STAFF REPORT
ST. VINCENT DE PAUL SOCIETY OF LANE COUNTY
19,715 SF RETAIL DEVELOPMENT WITH DRIVE-UP DONATION FACILITY
SITE DESIGN REVIEW SDR 3-22
DECEMBER 21, 2022

PROPOSAL DESCRIPTION

Date application filed:	November 21, 2022
Date application complete:	November 22, 2022
Applicant:	BDA Architecture 1369 Olive Street Eugene, OR 97401
Owner:	St Vincent de Paul Society of Lane County PO Box 24608 Eugene, OR 97402
Location:	910 Row River Road 20-03-27-31 00210 & 00211
Present Conditions:	Largely vacant and undeveloped parcel excepting the coffee stand located at 185 Thornton Road
Proposed Condition:	19,000 sf retail development with drive-up donation facility and sorting facility (coffee stand at 185 Thornton to remain)
Comp Plan Designation:	C – Community Commercial
Zoning:	C2P – Community Commercial

MATERIALS TO BE PART OF THE RECORD

City of Cottage Grove File(s): CUP 3-22 and SDR 3-22

- Applicant's Application
- Applicant's Narrative
- Site Plan
- Traffic Impact Study
- Minutes and information from Community Meeting dated 11/17/2022
- City of Cottage Grove Completeness Correspondence
- Affidavit of Posting
- Affidavit of Notice
- Engineering Comments dated December 6, 2022

Proposal: The applicant, BDA Architecture on behalf of St Vincent de Paul Society of Lane County, proposes to construct a 19,715 sf retail (15,485 sf) and donation building with a donation drive-up and a donation sorting area (4,230 sf). This proposal is considered via a Type III Conditional Use Permit application for the drive-up donation facility per Section 14.23.110 and a concurrent Site Design Review application. The subject property(s) is located at 910 Row River Road, Map 20-03-27-31, Tax Lots 210 and 211, located at the northeast corner of Thornton Road and Row River Road. The property is zoned C2P Community Commercial and is currently vacant with the exception of the coffee stand located at 185 Thornton Road, which will remain. The proposed development crosses a property line and therefore per City policy a lot consolidation (re-plat of Partition Plat No. 2005-P1923) will be required prior to occupancy as a condition of approval, which is processed via a separate Type II Land Use Application.

The proposed development utilizes the existing joint-access to the subject property from Row River Road, an ODOT right-of-way. The existing sidewalk along Row River Road will remain, as will the access easement to the property north of the subject property. The existing access on Thornton Road, near the intersection of Row River Road, will be moved northeast approximately 10' to provide the minimum 30' separation from driveway approach to intersection of Row River Road and Thornton Road per Section 14.31.200 G. The existing coffee stand and access to the east of the coffee stand will remain. A new access to Thornton Road is proposed for the new 14'-0" wide service drive/fire lane behind the building. Frontage improvements along Thornton Road will be deferred through a waiver of non-remonstrance due to road alignment concerns identified by the applicant and staff. The waiver of non-remonstrance will be a recorded covenant in which the property owner accepts that at a future date the City may determine that the street improvements to Thornton Road are necessary and the property owner is required to pay the appropriate portion of that work. The draft waiver is included in this staff report as Exhibit F.

The proposed building is a pre-engineered steel structure. The roofing and exterior siding will be metal panel, and the doors and windows along Row River Road and Thornton Road will be storefront.
The site is designed to comply with all applicable provisions of the Community Commercial Land Use District (Chapter 14.23) and the Community Design Standards (Chapter 14.30). Specifically, the proposed building meets the architectural and design requirements through the use of building materials, sufficient glazing and articulation, and weather protected entrances. Additionally, per Chapter 14.30 the proposal meets the required interior ceiling height of a minimum of 12' for retail uses.

Proposed landscaping and parking will meet the requirements of Chapter 14.32 and Chapter 14.33 as required and as shown on the applicant's submitted plans. The subject property is 88,862 sf requiring a total landscaped area of 8,886 sf. The submitted landscape plans shows the total proposed landscaped area for the development at 25,035 sf well in excess of the 10% requirement. Additionally, per Section 14.33.000 10% of the parking area is required to be landscaped with one tree planted per every 3,000 sf of parking area. The proposed landscape plans shows a total of 31,182 sf of parking and maneuvering area with the plan showing a total of 6,887 sf to be landscaped and 21 trees to be planted. A total of 12 Class I street trees are required and shown on the applicant's submitted plans. The Class I is required due to existing overhead power and communication lines. The right-of-way of Row River Road is an ODOT facility. The applicant/developer is encouraged to contact ODOT to obtain a permit for any planting work in this right-of-way.

The retail portion of the building is 15,485 sf, and the sorting and storage area is 4,230 sf. The donation drop off drive and the loading dock are both adjacent to the sorting and storage area. In addition to the retail space and sorting/storage area, interior spaces include restrooms, a break room and lockers for staff (with long-term bike storage, a total of two required), and an office. The proposed use and square footage require per Section 14.33.300 A, a total of two parking spaces per 1,000 sf of leasable space. The applicant has proposed 41 parking spaces with one van accessible ADA parking space and one regular ADA parking space meeting the requirements of Chapter 14.33. A total of four short-term bicycle parking

spaces are required as well near the building entrance and these are show on the applicant's submitted plans.

The applicant did not include a signage proposal with this application. A separate Type I Sign Permit application will be required.

City Engineering staff has reviewed the application and submitted comments via the attached memorandum included as Exhibit A. These comments shall be considered conditions of approval.

South Lane County Fire & Rescue Fire Marshal, Danny Solesbee, has reviewed the application and finds the proposal to be incompliance with relevant code. One condition of approval requested by the Fire Marshal is to stripe and sign the service drive on the east side of the building as "No Parking – Fire Lane." This shall be a condition of approval.

COMMENTS RECEIVED

Comments were received from Branch Engineering, City of Cottage Grove Engineer on December 6, 2022. The comments are addressed in this staff report and included in the conditions of approval.

APPROVAL CRITERIA; SDR 3-22

Chapter 14.42.600 Site Design Review Approval Criteria. The review authority shall make written findings with respect to all of the following criteria when approving, approving with conditions, or denying an application:

1. *The application is complete, as determined in accordance with Chapter 14.41 – Types of Applications and Section 14.42.500, above;*

Staff response and findings of fact: The application was submitted and deemed complete on November 21, 2022.

2. *The application complies with all of the applicable provisions of the underlying Land Use District (Chapter 2), including: building and yard setbacks, lot area and dimensions, density and floor area, lot coverage, building height, building orientation, architecture, and other special standards as may be required for certain land uses;*

Staff response and findings of fact: The applicant has provided a site plan demonstrating compliance with all of the applicable provisions of the C2P district on November 21, 2022, as shown below.

3. *The applicant shall be required to upgrade any existing development that does not comply with the applicable land use district standards, in conformance with Chapter 14.52, Non-Conforming Use and Development.*

Staff response and findings of fact: The application proposes new development, rather than modification of a non-conforming use, and therefore this section does not apply.

4. *The application complies with all of the Design Standards in Chapter 3.*

Staff response and findings of fact: Compliance with applicable provisions of Chapter 3 is addressed below.

5. *Existing conditions of approval required as part of a prior Land Division (Chapter 14.43), Conditional Use Permit (Chapter 14.44), Master Planned Development (Chapter 14.45) or other approval shall be met.*

Staff response and findings of fact: There are no adopted conditions of approval for the subject properties.

2. Chapter 14.23 Commercial District Design Standards:

Staff response and findings of fact:
The subject property is zoned C2P and the proposed development is a permitted use in the zone, subject to Site Design Review and a conditional use permit for the drive-up facilities. Chapter 2 of the Development Code includes the applicable commercial design standards, which are set forth through Section 14.23.120 through 14.23.180. The applicable standards of each are addressed below.

14.23.120 Development Standards

The development standards in Table 14.23.120 apply to all new structures, buildings, and development, and major remodels, in the Commercial Districts.

Table 14.23.120 – Development Standards for Commercial Districts

Standard	C-2	C-2P	CT	CT/L
Minimum Lot Area (square feet)	No standard	No standard	No standard	No standard
Minimum Lot Width Nonresidential Uses *For flag lots, width is measured at the front building line.*	15 ft	60 ft	50 ft	50 ft
Minimum Lot Depth	N/A	80 ft	80 ft	80 ft
*Building/Structure Height** Level Site (slope less than 15%), maximum height	60 ft	60 ft	40 ft	40 ft
Sloping Site (15% or greater), maximum height	N/A	level site +5 ft	level site +5 ft	level site +5 ft
Height Bonus for Residential Use in Upper Building Story, per Section 14.23.160	12 ft	12 ft	N/A	N/A
Building Height Transition required adjacent to R/R-1 District, per Section 14.22.170	Yes	Yes	Yes	No

Table 14.23.120 – Development Standards for Commercial Districts				
Standard	**C-2**	**C-2P**	**CT**	**CT/L**
**Height may be exceeded with approval of a Conditional Use Permit, per Chapter 14.44.* Fences, Retaining/Garden Walls (See also Sections 14.31.200, vision clearance; 14.32.500, Fences and Walls)	7 ft	7 ft	7 ft	7 ft
Building Coverage (two options): 1. Max. Building Coverage 2. Coverage Bonus The allowable building coverage increases by a ratio of one-half square foot for every one square foot of required parking area that is paved using a city-approved porous/permeable paving material (i.e., allowing stormwater infiltration) or one-half square foot for every one square foot of city-approved water quality treatment area (e.g., vegetative swale or biofiltration) on the development site.	 100% N/A	 60% Yes	 50% Yes	 50% Yes
Min. Landscape Area (% site area), except does not apply to single-family dwellings. Landscape area may include plant areas and some non-plant areas as allowed under Section 14.32.300(D).	0%	10%	15%	15%
Minimum Setbacks (feet): (See also Section 14.22.170, R/R-1 height step-down.) Front, Street, Side, and Rear property lines, except garage or carport	0 ft	0 ft	0 ft	0 ft

Table 14.23.120 – Development Standards for Commercial Districts				
Standard	**C-2**	**C-2P**	**CT**	**CT/L**
Garage/Carport Entry, setback from street	0 ft	20 ft	20 ft	20 ft
Alley	0 ft	3 ft	3 ft	3 ft
Adjacent to R/R-1 District	10 ft, and per Section 14.22.170	10 ft, and per Section 14.22.170	10 ft, and per Section 14.22.170	10 ft, and per Section 14.22.170
Build-To Line (feet): New Buildings Only: (Per Sections 14.23.130(A), 14.23.170.)	0 ft	60 ft, may be increased per Section 14.23.170	60 ft, may be increased per Section 14.23.170	60 ft, may be increased per Section 14.23.170

Staff response and findings of fact:
The applicant has provided a site plan and narrative (see exhibits) that demonstrates compliance with all of the standards listed above from Table 14.23.120, as described above.

Building Height: The applicant proposes a building height of 21' at the ridge. This is well within the allowed 60' permitted within the C2P zone, this standard is met.

Lot Coverage: Lot coverage maximum is 60%. The main building is 15,715 sf or approximately 17.7% (15,715/88,862.4) of the lot. As the building covers less than 60% of the total lot, this standard is met.

Minimum Setbacks: Minimum setbacks in the C2P district are 0', or 20' to a garage entrance. The building is proposed to be located 24' from the front property line on Row River Road, 25' from the rear, 17' from the southern property line, and 37' from the northern boundary. The subject site consists of two lots of a Partition Plat. The City of Cottage Grove as a matter of policy does not permit development across property lines/boundaries. As a condition of approval the applicant/developer shall apply for a Type II Application to re-plat Partition Plat No. 2005-P1923 to eliminate the boundary between the two lots to create one 2.04 acre lot. This shall be a condition of approval.

Build-to Line: The Build to Line requirement is 60'. At least one primary building entrance shall be built no farther from the street right-of-way than the build-to line per 14.23.130, unless as permitted under Section 14.23.130 A "The build-to line may also be increased through Site Design Review when pedestrian amenities are provided between a primary building entrance and the street right-of-way." This development is being reviewed under Type III Site Design Review and the applicant has shown on the submitted plans a main entrance facing the right-of-way (Row River Road) and a clearly delineated and elevated pedestrian path connecting the right-of-way to the building entrance. This criterion is met.

14.23.130 Zero Setbacks and Build-To Line

A. ***Build-To Line Applicability:*** *At least one primary building entrance shall be built no farther from the street right-of-way than the build-to line; except where a greater setback is required for*

a Planned Street Improvement, then the build-to line increases proportionately. The build-to line may also be increased through Site Design Review when pedestrian amenities are provided between a primary building entrance and the street right-of-way.

Staff response and findings of fact: The Build to Line requirement is 60'. At least one primary building entrance shall be built no farther from the street right-of-way than the build-to line per 14.23.130, unless as permitted under Section 14.23.130 A "The build-to line may also be increased through Site Design Review when pedestrian amenities are provided between a primary building entrance and the street right-of-way." This development is being reviewed under Type III Site Design Review and the applicant has shown on the submitted plans a main entrance facing the right-of-way (Row River Road) and a clearly delineated and elevated pedestrian path connecting the right-of-way to the building entrance. This criterion is met.

14.23.150 Commercial Districts – Building Orientation and Commercial Block Layout

C. Building orientation standards. *Developments subject to this Section shall have their buildings oriented to a street, as generally shown in Figure 14.23.150.C(1). This standard is met when all of the following criteria are met:*

1. *Compliance with the setback and build-to line standards in Section 14.23.120, where applicable.*

Staff response and findings of fact: The applicant has requested via this Type III Site Design Review application that the 60' build-to line not be applied to the proposed development. The applicant proposes to construct an ADA accessible elevated path connecting the main building entrance to the right-of-way (Row River Road). This criterion is met.

2. *Except as provided in subsections 14.23.150.C(4) and (5), below, all buildings shall have at least one primary building entrance (i.e., dwelling entrance, a tenant entrance, lobby entrance, or breezeway/courtyard entrance) facing an adjoining street (i.e., within 45 degrees of the street property line).*

Staff response and findings of fact: The applicant has proposed to front the new building toward Row River Road and in accordance with the above stated criterion the main building entrance and the entrance to the donation facility are located on the Row River Road facing façade. This standard has been met.

3. *In the Commercial Districts, off-street parking, driveways, and other vehicle areas shall not be placed between buildings and the street(s) to which they are oriented; except as provided under subsection 14.23.150.C(4). Off-street parking in the Commercial Districts shall be oriented internally to the site and divided by landscape areas into bays of not more than 24 parking spaces per bay, as generally shown in Figures 14.23.150.C(2).*

4. *In the C-2P, CT and CT/L Districts, the building orientation standard may be met with vehicle areas allowed between the street right-of-way and a building's primary entrance when the approval body finds that the following criteria are met:*

    a. *Placing vehicle areas between the street right-of-way and building's primary entrance will not adversely affect pedestrian safety and convenience, based on the distance from the street sidewalk to the building entrance, projected vehicle traffic volumes, and available pedestrian walkways;*

Staff response and findings of fact: The applicant proposes to place the parking areas between the front façade of the building and the right-of-way. To address pedestrian safety the applicant has included a network of elevated walkways and delineated and elevated crossings to allow pedestrians to move from and through the parking area with little to no requirement of walking within the vehicle maneuvering areas. This criterion is met.

b. *The proposed vehicle areas are limited to one driveway of not more than 20 feet in width with adjoining bays of not more than eight (8) consecutive parking spaces per bay (including ADA accessible spaces) on the side(s) of the drive aisle. (The intent is to create a drive aisle that is street-like, and break up parking into small bays with landscaping); and*

c. *The building's primary entrance is connected to an adjoining street by a pedestrian walkway that meets the standards for pedestrian walkways under Section 14.31.030.*

Staff response and findings of fact: The applicant has proposed a single drive aisle with 90 degree parking spaces on either side. At pedestrian crossings the crossing distance is less than 20' and no bay of parking spaces exceeds eight. This criterion is met.

5. *Where a development contains multiple buildings and there is insufficient street frontage to which buildings can be oriented, a primary entrance may be oriented to common green, plaza, or courtyard. When oriented in this way, the primary entrance(s) and green, plaza, or courtyard shall be connected to the street by a pedestrian walkway meeting the standards in Section 14.31.030.*

Staff response and findings of fact: There is only one building, therefore this criterion does not apply.

14.23.170 Commercial Districts – Architectural Design Standards

B. Pedestrian Orientation. *The design of all buildings on a site shall support a safe and attractive pedestrian environment. This standard is met when the approval body finds that all of the criteria in 1-7, below, are met. Alternatively, the approval body may approve a different design upon finding that the design contains an equally good or superior way of achieving the above standard.*

1. *The building orientation standards under Section 14.23.150 are met; and*

Staff response and findings of fact: The building orientation standards are met as described above and detailed below. This criterion is met.

2. *Primary building entrances shall open directly to the outside and, if not abutting a street, shall have walkways connecting them to the street sidewalk; every building shall have at least one primary entrance that does not require passage through a parking lot or garage to gain access; and*

Staff response and findings of fact: The proposed building has its primary entrance on the southwest side of the building that is connected via a pedestrian walkway to the sidewalk adjacent to Row River Road. The walkway is unobstructed and where it crossed vehicle drive aisles the crossings are elevated and delineated. This criterion is met.

3. *Corner buildings (i.e., buildings within 20 feet of a corner as defined by the intersecting curbs) shall have corner entrances, or shall provide at least one entrance within 20 feet of the street corner or corner plaza; and*

Staff response and findings of fact: The proposed building is not proposed to be constructed within 20' of a corner or intersection, therefore this standard does not apply.

4. *In the C-2P, CT/L and CT districts, at least 40 percent of the building's front façade (measured horizontally in linear feet) shall be located at the build-to line or closer to the street. In the C-2 district, 100 percent of the building's front façade shall be located at the build-to line. Build-to lines are prescribed by Section 14.23.120; and*

Staff response and findings of fact: The proposed development is in the C2P district, which has a 60' build-to-line. The proposed building façade is 150' from the Row River Road right-of-way. Per Section 14.23.130, the applicant may seek approval to construct beyond the build-to line if the request is considered via Type III Site Design Review and pedestrian connections are made connecting the main building entrance to the right-of-way. This project is being considered as a Type III Site Design Review and the applicant has proposed an ADA accessible pedestrian path connecting the main building entrance to the right-of-way (Row River Road). This criterion has been met.

5. *Ground floor windows or window displays shall be provided along at least 40 percent of the building's (ground floor) street-facing elevation(s) in the C-2P, CT and CT/L districts, and along 70 percent of the building's street-facing elevation(s) in the C-2 district. Windows and display boxes shall be integral to the building design and not mounted to an exterior wall; and*

Staff response and findings of fact: The proposed building has two street-facing elevations, Row River Road (front) and Thornton Road (southeast). The total length of the front facade (Row River Road) is 235'. To meet the above standard, windows or window displays must be provided along a minimum of 40% of the street-facing elevation, or 94'. The proposed facade has approximately 110' feet of windows or window displays along the front facade. On the southeast (Thornton Road) façade the total façade length is 100' requiring 40' of windows or window displays. The applicant has shown 40' or 40% of the southeast façade with windows. This criteria is met.

6. *Primary building entrance(s) are designed with weather protection, such as awnings, canopies, overhangs, or similar features; and*

Staff response and findings of fact: The primary or main building entrance is covered by a covered gable entry that projects 15' from the building façade. This criterion is met.

C. ***Compatibility.*** *All new buildings and major remodels shall be designed consistent with the architectural context in which they are located. This standard is met when the approval body finds that all of the criteria in 1-9, below, are met.*

1. *There is continuity in building sizes between new and existing buildings;*

Staff response and findings of fact: The proposed building is 15,715 sf, which is significantly larger than the existing structures on adjacent properties to the north (Arby's) and south (Taco Bell), however when compared to the adjacent structures with retail uses, Walmart (~100,000 sf) and AutoZone (8,364 sf) the proposed building is in compliance with other existing buildings. This criterion is met.

2. *The ground floor and upper floor elevations and architectural detailing are compatible with adjacent commercial buildings;*

The proposed single story building is compatible with adjacent commercial buildings. While the gabled covered entry and single ridge roof line are different than the adjacent flat/parapet roof styles of adjacent commercial sites the proposed engineered metal structure aligns with other commercial buildings in the vicinity such as Brad's Cottage Grove Chevrolet and the hangar structures at the Cottage Grove State Airport to the northease. This criterion is met.

3. *Buildings adjacent to the R/R-1 district height step-down, as required by Section 14.22.170.C;*

Staff response and findings of fact: The zoning of the adjacent properties is C2P – Community Commercial, therefore the step down criteria does not apply.

4. *Roof elevation is compatible with adjacent commercial buildings (roof pitch, shape, height step-down);*

Staff response and findings of fact: The roof elevation is 21' to the ridgeline of the roof. This is comparable to the heights of adjacent structures along Row River Road, and meets the requirements of Section 14.23.120. This criterion is met.

5. *There is continuity of building sizes on the site, if more than one building is proposed;*

Staff response and findings of fact: Only one building is proposed under this Site Design Review application. This criterion does not apply.

6. *There is continuity in the rhythm of windows and doors on the proposed building(s);*

Staff response and findings of fact: The windows and windows/door openings are places in a typical pattern and orientation to both create architectural style and to meet the glazing requirements of the code. The Row River Road façade includes eight and ten foot wide windows in a regular pattern centered on the gabled covered entry. This criterion is met.

7. *The relationship of buildings to public spaces, such as streets, plazas, other areas, and public parking, including on-street parking, is strengthened by the proposed building(s);*

Staff response and findings of fact: The rectangular building is oriented with the long wall to the southwest (Row River Road) and the narrow end to the southeast facing Thornton Road. This layout creates room for a landscaped parking area with pedestrian connections to the Row River Road right-of-way and allows for additional landscaped open space with picnic table area for a plaza like feel between the building and the parking area. This criterion is met.

8. *Criteria for alterations of historic landmarks is met, as required by Chapter 14.26; and*

Staff response and findings of fact: There are no historic landmarks on the site. The provisions of Chapter 14.26 do not apply.

9. *New construction or relocations on properties adjacent to historic landmarks is compatible with the overall character of the landmark in use of exterior materials, such as roofing and siding; exterior features, such as roof pitch, eaves, window shapes, types and arrangements,*

doorways, porches, landscaping, etc.; and size, height, bulk, mass, scale, placement, arrangement of spaces and overall proportions.

Staff response and findings of fact: There are no adjacent historic landmarks. This criterion does not apply.

D. Human Scale. *The design of all buildings shall be to a human-scale. This standard is met when the approval body finds that all of the criteria in 1-8, below, are met. Alternatively, the approval body may approve a different design upon finding that the design contains an equally good or superior way of achieving the above standard. Figure 14.23.170.D contrasts examples of building elevations that are consistent/inconsistent with human scale criteria.*

1. *Regularly spaced and similarly shaped windows are provided on all building stories;*

Staff response and findings of fact: The proposed one-story building provides regularly spaced windows on the southwest and southeast façades with the main entrance facing Road River Road. Doors are also located for emergency egress and access to the donation center. This criterion is met.

2. *Ground floor retail spaces have tall ceilings (i.e., 12-16 feet) with display windows on the ground floor;*

Staff response and findings of fact: The proposed building will be a retail and donation facility. Per the submitted plans the interior height of the building is 12'. This criterion is met.

3. *Display windows are trimmed, recessed, or otherwise defined by wainscoting, sills, water tables, or similar architectural features;*

Staff response and findings of fact: The proposed use is a retail and donation facility. The provided display windows facing Row River Road are shown to be trimmed with 3" trim. This criterion is met.

4. *On multi-story buildings, ground floors are defined and separated from upper stories by appropriate architectural features (e.g., cornices, trim, awnings, canopies, arbors, trellises, overhangs, or other features) that visually identify the transition from ground floor to upper story; such features should be compatible with the surrounding architecture;*

Staff response and findings of fact: The proposed development does not include any multi-story buildings. This standard does not apply.

5. *The tops of flat roofs are treated with appropriate detailing (i.e., cornice, pediment, flashing, trim, or other detailing) that is compatible with the surrounding architecture;*

Staff response and findings of fact: The proposed roof style for the building is a single-ridge pitched roof with gabled covered entry. This criterion does not apply.

6. *Pitched roofs have eaves, brackets, gables with decorative vents, or other detailing that is consistent with the surrounding architecture;*

Staff response and findings of fact: The proposed building is a single ridge pitched roof with a gabled covered entry. The roof has eaves and alternate material is proposed in the gable end for the covered entry. This criterion is met.

7. *Historic design and compatibility requirements, where applicable, are met; and*

Staff response and findings of fact: There are no applicable historic design or compatibility requirements, as the property is not adjacent to any historic structure nor within a historic district. This criterion does not apply.

8. *Where buildings with greater than 5,000 square feet of enclosed ground-floor space are proposed, they shall provide articulated facades on all street-facing elevations. This criterion is met when an elevation contains at least 1 of the following features for every 30 feet of building (horizontal length):*

a. Windows;
b. Primary entrances;
c. Weather protection (awnings, canopies, arbors, trellises), sheltering roofs;
d. Building offsets;
e. Projections;
f. Changes in elevation or horizontal direction;
g. Terraces;
h. A distinct pattern of divisions in surface materials;
i. Ornamentation;
j. Screening trees;
k. Small-scale lighting (e.g., wall-mounted lighting, or up-lighting);
l. And/or similar features as generally shown in Figure 14.23.170.D.

Staff response and findings of fact: The proposed facade along Row River Road provides windows, primary entrances, weather protection, offsets, and/or projections every 30 horizontal feet maximum. The façade along Thornton Road provides windows every 30 horizontal feet maximum. This criterion is met.

6. *The applicant shall be required to upgrade any existing development that does not comply with the applicable land use district standards, in conformance with Chapter 14.52, Non-Conforming Uses and Development;*

Staff response and findings of fact: The application proposes new development on undeveloped lands, rather than a modification of a non-conforming use, and therefore this section does not apply.

Chapter 14.30 Design Standards Administration

Staff response and findings of fact: The application complies with all of the Design Standards in Chapter 3. Design standards from Chapter 3 that are applicable to this permit are found in Chapter 14.31 Access and Circulation, Chapter 14.32 Landscaping, Significant Vegetation, Street Trees, Fences and Walls, Chapter 14.33 Parking and Loading; Chapter 14.34 Public Facilities and Chapter 14.35 Surface Water Management. Other sections of Chapter 3 are not relevant to this application.

Chapter 14.31 – Access and Circulation

A. *Intent and Purpose. The intent of this Section is to manage access to land uses and on-site circulation, and to preserve the transportation system in terms of safety, capacity, and function. This Section applies to all public streets within the City of Cottage Grove, and to all properties that abut these roadways. This Section implements the access management policies of the Cottage Grove Transportation System Plan.*

B. Applicability. This Chapter applies to all public streets within the City and to all properties that abut these streets. The standards apply when lots are created, consolidated, or modified through a land division, partition, lot line adjustment, lot consolidation, or street vacation; and when properties are subject to Land Use Review or Site Design Review.

A. *Access Permit Required. Access (e.g., a new curb cut or driveway approach) to a public street requires an Access Permit. An access permit may be in the form of a letter to the applicant, or it may be attached to a land use decision notice as a condition of approval. In either case, approval of an access permit shall follow the procedures and requirements of the applicable road authority (i.e. Cottage Grove, Lane County or ODOT), Permits shall be processed as Type I applications, normally at time of Land Use Review. If the developer proposes exceptions to the standards of this chapter, the permit shall be processed as a Type II application.*

Staff response and findings of fact: Vehicular access is proposed via an existing approved two-way access onto Row River Road that will serve this proposed development and the existing Arby's to the northeast. A second existing access onto Thornton Road will be re-aligned to comply with intersection setback requirements. A new, 14' wide one-way, access is proposed onto Thornton Road to allow for truck traffic and fire lane access. At time of construction an access permit will be required as a condition of approval. This criterion is met.

D. *State Access Permits. ODOT has responsibility and authority in managing access to State Highways. Projects with direct access onto a State Highway shall be required to obtain a State access permit. An approved State access permit must be submitted as part of all Type II and III land use permits. Conditions placed by the State upon these access permits shall be considered conditions of approval for all applicable development approvals.*

Staff response and findings of fact: Row River Road is a State right-of-way, however, there are no proposed changes to the access or ADA and sidewalk facilities. If work is required in these areas, an ODOT Access Permit will be required. This shall be a condition of approval.

E. *Traffic Study Requirements. The City may require a traffic study prepared by a qualified professional to determine access, circulation, and other transportation requirements in conformance with Section 14.41.900, Traffic Impact Study.*

Staff response and findings of fact: Per Section 14.41.900 the following trigger a TIS requirement:
1. A change in zoning or a plan amendment designation that significantly affects a transportation facility per provisions of Section 14.47.800; or

2. Any proposed development or land use action that a road authority states may cause or be adversely impacted by operational or safety concerns along its facility(ies); or

3. Land divisions with 30 or more lots; or

4. An increase in site traffic volume generation by 300 Average Daily Trips (ADT) or more; or

5. An increase in peak hour volume of a particular movement to and from the State highway by 20 percent or more; or

6. An increase in use of adjacent streets by vehicles exceeding the 20,000 pound gross vehicle weights by 10 vehicles or more per day; or

7. The location of the access driveway does not meet minimum sight distance requirements, or is located where vehicles entering or leaving the property are restricted, or such vehicles queue or hesitate on the State highway, creating a safety hazard; or

8. A change in internal traffic patterns that may cause safety problems, such as back up onto a street or greater potential for traffic accidents.

Staff response and findings of fact: Per the applicant the proposed development could result in up to 1,000+ vehicle trips per day. Per #4 above a Traffic Impact Study is required. The applicant submitted the necessary report authored by Sandow Engineering dated November 18, 2022. City Engineer, Branch Engineering reviewed the report and made the following comment:

"The Traffic Impact Analysis (TIA) identifies a crash at the existing Gold Rush Espresso driveway from the ODOT Crash Data Reports Ser. #01954 06/02/2016 12L00PM Action Code 11 – Stopped in traffic waiting to make a left turn into Espresso Stand at the driveway near the intersection. If intersection queues exceed the distance to the revised access location, traffic will be stopped on Thornton Rd. creating a potential rear-end risk condition.

Also, based on the TIA, there should be more throat at the driveway that will be shared with Arby's. If more than one vehicle is queued departing this driveway, left turns into Arby's will be blocked and traffic will be stopped in the entry to the site. The TIA projects queuing at two-vehicles.

After the project traffic is added to these driveways, it is likely queues will block left turns into Arby's and the Espresso Stand. Although the TIA didn't recommend mitigation or adjustments, it is recommended a condition of approval be added to the land use decision that the applicant be responsible for City and State approved safety modifications if the anticipated queuing conflicts occur in either of the site accesses and the agencies identify a hazard. The applicant team should consider modifications to make these adjustments to their site plan."

F. *Conditions of Approval. The City may require the closing or consolidation of existing curb cuts or other vehicle access points, recording of reciprocal access easements (i.e., for shared driveways), development of a frontage street, installation of traffic control devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and efficient operation of the street and highway system.*

Staff response and findings of fact: The existing approved access to Row River Road has an existing reciprocal access easement to the benefit of the proposed development site and the adjoining development to the north (Arby's). The applicant proposes to adjust the existing access onto Thornton Road to bring it into compliance with criterion set forth Section 14.31.200 G, which required 30' of separation from an intersection on a local street, such as Thornton Road. Per City Engineer comments dated December 6, 2022, the City reserves the ability to require mitigation actions to ensure the safe use of the right-of-way in regard to the queuing of vehicles in the right-of-way. As a condition of approval no queuing of vehicles is permitted in the right-of-way of Row River Road and/or Thornton Road.

G. *Corner and Intersection Separation; Backing onto Public Streets. New and modified accesses shall conform to the following standards:*

1. Except as provided under subsection 4, below, the distance from a street intersection to a driveway or other street access shall meet the minimum spacing requirements for the street's

classification in the City's Transportation System Plan. No driveway approach may be located closer to the corner than 30 feet on local streets, 50 feet on collector streets, and 75 feet on arterials;

Staff response and findings of fact: The proposed development site has two existing access points. The access onto Row River Road, and ODOT right-of-way, meets the requirements of an arterial with over 300' of separation from the nearest intersection (Thornton Road) and backing into the right-of-way is not permitted. The existing access onto Thornton Road does not meet the required 30' separation distance for a local street. The applicant proposes to correct the separation of the access point to the intersection by shifting the access point to the northeast approximately 10'. The realignment of the access to Thornton Road shall be a condition of approval. The applicant proposes a new access point onto Thornton for one-way exiting truck traffic. The proposed location is more than 100' from the intersection of Row River Road and Thornton Road and therefore complies with the separation requirements. This criterion is met.

2. *When the above requirements cannot be met due to lack of frontage, the driveway may be located such that the driveway apron will begin at the farthest property line, but at no time shall new property access be permitted within 30 feet of an intersection. Where no other alternatives exist, the City may allow construction of an access connection at a point less than 30 feet from an intersection, provided the access is as far away from the intersection as possible (See Figure 14.31.200.G). In such cases, the City may impose turning restrictions (i.e., right in/out, right in only, or right out only);*

   Staff response and findings of fact: There is sufficient frontage to serve the proposed development. This criterion does not apply.

3. *Access to and from off-street parking areas shall not permit backing onto a public street, except for single-family and two-family dwellings;*

   Staff response and findings of fact: The proposed project complies with the criterion. The site parking areas have been designed such that backing onto a public street is not required for vehicular circulation. This criterion is met.

4. *The City may reduce required separation distance of access points where they prove impractical due to lot dimensions, existing development, other physical features, or conflicting code requirements, provided all of the following requirements are met:*

   a. *Joint-use driveways and cross-access easements are provided in accordance with Subsection 14.31.200.H;*
   b. *The site plan incorporates a unified access and circulation system in accordance with this Section; and*
   c. *The property owner(s) enter in a written agreement with the City, recorded with the deed, that pre-existing connections on the site will be closed and eliminated after construction of each side of the joint-use driveway.*

   Staff response and findings of fact: The City Engineer has reviewed the locations of the driveways. This criterion is not applicable.

H. Site Circulation. *New developments shall be required to provide a circulation system that accommodates expected traffic on the site. Pedestrian connections on the site, including*

connections through large sites, and connections between sites (as applicable) and adjacent sidewalks, must conform to the provisions in Section 14.31.300.

Staff response and findings of fact*:* As shown on the Site Plan, the proposed development provides a traffic circulation system that will accommodate traffic on site, and provides adequate pedestrian circulation through direct connections to the street side sidewalk along the Row River Road. This criterion is met.

K. Joint and Cross Access – Easement and Use and Maintenance Agreement.

Staff response and findings of fact*:* The existing access from Row River Road was established in with the construction of the Arby's approved by SDR 2-15. That existing access is encumbered by a joint use easement for the benefit of the Arby's and the subject property. This criterion is met.

L. Access Connections and Driveway Design. *All commercial and industrial driveway connections to a public right-of-way (access) and driveways shall conform to all of the following design standards:*

1. Driveway Dimensions. Driveways shall meet the following standards:

a. Driveway Width. The width of the driveway (measured along the curbline) shall not exceed the following dimensions:

DRIVEWAY WIDTH

Frontage (in feet)	*One Driveway Approach (min/max in feet)*	*Two Driveway Approaches (min/max in feet)*
Under 30	*12/16*	*Not Permitted*
30 to 60	*12/20*	*Not Permitted*
60 to 80	*12/30*	*12/22*
Over 80, but not exceeding 100	*12/30*	*12/30*

Staff response and findings of fact*:* The width of the existing driveway from Row River Road is 30'and the proposed adjusted driveway width off of Thornton Road is 30' as well, each is the maximum permitted as shown above. The third, and freight/fire lane access proposed onto Thornton Road is proposed to be 14'. This criterion is met.

b. Commercial Driveway Throat Lengths. Minimum commercial driveway throat lengths, measured from curb line to first on-site conflict point, are 35 feet (approximately 2 car lengths) on commercial collector and arterial streets. The City may require longer driveway throat lengths when deemed necessary.

Staff response and findings of fact*:* The City Engineer, Branch Engineering, has reviewed the application and his findings are in the attached memo Exhibit A. As stated in the comments the City Engineer's

review of the applicant's Traffic Impact Study identifies that the queueing area provided at the access from Row River Road may not be sufficient to prevent stacking into the Row River Road right-of-way. The criterion states 35' is the minimum and the applicant has proposed a distance of approximately 45' to the first conflict. As stated in regard the criterion and findings for 14.31.200 F no queuing of vehicles is permitted in the right-of-way as a condition of approval.

2. Driveway Approaches. *Driveway approaches shall be designed and located based on the following considerations:*

    a. *Provide exiting vehicles with an unobstructed view of other vehicles and pedestrians*
    b. *Prevent vehicles from backing into the flow of traffic on the public street or causing conflicts with on-site circulation;*
    c. *Avoid construction of driveway accesses along acceleration or deceleration lanes or tapers due to the potential for vehicular conflicts;*
    d. *Locate driveways to allow for safe maneuvering in and around loading areas. See also, Chapter 14.38, Loading;*
    e. *Access corner tracts from the lesser (lowest classification) street; and*
    f. *Consider characteristics of property, including location, size and orientation of structures on site, number of driveways needed to accommodate anticipated traffic, location and spacing of adjacent or opposite driveways.*

Staff response and findings of fact: The City Engineer, Branch Engineering, has reviewed the application and his findings are in the attached memo Exhibit A. The proposed driveways are in compliance with code as proposed. This criterion is met.

3. Driveway Construction. *Driveway aprons (when required) shall be constructed of concrete and shall be installed between the street right-of-way and the private drive, as shown in Figure 14.31.200.L(2). Driveway aprons shall conform to ADA requirements for sidewalks and walkways, which generally require a continuous unobstructed route of travel that is not less than 4 feet in width, with a cross slope not exceeding 2%, and providing for landing areas and ramps at intersections. Driveways shall conform to Fire Code requirements for placement of driveways next to fire hydrants, as shown in Figure 14.31.200.L(3). See also Engineering Department standards for driveway construction.*

Staff response and findings of fact: See Exhibit A for Engineering requirements.

4. Driveway Slopes. *Driveways shall be sloped to ensure that vehicles can be parked on the driveway, rather than in the street. Examples of acceptable driveway slopes are shown in Figure 14.31.200.L(4). The maximum grade for a residential driveway shall be 15%. The maximum grade for a commercial/industrial driveway shall be 7%. The change in grade after the driveway approach should not exceed +/- 6 percent in 10 feet for all driveways. Commercial and industrial driveways that have a change in grade of 3% in 10 feet and 6 percent in 10 feet shall have a 10 foot vertical curve connecting tangents.*

Staff response and findings of fact: The subject parcel is flat. This criterion does not apply.

M. Fire Access and Turnarounds. *When required under the Uniform Fire Code, fire access lanes with turnarounds shall be provided. Except as waived in writing by the Fire Marshal, a fire equipment access drive shall be provided for any portion of an exterior wall of the first story of a building that is located more than 150 feet from an existing public street or approved fire*

equipment access drive. The drive shall contain unobstructed adequate aisle width of 20 feet with paved surface between 14-20 feet, an unobstructed vertical clearance of 13 feet 6 inches and approved turn-around area for emergency vehicles, as required by the current adopted Oregon Fire Code. The Fire Marshal may require that fire lanes be marked as "No Stopping/No Parking." For requirements related to cul-de-sacs or dead-end streets, please refer to Section 14.34.100.N.

Staff response and findings of fact: The Fire Marshall, Danny Solesbee, has reviewed the application and stated the proposed project complies with this criterion. The parking lot access aisle to the west of the building is 24'and there is a proposed 15' wide freight/fire lane providing access around the rear of the building. Vertical clearance provided within the access road exceeds the minimum requirements. All turns in fire lanes meet minimum Fire Code standards (minimum turning radii of 28'). As a condition of approval the freight/fire lane around the rear of the building shall be kept clear of stored items and debris and by striped and signed as "No Parking/Fire Lane" This criterion is met.

N. Vertical Clearances. *Driveways, private streets, aisles, turn-around areas and ramps shall have a minimum vertical clearance of 13 feet 6 inches for their entire length and width.*

Staff response and findings of fact: The proposed project complies with this criterion. Vertical clearance within the driveway, turnaround areas and ramps all exceeds the minimum requirement. This shall be a condition of approval.

O. Vision Clearance. *No visual obstruction (e.g., sign, structure, solid fence, or shrub vegetation) between 2 1/2 feet and 8 feet in height shall be placed in "vision clearance areas" on streets, driveways, alleys, or mid-block lanes, as shown in Figure14.31.200.N. The minimum vision clearance area may be modified by the City Engineer upon finding that more or less sight distance is required (i.e., due to traffic speeds, roadway alignment, etc.). This standard does not apply to light standards, utility poles, trees trunks and similar objects.*

Staff response and findings of fact: The proposed project complies with this criterion. Vision clearance within the driveway, aisles and ramps all exceeds the minimum requirement.

P. Construction. *The following development and maintenance standards shall apply to all driveways, parking areas, turnarounds, alleys and private streets:*

1. *Surface Options. Driveways, parking areas, alleys, aisles, and turnarounds may be paved with asphalt, concrete, or comparable surfacing, or an approved durable non-paving or porous paving material, excluding gravel, may be used to reduce surface water runoff and protect water quality. Driveway and street materials shall be subject to review and approval by the City Engineer.*

Staff response and findings of fact: The proposed project complies with the criterion. Asphaltic concrete and concrete surface materials will be used for driveways, parking areas, aisles and turnarounds.

2. *Surface Water Management. When non-porous paving is used, all driveways, parking areas, alleys, aisles, and turnarounds shall have on-site collection of surface waters to eliminate sheet flow of such waters onto public rights-of-way and abutting property. Surface water facilities shall be constructed in conformance with Chapter 14.35 and applicable engineering standards. Single-family and two-family dwellings shall be exempt from this standard.*

Staff response and findings of fact: All driveways, parking areas, aisles and turnarounds will have onsite collection of surface waters to eliminate sheet flow onto public right of way and abutting property. This criterion is met.

3. *Driveway Aprons. When driveway approaches or "aprons" are required to connect driveways to the public right-of-way, they shall be paved with concrete surfacing and conform to the City's engineering design criteria and standard specifications. (See general illustrations in Section 14.31.200.L, above.)*

Staff response and findings of fact: See City Engineering comments in Exhibit A.

14.*31.300 Pedestrian Access and Circulation*

A. Site Layout and Design. *To ensure safe, direct, and convenient pedestrian circulation, all developments, except single-family and two-family detached housing (i.e., on individual lots), shall provide a continuous pedestrian system. The pedestrian system shall be based on the standards in subsections 1-3, below:*

1. *Continuous Walkway System. The pedestrian walkway system shall extend throughout the development site and connect to all future phases of development, and to existing or planned off-site adjacent trails, public parks, and open space areas to the greatest extent practicable. The developer may also be required to connect or stub walkway(s) to adjacent streets and to private property with a previously reserved public access easement for this purpose, in accordance with the provisions of Section 14.31.200, Vehicular Access and Circulation, and Section 14.34.100, Transportation Standards.*

Staff response and findings of fact: As shown on the Site Plan, the proposed development provides an ADA accessible pedestrian walkway system that provides direct unobstructed access from Row River Road to the main entry and front facade of the building. This criterion is met.

2. *Safe, Direct, and Convenient. Walkways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent streets, based on the following definitions:*

   a. *Reasonably direct. A route that does not involve a significant amount of out-of-direction travel for likely users.*

   b. *Safe and convenient. Routes that are reasonably free from hazards and provide a reasonably direct route of travel between destinations.*

   c. *"Primary entrance" for commercial, industrial, mixed use, public, and institutional buildings is the main public entrance to the building. In the case where no public entrance exists, street connections shall be provided to the main employee entrance.*

Staff response and findings of fact: The proposed walkways are direct, safe and convenient, and connect the primary entrance to the City street/sidewalk system. This criterion is met.

3. *Connections Within Development. Connections within developments shall be provided as required in subsections a-c, below:*

a. *Walkways shall connect all building entrances to one another to the extent practicable, as generally shown in Figure 14.31.300.A(1);*

Staff response and findings of fact*:* The sidewalks along the western and southern façades of the building are continuous, and connect all building entrances to one another. This criterion is met.

b. *Walkways shall connect all on-site parking areas, storage areas, recreational facilities and common areas, and shall connect off-site adjacent uses to the site to the extent practicable. Topographic or existing development constraints may be cause for not making certain walkway connections, as generally shown in Figure 14.31.300.A(1); and*

Staff response and findings of fact*:* The walkways connect on-site parking to off-site adjacent uses via a sidewalk connection to the west. This criterion is met.

c. *Large parking areas shall be broken up so that no contiguous parking area exceeds 3 acres. Parking areas may be broken up with plazas, large landscape areas with pedestrian access ways (i.e., at least 20 feet total width), streets, or driveways with street-like features. Street-like features, for the purpose of this section, means a raised sidewalk of at least 4-feet in width, with 6-inch curb, accessible curb ramps, street trees in planter strips or tree wells, and pedestrian-oriented lighting. (See also standards in Section 14.23.150.)*

Staff response and findings of fact*:* The subject property is 2.04 acres, therefore, this criterion is not applicable.

B. Walkway Design and Construction. *Walkways, including those provided with pedestrian access ways, shall conform to all of the standards in subsections 1-5, as generally illustrated in Figure 14.31.300.B:*

1. *Vehicle/Walkway Separation. Except for crosswalks (subsection 2), where a walkway abuts a driveway or street, it shall be raised 6 inches and curbed along the edge of the driveway/street. Alternatively, the decision body may approve a walkway abutting a driveway at the same grade as the driveway if the walkway is protected from all vehicle maneuvering areas. An example of such protection is a row of decorative metal or concrete bollards designed for withstand a vehicle's impact, with adequate minimum spacing between them to protect pedestrians.*

Staff response and findings of fact*:* The submitted site plan shows that all pedestrian paths proposed are separate from vehicle maneuvering and parking areas. As a condition of approval all pedestrian paths where abutting vehicle maneuvering and parking areas shall be raised and curbed a minimum of 6" from the adjacent vehicle maneuvering surfaces with the exception of pedestrian crosswalks. This criterion is met.

2. *Crosswalks. Where walkways cross a parking area, driveway, or street ("crosswalk"), they shall be clearly marked with striping or contrasting paving materials (e.g., light-color concrete inlay between asphalt), which may be part of a raised/hump crossing area.*

Staff response and findings of fact*:* Where pedestrian crossings occur a clearly delineated crosswalk will be required, compliant with ADA, and be clearly marked with striping or contrasting paving materials (e.g., light-color concrete inlay between asphalt), which may be part of a raised/hump crossing area. The pedestrian crossing shown at the north end of the parking area is not shown as delineated on the provided

site plan. As a condition of approval this crossing as with the others shall be clearly marked with striping or contrasting paving materials (e.g., light-color concrete inlay between asphalt), which may be part of a raised/hump crossing area as a condition of approval.

3. *Walkway Width and Surface. Walkway and accessway surfaces shall be concrete, asphalt, brick/masonry pavers, or other durable surface, as approved by the City Engineer, at least 6 feet wide. Multi-use paths (i.e., for bicycles and pedestrians) shall be concrete or asphalt, at least 10 feet wide. (See also, Section 14.34.100 - Transportation Standards for public, multi-use pathway standard.)*

Staff response and findings of fact: The walkway connecting the main entrance to the sidewalk along Row River Road shall be a minimum width of 6' as a condition of approval. This criterion is met.

4. *Accessible routes. Walkways shall comply with applicable Americans with Disabilities Act (ADA) requirements. The ends of all raised walkways, where the walkway intersects a driveway or street shall provide ramps that are ADA accessible, and walkways shall provide direct routes to primary building entrances.*

Staff response and findings of fact: All walkways shall comply with applicable ADA requirements. This shall be a condition of approval.

5. *Sidewalk construction and maintenance. Sidewalk construction and maintenance shall be the responsibility of the abutting property owner.*

Staff response and findings of fact: This shall be a condition of approval.

14.32.300 Landscaping

A. Applicability. *This Section shall apply to all new developments requiring Site Design Review. This section is not applicable to single-family or two-family dwellings.*

B. Landscaping Plan Required. *A landscape plan is required. All landscape plans shall conform to the requirements in Chapter 14.42.500, Section B.5 (Landscape Plans).*

C. Landscape Area Standards. *The minimum percentage of required landscaping equals:*

4. *Community Commercial District. 10% of the site.*

Staff response and findings of fact: The applicant proposes to include landscaping on 29% of the site (25,035 sf). Landscaping installation shall be complete as proposed/approved prior to certificate of occupancy as a condition of approval.

D. Landscape Materials. *Permitted landscape materials include trees, shrubs, ground cover plants, non-plant ground covers, and outdoor hardscape features, as described below. "Coverage" is based on the projected size of the plants at maturity, i.e., typically 3 or more years after planting.*

1. *Existing Vegetation. Existing non-invasive vegetation may be used in meeting landscape requirements. When existing mature trees are protected on the site (e.g., within or adjacent to parking areas) the decision making body may reduce the number of new trees required depending on the number and size of existing tree(s) protected.*

Staff response and findings of fact: The subject property is largely just grasses with the exception of a blackberry patch on the north end of the property. This criterion does not apply.

2. *Plant Selection. A combination of deciduous and evergreen trees, shrubs, and ground covers shall be used for all planted areas, the selection of which shall be based on local climate, exposure, water availability, and drainage conditions. When new vegetation is planted, soils shall be amended, as necessary, to allow for healthy plant growth.*

Staff response and findings of fact: This shall be a condition of approval.

3. *"Non-native, invasive" plants, as per Section 14.32.200.B, shall be removed during site development and the planting of new invasive species is prohibited.*

Staff response and findings of fact: This shall be a condition of approval.

4. *Hardscape features, i.e., patios, decks, plazas, etc., may cover up to 10 percent of the required landscape area. Swimming pools, sports courts, and similar active recreation facilities may not be counted toward fulfilling the landscape requirement.*

Staff response and findings of fact: There are no patios, decks, plazas, etc., proposed in this development. This criterion does not apply.

5. *Ground Cover Standard. All landscaped area, whether or not required, that is not planted with trees and shrubs, or covered with non-plant material (subsection 8, below), shall have ground cover plants that are sized and spaced as follows: a minimum of one plant per 12 inches on center in triangular spacing, or other planting pattern that is designed to achieve 75 percent coverage of the area not covered by shrubs and tree canopy.*

Staff response and findings of fact: This shall be a condition of approval.

6. *Tree Size. Trees shall have a minimum diameter or caliper 4 feet above grade of 2 inches or greater at time of planting.*

Staff response and findings of fact: This shall be a condition of approval. There are 21 trees proposed between street trees on Row River Road and Thornton Road and in the islands around the parking area. As a condition of approval the applicant shall obtain an ODOT permit for any planting or landscaping work proposed within the ODOT right-of-way.

7. *Shrub Size. Shrubs shall be planted from 5 gallon containers or larger.*

Staff response and findings of fact: This shall be a condition of approval.

8. *Non-plant Ground Covers. Bark dust, chips, aggregate, or other non-plant ground covers may be used, but shall cover no more than 25 percent of the area to be landscaped and shall be confined to areas underneath plants. Non-plant ground covers cannot be a substitute for ground cover plants.*

Staff response and findings of fact: This shall be a condition of approval.

9. *Significant Vegetation. Significant vegetation protected in accordance with Section 30 14.2.200 may be credited toward meeting the minimum landscape area standards. Credit*

shall be granted on a per square foot basis. The Street Tree standards of Section 14.32.400 may be waived by the City when existing trees protected within the front or street side yard provide the same or better shading and visual quality as would otherwise be provided by street trees.

