

17.41.030 - Tree protection—Conflicting code provisions.

Except as otherwise specified in this section, where these standards conflict with adopted city development codes or policies, the provision which provides the greater protection for regulated trees or groves, as defined in Section 17.04, shall govern.

Applicant's Response: No trees are located on proposed development site.

17.41.040 - Same—Exemptions.

These regulations are not intended to regulate normal cutting, pruning and maintenance of trees on private property except where trees are located on lots that are undergoing development review or are otherwise protected within the Natural Resource Overlay District (NROD) of section 17.49. These standards are not intended to regulate farm and forest practices as those practices are defined under ORS 30.930. Farm or forest resources. An applicant for development may claim exemption from compliance with these standards if the development site containing the regulated grove or trees was a designated farm or forest use, tree farm, Christmas tree plantation, or other approved timber use within one year prior to development application. "Forest practices" and "forestlands" as used in this subsection shall have the meaning as set out in ORS 30.930. The community development director has the authority to modify or waive compliance in this case.

Applicant's Response: No trees are located on proposed development site.

17.41.050 - Same—Compliance options.

Applicants for review shall comply with these requirements through one or a combination of the following procedures:

A. Option 1—Mitigation. Retention and removal of trees, with subsequent mitigation by replanting pursuant to Sections 17.41.060 or 17.41.070. All replanted and saved trees shall be protected by a permanent restrictive covenant or easement approved in form by the city.

B. Option 2—Dedicated Tract. Protection of trees or groves by placement in a tract within a new subdivision or partition plat pursuant to Sections 17.41.080—17.41.100; or

C. Option 3—Restrictive Covenant. Protection of trees or groves by recordation of a permanent restrictive covenant pursuant to Sections 17.41.110—17.41.120; or

D. Option 4—Cash-in-lieu of planting pursuant to Section 17.41.130.

A regulated tree that has been designated for protection pursuant to this section must be retained or permanently protected unless it has been determined by a certified arborist to be diseased or hazardous, pursuant to the following applicable provisions.

The community development director, pursuant to a Type II procedure, may allow a property owner to cut a specific number of trees within a regulated grove if preserving those trees would:

1. Preclude achieving eighty percent of minimum density with reduction of lot size; or
2. Preclude meeting minimum connectivity requirements for subdivisions.

Applicant's Response: No trees are located on proposed development site.

17.41.60 - Tree removal and replanting—Mitigation (Option 1).

A. Applicants for development who select this option shall ensure that all healthy trees shall be preserved outside the construction area as defined in Chapter 17.04 to the extent practicable. Compliance with these standards shall be demonstrated in a tree mitigation plan report prepared by a certified arborist, horticulturalist or forester or other environmental professional with experience and academic credentials in forestry or arboriculture. At the applicant's expense, the city may require the report to be reviewed by a consulting arborist. The number of replacement trees required on a development site shall be calculated separately from, and in addition to, any public or street trees in the public right-of-way required under section 12.08—Community Forest and Street Trees.

B. The applicant shall determine the number of trees to be mitigated on the site by counting all of the trees six inch DBH (minimum four and one-half feet from the ground) or larger on the entire site and either:

1. *Trees that are removed outside of the construction area, shall be replanted with the number of trees specified in Column 1 of Table 17.41.060-1. Trees that are removed within the construction area shall be replanted with the number of replacement trees required in Column 2; or*
2. *Diseased or hazardous trees, when the condition is verified by a certified arborist to be consistent with the definition in Section 17.04.1360, may be removed from the tree replacement calculation. Regulated healthy trees that are removed outside of the construction area, shall be replanted with the number of trees specified in Column 1 of Table 17.41.060-1. Regulated healthy trees that are removed within the construction area shall be replanted with the number of replacement trees required in Column 2.*

Table 17.41.060-1

Tree Replacement Requirements

All replacement trees shall be either: Two-inch caliper deciduous, or Six-foot high conifer

<i>Size of tree removed (DBH)</i>	<i>Column 1 Number of trees to be planted. (If removed Outside of construction)</i>	<i>Column 2 Number of trees to be planted. (If removed Within the construction)</i>
<i>6 to 12"</i>	<i>3</i>	<i>1</i>
<i>13 to 18"</i>	<i>6</i>	<i>2</i>
<i>19 to 24"</i>	<i>9</i>	<i>3</i>
<i>25 to 30"</i>	<i>12</i>	<i>4</i>
<i>31 and over"</i>	<i>15</i>	<i>5</i>

Steps for calculating the number of replacement trees:

1. Count all trees measuring six inches DBH (minimum four and one-half feet from the ground) or larger on the entire development site.
2. Designate (in certified arborists report) the condition and size (DBH) of all trees pursuant to accepted industry standards.
3. Document any trees that are currently diseased or hazardous.
4. Subtract the number of diseased or hazardous trees in step 3. from the total number of trees on the development site in step 1. The remaining number is the number of healthy trees on the site. Use this number to determine the number of replacement trees in steps 5. through 8.
5. Define the construction area (as defined in [Chapter 17.04](#)).
6. Determine the number and diameter of trees to be removed within the construction area. Based on the size of each tree, use Column 2 to determine the number of replacement trees required.
7. Determine the number and diameter of trees to be removed outside of the construction area. Based on the size of each tree, use Column 1 to determine the number of replacement trees required.
8. Determine the total number of replacement trees from steps 6. and 7.

Applicant's Response: No trees are located on proposed development site.

17.41.070 - Planting area priority for mitigation (Option 1).

Development applications which opt for removal of trees with subsequent replanting pursuant to section 17.41.050A. shall be required to mitigate for tree cutting by complying with the following priority for replanting standards below:

A. First Priority. Replanting on the development site.

B. Second Priority. Off-site replacement tree planting locations. If the community development director determines that it is not practicable to plant the total number of replacement trees on-site, a suitable off-site planting location for the remainder of the trees may be approved that will reasonably satisfy the objectives of this section. Such locations may include either publicly owned or private land and must be approved by the community development director.

Applicant's Response: No trees are located on proposed development site.

17.41.075 - Alternative mitigation plan.

The community development director may, subject to a Type II procedure, approve an alternative mitigation plan that adequately protects habitat pursuant to the standards for the natural resource overlay district alternative mitigation plan, [Section 17.49.190](#).

Applicant's Response: The project is not within a natural resource overlay district

17.41.080 - Tree preservation within subdivisions and partitions—Dedicated tract (Option 2).

A. Applicants for new subdivision and partition plats may delineate and show the regulated trees or groves as either a separate tract or part of a larger tract that meets the requirements of subsection D. of this section.

B. The standards for land divisions subject to this section shall apply in addition to the requirements of the city land division ordinance and zoning ordinance, provided that the minimum lot area, minimum average lot width, and minimum average lot depth standards of the base zone may be superseded in order to allow for a reduction of dimensional standards pursuant to Section 17.41100 below.

C. Prior to preliminary plat approval, the regulated tree or grove area shall be shown either as a separate tract or part of a larger tract that meets the requirements of subsection D. of this section, which shall not be a part of any parcel used for construction of a structure. The size of the tract shall be the minimum necessary as recommended by a consulting arborist to adequately encompass the dripline of the tree, protect the critical root zone and ensure long term survival of the tree or grove.

D. Prior to final plat approval, ownership of the regulated tree or grove tract shall be identified to

distinguish it from lots intended for sale. The tract may be identified as any one of the following:

- 1. Private open space held by the owner or a homeowners association; or*
- 2. For residential land divisions, private open space subject to an easement conveying stormwater and surface water management rights to the city and preventing the owner of the tract from activities and uses inconsistent with the purpose of this document; or*
- 3. At the owners option, public open space where the tract has been dedicated to the city or other governmental unit; or*
- 4. Any other ownership proposed by the owner and approved by the community development director.*

Applicant's Response: The proposed development does not include any partitions or subdivisions. The existing lot line between the parcel at 914 South End Rd and 950 South End Rd is proposed to be abandoned to consolidate the two lots.

17.41.090 - Density transfers incentive for tree protection tracts (Option 2).

A. The purpose of this section is to allow dimensional adjustments within a regulated tree protection tract to be transferred outside said tract to the remainder of the site. This provision applies on-site and density shall not be transferred beyond the boundaries of the development site.

B. Development applications for subdivisions and minor partitions that request a density transfer shall:

- 1. Provide a map showing the net buildable area of the tree protection tract;*
- 2. Provide calculations justifying the requested dimensional adjustments;*
- 3. Demonstrate that the minimum lot size requirements can be met based on an average of all lots created, including the tree protection tract created pursuant to Section 17.41.080;*
- 4. Demonstrate that, with the exception of the tree protection tract created pursuant to Section 17.41.080, no parcels have been created which would be unbuildable in terms of minimum yard setbacks;*
- 5. Meet all other standards of the base zone except as modified in section 17.41.100.*

C. The area of land contained in a tree protection tract may be excluded from the calculations for determining compliance with minimum density requirements of the zoning code.

Applicant's Response: Density transfers for tree protection are not proposed.

17.41.100 - Permitted modifications to dimensional standards (Option 2 only).

A. An applicant proposing to protect trees in a dedicated tract pursuant to section 17.41.080 may request, and the community development director, pursuant to a Type II procedure, may grant a reduction to, the lot size, width, depth, and setbacks of the underlying zone district in approving a subdivision or partition if necessary to retain a regulated tree or grove in a tract, as long as the calculation of average lot size, including tree protection tracts, meet the minimum lot size for the zone. The applicant may choose to make the adjustments over as many lots as required. For example, the lot reduction could be spread across all the remaining lots in the proposed subdivision or partition or could be applied to only those needed to incorporate the area of the tree tract.

*Table 17.41.100 A
Lot Size Reduction*

<i>ZONE</i>	<i>Min. Lot Size [sq. feet]</i>	<i>Min. Lot Width</i>	<i>Min. Lot Depth</i>
<i>R-10</i>	<i>5,000 sq. feet</i>	<i>50'</i>	<i>65'</i>
<i>R-8</i>	<i>4,000 sq. feet</i>	<i>45'</i>	<i>60'</i>
<i>R-6</i>	<i>3,500 sq. feet</i>	<i>35'</i>	<i>55'</i>
<i>R-5</i>	<i>3,000 sq. feet</i>	<i>30'</i>	<i>50'</i>

R-3.5	1,800 sq. feet	20'	45'

Table 17.41.100 B

Reduced Dimensional Standards for Detached Single-Family Residential Units

<i>Size of Reduced Lot</i>	<i>Front Yard Setback</i>	<i>Rear Yard Setback</i>	<i>Side yard Setback</i>	<i>Corner Side</i>	<i>Lot Coverag</i>
8,000—9,999 square feet	15 feet	20 feet	7/9 feet	15 feet	40%
6,000—7,999 square feet	10 feet	15 feet	5/7 feet	15 feet	40%
4,000—5,999 square feet	10 feet	15 feet	5/5 feet	10 feet	40%
1,800—3,999 square feet	5 feet	15 feet	5/5 feet	10 feet	55%

Table 17.41.100 C

<i>Reduced Dimensional Standards for</i>	<i>Front Yard Setback</i>	<i>Rear Yard Setback</i>	<i>Side yard Setback</i>	<i>Corner Side</i>	<i>Lot Coverag</i>
3,500—7,000 square feet	10 feet	15 feet	5/0* feet	10 feet	40%
1,800—3,499 square feet	5 feet	15 feet	5/0* feet	10 feet	55%

**0 foot setback is only allowed on single-family attached units*

Applicant's Response: No modifications to lot standards proposed

17.41.110 - Tree protection by restrictive covenant (Option 3).

Any regulated tree or grove which cannot be protected in a tract pursuant to [Section 17.41.080](#) above shall be protected with a restrictive covenant in a format to be approved by the community development director. Such covenant shall be recorded against the property deed and shall contain provisions to permanently protect the regulated tree or grove unless such tree or grove, as determined by a certified arborist and approved by the community development director, are determined to be diseased or hazardous.

Applicant's Response: No trees are located on proposed development site.

17.41.120 - Permitted adjustments (Option 3 Only).

A. The community development director, pursuant to a Type II procedure, may grant an adjustment to the side, front and rear yard setback standards by up to 50 percent if necessary to retain a Regulated Tree or Grove through a restrictive covenant pursuant to this section. In no case may the side yard setback be reduce less than three feet. The adjustment shall be the minimum necessary to accomplish preservation of trees on the lot and shall not conflict with other conditions imposed on the property.

B. The community development director, pursuant to a Type II procedure, may grant an adjustment to street standards, pursuant to adopted public works standards, in order to preserve

a tree. This may include flexibility to redesign sidewalk and planter strip sizes and locations and allow placement of sidewalks and planter strips in an easement within private lots.

C. The community development director, pursuant to a Type II procedure, may allow other adjustments in order to preserve any healthy tree that cannot be moved due to its size, but will contribute to the landscape character of the area and will not present a foreseeable hazard if retained.

Applicant's Response: No trees are located on proposed development site.

17.41.1[25] - Cash-in-lieu of planting (tree bank/fund) (Option 4).

The applicant may choose this option in-lieu-of or in addition to Compliance Options 1 through 3. In this case, the community development director may approve the payment of cash-in-lieu into a dedicated fund for the remainder of trees that cannot be replanted in the manner described above.

A. The cash-in-lieu payment per tree shall be as listed on the adopted fee schedule and shall be adjusted annually based on the Consumer Price Index (Index). The price shall include the cost of materials, transportation and planting.

B. The amount of the cash-in-lieu payment into the tree bank shall be calculated as the difference between the value of the total number of trees an applicant is required to plant, including cost of installation and adjusted for Consumer Price Index, minus the value of the trees actually planted. The value of the trees shall be based on the adopted fee schedule.

Applicant's Response: No trees are located on proposed development site.

17.41.130 - Regulated tree protection procedures during construction.

A. No permit for any grading or construction of public or private improvements may be released prior to verification by the community development director that regulated trees designated for protection or conservation have been protected according to the following standards. No trees designated for removal shall be removed without prior written approval from the community development director.

Applicant's Response: No trees are located on proposed development site.

B. Tree protection shall be as recommended by a qualified arborist or, as a minimum, to include the following protective measures:

1. Except as otherwise determined by the community development director, all required tree protection measures set forth in this section shall be instituted prior to any development activities, including, but not limited to clearing, grading, excavation or demolition work, and such measures shall be removed only after completion of all construction activity, including necessary landscaping and irrigation installation, and any required plat, tract, conservation easement or restrictive covenant has been recorded.

2. Approved construction fencing, a minimum of four feet tall with steel posts placed no farther than ten feet apart, shall be installed at the edge of the tree protection zone or dripline, whichever is greater. An alternative may be used with the approval of the community development director.

3. Approved signs shall be attached to the fencing stating that inside the fencing is a tree protection zone, not to be disturbed unless prior approval has been obtained from the community development director.

4. No construction activity shall occur within the tree protection zone, including, but not limited to; dumping or storage of materials such as building supplies, soil, waste items; nor passage or parking of vehicles or equipment.

5. The tree protection zone shall remain free of chemically injurious materials and liquids such as paints, thinners, cleaning solutions, petroleum products, and concrete or dry wall excess, construction debris, or run-off.

6. No excavation, trenching, grading, root pruning or other activity shall occur within the tree protection zone unless directed by an arborist present on site and approved by the community development director.
7. No machinery repair or cleaning shall be performed within ten feet of the dripline of any trees identified for protection.
8. Digging a trench for placement of public or private utilities or other structure within the critical root zone of a tree to be protected is prohibited. Boring under or through the tree protection zone may be permitted if approved by the community development director and pursuant to the approved written recommendations and on-site guidance and supervision of a certified arborist.
9. The city may require that a certified arborist be present during any construction or grading activities that may affect the dripline of trees to be protected.
10. The community development director may impose conditions to avoid disturbance to tree roots from grading activities and to protect trees and other significant vegetation identified for retention from harm. Such conditions may include, if necessary, the advisory expertise of a qualified consulting arborist or horticulturist both during and after site preparation, and a special maintenance/management program to provide protection to the resource as recommended by the arborist or horticulturist.

Applicant's Response: No trees are located on proposed development site.

C. Changes in soil hydrology due to soil compaction and site drainage within tree protection areas shall be avoided. Drainage and grading plans shall include provision to ensure that drainage of the site does not conflict with the standards of this section. Excessive site run-off shall be directed to appropriate storm drainage facilities and away from trees designated for conservation or protection.

Applicant's Response: No trees are located on proposed development site.

CHAPTER 17.50 - ADMINISTRATION AND PROCEDURES

17.50.050 Preapplication Conference

A. Preapplication Conference. Prior to submitting an application for any form of permit, the applicant shall schedule and attend a preapplication conference with City staff to discuss the proposal. To schedule a preapplication conference, the applicant shall contact the Planning Division, submit the required materials, and pay the appropriate conference fee. At a minimum, an applicant should submit a short narrative describing the proposal and a proposed site plan, drawn to a scale acceptable to the City, which identifies the proposed land uses, traffic circulation, and public rights-of-way and all other required plans. The purpose of the preapplication conference is to provide an opportunity for staff to provide the applicant with information on the likely impacts, limitations, requirements, approval standards, fees and other information that may affect the proposal. The Planning Division shall provide the applicant(s) with the identity and contact persons for all affected neighborhood associations as well as a written summary of the preapplication conference. Notwithstanding any representations by City staff at a preapplication conference, staff is not authorized to waive any requirements of this code, and any omission or failure by staff to recite to an applicant all relevant applicable land use requirements shall not constitute a waiver by the City of any standard or requirement.

B. A preapplication conference shall be valid for a period of six months from the date it is held. If no application is filed within six months of the conference or meeting, the applicant must schedule and attend another conference before the city will accept a permit application. The community development director may waive the preapplication requirement if, in the Director's opinion, the development does not warrant this step. In no case shall a preapplication conference be valid for more than one year.

Applicant's Response: A pre-application conference was held on March 29, 2019. A copy of the pre-app

notes and extension request have been included in this application.

17.50.055 Neighborhood Association Meeting

The purpose of the meeting with the recognized neighborhood association is to inform the affected neighborhood association about the proposed development and to receive the preliminary responses and suggestions from the neighborhood association and the member residents.

- 1. Applicants applying for annexations, zone change, comprehensive plan amendments, conditional use, planning commission variances, subdivision, or site plan and design review (excluding minor site plan and design review), general development master plans or detailed development plans applications shall schedule and attend a meeting with the city-recognized neighborhood association in whose territory the application is proposed. Although not required for other projects than those identified above, a meeting with the neighborhood association is highly recommended.*
- 2. The applicant shall send, by certified mail, return receipt requested letter to the chairperson of the neighborhood association and the citizen involvement committee describing the proposed project. Other communication methods may be used if approved by the neighborhood association.*
- 3. A meeting shall be scheduled within thirty days of the notice. A meeting may be scheduled later than thirty days if by mutual agreement of the applicant and the neighborhood association. If the neighborhood association does not want to, or cannot meet within thirty days, the applicant shall hold their own meeting after six p.m. or on the weekend, with notice to the neighborhood association, citizen involvement committee, and all property owners within three hundred feet. If the applicant holds their own meeting, a copy of the certified letter requesting a neighborhood association meeting shall be required for a complete application. The meeting held by the applicant shall be held within the boundaries of the neighborhood association or in a city facility.*
- 4. If the neighborhood association is not currently recognized by the city, is inactive, or does not exist, the applicant shall request a meeting with the citizen involvement committee.*
- 5. To show compliance with this section, the applicant shall submit a sign-in sheet of meeting attendees, a summary of issues discussed, and letter from the neighborhood association or citizen involvement committee indicating that a neighborhood meeting was held. If the applicant held a separately noticed meeting, the applicant shall submit a copy of the meeting flyer, a sign in sheet of attendees and a summary of issues discussed.*

Applicant's Response: The proposed use and building addition were presented to the CIC at their December 2nd, 2019 regular meeting. A copy of the meeting agenda and e-mail from Christina Robertson-Gardiner as evidence of compliance with the above criteria.

CHAPTER 17.58 LAWFUL NONCONFORMING USES, STRUCTURES AND LOTS

17.58.015 Applicability.

The regulations of this chapter apply only to those nonconforming situations that were lawfully established or that were approved through a land use decision. All nonconforming structures, uses or lots shall have been maintained over time. These situations have lawful nonconforming status. Nonconforming situations that were not allowed when established or have not been maintained over time have no lawful right to continue.

Applicant's Response: There are no nonconforming structures, uses, or lots are present to the best of our knowledge.

A structure that was lawfully established but no longer conforms to all development standards of this land use code (such as setbacks) shall be considered a lawful nonconforming structure. Notwithstanding development standard requirements in this Code, minor repairs and routing maintenance of a lawful nonconforming structure are permitted. The continuation of a lawful nonconforming structure is subject to the following:

A. Accidental Destruction. When a nonconforming structure is damaged by fire or other causes, the structure may be rebuilt using the same structure footprint.

Applicant's Response: There are no non-conforming buildings or structures on site.

B. Intentional Destruction. When a nonconforming structure is removed or intentionally damaged by fire or other causes within the control of the owner, the replacement structure shall comply with the development standards of this title.

Applicant's Response: There are no non-conforming buildings or structures on site.

C. Expansion. An expansion of a lawful nonconforming structure may be approved, conditionally approved or denied in accordance with the standards and procedures of this section.

1. In making a determination on such applications, the decision maker shall weigh the proposal's positive and negative features and the public convenience or necessity to be served against any adverse conditions that would result from authorizing the particular development at the location proposed, and, to approve such expansion, it must be found that the criteria identified in [Section 17.58.060](#) have either been met, can be met by observance of conditions, or are not applicable.

Applicant's Response: There are no non-conforming buildings or structures on site.

2. An expansion of a nonconforming structure with alterations that exceed the threshold of subparagraph C.2.a. below shall comply with the development standards listed in subparagraph C.2.b. The value of the alterations and improvements is based on the entire project and not individual building permits.

a. Thresholds triggering compliance. The standards of subparagraph C.2.b. below shall be met when the value of the proposed exterior alterations or additions to the site, as determined by the community development director, is more than seventy-five thousand dollars. The following alterations and improvements shall not be included in the threshold calculation:

- 1. Proposed alterations to meet approved fire and life safety agreements;*
- 2. Alterations related to the removal of existing architectural barriers, as required by the Americans with Disabilities Act, or as specified in Section 1113 of the Oregon Structural Specialty Code;*
- 3. Alterations required to meet Seismic Design Requirements; and*
- 4. Improvements to on-site stormwater management facilities in conformance with Oregon City Stormwater Design Standards.*

Applicant's Response: There are no non-conforming buildings or structures on site.

b. Standards that shall be met. Developments not complying with the development standards listed below shall be brought into conformance.

- 1. Pedestrian circulation systems, as set out in the pedestrian standards that apply to the sites;*
- 2. Minimum perimeter parking lot landscaping;*
- 3. Minimum interior parking lot landscaping;*
- 4. Minimum site landscaping requirements;*
- 5. Bicycle parking by upgrading existing racks and providing additional spaces in order to comply with [Chapter 17.52](#)—Off-Street Parking and Loading;*
- 6. Screening; and*
- 7. Paving of surface parking and exterior storage and display areas.*

Applicant's Response: Per the pre application meeting the planner indicated that the site was in full compliance other than the landscaping that had not been kept up during vacancy. This will be fixed to bring the site into full compliance prior to occupancy.

c. Area of required improvements.

1. Generally. Except as provided in C.2.c.2. below, required improvements shall be made for the entire site.

2. Exception for sites with ground leases. Required improvements may be limited to a smaller area if there is a ground lease for the portion of the site where the alterations are proposed. If all of the following are met, the area of the ground lease will be considered as a separate site for purposes of required improvements. The applicant shall meet the following:

i. The signed ground lease — or excerpts from the lease document satisfactory to the city attorney — shall be submitted to the community development director. The portions of the lease shall include the following:

- The term of the lease. In all cases, there must be at least one year remaining on the ground lease; and*
- A legal description of the boundaries of the lease.*

ii. The boundaries of the ground lease shall be shown on the site plan submitted with the application. The area of the lease shall include all existing and any proposed development that is required for, or is used exclusively by, those uses within the area of the lease; and

iii. Screening shall not be required along the boundaries of ground leases that are interior to the site.

Applicant's Response: There is not a ground lease on the site currently.

d. Timing and cost of required improvements. The applicant may choose one of the two following options for making the required improvements:

1. Option 1. Required improvements may be made as part of the alteration that triggers the required improvements. The cost of the standards that shall be met, identified in subparagraph C.2.b. above, is limited to ten percent of the value of the proposed alterations. It is the responsibility of the applicant to document to the community development director the value of the required improvements. Additional costs may be required to comply with other applicable requirements associated with the proposal. When all required improvements are not being made, the priority for the improvements shall be as listed in subparagraph C.2.b. above.

2. Option 2. Required improvements may be made over several years, based on the compliance period identified in Table 17.58—1 below. However, by the end of the compliance period, the site shall be brought fully into compliance with the standards listed in subparagraph C.2.b. Where this option is chosen, the following must be met:

i. Before a building permit is issued, the applicant shall submit the following to the community development director:

- A Nonconforming Development Assessment, which identifies in writing and on a site plan, all development that does not meet the standards listed in Subparagraph C.2.b.*

- A covenant, in a form approved by the city attorney, executed by the property owner that meets the requirements of 17.50.150. The covenant shall identify development on the site that does not meet the standards listed in Subparagraph C.2.b., and require the owner to bring that development fully into compliance with this title. The covenant shall also specify the date by which the owner will be in conformance. The date must be within the compliance periods set out in Table 17.58 — 1.*

ii. The nonconforming development identified in the Nonconforming Development Assessment shall be brought into full compliance with the requirements of this Title within the following compliance periods. The compliance period begins when a building permit is issued for alterations to the site of more than seventy-five thousand dollars. The compliance periods are based on the size of the site (see Table 17.58—1 below).

iii. By the end of the compliance period, the applicant or owner shall request that the site be certified by the community development director as in compliance. If the request is not received within that time, or if the site is not fully in conformance, no additional building permits will be issued.

iv. If the regulations referred to by subparagraph C.2.b. are amended after the Nonconforming Development Assessment is received by the community development director, and those amendments result in development on the site that was not addressed by the Assessment becoming

nonconforming, the applicant shall address the new nonconforming development using Option 1 or 2. If the applicant chooses Option 2, a separate Nonconforming Development Assessment, covenant and compliance period will be required for the new nonconforming development.

Table 17.58—1

Compliance Periods for Option 2

<i>Square footage of site</i>	<i>Compliance Period</i>
<i>Less than 150,000 sq. ft.</i>	<i>2 years</i>
<i>150,000 sq. ft. or more, up to 300,000 sq. ft.</i>	<i>3 years</i>
<i>300,000 sq. ft. or more, up to 500,000 sq. ft.</i>	<i>4 years</i>
<i>More than 500,000 sq. ft.</i>	<i>5 years</i>

Applicant's Response:

Per the pre application meeting the planner indicated that the site was in full compliance other than the landscaping that had not been kept up during vacancy. This will be fixed to bring the site into full compliance prior to occupancy.

17.60.030 - Variance Grounds

A Type II Minor Variance is requested for an increase in the total building lot coverage as the proposed lot coverage is under the 25% increase threshold. The proposed addition would add a 6,996 square foot building with 16 residential units and supporting offices/common spaces. The proposed lot coverage is 46.2% which is 6.2% above the 40% lot coverage.

Below is a response to the variance grounds conditions listed in OCMC 17.60.030.

A variance may be granted only in the event that all of the following conditions

exist:

- A. That the variance from the requirements is not likely to cause substantial damage to adjacent properties by reducing light, air, safe access or other desirable or necessary qualities otherwise protected by this title;

Applicant's Response: The building is located on a corner lot and the expansion to the North will not negatively affect neighbor residences. The North building expansions are within the required setbacks for the site and will not affect the buildings any more than a legally conforming building to the zoning code.

- B. That the request is the minimum variance that would alleviate the hardship

Applicant's Response: The building addition will provide room for additional residents. The building size is the minimum necessary to provide the number of suites, common areas, and internal circulation of the building.

- C. Granting the variance will equal or exceed the purpose of the regulation to be modified.

Applicant's Response: Setbacks as required in the R-10 zoning will be maintained.

- D. Any impacts resulting from the adjustment are mitigated;

Applicant's Response: The building is within the required setbacks per zoning requirements and will not impact the buildings surrounding any more than a conforming building.

- E. No practical alternatives have been identified which would accomplish the same purpose and not require a variance; and

Applicant's Response: Given the existing nature of the building and the need for the additional units, this is the only way to provide adequate units for the residents.

- F. The variance conforms to the comprehensive plan and the intent of the ordinance being varied

Applicant's Response: Granting the variance continues to fulfill the intent of the ordinance by being respectful of the surrounding buildings and using strong architectural character and landscaping to conform to the comprehensive plan.



City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Meeting Agenda Citizen Involvement Committee

Monday, December 2, 2019

7:00 PM

Commission Chambers

1. Call to Order

2 Presentations

- 2a. Land Use- Memory Care Addition, 914/950 South End Rd
- 2b. Development Services City Code Amendments to Sanitary Sewer and Overhead Utilities- Josh Wheeler PE, Assistant City Engineer & Bob Balgos PE, Project Engineer
- 2c. Molalla Ave Streetscape Update- John Lewis, Public Works Director

3. Public Comments

4. Staff Liaison Updates

4a Staff Liaison Update

Attachments: [Liasion Report](#)
[How to Understand Public Notices and Make Effective Public Comments Presentation](#)
[How to Prepare and Mail Neighborhood Association Postcards](#)
[Boards and Commissions-Apply Online](#)

5. General Business

- 5a. Amendments to OCMC 12.30- Citizen Involvement Committee

6. Roundatable

6a. Upcoming Neighborhood Association Meetings

Send all 2020 neighborhood meeting dates and any updated contact information to Kesi McNall kmcnall@orccity.org for city website.

Barclay Hills Neighborhood

Chair: Karla Laws, karla.laws@gmail.com

Vice Chair: Aaron Wolf, wolftune@gmail.com

Treasurer: Janice Morris, mad91058@msn.com

Secretary: OPEN

CIC Primary Representative: Janice Morris, mad91058@msn.com

CIC Alternate Representative: karla.laws@gmail.com

Meeting Information: Meetings held the second Tuesday of January, March, May, July, September, and November beginning at 7:00 p.m.

2019 General Meeting Dates: January 9, March 13, May 8, July 9, September 10, and November 12.

Located: St. John the Apostle Cemetery, 445 Warner Street, Oregon City, OR 97045

Canemah Neighborhood

Chair: Ken Baysinger, k.baysinger@comcast.net

Vice Chair: Bob Siewert, siewert.bob@gmail.com

Secretary: Ben Deitch, bfdeitch@gmail.com

Treasurer: Terry Bee Enstad, Thebee29@gmail.com

CIC Primary Representative: Dennis Anderson, GO2Danderson@gmail.com

CIC Alternate Representative: Linda Baysinger, team.baysinger@comcast.net

Canemah Cemetery Association: Mark Tacoma, 503-655-2192

Meeting Information: 2019 TBD

Meeting Time: 7:00 p.m.

Meeting Located: Community Room at Oregon City Library

Steering Committee Meetings:

Meets on the second (2nd) Wednesday in the month preceding each General Membership meeting held at the Community Room at the Oregon City Library. 2019 Meetings: Feb 21, April 18, June 20, September 19, November 21

Caufield Neighborhood

Chair: Robert Malchow, r.malchow@comcast.net

Vice Chair: Kristina Browning, kristina@PortlandHomeGal.com

Secretary/Treasurer: Tori Skipper, t.skipper@bhhsnw.com

CIC Primary Representative: John Kies, jkies1@gmail.com

CIC Alternate Representative: Robert Malchow, r.malchow@comcast.net

Meeting Information: Held the fourth Tuesday of January (28th), March (26th), May (28th- may change), September (24th), and November (26th)

Located: Oregon City School District's Facilities and Maintenance Center (Bus Barn), 14551 Meyers Road, Oregon City at 6:45 PM.

Gaffney Lane Neighborhood

Chair: Amy Willhite, awillhit@yahoo.com

Secretary/Treasurer: Angela Wright, englishimport@gmail.com

CIC Primary Representative: Amy Willhite, awillhit@yahoo.com

CIC Alternate Representative: Vacant

Meeting Information: Meeting Information: Held the second Thursday of odd months (Nov. 14 2019, Jan. 9 2020, March 12 2020, May 14 2020, July 9 2020, Sep. 10 2020, Nov. 12 2020).

Located: The Meadows Courtyard, 13637 Garden Meadows Drive, Oregon City, 7:00PM

Hazel Grove-Westling Farm Neighborhood The Hazel Grove-Westling Farm Neighborhood is currently inactive. If you are interested in helping to reactivate this neighborhood please contact Christina Robertson-Gardiner (crobertson@orc.org). People requesting a neighborhood meeting for Land use applications should contact CIC staff to schedule a meeting with the CIC.

Hillendale Neighborhood

Chair: Vacant

Vice Chair: Vacant

Land Use Chair: William Gifford, william@smallflags.com

Secretary/Treasurer: Joyce Gifford, Joyce@smallflags.com

CIC Primary Representative: Roy Harris, royandanna@centurylink.net

CIC Alternate Representative: Ray Stobie, drakeel@gmail.com

General Meetings: First Tuesday in January, April, July, and October

Steering Committee Meetings: TBD

Located: Living Hope Church - 19691 Meyers Road, Oregon City, 7:00PM

McLoughlin Neighborhood

Chair: Cameron McCredie, cmccredie@windermere.com

Vice Chair/Land Use: Denyse McGriff, guttmcg@msn.com

Land Use: TBD

Secretary: Josh Habre, mjshhbr@gmail.com

Treasurer: Jesse Buss, jessebuss@gmail.com

CIC Primary Representative: Denise Beasley, dbeasleym@gmail.com

CIC Alternate Representative: Rita Mills, nprita3@outlook.com

Meeting Information:

General Meetings: January 3rd 2019 - Library, March 7th 2019 - Fire House*, May 2nd 2019 - Library, July 10th 2019 - Library, September 5th 2019 Library, November 7th 2019 (Electron of New Steering Committee Members) - Library.

Located: Oregon City Public Library - Community Room, 606 John Adams

St. at 7:00 PM

Steering Committee Meetings: Typically the first Thursday of February, April, June, August, and October.

Located: *Fire Station, 7th & John Adams, Neighborhood Conference Room, Basement at 7:00 PM

Park Place Neighborhood

Chair: Greg Stone, gpstone72@yahoo.com

Vice Chair: Steve Van Haverbeke, steve@vanhaverbeke.org

Treasurer: Ray Renken, rbrenken@comcast.net

Secretary: Lisa Novak, novak0929@gmail.com

CIC Primary Representative: Steve Van Haverbeke, steve@vanhaverbeke.org

CIC Alternate Representative: Greg Stone, gpstone72@yahoo.com

Meeting Information:

General Meetings: 6:30 PM - February 25th 2019, May 20th 2019 and October 21st 2019

Located: Oregon City View Manor, Community Center, 280 S. Longview Way, Oregon City, OR 97045

Steering Committee Meetings: 6:30 PM - January 21st 2019, March 18th 2019, April 15th 2019, August 19th 2019, September 16th 2019 and November 18th 2019

Rivercrest Neighborhood

Chair: Ed Lindquist, ed-lindquist@msn.com

Vice Chair: Karin Morey, Karin.morey@gmail.com

Secretary/Treasurer Violet Stephenson, hrvrmstephenson@gmail.com

CIC Primary Representative: Karin Morey, karin.morey@gmail.com

CIC Primary Representative: Vacant

Meeting Information:

Steering Committee Meeting: February 14th, May 16th, October 17th.

Located: First Presbyterian Church, 1321 Linn Avenue, Oregon City, 7:00 PM

General Meeting: March 21st, June 20th, September 19th, November 21st.

Located: First Presbyterian Church, 1321 Linn Avenue, Oregon City, 7:00 PM

South End Neighborhood

The Southend Neighborhood is currently inactive. If you are interested in helping to reactivate this neighborhood please contact Christina Robertson-Gardiner (crobertson@orc.org). People requesting a neighborhood meeting for Land use applications should contact CIC staff to schedule a meeting with the CIC.

Tower Vista Neighborhood

Tower Vista Neighborhood Association

Chair: Vern Johnson, verndonnajohnson@yahoo.com
Secretary: Monica Mumper
CIC Representative: Vern Johnson, verndonnajohnson@yahoo.com
Meetings: Meetings are held in conjunction with the Hillendale
Neighborhood Association.

Two Rivers Neighborhood
Chair: Bryon Boyce, bryony@birdlink.net, (503) 655-4457
Secretary: Margie Hughes, margiehughes1@aol.com
CIC Primary Representative: Vacant
CIC Alternate Representative: Vacant
Meetings: Held the fourth Wednesday of January, April, July, and October
at 7:00 PM
Located: Rivershore Bar & Grill, 1900 Clackamas Drive, Oregon City, OR
97045

Citizen Involvement Committee
December 2, 2019, January 6, 2020, February 3, 2020, March 2, 2020,
April 6, 2020, May 4, 2020, June 1, 2020, July 6, 2020, August 3, 2020,
September 7, 2020- Labor Day- No Meeting, October 5, 2020, November
2, 2020, December 7, 2020
Meetings are scheduled for the first Monday of each month. Meetings are
held at City Hall (625 Center Street) in the Commission Chambers at 7:00
PM. City Hall, Commission Chambers, 625 Center Street, 7:00PM
Generally the 1st Monday of each month.

CIC Liaison Assignments
Development Stakeholders Committee (Amy Wilhite)
Equitable Housing (Steven Vanhaverbeke, Amy Willhite)
McLoughlin -Canemah Trail (Karin Morey)

7. Adjournment

Public Comments: The following guidelines are given for citizens presenting information or raising issues relevant to the City but not listed on the agenda.

- *Complete a Comment Card prior to the meeting and submit it to the staff member.*
- *When the Chair calls your name, proceed to the speaker table and state your name and city of residence into the microphone.*
- *Each speaker is given 3 minutes to speak. To assist in tracking your speaking time, refer to the timer at the dais.*
- *As a general practice, Oregon City Officers do not engage in discussion with those making comments.*

Agenda Posted at City Hall, Pioneer Community Center, Library, and City Web site(oregon-city.legistar.com).

Video Streaming & Broadcasts: The meeting is streamed live on Oregon City's Web site at www.orcity.org and is available on demand following the meeting.

ADA: City Hall is wheelchair accessible with entry ramps and handicapped parking located on the east side of the building. Hearing devices may be requested from the City staff member prior to the meeting. Disabled individuals requiring other assistance must make their request known 48 hours preceding the meeting by contacting the City Recorder's Office at 503-657-0891.

Sam Thomas

From: Christina Robertson-Gardiner <crobertson@orccity.org>
Sent: Friday, December 06, 2019 10:04 AM
To: Sam Thomas
Cc: Amy
Subject: RE: River Terrace MC Addition - CIC Presentation letter
Attachments: December 2, 2019 CIC Meeting (revised).pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Sam,

This email is to confirm that the River Terrace Memory Care Addition presented to the Citizen Involvement Committee on December 2, 2019, as the South end Neighborhood Association is currently inactive. I have attached the meeting agenda to the email. The video of the meeting can be viewed at <https://oregon-city.legistar.com/Calendar.aspx> once it is uploaded. Please include the CIC agenda and this email in your land use application.

Christina



Christina Robertson-Gardiner AICP

Senior Planner

crobertson@orccity.org

City of Oregon City

Community Development Division

PO Box 3040

698 Warner Parrott Rd.

Oregon City, Oregon 97045

503-496-1564 Direct phone

503-722-3789 City phone

503-722-3880 fax

Website: www.orccity.org | [Recorder Page](#)

PUBLIC RECORDS LAW DISCLOSURE: This e-mail is subject to the State Retention Schedule and may be made available to the public.



River Terrace Memory Care

Memory Care Addition

Oregon City, Oregon

lenity
architecture, inc.



River Terrace Memory Care
Memory Care Addition

Oregon City, Oregon



River Terrace Memory Care

Memory Care Addition

Oregon City, Oregon

lenity
architecture, inc.



River Terrace Memory Care

Memory Care Addition

Oregon City, Oregon

lenity
architecture, inc.

TABLE 'A' ITEMS - 950 SOUTH END ROAD

2. THE SITE ADDRESS IS 950 SOUTH END ROAD, OREGON CITY, OREGON 97045.
3. THE SITE HAS A FLOOD ZONE CLASSIFICATION OF "ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN" ACCORDING TO FEMA MAP 41005CO278D WITH AN EFFECTIVE DATE OF JUNE 17, 2008.
4. GROSS LAND AREA IS 39,439 SQUARE FEET (0.905 ACRES).
5. DATUM - NAVD 88 BASED ON RTK GPS OBSERVATIONS TO ORGN STATION PDXA.
6. NO ZONING REPORT WAS PROVIDED TO THE SURVEYOR.
7. EXTERIOR BUILDING DIMENSIONS AND SQUARE FOOTAGE SHOWN HEREIN.
8. SUBSTANTIAL FEATURES OBSERVED DURING THE SURVEY SHOWN HEREIN.
9. NINE TOTAL PARKING SPACES INCLUDING 1 HANDICAP PARKING SPACE.
11. UTILITIES SHOWN FROM MAPPING OF SURFACE FACILITIES AND LOCATE MARKS.

TABLE 'A' ITEMS - 914 SOUTH END ROAD

2. THE SITE ADDRESS IS 914 SOUTH END ROAD, OREGON CITY, OREGON 97045.
3. THE SITE HAS A FLOOD ZONE CLASSIFICATION OF "ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN" ACCORDING TO FEMA MAP 41005CO278D WITH AN EFFECTIVE DATE OF JUNE 17, 2008.
4. GROSS LAND AREA IS 11,228 SQUARE FEET (0.258 ACRES).
5. DATUM - NAVD 88 BASED ON RTK GPS OBSERVATIONS TO ORGN STATION PDXA.
6. NO ZONING REPORT WAS PROVIDED TO THE SURVEYOR.
7. EXTERIOR BUILDING DIMENSIONS AND SQUARE FOOTAGE SHOWN HEREIN.
8. SUBSTANTIAL FEATURES OBSERVED DURING THE SURVEY SHOWN HEREIN.
11. UTILITIES SHOWN FROM MAPPING OF SURFACE FACILITIES AND LOCATE MARKS.

SURVEYOR'S NOTES

1. THE PORTION OF THIS SURVEY PERTAINING TO THE TRACT OF LAND REFERRED TO AS 950 SOUTH END ROAD IS BASED UPON THE DESCRIPTION IN THE PRELIMINARY TITLE REPORT SUPPLEMENTAL NO. 6 STEWART TITLE COMPANY, ORDER NO. 01049-30086 WITH AN EFFECTIVE DATE OF NOVEMBER 7, 2018.
2. THE PORTION OF THIS SURVEY PERTAINING TO THE TRACT OF LAND REFERRED TO AS 914 SOUTH END ROAD IS BASED UPON THE DESCRIPTION IN THE PRELIMINARY TITLE REPORT BY FIDELITY NATIONAL TITLE COMPANY OF OREGON, ORDER NO. 45141905147, WITH AN EFFECTIVE DATE OF MARCH 29, 2019.

THIS SURVEY HAS HELD THE GEOMETRY CREATED BY THE ABOVE DESCRIPTION. THE DESCRIPTION ITSELF DOES NOT CLOSE NORTH-SOUTH BY 0.04 FEET, YIELDING THE DIFFERENCE IN LENGTH ON THE WEST LINE. THE VARIATION BETWEEN BEARINGS ON THE WEST AND EAST LINES IS DUE TO HOLDING SAID GEOMETRY CREATED BY THIS DESCRIPTION AND PERPETUATING THE RESOLVED RIGHT OF WAY FROM THE SOUTH.

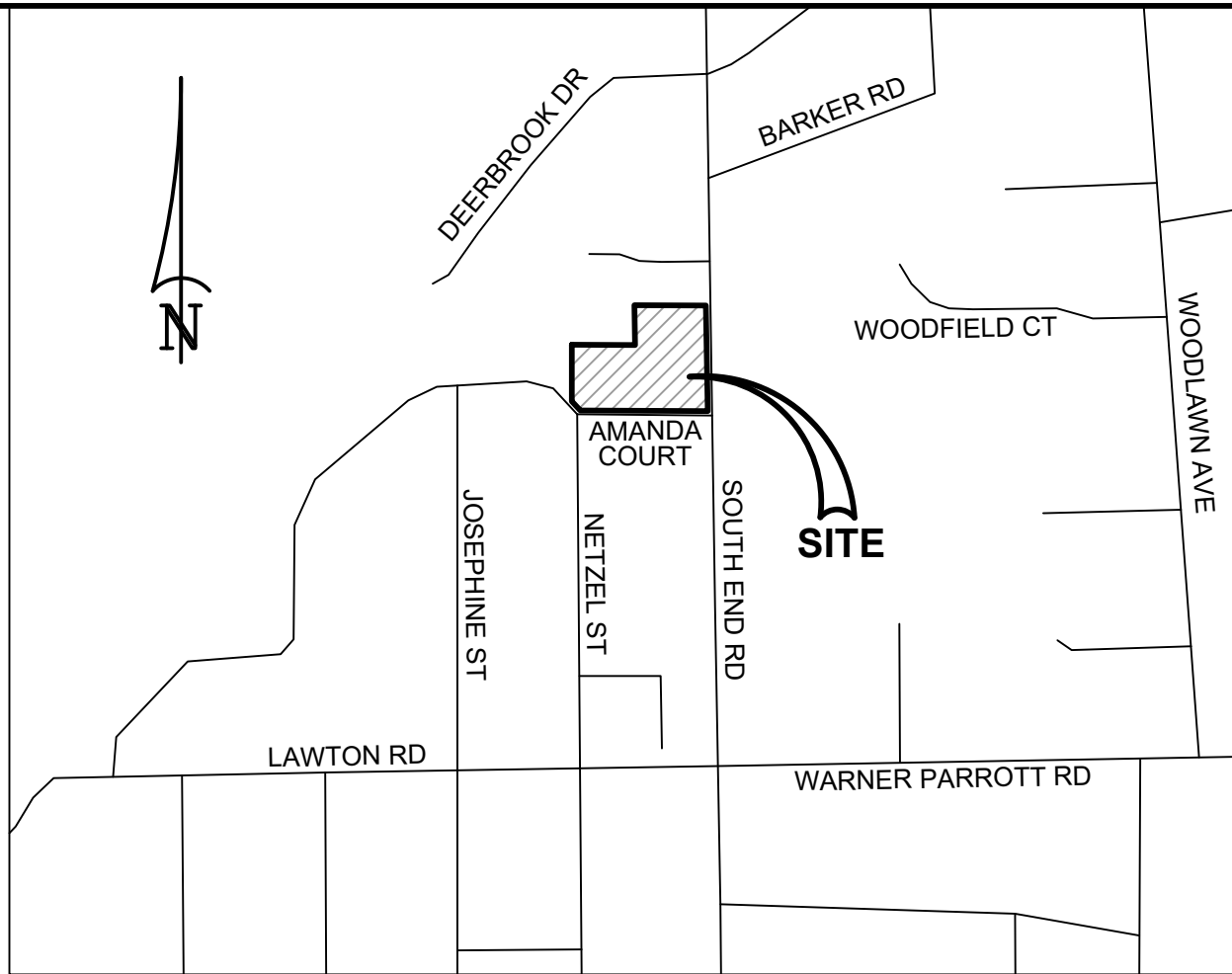
LEGEND

- SANITARY MANHOLE
⊙ COMMUNICATIONS MANHOLE
□ MAILBOX
+ SIGN ON POST
▢ CATCH BASIN
◇ UTILITY POLE
+ SIGN ON POST
■ ELECTRIC METER
▣ IRRIGATION BOX
C COMMUNICATION VAULT
P POWER VAULT
☐ CURB INLET
☐ DITCH INLET
→ GUY ANCHOR
• BOLLARD
■ JUNCTION BOX
* STREET LIGHT
▣ UTILITY LINE MARKER
○ STORM DRAIN MANHOLE
☐ GAS METER
☐ WATER METER
☐ FIRE HYDRANT
x WATER VALVE
y HOSE BIB
⊕ FOUND PROPERTY CORNER AS NOTED
★ CONIFEROUS TREE

- SS SANITARY LINE
SD STORM LINE
COM COMMUNICATION LINE
W WATER LINE
G GAS LINE
P POWER LINE
OHL OVERHEAD UTILITY LINE
RAMP INDICATES PHYSICAL ACCESS TO PUBLIC WAY

ABBREVIATIONS

- SDCO STORM DRAIN CLEAN OUT
R.O.W. RIGHT-OF-WAY
SSMH SANITARY SEWER MANHOLE
PUE PUBLIC UTILITY EASEMENT
COL. COLUMN
CONC. CONCRETE
A/C AIR CONDITIONER
CPP CORRUGATED PERFORATED PIPE
TYP. TYPICAL
COR. CORNER



VICINITY MAP
NOT TO SCALE

LEGAL DESCRIPTION - 950 SOUTH END ROAD

A TRACT OF LAND IN THE A.F. HEDGES D.L.C. IN SECTION 1, TOWNSHIP 3 SOUTH, RANGE 1 EAST OF THE WILLAMETTE MERIDIAN, IN THE CITY OF OREGON CITY, CLACKAMAS COUNTY, OREGON, DESCRIBED AS FOLLOWS:

BEGINNING AT A STONE MARKED WITH A CROSS THAT IS 30 FEET WEST AND 690.7 FEET NORTH OF THE NORTHWEST CORNER OF THE M.M. MCCARVER DLC IN SAID SECTION 1, SAID POINT BEING IN THE CENTER OF THE COUNTY ROAD LEADING TO CANEMAH; THENCE NORTH ALONG THE CENTER OF SAID COUNTY ROAD 224 FEET TO THE TRUE POINT OF BEGINNING OF THE TRACT TO BE DESCRIBED; THENCE WEST AT RIGHT ANGLES TO THE PRECEDING COURSE 325 FEET; THENCE NORTH PARALLEL WITH THE CENTER LINE OF THE COUNTY ROAD 120 FEET; THENCE EAST AT RIGHT ANGLES WITH THE PRECEDING COURSE 325 FEET TO THE CENTER LINE OF SAID COUNTY ROAD; THENCE SOUTH ALONG SAID CENTER LINE 120 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION LYING WITHIN SOUTH END ROAD AND THAT PORTION OF SOUTH END ROAD DISCLOSED IN DEED OF DEDICATION RECORDED ON JUNE 16, 2016, CLACKAMAS COUNTY RECORDING NO. 2016-039446.

TOGETHER WITH A NON-EXCLUSIVE EASEMENT FOR ROADWAY OVER AND ACROSS A STRIP OF LAND 27 FEET IN WIDTH LYING SOUTH OF AND ADJACENT TO THE ABOVE DESCRIBED TRACT.

EXCEPTIONS - 950 SOUTH END ROAD

THE FOLLOWING ARE SPECIAL EXCEPTIONS IN THE PRELIMINARY TITLE REPORT PREPARED BY STEWART TITLE COMPANY, SUPPLEMENTAL NO. 6, ORDER NO. 01049-30086, DATED NOVEMBER 7, 2018. REFER TO SAID REPORT FOR GENERAL EXCEPTIONS 1 THROUGH 6 AND SPECIAL EXCEPTIONS 7-13, 16 AND 18-27 (NOT SURVEY RELATED OR INTENTIONALLY DELETED BY SAID TITLE COMPANY) AND FURTHER PARTICULARS.

- 14 EASEMENT, INCLUDING THE TERMS AND CONDITIONS THEREOF, GRANTED TO: CITY OF OREGON CITY
RECORDED: JUNE 9, 2016
RECORDING NO.: 2016037773
PURPOSE: PUBLIC AND FRANCHISE UTILITIES
AFFECTS: EASTERLY 10.00 FEET
- 15 EASEMENT, INCLUDING THE TERMS AND CONDITIONS THEREOF, GRANTED TO: CITY OF OREGON CITY
RECORDED: JUNE 9, 2016
RECORDING NO.: 2016037774
PURPOSE: PUBLIC STREET AND SIDEWALK
AFFECTS: SOUTHERLY 10.00 FEET
- 17 EASEMENT, INCLUDING THE TERMS AND CONDITIONS THEREOF, GRANTED TO: CITY OF OREGON CITY
RECORDED: JUNE 16, 2016
RECORDING NO.: 2016039446
PURPOSE: STREET, ROAD, RIGHT-OF-WAY, AND PUBLIC UTILITY
AFFECTS: SOUTHERLY, SOUTHEASTERLY AND EASTERLY PORTIONS

LEGAL DESCRIPTION - 914 SOUTH END ROAD

A PORTION OF SECTION 1, TOWNSHIP 3 SOUTH, RANGE 1 EAST, OF THE WILLAMETTE MERIDIAN, IN THE CITY OF OREGON CITY, COUNTY OF CLACKAMAS AND STATE OF OREGON DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT 60 FEET WEST AND NORTH 1,034.81 FEET FROM THE NORTHWEST CORNER OF THE MCCARVER DONATION LAND CLAIM SITUATED IN SECTION 1, TOWNSHIP 3 SOUTH, RANGE 1 EAST, OF THE WILLAMETTE MERIDIAN, IN THE CITY OF OREGON CITY, COUNTY OF CLACKAMAS AND STATE OF OREGON; THENCE SOUTH 89°58'01" WEST, 155.00 FEET; THENCE NORTH 72.57 FEET TO THE NORTH LINE OF A TRACT OF LAND DESCRIBED IN BOOK 345, PAGE 53; THENCE SOUTH 89°58'22" EAST, 155.00 FEET ALONG SAID NORTH LINE TO THE WESTERLY RIGHT-OF-WAY OF SOUTH END ROAD; THENCE SOUTH 72.37 FEET ALONG SAID RIGHT-OF-WAY LINE TO THE TRUE POINT OF BEGINNING.

SEE SURVEYOR'S NOTE #2 FOR PARTICULARS ON THE INTERPRETATION OF THIS DESCRIPTION.

EXCEPTIONS - 914 SOUTH END ROAD

THERE WERE NO SPECIAL EXCEPTIONS IN THE PRELIMINARY TITLE REPORT PREPARED BY FIDELITY NATIONAL TITLE COMPANY OF OREGON, ORDER NO. 45141905147, WITH AN EFFECTIVE DATE OF MARCH 29, 2019. REFER TO SAID REPORT FOR GENERAL EXCEPTIONS 1 THROUGH 5 AND SPECIAL EXCEPTIONS 6-9 (NONE OF WHICH BEING SURVEY RELATED) AND FURTHER PARTICULARS.

SURVEYOR'S CERTIFICATE

TO: RIVER TERRACE MEMORY CARE PROPERTY, LLC, AN OREGON LIMITED LIABILITY COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2018 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 5, 6(A), 6(B), 7(A), 7(B), 8, 9, 11, AND 20 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON MAY 31, 2019.

DATED THIS 3RD DAY OF JUNE, 2019.
JON M. YAMASHITA, PLS, REGISTRATION NO. 53760
jon.yamashita@otak.com

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JANUARY 12, 2002
JON M. YAMASHITA
53760LS
RENEWES 6/30/2020

ALTA/NSPS LAND TITLE SURVEY

TWO TRACTS OF LAND LOCATED IN THE NORTHEAST ONE-QUARTER OF SECTION 1,
TOWNSHIP 3 SOUTH, RANGE 1 EAST OF THE WILLAMETTE MERIDIAN,
IN THE CITY OF OREGON CITY, COUNTY OF CLACKAMAS AND STATE OF OREGON.

Otak

808 SW 3rd Avenue, Suite 300
Portland, OR 97204
503.287.6825
www.otak.com

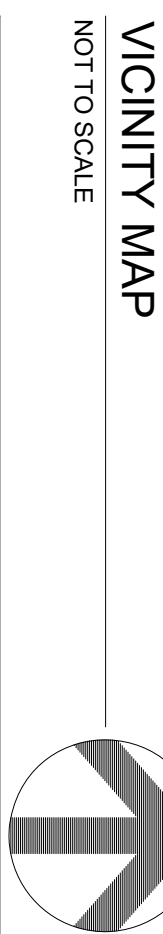
1 OF 1

Sheet No.

18947

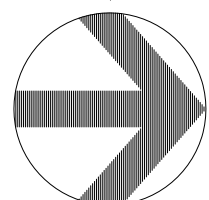
Project No.

River Terrace
Oregon City, OR



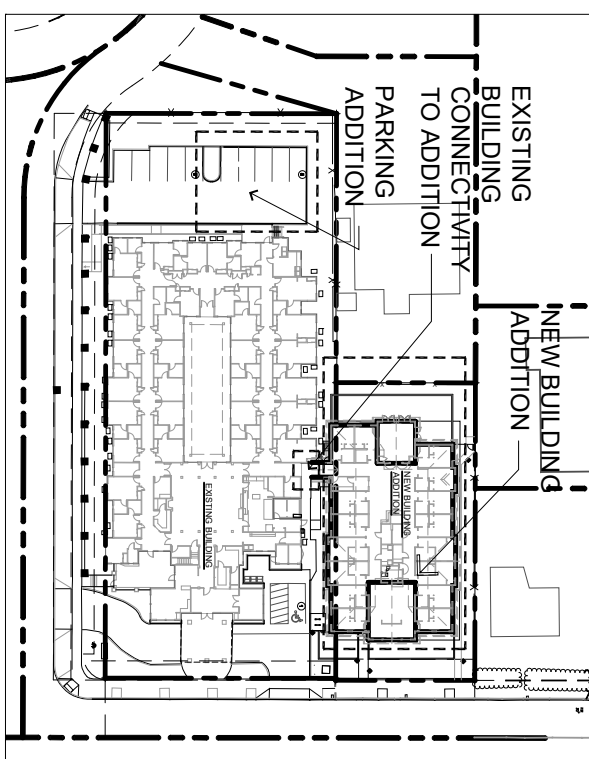
VICINITY MAP

NOT TO SCALE



SCOPE OF WORK

1" = 100



PROJECT DATA			
SITE DATA	959 SOUTH END ROAD	ZONED R-10	
PROPERTY AREA	97 ACRES	38.34 SQ. FT.	
ASSESSORS PARCEL ID/NUMBER		3-1E-01-0D-035100	
SITE DATA	914 SOUTH END ROAD	ZONED R-10	
PROPERTY AREA	28 ACRES	11,248 SQ. FT.	
ASSESSORS PARCEL ID/NUMBER		3-1E-01-0D-035301	
SITE DATA	914 & 959 SOUTH END ROAD (COMBINED)	50,591 SQ. FT.	
SITE AREA BREAKDOWN			
EXISTING MC BUILDING	16,405 SQ. FT.	(32%)	
ADDITION MC BUILDING	6,996 SQ. FT.	(14%)	
BUILDING FOOTPRINTS TOTAL	23,401 SQ. FT.	(46.5%)	
DRIVES/PARKING	7,177 SQ. FT.	(14.3%)	
OPEN SPACE	50,591 SQ. FT.	(100%)	
TOTAL	39,460 SQ. FT.	(77.8%)	
	11,131 SQ. FT.	(22.1%)	
PARKING BREAKDOWN:			
OPEN SPACES	10		
ACCESSIBLE SPACES	11		
TOTAL SPACES	21		
FLOOR TO AREA RATIO:			
EXISTING MC BUILDING (1ST & 2ND)	16,405 + 1,180 = 18,385 SQ. FT.		
ADDITION MC BUILDING	6,996 SQ. FT.		
	25,381 + 50,591 = 75,972		

PROJECT DESCRIPTION

A SINGLE-STORY 16-BED MEMORY CARE ADDITION FOR RESIDENTS WITH ALZHEIMERS, DEMENTIA, AND OTHER AGE-RELATED MENTAL IMPAIRMENTS. THE ADDITION WILL BE PHYSICALLY CONNECTED TO THE EXISTING FACILITY AND SITED AT 914 SOUTH END RD.

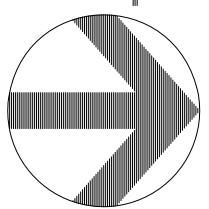
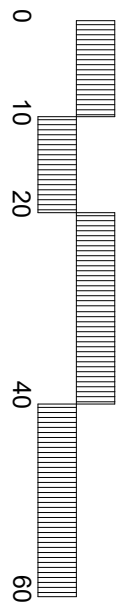
DRAWING INDEX	
A1.1	ARCHITECTURAL SITE PLAN AND NOTES
A2.1	LANDSCAPE PLAN AND NOTES
A2.2	FLOOR PLAN
A2.3	ROOF PLAN
A6.1	ELECTIONS
E.1	EXISTING CONDITIONS
	UPDATING SITE PLAN AND SCHEDULES
CH.1	EXISTING CONDITIONS PLAN
C2.0	DETAIL GRADING PLAN
C2.1	DETAIL GRADING PLAN
C2.2	DETAIL GRADING PLAN
C3.0	DETAIL UTILITY PLAN
C4.0	DETAIL EROSION CONTROL PLAN
C5.0	CIVIL DETAILS
C6.1	CIVIL DETAILS

DRAWING INDEX

A1.1	ARCHITECTURAL SITE PLAN AND NOTES
A1.2	LANDSCAPE PLAN AND NOTES
A2.2	ROOF PLAN
E1.1	ELEVATIONS
	DOORING SITE PLAN AND SCHEDULES
	EXISTING CONDITIONS PLAN
C0.1	DETAIL GRADING PLAN
C2.0	DETAIL GRADING PLAN
C2.1	DETAIL GRADING PLAN
C2.2	DETAIL GRADING PLAN
C2.3	DETAIL GRADING PLAN
C4.0	DETAIL EROSION CONTROL PLAN
C5.1	CIVIL DETAILS

ARCHITECTURAL
SITE PLAN

DATE: 12/13/2019

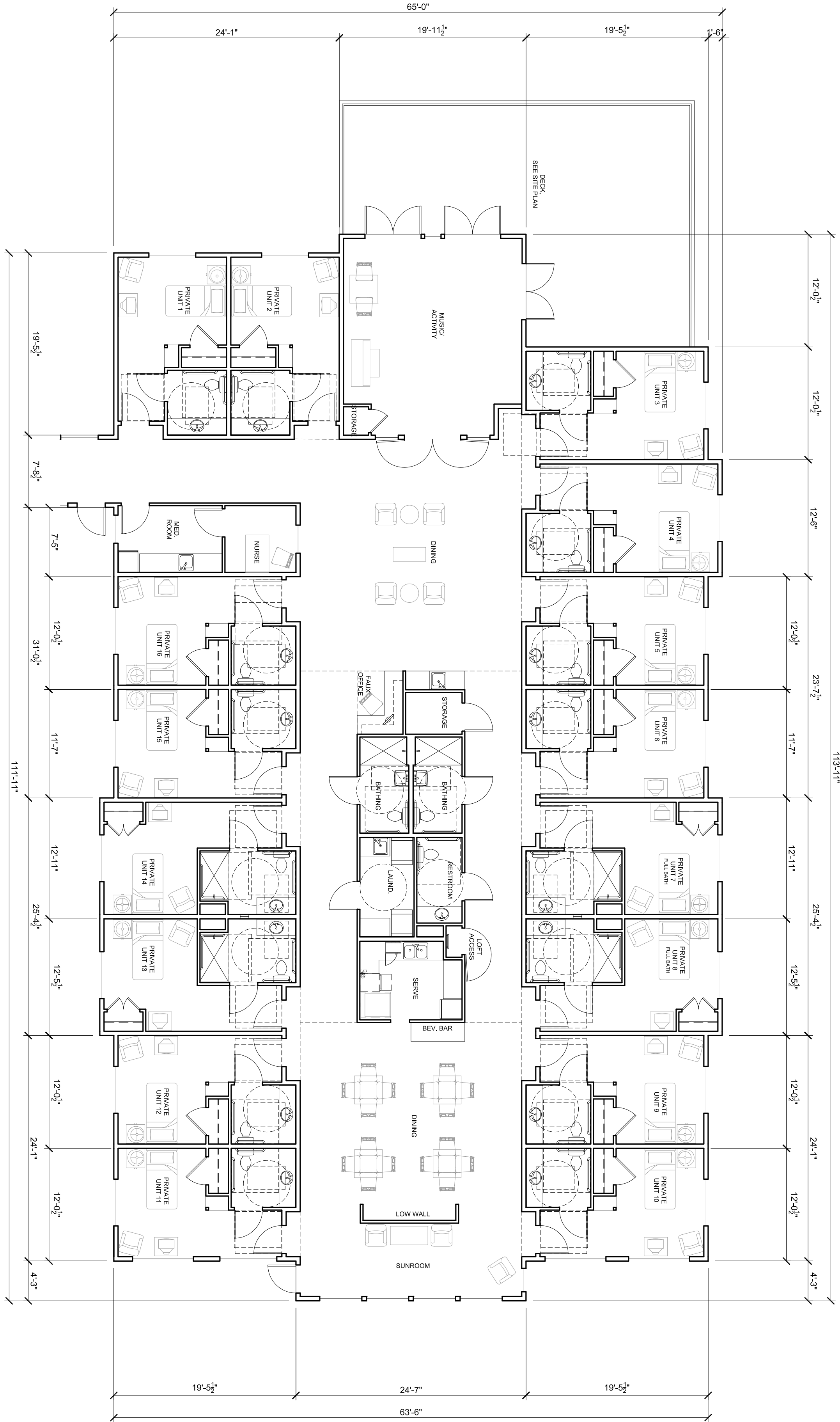
 $1'' = 20$ 

ARCHITECTURAL SITE PLAN

**RIVER TERRACE
BUILDING ADDITION**
914 & 950 SOUTH END ROAD
OREGON CITY, OR 97045

lenity
architecture, inc.

3150 Kettle Court SE, Salem, Oregon 97301
P 503 399 1090 F 503 399 0565 W lenityarchitecture.com

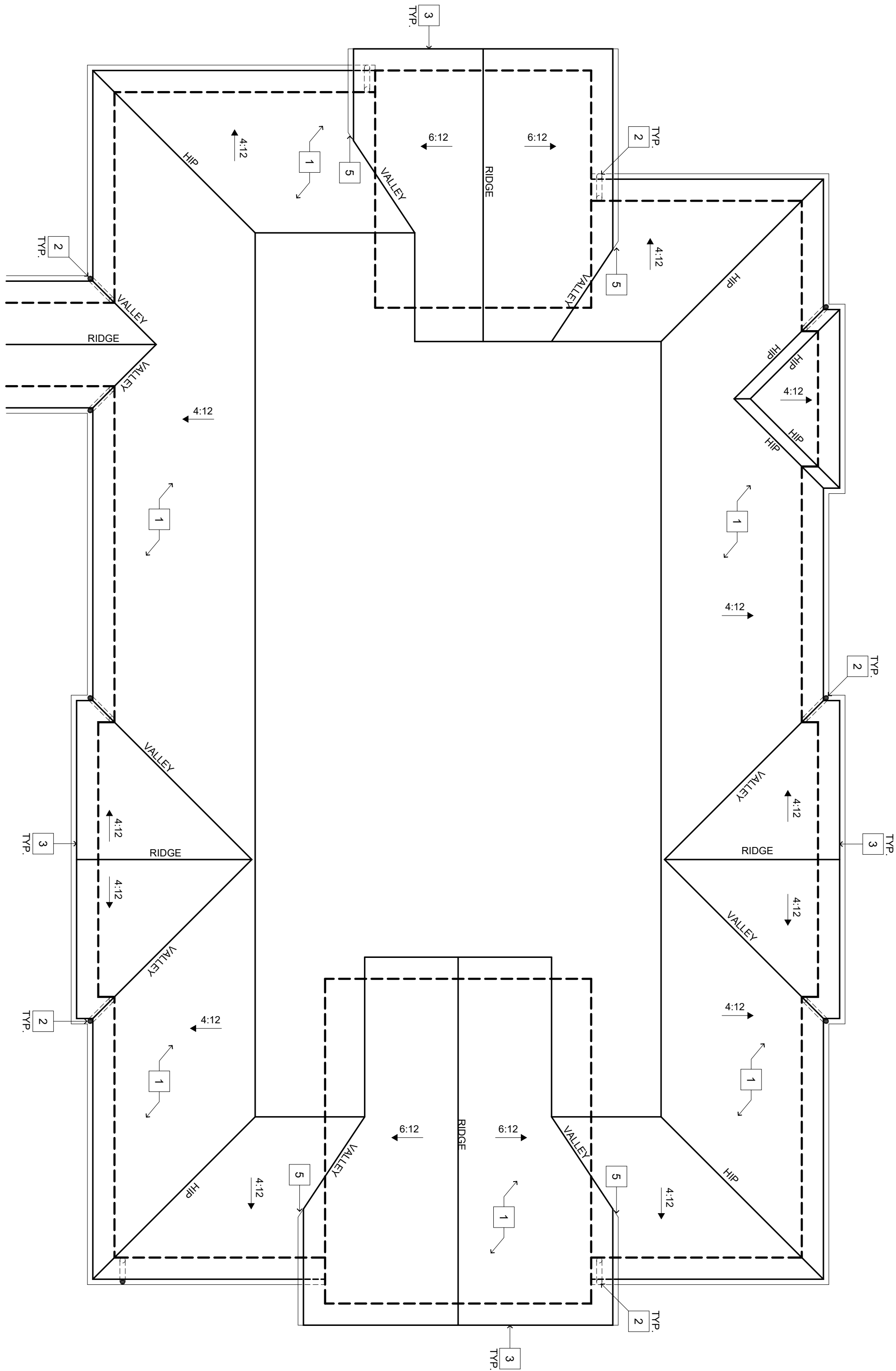


1 FLOOR PLAN
SCALE: 1/8" = 1'-0"

DATE	12/20/2019
REVISED DATE	
SHEET	A2.1

BLDG ADDITION
FLOOR PLAN

RIVER TERRACE
BUILDING ADDITION
914 & 950 SOUTH END ROAD
OREGON CITY, OR 97045



KEY NOTES

- 1 CLASS 'A' ARCH. COMP. 25 YEAR ASPHALT SHINGLE ROOFING. SEE DETAIL 1A/1.2
- 2 DOWNSPOUT TO GRADE
- 3 RAKE. SEE SHEET A2.2 FOR DETAILS AT DIFFERENT CONDITIONS
- 4 SKYLIGHTS. SEE 1A/7.2
- 5 OPEN END GUTTERS

KEYNOTES INDICATED ABOVE ARE APPLICABLE FOR THE ROOF PLAN SHEET ONLY

1 ROOF PLAN
SCALE: 1/8" = 1'-0"

©2018 Lenity Architecture

BLDG ADDITION
ROOF PLAN

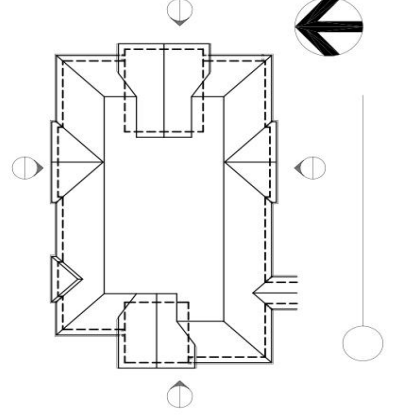
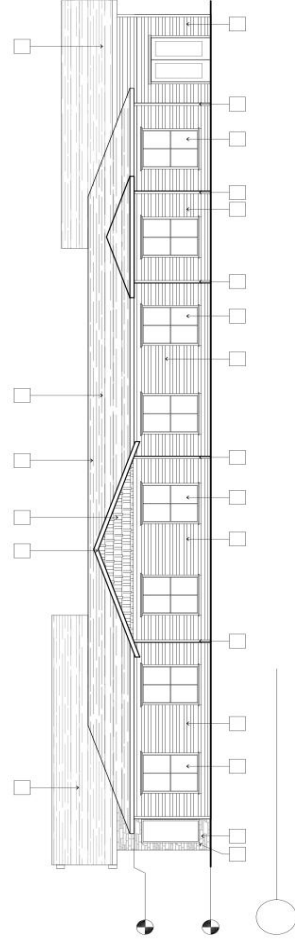
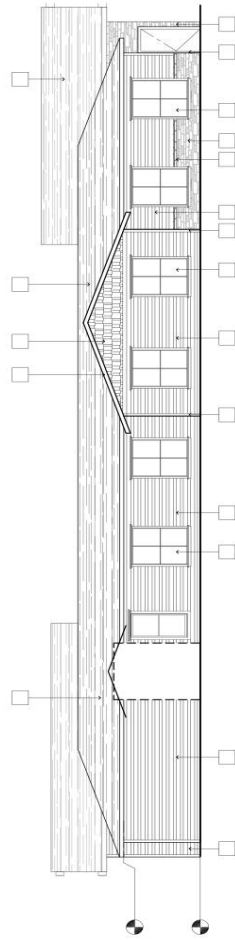
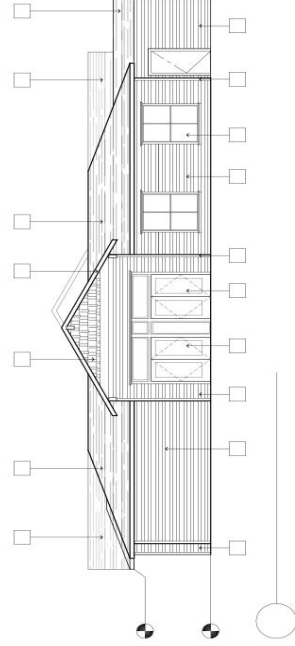
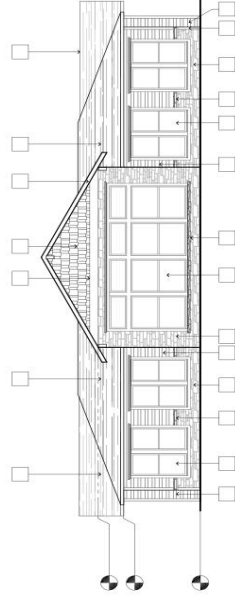
RIVER TERRACE
BUILDING ADDITION
914 & 950 SOUTH END ROAD
OREGON CITY, OR 97045

lenity
architecture, inc.

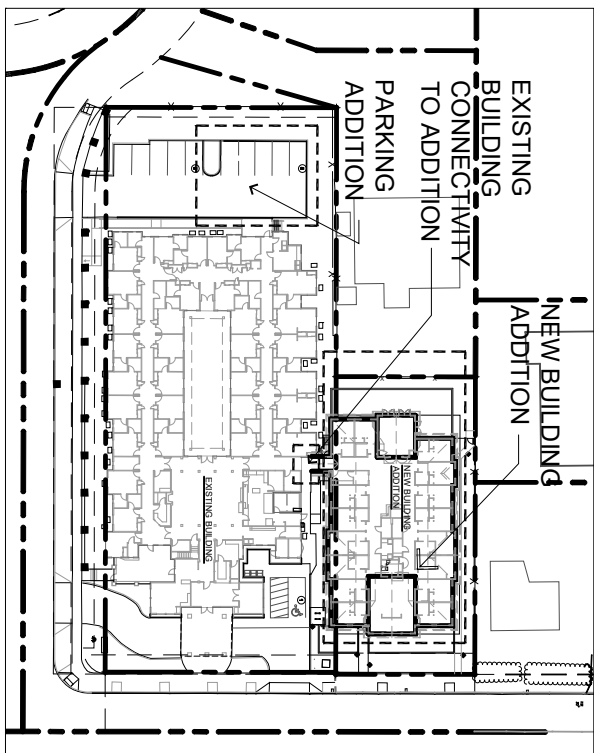
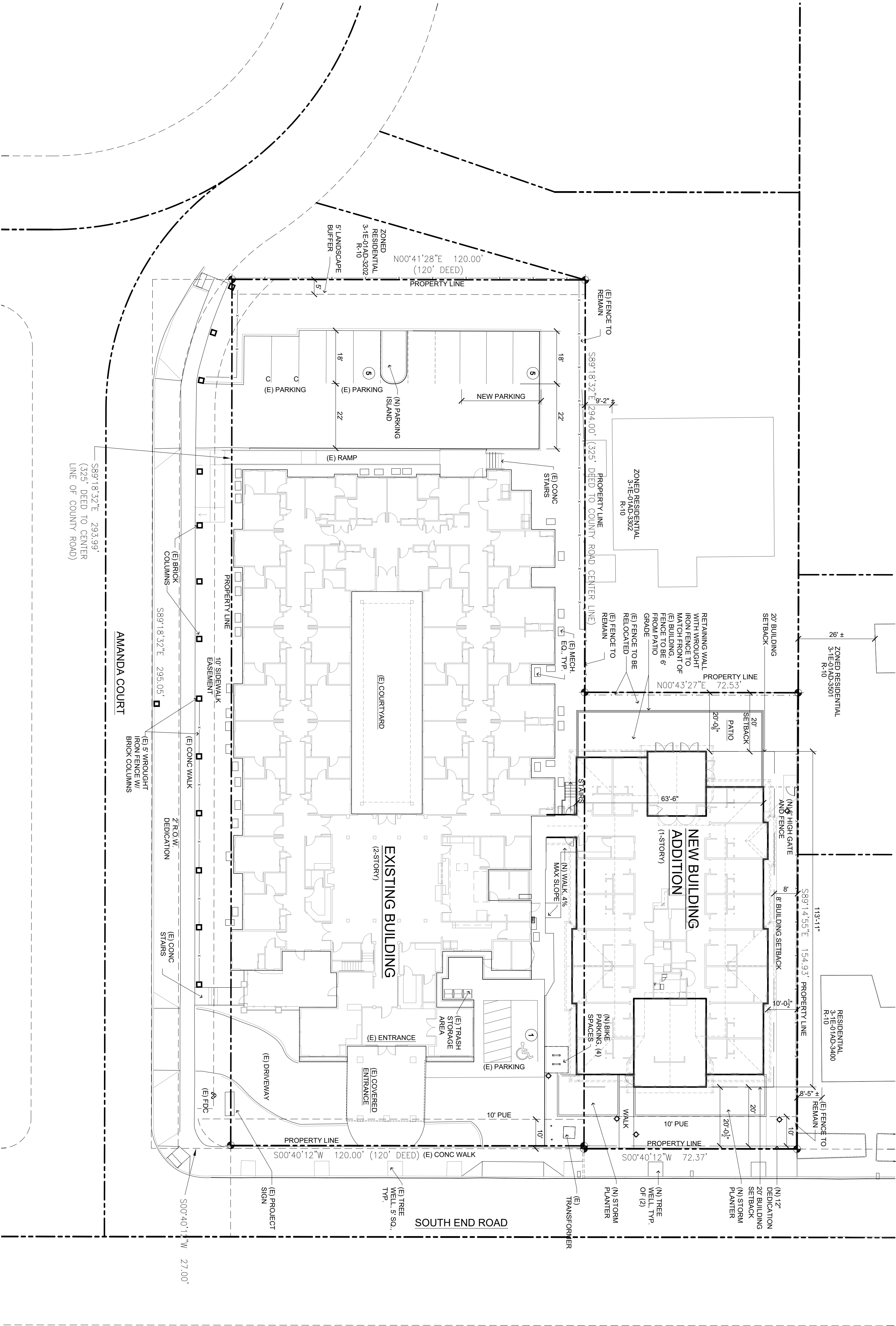
3150 Kettle Court SE, Salem, Oregon 97301
P 503.399.1090 F 503.399.0565 W lenityarchitecture.com

SHEET
A2.2

DATE
12/20/2019
REVISED DATE

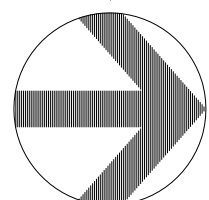


1 TYP.

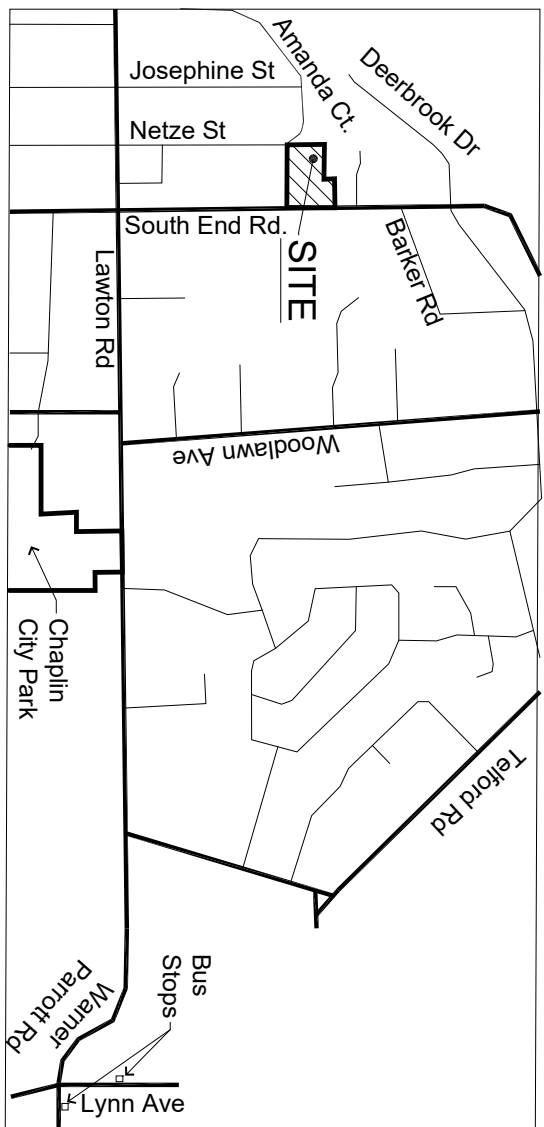


SCOPE OF WORK

1" = 100'

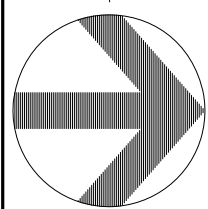


River Terrace Oregon City, OR



VICINITY MAP

NOT TO SCALE



PROJECT DATA

SITE DATA	950 SOUTH END ROAD	ZONED R-10
PROPERTY AREA	97 ACRES	33,343 SQ. FT.
ASSESSORS PARCEL ID NUMBER	3-1E-01A-03100	
SITE DATA	914 SOUTH END ROAD	ZONED R-10
PROPERTY AREA	26 ACRES	11,248 SQ. FT.
ASSESSORS PARCEL ID NUMBER	3-1E-01A-03801	
SITE DATA	914 & 950 SOUTH END ROAD (COMBINED)	50,591 SQ. FT.
PROPERTY AREA	117 ACRES	
SITE AREA BREAKDOWN		
EXISTING MC BUILDING	16,405 SQ. FT.	(32%)
ADDITION MC BUILDING	8,996 SQ. FT.	(14%)
BUILDING FOOTPRINTS TOTAL	25,401 SQ. FT.	(46.2%)
DRIVES / PARKING	7,177 SQ. FT.	(14.2%)
OPEN SPACE	11,131 SQ. FT.	(22.1%)
TOTAL	50,591 SQ. FT.	(100%)
IMPERVIOUS AREA	39,450 SQ. FT.	(77.9%)
PERVIOUS AREA	11,131 SQ. FT.	(22.1%)
PARKING BREAKDOWN		
OPEN SPACES	10	
TOTAL SPACES	11	
FLOOD TO AREA RATIO		
EXISTING MC BUILDING (1ST & 2ND)	16,405 + 1,980 = 18,385 SQ. FT.	
ADDITION MC BUILDING	25,381 / 50,591 = 50.1	

PROJECT DESCRIPTION

A SINGLE-STORY 16-BED MEMORY CARE ADDITION FOR RESIDENTS WITH ALZHEIMERS, DEMENTIA, AND OTHER AGE-RELATED MENTAL IMPAIRMENTS. THE ADDITION WILL BE ADJACENT TO THE EXISTING FACILITY AND SHARED AT 314 SOUTH END RD.