Staff response and findings of fact: There is not any significant vegetation as described in Section 14.32.200. This criterion does not apply.

10. *Storm Water Facilities. Storm water treatment facilities (e.g., detention/retention ponds and swales designed for water quality treatment), when required under Section 14.34.400, shall be landscaped with water tolerant, native plants, including native grasses.*

Staff response and findings of fact: No onsite systems to treat stormwater are proposed. This criterion does not apply.

E. Landscape Design Standards. *All yards, parking lots, and required street tree planter strips that are required to meet the standards of this Section shall be landscaped to provide, as applicable, erosion control, visual interest, buffering, privacy, open space and pathway identification, shading, and wind buffering, based on the following criteria:*

2. *Parking areas.*

a. *A minimum of 10 percent of the total surface of all parking areas as measured around the perimeter of parking spaces and maneuvering areas shall be landscaped. Such landscaping shall consist of trees and shrubs and/or ground cover plants that conform to the criteria in Section 14.32.300.E.1.a-h above. "Evenly distributed" means that the trees and other plants are distributed around the parking lot perimeter and between parking bays to provide a partial canopy.*

Staff response and findings of fact: A minimum of 10% of the total surface of the parking area will be landscaped, using plants that conform to the requirements of Section 14.32.300.E(1).

b. *Parking area landscaping shall consist of at minimum:*

1) *Trees: 1 tree for every 3,000 square feet of paved vehicular use area evenly distributed throughout site;*

Staff response and findings of fact: The applicant proposes the planting of 18 new trees abutting and within the parking and maneuvering area. The minimum required is one tree per 3,000 sf of surface area. As proposed the applicant is proposing one tree per approximately every 750 sf. This criterion is met.

2) *Landscaping between street and parking area within 50 feet of street: A landscape strip at least 7 feet in width is required between a street and parking area. It may be pierced by pedestrian and vehicular accessways. Strips shall be planted with low shrubs to form a continuous screen at least 30 inches high and maintained not to exceed 42 inches high or a masonry wall; and shall contain 1 canopy tree every 30 linear feet as measured along street lot line and living plant materials covering 75% of required landscape area within 3 years;*

Staff response and findings of fact: A 25' wide landscaping strip is proposed between the parking lot and the back of sidewalk to Row River Road except where pierced by curb cuts and pedestrian walkways. This criterion is met.

3) *Perimeter parking area landscaping: All parking areas shall provide perimeter Landscape strip at least 7 feet in width along perimeter of parking lot. Must include 100% site obscuring 6 foot fence or wall against interior lot lines of residential districts, or 50% site obscuring 6 foot fence (chain link with slats and vegetation) against interior lot lines of adjoining commercial or industrial properties; and*

Staff response and findings of fact: The proposed parking layout of the site orients the parking areas to the right-of-way and the building. Along the parking area adjacent to Row River Road a 7' wide vegetated buffer is proposed. This criterion is met.

4) *Planting islands: Planting islands shall be provided at the ends of each parking row and at intervals within parking rows so that no parking stall is more than 45 feet from a planting island. Planting islands shall be at least 7 feet in width, as measured from the outside edge of a 6 inch wide curb, and a minimum area of 140 square feet. Each of these islands shall provide at least 1 canopy tree.*

Staff response and findings of fact: As shown on the Site Plan, the applicant is proposing eight planting islands that are at least 7' in width, or larger, at the end of the row of parking spaces and at regular intervals so as that no distance is greater than 45' from a planting island. Planting islands are also sited at pedestrian crossing to assist with clearly defining the pedestrian crossing areas. This criterion is met.

3. *Buffering and Screening Required. Buffering and screening are required under the following conditions:*

a. *Parking/Maneuvering Area Adjacent to Streets and Drives. Where a parking or maneuvering area is adjacent and parallel to a street or driveway, a 7 foot wide landscape strip shall be located parallel to the street to provide visual buffering. The 7 foot wide landscape strip shall include either an evergreen hedge; decorative wall (masonry or similar quality material) with openings; arcade, trellis, or similar partially opaque structure 3-4 feet in height. The required screening shall have breaks, where necessary, to allow pedestrian access to the site. The design of the wall or screening shall also provide breaks or openings for visual surveillance of the site and security. Evergreen hedges used to comply with this standard shall be a minimum of 36 inches in height at maturity, and shall be of such species, number, and spacing to provide the required screening within 1 year after planting. Any areas between the wall/hedge and the street/driveway line shall be landscaped with plants or other vegetative ground cover to provide 75% vegetative cover. All landscaping shall be irrigated.*

Staff response and findings of fact: The applicant proposes to install a 7' wide vegetated buffer at the head of the parking areas adjacent to the right-of-way of Row River Road. This criterion is met.

b. *Parking/Maneuvering Area Adjacent to Building. Where a parking or maneuvering area, or driveway, is adjacent to a building, the area shall be separated from the building by a curb and a raised walkway, plaza, or landscaped buffer not less than 5 feet in width. Raised curbs, bollards, wheel stops, or other design features shall be used to protect pedestrians, landscaping, and buildings from being damaged by vehicles. Where parking*

areas are located adjacent to residential ground-floor living space, a 4-foot wide landscape buffer with a curbed edge may fulfill this requirement.

Staff response and findings of fact: The parking areas that face internal and toward the proposed building are separated from the building by a raised pedestrian walkway and a variable width lawn area with a minimum width of 40'. This criterion is met.

c. *Screening of Mechanical Equipment, Outdoor Storage, Service and Delivery Areas, and Other Screening When Required. All mechanical equipment, outdoor storage and manufacturing areas shall be screened from view from all public streets and adjacent Residential districts. Garbage areas and/or containers shall be screened on all sides regardless of their location on the property. When these or other areas are required to be screened, such screening shall be provided by:*

Staff response and findings of fact: All mechanical equipment and garbage areas will be screened from view from all public streets. The applicant proposes a fenced dumpster area. This shall be a condition of approval.

F. Maintenance and Irrigation. *Irrigation is required for all required commercial, industrial or multi-family landscape areas. The use of drought-tolerant plant species is encouraged. If the plantings fail to survive, the property owner shall replace them with an equivalent specimen (i.e., evergreen shrub replaces evergreen shrub, deciduous tree replaces deciduous tree, etc.). All man-made features required by this Code shall be maintained in good condition, or otherwise replaced by the owner. Backflow devices shall be required for all irrigation systems.*

Staff response and findings of fact: This shall be a condition of approval.

14.32.400 Street Trees

Street trees shall be planted for all developments that are subject to Subdivision, Master Plan or Site Design Review. Requirements for street tree planting strips are provided in Section 14.34.100, Transportation Standards. Planting of street trees shall generally follow construction of curbs and sidewalks; however, the City may defer tree planting until final inspection of completed dwellings to avoid damage to trees during construction. The planting and maintenance of street trees shall conform to the following standards and guidelines and any applicable road authority requirements:

A. Growth Characteristics. *Trees shall be selected based on climate zone, growth characteristics and site conditions, including available space, overhead clearance, soil conditions, exposure, and desired color and appearance. The following should guide tree selection by developers and approval by the City:*

1. Provide a broad canopy where shade is desired and over pedestrian walkways or parking areas, except where limited by available space or except in section 4.

2. Use low-growing trees for spaces under low utility wires.

3. Select trees that can be "limbed-up" to comply with vision clearance requirements.

4. Use narrow or "columnar" trees where awnings or other building features limit growth, or where greater visibility is desired between buildings and the street.

5. Use species with similar growth characteristics on the same block for design continuity.

6. Avoid using trees that are susceptible to insect damage and trees that produce excessive seeds or fruit.

7. Select trees that are well-adapted to the environment, including soil, wind, sun exposure, temperature tolerance, and exhaust. Drought-resistant trees should be chosen where they suit the specific soil type.

8. Select trees for their seasonal color if desired.

9. Use deciduous trees for summer shade and winter sun, unless unsuited to the location due to soil, wind, sun exposure, annual precipitation, or exhaust.

10. The diameter of the tree trunk at maturity shall not exceed the width and size of the planter strip or tree well.

***B. Caliper Size.** The minimum diameter or caliper size at planting, as measured 4 feet above grade, shall be 2 inches.*

***C. Spacing and Location.** Street trees shall be planted within the street right-of-way within existing and proposed planting strips or in sidewalk tree wells on streets without planting strips, except when utility easements occupy these areas. Selected street tree species should be low maintenance and not interfere with public safety. Street tree spacing shall be based upon the type of tree(s) selected and the canopy size at maturity and, at a minimum, the planting area shall contain 16 square feet, or typically, 4 feet by 4 feet. In general, trees shall be spaced no more than 30 feet apart, except where planting a tree would conflict with existing trees, retaining walls, utilities and similar physical barriers. All street trees shall be placed outside utility easements. If preexisting utility easements prohibit street trees within the sidewalk, required trees may be located in the front yard setback or within other required landscape areas as approved by the approval body.*

***D. Soil Preparation, Planting and Care.** The developer shall be responsible for planting street trees, including soil preparation, ground cover material, staking, and temporary irrigation for three years after planting. The developer shall also be responsible for tree care (pruning, watering, fertilization, and replacement as necessary) during the first three years after planting, after which the adjacent property owners shall maintain the trees.*

***E. Street Tree List.** See the following list for appropriate street trees. The developer may plant a tree species not included on this list when approved by the Community Development Director.*

Staff response and findings of fact: The applicant has proposed the planting of ten street trees along Row River Road at regular 30' intervals. There are overhead power lines, hence the appropriate tree selection shall be a Class I Street Tree. The proposed area of planting of the street trees along Row River Road is within the ODOT right-of-way. Applicant/developer shall obtain the necessary ODOT permit for planting within the ODOT right-of-way as a condition of approval. *Due to the presence of the Emerald Ash Borer in the State of Oregon the City requests that no ash trees be planted with this development.

14.33.300 Automobile Parking Standards

B. Vehicle Parking - Minimum Standards by Use.

Staff response and findings of fact: The proposed development complies with the minimum parking requirements identified in Table 14.33.300A, which states that the required minimum parking for Retail Sales and Service – General Retail is two (2) spaces per 1,000 sq. ft. The enclosed building area is 19,715 sf requiring a total of forty (40) parking spaces. A total of forty-one (41) on-site parking spaces, including one (1) van accessible ADA parking space and one (1) ADA parking space, are provided. No compact spaces are proposed. This criterion is met.

D. Vehicle Parking - Minimum Accessible Parking.

1. Accessible parking shall be provided for all uses in accordance the standards in Table 14.33.300B; parking spaces used to meet the standards in Table 14.33.300.B shall be counted

toward meeting off-street parking requirements in Table 14.33.300.A;

2. *Such parking shall be located in close proximity to building entrances and shall be designed to permit occupants of vehicles to reach the entrance on an unobstructed path or walkway. Accessible routes should be linked to required access aisles;*

3. *Accessible spaces shall be grouped in pairs where possible;*

4. *Where covered parking is provided, covered accessible spaces shall be provided in the same ratio as covered non-accessible spaces;*

5. *Required accessible parking spaces shall be identified with signs and pavement markings identifying them as reserved for persons with disabilities; signs shall be posted directly in front of the parking space at a height of no less than 42 inches and no more than 72 inches above pavement level. Van spaces shall be specifically identified as such.*

Staff response and findings of fact: The applicant proposes a van accessible ADA parking space and an ADA parking space. The minimum required per Table 14.33.300 when there are 25-50 spaces of total parking is two spaces with one being van accessible. This criterion is met as proposed and shall be a condition of approval.

F. General Parking Standards.

1. *Location. Vehicle parking is allowed only on streets, within garages, carports, and other structures, or on driveways or parking lots that have been developed in conformance with this code. Chapter 2, Land Use Districts, prescribes parking location for some land uses (e.g., the requirement that parking for some multiple family and commercial developments be located to side or rear of buildings), and Chapter 14.31, Access and Circulation, provides design standards for driveways. Street parking spaces shall not include space in a vehicle travel lane (including emergency or fire access lanes), public right-of-way, pedestrian accessway, landscape, or other undesignated area. Required off-street parking shall not be located in the front or street side setback.*

Staff response and findings of fact: The proposed parking lot meets the standards of Chapter 14.31. No street parking spaces are proposed. The required parking is not located in any required front or street side setback. This criterion has been met.

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 (i.e., the uses operate on different days or at different times of the day). The City may reduce the total parking required accordingly through Land Use Review.*

Staff response and findings of fact: There is only one land use proposed with this application therefore this criterion does not apply.

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 overlap (e.g., uses primarily of a daytime versus nighttime nature; weekday uses versus weekend uses), and provided that the right of joint use is evidenced by a recorded deed, lease, contract, or*

similar written instrument establishing the joint use. The City may approve owner requests for shared parking through Land Use Review.

Staff response and findings of fact*:* There is no shared parking proposed with the development. This criterion does not apply.

4. *Availability of facilities. Owners of off-street parking facilities may post a sign indicating that all parking on the site is available only for residents, customers, and/or employees. Signs shall conform to the standards of Chapter 14.39.*

Staff response and findings of fact*:* The applicant may choose to post the parking area for private use.

5. *Lighting. Parking areas shall have lighting to provide at least 2 foot-candles of illumination over parking spaces and walkways. Light standards shall be directed downward only and shielded to prevent lighting spillover into any adjacent residential district or use.*

Staff response and findings of fact*:* At time of site development permit application the applicant shall show lighting design meeting the required 2-foot candle. Lights shall be shielded/aimed away from adjacent uses and residences. This shall be a condition of approval.

6. *Screening of Parking Areas. Parking spaces shall be located or screened so that headlights do not shine onto adjacent residential uses, per Section 14.32.300.E.*

Staff response and findings of fact: There are no adjacent residential uses or residential zoning. This criterion does not apply.

G. Exceptions and Special Standards for Parking.

2. *Special Standards for Commercial Customer Parking. The motor vehicle parking areas shall be located and designed to facilitate safe and convenient pedestrian and bicycle movement to and from public sidewalks, streets or transit stops. Ways to achieve this standard may include, but are not limited to:*

    a. *Front facades and primary entrances of all buildings are oriented to a public street or a private internal drive or street, to minimize pedestrian and bicycle travel through a parking area and to provide safe, convenient, and direct travel routes for pedestrians;*

Staff response and findings of fact*:* The main entrance to the building is connected to the right-of-way of Row River Road via an ADA accessible path with delineated crossings at all vehicle maneuvering areas providing safe and separate direct pedestrian travel routes within the site. This criterion is met.

    b. *One or more raised walkways are provided through the parking areas, meeting federal American with Disabilities Act requirements, in order to provide safe, convenient, and direct travel routes for pedestrians through the parking areas;*

Staff response and findings of fact*:* Sidewalks are provided throughout the development for safe, convenient and direct travel routes for pedestrians. These sidewalks and corridors are designed to meet ADA requirements and the Cottage Grove Municipal Code. This criterion is met.

    c. *Walkways abutting parking spaces or maneuvering areas are protected from vehicles*

through either landscaping buffers, minimum 3 feet wide on each side, or curbs on both sides;

Staff response and findings of fact: All walkways are proposed to be raised 6" with curbs or clearly delineated for crosswalks. This criterion is met.

d. Walkways across vehicle aisles are delineated with non-asphaltic material in a different color or texture than the parking areas;

Staff response and findings of fact: The walkway from the ADA parking space and the garbage enclosure shall be clearly delineated. This shall be a condition of approval.

e. On-site pedestrian walkways and bikeways connect to existing pedestrian and bicycle circulation systems that serve adjacent commercial uses or residential areas;

Staff response and findings of fact: The pedestrian facilities proposed with this development connect to the exiting sidewalk system located in the Row River Road right-of-way. This criterion is met.

f. Internal drives or streets are designed to City standards for local streets in regard to pavement width, sidewalks and street trees. Sidewalks comply with ADA standards. Sidewalks 10-15 feet wide abutting front building facades are strongly encouraged. Internal vehicular circulation design for the site complies with City street connectivity standards, including maximum block length and perimeter.

Staff response and findings of fact: The proposed development is not accessed via a private access way. This criterion does not apply.

g. Internal drives or streets connect to public streets abutting the site, unless physically precluded by pre-existing buildings.

Staff response and findings of fact: The proposed new driveway approach requires an access permit from the City of Cottage Grove. At time of site development the City Engineer will provide necessary details for the construction of the approaches. This criterion is met.

h. Structures are located on the site to facilitate future infill and redevelopment of parking and landscape areas.

Staff response and findings of fact: Once this site is developed, there will be no opportunities for infill or redevelopment. This criterion is met.

i. For shopping centers abutting one or more transit routes, one or more transit stops are located and designed with the approval when applicable of the local transit provider;

Staff response and findings of fact: No shopping centers are proposed, therefore this criteria is not applicable.

j. No drive-up, drive-in, or drive-through drives or lanes are located between a building and a public or private street.

Staff response and findings of fact: Drive through facilities require adequate queuing space to ensure vehicles don't obstruct travel on existing private and public streets. As proposed by the applicant and reviewed under CUP 3-22 the drive-up is located to the north of the main entrance and provides space for pull up donations with vehicles having space for side-by-side queuing providing approximately 140' of queuing length. As established no queuing of vehicles in the right-of-way is permitted as a condition of approval. This criterion is met.

H. Maximum Number of Parking Spaces. *The number of parking spaces provided by any particular use in ground surface parking lots shall not exceed the minimum number of spaces required for each use as provided by this Section by more than 50%.*

I. Parking Stall Design and Minimum Dimensions. *All off-street parking spaces shall be improved to conform to City standards for surfacing, stormwater management, and striping. Standard parking spaces shall conform to the following standards and the dimensions in Figures 14.33.300.F(1) through (3), and Table 14.33.300.F:*

1. *Motor vehicle parking spaces shall measure minimum 9 feet wide by 18 feet long;*
2. *For large parking lots exceeding 10stalls, alternate rows may be designated for compact cars provided that the compact stalls do not exceed 30% of the total required stalls. A compact stall shall measure minimum 8 feet in width and 15 feet in length and shall be signed for compact car use;*
3. *All parallel motor vehicle parking spaces shall measure 9 feet by 20 feet unless within a public right-of-way, when they shall measure a minimum of 7 to 8 feet by 20 feet;*
4. *Parking area layout shall conform to the dimensions in Figure 14.33.300.F(1) and (2), and Table 14.33.300F, below;*
5. *Public alley width may be included as part of dimension "D" in Figure 14.33.300.F(1), but all parking stalls must be on private property;*
6. *Parking areas shall conform to Federal Americans With Disabilities Act (ADA) standards for parking spaces (dimensions, van accessible parking spaces, etc.). Parking structure vertical clearance, van accessible parking spaces, should refer to Federal ADA guidelines; and*
7. *Bicycle parking shall be on a 2 feet by 6 feet minimum concrete pad per bike, or within a garage or patio of residential use.*

Staff response and findings of fact: Figure 14.33.300.J in the Development Code requires 90 degree parking spaces like those proposed to be a minimum of 18' x 9', with a minimum clear aisle width of 24'. The parking stalls proposed in the parking lot meet this dimensional standard, as the van accessible site and one other space. All accessible parking will be constructed to comply with Federal ADA standards. This criterion is met.

14.33.400 Bicycle Parking Requirements

B. Minimum Required Bicycle Parking Spaces. *A minimum of one bicycle parking space per use is required for all uses subject to Site Design Review. Table 14.33.400 lists additional standards that apply to specific types of development. Uses shall provide long- and short-term bicycle parking spaces, as designated in Table 14.33.400 and subsections C-J below. Where two options are provided (e.g., 2 spaces, or 1 per 8 bedrooms), the option resulting in more bicycle parking is used.*

Staff response and findings of fact: The minimum bicycle parking required for this proposed use per this section is two long term and four short term bicycle parking spaces. All bike parking spaces will comply

with the dimensional requirements of 2-feet wide by 6-feet in length and shall not block required paths of travel (4' clearance minimum). The location and design of bicycle parking shown on the site plan meets the standards of Section 14.33.400.D. This criterion is met.

14.34.010 Public Facilities -- Purpose and Applicability

A. Purpose. *The purpose of this Chapter is to provide planning and design standards for public and private transportation facilities and utilities. Streets are the most common public spaces, touching virtually every parcel of land. Therefore, one of the primary purposes of this Chapter is to provide standards for attractive and safe streets that can accommodate vehicle traffic from planned growth and provide a range of transportation options, including options for driving, walking, bus transit, and bicycling. This Chapter is also intended to implement the City's Transportation System Plan.*

B. When Standards Apply. *Unless otherwise provided, the standard specifications for construction, reconstruction, or repair of transportation facilities, utilities, and other public improvements within the City shall occur in accordance with the standards of this Chapter. No development may occur unless the public facilities related to development comply with the public facility requirements established in this Chapter.*

Staff response and findings of fact: Per Engineering Comments dated December 6, 2022, the following conditions shall apply to this development:

General

- Although the plans are marked "not for construction", If the submitted engineering plans for mitigation approval in this application, they must be sealed and signed by the engineer.
- Development of the property will require that all cable utilities be placed underground including telephone, television and power. This requirement is inclusive of any connections to the feeder main. Separate permits from the individual private utilities will be required. Private utilities designs will be required prior to construction.
- Traffic control shall be in accordance of the Manual of Uniform Traffic Control Devices for all work performed in the public right-of-way.
- Developer will be responsible for payment of all system development charges and design review and other associated fees.
- The City of Cottage Grove requires a minimum of five feet horizontal separation from its utilities and all other utilities. This distance is measured from outside of pipe to outside of pipe. Other utility companies may have stricter standards than this. The standard with the greatest separation will apply.
- An Erosion control permit will be required. Improvement plans shall include details and language on the method of erosion control in the contract documentation. Erosion control measures shall be in place before any construction begins.
- If site disturbance exceeds one-acre, the applicant shall obtain a DEQ 1200C permit.

Streets

- This project will utilize an existing access to Row River Rd and another access to be slightly adjusted on Thornton Rd. The proposed new access for freight/fire lane onto Thornton Road shall comply with City Standard Detail No. 215.
- New and reconstructed driveway approaches shall conform to the City of Cottage Grove Standards.

- Any damage to sidewalk during construction, will result in replacement of any damaged panels. Any damage to an ADA ramp or driveway will require complete replacement to bring the ramp(s) and driveway to current standards. Any replacement work shall meet City Standards.
- Due to identified road alignment issues on Thornton Road the City will accept a "waiver of non-remonstrance" for the improvements to Thornton Road.

Water

- Water service lines shall be copper as per city standard.
- It wasn't clear in the plans if there is a nearby public fire hydrant. Applicant should verify with the Fire Marshal if a public hydrant is needed.
- Upon payment of fee, the City of Cottage Public Works crew will tap and set water meters. The crew tries to schedule installation within 10 business day. Crew will provide a stub out of the back side of the meter so private plumber can install backflow devices and install the remaining portion of the water service.
- Water meter(s) shall be placed in the sidewalk. The meter shall be place in a matter that they will not be covered up with parked vehicles, personal property, and/or trash cans.
- All new development is required to install a backflow device on the customer side of each water meter. This requirement can be deferred until the building permit process. Contact Utility Maintenance Supervisor for details.
- The Oregon Administrative Rules requires a 10-foot horizontal separation between water lines and sanitary sewer lines include water and sewer services within the public right of way. The proposed plans meet this requirement.
- Show irrigation lines, number of sprinkler heads and irrigation zones as well as any irrigation meter on the building permit plans to properly size the irrigation meter.
- Show water fixtures for each unit on the building plans so staff can check meter size for each unit as outlined in the plumbing code.
- Please include any hose bibbs on the building permit plans. Please indicate which water service they are to be attached too.

Sanitary Sewer

- Plans show a new 8-inch sanitary sewer lateral from the proposed development to the sewer main. If the sewer lateral is going to be a 4 inch line, the tap on the sewer main shall follow the City of Cottage Grove Standard Detail #304. The cleanout at property line is not required as shown on the detail. If proposed sewer lateral is over 4 inches as shown in the plans, then a manhole shall be installed at the connection point of the sewer main and proposed sewer lateral. The manhole shall be constructed to City standards as outline in City of Cottage Grove Standard detail #303.
- Developers are is responsible for the costs and the construction of the sewer services on private property.

Storm Drainage

- Storm water runoff is not to adversely affect adjacent property owners; therefore, no overland flow is allowed. All storm water runoff from this development shall be contained on the property prior to connecting the public storm drainage system. Building plans should include spot elevations or enough detail to show staff that all storm water runoff from site is captured on site before entering the public storm drainage system, including from back of the driveway approach(s).

- There is a recessed loading dock proposed; however, it is unclear how the stormwater and/or sanitary drainage will drain. Runoff from the uncovered portion shall be intercepted prior to draining under the roof, and drain into the private storm system. The covered portion shall drain to the sanitary sewer.
- The stormwater memo needs to be sealed and signed by a Professional Engineer registered in the State of Oregon.

Chapter 14.35 Stormwater Management

14.35.100 Erosion Prevention

A. Purpose. The purpose of this chapter is to restrict the discharge of sediments or other construction-related materials, including hazardous substances as identified in Section 13.08.150, into the city stormwater system to:

1. Prevent or minimize, to the maximum extent practicable, negative impacts to adjacent properties, water quality, and stormwater-related natural resource areas resulting from construction activities; and

2. Maintain the capacity of the city stormwater system by minimizing sedimentation.

B. When Standards Apply.

1. <u>When Standards Apply.</u> Unless otherwise provided, the standards in this chapter apply to all construction activities that result in any one or all of the following:

a. Land disturbance, including, but not limited to, clearing, grading, grubbing, logging, excavating, filling, and storing of materials;

b. Structural development or demolition, including, but not limited to, buildings, bridges, roads, and other infrastructure;

c. Impervious surfaces, including, but not limited to, parking lots, driveways, walkways, and patios; or

d. Dewatering.

2. <u>Exempt Activities.</u> Notwithstanding the foregoing, the following activities shall be exempt from the provisions of this section:

a. Actions by a public utility, the city, or any other governmental agency to remove or alleviate an emergency condition, restore utility service, or reopen a public thoroughfare to traffic; or

b. Actions by any other person when the city determines, and documents in writing, that the actions are necessary to remove or alleviate an emergency condition, restore utility service, or reopen a public thoroughfare to traffic.

C. Compliance. Regardless of whether a permit is required under subsection E of this section, no person shall engage in any construction activity covered by subsection (B)(1) of this section in a manner that can potentially impact water quality, adjacent properties or stormwater-related natural resource areas except as allowed by this code. All persons shall implement erosion prevention and sediment control measures designed to meet the outcomes below. Failure to meet those outcomes shall subject the person to the same enforcement provisions as those applicable to a permit holder under subsection F of this section.

D. Expected Outcomes. All persons conducting construction activities covered in subsection B of this section shall employ, to the maximum extent practicable, erosion prevention and construction site management practices that will achieve during both the construction period and wet weather season the following outcomes:

1. Adjacent properties, water features, and related natural resource areas are kept free of deposits or discharges of soil, sediment or construction-related material from the site except those that would occur through natural processes from an undisturbed site;

2. Vegetation in water features, related natural resource areas, and associated bank and/or riparian areas adjacent to construction sites are preserved or protected from impacts that exceed those that occur through natural processes on an undisturbed site;

3. Public rights-of-way, the city stormwater system and related natural resource areas, private streets and private stormwater drainage systems that discharge to the city stormwater system are kept free of mud, soil, sediment, concrete washout, trash, or other similar construction-related material. Direct deposit, dropping, dumping, erosion, tracking, or other discharge by construction vehicles of materials shall not occur in excess of those that occur through natural processes from an undisturbed site. Any such discharges that occur shall be prevented from entering water features or the city stormwater system and removed not later than the end of the day in which the discharge occurred, or as directed by the city. During the wet weather season corrective action shall be taken immediately for such discharges;

4. Soils and stockpile areas shall not be exposed to precipitation or stormwater runoff without the provision of secondary containment, perimeter controls, and other approved BMPs;

5. Earth slides, mudflows, earth sloughing, or other earth movement which may leave the property shall not occur in excess of those that occur through natural processes on an undisturbed site;

6. No discharge into the city stormwater system or related natural resource areas of construction-related contaminants resulting from activities such as, but not limited to, cleaning or washing of equipment, tools, or vehicles shall occur; and

7. No hazardous substances, such as paints, thinners, fuels, and other chemicals shall be released onto the site, onto adjacent properties, or water features, the city stormwater system, or related natural resource areas.

E. Erosion Prevention Permit.

1. <u>Permit Required.</u> Except as otherwise provided in subsection (E)(6) of this section, no person shall commence any construction activity without first obtaining from the city one of the erosion prevention permits listed below if the construction activity:

a. Is located in a designated sensitive land area; and/or

b. Is located within the public right-of-way and requires permits from the Cottage Grove engineering department; and/or

c. Requires a building permit or sewer/water line permit from the Cottage Grove public works and development department.

Construction activity that disturbs more than one acre of land must obtain a 1200C permit from the Department of Environmental Quality (DEQ).

Staff response and findings of fact: The subject property is 2.04 acres with the complete developed area being approximately 70,000 sf. A 1200C Permit from DEQ must be obtained as a condition of approval.

14.38.550 Community Commercial District Signs

The following sign standards have been established for the Community Commercial Districts:

A. Single Business. Each business which occupies a separate development site shall be permitted a maximum number of 3 signs totaling 200 square feet for all faces.

B. Multiple Businesses. Multiple businesses occupying the same building and/or approved development site shall be permitted a maximum number of 2 wall signs for each business, totaling 2 square feet per lineal foot of business frontage facing the principal street. Maximum size of combined wall signage per business shall be 100 square feet.

C. Free Standing, Roof and Projecting Signs for Multiple Tenant Sites. In addition to wall signs permitted above, 1 sign from this group shall be permitted for each approved multi-tenant development site. The total area permitted for a free standing sign, roof or projecting sign shall be 50 square feet for 1 face or 100 square feet for 2 or more faces at a maximum of 20 feet above grade.

D. Business Identification. In addition to the signage allowed above, each business may have 1 unlighted sign not exceeding 1 square foot in area per tenant and bearing only property numbers, postbox numbers, names of occupants, or occupation of occupant of the premises.

E. Encroachment. The minimum height for all signs encroaching in the public right of way shall be eight feet above grade. The maximum encroachment into the public right of way shall be 6 feet, provided that no sign shall encroach within 2 feet of any curb or driveway line.

E. Comprehensive Signage Plan. Applicants may choose to apply for a Comprehensive Sign Plan approval to modify the above requirements (see Section 14.38.800).

Staff response and findings of fact: The applicant did not submit a signage plan with this application submittal. This section and its criterion are for reference only. Developer is encouraged to contact ODOT if they wish to have a free-standing sign that projects into the Row River Road right-of-way.

CONCLUSION

Site Design Review **approval** pursuant to Section 14.42.600 Site Design Review Approval Criteria and subject to the recommended conditions is supported by the findings of fact that establish compliance with the applicable state and local standards.

STAFF RECOMMENDATION

That the Site Design Review SDR 3-22 be **approved** for the proposed 19,715 retail building with drive-up donation facility located at 910 Row River Road pursuant to Section 14.42.600 Site Design Review Approval Criteria which are supported by findings of fact and conditions that can establish compliance with applicable state and local standards.

CONDITIONS OF APPROVAL

1. Major modifications to these plans shall be approved by the Planning Commission.
2. Conditions of approval of Conditional Use Permit CUP 3-22 are applicable to this Site Design Review.
3. No queuing of vehicles is permitted in the public right-of-way.
4. Prior to occupancy the applicant/developer shall complete a re-plat of Partition Plat No. 2005-P1923 to eliminate the boundary between Parcels 2 and 3.
5. No storage of goods, materials, debris, or refuse is permitted in the freight/fire lane along the east side of the building.
6. The freight/fire lane shall be signed and striped as "No Parking/Fire Lane".
7. All pedestrian crossings of vehicle maneuvering areas shall be clearly delineated crosswalk will be required, compliant with ADA, and be clearly marked with striping or contrasting paving materials (e.g., light-color concrete inlay between asphalt), which may be part of a raised/hump crossing area. Tactile warning devices are required at all pedestrian crossings of vehicle maneuvering areas.
8. Required accessible parking spaces shall be identified with signs and pavement markings identifying them as reserved for persons with disabilities; signs shall be posted directly in front of the parking space at a height of no less than 42 inches and no more than 72 inches above pavement level. Van spaces shall be specifically identified as such.
9. Compliance with parking standards in Chapter 14.33.300 shall be verified prior to certificate of occupancy. Compliance with these requirements and parking dimensional standards will be verified prior to issuance of a certificate of occupancy. At minimum, 40 parking spaces of 18'x9' in dimension plus one van accessible ADA parking space and one ADA accessible space must be provided.
10. Provision of two long term bicycle parking spaces and four short-term shall be a requirement on the plans for building permit submittal, and both short and long term bike parking must be installed prior to occupancy. Location and design of bicycle parking shall meet standards of Section 14.33.400.D.
11. All proposed pedestrian walkways abutting driveways and streets will be raised 6 inches and curbed around the edge.
12. All walkways shall be at least 6' wide free and clear.
13. Landscaping and irrigation installation shall be complete as proposed/approved prior to certificate of occupancy.
14. A combination of deciduous and evergreen trees, shrubs, and ground covers shall be used for all planted areas, the selection of which shall be based on local climate, exposure, water availability, and drainage conditions. When new vegetation is planted, soils shall be amended, as necessary, to allow for healthy plant growth.
15. Non-native, invasive" plants, as per Section 14.32.200.B, shall be removed during site development and the planting of new invasive species is prohibited.
16. All landscaped area, whether or not required, that is not planted with trees and shrubs, or covered with non-plant material, shall have ground cover plants that are sized and spaced as follows: a minimum of one plant per 12 inches on center in triangular spacing, or other planting pattern that is designed to achieve 75 percent coverage of the area not covered by shrubs and tree canopy.
17. Trees shall have a minimum diameter or caliper 4 feet above grade of 2 inches or greater at time of planting. The City requests that ash trees not be selected for the final landscaping plan.
18. Shrubs shall be planted from 5 gallon containers or larger.
19. Bark dust, chips, aggregate, or other non-plant ground covers may be used, but shall cover no more than 25 percent of the area to be landscaped and shall be confined to areas underneath plants. Non-plant ground covers cannot be a substitute for ground cover plants.
20. A seven foot (7') wide landscaping strip around the perimeter parking areas of property and landscaping area along the west property line shall be planted with low shrubs to form a

continuous screen at least 30 inches high and maintained not to exceed 42 inches high or a masonry wall; and shall contain 1 canopy tree every 30 linear feet as measured along street lot line and living plant materials covering 75% of required landscape area within 3 years. The required screening shall have breaks, where necessary, to allow pedestrian access to the site. Evergreen hedges used to comply with this standard shall be a minimum of 36 inches in height at maturity, and shall be of such species, number, and spacing to provide the required screening within 1 year after planting. Any areas between the wall/hedge and the street/driveway line shall be landscaped with plants or other vegetative ground cover to provide 75% vegetative cover. All landscaping shall be irrigated.

21. ODOT permits are required for any work or development, such as landscaping, within the right-of-way of Row River Road.
22. All mechanical equipment and garbage areas will be screened from view from all public streets and adjacent residential areas to the west. All mechanical equipment and garbage areas will be screened from view from all public streets. The applicant proposes a chain link garbage enclosure with slats and landscaping for screening.
23. Irrigation is required for all required commercial, industrial or multi-family landscape areas. The use of drought-tolerant plant species is encouraged. If the plantings fail to survive, the property owner shall replace them with an equivalent specimen (i.e., evergreen shrub replaces evergreen shrub, deciduous tree replaces deciduous tree, etc.). Backflow devices shall be required for all irrigation systems.
24. All man-made features required by this Code shall be maintained in good condition, or otherwise replaced by the owner.
25. Parking areas shall have lighting to provide at least 2 foot-candles of illumination over parking spaces and walkways. Light standards shall be directed downward only and shielded to prevent lighting spillover into any adjacent residential district or use.
26. The property owner shall execute and record a “Waiver of Non-remonstrance” for the improvements (sidewalk, curb and gutter, etc) to Thornton Road.
27. A DEQ 1200-C Permit is required.
28. Engineering Comments dated December 6, 2022 are considered conditions of approval and shall be met prior to building occupancy.

EXHIBITS

A. Engineering Comments, Branch Engineering, December 6, 2022
B. Applicant’s Application and Narrative
C. Site Plans & Elevations
D. Transportation Impact Analysis

EXHIBIT A:
MEMO

To: Eric Mongan, Assistant Planner

From: Damien Gilbert, P.E., City Engineer

Subject: Engineering Comments
St. Vincent DePaul Site Review and Conditional Use Permit

Date: December 6, 2022

The following comments are based on a type III permit application for site design review and conditional use. The reviewed documents were received via email on December 1, 2022. Changes may occur during the review process and/or development phase that will be in conflict with statements below and some issues may have been overlooked that will be commented on during the building review process and/or development phase of this project.

General

- Although the plans are marked "not for construction", If the submitted engineering plans for mitigation approval in this application, they must be sealed and signed by the engineer.
- Development of the property will require that all cable utilities be placed underground including telephone, television and power. This requirement is inclusive of any connections to the feeder main. Separate permits from the individual private utilities will be required. Private utilities designs will be required prior to construction.
- Traffic control shall be in accordance of the Manual of Uniform Traffic Control Devices for all work performed in the public right-of-way.
- Developer will be responsible for payment of all system development charges and design review and other associated fees.
- The City of Cottage Grove requires a minimum of five feet horizontal separation from its utilities and all other utilities. This distance is measured from outside of pipe to outside of pipe. Other utility companies may have stricter standards than this. The standard with the greatest separation will apply.
- An Erosion control permit will be required. Improvement plans shall include details and language on the method of erosion control in the contract documentation. Erosion control measures shall be in place before any construction begins.
- If site disturbance exceeds one-acre, the applicant shall obtain a DEQ 1200C permit.
-

Streets

- This project will utilize an existing access to Row River Rd and another access to be slightly adjusted on Thornton Rd. The proposed new access for freight/fire lane onto Thornton Road shall comply with City Standard Detail No. 215.
- New and reconstructed driveway approaches shall conform to the City of Cottage Grove Standards.
- Any damage to sidewalk during construction, will result in replacement of any damaged panels. Any damage to an ADA ramp or driveway will require complete replacement to bring the ramp(s) and driveway to current standards. Any replacement work shall meet City Standards.

- Due to identified road alignment issues on Thornton Road the City will accept a "waiver of non-remonstrance" for the improvements to Thornton Road.

Water

- Water service lines shall be copper as per city standard.
- It wasn't clear in the plans if there is a nearby public fire hydrant. Applicant should verify with the Fire Marshal if a public hydrant is needed.
- Upon payment of fee, the City of Cottage Public Works crew will tap and set water meters. The crew tries to schedule installation within 10 business day. Crew will provide a stub out of the back side of the meter so private plumber can install backflow devices and install the remaining portion of the water service.
- Water meter(s) shall be placed in the sidewalk. The meter shall be place in a matter that they will not be covered up with parked vehicles, personal property, and/or trash cans.
- All new development is required to install a backflow device on the customer side of each water meter. This requirement can be deferred until the building permit process. Contact Utility Maintenance Supervisor for details.
- The Oregon Administrative Rules requires a 10-foot horizontal separation between water lines and sanitary sewer lines include water and sewer services within the public right of way. The proposed plans meet this requirement.
- Show irrigation lines, number of sprinkler heads and irrigation zones as well as any irrigation meter on the building permit plans to properly size the irrigation meter.
- Show water fixtures for each unit on the building plans so staff can check meter size for each unit as outlined in the plumbing code.
- Please include any hose bibbs on the building permit plans. Please indicate which water service they are to be attached too.

Sanitary Sewer

- Plans show a new 8-inch sanitary sewer lateral from the proposed development to the sewer main. If the sewer lateral is going to be a 4 inch line, the tap on the sewer main shall follow the City of Cottage Grove Standard Detail #304. The cleanout at property line is not required as shown on the detail. If proposed sewer lateral is over 4 inches as shown in the plans, then a manhole shall be installed at the connection point of the sewer main and proposed sewer lateral. The manhole shall be constructed to City standards as outline in City of Cottage Grove Standard detail #303.
- Developers are is responsible for the costs and the construction of the sewer services on private property.

Storm Drainage

- Storm water runoff is not to adversely affect adjacent property owners; therefore, no overland flow is allowed. All storm water runoff from this development shall be contained on the property prior to connecting the public storm drainage system. Building plans should include spot elevations or enough detail to show staff that all storm water runoff from site is captured on site before entering the public storm drainage system, including from back of the driveway approach(s).
- There is a recessed loading dock proposed; however, it is unclear how the stormwater and/or sanitary drainage will drain. Runoff from the uncovered portion shall be intercepted prior to draining under the roof, and drain into the private storm system. The covered portion shall drain to the sanitary sewer.

- The stormwater memo needs to be sealed and signed by a Professional Engineer registered in the State of Oregon.

Traffic Impact Analysis

The Traffic Impact Analysis (TIA) identifies a crash at the existing Gold Rush Espresso driveway from the ODOT Crash Data Reports Ser. #01954 06/02/2016 12L00PM Action Code 11 – Stopped in traffic waiting to make a left turn into Espresso Stand at the driveway near the intersection. If intersection queues exceed the distance to the revised access location, traffic will be stopped on Thornton Rd. creating a potential rear-end risk condition.

Also, based on the TIA, there should be more throat at the driveway that will be shared with Arby's. If more than one vehicle is queued departing this driveway, left turns into Arby's will be blocked and traffic will be stopped in the entry to the site. The TIA projects queuing at two-vehicles.

After the project traffic is added to these driveways, it is likely queues will block left turns into Arby's and the Espresso Stand. Although the TIA didn't recommend mitigation or adjustments, it is recommended a condition of approval be added to the land use decision that the applicant be responsible for City and State approved safety modifications if the anticipated queuing conflicts occur in either of the site accesses and the agencies identify a hazard. The applicant team should consider modifications to make these adjustments to their site plan.

EXHIBIT B

CITY OF COTTAGE GROVE

File No.: _____
Date Submitted by Applicant: _____
Date Deemed Complete: _____

400 Main Street Cottage Grove, OR 97424

TYPE III PERMIT APPLICATION

To: City of Cottage Grove Planning Commission

A. Applicant

1. Name: Mike Magee Phone No.: 541-683-8661 x5
2. Mailing Address: 1369 Olive Street, Eugene, OR 97401
3. Email Address: magee@bdarch.net
4. Status: Owner ✔ Agent

Note: If agent you must have owner's consent and signature.

B. Owner *(if not applicant)*

4. Owner's Name: ST. Vincent de Paul Society of Lane County Phone No.: 541-743-7152
5. Owner's Mailing Address: P.O. Box 24608, Eugene, OR 97402

C. Location of Property

6. Address/Location: 185 Thornton Lane, Cottage Grove, OR 97424
7. Map & Tax Lot Number: 20-03-27-31; 210, 211
8. Present Use: vacant
9. Proposed Use: retail store and donation drop off

D. Request for Consideration

10. Type of Land Use Application applying for: Site Design Review

Options: Conditional Use, Greenway Conditional Use, Cottage Industry, Historic Alteration, Land Use District Map changes (no plan amendment required), Master Planned Developments, Site Design Reviews, Subdivisions, Variance (Class C)

11. Is this application filed in association with other land use permit applications?

✔ Yes No

12. Reasons for Application: new construction of retail store in Community Commercial District (C-2P)

E. Required Information

☐ Narrative Statement: This application must be filed with one copy of a narrative statement that explains how the application satisfies each and all of the relevant criteria and standards in sufficient detail for review and decision-making.

Note: Additional information may be required under the specific application requirements for each approval, e.g., Chapters 4.2 (Land Use Review), 4.3 (Land Divisions), 4.4 (Conditional Use), 4.5 (Master Planned Developments), 4.6 (Modifications), 4.8 (Code Interpretations), 4.9 (Miscellaneous Permits) and 5.1 (Variances).

☐ Plans: Three (3) sets of plans, including one (1) set of plans in a reproducible form that is no larger than 11"x17" in size. Content of plans will vary with application type. Refer to submittal requirements for specific application type.

☐ Neighborhood Meeting verification (for Master Planned Developments, Conditional Uses and Subdivisions). Must include copy of meeting notice and minutes and/or recording of meeting.

☐ Non-refundable application fee.

G. Signature

I hereby request a Type III Permit on the above described real property, which is either owned by or under contract of sale to the applicant, and is located within the City of Cottage Grove, Oregon.

I hereby acknowledge that this application is not considered filed and complete until all of the required information has been submitted as determined by the Community Development Director and all required fees have been paid in full. Once the original application is submitted, Staff has 30 days to determine whether an application is complete. Within 30 days a letter will be mailed to you either deeming the application complete or requesting additional information. If additional information is requested you have 150 days to either: submit the missing information, submit some of the information and written notice that no other information will be provided, or submit a written notice that none of the missing information will be provided. *Once your application is deemed complete* you will be assigned a public hearing date before the Planning Commission and Staff will have 120 days to complete the processing of your application. (ORS 227.178)

	Owner:	Agent:
Signature:	KMK	
Name:	SVdP, Kristen Karle	Mike Magee
Date:	11/15/22	11/14/2022

Office Use Only

Date Application Received: _____ Initials: _____

Date Application Complete: _____ Initials: _____

Applicant Notified of Completeness: _____

Fee Paid: _____ Receipt No._____ Initials: _____

BDA
Architecture & Planning, P.C.

1369 Olive Street
Eugene, OR 97405

bdarch.net
541.683.8661

November 18, 2022

City of Cottage Grove
Attn: Planning Department
400 East Main Street
Cottage Grove, OR 97424

Re: New Retail Thrift Store for St. Vincent de Paul of Lane County, Inc.

Proposal Description

Applicant / Owner:
St. Vincent de Paul of Lane County, Inc.
P.O. Box 24608
Eugene, OR 97402

Location:
185 Thornton Lane (corner of Thornton Lane and Row River Road)
Cottage Grove, OR 97424
Map: 20-03-27-31; Tax Lots 210 & 211

Present Conditions: Vacant / Undeveloped Area
Base Zone: C-2P Community Commercial
Lot Area: 2.02 acres = 87,991.2 sf

Proposal

This Type III Site Design Review and Conditional Use Permit application is to develop a new retail store on a lot partition of Map 20-03-27-31, Tax Lots 210 and 211, located at the corner of Thornton Road and Row River Road. The property is zoned C2P Community Commercial and is currently vacant. The owner will consolidate the two tax lots as a condition of final occupancy.

The proposed development utilizes the existing access to the site on Row River Road. The existing sidewalk along Row River Road will remain, as will the access easement to the property north of the subject site. The existing access on Thornton Road, near the intersection of Row River Road, will be moved approximately northeast to provide at least 30'-0" to the corner of Row River Road. The existing coffee stand and access to the east of the coffee stand will remain. A new access on Thornton Road is proposed for the new 14'-0" wide service drive behind the building. Frontage improvements along Thornton Road will be deferred through a waiver of non-remonstrance.

Proposed parking and landscaping will meet the requirements of the Community Design Standards.

The retail portion of the building is 15,485 sf, and the sorting and storage area is 4,230 sf. The donation drop off drive and the loading dock are both adjacent to the sorting and storage area. In addition to the retail space and sorting/storage area, interior spaces include restrooms, a break room and lockers for staff (with long-term bike storage), and an office.

The proposed building is a pre-engineered steel structure. The roofing and exterior siding will be metal panel, and the doors and windows along Row River Road and Thornton Road will be storefront.

The site is designed to comply with all applicable provisions of the Community Commercial Land Use District (Chapter 14.23) and the Community Design Standards (Chapter 14.30) as demonstrated below. The application for Site Design Review and the associated Conditional Use Permit contain the required information for a Type III review under Chapters 14.42 and 14.44.

Attachments:

Type III Site Design Review Application

Type III Conditional Use Permit Application

Title Report

Site Analysis Map

Civil, Landscape and Architectural Drawings

Stormwater Memo

Traffic Impact Study

Chapter 14.23 - Commercial Districts

14.23.120 Commercial Districts - Development Standards

Table 14.23.120: C2P Community Commercial District

- Min. Lot Area: 60 width x 80 depth
  Proposed: North = 246.12', South = 297.38', East = 246.02', West = 432.03'
  88,000 sq. ft.
- Max height (level site): 60 feet
  Proposed: 21'-10"
- Max. building coverage: 60%
  Proposed: 24.4% (21,435 sq. ft.)
- Min. landscape area: 10% of site area
  Proposed: 24% (21,000 sq. ft.)
- Min Setbacks (front, street, sides, rear): 0 ft
  Proposed: Front (Row River Rd)= 120'-3", Street (Thornton Rd) = 17'-6", Side = 37'-4",
  Rear = 25'-0"
- Garage/carport setback from street: 20 ft
  N/A
- Alley: 3 ft
  N/A
- Build to line (new buildings): 60 ft; may be increased per Section 14.23.170
  Proposed: 136'-5"; increase per Section 14.23.170

14.23.130 Commercial Districts – Zero Setbacks and Build-To Line
A. Zero Setbacks and Build-To Line are intended to encourage pedestrian-oriented development, while providing more flexibility in site design than what is possible with large setbacks. With buildings placed close to the street, a development can afford good access for emergency service providers in the case of a fire or other emergency. Where no minimum setback in required, all structures and building shall conform to the vision clearance standards in Chapter 14.31 and the applicable fire and building codes. Build-To Line Applicability: At least one primary building entrance shall be built no farther from the street right-of-way than the build-to line… The build-to line may also be increased through Site Design Review when pedestrian amenities are provided between a primary building entrance and the street right-of-way. (See also Section 14.23.170 and 14.23.180.)
An increase of the build-to line is requested. The proposed site design provides pedestrian-oriented development via raised crosswalks and pedestrian amenities as shown on the landscape plan; it also meets the requirements of Section 14.31.300 Pedestrian Access and Circulation. The open space around the building allows for ample emergency service provider access.

14.23.140 Commercial Districts – Lot Coverage and Impervious Surface
Lot coverage and impervious surfaces are calculated as provided under Section 14.22.160
Lot coverage shall be as provided in Table 14.23.120.

14.23.150 Commercial Districts – Building Orientation and Commercial Block Layout

C. Building Orientation Standards

1. Compliance with the setback and build-to line standards in Section 14.23.120
   See Section 14.23.120 above
2. All buildings shall have at least one primary entrance facing an adjoining street
   Proposed primary building entry faces Row River Road.
3. Parking shall not be placed between building and the street; except as provided under 14.23.150.C(4)
   See exception criteria below
4. In C2P zone this arrangement may be allowed if the approval body finds that the following criteria are met:
   a) The placement will not affect pedestrian's safety and convenience based on the distance from sidewalk to building entrance, projected vehicle traffic volumes, and available pedestrian walkways
      Raised surfaces are proposed at all pedestrian crosswalks.
   b) The proposed vehicle areas are limited to one driveway of no more than 24 ft in width with adjoining bays with no more than 8 consecutive parking spaces per bay on the side(s) of the drive aisle
      The proposed driveway width is 24'-0", and parking bays are limited to 8 consecutive parking spaces.
   c) The building's primary entrance is connected to an adjoining street by a pedestrian walkway
      A direct pedestrian walkway is proposed to connect the main entry to the Row River Road walkway.