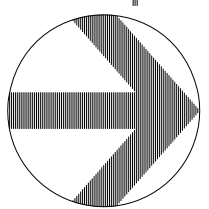
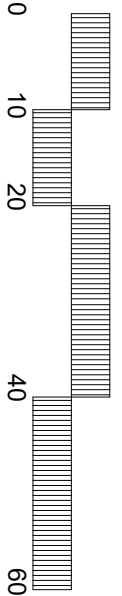
DRAWING INDEX

A1.1	ARCHITECTURAL SITE PLAN AND NOTES
L1.1	LANDSCAPE PLAN AND NOTES
A2.2	ROOF PLAN
A6.1	ELEVATIONS
E1.1	LIGHTING SITE PLAN AND SCHEDULES
C0.1	EXISTING CONDITIONS PLAN
C1.0	CIVIL SITE PLAN
C2.0	DETAIL GRADING PLAN
C2.2	DETAIL GRADING PLAN
C3.0	DETAIL UTILITY PLAN
C4.0	DETAIL EROSION CONTROL PLAN
C5.1	CIVIL DETAILS

ARCHITECTURAL SITE PLAN

DATE: 12/13/2019

1" = 20'



©2018 Lenity Architecture

ARCHITECTURAL SITE PLAN

RIVER TERRACE
BUILDING ADDITION
914 & 950 SOUTH END ROAD
OREGON CITY, OR 97045

lenity
architecture, inc.
3150 Kettle Court SE, Salem, Oregon 97301
P 503 399 1090 F 503 399 0565 W lenityarchitecture.com

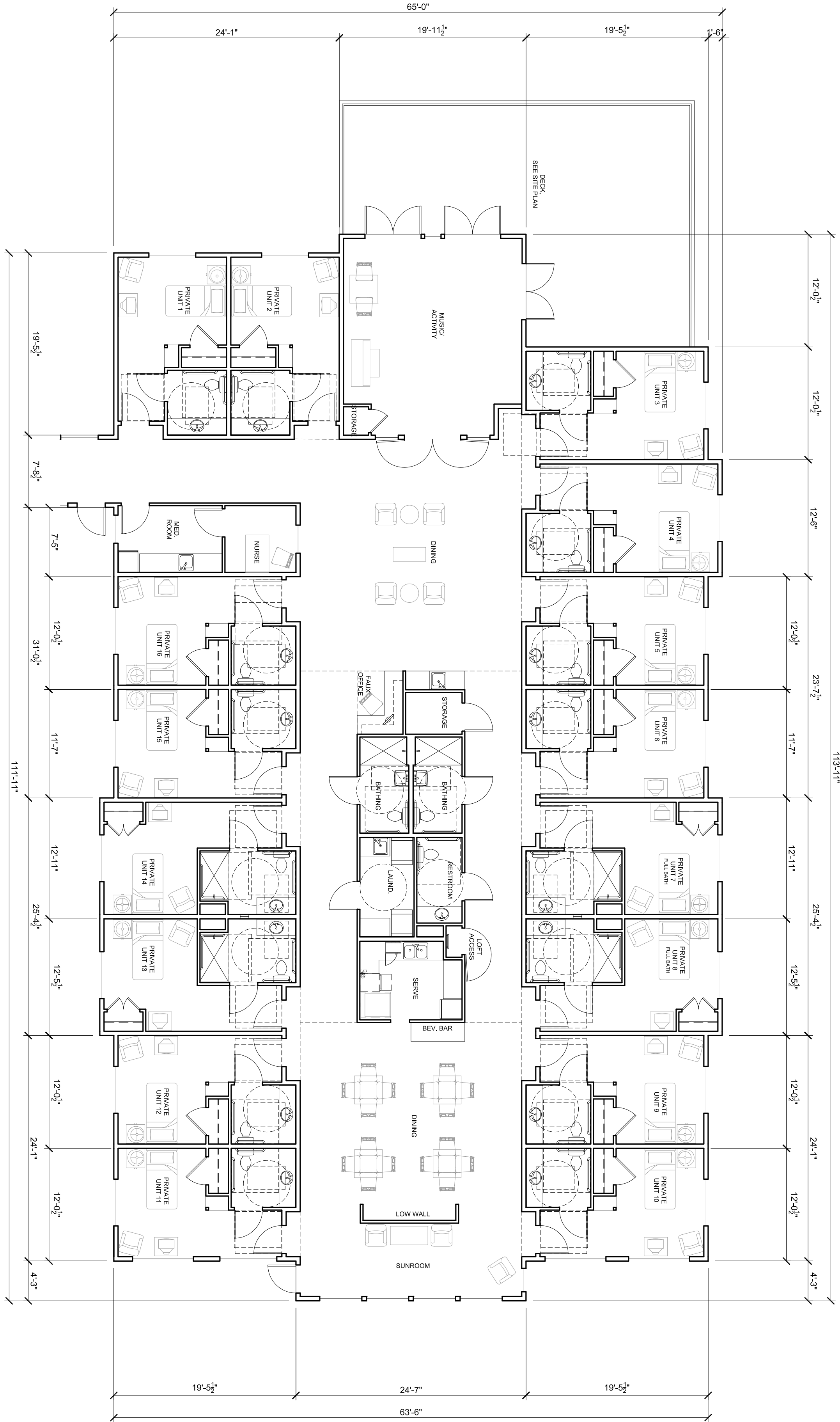
A1.1

SHEET

REVISED DATE

DATE

12/20/2019

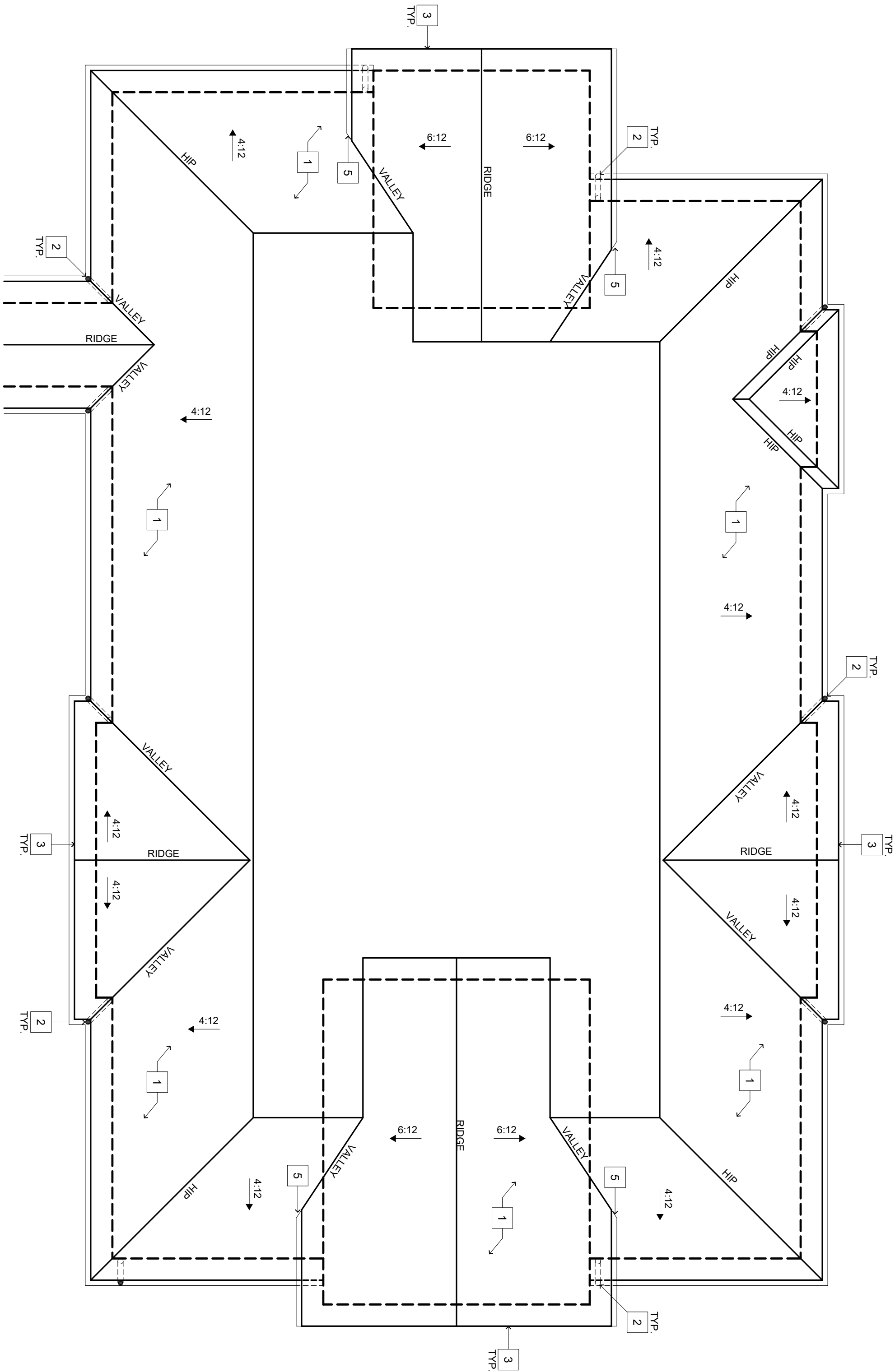


1 FLOOR PLAN
SCALE: 1/8" = 1'-0"

DATE	12/20/2019
REVISED DATE	
SHEET	A2.1

BLDG ADDITION
FLOOR PLAN

RIVER TERRACE
BUILDING ADDITION
914 & 950 SOUTH END ROAD
OREGON CITY, OR 97045



KEY NOTES

- 1 CLASS 'A' ARCH. COMP. 25 YEAR ASPHALT SHINGLE ROOFING. SEE DETAIL 1A/1.2
- 2 DOWNSPOUT TO GRADE
- 3 RAKE. SEE SHEET A2.2 FOR DETAILS AT DIFFERENT CONDITIONS
- 4 SKYLIGHTS. SEE 1A/1.2
- 5 OPEN END GUTTERS

KEYNOTES INDICATED ABOVE ARE APPLICABLE FOR THE ROOF PLAN SHEET ONLY

1 ROOF PLAN
SCALE: 1/8" = 1'-0"

©2018 Lenity Architecture

BLDG ADDITION
ROOF PLAN

RIVER TERRACE
BUILDING ADDITION
914 & 950 SOUTH END ROAD
OREGON CITY, OR 97045

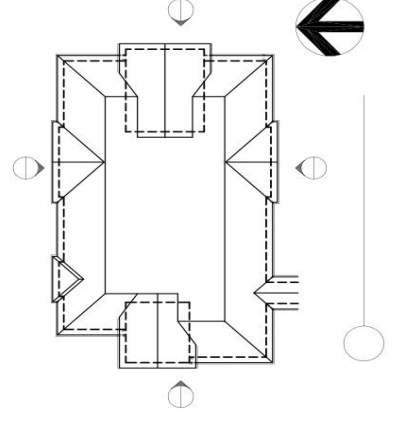
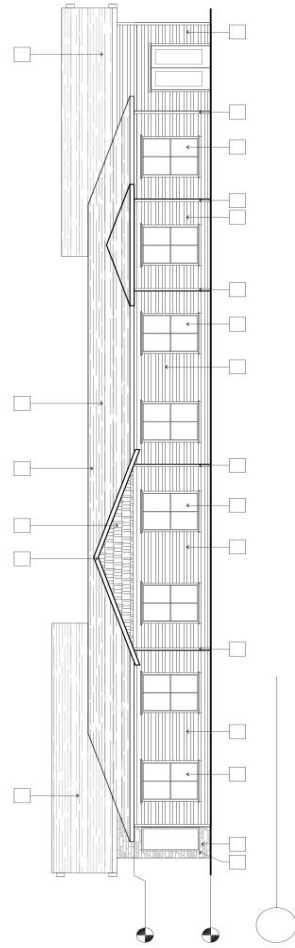
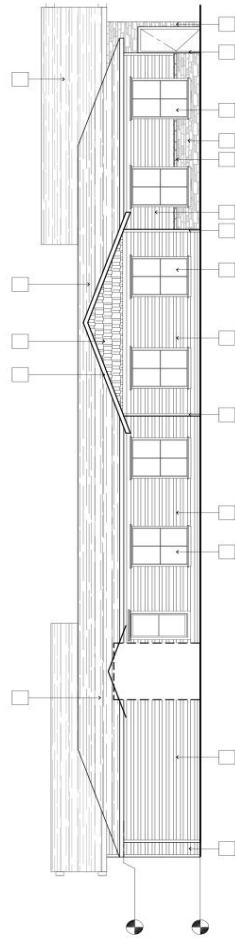
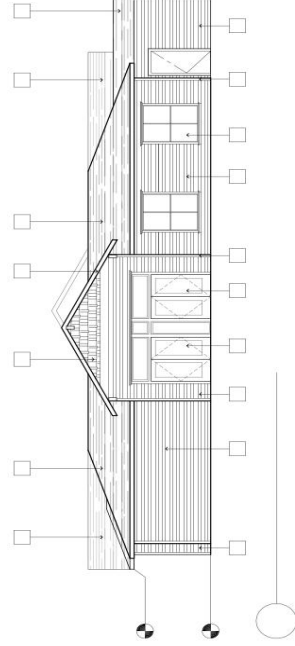
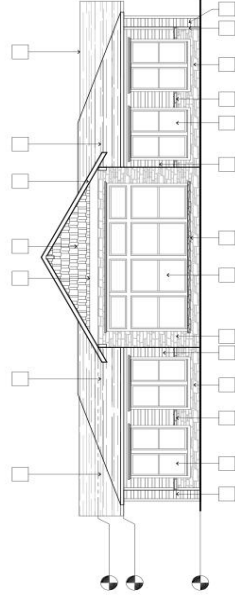
lenity
architecture, inc.

3150 Kettle Court SE, Salem, Oregon 97301
P 503.399.1090 F 503.399.0565 W lenityarchitecture.com

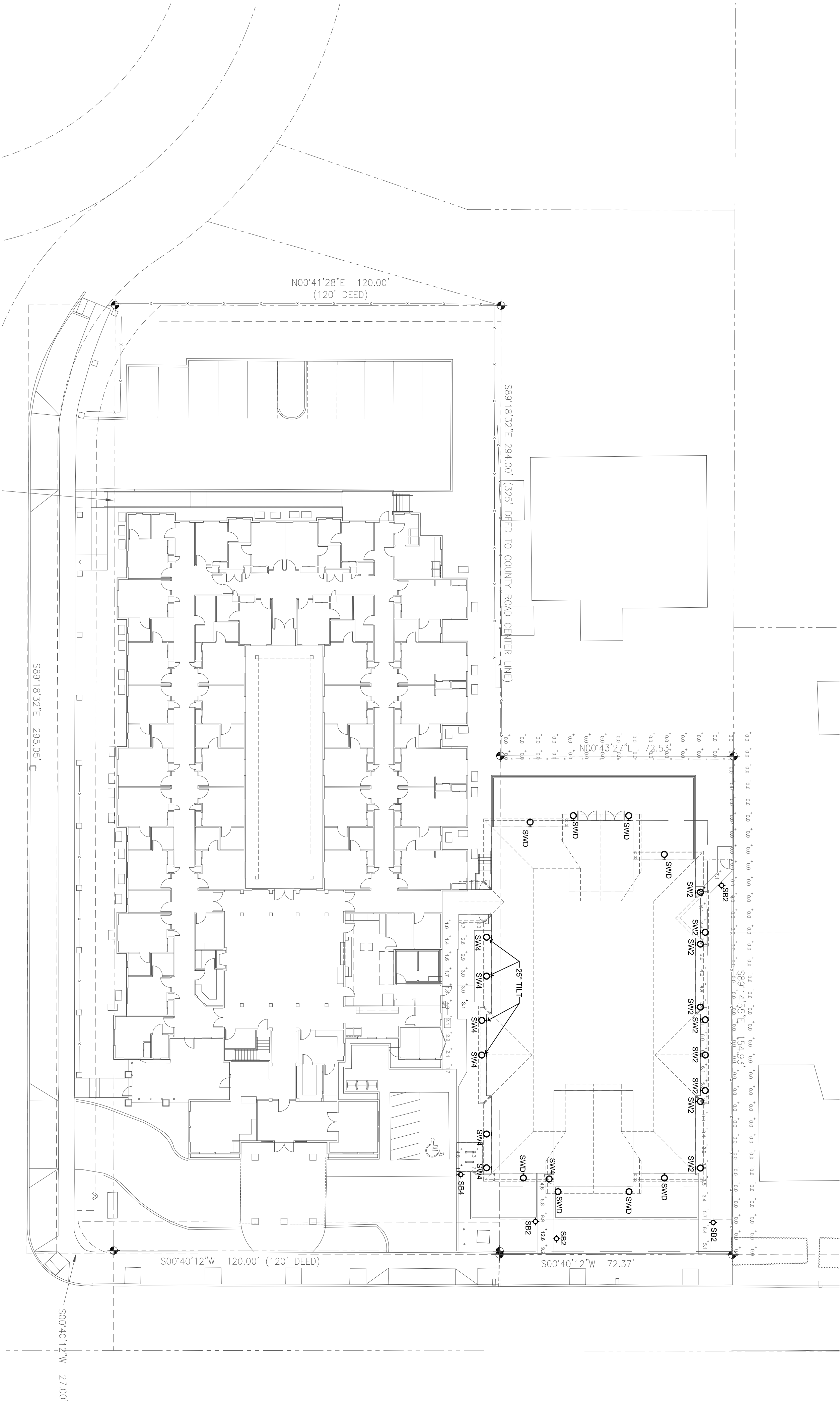
DATE
12/20/2019

REVISED DATE

SHEET
A2.2

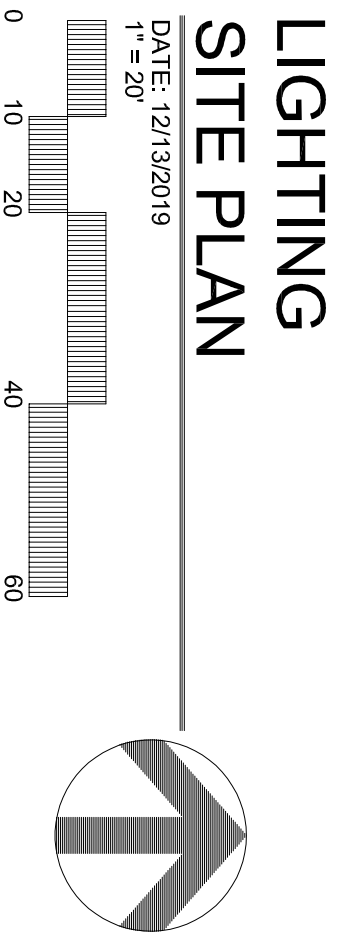


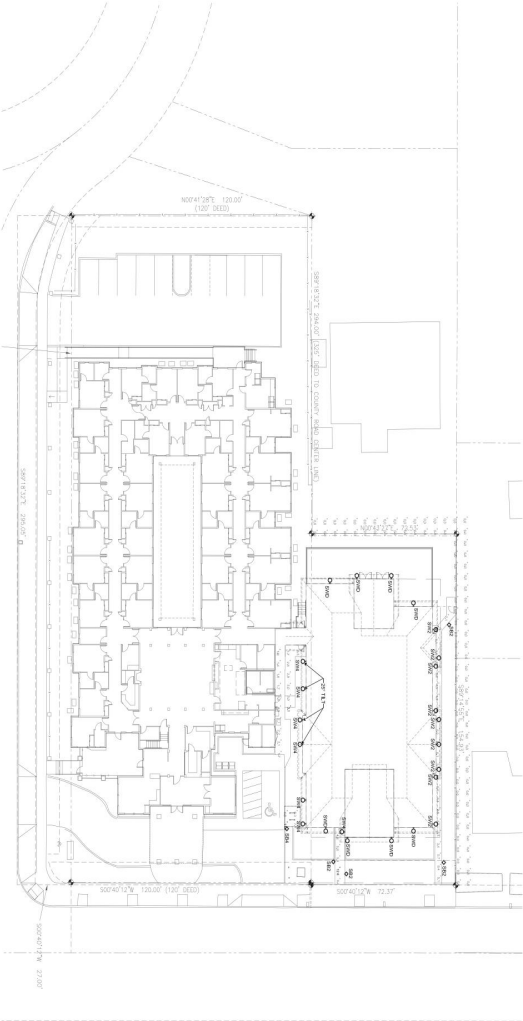
1 TYP.



Statistics					
Description	Symbol	Avg	Max	Min	Max/min
Blue Parking	+	12.8c	112.8c	4.6c	2.51 13.51
Green Parking	+	12.8c	112.8c	4.6c	2.51 13.51
Ground Level	+	5.8c	90.8c	2.8c	3.11 2.01
New and Existing	+	2.1c	3.1c	1.0c	3.11 2.11
Per. Sign Light	+	0.07c	0.07c	0.07c	N/A N/A

Light Loss Factor		Symbol	Label	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Wattage	Notes
	SW4		SW4	EATON - LUMIERE (FORMER COOPER LIGHTING)	303-WH-LEEB2-4000-UNV-T4-DIM10-BK	LUMIERE EON 303-WH WALL MOUNTED LUMINARE DOUBLE LED OPTICS, FROSTED GLASS LENS.	(14) 4000K CCT 75 CH LENS ABSOLUTE PHOTO METER / IS FACTORS CREATED USING LAB LUMEN'S STANDARDS IN TEST DISTANCE OF 28.75 FEET Industrial Landscape, Residential Sidewalk, Walkway, Accent, Behind Damp Location, Wet Location	14	15.6	MOUNT @ 90° FULL CUT OFF DOWN UNLESS OTHERWISE NOTED.
	SB2		SB2	EATON - LUMIERE (FORMER COOPER LIGHTING)	303-WH-LEEB2-4000-UNV-T4-DIM10-BK	LUMIERE EON 303-R1 SINGLE HEAD BOLLARD SINGLE LED BAR TYPE / FROSTED GLASS LENS.	(7) 4000K CCT 75 CH LENS ABSOLUTE PHOTO METER / IS FACTORS CREATED USING LAB LUMEN'S STANDARDS IN TEST DISTANCE OF 28.75 FEET Industrial Landscape, Residential Sidewalk, Walkway, Accent, Behind Damp Location, Wet Location	7	8.16	42" BOLLARD FULL CUT OFF
	SB4		SB4	EATON - LUMIERE (FORMER COOPER LIGHTING)	303-WH-LEEB2-4000-UNV-T4-DIM10-BK	LUMIERE EON 303-R1 SINGLE HEAD BOLLARD SINGLE LED BAR TYPE / FROSTED GLASS LENS.	(14) 4000K CCT 75 CH LENS ABSOLUTE PHOTO METER / IS FACTORS CREATED USING LAB LUMEN'S STANDARDS IN TEST DISTANCE OF 28.75 FEET Industrial Landscape, Residential Sidewalk, Walkway, Accent, Behind Damp Location, Wet Location	14	15.4	MOUNT @ 90° FULL CUT OFF DOWN UNLESS OTHERWISE NOTED.
	SW2		SW2	EATON - LUMIERE (FORMER COOPER LIGHTING)	303-WH-LEEB2-4000-UNV-T4-DIM10-BK	LUMIERE EON 303-WH WALL MOUNTED LUMINARE DOUBLE LED OPTICS, FROSTED GLASS LENS.	(14) 4000K CCT 75 CH LENS ABSOLUTE PHOTO METER / IS FACTORS CREATED USING LAB LUMEN'S STANDARDS IN TEST DISTANCE OF 28.75 FEET Industrial Landscape, Residential Sidewalk, Walkway, Accent, Behind Damp Location, Wet Location	14	15.4	MOUNT @ 90° FULL CUT OFF DOWN UNLESS OTHERWISE NOTED.
	SWD		SWD	LIGHTWAY INDUSTRIES	GHOW-H-LEED-A-EB2-4800-FSA	DECORATIVE CYLINDRICAL WALL MOUNTED LED BLACK FROSTED LENS.	5-WATT SELF BALLASTED LED 3000m 2700K	1	5	MOUNT @ 8°





Legend									
Symbol	Room	Room	Room	Room	Room	Room	Room	Room	Room
1	101	102	103	104	105	106	107	108	109
2	110	111	112	113	114	115	116	117	118
3	119	120	121	122	123	124	125	126	127
4	128	129	130	131	132	133	134	135	136
5	137	138	139	140	141	142	143	144	145
6	146	147	148	149	150	151	152	153	154
7	155	156	157	158	159	160	161	162	163
8	164	165	166	167	168	169	170	171	172
9	173	174	175	176	177	178	179	180	181
10	182	183	184	185	186	187	188	189	190
11	191	192	193	194	195	196	197	198	199
12	200	201	202	203	204	205	206	207	208
13	209	210	211	212	213	214	215	216	217
14	218	219	220	221	222	223	224	225	226
15	227	228	229	230	231	232	233	234	235
16	236	237	238	239	240	241	242	243	244
17	245	246	247	248	249	250	251	252	253
18	254	255	256	257	258	259	260	261	262
19	263	264	265	266	267	268	269	270	271
20	272	273	274	275	276	277	278	279	280
21	281	282	283	284	285	286	287	288	289
22	290	291	292	293	294	295	296	297	298
23	299	300	301	302	303	304	305	306	307
24	308	309	310	311	312	313	314	315	316
25	317	318	319	320	321	322	323	324	325
26	326	327	328	329	330	331	332	333	334
27	335	336	337	338	339	340	341	342	343
28	344	345	346	347	348	349	350	351	352
29	353	354	355	356	357	358	359	360	361
30	362	363	364	365	366	367	368	369	370
31	371	372	373	374	375	376	377	378	379
32	380	381	382	383	384	385	386	387	388
33	389	390	391	392	393	394	395	396	397
34	398	399	400	401	402	403	404	405	406
35	407	408	409	410	411	412	413	414	415
36	416	417	418	419	420	421	422	423	424
37	425	426	427	428	429	430	431	432	433
38	434	435	436	437	438	439	440	441	442
39	443	444	445	446	447	448	449	450	451
40	452	453	454	455	456	457	458	459	460
41	461	462	463	464	465	466	467	468	469
42	470	471	472	473	474	475	476	477	478
43	479	480	481	482	483	484	485	486	487
44	488	489	490	491	492	493	494	495	496
45	497	498	499	500	501	502	503	504	505
46	506	507	508	509	510	511	512	513	514
47	515	516	517	518	519	520	521	522	523
48	524	525	526	527	528	529	530	531	532
49	533	534	535	536	537	538	539	540	541
50	542	543	544	545	546	547	548	549	550
51	551	552	553	554	555	556	557	558	559
52	560	561	562	563	564	565	566	567	568
53	569	570	571	572	573	574	575	576	577
54	578	579	580	581	582	583	584	585	586
55	587	588	589	590	591	592	593	594	595
56	596	597	598	599	600	601	602	603	604
57	605	606	607	608	609	610	611	612	613
58	614	615	616	617	618	619	620	621	622
59	623	624	625	626	627	628	629	630	631
60	632	633	634	635	636	637	638	639	640
61	641	642	643	644	645	646	647	648	649
62	650	651	652	653	654	655	656	657	658
63	659	660	661	662	663	664	665	666	667
64	668	669	670	671	672	673	674	675	676
65	677	678	679	680	681	682	683	684	685
66	686	687	688	689	690	691	692	693	694
67	695	696	697	698	699	700	701	702	703
68	704	705	706	707	708	709	710	711	712
69	713	714	715	716	717	718	719	720	721
70	722	723	724	725	726	727	728	729	730
71	731	732	733	734	735	736	737	738	739
72	740	741	742	743	744	745	746	747	748
73	749	750	751	752	753	754	755	756	757
74	758	759	760	761	762	763	764	765	766
75	767	768	769	770	771	772	773	774	775
76	776	777	778	779	780	781	782	783	784
77	785	786	787	788	789	790	791	792	793
78	794	795	796	797	798	799	800	801	802
79	803	804	805	806	807	808	809	810	811
80	812	813	814	815	816	817	818	819	820
81	821	822	823	824	825	826	827	828	829
82	830	831	832	833	834	835	836	837	838
83	839	840	841	842	843	844	845	846	847
84	848	849	850	851	852	853	854	855	856
85	857	858	859	860	861	862	863	864	865
86	866	867	868	869	870	871	872	873	874
87	875	876	877	878	879	880	881	882	883
88	884	885	886	887	888	889	890	891	892
89	893	894	895	896	897	898	899	900	901
90	902	903	904	905	906	907	908	909	910
91	911	912	913	914	915	916	917	918	919
92	920	921	922	923	924	925	926	927	928
93	929	930	931	932	933	934	935	936	937
94	938	939	940	941	942	943	944	945	946
95	947	948	949	950	951	952	953	954	955
96	956	957	958	959	960	961	962	963	964
97	965	966	967	968	969	970	971	972	973
98	974	975	976	977	978	979	980	981	982
99	983	984	985	986	987	988	989	990	991
100	992	993	994	995	996	997	998	999	1000

UNIT	UNIT POWER	UNIT	UNIT POWER	UNIT	UNIT POWER	UNIT	UNIT POWER	UNIT	UNIT POWER
	SW4	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE
	SB2	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE
	SB4	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE
	SW2	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE
	SWD	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE	100W, 120V, 1.00A, 120W 4 APPROXIMATE



1. All shrub/ground cover beds to receive a 2" minimum layer of medium fresh fir or hemlock bark mulch.
2. All landscape areas shall be irrigated with an automatic irrigation system using SMART Technology. Landscape Contractor shall evaluate existing irrigation system and submit a Design/Build Irrigation Plan modification of existing system to Owner and Landscape Architect for review.

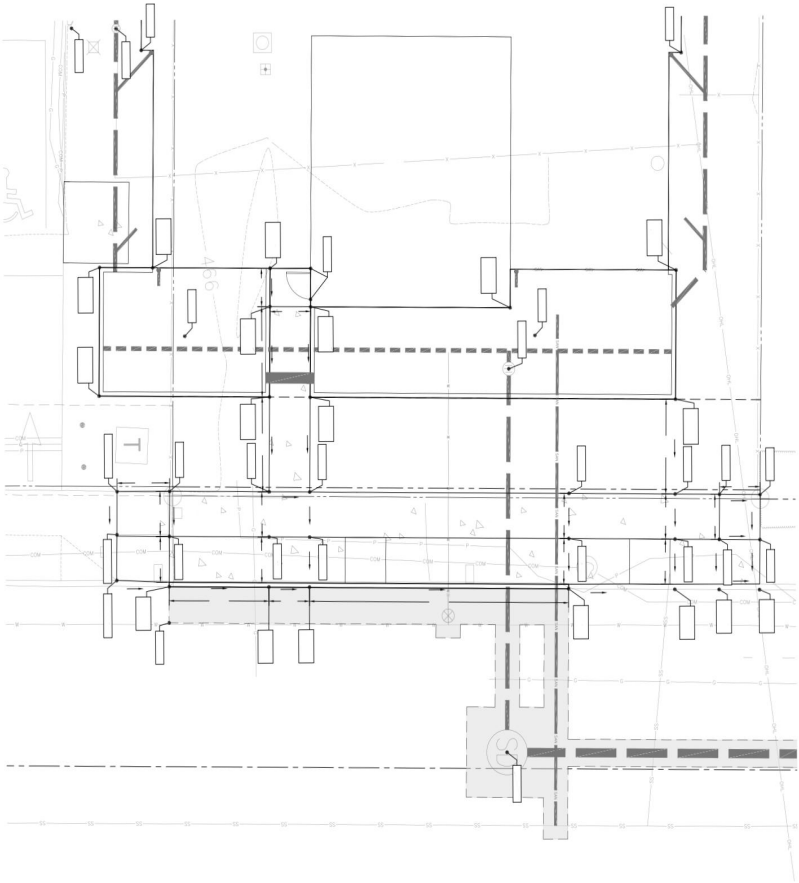
Site Area	60,591 s.f.
Open Space required (15%):	7,569 s.f.
Open Space proposed:	11,131 s.f. (22%)



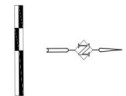
CONSTRUCTION NOTES:

- 1 CONSTRUCT STANDARD CURB PER DETAIL ON SHEET C5.0.
SEE GRADING ON SHEETS C2.0 THRU C2.2.
- 2 CONSTRUCT CONCRETE SIDEWALK PER DETAIL ON SHEET
C5.0. SEE GRADING ON SHEETS C2.0 & C2.1.
- 3 SAWCUT EXISTING CONCRETE AND/OR ASPHALT AND
REMOVE AS REQUIRED AND DIRECTED.

- 4 CONSTRUCT ASPHALT PAVEMENT SECTION PER DETAIL ON
SHEET C5.0 OR MATCH EXISTING, WHICHEVER IS THICKER.
SEE GRADING ON SHEET C2.2.



- LEGEND**
- EX = EXISTING
 - SW = SCHEDULE
 - TC = TOP OF CURB
 - RC = BOTTOM OF CURB
 - RA = ROAD RIGHT-OF-WAY
 - TR = TOP OF RAIL
 - BR = BOTTOM OF RAIL



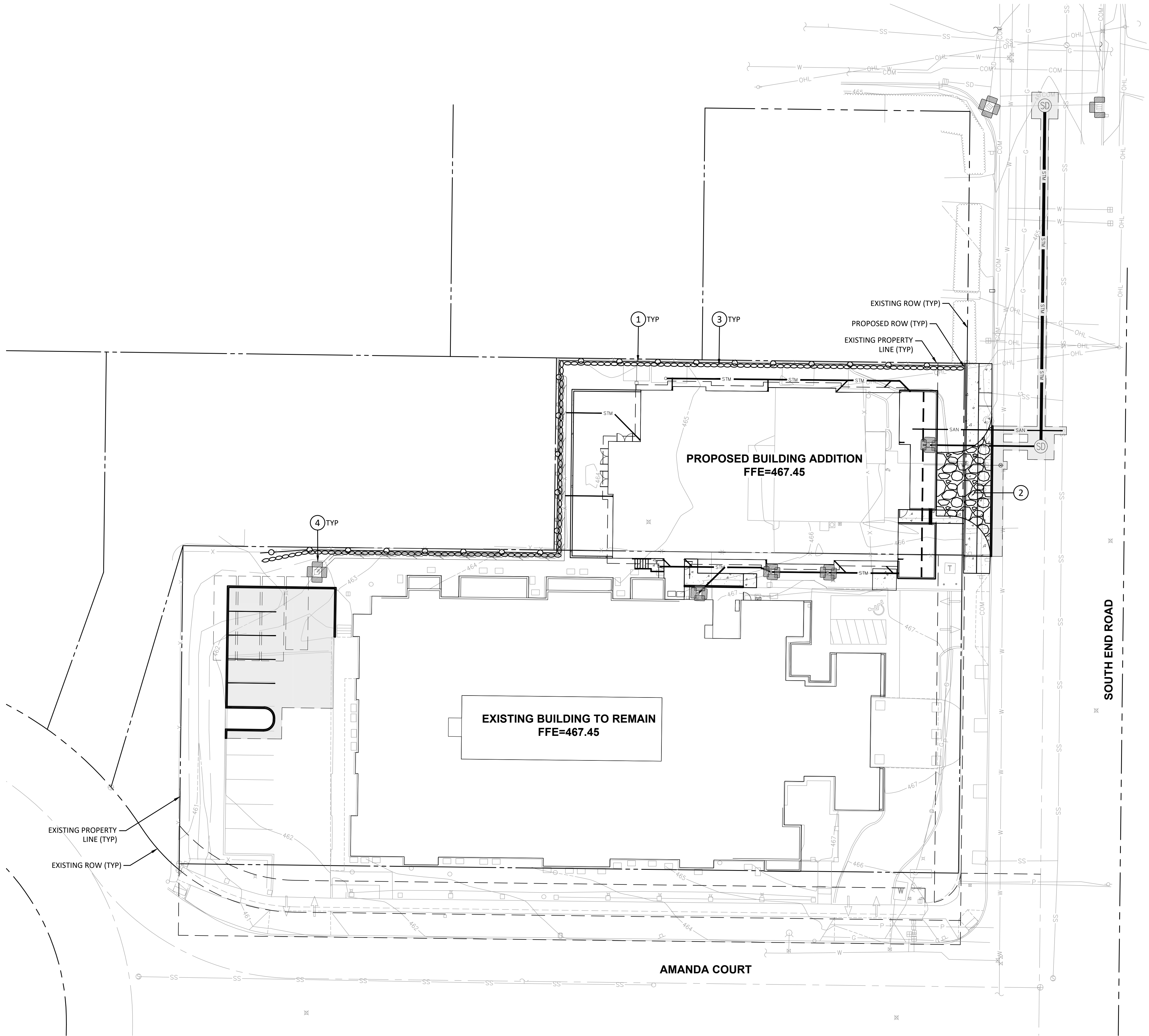


REGISTERED PROFESSIONAL
ENGINEER
77,944
OREGON
JAN. 3, 2011
BEAU J. BRAMAN
EXPIRES: 12/31/2019

DATE
12/20/2019
REVISED DATE
SHEET
C2.2

lenity
architecture, inc.

3560 Madia Court SE, Salem, Oregon 97301
P 503 399 1000 F 503 399 0565 www.lenityarchitecture.com



CONSTRUCTION NOTES:

- 1 INSTALL CONSTRUCTION FENCE PER DETAIL ON SHEET C5.2.
- 2 INSTALL CONSTRUCTION ENTRANCE PER DETAIL ON SHEET C5.2.
- 3 INSTALL WATTLES AT CATCH SLOPE LIMITS PER DETAIL ON SHEET C5.2.
- 4 INSTALL INLET PROTECTION PER DETAIL ON SHEET C5.2.

©2019 Lenity Architecture

EROSION CONTROL PLAN

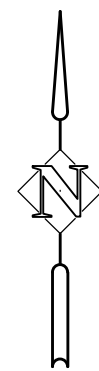
**RIVER TERRACE
BUILDING ADDITION**
650 SOUTH END ROAD
OREGON CITY, OR 97045

lenity
architecture, inc.
3900 Mills Court SE, Salem, Oregon 97301
P: 503.365.1131 F: 503.365.1131 www.lenityarch.com

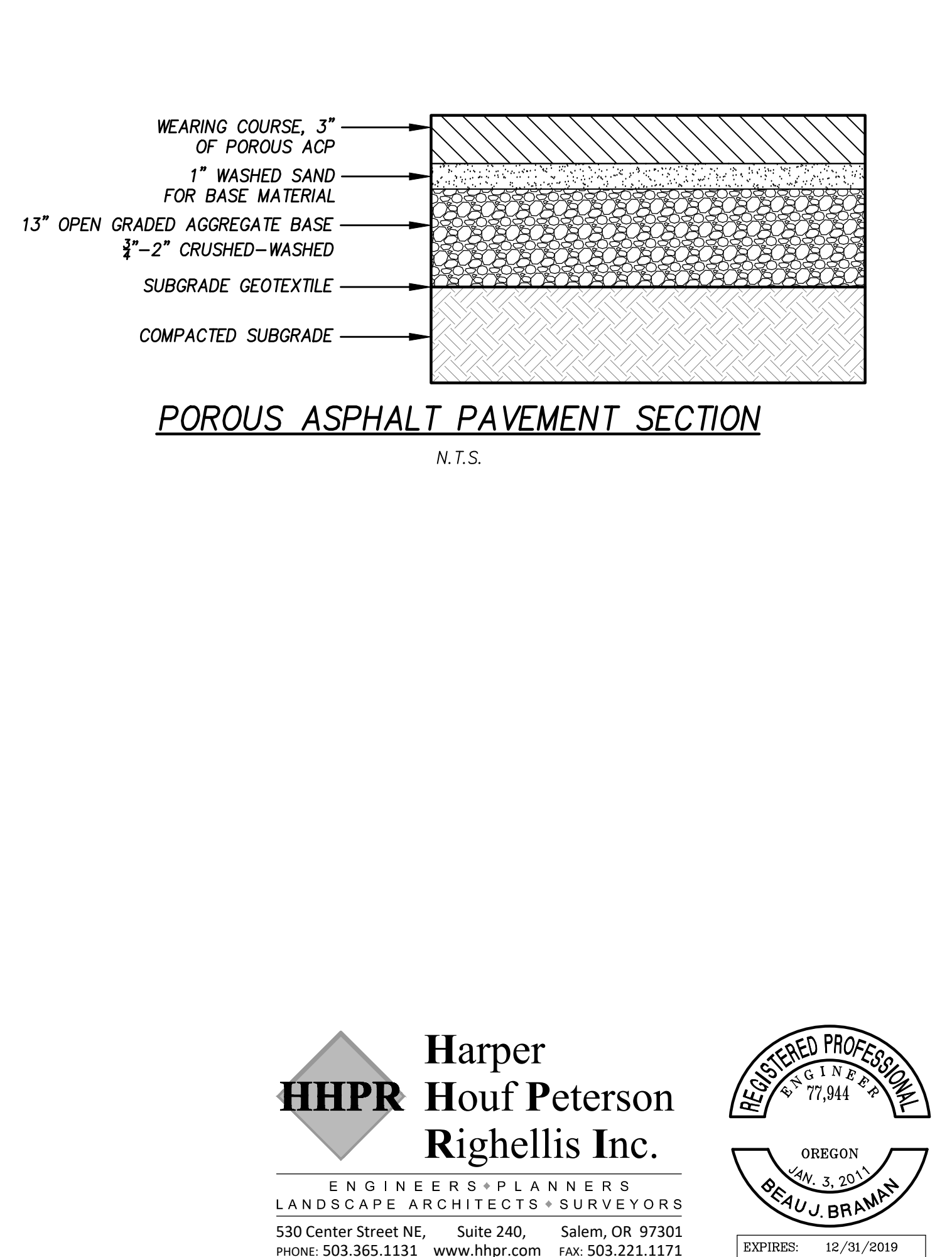
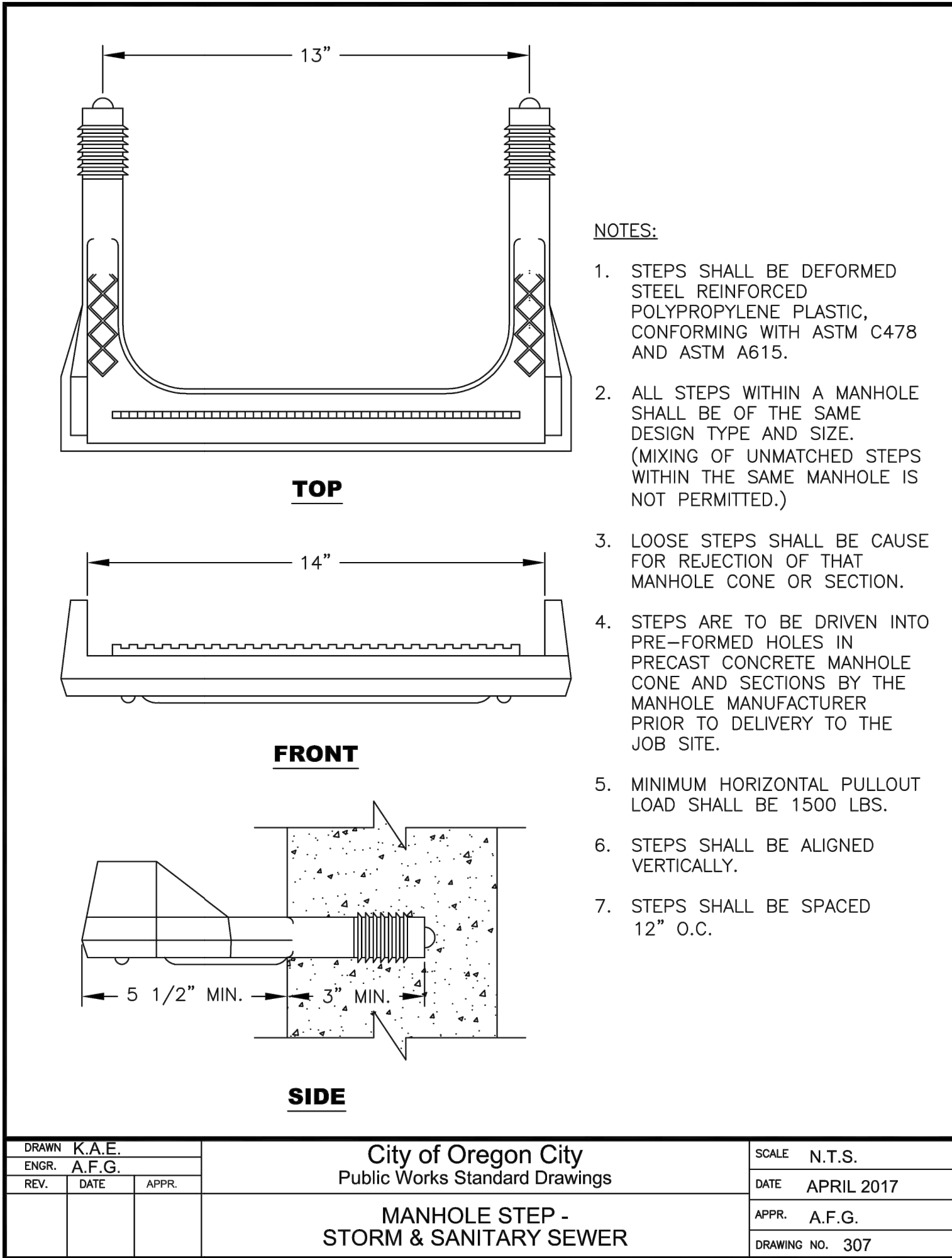
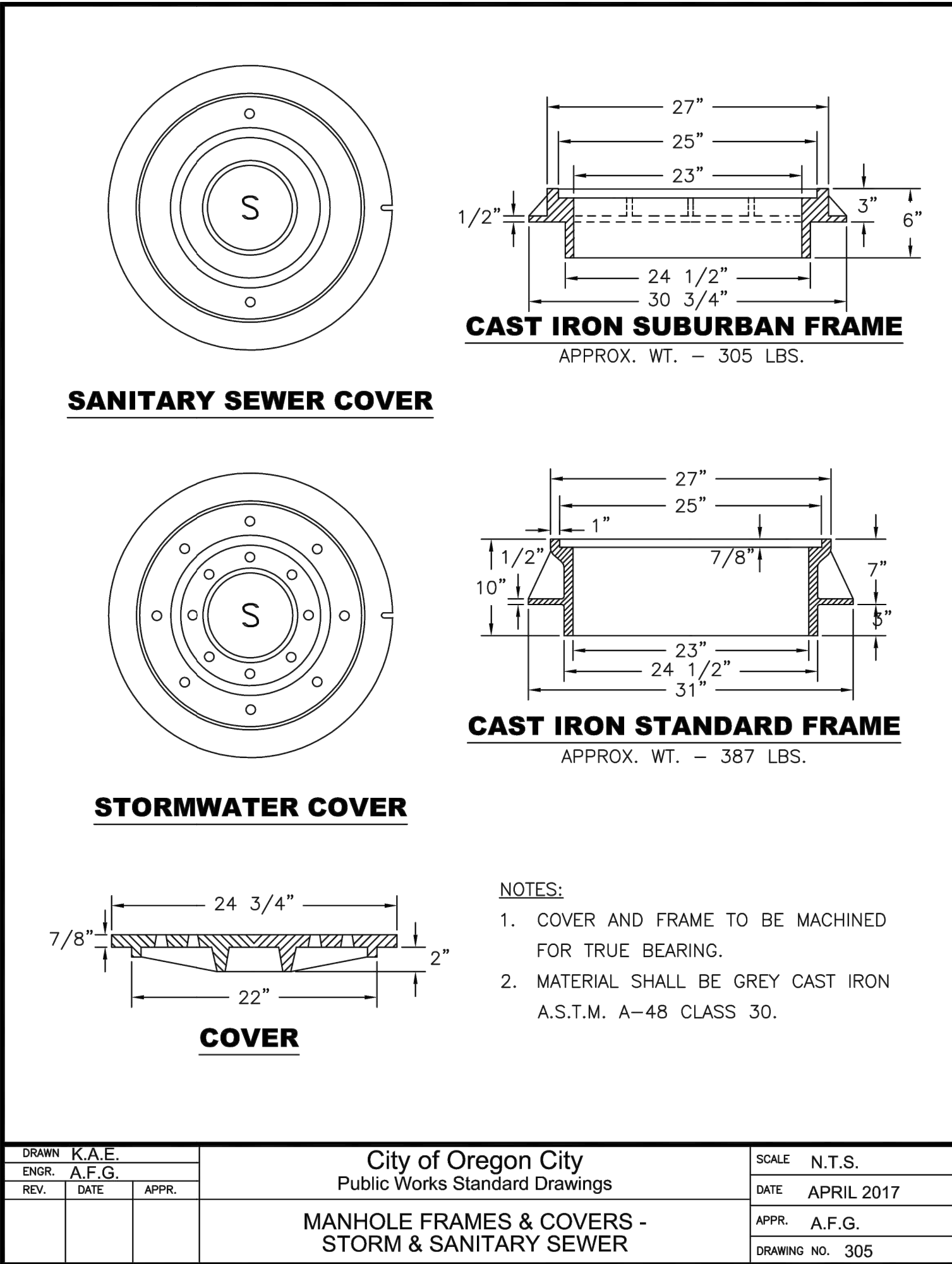
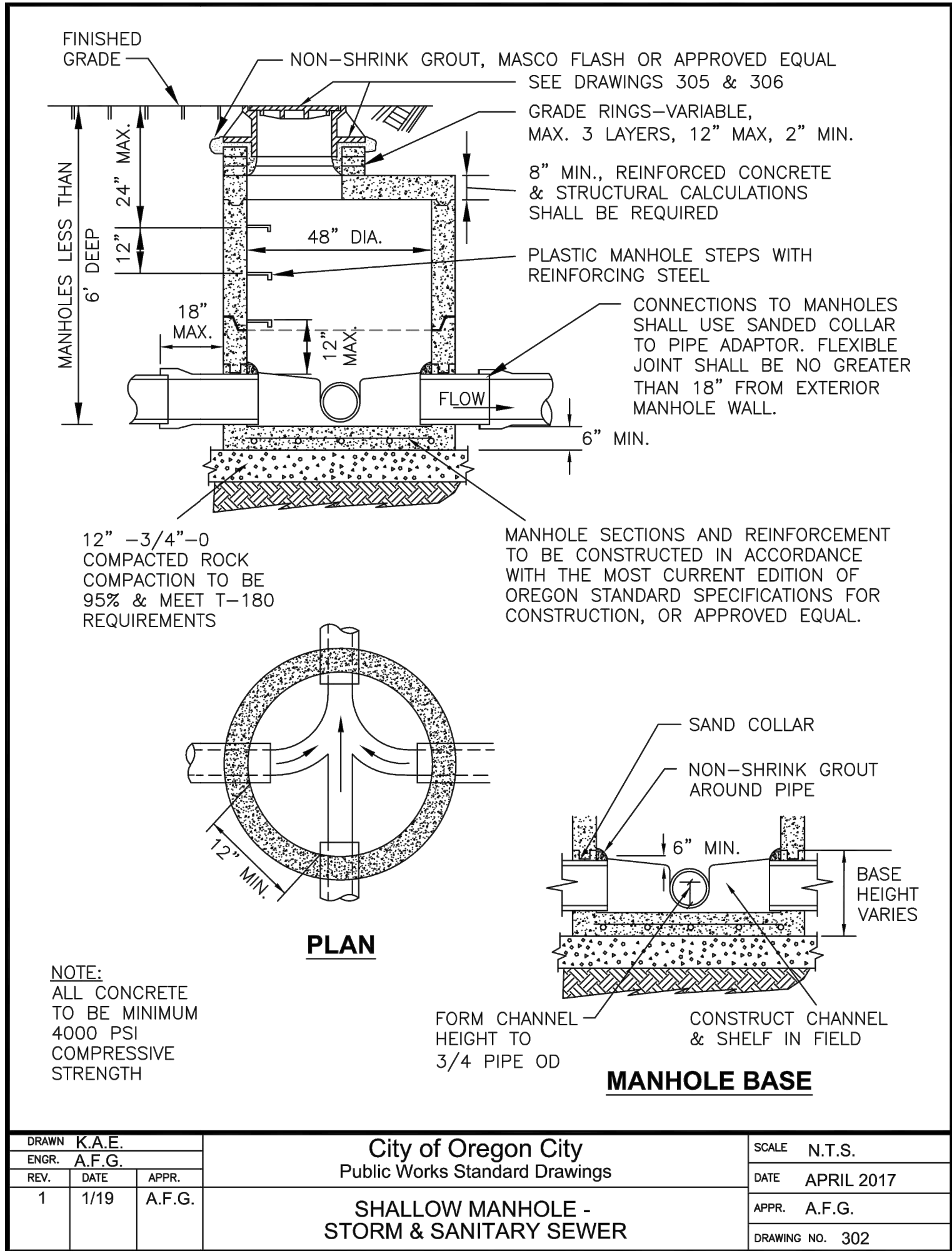
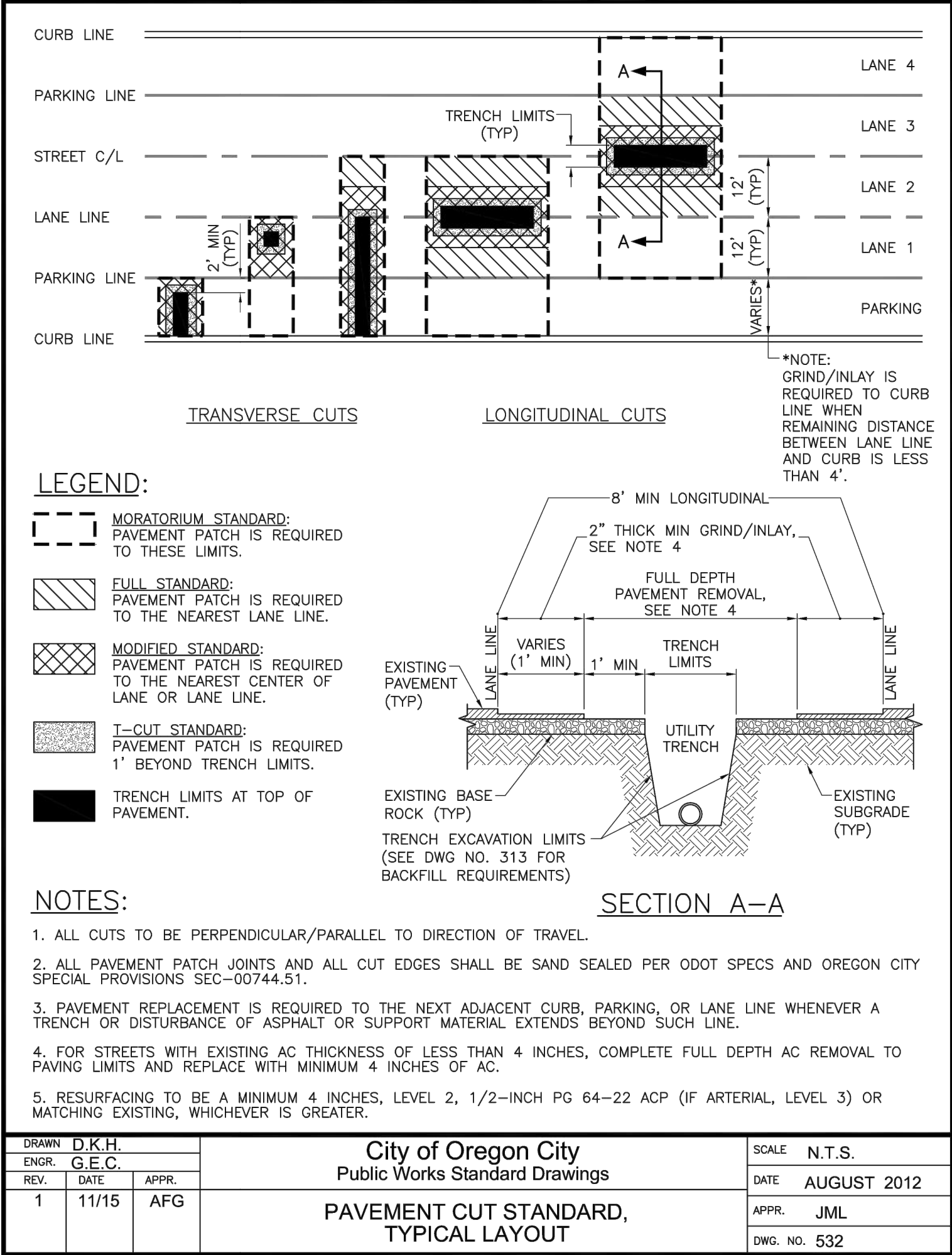
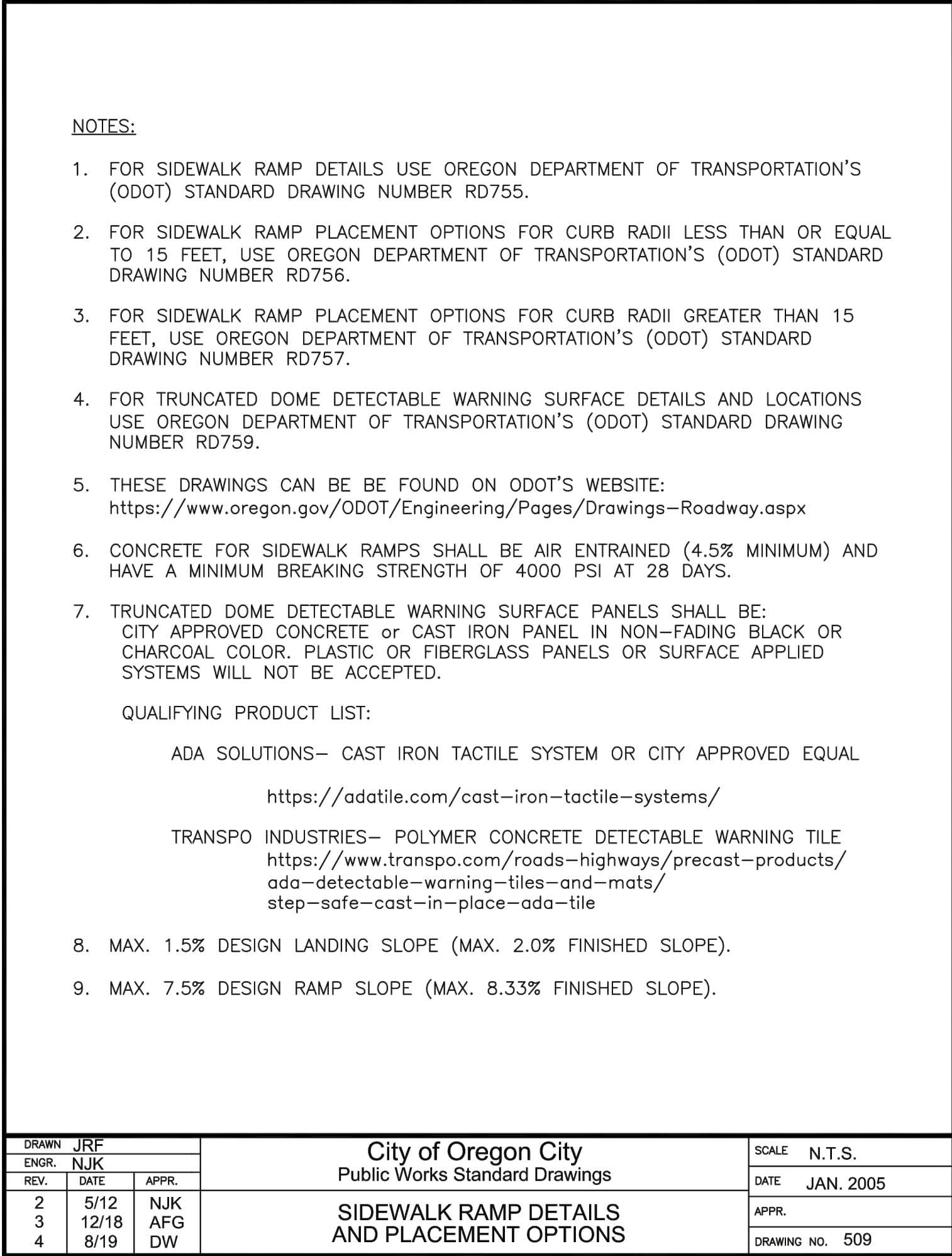
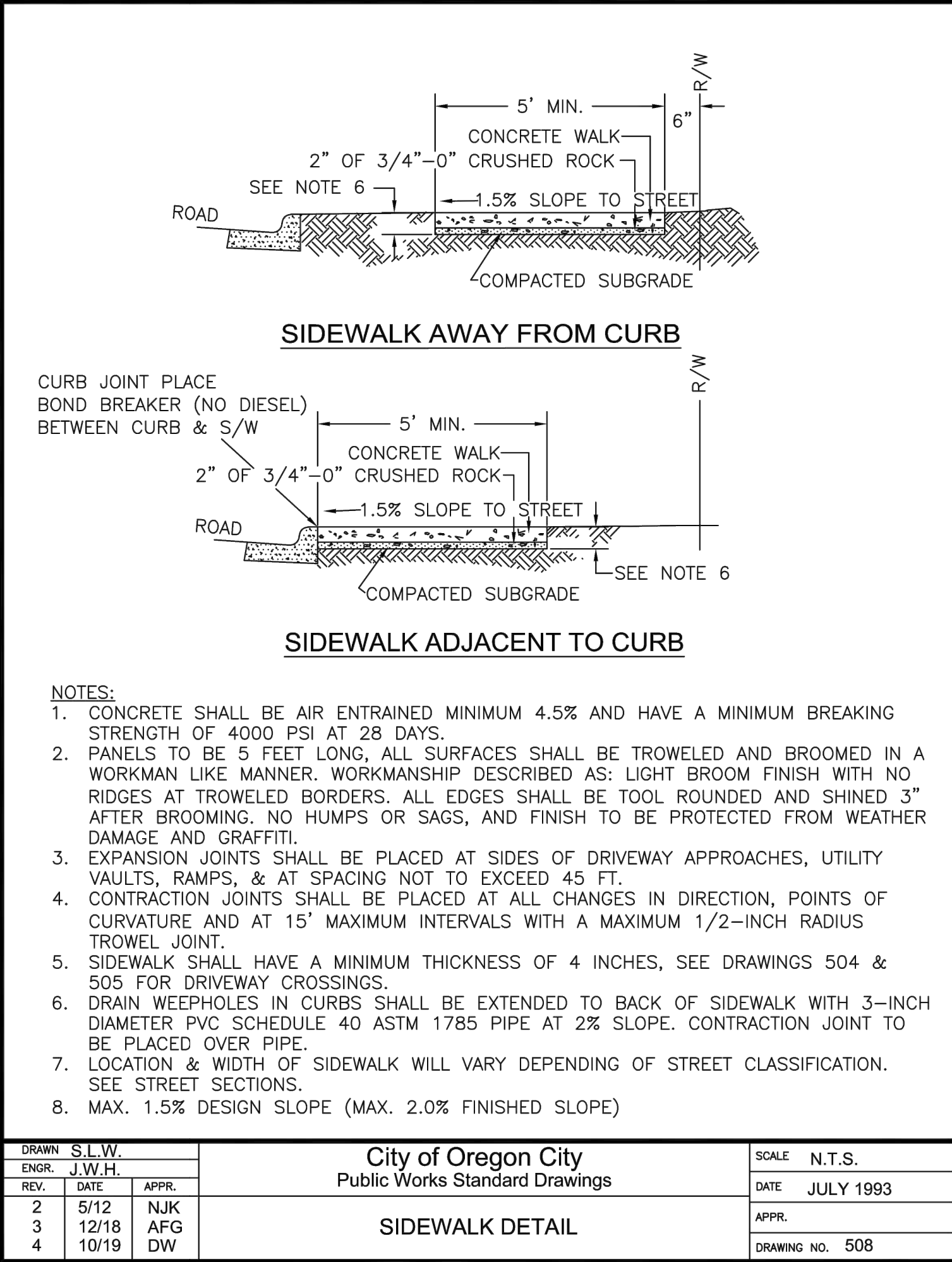
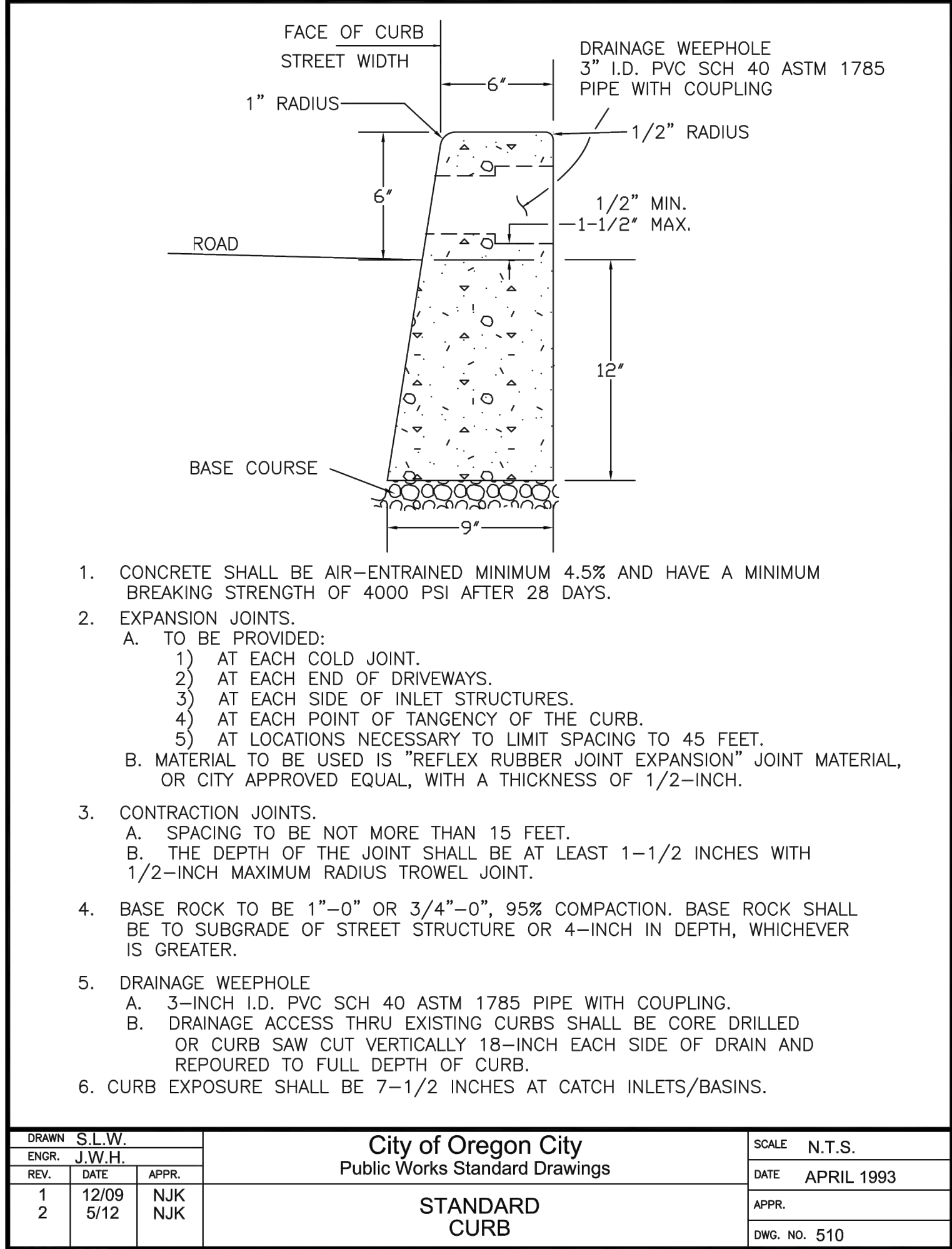
HHPR Harper
Houf Peterson
Righellis Inc.
ENGINEERS • PLANNERS
LANDSCAPE ARCHITECTS • SURVEYORS
530 Center Street NE, Suite 240, Salem, OR 97301
PHONE: 503.365.1131 www.hhpr.com FAX: 503.221.1171

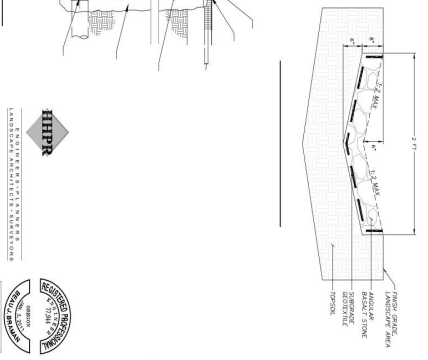
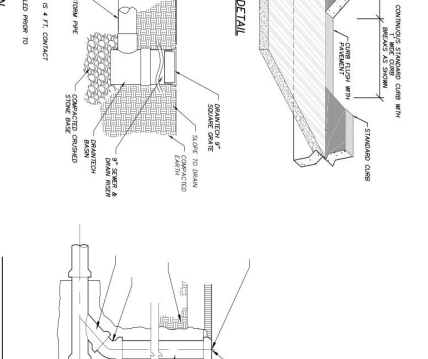
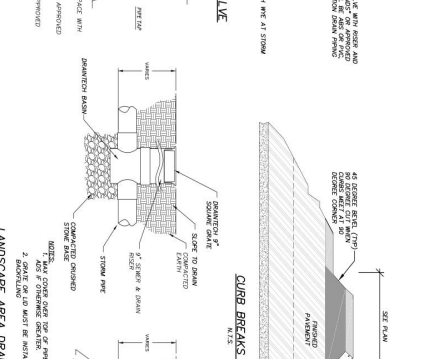
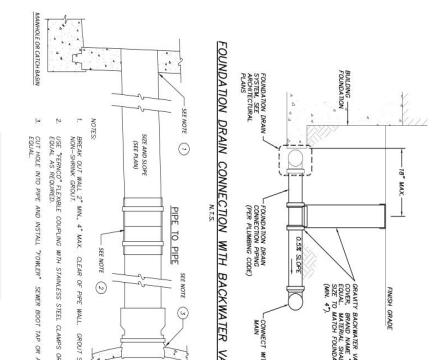
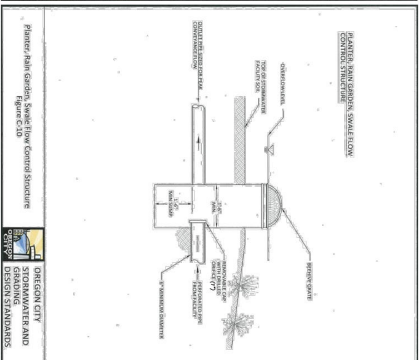
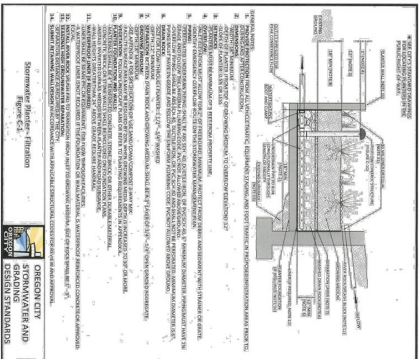
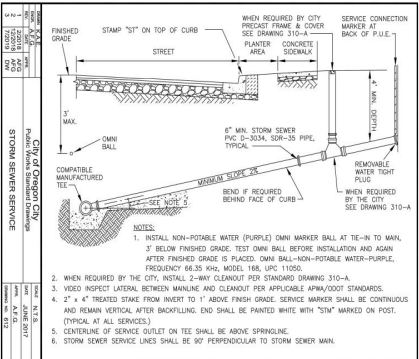
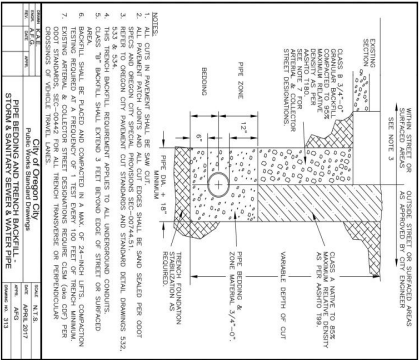


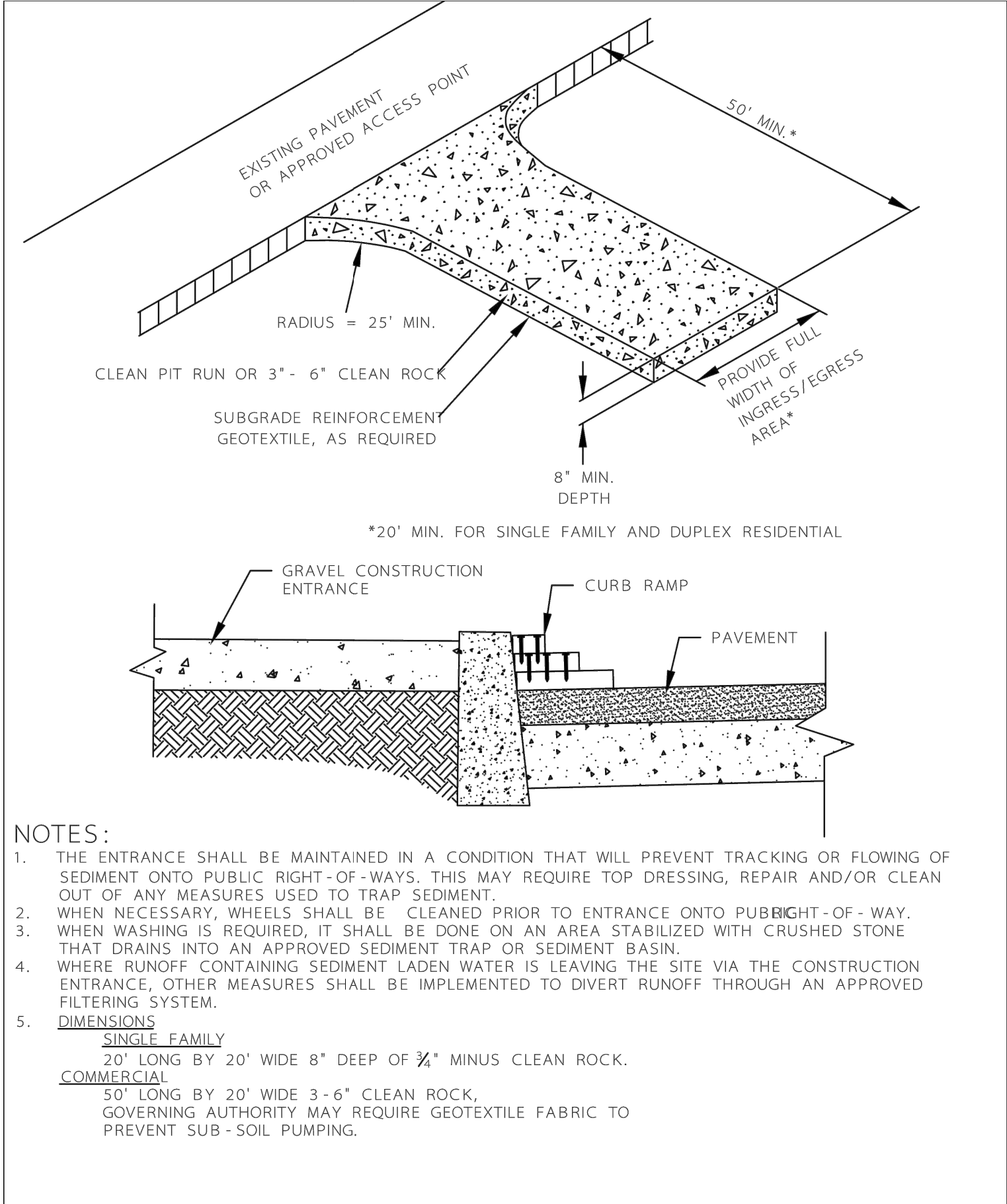
0 10 20 40
SCALE: 1" = 20'