D. Block Layout Standards: only applicable to developments containing 40,000 sf or more building floor area

Not applicable; proposed building area is 19,715 sf; total covered area is 21,435 sf

14.23.160 Commercial Districts –Building and Structure Height; Bonus for Mixed-Use

Not applicable

14.23.170 Commercial Districts – Architectural Design Standards

A. Purpose and applicability: all new buildings shall meet the standards which are applied through site design review.

B. Pedestrian Orientation: This standard is met when all the criteria below are met or when approved by site review board.

1. Building orientation standards are met (per 14.23.150)
   See Section 14.23.150 above
2. If primary entrance is not abutting a street, it shall have walkways connecting it to the street sidewalk; every building shall have at least one primary entrance that does not require passage through a parking lot to gain access.
   One primary pedestrian entrance through the parking lot meeting the exception criteria per 14.23.150.C(4) is proposed.

3. Corner buildings (located within 20 ft from a corner) shall have at least one corner entrance
   Not applicable
4. In C2P zone: at least 40% of the front façade shall be located at the "built-to-line" or closer
   Propose to meet exception criteria per 14.23.150.C(4)
5. Ground floor windows shall be provided along at least 40% of the street facing façade
   Display windows are proposed along 40% of the Row River Road and Thornton Road façades.
6. Primary building entry shall have a weather protection
   A canopy is provided over the primary building entry.
7. Drive-up and drive through facilities, when allowed, shall conform to Section 14.23.180; the provisions of which shall not be modified without a variance (Chapter 14.51).
   See Section 14.23.180 below

C. Compatibility

All new buildings and major remodels shall be designed consistent with the architectural context in which they are located. This standard is met when the approval body finds that the following criteria are met: continuity in adjacent building sizes, elevations, roof elevations, window and door rhythm, relationship of building to public spaces, etc.

The existing adjacent buildings are a mixture of scale and style. The proposed building design is intended to complement the existing architectural context.

D. Human Scale

1. Regularly spaced and similarly shaped windows are provided on all building stories
   Regularly spaced and similarly shaped windows are proposed.
2. Ground floor retail spaces shall have ceiling height of 12-16ft with display windows
   Display windows and a minimum ceiling height of 12' are provided.
3. Display windows shall be recessed, trimmed, or defined by wainscotting, sills, water tables, or similar architectural features
   Definition of display windows will be provided.
4. On multi-story buildings…
   Not applicable
5. The tops of flat roofs…
   Not applicable
6. Pitched roofs have eaves, brackets, gables with decorative vents, or other detailing that is consistent with the surrounding architecture
   Detailing of the pitched roofs will be provided.
7. Historic design and compatibility requirements…
   Not applicable
8. Where buildings with greater than 5,000 square feet of enclosed ground-floor space are proposed, they shall provide articulated facades on all street-facing elevations. This criterion is met when an elevation contains at least 1 of the following features for every 30 feet of building (horizontal length):
   Windows, primary entrances, weather protection, buildings offsets, projections, changes in elevation or horizontal direction, a distinct pattern of divisions in surface materials, ornamentation, small scale lighting, etc.

The proposed facade along Row River Road provides windows, primary entrances, weather protection, offsets, and/or projections every 30 horizontal feet maximum. The façade along Thornton Road provides windows every 30 horizontal feet maximum.

14.23.180 Commercial Districts – Special Use Standards

A. Drive-Up/Drive-In/Drive-Through Uses and Facilities: When drive-up or drive-through uses and facilities are allowed, no driveways or queuing areas shall be located between the building and a street. **The proposed donation drop off drive-through is located to the side of the primary building entrance, so pedestrians do not have to cross the queuing lanes to enter the building.**

Chapter 14.30 – Community Design Standards

14.30.200 Design Standards - Applicability

The standards in Chapter 14.30 are applied based on whether a project is classified as a *Major Project* or a *Minor Project*. In addition, each chapter of Chapter 14.30 contains "applicability directions." In general, the chapters are applied as follows:

A. Major Project. Major projects, including developments that require Site Design Review (Chapter 14.42), Land Division approval (Chapter 14.43), Master Planned Development (Chapter 14.45), and amendments to the Comprehensive Plan or Zoning Map (Chapter 14.47), must conform to the applicable sections of:

- Access and Circulation (Chapter 14.31)
- Landscaping, Street Trees, Fences and Walls (Chapter 14.32)
- Parking and Loading (Chapter 14.33)
- Public Facilities (Chapter 14.34)
- Surface Water Management (Chapter 14.35)
- Signs (Chapter 14.36)
- Sensitive Lands (Chapter 14.38)

B. Minor Project. Minor projects are small developments and land use actions that require only Land Use Review or Conditional Use approval (no site design review). The following chapters generally apply; however, individual sections will not apply to some projects.

- Access and Circulation (Chapter 14.31)
- Landscaping, Street Trees, Fences and Walls (Chapter 14.32)
- Parking and Loading (Chapter 14.33)
- Surface Water Management (Chapter 14.35)
- Signs (Chapter 14.36)
- Sensitive Lands (Chapter 14.38)

C. Non-Conforming Situations. See Chapter 14.53 for provisions related to non-conforming uses and developments.

The proposed development is a Major Project which requires Site Design Review, and must conform to the standards below.

Chapter 14.31 — Access and Circulation

14.31.200 Vehicular Access and Circulation

A. Intent and Purpose. The intent of this Section is to manage access to land uses and on-site circulation, and to preserve the transportation system in terms of safety, capacity, and function. This Section applies to all public streets within the City of Cottage Grove, and to all properties that abut these roadways. This Section implements the access management policies of the Cottage Grove Transportation System Plan.

B. Applicability. This Chapter applies to all public streets within the City and to all properties that abut these streets. The standards apply when lots are created, consolidated, or modified through a land division, partition, lot line adjustment, lot consolidation, or street vacation; and when properties are subject to Land Use Review or Site Design Review.

C. Access Permit Required. Access (e.g., a new curb cut or driveway approach) to a public street requires an Access Permit. An access permit may be in the form of a letter to the applicant, or it may be attached to a land use decision notice as a condition of approval. In either case, approval of an access permit shall follow the procedures and requirements of the applicable road authority (i.e. Cottage Grove, Lane County or ODOT), Permits shall be processed as Type I applications, normally at time of Land Use Review. If the developer proposes exceptions to the standards of this chapter, the permit shall be processed as a Type II application.

The proposed development utilizes the existing access on Row River Road. The existing access on Thornton Road, near the intersection of Row River Road, will be moved to the northeast to provide at least 30'-0" to the corner of Row River Road (per (G)(1) below). The existing coffee stand access to the east of the coffee stand will remain. A new access on Thornton Road is proposed for the new 14'-0" wide service drive behind the building.

D. State Access Permits. ODOT has responsibility and authority in managing access to State Highways. Projects with direct access onto a State Highway shall be required to obtain a State access permit. An approved State access permit must be submitted as part of all Type II and III land use permits. Conditions placed by the State upon these access permits shall be considered conditions of approval for all applicable development approvals.

Row River Road is a State right-of-way; however, no new access is proposed. Thornton Road is not a State right-of-way.

E. Traffic Study Requirements. The City may require a traffic study prepared by a qualified professional to determine access, circulation, and other transportation requirements in conformance with Section 14.41.900, Traffic Impact Study.

A Traffic Impact Study is provided since the proposed development will result in an increase in site traffic volume generation by more that 300 average daily trips (Section 14.41.900(A)(4)).

F. Conditions of Approval. The City may require the closing or consolidation of existing curb cuts or other vehicle access points, recording of reciprocal access easements (i.e., for shared driveways), development of a frontage street, installation of traffic control devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and efficient operation of the street and highway system.

G. Corner and Intersection Separation; Backing onto Public Streets. New and modified accesses shall conform to the following standards:

1. Except as provided under subsection 4, below, the distance from a street intersection to a driveway or other street access shall meet the minimum spacing requirements for the street's classification in the City's Transportation System Plan. No driveway approach may be

located closer to the corner than 30 feet on local streets, 50 feet on collector streets, and 75 feet on arterials;

The existing access on Thornton Road, near the intersection of Row River Road, will be moved approximately 6'-0" to the northeast to provide 30'-0" to the corner of Row River Road. All other existing and proposed access meet this standard.

2. When the above requirements cannot be met due to lack of frontage, the driveway may be located such that the driveway apron will begin at the farthest property line, but at no time shall new property access be permitted within 30 feet of an intersection. Where no other alternatives exist, the City may allow construction of an access connection at a point less than 30 feet from an intersection, provided the access is as far away from the intersection as possible (See Figure 3.1.200.G). In such cases, the City may impose turning restrictions (i.e., right in/out, right in only, or right out only);

Not applicable

3. Access to and from off-street parking areas shall not permit backing onto a public street, except for single-family and two-family dwellings;

The site parking areas have been designed such that backing onto a public street is not required for vehicular circulation.

4. The City may reduce required separation distance of access points where they prove impractical due to lot dimensions, existing development, other physical features, or conflicting code requirements, provided all of the following requirements are met:

a. Joint-use driveways and cross-access easements are provided in accordance with Subsection 14.31.200.H;
b. The site plan incorporates a unified access and circulation system in accordance with this Section; and
c. The property owner(s) enter in a written agreement with the City, recorded with the deed, that pre-existing connections on the site will be closed and eliminated after construction of each side of the joint-use driveway.

Not applicable

H. Site Circulation. New developments shall be required to provide a circulation system that accommodates expected traffic on the site. Pedestrian connections on the site, including connections through large sites, and connections between sites (as applicable) and adjacent sidewalks, must conform to the provisions in Section 14.31.300.

Expected traffic to the site will enter and exit from / on to Row River Road and Thornton Road. The drive aisles will be at minimum 24'-0" wide along the parking areas, Internal sidewalks lead from the public sidewalk to the building entries.

I. Joint and Cross Access – Requirement. The number of driveway and private street intersections

with public streets should be minimized by the use of shared driveways for adjoining lots where feasible. When necessary for traffic safety and access management purposes, or to access flag lots, the City may require joint access and/or shared driveways in the following situations as follows:

The existing driveway on Row River Road is shared with the property to the north; a private access easement is recorded.

1. For shared parking areas;

2. For adjacent developments, where access onto an arterial is limited;

3. For multi-tenant developments, and multi-family developments on multiple lots or parcels. Such joint accesses and shared driveways shall incorporate all of the following:
   a. A continuous service drive or cross-access corridor that provides for driveway separation consistent with the applicable transportation authority's access management classification system and standards;
   b. A design speed of 10 miles per hour and a maximum paved width of 20 feet, in addition to any parking alongside the driveway; additional driveway width or fire lanes may be approved when necessary to accommodate specific types of service vehicles, loading vehicles, or emergency service provider vehicles;
   c. Driveway stubs to property lines (for future extension) and other design features to make it easy to see that the abutting properties may be required with future development to connect to the cross-access driveway;
   d. Fire Department-approved turnaround for service drives or driveways over 150' long.

Not applicable

J. Joint and Cross Access – Reduction in Required Parking Allowed. When a shared driveway is provided or required as a condition of approval, the land uses adjacent to the shared driveway may have their minimum parking standards reduced in accordance with the shared parking provisions of Section 14.33.300.C.

Not applicable

K. Joint and Cross Access – Easement and Use and Maintenance Agreement. Pursuant to this Section, property owners shall:

1. Record an easement with the deed allowing cross-access to and from other properties served by the joint-use driveways and cross-access or service drive;
2. Record an agreement with the deed that remaining access rights along the roadway for the subject property shall be dedicated to the City and pre-existing driveways will be closed and eliminated after construction of the joint-use driveway;
3. Record a joint maintenance agreement with the deed defining maintenance responsibilities of property owners.

The required easement, use and maintenance agreements have been recorded.

L. Access Connections and Driveway Design. All commercial and industrial driveway connections to a public right-of-way (access) and driveways shall conform to all of the following design standards:

M. Fire Access and Turnarounds. When required under the Uniform Fire Code, fire access lanes with turnarounds shall be provided. Except as waived in writing by the Fire Marshal, a fire equipment access drive shall be provided for any portion of an exterior wall of the first story of a building that is located more than 150 feet from an existing public street or approved fire equipment access drive. The drive shall contain unobstructed adequate aisle width of 20 feet with paved surface between 14-20 feet, an unobstructed vertical clearance of 13 feet 6 inches and approved turn-around area for emergency vehicles, as required by the current adopted Oregon Fire Code. The Fire Marshal may require that fire lanes be marked as "No Stopping/No Parking." For requirements related to cul-de-sacs or dead-end streets, please refer to Section 3.4.100.N.

The proposed building is located within less than 150 feet from the parking areas to the west, the service drives to the north and east, and Thornton Road to the south. The parking areas and service drives meet the approved fire equipment access drive requirements: 20'-0" unobstructed width, 14'-0" wide drive with paved surface, and unobstructed vertical clearance of 13'-6".

N. Vertical Clearances. Driveways, private streets, aisles, turn-around areas and ramps shall have a minimum vertical clearance of 13 feet 6 inches for their entire length and width.

The minimum vertical clearance of 13'-6" is provided at all driveways, aisles, and the loading dock ramp.

O. Vision Clearance. No visual obstruction (e.g., sign, structure, solid fence, or shrub vegetation) between 2 1/2 feet and 8 feet in height shall be placed in "vision clearance areas" on streets, driveways, alleys, or mid-block lanes, as shown in Figure 3.1.200.N. The minimum vision clearance area may be modified by the City Engineer upon finding that more or less sight distance is required (i.e., due to traffic speeds, roadway alignment, etc.). This standard does not apply to light standards, utility poles, trees trunks and similar objects.

The proposed project will comply with the criterion. A 20'-0" vision clearance triangle will be maintained at the driveways with no obstruction between 2'-6" and 8'-0" in height.

P. Construction. The following development and maintenance standards shall apply to all driveways, parking areas, turnarounds, alleys and private streets:

1. Surface Options. Driveways, parking areas, alleys, aisles, and turnarounds may be paved with asphalt, concrete, or comparable surfacing, or an approved durable non-paving or porous paving material, excluding gravel, may be used to reduce surface water runoff and protect water quality. Driveway and street materials shall be subject to review and approval by the City Engineer.

The proposed project will comply with the criterion. Asphalt and concrete surface material will be used for driveways, parking areas and sidewalks.

2. Surface Water Management. When non-porous paving is used, all driveways, parking areas, alleys, aisles, and turnarounds shall have on-site collection of surface waters to eliminate sheet flow of such waters onto public rights-of-way and abutting property. Surface water facilities shall be constructed in conformance with Chapter 14.35 and applicable engineering standards. Single-family and two-family dwellings shall be exempt from this standard.

All storm water runoff shall be directed to a new treatment manhole prior to connecting to the public storm drainage system; see civil drawings.

3. Driveway Aprons. When driveway approaches or "aprons" are required to connect driveways to the public right-of-way, they shall be paved with concrete surfacing and conform to the City's engineering design criteria and standard specifications. (See general illustrations in Section 14.31.200.L, above.)

The proposed driveway aprons will be constructed with concrete/asphaltic concrete and designed to conform with the City's engineering design criteria.

14.31.300 Pedestrian Access and Circulation

A. Site Layout and Design. To ensure safe, direct, and convenient pedestrian circulation, all developments, except single-family and two-family detached housing (i.e., on individual lots), shall provide a continuous pedestrian system. The pedestrian system shall be based on the standards in subsections 1-3, below:

1. Continuous Walkway System. The pedestrian walkway system shall extend throughout the development site and connect to all future phases of development, and to existing or planned off-site adjacent trails, public parks, and open space areas to the greatest extent practicable. The developer may also be required to connect or stub walkway(s) to adjacent streets and to private property with a previously reserved public access easement for this purpose, in accordance with the provisions of Section 14.31.200, Vehicular Access and Circulation, and Section 14.34.100, Transportation Standards.

The on-site walkway system extends through the development site and connects to the public sidewalk, consistent with this standard. There are no adjacent areas requiring a pedestrian connection. All walkways will be constructed to meet ADA standards.

2. Safe, Direct, and Convenient. Walkways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent streets, based on the following definitions:

a. Reasonably direct. A route that does not involve a significant amount of out-of-direction travel for likely users.
b. Safe and convenient. Routes that are reasonably free from hazards and provide a reasonably direct route of travel between destinations.
c. "Primary entrance" for commercial, industrial, mixed use, public, and institutional buildings is the main public entrance to the building. In the case where no public

entrance exists, street connections shall be provided to the main employee entrance.

d. "Primary entrance" for residential buildings is the front door (i.e., facing the street). For multifamily buildings in which each unit does not have its own exterior entrance, the "primary entrance" may be a lobby, courtyard, or breezeway that serves as a common entrance for more than one dwelling.

The proposed walkway system is designed to be direct, convenient and safe, with raised surfaces at all crosswalks within the proposed development. The raised surfaces will be constructed to meet ADA standards. The proposed walkways connect Row River Road to the primary building entrance and the donation entrance.

There is no existing walkway along Thornton Road. Frontage improvements along Thornton Road will be deferred through a waiver of non-remonstrance.

3. Connections Within Development. Connections within developments shall be provided as required in subsections a-c, below:

a. Walkways shall connect all building entrances to one another to the extent practicable, as generally shown in Figure 14.31.300.A(1);

b. Walkways shall connect all on-site parking areas, storage areas, recreational facilities and common areas, and shall connect off-site adjacent uses to the site to the extent practicable. Topographic or existing development constraints may be cause for not making certain walkway connections, as generally shown in Figure 3.1.300.A(1); and

c. Large parking areas shall be broken up so that no contiguous parking area exceeds 3 acres. Parking areas may be broken up with plazas, large landscape areas with pedestrian access ways (i.e., at least 20 feet total width), streets, or driveways with street-like features. Street-like features, for the purpose of this section, means a raised sidewalk of at least 4-feet in width, with 6-inch curb, accessible curb ramps, street trees in planter strips or tree wells, and pedestrian-oriented lighting. (See also standards in Section 14.23.150.)

The proposed walkways within the development connect all building entrances, parking areas, and amenities. The parking areas will meet the requirements of 14.31.300(A)(3)(c), as well as the standards in Section 14.23.150.

B. Walkway Design and Construction. Walkways, including those provided with pedestrian access ways, shall conform to all of the standards in subsections 1-5, as generally illustrated in Figure 14.31.300.B:

1. Vehicle/Walkway Separation. Except for crosswalks (subsection 2), where a walkway abuts a driveway or street, it shall be raised 6 inches and curbed along the edge of the driveway/street. Alternatively, the decision body may approve a walkway abutting a driveway at the same grade as the driveway if the walkway is protected from all vehicle maneuvering areas. An example of such protection is a row of decorative metal or concrete bollards designed for withstand a vehicle's impact, with adequate minimum spacing

between them to protect pedestrians.

2. Crosswalks. Where walkways cross a parking area, driveway, or street ("crosswalk"), they shall be clearly marked with striping or contrasting paving materials (e.g., light-color concrete inlay between asphalt), which may be part of a raised/hump crossing area.

3. Walkway Width and Surface. Walkway and accessway surfaces shall be concrete, asphalt, brick/masonry pavers, or other durable surface, as approved by the City Engineer, at least 5 feet wide. Multi-use paths (i.e., for bicycles and pedestrians) shall be concrete or asphalt, at least 10 feet wide. (See also, Section 14.34.100 - Transportation Standards for public, multi-use pathway standard.)

4. Accessible routes. Walkways shall comply with applicable Americans with Disabilities Act (ADA) requirements. The ends of all raised walkways, where the walkway intersects a driveway or street shall provide ramps that are ADA accessible, and walkways shall provide direct routes to primary building entrances.

5. Sidewalk construction and maintenance. Sidewalk construction and maintenance shall be the responsibility of the abutting property owner.

The proposed development will meet the requirements of this Section 14.31.300(B).

Chapter 14.32 — Landscaping, Street Trees, Fences and Wall

14.32.200 Landscape Conservation

A. Applicability. All development sites containing Significant Vegetation, as defined below, shall comply with the standards of this Section. The purpose of this Section is to incorporate significant native vegetation into the landscapes of development and protect vegetation that is subject to requirements for Sensitive Lands (Chapter 14.37). The use of mature, native vegetation within developments is a preferred alternative to removal of vegetation and re-planting. Mature landscaping provides summer shade and wind breaks, controls erosion, and allows for water conservation due to larger plants having established root systems.

B. Significant Vegetation. "Significant vegetation" means individual trees and shrubs within designated Willamette River Greenway and/or Riparian areas, in accordance with Chapter 3.7, and trees not within a Sensitive Lands area that have a caliper of 8 inches or larger, except that protection shall not be required for plants listed as non-native, invasive plants by the Oregon State University (OSU) Extension Service in the applicable OSU bulletins for Lane County, and plants listed by the City as prohibited street trees and landscape plants. Non-native, invasive plants include, but are not limited to: purple loosestrife, leafy spurge, yellow starthistle, puncture vine, gorse, scotch broom, and non-native blackberry.

C. Mapping and Protection Required. Significant vegetation shall be mapped as required by Chapter 4.2, Site Design Review, and Chapter 3.7, Sensitive Lands. Significant trees shall be mapped individually and identified by species and diameter or caliper at 4 feet above grade. A "protection" area shall be defined around the edge of all branches (drip-line) of each tree. Drip lines may overlap between trees. The City also may require an inventory, survey, or assessment

prepared by a qualified professional when necessary to determine construction boundaries, building setbacks, and other protection or mitigation requirements.

D. Protection Standards. Significant trees and shrubs identified as meeting the criteria in Section B, above, shall be retained to minimize the risk of erosion, landslide, and stormwater runoff. Where protection is impracticable because it would prevent reasonable development of public streets, utilities, or land uses permitted by the applicable land use district, the City may allow removal of significant vegetation from the building envelope as defined by required yard setbacks. Where other areas must be disturbed to install streets or utilities, the applicant may be required to restore such areas after construction with landscaping or other means to prevent erosion and to protect the public health, safety, and welfare. With the owner's consent, the City may accept a land dedication or become a party to a conservation easement on private property for conservation purposes.

E. Construction. All significant vegetation on a site that is not otherwise designated and approved by the City for removal shall be protected prior to, during, and after construction in accordance with a limit-of-clearing and grading plan approved by the City. The City may limit grading activities and operation of vehicles and heavy equipment in and around significant vegetation areas to prevent compaction, erosion, pollution, or landslide hazards.

F. Exemptions. The protection standards in "D" and "E" shall not apply to:

1. Dead or Diseased Vegetation. Dead or diseased significant vegetation may be removed through a Type I Land Use Review.

2. Hazardous Vegetation and Other Emergencies. Significant vegetation may be removed without land use approval pursuant to Chapter 4 when the vegetation poses an immediate threat to life or safety, or the vegetation must be removed for other reasons of emergency (e.g., fallen over road or power line, blocked drainage way, or similar circumstance), as determined by the City or emergency service provider.

Not applicable. The subject property is not located within the Willamette River Greenway, Riparian, or other Sensitive Lands area. There are no existing trees over 8" in caliper on the development site.

14.32.300 Landscaping

A. Applicability. This Section shall apply to all new developments requiring Site Design Review. This section is not applicable to single-family or two-family dwellings.

B. Landscaping Plan Required. A landscape plan is required. All landscape plans shall conform to the requirements in Chapter 14.42.500, Section B.5 (Landscape Plans).

C. Landscape Area Standards. The minimum percentage of required landscaping equals:

1. Commercial Districts: 10% of the site.

The proposed development provides approximately 24% or 21,000 sf of landscaped area between the common spaces and parking area buffers. The total lot square footage is 88,000 sf.

D. Landscape Materials. Permitted landscape materials include trees, shrubs, ground cover plants, non-plant ground covers, and outdoor hardscape features, as described below. "Coverage" is based on the projected size of the plants at maturity, i.e., typically 3 or more years after planting.

1. Existing Vegetation. Existing non-invasive vegetation may be used in meeting landscape requirements. When existing mature trees are protected on the site (e.g., within or adjacent to parking areas) the decision making body may reduce the number of new trees required depending on the number and size of existing tree(s) protected.

2. Plant Selection. A combination of deciduous and evergreen trees, shrubs, and ground covers shall be used for all planted areas, the selection of which shall be based on local climate, exposure, water availability, and drainage conditions. When new vegetation is planted, soils shall be amended, as necessary, to allow for healthy plant growth.

3. "Non-native, invasive" plants, as per Section 3.2.200.B, shall be removed during site development and the planting of new invasive species is prohibited.

4. Hardscape features, i.e., patios, decks, plazas, etc., may cover up to 10 percent of the required landscape area. Swimming pools, sports courts, and similar active recreation facilities may not be counted toward fulfilling the landscape requirement.

5. Ground Cover Standard. All landscaped area, whether or not required, that is not planted with trees and shrubs, or covered with non-plant material (subsection 8, below), shall have ground cover plants that are sized and spaced as follows: a minimum of one plant per 12 inches on center in triangular spacing, or other planting pattern that is designed to achieve 75 percent coverage of the area not covered by shrubs and tree canopy.

6. Tree Size. Trees shall have a minimum diameter or caliper 4 feet above grade of 2 inches or greater at time of planting.

7. Shrub Size. Shrubs shall be planted from 5 gallon containers or larger.

8. Non-plant Ground Covers. Bark dust, chips, aggregate, or other non-plant ground covers may be used, but shall cover no more than 25 percent of the area to be landscaped and shall be confined to areas underneath plants. Non-plant ground covers cannot be a substitute for ground cover plants.

9. Significant Vegetation. Significant vegetation protected in accordance with Section 14.32.200 may be credited toward meeting the minimum landscape area standards. Credit shall be granted on a per square foot basis. The Street Tree standards of Section 14.32.400 may be waived by the City when existing trees protected within the front or street side yard provide the same or better shading and visual quality as would otherwise be provided by street trees.

10. Storm Water Facilities. Storm water treatment facilities (e.g., detention/retention ponds and swales designed for water quality treatment), when required under Section 14.34.400, shall be landscaped with water tolerant, native plants, including native grasses.

Compliance with this Section 14.32.300(D) will be shown in the landscaping plans to be submitted with the building permit application.

E. Landscape Design Standards. All yards, parking lots, and required street tree planter strips that are required to meet the standards of this Section shall be landscaped to provide, as applicable, erosion control, visual interest, buffering, privacy, open space and pathway identification, shading, and wind buffering, based on the following criteria:

1. Yard Setback Landscaping. Landscaping in yards shall:

a. Provide visual screening and privacy within side and rear yards and from incompatible adjoining uses or busy streets;
b. Use shrubs and trees as wind breaks;
c. Retain natural vegetation;
d. Define pedestrian pathways and open space areas with landscape materials;
e. Provide focal points within a development, for example, by preserving large or unique trees or groves, hedges, and flowering plants;
f. Use trees to provide summer shading within common open space areas and within front yards when street trees cannot be provided;
g. Use a combination of plants for year-long color and interest;
h. Use landscaping to screen outdoor storage and mechanical equipment areas, and to enhance graded areas such as berms, swales, and detention/retention ponds.

Compliance with this Section 14.32.300(E)(1) will be shown in the landscaping plans to be submitted with the building permit application.

2. Parking areas.

a. A minimum of 10 percent of the total surface of all parking areas as measured around the perimeter of parking spaces and maneuvering areas shall be landscaped. Such landscaping shall consist of trees and shrubs and/or ground cover plants that conform to the criteria in Section 14.32.300.E.1.a-h above. "Evenly distributed" means that the trees and other plants are distributed around the parking lot perimeter and between parking bays to provide a partial canopy.

b. Parking area landscaping shall consist of at minimum:

1) Trees: 1 tree for every 3,000 square feet of paved vehicular use area evenly distributed throughout site;

2) Landscaping between street and parking area within 50 feet of street: A landscape strip at least 7 feet in width is required between a street and parking area. It may be pierced by pedestrian and vehicular accessways. Strips shall be planted with low shrubs to form a continuous screen at least 30 inches high and maintained not to exceed 42 inches high or a masonry wall; and shall contain 1 canopy tree every 30 linear feet as measured along street lot line and living plant materials covering 75% of required landscape area within 3 years;

3) Perimeter parking area landscaping: All parking areas shall provide perimeter Landscape strip at least 7 feet in width along perimeter of parking lot. Must include 100% site obscuring 6 foot fence or wall against interior lot lines of residential districts, or 50% site obscuring 6 foot fence (chain link with slats and vegetation) against interior lot lines of adjoining commercial or industrial properties; and

5) Planting islands: Planting islands shall be provided at the ends of each parking row and at intervals within parking rows so that no parking stall is more than 45 feet from a planting island. Planting islands shall be at least 7 feet in width, as measured from the outside edge of a 6 inch wide curb, and a minimum area of 140 square feet. Each of

these islands shall provide at least 1 canopy tree.

Compliance with this Section 14.32.300(E)(2) will be shown in the landscaping plans to be submitted with the building permit application.

3. Buffering and Screening Required. Buffering and screening are required under the following conditions:

a. Parking/Maneuvering Area Adjacent to Streets and Drives. Where a parking or maneuvering area is adjacent and parallel to a street or driveway, a 7 foot wide landscape strip shall be located parallel to the street to provide visual buffering. The 7 foot wide landscape strip shall include either an evergreen hedge; decorative wall (masonry or similar quality material) with openings; arcade, trellis, or similar partially opaque structure 3-4 feet in height. The required screening shall have breaks, where necessary, to allow pedestrian access to the site. The design of the wall or screening shall also provide breaks or openings for visual surveillance of the site and security. Evergreen hedges used to comply with this standard shall be a minimum of 36 inches in height at maturity, and shall be of such species, number, and spacing to provide the required screening within 1 year after planting. Any areas between the wall/hedge and the street/driveway line shall be landscaped with plants or other vegetative ground cover to provide 75% vegetative cover. All landscaping shall be irrigated.

b. Parking/Maneuvering Area Adjacent to Building. Where a parking or maneuvering area, or driveway, is adjacent to a building, the area shall be separated from the building by a curb and a raised walkway, plaza, or landscaped buffer not less than 5 feet in width. Raised curbs, bollards, wheel stops, or other design features shall be used to protect pedestrians, landscaping, and buildings from being damaged by vehicles. Where parking areas are located adjacent to residential ground-floor living space, a 4- foot wide landscape buffer with a curbed edge may fulfill this requirement.

c. Screening of Mechanical Equipment, Outdoor Storage, Service and Delivery Areas, and Other Screening When Required. All mechanical equipment, outdoor storage and manufacturing areas shall be screened from view from all public streets and adjacent Residential districts. Garbage areas and/or containers shall be screened on all sides regardless of their location on the property. When these or other areas are required to be screened, such screening shall be provided by:

1) A decorative wall (i.e., masonry or similar quality material),
2) An evergreen hedge,
3) An opaque fence complying with Section 14.32.500, or
4) A similar feature that provides an opaque barrier.

Walls, fences, and hedges shall comply with the vision clearance requirements and provide for pedestrian circulation, in accordance with Chapter 3.1, Access and Circulation. (See Section 14.32.500 for standards specific to fences and walls.)

d. Flag Lot Screen. In approving a flag lot, the City may require a landscape screen and/or fence be installed along property line(s) of the flag lot, for privacy of adjoining residents,

in accordance with the provisions of Section 14.43.115. A flag lot screen shall not be required if the abutting property owner(s) indicate in writing that they do not want a screen or fence; however, the owner may install one at his or her discretion.

Compliance with this Section 14.32.300(E)(3) will be shown in the landscaping plans to be submitted with the building permit application.

F. Maintenance and Irrigation. Irrigation is required for all required commercial, industrial or multi-family landscape areas. The use of drought-tolerant plant species is encouraged. If the plantings fail to survive, the property owner shall replace them with an equivalent specimen (i.e., evergreen shrub replaces evergreen shrub, deciduous tree replaces deciduous tree, etc.). All man-made features required by this Code shall be maintained in good condition, or otherwise replaced by the owner. Backflow devices shall be required for all irrigation systems.

Compliance with this Section 14.32.300(F) will be shown in the landscaping plans to be submitted with the building permit application.

14.32.400 Street Trees

Street trees shall be planted for all developments that are subject to Subdivision, Master Plan or Site Design Review. Requirements for street tree planting strips are provided in Section 3.4.100, Transportation Standards. Planting of street trees shall generally follow construction of curbs and sidewalks; however, the City may defer tree planting until final inspection of completed dwellings to avoid damage to trees during construction. The planting and maintenance of street trees shall conform to the following standards and guidelines and any applicable road authority requirements:

A. Growth Characteristics. Trees shall be selected based on climate zone, growth characteristics and site conditions, including available space, overhead clearance, soil conditions, exposure, and desired color and appearance. The following should guide tree selection by developers and approval by the City:

1. Provide a broad canopy where shade is desired and over pedestrian walkways or parking areas, except where limited by available space or except in section 4.
2. Use low-growing trees for spaces under low utility wires.
3. Select trees that can be “limbed-up” to comply with vision clearance requirements.
4. Use narrow or “columnar” trees where awnings or other building features limit growth, or where greater visibility is desired between buildings and the street.
5. Use species with similar growth characteristics on the same block for design continuity.
6. Avoid using trees that are susceptible to insect damage and trees that produce excessive seeds or fruit.
7. Select trees that are well-adapted to the environment, including soil, wind, sun exposure, temperature tolerance, and exhaust. Drought-resistant trees should be chosen where they suit the specific soil type.
8. Select trees for their seasonal color if desired.
9. Use deciduous trees for summer shade and winter sun, unless unsuited to the location due to soil, wind, sun exposure, annual precipitation, or exhaust.
10. The diameter of the tree trunk at maturity shall not exceed the width and size of the planter strip or tree well.

B. Caliper Size. The minimum diameter or caliper size at planting, as measured 4 feet above grade, shall be 2 inches.

C. Spacing and Location. Street trees shall be planted within the street right-of-way within existing and proposed planting strips or in sidewalk tree wells on streets without planting strips, except when utility easements occupy these areas. Selected street tree species should be low maintenance and not interfere with public safety. Street tree spacing shall be based upon the type of tree(s) selected and the canopy size at maturity and, at a minimum, the planting area shall contain 16 square feet, or typically, 4 feet by 4 feet. In general, trees shall be spaced no more than 30 feet apart, except where planting a tree would conflict with existing trees, retaining walls, utilities and similar physical barriers. All street trees shall be placed outside utility easements. If preexisting utility easements prohibit street trees within the sidewalk, required trees may be located in the front yard setback or within other required landscape areas as approved by the approval body.

D. Soil Preparation, Planting and Care. The developer shall be responsible for planting street trees, including soil preparation, ground cover material, staking, and temporary irrigation for three years after planting. The developer shall also be responsible for tree care (pruning, watering, fertilization, and replacement as necessary) during the first three years after planting, after which the adjacent property owners shall maintain the trees.

E. Street Tree List. See the following list for appropriate street trees. The developer may plant a tree species not included on this list when approved by the Community Development Director.

Compliance with this Section 14.32.400 will be shown in the landscaping plans to be submitted with the building permit application.

14.32.500 Fences and Walls

Construction of fences and walls shall conform to all of the following requirements:

A. General Requirements. All fences and walls shall comply with the height limitations of the respective zoning district (Chapter 2) and the standards of this Section. The City may require installation of walls and/or fences as a condition of development approval, in accordance with land division approval (e.g., flag lots), approval of a conditional use permit, or site design review approval. If a fence is approved for greater than 6 feet in height, a building permit is also required. Any wall over 4 feet in height (measured from the bottom of the footing to the top of the wall) shall require a building permit and appropriate design from a licensed engineer. Fences must be located on private property. Fences and walls proposed on public right-of-way or public easements shall be subject to land use review approval.

B. Dimensions.

1. Except as provided under subsections 2 and 3, below, the height of fences and walls within a front yard setback shall not exceed 4 feet as measured from the grade closest to the street right-of-way.
2. A retaining wall exceeding 4 feet in height within a front yard setback, which is necessary

for site grading and development, may be approved through a land division or site development review.

3. No fence or wall may exceed 7 feet in height. Exceptions to this standard may be approved through a variance, master planned development or site design review.
4. One arbor, gate, or similar garden structures not exceeding 10 feet in height and 25 square feet in ground coverage, and has an entrance with a minimum clearance of 36 inches in width and 80 inches in height is allowed within each yard abutting a street, provided that it is not within a clear vision triangle.
5. Walls and fences to be built for required buffers shall comply with Section 14.32.300.
6. Fences, walls and hedges shall comply with the vision clearance standards of Section 14.31.200.

C. Maintenance. For safety and for compliance with the purpose of this Chapter, walls and fences required as a condition of development approval shall be maintained in good condition, or otherwise replaced by the property owner.

D. Materials.

1. Permitted fence and wall materials: wood; metal; bricks, stone; concrete block; stucco, or similar masonry; and non-prohibited evergreen plants.
2. Prohibited fence and wall materials: straw bales; barbed or razor wire; scrap lumber, scrap metal, or other scrap materials; hedges higher than 8 feet. Barbed wire on top of chain link or other fencing may only be approved on industrial, commercial or institutional use categories through a Class B Variance (Chapter 5.1.400).
3. Retaining walls constructed of brick or masonry exceeding 4 feet in height (as measured from bottom of footing to top coping) shall be subject to building permit review and approval by the City Building Official. Design of such walls shall be certified by a licensed architect or engineer.

Compliance with this Section 14.32.500 will be shown in the plans to be submitted with the building permit application.

Chapter 14.33 — Parking and Loading

14.33.200 Applicability

All developments subject to site design review (Chapter 14.42), including development of parking facilities, shall comply with the provisions of this Chapter.

14.33.300 Automobile Parking Standards

A. Applicability. All development within the City of Cottage Grove shall comply with the provisions of this Chapter.

B. Vehicle Parking - Minimum Standards by Use. The number of required off-street vehicle parking spaces shall be determined in accordance with the standards in Table 14.33.300.A, or alternatively, through a separate parking demand analysis prepared by the applicant and subject to a Type II Land Use Review (or Type III review if the request is part of an application

that is already subject to Type III review). Where a use is not specifically listed in this table, parking requirements are determined by finding that a use is similar to one of those listed in terms of parking needs, or by estimating parking needs individually using the demand analysis option described above. Parking that counts toward the minimum requirement is parking in garages, carports, parking lots, bays along driveways, and shared parking. There is no minimum number of off-street parking spaces required in the Central Business District (or in designated downtown historic district); however, the "maximum parking" standards of this Chapter apply.

The proposed development complies with the minimum parking requirements identified in Table 14.33.300A, which state that the required minimum parking for Retail Sales and Service – General Retail is two (2) spaces per 1,000 sq. ft. The enclosed building area is 19,715 sq. ft. requiring a total of forty (40) parking spaces. A total of forty-one (41) on-site parking spaces, including one (1) van accessible ADA parking space and one (1) ADA parking space, are provided. No compact spaces are proposed.

C. Credit for On-Street Parking. The amount of off-street parking required may be reduced by one off-street parking space for every on-street parking space abutting a commercial or industrial development, up to 50 percent of the requirement. On-street parking shall follow the established or approved configuration of existing on-street parking, except that angled parking may be allowed for some streets, where permitted by City, ODOT and/or County standards. Parking credit can only be granted for developments with frontage on streets that allow parking on both sides.

Not applicable

D. Vehicle Parking - Minimum Accessible Parking.

1. Accessible parking shall be provided for all uses in accordance the standards in Table 14.33.300B; parking spaces used to meet the standards in Table 14.33.300.B shall be counted toward meeting off-street parking requirements in Table 14.33.300.A;
2. Such parking shall be located in close proximity to building entrances and shall be designed to permit occupants of vehicles to reach the entrance on an unobstructed path or walkway. Accessible routes should be linked to required access aisles;
3. Accessible spaces shall be grouped in pairs where possible;
4. Where covered parking is provided, covered accessible spaces shall be provided in the same ratio as covered non-accessible spaces;
5. Required accessible parking spaces shall be identified with signs and pavement markings identifying them as reserved for persons with disabilities; signs shall be posted directly in front of the parking space at a height of no less than 42 inches and no more than 72 inches above pavement level. Van spaces shall be specifically identified as such.

The proposed project includes one (1) van accessible parking space and one (1) ADA parking space, which will be compliant with the signage and dimension standards in Table 14.33.300B and this Section 14.33.300(D).

E. Off-site parking. Except for single-family or two-family dwellings, the vehicle parking spaces required by this Chapter may be located on another parcel of land, provided the parcel is within 400 feet of the use it serves, commercial parking is allowed in the underlying zone, and

the City has approved the off-site parking through Land Use Review. The distance from the parking area to the use shall be measured from the nearest parking space to a building entrance, following a sidewalk or other pedestrian route. The right to use the off-site parking must be evidenced by a recorded deed, lease, easement, or similar written instrument as approved by the Community Development Director. This binding agreement may restrict future changes to the property.

Not applicable

F. General Parking Standards.

1. Location. Vehicle parking is allowed only on streets, within garages, carports, and other structures, or on driveways or parking lots that have been developed in conformance with this code. Chapter 2, Land Use Districts, prescribes parking location for some land uses (e.g., the requirement that parking for some multiple family and commercial developments be located to side or rear of buildings), and Chapter 3.1, Access and Circulation, provides design standards for driveways. Street parking spaces shall not include space in a vehicle travel lane (including emergency or fire access lanes), public right-of-way, pedestrian accessway, landscape, or other undesignated area. Required off-street parking shall not be located in the front or street side setback.

Not applicable; proposed parking is located within 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 (i.e., the uses operate on different days or at different times of the day). The City may reduce the total parking required accordingly through Land Use Review.

Not applicable

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 overlap (e.g., uses primarily of a daytime versus nighttime nature; weekday uses versus weekend uses), and provided that the right of joint use is evidenced by a recorded deed, lease, contract, or similar written instrument establishing the joint use. The City may approve owner requests for shared parking through Land Use Review.

Not applicable

4. Availability of facilities. Owners of off-street parking facilities may post a sign indicating that all parking on the site is available only for residents, customers, and/or employees. Signs shall conform to the standards of Chapter 14.39.

If availability of facilities signage is provided, it will meet the standards of Chapter 14.39.

5. Lighting. Parking areas shall have lighting to provide at least 2 foot-candles of illumination over parking spaces and walkways. Light standards shall be directed downward only and shielded to prevent lighting spillover into any adjacent residential district or use.

Parking lot lighting will meet the City's illumination standards, as will be shown in the lighting plans to be submitted with the building permit application.

6. Screening of Parking Areas. Parking spaces shall be located or screened so that headlights do not shine onto adjacent residential uses, per Section 3.2.300.E.

Not applicable, there are no adjacent residential uses.

G. Exceptions and Special Standards for Parking.

1. Exceptions for required parking.

   a. Seasonal outdoor seating where the seating area is less than 500 square feet is exempt from the required parking standards.

   b. The total number of required motor vehicle parking spaces for an industrial, commercial or office use may be reduced by 5 percent for each of the listed activities that are provided by the owners or operators, up to a maximum 15 percent reduction in the total number of motor vehicle spaces per development.

      1) Designating at least 10% of the employee motor vehicle parking spaces as carpool/vanpool parking and placing such spaces closer to the building than other employee parking;
      2) Providing showers and lockers for employees who commute by bicycle;
      3) Providing twice as many covered, secured bicycle parking racks or facilities as required by this ordinance;
      4) Providing a transit facility (e.g. bus stop) that is approved by the local transit authority, with related amenities. Related amenities include, but are not limited to, a public plaza, pedestrian sitting areas, shelter and additional landscaping;
      5) Other incentives provided in an approved Employee Transportation Demand Management (TDM) Plan.

Not applicable; no exceptions for required parking are proposed.

2. Special Standards for Commercial Customer Parking. The motor vehicle parking areas shall be located and designed to facilitate safe and convenient pedestrian and bicycle movement to and from public sidewalks, streets or transit stops. Ways to achieve this standard may include, but are not limited to:

   a. Front facades and primary entrances of all buildings are oriented to a public street or a private internal drive or street, to minimize pedestrian and bicycle travel through a parking area and to provide safe, convenient, and direct travel routes for pedestrians;
   b. One or more raised walkways are provided through the parking areas, meeting federal American with Disabilities Act requirements, in order to provide safe, convenient, and direct travel routes for pedestrians through the parking areas;

c. Walkways abutting parking spaces or maneuvering areas are protected from vehicles through either landscaping buffers, minimum 3 feet wide on each side, or curbs on both sides;

d. Walkways across vehicle aisles are delineated with non-asphaltic material in a different color or texture than the parking areas;

e. On-site pedestrian walkways and bikeways connect to existing pedestrian and bicycle circulation systems that serve adjacent commercial uses or residential areas;

f. Internal drives or streets are designed to City standards for local streets in regard to pavement width, sidewalks and street trees. Sidewalks comply with ADA standards. Sidewalks 10-15 feet wide abutting front building facades are strongly encouraged. Internal vehicular circulation design for the site complies with City street connectivity standards, including maximum block length and perimeter.

g. Internal drives or streets connect to public streets abutting the site, unless physically precluded by pre-existing buildings.

h. Structures are located on the site to facilitate future infill and redevelopment of parking and landscape areas.

i. For shopping centers abutting one or more transit routes, one or more transit stops are located and designed with the approval when applicable of the local transit provider;

j. No drive-up, drive-in, or drive-through drives or lanes are located between a building and a public or private street.

The proposed site design provides pedestrian-oriented development via raised crosswalks and meets the requirements of Section 14.31.300 Pedestrian Access and Circulation.

The proposed donation drop off drive-through is located to the side of the primary building entrance, so pedestrians do not have to cross the queuing lanes to enter the building.

H. Maximum Number of Parking Spaces. The number of parking spaces provided by any particular use in ground surface parking lots shall not exceed the minimum number of spaces required for each use as provided by this Section by more than 50%. Spaces provided on-street, or within the building footprint of structures, such as in rooftop parking or under-structure parking, or in multi-level parking above or below surface lots, shall not apply toward the maximum number of allowable spaces. Parking spaces provided through "shared parking" also do not apply toward the maximum number.

A total of forty-one (41) parking spaces are proposed, and forty (40) are required, which does not exceed the maximum number of parking spaces by 50%.

I. Parking Stall Design and Minimum Dimensions. All off-street parking spaces shall be improved to conform to City standards for surfacing, stormwater management, and striping. Standard parking spaces shall conform to the following standards and the dimensions in Figures 14.33.300.F(1) through (3), and Table 14.33.300.F:

1. Motor vehicle parking spaces shall measure minimum 9 feet wide by 18 feet long;

2. For large parking lots exceeding 10 stalls, alternate rows may be designated for compact cars provided that the compact stalls do not exceed 30% of the total required stalls. A compact stall shall measure minimum 8 feet in width and 15 feet in length and shall be signed for compact car use;

3. All parallel motor vehicle parking spaces shall measure 9 feet by 20 feet unless within a public right-of-way, when they shall measure a minimum of 7 to 8 feet by 20 feet;
4. Parking area layout shall conform to the dimensions in Figure 14.33.300.F(1) and (2), and Table 14.33.300F, below;
5. Public alley width may be included as part of dimension "D" in Figure 14.33.300.F(1), but all parking stalls must be on private property;
6. Parking areas shall conform to Federal Americans With Disabilities Act (ADA) standards for parking spaces (dimensions, van accessible parking spaces, etc.). Parking structure vertical clearance, van accessible parking spaces, should refer to Federal ADA guidelines; and
7. Bicycle parking shall be on a 2 feet by 6 feet minimum concrete pad per bike, or within a garage or patio of residential use.

The proposed parking stalls will meet the requirements of this Section 14.33.300(I), and will be detailed in the plans to be submitted with the building permit application.

14.33.400 Bicycle Parking Requirements

A. Applicability. All uses that are subject to Site Design Review shall provide bicycle parking, in conformance with the standards in Table 14.33.400, and subsections A-H, below. This section does not apply to single-family, two-family, and three-family housing (detached, attached or manufactured housing), home occupations or other developments with fewer than 3 vehicle parking spaces.

B. Minimum Required Bicycle Parking Spaces. A minimum of one bicycle parking space per use is required for all uses subject to Site Design Review. Table 14.33.400 lists additional standards that apply to specific types of development. Uses shall provide long- and short-term bicycle parking spaces, as designated in Table 14.33.400 and subsections C-J below. Where two options are provided (e.g., 2 spaces, or 1 per 20 units), the option resulting in more bicycle parking is used. **The enclosed building area is 19,715 sq. ft. requiring a total of two (2) long-term spaces, and four (4) short-term spaces. The two (2) long-term spaces are provided within the sorting and storage area of the building, near the staff support spaces. The four (4) short-term parking spaces are provided outside, adjacent to the primary building entrance.**

C. Special Standards for the Central Business District. Within the Central Business District zone, bicycle parking for customers shall be provided in the right-of-way along the street at a rate of at least one space per building. In addition, individual uses shall provide the required bicycle parking in front along the street, either on the sidewalks or in specially constructed areas such as pedestrian curb extensions. Several businesses may combine required parking into common bicycle parking structures if desired. Common bicycle parking shall not exceed 6 bicycle areas per parking structure.

Not applicable

D. Location and Design.

1. Location. Bicycle parking should be no farther from the main building entrance than the distance to the closest vehicle space, or no more than 50 feet. Long-term (i.e., covered) bicycle parking should be incorporated whenever possible into building design. Short-term

bicycle parking, when allowed within a public right-of-way, should be coordinated with the design of street furniture, as applicable. Street furniture includes benches, street lights, planters and other pedestrian amenities.

2. Pedestrian passage. The location of the rack and subsequent parking shall not interfere with pedestrian passage, leaving a clear area of at least 36 inches between bicycles and other existing and potential obstructions. Walkways from bicycle parking to the main entrance shall be hard surfaced and a minimum 4 feet in width.
3. Parking Space Dimensions. Bicycle parking spaces shall be at least 2 feet wide by 6 feet long and, when covered, provide a vertical clearance of 7 feet. An access aisle of at least 5 feet wide shall be provided and maintained beside or between each row of bicycle parking.
4. Design. Bicycle racks shall hold bicycles securely by means of the frame. The frame must be supported so that the bicycle cannot be pushed or fall to one side in a manner that will damage the wheels. Bicycle parking racks, shelters and lockers must be securely anchored to the ground or to the structure.

The proposed bike parking spaces will meet the requirements of this Section 14.33.400(D), and will be detailed in the plans to be submitted with the building permit application.

E. Visibility and Security. Bicycle parking for customers and visitors of a use shall be visible from street sidewalks or building entrances, so that it provides sufficient security from theft and damage.

The proposed short-term bike parking will be visible from the primary building entrance.

F. Options for Storage. Long-term bicycle parking requirements for multiple family uses and employee parking can be met by providing a bicycle storage room, bicycle lockers, racks, or other secure storage space inside or outside of the building.
The proposed long-term parking will bicycle racks inside of the building near the staff support spaces.

G. Lighting. For security, bicycle parking shall be at least as well lit as vehicle parking.

The proposed bike parking will meet the requirements of this Section 14.33.400(G).

H. Reserved Areas. Areas set aside for bicycle parking shall be clearly marked and reserved for bicycle parking only.

The proposed bike parking will meet the requirements of this Section 14.33.400(H).

I. Hazards. Bicycle parking shall not impede or create a hazard to pedestrians. Parking areas shall be located so as to not conflict with vision clearance standards (Chapter 3.1, Access and Circulation).

The proposed bike parking will meet the requirements of this Section 14.33.400(I).

J. Multiple Uses. For buildings with multiple uses (such as a commercial or mixed use center), bicycle parking standards shall be calculated by using the total number of motor vehicle parking spaces required for the entire development. A minimum of one bicycle parking space for every 10 motor vehicle parking spaces is required.

Not applicable

14.33.400 Loading Areas

A. Purpose. The purpose of this section of the Code is to provide standards (1) for a minimum number of off-street loading spaces that will ensure adequate loading areas for large uses and developments, and (2) to ensure that the appearance of loading areas is consistent with that of parking areas.

B. Applicability. Section 14.33.400 applies to residential projects with 50 or more dwelling units, and non-residential and mixed-use buildings with 20,000 square feet or more total floor area.

C. Number of Loading Spaces.

1. Residential buildings. Buildings where all of the floor area is in residential use shall meet the following standards:
- **a.** Fewer than 20 dwelling units on a site that abuts a local street: No loading spaces are required.
- **b.** All other buildings: One space.

2. Non-residential and mixed-use buildings. Buildings where any floor area is in non-residential uses shall meet the following standards:
- **a.** Less than 20,000 square feet total floor area: No loading spaces required.
- **b.** 20,000 to 50,000 square feet of total floor area: One loading space.
- **c.** More than 50,000 square feet of total floor area: Two loading spaces.

Not applicable; the proposed building floor area is 19,715 sq. ft. (less than 20,000 sq. ft.).

D. Size of Spaces. Required loading spaces shall be at least 35 feet long and 10 feet wide, and shall have a height clearance of at least 13 feet 6 inches.

Not applicable; the proposed building floor area is 19,715 sq. ft. (less than 20,000 sq. ft.).

E. Placement, setbacks, and landscaping. Loading areas shall conform to the setback and perimeter landscaping standards in Chapters 2 and 3. Where parking areas are prohibited between a building and the street, loading areas are also prohibited. The decision body may approve a loading area adjacent to or within the street right-of-way through Site Design Review or Conditional Use Permit review, as applicable, where it finds that loading and unloading operations are short in duration (i.e., less than 1 hour), not obstruct traffic during peak traffic hours, or interfere with emergency response services

Not applicable; the proposed building floor area is 19,715 sq. ft. (less than 20,000 sq. ft.).

Chapter 14.34 — Public Facilities

14.34.010 Purpose and Applicability

A. Purpose. The purpose of this Chapter is to provide planning and design standards for public and private transportation facilities and utilities. Streets are the most common public spaces, touching virtually every parcel of land. Therefore, one of the primary purposes of this Chapter is to provide standards for attractive and safe streets that can accommodate vehicle traffic from planned growth and provide a range of transportation options, including options for driving, walking, bus transit, and bicycling. This Chapter is also intended to implement the City's Transportation System Plan.

B. When Standards Apply. Unless otherwise provided, the standard specifications for construction, reconstruction, or repair of transportation facilities, utilities, and other public improvements within the City shall occur in accordance with the standards of this Chapter. No development may occur unless the public facilities related to development comply with the public facility requirements established in this Chapter.

C. Engineering Design Criteria, Standard Specifications and Details. The Oregon Standard Specifications for Construction with Appendum shall be a part of the City's adopted installation standard(s); other standards may also be required upon recommendation of the City Engineer. The design criteria, standard construction specifications and details maintained by the City Engineer, or any other road authority with jurisdiction, shall supplement the general design standards of this Development Code. The City's specifications, standards, and details are hereby incorporated into this code by reference.

D. Conditions of Development Approval. No development may occur unless required public facilities are in place or guaranteed, in conformance with the provisions of this Code. Improvements required as a condition of development approval, when not voluntarily accepted by the applicant, shall be roughly proportional to the impact of the development on public facilities. Findings in the development approval shall indicate how the required improvements are directly related and roughly proportional to the impact.

The proposed development will meet the requirements of this Section 14.34.010, and will be constructed in accordance with the requirements of the City's Engineering Design Criteria, Standard Specifications and Details.

14.34.100 Transportation Standards

A. Development Standards. The following standards shall be met for all new uses and developments:

The proposed project is a new development, and the standards below apply.

B. Guarantee. The City may accept a future improvement guarantee (e.g., owner agrees not to object to the formation of a local improvement district in the future) in lieu of street improvements if one or more of the following conditions exist:

Frontage improvements along Thornton Road will be deferred through a waiver of non-remonstrance.

C. Creation of Rights-of-Way for Streets and Related Purposes. Streets shall be created through the approval and recording of a final subdivision or partition plat; except the City may approve the

creation of a street by acceptance of a deed, provided that the street is deemed in the public interest by the City Council for the purpose of implementing the Transportation System Plan, and the deeded right-of-way conforms to the standards of this Code.

Not applicable; new streets and right-of-ways are not proposed.

D. Creation of Access Easements. The City may approve an access easement when the easement is necessary to provide for access and circulation in conformance with Chapter 14.31, Access and Circulation. Access easements shall be created and maintained in accordance with the Uniform Fire Code Section 10.207.

Not applicable; the creation of new access easements are not proposed.

E. Street Location, Width, and Grade. Except as noted below, the location, width and grade of all streets shall conform to the Transportation System Plan and an approved street plan or subdivision plat. Street location, width, and grade shall be determined in relation to existing and planned streets, topographic conditions, public convenience and safety, and in appropriate relation to the proposed use of the land to be served by such streets:

Not applicable; new streets are not proposed.

F. Minimum Rights-of-Way and Street Sections. Street rights-of-way and improvements shall be the widths in Table 14.34.100. A variance or Master Plan approval shall be required to vary the standards in Table 14.34.100. Where a range of width is indicated, the width shall be the narrower in the range unless unique and specific conditions exists as determined by the decision-making authority based upon the following factors:

1. Street classification in the Transportation System Plan;
2. Anticipated traffic generation;
3. On-street parking needs;
4. Sidewalk and bikeway requirements based on anticipated level of use;
5. Requirements for placement of utilities;
6. Street lighting;
7. Minimize drainage, slope, and sensitive lands impacts, as identified by Chapter 3.7;
8. Street tree location, as provided for in Chapter 3.2;
9. Protection of significant vegetation, as provided for in Chapter 3.2;
10. Safety and comfort for motorists, bicyclists, and pedestrians;
11. Street furnishings (e.g., benches, lighting, bus shelters, etc.), when provided;
12. Access needs for emergency vehicles; and
13. Transition between different street widths (i.e., existing streets and new streets).

Not applicable; new streets are not proposed.

G. Subdivision Street Connectivity. All subdivisions shall conform to all the following access and circulation design standards, as applicable:

Not applicable; the proposed project is not a subdivision.

H. Traffic Signals and Traffic Calming Features.

1. Traffic signals shall be required with development when traffic signal warrants are met, in conformance with the Highway Capacity Manual and Manual of Uniform Traffic Control Devices. The location of traffic signals shall be noted on approved street plans. Where a proposed street intersection will result in an immediate need for a traffic signal, a signal meeting approved specifications shall be installed in conformance with the road authority's requirements. The developer's cost and the timing of improvements shall be included as a condition of development approval.
2. When an intersection meets or is projected to meet traffic signal warrants, the City may accept alternative mitigation, such as a roundabout, in lieu of a traffic signal, if approved by the City Engineer and applicable road authority.
3. The City may require the installation of calming features such as traffic circles, curb extensions, reduced street width (parking on one side), medians with pedestrian crossing refuges, and/or special paving to slow traffic in neighborhoods or commercial areas with high pedestrian traffic.

Not applicable; new traffic signals are not proposed.

I. Future Street Plan and Extension of Streets.

1. A future street plan shall be filed by the applicant in conjunction with an application for a subdivision in order to facilitate orderly development of the street system. The plan shall show the pattern of existing and proposed future streets from the boundaries of the proposed land division and shall include other divisible parcels within 600 feet surrounding and adjacent to the proposed land division. The street plan is not binding; rather it is intended to show potential future street extensions with future development
2. Streets shall be extended to the boundary lines of the parcel or tract to be developed when the City determines that the extension is necessary to give street access to, or permit a satisfactory future division of, adjoining land. The point where the streets temporarily end shall conform to a-c, below:

Not applicable; new streets and extension of existing streets are not proposed.

J. Street Alignment, Radii, and Connections.

1. Staggering of streets making "T" intersections at collectors and arterials shall be designed so that offsets of more than 300 feet on such streets are created, as measured from the centerline of the street.
2. Spacing between local street intersections shall have a minimum separation of 200 feet, except where more closely spaced intersections are designed to provide an open space, pocket park, common area, or similar neighborhood amenity. This standard applies to four-way and three-way (off-set) intersections.
3. All local and collector streets that stub into a development site shall be extended within the site to provide through circulation unless prevented by environmental or topographical constraints, existing development patterns, or compliance with other standards in this code. The applicant must show why the environmental or topographic constraint precludes some reasonable street connection.

4. Proposed streets or street extensions shall be located to allow continuity in street alignments and to facilitate future development of vacant or re-developable lands.
5. In order to promote efficient vehicular and pedestrian circulation throughout the city, the design of subdivisions and alignment of new streets shall conform to block length standards in Section 14.31.200.
6. Corner curb radii shall be 20 feet -30 feet based on street classification, except where smaller radii are approved by the City Engineer.

Not applicable; new streets and extension of existing streets are not proposed.

K. Sidewalks, Planter Strips, Bicycle Lanes. Sidewalks, planter strips, and bicycle lanes shall be installed in conformance with the standards in Table 3.4.100, applicable provisions of Transportation System Plan, the Comprehensive Plan, and adopted street plans. Maintenance of sidewalks and planter strips in the right-of-way is the continuing obligation of the adjacent property owner.
Not applicable; new right-of-way sidewalks are not proposed.

L. Intersection Angles. Streets shall be laid out so as to intersect at an angle as near to a right angle as practicable, except where topography requires a lesser angle or where a reduced angle is necessary to provide an open space, pocket park, common area or similar neighborhood amenity. In addition, the following standards shall apply:

Not applicable; new intersections are not proposed.

M. Existing Rights-of-Way. Whenever existing rights-of-way adjacent to a proposed development are less than standard width, additional rights-of-way shall be provided at the time of subdivision or development, subject to the provision of Section 3.4.100.

Not applicable; improvements to existing right-of-way are not proposed.

N. Cul-de-sacs. A cul-de-sac street shall only be used when environmental or topographical constraints, existing development patterns, or compliance with other standards in this code preclude street extension and through circulation.

Not applicable; cul-de-sacs are not proposed.

O. Grades and Curves. Grades shall not exceed 6% on arterials, 10% on collector streets, or 15% on any other street (except that local or residential access streets may have segments with grades which exceed 15% for distances of no greater than 100 feet), and:

1. Centerline curve radii shall not be less than 300 feet on arterials, 200 feet on major collectors, or 100 feet on other streets; and
2. Streets intersecting with a minor collector or greater functional classification street, or streets intended to be posted with a stop sign or signalization, shall provide a landing averaging five percent or less. Landings are that portion of the street within 20 feet of the edge of the intersecting street at full improvement.

Not applicable; new streets are not proposed.

P. Curbs, Curb Cuts, Ramps, and Driveway Approaches. Concrete curbs, curb cuts, wheelchair ramps, bicycle ramps, and driveway approaches shall be constructed in accordance with standards specified in Chapter 14.31, Access and Circulation.

Proposed driveway approaches will meet the standards specified in Chapter 14.31.

Q. Streets Adjacent to Railroad Right-of-Way. When a transportation improvement is proposed within 300 feet of a public railroad crossing, or a modification is proposed to an existing public crossing, the Oregon Department of Transportation and the rail service provider shall be notified and given an opportunity to comment, in conformance with the provisions of Chapter 4. Private crossing improvements are subject to review and licensing by the rail service provider.

Not applicable; improvements within 300' of a public railroad crossing are not proposed.

R. Alleys, Public or Private. Alleys shall conform to the standards in Table 14.34.100. Alley intersections and sharp changes in alignment shall be avoided. The corners of necessary alley intersections shall have a radius of not less than 12 feet.

Not applicable; new alleys are not proposed.

S. Private Streets. Private streets shall conform to City standards of construction and Table 14.34.100.F and shall provide sidewalks or pathways as approved by the City. Private streets shall not be used to avoid public access connectivity required by this Chapter. Gated communities (i.e., where a gate limits access to a development from a public street) are prohibited*;* and

Not applicable; new private streets are not proposed.

T. Street Names. No new street name shall be used which will duplicate or be confused with the names of existing streets in Lane County. Street names, signs, and numbers shall conform to the standards in Chapter 12.16 of the Cottage Grove Municipal Code, except as requested by emergency service providers.

Not applicable; new streets are not proposed.

U. Survey Monuments. Upon completion of a street improvement and prior to acceptance by the City, it shall be the responsibility of the developer's registered professional land surveyor to provide certification to the City that all boundary and interior monuments shall be reestablished and protected.

Not applicable; new streets are not proposed.

V. Street Signs. The city, county, or state with jurisdiction shall install all signs for traffic control and street names. The cost of signs required for new development shall be the responsibility of the developer. Street name signs shall be installed at all street intersections. Stop signs and other signs may be required.

Not applicable; new streets are not proposed.

W. Mail Boxes. Plans for mail boxes shall be approved by the United States Postal Service.

Proposed mail boxes will meet the approval of the United States Postal Service.

X. Street Light Standards. Street lights shall be installed in accordance with City standards.

If new street lights are required or provided, they shall be installed in accordance with City standards.

Y. Street Cross Sections. Street cross sections shall be constructed to Engineering Department Standards.

Not applicable; new streets are not proposed.

14.34.200 Public Use Areas

A. Dedication of Public Use Areas.

1. Where a proposed park, playground, or other public use shown in a plan adopted by the City is located in whole or in part in a subdivision, the City may require the dedication or reservation of this area on the final plat for the subdivision, provided that the impact of the development on the City park system is roughly proportionate to the dedication or reservation being made.

2. The City may purchase or accept voluntary dedication or reservation of areas within the subdivision that are suitable for the development of parks and other public uses; however, the City is under no obligation to accept such areas offered for dedication or sale.

B. System Development Charge Credit. Dedication of land to the City for public use areas, voluntary or otherwise, shall be eligible as a credit toward any required system development charge for parks.

Not applicable; dedication of public use areas are not proposed, and System Development Charge Credit is not requested.

14.34.300 Sanitary Sewer and Water Service Improvements

A. Sewers and Water Mains Required. Sanitary sewers and water mains shall be installed to serve each new development and to connect developments to existing mains in accordance with the City's Sanitary Sewer Master Plan, Water System Master Plan, and the applicable construction specifications. When streets are required to be stubbed to the edge of the subdivision, sewer and water system improvements shall also be stubbed with the streets, except as may be waived by the City Engineer.

B. Sewer and Water Plan Approval. Development permits for sewer and water improvements shall not be issued until the City Engineer has approved all sanitary sewer and water plans in conformance with City standards.

C. Over-Sizing. The City may require as a condition of development approval that sewer, water, and/or storm drainage systems serving new development be sized to accommodate future development within the area as projected by the applicable Water, Sewer, and/or Storm Drainage Master Plan, provided that the city may grant the developer credit toward any required system development charge for the same.

D. Inadequate Facilities. Development permits may be restricted by the City where a deficiency exists in the existing water or sewer system that cannot be rectified by the development and which if not rectified will result in a threat to public health or safety, surcharging of existing mains, or violations of state or federal standards pertaining to operation of domestic water and sewerage treatment systems.

The proposed development will meet the requirements of this Section 14.34.300, and will be constructed in accordance with the requirements of the City's Engineering Design Criteria, Standard Specifications and Details.

14.34.400 Storm Drainage Improvements

A. General Provisions. The City shall issue a development permit only where adequate provisions for storm water and flood water runoff have been made in conformance with the City's Storm Drainage Master Plan and Chapter 14.35, Surface Water Management.

B. Accommodation of Upstream Drainage. Culverts and other drainage facilities shall be large enough to accommodate existing and potential future runoff from the entire upstream drainage area, whether inside or outside the development. Such facilities shall be subject to review and approval by the City Engineer.

C. Effect on Downstream Drainage. Where it is anticipated by the City Engineer that the additional runoff resulting from the development will overload an existing drainage facility, the City shall withhold approval of the development until provisions have been made for improvement of the potential condition or until provisions have been made for storage of additional runoff caused by the development in accordance with City standards.

D. Over-Sizing. The City may require as a condition of development approval that sewer, water, and/or storm drainage systems serving new development be sized to accommodate future development within the area as projected by the applicable Water, Sewer, and/or Storm Drainage Master Plan, provided that the city may grant the developer credit toward any required system development charge for the same.

E. Existing Watercourse. Where a proposed development is traversed by a watercourse, drainage way, channel, or stream, there shall be provided a storm water easement or drainage right-of- way conforming substantially with the lines of such watercourse and such further width as will be adequate for conveyance and maintenance to protect the public health and safety.

The proposed development will meet the requirements of this Section 14.34.400, and will be constructed in accordance with City standards.

14.34.500 Utilities

A. Underground Utilities.

1. Generally. All new utility lines including, but not limited to, those required for electric, communication, lighting, and cable television services and related facilities shall be placed underground, except for surface mounted transformers, surface mounted connection boxes and meter cabinets which may be placed above ground, temporary utility service facilities during construction, and high capacity electric lines operating at 50,000 volts or above.

2. Subdivisions. The following additional standards apply to all new subdivisions, in order to facilitate underground placement of utilities:

a. The developer shall make all necessary arrangements with the serving utility to provide the underground services. Care shall be taken to ensure that all above ground equipment does not obstruct vision clearance areas for vehicular traffic (Chapter 14.31);
b. The City reserves the right to approve the location of all surface-mounted facilities;
c. All underground utilities, including sanitary sewers and storm drains installed in streets by the developer, shall be constructed prior to the surfacing of the streets; and
d. Stubs for service connections shall be long enough to avoid disturbing the street improvements when service connections are made.

B. Exception to Undergrounding Requirement. An exception to the undergrounding requirement may be granted due to physical constraints, such as steep topography, sensitive lands (Chapter 14.37), or existing development conditions.

The proposed development will meet the requirements of this Section 14.34.500, and will be constructed in accordance with City standards.

14.34.600 Easements

A. Provision. The developer or applicant shall make arrangements with the City, the applicable district, and each utility franchise for the provision and dedication of utility easements necessary to provide full services to the development. The City's standard width for public main line utility easements shall be determined by the City Engineer.

B. Recordation. As determined by the City Engineer, all easements for sewers, storm drainage and water quality facilities, water mains, electric lines, or other public utilities shall be recorded with the final plat. See Chapter 14.42, Site Design Review, and Chapter 14.43, Land Divisions.

Not applicable; no new easements are proposed.

14.34.700 Construction Plan Approval and Assurances

A. Plan Approval and Permit. No public improvements, including sanitary sewers, storm sewers, streets, sidewalks, curbs, lighting, parks, or other requirements shall be undertaken

except after the plans have been approved by the City, permit fee paid, and permit issued. The permit fee is required to defray the cost and expenses incurred by the City for construction and other services in connection with the improvement. The permit fee shall be set by City Council.

B. Performance Guarantee. The City may require the developer or subdivider to provide bonding or other performance guarantees to ensure completion of required public improvements. See Section 14.42.400, Site Design Review, and Section 14.43.180, Land Divisions.

The proposed development will meet the requirements of this Section 14.34.700, and will be constructed in accordance with City standards.

14.34.800 Installation

A. Conformance Required. Improvements installed by the developer either as a requirement of these regulations or at his/her own option, shall conform to the requirements of this Chapter, approved construction plans, and to improvement standards and specifications adopted by the City.

B. Adopted Installation Standards. The Standard Specifications for Public Works Construction, Oregon Chapter A.P.W.A., shall be a part of the City's adopted installation standard(s); other standards may also be required upon recommendation of the City Engineer.

C. Commencement. Work shall not begin until the City has been notified in advance in writing.

D. Resumption. If work is discontinued for more than one month, it shall not be resumed until the City is notified in writing.

E. City Inspection. Improvements shall be constructed under the inspection and to the satisfaction of the City. The City may require minor changes in typical sections and details if unusual conditions arising during construction warrant such changes in the public interest. Modifications to the approved design requested by the developer may be subject to review under Chapter 14.46, Modifications to Approved Plans and Conditions of Approval. Any monuments that are disturbed before all improvements are completed by the subdivider shall be replaced prior to final acceptance of the improvements.

F. Engineer's Certification and As-Built Plans. A registered civil engineer shall provide written certification in a form required by the City that all improvements, workmanship, and materials are in accord with current and standard engineering and construction practices, conform to approved plans and conditions of approval, and are of high grade, prior to City acceptance of the public improvements, or any portion thereof, for operation and maintenance. The developer's engineer shall also provide 2 sets of "as-built" plans, in conformance with the City Engineer's specifications, for permanent filing with the City.

Proposed utility work or repair of utility work or connection to any utility within the City right-of-way will conform to City standards.

14.42.500 Site Design Review – Application Submission Requirements

A. General Submission Requirements:

1. Public Facilities and Services Impact Study
   Not applicable
2. Traffic Impact Study
   Provided
3. Dedication of real property to the City
   Not applicable

B. Site Design Review Information

1. Site analysis map
   Survey provided
2. Proposed site plan
   Civil, architectural and landscape site plans provided
3. Architectural drawings
   Floor plan, building elevations and view, and articulation diagrams provided
4. Preliminary grading plan
   Provided
5. Landscape plan
   Provided
6. Sign drawings
   Signage to be submitted separately
7. Deed restrictions
   Title report provided
8. Narrative
   Provided
9. Traffic impact study
   Provided
10. State highway access permit
    Not applicable
11. Other information
    Not applicable

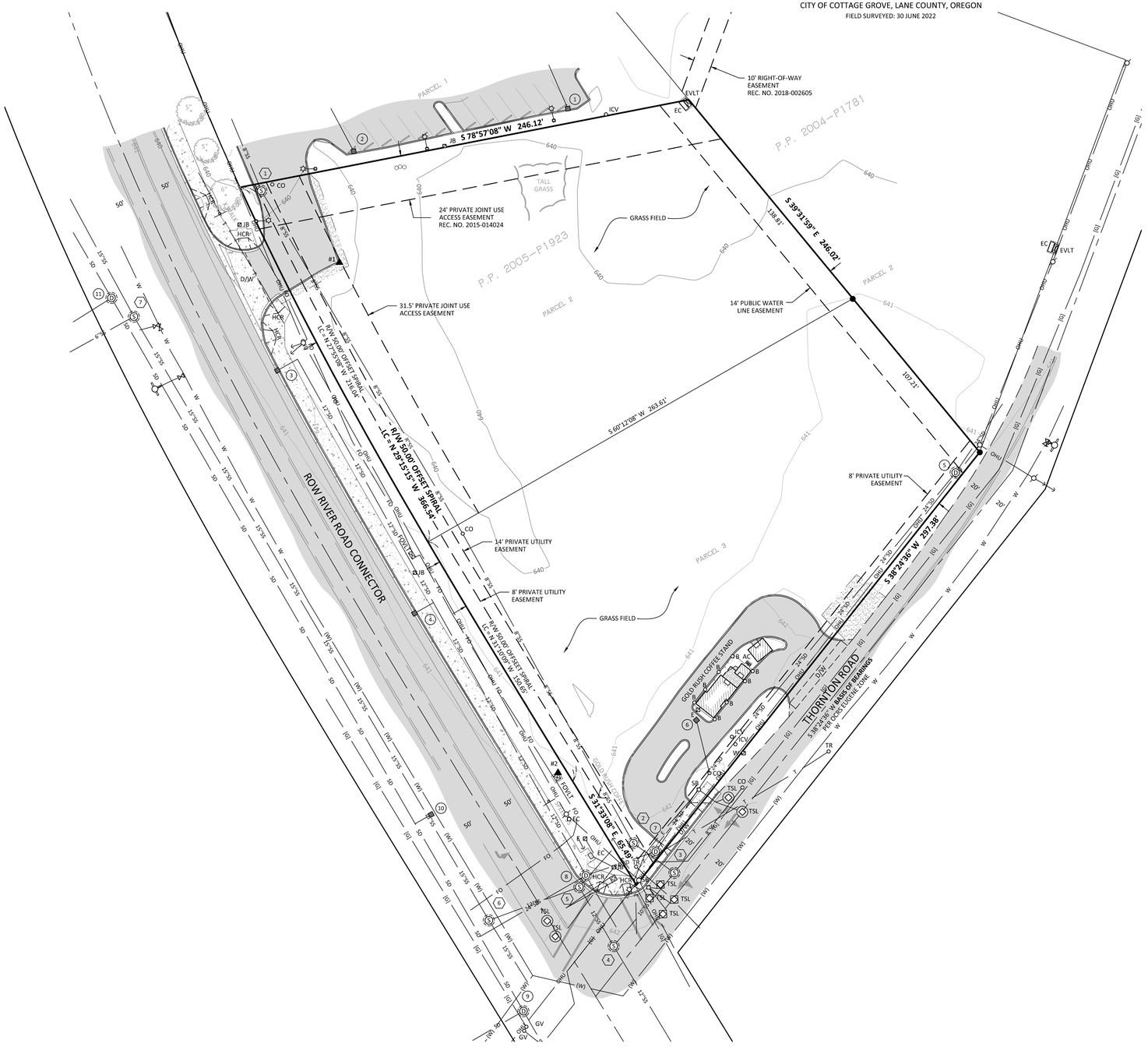
14.44.300 Conditional Use Permits – Application Submission Requirements

1. Existing site conditions
   Survey provided
2. Site plan
   Civil, architectural and landscape site plans provided
3. Preliminary grading plan
   Provided
4. Landscape plan
   Provided
5. Architectural drawings of all structures
   Floor plan and building elevations provided
6. Drawings of all proposed signs
   Signage to be submitted separately

7. A copy of all existing and proposed restrictions or covenants
   Title report provided
8. A copy of an approved State Access Permit
   Not applicable
9. Narrative report or letter documenting compliance with all applicable approval criteria in Section 14.44.400
   Provided
10. Narrative report documenting compliance with all applicable approval criteria and conditions in Section 14.37.400 Willamette River Greenway as applicable.
    Not applicable

BOUNDARY & TOPOGRAPHIC SURVEY

OF PARCELS 2 AND 3 OF LAND PARTITION PLAT 2005-P1923
LOCATED IN THE SW QUARTER AND SE QUARTER OF SECTION 27
TOWNSHIP 20 SOUTH, RANGE 3 WEST, WILLAMETTE MERIDIAN
CITY OF COTTAGE GROVE, LANE COUNTY, OREGON
FIELD SURVEYED: 30 JUNE 2022



NOTES:

1.) VERTICAL DATUM: NAVD 88 (GEOID 12A) ELEVATION WAS ESTABLISHED THROUGH A GPS OBSERVATION ON CONTROL POINT NO. 1 USING THE OREGON REAL-TIME GPS NETWORK (ORGN).

2.) BASIS OF BEARINGS FOR THIS SURVEY IS THE OREGON COORDINATE REFERENCE SYSTEM (OCRS), EUGENE ZONE. THE RESULTANT BEARING OF THE CENTERLINE OF THORNTON ROAD IS SOUTH 38°24'36" WEST.

3.) BOUNDARY AND EASEMENTS SHOWN HEREON ARE BASED ON PRELIMINARY TITLE REPORT NO. 0332940 BY CASCADE TITLE COMPANY, EFFECTIVE DATE JANUARY 13, 2022.

4.) UTILITY LOCATIONS SHOWN ARE PER FIELD LOCATED UTILITY PAINT MARKS & REFERENCE MAPS MADE AVAILABLE BY THE VARIOUS UTILITY PROVIDERS. UNLESS INDICATED, DEPTHS OF UTILITY LINES ARE NOT AVAILABLE. ALL UTILITY LOCATIONS SHOULD BE FIELD VERIFIED (POTHOLED) PRIOR TO CONSTRUCTION.

STORM TABLE:

1. CATCH BASIN
RIM = 639.39'
IE 6" OUT (NW) = 638.39'

2. CATCH BASIN
RIM = 639.17'
IE 10" OUT (NW) = 637.84'

3. CATCH BASIN
FULL OF DEBRIS
RIM = 640.24'

4. CATCH BASIN
RIM = 640.66'
IE 12" OUT (NE) = 636.26'

5. STORM MANHOLE
RIM = 641.51'
IE 24" IN (NE) = 635.01'
IE 24" OUT (SW) = 634.88'

6. CATCH BASIN
RIM = 641.02'
IE 6" OUT (SE) = 639.77'

7. STORM MANHOLE
RIM = 642.29'
IE 24" IN (NE) = 634.39'
IE 24" OUT (SW) = 634.25'

8. STORM MANHOLE
RIM = 641.97'
IE 24" IN (SE) = 634.13'
IE 24" IN (NE) = 634.25'
IE 12" IN (NW) = 634.96'
IE 24" OUT (SW) = 634.06'

9. STORM MANHOLE
RIM = 641.77'
IE IN (SW) = 633.02'
IE IN (SE) = 632.97'
IE OUT (NW) = 632.72'

10. CATCH BASIN
RIM = 640.90'
IE 10" OUT (SW) = 637.65'

11. STORM MANHOLE
RIM = 642.23'
IE IN (SW) = 632.20'
IE IN (SE) = 631.73'
IE OUT (NW) = 631.72'

SANITARY TABLE:

1. SANITARY MANHOLE
RIM = 639.77'
IE 8" IN (NW) = 633.65'
IE 8" OUT (SE) = 633.61'

2. SANITARY MANHOLE
RIM = 642.87'
IE 8" IN (NW) = 631.32'
IE 8" OUT (SE) = 631.19'

3. SANITARY MANHOLE
RIM = 641.86'
IE 8" IN (NE) = 631.04'
IE 8" IN (NW) = 631.17'
IE 10" OUT (SW) = 630.98'

4. SANITARY MANHOLE
RIM = 642.17'
IE 12" IN (SE) = 630.55'
IE 10" IN (NE) = 630.75'
IE 12" OUT (NW) = 630.53'

5. SANITARY MANHOLE
RIM = 641.44'
12" IN (SE) = 630.41'
IE 10" IN (NE) = 630.45'
(PIPE WAS DRY, NO FLOW)
IE 12" OUT (W) = 630.31'

6. SANITARY MANHOLE
RIM = 641.57'
IE 15" IN (SE) = 630.38'
IE 12" IN (E) = 630.26'
IE 15" OUT (NW) = 630.26'

7. SANITARY MANHOLE
RIM = 642.23'
IE 6" IN (SW) = 630.11'
IE 15" IN (SE) = 629.47'
IE 15" OUT (NW) = 629.46'

LEGEND:

- BUILDING OUTLINE WITH DOOR
- CONCRETE SURFACE
- ASPHALT SURFACE
- WALL
- BUILDING OVERHANG
- CURB LINE
- EDGE OF ASPHALT
- RIGHT-OF-WAY LINE
- EASEMENT LINE
- LOT LINE
- PROPERTY LINE
- BRUSH LINE
- FO — FIBER OPTIC LINE
- E — ELECTRICAL LINE
- TS — TRAFFIC SIGNAL LINE
- T — TELECOMMUNICATIONS LINE
- SD — STORM LINE
- SS — SANITARY SEWER LINE
- W — WATER LINE
- G — GAS LINE
- OHU — OVERHEAD UTILITY LINES
- [ ] — UNDERGROUND LINE PER AS-BUILTS
- SIGN
- DOUBLE POST SIGN
- BOLLARD
- D/W — DRIVEWAY ENTRY
- HCR — HANDICAP RAMP
- JB — ELECTRICAL JUNCTION BOX
- E — ELECTRICAL METER
- EC — ELECTRICAL CABINET
- EVLT — ELECTRICAL VAULT
- GUY ANCHOR
- POWER POLE
- OVERHEAD LIGHT
- POWER POLE/OVERHEAD LIGHT
- GV — GAS VALVE
- SANITARY MANHOLE WITH STRUCTURE
- STORM MANHOLE WITH STRUCTURE
- CATCH BASIN
- CO — SANITARY/STORM CLEAN OUT
- 1 / 1 — SANITARY/STORM STRUCTURE #
- TR — TELECOMMUNICATIONS RISER
- FOVLT — FIBER OPTIC VAULT
- TSL — TRAFFIC SIGNAL LOOP
- SB — TRAFFIC SIGNAL BOX
- TRAFFIC CONTROL SIGNAL ARM
- WATER VALVE
- FIRE HYDRANT
- W — WATER METER
- ICV — IRRIGATION CONTROL VALVE
- DECIDUOUS TREE -PERIMETER REPRESENTS DRIPLINE
- FOUND MONUMENT
- ▲#1 — PROJECT CONTROL POINT

NORTH

SCALE
30 0 15 30 60
1 INCH = 30 FEET

PRELIMINARY

EXHIBIT C

JOB NO. 2200214

kpff
111 SW Fifth Ave., Suite 2400
Portland, OR 97204
O: 503.227.3251
F: 503.224.4681
www.kpff.com

REV.	DATE	BY	DESCRIPTION

kpff
111 SW Fifth Ave., Suite 2400
Portland, OR 97204
O: 503.227.3251
F: 503.224.4681
www.kpff.com

SURVEYED BY:	JH/SW
DRAWN BY:	MLP
CHECKED BY:	TTT
PROJECT NO.:	2200214
FILE:	2200214-SB.DWG

BOUNDARY & TOPOGRAPHIC SURVEY
PARCELS 2 AND 3, P.P. 2005-P1923
ST. VINCENT DE PAUL SOCIETY OF LANE COUNTY
CITY OF COTTAGE GROVE / LANE COUNTY / OREGON

DATE:	11 JULY 2022
CONTOUR INTERVAL:	1 FOOT
SHEET NO.	1 OF 1

SVdP THRIFT STORE

COTTAGE GROVE, OREGON 97424

SITE DESIGN REVIEW 11.18.2022

PROJECT TEAM

OWNER

ST. VINCENT de PAUL SOCIETY OF LANE COUNTY, INC.
PO BOX 24608
EUGENE, OR 97402
T: 541.743.7152
KRISTEN KARLE

ARCHITECT

BDA ARCHITECTURE AND PLANNING, P.C.
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MIKE MAGEE, AIA

CIVIL ENGINEERING

KPFF CONSULTING ENGINEERS
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MATT KEENAN, P.E.

LANDSCAPE

DOUGHERTY LANDSCAPE ARCHITECTS
474 WILLAMETTE STREET, SUITE 305
EUGENE, OR 97401
T: 541.683.5803
DAVID DOUGHERTY

VICINITY MAP

NTS

PROJECT DESCRIPTION

NEW COMMERCIAL DEVELOPMENT CONSISTING OF 19,715 SF OF RETAIL AND STORAGE AREA WITH A DONATION DROP OFF DRIVE-THROUGH, LOADING DOCK, AND ALL ASSOCIATED SITE IMPROVEMENTS.

PROPERTY DESCRIPTION:

SITE ADDRESS:	185 THORNTON LANE (INTERSECTION OF THORNTON LANE AND ROW RIVER ROAD)
	COTTAGE GROVE, OR 97424
MAP & TAX LOT #:	20-03-27-31; 210 & 211
	(TAX LOTS TO BE CONSOLIDATED AS A CONDITION OF FINAL OCCUPANCY)
SITE AREA:	2.02 ACRES
ZONING:	C-2P COMMUNITY COMMERCIAL

SHEET INDEX

BDA
Architecture and Planning, PC
bdarch.net
541.683.8661
1369 Olive Street
Eugene, OR 97401

Revision Summary

Revision Number	Revision Date

COTTAGE GROVE THRIFT STORE

185 THORNTON LANE
COTTAGE GROVE, OREGON 97424

ST. VINCENT de PAUL SOCIETY of LANE COUNTY

COVER SHEET
PROJECT INFORMATION

date 11-18-2022
file 2202_G001
d.b. LWL

G001

SITE REVIEW SET - NOVEMBER 18, 2022

GENERAL NOTES

1. SURVEY PROVIDED BY KPFF CONSULTING ENGINEERS, DATED 11 JULY 2022. ELEVATIONS ARE BASED ON THE NAVD 88 GEOID 12 VERTICAL DATUM, AND ESTABLISHED THROUGH A GPS OBSERVATION ON CONTROL POINT NO.1 USING THE OREGON REAL-TIME GPS NETWORK (ORGN).
2. 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.
3. PROJECT CONTROL SHALL BE FIELD VERIFIED AND CHECKED FOR RELATIVE HORIZONTAL POSITION PRIOR TO BEGINNING CONSTRUCTION LAYOUT. SEE SHEET C2.0 FOR PROJECT CONTROL INFORMATION.
4. PROJECT CONTROL SHALL BE FIELD VERIFIED AND CHECKED FOR RELATIVE VERTICAL POSITION BASED ON THE BENCHMARK STATED HEREON, PRIOR TO BEGINNING CONSTRUCTION LAYOUT.
5. WHEN DIMENSIONS AND COORDINATE LOCATIONS ARE REPRESENTED - DIMENSIONS SHALL HOLD OVER COORDINATE LOCATION. NOTIFY THE CIVIL ENGINEER OF RECORD IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES.
6. 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.
7. 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.
8. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THESE PLANS, THE PROJECT SPECIFICATIONS AND THE APPLICABLE REQUIREMENTS OF THE 2021 OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, AS WELL AS THE 2021 OREGON PLUMBING SPECIALTY CODE AND REQUIREMENTS OF THE CITY OF COTTAGE GROVE.
9. 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.
10. 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.
11. 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 KPFF CONSULTING ENGINEERS, 72 HOURS PRIOR TO START OF CONSTRUCTION TO PREVENT GRADE AND ALIGNMENT CONFLICTS.
12. 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.
13. TEMPORARY AND PERMANENT EROSION CONTROL MEASURES SHALL BE IMPLEMENTED. THE CONTRACTOR SHALL ADHERE TO CITY OF COTTAGE GROVE AND APPROVED EROSION CONTROL PERMIT 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.
14. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL ROADWAYS, KEEPING THEM CLEAN AND FREE OF CONSTRUCTION MATERIALS AND DEBRIS, AND PROVIDING DUST CONTROL AS REQUIRED.
15. TRAFFIC CONTROL SHALL BE PROVIDED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN TO THE CITY OF COTTAGE GROVE FOR REVIEW AND APPROVAL PRIOR TO COMMENCING CONSTRUCTION.
16. CONTRACTOR SHALL MAINTAIN ALL UTILITIES TO {BLDG. OR BUSINESS} AT ALL TIMES DURING CONSTRUCTION. {CHECK APPLICABILITY.}
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING ALL WORK WITH THE OWNER.
18. NOTIFY THE CITY OF COTTAGE GROVE INSPECTOR 72 HOURS BEFORE STARTING WORK. A PRECONSTRUCTION MEETING WITH THE OWNER, THE OWNER'S ENGINEER, CONTRACTOR AND THE CITY OF COTTAGE GROVE REPRESENTATIVE SHALL BE REQUIRED.

CONSTRUCTION NOTES

GENERAL

1. 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.
2. SPECIAL INSPECTION REQUIRED FOR ALL COMPACTION TESTING.

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.
5. ALL WORK TO CONFORM TO THE 2021 OREGON PLUMBING SPECIALTY CODE

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 2 PERCENT UNLESS NOTED OTHERWISE IN THE PLANS.
4. ALL HORIZONTAL CONNECTIONS TO THE SANITARY OR STORM SEWERS SHALL BE OF THE 'WYE' BRANCH TYPE.

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.

PAVING

1. SEE ARCHITECTURAL PLANS FOR SIDEWALK FINISHING AND SCORING PATTERNS. {CHECK APPLICABILITY.}

SEPARATION STATEMENT

ALL WATER MAIN CROSSINGS SHALL CONFORM TO THE OREGON STATE HEALTH DEPARTMENT, CHAPTER 333. WATER MAINS SHALL CROSS OVER SANITARY SEWERS WITH A 18" MINIMUM CLEARANCE BETWEEN OUTSIDE DIAMETERS OF PIPE WITH ALL PIPE JOINTS EQUIDISTANT FROM CROSSING. HORIZONTAL SEPARATION BETWEEN WATER MAINS AND SANITARY SEWERS IN PARALLEL INSTALLATIONS SHALL BE 10'. MAINTAIN 12" MINIMUM VERTICAL DISTANCE FOR ALL OTHER UTILITY CROSSINGS AND 12" HORIZONTAL PARALLEL DISTANCE. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN THE MINIMUM 10' HORIZONTAL SEPARATION, THE WATER MAIN SHALL BE LAID ON A SEPARATE SHELF IN THE TRENCH 18" INCHES ABOVE THE SEWER.

ABBREVIATIONS

AC	ASPHALT CONCRETE	PCR	POINT OF CURB RETURN
AD	AREA DRAIN	PED	PEDESTRIAN
BLDG	BUILDING	PP	POWER POLE
BOW	BACK OF WALK	P.U.E	PUBLIC UTILITY EASEMENT
BS	BOTTOM OF STAIR	PVC	POLYVINYL CHLORIDE
BW	BOTTOM OF WALL	PVT	PRIVATE
CB	CATCH BASIN	R	RIM
CL	CENTERLINE	RD	ROOF DRAIN
CO	CLEANOUT	R.O.W	RIGHT-OF-WAY
CONC.	CONCRETE	S	SLOPE (FT/FT)
COTG	CLEANOUT TO GRADE	SD	STORM DRAIN
CP	CONTROL POINT	SDMH	STORM DRAIN MANHOLE
D/W	DRIVEWAY	SHT	SHEET
DIA.,Ø	DIAMETER	SS	SANITARY SEWER
DIP	DUCTILE IRON PIPE	SSMH	SANITARY SEWER MANHOLE
E	EASTING	STA	STATION
EXIST./EX	EXISTING	STD	STANDARD
FDC	FIRE DEPARTMENT CONNECTION	S/W	SIDEWALK
FF	FINISH FLOOR ELEVATION	TC	TOP OF CURB
FG	FINISH GRADE	TD	TRENCH DRAIN
FH	FIRE HYDRANT	TG	TOP OF GROUND
FND	FOUNDATION	TP	TOP OF PAVEMENT
G	GUTTER	TRANS.	TRANSFORMER
GB	GRADE BREAK	TS	TOP OF STAIR
GL	GAS LINE	TW	TOP OF WALL
GV	GATE VALVE		TOP OF WALK
IE	INVERT ELEVATION	TYP	TYPICAL
LP	LIGHT POLE	UNO	UNLESS NOTED OTHERWISE
MH	MANHOLE	W	WATER
MIN	MINIMUM	WM	WATER METER
N	NORTHING	WV	WATER VALVE
P/L	PROPERTY LINE		

SHEET INDEX

NOTICE TO EXCAVATORS:
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(NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503)-232-1987).

POTENTIAL UNDERGROUND FACILITY OWNERS

Call before you dig.

Oregon811 UTILITY NOTIFICATION CENTER or 800-332-2344

kpff
800 Willamette Street, Suite 400
Eugene, OR 97401
O: 541.684.4902
F: 541.684.4909
www.kpff.com

BDA Architecture and Planning, PC
bdarch.net
541.683.8661
1369 Olive Street
Eugene, OR 97401

PRELIMINARY NOT FOR CONSTRUCTION

Revision Summary	
Revision Number	Revision Date

COTTAGE GROVE THRIFT STORE

XXX THORNTON ROAD
COTTAGE GROVE, OREGON 97424

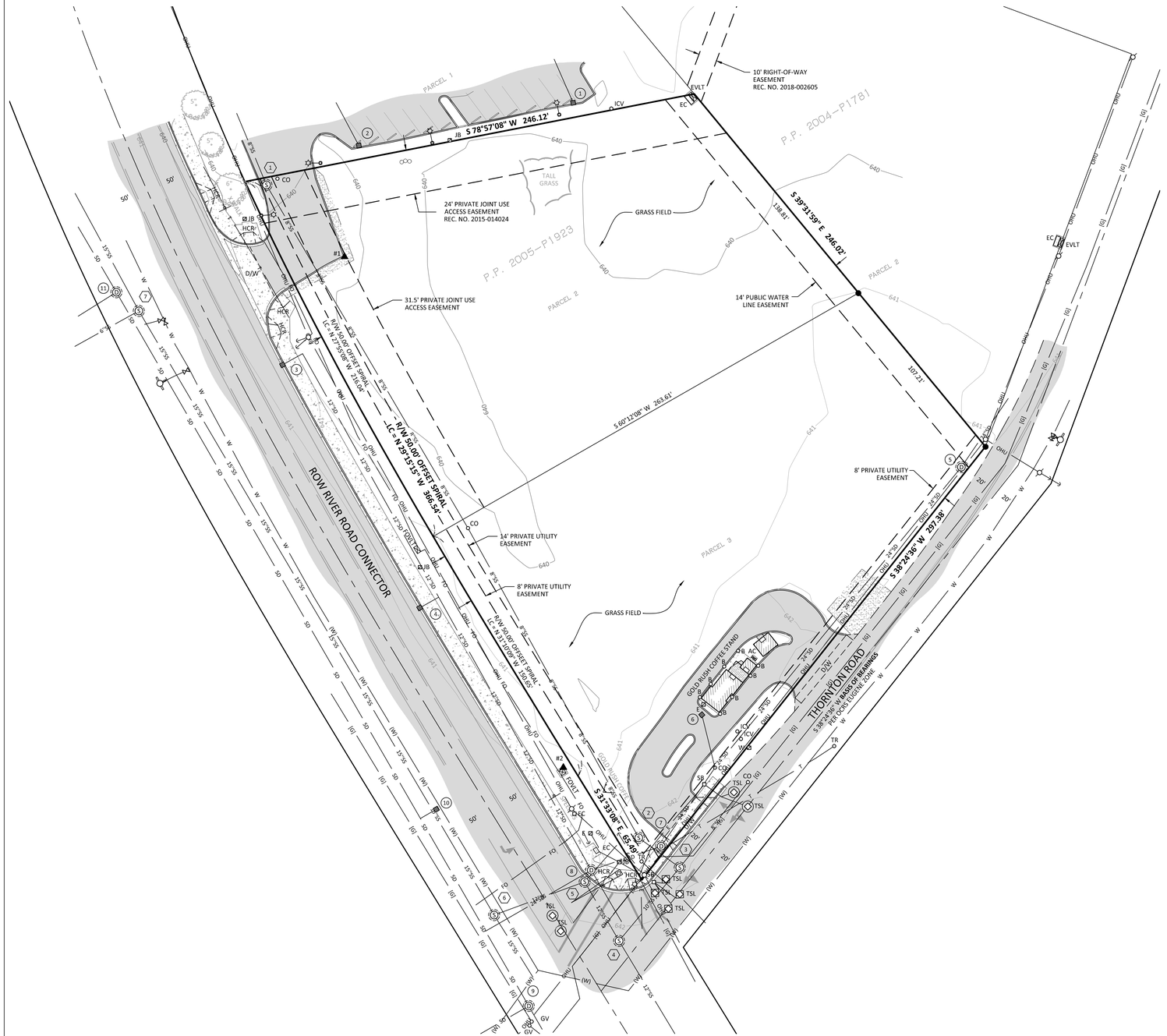
CIVIL NOTES & ABBREVIATIONS

ST. VINCENT de PAUL SOCIETY of LANE COUNTY

SITE REVIEW

C1.0

date 11-18-2022
file
d.b. RR/WM



NOTES:

1.) VERTICAL DATUM: NAVD 88 (GEOID 12A) ELEVATION WAS ESTABLISHED THROUGH A GPS OBSERVATION ON CONTROL POINT NO. 1 USING THE OREGON REAL-TIME GPS NETWORK (ORGN).

2.) BASIS OF BEARINGS FOR THIS SURVEY IS THE OREGON COORDINATE REFERENCE SYSTEM (OCRS), EUGENE ZONE. THE RESULTANT BEARING OF THE CENTERLINE OF THORNTON ROAD IS SOUTH 38°24'36" WEST.

3.) BOUNDARY AND EASEMENTS SHOWN HEREON ARE BASED ON PRELIMINARY TITLE REPORT NO. 0332940 BY CASCADE TITLE COMPANY, EFFECTIVE DATE JANUARY 13, 2022.

4.) UTILITY LOCATIONS SHOWN ARE PER FIELD LOCATED UTILITY PAINT MARKS & REFERENCE MAPS MADE AVAILABLE BY THE VARIOUS UTILITY PROVIDERS. UNLESS INDICATED, DEPTHS OF UTILITY LINES ARE NOT AVAILABLE. ALL UTILITY LOCATIONS SHOULD BE FIELD VERIFIED (POTHOLED) PRIOR TO CONSTRUCTION.

STORM TABLE:

1. CATCH BASIN
   RIM = 639.39'
   IE 6" OUT (NW) = 638.39'
2. CATCH BASIN
   RIM = 639.17'
   IE 10" OUT (NW) = 637.84'
3. CATCH BASIN
   FULL OF DEBRIS
   RIM = 640.24'
4. CATCH BASIN
   RIM = 640.66'
   IE 12" OUT (NE) = 636.26'
5. STORM MANHOLE
   RIM = 641.51'
   IE 24" IN (NE) = 635.01'
   IE 24" OUT (SW) = 634.88'
6. CATCH BASIN
   RIM = 641.02'
   IE 6" OUT (SE) = 639.77'
7. STORM MANHOLE
   RIM = 642.29'
   IE 24" IN (NE) = 634.39'
   IE 24" OUT (SW) = 634.25'
8. STORM MANHOLE
   RIM = 641.97'
   IE 24" IN (SE) = 634.13'
   IE 24" IN (NE) = 634.25'
   IE 12" IN (NW) = 634.96'
   IE 24" OUT (SW) = 634.06'
9. STORM MANHOLE
   RIM = 641.77'
   IE IN (SW) = 633.02'
   IE IN (SE) = 632.97'
   IE OUT (NW) = 632.72'
10. CATCH BASIN
    RIM = 640.90'
    IE 10" OUT (SW) = 637.65'
11. STORM MANHOLE
    RIM = 642.23'
    IE IN (SW) = 632.20'
    IE IN (SE) = 631.73'
    IE OUT (NW) = 631.72'

SANITARY TABLE:

1. SANITARY MANHOLE
   RIM = 639.77'
   IE 8" IN (NW) = 633.65'
   IE 8" OUT (SE) = 633.61'
2. SANITARY MANHOLE
   RIM = 642.87'
   IE 8" IN (NW) = 631.32'
   IE 8" OUT (SE) = 631.19'
3. SANITARY MANHOLE
   RIM = 641.86'
   IE 8" IN (NE) = 631.04'
   IE 8" IN (NW) = 631.17'
   IE 10" OUT (SW) = 630.98'
4. SANITARY MANHOLE
   RIM = 642.17'
   IE 12" IN (SE) = 630.55'
   IE 10" IN (NE) = 630.75'
   IE 12" OUT (NW) = 630.53'
5. SANITARY MANHOLE
   RIM = 641.44'
   12" IN (SE) = 630.41'
   IE 10" IN (NE) = 630.45'
   (PIPE WAS DRY, NO FLOW)
   IE 12" OUT (W) = 630.31'
6. SANITARY MANHOLE
   RIM = 641.57'
   IE 15" IN (SE) = 630.38'
   IE 12" IN (E) = 630.26'
   IE 15" OUT (NW) = 630.26'
7. SANITARY MANHOLE
   RIM = 642.23'
   IE 6" IN (SW) = 630.11'
   IE 15" IN (SE) = 629.47'
   IE 15" OUT (NW) = 629.46'

LEGEND:

- BUILDING OUTLINE WITH DOOR
- CONCRETE SURFACE
- ASPHALT SURFACE
- WALL
- BUILDING OVERHANG
- CURB LINE
- EDGE OF ASPHALT
- RIGHT-OF-WAY LINE
- EASEMENT LINE
- LOT LINE
- PROPERTY LINE
- BRUSH LINE
- FO — FIBER OPTIC LINE
- E — ELECTRICAL LINE
- TS — TRAFFIC SIGNAL LINE
- T — TELECOMMUNICATIONS LINE
- SD — STORM LINE
- SS — SANITARY SEWER LINE
- W — WATER LINE
- G — GAS LINE
- OHU — OVERHEAD UTILITY LINES
- [ ] — UNDERGROUND LINE PER AS-BUILTS
- SIGN
- DOUBLE POST SIGN
- BOLLARD
- D/W — DRIVEWAY ENTRY
- HCR — HANDICAP RAMP
- JB — ELECTRICAL JUNCTION BOX
- E — ELECTRICAL METER
- EC — ELECTRICAL CABINET
- EVLT — ELECTRICAL VAULT
- GUY ANCHOR
- POWER POLE
- OVERHEAD LIGHT
- POWER POLE/OVERHEAD LIGHT
- GV — GAS VALVE
- SANITARY MANHOLE WITH STRUCTURE
- STORM MANHOLE WITH STRUCTURE
- CATCH BASIN
- CO — SANITARY/STORM CLEAN OUT
- SANITARY/STORM STRUCTURE #
- TR — TELECOMMUNICATIONS RISER
- FOVLT — FIBER OPTIC VAULT
- TSL — TRAFFIC SIGNAL LOOP
- SB — TRAFFIC SIGNAL BOX
- TRAFFIC CONTROL SIGNAL ARM
- WATER VALVE
- FIRE HYDRANT
- W — WATER METER
- ICV — IRRIGATION CONTROL VALVE
- DECIDUOUS TREE -PERIMETER REPRESENTS DRIPLINE
- FOUND MONUMENT
- #1 — PROJECT CONTROL POINT

PROJECT CONTROL:

STATION	DESCRIPTION	NORTHING	EASTING	ELEVATION
1	1-1/8" BRASS CAP "KPFF CONTROL"	18422.05	197660.76	641.15'
2	1-1/8" BRASS CAP "KPFF CONTROL"	18147.33	197778.45	641.62'

NORTH

SCALE
30 0 15 30 60
1 INCH = 30 FEET

JOB NO. 2200214

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1369 Olive Street
Eugene, OR 97401

PRELIMINARY NOT FOR CONSTRUCTION

Revision Summary	
Revision Number	Revision Date

COTTAGE GROVE THRIFT STORE

XXX THORNTON ROAD
COTTAGE GROVE, OREGON 97424

EXISTING CONDITIONS

ST. VINCENT de PAUL SOCIETY of LANE COUNTY

SITE REVIEW

C1.1

date 11-18-2022
file
d.b. RR/WM

SHEET NOTES

1. ALL DIMENSIONS ARE TO FACE OF CURB OR FACE OF WALL.
2. ALL SIDEWALK PAVEMENT JOINTS SHALL BE CONSTRUCTED PER DETAIL 9/C6.0.
3. ALL RADII ARE 2' UNO.