DATE	12/20/2019
REVISED DATE	
SHEET	C4.0



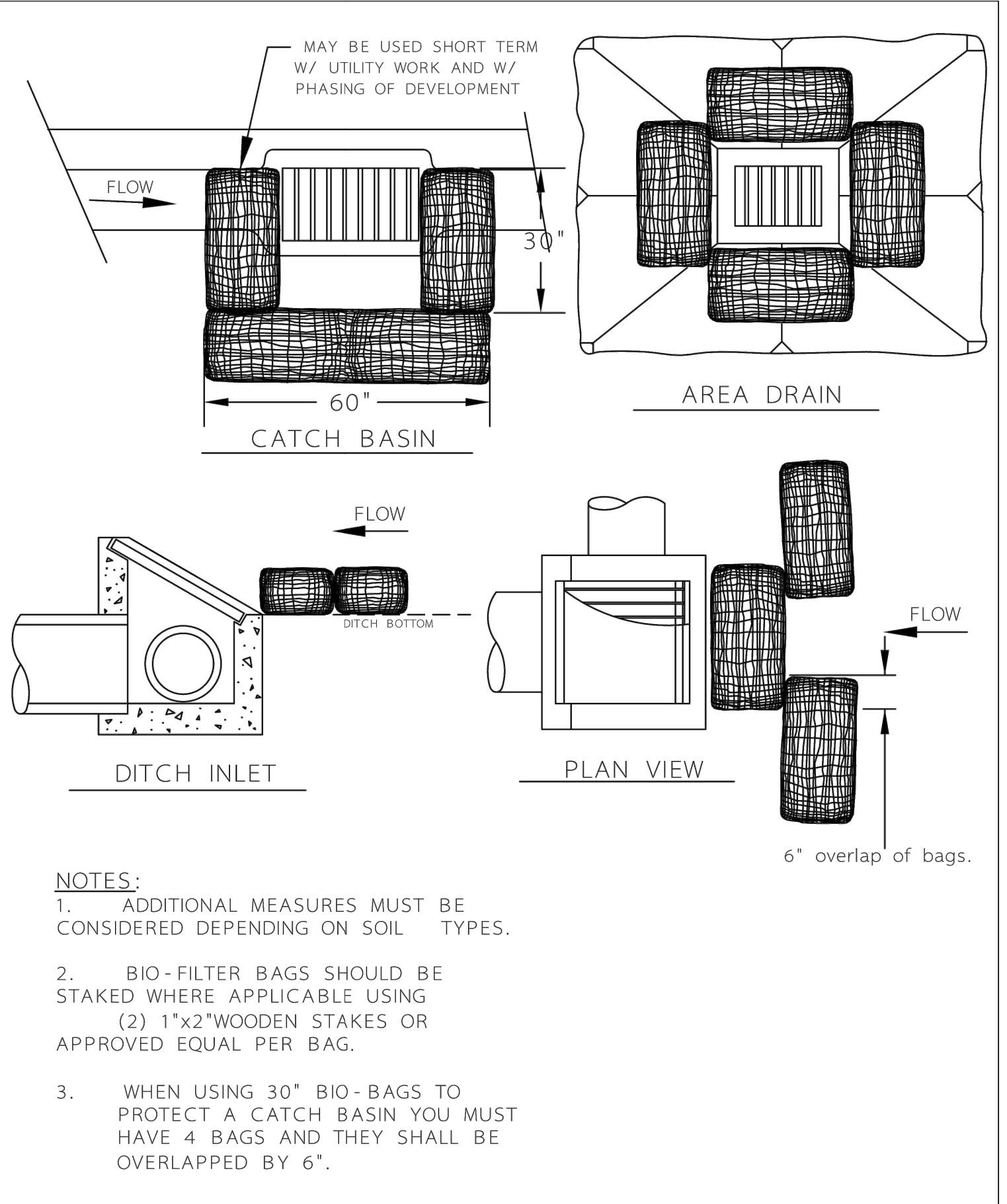




CONSTRUCTION ENTRANCE

DETAIL DRAWING 4-13

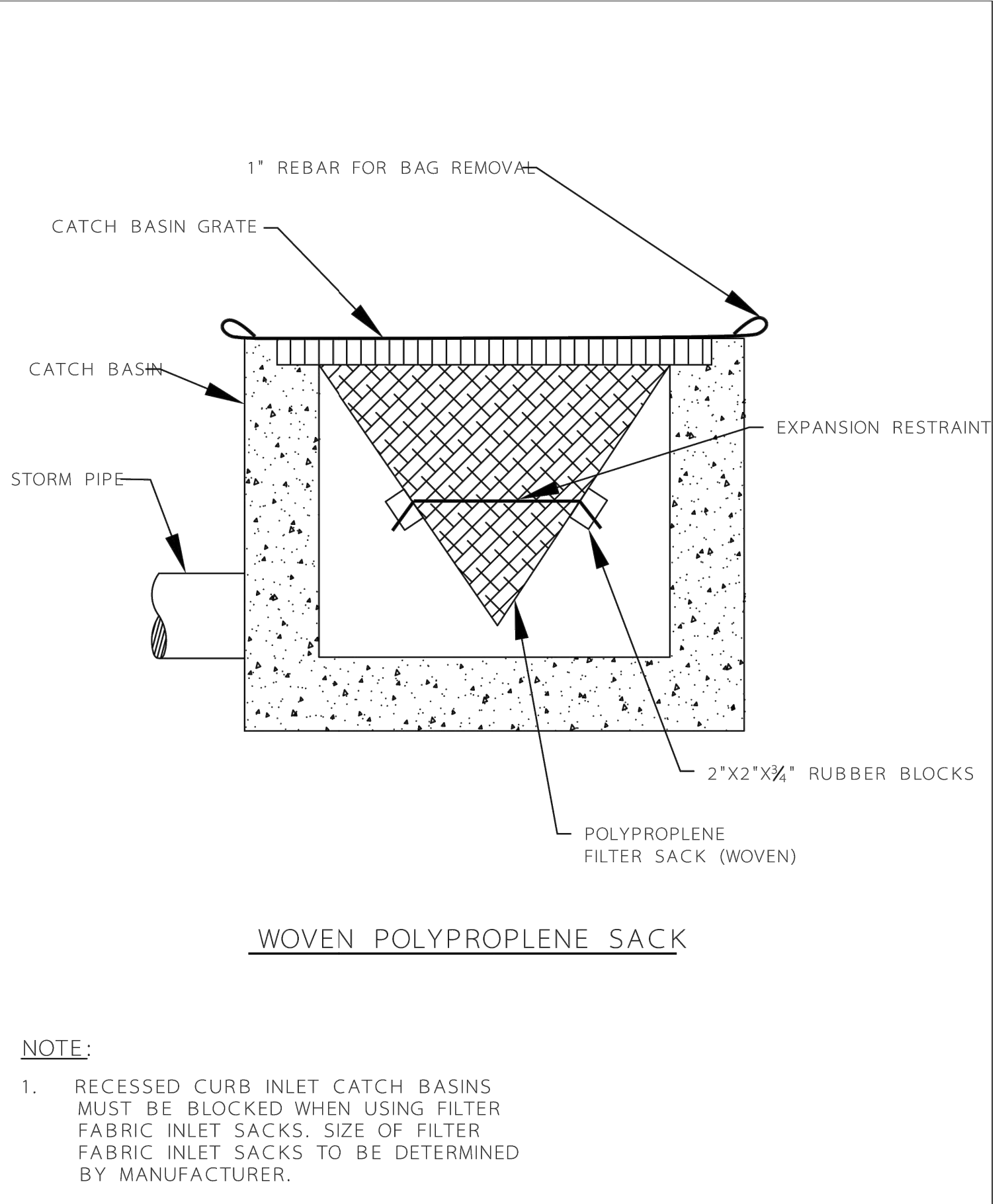
REVISED 01-09



INLET PROTECTION TYPE 4

DETAIL DRAWING 4-18

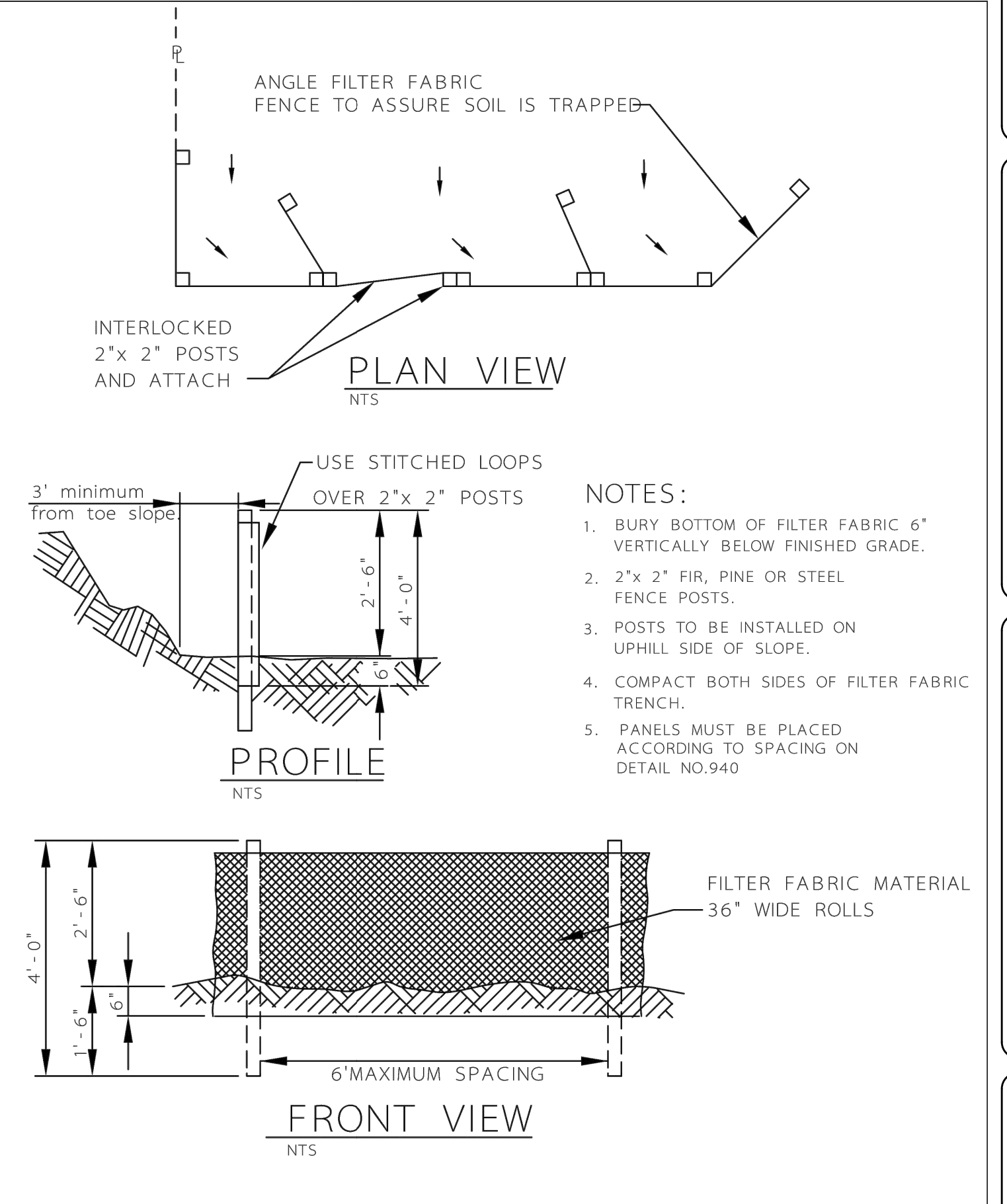
REVISED 01-09



INLET PROTECTION TYPE 5

DETAIL DRAWING 4-19

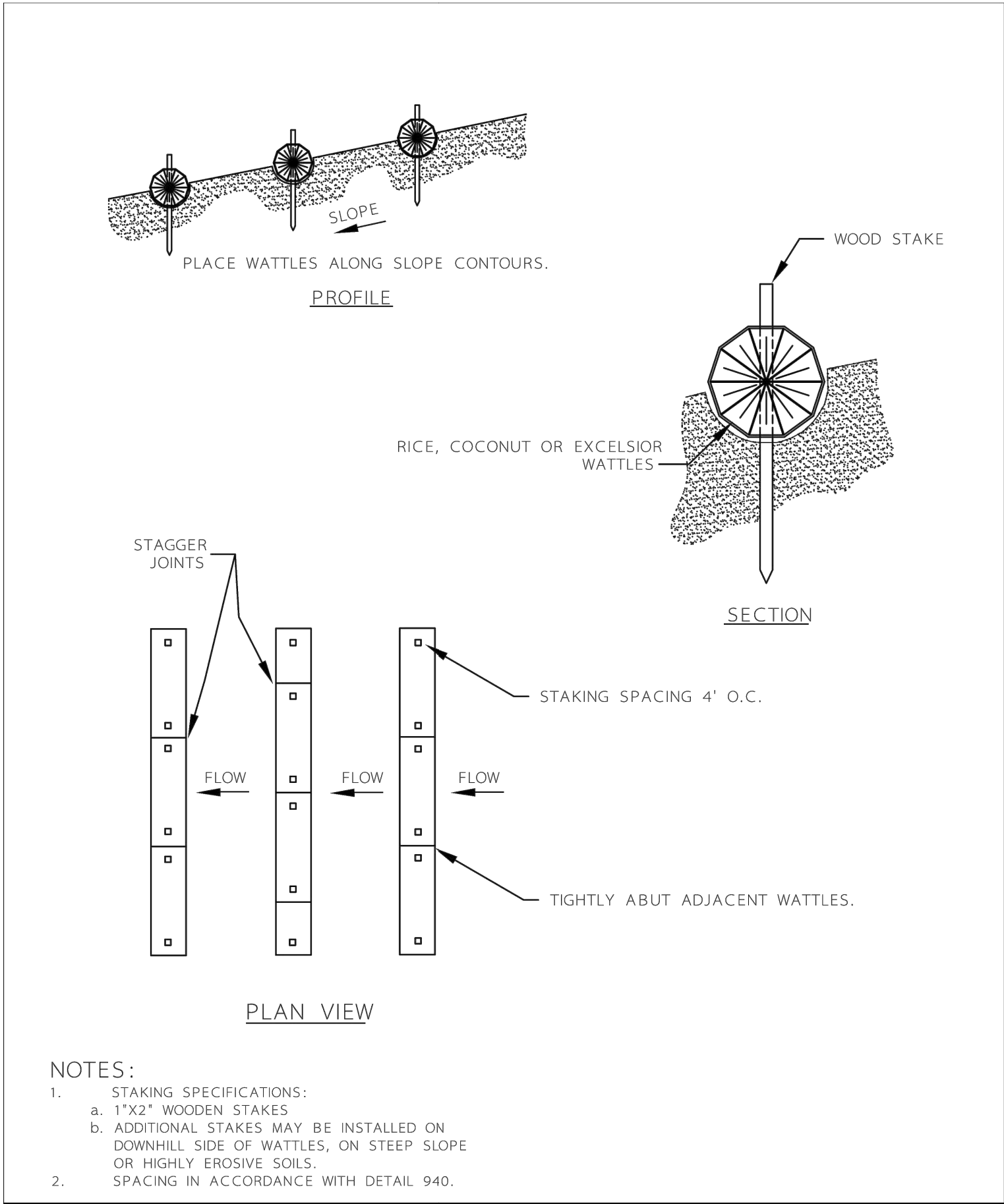
REVISED 01-09



SEDIMENT FENCE

DETAIL DRAWING 4-23

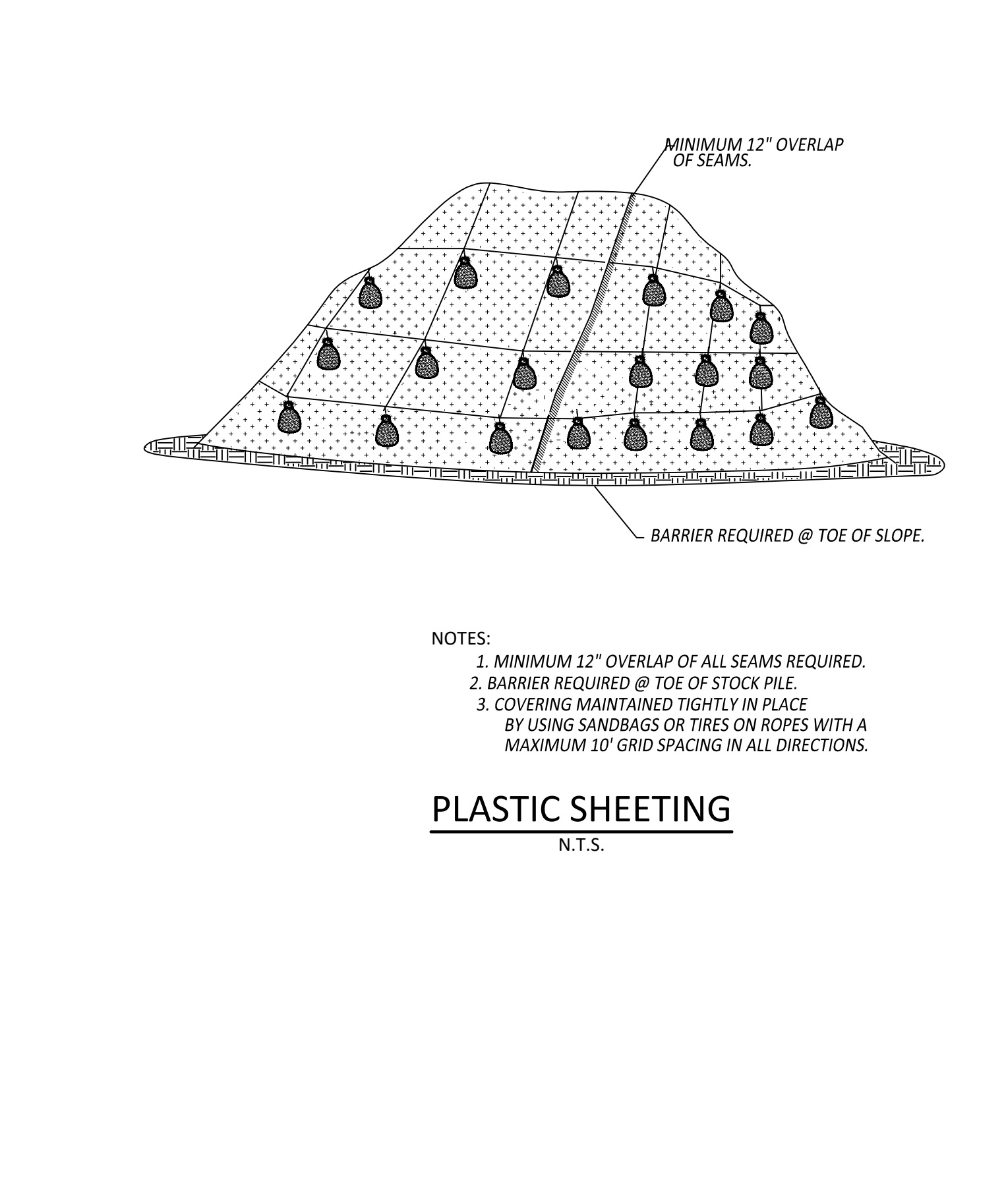
REVISED 01-09



WATTLES

DETAIL DRAWING 4-27

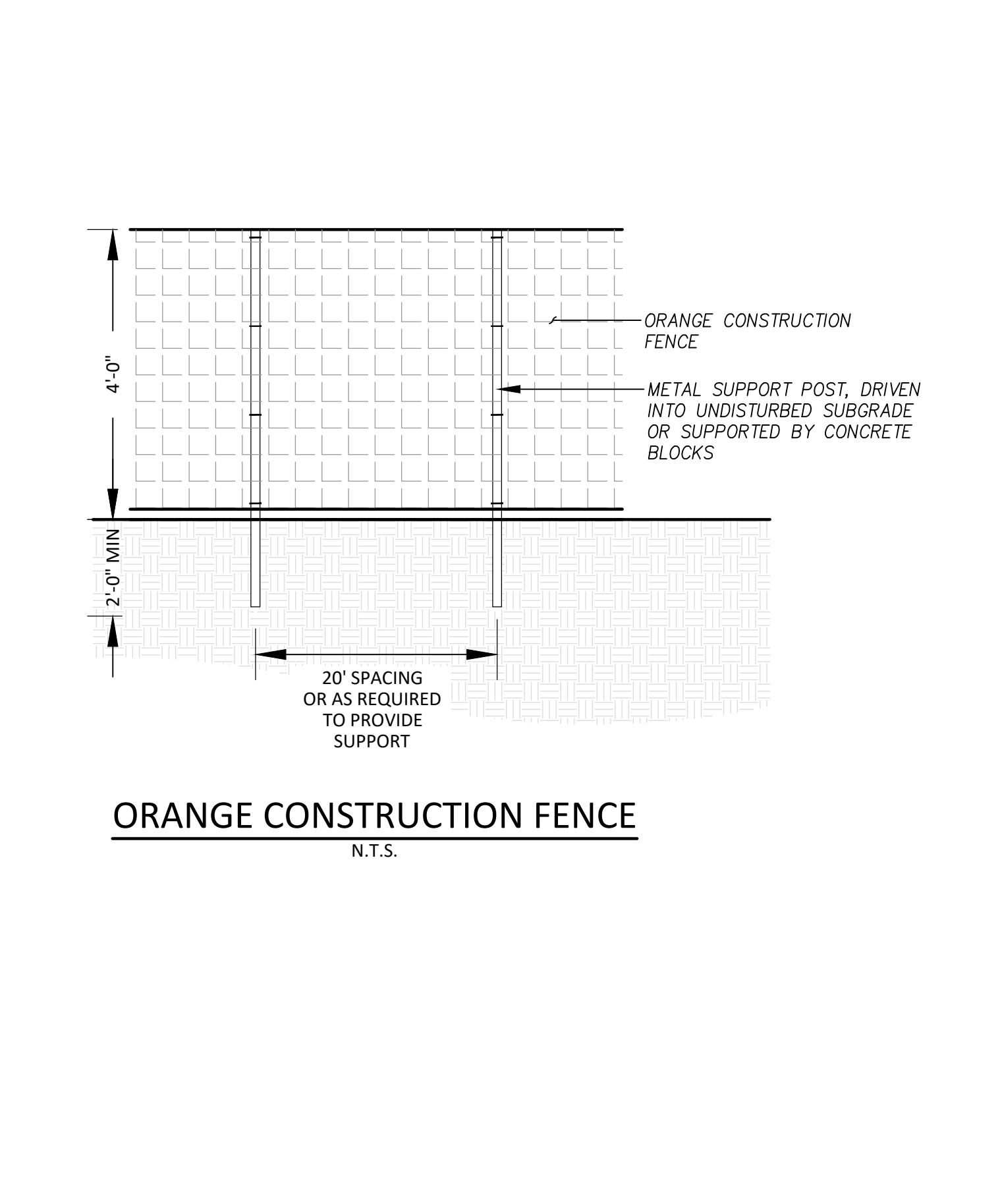
REVISED 01-09



PLASTIC SHEET

DETAIL DRAWING 4-28

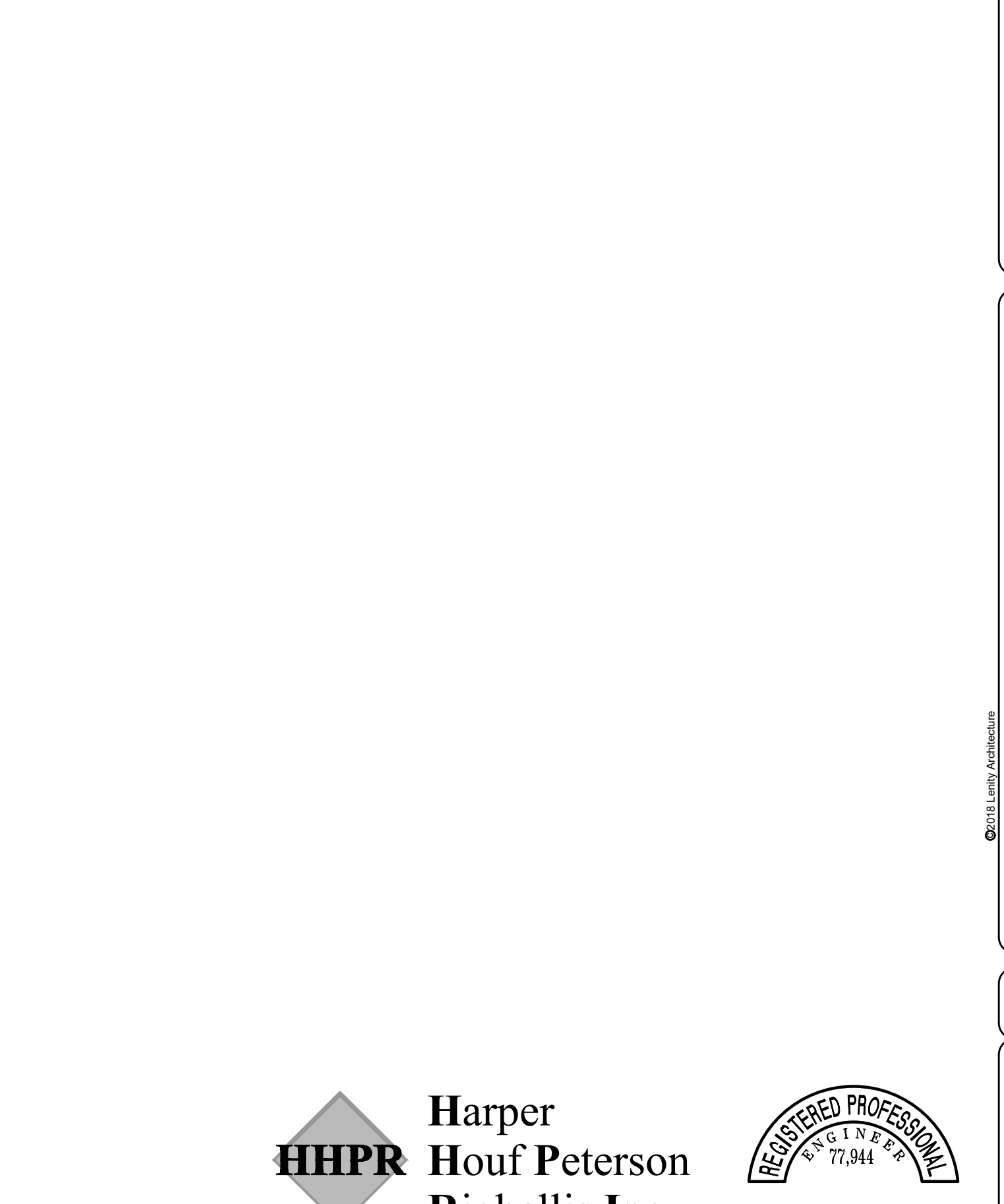
REVISED 01-09



ORANGE CONSTRUCTION FENCE

DETAIL DRAWING 4-29

REVISED 01-09



SEDIMENT FENCE

DETAIL DRAWING 4-23

REVISED 01-09

\\saw12192019 10:48 AM daniel@hpr.com [miscellaneous civil projects]mwp-21 [river terrace memory care]mwp-21 - c5.0 - civil details.dwg C5.2

HHPR Harper Houf Peterson Righellis Inc.

ENGINEERS • PLANNERS
LANDSCAPE ARCHITECTS • SURVEYORS

530 Center Street NE, Suite 240, Salem, OR 97301
PHONE: 503.365.1131 www.hhpr.com FAX: 503.221.1171

REGISTERED PROFESSIONAL ENGINEER
No. 77,944
ORIGON
JAN. 3, 2011
BEAU J. BRAMAN
EXPIRES: 12/31/2019

lenity architecture, inc.
3800 Mills Court SE, Salem, Oregon 97321
P: 503.365.1131 F: 503.221.1171

RIVER TERRACE
BUILDING ADDITION
650 SOUTH END ROAD
OREGON CITY, OR 97045

CIVIL DETAILS

DATE
12/20/2019

REVISED DATE

SHEET
C5.2



City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Meeting Agenda Citizen Involvement Committee

Monday, December 2, 2019

7:00 PM

Commission Chambers

1. Call to Order

2 Presentations

- 2a. Land Use- Memory Care Addition, 914/950 South End Rd
- 2b. Development Services City Code Amendments to Sanitary Sewer and Overhead Utilities- Josh Wheeler PE, Assistant City Engineer & Bob Balgos PE, Project Engineer
- 2c. Molalla Ave Streetscape Update- John Lewis, Public Works Director

3. Public Comments

4. Staff Liaison Updates

4a Staff Liaison Update

Attachments: [Liasion Report](#)
[How to Understand Public Notices and Make Effective Public Comments Presentation](#)
[How to Prepare and Mail Neighborhood Association Postcards](#)
[Boards and Commissions-Apply Online](#)

5. General Business

- 5a. Amendments to OCMC 12.30- Citizen Involvement Committee

6. Roundatable

6a. Upcoming Neighborhood Association Meetings

Send all 2020 neighborhood meeting dates and any updated contact information to Kesi McNall kmcnall@orc.org for city website.

Barclay Hills Neighborhood

Chair: Karla Laws, karla.laws@gmail.com

Vice Chair: Aaron Wolf, wolftune@gmail.com

Treasurer: Janice Morris, mad91058@msn.com

Secretary: OPEN

CIC Primary Representative: Janice Morris, mad91058@msn.com

CIC Alternate Representative: karla.laws@gmail.com

Meeting Information: Meetings held the second Tuesday of January, March, May, July, September, and November beginning at 7:00 p.m.

2019 General Meeting Dates: January 9, March 13, May 8, July 9, September 10, and November 12.

Located: St. John the Apostle Cemetery, 445 Warner Street, Oregon City, OR 97045

Canemah Neighborhood

Chair: Ken Baysinger, k.baysinger@comcast.net

Vice Chair: Bob Siewert, siewert.bob@gmail.com

Secretary: Ben Deitch, bfdeitch@gmail.com

Treasurer: Terry Bee Enstad, Thebee29@gmail.com

CIC Primary Representative: Dennis Anderson, GO2Danderson@gmail.com

CIC Alternate Representative: Linda Baysinger, team.baysinger@comcast.net

Canemah Cemetery Association: Mark Tacoma, 503-655-2192

Meeting Information: 2019 TBD

Meeting Time: 7:00 p.m.

Meeting Located: Community Room at Oregon City Library

Steering Committee Meetings:

Meets on the second (2nd) Wednesday in the month preceding each General Membership meeting held at the Community Room at the Oregon City Library. 2019 Meetings: Feb 21, April 18, June 20, September 19, November 21

Caufield Neighborhood

Chair: Robert Malchow, r.malchow@comcast.net

Vice Chair: Kristina Browning, kristina@PortlandHomeGal.com

Secretary/Treasurer: Tori Skipper, t.skipper@bhhsnw.com

CIC Primary Representative: John Kies, jkies1@gmail.com

CIC Alternate Representative: Robert Malchow, r.malchow@comcast.net

Meeting Information: Held the fourth Tuesday of January (28th), March (26th), May (28th- may change), September (24th), and November (26th)

Located: Oregon City School District's Facilities and Maintenance Center (Bus Barn), 14551 Meyers Road, Oregon City at 6:45 PM.

Gaffney Lane Neighborhood

Chair: Amy Willhite, awillhit@yahoo.com

Secretary/Treasurer: Angela Wright, englishimport@gmail.com

CIC Primary Representative: Amy Willhite, awillhit@yahoo.com

CIC Alternate Representative: Vacant

Meeting Information: Meeting Information: Held the second Thursday of odd months (Nov. 14 2019, Jan. 9 2020, March 12 2020, May 14 2020, July 9 2020, Sep. 10 2020, Nov. 12 2020).

Located: The Meadows Courtyard, 13637 Garden Meadows Drive, Oregon City, 7:00PM

Hazel Grove-Westling Farm Neighborhood The Hazel Grove-Westling Farm Neighborhood is currently inactive. If you are interested in helping to reactivate this neighborhood please contact Christina Robertson-Gardiner (crobertson@orc.org). People requesting a neighborhood meeting for Land use applications should contact CIC staff to schedule a meeting with the CIC.

Hillendale Neighborhood

Chair: Vacant

Vice Chair: Vacant

Land Use Chair: William Gifford, william@smallflags.com

Secretary/Treasurer: Joyce Gifford, Joyce@smallflags.com

CIC Primary Representative: Roy Harris, royandanna@centurylink.net

CIC Alternate Representative: Ray Stobie, drakeel@gmail.com

General Meetings: First Tuesday in January, April, July, and October

Steering Committee Meetings: TBD

Located: Living Hope Church - 19691 Meyers Road, Oregon City, 7:00PM

McLoughlin Neighborhood

Chair: Cameron McCredie, cmccredie@windermere.com

Vice Chair/Land Use: Denyse McGriff, guttmcg@msn.com

Land Use: TBD

Secretary: Josh Habre, mjshhbr@gmail.com

Treasurer: Jesse Buss, jessebuss@gmail.com

CIC Primary Representative: Denise Beasley, dbeasleym@gmail.com

CIC Alternate Representative: Rita Mills, nprita3@outlook.com

Meeting Information:

General Meetings: January 3rd 2019 - Library, March 7th 2019 - Fire House*, May 2nd 2019 - Library, July 10th 2019 - Library, September 5th 2019 Library, November 7th 2019 (Electron of New Steering Committee Members) - Library.

Located: Oregon City Public Library - Community Room, 606 John Adams

St. at 7:00 PM

Steering Committee Meetings: Typically the first Thursday of February, April, June, August, and October.

Located: *Fire Station, 7th & John Adams, Neighborhood Conference Room, Basement at 7:00 PM

Park Place Neighborhood

Chair: Greg Stone, gpstone72@yahoo.com

Vice Chair: Steve Van Haverbeke, steve@vanhaverbeke.org

Treasurer: Ray Renken, rbrenken@comcast.net

Secretary: Lisa Novak, novak0929@gmail.com

CIC Primary Representative: Steve Van Haverbeke,
steve@vanhaverbeke.org

CIC Alternate Representative: Greg Stone, gpstone72@yahoo.com

Meeting Information:

General Meetings: 6:30 PM - February 25th 2019, May 20th 2019 and October 21st 2019

Located: Oregon City View Manor, Community Center, 280 S. Longview Way, Oregon City, OR 97045

Steering Committee Meetings: 6:30 PM - January 21st 2019, March 18th 2019, April 15th 2019, August 19th 2019, September 16th 2019 and November 18th 2019

Rivercrest Neighborhood

Chair: Ed Lindquist, ed-lindquist@msn.com

Vice Chair: Karin Morey, Karin.morey@gmail.com

Secretary/Treasurer Violet Stephenson, hrvrmstephenson@gmail.com

CIC Primary Representative: Karin Morey, karin.morey@gmail.com

CIC Primary Representative: Vacant

Meeting Information:

Steering Committee Meeting: February 14th, May 16th, October 17th.

Located: First Presbyterian Church, 1321 Linn Avenue, Oregon City, 7:00 PM

General Meeting: March 21st, June 20th, September 19th, November 21st.

Located: First Presbyterian Church, 1321 Linn Avenue, Oregon City, 7:00 PM

South End Neighborhood

The Southend Neighborhood is currently inactive. If you are interested in helping to reactivate this neighborhood please contact Christina Robertson-Gardiner (crobertson@orc.org). People requesting a neighborhood meeting for Land use applications should contact CIC staff to schedule a meeting with the CIC.

Tower Vista Neighborhood

Tower Vista Neighborhood Association

Chair: Vern Johnson, verndonnajohnson@yahoo.com
Secretary: Monica Mumper
CIC Representative: Vern Johnson, verndonnajohnson@yahoo.com
Meetings: Meetings are held in conjunction with the Hillendale
Neighborhood Association.

Two Rivers Neighborhood
Chair: Bryon Boyce, bryony@birdlink.net, (503) 655-4457
Secretary: Margie Hughes, margiehughes1@aol.com
CIC Primary Representative: Vacant
CIC Alternate Representative: Vacant
Meetings: Held the fourth Wednesday of January, April, July, and October
at 7:00 PM
Located: Rivershore Bar & Grill, 1900 Clackamas Drive, Oregon City, OR
97045

Citizen Involvement Committee
December 2, 2019, January 6, 2020, February 3, 2020, March 2, 2020,
April 6, 2020, May 4, 2020, June 1, 2020, July 6, 2020, August 3, 2020,
September 7, 2020- Labor Day- No Meeting, October 5, 2020, November
2, 2020, December 7, 2020
Meetings are scheduled for the first Monday of each month. Meetings are
held at City Hall (625 Center Street) in the Commission Chambers at 7:00
PM. City Hall, Commission Chambers, 625 Center Street, 7:00PM
Generally the 1st Monday of each month.

CIC Liaison Assignments
Development Stakeholders Committee (Amy Wilhite)
Equitable Housing (Steven Vanhaverbeke, Amy Willhite)
McLoughlin -Canemah Trail (Karin Morey)

7. Adjournment

Public Comments: The following guidelines are given for citizens presenting information or raising issues relevant to the City but not listed on the agenda.

- *Complete a Comment Card prior to the meeting and submit it to the staff member.*
- *When the Chair calls your name, proceed to the speaker table and state your name and city of residence into the microphone.*
- *Each speaker is given 3 minutes to speak. To assist in tracking your speaking time, refer to the timer at the dais.*
- *As a general practice, Oregon City Officers do not engage in discussion with those making comments.*

Agenda Posted at City Hall, Pioneer Community Center, Library, and City Web site(oregon-city.legistar.com).

Video Streaming & Broadcasts: The meeting is streamed live on Oregon City's Web site at www.orcity.org and is available on demand following the meeting.

ADA: City Hall is wheelchair accessible with entry ramps and handicapped parking located on the east side of the building. Hearing devices may be requested from the City staff member prior to the meeting. Disabled individuals requiring other assistance must make their request known 48 hours preceding the meeting by contacting the City Recorder's Office at 503-657-0891.

Sam Thomas

From: Christina Robertson-Gardiner <crobertson@orccity.org>
Sent: Friday, December 06, 2019 10:04 AM
To: Sam Thomas
Cc: Amy
Subject: RE: River Terrace MC Addition - CIC Presentation letter
Attachments: December 2, 2019 CIC Meeting (revised).pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Sam,

This email is to confirm that the River Terrace Memory Care Addition presented to the Citizen Involvement Committee on December 2, 2019, as the South end Neighborhood Association is currently inactive. I have attached the meeting agenda to the email. The video of the meeting can be viewed at <https://oregon-city.legistar.com/Calendar.aspx> once it is uploaded. Please include the CIC agenda and this email in your land use application.

Christina



Christina Robertson-Gardiner AICP

Senior Planner

crobertson@orccity.org

City of Oregon City

Community Development Division

PO Box 3040

698 Warner Parrott Rd.

Oregon City, Oregon 97045

503-496-1564 Direct phone

503-722-3789 City phone

503-722-3880 fax

Website: www.orccity.org | [Recorder Page](#)

PUBLIC RECORDS LAW DISCLOSURE: This e-mail is subject to the State Retention Schedule and may be made available to the public.



Roofing

MFR: Owens Corning

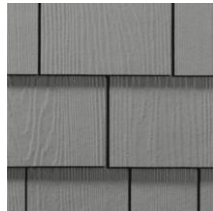
Color: Harbor Fog



Stone Veneer

MFR: Castle Stone

Color: Emerald Gray



Shake Siding

MFR: James Hardie

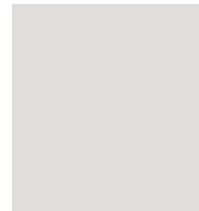
Color: Gray Slate



Lap Siding

MFR: James Hardie

Color: SW 7642
Pavestone



Trim/Fascia

MFR: James Hardie

Color: SW 6000 Snowfall



Ledgerstone

MFR: El Dorado Stone

Color: Boardwalk



Construction Costs for Site Plan and Design Review and Detailed Development Plans

The cost of Planning Division review for Site Plan and Design Review and Detailed Development Plans is based on the construction cost of the project. The construction costs is defined as all costs to complete the project, including soft costs. The estimate does exclude interior furniture or moving expenses.

Address: 914 & 950 South End Rd

Project Description: 16 Bed Memory Care Addition consisting of approximately 6,996 square feet. Type VA construction.
Occupancy Type I-2.

Section I – Construction Costs

Design Work	\$ 120,000
Site Prep	\$ 40,000
Consultants	\$ 25,000
Excavation	\$ 20,000
Utilities	\$ 100,000
Foundation	\$ 50,000
Framing material/wall construction	\$ 250,000
Interior finish (walls, doors, floor finish, cabinetry, light fixtures, etc.)	\$ 250,000
Supplemental information (fire suppression, hvac, electrical, plumbing, etc.)	\$ 250,000
Roofing	\$ 150,000
Landscaping	\$ 30,000
Paving	\$ 15,000
Sign - None Proposed	\$ 0
Trash Enclosures - None proposed	\$ 0
Other	\$ 0
Total Section I	\$ 1,300,000

Section II – Permits

Building \$959.49 for first 100,000. \$4.64 for each additional \$1,000 or fraction thereof	\$ 10,770.36
Electrical	\$ 1,250
Plumbing	\$ 4,193.75
Mechanical	\$ 1,768.12
Land Use	\$ 17,504
Total Section II	\$ 35,486.23

Section III - Total

Section I Total	\$ 1,300,000
Section II Total	\$ 35,486.23
Total Section III	\$ 1,335,486.23

Office Use Only –

Building Official Verification: _____

EXTERIOR LIGHTING CUTSHEETS

River Terrace
Building Addition
Oregon City, OR



DESCRIPTION

Eon 303-B1-LEDB1 is a compact, low profile, dimmable, LED bollard that provides downlight only via a fixed head. 303-B1-LEDB1 has a single head on one side of the luminaire. The bollard comes standard with universal input LED driver (120-277V, 50/60 Hz). Dimming is achieved with a standard ELV, reverse phase dimming driver or an optional 0-10V dimming driver. Eon fixtures may be used indoors or outdoors and carry an IP66 rating. The patented LumaLevel™ leveling system provides quick installation, easy adjustment, secure mounting and protection from vibration.

Catalog #	Type
	SB2 SB4
Project	Date
Comments	
Prepared by	

SPECIFICATION FEATURES

Construction

The head of the 303-B1-LEDB1 is precision machined from corrosion-resistant 6061-T6 aluminum. Body is extruded aluminum and adjustable mounting base is cast from corrosion resistant aluminum alloy. Stainless steel hardware is included. Four (4) 3/8" x 12" galvanized anchor bolts and a galvanized steel anchor bolt template are standard. Specify option -LAB and order the anchor bolt/template kit separately (Catalog: 7581-01PK).

Optical

LightBAR™ and optical assembly are sealed by a clear, impact resistant tempered glass lens. The optical assembly is available in three distributions: T2 (lateral throw), T4 (forward throw) and T5X (Flood). Available in several color temperatures: 2700K, 3000K, 3500K,

4000K and TSAM (Amber). Both color temperature and distribution must be specified when ordering – see catalog logic for details. An edge-lit option is available.

Electrical

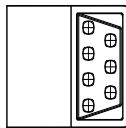
The bollard is standard with an ELV trailing edge phase dimmable driver that accepts a universal input (120-277, 50/60Hz). An optional 0-10V universal dimming driver is also available. Both driver options incorporate surge protection. The receptacle option incorporates a specification grade, 120V, 15A tamper proof and weather resistant duplex GFCI. The photocell option comes in either a 120V or 277V. Please see Option section for more detail.

Finish

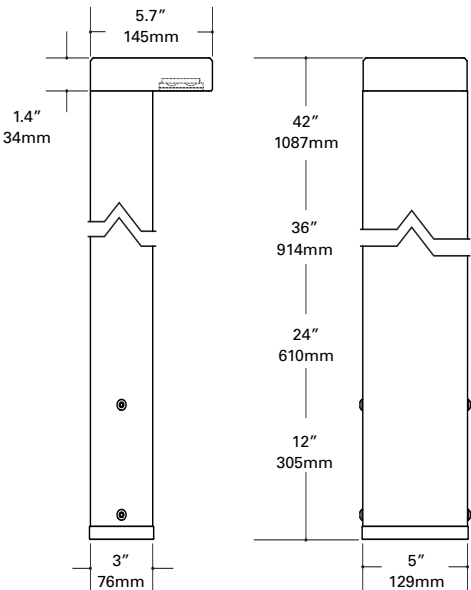
Luminaire and mounting base are double protected by a RoHS compliant chemical film undercoating and polyester powdercoat paint finish. The mounting base is painted black. The luminaire housing and head are available in a variety of standard colors. RAL and custom color matches are available upon request. As an option, the Eon bollards are also available in colors to match other outdoor Eaton product lines, such as Invue. See the Finish section in the ordering detail for more detail.

Warranty

Lumiere warrants the EON series of fixtures against defects in material and workmanship for five (5) years. Auxiliary equipment such as LED drivers carries the original manufacturer's warranty.



Under side profile view



303-B1-LEDB1

EON LED

APPLICATIONS:
BOLLARD

CERTIFICATION DATA

UL and cUL Wet Location Listed
LM79 / LM80 Compliant
ROHS Compliant
IP66 Ingress Protection Rated

TECHNICAL DATA

50°C Maximum Temperature Rating
External Supply Wiring 90°C Minimum



ORDERING INFORMATION

Sample Number: 303-B1-LEDB1-2700-120-T2-DIM10-BK-42-EDGE-PC1-RFL-LAB

Series ¹	Color Temperature	Input Voltage	Optics	Dimming	Finish ³	Height ⁴	Options ⁶
303-B1-LEDB1 Head contains one (1) Mini LightBAR™	2700=2700K 3000=3000K 3500=3500K 4000= 4000K TSAM=Turtle Safe Amber (585-595nm)	UNV=120-277V ¹ 120=120V 277=277V ²	T2=Type II, Lateral Throw T4=Type IV, Forward Throw T5X=Type V, Extra Wide Flood	DIMELV=Trailing Edge Phase Dimming Driver DIM10=0-10V Dimming Driver	Painted BK=Black BZ=Bronze CS=City Silver WT=White Premium Paint AP=Grey DP=Dark Platinum GM=Graphite Metallic	12=12" ⁵ 24=24" 36=36" 42=42"	EDGE=Edge lit glass lens PC1=Photocontrol 120V ⁷ PC2=Photocontrol 208-277V ⁷ RIU=Receptacle - In Use (120V Only) ⁷ RFL=Receptacle - Flip-Lid (120V Only) ⁷ LAB=Less Anchor Bolts & Template ⁸

NOTES: 1 Universal Voltage (UNV) is standard unless specifying Photocontrol or Receptacle (RIU or RFL - 120V) options. 2 Specify for PC2 option only. 3 Custom and RAL color matching available upon request. Consult factory for further information. 4 Bollard heights are nominal (shown in inches). 5 12" length not available with RIU or RFL options. 6 Add suffix in the order shown. 7 Must specify voltage when ordering. 8 When specifying LAB option the anchor bolts and template need to be ordered separately 7581-01PK. 9 DesignLights Consortium™ Qualified and classified for DLC Standard. Refer to www.designlights.org for details on exact qualified EON 303-B1-LEDB1 product as not all configurations are DLC classified.



Powering Business Worldwide

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (72,000 Hours)	TM-21 Reported L70(10k) (Hours)	Theoretical L70 (Hours)
25°C	> 94%	> 60,000	365,000
40°C			
50°C			

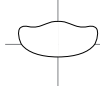
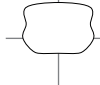
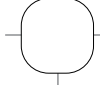
CURRENT DRAW

Model	Line Voltage	Current Draw
303-B1-LEDB1	120-277V, 50/60Hz	0.068A

MAX LOAD RATING

Options	Line Voltage	Max Load Rating
PC1	120V, 50/60Hz	1000VA, 8.3A
PC2	208-277V, 50/60Hz	
RIU or RFL	120V, 50/60Hz	1800VA, 15A

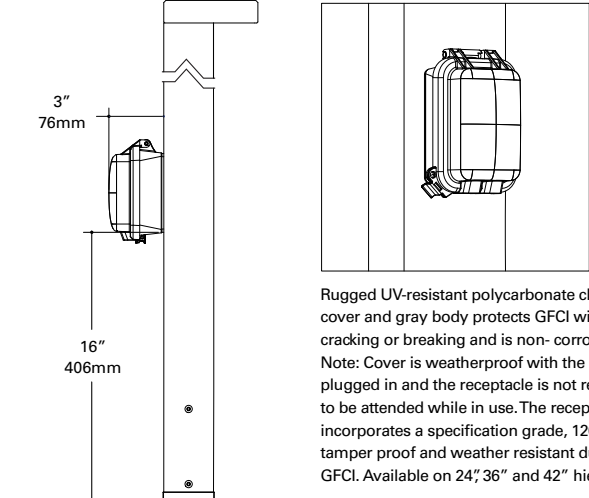
LUMENS - CRI/CCT TABLE

Optic Type	Distribution	Watts	Delivered Lumens	LPW	CCT (K) / Color	CRI nom. / Wavelength	B-U-G Rating
T2 (Lateral Throw)		8.5	361	44	2700	95	B0-U0-G0
			600	74	3000	75	
			419	51	3500	85	
			661	81	4000	75	
		6.5	184	28	TSAM (Amber)	585-595nm	
T4 (Forward Throw)		8.5	353	43	2700	95	B0-U0-G0
			587	72	3000	75	
			410	50	3500	85	
			647	79	4000	75	
		6.5	180	28	TSAM (Amber)	585-595nm	
T5X (Extra Wide Flood)		8.5	316	39	2700	95	B0-U0-G0
			525	65	3000	75	
			367	45	3500	85	
			579	71	4000	75	
		6.5	161	25	TSAM (Amber)	585-595nm	

OPTIONS

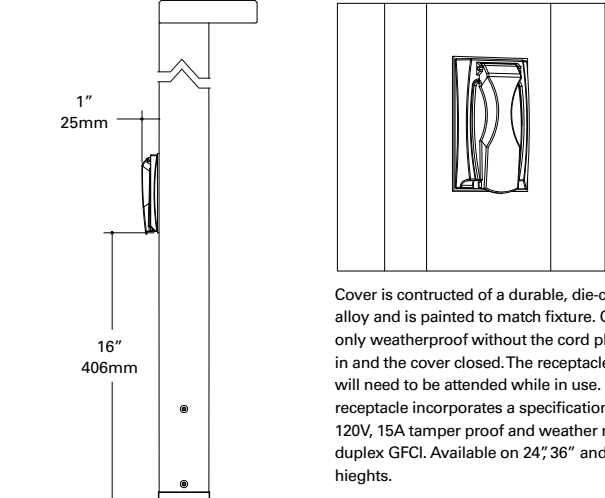
Receptacle Options (120V Only)

RIU - Receptacle In-Use



Rugged UV-resistant polycarbonate clear cover and gray body protects GFCI without cracking or breaking and is non-corrosive. Note: Cover is weatherproof with the cord plugged in and the receptacle is not required to be attended while in use. The receptacle incorporates a specification grade, 120V, 15A tamper proof and weather resistant duplex GFCI. Available on 24", 36" and 42" heights.

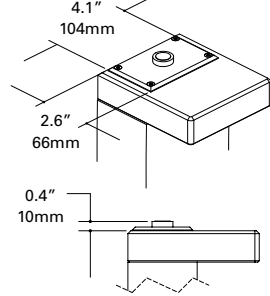
RFL - Receptacle Flip Lid



Cover is constructed of a durable, die-cast zinc-alloy and is painted to match fixture. Cover is only weatherproof without the cord plugged in and the cover closed. The receptacle will need to be attended while in use. The receptacle incorporates a specification grade, 120V, 15A tamper proof and weather resistant duplex GFCI. Available on 24", 36" and 42" heights.

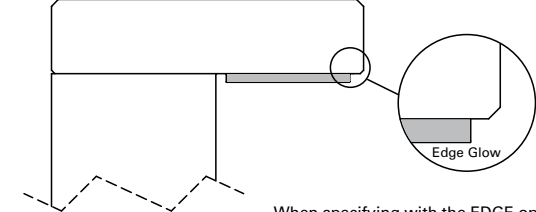
Photocontrol

PC1 (120V) or PC2 (277V)



Photocontrol cover is precision machined from corrosion-resistant 6061-T6 aluminum and is secured to bollard head with tamper resistant stainless steel hardware. The photocontrol option is available in dedicated 120V or 208-277V. When specifying a photocontrol option make sure to designate the appropriate voltage within the catalog logic.

Edge



When specifying with the EDGE option, the diffused glass becomes thicker adding a visible line of light around the edge accentuating the luminaries' aesthetics and styling.

TECHNICAL NOTES:

1. Adjustable mounting base - Cast aluminum mounting base is equipped with the patented LumaLevel™ leveling system that includes mounting base, 70 shore neoprene base, stainless steel hardware and a slot to accommodate two inbound and outbound 3/4" conduits. It provides quick installation, easy adjustment, secure mounting and protection from vibration.

DESCRIPTION

The Lumière Eon LED 303-W1-LEDB2 is a compact, low profile, dimmable LED direct/indirect luminaire. The luminaire features full vertical adjustment (180°) for easy aiming and mounts directly to any wall or ceiling surface over a standard 4" square junction box. It is standard with a universal input LED driver (120 - 277V, 50/60 Hz). Dimming is achieved with a standard ELV, reverse phase dimming driver or an optional 0-10V dimming driver. 303-W1-LEDB2 may be used indoors or outdoors and carries an IP66 rating.

Catalog #	Type
Project	SW2, SW4
Comments	Date
Prepared by	

SPECIFICATION FEATURES

Construction

Head and back plate are precision machined from corrosion-resistant 6061-T6 aluminum. A universal mounting plate and one piece silicone key hole gasket is provided for adaption to junction box or surface. Stainless steel hardware is included.

Mounting

The luminaire mounts directly to a standard 4" square junction box. For further mounting information see technical notes section on page 2.

Optical

LightBAR™ and optical assembly are sealed by a diffused, impact resistant tempered glass lens. The optical assembly is available in three distributions: T2 (lateral

throw), T4 (forward throw) and T5X (Extra Wide Flood). Available in several color temperatures: 2700K, 3000K, 3500K, 4000K and TSAM (Amber). Both color temperature and distribution must be specified when ordering – see catalog logic for details. An edge-lit option is available.

Electrical

The 15.5W 303-W1-LEDB2 is standard with an ELV trailing edge phase dimmable driver that accepts a universal input (120-277, 50/60Hz). It will operate in -40°C to 50°C [-40°F to 122°F]. The driver incorporates surge protection. An optional 0-10V dimming driver is also available.

Finish

The luminaires are double protected by a RoHS compliant chemical film undercoating and polyester

powder coat paint finish, surpassing the rigorous demands of the outdoor environment. A variety of standard colors are available. RAL and custom color matches available upon request. Luminaires can also be brushed with a clear coat finish. The LightBAR™ cover plates are standard white and may be specified to match finish of luminaire housing (LCF).

Warranty

Lumière warrants the EON series of fixtures against defects in material and workmanship for five (5) years. Auxiliary equipment such as LED drivers carries the original manufacturer's warranty.



303-W1-LEDB2

EON LED

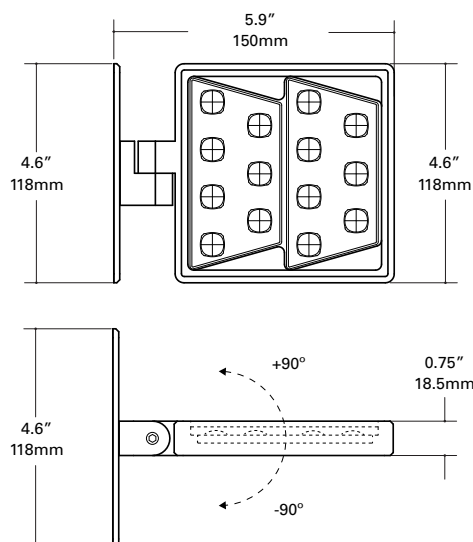
APPLICATIONS:
CEILING / WALL MOUNT
DIRECT
INDIRECT

CERTIFICATION DATA

UL and cUL Wet Location Listed
LM79 / LM80 Compliant
ROHS Compliant
IP66 Ingress Protection Rated

TECHNICAL DATA

35°C Maximum Temperature Rating
External Supply Wiring 90°C Minimum



ORDERING INFORMATION

Sample Number: 303-W1-LEDB2-2700-UNV-T2-DIM10-BK-EDGE-LCF

Series ⁴	Color Temperature	Input Voltage	Optics	Dimming	Finish ¹	Options ^{2,3}
303-W1-LEDB2 Head contains two (2) Mini LightBAR™	2700=2700K 3000=3000K 3500=3500K 4000=4000K TSAM =Turtle Safe Amber (585-595nm)	UNV=Universal 120-277, 50/60Hz	T2=Type II, Lateral Throw T4=Type IV, Forward Throw T5X=Type V, Extra Wide Flood	DIMELV=Trailing Edge Phase DIM10=0-10V Dimming	Painted BK=Black BZ=Bronze CS=City Silver WT=White Premium Finish BA=Brushed NSS=Solid Stainless Steel	EDGE=Edge lit glass lens LCF=LightBAR cover plate matches housing finish

NOTES: 1 Custom and RAL color matching available upon request. Consult factory for further information. 2 Add suffix in the order shown. 3 LCF option not available when WT (white) finish is selected. 4 DesignLights Consortium™ Qualified and classified for DLC Standard. Refer to www.designlights.org for details on exact qualified EON 303-W1-LEDB2 product as not all configurations are DLC classified.

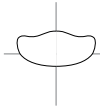
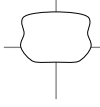
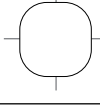
LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (72,000 Hours)	TM-21 Reported L70(10k) (Hours)	Theoretical L70 (Hours)
25°C	> 94%	> 60,000	365,000
40°C			
50°C			

CURRENT DRAW

Model	Line Voltage	Current Draw
303-W1-LEDB2	120-277V, 50/60Hz	0.13A

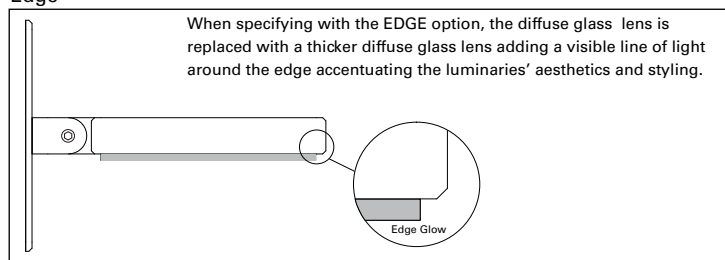
LUMENS - CRI/CCT TABLE

Optic Type	Distribution	Watts	Delivered Lumens	LPW	CCT (K) / Color	CRI nom. / Wavelength
T2 (Lateral Throw)		15.5	691	44	2700	95
			1148	73	3000	75
			802	51	3500	85
			1265	81	4000	75
		12.1	351	29	TSAM (Amber)	585-595nm
T4 (Forward Throw)		15.5	647	42	2700	95
			1075	69	3000	75
			752	48	3500	85
			1185	76	4000	75
		12.1	329	27	TSAM (Amber)	585-595nm
T5X (Extra Wide Flood)		15.5	778	50	2700	95
			1293	83	3000	75
			904	58	3500	85
			1425	91	4000	75
		12.1	396	33	TSAM (Amber)	585-595nm

NOTES: 1 When the LCF option is selected use a lumen multiplier of .85

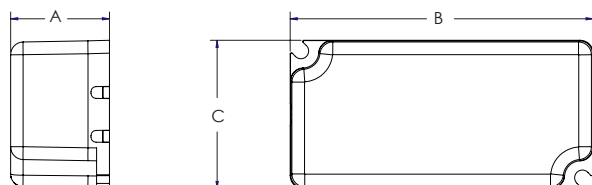
OPTIONS

Edge



TECHNICAL NOTES

- Junction box size and depth is important when specifying product. Recommended junction boxes include 2-1/8" deep, 4" square weld/drawn Crouse Hinds part numbers TP403, TP434, TP494, TP196, TP395 or equivalent. Use with included universal mounting plate or with Crouse-Hinds part number TP480 or equivalent cover with similar fixture mounting locations.
- The universal wall plate provided with all EON wall mount fixtures can be used with an outdoor rated two gang 30.5 cubic inch capacity outlet box. Cooper Crouse-Hinds part numbers TP7086 – TP7122 or equivalent. The universal mounting plate will attach with four (4) 6-32 pan head/flat stainless steel screws (not provided).
- Driver can be remote mounted in a junction box a max distance of 25 feet (voltage drop needs to be considered) or placed in the junction box behind the luminaire.
- When specifying with the EDGE option, the diffused glass becomes thicker adding a visible line of light around the edge accentuating the luminaires' aesthetics and styling.
- If Luminaire will not be dimmed, the Luminaire must be ordered with DIMELV option, but does not have to be dimmed.
- Driver Dimensions:



Luminaire Type	Dimming Type	Driver Dimensions in [mm]		
		A	B	C
303-W1-LEDB2	DIMELV	.98 [25.0]	3.36 [85.3]	1.49 [37.9]
	DIM10	1.18 [30.0]	3.49 [88.6]	1.64 [41.6]

GHCW-LED

Construction:

- Fade and Rust Resistant Polycarbonate Construction
- Glare Free Frosted Acrylic Lens

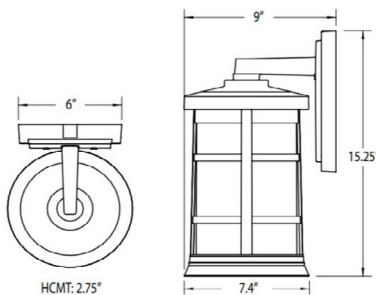
Light Source:

- LED
- Incandescent Medium Base / Lamp by others

Notes:

- Mounts to standard junction box
- Mounting hardware included
- Optional Photocell
- UL and CUL listed **WET** location
- LED Components
 - Replaceable Module
 - CRI > 80
 - 120 volt standard
 - 5-Year Warranty on LED Components

Type:	SWD
Job Name:	



ORDERING INFORMATION

Example: **GHCW-15-LED-A-13W-4-Z99-FSA**

GHCW-15-I		A	E26		B99	FSA	
Model	Cage	Voltage	Lamping	Kelvin	Finish	Diffuser	Options
GHCW-15-LED		A 120 Volt	13w LED / 1140lm E26 Medium Base (NL)	2 3000K 4 4000K	B99 Black W99 White Z99 Bronze	FSA Frosted Smooth Acrylic	21-01 Photocell - 120 Volt



28435 Industry Drive., Valencia, California 91355
 West Coast Sales: 800-325-4448 / 661-257-0286 • fax 800-323-2346 / 661-257-0201
 East Coast Sales: 866-350-0991 • fax 866-490-5754
www.lightwayind.com • sales@lightwayind.com



Revision: 07/05/2019



LED Wet Location S14

Non-Dimmable

Perfect for applications with hard to reach areas, vibration, and frequent starts.

Limitless options for the following applications:

- Chandeliers
- Ceiling Fans
- Decorative
- Indoor Fixtures
- Outdoor Fixtures
- Scoreboards
- Movie Signs

Great features and benefits:

- Long Life: 25,000 hours—no more bulb replacements
- Excellent white color consistency from bulb to bulb
- UL approved for wet locations
- Wet location to replace cold cathodes

Wet Location S14 lamps are non-dimmable



S14 Clear

S14 Frosted



LED
we know light.™



LED

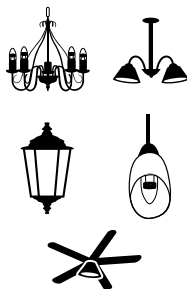
25,000 hours average rated life, 120 volts

Applications

Ideal for decorative applications—suitable for outdoor fixtures
Also perfect for applications with hard to reach areas, vibration, and frequent starts

Accent and decorative lighting including:

- + Chandeliers
- + Ceiling Fans
- + Decorative
- + Indoor Fixtures
- + Outdoor Fixtures
- + Scoreboards
- + Movie Signs

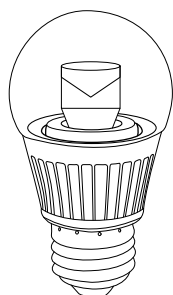


Light output equivalent to 40W
Cold cathode replacement

Features and Benefits

- Long Life: 25,000 hours—no more bulb replacements
- Excellent white color consistency from bulb to bulb
- UL approved for wet locations
- Wet location to replace cold cathodes

Wet Location S14 lamps are non-dimmable



LED5E26S1427K

Catalog Number

Notes

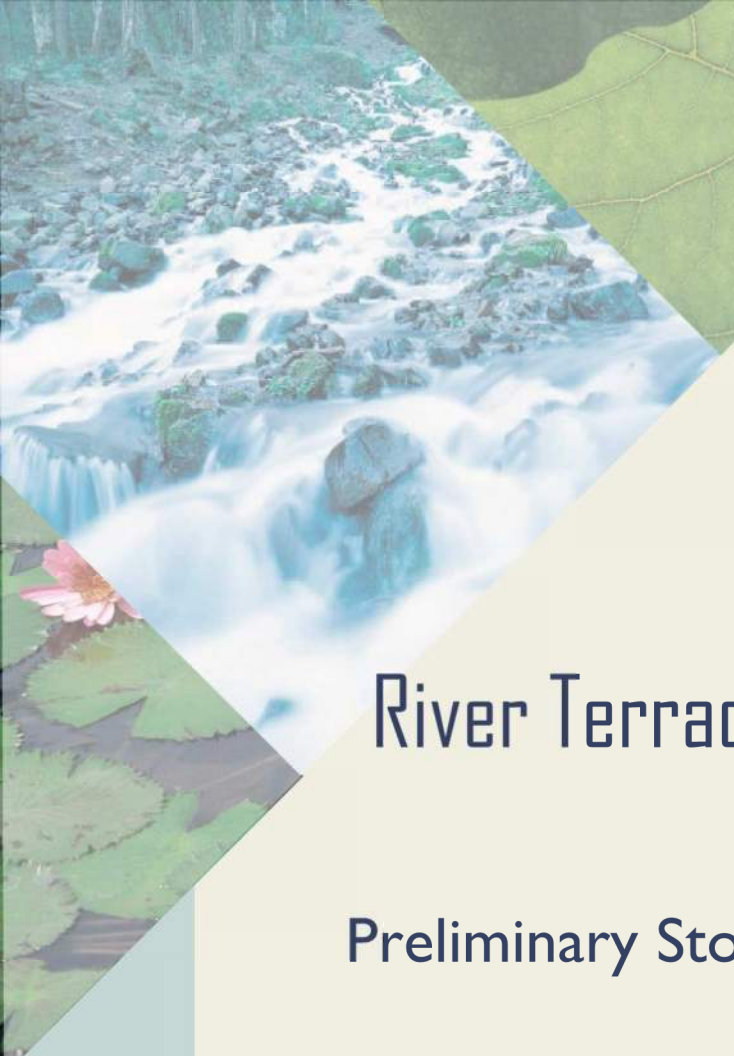
Type



Specifications (at full brightness)

Input Line Voltage:	120VAC
Input Line Frequency	50/60HZ
Lamp Life (Rated)	25,000 hrs
Minimum Starting Temp	-30°C
Maximum Operating Temp	40°C
UL/cUL Listed	Yes
Power Factor	92%
CRI	80

Warranties and Certifications:	Item #	Description	Voltage	Wattage	Wattage Equivalent	M.O.L. (inches)	Diameter (inches)	Lumens	LPW	CCT	CRI
5 YEAR WARRANTY 	LED5E26S1427K	LED 5W WET LOCATION S14 - 2700K	120	5.0	40W	3.8	1.4	300	60	2700K	80
	LED5E26S1430K	LED 5W WET LOCATION S14 - 3000K	120	5.0	40W	3.8	1.4	300	60	3000K	80
	LED5E26S1441K	LED 5W WET LOCATION S14 - 4100K	120	5.0	40W	3.8	1.4	300	60	4100K	80
	LED5E26S1427KF	LED 5W WET LOCATION S14 - 2700K Frosted	120	5.0	40W	3.8	1.4	300	60	2700K	80
	LED5E26S1430KF	LED 5W WET LOCATION S14 - 3000K Frosted	120	5.0	40W	3.8	1.4	300	60	3000K	80
	LED5E26S1441KF	LED 5W WET LOCATION S14 - 4100K Frosted	120	5.0	40W	3.8	1.4	300	60	4100K	80
For the most up-to-date specs, please visit www.tapi.com											



Harper
Houf Peterson
Righellis Inc.

River Terrace Building Addition

Preliminary Stormwater Management Report

December 2019

Prepared For:

Sam Thomas
Lenity Architecture
3150 Kettle Ct SE
Salem, Oregon 97301

HHPR Project # SEA-110

Prepared By:

Harper Houf Peterson Righellis Inc.
530 Center Street NE, Suite 240
Salem, OR 97301
P: 503-365-1131

Beau Braman, PE
BeauB@hhpr.com



EXPIRES: 12/31/ 2019



HHPR

ENGINEERS ♦ PLANNERS
LANDSCAPE ARCHITECTS ♦ SURVEYORS

Table of Contents

Project Overview and Description	1 / 2
Methodology	2 / 3
Analysis	3 / 4
Downstream Analysis	4
Private Stormwater Facilities Agreement	4
Operations and Maintenance Plan	4

Tables

Table 1 – Stormwater Runoff Basins	2
Table 2 – Stormwater Management Requirements	3

Appendices

Appendix A – Maps

Vicinity Map
Pre-Developed Basin Map
Post-Developed Basin Map

Appendix B – Methodology

Infiltration Testing Results
Soil Survey Map
Hydrologic Grouping Table

Appendix C – Analysis

BMP Sizing Tool Report

Project Overview and Description

The project site is located at 950 and 914 South End Road in the City of Oregon City, Oregon. The site consists of two tax lots (prior to consolidation), totaling approximately 1.2 acres in size, designated as Single Family Dwelling (R-10) on the City of Oregon City Zoning Map. See Appendix A for a Vicinity Map.

The proposed project constructs a 7,000 square foot building addition to the existing River Terrace Memory Care facility. The proposed site improvements include existing building demolition, parking lot expansion, site grading, pedestrian access, stormwater management, landscaping and utilities.

Site stormwater management improvements include pipe conveyance, roof/foundation drain connections, public main extension, stormwater filtration planters, drainage channel, and area drains. These improvements will tie into the existing stormwater system in South End Road and the existing stormwater system on-site, which consists of underground detention chambers.

Existing Conditions

The existing site is currently occupied by a residential building and River Terrace Memory Care facility. Existing Basin 1 includes stormwater runoff from the existing building roof and site landscaping. Stormwater runoff sheet flows to an existing on-site low point, where it is assumed to infiltrate native soils. There are no stormwater treatment facilities within this basin. Existing Basin 2 includes stormwater runoff from the asphalt driveway, building roof and site landscaping. Basin 2 stormwater runoff sheet flows to South End Road prior to entering the public stormwater system north of the site. Existing Basin 3 includes stormwater runoff from site landscaping. This runoff sheet flows to an existing catch basin prior to discharging to the existing underground detention chambers on-site. Existing Basin 4 contains runoff from the pervious pavement parking lot and site landscaping. Basin 4 runoff sheet flows towards the southwest corner of the site and allows runoff to infiltrate native soils. Existing Basin 5 includes stormwater runoff from site landscaping. This basin allows runoff to infiltrate native soils. See Appendix A for the Pre-Developed Basin Map.

Proposed Conditions

Proposed stormwater management increases the amount of treated stormwater runoff. Proposed Basin 1 includes stormwater runoff from the proposed building roof, site landscaping and concrete sidewalks. Basin 1 conveys runoff to the proposed stormwater filtration planters for treatment prior to discharging into the existing public system in South End Road. Proposed Basin 2 (existing and proposed) includes stormwater runoff from site landscaping and concrete sidewalks. Basin 2 maintains existing drainage patterns by allowing runoff to sheet flow into the existing roadway, which enters the public stormwater system north of the site. Proposed Basin 3 includes stormwater runoff from the proposed building roof, proposed patio area, and site landscaping. Basin 3 collects and conveys runoff through a drainage channel prior to discharging into existing underground detention chambers. Proposed Basin 4 (existing and proposed) includes stormwater runoff from the existing and proposed pervious parking lot and

site landscaping. Basin 4 maintains existing drainage patterns by allowing runoff to infiltrate native soils. Proposed Basin 5 (existing and proposed) includes runoff from site landscaping. Basin 5 maintains existing drainage patterns by allowing runoff to infiltrate native soils. See Appendix A for the Post-Developed Basin Map. See Table 1 for Stormwater Runoff Basins.

Table 1 – Stormwater Runoff Basins

Basin	Total Area (acre)	Impervious Area (acre)	Pervious Area (acre)	Treated Area (acre)
Ex 1	0.18	0.03	0.15	-
Ex 2	0.13	0.06	0.07	-
Ex 3	0.04	0.00	0.04	-
Ex 4	0.17	0.00	0.17	-
Ex 5	0.02	0.00	0.02	-
Ex total	0.54	0.09	0.45	-
1	0.19	0.16	0.03	0.19
2	0.05	0.025	0.025	-
3	0.10	0.04	0.06	-
4	0.17	0.00	0.17	-
5	0.03	0.00	0.03	-
Total	0.54	0.225	0.315	0.19

Methodology

A Geotechnical Engineering Report was completed by GeoPacific Engineering, Inc., dated July 11, 2019. Reference sections are included in Appendix B. The full geotechnical engineering report is available upon request. The following is a summary of findings used for stormwater management design:

- Depth of Groundwater = 139 feet below ground surface (BGS)
 - Groundwater was not encountered during field explorations
- Infiltration Rate = 0.01 to 0.02 inches per hour
 - Due to limited infiltration rate, all stormwater facilities on-site will be designed for filtration

The Natural Resource Conservation Service (NRCS) Web Soil Survey describes the soils on-site as Jory stony silt loam with a Hydrologic Soil Grouping C classification (See Appendix B for Soil Survey Maps and Hydrologic Grouping Tables). Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet and receive precipitation from long-duration storms.

- Soil Classification = C

The purpose of this stormwater memorandum is to present stormwater best management practices (BMP) for water quality treatment, flow control, and conveyance to be installed as part of this development project and designed to comply with the 2019 City of Oregon City Stormwater and Grading Design Standards. Table 2 below summarizes the City's design criteria.

Table 2 – Stormwater Management Requirements

Design Requirement	City of Oregon City Criteria
Water Quality Treatment Area	All new and replaced impervious area within the project limits
Water Quality Design Storm	1.0 inch per 24-hour period
Flow Control	42% of the post-development peak runoff rate of the two-year storm must be equal to or less than 42% of the peak runoff rate of the pre-developed two-year, 24-hour storm; and the peak runoff rate of the post-development ten-year, 24-hour storm must be equal to or less than the peak runoff rate of the pre-developed ten-year, 24-hour storm event. Volume-based facilities shall be sized to detain the post-developed 100-year design storm with a release rate no greater than the pre-developed, 100-year design storm.
Infiltration	Utilize LID facilities to the MEP using either the BMP Sizing Tool or the Engineered Method. MEP is defined as installing LID facilities with a surface area of at least 10% of the total new plus replaced impervious area. OR Retain and fully infiltrate the 10-year storm (3.5 inches per 24-hour) within 72 hours of the beginning of the storm event.
Conveyance	Convey the 10-year, 24 hour, storm event
Downstream Capacity	¼ mile downstream or to a distance where the project site contributes less than 15 percent of upstream area; If downstream capacity issues have been identified

Analysis

Stormwater runoff modeling will be completed using the City of Oregon City's BMP Sizing Tool application. This tool addresses water quality treatment and flow control requirements when sizing stormwater management facilities. The design process includes separating the site into Discharge Management Areas (DMA) that are routed to BMP's. The application will adequately size the BMP's based on soil infiltration rates and desired facility surface area or depth.

Water Quality and Flow Control

Water quality treatment and flow control requirements will be met through the use of the BMP Sizing Tool application. Water quality facilities will be designed to capture and treat 80% of the average annual runoff volume to the MEP with a goal of 70% total suspended solids (TSS) removal. This volume is the equivalent of a 1 inch design storm over a 24-hour period.

Flow control facilities peak runoff rates from post-developed conditions will be less than or equal to the duration of peak runoff rates from pre-developed conditions for flows between 42% of the 2-year storm event up to the 10-year storm event.

Due to the limited available stormwater facility areas on-site, a stormwater filtration planter was chosen to maximize the stormwater treatment area. Using the BMP Sizing Tool, the stormwater filtration planter's required area is 540 square feet. See Appendix C for the BMP Sizing Tool Report.

Conveyance

Conveyance systems shall be designed and constructed to convey the 10-year design storm flowing full with no pressure flow. The design size shall be based on Manning's equation and hydraulic calculations shall be provided with the Final Stormwater Management Report.

Downstream Analysis

There are no known identified downstream deficiencies for this project.

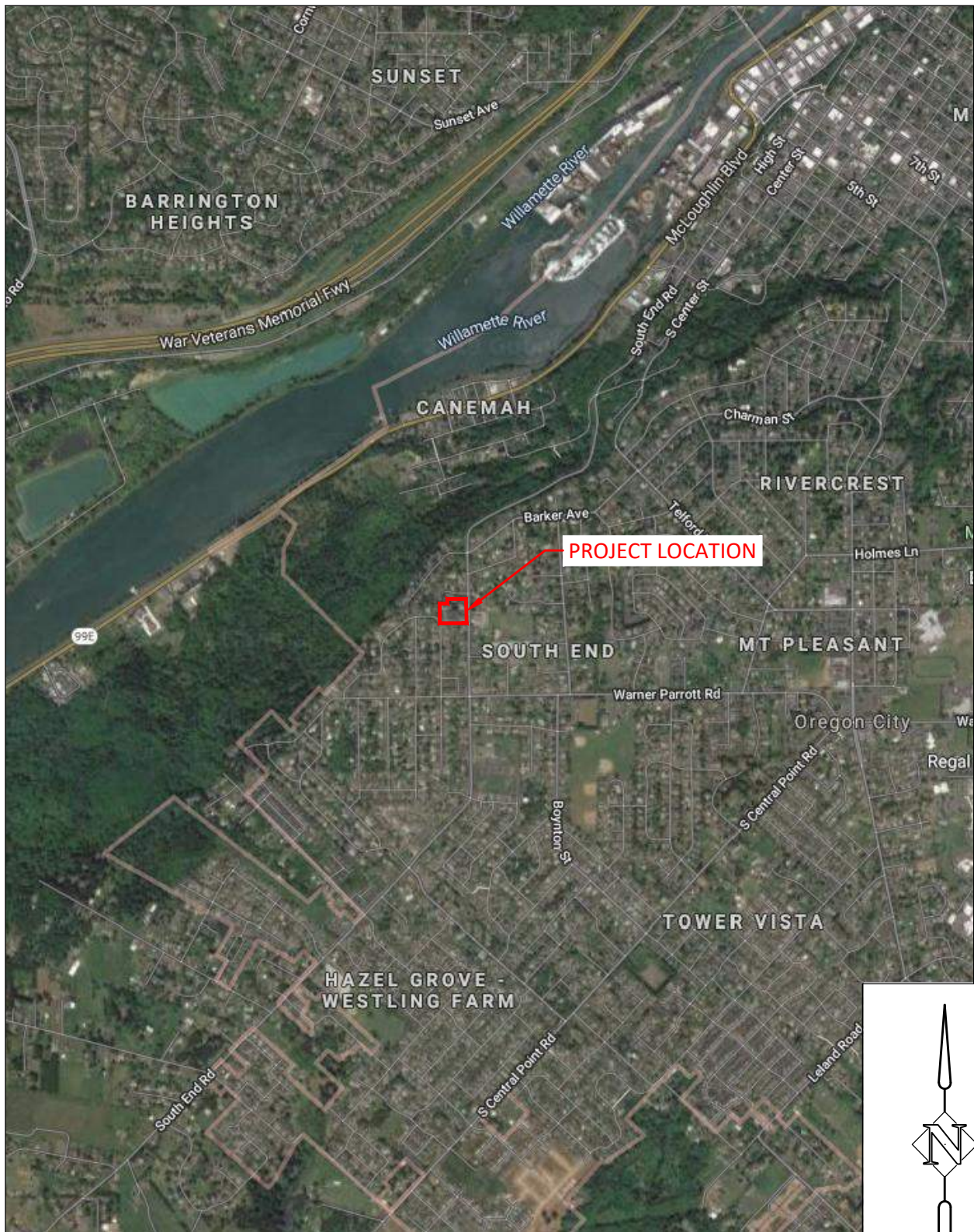
Private Stormwater Facilities Agreement

A private stormwater facilities agreement will be recorded in Clackamas County prior to the Final Stormwater Management Report.

Operations and Maintenance Plan

An Operations and Maintenance Plan will be provided with the Final Stormwater Management Report.

Appendix A – Maps



SOURCE: GOOGLE MAPS (NOT TO SCALE)

SHEET NO.				DESIGNED:	HHPR
1				DRAWN:	HHPR
				CHECKED:	HHPR
				DATE:	DEC 2019
JOB NO.	MCP-21	DATE	NO.	DESCRIPTION	
R E V I S I O N S					



**Harper
Houf Peterson
Righellis Inc.**

ENGINEERS ♦ PLANNERS
LANDSCAPE ARCHITECTS ♦ SURVEYORS
205 SE Spokane Street, Suite 200, Portland, OR 97202
phone: 503.221.1131 www.hhpr.com fax: 503.221.1171

VICINITY MAP
RIVER TERRACE BUILDING ADDITION
OREGON CITY, OREGON

RIVER TERRACE BUILDING ADDITION

EXISTING PERVIOUS

EXISTING BASIN BO

DRAINAGE FLOW



**Haider
Horn & Peterson
Riggall Inc.**
ENGINEERS, ARCHITECTS & LANDSCAPE ARCHITECTS
305 SE Spokane Street, Suite 200, Portland, OR 97202
phone: 503.221.1131 www.hhpr.com fax: 503.221.1171

PERVIOUS AREA	0.45 ACRES
IMPERVIOUS AREA	0.09 ACRES
TOTAL AREA	0.54 ACRES



BASIN 2
IMP = 0.006 ACRES
PERV = 0.07 ACRES

BASIN 1
IMP = 0.03 ACRES
PERV = 0.15 ACRES

BASIN 5
IMP = 0.00 ACRES
PERV = 0.02 ACRES

EXISTING
BUILDING TO
BE REMOVED

EXISTING BUILDING TO REMAIN
FFE=467.45

SOUTH END ROAD

RIVER TERRACE BUILDING ADDITION

PROPOSED PERVIC

PROPOSED BASIN

DRAINAGE FLOW



**Haider
Horn Peterson
Riggall & Sons**
ENGINEERS, ARCHITECTS, PLANNERS
LANDSCAPE ARCHITECTS + DESIGNERS
305 SE Spokane Street, Suite 200, Portland, OR 97202
phone: 503.221.1131 www.hhpr.com fax: 503.221.1171

PERVIOUS AREA	0.315 ACRES
IMPERVIOUS AREA	0.225 ACRES
TOTAL AREA	0.54 ACRES

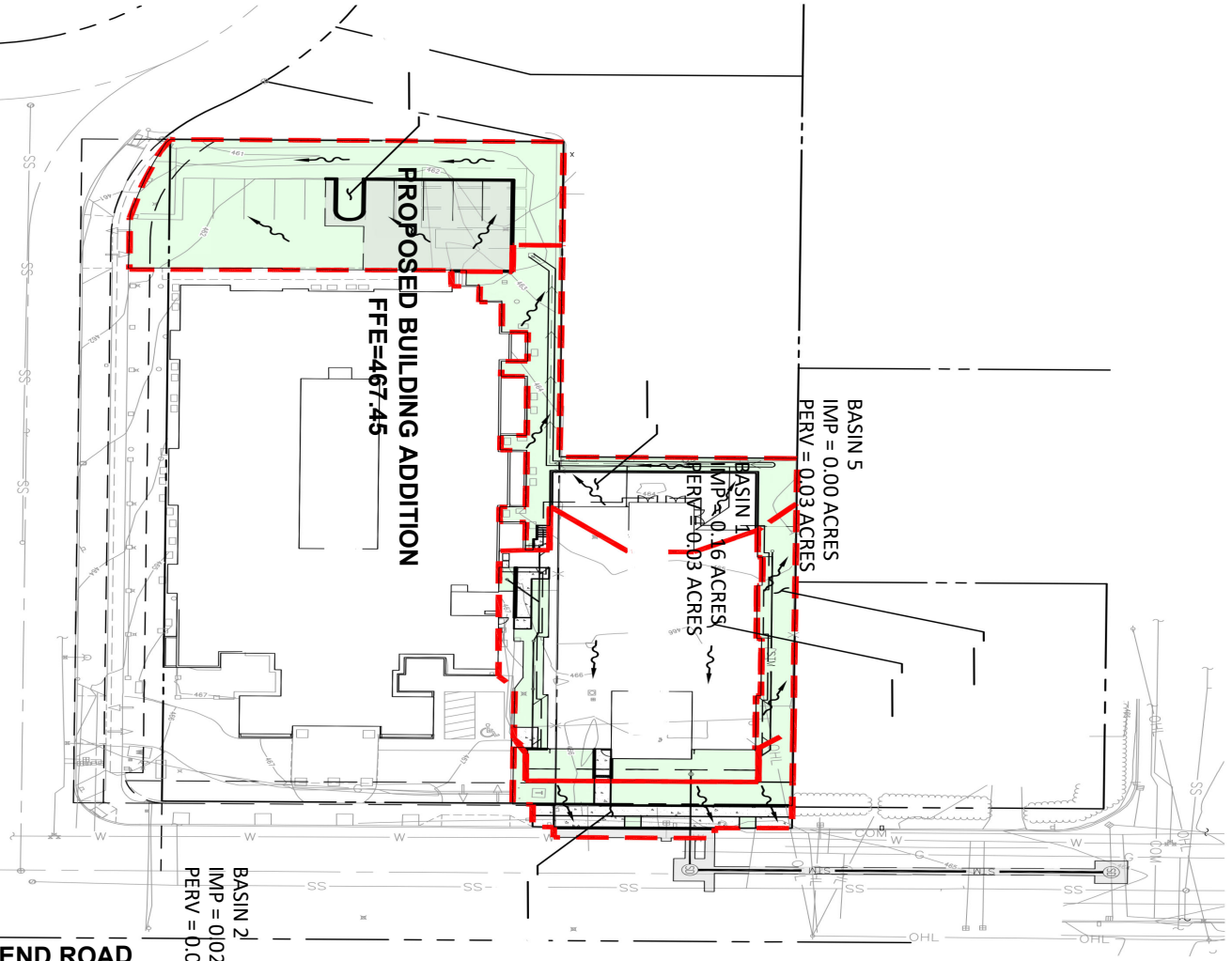
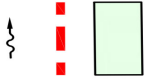
BASIN 5
IMP = 0.00 ACRES
PERV = 0.03 ACRES

BASIN 1
IMP = 0.16 ACRES
PERV = 0.03 ACRES

BASIN 2
IMP = 0.025 ACRES
PERV = 0.025 ACRES

PROPOSED BUILDING ADDITION
FFE=467.45

EXISTING BUILDING TO REMAIN
FFE=467.45



Appendix B – Methodology

bed, topsoil was observed to consist of dark brown garden soil with roots extending to a depth of approximately 12 inches bgs.