(X) KEY NOTES

#	DESCRIPTION	DETAIL REF.
1	SAWCUT LINE	
2	STANDARD CURB	10/C6.0
3	CURB ENDING	2/C6.0
4	CURB RAMP TYPE 1	7/C6.0
5	CONCRETE SIDEWALK	3/C6.0
6a	ADA PARKING STALLS AND STRIPING	
6b	'NO PARKING" ZONE STRIPING	
6c	4" WIDE WHITE STRIPE	
7	ADA PARKING SIGN	
8	RAISED CROSSING	11/C6.0

SHEET LEGEND

- PROPERTY LINE
- SAWCUT LINE
- CONCRETE SIDEWALK — 3/C6.0
- STANDARD ASPHALT PAVEMENT — 1/C6.0
- CONCRETE PAVEMENT — 4/C6.0

SCALE 1 INCH = 20 FEET
20 0 20 40

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Revision Summary	
Revision Number	Revision Date

COTTAGE GROVE THRIFT STORE

XXX THORNTON ROAD
COTTAGE GROVE, OREGON 97424

HORIZONTAL CONTROL PLAN

ST. VINCENT de PAUL SOCIETY of LANE COUNTY

SITE REVIEW

C2.0

date 11-18-2022
file
d.b. RR/WM

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800 Willamette Street, Suite 400
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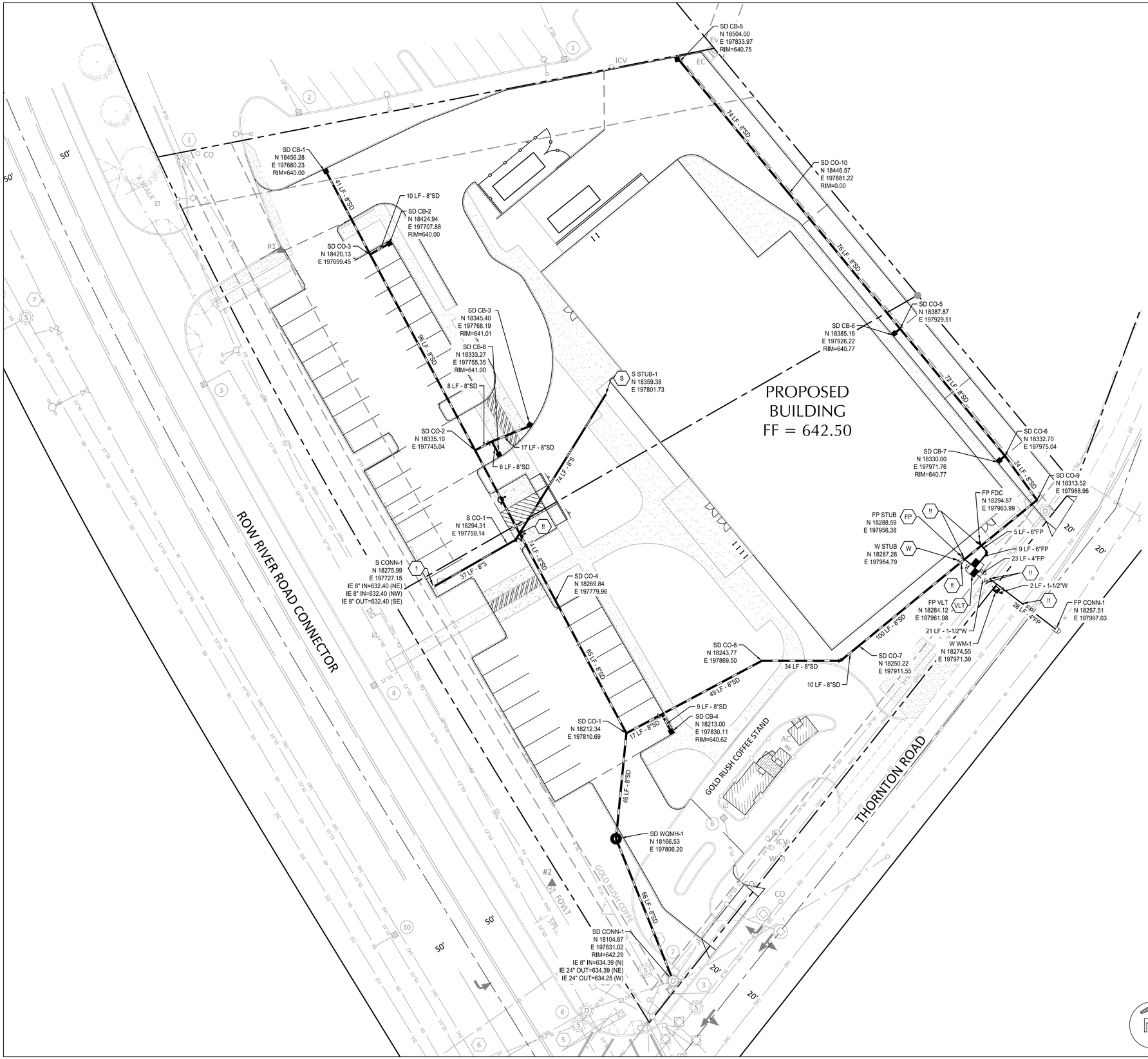

SHEET NOTES

1. PIPE BEDDING AND BACKFILL FOR ALL UTILITIES SHALL BE DONE PER DETAIL 1/C6.1.
2. STATIONS AND OFFSETS SHOWN ON STRUCTURES ARE SHOWN AT CENTER OF STRUCTURE.
3. INSTALL THRUST BLOCK ON FIRE AND WATER LINES PER DETAIL X & 4/C6.1.

(X) UTILITY KEY NOTES

NOTE	DESCRIPTION	DETAIL REF.
1	FIELD VERIFY LOCATION AND IE PRIOR TO CONSTRUCTION.	
BWV	BACKFLOW PREVENTION VAULT	
FP	CONNECT TO FIRE PROTECTION SYSTEM. SIZE AS NOTED. SEE PLUMBING PLANS FOR CONTINUATION.	
S	CONNECT TO WASTE LINE. SEE PLUMBING PLANS FOR CONTINUATION. SIZE AS NOTED.	
SD	CONNECT TO STORM DRAIN/ROOF DRAIN. SEE PLUMBING PLANS FOR CONTINUATION. SIZE AND IE AS NOTED.	
VLT	COMBINATION FIRE AND WATER VAULT	
W	CONNECT TO COLD WATER SYSTEM. SEE PLUMBING PLANS FOR CONTINUATION. SIZE AS NOTED.	
!!	UTILITY CROSSING. PROVIDE 12" MIN. CLEARANCE, U.N.O.	

UTILITY LABEL LEGEND

STRUCTURE LABEL

UTILITY TYPE (SD=STORM DRAINAGE)
STRUCTURE TYPE CALLOUT
ID NUMBER (WHERE APPLICABLE)

XX XX-XX
X+XX.X RT X.X' — LOCATION (WHERE APPLICABLE)
RIM=
IE IN = XX.X
IE OUT = XX.X — STRUCTURE INFO (WHERE APPLICABLE)

PIPE LABEL

UTILITY LENGTH
UTILITY SIZE
UTILITY TYPE

XXLF - XX" XX
S=X.XX%
SLOPE (WHERE APPLICABLE)

STRUCTURE TYPE

CALLOUT	DESCRIPTION	DETAIL REF.
BEND	BEND	
CB	CATCH BASIN	3/C6.1
CO	CLEANOUT TO GRADE	2/C6.1
MH	MANHOLE	
STUB	STUB	
TEE	TEE	
WQMH	WATER QUALITY MANHOLE	5/C6.1

SCALE 1 INCH = 20 FEET
20 0 20 40

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Revision Summary	
Revision Number	Revision Date

COTTAGE GROVE THRIFT STORE

XXX THORNTON ROAD
COTTAGE GROVE, OREGON 97424
UTILITY INSTALLATION PLAN
ST. VINCENT de PAUL SOCIETY of LANE COUNTY

SITE REVIEW

C3.0

date 11-18-2022
file
d.b. RR/WM

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File: O:\o\2022\22200397-SVDP-CG-Store\CAD\PLOT\2200397-03UT.dwg TAB:C3.0
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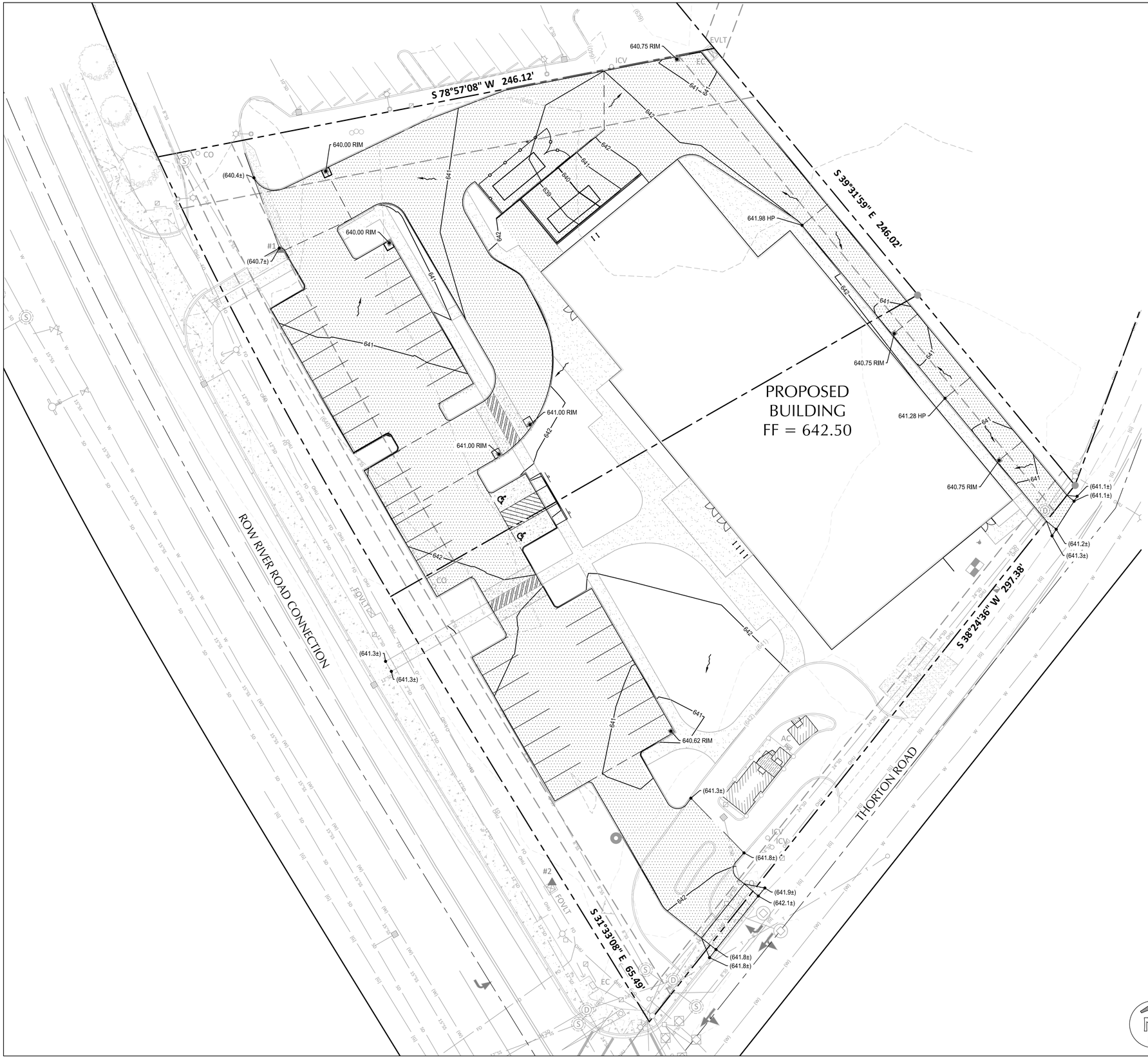

SHEET NOTES

1. SLOPES PROVIDED ON SLOPE ARROW ARE FOR REFERENCE ONLY.
2. LANDINGS ON ACCESSIBLE ROUTES SHALL NOT EXCEED 2% IN ANY DIRECTION.
3. ALL ACCESSIBLE ROUTES SHALL COMPLY WITH CURRENT ADA ACCESSIBILITY GUIDELINES FOR BUILDING AND FACILITIES (ADAAG).

GRADING LABEL LEGEND

CALLOUT	DESCRIPTION
[X.X%] →	SLOPE ORIENTATION INDICATING DIRECTION OF MAXIMUM GRADE (DOWNHILL)
XX.XX XX	SPOT ELEVATION DESCRIPTION LISTED BELOW. NO DESCRIPTION MEANS TP OR TG
BS	BOTTOM OF STEP
BW	BOTTOM OF WALL
EG	EXISTING GRADE
FF	FINISHED FLOOR
G	GUTTER
HP	HIGH POINT
LP	LOW POINT
RIM	RIM OF STRUCTURE
TC	TOP OF CURB
TG	TOP OF GROUND
TP	TOP OF PAVEMENT
TS	TOP OF STEP
TW	TOP WALL
(XXX.X±)	EXISTING GRADE (MATCH WHERE APPLICABLE)

SHEET LEGEND

- DRAINAGE FLOW DIRECTION
- GRADE BREAK
- SAWCUT LINE
- 49 EX. CONTOUR MINOR
- 50 EX. CONTOUR MAJOR
- 49 CONTOUR MINOR (FG)
- 50 CONTOUR MAJOR (FG)

SCALE 1 INCH = 20 FEET
20 0 20 40

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Revision Summary	
Revision Number	Revision Date

COTTAGE GROVE THRIFT STORE

XXX THORNTON ROAD
COTTAGE GROVE, OREGON 97424

GRADING PLAN

ST. VINCENT de PAUL SOCIETY of LANE COUNTY

SITE REVIEW

C4.0

date 11-18-2022
file
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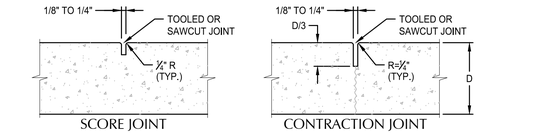
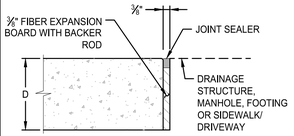




EXPANSION / ISOLATION JOINT

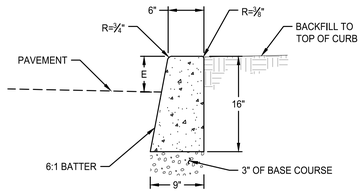
JOINT INTERVALS TABLE

TYPE	SPACING	OR AT...
SCORE	5' TYP.	LOCATIONS SHOWN ON PLANS
CONTRACTION	15' MAX.	END OF RAMPS AND DRIVEWAYS
EXPANSION/ ISOLATION	200' *	POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY OR OTHER FIXED OBJECTS

* MONOLITHIC CURB AND SIDEWALK SHALL BE 45' MAX.

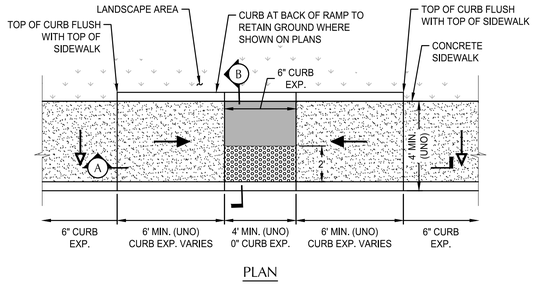
NOTES:
1. CONTRACTION JOINTS MAY BE USED IN PLACE OF SCORE JOINTS.
2. CONSTRUCTION COLD JOINTS MAY BE USED IN PLACE OF CONTRACTION JOINTS.
3. PROVIDE MEDIUM BROOM FINISH WITH NO TOOL MARKS.

9 SIDEWALK JOINTS
SCALE: NTS

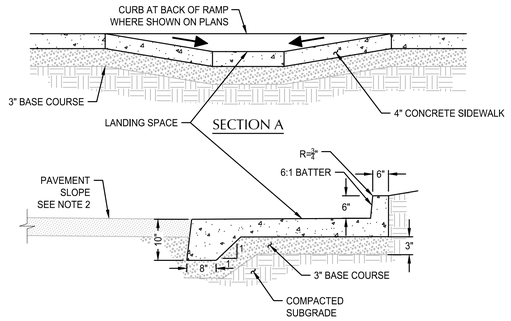


NOTES:
1. CURB EXPOSURE 'E' = 6", TYP. VARY AS SHOWN ON PLANS OR AS DIRECTED.
2. CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS. CONSTRUCT EXPANSION JOINTS AT 200' MAX SPACING AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY.
3. TOPS OF ALL CURBS SHALL SLOPE TOWARD THE ROADWAY AT 2% UNLESS OTHERWISE SHOWN OR AS DIRECTED.
4. DIMENSIONS ARE NOMINAL AND MAY VARY TO CONFORM WITH CURB MACHINE AS APPROVED BY THE ENGINEER.

10 CONCRETE CURB - STANDARD
SCALE: NTS



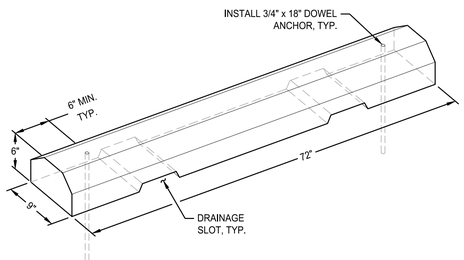
PLAN



SECTION A

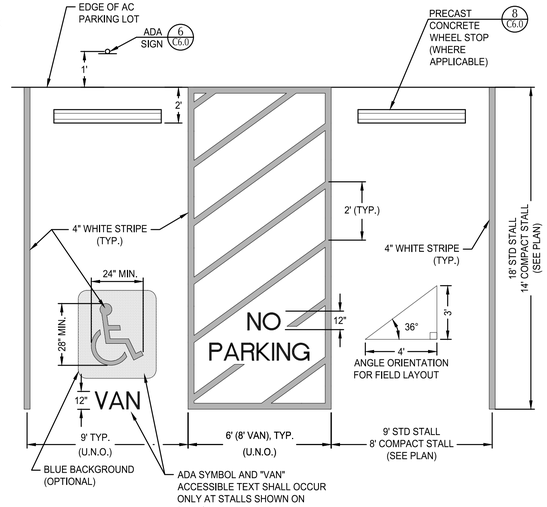
SECTION B

7 CURB RAMP - TYPE 1
SCALE: NTS

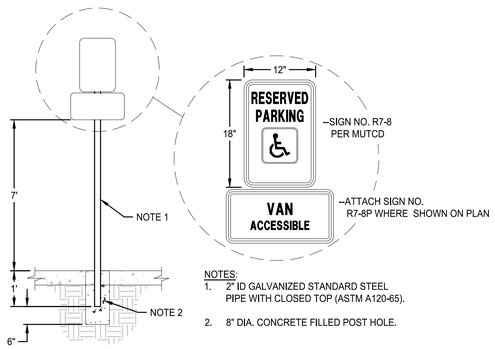


NOTES:
1. DIMENSIONS ARE NOMINAL AND MAY VARY TO CONFORM TO MANUFACTURER'S PRODUCTS APPROVED BY ENGINEER.

8 PRECAST CONCRETE WHEEL STOP
SCALE: NTS

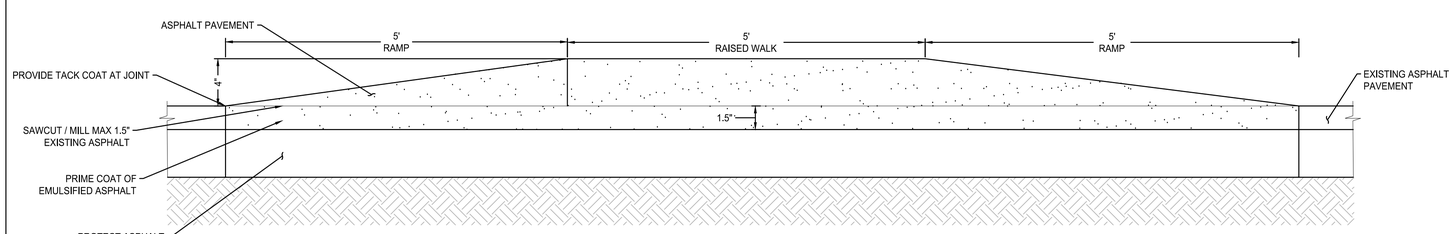


5 TYPICAL PARKING LAYOUT
SCALE: NTS

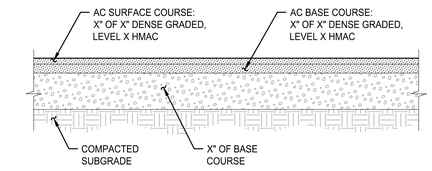


NOTES:
1. 2" ID GALVANIZED STANDARD STEEL PIPE WITH CLOSED TOP (ASTM A120-65).
2. 8" DIA. CONCRETE FILLED POST HOLE.

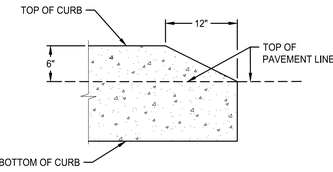
6 ADA PARKING SIGN - TYPE 1
SCALE: NTS



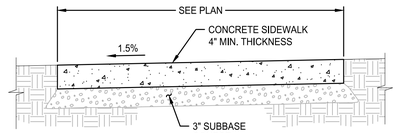
11 RAISED ASPHALT CROSS-WALK
SCALE: NTS



1 ASPHALT PAVEMENT SECTION
SCALE: NTS

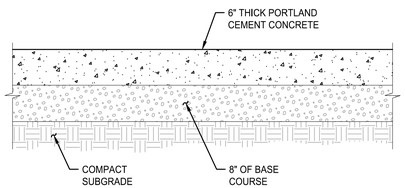


2 CONCRETE CURB - ENDING
SCALE: NTS



NOTES:
1. CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS. CONSTRUCT EXPANSION JOINTS AT 200' MAX SPACING, AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY, UNLESS NOTED OTHERWISE.

3 CONCRETE SIDEWALK
SCALE: NTS



NOTES:
1. - CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS.
   - CONSTRUCT EXPANSION JOINTS AT 200' MAX. SPACING AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY.
2. PROVIDE MEDIUM TO COARSE BROOM FINISH.

4 CONCRETE PAVEMENT SECTION
SCALE: NTS

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Revision Summary

Revision Number	Revision Date

COTTAGE GROVE THRIFT STORE

XXX THORNTON ROAD
COTTAGE GROVE, OREGON 97424

CIVIL PAVING DETAILS

ST. VINCENT de PAUL SOCIETY of LANE COUNTY

SITE REVIEW

C5.0

date 11-18-2022
file
d.b. RR/WM

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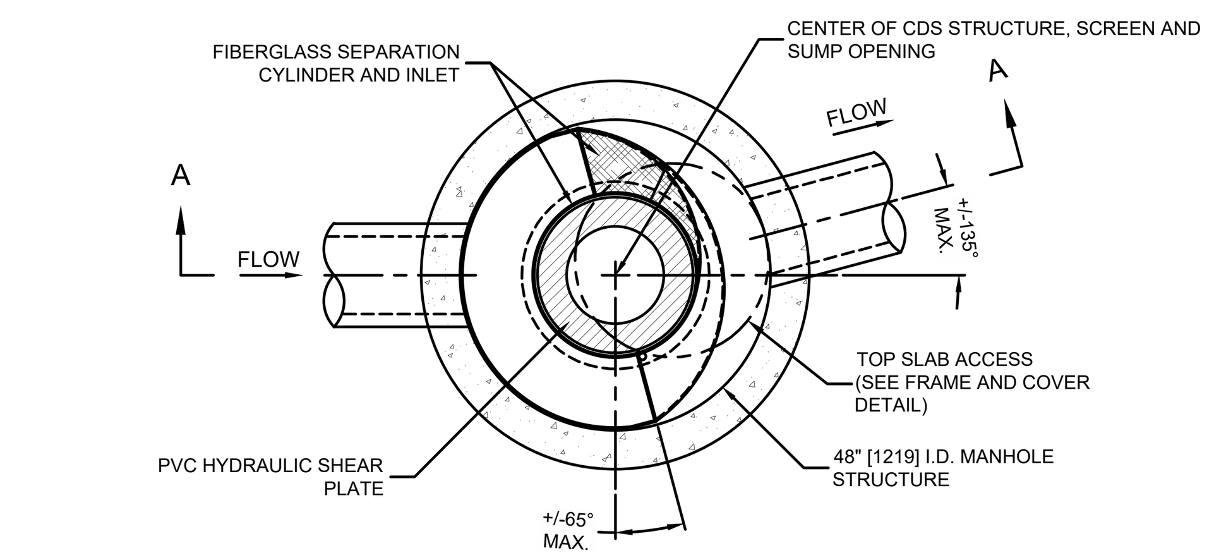
Plotted: 11/18/22 at 10:33am By: rondeau

CDS2015-4-C DESIGN NOTES

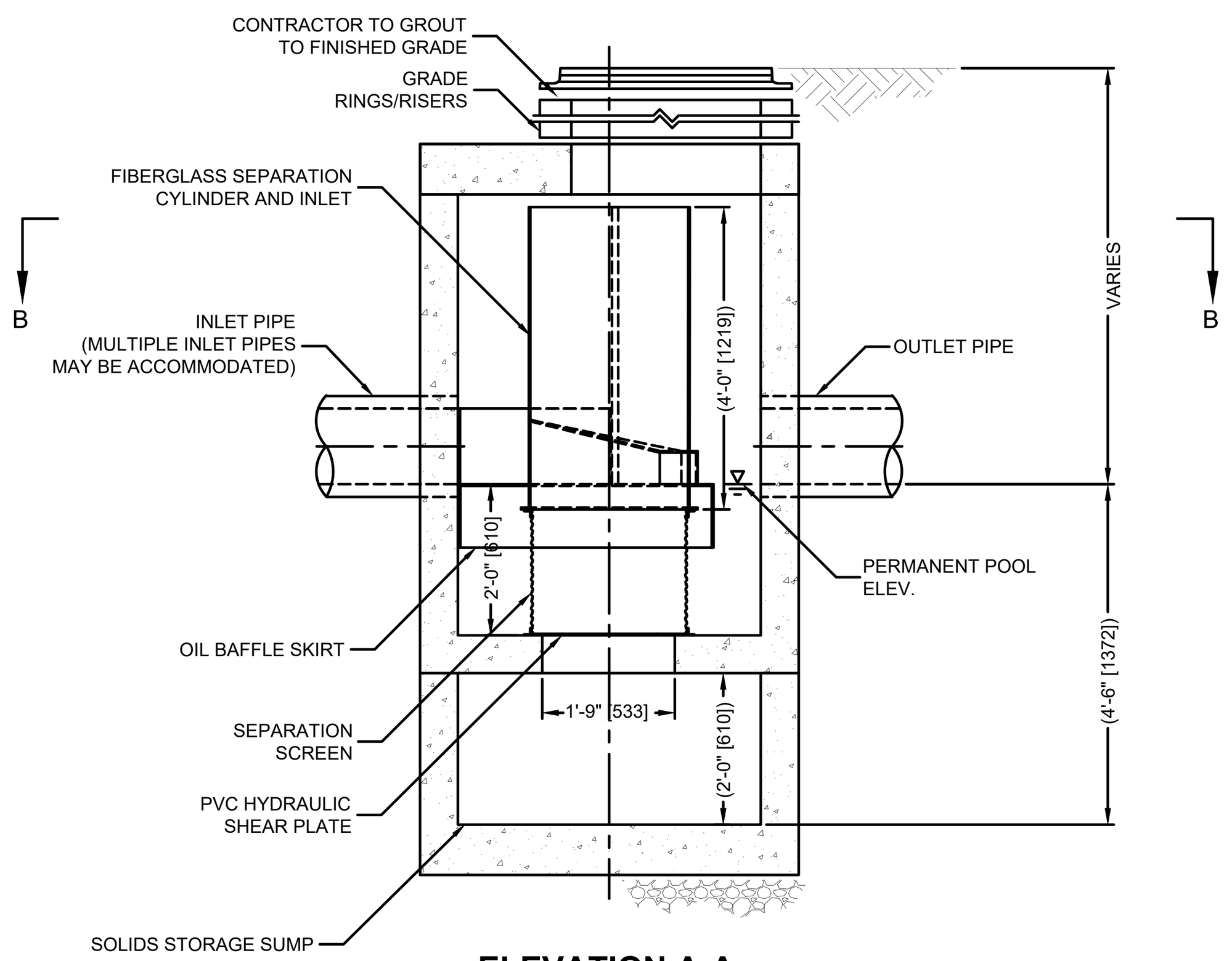
CDS2015-4-C RATED TREATMENT CAPACITY IS 0.7 CFS [19.8 L/s], OR PER LOCAL REGULATIONS. IF THE SITE CONDITIONS EXCEED MAXIMUM HYDRAULIC CAPACITY, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CDS2015-4-C STANDARD CONFIGURATION IS SHOWN.

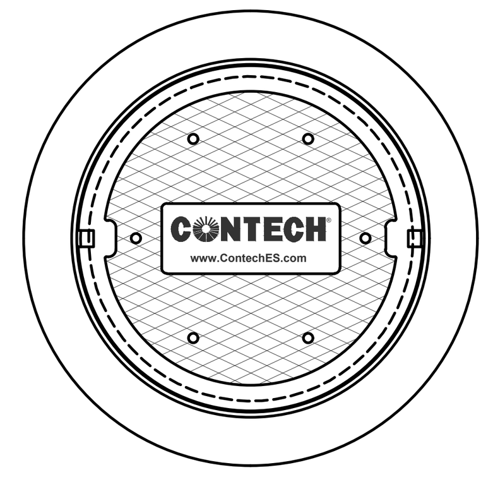
FOR NJDEP PROJECTS, PLEASE CONTACT YOUR LOCAL CONTECH REPRESENTATIVE FOR APPROVED CONFIGURATIONS.



PLAN VIEW B-B
NOT TO SCALE.



ELEVATION A-A
NOT TO SCALE.



FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS OR L/s)			*
PEAK FLOW RATE (CFS OR L/s)			*
RETURN PERIOD OF PEAK FLOW (YRS)			*
SCREEN APERTURE (2400 OR 4700)			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		*	*
NOTES/SPECIAL REQUIREMENTS:			
* PER ENGINEER OF RECORD			

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO..
5. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
6. CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

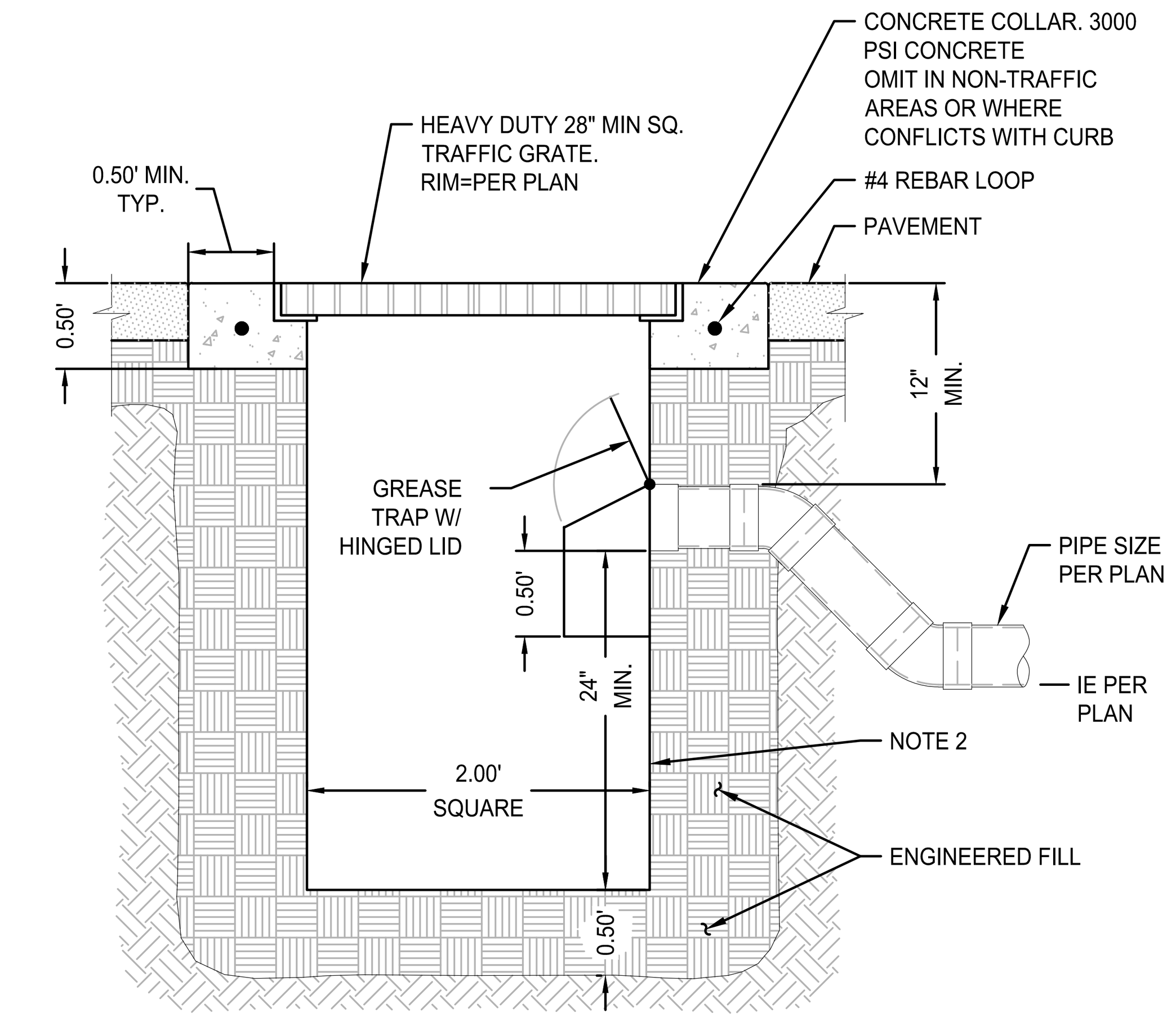
INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 5,788,848; 6,641,720; 6,511,595; 6,581,783; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

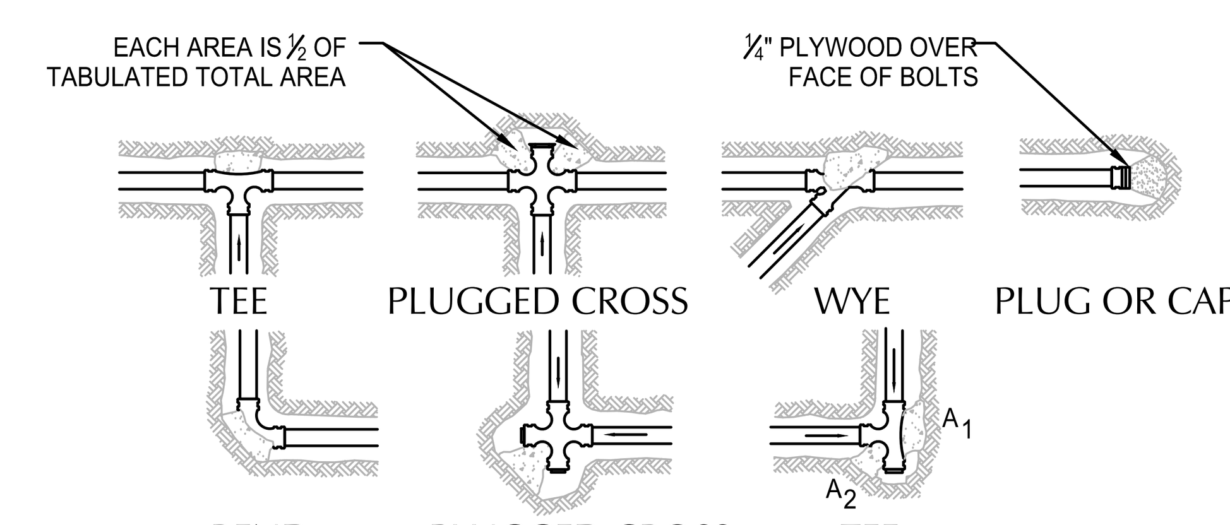
CDS2015-4-C
ONLINE CDS
STANDARD DETAIL

5 CDS WATER QUALITY MANHOLE
SCALE: NTS



NOTES:
1. CONTRACTOR TO WIDEN EXCAVATION AS REQUIRED TO OBTAIN COMPACTION WITH CONTRACTORS COMPACTION EQUIPMENT.
2. 1/4" STEEL PLATE, BITUMINOUS COATED. AS MANUFACTURED BY GIBSON STEEL BASINS OR APPROVED EQUAL.

3 TRAPPED CATCH BASIN
SCALE: NTS



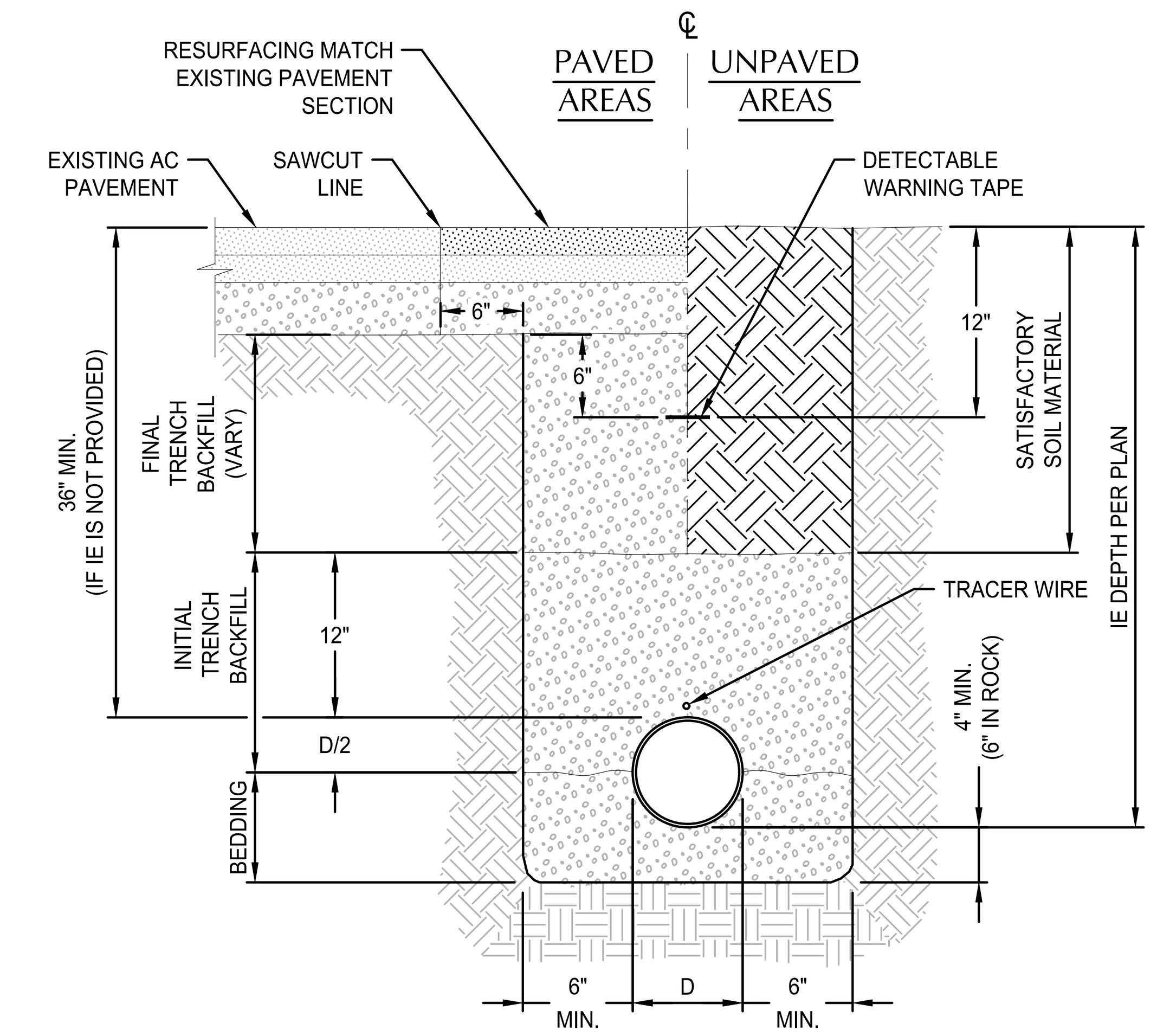
1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. KEEP CONCRETE CLEAR OF JOINT AND ACCESSORIES.
3. THE REQUIRED THRUST BEARING AREAS FOR SPECIAL CONNECTIONS ARE SHOWN ENCIRCLED ON THE PLAN; e.g. 15 INDICATES 15 SQUARE FEET BEARING AREA REQUIRED.
4. IF NOT SHOWN ON PLANS REQUIRED 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

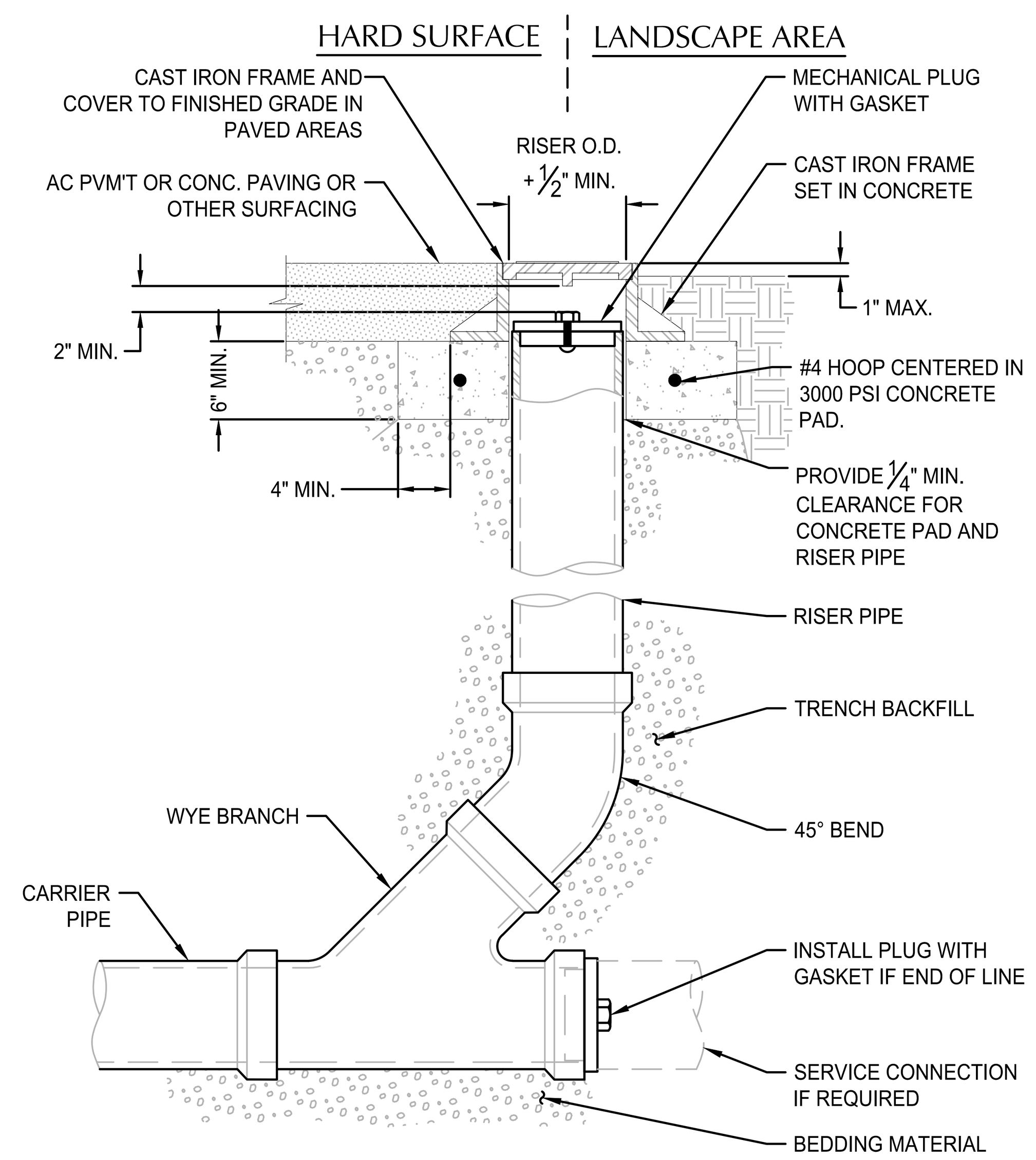
			TEE PLUGGED ON RUN				
FITTING SIZE	TEE, WYE, PLUG, OR CAP	90° BEND PLUGGED CROSS	A1	A2	45° BEND	22½° BEND	11¼° BEND
4	1.0	1.4	1.9	1.4	1.0		
6	2.1	3.0	4.3	3.0	1.6	1.0	
8	3.8	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	8.4	11.8	8.4	4.6	2.4	1.2

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).

4 THRUST BLOCK
SCALE: NTS



1 TYPICAL PIPE BEDDING AND BACKFILL
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.

2 STANDARD CLEANOUT (COTG)
SCALE: NTS

BDA
Architecture and Planning, PC
bdarch.net
541.683.8661
1369 Olive Street
Eugene, OR 97401

PRELIMINARY NOT FOR CONSTRUCTION

Revision Summary

Revision Number	Revision Date

COTTAGE GROVE THRIFT STORE
XXX THORNTON ROAD
COTTAGE GROVE, OREGON 97424
CIVIL UTILITY DETAILS
ST. VINCENT de PAUL SOCIETY of LANE COUNTY

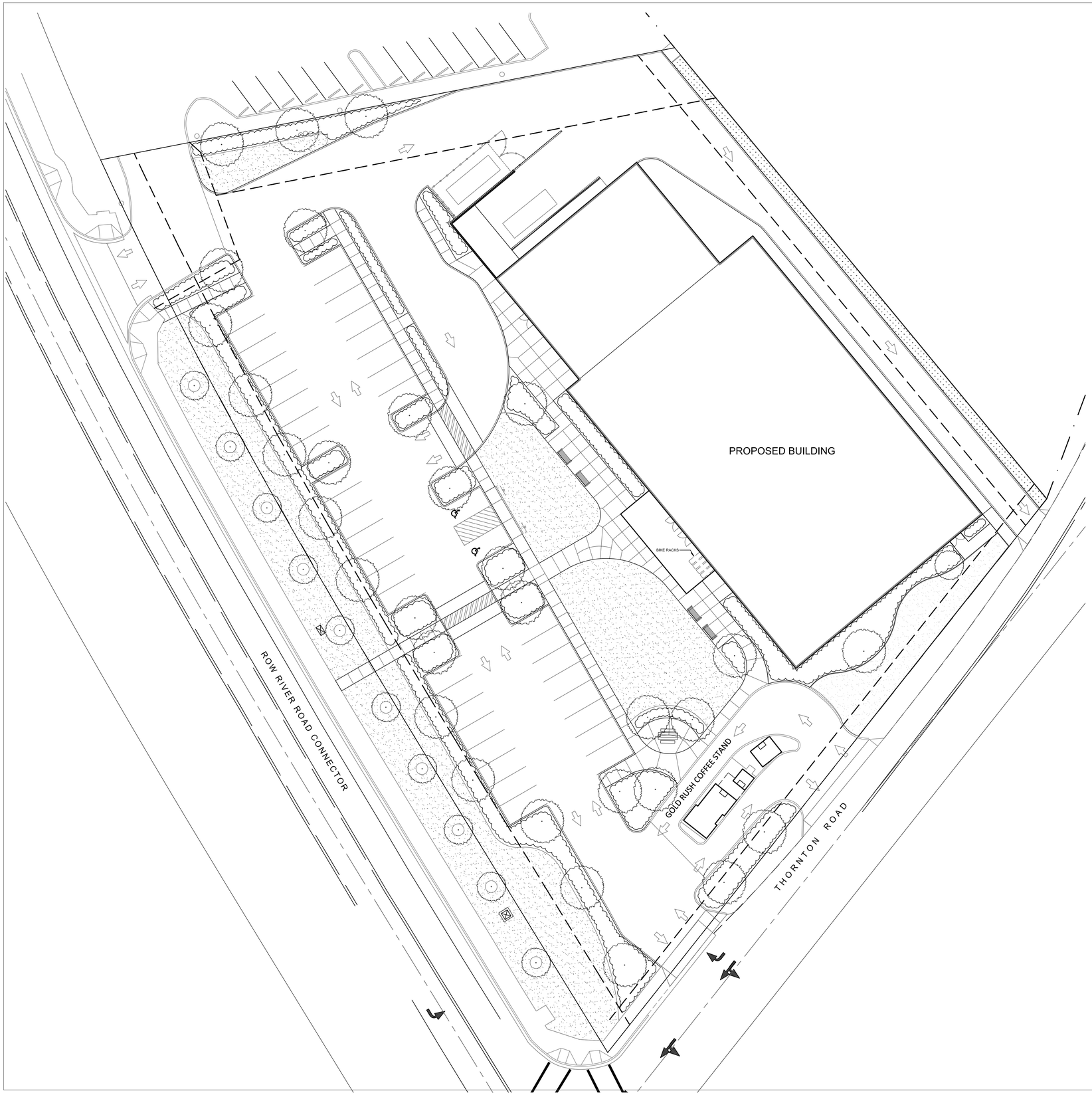
SITE REVIEW

C5.1

date 11-18-2022
file
d.b. RR/WM

kpff
800 Willamette Street, Suite 400
Eugene, OR 97401
O: 541.684.4902
F: 541.684.4909
www.kpff.com

File: O:\c\p\2022\2200397-SVDP-CG-Store\CAD\PLOT\2200397-06DT.dwg TAB:C5.1
Plotted: 11/18/22 at 10:33am By: rrondeau



LANDSCAPE LEGEND

- SHADE TREES
- ORNAMENTAL TREES WITH 5' MULCH CIRCLE
- LAWN
- DROUGHT TOLERANT SEED MIX
- SHRUBS
- 6' BENCH
- PICNIC TABLE

CODE REQUIRMENTS

ZONING: COMMUNITY COMMERCIAL (C2P)

LANDSCAPE AREA STANDARDS , MIN REQUIREMENTS: COMMUNITY COMMERCIAL DISTRICT 10% OF THE SITE

- TOTAL AREA = 86,621 SQFT
- TOTAL LANDSCAPE AREA = 25,035 SQFT (29%)

PARKING AREA:

10% OF THE TOTAL SURFACE OF ALL PARKING AREA AND MANEUVERING AREA SHALL BE LANDSCAPED. LANDSCAPING TO INCLUDE 1 TREE EVERY 3000SQFT.

- TOTAL PARKING AREA AND MANEUVERING AREA = 31,182 SQFT
- TOTAL LANDSCAPE AREA= 6,867 SQFT (22%) & 21 TREES (10 REQUIRED)

GENERAL NOTES

1. THE INFORMATION PROVIDED IS PRELIMINARY AND FOR REFERENCE ONLY TO DEMONSTRATE COMPLIANCE WITH THE APPLICABLE LAND USE APPLICATION APPROVAL CRITERIA. DESIGN INFORMATION AND DETAILS WILL BE REFINED TO MEET ALL APPLICABLE REQUIREMENTS AT THE TIME OF PERMIT SUBMITTAL.
2. SEE SHEET A100 FOR THE SITE PLAN
3. SEE CIVIL ENGINEER'S PLANS AND DETAILS FOR STORMWATER DESIGN.
4. COMPLETE PLANTING PLANS TO BE INCLUDED AT TIME OF BUILDING PERMIT SUBMITTAL.

IRRIGATION SYSTEM DESCRIPTION

1. AUTOMATIC, UNDERGROUND IRRIGATION SYSTEM WILL BE PROVIDED FOR ALL NEW AND UPGRADED PLANT BED AREAS.
2. SYSTEM WILL PROVIDE HEAD TO HEAD COVERAGE.
3. SYSTEM WILL PROVIDE SEPARATE ZONES FOR DIFFERENT SOLAR ORIENTATIONS.
4. HEAD LAYOUT WILL MINIMIZE OVERSPRAY ONTO PAVED SURFACES.

FOR SITE REVIEW ONLY

LANDSCAPE PLAN

0 5 10 20 40 80

SCALE: 1"=20'-0"

NORTH

DLA
DOUGHERTY LANDSCAPE ARCHITECTS
474 Willamette Street
Suite 305
Eugene, Oregon 97401
P 541.683.5803
F 541.683.8183
www.DLAdesign.com

BDA
Architecture and Planning, PC
1369 Olive Street
Eugene, OR 97401
bdarch.net
541.683.8661

Revision Summary	
Revision Number	Revision Date

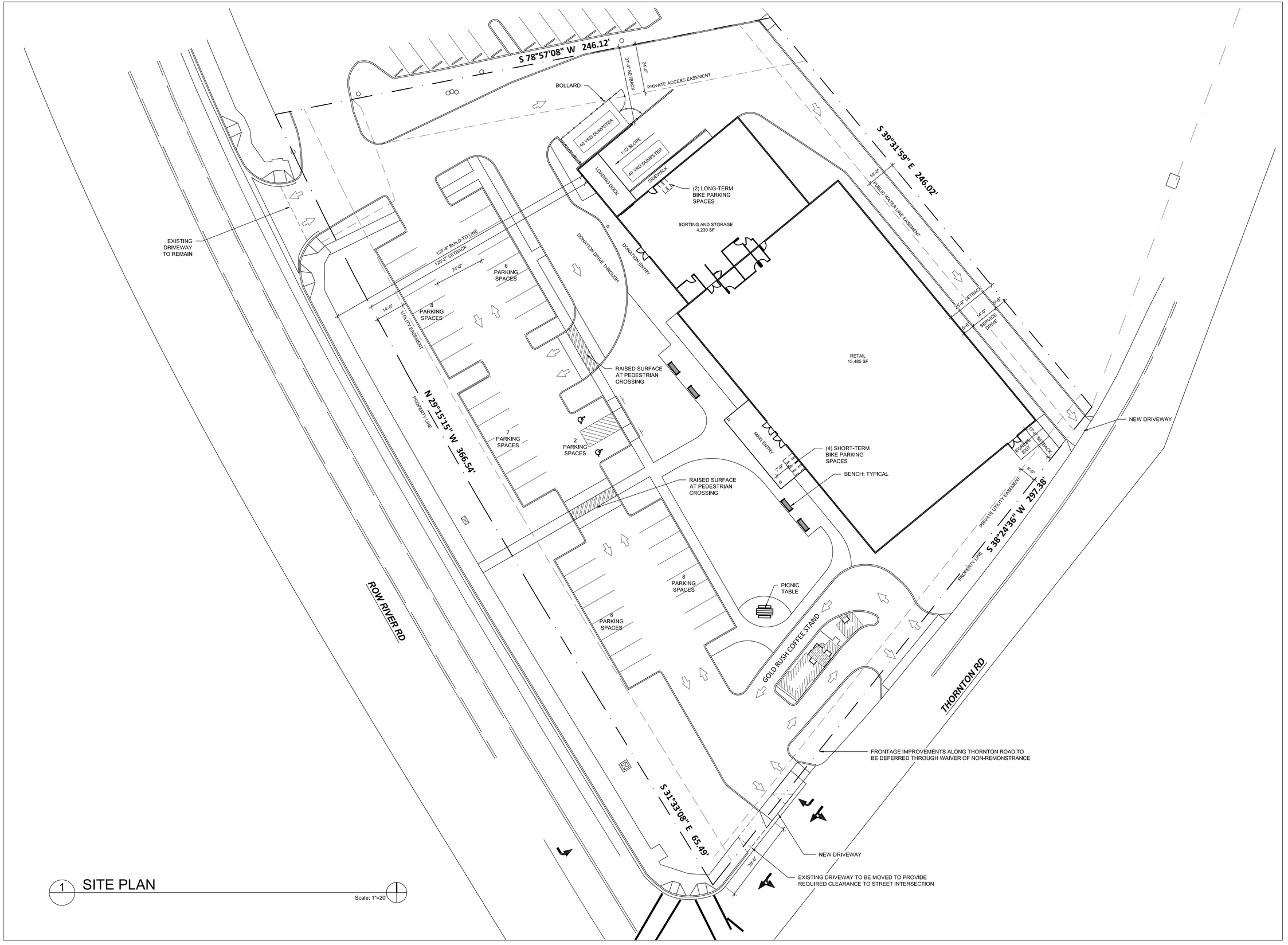
COTTAGE GROVE THRIFT STORE
185 THORNTON ROAD
COTTAGE GROVE, OREGON 97424
ST. VINCENT de PAUL SOCIETY of LANE COUNTY

ISSUED FOR DATE
PERMIT ISSUE

LANDSCAPE PLAN

date 11-18-2022
file 2202
d.b. LMS

LA.1



1 SITE PLAN

Scale: 1"=20'

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1369 Olive Street
Eugene, OR 97401
bdarch.net
541.683.8661

Revision Summary	
Revision Number	Revision Date

COTTAGE GROVE THRIFT STORE

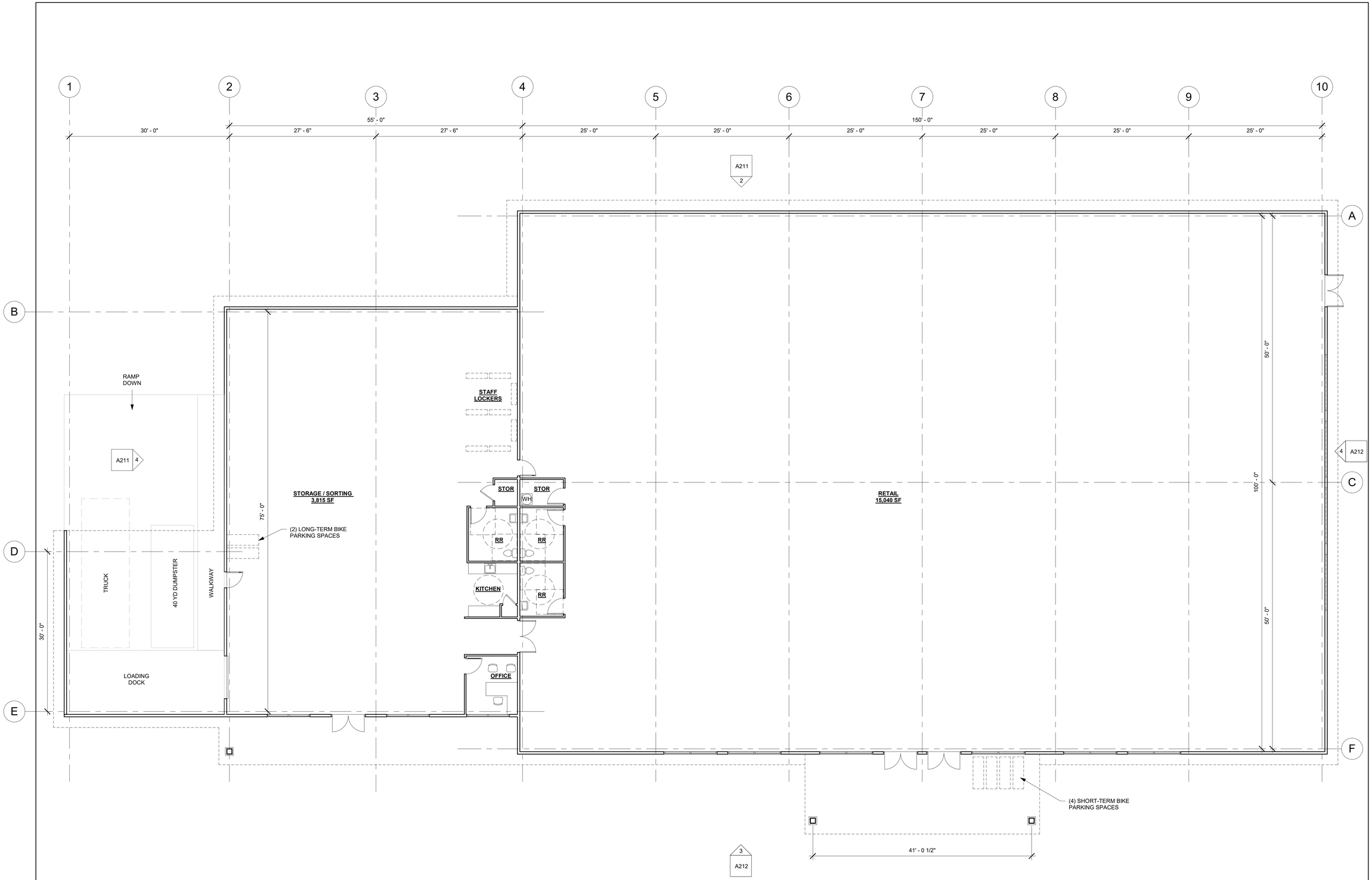
185 THORNTON LANE
COTTAGE GROVE, OREGON 97424

ST. VINCENT de PAUL SOCIETY of LANE COUNTY

SITE PLAN

date	11-18-2022
file	2202
d.b.	LWL

A001



1 FLOOR PLAN - LEVEL 1
1/8" = 1'-0"

BDA
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1369 Olive Street
Eugene, Oregon 97401
bdarch.net
541.683.8661

Revision Summary

Revision Number	Revision Date

COTTAGE GROVE THRIFT STORE

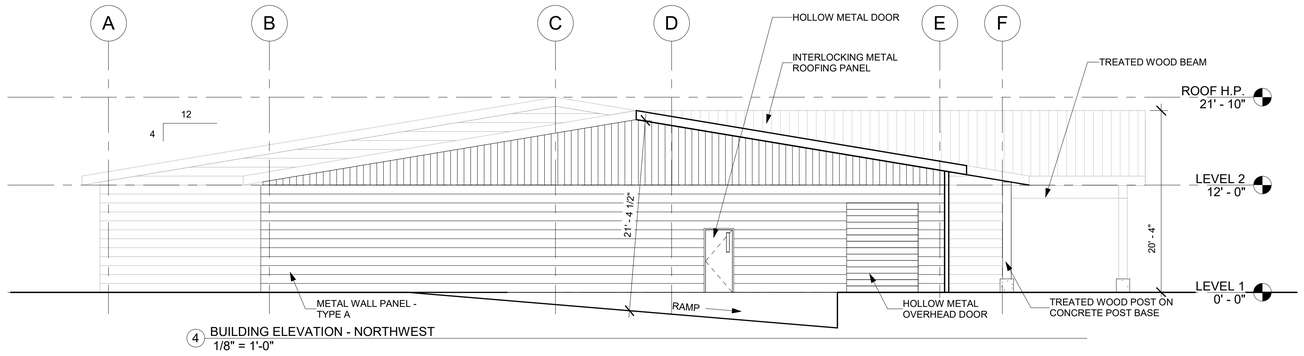
185 THORNTON LANE
COTTAGE GROVE, OREGON 97424

ST. VINCENT de PAUL SOCIETY of LANE COUNTY

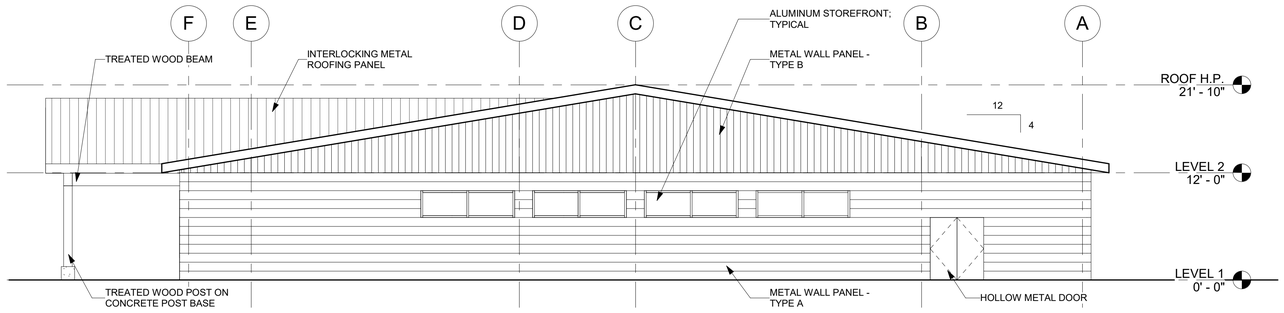
FLOOR PLAN

date 11-18-2022
file 2202
d.b. LWL

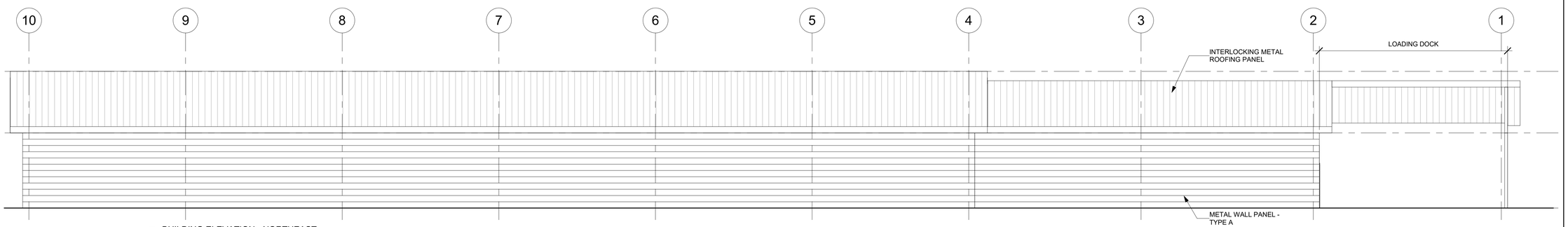
A111



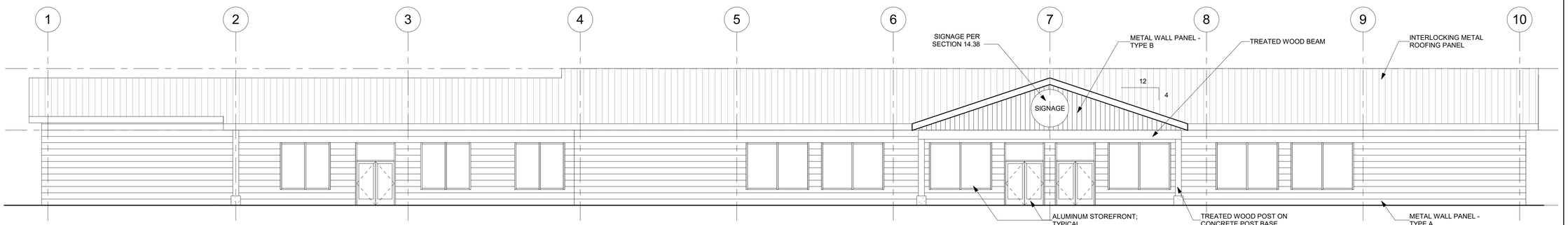
4 BUILDING ELEVATION - NORTHWEST
1/8" = 1'-0"



3 BUILDING ELEVATION - SOUTHEAST
1/8" = 1'-0"



2 BUILDING ELEVATION - NORTHEAST
1/8" = 1'-0"



1 BUILDING ELEVATION - SOUTHWEST
1/8" = 1'-0"

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541.683.8661
1369 Olive Street
Eugene, Oregon 97401

Revision Summary

Revision Number	Revision Date

COTTAGE GROVE THRIFT STORE

185 THORNTON LANE
COTTAGE GROVE, OREGON 97424

ST. VINCENT de PAUL SOCIETY of LANE COUNTY

BUILDING ELEVATIONS

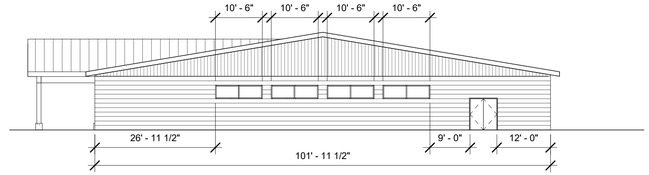
date	11-18-2022
file	2202
d.b.	LWL

A211

PROPOSED COLORS:

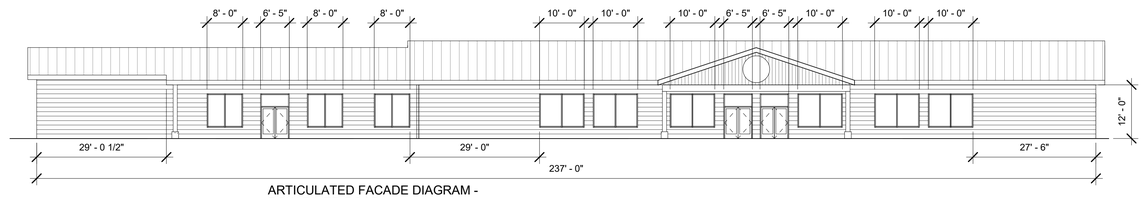
DARK BRONZE	INTERLOCKING METAL ROOFING PANEL
ASHLAND GRAY	METAL WALL PANEL - TYPE A
GRAYS HARBOR	METAL WALL PANEL - TYPE B OPTION
REDMOND RED	METAL WALL PANEL - TYPE B OPTION
CLEAR	ALUMINUM STOREFRONT

THORNTON ROAD ELEVATION:
TOTAL LINEAR FEET = 102'-0"
LINEAR FEET OF OPENINGS = 492 SF
42'-0" / 102'-0" = **41% OPENINGS**



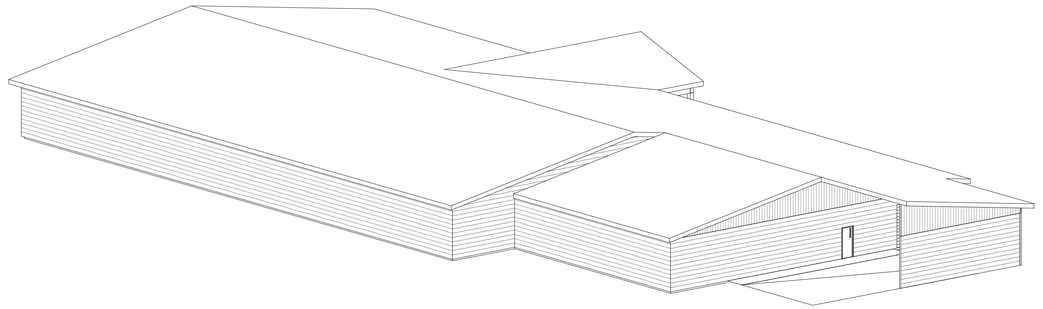
4 ARTICULATED FACADE DIAGRAM - THORNTON ROAD
1/16" = 1'-0"

ROW RIVER ROAD ELEVATION:
TOTAL LINEAR FEET = 237'-0"
LINEAR FEET OF OPENINGS = 103'-0"
103'-0" / 237'-0" = **43% OPENINGS**

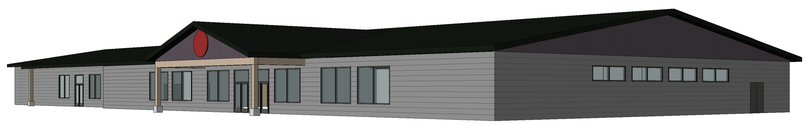


3 ARTICULATED FACADE DIAGRAM - ROW RIVER ROAD
1/16" = 1'-0"

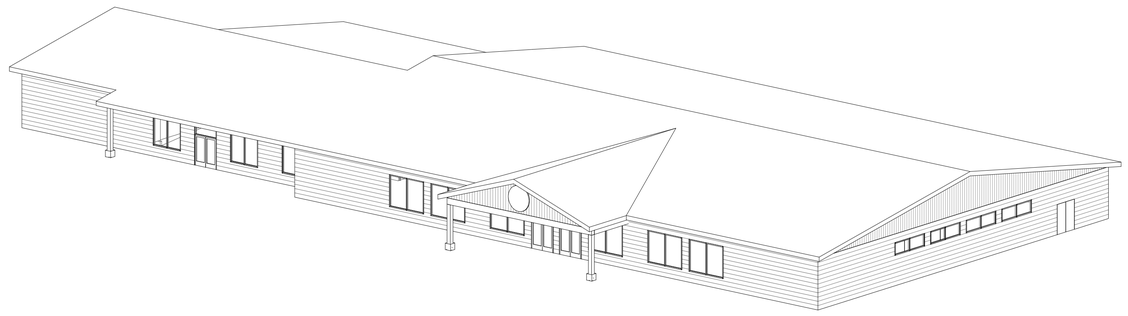
6 VIEW FROM NORTH



2 AERIAL VIEW FROM NORTH



5 VIEW FROM SOUTH



1 AERIAL VIEW FROM SOUTH

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1369 Olive Street
Eugene, Oregon 97401
bdarch.net
541.683.8661

Revision Summary

Revision Number	Revision Date

COTTAGE GROVE THRIFT STORE

185 THORNTON LANE
COTTAGE GROVE, OREGON 97424

ST. VINCENT de PAUL SOCIETY of LANE COUNTY

EXTERIOR VIEWS & ARTICULATION DIAGRAMS

date 11-18-2022
file 2202
d.b. LWL

A212

Memorandum

DATE: November 18, 2022

PROJECT: 2200397-SVDP-Cottage Grove Store

SUBJECT: SVDP Cottage Grove Stormwater

TO: Leanne Love
BDA Architecture and Planning
PHONE: 541.683.8661 x8
EMAIL: love@bdarch.net

FROM: Matt Keenan, PE
KPFF Consulting Engineers
PHONE: 541.735.9251
EMAIL: matt.keenan@kpff.com

This memo has been prepared to briefly present the storm drainage design and calculations for the proposed SVDP Cottage Grove Store. The site is adjacent to the existing Gold Rush Espresso stand at the corner of Thornton Road and Row River Road in Cottage Grove.

Existing Storm Drainage

Currently, the site is an open field with no drainage. The pavement and roof area at the existing Gold Rush Espresso stand on the southeastern edge of the site drain to an existing catch basin south of the stand. The existing driveway at the northwest corner of the site is used to access the next-door Arby's restaurant. The existing driveway pavement drains northwest toward curb cuts in a storm planter at the Row River Road frontage of the Arby's site.

Proposed Stormwater Design

Stormwater Quality

A water-quality manhole will be installed to trap oil and sediment. Mechanical treatment is the preferred method for site simplicity and ease of design and permitting. The proposed development increases impervious surface area by 63,668 SF, as there is no existing impervious area on site. A Contech Stormceptor designed to treat the 10-year storm will be utilized for the new building and site area.

Operations and Maintenance

The proposed system will have a mechanized treatment facility, which will be operated and maintained according to City and manufacturer standards.

Attachments: *Proposed Stormwater Basin Map and Water Quality Calculations*
Contech Stormcepter Cut Sheet

2200397- kg

BASIN LEGEND		
BASIN COLOR	BASIN NAME	TOTAL AREA, (SF)
	BASIN A	63,668
	BASIN B	17,560

PROPOSED BASIN MAP

SCALE: 1"=50'

0 50' 100'

SHEET NO.

EXH-1

11X17-EXHIBIT File: O:\c\p\2022\2200397-SVDP-CG-Store\PROJ-INFO\Planning-Design\STRM\BASIN MAP.dwg TAB: EXH-1

Plotted: 11/16/22 at 11:03am By: rrondeau

SBUH Calculation Worksheet for City of Eugene Storm Events

Project Name: SVDP COTTAGE GROVE **Date: 11/18/2022**

Designer: RR **Basin: A**

User-Supplied Data

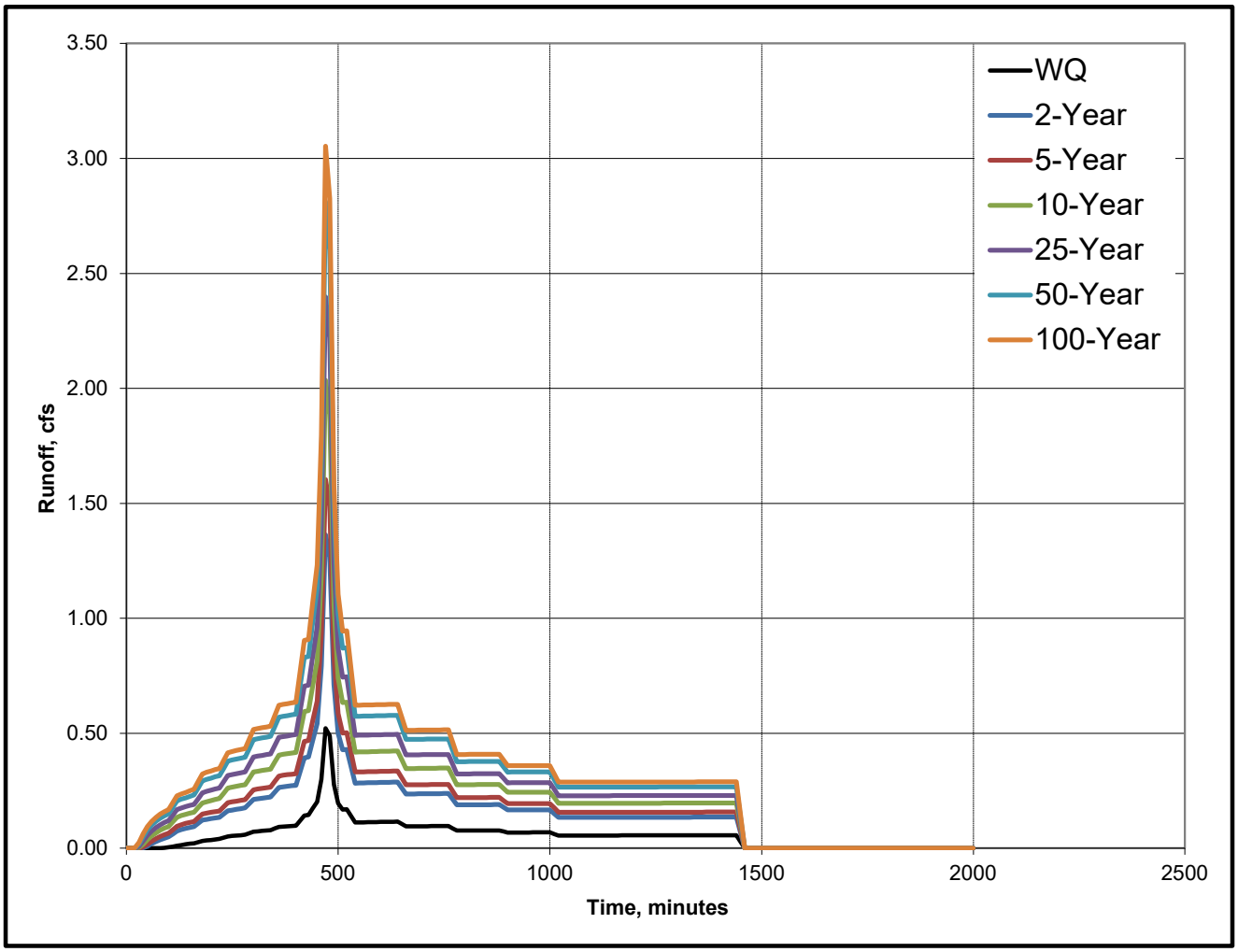
Pervious Area		**Impervious Area**	
Pervious Area, SF	17,560	Impervious Area, SF	63,668
Pervious Area, Acres	0.40	Impervious Area, Acres	1.46
Pervious Area Curve Number, CNperv	85	Impervious Area Curve Number, CNimp	98
Time of Concentration, Tc, minutes	5	Note: minimum Tc is five minutes	

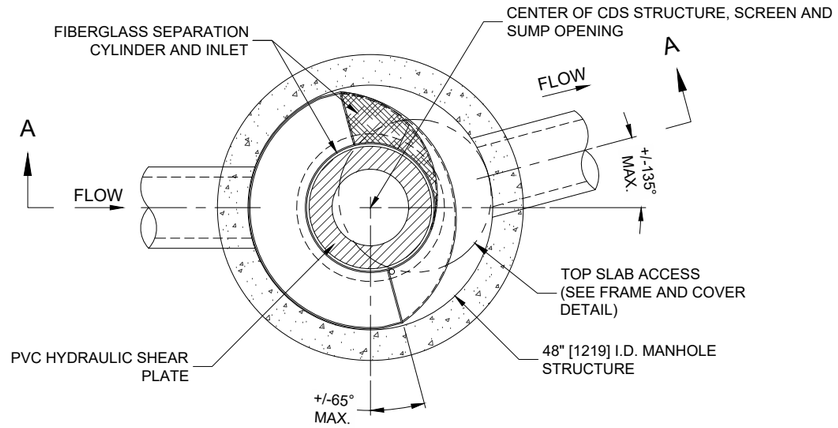
City of Eugene 24-Hour Rainfall Depths (NRCS Type 1A distribution)							
Recurrence Interval	WQ	2	5	10	25	50	100
Inches	1.4	3.12	3.6	4.46	5.18	6	6.48

Calculated Data

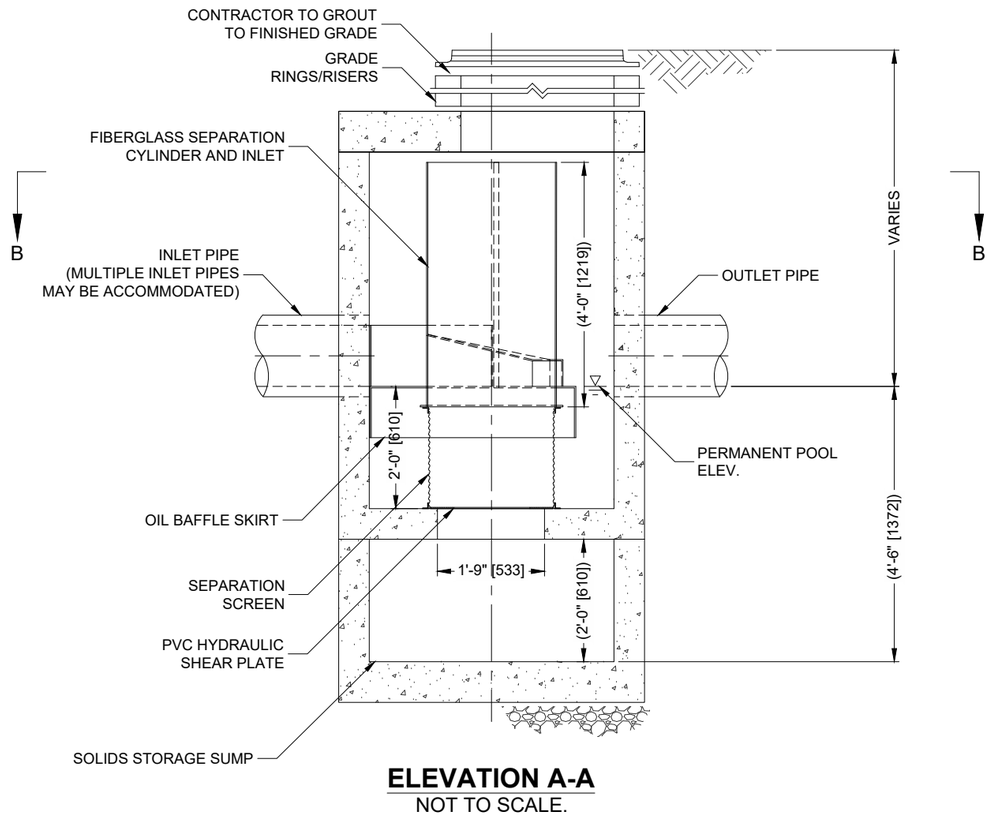
Total Project Area, Acres	**1.86**	Total Project Area, Square Feet					**81,228**
Recurrence Interval	WQ	2	5	10	25	50	100
Peak Flow Rate, Qpeak, cfs	**0.52**	**1.36**	**1.60**	**2.03**	**2.40**	**2.81**	**3.05**
Total Runoff Volume, V, cubic feet	**6,841**	**17,794**	**20,938**	**26,615**	**31,398**	**36,867**	**40,076**
Time to Peak Runoff, hours	**7.83**	**7.83**	**7.83**	**7.83**	**7.83**	**7.83**	**7.83**

Runoff Hydrograph





PLAN VIEW B-B
NOT TO SCALE.



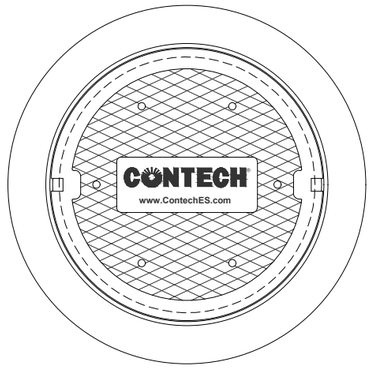
ELEVATION A-A
NOT TO SCALE.

CDS2015-4-C DESIGN NOTES

CDS2015-4-C RATED TREATMENT CAPACITY IS 0.7 CFS [19.8 L/s], OR PER LOCAL REGULATIONS. IF THE SITE CONDITIONS EXCEED MAXIMUM HYDRAULIC CAPACITY, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CDS2015-4-C STANDARD CONFIGURATION IS SHOWN.

FOR NJDEP PROJECTS, PLEASE CONTACT YOUR LOCAL CONTECH REPRESENTATIVE FOR APPROVED CONFIGURATIONS.



FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS OR L/s)			*
PEAK FLOW RATE (CFS OR L/s)			*
RETURN PERIOD OF PEAK FLOW (YRS)			*
SCREEN APERTURE (2400 OR 4700)			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			*
ANTI-FLOTATION BALLAST	WIDTH	HEIGHT	
	*	*	

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

GENERAL NOTES

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO..
5. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
6. CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS2015-4-C ONLINE CDS STANDARD DETAIL

TRAFFIC IMPACT ANALYS

ST. VINCENT de PAUL

Traffic Impact Analysis

COTTAGE GROVE, OREGON

November 18, 2022

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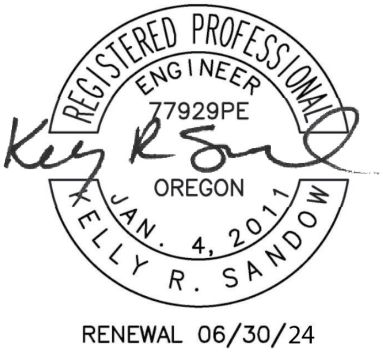
Traffic Impact Analysis

ST VINCENT DE PAUL



Cottage Grove, Oregon

November 18, 2022

Kelly Sandow PE

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project # 6013

EXECUTIVE SUMMARY

This report provides the Traffic Impact Analysis and findings prepared for the proposed St. Vincent de Paul site in Cottage Grove, Oregon. The subject site is located at tax lots 210 and 211 Assessor's Map 20-03-27-31. The site is located at the northeast corner of Row River Road and Thornton Road intersection.

This proposal is for the construction of an approximately 19,715 sf building containing a retail store and storage facility for a St Vincent de Paul's thrift store.

The development site currently has one full movement access to Row River Road and two full movement accesses to Thornton Road. All existing access connections are proposed to remain.

The analysis evaluates the transportation impacts per ODOT and the City of Cottage Grove criteria, evaluating adjacent roadway and intersection operations.

FINDINGS

The following report recommendations are based on the information and analysis documented in this report.

- The addition of development trips does not trigger intersection mitigation.
- The addition of development trips does not increase queuing conditions at the study area intersections.
- The site accesses will operate safely and efficiently for all modes of travel.

CONTENTS

LIST OF APPENDICES

1.0 BACKGROUND

This report provides the Traffic Impact Analysis and findings prepared for the proposed St Vincent DePaul Thrift Store in Cottage Grove, Oregon.

1.1 SITE INFORMATION

The subject site is located at tax lots 210 and 211 of Assessor's Map 20-03-27-31 at the northeast corner of the intersection of Row River Road and Thornton Road. The site is approximately 2.02 acres, is zoned C2P-Community Commercial, and is mostly vacant. There is a coffee shop with a drive-through located on the southeast edge of tax lot 211.

Tax lot 210 (the northern lot) has one full movement access to Row River Road that is shared with tax lot 209 to the north. This access is proposed to be maintained.

Tax lot 211 (the southern lot) has two full movement accesses to Thornton Road. These accesses are currently used by the coffee shop along the southern edge of the site. These accesses are proposed to be maintained.

Figure 1 contains the site location and vicinity map.

1.2 DEVELOPMENT PROPOSAL

The development proposal is a 19,715-sf building containing a thrift store (St. Vincent de Paul). St Vincent de Paul stores are typically open from 10 AM to 6 PM daily.

The applicant is proposing to maintain the existing access connections to Row River Road and Thornton Road. Additionally, a third access connection is proposed to Thornton Road along the east edge. This access will be an exit only, serving service vehicles.

Appendix A contains the site plan.

1.3 ANALYSIS SCOPE

The analysis includes the following:

- Evaluation of site access points on Row River Road and Thornton Road
- Evaluation of Row River Road at Thornton Road intersection

The evaluation is prepared for the PM Peak Period (4:00-6:00 AM). The site will not open until 10 AM, which is outside of the typical AM peak analysis period of 6:00-9:00 AM. Therefore, an AM analysis is not required.

The analysis is performed for:

- Existing conditions, year 2022
- Estimated year of completion, year 2023, with and without the proposed development
- 5-year planning horizon, year 2028, with and without the proposed development

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Figure 1: Site Location and Vicinity Map

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2.0 EXISTING ROADWAY CONDITIONS

2.1 STREET NETWORK

Public streets included within the study area are Row River Road and Thornton Road. Row River Road from 1-5 interchange to Thornton Road is under the jurisdiction of ODOT. Thornton Road is City jurisdiction. The roadway characteristics within the study area are included in Table 1.

TABLE 1: ROADWAY CHARACTERISTICS WITHIN STUDY AREA

Characteristic	Row River Road	Thornton Road
Jurisdiction	ODOT from interchange to Thornton Road	City
Classification	Minor Arterial	Local/ Collector
Speed	35	25
Lanes per Direction	1	1
Center Left-Turn Lane	Yes	None
Restrictions in the Median	Ped Crossing South of RV Access	None
Bike Lanes Present	Yes	None
Sidewalks Present	Yes	Intermittent
Transit Route	Yes	West of Row River Road
On-Street Parking	No	No

There is a Rectangular Rapid Flashing (RRFB) with a center median pedestrian crossing located to the south of the site access.

2.2 STUDY INTERSECTIONS

The following locations are included in this study:

Two-Way Stop Controlled

- Thornton Road at site Access
- Row River Road at site access

Signalized Controlled

- Row River Road at Thornton Road

Figure 2 illustrates the study area intersection geometry and control.

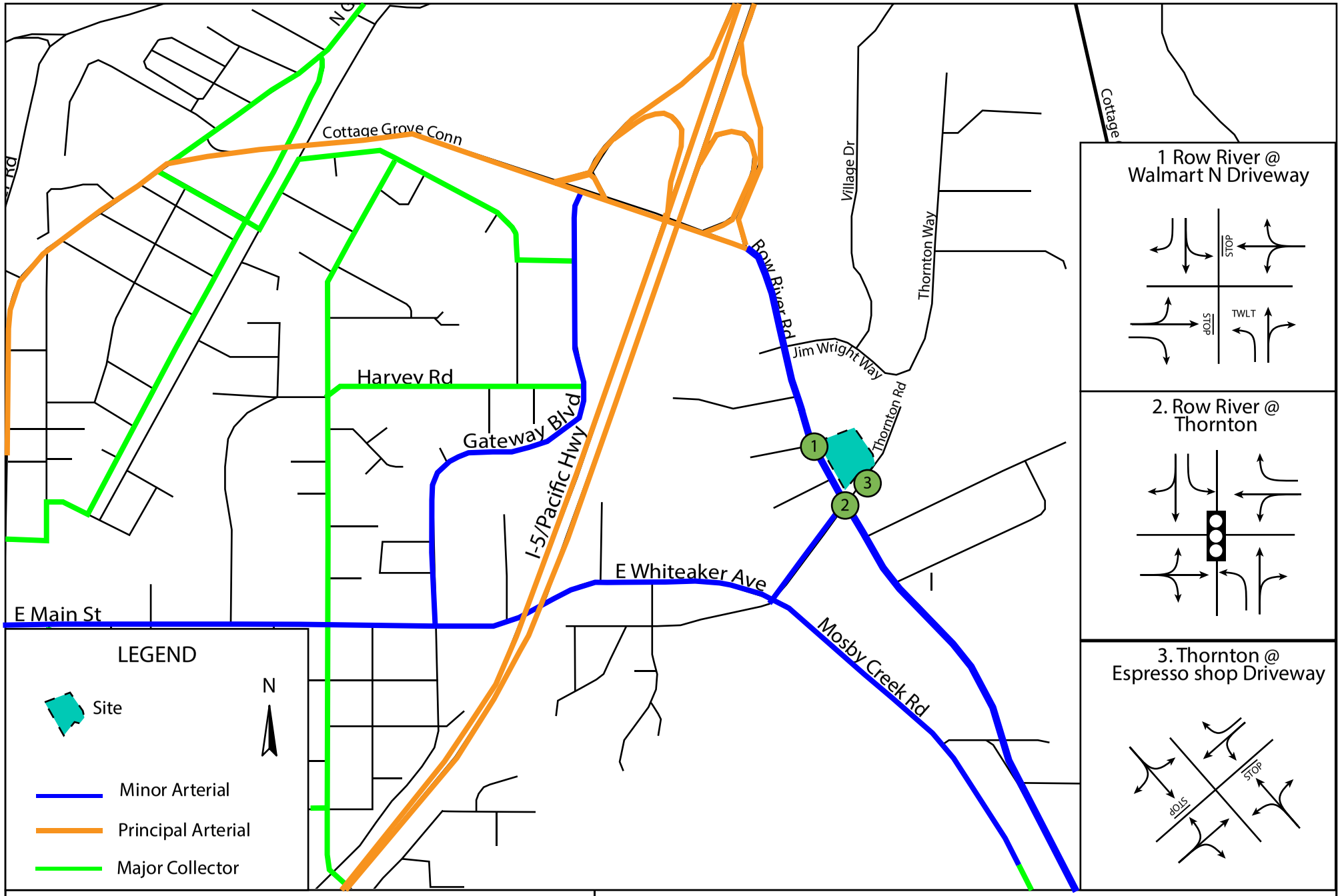

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Figure 2: Lane Configuration and Street Classification

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2.3 CRASH ANALYSIS

A crash evaluation was performed for the study area intersections. The analysis investigates crash data available for the most recent 5 years, 1/1/2016-12/31/2020, to determine the crash rate in crashes per million entering vehicles and the type of crashes that occurred. The crash analysis follows the HCM Critical Crash Rate methodology. The calculated intersection crash rates are compared to the Statewide Crash Rate. If the calculated crash rate exceeds the critical crash rate, the location is considered for further mitigation measures. Crash data was provided by ODOT for the study area and is included in Appendix C. The results of the crash analysis are provided in Table 2.

TABLE 2: INTERSECTION CRASH RATES

Location	Intersection Type	Number of Crashes	ADT	MEV	Crash Rate	Statewide Crash Rate	Under
Row River Rd at Thornton Road	Signal	1	7,820	14.27	0.07	0.408	Under

***(crashes/million entering vehicles)**

As illustrated in Table 2, the intersection crash rate does not exceed the statewide crash rate for the intersection of Row River Road at Thornton Road. Therefore, mitigation for crash history is not triggered by this development.

The crash data along the site frontage was evaluated for crashes that may have occurred at the site access connections. The image below illustrates the crashes at the site accesses.

2016-202 Crash Data (ODOT Trans GIS)

There was 1 crash reported at the site access to Row River Road. This crash involved a vehicle turning onto Row River Road and colliding with a vehicle on Row River Road.

There was 1 crash reported on Thornton Road near the site access. This crash was a rear-end collision.

3.0 DEVELOPMENT TRIP GENERATION AND DISTRIBUTION

3.1 DEVELOPMENT TRIP GENERATION

The trips to the site are estimated using the ITE Trip Generation Manual 11th Edition. The ITE manuals do not have a land use code specifically for a thrift store use. The most closely related land uses are 875-Department Store and 815-Freestanding Discount Store. 875-Department Store is described as a free-standing facility that sells a wide range of products, including apparel, home goods, and linens, with typical building sizes over 100,000 sf. 815-Free Standing Discount Store is described as selling a variety of goods at discount prices and has store sizes in the 18,000-20,000 sf. After a review of relevant information for both of these land uses, it is determined that the most appropriate land use and trip rates for this site is Land Use 815-Freestanding Discount Store. Table 3 illustrates the PM Peak Hour, AM Peak Hour, and Daily Trips.

TABLE 3: TRIP GENERATION- PM PEAK HOUR

Land Use	Size	Rate	Trips	IN	Out
AM Peak Hour					
815- Free-standing Discount Store	19.72	1.18	23	(70%) 16	(30%) 7
PM Peak Hour					
815- Free-standing Discount Store	19.72	4.86	96	(50%) 48	(50%) 48
Daily Trips					
815- Free-standing Discount Store	19.72	12.93	1062	(50%) 531	(50%) 531

3.2 DEVELOPMENT TRIP DISTRIBUTION

The existing travel patterns from the traffic counts are used to estimate how the development trips will use the surrounding transportation system to access the site with modifications for reasonable origins and destinations. The trip origins/destinations are assumed at:

- North on Row River Road= 50%
- South on Row River Road= 35%
- West on Thornton Road= 15%

Figure 3 illustrates the development trip distribution for the PM Peak Hour.

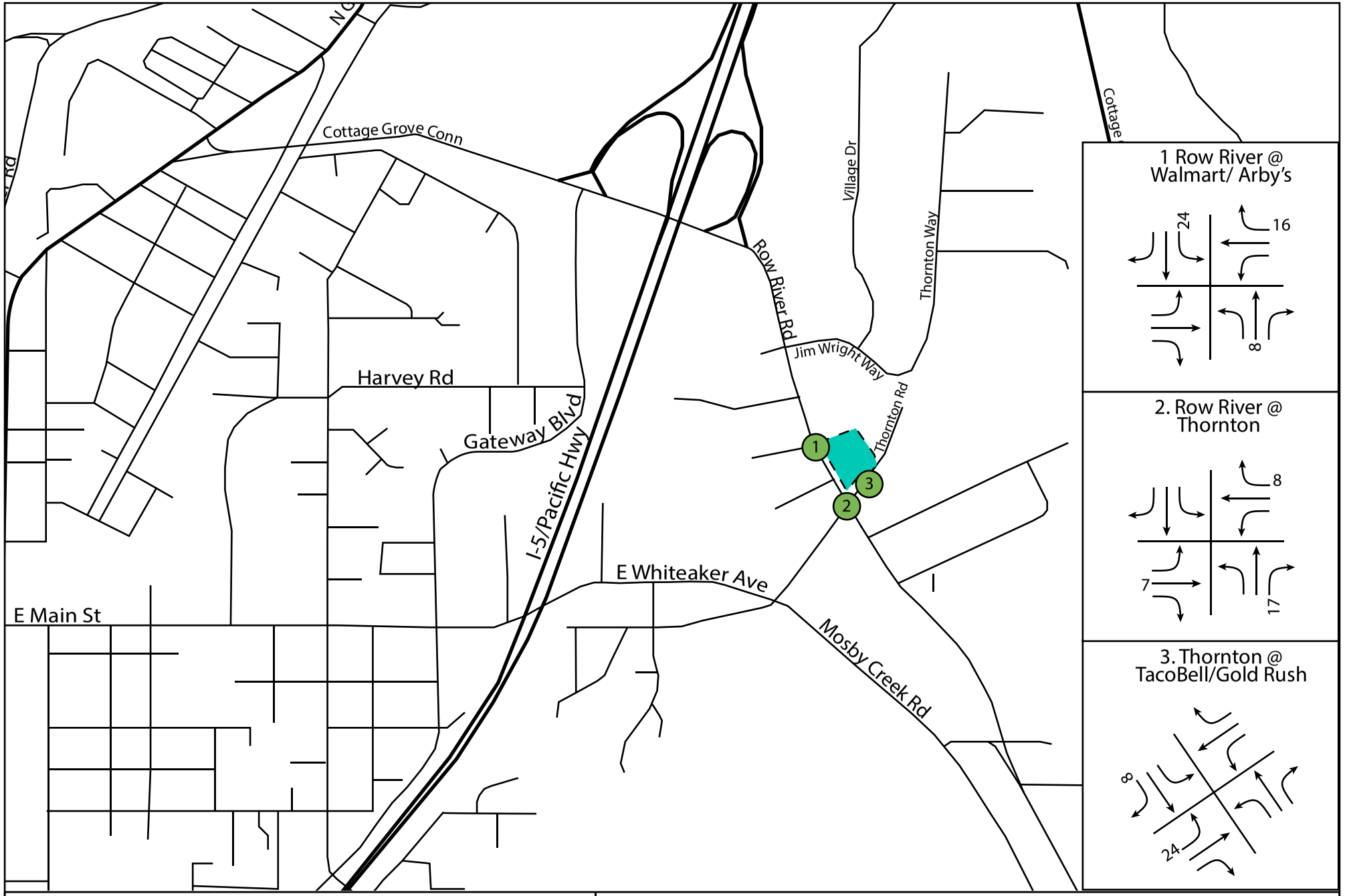

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Figure 3: Development Trip Distribution

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4.0 BACKGROUND TRAFFIC VOLUMES

4.1 INTERSECTION COUNTS

Sandow Engineering collected the PM peak hour counts at the study area intersections. The counts were collected in August 2021 and November 2022.