Elastic SILT (MH): Underlying the topsoil within our test pit explorations, soils were observed to consist of brown and reddish brown, medium stiff to very stiff, moist, high plasticity, Elastic SILT (MH). A color transition to deep reddish brown was typically observed at a depth of approximately 5.5 feet bgs. Soil strength was observed to increase with depth and residual textures and patterns were observed indicating the soil type appears to be a product of residual weathering of basalt flows as the geologic mapping indicates. The soil type was observed to extend to the maximum depth of exploration within our test pits (10 feet bgs).

Soils laboratory testing conducted on representative samples collected from test pit TP-1 indicated that the soil type classified as Elastic SILT (MH) according to the USCS soil classification system, and as A-7-5(22), A-7-5(25), and A-7-5(28) according to AASHTO standards. Sieve analysis indicated 80 to 93 percent by weight passing the U.S. No. 200 sieve, and moisture content of 20 to 25 percent. Atterberg Limit testing indicated a liquid limit of 55 to 56, and a plasticity index of 22 to 25.

5.2 Shrink-Swell Potential

Elastic SILT soils were encountered within test pit explorations conducted at the site. Atterberg limit testing conducted on the soil type indicated a liquid limit of 55 to 56, and a plasticity index of 22 to 25. Based upon the results of our soils laboratory testing and our local experience with the soil layers in the vicinity of the subject site, the shrink-swell potential of the Elastic SILT soil type is considered to be low, and the plasticity is considered to be *high*. Special design measures are not considered necessary to minimize the risk of uncontrolled damage of foundations as a result of potential soil expansion at this site.

5.3 Groundwater and Soil Moisture

On July 1, 2019, the observed soil moisture conditions were generally moist. No groundwater seepage was observed within our subsurface explorations which extended to a maximum depth of 10 feet bgs. According to the *Estimated Depth to Groundwater in the Portland, Oregon Area* Website (USGS, Oregon Water Science Center, <https://or.water.usgs.gov>) static groundwater is expected to be located at an approximate depth of 139 feet below the site. Perched groundwater may be encountered in localized areas. Seeps and springs may exist in areas not explored and may become evident during site grading.

5.4 Infiltration Testing

Soil infiltration testing was performed using the encased falling-head method at depths of -4, and -10 feet bgs within test pit TP-2 in accordance with the methodology of the 2016 City of Portland Stormwater Management Manual. The approximate locations of the subsurface explorations are indicated on Figures 2 and 3. The test locations were pre-saturated prior to testing. During testing the water level was measured to the nearest 0.01 foot (1/8 inch) from a fixed point, and the change in water level was recorded at regular intervals until three successive measurements showing a consistent infiltration rate were achieved.

Table 1 summarizes the results of the infiltration testing. Infiltration rates have been reported without applying a factor of safety. Soils at the test locations were observed and sampled in order to characterize the subsurface profile. Tested native soils classified as Elastic SILT (MH). Groundwater was not encountered within our explorations which extended to a maximum depth approximately 10 feet bgs. According to the *Estimated Depth to Groundwater in the Portland, Oregon Area Website* (USGS, Oregon Water Science Center, <https://or.water.usgs.gov>) static groundwater is expected to be located at an approximate depth of 139 feet below the site. Infiltration testing data tables are presented in the appendix of this report.

Table 1: Summary of Infiltration Test Results

Test Location	Test Designation	Depth (feet)	Soil Type	% Passing U.S. No 200 Sieve	Infiltration Rate (inches/hr)	Hydraulic Head Range (inches)	Depth to Groundwater (Feet)
TP-2	IT-1	4	MH	80.5	0.01	0-12	Est 139
TP-2	IT-2	10	MH	91.4	0.02	0-12	Est 139

Very low to no infiltration was observed at the locations and depths tested. Based upon our observations of the subsurface soil profile and results of infiltration measurements, it is our opinion that stormwater infiltration systems are not geotechnically feasible at the subject site. Infiltration test methods and procedures attempt to simulate the as-built conditions of the planned disposal systems. However, due to natural variations in soil properties, actual infiltration rates may vary from the measured and/or recommended design rates. Infiltration rates presented in this report should not be applied to inappropriate or complex hydrological models such as a closed basin without extensive further studies. Evaluating environmental implications of stormwater disposal at this site are beyond the scope of this study.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Our site investigation indicates that the proposed construction appears to be geotechnically feasible, provided that the recommendations of this report are incorporated into the design and construction phases of the project. The primary geotechnical concern associated with development at the site is the lack of infiltration potential where stormwater infiltration systems are desired.

6.1 Site Preparation Recommendations

Areas of proposed construction and areas to receive fill should be cleared of any organic and inorganic debris, and loose stockpiled soils. Inorganic debris and organic materials from clearing should be removed from the site. Organic-rich soils and root zones should then be stripped from construction areas of the site or where engineered fill is to be placed. Depth of stripping of existing organic topsoil is estimated to be approximately 8 to 12 inches at the site, however depth of organic soil layers may increase in areas where trees and vegetation are present.

The final depth of soil removal should be determined by the geotechnical engineer or designated representative during site inspection while stripping/excavation is being performed. Stripped topsoil should be removed from areas proposed for placement of engineered fill and structures. Any remaining topsoil should be stockpiled only in designated areas and stripping operations should be observed and documented by the geotechnical engineer or his representative.



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Clackamas County Area, Oregon**



November 8, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Clackamas County Area, Oregon.....	13
46B—Jory stony silt loam, 3 to 8 percent slopes.....	13
Soil Information for All Uses	14
Soil Properties and Qualities.....	14
Soil Physical Properties.....	14
Saturated Hydraulic Conductivity (Ksat).....	14
References	18

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



MAP LEGEND

MAP INFORMATION

		Warning: Soil Map may not be valid at this scale.	
		Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.	
		Please rely on the bar scale on each map sheet for map measurements.	
		Source of Map: Natural Resources Conservation Service Web Soil Survey URL: _____ Coordinate System: Web Mercator (EPSG:3857)	
		Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.	
		This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.	
		Soil Survey Area: Clackamas County Area, Oregon Survey Area Data: Version 15, Sep 10, 2019	
		Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.	
		Date(s) aerial images were photographed: Jul 26, 2014—Sep 5, 2014	
		The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.	

Soil Map Unit Polygons	Very Stony Spot
Soil Map Unit Lines	Wet Spot
Soil Map Unit Points	Other
	Special Line Features
Special Point Features	
Blowout	
Borrow Pit	Streams and Canals
Clay Spot	Transportation
Closed Depression	Rails
Gravel Pit	Interstate Highways
Gravelly Spot	US Routes
Landfill	Major Roads
Lava Flow	Local Roads
Marsh or swamp	Background
Mine or Quarry	Aerial Photography
Miscellaneous Water	
Perennial Water	
Rock Outcrop	
Saline Spot	
Sandy Spot	
Severely Eroded Spot	
Sinkhole	
Slide or Slip	
Sodic Spot	

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
46B	Jory stony silt loam, 3 to 8 percent slopes	0.3	100.0%
Totals for Area of Interest		0.3	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Clackamas County Area, Oregon

46B—Jory stony silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2251

Elevation: 250 to 1,200 feet

Mean annual precipitation: 40 to 50 inches

Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Jory and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jory

Setting

Landform: Hillslopes

Landform position (two-dimensional): Summit, footslope

Landform position (three-dimensional): Base slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Colluvium

Typical profile

H1 - 0 to 8 inches: stony silt loam

H2 - 8 to 48 inches: stony silty clay

H3 - 48 to 60 inches: stony silty clay

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): 4s

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: C

Forage suitability group: Well drained < 15% Slopes (G002XY002OR)

Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Saturated Hydraulic Conductivity (Ksat)

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Custom Soil Resource Report

Map—Saturated Hydraulic Conductivity (Ksat)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons



= 3.7895



Not rated or not available

Soil Rating Lines



= 3.7895



Not rated or not available

Soil Rating Points



= 3.7895



Not rated or not available

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clackamas County Area, Oregon

Survey Area Data: Version 15, Sep 10, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 26, 2014—Sep 5, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Saturated Hydraulic Conductivity (Ksat)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
46B	Jory stony silt loam, 3 to 8 percent slopes	3.7895	0.3	100.0%
Totals for Area of Interest			0.3	100.0%

Rating Options—Saturated Hydraulic Conductivity (Ksat)

Units of Measure: micrometers per second

Aggregation Method: Minimum or Maximum

Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelpdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix C – Analysis

WES BMP Sizing Report

Project Information

Project Name	River Terrace Project
Project Type	Addition
Location	
Stormwater Management Area	0
Project Applicant	
Jurisdiction	OutofDistrict

Drainage Management Area

Name	Area (sq-ft)	Pre-Project Cover	Post-Project Cover	DMA Soil Type	BMP
DMA - Impervious	6,970	Grass	Roofs	C	Planter
DMA - Pervious	1,307	Grass	LandscapeCsoil	C	Planter

LID Facility Sizing Details

LID ID	Design Criteria	BMP Type	Facility Soil Type	Minimum Area (sq-ft)	Planned Areas (sq-ft)	Orifice Diameter (in)
Planter	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	533.6	540.0	0.9

Pond Sizing Details

1. FCWQT = Flow control and water quality treatment, WQT = Water quality treatment only
2. Depth is measured from the bottom of the facility and includes the three feet of media (drain rock, separation layer and growing media).
3. Maximum volume of the facility. Includes the volume occupied by the media at the bottom of the facility.
4. Maximum water storage volume of the facility. Includes water storage in the three feet of soil media assuming a 40 percent porosity.



Stewart Title Company
1000 SW Broadway, Suite 1600
Portland, OR 97205
Phone: (503) 290-5500

PRELIMINARY TITLE REPORT

SUPPLEMENTAL NO. 7

Date: December 16, 2019

Escrow Officer: Janice Mann
Phone: (503) 290-5561
Email: Jan.Mann@stewart.com

Title Officer: Tom Erickson
Email: Tom.Erickson@stewart.com

Order Number: 01049-30086

Property Address: 950 South End Rd., Oregon City, OR 97045

PRIOR REPORT DATED 11/8/2017 IS SUPPLEMENTED FOR THE FOLLOWING:

Amended Exception No. 7.

	<u>Liability</u>	<u>Premium</u>
ALTA 2006 Owner's Policy Extended	\$4,900,000.00	\$9,161.00
Short Term Credit applied in the amount of \$1,987.00		
(Underwriting fee - 11%)		
Proposed Insured:		
ALTA 2006 Loan Policy Extended	\$4,568,750.00	\$1,963.00
(Underwriting fee - 11%)		
Proposed Insured:		
First Interstate Bank		
OTIRO Endorsements: 228.06 (\$100.00), 203.1-06 (\$745.00), 206-06 (\$50.00), 208.2-06 (\$745.00), 209.10-06 (100.00), 209.6.1-06 (\$100.00), 217-06 (\$125.00), 217.1-06 (\$150.00), 218-06 (\$50.00), 222-06 (No fee), 225-06 (\$100.00), 237-06 (\$50.00), 66 (\$50.00), 70 (\$373.00)		
Government Service Fee		\$60.00

Stewart Title Company is prepared to issue on request and on recording of the appropriate documents, a policy or policies of Stewart Title Guaranty Company, as applied for, with coverages as indicated, based on this preliminary report. As of **December 11, 2019** at 8:00 A.M. title to the property described herein is vested in:

River Terrace Memory Care Property, LLC, an Oregon limited liability company

Subject only to the exceptions shown herein and to the terms, conditions and stipulations contained in the policy form. No liability is assumed until a full premium has been paid and a policy issued.

LEGAL DESCRIPTION: SEE EXHIBIT "A" ATTACHED HERETO

EXHIBIT "A"
LEGAL DESCRIPTION

**EXHIBIT A LEGAL
DESCRIPTION**

A tract of land in the A. F. Hedges D.L.C. in Section 1, Township 3 South, Range 1 East of the Willamette Meridian, in the City of Oregon City, Clackamas County, Oregon, described as follows:

Beginning at a stone marked with a cross that is 30 feet West and 690.7 feet North of the Northwest corner of the M. M. McCarver DLC in said Section 1, said point being in the center of the County Road leading to Canemah; thence North along the center of said County Road 224 feet to the true point of beginning of the tract to be described; thence West at right angles to the preceding course 325 feet; thence North parallel with the center line of the County Road 120 feet; thence East at right angles with the preceding course 325 feet to the center line of said County Road; thence South along said center line 120 feet to the true point of beginning.

EXCEPT that portion lying within South End Road and that portion of South End Road disclosed in Deed of Dedication recorded on June 16, 2016, Clackamas County Recording No. 2016-039446.

TOGETHER with a non-exclusive easement for roadway over and across a strip of land 27 feet in width lying South of and adjacent to the above described tract.

SCHEDULE B

GENERAL EXCEPTIONS

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the public records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
4. Any encroachment (of existing improvements located on the subject land onto adjoining land or of existing improvements located on adjoining land onto the subject land), encumbrance, violation, variation, or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the subject land.
5. Any lien or right to a lien, for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the public records.
6. Minerals of whatsoever kind, subsurface and surface substances, including but not limited to coal, lignite, oil, gas, uranium, clay, rock, sand and gravel in, on, under and that may be produced from the Land, together with all rights, privileges, and immunities relating thereto, whether or not appearing in the Public Records or listed in Schedule B. The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.

SPECIAL EXCEPTIONS:

7. Any lien or right to a lien, for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the public records.
8. The herein described premises are within the boundaries of and subject to the statutory powers, including the power of assessment, of the Tri-City Service District. We find none as of the effective date herein.
9. Rights of the public in and to any portion of the herein described premises lying within the boundaries of streets, roads or highways.
10. City Lien if any for the City of Oregon City. No search was done.
11. The herein described premises are within the boundaries of the subject to the statutory powers, including the power of assessment, of the Tri-City Service District. No search was done.
12. Rights of the public in and to any portion of the herein described premises lying within the boundaries of streets, roads or highways.
13. Restrictive Covenant Non-Remonstrance Agreement to Waive Remonstrance, including the terms and conditions thereof:
Recorded: June 9, 2016
Fee No.: [2016037772](#)
For: Sanitary sewer, storm sewer, water or street improvements
14. Easement, including the terms and conditions thereof,
Granted to: City of Oregon City
Recorded: June 9, 2016
Recording No.: [2016037773](#)
Purpose: Public and franchise utilities

Affects: Easterly 10.00 feet

15. Easement, including the terms and conditions thereof,
Granted to: City of Oregon City
Recorded: June 9, 2016
Recording No.: [2016037774](#)
Purpose: Public street and sidewalk
Affects: Southerly 10.00 feet

16. Maintenance Covenant and Access Easement, including the terms and provisions thereof:
Recorded: June 10, 2016
Fee No.: [2016038096](#)
For: Privately owned stormwater management facilities

17. Easement, including the terms and conditions thereof,
Granted to: City of Oregon City
Recorded: June 16, 2016
Recording No.: [2016039446](#)
Purpose: Street, road, right-of-way, and public utility
Affects: Southerly, Southeasterly and Easterly portions.

18. Deed of Trust, Assignment of Leases and Rents, Security Agreement and Fixture Filing and the terms and conditions thereof:
Grantor: River Terrace Memory Care Property, LLC, an Oregon limited liability company
Trustee: Stewart Title Company
Beneficiary: First Interstate Bank
Amount: \$4,568,750.00
Dated: November 19, 2018
Recorded: November 21, 2018
Recording No.: 2018-070977

19. Memorandum of Lease:
Lessor: River Terrace Memory Care Property, LLC, an Oregon limited liability company
Lessee: River Terrace Memory Care Operations, an Oregon limited liability company
Recorded: November 21, 2018
Recording No.: 2018-070978

20. The lien of the Lessor in the above Memorandum of Lease purports to subordinate to the lien of the instrument recorded under Recording No. 2018-070977 by Subordination, Nondisturbance and attornment Agreement, including the terms and conditions thereof:
Recorded: November 21, 2018
Recording No.: 2018-070979

END OF EXCEPTIONS

NOTES:

NOTE (a): We find no judgments or Federal Tax Liens against the vestee herein.

NOTE (b): Taxes paid in full for 2019-2020:
Levied Amount: \$78,598.03
Account No.: 00744047
Levy Code: 062-002
Map No.: 31E01AD03100

NOTE (c): As disclosed by the county tax rolls, the 2019-2020 real market value for said property is:

Land: \$1,030,813.00
Improvements: \$8,820,260.00
Total: \$6,851,073.00

NOTE (d): We find the following Deeds of record on the subject property:
Type of Document: Trustee's Deed
Dated: June 26, 2017
Recorded: June 26, 2017
Fee No.: [2017-042632](#)
Grantor: The Smith Firm, P.C.
Grantee: PBRELF I, LLC

NOTE: Any map or sketch enclosed as an attachment herewith is furnished for information purposes only to assist in property location with reference to streets and other parcels. No representation is made as to accuracy and the company assumes no liability for any loss occurring by reliance thereon.

After the issuance of a preliminary title report, if a transaction is consummated in reliance thereon, but without requiring the issuance of the title policy applied for, the full scheduled charge applicable to the type of coverage normally issued on such transactions will apply.

Stewart Title Company



Tom Erickson, Title Officer

TJA/te/bdm/te/te/te/ta

**If you have any questions regarding this report or your escrow, please contact your Escrow Officer Janice Mann
◆ Phone: (503) 290-5561 ◆ Fax: (866) 739-5724.**

ESCROW OFFICER LOCATION:

Stewart Title Company
5005 SW Meadows Road
Suite 120
Lake Oswego, OR 97035
Jan.Mann@stewart.com

STG Privacy Notice

Stewart Title Companies

WHAT DO THE STEWART TITLE COMPANIES DO WITH YOUR PERSONAL INFORMATION?

Federal and applicable state law and regulations give consumers the right to limit some but not all sharing. Federal and applicable state law regulations also require us to tell you how we collect, share, and protect your personal information. Please read this notice carefully to understand how we use your personal information. This privacy notice is distributed on behalf of the Stewart Title Guaranty Company and its title affiliates (the Stewart Title Companies), pursuant to Title V of the Gramm-Leach-Bliley Act (GLBA).

The types of personal information we collect and share depend on the product or service that you have sought through us. This information can include social security numbers and driver's license number.

All financial companies, such as the Stewart Title Companies, need to share customers' personal information to run their everyday business—to process transactions and maintain customer accounts. In the section below, we list the reasons that we can share customers' personal information; the reasons that we choose to share; and whether you can limit this sharing.

Reasons we can share your personal information.	Do we share	Can you limit this sharing?
For our everyday business purposes — to process your transactions and maintain your account. This may include running the business and managing customer accounts, such as processing transactions, mailing, and auditing services, and responding to court orders and legal investigations.	Yes	No
For our marketing purposes — to offer our products and services to you.	Yes	No
For joint marketing with other financial companies	No	We don't share
For our affiliates' everyday business purposes — information about your transactions and experiences. Affiliates are companies related by common ownership or control. They can be financial and non-financial companies. <i>Our affiliates may include companies with a Stewart name; financial companies, such as Stewart Title Company</i>	Yes	No
For our affiliates' everyday business purposes — information about your creditworthiness.	No	We don't share
For our affiliates to market to you — For your convenience, Stewart has developed a means for you to opt out from its affiliates marketing even though such mechanism is not legally required.	Yes	Yes, send your first and last name, the email address used in your transaction, your Stewart file number and the Stewart office location that is handling your transaction by email to optout@stewart.com or fax to 1-800-335-9591.
For non-affiliates to market to you. Non-affiliates are companies not related by common ownership or control. They can be financial and non-financial companies.	No	We don't share

We may disclose your personal information to our affiliates or to non-affiliates as permitted by law. If you request a transaction with a non-affiliate, such as a third party insurance company, we will disclose your personal information to that non-affiliate. [We do not control their subsequent use of information, and suggest you refer to their privacy notices.]

SHARING PRACTICES

How often do the Stewart Title Companies notify me about their practices?	We must notify you about our sharing practices when you request a transaction.
How do the Stewart Title Companies protect my personal information?	To protect your personal information from unauthorized access and use, we use security measures that comply with federal law. These measures include computer, file, and building safeguards.
How do the Stewart Title Companies collect my personal information?	We collect your personal information, for example, when you - request insurance-related services - provide such information to us We also collect your personal information from others, such as the real estate agent or lender involved in your transaction, credit reporting agencies, affiliates or other companies.
What sharing can I limit?	Although federal and state law give you the right to limit sharing (e.g., opt out) in certain instances, we do not share your personal information in those instances.

Contact us: If you have any questions about this privacy notice, please contact us at: Stewart Title Guaranty Company, 1980 Post Oak Blvd., Privacy Officer, Houston, Texas 77056

Sam Thomas

From: Jeffrey Wellington <jeffrey.wellington@gmail.com>
Sent: Monday, December 16, 2019 10:20 AM
To: Sam Thomas; Aaron Clark
Subject: Fwd: Pre-Application Extension Request

In case you do not have this email.

----- Forwarded message -----

From: **Laura Terway** <lterway@orccity.org>
Date: Thu, Oct 31, 2019 at 11:35 AM
Subject: RE: Pre-Application Extension Request
To: Jeffrey Wellington <jeffrey.wellington@gmail.com>

Morning,

Your extension is extended to make your pre-app valid for 1 year.



Laura Terway, AICP

Community Development Director

Planning & Building Departments

She/Her

City of Oregon City
PO Box 3040
698 Warner Parrott Road

Oregon City, Oregon 97045
Direct - 503.496.1553

Office - 503.722.3789

Fax 503.722.3880

Website: www.orccity.org | webmaps.orccity.org | www.rediscoverthefalls.com

Think **GREEN** before you print.

Please visit us at between the hours of 8:30am-3:30pm Monday through Friday.

PUBLIC RECORDS LAW DISCLOSURE: This e-mail is subject to the State Retention Schedule and may be made available to the public.

From: Jeffrey Wellington <jeffrey.wellington@gmail.com>

Sent: Monday, October 28, 2019 11:26 AM

To: Laura Terway <lterway@orccity.org>

Subject: Pre-Application Extension Request

Hey Laura,

Pete asked me to contact you directly to request a pre-application extension. We had our pre-app for the 914 South End Rd memory care expansion back in late March of this year. Since March there have been no significant changes to the project, so I wondered if we could extend the pre-application coverage. Is that possible?

Thanks,

Jeffrey



Pre-Application Conference Notes

PA 19-15, March 29, 2019

1. Proposed Project:

River Terrace Memory Care

Demolish existing residence, construct wing for memory care facility addition

Adding 16 Single Units w/ Shared Bath - 16 Beds

48 Total Units = 54 Total Beds

2 Additional Parking Spaces

2. Location:

950 + 914 South End Road, Oregon City, OR 97045

Clackamas County Map 3-1E-01AD, Tax Lots 3100 and 3301

3. General Information:

- Zoning: R-10 Single-Family Dwelling District
- Overlay Districts: High Water Table

4. Prior Approvals:

- 2018: GLUA-18-00025, VAR-18-00001, SP-18-000106, SP-18-00120, MD-18-00001
- 2014: SP-14-0009, VR-14-0001, CU-14-0001, LL-14-0005

5. Timing and Review Process:

It is the express policy of the city that development review not be segmented into discrete parts in a manner that precludes a comprehensive review of the entire development and its cumulative impacts.

This application will consist of four concurrent applications:

1. Conditional Use (Required for Major Modifications to original CU per OCMC 17.04.710)
2. Site Plan and Design Review
3. Variance
4. Lot Line Abandonment

This application is a **Type III** Decision. **The decision-making body is the Planning Commission.** The decision of the planning commission or historic review board is appealable to the city commission, on the record pursuant to Section 17.50.190. The city commission decision on appeal is the city's final decision and is subject to review by LUBA within twenty-one days of when it becomes final, unless otherwise provided by state law., with any subsequent appeal to the City Commission.

Pursuant to OCMC Section 17.50.050, a pre-application conference is valid for a period of six months. The applicant has **180 days** from the date of submittal of a land use application to have a complete application.

Type III decisions involve the greatest amount of discretion and evaluation of subjective approval standards, yet are not heard by the city commission, except upon appeal. In the event that any decision is not classified, it shall be treated as a Type III decision. The process for these land use decisions is controlled by ORS 197.763. Notice of the application and the planning commission or the historic review board hearing is

published and mailed to the applicant, recognized neighborhood association(s) and property owners within three hundred feet. Notice must be issued at least twenty days pre-hearing, and the staff report must be available at least seven days pre-hearing. At the evidentiary hearing held before the planning commission or the historic review board, all issues are addressed.

Staff is not authorized to waive any requirements of the code except for modifications to Street Standards through Section 12.04.007, modifications that will better meet design standards of site plan and design review through Section 17.62.015, and alternative parking lot landscaping plans through sections 17.52.070.

6. "R-10" Single-Family Dwelling District:

- "R-10" Single-Family District minimum required setbacks:
 - Front yard: 20 feet
 - Front porch: 15 feet
 - Attached and detached garage: 20 feet from the public right-of-way where access is taken
 - Interior side yard: 10 feet for at least one side yard, 8 feet for the other side yard
 - Corner side yard: 15 feet
 - Rear yard: 20 feet
 - Rear porch: 15 feet
 - Structures with a footprint of over 200 square feet cannot cover more than 40% of the lot area (decks and porches do not count towards lot coverage).
 - The proposal identifies the following lot coverage:

	Square Feet
Total Site	50,840
Allowed Building Coverage (40%)	20,336
Proposed Building Coverage (44.74%)	22,749

7. Variances (OCMC 17.60)

- A variance application is required for lot coverage. Please refer to Variance section of these notes.
- The variance application will be reviewed at the Type III level by the Planning Commission, however the minor variance fee will be charged because the variance for lot coverage is less than 25% and would typically be reviewed as a Type II Administrative Variance.
- 2019 Review fee = \$1,450.
- Grounds for Variance (i.e. Approval Criteria):
 1. That the variance from the requirements is not likely to cause substantial damage to adjacent properties by reducing light, air, safe access, or other desirable or necessary qualities;
 2. That the request is the minimum variance that would alleviate the hardship;
 3. Granting the variance will equal or exceed the regulation to be modified;
 4. Any impacts resulting from the adjustment are mitigated;
 5. No practical alternatives have been identified which would accomplish the same purpose and not require a variance.
 6. That the variance conforms to the comprehensive plan and the intent of the ordinance being varied.

8. Conditional Use Permit (OCMC 17.56):

- The addition will increase the square-footage of the facility more than 10 percent, which is considered a major modification of the original Conditional Use per OCMC 17.04.710. This requires a new Conditional Use application.
- Review fee for Conditional Use is \$4,091

9. Site Plan and Design Review (OCMC 17.62):

- Pursuant with OCMC Section 17.08.030, residential care facilities are a conditionally permitted use in the R-10 Single-Family Dwelling District. Site Plan and Design Review is required for conditional uses in all zones.
- The addition is greater than 1,000 SF and requires a full Site Plan and Design Review application.
- The applicant is required to demonstrate compliance with all applicable criteria. The pre-application materials did not include building elevations and lack the specificity and detail to determine compliance with some standards of the Oregon City Municipal Code. Please include details for all structures, parking lots, pavement, development, etc. with the application submittal.

Parking (OCMC 17.52)

- The number of parking stalls is dependent on the number of beds within the residential care facility and the net square footage of the combined use on the site. Based on the 2014 Conditional Use Permit/Site Plan and Design Review approval, the number of stalls required are as follows:

Use	<u>SQUARE FEET/BEDS</u>	<u>MINIMUM</u>	<u>MAXIMUM</u>
Senior housing, including congregate care, residential care and assisted living facilities; nursing homes and other types of group homes	54 beds	1 per 7 Beds (8 Stalls Required)	1 per 5 Beds (11 Stalls Required)
Office	~ 750 SF	2.70 (2 Stalls Required)	3.33 (3 Stalls Required)
Total		10	14

- Based on the 2018 approval, the Planning Commission approved 9 on-site parking spaces. The proposal would add 2 more spaces for a total of 11 spaces which is within the minimum and maximum parking amounts. On-street parking spaces do not count toward the maximum spaces.
- The application should include a floor plan identifying the number of beds and square footage of other uses (e.g. office space) to ensure compliance with minimum and maximum parking stalls is maintained.

Landscaping

- A landscaping plan prepared by a registered landscape architect is required to be submitted.
- 15% of the site must be landscaped. The application should include a calculation of landscaping demonstrating compliance with minimum site landscaping.
- Landscaping standards may be found in [OCMC 17.62.050.A.1](#)
- Parking Lot Landscaping is required per [OCMC 17.52.060](#). No more than eight contiguous spaces is permitted without a landscaped island between them, unless the applicant proposes an Alternative Landscaping Plan pursuant to section [17.52.070](#).

Site and Buildings

- Compliance with various building design standards shall be demonstrated including:
 - Relationship of Buildings to Streets and Parking in [OCMC 17.62.055.D](#) (Note that front setbacks greater than 5' will require one Pedestrian Amenity be provided for every five feet of additional setback requested.
 - Articulation, massing, and transparency in [OCMC 17.62.055.G, H, and I](#)
 - Mechanical equipment standards in [OCMC Section 17.62.050.A.20](#)
 - Pedestrian circulation requirements in [OCMC Section 17.62.050.A.9](#).
 - Building materials standards in [OCMC Section 17.62.050.A.21](#).

- Please identify all proposed improvement to the site as part of your land use application including but not limited to:
 - Landscaping
 - Parking
 - Outdoor Lighting (Photometric)
 - Pedestrian Circulation
 - Refuse/recycling areas
 - Mechanical equipment proposed
 - Façade modifications (windows, entranceways, exterior building materials, etc.)

10. Lot Line Abandonment (OCMC 16.20)

- An application for lot line abandonment to consolidate the parcels must be approved and recorded prior to issuance of any building permits. Staff will recommend this be a Condition of Approval. Alternatively, the applicant may submit the application for lot line abandonment concurrently with the other applications.
- Typically lot line abandonment is reviewed through a Type I administrative process.
- 2019 Fee for lot line abandonment is \$1,250.00

11. Transportation Impacts:

The applicant will need to have a traffic engineer conduct a transportation study in conformance with the City's [Guidelines for Transportation Impact Analysis](#) available on the City of Oregon City website.

Based on the information provided by the applicant, it appears the transportation analysis associated with this development proposal can be satisfied by submittal of a Transportation Analysis Letter (TAL). This option is available when specific criteria are met. These include a determination that the development generates 24 or fewer AM and PM peak hour trips and fewer than 250 daily trips. Details for a TAL can be found in Section 3.1 of the Guidelines. It is the applicant's responsibility to verify the trip generation characteristics of the proposed development.

The applicant's traffic engineer is welcome to contact the city's traffic engineering consultant, John Replinger, at Replinger-Associates@comcast.net or at 503-719-3383.

12. Tree Protection/Mitigation and Street Trees

Tree removal during the land development process is subject to compliance with tree protection and mitigation standards.

- The applicant's submittal should identify species and size of all trees onsite greater than 6" DBH.
- Tree removal is subject to OCMC [Chapter 17.41](#).
- Tree protection, removal and mitigation standards can be found in OCMC Section 17.41.130
- A mitigation plan prepared by a qualified professional (certified arborist, horticulturalist or forester or other environmental professional) is required in accordance with OCMC Chapter 17.41
- A tree covenant may be required to be recorded to protect existing and future trees.

13. Upcoming Code Changes:

The City is proposing Housing and Development Code Amendments which may affect your proposal. For details on proposed code amendments, please visit the following site:

<https://www.orcity.org/planning/draft-housing-and-other-development-and-zoning-code-amendments>

14. Other Notes:

- A neighborhood association meeting is required.
 - Chair: Bill McConnel, sena97045@gmail.com
 - Vice Chair: Gary Fergus, Interim Vice Chair fergusfamily@gmail.com

- Secretary: Vacant
- CIC Representative: Vacant
- CIC Representative: Vacant
- Planning Division Contact: Kelly Reid, kreid@orcity.org, 503-496-1540
- Meeting Information: Held the 3rd Thursday of January, March, May, August, and October
- Located: Oregon City United Methodist Church, 18955 South End Road, Oregon City, 7:00 PM
- Please include the Citizen Involvement Committee Chair, Amy Willhite, in any Neighborhood Association meeting requests, notifications or correspondence. Amy can be reached at awillhit@yahoo.com
- [OCMC 17.50.055](#) requires submittal of the meeting sign-in sheet, a summary of issues discussed, and a letter from the neighborhood association indicating that a meeting was held.
- Your application was transmitted to the State Historic Preservation Office (SHPO) and affected tribes for review. Comments received have been provided.

15. Applications Anticipated and Fees:

- Planning application anticipated:
 - Conditional Use: \$4,091.00
 - Site Plan and Design Review: Based on Project Cost – See Fee Schedule and Cost Estimate Sheet.
 - Variance (Administrative): \$1,450.00
 - Lot Line Abandonment: \$1,250.00
 - Mailing Labels: \$17 or provided by applicant
 - [2019 Planning Fee Schedule](#)

16. Applications, Checklists and Links:

- [Type III Review Process](#)
- [Land Use Application](#)
- [Conditional Use Checklist](#)
- [Variance Checklist](#)
- [Site Plan and Design Review Checklist](#)
- [Site Plan and Design Review Construction Cost Form](#)
- [Lot Line Adjustment and Abandonment Application](#)
- [Oregon City Adopted Street Tree List](#)
- [Oregon City Municipal Code](#)

17. Planning Division

Pete Walter, AICP, Planner, reviewed your pre-application for the Planning Division. Pete may be reached at 503-496-1568 or pwalter@orcity.org

18. Development Services Division (Utilities/Public Improvements/SDC's etc):

Sang Pau, Development Engineer with the Oregon City Development Services Division, reviewed your pre-application. Sang can be reached at 503-974-5503 or spau@orcity.org.

19. Building Division:

You may contact Mike Roberts, Building Official at 503.496.1517 or by email at mroberts@orcity.org.

20. Clackamas Fire District:

Questions can be directed to Mike Boumann, Lieutenant Deputy Fire Marshal of Clackamas Fire District #1. You may contact Mr. Boumann at (503)742-2660 or michaelbou@ccfd1.com.

21. Oregon City Municipal Code Criteria:

A template with applicable code criteria will be provided by staff following the pre-application conference. The following chapters of the Oregon City Municipal Code (OCMC) may be applicable to this proposal:

OCMC 12.04 – Streets, Sidewalks, and Public Places

OCMC 12.08 – Public and Street Trees

OCMC 13.12 – Stormwater Management

OCMC 15.48 – Grading, Filling, and Excavating

OCMC 16.20 – Property Line Adjustments and Abandonments Process and Standards

OCMC 17.08 – “R-10” Single-Family Dwelling District

OCMC 17.41 – Tree Protection Standards

OCMC 17.47 – Erosion and Sediment Control

OCMC 17.52 – Off-Street Parking and Loading

OCMC 17.54 – Supplemental Zoning Regulations and Exceptions

OCMC 17.56 – Conditional Uses

OCMC 17.58 – Lawful Nonconforming Uses, Structures, and Lots

OCMC 17.60 – Variances

OCMC 17.62 – Site Plan and Design Review

OCMC 17.50 – Administration and Procedures

Please note that several applicable code sections will soon change and have not yet been adopted.

For more information go to <https://www.orcity.org/planning/housing-and-other-development-and-zoning-code-amendments>

The provided current code response template is based on existing code.

Pre-application conferences are required by Section 17.50.050 of the City Code, as follows:

A. Preapplication Conference. Prior to submitting an application for any form of permit, the applicant shall schedule and attend a preapplication conference with City staff to discuss the proposal. To schedule a preapplication conference, the applicant shall contact the Planning Division, submit the required materials, and pay the appropriate conference fee. At a minimum, an applicant should submit a short narrative describing the proposal and a proposed site plan, drawn to a scale acceptable to the City, which identifies the proposed land uses, traffic circulation, and public rights-of-way and all other required plans. The purpose of the preapplication conference is to provide an opportunity for staff to provide the applicant with information on the likely impacts, limitations, requirements, approval standards, fees and other information that may affect the proposal. The Planning Division shall provide the applicant(s) with the identity and contact persons for all affected neighborhood associations as well as a written summary of the preapplication conference.

Notwithstanding any representations by City staff at a preapplication conference, staff is not authorized to waive any requirements of this code, and any omission or failure by staff to recite to an applicant all relevant applicable land use requirements shall not constitute a waiver by the City of any standard or requirement.

B. A preapplication conference shall be valid for a period of six months from the date it is held. If no application is filed within six months of the conference or meeting, the applicant must schedule and attend another conference before the City will accept a permit application. The community development director may waive the preapplication requirement if, in the Director's opinion, the development does not warrant this step. In no case shall a preapplication conference be valid for more than one year.

NOTICE TO APPLICANT: *A property owner may apply for any permit they wish for their property. HOWEVER, THERE ARE NO GUARANTEES THAT ANY APPLICATION WILL BE APPROVED. No decisions are made until all reports and testimony have been submitted. This form will be kept by the Community Development Department. A copy will be given to the applicant. IF the applicant does not submit an application within six (6) months from the Pre-application Conference meeting date, a NEW Pre-Application Conference will be required.*



DEVELOPMENT SERVICES PRE-APPLICATION MEETING NOTES

Planning Project Number: PA 19-15
Address: 950 South End Road
Map Number(s): 3-1E-01AD
Tax Lot(s): 03100, 03301
Project Name: 950 South End Road
Meeting Date: March 29, 2019
Reviewer(s): Sang Pau

General Comments

1. A complete land use application will typically include a preliminary stormwater report and preliminary construction plans showing all public improvements, including sewer, water, grading and erosion control, and stormwater facilities. The application should also include a narrative responding to all sections of the Oregon City Municipal Code (OCMC) applicable to the proposed development.
2. The City will issue a Staff Report in response to the contents of the application package provided by the applicant. Once a Staff Report is issued, staff strongly encourages a pre-design meeting with the project engineer to discuss plan requirements, conditions of approval, and process.
3. All applicable conditions of approval contained in the Staff Report must be addressed by providing the appropriate document (E.G. construction plans, reports, etc.) which must be reviewed and approved prior to issuance of building permits.
4. All applicable System Development Charges (SDC) shall be due and payable upon building permit issuance. The applicant will need to complete an SDC request form, found on the City's website.
5. The applicant may be required to sign a Non-Remonstrance Agreement for the purpose of making sanitary sewer, storm sewer, water or street improvements in the future that benefit the Property and assessing the cost to benefited properties.
6. The contractor for the applicant will be required to attend a pre-construction meeting prior to any work beginning onsite.
7. All public improvements must be bonded with a 120% performance bond prior to the beginning of construction. Public improvements are defined as public utility extensions and roadway improvements within existing right-of-way. Public improvements may also be on private property in certain circumstances. This bond is released at the end of the construction period assuming everything is constructed as agreed upon.

8. All newly constructed public improvements shall be maintained for a two year period following their acceptance of construction with a 15% maintenance bond. Newly constructed public improvements consist of those improvements within existing right of way and those that were constructed on private land that will be owned by the City following approval of a plat. This bond is released at the end of the maintenance period.
9. An erosion control application and review must be completed prior to issuance of construction permit : <https://www.orcity.org/publicworks/erosion-control-0>

Streets

1. South End Road is classified as a “Minor Arterial” road within a residentially zoned area. South End Road has right-of-way (ROW) that is, approximately, 60-foot-wide along the property’s frontage, with approximately 30 feet on the subject property side of the centerline. Existing improvements on the subject property side of the centerline of the road consist of approximately 20’ of pavement and curb without sidewalk.
2. “Minor Arterial” roads adjacent to residential zones may be required to have up to 100-foot-wide ROW. However, based on development pattern and future needs of the area, the proposed development will not need to provide the maximum ROW width.
3. Frontage improvements adjacent to the roadway should be, 5-foot-wide sidewalk with a 5-foot-wide planter strip and 0.5’ of buffer behind sidewalk. The development shall dedicate right-of-way to ensure there is 11’ from the edge of the existing pavement to incorporate a 0.5’ curb, a 5-foot-wide planter strip, a 5-foot-wide sidewalk and 0.5’ of buffer behind the sidewalk.
4. The existing driveway and approach must be decommissioned.
5. One street tree is required for every thirty-five feet of property frontage. If the pedestrian corridor does not have adequate space within the planter strip, trees may be planted within ten feet of the public ROW.
6. The development will be required to provide a 10-foot-wide Public Utility Easement (PUE) along all property lines frontages.
7. There are no overhead utilities required to be relocated underground along the frontage of the property.
8. Street lighting along the frontage of the development appears to be adequate.
9. Reduction to the standard improvements, ROW dedication and other deviations from the City’s street design standards may be requested through the modification process outlined in section

12.04.007 of the Oregon City Municipal Code. Proposed modifications may require additional evidence and analysis for review.

Stormwater

1. The following are General Thresholds from the Stormwater and Grading Design Standard (Section 1.2.1), which can be found online at:
https://www.orcity.org/sites/default/files/fileattachments/public_works/page/4224/final_manual_0.pdf
 - A. Development activities that result in 5,000 square feet of new or replaced impervious surface, cumulative over a 5-year period.
 - B. Development activities that will result in the **creation of more than 500 square feet of new impervious surface within a Natural Resource Overlay District (NROD)** (as defined by Oregon City Municipal Code [OCMC] 17.49), cumulative over a 5-year period.
 - C. Development activities that will **disturb 1,000 square feet of existing impervious surface within a Natural Resource Overlay District (NROD)** (as defined by Oregon City Municipal Code [OCMC] 17.49), cumulative over a 5-year period.
2. The project, as described in the Pre-Application submittal, appears to trigger part A of the above General Thresholds. Projects within the General Thresholds are subject to the requirements of the City's Stormwater and Grading Design Standards. Pervious pavement and green roofs may be utilized to reduce total impervious areas.
3. Where compliance with the Stormwater and Grading Design Standards is required, applicants must submit a completed Site Assessment and Planning Checklist (and other items as described in Section 9.1.1 of the Stormwater and Grading Design Standards) as part of the land use application review process. At a minimum the applicant should submit a preliminary stormwater report addressing the following items from Section 9.1.1 of the City's Stormwater and Grading Design Standards.
 - A. Stormwater management strategy
 - B. A site plan showing an adequately sized stormwater facility based on Stormwater Best Management Practices (BMP) Sizing Tool or sized using the Engineered Method (as defined by City's Stormwater and Grading Design Standards).
 - C. A geotechnical report or a Natural Resource Conservation Service (NRCS) soils report documenting onsite infiltration and soil conditions in support of a proposed stormwater management strategy.
 - D. Downstream analysis which extends to the distance where the project site contributes less than 15 percent of the cumulative tributary drainage area or 1,500 feet downstream of the approved point of discharge, whichever is greater, as required by Chapter 5 of the Stormwater and Grading Design Standards.

4. The nearest downstream public stormwater facility is an inlet located north of the proposed development, in South End Road. This structure directs flows north through a 12-inch pipe to the "Coffee" basin.
5. The development may be required to extend a 12" stormwater line to the frontage of the proposed development for conveyance of stormwater unless the site can infiltrate all stormwater runoff as required by the Stormwater and Grading Design Standards.

Water

1. There is an existing 8-inch ductile iron water main that runs within South End Road.
2. The development may be required to provide the development with a new water service line and meter if it is to remain on a separate lot.
3. There is an existing fire hydrant located off Amanda Court.
4. Record drawings for previous development show that the site is served by a 2" water service line with a 3/4" meter. The meter may need to be upsized to accommodate the proposed development.
5. Fire suppression shall be per the requirements and direction of Clackamas Fire District No. 1.

Sanitary Sewer

1. An 18-inch sanitary sewer main exists within South End Road.
2. The existing house on the property has a sanitary lateral which would not be applicable for commercial use as it is meant for single family residential. Therefore, the existing sewer lateral must be capped and abandoned as required by Oregon City Public Works.
3. The development may be required to provide a 6" sanitary service lateral (for commercial use) and two-way cleanout for the new development if it is to remain on a separate lot.

Supplemental Information:

- I. Documentation required before any construction plan review can begin by Public Works (which is after a land use decision has been made):
 - a. Complete Engineering Plans (Public Improvements, all stormwater facilities, site grading and erosion control)
 - b. Preliminary Cost Estimate for construction of Public Improvements, all stormwater facilities, site grading and erosion control.
 - c. Plan Review Fee
 - d. Complete Storm Water Report and Site Assessment and Planning Checklist
- II. Documentation required before any construction plan can be deemed approved by Public Works (to be able to start construction or obtain a building permit):
 - a. Inspection Fee

- b. Final Cost Estimate of Public Improvements
- c. Approved Engineering Plan stamped and signed by an Oregon Professional Engineer
- d. Approved Storm Water Report stamped and signed by an Oregon Professional Engineer
- e. 120% Performance Bond
- f. Developer/Engineer Agreement
- g. Non-Remonstrance Agreement
- h. R.O.W. Dedication / Deed of Dedication

III. Documentation required before Public Works will recommend Certificate of Occupancy or allow any buildings to be permitted for construction:

- a. Engineer of Record Certificate of Completion
- b. Completed Punchlist
- c. 15% Warranty Guarantee
- d. Recorded Easements
- e. Recorded Plat
- f. Private storm facilities - Maintenance Covenant and Access Easement



Oregon
Kate Brown, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE Ste C
Salem, OR 97301-1266
Phone (503) 986-0690
Fax (503) 986-0793
www.oregonheritage.org



June 12, 2019

Ms. Diliaana Vassileva
City of Oregon City Planning
221 Molalla Ave
Ste 200
Oregon City, OR 97045

RE: SHPO Case No. 19-0713
City of Oregon City PA 19-15, Memory Care Facility
Future potential ground disturbance
950 914 South End Road (3S 1E 1), Oregon City, Clackamas County

Dear Ms. Vassileva:

Our office recently received a request to review your application for the project referenced above. In checking our statewide archaeological database, it appears that there have been no previous surveys completed near the proposed project area. However, the project area lies within an area generally perceived to have a high probability for possessing archaeological sites and/or buried human remains. In the absence of sufficient knowledge to predict the location of cultural resources within the project area, extreme caution is recommended during project related ground disturbing activities. Under state law (ORS 358.905 and ORS 97.74) archaeological sites, objects and human remains are protected on both state public and private lands in Oregon. If archaeological objects or sites are discovered during construction, all activities should cease immediately until a professional archaeologist can evaluate the discovery. If you have not already done so, be sure to consult with all appropriate Indian tribes regarding your proposed project. If the project has a federal nexus (i.e., federal funding, permitting, or oversight) please coordinate with the appropriate lead federal agency representative regarding compliance with Section 106 of the National Historic Preservation Act (NHPA). If you have any questions about the above comments or would like additional information, please feel free to contact our office at your convenience. In order to help us track your project accurately, please reference the SHPO case number above in all correspondence.

Sincerely,

Dennis Griffin, Ph.D., RPA
State Archaeologist
(503) 986-0674
dennis.griffin@oregon.gov



TABLE 'A' ITEMS - 950 SOUTH END ROAD

2. THE SITE ADDRESS IS 950 SOUTH END ROAD, OREGON CITY, OREGON 97045.
3. THE SITE HAS A FLOOD ZONE CLASSIFICATION OF "ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN" ACCORDING TO FEMA MAP 41005CO278D WITH AN EFFECTIVE DATE OF JUNE 17, 2008.
4. GROSS LAND AREA IS 39,439 SQUARE FEET (0.905 ACRES).
5. DATUM - NAVD 88 BASED ON RTK GPS OBSERVATIONS TO ORGN STATION PDXA.
6. NO ZONING REPORT WAS PROVIDED TO THE SURVEYOR.
7. EXTERIOR BUILDING DIMENSIONS AND SQUARE FOOTAGE SHOWN HEREIN.
8. SUBSTANTIAL FEATURES OBSERVED DURING THE SURVEY SHOWN HEREIN.
9. NINE TOTAL PARKING SPACES INCLUDING 1 HANDICAP PARKING SPACE.
11. UTILITIES SHOWN FROM MAPPING OF SURFACE FACILITIES AND LOCATE MARKS.

TABLE 'A' ITEMS - 914 SOUTH END ROAD

2. THE SITE ADDRESS IS 914 SOUTH END ROAD, OREGON CITY, OREGON 97045.
3. THE SITE HAS A FLOOD ZONE CLASSIFICATION OF "ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN" ACCORDING TO FEMA MAP 41005CO278D WITH AN EFFECTIVE DATE OF JUNE 17, 2008.
4. GROSS LAND AREA IS 11,228 SQUARE FEET (0.258 ACRES).
5. DATUM - NAVD 88 BASED ON RTK GPS OBSERVATIONS TO ORGN STATION PDXA.
6. NO ZONING REPORT WAS PROVIDED TO THE SURVEYOR.
7. EXTERIOR BUILDING DIMENSIONS AND SQUARE FOOTAGE SHOWN HEREIN.
8. SUBSTANTIAL FEATURES OBSERVED DURING THE SURVEY SHOWN HEREIN.
11. UTILITIES SHOWN FROM MAPPING OF SURFACE FACILITIES AND LOCATE MARKS.

SURVEYOR'S NOTES

1. THE PORTION OF THIS SURVEY PERTAINING TO THE TRACT OF LAND REFERRED TO AS 950 SOUTH END ROAD IS BASED UPON THE DESCRIPTION IN THE PRELIMINARY TITLE REPORT SUPPLEMENTAL NO. 6 STEWART TITLE COMPANY, ORDER NO. 01049-30086 WITH AN EFFECTIVE DATE OF NOVEMBER 7, 2018.
2. THE PORTION OF THIS SURVEY PERTAINING TO THE TRACT OF LAND REFERRED TO AS 914 SOUTH END ROAD IS BASED UPON THE DESCRIPTION IN THE PRELIMINARY TITLE REPORT BY FIDELITY NATIONAL TITLE COMPANY OF OREGON, ORDER NO. 45141905147, WITH AN EFFECTIVE DATE OF MARCH 29, 2019.

THIS SURVEY HAS HELD THE GEOMETRY CREATED BY THE ABOVE DESCRIPTION. THE DESCRIPTION ITSELF DOES NOT CLOSE NORTH-SOUTH BY 0.04 FEET, YIELDING THE DIFFERENCE IN LENGTH ON THE WEST LINE. THE VARIATION BETWEEN BEARINGS ON THE WEST AND EAST LINES IS DUE TO HOLDING SAID GEOMETRY CREATED BY THIS DESCRIPTION AND PERPETUATING THE RESOLVED RIGHT OF WAY FROM THE SOUTH.

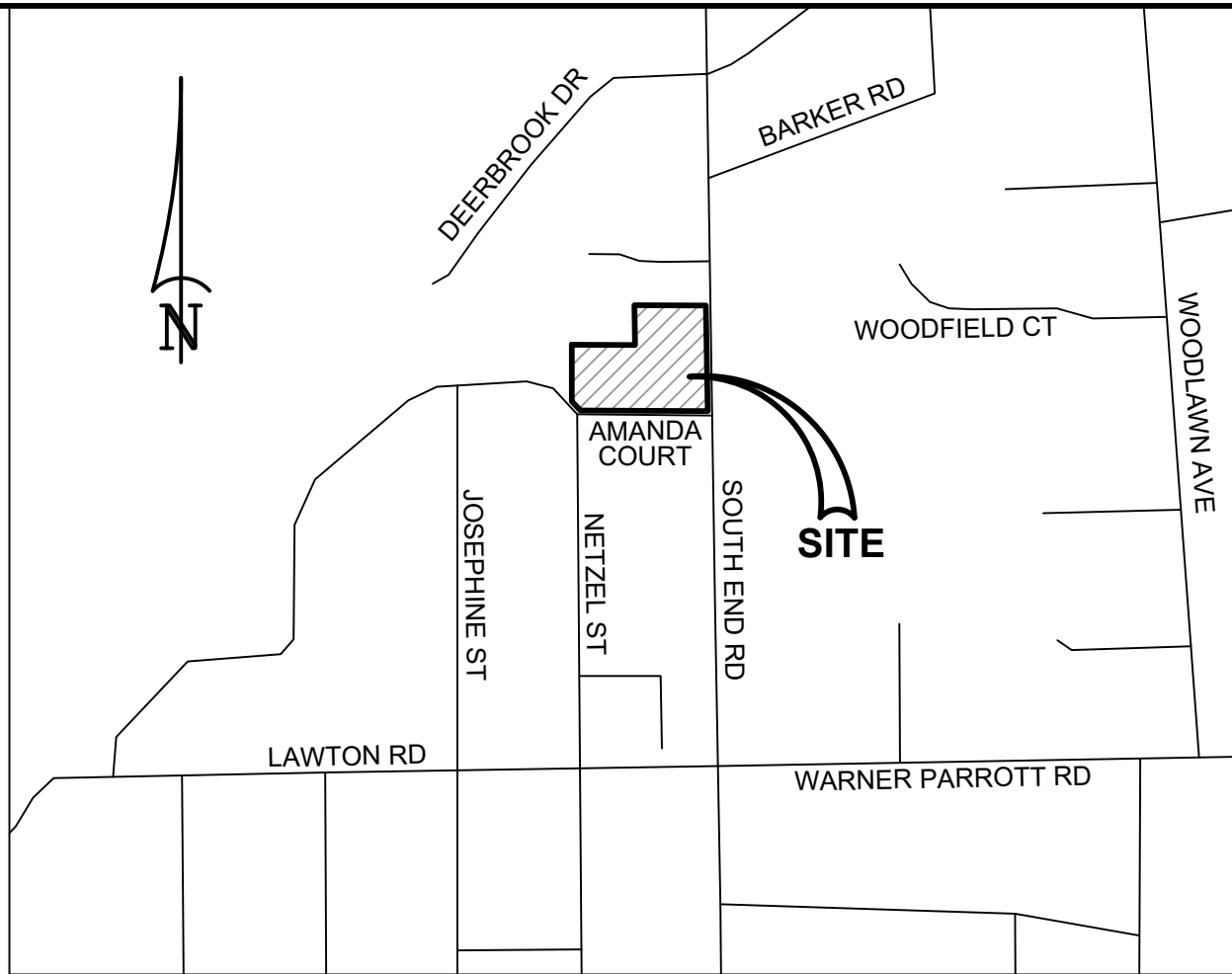
LEGEND

- SANITARY MANHOLE
⊙ COMMUNICATIONS MANHOLE
□ MAILBOX
+ SIGN ON POST
▢ CATCH BASIN
◇ UTILITY POLE
+ SIGN ON POST
■ ELECTRIC METER
▢ IRRIGATION BOX
C COMMUNICATION VAULT
P POWER VAULT
☐ CURB INLET
☐ DITCH INLET
→ GUY ANCHOR
• BOLLARD
■ JUNCTION BOX
* STREET LIGHT
▢ UTILITY LINE MARKER
○ STORM DRAIN MANHOLE
☐ GAS METER
▢ WATER METER
⊙ FIRE HYDRANT
x WATER VALVE
y HOSE BIB
⊕ FOUND PROPERTY CORNER AS NOTED
★ CONIFEROUS TREE

- SS SANITARY LINE
SD STORM LINE
COM COMMUNICATION LINE
W WATER LINE
G GAS LINE
P POWER LINE
OHL OVERHEAD UTILITY LINE
RAMP INDICATES PHYSICAL ACCESS TO PUBLIC WAY

ABBREVIATIONS

- SDCO STORM DRAIN CLEAN OUT
R.O.W. RIGHT-OF-WAY
SSMH SANITARY SEWER MANHOLE
PUE PUBLIC UTILITY EASEMENT
COL. COLUMN
CONC. CONCRETE
A/C AIR CONDITIONER
CPP CORRUGATED PERFORATED PIPE
TYP. TYPICAL
COR. CORNER



VICINITY MAP
NOT TO SCALE

LEGAL DESCRIPTION - 950 SOUTH END ROAD

A TRACT OF LAND IN THE A.F. HEDGES D.L.C. IN SECTION 1, TOWNSHIP 3 SOUTH, RANGE 1 EAST OF THE WILLAMETTE MERIDIAN, IN THE CITY OF OREGON CITY, CLACKAMAS COUNTY, OREGON, DESCRIBED AS FOLLOWS:

BEGINNING AT A STONE MARKED WITH A CROSS THAT IS 30 FEET WEST AND 690.7 FEET NORTH OF THE NORTHWEST CORNER OF THE M.M. MCCARVER DLC IN SAID SECTION 1, SAID POINT BEING IN THE CENTER OF THE COUNTY ROAD LEADING TO CANEMAH; THENCE NORTH ALONG THE CENTER OF SAID COUNTY ROAD 224 FEET TO THE TRUE POINT OF BEGINNING OF THE TRACT TO BE DESCRIBED; THENCE WEST AT RIGHT ANGLES TO THE PRECEDING COURSE 325 FEET; THENCE NORTH PARALLEL WITH THE CENTER LINE OF THE COUNTY ROAD 120 FEET; THENCE EAST AT RIGHT ANGLES WITH THE PRECEDING COURSE 325 FEET TO THE CENTER LINE OF SAID COUNTY ROAD; THENCE SOUTH ALONG SAID CENTER LINE 120 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPT THAT PORTION LYING WITHIN SOUTH END ROAD AND THAT PORTION OF SOUTH END ROAD DISCLOSED IN DEED OF DEDICATION RECORDED ON JUNE 16, 2016, CLACKAMAS COUNTY RECORDING NO. 2016-039446.

TOGETHER WITH A NON-EXCLUSIVE EASEMENT FOR ROADWAY OVER AND ACROSS A STRIP OF LAND 27 FEET IN WIDTH LYING SOUTH OF AND ADJACENT TO THE ABOVE DESCRIBED TRACT.

EXCEPTIONS - 950 SOUTH END ROAD

THE FOLLOWING ARE SPECIAL EXCEPTIONS IN THE PRELIMINARY TITLE REPORT PREPARED BY STEWART TITLE COMPANY, SUPPLEMENTAL NO. 6, ORDER NO. 01049-30086, DATED NOVEMBER 7, 2018. REFER TO SAID REPORT FOR GENERAL EXCEPTIONS 1 THROUGH 6 AND SPECIAL EXCEPTIONS 7-13, 16 AND 18-27 (NOT SURVEY RELATED OR INTENTIONALLY DELETED BY SAID TITLE COMPANY) AND FURTHER PARTICULARS.

- 14 EASEMENT, INCLUDING THE TERMS AND CONDITIONS THEREOF, GRANTED TO: CITY OF OREGON CITY
RECORDED: JUNE 9, 2016
RECORDING NO.: 2016037773
PURPOSE: PUBLIC AND FRANCHISE UTILITIES
AFFECTS: EASTERLY 10.00 FEET
- 15 EASEMENT, INCLUDING THE TERMS AND CONDITIONS THEREOF, GRANTED TO: CITY OF OREGON CITY
RECORDED: JUNE 9, 2016
RECORDING NO.: 2016037774
PURPOSE: PUBLIC STREET AND SIDEWALK
AFFECTS: SOUTHERLY 10.00 FEET
- 17 EASEMENT, INCLUDING THE TERMS AND CONDITIONS THEREOF, GRANTED TO: CITY OF OREGON CITY
RECORDED: JUNE 16, 2016
RECORDING NO.: 2016039446
PURPOSE: STREET, ROAD, RIGHT-OF-WAY, AND PUBLIC UTILITY
AFFECTS: SOUTHERLY, SOUTHEASTERLY AND EASTERLY PORTIONS

LEGAL DESCRIPTION - 914 SOUTH END ROAD

A PORTION OF SECTION 1, TOWNSHIP 3 SOUTH, RANGE 1 EAST, OF THE WILLAMETTE MERIDIAN, IN THE CITY OF OREGON CITY, COUNTY OF CLACKAMAS AND STATE OF OREGON DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT 60 FEET WEST AND NORTH 1,034.81 FEET FROM THE NORTHWEST CORNER OF THE MCCARVER DONATION LAND CLAIM SITUATED IN SECTION 1, TOWNSHIP 3 SOUTH, RANGE 1 EAST, OF THE WILLAMETTE MERIDIAN, IN THE CITY OF OREGON CITY, COUNTY OF CLACKAMAS AND STATE OF OREGON; THENCE SOUTH 89°58'01" WEST, 155.00 FEET; THENCE NORTH 72.57 FEET TO THE NORTH LINE OF A TRACT OF LAND DESCRIBED IN BOOK 345, PAGE 53; THENCE SOUTH 89°58'22" EAST, 155.00 FEET ALONG SAID NORTH LINE TO THE WESTERLY RIGHT-OF-WAY OF SOUTH END ROAD; THENCE SOUTH 72.37 FEET ALONG SAID RIGHT-OF-WAY LINE TO THE TRUE POINT OF BEGINNING.

SEE SURVEYOR'S NOTE #2 FOR PARTICULARS ON THE INTERPRETATION OF THIS DESCRIPTION.

EXCEPTIONS - 914 SOUTH END ROAD

THERE WERE NO SPECIAL EXCEPTIONS IN THE PRELIMINARY TITLE REPORT PREPARED BY FIDELITY NATIONAL TITLE COMPANY OF OREGON, ORDER NO. 45141905147, WITH AN EFFECTIVE DATE OF MARCH 29, 2019. REFER TO SAID REPORT FOR GENERAL EXCEPTIONS 1 THROUGH 5 AND SPECIAL EXCEPTIONS 6-9 (NONE OF WHICH BEING SURVEY RELATED) AND FURTHER PARTICULARS.

SURVEYOR'S CERTIFICATE

TO: RIVER TERRACE MEMORY CARE PROPERTY, LLC, AN OREGON LIMITED LIABILITY COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2018 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 5, 6(A), 6(B), 7(A), 7(B), 8, 9, 11, AND 20 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON MAY 31, 2019.

DATED THIS 3RD DAY OF JUNE, 2019.
JON M. YAMASHITA, PLS, REGISTRATION NO. 53760
jon.yamashita@otak.com

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JANUARY 12, 2002
JON M. YAMASHITA
53760LS
RENEWES 6/30/2020

ALTA/NSPS LAND TITLE SURVEY

TWO TRACTS OF LAND LOCATED IN THE NORTHEAST ONE-QUARTER OF SECTION 1,
TOWNSHIP 3 SOUTH, RANGE 1 EAST OF THE WILLAMETTE MERIDIAN,
IN THE CITY OF OREGON CITY, COUNTY OF CLACKAMAS AND STATE OF OREGON.

Otak

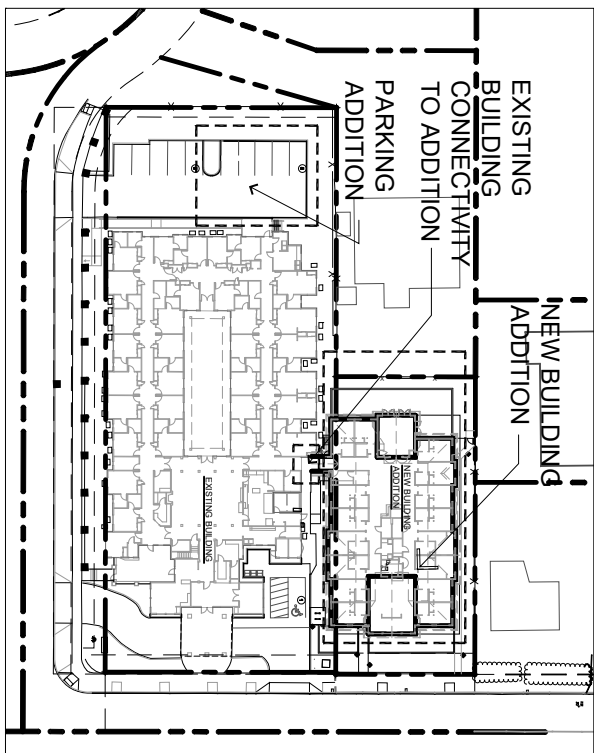
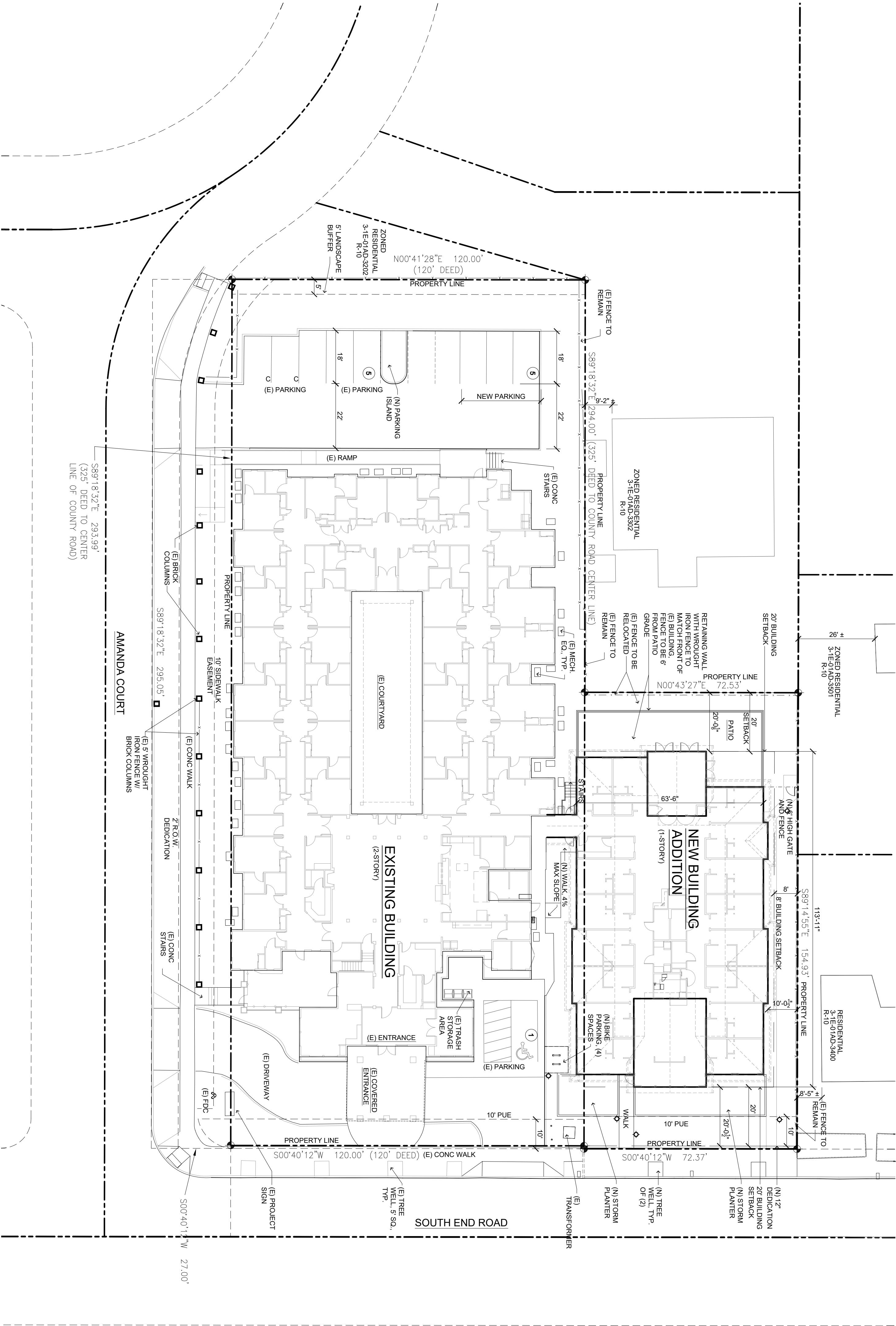
808 SW 3rd Avenue, Suite 300
Portland, OR 97204
503.287.6825
www.otak.com

1 OF 1

Sheet No.

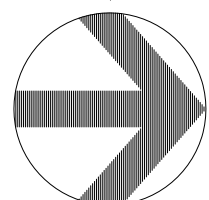
18947

Project No.

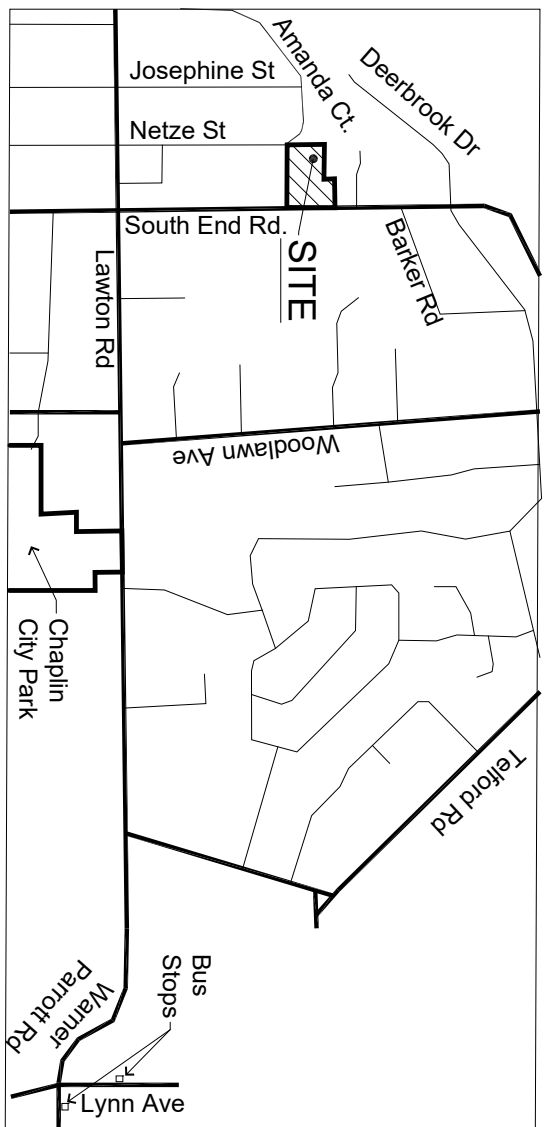


SCOPE OF WORK

1" = 100'

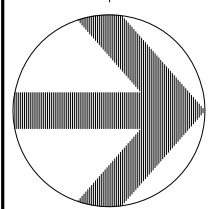


River Terrace Oregon City, OR



VICINITY MAP

NOT TO SCALE



PROJECT DATA

SITE DATA	950 SOUTH END ROAD	ZONED R-10
PROPERTY AREA	97 ACRES	33,343 SQ. FT.
ASSESSORS PARCEL ID NUMBER	3-1E-01A-03100	
SITE DATA	914 SOUTH END ROAD	ZONED R-10
PROPERTY AREA	26 ACRES	11,248 SQ. FT.
ASSESSORS PARCEL ID NUMBER	3-1E-01A-03801	
SITE DATA	914 & 950 SOUTH END ROAD (COMBINED)	50,591 SQ. FT.
PROPERTY AREA	117 ACRES	
SITE AREA BREAKDOWN		
EXISTING MC BUILDING	16,405 SQ. FT.	(32%)
ADDITION MC BUILDING	8,996 SQ. FT.	(14%)
BUILDING FOOTPRINTS TOTAL	25,401 SQ. FT.	(46.2%)
DRIVES / PARKING	7,177 SQ. FT.	(14.2%)
OPEN SPACE	11,131 SQ. FT.	(22.1%)
TOTAL	50,591 SQ. FT.	(100%)
IMPERVIOUS AREA	39,450 SQ. FT.	(77.9%)
PERVIOUS AREA	11,131 SQ. FT.	(22.1%)
PARKING BREAKDOWN		
OPEN SPACES	10	
TOTAL SPACES	11	
FLOOR TO AREA RATIO		
EXISTING MC BUILDING (1ST & 2ND)	16,405 ÷ 1,980 = 8.38	SQ. FT.
ADDITION MC BUILDING	8,996 ÷ 1,980 = 4.54	SQ. FT.
TOTAL	25,381 ÷ 50,591 = 50.1	

PROJECT DESCRIPTION

A SINGLE-STORY 16-BED MEMORY CARE ADDITION FOR RESIDENTS WITH ALZHEIMERS, DEMENTIA, AND OTHER AGE-RELATED MENTAL IMPAIRMENTS. THE ADDITION WILL BE ADJACENT TO THE EXISTING FACILITY AND SHED AT 914 SOUTH END RD.

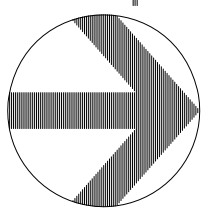
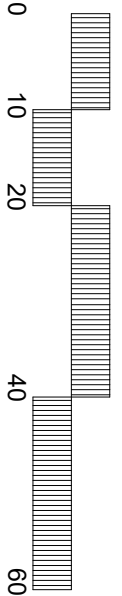
DRAWING INDEX

A1.1	ARCHITECTURAL SITE PLAN AND NOTES
L1.1	LANDSCAPE PLAN AND NOTES
A2.2	ROOF PLAN
A6.1	ELEVATIONS
E1.1	LIGHTING SITE PLAN AND SCHEDULES
C0.1	EXISTING CONDITIONS PLAN
C1.0	CIVIL SITE PLAN
C2.0	DETAIL GRADING PLAN
C2.1	DETAIL GRADING PLAN
C3.0	DETAIL UTILITY PLAN
C4.0	DETAIL EROSION CONTROL PLAN
C5.1	CIVIL DETAILS

ARCHITECTURAL SITE PLAN

DATE: 12/13/2019

1" = 20'



©2018 Lenity Architecture

ARCHITECTURAL SITE PLAN

RIVER TERRACE
BUILDING ADDITION
914 & 950 SOUTH END ROAD
OREGON CITY, OR 97045

lenity
architecture, inc.
3150 Kettle Court SE, Salem, Oregon 97301
P 503 399 1090 F 503 399 0565 W lenityarchitecture.com

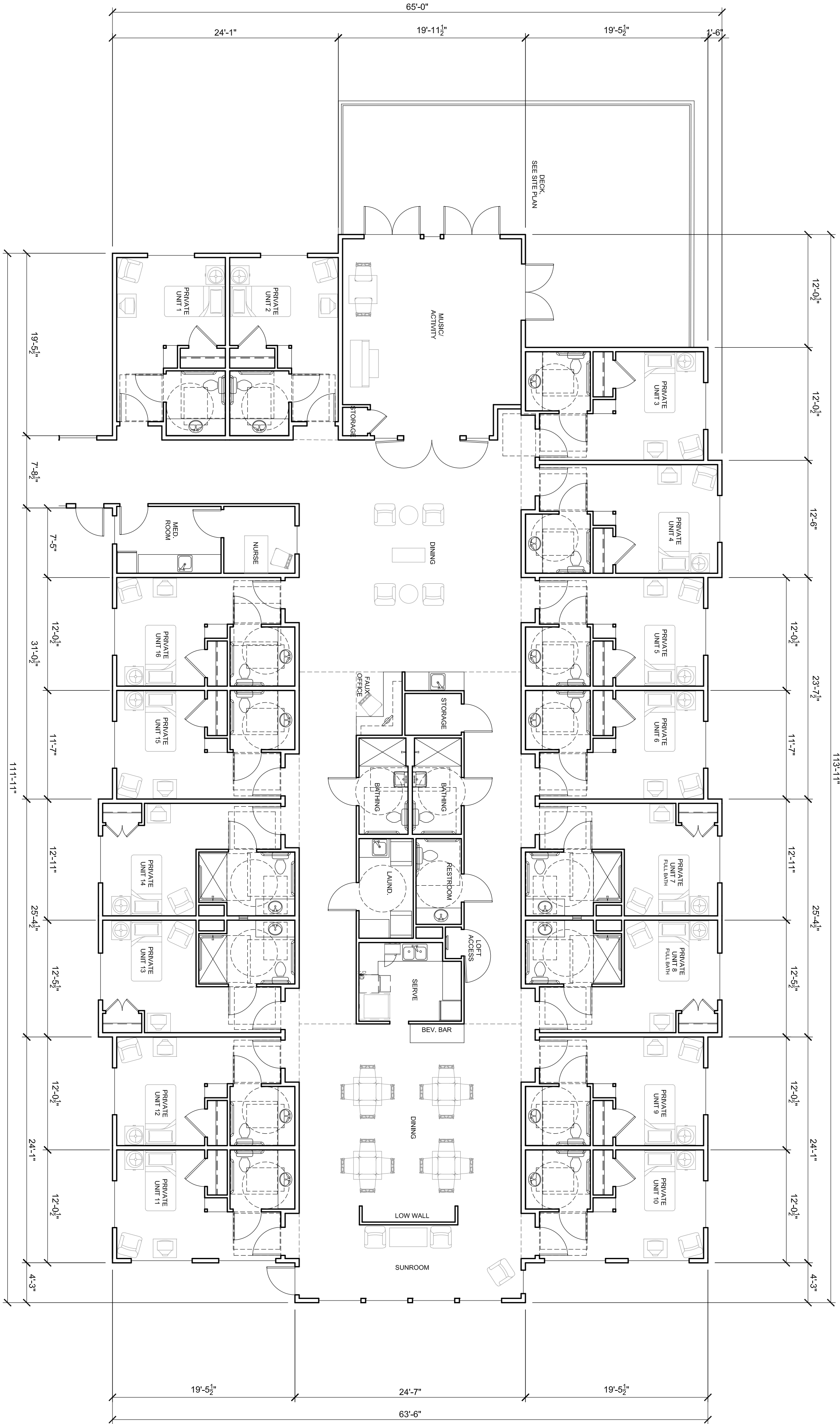
A1.1

SHEET

REVISED DATE

DATE

12/20/2019

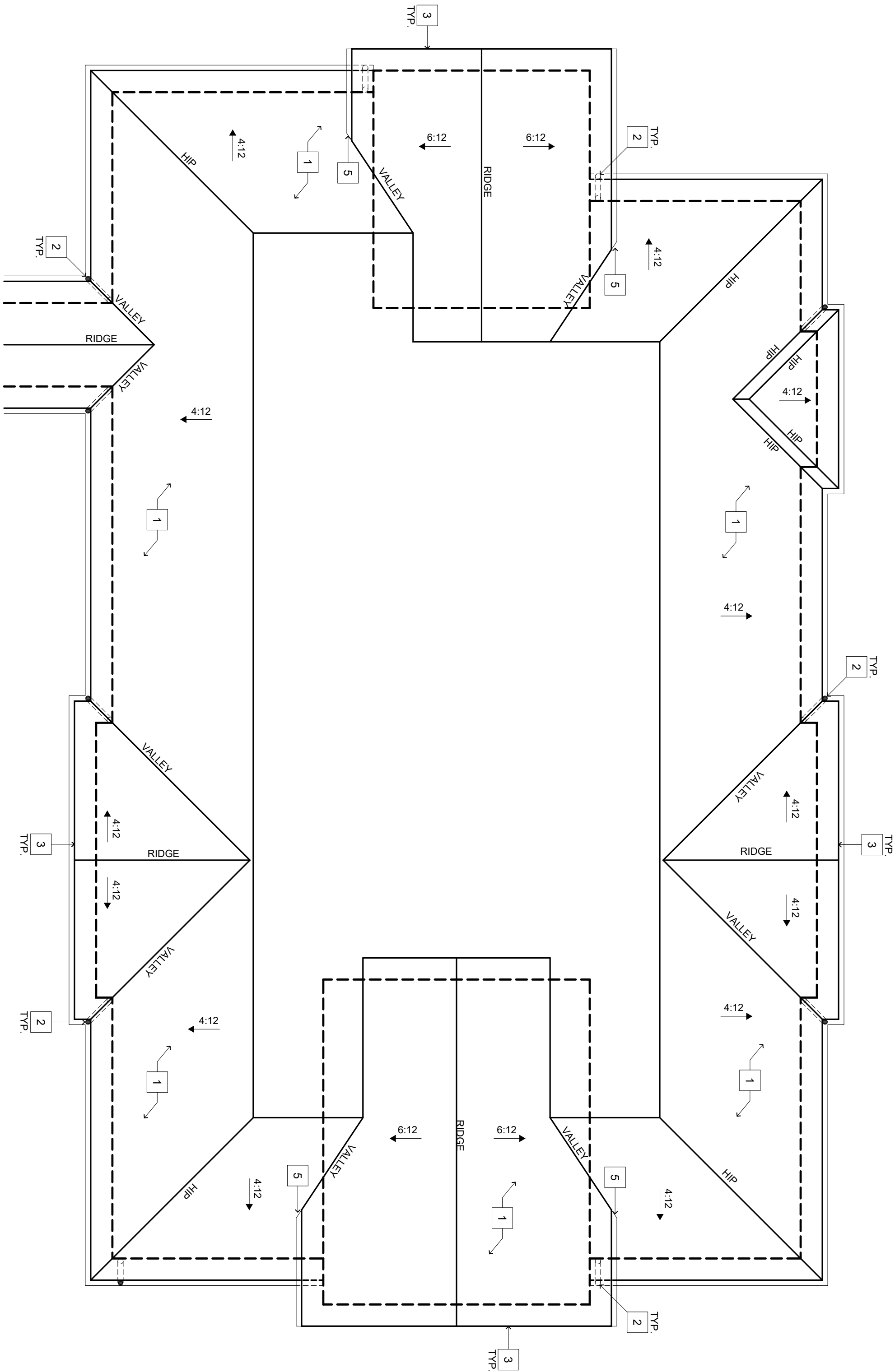


1 FLOOR PLAN
SCALE: 1/8" = 1'-0"

DATE	12/20/2019
REVISED DATE	
SHEET	A2.1

BLDG ADDITION
FLOOR PLAN

RIVER TERRACE
BUILDING ADDITION
914 & 950 SOUTH END ROAD
OREGON CITY, OR 97045



KEY NOTES

- 1 CLASS 'A' ARCH, COMP 25 YEAR ASPHALT SHINGLE ROOFING, SEE DETAIL 14A7.2
- 2 DOWNSPOUT TO GRADE
- 3 RAKE, SEE SHEET A2.2 FOR DETAILS AT DIFFERENT CONDITIONS
- 4 SKYLIGHTS, SEE 14A7.2
- 5 OPEN END GUTTERS

KEYNOTES INDICATED ABOVE ARE APPLICABLE FOR THE ROOF PLAN SHEET ONLY

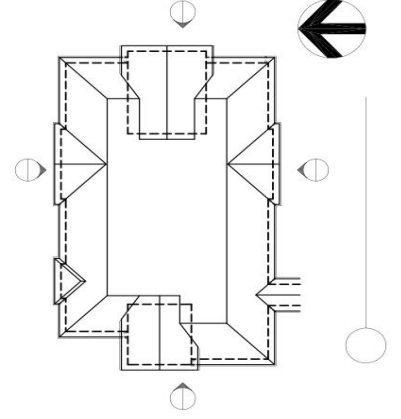
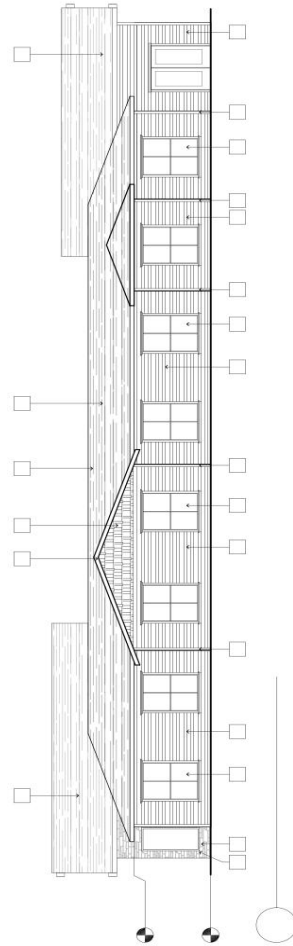
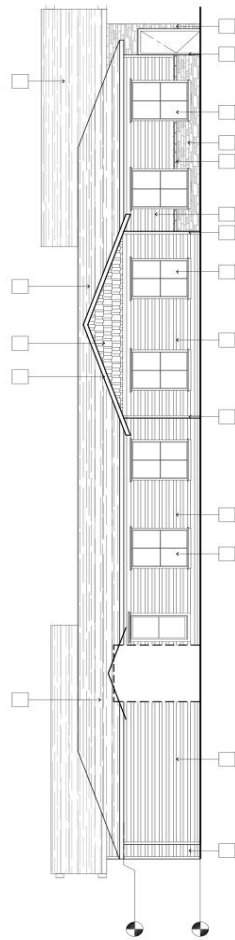
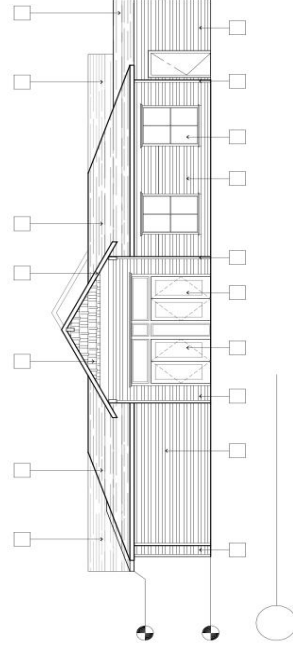
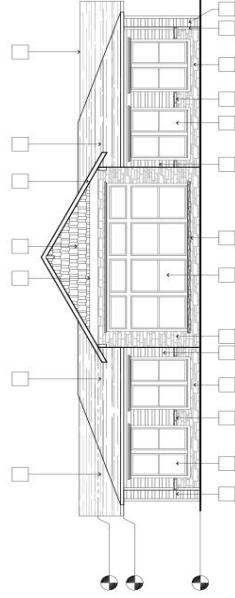
1 ROOF PLAN
SCALE: 1/8" = 1'-0"

©2018 Lenity Architecture

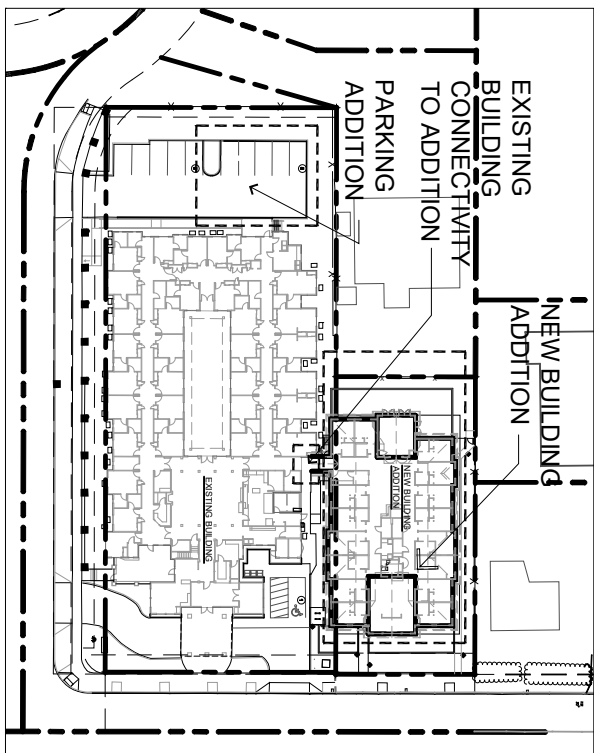
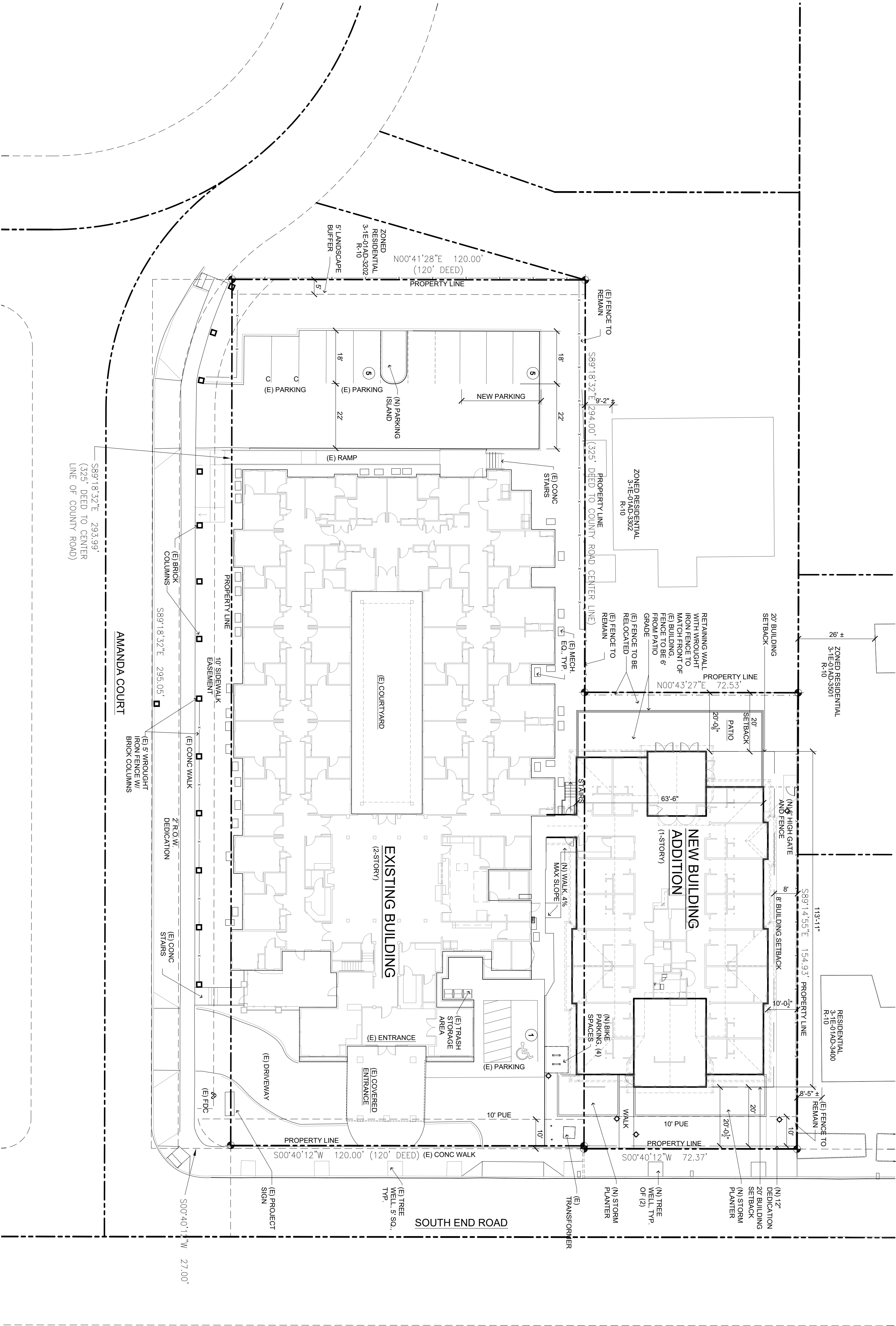
BLDG ADDITION
ROOF PLAN

RIVER TERRACE
BUILDING ADDITION
914 & 950 SOUTH END ROAD
OREGON CITY, OR 97045

lenity
architecture, inc.
3150 Kettle Court SE, Salem, Oregon 97301
P 503.399.1090 F 503.399.0565 W lenityarchitecture.com

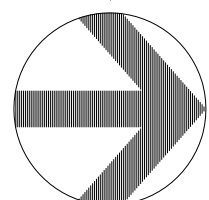


1 TYP.

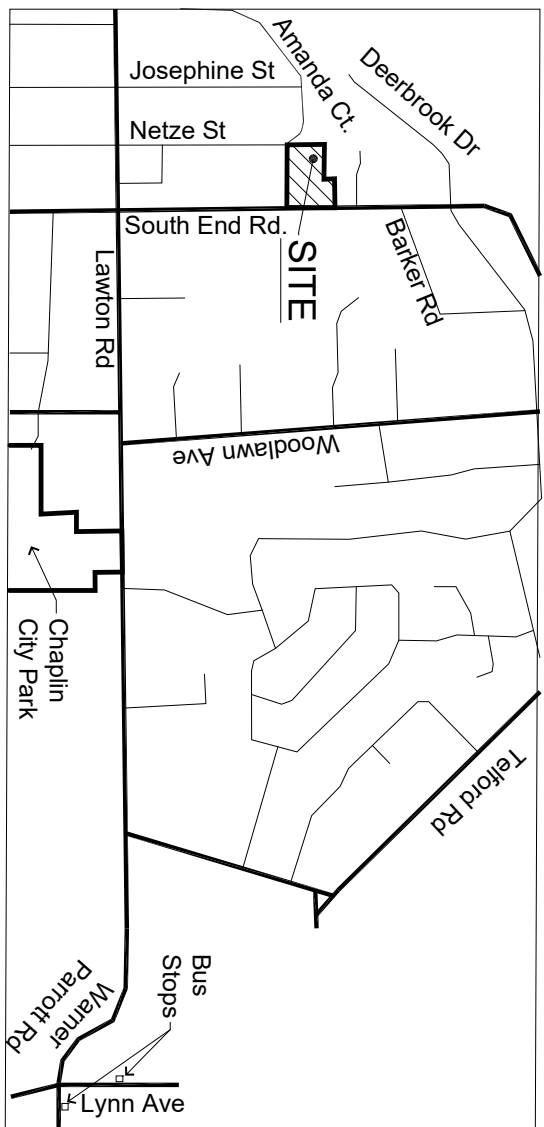


SCOPE OF WORK

1" = 100'

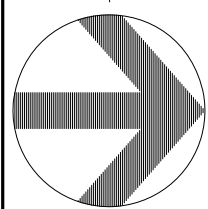


River Terrace Oregon City, OR



VICINITY MAP

NOT TO SCALE



PROJECT DATA

SITE DATA	950 SOUTH END ROAD	ZONED R-10
PROPERTY AREA	97 ACRES	33,343 SQ. FT.
ASSESSORS PARCEL ID NUMBER	3-1E-01A-03100	
SITE DATA	914 SOUTH END ROAD	ZONED R-10
PROPERTY AREA	26 ACRES	11,248 SQ. FT.
ASSESSORS PARCEL ID NUMBER	3-1E-01A-03801	
SITE DATA	914 & 950 SOUTH END ROAD (COMBINED)	50,591 SQ. FT.
PROPERTY AREA	117 ACRES	
SITE AREA BREAKDOWN		
EXISTING MC BUILDING	16,405 SQ. FT.	(32%)
ADDITION MC BUILDING	8,996 SQ. FT.	(14%)
BUILDING FOOTPRINTS TOTAL	25,401 SQ. FT.	(46.2%)
DRIVES / PARKING	7,177 SQ. FT.	(14.2%)
OPEN SPACE	11,131 SQ. FT.	(22.1%)
TOTAL	50,591 SQ. FT.	(100%)
IMPERVIOUS AREA	39,450 SQ. FT.	(77.9%)
PERVIOUS AREA	11,131 SQ. FT.	(22.1%)
PARKING BREAKDOWN		
OPEN SPACES	10	
TOTAL SPACES	11	
FLOOR TO AREA RATIO		
EXISTING MC BUILDING (1ST & 2ND)	16,405 + 1,980 = 18,385 SQ. FT.	
ADDITION MC BUILDING	25,381 / 50,591 = 50.1	

PROJECT DESCRIPTION

A SINGLE-STORY 16-BED MEMORY CARE ADDITION FOR RESIDENTS WITH ALZHEIMERS, DEMENTIA, AND OTHER AGE-RELATED MENTAL IMPAIRMENTS. THE ADDITION WILL BE ADJACENT TO THE EXISTING FACILITY AND SHED AT 314 SOUTH END RD.

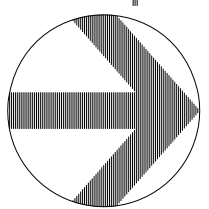
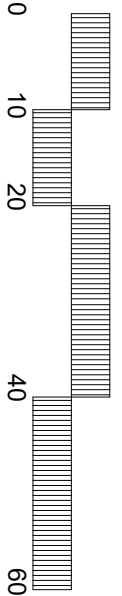
DRAWING INDEX

A1.1	ARCHITECTURAL SITE PLAN AND NOTES
L1.1	LANDSCAPE PLAN AND NOTES
A2.2	ROOF PLAN
A6.1	ELEVATIONS
E1.1	LIGHTING SITE PLAN AND SCHEDULES
C0.1	EXISTING CONDITIONS PLAN
C1.0	CIVIL SITE PLAN
C2.0	DETAIL GRADING PLAN
C2.2	DETAIL GRADING PLAN
C3.0	DETAIL UTILITY PLAN
C4.0	DETAIL EROSION CONTROL PLAN
C5.1	CIVIL DETAILS

ARCHITECTURAL SITE PLAN

DATE: 12/13/2019

1" = 20'



©2018 Lenity Architecture

ARCHITECTURAL SITE PLAN

RIVER TERRACE
BUILDING ADDITION
914 & 950 SOUTH END ROAD
OREGON CITY, OR 97045

lenity
architecture, inc.
3150 Kettle Court SE, Salem, Oregon 97301
P 503 399 1090 F 503 399 0565 W lenityarchitecture.com

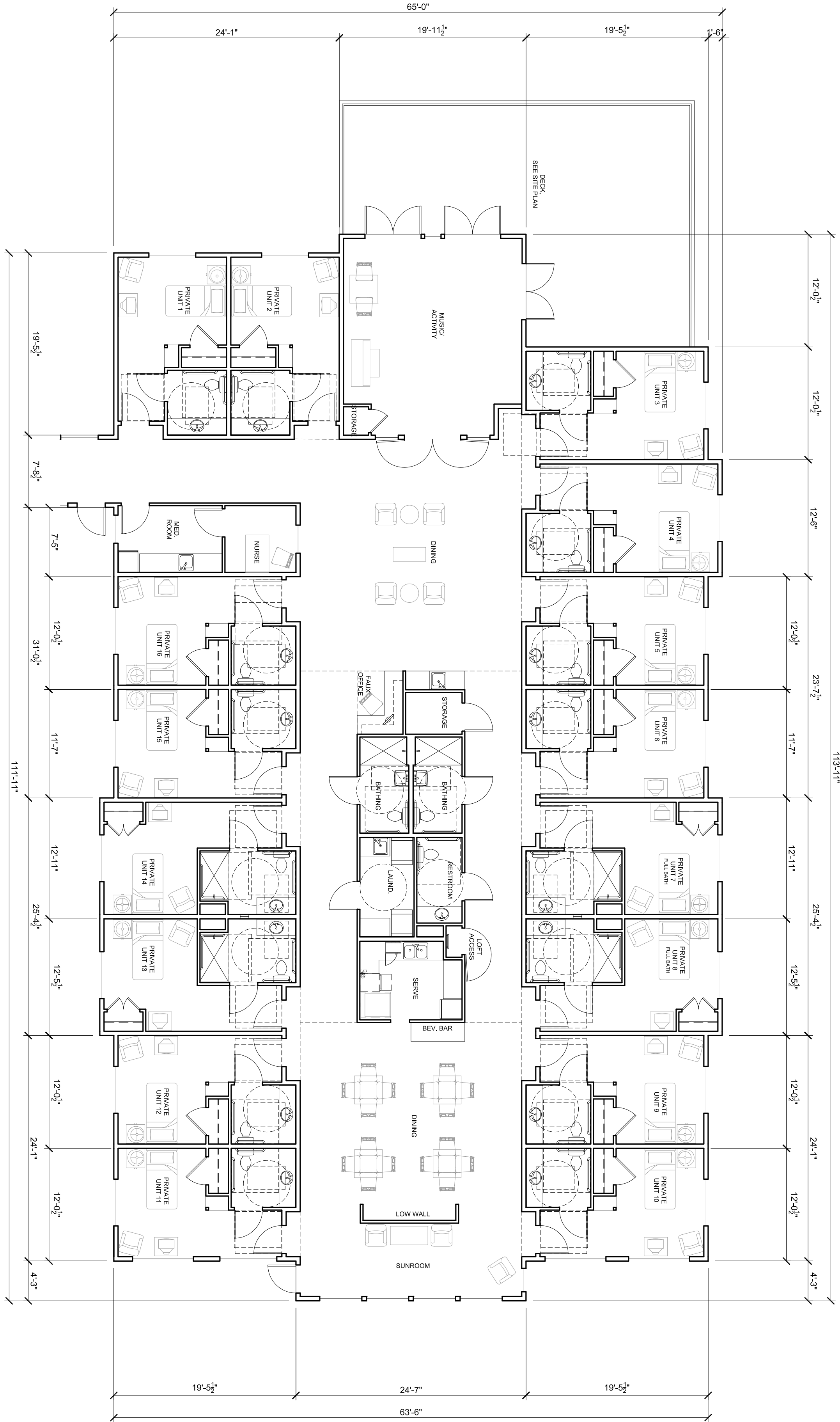
A1.1

SHEET

REVISED DATE

DATE

12/20/2019

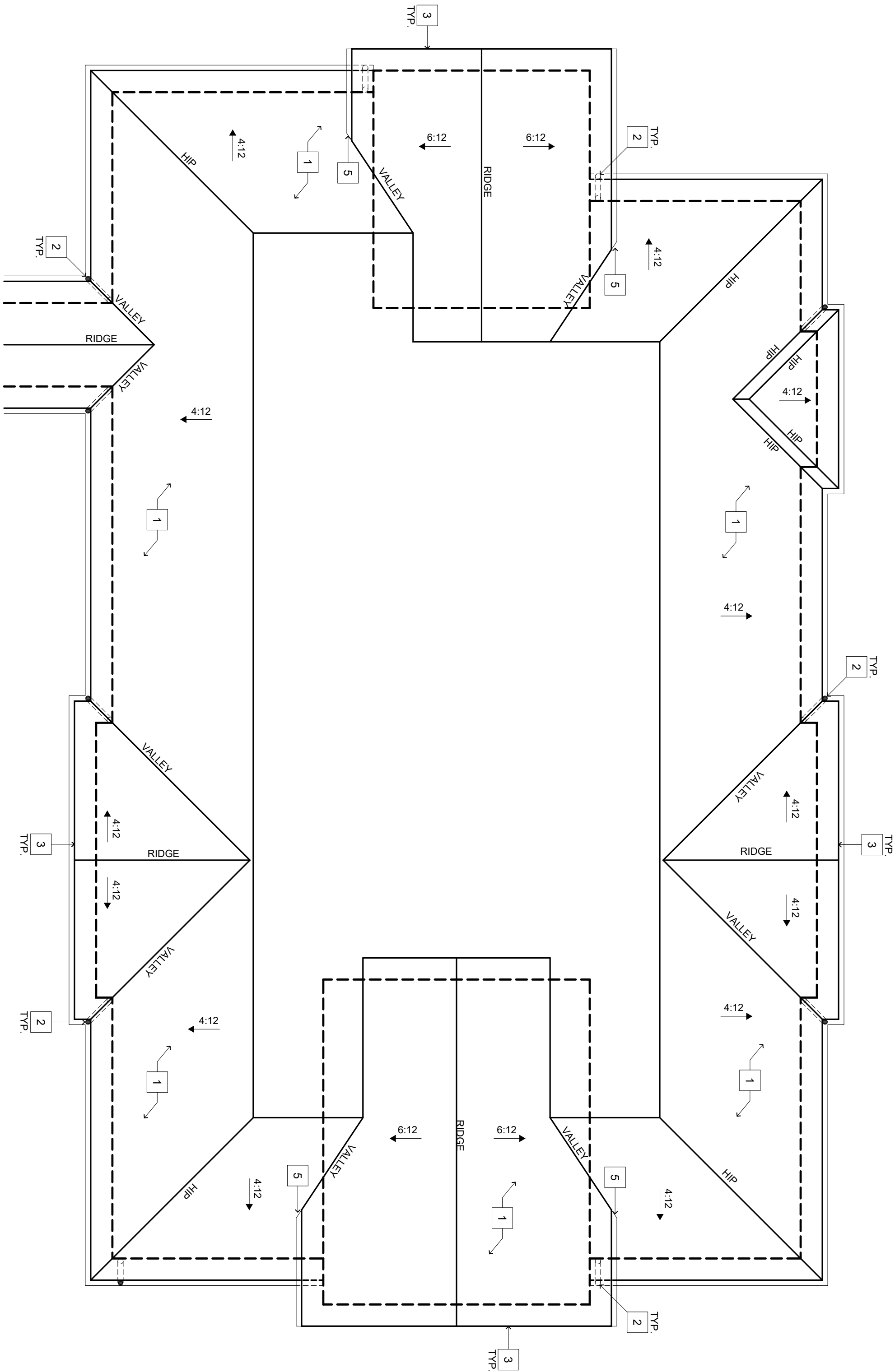


1 FLOOR PLAN
SCALE: 1/8" = 1'-0"

DATE	12/20/2019
REVISED DATE	
SHEET	A2.1

BLDG ADDITION
FLOOR PLAN

RIVER TERRACE
BUILDING ADDITION
914 & 950 SOUTH END ROAD
OREGON CITY, OR 97045



KEY NOTES

- 1 CLASS 'A' ARCH. COMP. 25 YEAR ASPHALT SHINGLE ROOFING. SEE DETAIL 1A/1.2
- 2 DOWNSPOUT TO GRADE
- 3 RAKE. SEE SHEET A2.2 FOR DETAILS AT DIFFERENT CONDITIONS
- 4 SKYLIGHTS. SEE 1A/1.2
- 5 OPEN END GUTTERS

KEYNOTES INDICATED ABOVE ARE APPLICABLE FOR THE ROOF PLAN SHEET ONLY

lenity
architecture, inc.

3150 Kettle Court SE, Salem, Oregon 97301
P 503.399.1090 F 503.399.0565 W lenityarchitecture.com

RIVER TERRACE
BUILDING ADDITION
914 & 950 SOUTH END ROAD
OREGON CITY, OR 97045

BLDG ADDITION
ROOF PLAN

DATE
12/20/2019

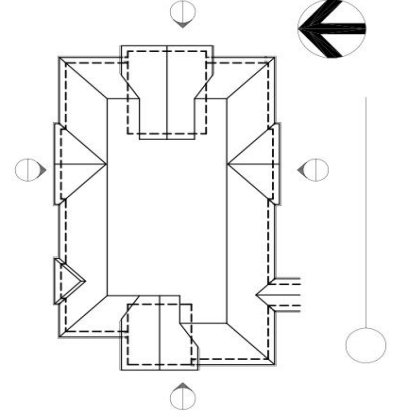
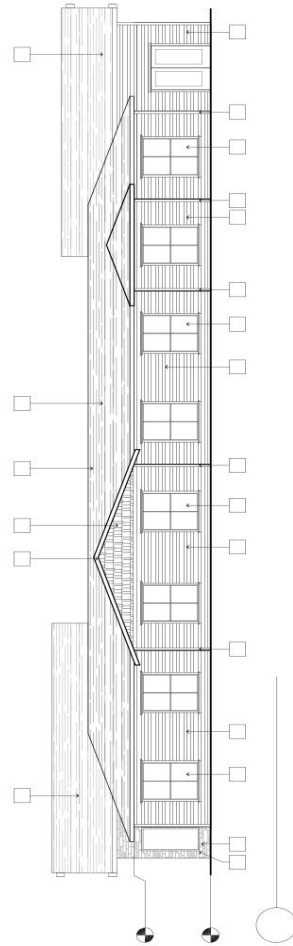
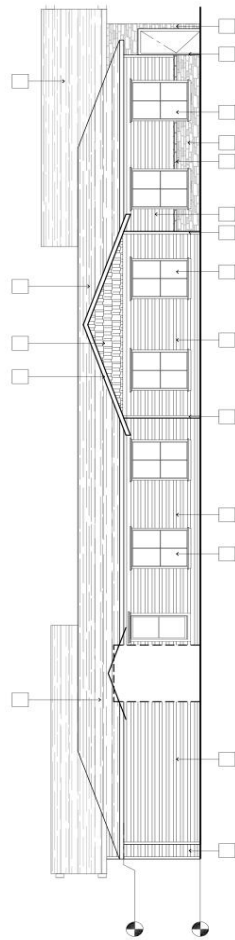
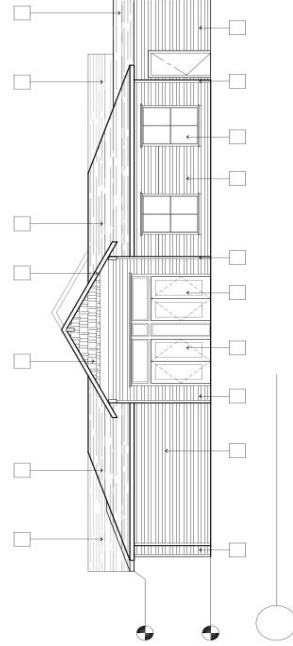
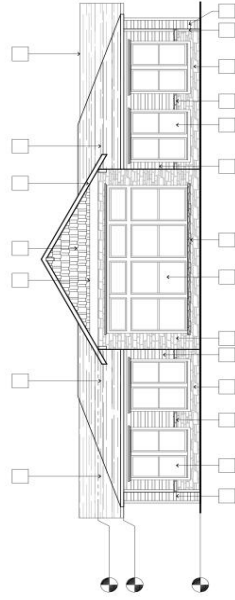
REVISED DATE

SHEET

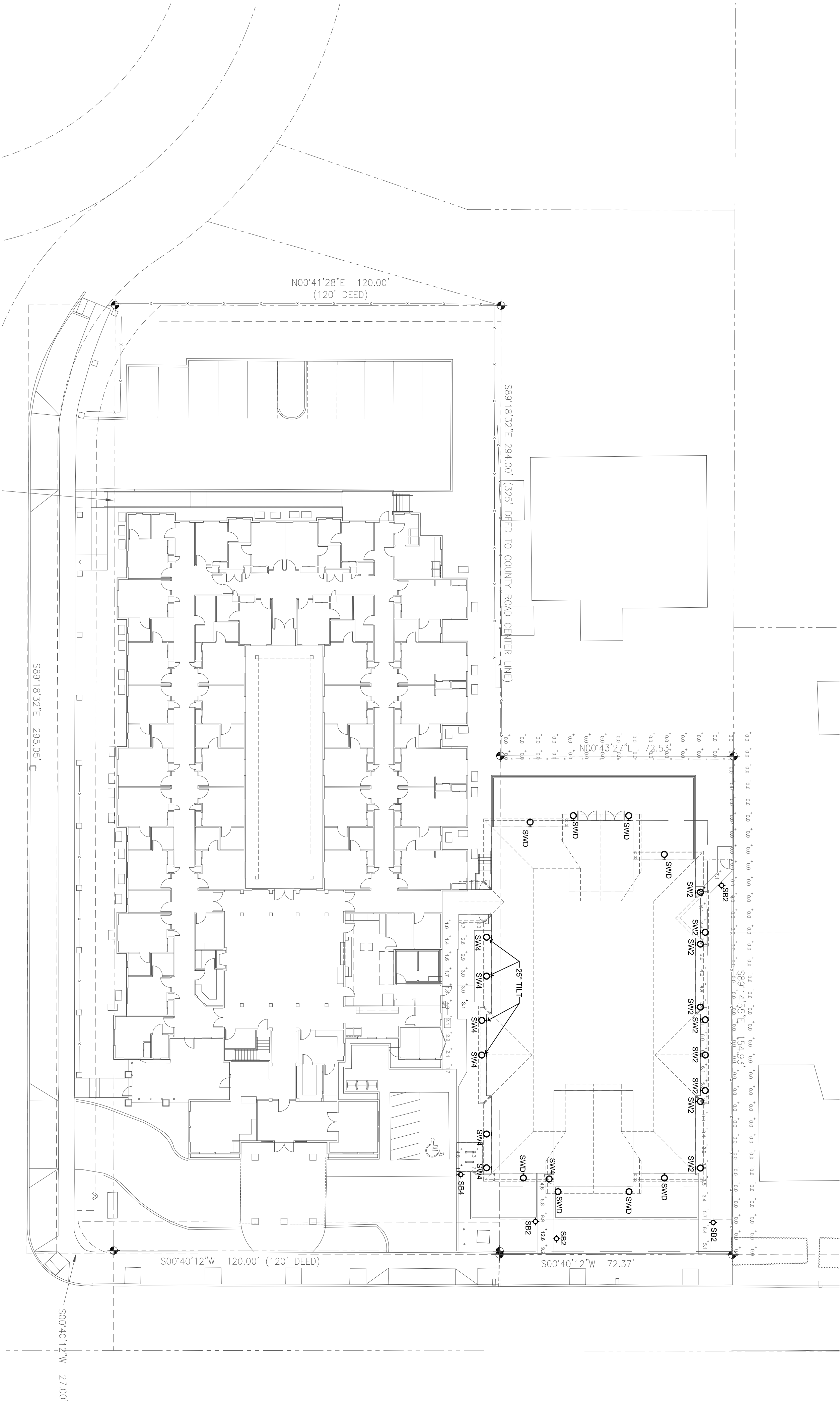
A2.2

1 ROOF PLAN

SCALE: 1/8" = 1'-0"



1 TYP.

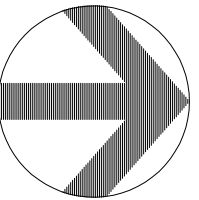
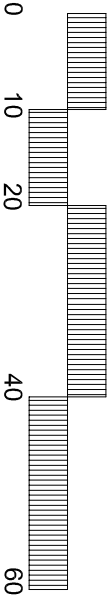


Statistics					
Description	Symbol	Avg	Max	Min	Max/min
Blue Parking	+	12.8c	112.8c	4.6c	2.51 13.51
Green Parking	+	12.8c	112.8c	4.6c	2.51 13.51
Ground Level	+	5.8c	90.8c	2.8c	3.11 2.01
New and Existing	+	2.1c	3.1c	1.0c	3.11 2.11
Res. Sign Light	+	0.07c	0.07c	0.07c	N/A N/A

Light Loss Factor		Symbol	Label	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Wattage	Notes
	SW4		SW4	EATON - LUMIERE (FORMER COOPER LIGHTING)	303-WH-LEEB2-4000-UNV-T4-DIM10-BK	LUMIERE EON 303-WH WALL MOUNTED LUMINARE DOUBLE LED OPTICS, FROSTED GLASS LENS.	(14) 4000K CCT 75 CH LENS ABSOLUTE PHOTO METER / IS FACTORS CREATED USING LAB LUMEN STANDAARDS IN TEST DISTANCE OF 28.75 FEET Industrial Landscape, Residential Sidewalk, Walkway, Accent, Behind Damp Location, Wet Location	14	15.6	MOUNT @ 90° FULL CUT OFF DOWN UNLESS OTHERWISE NOTED.
	SB2		SB2	EATON - LUMIERE (FORMER COOPER LIGHTING)	303-WH-LEEB2-4000-UNV-T2-DIM10-BK	LUMIERE EON 303-R1 SINGLE HEAD BOLLARD SINGLE LED BAR TYPE / FROSTED GLASS LENS.	(7) 4000K CCT 75 CH LENS ABSOLUTE PHOTO METER / IS FACTORS CREATED USING LAB LUMEN STANDAARDS IN TEST DISTANCE OF 28.75 FEET Industrial Landscape, Residential Sidewalk, Walkway, Accent, Behind Damp Location, Wet Location	7	8.16	42" BOLLARD FULL CUT OFF
	SB4		SB4	EATON - LUMIERE (FORMER COOPER LIGHTING)	303-WH-LEEB2-4000-UNV-T4-DIM10-BK	LUMIERE EON 303-R1 SINGLE HEAD BOLLARD SINGLE LED BAR TYPE / FROSTED GLASS LENS.	(14) 4000K CCT 75 CH LENS ABSOLUTE PHOTO METER / IS FACTORS CREATED USING LAB LUMEN STANDAARDS IN TEST DISTANCE OF 28.75 FEET Industrial Landscape, Residential Sidewalk, Walkway, Accent, Behind Damp Location, Wet Location	14	15.4	MOUNT @ 90° FULL CUT OFF DOWN UNLESS OTHERWISE NOTED.
	SW2		SW2	EATON - LUMIERE (FORMER COOPER LIGHTING)	303-WH-LEEB2-4000-UNV-T4-DIM10-BK	LUMIERE EON 303-WH WALL MOUNTED LUMINARE DOUBLE LED OPTICS, FROSTED GLASS LENS.	(14) 4000K CCT 75 CH LENS ABSOLUTE PHOTO METER / IS FACTORS CREATED USING LAB LUMEN STANDAARDS IN TEST DISTANCE OF 28.75 FEET Industrial Landscape, Residential Sidewalk, Walkway, Accent, Behind Damp Location, Wet Location	14	15.4	MOUNT @ 90° FULL CUT OFF DOWN UNLESS OTHERWISE NOTED.
	SWD		SWD	LIGHTWAY INDUSTRIES	GHOW-H-LEEA-CEB2-8000-FSA	DECORATIVE CYLINDRICAL WALL MOUNTED LED BLACK, FROSTED LENS.	5-WATT SELF BALLASTED LED 3000m 2700K	1	5	MOUNT @ 8°

LIGHTING
SITE PLAN

DATE: 12/19/2019
T' = 20'



DATE

12/20/2019

REVISED DATE

SHEET

E1.1

©2018 Lenity Architecture

LIGHTING
SITE PLAN

RIVER TERRACE
BUILDING ADDITION
914 & 950 SOUTH END ROAD
OREGON CITY, OR 97045



Roofing

MFR: Owens Corning

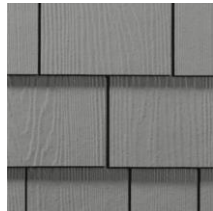
Color: Harbor Fog



Stone Veneer

MFR: Castle Stone

Color: Emerald Gray



Shake Siding

MFR: James Hardie

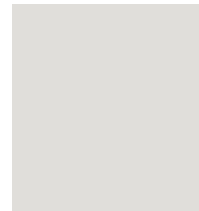
Color: Gray Slate



Lap Siding

MFR: James Hardie

Color: SW 7642
Pavestone



Trim/Fascia

MFR: James Hardie

Color: SW 6000 Snowfall



Ledgerstone

MFR: El Dorado Stone

Color: Boardwalk



Construction Costs for Site Plan and Design Review and Detailed Development Plans

The cost of Planning Division review for Site Plan and Design Review and Detailed Development Plans is based on the construction cost of the project. The construction costs is defined as all costs to complete the project, including soft costs. The estimate does exclude interior furniture or moving expenses.

Address: 914 & 950 South End Rd

Project Description: 16 Bed Memory Care Addition consisting of approximately 6,996 square feet. Type VA construction.
Occupancy Type I-2.

Section I – Construction Costs

Design Work	\$ 120,000
Site Prep	\$ 40,000
Consultants	\$ 25,000
Excavation	\$ 20,000
Utilities	\$ 100,000
Foundation	\$ 50,000
Framing material/wall construction	\$ 250,000
Interior finish (walls, doors, floor finish, cabinetry, light fixtures, etc.)	\$ 250,000
Supplemental information (fire suppression, hvac, electrical, plumbing, etc.)	\$ 250,000
Roofing	\$ 150,000
Landscaping	\$ 30,000
Paving	\$ 15,000
Sign - None Proposed	\$ 0
Trash Enclosures - None proposed	\$ 0
Other	\$ 0
Total Section I	\$ 1,300,000

Section II – Permits

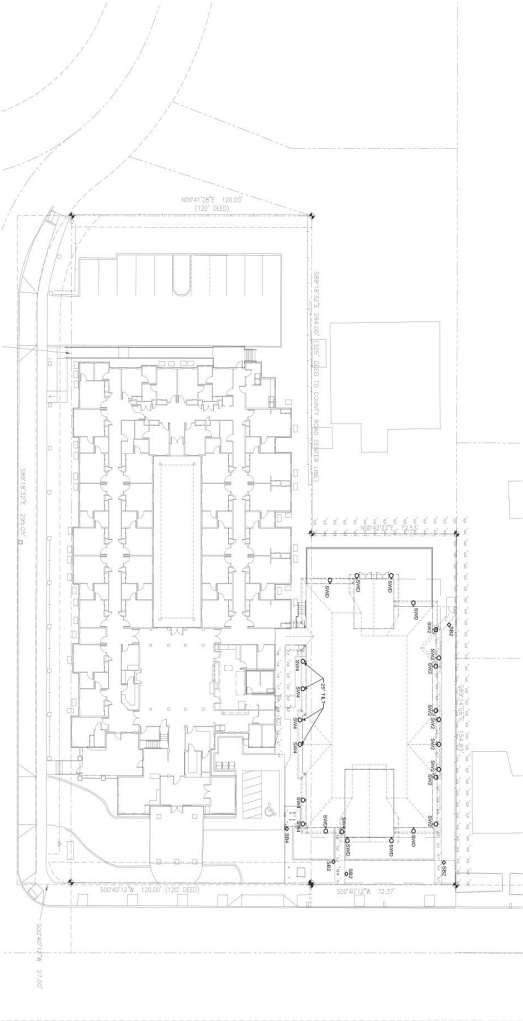
Building \$959.49 for first 100,000. \$4.64 for each additional \$1,000 or fraction thereof	\$ 10,770.36
Electrical	\$ 1,250
Plumbing	\$ 4,193.75
Mechanical	\$ 1,768.12
Land Use	\$ 17,504
Total Section II	\$ 35,486.23

Section III - Total

Section I Total	\$ 1,300,000
Section II Total	\$ 35,486.23
Total Section III	\$ 1,335,486.23

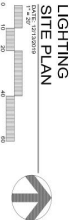
Office Use Only –

Building Official Verification: _____



Legend									
Symbol	Notes	Symbol	Notes	Symbol	Notes	Symbol	Notes	Symbol	Notes
1	100' 0" 100' 0"	2	100' 0" 100' 0"	3	100' 0" 100' 0"	4	100' 0" 100' 0"	5	100' 0" 100' 0"
6	100' 0" 100' 0"	7	100' 0" 100' 0"	8	100' 0" 100' 0"	9	100' 0" 100' 0"	10	100' 0" 100' 0"
11	100' 0" 100' 0"	12	100' 0" 100' 0"	13	100' 0" 100' 0"	14	100' 0" 100' 0"	15	100' 0" 100' 0"
16	100' 0" 100' 0"	17	100' 0" 100' 0"	18	100' 0" 100' 0"	19	100' 0" 100' 0"	20	100' 0" 100' 0"
21	100' 0" 100' 0"	22	100' 0" 100' 0"	23	100' 0" 100' 0"	24	100' 0" 100' 0"	25	100' 0" 100' 0"
26	100' 0" 100' 0"	27	100' 0" 100' 0"	28	100' 0" 100' 0"	29	100' 0" 100' 0"	30	100' 0" 100' 0"
31	100' 0" 100' 0"	32	100' 0" 100' 0"	33	100' 0" 100' 0"	34	100' 0" 100' 0"	35	100' 0" 100' 0"
36	100' 0" 100' 0"	37	100' 0" 100' 0"	38	100' 0" 100' 0"	39	100' 0" 100' 0"	40	100' 0" 100' 0"
41	100' 0" 100' 0"	42	100' 0" 100' 0"	43	100' 0" 100' 0"	44	100' 0" 100' 0"	45	100' 0" 100' 0"
46	100' 0" 100' 0"	47	100' 0" 100' 0"	48	100' 0" 100' 0"	49	100' 0" 100' 0"	50	100' 0" 100' 0"
51	100' 0" 100' 0"	52	100' 0" 100' 0"	53	100' 0" 100' 0"	54	100' 0" 100' 0"	55	100' 0" 100' 0"
56	100' 0" 100' 0"	57	100' 0" 100' 0"	58	100' 0" 100' 0"	59	100' 0" 100' 0"	60	100' 0" 100' 0"
61	100' 0" 100' 0"	62	100' 0" 100' 0"	63	100' 0" 100' 0"	64	100' 0" 100' 0"	65	100' 0" 100' 0"
66	100' 0" 100' 0"	67	100' 0" 100' 0"	68	100' 0" 100' 0"	69	100' 0" 100' 0"	70	100' 0" 100' 0"
71	100' 0" 100' 0"	72	100' 0" 100' 0"	73	100' 0" 100' 0"	74	100' 0" 100' 0"	75	100' 0" 100' 0"
76	100' 0" 100' 0"	77	100' 0" 100' 0"	78	100' 0" 100' 0"	79	100' 0" 100' 0"	80	100' 0" 100' 0"
81	100' 0" 100' 0"	82	100' 0" 100' 0"	83	100' 0" 100' 0"	84	100' 0" 100' 0"	85	100' 0" 100' 0"
86	100' 0" 100' 0"	87	100' 0" 100' 0"	88	100' 0" 100' 0"	89	100' 0" 100' 0"	90	100' 0" 100' 0"
91	100' 0" 100' 0"	92	100' 0" 100' 0"	93	100' 0" 100' 0"	94	100' 0" 100' 0"	95	100' 0" 100' 0"
96	100' 0" 100' 0"	97	100' 0" 100' 0"	98	100' 0" 100' 0"	99	100' 0" 100' 0"	100	100' 0" 100' 0"

Symbol	Notes	Symbol	Notes	Symbol	Notes	Symbol	Notes	Symbol	Notes
1	100' 0" 100' 0"	2	100' 0" 100' 0"	3	100' 0" 100' 0"	4	100' 0" 100' 0"	5	100' 0" 100' 0"
6	100' 0" 100' 0"	7	100' 0" 100' 0"	8	100' 0" 100' 0"	9	100' 0" 100' 0"	10	100' 0" 100' 0"
11	100' 0" 100' 0"	12	100' 0" 100' 0"	13	100' 0" 100' 0"	14	100' 0" 100' 0"	15	100' 0" 100' 0"
16	100' 0" 100' 0"	17	100' 0" 100' 0"	18	100' 0" 100' 0"	19	100' 0" 100' 0"	20	100' 0" 100' 0"
21	100' 0" 100' 0"	22	100' 0" 100' 0"	23	100' 0" 100' 0"	24	100' 0" 100' 0"	25	100' 0" 100' 0"
26	100' 0" 100' 0"	27	100' 0" 100' 0"	28	100' 0" 100' 0"	29	100' 0" 100' 0"	30	100' 0" 100' 0"
31	100' 0" 100' 0"	32	100' 0" 100' 0"	33	100' 0" 100' 0"	34	100' 0" 100' 0"	35	100' 0" 100' 0"
36	100' 0" 100' 0"	37	100' 0" 100' 0"	38	100' 0" 100' 0"	39	100' 0" 100' 0"	40	100' 0" 100' 0"
41	100' 0" 100' 0"	42	100' 0" 100' 0"	43	100' 0" 100' 0"	44	100' 0" 100' 0"	45	100' 0" 100' 0"
46	100' 0" 100' 0"	47	100' 0" 100' 0"	48	100' 0" 100' 0"	49	100' 0" 100' 0"	50	100' 0" 100' 0"
51	100' 0" 100' 0"	52	100' 0" 100' 0"	53	100' 0" 100' 0"	54	100' 0" 100' 0"	55	100' 0" 100' 0"
56	100' 0" 100' 0"	57	100' 0" 100' 0"	58	100' 0" 100' 0"	59	100' 0" 100' 0"	60	100' 0" 100' 0"
61	100' 0" 100' 0"	62	100' 0" 100' 0"	63	100' 0" 100' 0"	64	100' 0" 100' 0"	65	100' 0" 100' 0"
66	100' 0" 100' 0"	67	100' 0" 100' 0"	68	100' 0" 100' 0"	69	100' 0" 100' 0"	70	100' 0" 100' 0"
71	100' 0" 100' 0"	72	100' 0" 100' 0"	73	100' 0" 100' 0"	74	100' 0" 100' 0"	75	100' 0" 100' 0"
76	100' 0" 100' 0"	77	100' 0" 100' 0"	78	100' 0" 100' 0"	79	100' 0" 100' 0"	80	100' 0" 100' 0"
81	100' 0" 100' 0"	82	100' 0" 100' 0"	83	100' 0" 100' 0"	84	100' 0" 100' 0"	85	100' 0" 100' 0"
86	100' 0" 100' 0"	87	100' 0" 100' 0"	88	100' 0" 100' 0"	89	100' 0" 100' 0"	90	100' 0" 100' 0"
91	100' 0" 100' 0"	92	100' 0" 100' 0"	93	100' 0" 100' 0"	94	100' 0" 100' 0"	95	100' 0" 100' 0"
96	100' 0" 100' 0"	97	100' 0" 100' 0"	98	100' 0" 100' 0"	99	100' 0" 100' 0"	100	100' 0" 100' 0"



EXTERIOR LIGHTING CUTSHEETS

River Terrace
Building Addition
Oregon City, OR



DESCRIPTION

Eon 303-B1-LEDB1 is a compact, low profile, dimmable, LED bollard that provides downlight only via a fixed head. 303-B1-LEDB1 has a single head on one side of the luminaire. The bollard comes standard with universal input LED driver (120-277V, 50/60 Hz). Dimming is achieved with a standard ELV, reverse phase dimming driver or an optional 0-10V dimming driver. Eon fixtures may be used indoors or outdoors and carry an IP66 rating. The patented LumaLevel™ leveling system provides quick installation, easy adjustment, secure mounting and protection from vibration.

Catalog #	Type
	SB2 SB4
Project	Date
Comments	
Prepared by	

SPECIFICATION FEATURES

Construction

The head of the 303-B1-LEDB1 is precision machined from corrosion-resistant 6061-T6 aluminum. Body is extruded aluminum and adjustable mounting base is cast from corrosion resistant aluminum alloy. Stainless steel hardware is included. Four (4) 3/8" x 12" galvanized anchor bolts and a galvanized steel anchor bolt template are standard. Specify option -LAB and order the anchor bolt/template kit separately (Catalog: 7581-01PK).

Optical

LightBAR™ and optical assembly are sealed by a clear, impact resistant tempered glass lens. The optical assembly is available in three distributions: T2 (lateral throw), T4 (forward throw) and T5X (Flood). Available in several color temperatures: 2700K, 3000K, 3500K,

4000K and TSAM (Amber). Both color temperature and distribution must be specified when ordering – see catalog logic for details. An edge-lit option is available.

Electrical

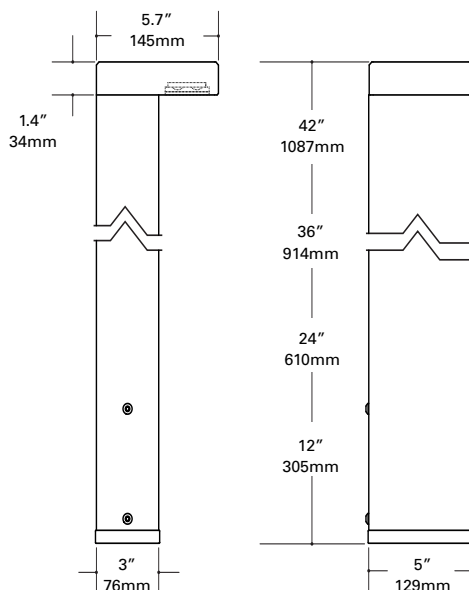
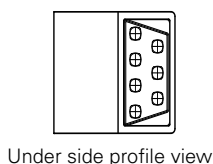
The bollard is standard with an ELV trailing edge phase dimmable driver that accepts a universal input (120-277, 50/60Hz). An optional 0-10V universal dimming driver is also available. Both driver options incorporate surge protection. The receptacle option incorporates a specification grade, 120V, 15A tamper proof and weather resistant duplex GFCI. The photocell option comes in either a 120V or 277V. Please see Option section for more detail.

Finish

Luminaire and mounting base are double protected by a RoHS compliant chemical film undercoating and polyester powdercoat paint finish. The mounting base is painted black. The luminaire housing and head are available in a variety of standard colors. RAL and custom color matches are available upon request. As an option, the Eon bollards are also available in colors to match other outdoor Eaton product lines, such as Invue. See the Finish section in the ordering detail for more detail.

Warranty

Lumiere warrants the EON series of fixtures against defects in material and workmanship for five (5) years. Auxiliary equipment such as LED drivers carries the original manufacturer's warranty.



303-B1-LEDB1 EON LED

APPLICATIONS: BOLLARD

CERTIFICATION DATA

UL and cUL Wet Location Listed
LM79 / LM80 Compliant
ROHS Compliant
IP66 Ingress Protection Rated

TECHNICAL DATA

50°C Maximum Temperature Rating
External Supply Wiring 90°C Minimum



ORDERING INFORMATION

Sample Number: 303-B1-LEDB1-2700-120-T2-DIM10-BK-42-EDGE-PC1-RFL-LAB

Series ¹	Color Temperature	Input Voltage	Optics	Dimming	Finish ³	Height ⁴	Options ⁶
303-B1-LEDB1 Head contains one (1) Mini LightBAR™	2700=2700K 3000=3000K 3500=3500K 4000= 4000K TSAM=Turtle Safe Amber (585-595nm)	UNV=120-277V ¹ 120=120V 277=277V ²	T2=Type II, Lateral Throw T4=Type IV, Forward Throw T5X=Type V, Extra Wide Flood	DIMELV=Trailing Edge Phase Dimming Driver DIM10=0-10V Dimming Driver	Painted BK=Black BZ=Bronze CS=City Silver WT=White Premium Paint AP=Grey DP=Dark Platinum GM=Graphite Metallic	12=12" ⁵ 24=24" 36=36" 42=42"	EDGE=Edge lit glass lens PC1=Photocontrol 120V ⁷ PC2=Photocontrol 208-277V ⁷ RIU=Receptacle - In Use (120V Only) ⁷ RFL=Receptacle - Flip-Lid (120V Only) ⁷ LAB=Less Anchor Bolts & Template ⁸

NOTES: 1 Universal Voltage (UNV) is standard unless specifying Photocontrol or Receptacle (RIU or RFL - 120V) options. 2 Specify for PC2 option only. 3 Custom and RAL color matching available upon request. Consult factory for further information. 4 Bollard heights are nominal (shown in inches). 5 12" length not available with RIU or RFL options. 6 Add suffix in the order shown. 7 Must specify voltage when ordering. 8 When specifying LAB option the anchor bolts and template need to be ordered separately 7581-01PK. 9 DesignLights Consortium™ Qualified and classified for DLC Standard. Refer to www.designlights.org for details on exact qualified EON 303-B1-LEDB1 product as not all configurations are DLC classified.

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (72,000 Hours)	TM-21 Reported L70(10k) (Hours)	Theoretical L70 (Hours)
25°C	> 94%	> 60,000	365,000
40°C			
50°C			

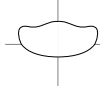
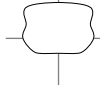
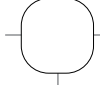
CURRENT DRAW

Model	Line Voltage	Current Draw
303-B1-LEDB1	120-277V, 50/60Hz	0.068A

MAX LOAD RATING

Options	Line Voltage	Max Load Rating
PC1	120V, 50/60Hz	1000VA, 8.3A
PC2	208-277V, 50/60Hz	
RIU or RFL	120V, 50/60Hz	1800VA, 15A

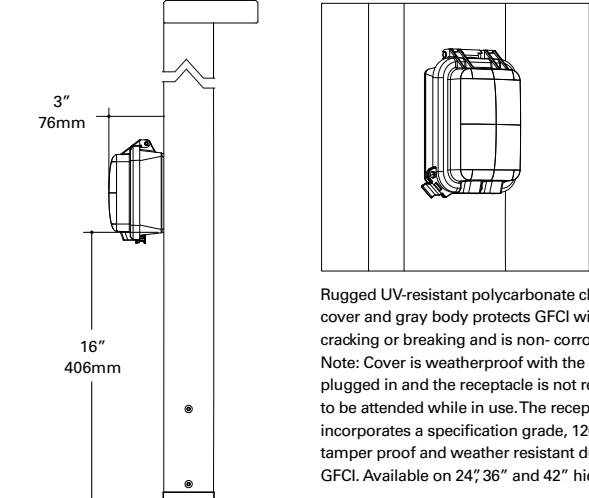
LUMENS - CRI/CCT TABLE

Optic Type	Distribution	Watts	Delivered Lumens	LPW	CCT (K) / Color	CRI nom. / Wavelength	B-U-G Rating
T2 (Lateral Throw)		8.5	361	44	2700	95	B0-U0-G0
			600	74	3000	75	
			419	51	3500	85	
			661	81	4000	75	
		6.5	184	28	TSAM (Amber)	585-595nm	
T4 (Forward Throw)		8.5	353	43	2700	95	B0-U0-G0
			587	72	3000	75	
			410	50	3500	85	
			647	79	4000	75	
		6.5	180	28	TSAM (Amber)	585-595nm	
T5X (Extra Wide Flood)		8.5	316	39	2700	95	B0-U0-G0
			525	65	3000	75	
			367	45	3500	85	
			579	71	4000	75	
		6.5	161	25	TSAM (Amber)	585-595nm	

OPTIONS

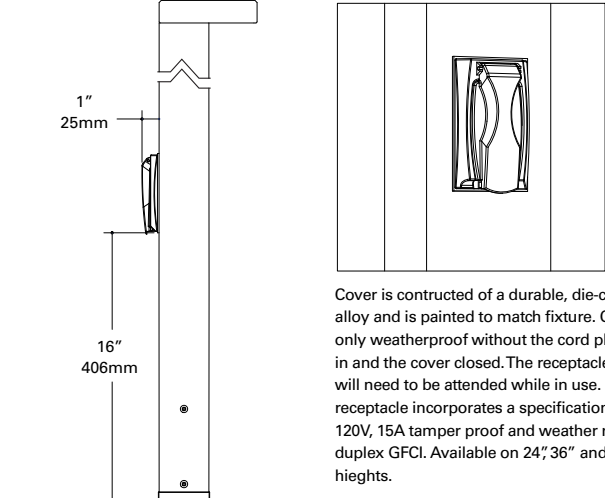
Receptacle Options (120V Only)

RIU - Receptacle In-Use



Rugged UV-resistant polycarbonate clear cover and gray body protects GFCI without cracking or breaking and is non-corrosive. Note: Cover is weatherproof with the cord plugged in and the receptacle is not required to be attended while in use. The receptacle incorporates a specification grade, 120V, 15A tamper proof and weather resistant duplex GFCI. Available on 24", 36" and 42" heights.

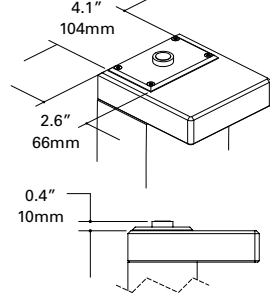
RFL - Receptacle Flip Lid



Cover is constructed of a durable, die-cast zinc-alloy and is painted to match fixture. Cover is only weatherproof without the cord plugged in and the cover closed. The receptacle will need to be attended while in use. The receptacle incorporates a specification grade, 120V, 15A tamper proof and weather resistant duplex GFCI. Available on 24", 36" and 42" heights.

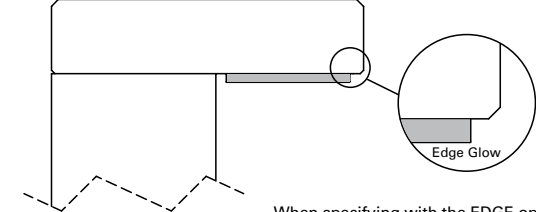
Photocontrol

PC1 (120V) or PC2 (277V)



Photocontrol cover is precision machined from corrosion-resistant 6061-T6 aluminum and is secured to bollard head with tamper resistant stainless steel hardware. The photocontrol option is available in dedicated 120V or 208-277V. When specifying a photocontrol option make sure to designate the appropriate voltage within the catalog logic.

Edge



When specifying with the EDGE option, the diffused glass becomes thicker adding a visible line of light around the edge accentuating the luminaries' aesthetics and styling.

TECHNICAL NOTES:

1. Adjustable mounting base - Cast aluminum mounting base is equipped with the patented LumaLevel™ leveling system that includes mounting base, 70 shore neoprene base, stainless steel hardware and a slot to accommodate two inbound and outbound 3/4" conduits. It provides quick installation, easy adjustment, secure mounting and protection from vibration.

DESCRIPTION

The Lumière Eon LED 303-W1-LEDB2 is a compact, low profile, dimmable LED direct/indirect luminaire. The luminaire features full vertical adjustment (180°) for easy aiming and mounts directly to any wall or ceiling surface over a standard 4" square junction box. It is standard with a universal input LED driver (120 - 277V, 50/60 Hz). Dimming is achieved with a standard ELV, reverse phase dimming driver or an optional 0-10V dimming driver. 303-W1-LEDB2 may be used indoors or outdoors and carries an IP66 rating.

Catalog #	Type
Project	SW2, SW4
Comments	Date
Prepared by	

SPECIFICATION FEATURES

Construction

Head and back plate are precision machined from corrosion-resistant 6061-T6 aluminum. A universal mounting plate and one piece silicone key hole gasket is provided for adaption to junction box or surface. Stainless steel hardware is included.

Mounting

The luminaire mounts directly to a standard 4" square junction box. For further mounting information see technical notes section on page 2.

Optical

LightBAR™ and optical assembly are sealed by a diffused, impact resistant tempered glass lens. The optical assembly is available in three distributions: T2 (lateral

throw), T4 (forward throw) and T5X (Extra Wide Flood). Available in several color temperatures: 2700K, 3000K, 3500K, 4000K and TSAM (Amber). Both color temperature and distribution must be specified when ordering – see catalog logic for details. An edge-lit option is available.

Electrical

The 15.5W 303-W1-LEDB2 is standard with an ELV trailing edge phase dimmable driver that accepts a universal input (120-277, 50/60Hz). It will operate in -40°C to 50°C [-40°F to 122°F]. The driver incorporates surge protection. An optional 0-10V dimming driver is also available.

Finish

The luminaires are double protected by a RoHS compliant chemical film undercoating and polyester

powder coat paint finish, surpassing the rigorous demands of the outdoor environment. A variety of standard colors are available. RAL and custom color matches available upon request. Luminaires can also be brushed with a clear coat finish. The LightBAR™ cover plates are standard white and may be specified to match finish of luminaire housing (LCF).

Warranty

Lumière warrants the EON series of fixtures against defects in material and workmanship for five (5) years. Auxiliary equipment such as LED drivers carries the original manufacturer's warranty.



303-W1-LEDB2

EON LED

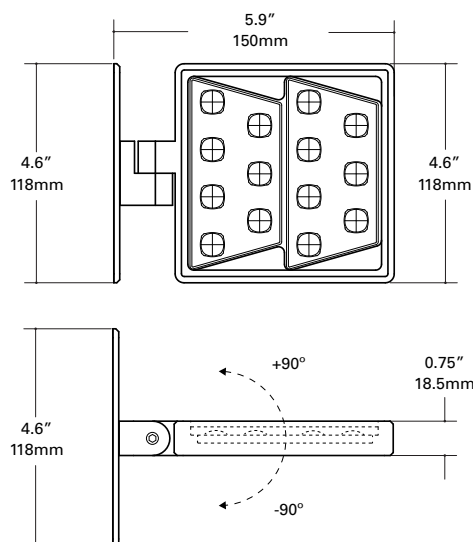
APPLICATIONS:
CEILING / WALL MOUNT
DIRECT
INDIRECT

CERTIFICATION DATA

UL and cUL Wet Location Listed
LM79 / LM80 Compliant
ROHS Compliant
IP66 Ingress Protection Rated

TECHNICAL DATA

35°C Maximum Temperature Rating
External Supply Wiring 90°C Minimum



ORDERING INFORMATION

Sample Number: 303-W1-LEDB2-2700-UNV-T2-DIM10-BK-EDGE-LCF

Series ⁴	Color Temperature	Input Voltage	Optics	Dimming	Finish ¹	Options ^{2,3}
303-W1-LEDB2 Head contains two (2) Mini LightBAR™	2700=2700K 3000=3000K 3500=3500K 4000=4000K TSAM =Turtle Safe Amber (585-595nm)	UNV=Universal 120-277, 50/60Hz	T2=Type II, Lateral Throw T4=Type IV, Forward Throw T5X=Type V, Extra Wide Flood	DIMELV=Trailing Edge Phase DIM10=0-10V Dimming	Painted BK=Black BZ=Bronze CS=City Silver WT=White Premium Finish BA=Brushed NSS=Solid Stainless Steel	EDGE=Edge lit glass lens LCF=LightBAR cover plate matches housing finish

NOTES: 1 Custom and RAL color matching available upon request. Consult factory for further information. 2 Add suffix in the order shown. 3 LCF option not available when WT (white) finish is selected. 4 DesignLights Consortium™ Qualified and classified for DLC Standard. Refer to www.designlights.org for details on exact qualified EON 303-W1-LEDB2 product as not all configurations are DLC classified.

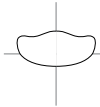
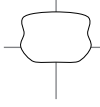
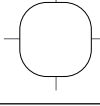
LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (72,000 Hours)	TM-21 Reported L70(10k) (Hours)	Theoretical L70 (Hours)
25°C	> 94%	> 60,000	365,000
40°C			
50°C			

CURRENT DRAW

Model	Line Voltage	Current Draw
303-W1-LEDB2	120-277V, 50/60Hz	0.13A

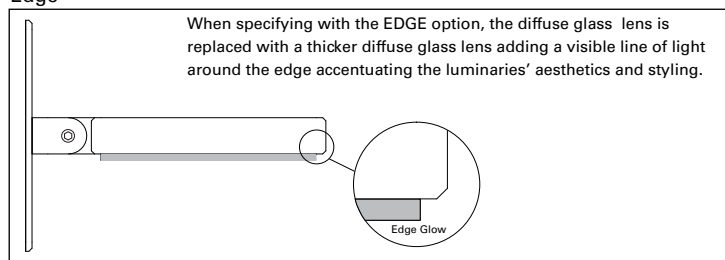
LUMENS - CRI/CCT TABLE

Optic Type	Distribution	Watts	Delivered Lumens	LPW	CCT (K) / Color	CRI nom. / Wavelength
T2 (Lateral Throw)		15.5	691	44	2700	95
			1148	73	3000	75
			802	51	3500	85
			1265	81	4000	75
		12.1	351	29	TSAM (Amber)	585-595nm
T4 (Forward Throw)		15.5	647	42	2700	95
			1075	69	3000	75
			752	48	3500	85
			1185	76	4000	75
		12.1	329	27	TSAM (Amber)	585-595nm
T5X (Extra Wide Flood)		15.5	778	50	2700	95
			1293	83	3000	75
			904	58	3500	85
			1425	91	4000	75
		12.1	396	33	TSAM (Amber)	585-595nm

NOTES: 1 When the LCF option is selected use a lumen multiplier of .85

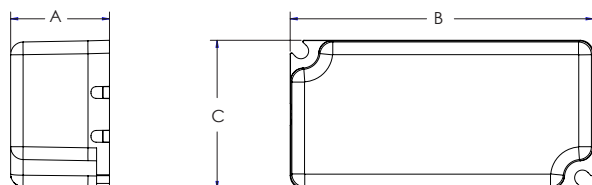
OPTIONS

Edge



TECHNICAL NOTES

- Junction box size and depth is important when specifying product. Recommended junction boxes include 2-1/8" deep, 4" square weld/drawn Crouse Hinds part numbers TP403, TP434, TP494, TP196, TP395 or equivalent. Use with included universal mounting plate or with Crouse-Hinds part number TP480 or equivalent cover with similar fixture mounting locations.
- The universal wall plate provided with all EON wall mount fixtures can be used with an outdoor rated two gang 30.5 cubic inch capacity outlet box. Cooper Crouse-Hinds part numbers TP7086 – TP7122 or equivalent. The universal mounting plate will attach with four (4) 6-32 pan head/flat stainless steel screws (not provided).
- Driver can be remote mounted in a junction box a max distance of 25 feet (voltage drop needs to be considered) or placed in the junction box behind the luminaire.
- When specifying with the EDGE option, the diffused glass becomes thicker adding a visible line of light around the edge accentuating the luminaires' aesthetics and styling.
- If Luminaire will not be dimmed, the Luminaire must be ordered with DIMELV option, but does not have to be dimmed.
- Driver Dimensions:



Luminaire Type	Dimming Type	Driver Dimensions in [mm]		
		A	B	C
303-W1-LEDB2	DIMELV	.98 [25.0]	3.36 [85.3]	1.49 [37.9]
	DIM10	1.18 [30.0]	3.49 [88.6]	1.64 [41.6]

GHCW-LED

Construction:

- Fade and Rust Resistant Polycarbonate Construction
- Glare Free Frosted Acrylic Lens

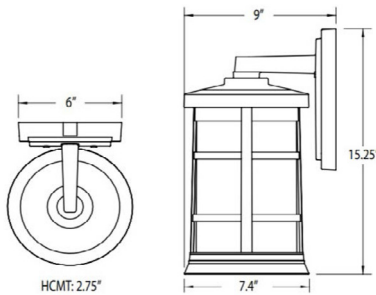
Light Source:

- LED
- Incandescent Medium Base / Lamp by others

Notes:

- Mounts to standard junction box
- Mounting hardware included
- Optional Photocell
- UL and CUL listed **WET** location
- LED Components
 - Replaceable Module
 - CRI > 80
 - 120 volt standard
 - 5-Year Warranty on LED Components

Type:	SWD
Job Name:	



ORDERING INFORMATION

Example: **GHCW-15-LED-A-13W-4-Z99-FSA**

GHCW-15-I		A	E26		B99	FSA	
Model	Cage	Voltage	Lamping	Kelvin	Finish	Diffuser	Options
GHCW-15-LED		A 120 Volt	13w LED / 1140lm E26 Medium Base (NL)	2 3000K 4 4000K	B99 Black W99 White Z99 Bronze	FSA Frosted Smooth Acrylic	21-01 Photocell - 120 Volt



28435 Industry Drive., Valencia, California 91355
 West Coast Sales: 800-325-4448 / 661-257-0286 • fax 800-323-2346 / 661-257-0201
 East Coast Sales: 866-350-0991 • fax 866-490-5754
www.lightwayind.com • sales@lightwayind.com



Revision: 07/05/2019



LED Wet Location S14

Non-Dimmable

Perfect for applications with hard to reach areas, vibration, and frequent starts.

Limitless options for the following applications:

- Chandeliers
- Ceiling Fans
- Decorative
- Indoor Fixtures
- Outdoor Fixtures
- Scoreboards
- Movie Signs

Great features and benefits:

- Long Life: 25,000 hours—no more bulb replacements
- Excellent white color consistency from bulb to bulb
- UL approved for wet locations
- Wet location to replace cold cathodes

Wet Location S14 lamps are non-dimmable



S14 Clear

S14 Frosted



LED
we know light.™



LED

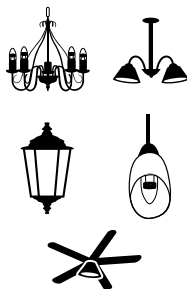
25,000 hours average rated life, 120 volts

Applications

Ideal for decorative applications—suitable for outdoor fixtures
Also perfect for applications with hard to reach areas, vibration, and frequent starts

Accent and decorative lighting including:

- + Chandeliers
- + Ceiling Fans
- + Decorative
- + Indoor Fixtures
- + Outdoor Fixtures
- + Scoreboards
- + Movie Signs

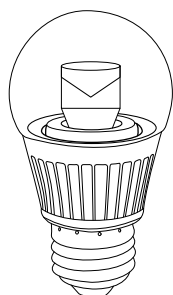


Light output equivalent to 40W
Cold cathode replacement

Features and Benefits

- Long Life: 25,000 hours—no more bulb replacements
- Excellent white color consistency from bulb to bulb
- UL approved for wet locations
- Wet location to replace cold cathodes

Wet Location S14 lamps are non-dimmable



LED5E26S1427K

Catalog Number

Notes

Type



Specifications (at full brightness)

Input Line Voltage:	120VAC
Input Line Frequency	50/60HZ
Lamp Life (Rated)	25,000 hrs
Minimum Starting Temp	-30°C
Maximum Operating Temp	40°C
UL/cUL Listed	Yes
Power Factor	92%
CRI	80

Warranties and Certifications:	Item #	Description	Voltage	Wattage	Wattage Equivalent	M.O.L. (inches)	Diameter (inches)	Lumens	LPW	CCT	CRI
5 YEAR WARRANTY 	LED5E26S1427K	LED 5W WET LOCATION S14 - 2700K	120	5.0	40W	3.8	1.4	300	60	2700K	80
	LED5E26S1430K	LED 5W WET LOCATION S14 - 3000K	120	5.0	40W	3.8	1.4	300	60	3000K	80
	LED5E26S1441K	LED 5W WET LOCATION S14 - 4100K	120	5.0	40W	3.8	1.4	300	60	4100K	80
	LED5E26S1427KF	LED 5W WET LOCATION S14 - 2700K Frosted	120	5.0	40W	3.8	1.4	300	60	2700K	80
	LED5E26S1430KF	LED 5W WET LOCATION S14 - 3000K Frosted	120	5.0	40W	3.8	1.4	300	60	3000K	80
	LED5E26S1441KF	LED 5W WET LOCATION S14 - 4100K Frosted	120	5.0	40W	3.8	1.4	300	60	4100K	80
For the most up-to-date specs, please visit www.tapi.com											



1. All shrub/ground cover beds to receive a 2" minimum layer of medium fresh fir or hemlock bark mulch.
2. All landscape areas shall be irrigated with an automatic irrigation system using SMART Technology. Landscape Contractor shall evaluate existing irrigation system and submit a Design/Build Irrigation Plan modification of existing system to Owner and Landscape Architect for review.

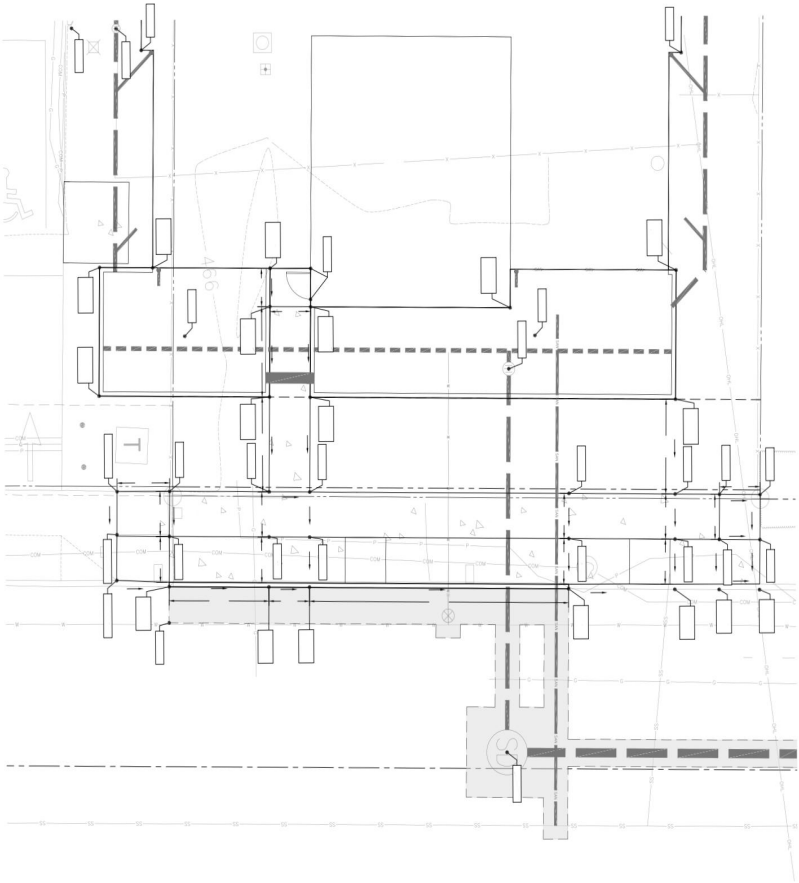
Site Area	60,591 s.f.
Open Space required (15%):	7,509 s.f.
Open Space proposed:	11,131 s.f. (22%)



CONSTRUCTION NOTES:

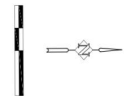
- 1 CONSTRUCT STANDARD CURB PER DETAIL ON SHEET C5.0.
SEE GRADING ON SHEETS C2.0 THRU C2.2.
- 2 CONSTRUCT CONCRETE SIDEWALK PER DETAIL ON SHEET
C5.0. SEE GRADING ON SHEETS C2.0 & C2.1.
- 3 SAWCUT EXISTING CONCRETE AND/OR ASPHALT AND
REMOVE AS REQUIRED AND DIRECTED.

- 4 CONSTRUCT ASPHALT PAVEMENT SECTION PER DETAIL ON
SHEET C5.0 OR MATCH EXISTING, WHICHEVER IS THICKER.
SEE GRADING ON SHEET C2.2.



LEGEND

- EX = EXISTING
- SW = SCHEDULE
- TC = TOP OF CURB
- RC = BOTTOM OF CURB
- RA = RAMP
- TR = TOP OF RAIL
- BR = BOTTOM OF RAIL



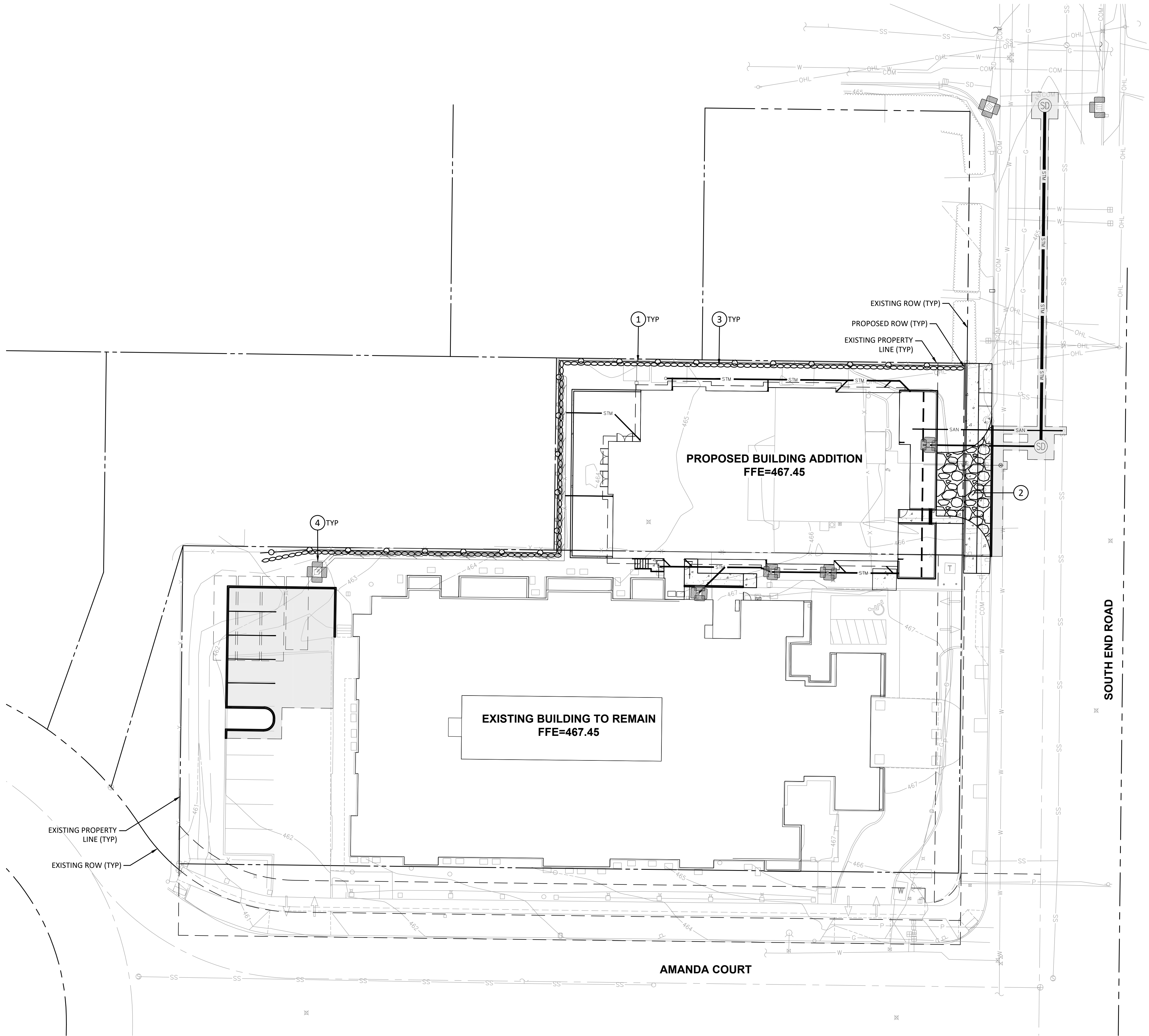
IMPR

LANDSCAPE ARCHITECTURE



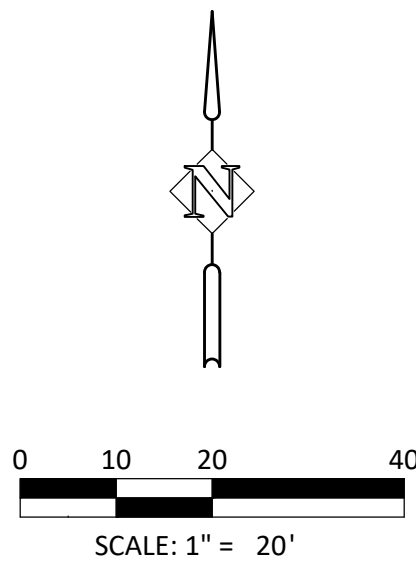
lenity
architecture, inc.

1000 Santa Cruz St., Suite 100, San Jose, CA 95128
408.933.1000 408.933.1001 www.lenityarch.com



CONSTRUCTION NOTES:

- 1 INSTALL CONSTRUCTION FENCE PER DETAIL ON SHEET C5.2.
- 2 INSTALL CONSTRUCTION ENTRANCE PER DETAIL ON SHEET C5.2.
- 3 INSTALL WATTLES AT CATCH SLOPE LIMITS PER DETAIL ON SHEET C5.2.
- 4 INSTALL INLET PROTECTION PER DETAIL ON SHEET C5.2.