4.2 ADJUSTMENTS

Seasonal Adjustment

The application of seasonal adjustment factors account for the fact that volumes along State Highways and recreational routes tend to fluctuate from month to month due to changes in recreational behavior, etc. Monthly volume variations for routes with recreational traffic show much higher seasonal peaking than routes with predominantly intercity traffic.

ODOT's Analysis Procedures Manual details the methodology for calculating the seasonal adjustment factor. The appropriate method is to use ODOT's Seasonal Trend Table. The peak trends for this area are Commuter and Summer Trends. The Commuter trend has a peak in June, and the Summer trend has a peak in July. The SAFs for these trends are averaged, resulting in 1.023 for the August count and 1.161 for the November counts. The SAF is applied to the traffic volumes to reflect peak season conditions. The seasonal adjustment factor calculation is provided in Appendix C.

4.3 FUTURE YEAR BACKGROUND VOLUMES

The proposed site development is projected to be completed by the year 2024. Consistent with the traffic impact analysis criteria, the intersections were evaluated for the year of completion. To account for naturally occurring traffic increases between the count year and the future analysis year, an annual growth rate is applied. The City's TSP is used for determining the growth rate. The growth rate in the study area is 1.2%.

4.4 FINAL TRAFFIC VOLUMES

The existing traffic volumes were adjusted according to the methodology described above. Appendix C provides the traffic volume calculations. The development trips are added to the background traffic volumes to represent the build conditions. The traffic volumes are illustrated in the following figures:

- Figure 4- Year 2022 PM Peak Hour Background
- Figure 5- Year 2023 PM Peak Hour Background
- Figure 6- Year 2028 PM Peak Hour Background
- Figure 7- Year 2023 PM Peak Hour with Development
- Figure 8- Year 2028 PM Peak Hour with Development

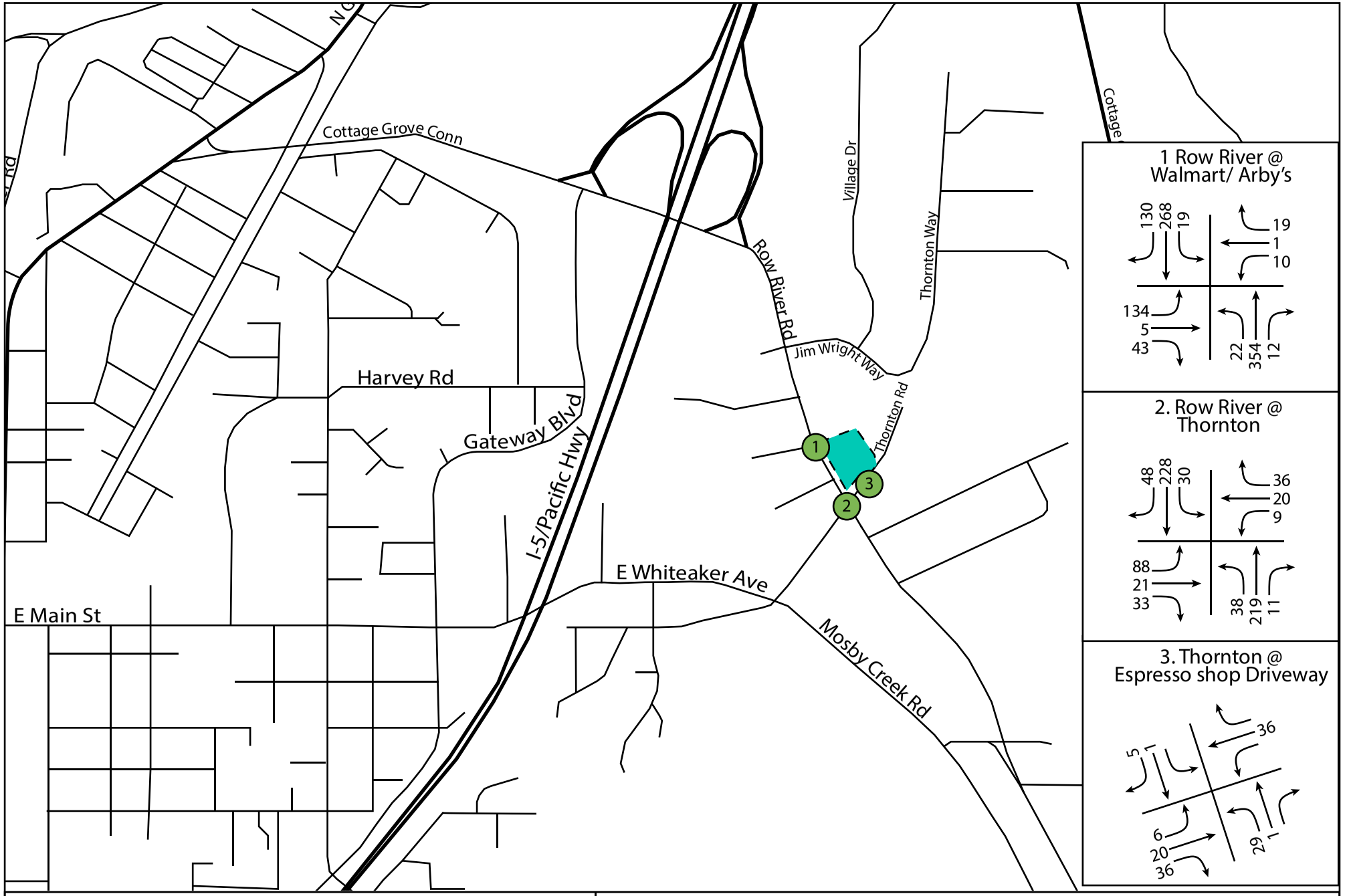

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Figure 4: Year 2022 PM Background Trafic Volumes

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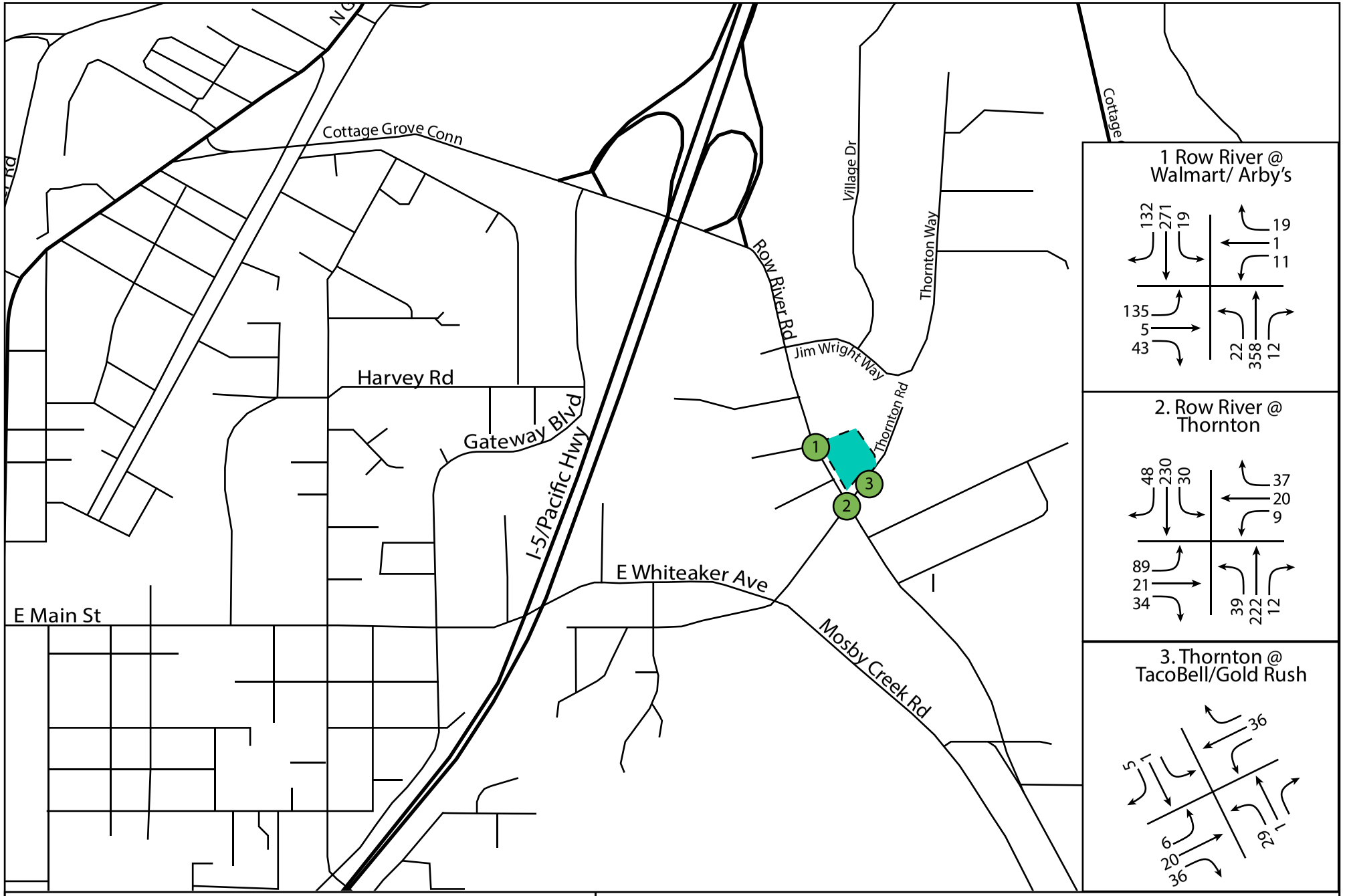

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Figure 5: Year 2023 PM Background Trafic Volumes

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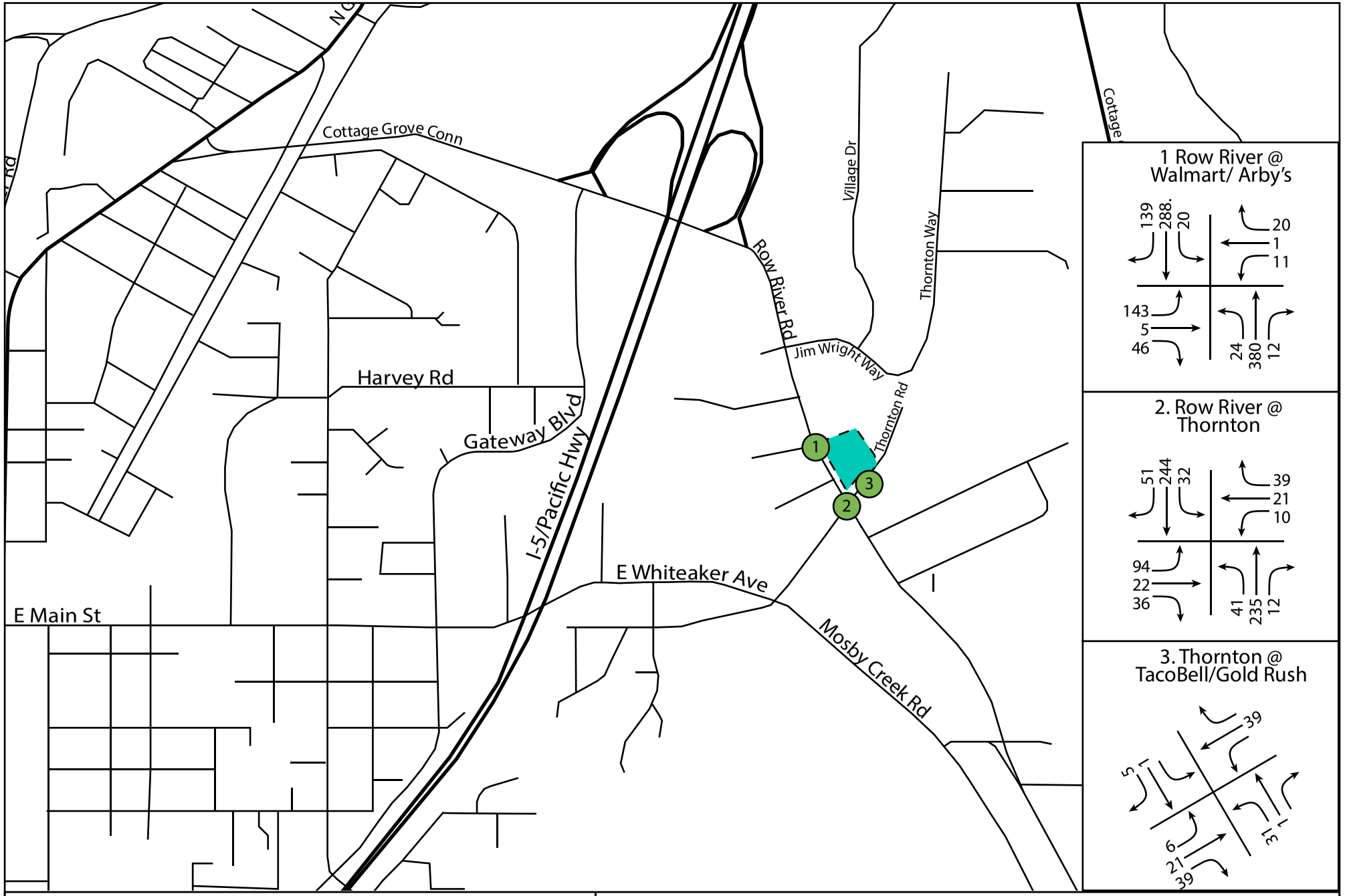

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Figure 6: Year 2028 PM Background Trafic Volumes

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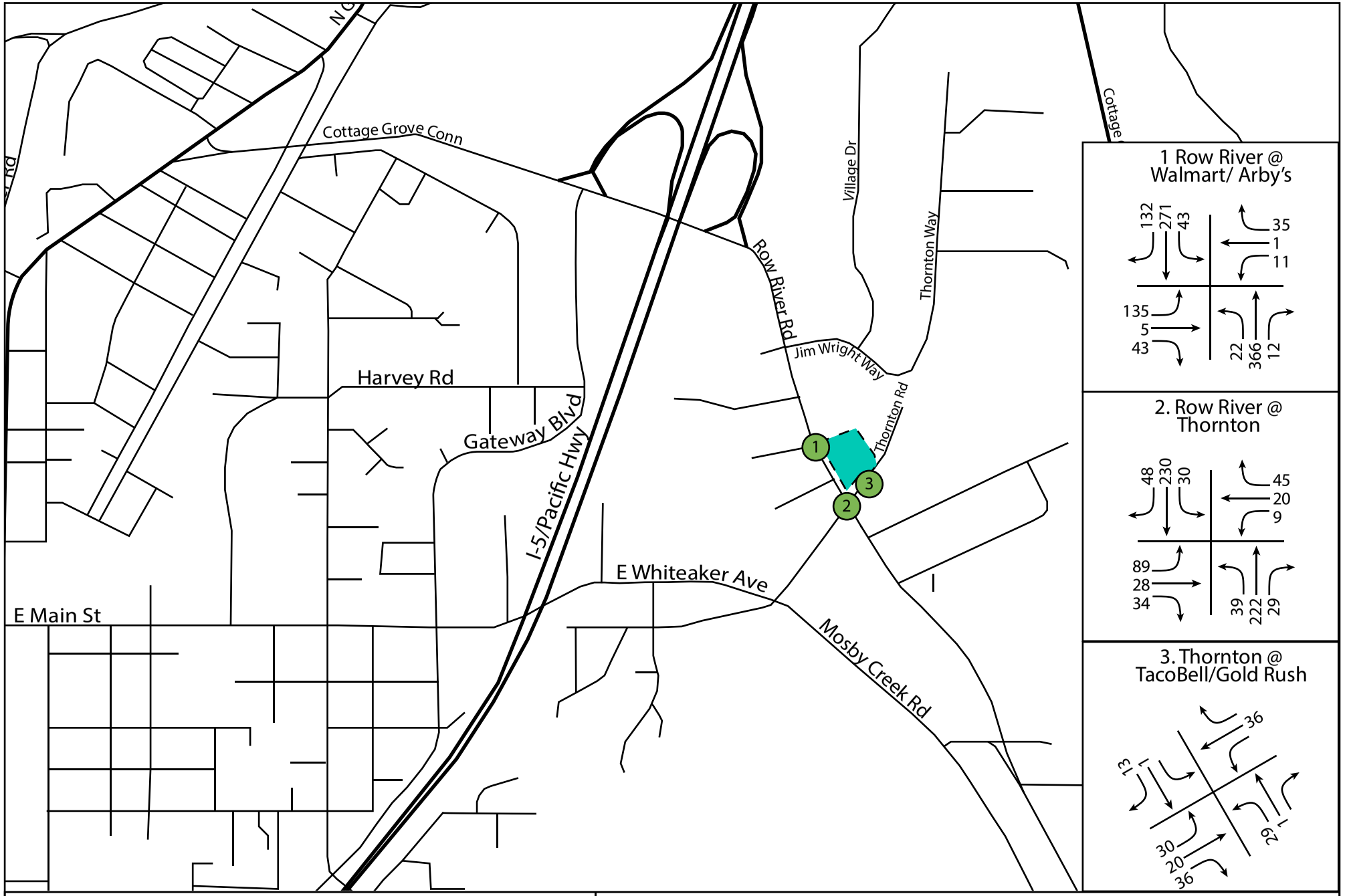

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Figure 7: Year 2023 PM Traffic Volumes With Development

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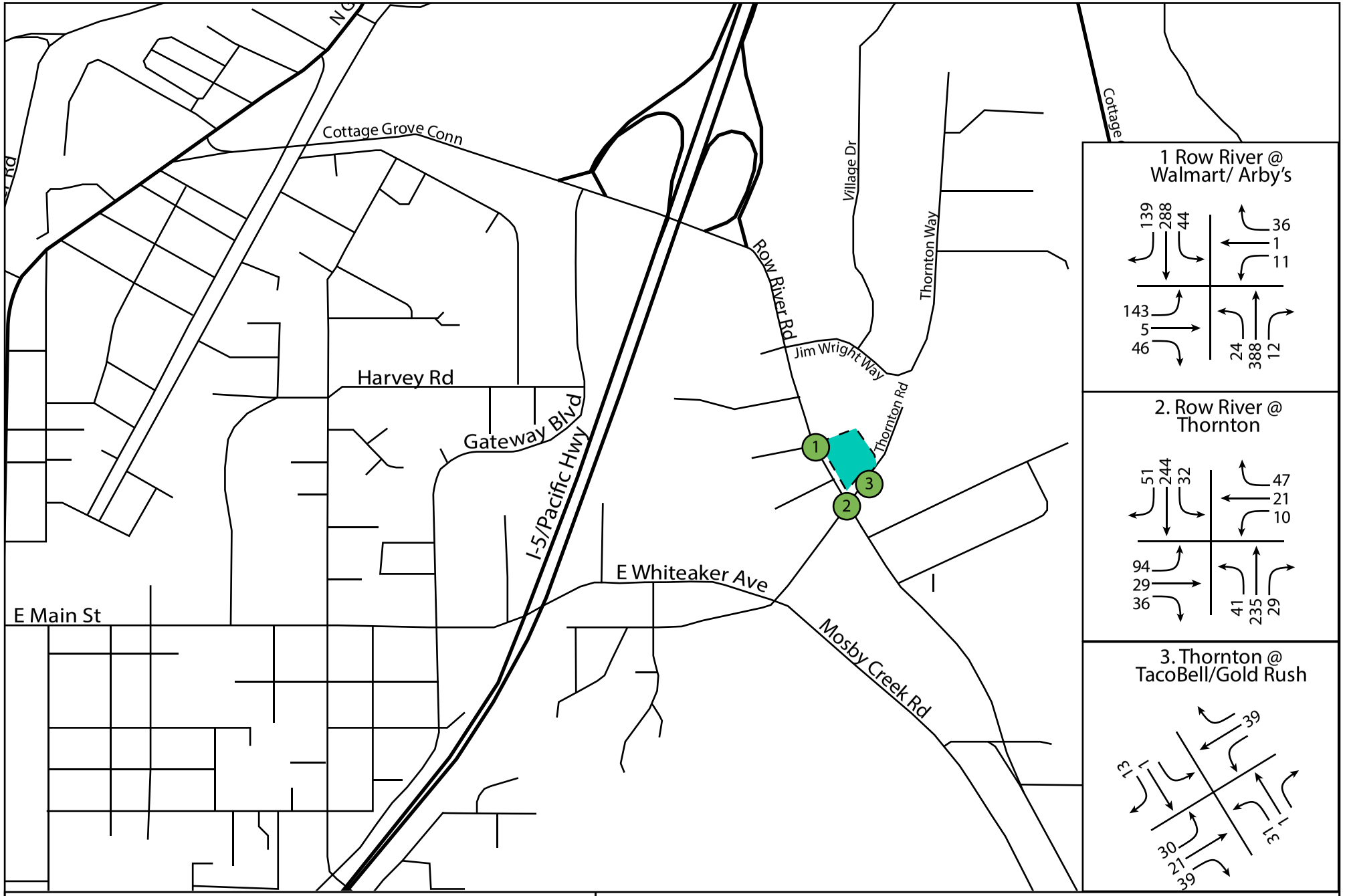

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Figure 8: Year 2028 PM Traffic Volumes With Development

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5.0 INTERSECTION ANALYSIS

5.1 PERFORMANCE MEASURES

The measure of performance for the site access and intersections is the volume-to-capacity ratio (v/c) and Level of Service (LOS).

The volume-to-capacity ratio (v/c) describes the capability of an intersection to meet volume demand based on the maximum number of vehicles that could be served in an hour.

LOS is a measure of performance for intersections in this analysis and is based on the Highway Capacity Manual (HCM). 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 along a roadway segment. It was developed to quantify the quality of service of transportation facilities.

LOS is based on average delay, defined as the average total elapsed time from when a vehicle stops at the end of a queue until the vehicle departs from the stop line. The average delay is measured in seconds per vehicle per hour and then translated into a grade or "level of service" for each intersection. LOS ranges from A to F, with A indicating the most desirable condition and F indicating the most unsatisfactory condition.

The City of Cottage Grove uses a LOS D standard for intersections.

The LOS criteria, as defined by the Highway Capacity Manual for signalized intersections, are provided in Table 4.

TABLE 4: HCM LEVEL OF SERVICE FOR INTERSECTIONS

	Stopped Delay Per Vehicle (Seconds per Vehicle)	
	Unsignalized Intersections	**Signalized Intersections**
A	≤ 10.0	≤ 10
B	> 10.0 and ≤ 15.0	> 10 and ≤ 20
C	> 15.0 and ≤ 25.0	> 20 and ≤ 35
D	> 25.0 and ≤ 35.0	> 35 and ≤ 55
E	> 35.0 and ≤ 50.0	> 55 and ≤ 80
F	> 50.0	> 80

ODOT uses a volume-to-capacity ratio (v/c) as defined by the *1999 Oregon Highway Plan*. Row Rover Road is classified as a Frontage Road. The v/c for intersections and access on this roadway is 0.95. ODOT evaluates the intersection v/c ratio for intersection using the HCM 6 Critical v/c methodology, as required by Chapter 13 of the Analysis Procedures Manual.

5.2 INTERSECTION ANALYSIS RESULTS

A performance analysis was conducted for the studied intersections for the Year 2022 and Year 2023 conditions for the PM peak hours. The intersection evaluation was performed using Synchro 10 following HCM 6 critical movement methodology outlined in ODOT's analysis Procedures Manual. The results are shown in Table 5, and the SYNCHRO outputs are provided in Appendix D.

TABLE 5: INTERSECTION PERFORMANCE: WEEKDAY AM PEAK HOUR

Intersection	Mobility Standard v/c	2022 Background	2023 Background	2023 Build	2028 Background	2028 Build
Row River at Site Access *	0.95	EBL 0.57 NBL 0.02	EBL 0.58 NBL 0.02	EBL 0.68 NBL 0.02	EBL 0.67 NBL 0.03	EBL 0.79 NBL 0.03
Row River at Thornton Rd	0.95	0.52	0.54	0.54	0.57	0.58
Thornton at West Access*	D	**A**	**A**	**B**	**A**	**B**

*Results reported for the highest movement

As illustrated in Table 5, all intersections meet the mobility standards.

5.3 QUEUE ANALYSIS

A queuing analysis was conducted for the studied intersections. The analysis was performed using SimTraffic, a microsimulation software tool that uses the HCM-defined criteria to estimate the queuing of vehicles within the study area. The average and 95th percentile queuing results are illustrated in Table 6. All results are rounded to 25 feet to represent the total number of vehicles in the queue, as one vehicle typically occupies 25 feet of space. The SimTraffic outputs are provided in Appendix E.

TABLE 6: INTERSECTION QUEUING: WEEKDAY AM PEAK HOUR

Intersection		Available Storage (Feet)	2022 No Build (Feet)		2023 No Build (Feet)		2023 Build (Feet)		2028 No Build (Feet)		2028 Build (Feet)	
			Average	95th	Average	95th	Average	95th	Average	95th	Average	95th
Row River @ Site Access	EB LT	200	50	100	50	100	75	100	75	100	75	125
	EB R	180	25	50	25	50	25	50	25	50	25	50
	WB LTR	50	25	50	25	50	25	50	25	50	25	50
	NB L	250	25	50	25	50	25	50	25	50	25	50
	SB L	175	25	25	25	25	25	50	25	25	25	50
	SB R	100	25	25	25	25	25	25	25	25	25	25
Row River @ Thornton	EB LTR	375	75	150	100	150	100	150	75	150	75	175
	WB LT	130	25	50	25	50	25	50	25	50	25	50
	WB R	75	25	50	25	50	25	50	25	50	25	50
	NB L	350	25	50	25	50	25	50	25	50	25	50
	NB TR	350	25	75	25	75	50	75	50	75	50	75
	SB L	100	25	25	25	25	25	25	25	25	25	25
	SB TR	125	25	75	25	75	25	75	50	75	50	75
Thornton Rd @ Access	EB LTR	80	0	0	0	25	0	25	0	0	25	25
	NB LTR	80	25	50	25	50	25	50	25	50	25	50
	SB LTR	100	25	25	25	25	25	50	25	50	25	25

As demonstrated in Table 8, the addition of development traffic does not substantially increase the queuing conditions at the studied intersections.

6.0 SITE ACCESS EVALUATION

Row River Road between the I-5 Interchange and Thornton Road is within the jurisdiction of ODOT. Therefore, the access connection within the section of the roadway is required to comply with ODOT standards and criteria.

As stated previously within the report, the applicant is proposing to maintain the existing access connections to Row River Road. However, the site triggers a "change of use" as defined by ODOT. A " change of use" as defined by OAR 734-051-3020, is:

> *a) The number of peak hour trips increases by fifty (50) trips or more from that of the property's prior use and the increase represents a twenty (20) percent or greater increase in the number of peak hour trips from that of the property's prior use; or*

The development will have an increase of more than 50 trips during the PM peak hour, meeting this threshold. Therefore, the site needs to demonstrate compliance with ODOT access standards found within OAR 734-051-4020.

As per OAR 734-051-4020 (2), "The standards and criteria for approval of private approaches", the regional manager shall approve an application for a state highway approach that meets the general approach criteria (a)-(c).

(a) Approach Spacing Standards
(b) Channelization Standards
(c) Sight distance Standards

Additionally, the following evaluation is provided:

(d) Truck Turning Templates
(e) Overlapping Left Turn Movements/Competing use of the center turn lane.

6.1 APPROACH SPACING STANDARDS

Row River Road along the site frontage is classified as a Connector Road, has a posted speed of 35 mph along the site frontage, and has an ADT of 9,102.

As per OAR 734-051-4020 (8) Table 6, the access spacing standard for the segment of Row River Road is 350 feet. The proposed access should be 350 feet from the nearest driveway or road approach on the same side of the street (measured from centerline to centerline).

The access to Row River Road is shared with the property to the north (Arby's) and is aligned with the main entrance to Walmart. There is one access connection approximately 305 feet to the north. There are no access connections to the south within 350 feet. The illustration below depicts the access spacing.

The access spacing standards are not met between the existing site access and the nearest access to the north. A deviation to the spacing standards is requested as the access connection should not be moved south to meet the spacing requirements to the north as it would offset the access from the Walmart access creating conflicting left turn movements.

Access Spacing

6.2 CHANNELIZATION STANDARDS

"An application meets the channelization standards if none of the conditions in (A) through (C) below exist; ..."

A. Average daily trips for the proposed development exceed four hundred (400) for the approach on a 2-lane highway and with annual daily traffic of 5,000 or more
B. Average daily trips for the proposed development exceed four hundred (400) for the approach on a 4-lane highway with annual average daily traffic of 10,000 or more.
C. Average daily trips for the proposed development multiplied by the annual average daily traffic on the highway is equal to or greater than the products listed in Table 1. (2 lane highway at 35 mph= 3.9)

The ADT of the proposed use is estimated at 1,062 vehicles, and the site is estimated to add 528 ADT to the access at Row River Road.

Row River Road along the property frontage is a 2-lane roadway, 35 mph, and has an ADT of 9,102. Item (A) above applies to this site and is met. Item (B) does not apply. Item (C), the product is 5.60, the standard is met.

The turn lane warrants are described in the following section.

6.3 TURN LANE WARRANTS

Right and left turn lane warrants were performed for the site access connection on Row River Road. The turn analysis follows the procedures within ODOT's Analysis Procedures Manual.

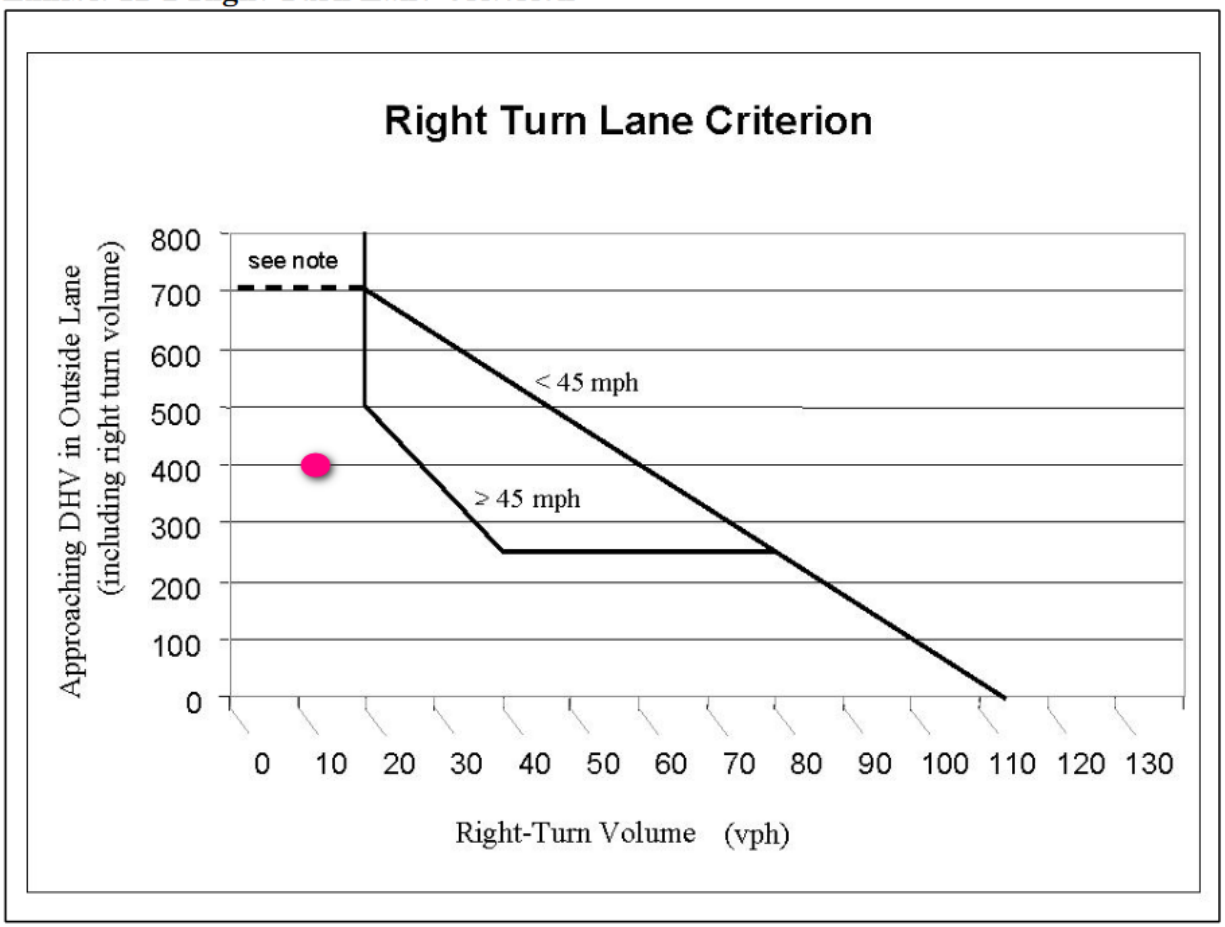
LEFT TURN LANE

There is a center two-way left-turn lane provided on Row River Road. There is no need to provide a left turn lane analysis.

RIGHT TURN LANE

The Analysis Procedures Manual has three criteria for determining when a separate right-turn pocket should be installed. Criterion 1 is the comparison of right-turn traffic volumes to approaching traffic volumes. As per Figure 8, during the year 2028 AM peak hour, there are 12 right turns, 400 approaching volumes, and the speed is 35 mph. The illustration below shows the right turn lane criterion.

Exhibit 12-2 Right Turn Lane Criterion



Note: If there is no right turn lane, a shoulder needs to be provided. If this intersection is in a rural area and is a connection to a public street, a right turn lane is needed.

As shown in the illustration, a right turn lane is not warranted for the northbound right-turn movement at the main site access.

6.4 SIGHT DISTANCE STANDARDS

The requirements for sight distance follow AASHTO standards and are based on the speed of Row River Road. The criteria established within OAR 734-15-4020 (2)(c) is based on a vehicle making a left turn exiting the sight.

Sight distances are classified by the stopping sight distance (SSD) for the major roadway and departure/intersection sight distance (ISD) for the site accesses. The stopping sight distance is the length of roadway needed for a vehicle traveling at the design speed to safely stop for a stationary object in the roadway. The required sight distance allows a driver to perceive and react to an object 2 feet high on the roadway visible from a driver's eye height of 3.5 feet above the ground. The departure sight distance (ISD) is a measure of the length of visibility of the roadway given to a stopped driver on a minor road approach. The distance provides time to perceive and react to gaps in traffic. For this calculation, it is assumed that the driver's eye

is 3.5 feet above the ground and that the object to be seen is 3.5 feet above the ground of the intersecting road.

The standards for evaluating SSD and ISD follow the methodology in the AASHTO's *A Policy on Geometric Design of Highways and Streets* (2011) and OAR 734-15-4020 Table 2. As per the AASHTO methodology, intersections and driveways should, at a minimum, meet the SSD requirements. However, it is desirable to achieve the ISD whenever possible.

MAIN ACCESS

Stopping Sight Distance

Stopping sight distance is based on the speed of the major roadway. Row River Road has a posted speed of 35 mph, both north and south of the access. As per AASHTO, the SSD is 250 feet. The available stopping sight distance exceeds this distance. See Figure 8 for an illustration of the stopping sight distance.

Intersection Sight Distance

As per OAR 734-15-4020 Table 2, the recommended intersection sight distance is calculated for the site driveway on Row River Road is 475 feet for this approach. The available ISD exceeds this distance. See Figure 8 for an illustration of the stopping sight distance.

6.5 LEFT TURN MOVEMENTS

The site access connections were evaluated for left-turn conflicts and competing left-turn movements. The proposed access aligns with Wal-Mart access across Row River Road. There are no competing left turns with this access. The nearest access is more than 300 feet north. There is no competing left turn with this access.

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Figure 9: Access Site Distance

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6.6 ADDITIONAL CONSIDERATIONS

The following describes additional considerations for access permit review.

SAFETY AND OPERATIONS CONCERNS

As per OAR 734-051-4020 (3), ODOT "has the burden of proving safety and highway operations concerns that it relies upon in requiring mitigation or denying an application based on those concerns." Those concerns are limited to the following:

A) *Regular queuing on the highway that impedes turning movements associated with the approach.*

As illustrated within this report, the anticipated queueing through the year 2029 at the entrances is not projected to cause any concerns with turning movements at the access connections.

B) *Overlapping left turn movements or competing use of center left turn lane*

There are no overlapping left turn movements or competing use of center left turn lane.

C) *Location of approach on a segment that has a 20% higher crash rate than the statewide average.*

As illustrated within Section 2.3, the Row River at the proposed approach location has a low crash rate.

D) *Location listed within a top 5% of SPIS locations*

Row River at the site frontage is not identified as a SPIS site.

E) *The proposed approach is on a district or regional highway with a posted speed of 50 mph or higher and the spacing is less than the stopping sight distance.*

This criterion is not applicable; Row River Road is a connector road with a posted speed of 35 mph.

F) Insufficient distance for weave movement made by vehicles exiting the proposed approach.

There is sufficient distance for vehicles to merge into traffic from the site entrances.

6.7 TRAFFIC IMPACT ANALYSIS

A Traffic Impact Analysis was prepared to support the request for a deviation for the access spacing standards. As per **ORS 374.312 Rules regarding permits for approach roads (*7),*** *"Applications that do not meet the spacing, channelization or sight distance standards described in ORS 374.311 may be approved with deviations from those standards as follows:"*

(a) A request for one or more deviations from the spacing, channelization or sight distance standards described in ORS 374.311 may be included in an application for one or more private approaches that do not meet the standards.

(b) Unless waived by the department, a request for a deviation must include a traffic impact analysis provided by the applicant that addresses a request for deviations from the spacing, channelization or sight distance standards described in ORS 374.311 for safety and highway operations.

(c) A request for a deviation may be approved based upon a determination by the engineer assigned by the department to analyze the request for a deviation that the approach adequately addresses the safety and highway operations concerns identified by the department as provided in subsection (10)(g) of this section.

(10) (g) The department shall have the burden of proving any safety or highway operations concerns relied upon in the department's decision to approve an application with conditions or deny an application. Safety or highway operations concerns that may be applied to the department's permit decisions on applications submitted under this section are limited to one or more of the following unique safety and highway operations concerns:

(A) Regular queuing on the highway that impedes turning movements associated with the proposed approach.

(B) Offset approaches that may create the potential for overlapping left turn movements or competing use of a center turn lane.

(C) Insufficient distance for weave movements made by vehicles exiting an approach across multiple lanes in the vicinity of signalized intersections, roads classified by the Oregon Transportation Commission as collectors or arterials and on-ramps or off-ramps.

(D) Location of the proposed approach within a highway segment with a crash rate that is 20 percent higher than the statewide average for similar highways.

(E) Location of the proposed approach within a highway segment listed in the top five percent of locations identified by the safety priority index system developed by the department.

(F) Inadequate sight distance from an intersection to the nearest driveway on district highways and regional highways where the speed limit established in ORS 811.111, or the designated speed posted under ORS 810.180 is 50 miles per hour or higher.

A Traffic Analysis was prepared to satisfy the requirements of ORS 374.312 (7)

7.0 CONCLUSION

This report provides the Traffic Impact Analysis and findings prepared for the proposed St Vincent de Paul retail store in Cottage Grove, Oregon. The subject site is located at tax lots 3701 and 3702 of Assessor's Map 20-03-27-20.

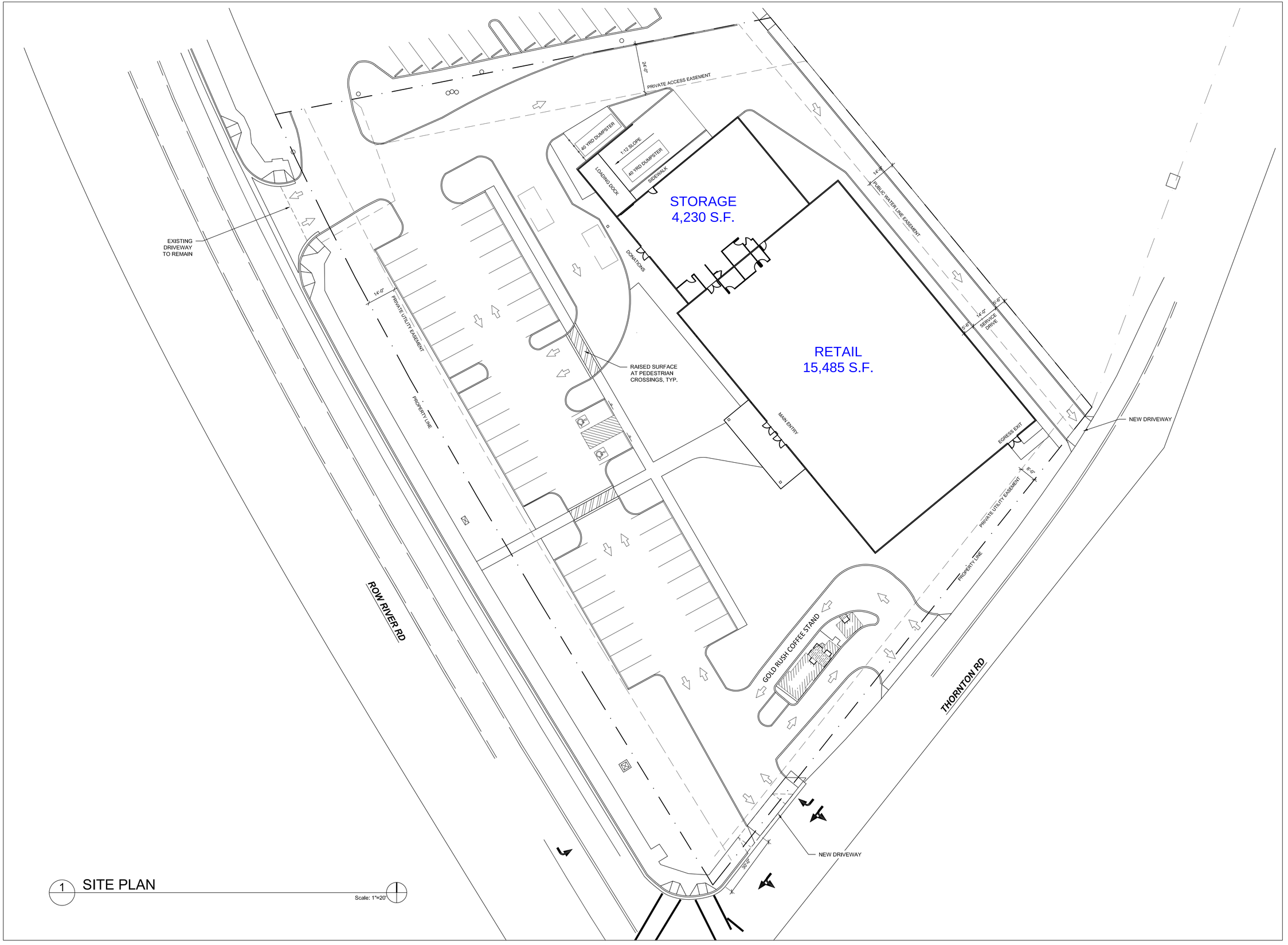
FINDINGS

The following report recommendations are based on the information and analysis documented in this report.

- The addition of development trips does not trigger intersection mitigation.
- The addition of development trips does not increase queuing conditions at the study area intersections.
- The site accesses will operate safely and efficiently for all modes of travel.