HHPR Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
LANDSCAPE ARCHITECTS • SURVEYORS
530 Center Street NE, Suite 240, Salem, OR 97301
PHONE: 503.365.1131 www.hhpr.com FAX: 503.221.1171



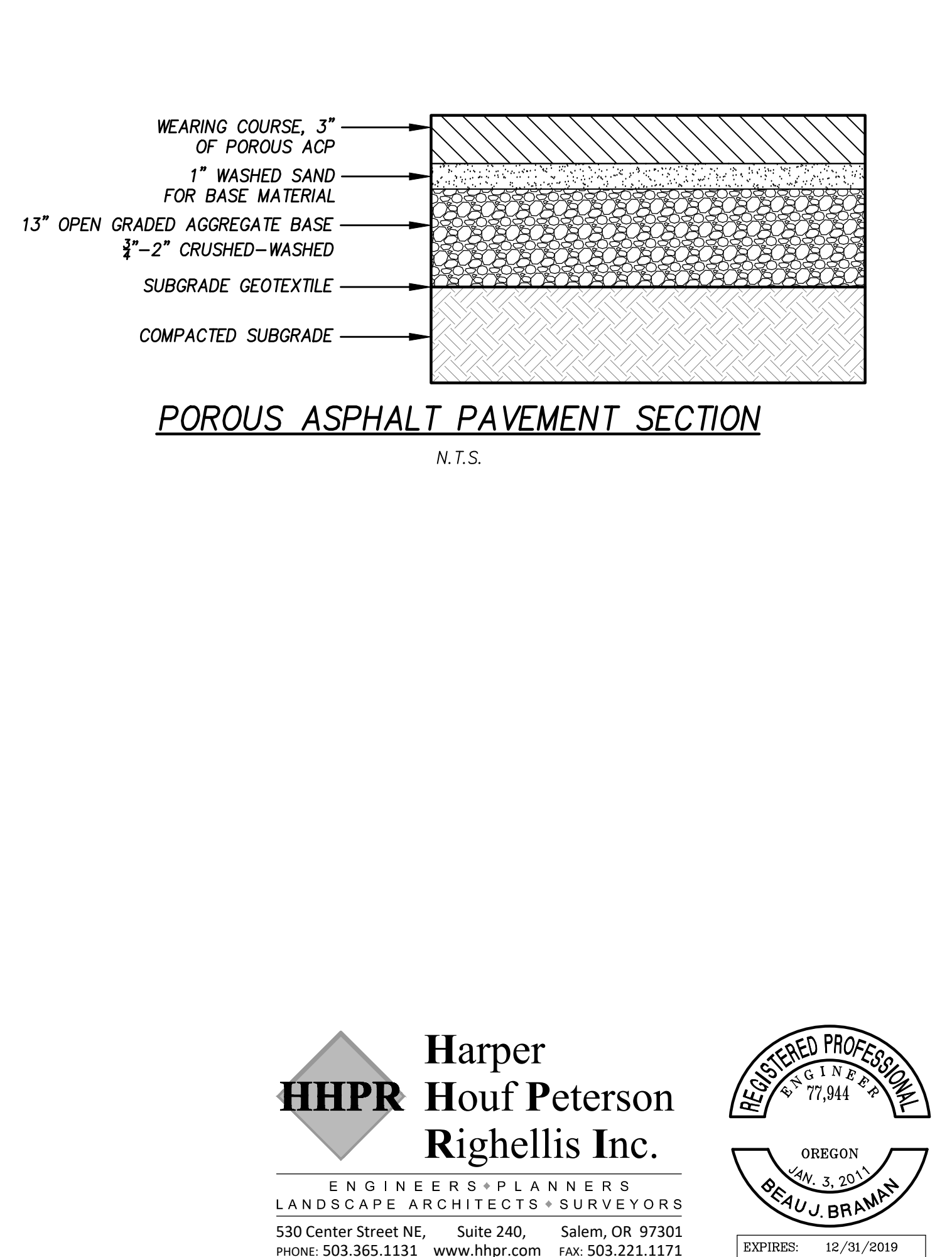
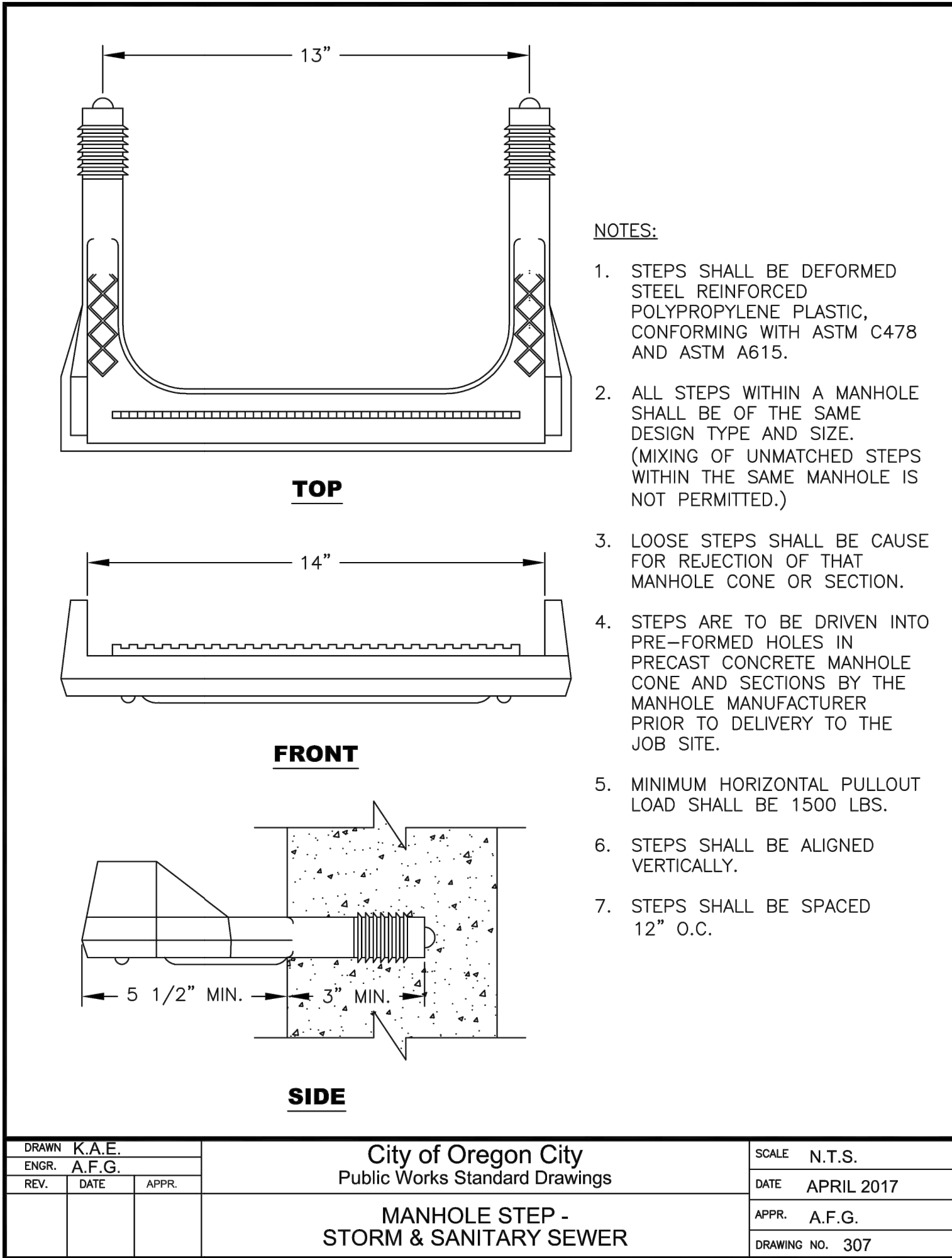
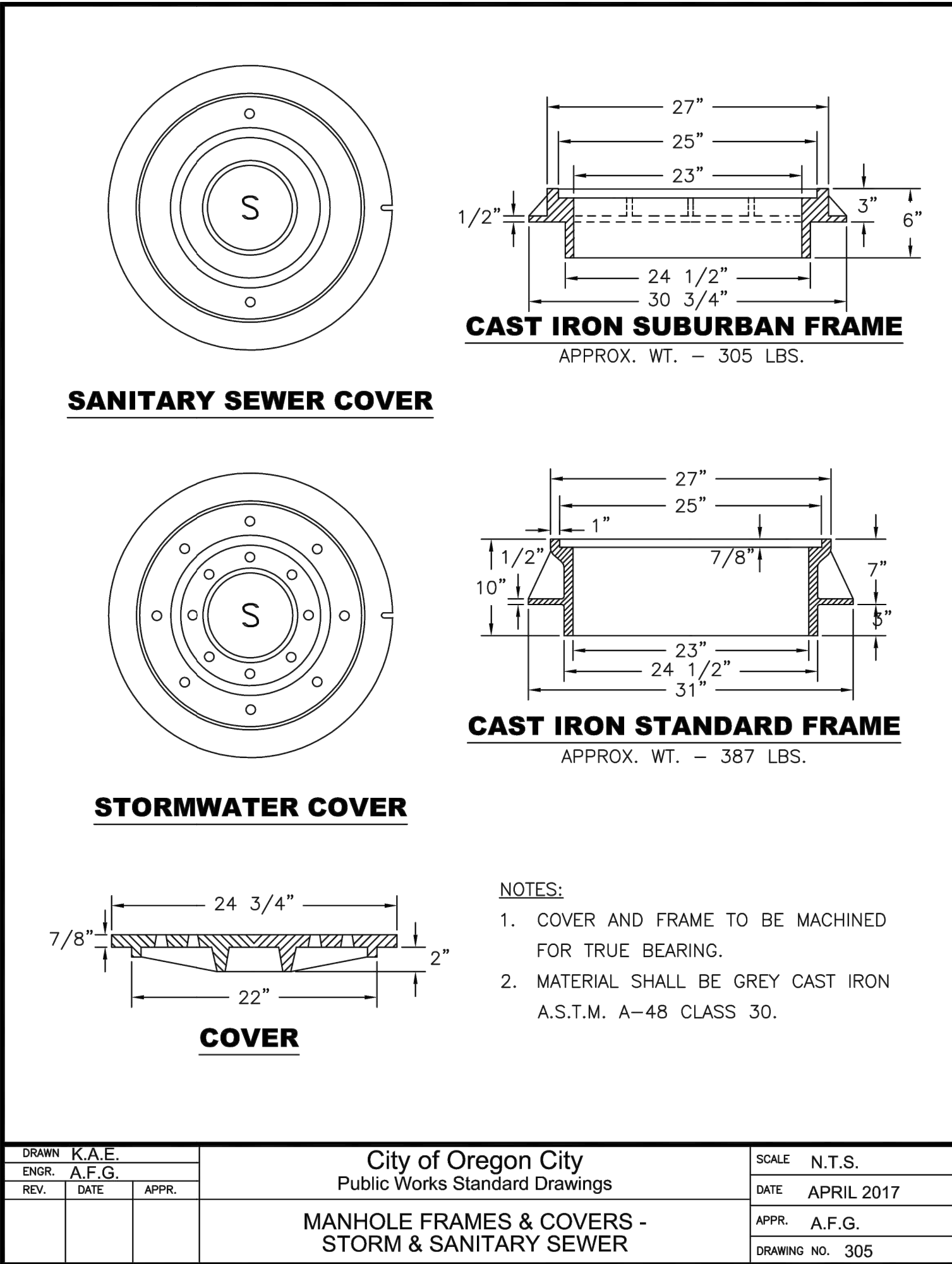
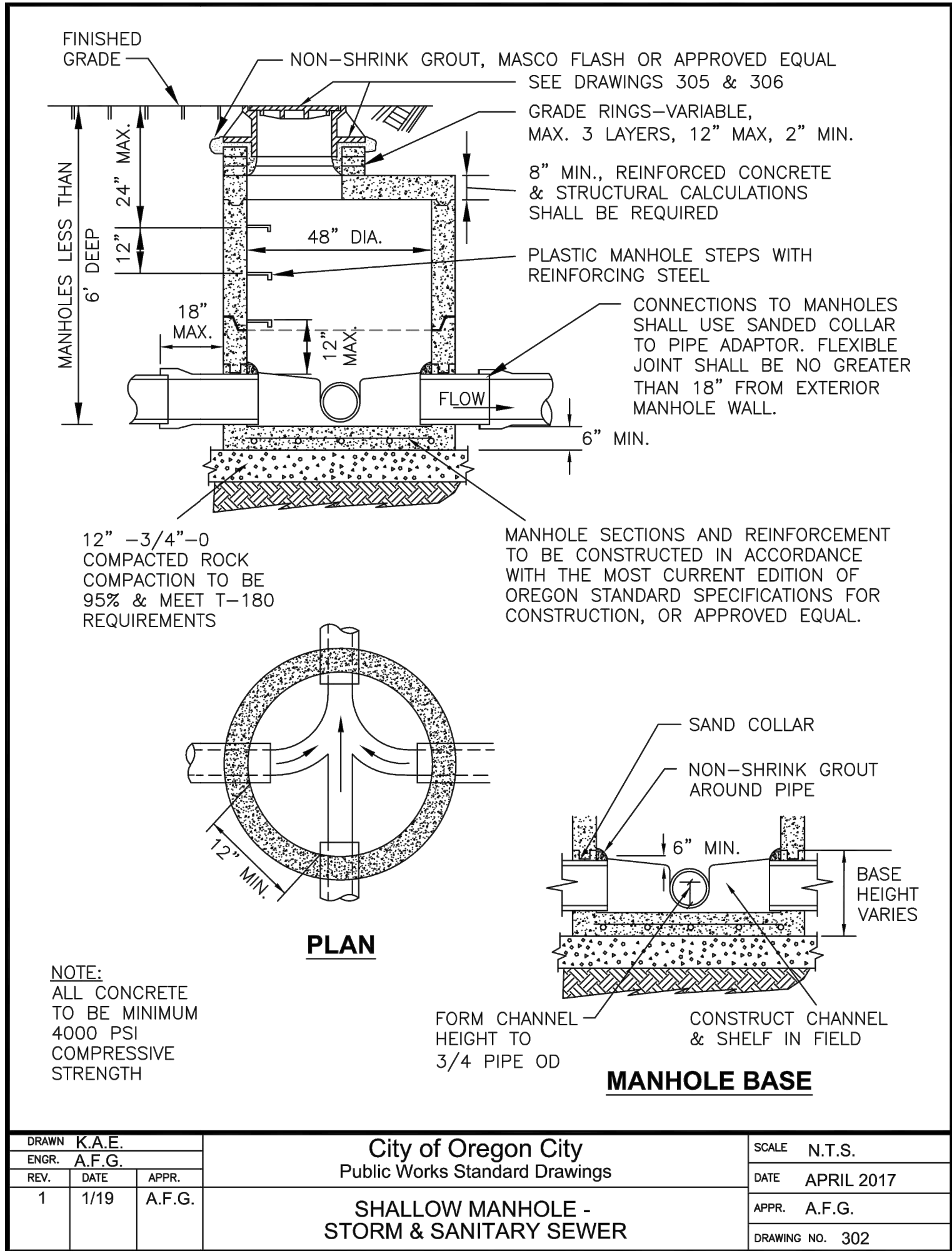
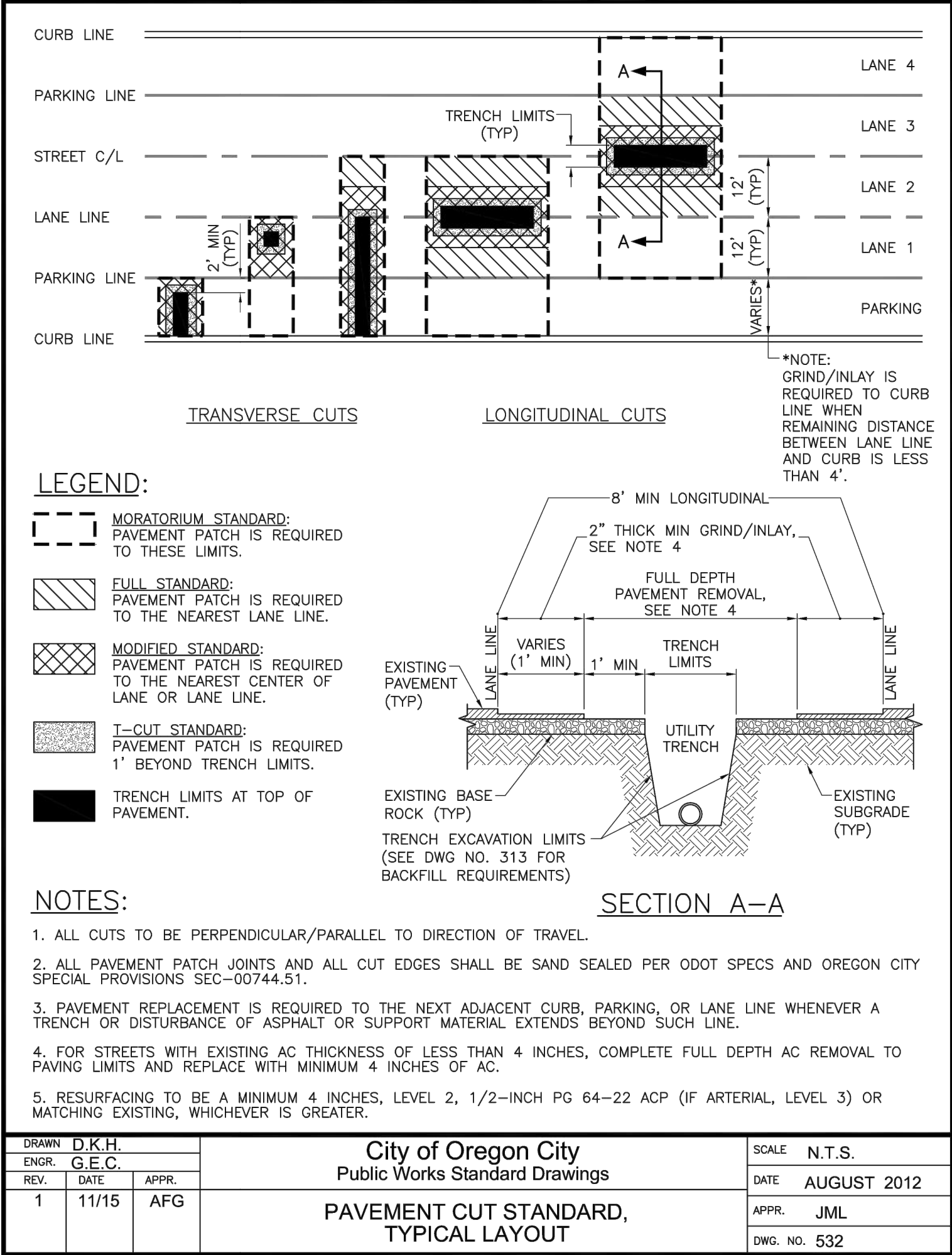
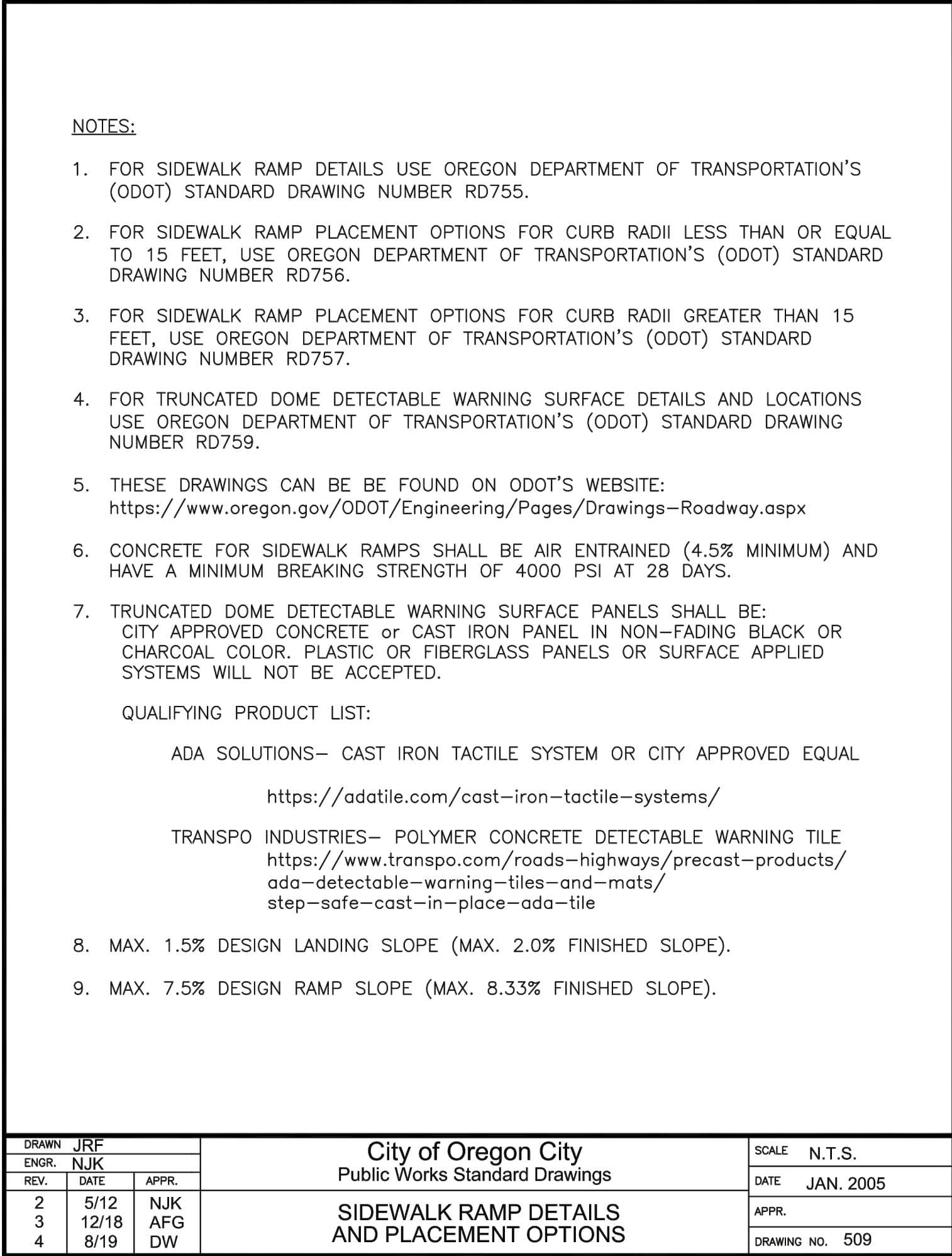
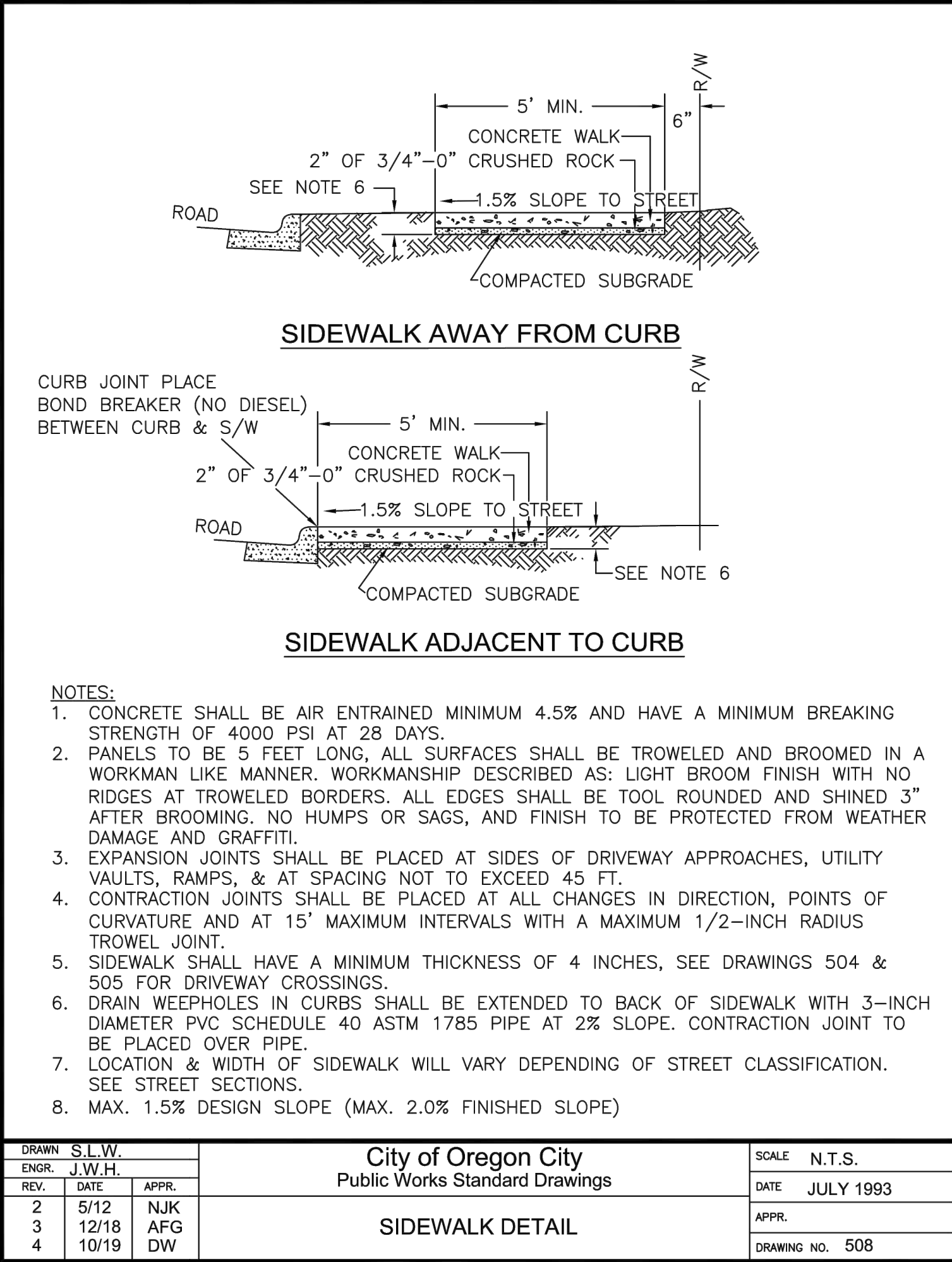
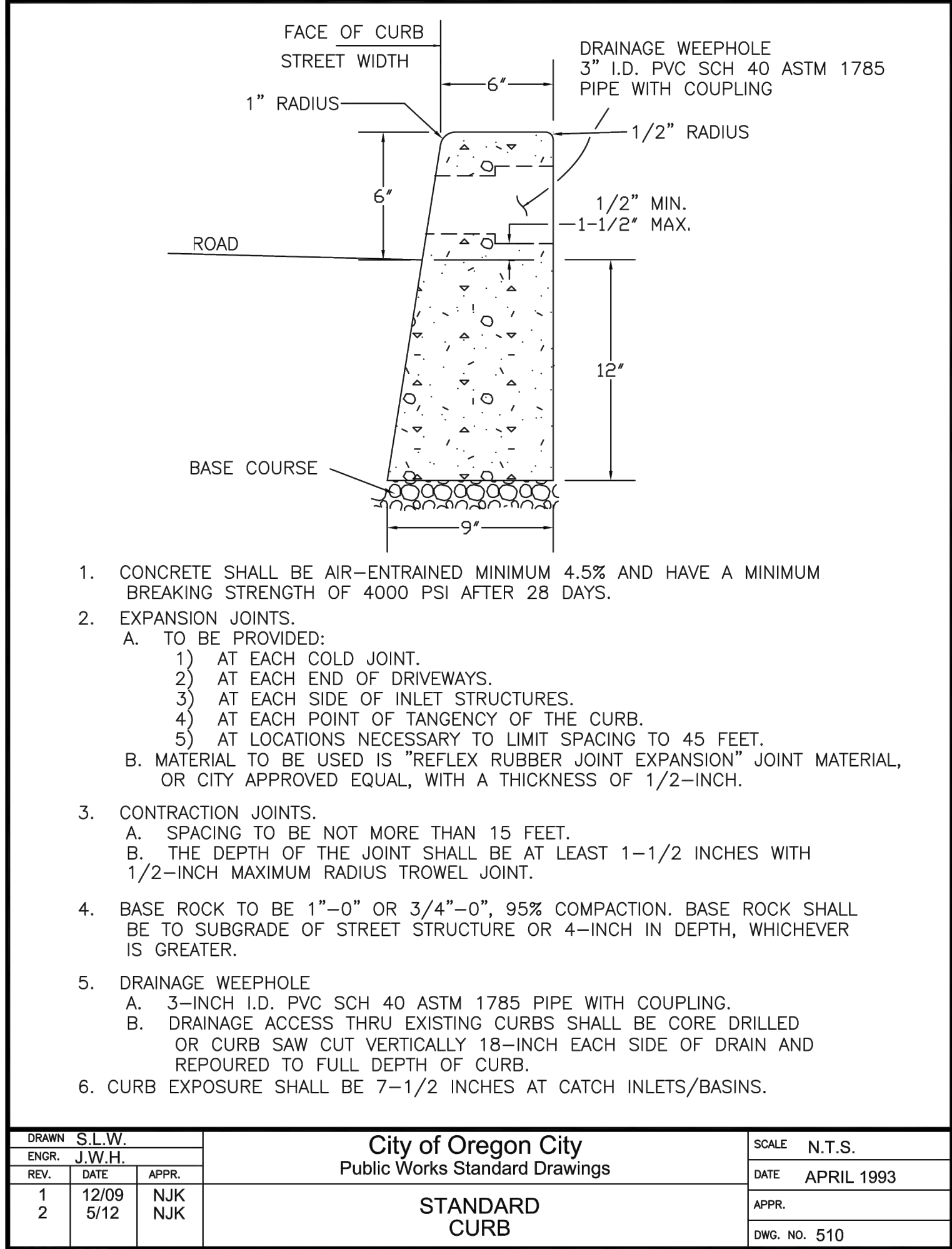
©2019 Lenity Architecture

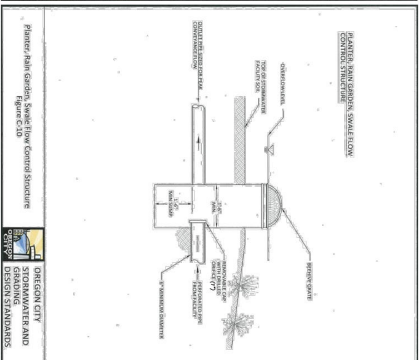
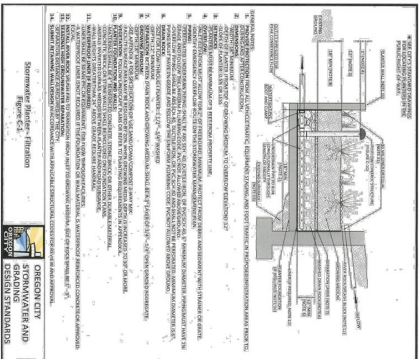
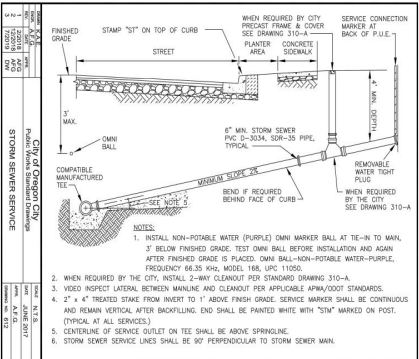
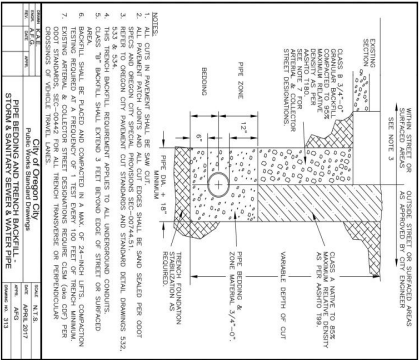
EROSION CONTROL PLAN

**RIVER TERRACE
BUILDING ADDITION**
650 SOUTH END ROAD
OREGON CITY, OR 97045

lenity
architecture, inc.
3900 Mills Court SE, Salem, Oregon 97301
P: 503.298.1000 F: 503.298.0065 www.lenityarch.com

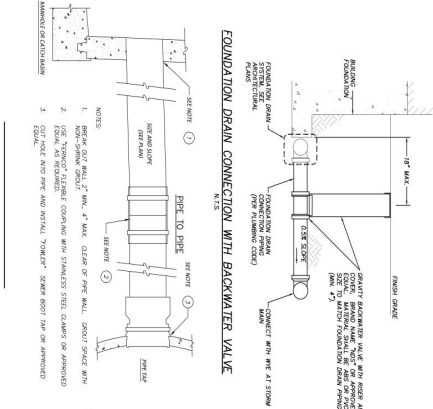
DATE
12/20/2019
REVISED DATE
SHEET
C4.0





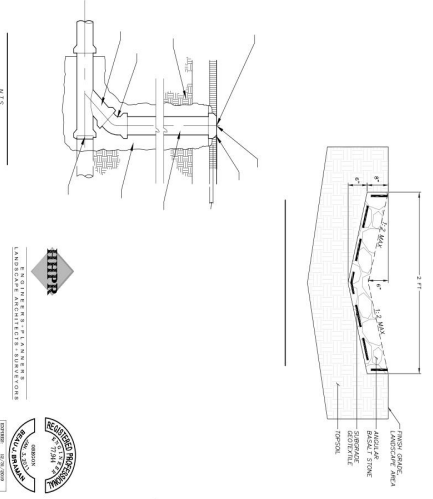
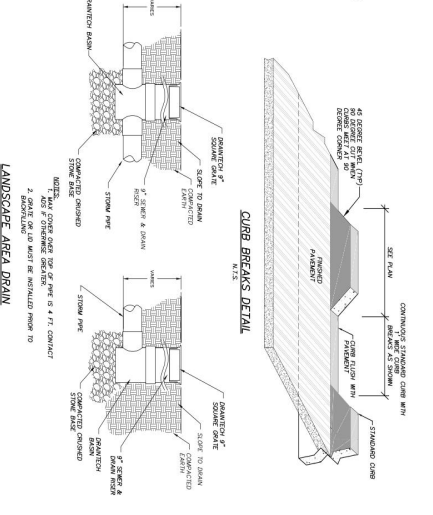
FOUNDATION DRAIN CONNECTION WITH BACKWATER VALVE

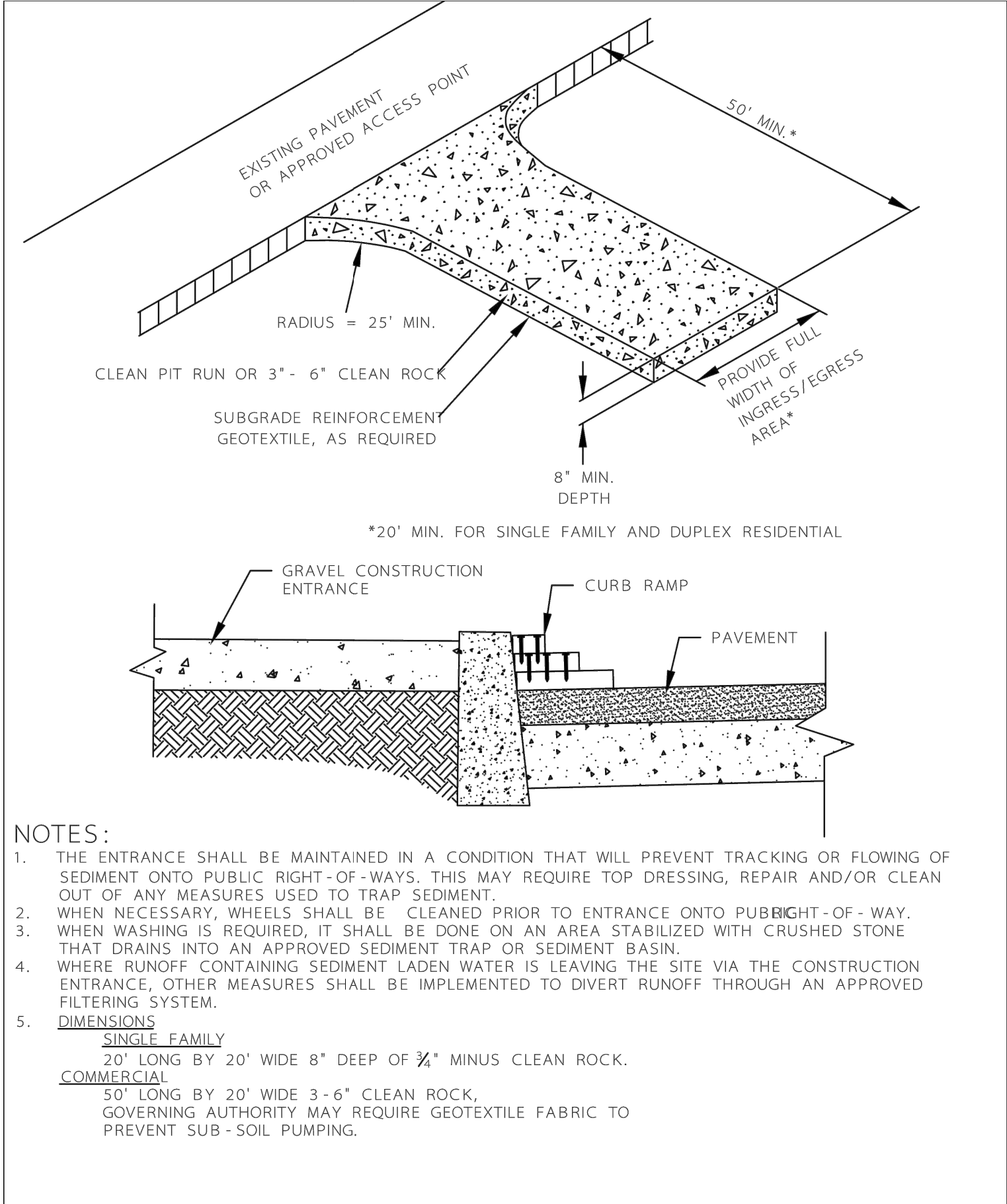
N.T.S.



LANDSCAPE AREA DRAIN

N.T.S.

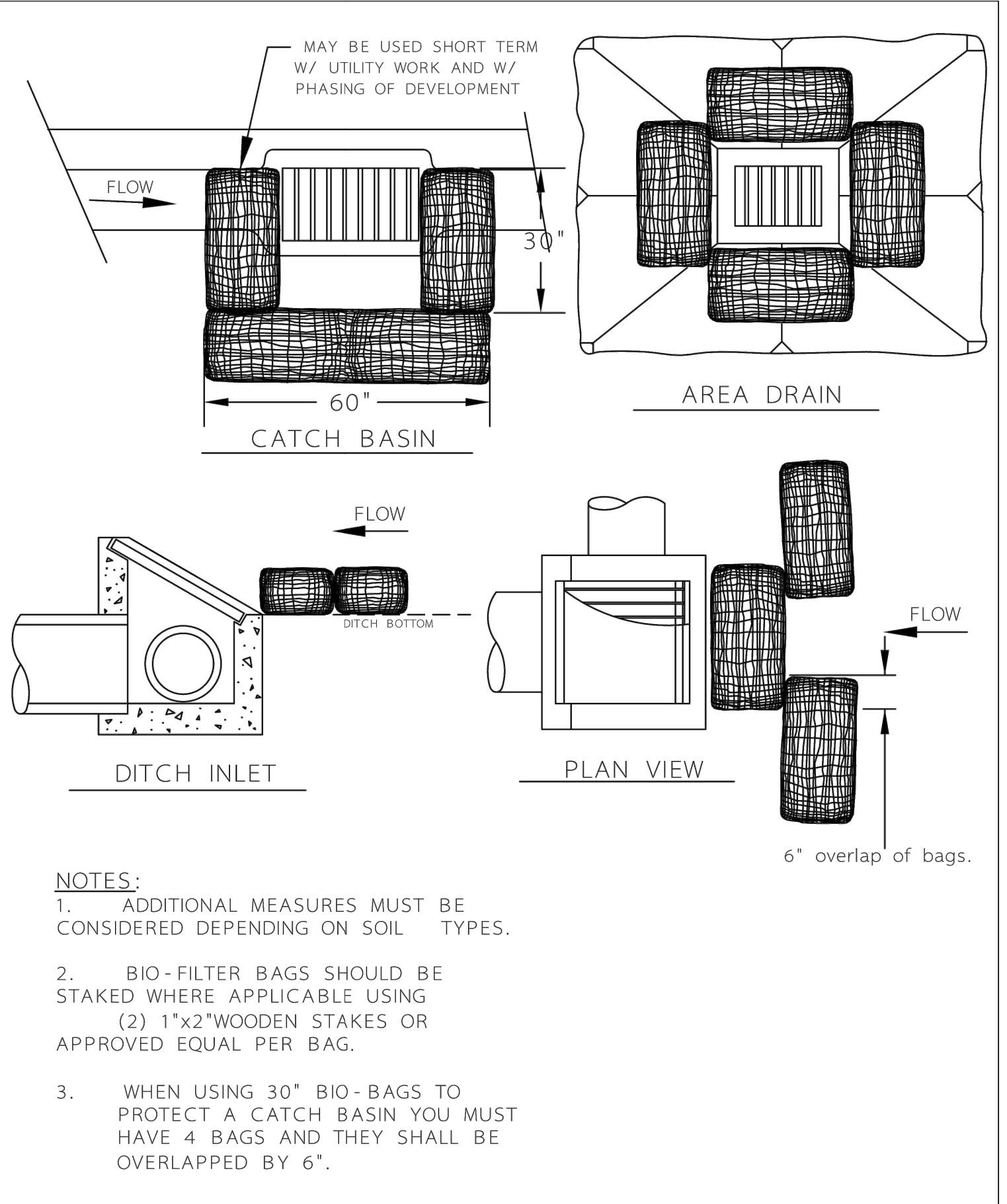




CONSTRUCTION ENTRANCE

DETAIL DRAWING 4-13

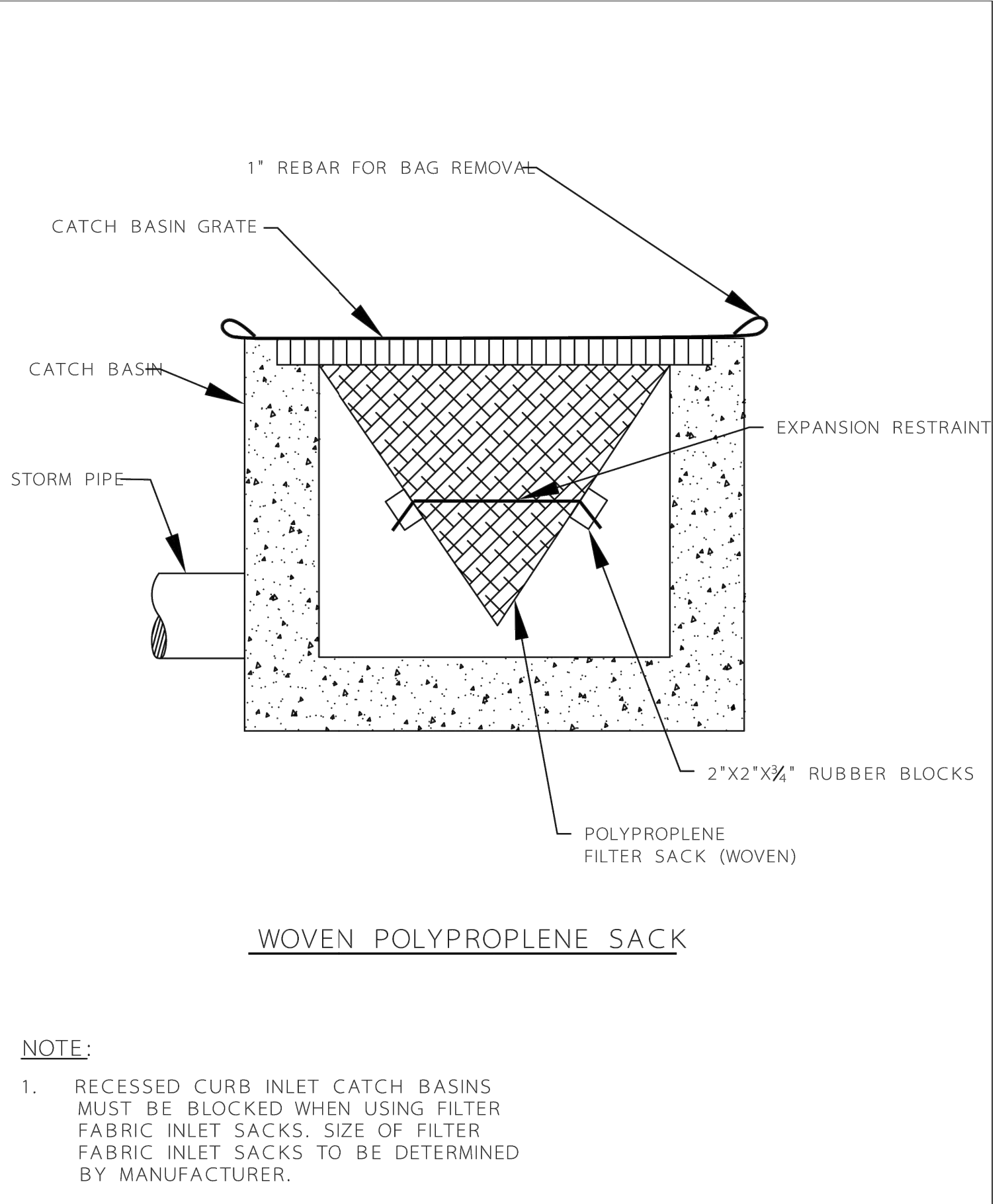
REVISED 01-09



INLET PROTECTION TYPE 4

DETAIL DRAWING 4-18

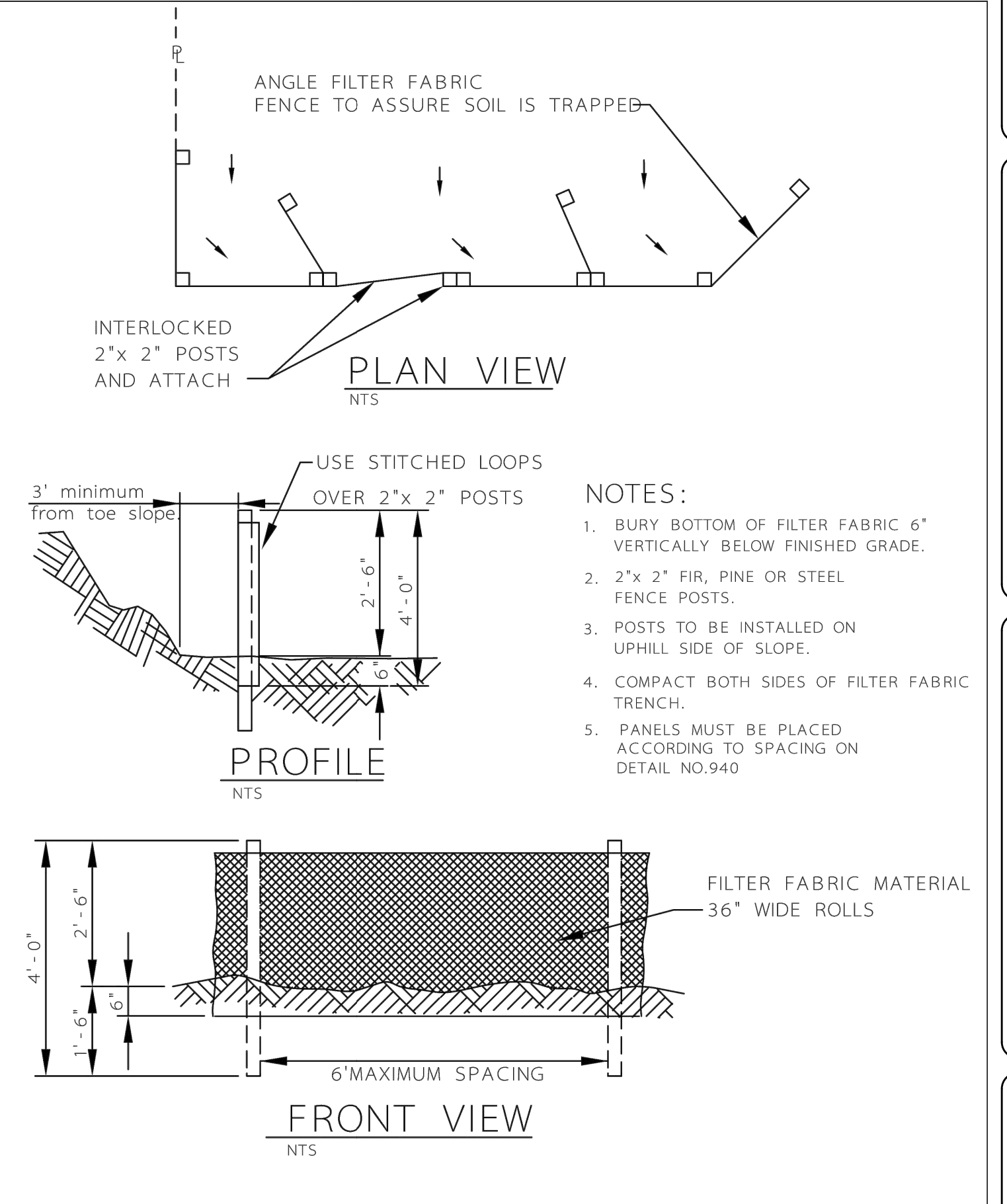
REVISED 01-09



INLET PROTECTION TYPE 5

DETAIL DRAWING 4-19

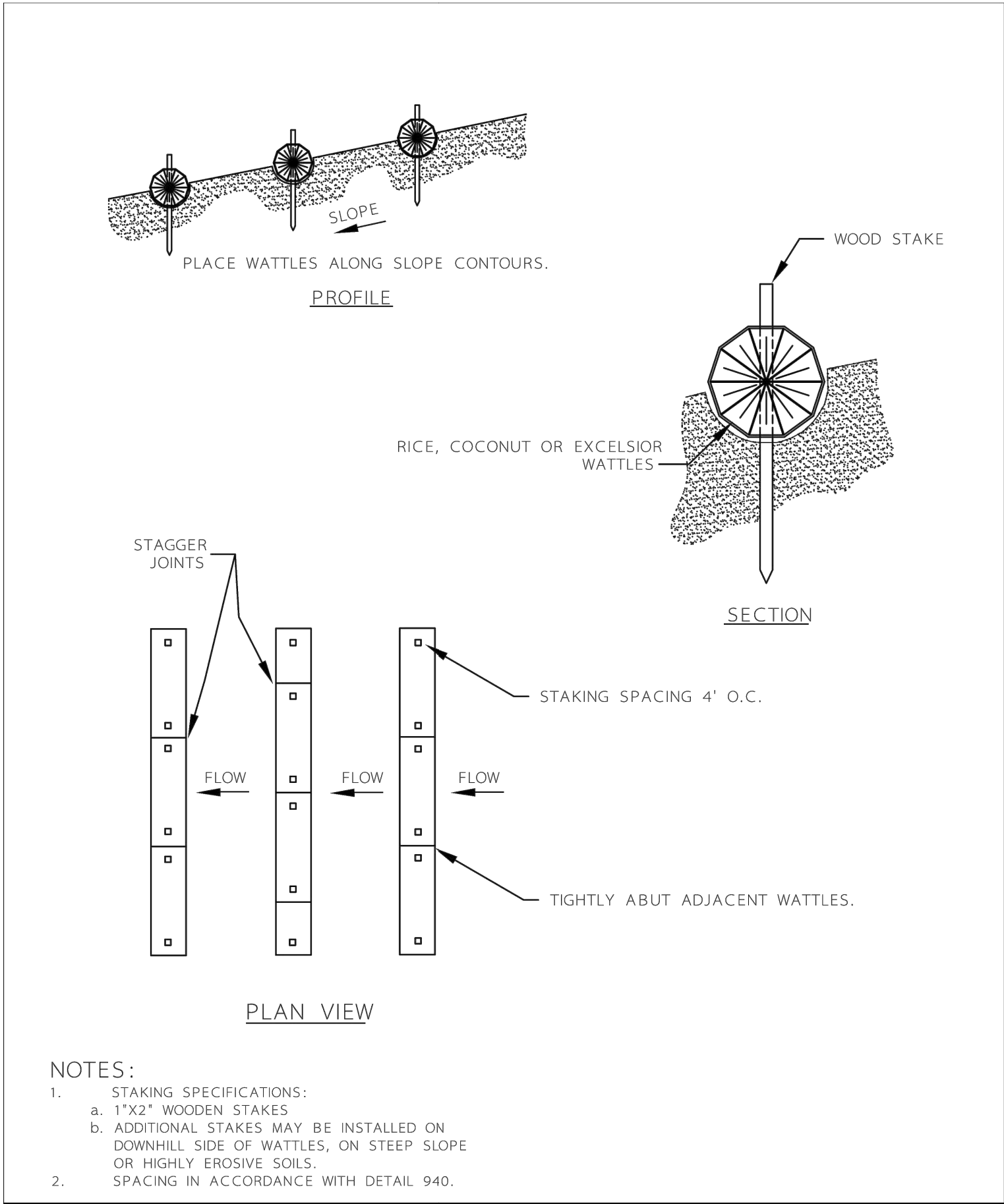
REVISED 01-09



SEDIMENT FENCE

DETAIL DRAWING 4-23

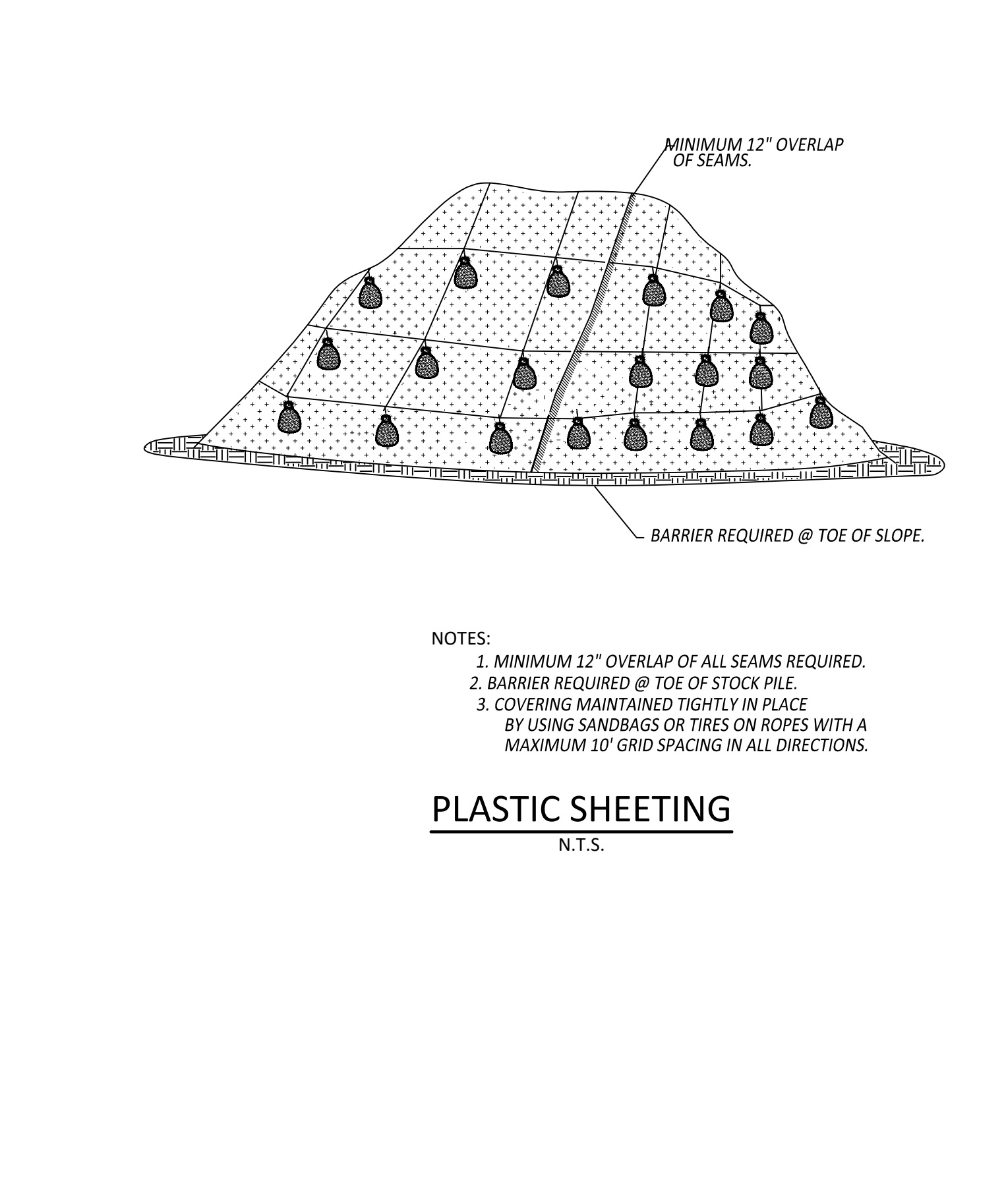
REVISED 01-09



WATTLES

DETAIL DRAWING 4-27

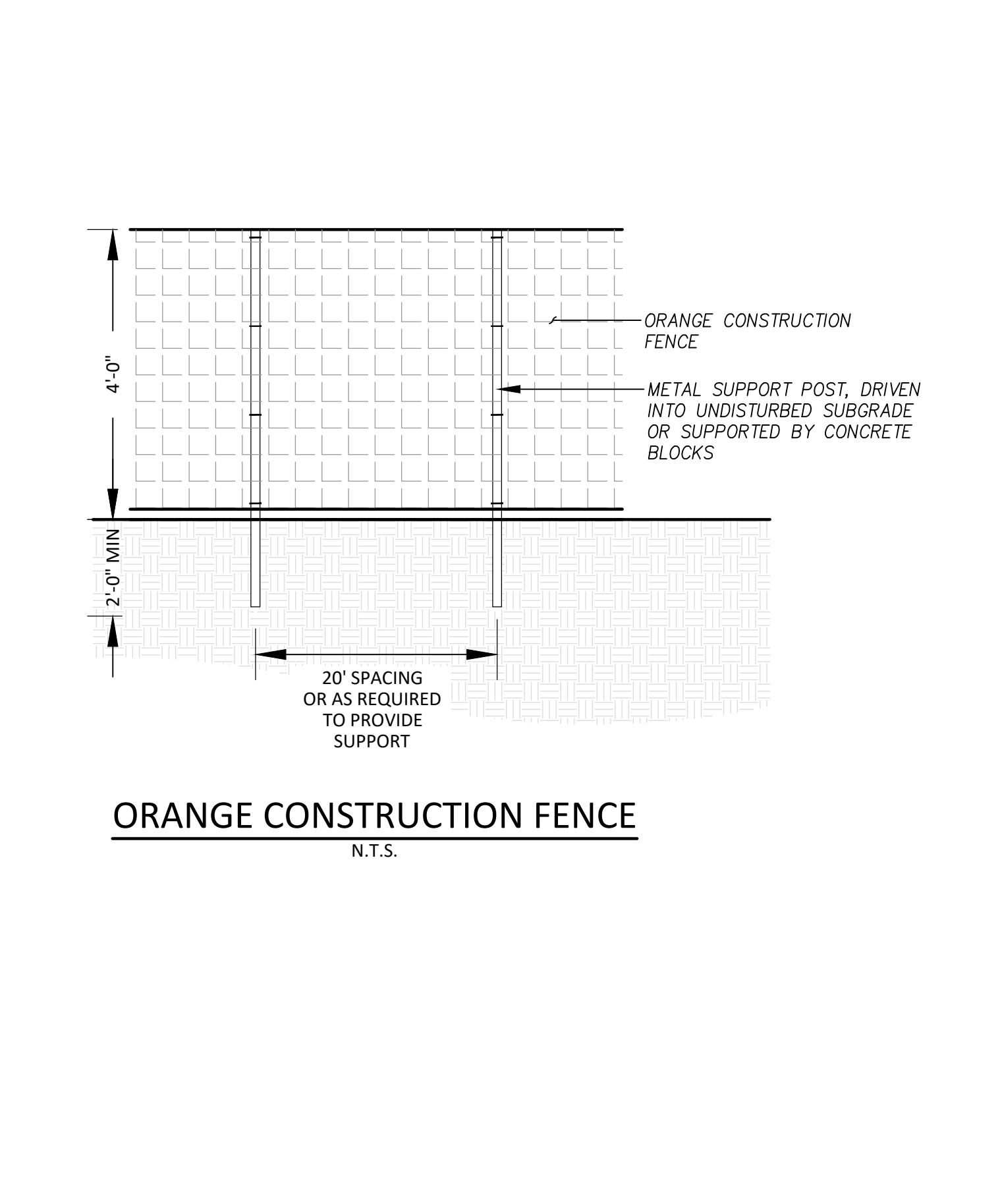
REVISED 01-09



PLASTIC SHEETING

DETAIL DRAWING 4-28

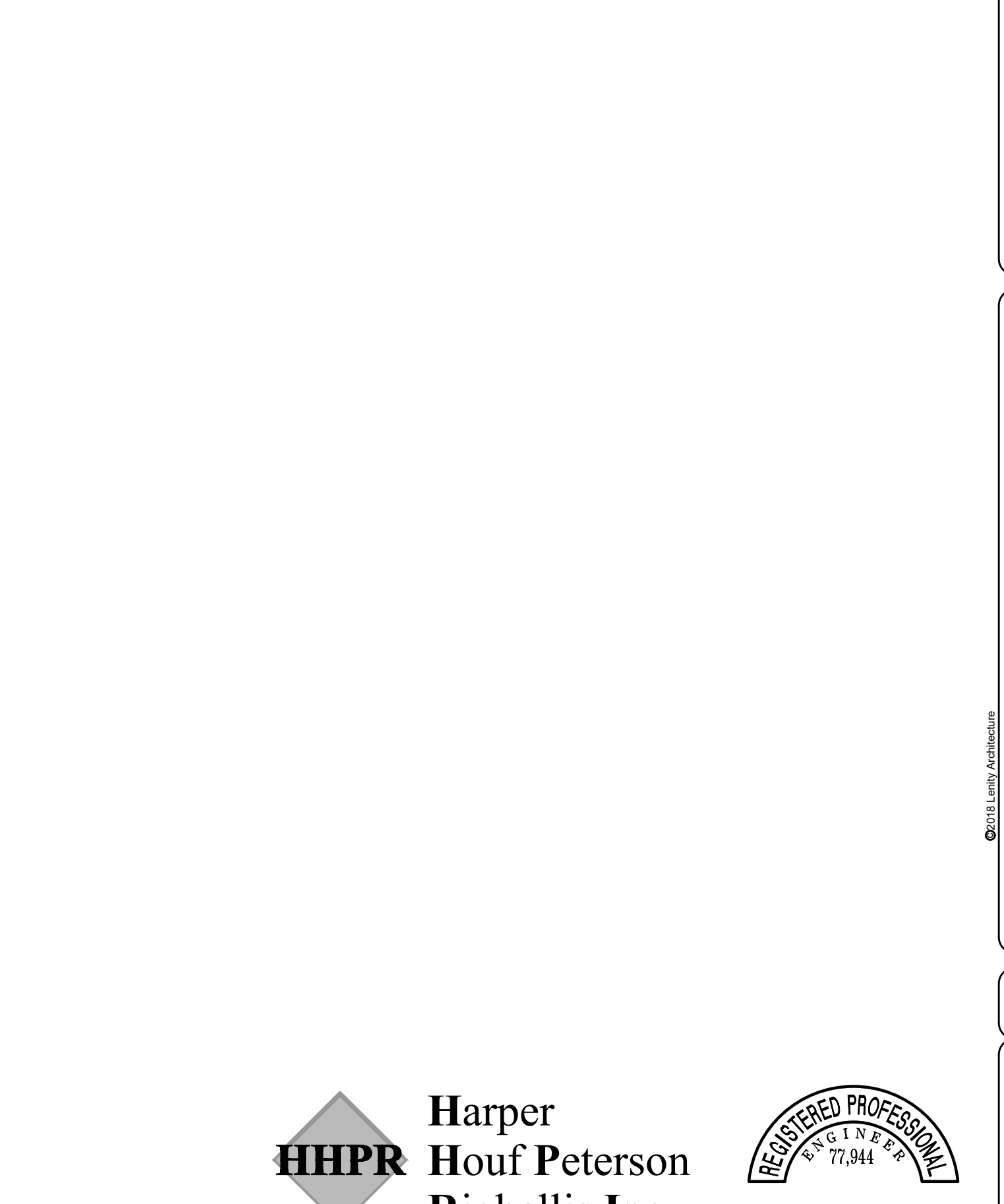
REVISED 01-09



ORANGE CONSTRUCTION FENCE

DETAIL DRAWING 4-29

REVISED 01-09



SLOPE PROTECTION

DETAIL DRAWING 4-30

REVISED 01-09

\\na12192019 10:48 AM daniel@hprh.com p:\4-27\wattles\miscellaneous\detail\project\mwp-21\river terrace memory care\mwp-21-detailed\wattles21-c5.2 - civil details.dwg C5.2

lenity
architecture, inc.
3800 Mills Court SE, Salem, Oregon 97301
P: 503.365.1131 F: 503.365.1131 www.lenityarch.com

RIVER TERRACE
BUILDING ADDITION
650 SOUTH END ROAD
OREGON CITY, OR 97045

CIVIL DETAILS

DATE
12/20/2019

REVISED DATE

SHEET
C5.2

Harper
Houf Peterson
Righellis Inc.

ENGINEERS • PLANNERS
LANDSCAPE ARCHITECTS • SURVEYORS
530 Center Street NE, Suite 240, Salem, OR 97301
PHONE: 503.365.1131 www.hhpr.com FAX: 503.221.1171

REGISTERED PROFESSIONAL
ENGINEER
No. 77,944
OREGON
JAN. 3, 2011
BEAU J. BRAMAN
EXPIRES: 12/31/2019



PROPERTY LINE ADJUSTMENT OR ABANDONMENT APPLICATION

File Number: LL-19-00008

Applicant(s):

Applicant(s) Signature: _____ Date: 12/20/2019

Applicant(s) Name Printed: Sam Thomas - Lenity Architecture, Inc.

Mailing Address: 3150 Kettle Court SE, Salem, OR 97301

Phone: (503) 399-1090 Email: samt@lenityarchitecture.com

Property A Owner(s):

Property Address: 914 South End Rd

Clackamas County Map and Tax Lot Number: 31E01AD03301

Property Owner(s) Signature: _____ Date: 12/20/2019

Property Owner(s) Name Printed: _____

Mailing Address: _____

Phone: _____ Email: _____

Property B Owner(s):

Property Address: 950 South End Rd

Clackamas County Map and Tax Lot Number: 31E01AD03100

Property Owner(s) Signature: _____ Date: 12/20/2019

Property Owner(s) Name Printed: _____

Mailing Address: _____

Phone: _____ Email: _____

All signatures represented must have the full legal capacity and hereby authorize the filing of this application and certify that the information and exhibits herewith are correct and indicate the party's willingness to comply with all code requirements.

Submittal Requirements:

The following information is required to be submitted:

- ☒ This Completed Application Form
- ☒ A Survey Prepared by Qualified Personnel which includes property lines, structures, water and sewer services, storm pipes, and location of a septic system.
- ☐ Title Reports or Trios for Each Property
- ☐ Deed Descriptions

1. Size

Identify the size of the properties subsequent to the Lot Line Adjustment.

☐ Lot Line Adjustment

☒ Lot Line Abandonment

Zoning Designation: R-10

Property A:

Area Prior to Adjustment 11,228 sq. ft. (0.258-acre)

Area After Adjustment 0

Total Area Adjusted 11,228 sq. ft. (0.258-acre)

Property B:

Area Prior to Adjustment 39,439 sq. ft. (0.905-acre)

Area After Adjustment 50,667 (1.163-acres)

Total Area Adjusted 50,667 (1.163-acres)

Does the proposal include property within a previously platted subdivision? ☐ Yes ☒ No

If so, please attach the lot size calculations to demonstrate the average lot size within the subdivision and the proposal would not create lot size less than 80% of the minimum.

Subdivision Name: _____ File Number: _____

Average Lot Size: _____

Minimum Lot Size Allowed (80% of minimum): _____ Minimum Lot Size Proposed: _____

Planning Staff Only			
Lot Size Approved?	☐ Yes	☐ No	☐ Not Applicable Initial _____

2. Lot Dimensions

Identify the lot width and depth of proposed lots. Lot width is measured between the midpoints of the two principal opposite side lot lines and generally at approximately right angles to the lot depth. Lot depth is measured from the midpoint of the front lot line to the midpoint of the opposite, usually rear lot line and generally at approximately right angles to the lot width. The minimum lot dimensions may be found in Title 17 of the Oregon City Municipal Code.

Zoning Designation: R-10

Lot A
Lot Width: 72.37'

Lot Depth: 154.93'

Lot B
Lot Width: 120.0'

Lot Depth: 293.99'

Planning Staff Only			
Lot Dimensions Approved?	☐ Yes	☐ No	☐ Not Applicable Initial _____

3. Setbacks

Identify the building setbacks (distance between the proposed foundation/support and the property line) for all structures onsite. The minimum distances may be found in dimensional standards of your zoning designation in Title 17 of the Oregon City Municipal Code. Please write N/A if the setback referenced is not affected by the proposal.

Zoning Designation: R-10

Lot A

Identify the closest point between the structures identified below and the proposed property line subsequent to the lot line adjustment/abandonment.

Dwelling

Closest Left Setback: _____

Closest Right Setback: _____

Closest Garage Setback: _____

Closest Rear Setback: _____

Closest Front Setback: _____

Closest Rear Porch Setback: _____

Closest Front Porch Setback: _____

Closest Projection into Setback: _____

Accessory Structure(s)

Closest Left Setback: _____

Closest Right Setback: _____

Closest Garage Setback: _____

Closest Rear Setback: _____

Closest Front Setback: _____

Closest Rear Porch Setback: _____

Closest Front Porch Setback: _____

Closest Projection into Setback: _____

Lot B

Identify the closest point between the structures identified below and the proposed property line subsequent to the lot line adjustment/abandonment.

Dwelling

Closest Left Setback: _____

Closest Right Setback: _____

Closest Garage Setback: _____

Closest Rear Setback: _____

Closest Front Setback: _____

Closest Rear Porch Setback: _____

Closest Front Porch Setback: _____

Closest Projection into Setback: _____

Accessory Structure(s)

Closest Left Setback: _____

Closest Right Setback: _____

Closest Garage Setback: _____

Closest Rear Setback: _____

Closest Front Setback: _____

Closest Rear Porch Setback: _____

Closest Front Porch Setback: _____

Closest Projection into Setback: _____

Planning Staff Only			
Building Setback Approved?	☐ Yes	☐ No	☐ Not Applicable Initial _____

4. Lot Coverage

Structures 200 square feet or greater (excluding decks, covered and uncovered porches and eave overhangs), are limited to the following lot coverage:

R-10, R-8 and R-6 Dwelling Districts: 40% Maximum Lot Coverage

R-5 Dwelling District: 50% Maximum Lot Coverage

R-3.5 Dwelling District: 55% Maximum Lot Coverage

Lot A

1. Square footage of all existing building footprints over 200 square feet (see exclusions above): 1,866 sq. ft. (to be removed)
2. Square footage of all proposed building footprints over 200 square feet (see exclusions above): 0
3. Total square footage of all building footprints over 200 square feet (line 1+2):..... 0
4. Total square footage of property subsequent to the lot line adjustment/abandonment:..... 0
5. Line 3 divided by line 4 and multiply by 100:..... N/A

Lot B

1. Square footage of all existing building footprints over 200 square feet (see exclusions above):. 16,405 sq. ft.
2. Square footage of all proposed building footprints over 200 square feet (see exclusions above): 6,996 sq. ft.
3. Total square footage of all building footprints over 200 square feet (line 1+2):..... 23,401 sq. ft.
4. Total square footage of property subsequent to the lot line adjustment/abandonment: 50,667 sq. ft.
5. Line 3 divided by line 4 and multiply by 100:..... 46.2% (variance requested)

Planning Staff Only			
Lot Coverage Approved?	☐ Yes	☐ No	☐ Not Applicable Initial _____

5. Frontage

Each lot is required to have a minimum of 20 feet of frontage, unless a flag lot is proposed. Frontage means that portion of a parcel of property which abuts a dedicated public street or highway or an approved private way.

Proposed Frontage for Lot A: 0 (lot to be abandoned) Proposed Frontage for Lot B: 192.37'

☐ Not Applicable, a flag lot configuration is proposed

Planning Staff Only			
Frontage Approved?	☐ Yes	☐ No	☐ Not Required Initial _____

6. Flag Lot

"Flag lot" means a lot or parcel that has a narrow frontage on a public right-of-way and a narrow accessway which serves the main body of the lot used for building

☒ Not Applicable, a flag lot configuration is not proposed

The pole must connect to a public street.

Does the pole portion connect to a public street? ☐ Yes ☐ No

The pole must be at least 8 feet wide for its entire length.

Is the pole portion a minimum of 8 feet in width? ☐ Yes ☐ No Width: _____

The pole must be part of the flag lot and must be under the same ownership as the flag portion of the lot.

Is the pole portion of the lot under the same ownership as the remaining portion of the lot? ☐ Yes ☐ No

A joint accessway shall be provided unless the existing topography of the site or the dwelling unit is located on the property to prevent a joint accessway. A perpetual reciprocal access easement and maintenance agreement shall be recorded for the joint accessway, in a format acceptable to the city attorney.

Is a joint accessway proposed? ☐ Yes ☐ No

If so, please describe the dimensions and location of the easement and provide a draft with the application.

Explanation: _____

Accessways shall have a minimum pavement width of 16 feet to service one to two units or 20 feet to service three or more units. A fire access corridor of at least 20 feet shall be provided to all parcels with a minimum pavement width of 16 feet to service two units or 20 feet to service three or more units. At least 6 inches of shoulder on each side of the access corridor shall be provided in order that construction work does not infringe on adjacent properties. A narrower pavement width may be approved by the Fire District and Planning Division. The approval may require that additional fire suppression devices be provided to assure an adequate level of fire and life safety. No obstruction, including trees, fences, landscaping or structures, shall be located within the access corridor.

Number of Units Utilizing the Accessway? _____

Width of Pavement Proposed? _____

Explanation: _____

Planning Staff Only

Flag Lot Approved? ☐ Yes ☐ No ☐ Not Applicable Initial _____

7. Plat Restrictions

Identify the size and location of all restrictions on your proposed plan. Plats may be obtained on OCMAP or from the Development Services Division.

Easements (PUE, SSE, etc.): 10' PUE along South End Rd, 10' SSE along Amanda Ct. _____

Non-Vehicular Access Strip (NVA): _____

Other Restrictions: _____

☐ Not Applicable

DS Staff Only

Plat Restrictions Approved? ☐ Yes ☐ No ☐ Not Required Initial _____

8. Utilities

Please indicate the location of all water, sanitary sewer, and stormwater facilities on the survey.

Does the proposal include:

1. A drainfield? ☐ Yes ☒ No.

If yes, is it affected by proposal? ☐ Yes ☐ No

If yes, please explain _____

2. Septic tank? ☐ Yes ☒ No

If yes, is it affected by proposal? ☐ Yes ☐ No

If yes, please explain _____

3. Stormwater Facility or piping? ☒ Yes ☐ No

If yes, is it affected by proposal? ☐ Yes ☒ No

If yes, please explain _____

4. Water Service? ☒ Yes ☐ No

If yes, is it affected by proposal? ☐ Yes ☒ No

If yes, please explain _____

5. Sewer Service? ☒ Yes ☐ No

If yes, is it affected by proposal? ☐ Yes ☒ No

If yes, please explain _____

Note that an easement is required if the proposal would result in a utility being located on another property.

DS Staff Only			
Utilities Approved?	☐ Yes	☐ No	☐ Not Applicable Initial _____

City Decision

Planning Division Approval? ☐ Yes ☐ No Date: _____ Signature: _____

Development Services Approval? ☐ Yes ☐ No Date: _____ Signature: _____

Building Division Approval? ☐ Yes ☐ No Date: _____ Signature: _____

Please note that approval of this Property line Adjustment does not affect any existing easements or encumbrances which may be located on the subject properties.

APPROVAL PROCESS:

1. The current deed holders or their assigns shall sign the revised deeds for the approved legal descriptions. These deeds shall be recorded at the Clackamas County Clerk's Office.
2. The applicant shall submit a mylar copy of the record of survey for signature by the Community Development Director prior to recordation at the Clackamas County Surveyor's Office.
3. The applicant shall provide the City Technical Services Department a CAD file of the final survey. The preferred file type is an AutoCAD*.dwg. If AutoCAD is not the CAD system used, a *.dxf format will be sufficient.
4. Provide the City of Oregon City a file copy of the final Property line Adjustment as filed by Clackamas County, including the Clackamas County Survey Number.
5. The applicant shall record the final property descriptions with Clackamas County within **two years of the Community Development Director's approval**, after which the decision shall be null and void.

Job No.: MCP-21

Date: January 21, 2020

To: Sang Pau

From: Daniel Cicerchi



Project/Subject: PR-150-2019 / GLUA-19-00052 914 and 950 South End Road

☐ Fax - Number: _____; Number of pages _____
(If you did not receive the correct number of pages, please call 503-221-1131)
☒ E-mail ☐ Mail ☐ Hand Deliver ☐ Interoffice

Hello Sang,

The purpose of this memorandum is to address the two (2) comments received during Development Services' Completeness Review for the subject line project. Here is a summary for the proposed on-site stormwater management:

"Site stormwater management will be accomplished by sending the majority of proposed roof runoff to stormwater filtration planters prior to discharging to the public stormwater system. The planter wall height was increased and equivalent volume calculations performed to reduce the required surface area. Please see Appendix C of the Preliminary Stormwater Report for the BMP Sizing Tool Reports and sizing calculations. The remainder of proposed roof/patio runoff will be piped to a 160-foot drainage channel. This channel will allow some stormwater runoff to infiltrate prior to entering a mechanical treatment catch basin connected to the existing underground stormwater detention chamber system. This existing chamber system was modeled using the Santa Barbara Urban Hydrograph method based on the existing system's stormwater report and infiltration test results. According to current City Standards, the existing chamber system is oversized and has capacity for additional stormwater runoff. Please see Appendix C of the Preliminary Stormwater Report for Hydrograph Reports and calculations."

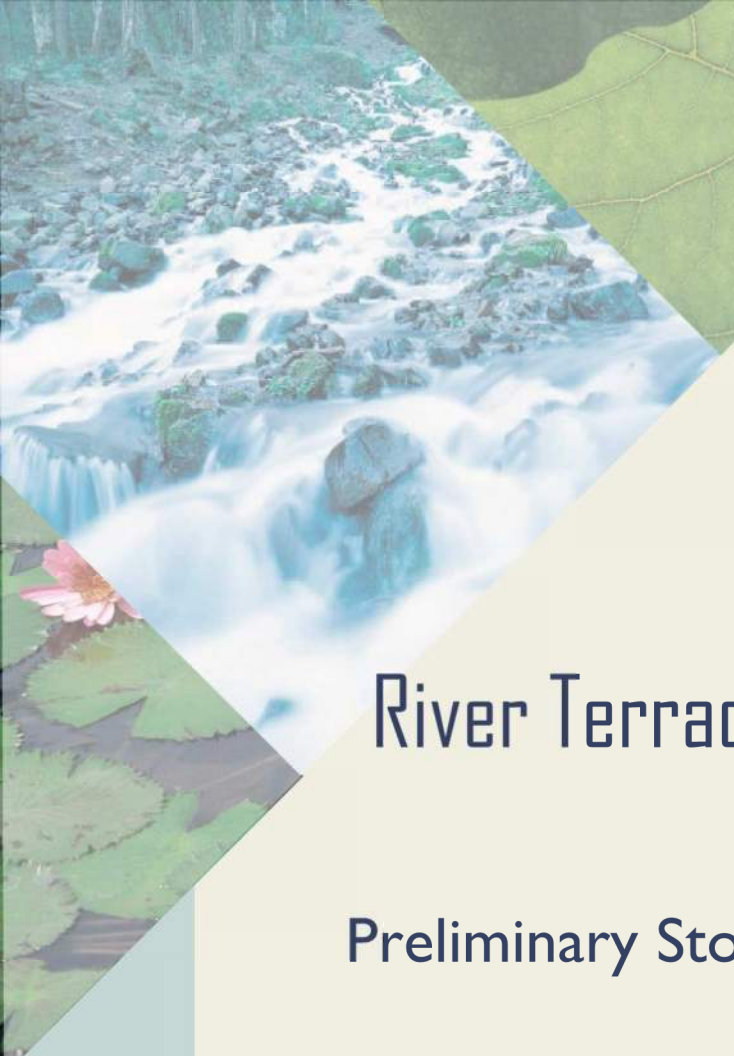
Please provide approval, or additional comments, for the revised on-site stormwater management plan.

Attachments:

- 1 pdf copy of Development Services' Completeness Review
- 1 pdf copy of Civil's Land Use Plan Drawings
- 1 pdf copy of Civil's Preliminary Stormwater Report

Thank you,

Daniel Cicerchi
Harper Houf Peterson Righellis, Inc.



Harper
Houf Peterson
Righellis Inc.

River Terrace Building Addition

Preliminary Stormwater Management Report

December 2019

Prepared For:

Sam Thomas
Lenity Architecture
3150 Kettle Ct SE
Salem, Oregon 97301

HHPR Project # SEA-110

Prepared By:

Harper Houf Peterson Righellis Inc.
530 Center Street NE, Suite 240
Salem, OR 97301
P: 503-365-1131

Beau Braman, PE
BeauB@hhpr.com



EXPIRES: 12/31/ 2019



HHPR

ENGINEERS ♦ PLANNERS
LANDSCAPE ARCHITECTS ♦ SURVEYORS

Table of Contents

Project Overview and Description	1 / 2
Methodology	2 / 3
Analysis	3 / 4
Downstream Analysis	4
Private Stormwater Facilities Agreement	4
Operations and Maintenance Plan	4

Tables

Table 1 – Stormwater Runoff Basins	2
Table 2 – Stormwater Management Requirements	3

Appendices

Appendix A – Maps

Vicinity Map
Pre-Developed Basin Map
Post-Developed Basin Map

Appendix B – Methodology

Infiltration Testing Results
Soil Survey Map
Hydrologic Grouping Table

Appendix C – Analysis

BMP Sizing Tool Report

Project Overview and Description

The project site is located at 950 and 914 South End Road in the City of Oregon City, Oregon. The site consists of two tax lots (prior to consolidation), totaling approximately 1.2 acres in size, designated as Single Family Dwelling (R-10) on the City of Oregon City Zoning Map. See Appendix A for a Vicinity Map.

The proposed project constructs a 7,000 square foot building addition to the existing River Terrace Memory Care facility. The proposed site improvements include existing building demolition, parking lot expansion, site grading, pedestrian access, stormwater management, landscaping and utilities.

Site stormwater management improvements include pipe conveyance, roof/foundation drain connections, public main extension, stormwater filtration planters, drainage channel, and area drains. These improvements will tie into the existing stormwater system in South End Road and the existing stormwater system on-site, which consists of underground detention chambers.

Existing Conditions

The existing site is currently occupied by a residential building and River Terrace Memory Care facility. Existing Basin 1 includes stormwater runoff from the existing building roof and site landscaping. Stormwater runoff sheet flows to an existing on-site low point, where it is assumed to infiltrate native soils. There are no stormwater treatment facilities within this basin. Existing Basin 2 includes stormwater runoff from the asphalt driveway, building roof and site landscaping. Basin 2 stormwater runoff sheet flows to South End Road prior to entering the public stormwater system north of the site. Existing Basin 3 includes stormwater runoff from site landscaping. This runoff sheet flows to an existing catch basin prior to discharging to the existing underground detention chambers on-site. Existing Basin 4 contains runoff from the pervious pavement parking lot and site landscaping. Basin 4 runoff sheet flows towards the southwest corner of the site and allows runoff to infiltrate native soils. Existing Basin 5 includes stormwater runoff from site landscaping. This basin allows runoff to infiltrate native soils. See Appendix A for the Pre-Developed Basin Map.

Proposed Conditions

Proposed stormwater management increases the amount of treated stormwater runoff. Proposed Basin 1 includes stormwater runoff from the proposed building roof, site landscaping and concrete sidewalks. Basin 1 conveys runoff to the proposed stormwater filtration planters for treatment prior to discharging into the existing public system in South End Road. Proposed Basin 2 (existing and proposed) includes stormwater runoff from site landscaping and concrete sidewalks. Basin 2 maintains existing drainage patterns by allowing runoff to sheet flow into the existing roadway, which enters the public stormwater system north of the site. Proposed Basin 3 includes stormwater runoff from the proposed building roof, proposed patio area, and site landscaping. Basin 3 collects and conveys runoff through a drainage channel prior to discharging into existing underground detention chambers. Proposed Basin 4 (existing and proposed) includes stormwater runoff from the existing and proposed pervious parking lot and

site landscaping. Basin 4 maintains existing drainage patterns by allowing runoff to infiltrate native soils. Proposed Basin 5 (existing and proposed) includes runoff from site landscaping. Basin 5 maintains existing drainage patterns by allowing runoff to infiltrate native soils. See Appendix A for the Post-Developed Basin Map. See Table 1 for Stormwater Runoff Basins.

Table 1 – Stormwater Runoff Basins

Basin	Total Area (acre)	Impervious Area (acre)	Pervious Area (acre)	Treated Area (acre)
Ex 1	0.18	0.03	0.15	-
Ex 2	0.13	0.06	0.07	-
Ex 3	0.04	0.00	0.04	-
Ex 4	0.17	0.00	0.17	-
Ex 5	0.02	0.00	0.02	-
Ex total	0.54	0.09	0.45	-
1	0.19	0.16	0.03	0.19
2	0.05	0.025	0.025	-
3	0.10	0.04	0.06	-
4	0.17	0.00	0.17	-
5	0.03	0.00	0.03	-
Total	0.54	0.225	0.315	0.19

Methodology

A Geotechnical Engineering Report was completed by GeoPacific Engineering, Inc., dated July 11, 2019. Reference sections are included in Appendix B. The full geotechnical engineering report is available upon request. The following is a summary of findings used for stormwater management design:

- Depth of Groundwater = 139 feet below ground surface (BGS)
 - Groundwater was not encountered during field explorations
- Infiltration Rate = 0.01 to 0.02 inches per hour
 - Due to limited infiltration rate, all stormwater facilities on-site will be designed for filtration

The Natural Resource Conservation Service (NRCS) Web Soil Survey describes the soils on-site as Jory stony silt loam with a Hydrologic Soil Grouping C classification (See Appendix B for Soil Survey Maps and Hydrologic Grouping Tables). Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet and receive precipitation from long-duration storms.

- Soil Classification = C

The purpose of this stormwater memorandum is to present stormwater best management practices (BMP) for water quality treatment, flow control, and conveyance to be installed as part of this development project and designed to comply with the 2019 City of Oregon City Stormwater and Grading Design Standards. Table 2 below summarizes the City's design criteria.

Table 2 – Stormwater Management Requirements

Design Requirement	City of Oregon City Criteria
Water Quality Treatment Area	All new and replaced impervious area within the project limits
Water Quality Design Storm	1.0 inch per 24-hour period
Flow Control	42% of the post-development peak runoff rate of the two-year storm must be equal to or less than 42% of the peak runoff rate of the pre-developed two-year, 24-hour storm; and the peak runoff rate of the post-development ten-year, 24-hour storm must be equal to or less than the peak runoff rate of the pre-developed ten-year, 24-hour storm event. Volume-based facilities shall be sized to detain the post-developed 100-year design storm with a release rate no greater than the pre-developed, 100-year design storm.
Infiltration	Utilize LID facilities to the MEP using either the BMP Sizing Tool or the Engineered Method. MEP is defined as installing LID facilities with a surface area of at least 10% of the total new plus replaced impervious area. OR Retain and fully infiltrate the 10-year storm (3.5 inches per 24-hour) within 72 hours of the beginning of the storm event.
Conveyance	Convey the 10-year, 24 hour, storm event
Downstream Capacity	¼ mile downstream or to a distance where the project site contributes less than 15 percent of upstream area; If downstream capacity issues have been identified

Analysis

Stormwater runoff modeling will be completed using the City of Oregon City's BMP Sizing Tool application. This tool addresses water quality treatment and flow control requirements when sizing stormwater management facilities. The design process includes separating the site into Discharge Management Areas (DMA) that are routed to BMP's. The application will adequately size the BMP's based on soil infiltration rates and desired facility surface area or depth.

Water Quality and Flow Control

Water quality treatment and flow control requirements will be met through the use of the BMP Sizing Tool application. Water quality facilities will be designed to capture and treat 80% of the average annual runoff volume to the MEP with a goal of 70% total suspended solids (TSS) removal. This volume is the equivalent of a 1 inch design storm over a 24-hour period.

Flow control facilities peak runoff rates from post-developed conditions will be less than or equal to the duration of peak runoff rates from pre-developed conditions for flows between 42% of the 2-year storm event up to the 10-year storm event.

Due to the limited available stormwater facility areas on-site, a stormwater filtration planter was chosen to maximize the stormwater treatment area. Using the BMP Sizing Tool, the stormwater filtration planter's required area is 540 square feet. See Appendix C for the BMP Sizing Tool Report.

Conveyance

Conveyance systems shall be designed and constructed to convey the 10-year design storm flowing full with no pressure flow. The design size shall be based on Manning's equation and hydraulic calculations shall be provided with the Final Stormwater Management Report.

Downstream Analysis

There are no known identified downstream deficiencies for this project.

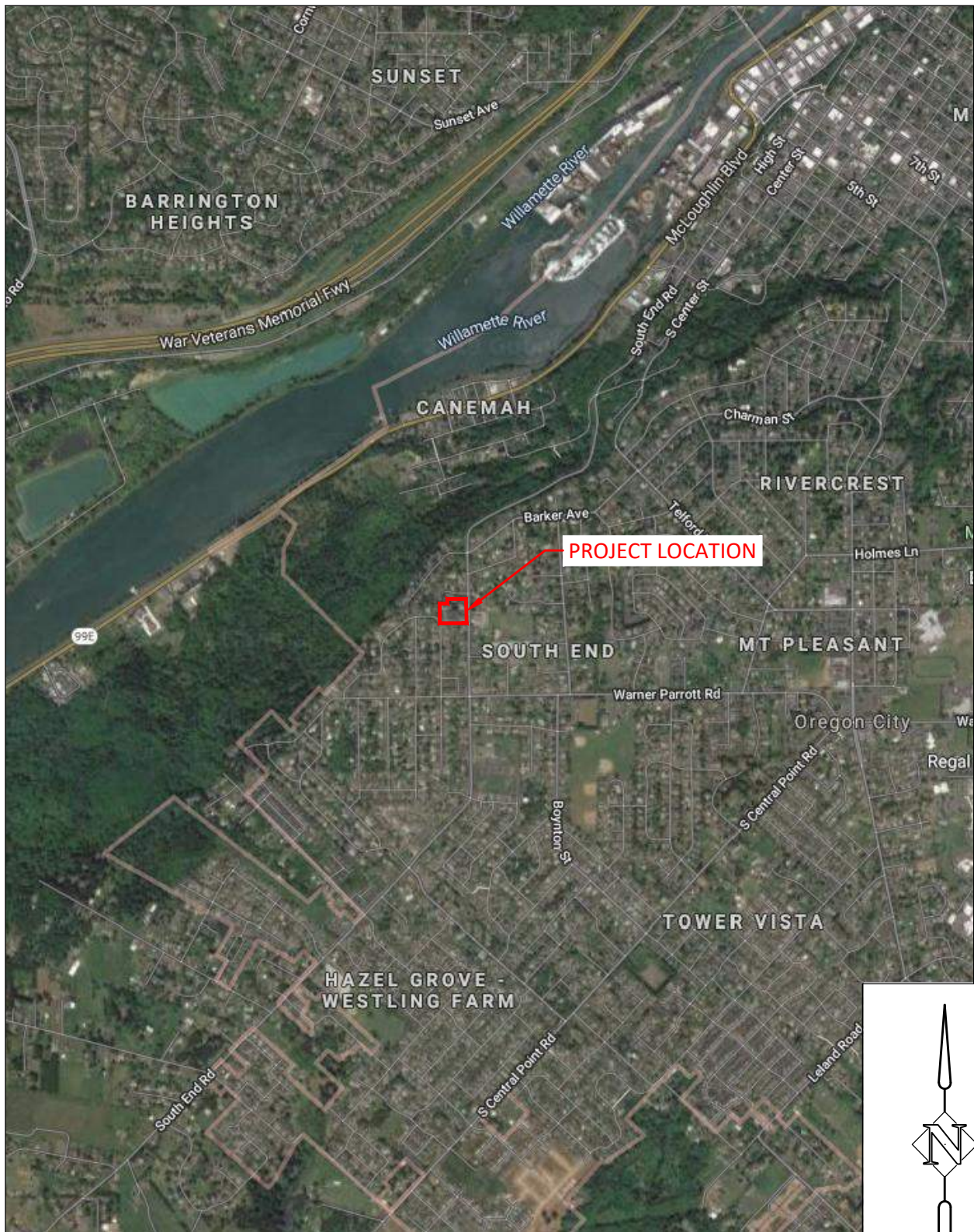
Private Stormwater Facilities Agreement

A private stormwater facilities agreement will be recorded in Clackamas County prior to the Final Stormwater Management Report.

Operations and Maintenance Plan

An Operations and Maintenance Plan will be provided with the Final Stormwater Management Report.

Appendix A – Maps



SOURCE: GOOGLE MAPS (NOT TO SCALE)

SHEET NO.				DESIGNED:	HHPR
1				DRAWN:	HHPR
				CHECKED:	HHPR
	DATE	NO.	DESCRIPTION	DATE:	DEC 2019
JOB NO.	R E V I S I O N S				
MCP-21					



**Harper
Houf Peterson
Righellis Inc.**

ENGINEERS ♦ PLANNERS
LANDSCAPE ARCHITECTS ♦ SURVEYORS
205 SE Spokane Street, Suite 200, Portland, OR 97202
phone: 503.221.1131 www.hhpr.com fax: 503.221.1171

VICINITY MAP
RIVER TERRACE BUILDING ADDITION
OREGON CITY, OREGON

RIVER TERRACE BUILDING ADDITION

EXISTING PERVIOUS

EXISTING BASIN BO

DRAINAGE FLOW



**Haider
Horn & Peterson
Riggall & P.**
ENGINEERS AND ARCHITECTS
LANDSCAPE ARCHITECTS + SURVEYORS
305 SE Spokane Street, Suite 200, Portland, OR 97202
phone: 503.221.1131 www.hhpr.com fax: 503.221.1171

PERVIOUS AREA	0.45 ACRES
IMPERVIOUS AREA	0.09 ACRES
TOTAL AREA	0.54 ACRES



SOUTH END ROAD

BASIN 2
IMP = 0.006 ACRES
PERV = 0.07 ACRES

EXISTING
BUILDING TO
BE REMOVED

BASIN 1
IMP = 0.03 ACRES
PERV = 0.15 ACRES

BASIN 5
IMP = 0.00 ACRES
PERV = 0.02 ACRES

EXISTING BUILDING TO REMAIN
FFE=467.45

RIVER TERRACE BUILDING ADDITION

PROPOSED PERVIC

PROPOSED BASIN

DRAINAGE FLOW



**Haider
Hovde Peterson
Riggall & Son**
ENGINEERS, ARCHITECTS, PLANNERS
LANDSCAPE ARCHITECTS + DESIGNERS
305 SE Spokane Street, Suite 200, Portland, OR 97202
phone: 503.221.1131 www.hhpr.com fax: 503.221.1171

PERVIOUS AREA	0.315 ACRES
IMPERVIOUS AREA	0.225 ACRES
TOTAL AREA	0.54 ACRES

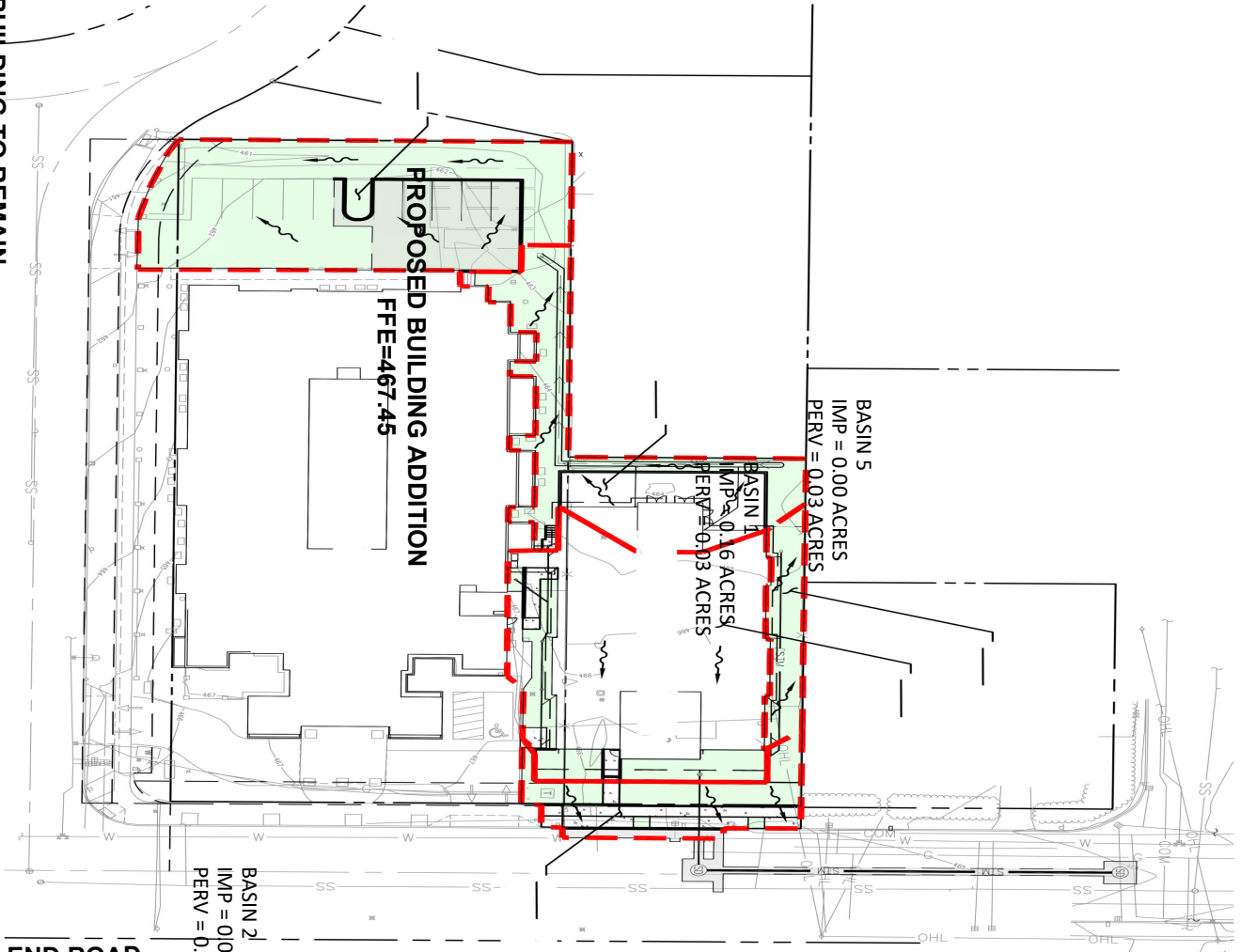
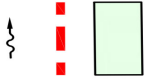
BASIN 5
IMP = 0.00 ACRES
PERV = 0.03 ACRES

BASIN 1
IMP = 0.16 ACRES
PERV = 0.03 ACRES

BASIN 2
IMP = 0.025 ACRES
PERV = 0.025 ACRES

PROPOSED BUILDING ADDITION
FFE=467.45

EXISTING BUILDING TO REMAIN
FFE=467.45



Appendix B – Methodology

bed, topsoil was observed to consist of dark brown garden soil with roots extending to a depth of approximately 12 inches bgs.

Elastic SILT (MH): Underlying the topsoil within our test pit explorations, soils were observed to consist of brown and reddish brown, medium stiff to very stiff, moist, high plasticity, Elastic SILT (MH). A color transition to deep reddish brown was typically observed at a depth of approximately 5.5 feet bgs. Soil strength was observed to increase with depth and residual textures and patterns were observed indicating the soil type appears to be a product of residual weathering of basalt flows as the geologic mapping indicates. The soil type was observed to extend to the maximum depth of exploration within our test pits (10 feet bgs).

Soils laboratory testing conducted on representative samples collected from test pit TP-1 indicated that the soil type classified as Elastic SILT (MH) according to the USCS soil classification system, and as A-7-5(22), A-7-5(25), and A-7-5(28) according to AASHTO standards. Sieve analysis indicated 80 to 93 percent by weight passing the U.S. No. 200 sieve, and moisture content of 20 to 25 percent. Atterberg Limit testing indicated a liquid limit of 55 to 56, and a plasticity index of 22 to 25.

5.2 Shrink-Swell Potential

Elastic SILT soils were encountered within test pit explorations conducted at the site. Atterberg limit testing conducted on the soil type indicated a liquid limit of 55 to 56, and a plasticity index of 22 to 25. Based upon the results of our soils laboratory testing and our local experience with the soil layers in the vicinity of the subject site, the shrink-swell potential of the Elastic SILT soil type is considered to be low, and the plasticity is considered to be *high*. Special design measures are not considered necessary to minimize the risk of uncontrolled damage of foundations as a result of potential soil expansion at this site.

5.3 Groundwater and Soil Moisture

On July 1, 2019, the observed soil moisture conditions were generally moist. No groundwater seepage was observed within our subsurface explorations which extended to a maximum depth of 10 feet bgs. According to the *Estimated Depth to Groundwater in the Portland, Oregon Area* Website (USGS, Oregon Water Science Center, <https://or.water.usgs.gov>) static groundwater is expected to be located at an approximate depth of 139 feet below the site. Perched groundwater may be encountered in localized areas. Seeps and springs may exist in areas not explored and may become evident during site grading.

5.4 Infiltration Testing

Soil infiltration testing was performed using the encased falling-head method at depths of -4, and -10 feet bgs within test pit TP-2 in accordance with the methodology of the 2016 City of Portland Stormwater Management Manual. The approximate locations of the subsurface explorations are indicated on Figures 2 and 3. The test locations were pre-saturated prior to testing. During testing the water level was measured to the nearest 0.01 foot (1/8 inch) from a fixed point, and the change in water level was recorded at regular intervals until three successive measurements showing a consistent infiltration rate were achieved.

Table 1 summarizes the results of the infiltration testing. Infiltration rates have been reported without applying a factor of safety. Soils at the test locations were observed and sampled in order to characterize the subsurface profile. Tested native soils classified as Elastic SILT (MH). Groundwater was not encountered within our explorations which extended to a maximum depth approximately 10 feet bgs. According to the *Estimated Depth to Groundwater in the Portland, Oregon Area Website* (USGS, Oregon Water Science Center, <https://or.water.usgs.gov>) static groundwater is expected to be located at an approximate depth of 139 feet below the site. Infiltration testing data tables are presented in the appendix of this report.

Table 1: Summary of Infiltration Test Results

Test Location	Test Designation	Depth (feet)	Soil Type	% Passing U.S. No 200 Sieve	Infiltration Rate (inches/hr)	Hydraulic Head Range (inches)	Depth to Groundwater (Feet)
TP-2	IT-1	4	MH	80.5	0.01	0-12	Est 139
TP-2	IT-2	10	MH	91.4	0.02	0-12	Est 139

Very low to no infiltration was observed at the locations and depths tested. Based upon our observations of the subsurface soil profile and results of infiltration measurements, it is our opinion that stormwater infiltration systems are not geotechnically feasible at the subject site. Infiltration test methods and procedures attempt to simulate the as-built conditions of the planned disposal systems. However, due to natural variations in soil properties, actual infiltration rates may vary from the measured and/or recommended design rates. Infiltration rates presented in this report should not be applied to inappropriate or complex hydrological models such as a closed basin without extensive further studies. Evaluating environmental implications of stormwater disposal at this site are beyond the scope of this study.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Our site investigation indicates that the proposed construction appears to be geotechnically feasible, provided that the recommendations of this report are incorporated into the design and construction phases of the project. The primary geotechnical concern associated with development at the site is the lack of infiltration potential where stormwater infiltration systems are desired.

6.1 Site Preparation Recommendations

Areas of proposed construction and areas to receive fill should be cleared of any organic and inorganic debris, and loose stockpiled soils. Inorganic debris and organic materials from clearing should be removed from the site. Organic-rich soils and root zones should then be stripped from construction areas of the site or where engineered fill is to be placed. Depth of stripping of existing organic topsoil is estimated to be approximately 8 to 12 inches at the site, however depth of organic soil layers may increase in areas where trees and vegetation are present.

The final depth of soil removal should be determined by the geotechnical engineer or designated representative during site inspection while stripping/excavation is being performed. Stripped topsoil should be removed from areas proposed for placement of engineered fill and structures. Any remaining topsoil should be stockpiled only in designated areas and stripping operations should be observed and documented by the geotechnical engineer or his representative.



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Clackamas County Area, Oregon**



November 8, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Clackamas County Area, Oregon.....	13
46B—Jory stony silt loam, 3 to 8 percent slopes.....	13
Soil Information for All Uses	14
Soil Properties and Qualities.....	14
Soil Physical Properties.....	14
Saturated Hydraulic Conductivity (Ksat).....	14
References	18

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



MAP LEGEND

MAP INFORMATION

		Warning: Soil Map may not be valid at this scale.	
		Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.	
		Please rely on the bar scale on each map sheet for map measurements.	
		Source of Map: Natural Resources Conservation Service Web Soil Survey URL: _____ Coordinate System: Web Mercator (EPSG:3857)	
		Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.	
		This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.	
		Soil Survey Area: Clackamas County Area, Oregon Survey Area Data: Version 15, Sep 10, 2019	
		Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.	
		Date(s) aerial images were photographed: Jul 26, 2014—Sep 5, 2014	
		The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.	

Soil Map Unit Polygons	Very Stony Spot
Soil Map Unit Lines	Wet Spot
Soil Map Unit Points	Other
	Special Line Features
Special Point Features	
Blowout	
Borrow Pit	Streams and Canals
Clay Spot	Transportation
Closed Depression	Rails
Gravel Pit	Interstate Highways
Gravelly Spot	US Routes
Landfill	Major Roads
Lava Flow	Local Roads
Marsh or swamp	Background
Mine or Quarry	Aerial Photography
Miscellaneous Water	
Perennial Water	
Rock Outcrop	
Saline Spot	
Sandy Spot	
Severely Eroded Spot	
Sinkhole	
Slide or Slip	
Sodic Spot	

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
46B	Jory stony silt loam, 3 to 8 percent slopes	0.3	100.0%
Totals for Area of Interest		0.3	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Clackamas County Area, Oregon

46B—Jory stony silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2251

Elevation: 250 to 1,200 feet

Mean annual precipitation: 40 to 50 inches

Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Jory and similar soils: 85 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jory

Setting

Landform: Hillslopes

Landform position (two-dimensional): Summit, footslope

Landform position (three-dimensional): Base slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Colluvium

Typical profile

H1 - 0 to 8 inches: stony silt loam

H2 - 8 to 48 inches: stony silty clay

H3 - 48 to 60 inches: stony silty clay

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): 4s

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: C

Forage suitability group: Well drained < 15% Slopes (G002XY002OR)

Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Saturated Hydraulic Conductivity (Ksat)

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Custom Soil Resource Report
Map—Saturated Hydraulic Conductivity (Ksat)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons



= 3.7895



Not rated or not available

Soil Rating Lines



= 3.7895



Not rated or not available

Soil Rating Points



= 3.7895



Not rated or not available

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clackamas County Area, Oregon
Survey Area Data: Version 15, Sep 10, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 26, 2014—Sep 5, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Saturated Hydraulic Conductivity (Ksat)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
46B	Jory stony silt loam, 3 to 8 percent slopes	3.7895	0.3	100.0%
Totals for Area of Interest			0.3	100.0%

Rating Options—Saturated Hydraulic Conductivity (Ksat)

Units of Measure: micrometers per second

Aggregation Method: Minimum or Maximum

Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix C – Analysis

WES BMP Sizing Report

Project Information

Project Name	River Terrace Project
Project Type	Addition
Location	
Stormwater Management Area	0
Project Applicant	
Jurisdiction	OutofDistrict

Drainage Management Area

Name	Area (sq-ft)	Pre-Project Cover	Post-Project Cover	DMA Soil Type	BMP
DMA - Impervious	6,970	Grass	Roofs	C	Planter
DMA - Pervious	1,307	Grass	LandscapeCsoil	C	Planter

LID Facility Sizing Details

LID ID	Design Criteria	BMP Type	Facility Soil Type	Minimum Area (sq-ft)	Planned Areas (sq-ft)	Orifice Diameter (in)
Planter	FlowControlAndTreatment	Stormwater Planter - Filtration	Lined	533.6	540.0	0.9

Pond Sizing Details

1. FCWQT = Flow control and water quality treatment, WQT = Water quality treatment only
2. Depth is measured from the bottom of the facility and includes the three feet of media (drain rock, separation layer and growing media).
3. Maximum volume of the facility. Includes the volume occupied by the media at the bottom of the facility.
4. Maximum water storage volume of the facility. Includes water storage in the three feet of soil media assuming a 40 percent porosity.



Oregon
Kate Brown, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE Ste C
Salem, OR 97301-1266
Phone (503) 986-0690
Fax (503) 986-0793
www.oregonheritage.org



June 12, 2019

Ms. Diliaana Vassileva
City of Oregon City Planning
221 Molalla Ave
Ste 200
Oregon City, OR 97045

RE: SHPO Case No. 19-0713
City of Oregon City PA 19-15, Memory Care Facility
Future potential ground disturbance
950 914 South End Road (3S 1E 1), Oregon City, Clackamas County

Dear Ms. Vassileva:

Our office recently received a request to review your application for the project referenced above. In checking our statewide archaeological database, it appears that there have been no previous surveys completed near the proposed project area. However, the project area lies within an area generally perceived to have a high probability for possessing archaeological sites and/or buried human remains. In the absence of sufficient knowledge to predict the location of cultural resources within the project area, extreme caution is recommended during project related ground disturbing activities. Under state law (ORS 358.905 and ORS 97.74) archaeological sites, objects and human remains are protected on both state public and private lands in Oregon. If archaeological objects or sites are discovered during construction, all activities should cease immediately until a professional archaeologist can evaluate the discovery. If you have not already done so, be sure to consult with all appropriate Indian tribes regarding your proposed project. If the project has a federal nexus (i.e., federal funding, permitting, or oversight) please coordinate with the appropriate lead federal agency representative regarding compliance with Section 106 of the National Historic Preservation Act (NHPA). If you have any questions about the above comments or would like additional information, please feel free to contact our office at your convenience. In order to help us track your project accurately, please reference the SHPO case number above in all correspondence.

Sincerely,

Dennis Griffin, Ph.D., RPA
State Archaeologist
(503) 986-0674
dennis.griffin@oregon.gov





Pre-Application Conference Notes

PA 19-15, March 29, 2019

1. Proposed Project:

River Terrace Memory Care

Demolish existing residence, construct wing for memory care facility addition

Adding 16 Single Units w/ Shared Bath - 16 Beds

48 Total Units = 54 Total Beds

2 Additional Parking Spaces

2. Location:

950 + 914 South End Road, Oregon City, OR 97045

Clackamas County Map 3-1E-01AD, Tax Lots 3100 and 3301

3. General Information:

- Zoning: R-10 Single-Family Dwelling District
- Overlay Districts: High Water Table

4. Prior Approvals:

- 2018: GLUA-18-00025, VAR-18-00001, SP-18-000106, SP-18-00120, MD-18-00001
- 2014: SP-14-0009, VR-14-0001, CU-14-0001, LL-14-0005

5. Timing and Review Process:

It is the express policy of the city that development review not be segmented into discrete parts in a manner that precludes a comprehensive review of the entire development and its cumulative impacts.

This application will consist of four concurrent applications:

1. Conditional Use (Required for Major Modifications to original CU per OCMC 17.04.710)
2. Site Plan and Design Review
3. Variance
4. Lot Line Abandonment

This application is a **Type III** Decision. **The decision-making body is the Planning Commission.** The decision of the planning commission or historic review board is appealable to the city commission, on the record pursuant to Section 17.50.190. The city commission decision on appeal is the city's final decision and is subject to review by LUBA within twenty-one days of when it becomes final, unless otherwise provided by state law., with any subsequent appeal to the City Commission.

Pursuant to OCMC Section 17.50.050, a pre-application conference is valid for a period of six months. The applicant has **180 days** from the date of submittal of a land use application to have a complete application.

Type III decisions involve the greatest amount of discretion and evaluation of subjective approval standards, yet are not heard by the city commission, except upon appeal. In the event that any decision is not classified, it shall be treated as a Type III decision. The process for these land use decisions is controlled by ORS 197.763. Notice of the application and the planning commission or the historic review board hearing is

published and mailed to the applicant, recognized neighborhood association(s) and property owners within three hundred feet. Notice must be issued at least twenty days pre-hearing, and the staff report must be available at least seven days pre-hearing. At the evidentiary hearing held before the planning commission or the historic review board, all issues are addressed.

Staff is not authorized to waive any requirements of the code except for modifications to Street Standards through Section 12.04.007, modifications that will better meet design standards of site plan and design review through Section 17.62.015, and alternative parking lot landscaping plans through sections 17.52.070.

6. "R-10" Single-Family Dwelling District:

- "R-10" Single-Family District minimum required setbacks:
 - Front yard: 20 feet
 - Front porch: 15 feet
 - Attached and detached garage: 20 feet from the public right-of-way where access is taken
 - Interior side yard: 10 feet for at least one side yard, 8 feet for the other side yard
 - Corner side yard: 15 feet
 - Rear yard: 20 feet
 - Rear porch: 15 feet
 - Structures with a footprint of over 200 square feet cannot cover more than 40% of the lot area (decks and porches do not count towards lot coverage).
 - The proposal identifies the following lot coverage:

	Square Feet
Total Site	50,840
Allowed Building Coverage (40%)	20,336
Proposed Building Coverage (44.74%)	22,749

7. Variances (OCMC 17.60)

- A variance application is required for lot coverage. Please refer to Variance section of these notes.
- The variance application will be reviewed at the Type III level by the Planning Commission, however the minor variance fee will be charged because the variance for lot coverage is less than 25% and would typically be reviewed as a Type II Administrative Variance.
- 2019 Review fee = \$1,450.
- Grounds for Variance (i.e. Approval Criteria):
 1. That the variance from the requirements is not likely to cause substantial damage to adjacent properties by reducing light, air, safe access, or other desirable or necessary qualities;
 2. That the request is the minimum variance that would alleviate the hardship;
 3. Granting the variance will equal or exceed the regulation to be modified;
 4. Any impacts resulting from the adjustment are mitigated;
 5. No practical alternatives have been identified which would accomplish the same purpose and not require a variance.
 6. That the variance conforms to the comprehensive plan and the intent of the ordinance being varied.

8. Conditional Use Permit (OCMC 17.56):

- The addition will increase the square-footage of the facility more than 10 percent, which is considered a major modification of the original Conditional Use per OCMC 17.04.710. This requires a new Conditional Use application.
- Review fee for Conditional Use is \$4,091

9. Site Plan and Design Review (OCMC 17.62):

- Pursuant with OCMC Section 17.08.030, residential care facilities are a conditionally permitted use in the R-10 Single-Family Dwelling District. Site Plan and Design Review is required for conditional uses in all zones.
- The addition is greater than 1,000 SF and requires a full Site Plan and Design Review application.
- The applicant is required to demonstrate compliance with all applicable criteria. The pre-application materials did not include building elevations and lack the specificity and detail to determine compliance with some standards of the Oregon City Municipal Code. Please include details for all structures, parking lots, pavement, development, etc. with the application submittal.

Parking (OCMC 17.52)

- The number of parking stalls is dependent on the number of beds within the residential care facility and the net square footage of the combined use on the site. Based on the 2014 Conditional Use Permit/Site Plan and Design Review approval, the number of stalls required are as follows:

Use	<u>SQUARE FEET/BEDS</u>	<u>MINIMUM</u>	<u>MAXIMUM</u>
Senior housing, including congregate care, residential care and assisted living facilities; nursing homes and other types of group homes	54 beds	1 per 7 Beds (8 Stalls Required)	1 per 5 Beds (11 Stalls Required)
Office	~ 750 SF	2.70 (2 Stalls Required)	3.33 (3 Stalls Required)
Total		10	14

- Based on the 2018 approval, the Planning Commission approved 9 on-site parking spaces. The proposal would add 2 more spaces for a total of 11 spaces which is within the minimum and maximum parking amounts. On-street parking spaces do not count toward the maximum spaces.
- The application should include a floor plan identifying the number of beds and square footage of other uses (e.g. office space) to ensure compliance with minimum and maximum parking stalls is maintained.

Landscaping

- A landscaping plan prepared by a registered landscape architect is required to be submitted.
- 15% of the site must be landscaped. The application should include a calculation of landscaping demonstrating compliance with minimum site landscaping.
- Landscaping standards may be found in [OCMC 17.62.050.A.1](#)
- Parking Lot Landscaping is required per [OCMC 17.52.060](#). No more than eight contiguous spaces is permitted without a landscaped island between them, unless the applicant proposes an Alternative Landscaping Plan pursuant to section [17.52.070](#).

Site and Buildings

- Compliance with various building design standards shall be demonstrated including:
 - Relationship of Buildings to Streets and Parking in [OCMC 17.62.055.D](#) (Note that front setbacks greater than 5' will require one Pedestrian Amenity be provided for every five feet of additional setback requested.
 - Articulation, massing, and transparency in [OCMC 17.62.055.G, H, and I](#)
 - Mechanical equipment standards in [OCMC Section 17.62.050.A.20](#)
 - Pedestrian circulation requirements in [OCMC Section 17.62.050.A.9](#).
 - Building materials standards in [OCMC Section 17.62.050.A.21](#).

- Please identify all proposed improvement to the site as part of your land use application including but not limited to:
 - Landscaping
 - Parking
 - Outdoor Lighting (Photometric)
 - Pedestrian Circulation
 - Refuse/recycling areas
 - Mechanical equipment proposed
 - Façade modifications (windows, entranceways, exterior building materials, etc.)

10. Lot Line Abandonment (OCMC 16.20)

- An application for lot line abandonment to consolidate the parcels must be approved and recorded prior to issuance of any building permits. Staff will recommend this be a Condition of Approval. Alternatively, the applicant may submit the application for lot line abandonment concurrently with the other applications.
- Typically lot line abandonment is reviewed through a Type I administrative process.
- 2019 Fee for lot line abandonment is \$1,250.00

11. Transportation Impacts:

The applicant will need to have a traffic engineer conduct a transportation study in conformance with the City's [Guidelines for Transportation Impact Analysis](#) available on the City of Oregon City website.

Based on the information provided by the applicant, it appears the transportation analysis associated with this development proposal can be satisfied by submittal of a Transportation Analysis Letter (TAL). This option is available when specific criteria are met. These include a determination that the development generates 24 or fewer AM and PM peak hour trips and fewer than 250 daily trips. Details for a TAL can be found in Section 3.1 of the Guidelines. It is the applicant's responsibility to verify the trip generation characteristics of the proposed development.

The applicant's traffic engineer is welcome to contact the city's traffic engineering consultant, John Replinger, at Replinger-Associates@comcast.net or at 503-719-3383.

12. Tree Protection/Mitigation and Street Trees

Tree removal during the land development process is subject to compliance with tree protection and mitigation standards.

- The applicant's submittal should identify species and size of all trees onsite greater than 6" DBH.
- Tree removal is subject to OCMC [Chapter 17.41](#).
- Tree protection , removal and mitigation standards can be found in OCMC Section 17.41.130
- A mitigation plan prepared by a qualified professional (certified arborist, horticulturalist or forester or other environmental professional) is required in accordance with OCMC Chapter 17.41
- A tree covenant may be required to be recorded to protect existing and future trees.

13. Upcoming Code Changes:

The City is proposing Housing and Development Code Amendments which may affect your proposal. For details on proposed code amendments, please visit the following site:

<https://www.orcity.org/planning/draft-housing-and-other-development-and-zoning-code-amendments>

14. Other Notes:

- A neighborhood association meeting is required.
 - Chair: Bill McConnel, sena97045@gmail.com
 - Vice Chair: Gary Fergus, Interim Vice Chair fergusfamily@gmail.com

- Secretary: Vacant
- CIC Representative: Vacant
- CIC Representative: Vacant
- Planning Division Contact: Kelly Reid, kreid@orccity.org, 503-496-1540
- Meeting Information: Held the 3rd Thursday of January, March, May, August, and October
- Located: Oregon City United Methodist Church, 18955 South End Road, Oregon City, 7:00 PM
- Please include the Citizen Involvement Committee Chair, Amy Willhite, in any Neighborhood Association meeting requests, notifications or correspondence. Amy can be reached at awillhit@yahoo.com
- [OCMC 17.50.055](#) requires submittal of the meeting sign-in sheet, a summary of issues discussed, and a letter from the neighborhood association indicating that a meeting was held.
- Your application was transmitted to the State Historic Preservation Office (SHPO) and affected tribes for review. Comments received have been provided.

15. Applications Anticipated and Fees:

- Planning application anticipated:
 - Conditional Use: \$4,091.00
 - Site Plan and Design Review: Based on Project Cost – See Fee Schedule and Cost Estimate Sheet.
 - Variance (Administrative): \$1,450.00
 - Lot Line Abandonment: \$1,250.00
 - Mailing Labels: \$17 or provided by applicant
 - [2019 Planning Fee Schedule](#)

16. Applications, Checklists and Links:

- [Type III Review Process](#)
- [Land Use Application](#)
- [Conditional Use Checklist](#)
- [Variance Checklist](#)
- [Site Plan and Design Review Checklist](#)
- [Site Plan and Design Review Construction Cost Form](#)
- [Lot Line Adjustment and Abandonment Application](#)
- [Oregon City Adopted Street Tree List](#)
- [Oregon City Municipal Code](#)

17. Planning Division

Pete Walter, AICP, Planner, reviewed your pre-application for the Planning Division. Pete may be reached at 503-496-1568 or pwalter@orccity.org

18. Development Services Division (Utilities/Public Improvements/SDC's etc):

Sang Pau, Development Engineer with the Oregon City Development Services Division, reviewed your pre-application. Sang can be reached at 503-974-5503 or spau@orccity.org.

19. Building Division:

You may contact Mike Roberts, Building Official at 503.496.1517 or by email at mroberts@orccity.org.

20. Clackamas Fire District:

Questions can be directed to Mike Boumann, Lieutenant Deputy Fire Marshal of Clackamas Fire District #1. You may contact Mr. Boumann at (503)742-2660 or michaelbou@ccfd1.com.

21. Oregon City Municipal Code Criteria:

A template with applicable code criteria will be provided by staff following the pre-application conference. The following chapters of the Oregon City Municipal Code (OCMC) may be applicable to this proposal:

OCMC 12.04 – Streets, Sidewalks, and Public Places

OCMC 12.08 – Public and Street Trees

OCMC 13.12 – Stormwater Management

OCMC 15.48 – Grading, Filling, and Excavating

OCMC 16.20 – Property Line Adjustments and Abandonments Process and Standards

OCMC 17.08 – “R-10” Single-Family Dwelling District

OCMC 17.41 – Tree Protection Standards

OCMC 17.47 – Erosion and Sediment Control

OCMC 17.52 – Off-Street Parking and Loading

OCMC 17.54 – Supplemental Zoning Regulations and Exceptions

OCMC 17.56 – Conditional Uses

OCMC 17.58 – Lawful Nonconforming Uses, Structures, and Lots

OCMC 17.60 – Variances

OCMC 17.62 – Site Plan and Design Review

OCMC 17.50 – Administration and Procedures

Please note that several applicable code sections will soon change and have not yet been adopted.

For more information go to <https://www.orcity.org/planning/housing-and-other-development-and-zoning-code-amendments>

The provided current code response template is based on existing code.

Pre-application conferences are required by Section 17.50.050 of the City Code, as follows:

A. Preapplication Conference. Prior to submitting an application for any form of permit, the applicant shall schedule and attend a preapplication conference with City staff to discuss the proposal. To schedule a preapplication conference, the applicant shall contact the Planning Division, submit the required materials, and pay the appropriate conference fee. At a minimum, an applicant should submit a short narrative describing the proposal and a proposed site plan, drawn to a scale acceptable to the City, which identifies the proposed land uses, traffic circulation, and public rights-of-way and all other required plans. The purpose of the preapplication conference is to provide an opportunity for staff to provide the applicant with information on the likely impacts, limitations, requirements, approval standards, fees and other information that may affect the proposal. The Planning Division shall provide the applicant(s) with the identity and contact persons for all affected neighborhood associations as well as a written summary of the preapplication conference.

Notwithstanding any representations by City staff at a preapplication conference, staff is not authorized to waive any requirements of this code, and any omission or failure by staff to recite to an applicant all relevant applicable land use requirements shall not constitute a waiver by the City of any standard or requirement.

B. A preapplication conference shall be valid for a period of six months from the date it is held. If no application is filed within six months of the conference or meeting, the applicant must schedule and attend another conference before the City will accept a permit application. The community development director may waive the preapplication requirement if, in the Director's opinion, the development does not warrant this step. In no case shall a preapplication conference be valid for more than one year.

NOTICE TO APPLICANT: *A property owner may apply for any permit they wish for their property. HOWEVER, THERE ARE NO GUARANTEES THAT ANY APPLICATION WILL BE APPROVED. No decisions are made until all reports and testimony have been submitted. This form will be kept by the Community Development Department. A copy will be given to the applicant. IF the applicant does not submit an application within six (6) months from the Pre-application Conference meeting date, a NEW Pre-Application Conference will be required.*



DEVELOPMENT SERVICES PRE-APPLICATION MEETING NOTES

Planning Project Number: PA 19-15
Address: 950 South End Road
Map Number(s): 3-1E-01AD
Tax Lot(s): 03100, 03301
Project Name: 950 South End Road
Meeting Date: March 29, 2019
Reviewer(s): Sang Pau

General Comments

1. A complete land use application will typically include a preliminary stormwater report and preliminary construction plans showing all public improvements, including sewer, water, grading and erosion control, and stormwater facilities. The application should also include a narrative responding to all sections of the Oregon City Municipal Code (OCMC) applicable to the proposed development.
2. The City will issue a Staff Report in response to the contents of the application package provided by the applicant. Once a Staff Report is issued, staff strongly encourages a pre-design meeting with the project engineer to discuss plan requirements, conditions of approval, and process.
3. All applicable conditions of approval contained in the Staff Report must be addressed by providing the appropriate document (E.G. construction plans, reports, etc.) which must be reviewed and approved prior to issuance of building permits.
4. All applicable System Development Charges (SDC) shall be due and payable upon building permit issuance. The applicant will need to complete an SDC request form, found on the City's website.
5. The applicant may be required to sign a Non-Remonstrance Agreement for the purpose of making sanitary sewer, storm sewer, water or street improvements in the future that benefit the Property and assessing the cost to benefited properties.
6. The contractor for the applicant will be required to attend a pre-construction meeting prior to any work beginning onsite.
7. All public improvements must be bonded with a 120% performance bond prior to the beginning of construction. Public improvements are defined as public utility extensions and roadway improvements within existing right-of-way. Public improvements may also be on private property in certain circumstances. This bond is released at the end of the construction period assuming everything is constructed as agreed upon.

8. All newly constructed public improvements shall be maintained for a two year period following their acceptance of construction with a 15% maintenance bond. Newly constructed public improvements consist of those improvements within existing right of way and those that were constructed on private land that will be owned by the City following approval of a plat. This bond is released at the end of the maintenance period.
9. An erosion control application and review must be completed prior to issuance of construction permit : <https://www.orcity.org/publicworks/erosion-control-0>

Streets

1. South End Road is classified as a “Minor Arterial” road within a residentially zoned area. South End Road has right-of-way (ROW) that is, approximately, 60-foot-wide along the property’s frontage, with approximately 30 feet on the subject property side of the centerline. Existing improvements on the subject property side of the centerline of the road consist of approximately 20’ of pavement and curb without sidewalk.
2. “Minor Arterial” roads adjacent to residential zones may be required to have up to 100-foot-wide ROW. However, based on development pattern and future needs of the area, the proposed development will not need to provide the maximum ROW width.
3. Frontage improvements adjacent to the roadway should be, 5-foot-wide sidewalk with a 5-foot-wide planter strip and 0.5’ of buffer behind sidewalk. The development shall dedicate right-of-way to ensure there is 11’ from the edge of the existing pavement to incorporate a 0.5’ curb, a 5-foot-wide planter strip, a 5-foot-wide sidewalk and 0.5’ of buffer behind the sidewalk.
4. The existing driveway and approach must be decommissioned.
5. One street tree is required for every thirty-five feet of property frontage. If the pedestrian corridor does not have adequate space within the planter strip, trees may be planted within ten feet of the public ROW.
6. The development will be required to provide a 10-foot-wide Public Utility Easement (PUE) along all property lines frontages.
7. There are no overhead utilities required to be relocated underground along the frontage of the property.
8. Street lighting along the frontage of the development appears to be adequate.
9. Reduction to the standard improvements, ROW dedication and other deviations from the City’s street design standards may be requested through the modification process outlined in section

12.04.007 of the Oregon City Municipal Code. Proposed modifications may require additional evidence and analysis for review.

Stormwater

1. The following are General Thresholds from the Stormwater and Grading Design Standard (Section 1.2.1), which can be found online at:
https://www.orcity.org/sites/default/files/fileattachments/public_works/page/4224/final_manual_0.pdf
 - A. Development activities that result in 5,000 square feet of new or replaced impervious surface, cumulative over a 5-year period.
 - B. Development activities that will result in the **creation of more than 500 square feet of new impervious surface within a Natural Resource Overlay District (NROD)** (as defined by Oregon City Municipal Code [OCMC] 17.49), cumulative over a 5-year period.
 - C. Development activities that will **disturb 1,000 square feet of existing impervious surface within a Natural Resource Overlay District (NROD)** (as defined by Oregon City Municipal Code [OCMC] 17.49), cumulative over a 5-year period.
2. The project, as described in the Pre-Application submittal, appears to trigger part A of the above General Thresholds. Projects within the General Thresholds are subject to the requirements of the City's Stormwater and Grading Design Standards. Pervious pavement and green roofs may be utilized to reduce total impervious areas.
3. Where compliance with the Stormwater and Grading Design Standards is required, applicants must submit a completed Site Assessment and Planning Checklist (and other items as described in Section 9.1.1 of the Stormwater and Grading Design Standards) as part of the land use application review process. At a minimum the applicant should submit a preliminary stormwater report addressing the following items from Section 9.1.1 of the City's Stormwater and Grading Design Standards.
 - A. Stormwater management strategy
 - B. A site plan showing an adequately sized stormwater facility based on Stormwater Best Management Practices (BMP) Sizing Tool or sized using the Engineered Method (as defined by City's Stormwater and Grading Design Standards).
 - C. A geotechnical report or a Natural Resource Conservation Service (NRCS) soils report documenting onsite infiltration and soil conditions in support of a proposed stormwater management strategy.
 - D. Downstream analysis which extends to the distance where the project site contributes less than 15 percent of the cumulative tributary drainage area or 1,500 feet downstream of the approved point of discharge, whichever is greater, as required by Chapter 5 of the Stormwater and Grading Design Standards.

4. The nearest downstream public stormwater facility is an inlet located north of the proposed development, in South End Road. This structure directs flows north through a 12-inch pipe to the "Coffee" basin.
5. The development may be required to extend a 12" stormwater line to the frontage of the proposed development for conveyance of stormwater unless the site can infiltrate all stormwater runoff as required by the Stormwater and Grading Design Standards.

Water

1. There is an existing 8-inch ductile iron water main that runs within South End Road.
2. The development may be required to provide the development with a new water service line and meter if it is to remain on a separate lot.
3. There is an existing fire hydrant located off Amanda Court.
4. Record drawings for previous development show that the site is served by a 2" water service line with a 3/4" meter. The meter may need to be upsized to accommodate the proposed development.
5. Fire suppression shall be per the requirements and direction of Clackamas Fire District No. 1.

Sanitary Sewer

1. An 18-inch sanitary sewer main exists within South End Road.
2. The existing house on the property has a sanitary lateral which would not be applicable for commercial use as it is meant for single family residential. Therefore, the existing sewer lateral must be capped and abandoned as required by Oregon City Public Works.
3. The development may be required to provide a 6" sanitary service lateral (for commercial use) and two-way cleanout for the new development if it is to remain on a separate lot.

Supplemental Information:

- I. Documentation required before any construction plan review can begin by Public Works (which is after a land use decision has been made):
 - a. Complete Engineering Plans (Public Improvements, all stormwater facilities, site grading and erosion control)
 - b. Preliminary Cost Estimate for construction of Public Improvements, all stormwater facilities, site grading and erosion control.
 - c. Plan Review Fee
 - d. Complete Storm Water Report and Site Assessment and Planning Checklist
- II. Documentation required before any construction plan can be deemed approved by Public Works (to be able to start construction or obtain a building permit):
 - a. Inspection Fee

- b. Final Cost Estimate of Public Improvements
- c. Approved Engineering Plan stamped and signed by an Oregon Professional Engineer
- d. Approved Storm Water Report stamped and signed by an Oregon Professional Engineer
- e. 120% Performance Bond
- f. Developer/Engineer Agreement
- g. Non-Remonstrance Agreement
- h. R.O.W. Dedication / Deed of Dedication

III. Documentation required before Public Works will recommend Certificate of Occupancy or allow any buildings to be permitted for construction:

- a. Engineer of Record Certificate of Completion
- b. Completed Punchlist
- c. 15% Warranty Guarantee
- d. Recorded Easements
- e. Recorded Plat
- f. Private storm facilities - Maintenance Covenant and Access Easement

Sam Thomas

From: Jeffrey Wellington <jeffrey.wellington@gmail.com>
Sent: Monday, December 16, 2019 10:20 AM
To: Sam Thomas; Aaron Clark
Subject: Fwd: Pre-Application Extension Request

In case you do not have this email.

----- Forwarded message -----

From: **Laura Terway** <lterway@orccity.org>
Date: Thu, Oct 31, 2019 at 11:35 AM
Subject: RE: Pre-Application Extension Request
To: Jeffrey Wellington <jeffrey.wellington@gmail.com>

Morning,

Your extension is extended to make your pre-app valid for 1 year.



Laura Terway, AICP

Community Development Director

Planning & Building Departments

She/Her

City of Oregon City
PO Box 3040
698 Warner Parrott Road

Oregon City, Oregon 97045
Direct - 503.496.1553

Office - 503.722.3789

Fax 503.722.3880

Website: www.orccity.org | webmaps.orccity.org | www.rediscoverthefalls.com

Think **GREEN** before you print.

Please visit us at between the hours of 8:30am-3:30pm Monday through Friday.

PUBLIC RECORDS LAW DISCLOSURE: This e-mail is subject to the State Retention Schedule and may be made available to the public.

From: Jeffrey Wellington <jeffrey.wellington@gmail.com>

Sent: Monday, October 28, 2019 11:26 AM

To: Laura Terway <lterway@orccity.org>

Subject: Pre-Application Extension Request

Hey Laura,

Pete asked me to contact you directly to request a pre-application extension. We had our pre-app for the 914 South End Rd memory care expansion back in late March of this year. Since March there have been no significant changes to the project, so I wondered if we could extend the pre-application coverage. Is that possible?

Thanks,

Jeffrey

TRAFFIC ANALYSIS LETTER

FOR

RIVER TERRACE PHASE 3 MEMORY CARE FACILITY

SOUTH END ROAD

CITY OF OREGON CITY

SUBMITTED BY



October 2019

Project 19-48

TRAFFIC ANALYSIS LETTER

FOR

RIVER TERRACE PHASE 3 MEMORY CARE FACILITY

SOUTH END ROAD

CITY OF OREGON CITY

Prepared By

CHARBONNEAU Engineering LLC



October 2019

Project 19-48

MEMORANDUM

Date: October 24, 2019

To: Jeffrey Wellington
River Terrace Memory Care Property LLC
415 SE 28th Avenue
Portland OR 97217

From: Frank Charbonneau, PE, PTOE

Subject: Transportation Analysis Letter FL19109
River Terrace Phase 3 Memory Care Facility
South End Road, Oregon City

This letter has been prepared for the River Terrace Phase 3 Memory Care Facility development in the City of Oregon City. A total of 16 units will be added on the existing memory care site.

Development of River Terrace Phase 3 Memory Care Facility will not exceed the City of Oregon City's trip generation threshold of 25 AM & PM peak hour trips or 250 daily trips and as a result a transportation analysis letter (TAL) has been prepared. Capacity analysis of nearby public intersections and the site driveways is not required. The transportation analysis letter includes a description of the site, trip generation documentation, verification of the street spacing standards, sight distance assessment, and review of the traffic safety conditions.

Site Development

The site currently includes a memory care facility totaling 32 units and is located within a residential area on the west side of South End Road at address #950 South End Road. The attached vicinity map (Figure 'a') highlights the project location. Development of the site will include demolition of one single-family house and construction of a memory care building facility totaling 7,000 square feet and providing for 16 beds. Figure 'b' represents the project site plan. Two additional parking spaces will be added on-site increasing the total number of spaces to 10 stalls.

Trip Generation

Trip rates presented in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th edition, were utilized to estimate the site's trip generation. Assisted Living (ITE code #254) trip rates were applied to estimate the trips generated by the proposed use. Trip credits have been applied for the demolition of one single-family home. The following table presents the trip generation estimate for the memory care center.

Trip Generation Summary

ITE Land Use	# Units	Weekday						
		ADT	AM Peak Hour			PM Peak Hour		
			Total	Enter	Exit	Total	Enter	Exit
Assisted Living (#254)	16							
Generation Rate ¹	Beds	2.60	0.19	63%	37%	0.26	38%	62%
#Trips		42	3	2	1	4	2	2
Exist Home (#210)	1							
Generation Rate 1	SF Home	9.44	0.74	25%	75%	0.99	63%	37%
#Trip Credits		-9	-1	0	-1	-1	-1	0
Net Site Trips		33	2	2	0	3	1	2

¹ Source: *Trip Generation*, 10th Edition, ITE, 2017, average rates.

The River Terrace Phase 3 Memory Care Facility is expected to generate 33 daily trips, two AM peak hour trips, and three PM peak hour trips.

Access Spacing

No access changes will be made in conjunction with the proposed development. There are currently two site accesses on Amanda Court at the east and west ends of the development site and a single access on South End Road at the site's north property edge. These locations have previously been approved by the City.

Sight Distance

Sight distance along South End Road was reviewed in accordance with AASHTO standards. The speed along South End Road is posted for 35 MPH. Based on the posted speed AASHTO recommends a minimum sight distance of 390 feet be available.

At the South End Road site access point currently there are no obstructions to the sight distance and the required sight distance standards is met as the available sight distance exceeds 400 feet in both directions. With development of the new building addition the existing access shall be maintained such that AASHTO's minimum sight distance recommendations are retained in the future for safety reasons.

Safety Review

Accident data for the five-year period between 01/01/13 and 12/31/17 for South End Road at Amanda Court and Netzel Street at Amanda Court was obtained from the Oregon Department of Transportation staff and was reviewed to help identify any traffic safety problems. No accidents were reported for the period reviewed. Copies of the accident reports are attached.

Conclusion

The transportation analysis letter for the River Terrace Phase 3 Memory Care Facility has been prepared to document the trip generation, access spacing, and the sight distance availability. Development of the facility will consist of a 16 bed building that is projected to generate 33 daily trips, two AM peak hour trips, and three PM peak hour trips.

No access changes will be made in conjunction with the proposed development. There are currently two site accesses on Amanda Court at the east and west ends of the development site and a single access on South End Road at the site's north property edge. These locations have previously been approved by the City.

Near the proposed building site and at the existing site access on South End Road there are no obstructions to the sight distance and the required sight distance standard is met as the available sight distance exceeds 400 feet in both directions. In conjunction with the development sight distance at the access shall be maintained such that AASHTO's minimum sight distance recommendations are met or exceeded. Obstruction to the sightlines by landscaping, signing, parking, buildings, above ground utilities, or other objects shall be avoided for safety reasons.

Accident data for the intersections on South End Road at Amanda Court and Netzel Street at Amanda Court was obtained from the Oregon Department of Transportation. The data documented that no crashes were reported during the five-year period reviewed. Therefore, no safety mitigation is necessary on South End Road near the project site vicinity.

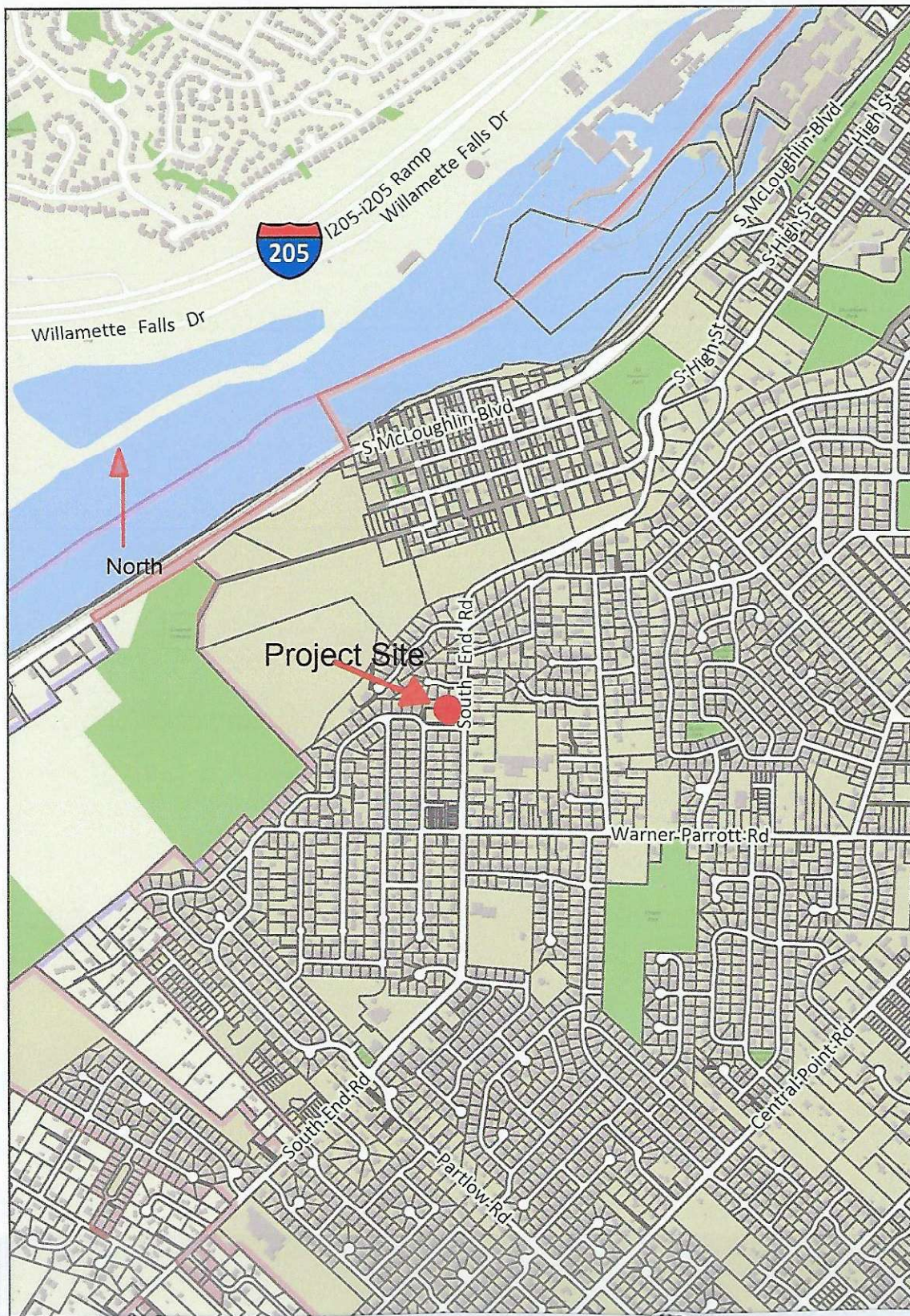
Based on the results of the traffic analysis and the limited trip generation it is recommended that the City of Oregon City support the proposed development without requiring any changes to the area's transportation system.

Attachments

Figure 'a' Vicinity Map

Figure 'b' Site Plan

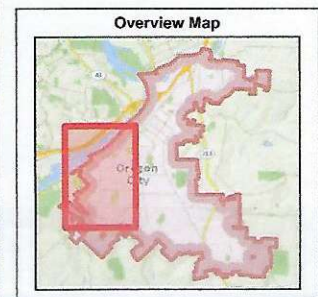
Safety - Accident History Report (furnished by ODOT)



Legend

- Taxlots
- Unimproved ROW
- City Limits
- UGB

Notes



VICINITY MAP RIVER TERRACE PHASE 3 MEMORY CARE	FIGURE a
Project No. 19-48	

BUILDING CODE INFORMATION

BUILDING CODE EDITION: 2019 OSGC
2014 ORESC (NO CHANGE)

OCCUPANCY GROUPS: 1-2
SEPARATIONS: OCCUPANCIES ARE NON-SEPARATED PER SGB.3 EXCEPT THAT A SMOKE PARTITION SEPARATION IS REQ'D. AT ALL CORRIDORS

CONSTRUCTION TYPES: EXISTING - TYPE V-A (TYPE 5, 1-HR.)
(NO CHANGE)

ZONING OF SITE: R-10 (RCF IS CONDITIONAL USE)

SITE AREA: 39,434 SQ. FT. AFTER DEDICATIONS
+ 11,401 SQ. FT. NORTH PROPERTY
50,840 SQ. FT. TOTAL CONSOLIDATED LOT

SITE COVERAGE: 15,952 SQ. FT. FOOTPRINT + 6,844 SQ. FT. ADDITION
23,014 SQ. FT. BUILDING AREA + 44.1% OF POST-DEDICATION
SITE AREA
20,356 SQ. FT. MAX. ALLOWED + 40% (VARIANCE REQUESTED)

LANDSCAPE AREA:

REQ'D
15%

SETBACKS:

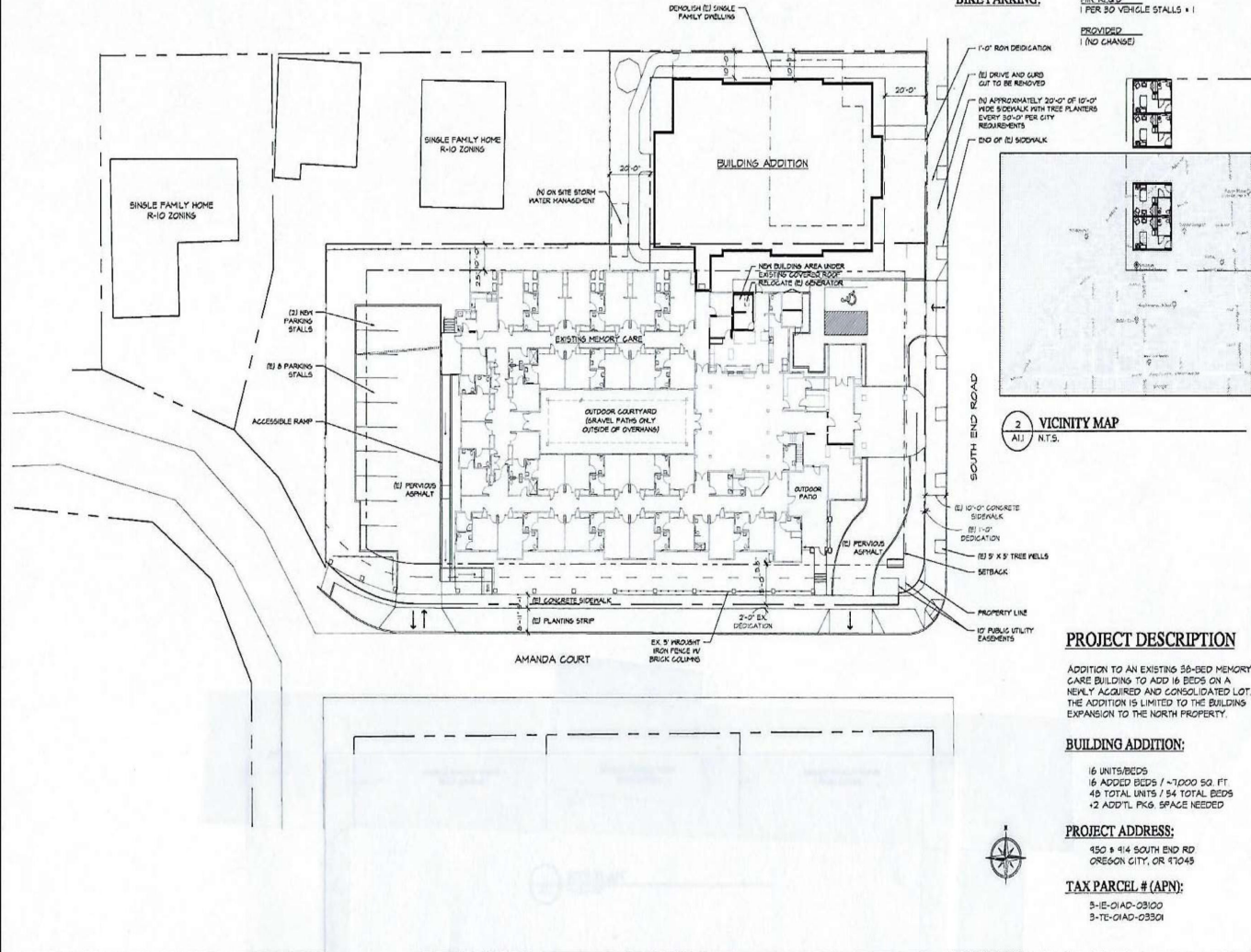
	REQ'D	PROVIDED
FRONT:	20'	20'-0"
REAR:	20'	20'
SIDE (NORTH):	10'	10'-1"
SIDE (SOUTH):	15'	NA

PARKING:

MIN. OFF-STREET REQ'D
1 PER 1 BEDS + 54 BEDS/1 + 5 PARKING SPACES
2.10 PER 1,000 SQ. FT. OFFICE
1,000 SQ. FT./750 SQ. FT. + 2 (NO CHANGE)
TOTAL + 10 MIN/15 MAX
PROVIDED
10 (INC. 1 VAN ACCESSIBLE) (NO CHANGE)

BIKE PARKING:

MIN. REQ'D
1 PER 30 VEHICLE STALLS + 1
PROVIDED
1 (NO CHANGE)



PROJECT DESCRIPTION

ADDITION TO AN EXISTING 50-BED MEMORY CARE BUILDING TO ADD 16 BEDS ON A NEWLY ACQUIRED AND CONSOLIDATED LOT. THE ADDITION IS LIMITED TO THE BUILDING EXPANSION TO THE NORTH PROPERTY.

BUILDING ADDITION:

16 UNITS/BEDS
16 ADDED BEDS / ~1,000 SQ. FT.
40 TOTAL UNITS / 54 TOTAL BEDS
+2 ADD'L PKG. SPACE NEEDED

PROJECT ADDRESS:

430 + 1/4 SOUTH END RD
OREGON CITY, OR 97045

TAX PARCEL # (APN):

5-1E-01AD-03100
3-TE-01AD-03301

JOHN LAPE, ARCHITECT

530 SW 6TH AVE., SUITE 520
PORTLAND, OREGON 97204
(503) 434-5600

PRELIMINARY SITE PLAN
RIVER TERRACE PHASE III
950 SOUTH END ROAD
OREGON CITY, OR 97045

BLANK 01903
DATE MAY 22, 2019

WORKSHEET
REVISION

A1.1

SITE PLAN
RIVER TERRACE PHASE 3 MEMORY CARE

FIGURE
b

Project No. 19-48

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
 CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Amanda Ct & Netzel St
 January 1, 2013 through December 31, 2017

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Disclaimers: Effective 2016, collection of “Property Damage Only” (PDO) crash data elements was reduced for vehicles and participants. Age, Gender, License, Error and other elements are no longer available for PDO crash reporting. Please keep this in mind when comparing 2016 PDO crash data to prior years.

A higher number of crashes may be reported as of 2011 compared to prior years. This does not necessarily reflect an increase in annual crashes. The higher numbers may result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics. For all disclaimers, see https://www.oregon.gov/ODOT/Data/documents/Crash_Data_Disclaimers.pdf.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
 CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Amanda Ct & South End Rd
 January 1, 2013 through December 31, 2017

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Disclaimers: Effective 2016, collection of “Property Damage Only” (PDO) crash data elements was reduced for vehicles and participants. Age, Gender, License, Error and other elements are no longer available for PDO crash reporting. Please keep this in mind when comparing 2016 PDO crash data to prior years.

A higher number of crashes may be reported as of 2011 compared to prior years. This does not necessarily reflect an increase in annual crashes. The higher numbers may result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics. For all disclaimers, see https://www.oregon.gov/ODOT/Data/documents/Crash_Data_Disclaimers.pdf.



Stewart Title Company
1000 SW Broadway, Suite 1600
Portland, OR 97205
Phone: (503) 290-5500

PRELIMINARY TITLE REPORT
SUPPLEMENTAL NO. 7

Date: December 16, 2019

Escrow Officer: Janice Mann
Phone: (503) 290-5561
Email: Jan.Mann@stewart.com

Title Officer: Tom Erickson
Order Number: 01049-30086
Email: Tom.Erickson@stewart.com

Property Address: 950 South End Rd., Oregon City, OR 97045

PRIOR REPORT DATED 11/8/2017 IS SUPPLEMENTED FOR THE FOLLOWING:

Amended Exception No. 7.

	<u>Liability</u>	<u>Premium</u>
ALTA 2006 Owner's Policy Extended	\$4,900,000.00	\$9,161.00
Short Term Credit applied in the amount of \$1,987.00		
(Underwriting fee - 11%)		
Proposed Insured:		
ALTA 2006 Loan Policy Extended	\$4,568,750.00	\$1,963.00
(Underwriting fee - 11%)		
Proposed Insured:		
First Interstate Bank		
OTIRO Endorsements: 228.06 (\$100.00), 203.1-06 (\$745.00), 206-06 (\$50.00), 208.2-06 (\$745.00), 209.10-06 (100.00), 209.6.1-06 (\$100.00), 217-06 (\$125.00), 217.1-06 (\$150.00), 218-06 (\$50.00), 222-06 (No fee), 225-06 (\$100.00), 237-06 (\$50.00), 66 (\$50.00), 70 (\$373.00)		
Government Service Fee		\$60.00

Stewart Title Company is prepared to issue on request and on recording of the appropriate documents, a policy or policies of Stewart Title Guaranty Company, as applied for, with coverages as indicated, based on this preliminary report. As of **December 11, 2019** at 8:00 A.M. title to the property described herein is vested in:

River Terrace Memory Care Property, LLC, an Oregon limited liability company

Subject only to the exceptions shown herein and to the terms, conditions and stipulations contained in the policy form. No liability is assumed until a full premium has been paid and a policy issued.

LEGAL DESCRIPTION: SEE EXHIBIT "A" ATTACHED HERETO

EXHIBIT "A"
LEGAL DESCRIPTION

**EXHIBIT A LEGAL
DESCRIPTION**

A tract of land in the A. F. Hedges D.L.C. in Section 1, Township 3 South, Range 1 East of the Willamette Meridian, in the City of Oregon City, Clackamas County, Oregon, described as follows:

Beginning at a stone marked with a cross that is 30 feet West and 690.7 feet North of the Northwest corner of the M. M. McCarver DLC in said Section 1, said point being in the center of the County Road leading to Canemah; thence North along the center of said County Road 224 feet to the true point of beginning of the tract to be described; thence West at right angles to the preceding course 325 feet; thence North parallel with the center line of the County Road 120 feet; thence East at right angles with the preceding course 325 feet to the center line of said County Road; thence South along said center line 120 feet to the true point of beginning.

EXCEPT that portion lying within South End Road and that portion of South End Road disclosed in Deed of Dedication recorded on June 16, 2016, Clackamas County Recording No. 2016-039446.

TOGETHER with a non-exclusive easement for roadway over and across a strip of land 27 feet in width lying South of and adjacent to the above described tract.

SCHEDULE B

GENERAL EXCEPTIONS

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the public records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
4. Any encroachment (of existing improvements located on the subject land onto adjoining land or of existing improvements located on adjoining land onto the subject land), encumbrance, violation, variation, or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the subject land.
5. Any lien or right to a lien, for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the public records.
6. Minerals of whatsoever kind, subsurface and surface substances, including but not limited to coal, lignite, oil, gas, uranium, clay, rock, sand and gravel in, on, under and that may be produced from the Land, together with all rights, privileges, and immunities relating thereto, whether or not appearing in the Public Records or listed in Schedule B. The Company makes no representation as to the present ownership of any such interests. There may be leases, grants, exceptions or reservations of interests that are not listed.

SPECIAL EXCEPTIONS:

7. Any lien or right to a lien, for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the public records.
8. The herein described premises are within the boundaries of and subject to the statutory powers, including the power of assessment, of the Tri-City Service District. We find none as of the effective date herein.
9. Rights of the public in and to any portion of the herein described premises lying within the boundaries of streets, roads or highways.
10. City Lien if any for the City of Oregon City. No search was done.
11. The herein described premises are within the boundaries of the subject to the statutory powers, including the power of assessment, of the Tri-City Service District. No search was done.
12. Rights of the public in and to any portion of the herein described premises lying within the boundaries of streets, roads or highways.
13. Restrictive Covenant Non-Remonstrance Agreement to Waive Remonstrance, including the terms and conditions thereof:
Recorded: June 9, 2016
Fee No.: [2016037772](#)
For: Sanitary sewer, storm sewer, water or street improvements
14. Easement, including the terms and conditions thereof,
Granted to: City of Oregon City
Recorded: June 9, 2016
Recording No.: [2016037773](#)
Purpose: Public and franchise utilities

Affects: Easterly 10.00 feet

15. Easement, including the terms and conditions thereof,
Granted to: City of Oregon City
Recorded: June 9, 2016
Recording No.: [2016037774](#)
Purpose: Public street and sidewalk
Affects: Southerly 10.00 feet

16. Maintenance Covenant and Access Easement, including the terms and provisions thereof:
Recorded: June 10, 2016
Fee No.: [2016038096](#)
For: Privately owned stormwater management facilities

17. Easement, including the terms and conditions thereof,
Granted to: City of Oregon City
Recorded: June 16, 2016
Recording No.: [2016039446](#)
Purpose: Street, road, right-of-way, and public utility
Affects: Southerly, Southeasterly and Easterly portions.

18. Deed of Trust, Assignment of Leases and Rents, Security Agreement and Fixture Filing and the terms and conditions thereof:
Grantor: River Terrace Memory Care Property, LLC, an Oregon limited liability company
Trustee: Stewart Title Company
Beneficiary: First Interstate Bank
Amount: \$4,568,750.00
Dated: November 19, 2018
Recorded: November 21, 2018
Recording No.: 2018-070977

19. Memorandum of Lease:
Lessor: River Terrace Memory Care Property, LLC, an Oregon limited liability company
Lessee: River Terrace Memory Care Operations, an Oregon limited liability company
Recorded: November 21, 2018
Recording No.: 2018-070978

20. The lien of the Lessor in the above Memorandum of Lease purports to subordinate to the lien of the instrument recorded under Recording No. 2018-070977 by Subordination, Nondisturbance and attornment Agreement, including the terms and conditions thereof:
Recorded: November 21, 2018
Recording No.: 2018-070979

END OF EXCEPTIONS

NOTES:

NOTE (a): We find no judgments or Federal Tax Liens against the vestee herein.

NOTE (b): Taxes paid in full for 2019-2020:
Levied Amount: \$78,598.03
Account No.: 00744047
Levy Code: 062-002
Map No.: 31E01AD03100

NOTE (c): As disclosed by the county tax rolls, the 2019-2020 real market value for said property is:

Land: \$1,030,813.00
Improvements: \$8,820,260.00
Total: \$6,851,073.00

NOTE (d): We find the following Deeds of record on the subject property:
Type of Document: Trustee's Deed
Dated: June 26, 2017
Recorded: June 26, 2017
Fee No.: [2017-042632](#)
Grantor: The Smith Firm, P.C.
Grantee: PBRELF I, LLC

NOTE: Any map or sketch enclosed as an attachment herewith is furnished for information purposes only to assist in property location with reference to streets and other parcels. No representation is made as to accuracy and the company assumes no liability for any loss occurring by reliance thereon.

After the issuance of a preliminary title report, if a transaction is consummated in reliance thereon, but without requiring the issuance of the title policy applied for, the full scheduled charge applicable to the type of coverage normally issued on such transactions will apply.

Stewart Title Company



Tom Erickson, Title Officer

TJA/te/bdm/te/te/te/ta

**If you have any questions regarding this report or your escrow, please contact your Escrow Officer Janice Mann
♦ Phone: (503) 290-5561 ♦ Fax: (866) 739-5724.**

ESCROW OFFICER LOCATION:

Stewart Title Company
5005 SW Meadows Road
Suite 120
Lake Oswego, OR 97035
Jan.Mann@stewart.com

STG Privacy Notice

Stewart Title Companies

WHAT DO THE STEWART TITLE COMPANIES DO WITH YOUR PERSONAL INFORMATION?

Federal and applicable state law and regulations give consumers the right to limit some but not all sharing. Federal and applicable state law regulations also require us to tell you how we collect, share, and protect your personal information. Please read this notice carefully to understand how we use your personal information. This privacy notice is distributed on behalf of the Stewart Title Guaranty Company and its title affiliates (the Stewart Title Companies), pursuant to Title V of the Gramm-Leach-Bliley Act (GLBA).

The types of personal information we collect and share depend on the product or service that you have sought through us. This information can include social security numbers and driver's license number.

All financial companies, such as the Stewart Title Companies, need to share customers' personal information to run their everyday business—to process transactions and maintain customer accounts. In the section below, we list the reasons that we can share customers' personal information; the reasons that we choose to share; and whether you can limit this sharing.

Reasons we can share your personal information.	Do we share	Can you limit this sharing?
For our everyday business purposes — to process your transactions and maintain your account. This may include running the business and managing customer accounts, such as processing transactions, mailing, and auditing services, and responding to court orders and legal investigations.	Yes	No
For our marketing purposes — to offer our products and services to you.	Yes	No
For joint marketing with other financial companies	No	We don't share
For our affiliates' everyday business purposes — information about your transactions and experiences. Affiliates are companies related by common ownership or control. They can be financial and non-financial companies. <i>Our affiliates may include companies with a Stewart name; financial companies, such as Stewart Title Company</i>	Yes	No
For our affiliates' everyday business purposes — information about your creditworthiness.	No	We don't share
For our affiliates to market to you — For your convenience, Stewart has developed a means for you to opt out from its affiliates marketing even though such mechanism is not legally required.	Yes	Yes, send your first and last name, the email address used in your transaction, your Stewart file number and the Stewart office location that is handling your transaction by email to optout@stewart.com or fax to 1-800-335-9591.
For non-affiliates to market to you. Non-affiliates are companies not related by common ownership or control. They can be financial and non-financial companies.	No	We don't share

We may disclose your personal information to our affiliates or to non-affiliates as permitted by law. If you request a transaction with a non-affiliate, such as a third party insurance company, we will disclose your personal information to that non-affiliate. [We do not control their subsequent use of information, and suggest you refer to their privacy notices.]

SHARING PRACTICES

How often do the Stewart Title Companies notify me about their practices?	We must notify you about our sharing practices when you request a transaction.
How do the Stewart Title Companies protect my personal information?	To protect your personal information from unauthorized access and use, we use security measures that comply with federal law. These measures include computer, file, and building safeguards.
How do the Stewart Title Companies collect my personal information?	We collect your personal information, for example, when you - request insurance-related services - provide such information to us We also collect your personal information from others, such as the real estate agent or lender involved in your transaction, credit reporting agencies, affiliates or other companies.
What sharing can I limit?	Although federal and state law give you the right to limit sharing (e.g., opt out) in certain instances, we do not share your personal information in those instances.

Contact us: If you have any questions about this privacy notice, please contact us at: Stewart Title Guaranty Company, 1980 Post Oak Blvd., Privacy Officer, Houston, Texas 77056



AFFIDAVIT OF POSTING OF NOTICE FOR LAND USE APPLICATIONS

Lenity Architecture, Attn: Sam Thomas
3150 Kettle Court SE

River Terrace Memory Care LLC
Attn: Jeffrey Wellington
415 SE 28th Ave, Portland, OR 97214

Files: PR-150-2019

GLUA-19-00052 / CU-19-00052 /

SP-19-00140 / VAR-19-00015 / LL-19-00008

Location: 914 and 950 South End Road, Oregon City, OR
97045

Clackamas County Map 3-1E-01AD, Tax Lots 3300 and
3301

Proposal: 16-bed expansion to existing memory care
facility

Application Submitted: 12/20/2019

Application Incomplete: 01/08/2020

Application Complete: 01/29/2020

120 date: 5/28/2020

Tentative PC Hearing: 3/9/2020

Your application requires the posting of signs on the subject site that provides a brief description of your development and requests comments from the public. This notice must be posted 20 days prior to the first evidentiary public hearing.

The applicant shall place the notices on each frontage of the subject property. If the property's frontage exceeds six hundred feet, the applicant shall post one copy of the notice for each six hundred feet or fraction thereof. Notices do not have to be posted adjacent to alleys or unconstructed right-of-way. Notices shall be posted within ten feet of the street and shall be visible to pedestrians and motorists. Notices shall not be posted within the public right-of-way or on trees. The applicant shall remove all signs within ten days following the event announced in the notice.

It is the applicant's responsibility to ensure that the sign remains clearly visible during the public comment period. **The signs shall be posted by February 18, 2020** so that they are clearly visible along the street fronting the property. A map is enclosed distinguishing the location of where the signs should be posted. The signs shall remain posted until after the Planning Commission closes the Public Hearing. If you have any questions please contact Planning at (503) 722-3789.

PLEASE SIGN AND RETURN THIS NOTICE TO THE PLANNING DIVISION

I hereby certify that on (date) 2/18/20, I posted the required signs on the subject site in accordance with the requirement of the Oregon City Municipal Code. If there is any delay in the city's land use process caused by the applicant's failure to correctly post the subject property for the required period of time and in the correct location, the applicant agrees to extend the one-hundred-twenty-day period in a timely manner.

Applicant

For Applicant

2/18/20
Date



OREGON CITY

Community Development – Planning

698 Warner Parrott Road | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

Lenity Architecture, Attn: Sam Thomas
3150 Kettle Court SE

River Terrace Memory Care LLC
Attn: Jeffrey Wellington
415 SE 28th Ave, Portland, OR 97214

Files: PR-150-2019

GLUA-19-00052 / CU-19-00052 /

SP-19-00140 / VAR-19-00015 / LL-19-00008

Location: 914 and 950 South End Road, Oregon City, OR 97045

Clackamas County Map 3-1E-01AD, Tax Lots 3300 and 3301

Proposal: 16-bed expansion to existing memory care facility

Application Submitted: 12/20/2019

Application Incomplete: 01/08/2020

Application Complete: 01/29/2020

120 date: 5/28/2020

Tentative PC Hearing: 3/9/2020

DETERMINATION OF APPLICATION COMPLETENESS

Your project has been evaluated and found to be complete for processing.

XX GLUA-19-00052 is complete

The applications you submitted for the properties at 914 and 950 South End Rd (Planning Files GLUA-19-00052 / CU-19-00052 / SP-19-00140 / VAR-19-00015 / LL-19-00008) have been deemed complete for processing. For assistance regarding any current planning issues related to your project, please contact me in the Community Development Department at (503) 496-1568 or by email at pwalter@orc.org. I look forward to working with you on your application.

Sincerely,

Pete Walter, AICP, Senior Planner
Planning Division



AFFIDAVIT OF POSTING OF NOTICE FOR LAND USE APPLICATIONS

Lenity Architecture, Attn: Sam Thomas
3150 Kettle Court SE

River Terrace Memory Care LLC
Attn: Jeffrey Wellington
415 SE 28th Ave, Portland, OR 97214

Files: PR-150-2019

GLUA-19-00052 / CU-19-00052 /

SP-19-00140 / VAR-19-00015 / LL-19-00008

Location: 914 and 950 South End Road, Oregon City, OR
97045

**Clackamas County Map 3-1E-01AD, Tax Lots 3300 and
3301**

Proposal: 16-bed expansion to existing memory care
facility

Application Submitted: 12/20/2019

Application Incomplete: 01/08/2020

Application Complete: 01/29/2020

120 date: 5/28/2020

Tentative PC Hearing: 3/9/2020

Your application requires the posting of signs on the subject site that provides a brief description of your development and requests comments from the public. This notice must be posted 20 days prior to the first evidentiary public hearing.

The applicant shall place the notices on each frontage of the subject property. If the property's frontage exceeds six hundred feet, the applicant shall post one copy of the notice for each six hundred feet or fraction thereof. Notices do not have to be posted adjacent to alleys or unconstructed right-of-way. Notices shall be posted within ten feet of the street and shall be visible to pedestrians and motorists. Notices shall not be posted within the public right-of-way or on trees. The applicant shall remove all signs within ten days following the event announced in the notice.

It is the applicant's responsibility to ensure that the sign remains clearly visible during the public comment period. **The signs shall be posted by February 18, 2020** so that they are clearly visible along the street fronting the property. A map is enclosed distinguishing the location of where the signs should be posted. The signs shall remain posted until after the Planning Commission closes the Public Hearing. If you have any questions please contact Planning at (503) 722-3789.

PLEASE SIGN AND RETURN THIS NOTICE TO THE PLANNING DIVISION

I hereby certify that on (date) 2/18/20, I posted the required signs on the subject site in accordance with the requirement of the Oregon City Municipal Code. If there is any delay in the city's land use process caused by the applicant's failure to correctly post the subject property for the required period of time and in the correct location, the applicant agrees to extend the one-hundred-twenty-day period in a timely manner.

Applicant

For Applicant

2/18/20
Date



NOTICE OF PLANNING COMMISSION PUBLIC HEARING (Revised)

Mailed on February 15th, 2020

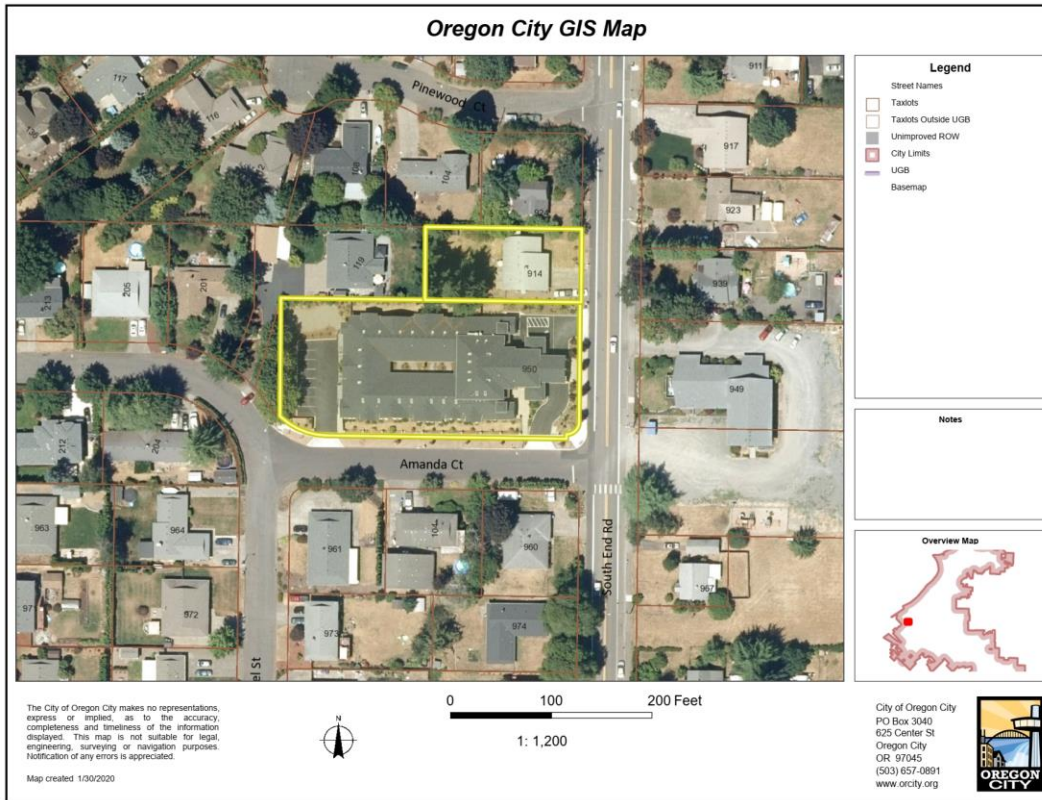
COMMENT DEADLINE:	On Monday, May 11, 2020 , the City of Oregon City - Planning Commission will conduct a public hearing at 7:00 p.m. in the Commission Chambers at City Hall, 625 Center Street, Oregon City 97045 on the following Type III Land Use Applications. Any interested party may testify at the public hearing or submit written testimony at or prior to the close of the Planning Commission hearing. Written or emailed comments on these Type III Land Use Applications must be received by the Oregon City Planning Division, no later than Friday, May 1, 2020 to be included in the Staff Report. Comments received after this date will be provided to the Planning Commission at the hearing. The public record will remain open until the Planning Commission closes the public hearing.
FILE NUMBERS:	GLUA-19-00052: CU-19-00052 Conditional Use / SP-19-00140 Site Plan and Design Review / VAR-19-00015 Minor Variance / LL-19-00008 Lot Line Abandonment
APPLICANT:	Lenity Architecture, LLC, 3150 Kettle Court SE, Salem, OR 97301
OWNER:	River Terrace Memory Care LLC, 415 SE 28th Ave, Portland, OR 97214
PROJECT WEBPAGE:	https://www.orcity.org/planning/project/glua-19-00052
REQUEST:	Approval for 16-bed expansion of an existing assisted living memory care facility at 914 South End Rd. The property is zoned R-10 Low-Density Residential, and the expansion requires Conditional Use approval. The application includes Site Plan and Design Review, a Minor Variance for lot coverage, and a Property Line Abandonment between parcels 3100 and 3301.
LOCATION: (see map on reverse)	914 and 950 South End Road, Oregon City, OR 97045 Clackamas County Map: 3-1E-01AD, Tax Lots 3300 and 3301
CONTACT PERSON:	Pete Walter, AICP, Senior Planner (503) 496-1568, pwalter@orcify.org
NEIGHBORHOOD ASSOC:	South End Neighborhood Association
APPROVAL CRITERIA:	The following Chapters of the Oregon City Municipal Code are applicable to this proposal. The City Code Book is available on-line at www.orcity.org : 12.04 – <i>Streets, Sidewalks, and Public Places</i> ; 12.08 – <i>Public and Street Trees</i> ; 13.12 – <i>Stormwater Management</i> ; 15.48 – <i>Grading, Filling, and Excavating</i> ; 16.12 – <i>Minimum Public Improvements and Design Standards for Development</i> ; 16.20 – <i>Property Line Adjustments and Abandonments Process and Standards</i> ; 17.08 – <i>Low Density Residential Districts</i> ; 17.41 – <i>Tree Protection, Preservation, Removal and Replanting Standards</i> ; 17.47 – <i>Erosion and Sediment Control</i> ; 17.52 – <i>Off-Street Parking and Loading</i> ; 17.54 – <i>Supplemental Zoning Regulations and Exceptions</i> ; 17.56 – <i>Conditional Uses</i> ; 17.58 – <i>Lawful Nonconforming Uses, Structures, and Lots</i> ; 17.60 – <i>Variances</i> ; 17.62 – <i>Site Plan and Design Review</i> ; and 17.50 – <i>Administration and Procedures</i> .
For helpful tips on submitting public comments, please visit the “How Do I...?” section of our website: https://www.orcity.org/planning/how-do-i then click on “How do I Make the Most Effective Comments on Development Applications?” Thank you!	

The applicant and all documents submitted by or on behalf of the applicant are available for inspection at no cost at the Oregon City Planning Division, 698 Warner Parrott Rd, Oregon City, Oregon 97045, from 8:30 a.m. to 3:30 p.m Monday thru Friday. The staff report, with all the applicable approval criteria, will also be available for inspection seven days prior to the hearing. Copies of these materials may be obtained for a reasonable cost in advance.

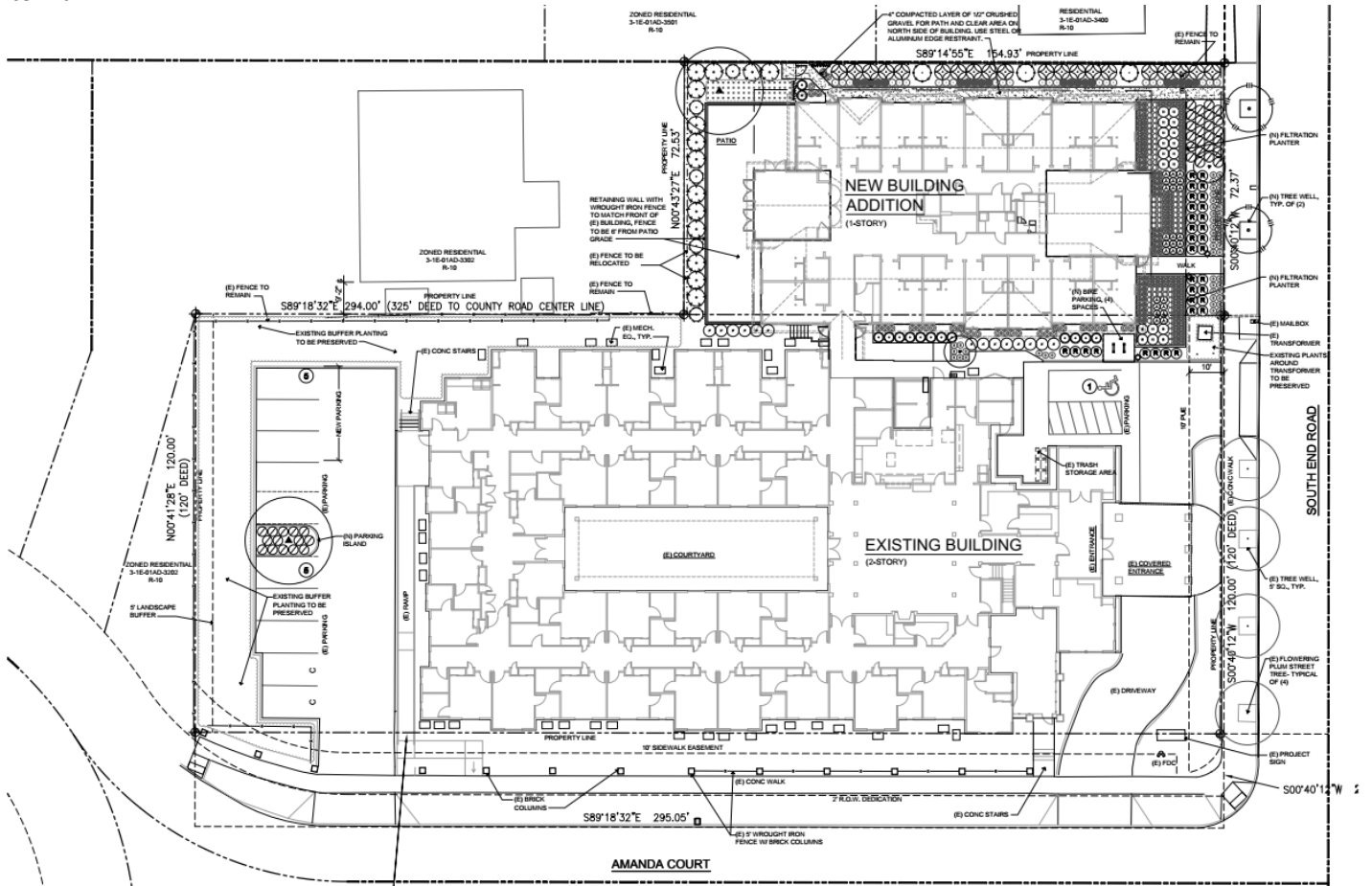
Please be advised that any issue that is intended to provide a basis for appeal must be raised before the close of the Planning Commission hearing, in person or by letter, with sufficient specificity to afford the Planning Commission and the parties an opportunity to respond to the issue. Failure to raise an issue with sufficient specificity will preclude any appeal on that issue. The decision of the Planning Commission may be appealed to the City Commission by parties with standing within 14 days of the notice of decision. Any appeal will be based on the record. The procedures that govern the hearing will be posted at the hearing and are found in OCMC Chapter 17.50 and ORS 197.763.

A city-recognized neighborhood association requesting an appeal fee waiver pursuant to OCMC 17.50.290(C) must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal.

Vicinity Map / 2018 Aerial Photo



Site Plan





NOTICE OF PLANNING COMMISSION PUBLIC HEARING

Mailed on January 31, 2020

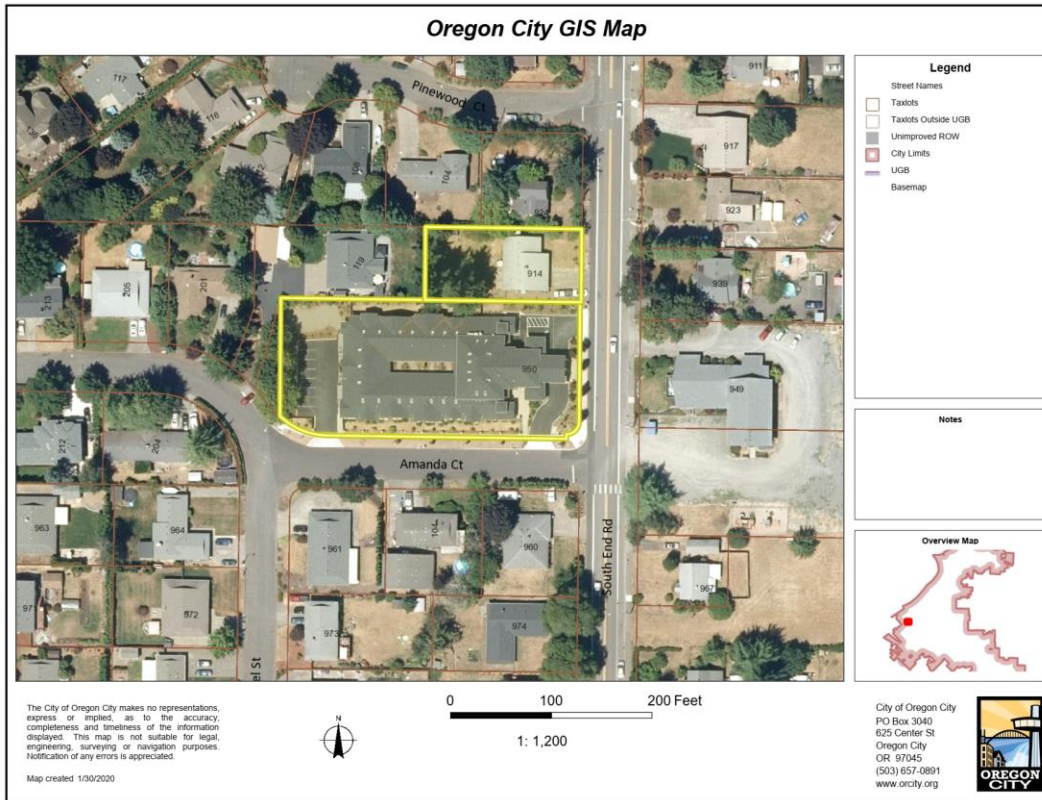
COMMENT DEADLINE:	On Monday, March 9, 2020 , the City of Oregon City - Planning Commission will conduct a public hearing at 7:00 p.m. in the Commission Chambers at City Hall, 625 Center Street, Oregon City 97045 on the following Type III Land Use Applications. Any interested party may testify at the public hearing or submit written testimony at or prior to the close of the Planning Commission hearing. Written comments on these Type III Land Use Applications must be received by the Oregon City Planning Division, no later than Friday, February 28, 2020 to be included in the Staff Report. Comments received after this date will be provided to the Planning Commission at the hearing. The public record will remain open until the Planning Commission closes the public hearing.
FILE NUMBERS:	GLUA-19-00052: CU-19-00052 Conditional Use / SP-19-00140 Site Plan and Design Review / VAR-19-00015 Minor Variance / LL-19-00008 Lot Line Abandonment
APPLICANT:	Lenity Architecture, LLC, 3150 Kettle Court SE, Salem, OR 97301
OWNER:	River Terrace Memory Care LLC, 415 SE 28th Ave, Portland, OR 97214
PROJECT WEBPAGE:	https://www.orcity.org/planning/project/glua-19-00052
REQUEST:	Approval for 16-bed expansion of an existing assisted living memory care facility at 914 South End Rd. The property is zoned R-10 Low-Density Residential, and the expansion requires Conditional Use approval. The application includes Site Plan and Design Review, a Minor Variance for lot coverage, and a Property Line Abandonment between parcels 3100 and 3301.
LOCATION: (see map on reverse)	914 and 950 South End Road, Oregon City, OR 97045 Clackamas County Map: 3-1E-01AD, Tax Lots 3300 and 3301
CONTACT PERSON:	Pete Walter, AICP, Senior Planner (503) 496-1568, pwalter@orcify.org
NEIGHBORHOOD ASSOC:	South End Neighborhood Association
APPROVAL CRITERIA:	The following Chapters of the Oregon City Municipal Code are applicable to this proposal. The City Code Book is available on-line at www.orcity.org : 12.04 – <i>Streets, Sidewalks, and Public Places</i> ; 12.08 – <i>Public and Street Trees</i> ; 13.12 – <i>Stormwater Management</i> ; 15.48 – <i>Grading, Filling, and Excavating</i> ; 16.12 – <i>Minimum Public Improvements and Design Standards for Development</i> ; 16.20 – <i>Property Line Adjustments and Abandonments Process and Standards</i> ; 17.08 – <i>Low Density Residential Districts</i> ; 17.41 – <i>Tree Protection, Preservation, Removal and Replanting Standards</i> ; 17.47 – <i>Erosion and Sediment Control</i> ; 17.52 – <i>Off-Street Parking and Loading</i> ; 17.54 – <i>Supplemental Zoning Regulations and Exceptions</i> ; 17.56 – <i>Conditional Uses</i> ; 17.58 – <i>Lawful Nonconforming Uses, Structures, and Lots</i> ; 17.60 – <i>Variances</i> ; 17.62 – <i>Site Plan and Design Review</i> ; and 17.50 – <i>Administration and Procedures</i> .
For helpful tips on submitting public comments, please visit the “How Do I...?” section of our website: https://www.orcity.org/planning/how-do-i then click on “How do I Make the Most Effective Comments on Development Applications?” Thank you!	

The applicant and all documents submitted by or on behalf of the applicant are available for inspection at no cost at the Oregon City Planning Division, 698 Warner Parrott Rd, Oregon City, Oregon 97045, from 8:30 a.m. to 3:30 p.m Monday thru Friday. The staff report, with all the applicable approval criteria, will also be available for inspection seven days prior to the hearing. Copies of these materials may be obtained for a reasonable cost in advance.

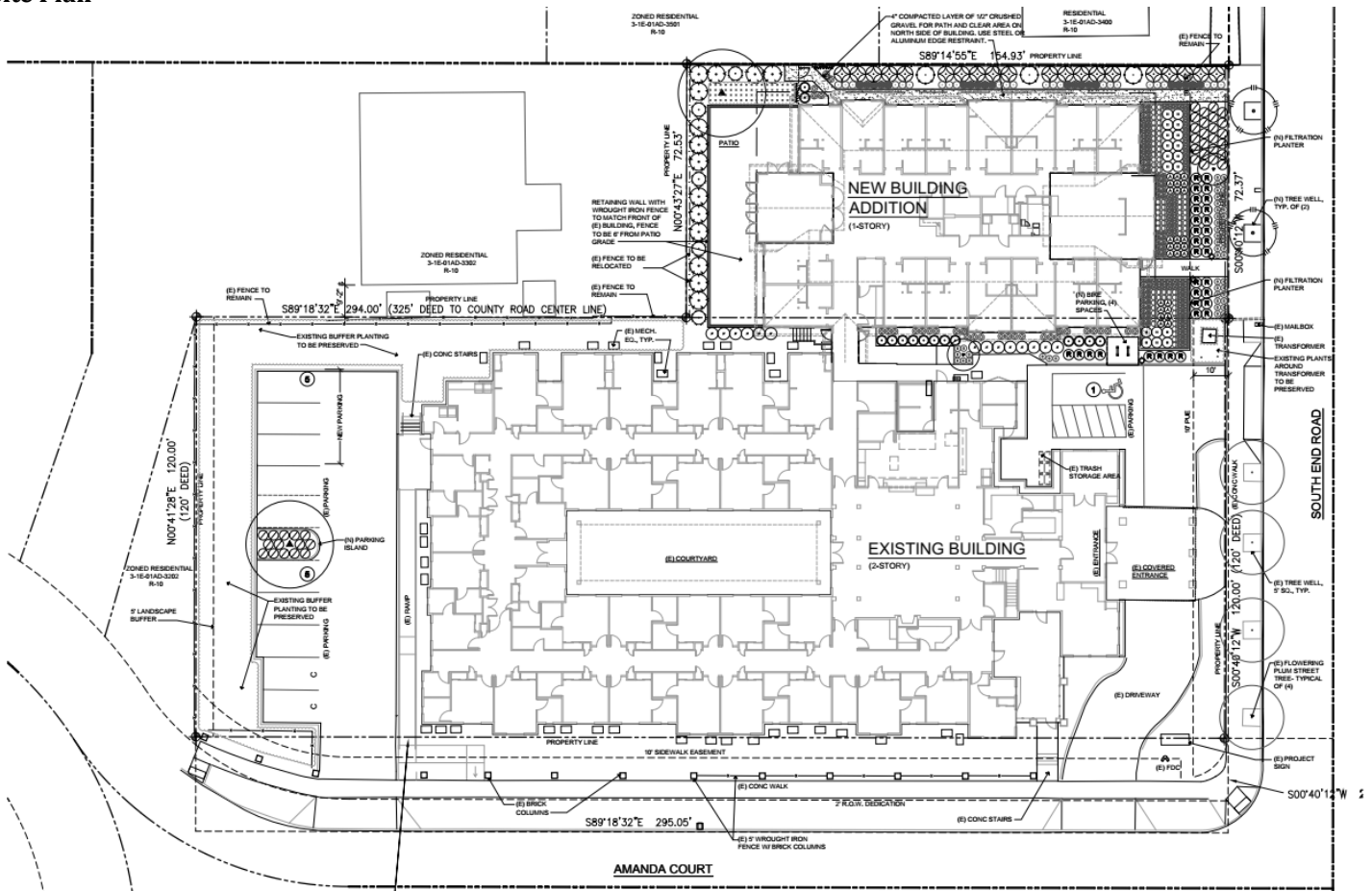
Please be advised that any issue that is intended to provide a basis for appeal must be raised before the close of the Planning Commission hearing, in person or by letter, with sufficient specificity to afford the Planning Commission and the parties an opportunity to respond to the issue. Failure to raise an issue with sufficient specificity will preclude any appeal on that issue. The decision of the Planning Commission may be appealed to the City Commission by parties with standing within 14 days of the notice of decision. Any appeal will be based on the record. The procedures that govern the hearing will be posted at the hearing and are found in OCMC Chapter 17.50 and ORS 197.763.

A city-recognized neighborhood association requesting an appeal fee waiver pursuant to OCMC 17.50.290(C) must officially approve the request through a vote of its general membership or board at a duly announced meeting prior to the filing of an appeal.

Vicinity Map / 2018 Aerial Photo



Site Plan





OREGON CITY

Community Development – Planning

698 Warner Parrott Road | Oregon City OR 97045

Ph (503) 722-3789 | Fax (503) 722-3880

LAND USE APPLICATION TRANSMITTAL

Date: 1/31/2019

DISTRIBUTION OF APPLICATION

☒	Building Official	☒	Clackamas County Transportation
☒	Development Services	☒	Clackamas County Planning
☒	Public Works Operations	☒	Clackamas Fire District #1
☒	City Engineer	☐	ODOT – Division Review
☒	Public Works Director	☒	Oregon City School District
☒	Parks Manager	☐	Tri-Met
☒	Community Services Director	☐	Metro
☒	Police	☐	PGE
☒	Economic Development Manager	☒	South Fork Water Board
☒	Traffic Engineer	☒	Hamlet of Beavercreek
☐	City Manager's Office	☒	Holcomb Outlook CPO
☐	Oregon City Neighborhood Associations	☒	Central Point / Leland Road / New Era CPO
☒	N.A Chair South End	☐	Other – See Email List
☒	N.A. Land Use Chair	☒	Natural Resource Committee
☒	Notice of the application mailed to all properties within 300 feet	☐	Other:

COMMENTS DUE BY:	February 28, 2020		
DECISION BODY:	Type III Planning Commission		
HEARING DATE(s):	Monday, March 9, 2020		
DECISION TYPE:	Type III		
FILE #S:	GLUA-19-00052: CU-19-00052 / SP-19-00140 / VAR-19-00015 / LL-19-00008		
PLANNER:	Pete Walter	Phone (503) 496-1568	Email pwalter@orcite.org
APPLICANT:	Lenity Architecture, LLC, 3150 Kettle Court SE, Salem, OR 97301		
OWNER:	River Terrace Memory Care LLC, 415 SE 28th Ave, Portland, OR 97214		
REPRESENTATIVE:	N/A		
REQUEST:	16-Bed Expansion to existing Memory Care / Assisted Living Facility		
ROJECT WEBPAGE:	https://www.orcity.org/planning/project/glua-19-00052		
ZONING:	R-10 Single Family Dwelling		
ADDRESS(ES):	N914 and 950 South End Road, Oregon City, OR 97045		
TAX LOTS:	Clackamas County Map: 3-1E-01AD, Tax Lots 3300 and 3301		

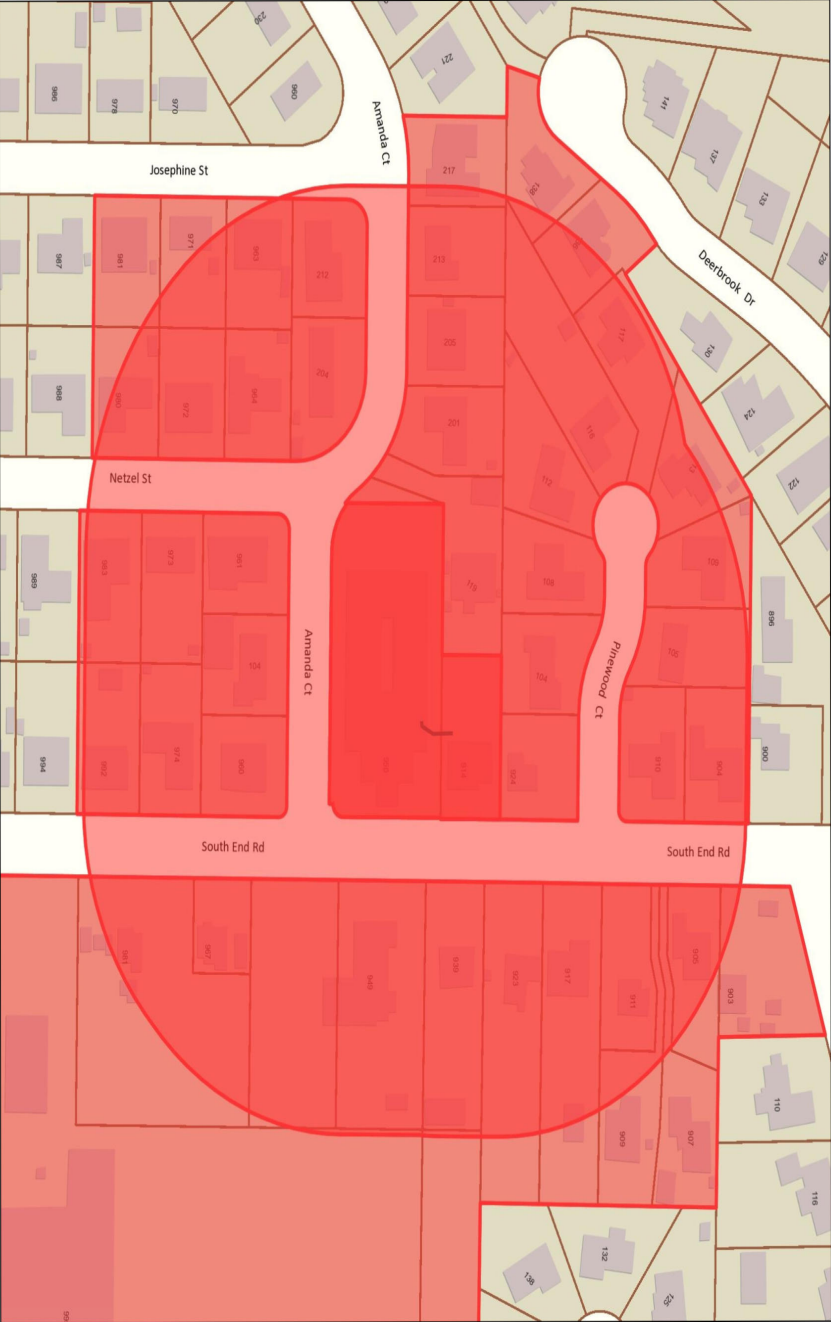
This application material is referred to you for your information, study and official comments. If extra copies are required, please contact the Planning Department. Your recommendations and suggestions will be used to guide the Planning staff when reviewing this proposal. If you wish to have your comments considered and incorporated into the staff report, please return the attached copy of this form to facilitate the processing of this application and will insure prompt consideration of your recommendations.

Please check the appropriate spaces below.

☐	The proposal does not conflict with our interests.
☐	The proposal conflicts with our interests for the reasons attached.
☐	The proposal would not conflict our interests if the changes noted below are included.

Signature _____

CONTACT THE PLANNING DIVISION IF YOU HAVE ANY QUESTIONS ABOUT THIS APPLICATION



Labels created:	1/29/2020 1:51 PM
Run by:	Pete Walter
Labels generated using:	User-defined Graphic
Use graphic or underlying taxlot(s)?	Underlying taxlot(s)
Buffer?	Yes
Buffer Distance:	300 Foot
Label type:	Taxpayers
Sort order:	By Name
Output format:	Pdf
Notify Neighborhood Associations?	Yes
# Taxlots used to create labels:	50
# Labels generated:	47 (includes 1 Neighborhood Association label)

ACUNA ANEKA R
992 SOUTH END RD
OREGON CITY, OR 97045

DAVIS ROB
963 JOSEPHINE ST
OREGON CITY, OR 97045

JACKSON KATHRYN
910 SOUTH END RD
OREGON CITY, OR 97045

ARNHART KYLE G
917 SOUTH END RD
OREGON CITY, OR 97045

EELLS ERIN J & CRYSTAL R
964 NETZEL ST
OREGON CITY, OR 97045

KUCERA-HUGGER KERRI L
914 SOUTH END RD
OREGON CITY, OR 97045

BARREDO GAUDENCIO D JR & FLERIZA I
212 AMANDA CT
OREGON CITY, OR 97045

EPPERSON JESSICA
113 PINWOOD CT
OREGON CITY, OR 97045

LAKEY KAITLYN M
204 AMANDA CT
OREGON CITY, OR 97045

BELL DANIEL A JR
104 AMANDA CT
OREGON CITY, OR 97045

ESTABROOK MICHELE K & DAVID R
971 JOSEPHINE ST
OREGON CITY, OR 97045

LEWELLING CHERYL L
980 NETZEL ST
OREGON CITY, OR 97045

BINSWANGER ROBERT & M HOLLINGWO
983 NETZEL ST
OREGON CITY, OR 97045

FABER MARY JO
112 PINWOOD CT
OREGON CITY, OR 97045

LORD GREGORY D & CHRISTINE L
217 AMANDA CT
OREGON CITY, OR 97045

BONNER WAYMON A & KIMBERLY L
108 PINWOOD CT
OREGON CITY, OR 97045

FAULKNER JON A
903 SOUTH END RD
OREGON CITY, OR 97045

LYNCH PATRICK BRENDAN & DANELLE I
201 AMANDA CT
OREGON CITY, OR 97045

BREY JAMES D TRUSTEE
909 SOUTH END RD
OREGON CITY, OR 97045

FISHER IRENE FRANCES CO-TRUSTEE
904 SOUTH END RD
OREGON CITY, OR 97045

MARQUEZ ROSALINDA
974 SOUTH END RD
OREGON CITY, OR 97045

CONLON PATRICK & PATRICIA
923 SOUTH END RD
OREGON CITY, OR 97045

GODLEY RONALD M & MARY E
119 AMANDA CT
OREGON CITY, OR 97045

METRO 960 SOUTH END ROAD LLC
3914 SW MARTINS LN
PORTLAND, OR 97239

CONROY ROCKY J & KELLIE J
205 AMANDA CT
OREGON CITY, OR 97045

GROENER KAREN A
907 SOUTH END RD
OREGON CITY, OR 97045

MILLEN PATRICIA K & DAVID E
213 AMANDA CT
OREGON CITY, OR 97045

CURL PAULA RAE
104 PINWOOD CT
OREGON CITY, OR 97045

HOWARD SHIRLEY JO TRUSTEE
8150 SW CANYON DR
PORTLAND, OR 97225

MITCHELL JOSHUA D & CHERINE L
905 SOUTH END RD
OREGON CITY, OR 97045

MURPHY CHAD A & TYHA

961 NETZEL ST
OREGON CITY, OR 97045

UNITED PENTECOSTAL CHURCH OF ORE

949 SOUTH END RD
OREGON CITY, OR 97045

OREGON CITY SCH DIST #62

PO BOX 2110
OREGON CITY, OR 97045

WEIGEL CHERYL L

138 DEERBROOK DR
OREGON CITY, OR 97045

PAINTER JAYCE A

109 PINEWOOD CT
OREGON CITY, OR 97045

WHITE JEREMY H

116 PINEWOOD CT
OREGON CITY, OR 97045

PAULSON DARLENE M

911 SOUTH END RD
OREGON CITY, OR 97045

WHITNEY JOHN J

117 PINEWOOD CT
OREGON CITY, OR 97045

PETTY JOHN P & DORIS E

105 PINEWOOD CT
OREGON CITY, OR 97045

WILSON DAVID P & LINDA S

981 JOSEPHINE ST
OREGON CITY, OR 97045

RIVER TERRACE MEMORY CARE PROPE

415 SE 28TH AVE
PORTLAND, OR 97214

WONG TYLER & JESSICA

972 NETZEL ST
OREGON CITY, OR 97045

ROSHAK DAVID M CO-TRUSTEE

973 NETZEL ST
OREGON CITY, OR 97045

South End NA Chair

18797 Lassen Ct
Oregon City, OR 97045

SENTHIRAJAH SHAN

994 NETZEL ST
OREGON CITY, OR 97045

SMERAGLIO JAKE & DANIELLE

136 DEERBROOK DR
OREGON CITY, OR 97045

UNITED PENTECOSTAL CH OF OC

949 SOUTH END RD
OREGON CITY, OR 97045

REPLINGER & ASSOCIATES LLC
TRANSPORTATION ENGINEERING

May 29, 2020

Mr. Pete Walter
City of Oregon City
PO Box 3040
Oregon City, OR 97045

**SUBJECT: REVIEW OF TRANSPORTATION ANALYSIS LETTER – RIVER
TERRACE MEMORY CARE EXPANSION PHASE 3 – GLUA19-52**

Dear Mr. Walter:

In response to your request, I have reviewed the materials in support of the proposed expansion of the River Terrace Memory Care facility at 950 South End Road. Key materials consist of the Transportation Analysis Letter (TAL) prepared under the direction of Frank Charbonneau, PE of Charbonneau Engineering. The TAL is dated October 24, 2019.

The applicant proposes to expand the facility from the 38 beds to 54 beds. The expansion consists of building changes and two additional parking stalls. The building expansion will replace an existing single-family dwelling on an adjacent parcel. The facility is in the northwest quadrant of the intersection of South End Road and Amanda Court.

Overall

I find the TAL addressed the city's requirements and provides an adequate basis to evaluate impacts of the proposed expansion.

Comments

- 1. Trip Generation.** The TAL presented information on trip generation for a 16-bed assisted living facility. The trip generation rates were taken from the Institute of Transportation Engineers' *Trip Generation*. The engineer used the trip generation rates for land use category 254 – assisted living facility. The engineer accounted for the removal of the existing single-family dwelling occupying the site. The engineer predicted that the facility would produce a net increase of 2 AM peak hour trips; 3

PM peak hour trips; and 33 additional weekday trips. The calculations of trip generation appear reasonable.

- 2. Access Locations.** No change in access location is proposed in connection with the expansion. The three existing access locations are acceptable.
- 3. Driveway Width.** The driveways were constructed to meet city requirements for driveway width.
- 4. Intersection Spacing.** No new street intersections are proposed.
- 5. Sight Distance.** The engineer reviewed sight distance and concluded sight distance meets applicable standards. I concur.
- 6. Safety Issues.** The engineer indicated there were no reported crashes in the vicinity during the previous five years from 2012 through 2017. He did not find any safety issues associated with the proposed development. There is no indication that the expansion will cause any additional safety issues.
- 7. Consistency with the Transportation System Plan (TSP).** Frontage improvements along South End Road and Amanda Court have been constructed.

Conclusion and Recommendations

I find that the TAL meets city requirements and that the 16-bed expansion of the facility will have insignificant transportation impacts. There is no need for any mitigation measures in connection with the expansion.

If you have any questions or need any further information concerning this review, please contact me at replinger-associates@comcast.net.

Sincerely,



John Replinger, PE
Principal

Pete Walter

From: ODOT_R1_DevRev <ODOT_R1_DevRev@odot.state.or.us>
Sent: Friday, January 31, 2020 2:39 PM
To: Pete Walter
Subject: RE: Oregon City Land Use Transmittal for Comment - GLUA-19-00052

Thanks, Pete. ODOT has no concerns and will not be providing comment.

Kate (Wihtol) Hawkins

Associate Planner, Development Review

ODOT Region 1

kate.w.hawkins@odot.state.or.us

(503) 731 – 3049

She/Her

From: Pete Walter <pwalter@orcity.org>
Sent: Friday, January 31, 2020 2:16 PM
To: Aaron Parker <aparker@orcity.org>; Adam Bjornstedt <abjornstedt@crwater.com>; Barclay Hills - Betty Mumm <bmummb@comcast.net>; Barclay Hills CIC Chair <mad91058@msn.com>; Barclay Hills Contact Email <barclayhillsna@gmail.com>; 'Betty Johnson' <bjohnson@crwater.com>; Bob Siewert <siewert.bob@gmail.com>; 'Boll, Heather' <BollH@trimet.org>; Mike Boumann <mike.boumann@ClackamasFire.com>; Canemah - Ken Baysinger <k.baysinger@comcast.net>; team.baysinger@comcast.net; Caufield - Kristina Browning <Kristina@SpaceandReason.com>; Caufield - Robert Malchow <r.malchow@comcast.net>; Christopher Long <clong@orcity.org>; Clackamas County Engineering <developmentengineering@clackamas.us>; Dayna Webb <dwebb@orcity.org>; Denise Conrad <dconrad@orcity.org>; DevelopmentReview@trimet.org; Dorothy (Didi) Dahlsrud - NRC <dorothydahlsrud@gmail.com>; Doug Neeley (intstats10@gmail.com) <intstats10@gmail.com>; Gaffney Lane - Angela Wright <englishimport@gmail.com>; Gaffney Lane Chair - Amy Willhite <awillhit@yahoo.com>; Gaffney Lane CIC Alternate <mikafay@gmail.com>; Hillendale Chair - Roy Harris <royandanna@centurylink.net>; Hillendale CIC Alternate <drakeel@gmail.com>; Hillendale Land Use Chair - William Gifford <william@smallflags.com>; Holcomb Outlook CPO <allen.taylor@ieee.org>; James King CIC McLoughlin NA <j.king@alliant-systems.com>; Jeffrey Raker <Jeffrey.Raker@oregonmetro.gov>; Jeremy Tamargo <jtamargo@orcity.org>; John Collins <johnc@sfbw.org>; John M. Lewis <jmlewis@orcity.org>; John Replinger (replinger-associates@comcast.net) <replinger-associates@comcast.net>; Josh Wheeler <jwheeler@orcity.org>; 'McIntire, Rick' <rickmci@co.clackamas.or.us>; McLoughlin Chair - Cameron McCredie (cmccredie@windermere.com) <cmccredie@windermere.com>; guttmcg@msn.com; Metro Land Use Notifications <landusenotifications@oregonmetro.gov>; Mike Mitchell <mike.k.mitchell@gmail.com>; Mike Roberts <mroberts@orcity.org>; ODOT_R1_DevRev <ODOT_R1_DevRev@odot.state.or.us>; Park Place - Greg Stone <gpstone72@yahoo.com>; Phil Lewis <plewis@orcity.org>; Rivercrest - Ed Lindquist <ed-lindquist@msn.com>; karin.morey@gmail.com; salmoelclarki@stinkingdesert.com; Sang Pau <spau@orcity.org>; South End Chair - Bill McConnel <sena97045@gmail.com>; South End NA Vice Chair <fergusfamily@gmail.com>; Steve Vanhaverbeke <steve@vanhaverbeke.org>; Tammy Stevens Chair Beaver Creek Hamlet <chair@beavercreek.org>; TAYAR Abraham * Avi <Abraham.TAYAR@odot.state.or.us>; Tower Vista - Vern Johnson <verndonnajohnson@yahoo.com>; Trent Warness - NRC <twarness@gmail.com>; Two Rivers - Margie Hughes <margiehughes1@aol.com>; Two Rivers Chair: Bryon Boyce <bryony@birdlink.net>; WES <WES-Planning@clackamas.us>; Wes Rogers, OC School District <wes.rogers@orecity.k12.or.us>
Subject: Oregon City Land Use Transmittal for Comment - GLUA-19-00052

COMMENT DEADLINE:	On Monday, March 9, 2020 , the City of Oregon City - Planning Commission will conduct a public hearing at 7:00 p.m. in the Commission Chambers at City Hall, 625 Center Street, Oregon City 97045 on the following Type III Land Use Applications. Any interested party may testify at the public hearing or submit

	written testimony at or prior to the close of the Planning Commission hearing. Written comments on these Type III Land Use Applications must be received by the Oregon City Planning Division, no later than Friday, February 28, 2020 to be included in the Staff Report. Comments received after this date will be provided to the Planning Commission at the hearing. The public record will remain open until the Planning Commission closes the public hearing.
FILE NUMBERS:	GLUA-19-00052: CU-19-00052 Conditional Use / SP-19-00140 Site Plan and Design Review / VAR-19-00015 Minor Variance / LL-19-00008 Lot Line Abandonment
APPLICANT:	Lenity Architecture, LLC, 3150 Kettle Court SE, Salem, OR 97301
OWNER:	River Terrace Memory Care LLC, 415 SE 28th Ave, Portland, OR 97214
PROJECT WEBPAGE:	https://www.orcity.org/planning/project/glua-19-00052
REQUEST:	Approval for 16-bed expansion of an existing assisted living memory care facility at 914 South End Rd. The property is zoned R-10 Low-Density Residential, and the expansion requires Conditional Use approval. The application includes Site Plan and Design Review, a Minor Variance for lot coverage, and a Property Line Abandonment between parcels 3100 and 3301.
LOCATION: (see map on reverse)	914 and 950 South End Road, Oregon City, OR 97045 Clackamas County Map: 3-1E-01AD, Tax Lots 3300 and 3301
CONTACT PERSON:	Pete Walter, AICP, Senior Planner (503) 496-1568, pwalter@orcify.org
NEIGHBORHOOD ASSOC:	South End Neighborhood Association
APPROVAL CRITERIA:	The following Chapters of the Oregon City Municipal Code are applicable to this proposal. The City Code Book is available on-line at www.orcity.org : 12.04 – <i>Streets, Sidewalks, and Public Places</i> ; 12.08 – <i>Public and Street Trees</i> ; 13.12 – <i>Stormwater Management</i> ; 15.48 – <i>Grading, Filling, and Excavating</i> ; 16.12 – <i>Minimum Public Improvements and Design Standards for Development</i> ; 16.20 – <i>Property Line Adjustments and Abandonments Process and Standards</i> ; 17.08 – <i>Low Density Residential Districts</i> ; 17.41 – <i>Tree Protection, Preservation, Removal and Replanting Standards</i> ; 17.47 – <i>Erosion and Sediment Control</i> ; 17.52 – <i>Off-Street Parking and Loading</i> ; 17.54 – <i>Supplemental Zoning Regulations and Exceptions</i> ; 17.56 – <i>Conditional Uses</i> ; 17.58 – <i>Lawful Nonconforming Uses, Structures, and Lots</i> ; 17.60 – <i>Variances</i> ; 17.62 – <i>Site Plan and Design Review</i> ; and 17.50 – <i>Administration and Procedures</i> .
For helpful tips on submitting public comments, please visit the “How Do I...?” section of our website: https://www.orcity.org/planning/how-do-i then click on “How do I Make the Most Effective Comments on Development Applications?” Thank you!	

Peter Walter, AICP, Senior Planner
 City of Oregon City
 Community Development – Planning
 698 Warner Parrott Rd, Oregon City, OR 97045
 (503) 496-1568 Direct
 (503) 722-3789 Main
 Email: pwalter@orcify.org
[Website](#)
[Interactive Maps and Apps](#)
[Draft Housing and Other Development Code Amendments](#)
PUBLIC RECORDS LAW DISCLOSURE: This e-mail is subject to the State Retention Schedule and may be made available to the public.



City of Oregon City

625 Center Street
Oregon City, OR 97045
503-657-0891

Staff Report

File Number: PC 20-079

Agenda Date: 6/8/2020

Status: Agenda Ready

To: Planning Commission

Agenda #: 4a.

From: Sr. Planner Pete Walter

File Type: Planning Item

SUBJECT:

OC 2040 Update: Public Engagement Plan for the Oregon City Comprehensive Plan 2040 Vision and nomination for Two Members (Primary and Alternate) to Volunteer on the Project Advisory Team (PAT)

RECOMMENDED ACTION (Motion):

1. Review the draft public engagement plan and provide feedback to staff.
2. Select 2 members of the Planning Commission to serve on the Project Advisory Team.

BACKGROUND:

Project Overview

The City of Oregon City is launching OC2040, a citywide effort to update the Oregon City Comprehensive Plan that will guide land use decisions over the next 20 years. The first step in the process is to create a community vision that reflects what community members love and want to preserve about Oregon City, and what they would like to see change by 2040. The Comprehensive Plan will consist of broad goals and policies to implement the vision and guide future growth and development.

Oregon City has seen significant changes in its population since the current Comprehensive Plan was adopted in 2004. Furthermore, previous outreach measures were not successful in soliciting input from those not already connected to local government. Traditional outreach methods coupled with long and complicated documents written only in English failed to engage a wider range of community members who really need to be heard. Therefore, the current Comprehensive Plan does not adequately reflect the needs of all community members in Oregon City.

OC2040 will employ a new approach that ensures all community members are given the opportunity to participate in a collective vision for the future that reflects our values and equitably supports all. Our approach will take care to assure marginalized community members have a voice. Outreach efforts will empower the community with information and facilitate careful listening to a diverse array of community members. We will work together to create a Comprehensive Plan that reflects the entire community, encourages participation in future decisions, and inspires future leaders.

The purpose of this document is to identify the community engagement which will shape the

Community Vision. The community input is anticipated to be collected from May - October of 2020. The process will be followed by the creation and adoption of the Community Vision October - January.

Community Engagement Objectives

The City is committed to engaging the community early and often throughout the process using a variety of means. The intent is to lift up the voices of all community members, including underrepresented populations such as communities of color, living in subsidized housing, homeless to understand how to better support them. The community engagement process is designed to meet the following objectives:

- ✓ Design and implement a robust and equitable community outreach program.
- ✓ Inform the community with timely, transparent, and accurate information.
- ✓ Engage a representative cross-section of Oregon City residents, businesses and partners.
- ✓ Consult the community in the identification, refinement, and prioritization of policy updates.
- ✓ Ensure community members understand how decisions are made, their concerns are heard, and they know how their feedback influenced decisions.
- ✓ Work with partners to conduct outreach in a culturally and linguistically appropriate manner, using methods and locations that are safe and familiar.
- ✓ Employ accessible and appropriate tools and technologies to inform and engage the community.

Key Messages

The following statements characterize the project and communicate the information people need to know. These messages will be updated and augmented throughout the course of the project and used across platforms.

- Oregon City is launching OC2040, a citywide effort to update the Oregon City Comprehensive Plan.
- Oregon City has seen many changes since the last comprehensive plan was adopted in 2004.
- The Comprehensive Plan will guide growth and development in our community over the next 20 years. It establishes goals and policies for future housing, economy, community, infrastructure, government and ecosystems in Oregon City.
- City leaders use the Plan to manage expected population and employment growth, coordinate public investments and make decisions about new development, existing neighborhoods, transportation, and a variety of other topics.
- Oregon state law requires that all cities and counties adopt Comprehensive Plans that are consistent with statewide planning goals.
- There will be multiple opportunities to participate in the comprehensive planning process in the coming months.
- Community members can provide comments or ask questions at any time by visiting OC2040.com.

Project Advisory Team

Interested Oregon City citizens are invited to apply for a position on the Oregon City 2040 (OC2040) Comprehensive Plan Update Project Advisory Team (PAT). The PAT will meet up to

ten times between Spring 2020 and December 2021. The PAT will:

- ✓ Advise and help implement equitable and effective public involvement strategies including engaging broader Oregon City constituencies, communities, and civic organizations
- ✓ Provide a broad set of perspectives to ensure OC2040 is an equitable process
- ✓ Ensure that the OC2040 Vision reflects the community's values
- ✓ Support the work of city staff, consultants, and the Citizen Involvement Committee

Project Advisory Team Positions

- 1 Rental Housing / Public Assistance Advocate
- 1 Arts and Culture Advocate
- 1 Active Transportation / Bicycle / Pedestrian Advocate
- 1 (+1 Alternate) City Commissioner
- 1 (+1 Alternate) Planning Commissioner
- 1 Latinx and Hispanic Association or Representative
- 1 Russian Association or Representative
- 1 Elderly / Aging in Place Advocate
- 1 Indigenous People / Tribal Representative
- 2 Youth Representatives
- 1 Citizen Involvement Committee (CIC) Member
- 1 Historic Review Board (HRB) Member
- 1 Natural Resources Committee (NRC) Member
- 1 Parks and Recreation Advisory Committee (PRAC) Member
- 1 Transportation Advisory Committee (TAC) Member
- 1 Clackamas Community College Representative
- 1 Residential Developer / Home Builders Association / Realtor
- 1 Large Employer
- 1 Small Employer
- 1 Chamber of Commerce Representative
- 1 Downtown Oregon City Association (DOCA) Representative
- 1 Faith Based Organization / Local Church Pastor Advocate
- 2 At Large Community Members
- 1 LGBTQ Advocate
- 1 Advocate for Persons with Disabilities



Oregon City Comprehensive Plan Update

Draft Public Involvement Plan for Community Vision

May 19, 2020

Project Overview

The City of Oregon City is launching OC2040, a citywide effort to update the Oregon City Comprehensive Plan that will guide land use decisions over the next 20 years. The first step in the process is to create a community vision that reflects what community members love and want to preserve about Oregon City, and what they would like to see change by 2040. The Comprehensive Plan will consist of broad goals and policies to implement the vision and guide future growth and development.

Oregon City has seen significant changes in its population since the current Comprehensive Plan was adopted in 2004. Furthermore, previous outreach measures were not successful in soliciting input from those not already connected to local government. Traditional outreach methods coupled with long and complicated documents written only in English failed to engage a wider range of community members who really need to be heard. Therefore, the current Comprehensive Plan does not adequately reflect the needs of all community members in Oregon City.

OC2040 will employ a new approach that ensures all community members are given the opportunity to participate in a collective vision for the future that reflects our values and equitably supports all. Our approach will take care to assure marginalized community members have a voice. Outreach efforts will empower the community with information and facilitate careful listening to a diverse array of community members. We will work together to create a Comprehensive Plan that reflects the entire community, encourages participation in future decisions, and inspires future leaders.

The purpose of this document is to identify the community engagement which will shape the Community Vision. The community input is anticipated to be collected from May – October of 2020. The process will be followed by the creation and adoption of the Community Vision October – January.

Community Engagement Objectives

The City is committed to engaging the community early and often throughout the process using a variety of means. The intent is to lift up the voices of all community members, including underrepresented populations such as communities of color, living in subsidized housing, homeless to understand how to better support them. The community engagement process is designed to meet the following objectives:

- ✓ Design and implement a robust and equitable community outreach program.
- ✓ Inform the community with timely, transparent, and accurate information.
- ✓ Engage a representative cross-section of Oregon City residents, businesses and partners.
- ✓ Consult the community in the identification, refinement, and prioritization of policy updates.
- ✓ Ensure community members understand how decisions are made, their concerns are heard, and they know how their feedback influenced decisions.
- ✓ Work with partners to conduct outreach in a culturally and linguistically appropriate manner, using methods and locations that are safe and familiar.
- ✓ Employ accessible and appropriate tools and technologies to inform and engage the community.



Key Messages

The following statements characterize the project and communicate the information people need to know. These messages will be updated and augmented throughout the course of the project and used across platforms.

- Oregon City is launching OC2040, a citywide effort to update the Oregon City Comprehensive Plan.
- Oregon City has seen many changes since the last comprehensive plan was adopted in 2004.
- The Comprehensive Plan will guide growth and development in our community over the next 20 years. It establishes goals and policies for future housing, economy, community, infrastructure, government and ecosystems in Oregon City.
- City leaders use the Plan to manage expected population and employment growth, coordinate public investments and make decisions about new development, existing neighborhoods, transportation, and a variety of other topics.
- Oregon state law requires that all cities and counties adopt Comprehensive Plans that are consistent with statewide planning goals.
- There will be multiple opportunities to participate in the comprehensive planning process in the coming months.
- Community members can provide comments or ask questions at any time by visiting OC2040.com.

Stakeholders and Partners

The following table is a sample of the interests and stakeholders the project team will work to engage through the comprehensive planning process. With guidance provided by the Project Advisory Team, the project team will continue to identify specific organizations and groups within these interest areas.

Interests	Organizations/Groups to Engage
Youth	Elementary Schools Alliance Charter Academy Gardiner Middle School Ogden Middle School Oregon City Senior High School Oregon City Service Learning Academy Clackamas Community College Oregon City Optimist Club The Living Room LGBTQ Youth Group
Parks/recreation and nature	Oregon City Parks and Recreation Advisory Committee Oregon City Parks Foundation Oregon City Natural Resources Committee Greater Oregon City Watershed Council Metro eNRG Kayaking Classic Cycle



Industry and business	Oregon City Economic Development Oregon City Chamber of Commerce Oregon City Business Alliance Downtown Oregon City Association Large employers Oregon City Development Stakeholders Group
Public safety	Oregon City Police Department Clackamas Fire District #1
Utilities	Oregon City Public Works South Fork Water Board Clackamas County Water Environment Services Northwest Environmental Defense Center
Health	Providence Willamette Falls Medical Center Oregon City Healthy Living Meetup Group
Historic Preservation	Oregon City Historic Review Board End of the Oregon Trail Museum Restore Oregon Museum of the Oregon Territory Architecture Foundation of Oregon
Transportation and Development	TriMet Clackamas County Transportation and Development Oregon City Transportation Advisory Committee Oregon City Development Stakeholder Group
Housing	Clackamas County Health and Human Services Oregon City Development Stakeholder Group
Services	Gleaners My Fathers Heart A Safe Place Library Homeless Coalition of Clackamas County Clackamas County Social Services
Non-Native English speakers	Hispanic Interagency Networking Team Non-English Churches - Oregon City Church of Christ
Arts	Oregon City Arts Alliance Three Rivers Artist Guild
Seniors	AARP Pioneer Senior Center
County and State Agencies	Clackamas County, Metro, ODOT, DLCD
Oregon City Elected and Appointed Officials	City Commission Planning Commission Citizen Involvement Committee Library Board
Other Community Organizations	Oregon City Neighborhood Associations Oregon City Women's Club



Demographics

The following demographic profile will allow the City to tailor outreach efforts to meet the needs of specific community groups. The following information comes from the U.S. Census

Race and Ethnicity

Approximately 37,129 people lived in the City of Oregon City in 2018. More than 89 percent of Oregon City residents identify as White. No other racial group makes up more than 2 percent of the population. About 7 percent of residents identify as Hispanic or Latino.

Race/Ethnicity	Oregon City
White	89.5%
African American	1.2%
American Indian or Alaska Native	1.4%
Asian	1.2%
Native Hawaiian and other Pacific Islander	0.2%
Two or more races	3.9%
Hispanic or Latino (any race)	7.1%

U.S. Census July 1, 2018 Population Estimate,

<https://www.census.gov/quickfacts/fact/table/oregoncitycityoregon/PST045218>

Languages Spoken at Home

Most Oregon City residents speak only English at home (92 percent), while about 8 percent speak a language other than English. The most commonly spoken language other than English in the city is Spanish (4 percent).

Income

From 2014-2018, the median household income in Oregon City was \$71,856 which is lower than the Clackamas County average (\$76,597) but higher than the state average (\$59,393). However, more than a quarter (31 percent) of Oregon City households earn less than \$50,000.

Income	Oregon City
<\$15,000	7.3%
\$15,000 - \$24,999	5.4%
\$25,000 - \$49,999	18.8%
\$50,000 - \$74,999	20.6%
\$75,000+	47.9%

People with Disabilities

About 8.2 percent of Oregon City residents live with a disability. This is higher than the Clackamas County average of 7.6 percent and lower than the Oregon state average of 10.1 percent.

Housing

More than half (61.9%) of Oregon City residents own a single-family home. Approximately 21 percent of Oregon City residents occupy multi-family homes. More than 1/3 of residents are renters (33.6%).



Community Participation Strategy and Activities

Outreach during the Community Vision phase will be based on careful listening and reflection. Activities will capture the community's vision for the future through a responsive and constructive dialogue among community members. The strategy will develop broad project awareness and provide multiple, creative ways to engage in discussion about what community members value about Oregon City today and what could make it a better place to live in the future. The strategy will be implemented and promoted as a positive, fun and community-building campaign.

Activities and tools focus on a combination of engaging trusted referral sources, creating a robust social media and web presence, and face-to-face (or phone-to-phone, or video-to-video) outreach to the extent that circumstances allow. With the understanding that online portals will drive much of the dissemination of information and collection of input, special attention will be made to the promotion and messaging of online and virtual engagement activities and tools. Activities will provide community members with information about the project and engage them in discussions about what they value about Oregon City today, and what changes they would like to see in the future, as well as how they'd like to be involved in the process going forward.

With a focus on equity, Community Vision activities designed to reach the general public, also will be tailored to reach underrepresented communities that do not normally participate in city planning efforts. Strategies may include targeted outreach to certain geographic locations, the use of phone interviews rather than online surveys, and partnerships with county agencies and culturally specific nonprofits. Incentives will be offered to encourage participation while instilling a culture of community-wide support.

Incentives will include:

- City purchase of gift cards from local restaurants, focusing on minority-owned businesses, for distribution to populations such as youth, communities of color, non-English speaking community members, people on social services to entice participation for completing surveys and/or participating in a photo contest.
- Rewarding the general population for completing surveys and/or participating in a photo contest with an opportunity to win one of 10 gift cards

The use of incentives may be advertised through the following avenues:

- Targeted notices to apartment complexes, community centers and churches which cater to communities of color/underrepresented people
- Distributing printed surveys with a return envelope or information cards directing people to the website with a special code
- Advertised on the introductory postcard/mailed notice all property owners and residences.
- Social media and social media partners

Activities

This section describes the activities and communication tools for developing a Community Vision. Where applicable, alternative strategies are discussed for in-person gatherings that are restricted due to the uncertainties of COVID-19. Before initiating each activity, the project team will assess current conditions and refine the strategy or approach behind each activity or tool to meet project needs and engage a full range of community members.



Project Advisory Team

The Project Advisory Team (PAT) is comprised of members that represent a broad cross-section of community interests and areas of expertise. The PAT reviews and comments on work products, guides public outreach and engagement efforts, acts as liaisons to specific constituencies or interest groups, hosts public events, encourages community members to participate in the process, and acts as champions of the ultimate Oregon City Vision and Comprehensive Plan update that emerges from the process. The PAT will meet nine (9) times during the project. Representation from PAT members may include the following:

Advisory Team Positions	Representation
Rental Housing / Public Assistance Advocate	1
Arts and Culture	1
Active Transportation / Bicycle / Pedestrian Advocate	1
City Commissioner	1 + 1 Alt
Planning Commissioner	1 + 1 Alt
Latinx and Hispanic Association or Speaking Household	1
Russian Association or Speaking Household	1
Indigenous People/Tribal Association or Household	1
Elderly/Aging in Place	1
Youth Representatives	2
Citizen Involvement Committee (CIC)	1
Historic Resources- Historic Review Board (HRB)	1
Natural Resources -Natural Resources Committee (NRC)	1
Parks - Parks and Recreation Advisory Committee (PRAC)	1
Transportation- Transportation Advisory Committee (TAC)	1
Development- Development Stakeholder Group (DSG)	1
Clackamas Community College	1
Residential Developer / Home Builders Association / Realtor	1
Large Employer	1
Small Employer	1
Chamber of Commerce	1
Downtown Oregon City Association (DOCA)	1
Faith Based Organization/Local Church Pastor	1
Public Health	1
At Large	2
LGBTQ Advocate	1
Disabilities Advocate	1

In addition, the following members will attend PAT meetings but are not part of the PAT decision-making structure:

- City Departments (Police, Public Works, Economic Development, Community Development, Community Services, Communications, Library, City Transportation Engineer)
- Metro
- State Agencies (DLCD, ODOT)
- Clackamas County Agencies (Health Housing and Human Services, Planning and Zoning)



- Oregon City School District

Until restrictions on in-person gatherings are lifted and members are comfortable meeting, PAT meetings will be held online via video conferencing. The City will provide additional support for communities of color and other representatives of underserved populations, including Wi-Fi access, day care, accessible locations, phone conversations prior to meetings, and incentives for participation.

Citizen Involvement Committee

The Citizen Involvement Committee (CIC) members will be engaged early in the process to review and provide feedback and guidance on the Public Involvement Plan for the Community Vision. The CIC will consider identified stakeholder groups, outreach activities, desired outcomes, and a schedule of opportunities for participation in the Community Vision process. CIC comments will be incorporated into the Plan.

Community Conversations

A Community Conversations Kit will guide City staff, PAT/City advisory board members, and the general public to hold meetings and document community comments. Community conversations allow project members to connect with the community where people gather and through channels which they receive information. Each PAT member will be responsible for hosting up to five conversations and City advisory board members at least one conversation. City staff will host community conversations with the general community and underrepresented communities.

Given the restrictions on in-person gatherings and the cancellation of events, even though the Community Conversation may be scaled to larger groups, many community conversations will likely occur via phone interviews, small group video conferencing, or even by families on their own. Community Conversation kits will be made available on the project website, along with video-recorded instructions and a choice of a video-recorded mini slideshow to explain the project or a mini slideshow which the host may talk through. Community Conversation kits will be promoted through all lines of communication, encouraging community members to host their own conversations.

Social Media

Bi-Weekly social media posts and monthly email blasts will provide project updates and encourage participation. Posts will solicit feedback on questions and administering visual preference surveys.

Surveys

Online surveys will supplement in-person and virtual community engagement activities. The surveys will ask the same questions that are posed through other outreach activities. The first survey will ask general questions about what people love about Oregon City as well as what they would like to see in their community over the next 20 years. The second survey will solicit the community's opinions on balancing competing interests. Surveys will also be available in a hard copy format and may be distributed with a return envelope to communities of color or underrepresented people.

Community Satisfaction Survey

In August of 2020, the City will be completing a city-wide as part of an effort to identify satisfaction of City services. Results will help ensure that the City's priorities are aligned with the needs of our residents. The survey contains both a mailed statistically valid component which is mailed to 3,500



households as well as an online survey, widely advertised on social media as well as to community members and partners.

Passive Poster Activity

Four interactive posters will be designed to be placed in prominent public spaces (downtown, City Hall, library, grocery stores, coffee shops, churches) so people can participate in a passive activity to help develop the community vision. Posters will pose a key vision question and use dots or other markers to indicate preferences. This will help supplement activities that are restricted due to their in-person nature, such as tabling at Community Events and conducting in-person Community Conversations.

Photo Contest

The design and facilitation of photo contest will encourage residents to share and showcase the elements they love about their community and provide engaging content for social media. Materials collected through the photo contest may be used in a visual preference survey.

Youth Engagement

At least one activity will be designed to engage youth in the vision process, such as a drawing contest that ask participants to draw their dream city. One possible opportunity is the Summer Reading Program at the Oregon City Public Library.

Community Events

Tabling at community events such as the farmer's market, concerts at the park, grocery stores, First City Festival, National Night Out, etc. provide a unique opportunity to reach many people in one place. While COVID-19 will limit the extent to which these venues can have a role in the engagement strategy for the Community Vision, the project team will reassess the situation on a month-by-month basis. Materials for tabling will be designed to solicit community comments, create project awareness, drive people to the project website, and describe the opportunities to get involved. City staff and the PAT will be responsible for staffing community events. Some possible early locations include the Pioneer Center kiosk, Comm Development kiosk, and the Oregon City Public Library.

Mailed Notice

Postcard notices will be mailed to all property owners and renters within the urban growth boundary surrounding Oregon City. These mailers will provide information about the project and highlight opportunities to participate at three points in the process: at the beginning of the Community Vision process, at the beginning of the comprehensive planning process, and at the beginning of the hearings process. Additional targeted notices may be sent to apartment complexes, community centers and churches which cater to communities of color or underrepresented people.

Communication Tools

In addition to the above activities, the following communication tools will provide information about events, activities and opportunities to be involved in developing the Community Vision.

Logo/Branding



A project “look” based on the selected OC2040 logo, including colors, fonts, headers and related graphic elements will appear on all project materials and provide continuity and visibility for the project, ensuring its identity is unique and compelling.

Key Messages

A series of statements, characterizing the project and communicating the information people need to know, are organized under the **Key Messages** section of this document. These key messages will be used throughout the Community Vision process and incorporated across all platforms.

Project Website

A project webpage will include a project overview and timeline, important contacts, schedule of opportunities for engagement, updates on project status, a library of documents and mechanism to submit general comments.

Social media

Social media platforms may include Facebook, Twitter, Instagram, etc. to increase project awareness and provide additional avenues for community input. Postings will coordinate with various City departmental accounts.

Mailed Notices

Postcard notices will provide target engagement to residents and property owners.

Media Releases and Project Promotion

Media releases will announce the project kickoff and advertise key opportunities for public participation. Additional project information will be posted through advertisements in the Trail News, utility bills, cable station, and other local publications.

Promotional Materials

Flyers or other printed materials will help advertise public engagement events and activities. This may include window signs or lawn signs.

Project Email List

E-mail addresses of people who express interest in the planning process will be maintained in a database and used when the City sends e-blasts to notify people about events and activities. Interested parties will have several opportunities to join the mailing list, such as on the project website and at public meetings and events.

Internal Tracking

The consultant will be responsible for maintaining a spreadsheet to track community comments and provide responses, as needed, via the project website. The tracking tool will be used to summarize the results of outreach activities and highlight vision themes in a concise and illustrative report. It will document frequent comments that lend themselves to developing policies and actions. The comments will be summarized in a report and grouped by themes in order to inform the development of the Community Vision.



Roles and Responsibilities

Activity	Consultant Lead	City Lead
PAT Meetings	Meeting materials Facilitation	Communications Logistics
CIC Meetings	Meeting materials	Communications Logistics Facilitation
Community Conversations	Community Conversations Kit Train facilitators as needed	Identify community groups Assignments to PAT and community advisory groups Facilitation Summaries
Community Events	Event materials	Secure place at events Staff events
Passive Poster Activity	Interactive poster boards	Stage and monitor posters with community partners
Photo Contest	Description and instructional content	Implement and manage contest
Youth Engagement	Activity format Materials	Staffing Summaries
Online Engagement	Two surveys Implement engagements Summaries	Implement web updates
Communication Tool		
Logo/Branding	Graphic look and design	Implement graphic look and design
Key Messages	Develop content	Distribute key messages
Project Website	Project web page content	Implement website
Social media	Bi-Weekly social media posts	Distribute via City platforms
Mailed Notices	Content for mailed notice	Distribute via City methods
Media Releases and Project Promotion	Six media releases Support of additional advertisements	Distribute via City avenues Develop and implement additional advertisements
Promotional materials	Flyers	Distribute via City methods
Project Email List	Monthly email blasts (MailChimp)	Create and maintain database
Internal Tracking	Internal tracking spreadsheet	Regular updates to spreadsheet

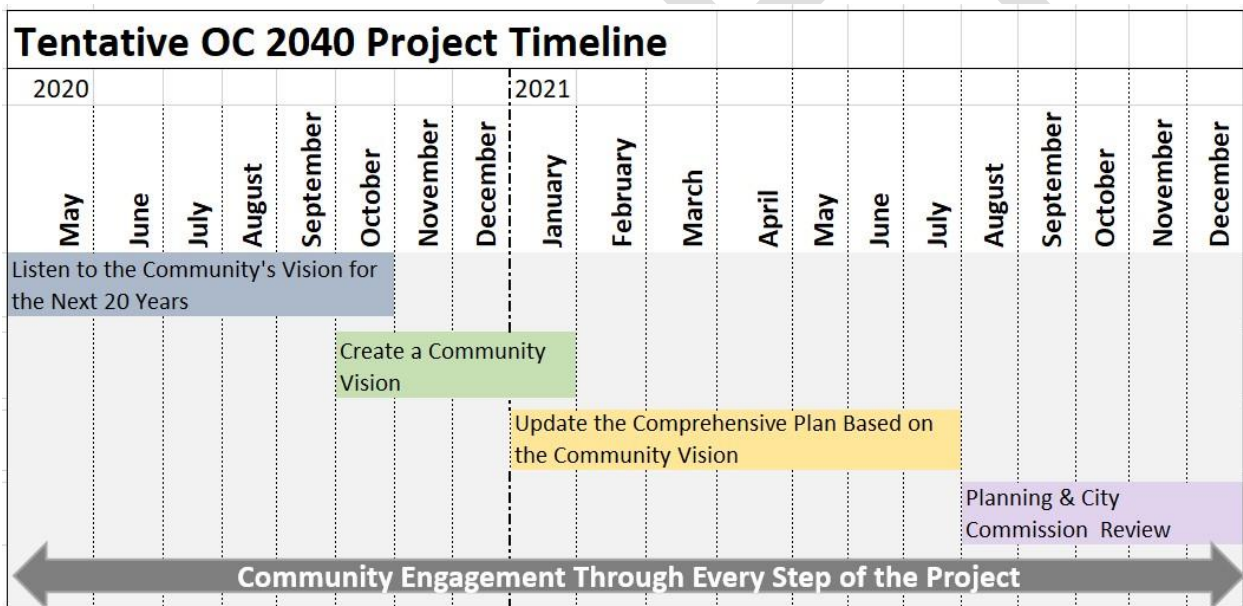


Schedule

Activities	May	June	July	Aug	Sept	Oct
<i>Advisory Committee Meetings</i>	●	▲				▲
<i>Community Conversations</i>						
<i>Community Events</i>						
<i>Passive Poster Activity</i>						
<i>Photo Contest</i>						
<i>Youth Engagement</i>						
<i>Online Engagement</i>						
Communication Tools						

● CIC Input Via Email

▲ PAT Meeting





June 8, 2020

Transportation Growth Management (TGM) Grant
c/o Glen Bolen
Oregon Department of Transportation
123 NW Flanders St.
Portland, OR 97209

RE: Letter of Support – Planning Commission
Park Place Neighborhood Urbanization Plan
City of Oregon City

To Whom It May Concern:

The Park Place Neighborhood is located on the north side of the City of Oregon City. When it was annexed over 20 years ago, it consisted of mostly rural roads with a large amount of developable land.

Today, it consists of one park, two schools, and a large amount of developable land commonly called the Park Place Concept Plan Area. Outside of the Concept Plan, other developable land exists along with a large amount of land slated for redevelopment.

As development has occurred over the past 20 years, it has become necessary to build out the infrastructure, including the roadway system, to be able to handle the increased traffic consisting of automotive vehicles, bicycles, and pedestrians. Without a Plan in place other than the City's Transportation System Plan, roads have not been addressed consistently since the area was annexed to the City. We understand this Study will provide guidance and solutions to staff to properly address roads going forward.

The Planning Commission supports the City of Oregon City's application for an Urbanization Study that will determine how to properly and consistently build out the roadway network as development continues so that the future population is addressed in a manageable way. We understand this Urbanization Study will take into account the City of Oregon City Municipal Code, the City of Oregon City Transportation System Plan (TSP), and the Park Place Concept Plan. We also understand this Urbanization Study will be adopted by the City Commission as an ancillary document to the City's TSP.

We pledge that we will have representation at public outreach opportunities as this Study will impact the Park Place Neighborhood for years to come.

Sincerely,

The City of Oregon City Planning Commission

City Engineer

ization Study rowth Management (TGM) Grant



TGM Grant

- State Program administered by ODOT
- Funding for TSP plans or TSP updates
- Funding for Corridor Plans and other transportation planning efforts



City of Oregon City

Existing Transportation Studies

- Transportation System Plan (TSP)
- Linn/Leland/Meyers Corridor
- Molalla Streetscape
- Holcomb Pedestrian Plan
- Meyers Road Corridor



City of Oregon City

Existing Transportation Studies

- South End Concept Plan
- Park Place Concept Plan
- Beavercreek(Thimble Creek)
Concept Plan
- Beavercreek Road Access
Management
- McLoughlin Boulevard
Enhancement



City of Oregon City

Existing Transportation Studies

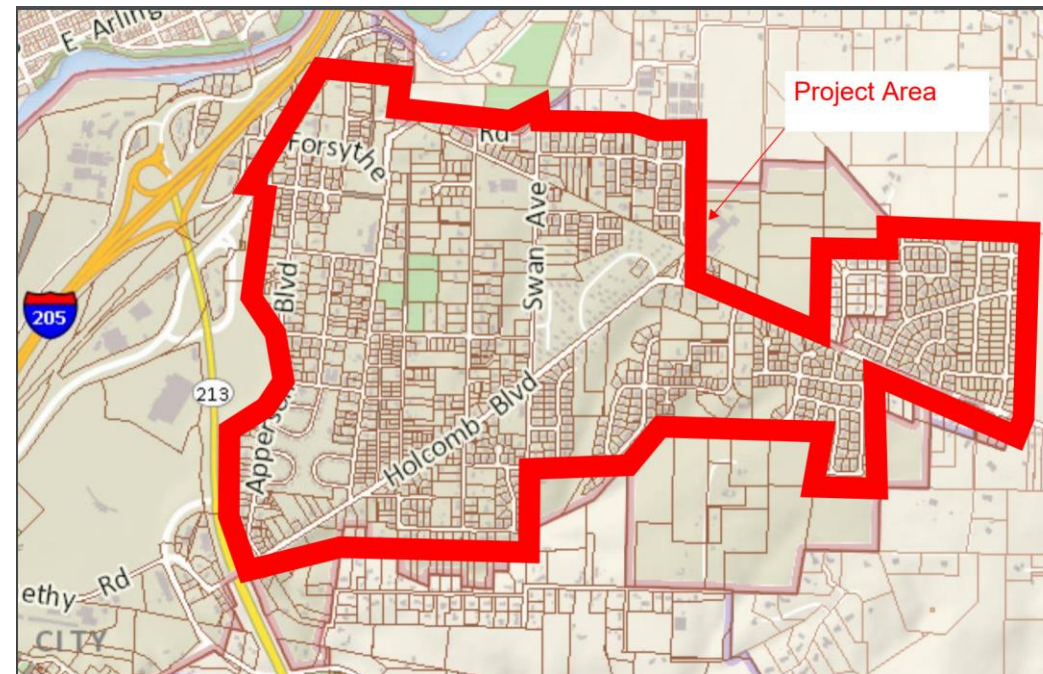
- How do we use these plans?
 - Referenced during land use process for private development
 - Determines buildout by private developers based in impacts and TSP and corridor plans
 - To apply for grants for capital projects
- How do we NOT use these plans?
 - For Capital Projects by the City as this type of funding is rare
 - Meyers and Molalla did use their plans



City of Oregon City

Proposed Grant Application

- Park Place Urbanization Plan
 - Provide planning for as many roads as funding allows for existing Park Place
 - Will coordinate with Concept Plan, Holcomb Pedestrian Plan, and Safe Routes to Schools Grant (if received)



City of Oregon City

Proposed Grant Application

- Park Place Urbanization Plan
 - Provide proposed buildout of roads with a priority toward Swan, Hunter, Hiram, Front, Apperson, Harley, and Ames
 - Will include which roads should receive sidewalks and bike lanes



City of Oregon City

Proposed Grant Application

- Park Place Urbanization Plan
 - Grant = \$100,000
 - Local Match = \$50,000
 - City Approved Budget = \$100,000



City of Oregon City

Proposed Grant Application

- Park Place Urbanization Plan
 - Seeking Letters of Support from :
 - City Commission
 - Planning Commission
 - Transportation Advisory Committee
 - Park Place Neighborhood Association
 - Citizen Involvement Committee

- Questions?

- jwheeler@orccity.org
 - 503-496-1548

THANK YOU!



City of Oregon City