Cottage Grove St Vincent de Paul
Cottage Grove

APPENDIX A: SITE PLAN



1 SITE PLAN

Scale: 1"=20'

BDA
Architecture and Planning, PC
1369 Olive Street
Eugene, OR 97401
bdarch.net
541.683.8661

PRELIMINARY
NOT FOR CONSTRUCTION

Revision Summary	
Revision Number	Revision Date

COTTAGE GROVE THRIFT STORE

XXX THORNTON ROAD
COTTAGE GROVE, OREGON 97424

ST. VINCENT de PAUL SOCIETY of LANE COUNTY

SITE PLAN

date	10-04-2022
file	2202
d.b.	LWL

A100

Cottage Grove St Vincent de Paul
Cottage Grove

APPENDIX B: CRASH ANALYSIS

SANDOW ENGINEERING

Row River @ Thornton											
YEAR	PDO	INJURY	FATAL	HEAD	REAR	SIDE	TURN	OTHER	PED	BIKE	TOTAL
											0
2016											0
2017											0
2018											0
2019											0
2020	1				1						1
TOTALS:	1	0	0	0	1	0	0	0	0	0	1

CHECK
OK
OK
OK
OK
OK
OK

P.M. PEAK HOUR	Number of Years, n	ADT	AVG. ANNUAL MILES (MILLIONS)	AVG. YEARLY CRASHES	CRASH RATE/ MILLION MILES
782	5	7820	2854300.000	200000.0	0.07

REAR 14.2715
TURN
OTHER
PED

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF COTTAGE GROVE, LANE COUNTY

ROW RIVER RD at THORNTON RD, City of Cottage Grove, Lane County, 01/01/2016 to 12/31/2021

1 - 1 of 1 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I C N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01525	N	N	N	#Error	N	N	07/03/2020	16	ROW RIVER RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	STRGHT											29
CITY						FR			THORNTON RD	NW		TRF SIGNAL	N	DRY	REAR		PRVTE	NW-SE									000		00
N						2P				06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	28	M	OR-Y		026	000		29
N						43 47 57.59	-123 2 19.69		0001KC100S00																OR<25					
				#Error												02	NONE	STOP											
																	PRVTE	NW-SE									011		00
																	PSNGR CAR		01	DRVR	INJC	70	F	OTH-Y N-RES		000	000		00
				#Error												02	NONE	STOP											
																	PRVTE	NW-SE									011		00
																	PSNGR CAR		02	PSNG	INJC	73	F			000	000		00

CITY OF COTTAGE GROVE, LANE COUNTY

ROW RIVER RD at THORNTON RD, City of Cottage Grove, Lane County, 01/01/2016 to 12/31/2021

Cottage Grove St Vincent de Paul
Cottage Grove

APPENDIX C: TRAFFIC VOLUMES

SANDOW ENGINEERING

Intersection: 1: Row River @ Thorton Rd **City:** Cottage Grove

Counter: Sandow Eniginering **Date:** Thursday, August 5, 2021

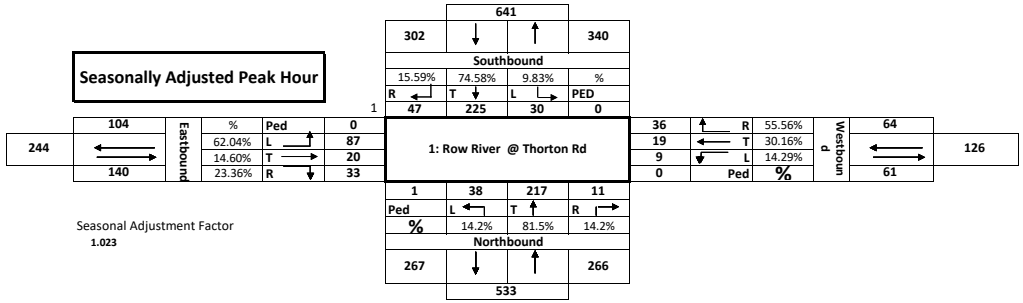
Total of All Vehicles

Time Period		Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume	Pedestrians			
		Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB
16:00	16:15	10	61	10	81	11	3	5	19	2	62	8	72	8	4	22	34	206		0	0	0	0
16:15	16:30	11	53	7	71	7	3	1	11	2	55	10	67	8	4	21	33	182		0	0	0	0
16:30	16:45	16	55	7	78	9	6	0	15	2	49	8	59	5	6	18	29	181		0	0	0	0
16:45	17:00	9	51	5	65	8	7	3	18	5	46	11	62	11	6	24	41	186	755	0	0	1	0
17:00	17:15	16	51	13	80	10	5	0	15	0	52	15	67	6	0	23	29	191	740	0	0	0	0
17:15	17:30	20	50	6	76	3	1	3	7	1	56	11	68	4	2	16	22	173	731	0	0	0	0
17:30	17:45	11	59	4	74	4	2	2	8	2	33	4	39	3	2	18	23	144	694	0	0	0	0
17:45	18:00	13	47	5	65	9	5	1	15	0	29	7	36	6	3	7	16	132	640	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	1	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
Count Period Total		**106**	**427**	**57**		**61**	**32**	**15**		**14**	**382**	**74**		**51**	**27**	**149**		**1395**		**0**	**0**	**2**	**0**

PM Peak Hour Count Summary

	Southbound				Westbound				Northbound				Eastbound						Pedestrians			
	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB
Peak Volumes	**46**	**220**	**29**	**295**	**35**	**19**	**9**	**63**	**11**	**212**	**37**	**260**	**32**	**20**	**85**	**137**	**755**		**0**	**0**	**1**	**0**
PHF	0.72	0.90	0.73	0.91	0.80	0.68	0.45	0.83	0.55	0.85	0.84	0.90	0.73	0.83	0.89	0.84	0.92					
Trucks	1	8	1		1	0	0		0	4	0		0	0	4							
% Trucks	2%	4%	3%		3%	0%	0%		0%	2%	0%		0%	0%	5%							

Seasonally Adjusted Peak Hour



Seasonal Adjustment Factor

1.023

1: Row River @ Thorton Rd

Pedestrians and Cars

Time Period	Southbound					Westbound					Northbound					Eastbound					15 Minute Volume	Hourly Volume
	Peds	Right	Thru	Left		Peds	Right	Thru	Left		Peds	Right	Thru	Left		Peds	Right	Thru	Left			
4:00 PM		10	57	9			10	3	5			2	61	8			8	4	20		197	
4:15 PM		11	53	7			7	3	1			2	53	10			8	4	20		179	
4:30 PM		15	53	7			9	6	0			2	49	8			5	6	17		177	
4:45 PM		9	49	5			8	7	3			5	45	11			11	6	24		183	736
5:00 PM		16	48	13			10	5	0			0	50	15			6	0	22		185	724
5:15 PM		20	46	5			3	1	3			1	55	11			4	2	16		167	712
5:30 PM		11	57	4			4	2	2			2	30	4			3	2	18		139	674
5:45 PM		13	46	5			9	5	1			0	29	7			6	3	7		131	622
6:00 PM																					0	437
6:15 PM																					0	270
6:30 PM																					0	131
6:45 PM																					0	0
Total	0	105	409	55		0	60	32	15		0	14	372	74		0	51	27	144			
Peak Hour	**0**	**45**	**212**	**28**		**0**	**34**	**19**	**9**		**0**	**11**	**208**	**37**		**0**	**32**	**20**	**81**		**736**	

Trucks

Time Period	Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume
	Right	Thru	Left		Right	Thru	Left		Right	Thru	Left		Right	Thru	Left			
4:00 PM		4	1		1					1					2		9	
4:15 PM		0								2					1		3	
4:30 PM	1	2								0					1		4	
4:45 PM		2								1							3	19
5:00 PM		3								2					1		6	16
5:15 PM		4	1							1							6	19
5:30 PM		2								3							5	20
5:45 PM		1								0							1	18
6:00 PM																	0	12
6:15 PM																	0	6
6:30 PM																	0	1
6:45 PM																	0	0
Total	1	18	2		1	0	0		0	10	0		0	0	5			
Peak Hour	**1**	**8**	**1**		**1**	**0**	**0**		**0**	**4**	**0**		**0**	**0**	**4**		**19**	

Bikes

Time Period	Southbound				Westbound				Northbound				Eastbound				SB	WB	NB	EB
	Right	Thru	Left		Right	Thru	Left		Right	Thru	Left		Right	Thru	Left					
4:00 PM																	0	0	0	0
4:15 PM																	0	0	0	0
4:30 PM																	0	0	0	0
4:45 PM																	0	0	0	0
5:00 PM																	0	0	0	0
5:15 PM										1							0	0	1	0
5:30 PM																	0	0	0	0
5:45 PM																	0	0	0	0
6:00 PM																	0	0	0	0
6:15 PM																	0	0	0	0
6:30 PM																	0	0	0	0
6:45 PM																	0	0	0	0
Total	0	0	0		0	0	0		0	1	0		0	0	0	0	0	1	0	
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

Pedestrians

Time Period	NE				NW				SW				SE			SB	WB	NB	EB
	Left	Right	Total		Left	Right	Total		Left	Right	Total		Left	Right	Total				
4:00 PM			0				0				0				0	0	0	0	0
4:15 PM			0		1		1				0		1		1	0	1	0	1
4:30 PM			0				0				0				0	0	0	0	0
4:45 PM			0				0				0				0	0	0	0	0
5:00 PM			0				0				0				0	0	0	0	0
5:15 PM			0				0				0				0	0	0	0	0
5:30 PM			0				0				0				0	0	0	0	0
5:45 PM			0				0				0				0	0	0	0	0
6:00 PM			0				0				0				0	0	0	0	0
6:15 PM			0				0				0				0	0	0	0	0
6:30 PM			0				0				0				0	0	0	0	0
6:45 PM			0				0				0				0	0	0	0	0
Total	0	0	0		1	0	1		0	0	0		1	0	1	0	1	0	1
Peak Hour	**0**	**0**	**0**		**1**	**0**	**1**		**0**	**0**	**0**		**1**	**0**	**1**	**0**	**1**	**0**	**1**

Intersection: 2: Row River @ Walmart/Arbys **City:** Cottage Grove

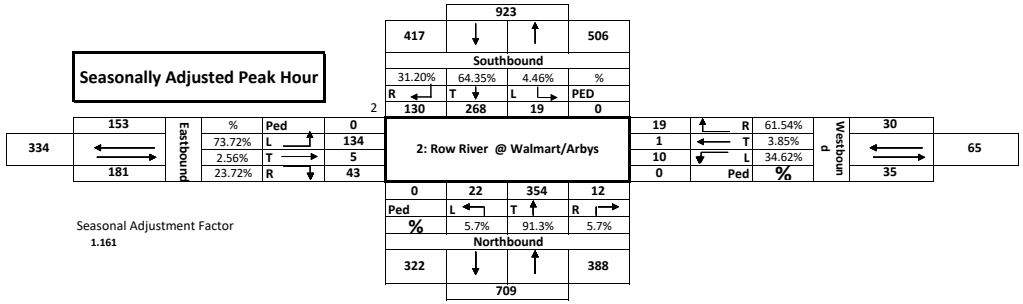
Counter: Sandow Eniginering **Date:** 11/15/2022

Total of All Vehicles

Time Period		Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume	Pedestrians			
		Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB
16:00	16:15	20	60	5	85	4	0	2	6	4	75	5	84	9	0	32	41	216		0	0	0	0
16:15	16:30	30	69	2	101	2	0	0	2	2	96	5	103	10	2	31	43	249		0	0	0	0
16:30	16:45	24	50	6	80	5	0	5	10	2	67	4	73	9	1	31	41	204		0	0	0	0
16:45	17:00	38	52	3	93	5	1	2	8	2	67	5	74	9	1	21	31	206	875	0	0	0	0
17:00	17:15	36	64	2	102	5	0	0	5	3	57	3	63	4	2	30	36	206	865	0	0	0	0
17:15	17:30	41	46	1	88	6	0	3	9	4	47	7	58	8	1	26	35	190	806	1	0	0	0
17:30	17:45	26	67	4	97	2	1	1	4	0	57	10	67	3	2	27	32	200	802	0	0	0	0
17:45	18:00	23	50	1	74	2	0	0	2	0	25	2	27	7	2	25	34	137	733	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		1	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1		0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
Count Period Total		**238**	**458**	**24**		**31**	**2**	**13**		**17**	**492**	**41**		**59**	**11**	**223**		**1609**		**2**	**0**	**0**	**0**

PM Peak Hour Count Summary

	Southbound				Westbound				Northbound				Eastbound						Pedestrians			
	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB
Peak Volumes	**112**	**231**	**16**	**359**	**16**	**1**	**9**	**26**	**10**	**305**	**19**	**334**	**37**	**4**	**115**	**156**	**875**		**0**	**0**	**0**	**0**
PHF	0.74	0.84	0.67	0.89	0.80	0.25	0.45	0.65	0.63	0.79	0.95	0.81	0.93	0.50	0.90	0.91	0.88					
Trucks	1	9	0		0	0	0		0	16	0		0	0	1							
% Trucks	1%	4%	0%		0%	0%	0%		0%	5%	0%		0%	0%	1%							


Seasonally Adjusted Peak Hour
923
417
506
Southbound
31.20%
64.35%
4.46%
%
R
T
L
PED
130
268
19
0
153
334
181
Eastbound
%
Ped
0
73.72%
L
134
2.56%
T
5
23.72%
R
43
2: Row River @ Walmart/Arbys
19
R
61.54%
1
T
3.85%
10
L
34.62%
0
Ped
%
Westboun
d
30
65
35
0
22
354
12
Ped
L
T
R
%
5.7%
91.3%
5.7%
Northbound
322
388
709
Seasonal Adjustment Factor
1.161

2: Row River @ Walmart/Arbys

Pedestrians and Cars

Time Period	Southbound					Westbound					Northbound					Eastbound					15 Minute Volume	Hourly Volume
	Peds	Right	Thru	Left		Peds	Right	Thru	Left		Peds	Right	Thru	Left		Peds	Right	Thru	Left			
4:00 PM		20	58	5			4	0	2			4	71	5			9	0	32		210	
4:15 PM		30	64	2			2	0	0			2	92	5			10	2	30		239	
4:30 PM		24	48	6			5	0	5			2	63	4			9	1	31		198	
4:45 PM		37	52	3			5	1	2			2	63	5			9	1	21		201	848
5:00 PM		35	63	2			5	0	0			3	54	3			4	2	30		201	839
5:15 PM		41	46	1			6	0	3			4	45	7			8	1	26		188	788
5:30 PM		26	67	4			2	1	1			0	55	10			3	2	25		196	786
5:45 PM		23	46	1			2	0	0			0	24	2			7	2	25		132	717
6:00 PM																					0	516
6:15 PM																					0	328
6:30 PM																					0	132
6:45 PM																					0	0
Total	0	236	444	24		0	31	2	13		0	17	467	41		0	59	11	220			
Peak Hour	**0**	**111**	**222**	**16**		**0**	**16**	**1**	**9**		**0**	**10**	**289**	**19**		**0**	**37**	**4**	**114**		**848**	

Trucks

Time Period	Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume
	Right	Thru	Left		Right	Thru	Left		Right	Thru	Left		Right	Thru	Left			
4:00 PM	0	2	0							4					0		6	
4:15 PM	0	5	0							4					1		10	
4:30 PM	0	2	0							4					0		6	
4:45 PM	1	0	0							4					0		5	27
5:00 PM	1	1	0							3					0		5	26
5:15 PM	0	0	0							2					0		2	18
5:30 PM	0	0	0							2					2		4	16
5:45 PM	0	4	0							1					0		5	16
6:00 PM										0							0	11
6:15 PM										1							1	10
6:30 PM																	0	6
6:45 PM																	0	1
Total	2	14	0		0	0	0		0	25	0		0	0	3			
Peak Hour	**1**	**9**	**0**		**0**	**0**	**0**		**0**	**16**	**0**		**0**	**0**	**1**		**27**	

Bikes

Time Period	Southbound				Westbound				Northbound				Eastbound				SB	WB	NB	EB
	Right	Thru	Left		Right	Thru	Left		Right	Thru	Left		Right	Thru	Left					
4:00 PM																	0	0	0	0
4:15 PM																	0	0	0	0
4:30 PM																	0	0	0	0
4:45 PM																	0	0	0	0
5:00 PM																	0	0	0	0
5:15 PM																	0	0	0	0
5:30 PM																	0	0	0	0
5:45 PM		1															1	0	0	0
6:00 PM																	0	0	0	0
6:15 PM																	0	0	0	0
6:30 PM																	0	0	0	0
6:45 PM																	0	0	0	0
Total	0	1	0		0	0	0		0	0	0		0	0	0		1	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**

Pedestrians

Time Period	NE				NW				SW				SE				SB	WB	NB	EB
	Left	Right	Total		Left	Right	Total		Left	Right	Total		Left	Right	Total					
4:00 PM			0				0				0				0		0	0	0	0
4:15 PM			0				0				0				0		0	0	0	0
4:30 PM			0				0				0				0		0	0	0	0
4:45 PM			0				0				0				0		0	0	0	0
5:00 PM			0				0				0				0		0	0	0	0
5:15 PM			0				0				0				0		0	0	0	0
5:30 PM			0				0				0				0		0	0	0	0
5:45 PM			0				0				0				0		0	0	0	0
6:00 PM			0				0				0				0		0	0	0	0
6:15 PM			0				0				0				0		0	0	0	0
6:30 PM			0				0				0				0		0	0	0	0
6:45 PM			0				0				0				0		0	0	0	0
Total	0	0	0		0	0	0		0	0	0		0	0	0		0	0	0	0
Peak Hour	**0**	**0**	**0**		**0**	**0**	**0**		**0**	**0**	**0**		**0**	**0**	**0**		**0**	**0**	**0**	**0**

Intersection: 3: TacoBell/ Gold Rush @ Thorton Rd **City:** Cottage Grove

Counter: Sandow Eniginering **Date:** 11/15/2023

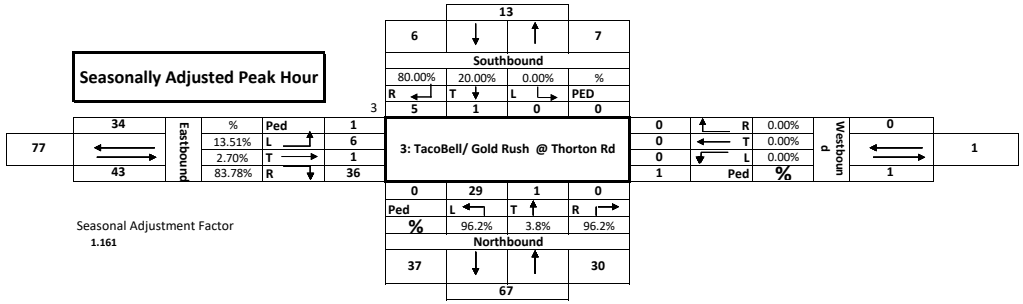
Total of All Vehicles

Time Period		Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume	Pedestrians			
		Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB
16:00	16:15	1	0	0	1	0	0	0	0	0	0	8	8	12	0	1	13	22		0	1	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0	0	9	9	10	0	0	10	19		0	0	0	0
16:30	16:45	1	0	0	1	0	0	0	0	0	0	7	7	8	1	2	11	19		0	0	0	1
16:45	17:00	3	1	0	4	0	0	0	0	0	1	9	10	13	0	3	16	30	90	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	1	0	1
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	1
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
Count Period Total		**5**	**1**	**0**		**0**	**0**	**0**		**0**	**1**	**33**		**43**	**1**	**6**		**90**		**0**	**2**	**0**	**3**

PM Peak Hour Count Summary

	Southbound				Westbound				Northbound				Eastbound						Pedestrians			
	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total	Right	Thru	Left	Approach Total			SB	WB	NB	EB
Peak Volumes	**4**	**1**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**1**	**25**	**26**	**31**	**1**	**5**	**37**	**68**		**0**	**1**	**0**	**1**
PHF	0.33	0.25	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.25	0.69	0.65	0.60	0.25	0.42	0.58	0.57					
Trucks	0	0	0		0	0	0		0	0	0		0	0	0							
% Trucks	0%	0%	0%		0%	0%	0%		0%	0%	0%		0%	0%	0%							

Seasonally Adjusted Peak Hour



Seasonal Adjustment Factor

1.161

3: TacoBell/ Gold Rush @ Thorton Rd

Pedestrians and Cars

Time Period	Southbound					Westbound					Northbound					Eastbound					15 Minute Volume	Hourly Volume
	Peds	Right	Thru	Left		Peds	Right	Thru	Left		Peds	Right	Thru	Left		Peds	Right	Thru	Left			
4:00 PM		1												8			12		1		22	
4:15 PM														9			10				19	
4:30 PM		1												7		1	8	1	2		19	
4:45 PM		3	1										1	9			13		3		30	90
5:00 PM																					0	68
5:15 PM																					0	49
5:30 PM																					0	30
5:45 PM																					0	0
6:00 PM																					0	0
6:15 PM																					0	0
6:30 PM																					0	0
6:45 PM																					0	0
Total	0	5	1	0		0	0	0	0		0	0	1	33		1	43	1	6			
Peak Hour	**0**	**5**	**1**	**0**		**0**	**0**	**0**	**0**		**0**	**0**	**1**	**33**		**1**	**43**	**1**	**6**		**90**	

Trucks

Time Period	Southbound				Westbound				Northbound				Eastbound				15 Minute Volume	Hourly Volume
	Right	Thru	Left		Right	Thru	Left		Right	Thru	Left		Right	Thru	Left			
4:00 PM																	0	
4:15 PM																	0	
4:30 PM																	0	
4:45 PM																	0	0
5:00 PM																	0	0
5:15 PM																	0	0
5:30 PM																	0	0
5:45 PM																	0	0
6:00 PM																	0	0
6:15 PM																	0	0
6:30 PM																	0	0
6:45 PM																	0	0
Total	0	0	0		0	0	0		0	0	0		0	0	0			
Peak Hour	**0**	**0**	**0**		**0**	**0**	**0**		**0**	**0**	**0**		**0**	**0**	**0**		**0**	

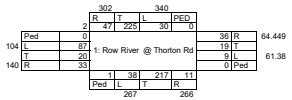
Bikes

Time Period	Southbound				Westbound				Northbound				Eastbound				SB	WB	NB	EB
	Right	Thru	Left		Right	Thru	Left		Right	Thru	Left		Right	Thru	Left					
4:00 PM						1											0	1	0	0
4:15 PM																	0	0	0	0
4:30 PM																	0	0	0	0
4:45 PM																	0	0	0	0
5:00 PM																	0	0	0	0
5:15 PM																	0	0	0	0
5:30 PM																	0	0	0	0
5:45 PM																	0	0	0	0
6:00 PM																	0	0	0	0
6:15 PM																	0	0	0	0
6:30 PM																	0	0	0	0
6:45 PM																	0	0	0	0
Total	0	0	0		0	1	0		0	0	0		0	0	0		0	1	0	0
Peak Hour	**0**	**0**	**0**		**0**	**0**	**0**		**0**	**0**	**0**		**0**	**0**	**0**		**0**	**0**	**0**	**0**

Pedestrians

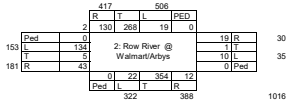
Time Period	NE				NW				SW				SE				SB	WB	NB	EB
	Left	Right	Total		Left	Right	Total		Left	Right	Total		Left	Right	Total					
4:00 PM			0				0				0				0		0	0	0	0
4:15 PM			0				0				0				0		0	0	0	0
4:30 PM			0				0				0				0		0	0	0	0
4:45 PM			0				0				0				0		0	0	0	0
5:00 PM			0				0				0				0		0	0	0	0
5:15 PM			0				0				0				0		0	0	0	0
5:30 PM			0				0				0				0		0	0	0	0
5:45 PM			0				0				0				0		0	0	0	0
6:00 PM			0				0				0				0		0	0	0	0
6:15 PM			0				0				0				0		0	0	0	0
6:30 PM			0				0				0				0		0	0	0	0
6:45 PM			0				0				0				0		0	0	0	0
Total	0	0	0		0	0	0		0	0	0		0	0	0		0	0	0	0
Peak Hour	**0**	**0**	**0**		**0**	**0**	**0**		**0**	**0**	**0**		**0**	**0**	**0**		**0**	**0**	**0**	**0**

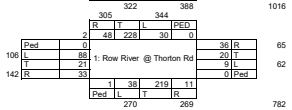
2021

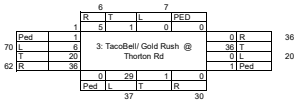


EDIT Highlighted	
Base Year	2021
Target Year	2022
Years of Growth	1
Growth Rate Per Year	0.012
Growth Factor	1.01

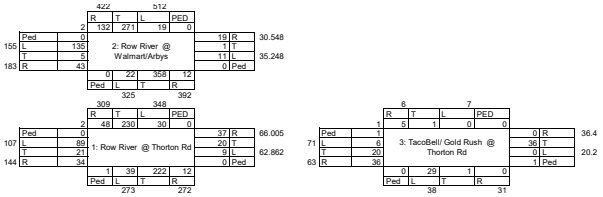
Existing 2022 PM Volumes





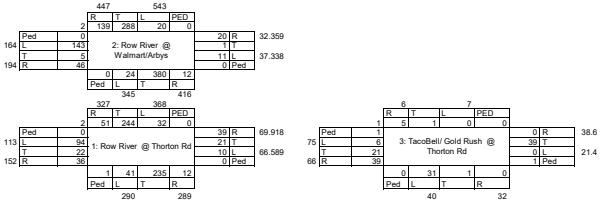


Existing 2023 PM Volumes



EDIT Highlighted	
Base Year	2022
Target Year	2023
Years of Growth	1
Growth Rate Per Year	####
Growth Factor	1.01

Existing 2028 PM Volumes



EDIT Highlighted	
Base Year	2022
Target Year	2028
Years of Growth	6
Growth Rate Per Year	####
Growth Factor	1.07

TREND	1-Jan	15-Jan	1-Feb	15-Feb	1-Mar	15-Mar	1-Apr	15-Apr	1-May	15-May	1-Jun	15-Jun	1-Jul	15-Jul	1-Aug	15-Aug	1-Sep	15-Sep	1-Oct	15-Oct	1-Nov	15-Nov	1-Dec	15-Dec	Seasonal Trend Peak Period Factor
INTERSTATE URBANIZED	1.0937	1.1592	1.1547	1.1502	1.0841	1.0180	0.9963	0.9746	0.9815	0.9885	0.9625	0.9366	0.9211	0.9056	0.9175	0.9295	0.9470	0.9645	0.9721	0.9796	0.9885	0.9973	1.0384	1.0794	0.9056
INTERSTATE NONURBANIZED	1.2128	1.3303	1.3475	1.3647	1.2141	1.0634	1.0236	0.9838	0.9687	0.9536	0.9130	0.8724	0.8404	0.8084	0.8293	0.8501	0.8889	0.9276	0.9583	0.9889	1.0037	1.0185	1.1007	1.1830	0.8084
COMMUTER	1.1005	1.1479	1.1341	1.1204	1.0651	1.0099	0.9836	0.9574	0.9663	0.9752	0.9544	0.9336	0.9338	0.9341	0.9453	0.9566	0.9608	0.9649	0.9693	0.9736	0.9935	1.0134	1.0465	1.0796	0.9336
COASTAL DESTINATION	1.1584	1.2243	1.2052	1.1862	1.1005	1.0149	0.9887	0.9625	0.9672	0.9720	0.9181	0.8642	0.8386	0.8130	0.8299	0.8468	0.8926	0.9384	0.9940	1.0496	1.0999	1.1502	1.1960	1.2419	0.8130
COASTAL DESTINATION ROUTE	1.2909	1.3694	1.3728	1.3763	1.2315	1.0867	1.0419	0.9972	0.9581	0.9191	0.8590	0.7989	0.7607	0.7225	0.7389	0.7554	0.8235	0.8916	0.9820	1.0724	1.1507	1.2291	1.3629	1.4967	0.7225
AGRICULTURE	1.4312	1.4915	1.4980	1.5046	1.3605	1.2164	1.1152	1.0141	0.9356	0.8572	0.8266	0.7960	0.8137	0.8315	0.8448	0.8581	0.8336	0.8092	0.8496	0.8901	0.9684	1.0467	1.2566	1.4666	0.7960
RECREATIONAL SUMMER	1.4118	1.5326	1.6112	1.6898	1.4761	1.2623	1.1772	1.0921	0.9752	0.8582	0.7947	0.7311	0.7197	0.7082	0.7395	0.7708	0.8006	0.8304	0.8977	0.9651	1.0781	1.1910	1.4205	1.6501	0.7082
RECREATIONAL SUMMER WINTER	0.7518	0.8394	0.9654	1.0914	1.0422	0.9930	1.0357	1.0785	1.0310	0.9834	0.9358	0.8882	0.7824	0.6767	0.7712	0.8658	0.9973	1.1289	1.2850	1.4412	1.5833	1.7254	1.3952	1.0650	0.6767
RECREATIONAL WINTER	0.5086	0.5112	0.5988	0.6864	0.7354	0.7845	0.9435	1.1025	1.2219	1.3414	1.2723	1.2032	1.0545	0.9058	1.0033	1.1007	1.2108	1.3209	1.4791	1.6373	2.0741	2.5110	1.7317	0.9524	0.5086
SUMMER	1.2166	1.2914	1.2738	1.2563	1.1530	1.0496	1.0061	0.9625	0.9423	0.9220	0.8906	0.8591	0.8435	0.8279	0.8550	0.8821	0.9088	0.9355	0.9732	1.0109	1.0420	1.0731	1.1534	1.2337	0.8279
SUMMER < 2500	1.2683	1.3194	1.3010	1.2826	1.1889	1.0952	1.0262	0.9573	0.9119	0.8664	0.8549	0.8434	0.8442	0.8451	0.8727	0.9003	0.9080	0.9157	0.9406	0.9654	1.0279	1.0903	1.1996	1.3089	0.8434

*** Seasonal Trend Table factors are based on previous year ATR data. The table is updated yearly.**

*** Grey shading indicates months were seasonal factor is greater than or less than 30%**

	August Count	Peak	
Commuter	0.9453	0.9336	1.012595
Summer	0.8550	0.8279	1.032711
			1.023 Average

	November	Peak	
Commuter	0.9935	0.9336	1.064205
Summer	1.0420	0.8279	1.258542
			1.161 Average

EXHIBIT D

Cottage Grove St Vincent de Paul
Cottage Grove

APPENDIX D: SYNHCRO OUTPUTS

SANDOW ENGINEERING

Row River at Thornon PM Peak Hour

2022 Existing Conditions									los	A
Phase		Adj flow	Sat Flow							
1	SBL	33	1628	0.020 pm pt	1,2	0.167				
2	NBT	250	1708	0.146	5,6	0.207				
3							0.207		Cycle Length	40
4	EBT	155	1442	0.107	3,4	0.107			Lost Time/phase	4
5	NBL	41	1667	0.025 pm pt	7,8	0.026	0.107		# phases	4
6	SBT	300	1644	0.182					Total Lost Time	16
7										
8	WBT	39	1483	0.026	Critical Pairs	0.315		Critical	v/c	0.52

2023 Background Conditions										A
Phase										
1	SBL	33	1628	0.020 pm pt	1,2	0.169				
2	NBT	254	1707	0.149	5,6	0.209				
3							0.209		Cycle Length	39
4	EBT	157	1446	0.109	3,4	0.109			Lost Time/phase	4
5	NBL	42	1667	0.025 pm pt	7,8	0.027	0.109		# phases	4
6	SBT	302	1644	0.184					Total Lost Time	16
7										
8	WBT	40	1483	0.027	Critical Pairs	0.317		Critical	v/c	0.54

2023 Build Conditions										A
Phase										
1	SBL	33	1628	0.020 pm pt	1,2	0.182				
2	NBT	273	1687	0.162	5,6	0.209				
3							0.209		Cycle Length	39
4	EBT	164	1464	0.112	3,4	0.112			Lost Time/phase	4
5	NBL	42	1667	0.025 pm pt	7,8	0.033	0.112		# phases	4
6	SBT	302	1644	0.184					Total Lost Time	16
7										
8	WBT	49	1483	0.033	Critical Pairs	0.321		Critical	v/c	0.54

2028 Background Conditions										A
Phase										
1	SBL	35	1628	0.021 pm pt	1,2	0.178				
2	NBT	268	1708	0.157	5,6	0.222				
3							0.222		Cycle Length	39
4	EBT	165	1454	0.113	3,4	0.113			Lost Time/phase	4
5	NBL	45	1667	0.027 pm pt	7,8	0.028	0.113		# phases	4
6	SBT	320	1645	0.195					Total Lost Time	16
7										
8	WBT	42	1483	0.028	Critical Pairs	0.335		Critical	v/c	0.57

2028 Build Conditions										A
Phase										
1	SBL	35	1628	0.021 pm pt	1,2	0.191				
2	NBT	287	1689	0.170	5,6	0.222				
3							0.222		Cycle Length	39
4	EBT	173	1464	0.118	3,4	0.118			Lost Time/phase	4
5	NBL	45	1667	0.027 pm pt	7,8	0.034	0.118		# phases	4
6	SBT	320	1645	0.195					Total Lost Time	16
7										
8	WBT	51	1483	0.034	Critical Pairs	0.340		Critical	v/c	0.58

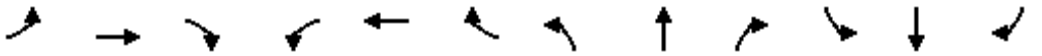
Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	134	5	43	10	1	19	22	354	12	19	268	130
Future Vol, veh/h	134	5	43	10	1	19	22	354	12	19	268	130
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	165	-	-	-	170	-	-	170	-	120
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	1	0	0	0	0	0	0	5	0	0	4	1
Mvmt Flow	152	6	49	11	1	22	25	402	14	22	305	148

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	820	815	305	910	956	409	453	0	0	416	0	0
Stage 1	349	349	-	459	459	-	-	-	-	-	-	-
Stage 2	471	466	-	451	497	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.11	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	295	314	740	258	260	647	1118	-	-	1154	-	-
Stage 1	669	637	-	586	570	-	-	-	-	-	-	-
Stage 2	575	566	-	592	548	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	275	301	740	230	249	647	1118	-	-	1154	-	-
Mov Cap-2 Maneuver	275	301	-	230	249	-	-	-	-	-	-	-
Stage 1	654	625	-	573	557	-	-	-	-	-	-	-
Stage 2	542	554	-	537	538	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.5	15.1	0.5	0.4
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1118	-	-	276	740	390	1154	-	-
HCM Lane V/C Ratio	0.022	-	-	0.572	0.066	0.087	0.019	-	-
HCM Control Delay (s)	8.3	-	-	34.1	10.2	15.1	8.2	-	-
HCM Lane LOS	A	-	-	D	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.3	0.2	0.3	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	21	33	9	20	36	38	219	11	30	228	48
Future Volume (vph)	88	21	33	9	20	36	38	219	11	30	228	48
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected		0.97			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1595			1707	1488	1662	1705		1614	1644	
Flt Permitted		0.79			0.91	1.00	0.53	1.00		0.60	1.00	
Satd. Flow (perm)		1303			1573	1488	934	1705		1026	1644	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	23	36	10	22	39	41	238	12	33	248	52
RTOR Reduction (vph)	0	14	0	0	0	32	0	2	0	0	8	0
Lane Group Flow (vph)	0	141	0	0	32	7	41	248	0	33	292	0
Heavy Vehicles (%)	5%	0%	0%	3%	0%	0%	0%	2%	0%	3%	4%	2%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		6.6			6.6	6.6	20.3	18.3		17.9	17.1	
Effective Green, g (s)		6.6			6.6	6.6	21.3	18.8		18.9	17.6	
Actuated g/C Ratio		0.17			0.17	0.17	0.55	0.49		0.49	0.45	
Clearance Time (s)		4.0			4.0	4.0	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5			2.5	2.5	2.5	4.0		2.5	4.0	
Lane Grp Cap (vph)		222			268	253	561	828		520	747	
v/s Ratio Prot							c0.00	0.15		0.00	c0.18	
v/s Ratio Perm		c0.11			0.02	0.00	0.04			0.03		
v/c Ratio		0.63			0.12	0.03	0.07	0.30		0.06	0.39	
Uniform Delay, d1		14.9			13.6	13.4	4.0	6.0		5.2	7.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.1			0.1	0.0	0.0	0.3		0.0	0.5	
Delay (s)		20.0			13.7	13.4	4.1	6.3		5.2	7.5	
Level of Service		C			B	B	A	A		A	A	
Approach Delay (s)		20.0			13.6			6.0			7.2	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	38.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	21	33	9	20	36	38	219	11	30	228	48
Future Volume (veh/h)	88	21	33	9	20	36	38	219	11	30	228	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1682	1750	1750	1709	1750	1750	1750	1723	1750	1709	1695	1723
Adj Flow Rate, veh/h	96	23	36	10	22	39	41	238	12	33	248	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	0	0	3	0	0	0	2	0	3	4	2
Cap, veh/h	327	50	56	200	239	250	597	634	32	634	521	109
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.05	0.39	0.37	0.05	0.38	0.38
Sat Flow, veh/h	808	299	335	270	1419	1483	1667	1626	82	1628	1359	285
Grp Volume(v), veh/h	155	0	0	32	0	39	41	0	250	33	0	300
Grp Sat Flow(s),veh/h/ln	1442	0	0	1689	0	1483	1667	0	1708	1628	0	1644
Q Serve(g_s), s	2.6	0.0	0.0	0.0	0.0	0.7	0.4	0.0	3.2	0.4	0.0	4.2
Cycle Q Clear(g_c), s	3.1	0.0	0.0	0.5	0.0	0.7	0.4	0.0	3.2	0.4	0.0	4.2
Prop In Lane	0.62		0.23	0.31		1.00	1.00		0.05	1.00		0.17
Lane Grp Cap(c), veh/h	434	0	0	440	0	250	597	0	666	634	0	631
V/C Ratio(X)	0.36	0.00	0.00	0.07	0.00	0.16	0.07	0.00	0.38	0.05	0.00	0.48
Avail Cap(c_a), veh/h	1462	0	0	1590	0	1311	1106	0	2236	1142	0	2153
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.8	0.0	0.0	10.8	0.0	10.8	5.2	0.0	6.7	5.2	0.0	7.1
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.5	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.1	0.0	0.2	0.1	0.0	0.7	0.1	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	0.0	0.0	10.8	0.0	11.1	5.3	0.0	7.2	5.2	0.0	7.9
LnGrp LOS	B	A	A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		155			71			291			333	
Approach Delay, s/veh		12.2			10.9			6.9			7.6	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	15.9		9.2	5.7	15.7		9.2				
Change Period (Y+Rc), s	4.5	4.5		4.0	4.5	4.5		4.0				
Max Green Setting (Gmax), s	10.5	39.5		27.0	10.5	39.5		27.0				
Max Q Clear Time (g_c+I1), s	2.4	5.2		5.1	2.4	6.2		2.7				
Green Ext Time (p_c), s	0.0	4.0		1.0	0.0	5.0		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		8.5	
HCM 6th LOS		A	

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	6	20	36	0	36	0	29	1	0	5	1	0
Future Vol, veh/h	6	20	36	0	36	0	29	1	0	5	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	57	57	57	57	57	57	57	57	57
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	11	35	63	0	63	0	51	2	0	9	2	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	63	0	0	98	0	0	153	152	67	153	183	63
Stage 1	-	-	-	-	-	-	89	89	-	63	63	-
Stage 2	-	-	-	-	-	-	64	63	-	90	120	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1553	-	-	1508	-	-	819	743	1002	819	715	1007
Stage 1	-	-	-	-	-	-	923	825	-	953	846	-
Stage 2	-	-	-	-	-	-	952	846	-	922	800	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1553	-	-	1508	-	-	812	737	1002	812	709	1007
Mov Cap-2 Maneuver	-	-	-	-	-	-	812	737	-	812	709	-
Stage 1	-	-	-	-	-	-	916	818	-	945	846	-
Stage 2	-	-	-	-	-	-	950	846	-	913	794	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	9.8	9.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	809	1553	-	-	1508	-	-	793
HCM Lane V/C Ratio	0.065	0.007	-	-	-	-	-	0.013
HCM Control Delay (s)	9.8	7.3	0	-	0	-	-	9.6
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

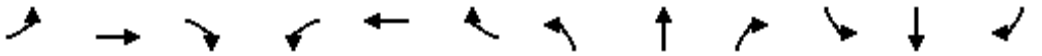
Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	135	5	43	11	1	19	22	358	12	19	271	132
Future Vol, veh/h	135	5	43	11	1	19	22	358	12	19	271	132
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	165	-	-	-	170	-	-	170	-	120
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	1	0	0	0	0	0	0	5	0	0	4	1
Mvmt Flow	153	6	49	13	1	22	25	407	14	22	308	150

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	828	823	308	919	966	414	458	0	0	421	0	0
Stage 1	352	352	-	464	464	-	-	-	-	-	-	-
Stage 2	476	471	-	455	502	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.11	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	291	311	737	254	257	643	1114	-	-	1149	-	-
Stage 1	667	635	-	582	567	-	-	-	-	-	-	-
Stage 2	572	563	-	589	545	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	272	298	737	226	246	643	1114	-	-	1149	-	-
Mov Cap-2 Maneuver	272	298	-	226	246	-	-	-	-	-	-	-
Stage 1	652	623	-	569	555	-	-	-	-	-	-	-
Stage 2	539	551	-	534	535	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.2	15.5	0.5	0.4
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1114	-	-	273	737	377	1149	-	-
HCM Lane V/C Ratio	0.022	-	-	0.583	0.066	0.093	0.019	-	-
HCM Control Delay (s)	8.3	-	-	35.1	10.2	15.5	8.2	-	-
HCM Lane LOS	A	-	-	E	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.4	0.2	0.3	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	21	34	9	20	37	39	222	12	30	230	48
Future Volume (vph)	89	21	34	9	20	37	39	222	12	30	230	48
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected		0.97			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1594			1707	1488	1662	1704		1614	1645	
Flt Permitted		0.79			0.91	1.00	0.53	1.00		0.60	1.00	
Satd. Flow (perm)		1303			1574	1488	935	1704		1022	1645	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	23	37	10	22	40	42	241	13	33	250	52
RTOR Reduction (vph)	0	15	0	0	0	33	0	2	0	0	8	0
Lane Group Flow (vph)	0	142	0	0	32	7	42	252	0	33	294	0
Heavy Vehicles (%)	5%	0%	0%	3%	0%	0%	0%	2%	0%	3%	4%	2%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		6.7			6.7	6.7	20.4	18.4		18.2	17.3	
Effective Green, g (s)		6.7			6.7	6.7	21.4	18.9		19.2	17.8	
Actuated g/C Ratio		0.17			0.17	0.17	0.55	0.48		0.49	0.46	
Clearance Time (s)		4.0			4.0	4.0	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5			2.5	2.5	2.5	4.0		2.5	4.0	
Lane Grp Cap (vph)		223			270	255	559	825		524	750	
v/s Ratio Prot							c0.00	0.15		0.00	c0.18	
v/s Ratio Perm		c0.11			0.02	0.00	0.04			0.03		
v/c Ratio		0.64			0.12	0.03	0.08	0.31		0.06	0.39	
Uniform Delay, d1		15.0			13.7	13.4	4.1	6.1		5.1	7.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.1			0.1	0.0	0.0	0.3		0.0	0.5	
Delay (s)		20.2			13.8	13.5	4.1	6.4		5.2	7.5	
Level of Service		C			B	B	A	A		A	A	
Approach Delay (s)		20.2			13.6			6.1			7.3	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	39.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	21	34	9	20	37	39	222	12	30	230	48
Future Volume (veh/h)	89	21	34	9	20	37	39	222	12	30	230	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1682	1750	1750	1709	1750	1750	1750	1723	1750	1709	1695	1723
Adj Flow Rate, veh/h	97	23	37	10	22	40	42	241	13	33	250	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	0	0	3	0	0	0	2	0	3	4	2
Cap, veh/h	327	51	58	199	242	252	595	634	34	631	523	109
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.06	0.39	0.38	0.05	0.38	0.38
Sat Flow, veh/h	807	299	341	266	1422	1483	1667	1620	87	1628	1361	283
Grp Volume(v), veh/h	157	0	0	32	0	40	42	0	254	33	0	302
Grp Sat Flow(s),veh/h/ln	1446	0	0	1689	0	1483	1667	0	1707	1628	0	1644
Q Serve(g_s), s	2.6	0.0	0.0	0.0	0.0	0.7	0.4	0.0	3.3	0.4	0.0	4.3
Cycle Q Clear(g_c), s	3.1	0.0	0.0	0.5	0.0	0.7	0.4	0.0	3.3	0.4	0.0	4.3
Prop In Lane	0.62		0.24	0.31		1.00	1.00		0.05	1.00		0.17
Lane Grp Cap(c), veh/h	436	0	0	441	0	252	595	0	668	631	0	632
V/C Ratio(X)	0.36	0.00	0.00	0.07	0.00	0.16	0.07	0.00	0.38	0.05	0.00	0.48
Avail Cap(c_a), veh/h	1452	0	0	1579	0	1302	1099	0	2220	1134	0	2139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.9	0.0	0.0	10.8	0.0	10.9	5.3	0.0	6.7	5.2	0.0	7.1
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.5	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.2	0.0	0.2	0.1	0.0	0.7	0.1	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	0.0	0.0	10.8	0.0	11.1	5.3	0.0	7.2	5.2	0.0	7.9
LnGrp LOS	B	A	A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		157			72			296			335	
Approach Delay, s/veh		12.2			11.0			6.9			7.7	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	16.0		9.2	5.7	15.8		9.2				
Change Period (Y+Rc), s	4.5	4.5		4.0	4.5	4.5		4.0				
Max Green Setting (Gmax), s	10.5	39.5		27.0	10.5	39.5		27.0				
Max Q Clear Time (g_c+I1), s	2.4	5.3		5.1	2.4	6.3		2.7				
Green Ext Time (p_c), s	0.0	4.1		1.0	0.0	5.1		0.4				

Intersection Summary		
HCM 6th Ctrl Delay		8.5
HCM 6th LOS		A

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	6	20	36	0	36	0	29	1	0	5	1	0
Future Vol, veh/h	6	20	36	0	36	0	29	1	0	5	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	57	57	57	57	57	57	57	57	57
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	11	35	63	0	63	0	51	2	0	9	2	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	63	0	0	98	0	0	153	152	67	153	183	63
Stage 1	-	-	-	-	-	-	89	89	-	63	63	-
Stage 2	-	-	-	-	-	-	64	63	-	90	120	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1553	-	-	1508	-	-	819	743	1002	819	715	1007
Stage 1	-	-	-	-	-	-	923	825	-	953	846	-
Stage 2	-	-	-	-	-	-	952	846	-	922	800	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1553	-	-	1508	-	-	812	737	1002	812	709	1007
Mov Cap-2 Maneuver	-	-	-	-	-	-	812	737	-	812	709	-
Stage 1	-	-	-	-	-	-	916	818	-	945	846	-
Stage 2	-	-	-	-	-	-	950	846	-	913	794	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	9.8	9.6
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	809	1553	-	-	1508	-	-	793
HCM Lane V/C Ratio	0.065	0.007	-	-	-	-	-	0.013
HCM Control Delay (s)	9.8	7.3	0	-	0	-	-	9.6
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

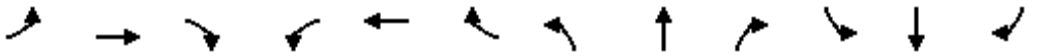
Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	135	5	43	11	1	35	22	366	12	43	271	132
Future Vol, veh/h	135	5	43	11	1	35	22	366	12	43	271	132
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	165	-	-	-	170	-	-	170	-	120
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	1	0	0	0	0	0	0	5	0	0	4	1
Mvmt Flow	153	6	49	13	1	40	25	416	14	49	308	150

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	900	886	308	982	1029	423	458	0	0	430	0	0
Stage 1	406	406	-	473	473	-	-	-	-	-	-	-
Stage 2	494	480	-	509	556	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.11	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	261	286	737	230	236	635	1114	-	-	1140	-	-
Stage 1	624	601	-	576	562	-	-	-	-	-	-	-
Stage 2	559	558	-	550	516	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	232	268	737	201	221	635	1114	-	-	1140	-	-
Mov Cap-2 Maneuver	232	268	-	201	221	-	-	-	-	-	-	-
Stage 1	610	575	-	563	550	-	-	-	-	-	-	-
Stage 2	511	546	-	487	494	-	-	-	-	-	-	-

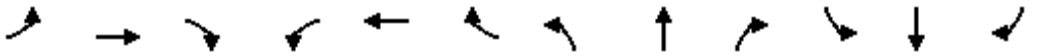
Approach	EB	WB	NB	SB
HCM Control Delay, s	39.3	15.1	0.5	0.8
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1114	-	-	233	737	411	1140	-	-
HCM Lane V/C Ratio	0.022	-	-	0.683	0.066	0.13	0.043	-	-
HCM Control Delay (s)	8.3	-	-	48.3	10.2	15.1	8.3	-	-
HCM Lane LOS	A	-	-	E	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	4.4	0.2	0.4	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	28	34	9	20	45	39	222	29	30	230	48
Future Volume (vph)	89	28	34	9	20	45	39	222	29	30	230	48
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.98		1.00	0.97	
Flt Protected		0.97			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1601			1707	1488	1662	1689		1614	1645	
Flt Permitted		0.80			0.91	1.00	0.53	1.00		0.59	1.00	
Satd. Flow (perm)		1318			1580	1488	934	1689		1005	1645	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	97	30	37	10	22	49	42	241	32	33	250	52
RTOR Reduction (vph)	0	14	0	0	0	41	0	5	0	0	8	0
Lane Group Flow (vph)	0	150	0	0	32	9	42	268	0	33	294	0
Heavy Vehicles (%)	5%	0%	0%	3%	0%	0%	0%	2%	0%	3%	4%	2%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		6.8			6.8	6.8	20.5	18.5		18.3	17.4	
Effective Green, g (s)		6.8			6.8	6.8	21.5	19.0		19.3	17.9	
Actuated g/C Ratio		0.17			0.17	0.17	0.55	0.48		0.49	0.46	
Clearance Time (s)		4.0			4.0	4.0	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5			2.5	2.5	2.5	4.0		2.5	4.0	
Lane Grp Cap (vph)		228			274	258	558	818		516	751	
v/s Ratio Prot							c0.00	0.16		0.00	c0.18	
v/s Ratio Perm		c0.11			0.02	0.01	0.04			0.03		
v/c Ratio		0.66			0.12	0.03	0.08	0.33		0.06	0.39	
Uniform Delay, d1		15.1			13.7	13.5	4.1	6.2		5.2	7.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.0			0.1	0.0	0.0	0.3		0.0	0.5	
Delay (s)		21.1			13.8	13.5	4.2	6.5		5.2	7.5	
Level of Service		C			B	B	A	A		A	A	
Approach Delay (s)		21.1			13.6			6.2			7.3	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	39.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	28	34	9	20	45	39	222	29	30	230	48
Future Volume (veh/h)	89	28	34	9	20	45	39	222	29	30	230	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1682	1750	1750	1709	1750	1750	1750	1723	1750	1709	1695	1723
Adj Flow Rate, veh/h	97	30	37	10	22	49	42	241	32	33	250	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	0	0	3	0	0	0	2	0	3	4	2
Cap, veh/h	320	65	58	197	253	262	589	580	77	607	520	108
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.06	0.39	0.37	0.05	0.38	0.38
Sat Flow, veh/h	767	367	330	256	1430	1483	1667	1489	198	1628	1361	283
Grp Volume(v), veh/h	164	0	0	32	0	49	42	0	273	33	0	302
Grp Sat Flow(s),veh/h/ln	1464	0	0	1686	0	1483	1667	0	1687	1628	0	1644
Q Serve(g_s), s	2.6	0.0	0.0	0.0	0.0	0.9	0.5	0.0	3.7	0.4	0.0	4.3
Cycle Q Clear(g_c), s	3.2	0.0	0.0	0.5	0.0	0.9	0.5	0.0	3.7	0.4	0.0	4.3
Prop In Lane	0.59		0.23	0.31		1.00	1.00		0.12	1.00		0.17
Lane Grp Cap(c), veh/h	443	0	0	450	0	262	589	0	657	607	0	628
V/C Ratio(X)	0.37	0.00	0.00	0.07	0.00	0.19	0.07	0.00	0.42	0.05	0.00	0.48
Avail Cap(c_a), veh/h	1439	0	0	1560	0	1288	1087	0	2171	1105	0	2116
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.8	0.0	0.0	10.7	0.0	10.9	5.4	0.0	6.9	5.4	0.0	7.3
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.6	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	0.2	0.0	0.2	0.1	0.0	0.8	0.1	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	0.0	0.0	10.8	0.0	11.1	5.4	0.0	7.5	5.4	0.0	8.1
LnGrp LOS	B	A	A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		164			81			315			335	
Approach Delay, s/veh		12.2			11.0			7.3			7.8	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	16.1		9.5	5.7	15.9		9.5				
Change Period (Y+Rc), s	4.5	4.5		4.0	4.5	4.5		4.0				
Max Green Setting (Gmax), s	10.5	39.5		27.0	10.5	39.5		27.0				
Max Q Clear Time (g_c+I1), s	2.4	5.7		5.2	2.5	6.3		2.9				
Green Ext Time (p_c), s	0.0	4.5		1.1	0.0	5.0		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		8.7	
HCM 6th LOS		A	

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	30	20	36	0	36	0	29	1	0	5	1	8
Future Vol, veh/h	30	20	36	0	36	0	29	1	0	5	1	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	57	57	57	57	57	57	57	57	57
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	53	35	63	0	63	0	51	2	0	9	2	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	63	0	0	98	0	0	244	236	67	237	267	63
Stage 1	-	-	-	-	-	-	173	173	-	63	63	-
Stage 2	-	-	-	-	-	-	71	63	-	174	204	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1553	-	-	1508	-	-	714	668	1002	722	642	1007
Stage 1	-	-	-	-	-	-	834	760	-	953	846	-
Stage 2	-	-	-	-	-	-	944	846	-	833	737	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1553	-	-	1508	-	-	683	644	1002	701	619	1007
Mov Cap-2 Maneuver	-	-	-	-	-	-	683	644	-	701	619	-
Stage 1	-	-	-	-	-	-	804	733	-	919	846	-
Stage 2	-	-	-	-	-	-	929	846	-	801	710	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.6	0	10.7	9.4
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	682	1553	-	-	1508	-	-	839
HCM Lane V/C Ratio	0.077	0.034	-	-	-	-	-	0.029
HCM Control Delay (s)	10.7	7.4	0	-	0	-	-	9.4
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.1

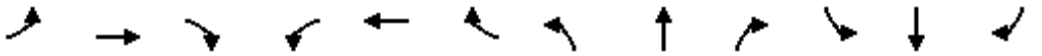
Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	143	5	46	11	1	20	24	380	12	20	288	139
Future Vol, veh/h	143	5	46	11	1	20	24	380	12	20	288	139
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	165	-	-	-	170	-	-	170	-	120
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	1	0	0	0	0	0	0	5	0	0	4	1
Mvmt Flow	163	6	52	13	1	23	27	432	14	23	327	158

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	878	873	327	974	1024	439	485	0	0	446	0	0
Stage 1	373	373	-	493	493	-	-	-	-	-	-	-
Stage 2	505	500	-	481	531	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.11	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	270	291	719	233	237	622	1088	-	-	1125	-	-
Stage 1	650	622	-	562	550	-	-	-	-	-	-	-
Stage 2	551	546	-	570	529	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	250	278	719	206	227	622	1088	-	-	1125	-	-
Mov Cap-2 Maneuver	250	278	-	206	227	-	-	-	-	-	-	-
Stage 1	634	610	-	548	536	-	-	-	-	-	-	-
Stage 2	517	532	-	513	518	-	-	-	-	-	-	-

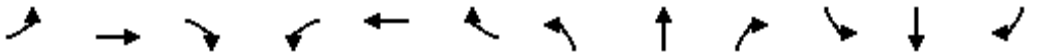
Approach	EB	WB	NB	SB
HCM Control Delay, s	36.3	16.3	0.5	0.4
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1088	-	-	251	719	356	1125	-	-
HCM Lane V/C Ratio	0.025	-	-	0.67	0.073	0.102	0.02	-	-
HCM Control Delay (s)	8.4	-	-	44.3	10.4	16.3	8.3	-	-
HCM Lane LOS	A	-	-	E	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	4.3	0.2	0.3	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	22	36	10	21	39	41	235	12	32	244	51
Future Volume (vph)	94	22	36	10	21	39	41	235	12	32	244	51
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected		0.97			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1594			1706	1488	1662	1705		1614	1645	
Flt Permitted		0.79			0.91	1.00	0.54	1.00		0.59	1.00	
Satd. Flow (perm)		1301			1571	1488	945	1705		1010	1645	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	24	39	11	23	42	45	255	13	35	265	55
RTOR Reduction (vph)	0	15	0	0	0	35	0	2	0	0	8	0
Lane Group Flow (vph)	0	150	0	0	34	7	45	266	0	35	312	0
Heavy Vehicles (%)	5%	0%	0%	3%	0%	0%	0%	2%	0%	3%	4%	2%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		6.9			6.9	6.9	19.3	17.3		18.9	17.1	
Effective Green, g (s)		6.9			6.9	6.9	20.3	17.8		19.9	17.6	
Actuated g/C Ratio		0.18			0.18	0.18	0.52	0.46		0.51	0.45	
Clearance Time (s)		4.0			4.0	4.0	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5			2.5	2.5	2.5	4.0		2.5	4.0	
Lane Grp Cap (vph)		230			277	263	537	778		550	742	
v/s Ratio Prot							c0.01	0.16		0.00	c0.19	
v/s Ratio Perm		c0.12			0.02	0.00	0.04			0.03		
v/c Ratio		0.65			0.12	0.03	0.08	0.34		0.06	0.42	
Uniform Delay, d1		14.9			13.5	13.3	4.6	6.8		4.8	7.2	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.8			0.1	0.0	0.0	0.4		0.0	0.5	
Delay (s)		20.8			13.6	13.3	4.7	7.2		4.8	7.8	
Level of Service		C			B	B	A	A		A	A	
Approach Delay (s)		20.8			13.5			6.8			7.5	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	39.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	22	36	10	21	39	41	235	12	32	244	51
Future Volume (veh/h)	94	22	36	10	21	39	41	235	12	32	244	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1682	1750	1750	1709	1750	1750	1750	1723	1750	1709	1695	1723
Adj Flow Rate, veh/h	102	24	39	11	23	42	45	255	13	35	265	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	0	0	3	0	0	0	2	0	3	4	2
Cap, veh/h	323	54	61	195	251	262	585	652	33	623	536	111
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.06	0.40	0.39	0.05	0.39	0.39
Sat Flow, veh/h	804	307	344	266	1420	1483	1667	1625	83	1628	1362	283
Grp Volume(v), veh/h	165	0	0	34	0	42	45	0	268	35	0	320
Grp Sat Flow(s),veh/h/ln	1454	0	0	1687	0	1483	1667	0	1708	1628	0	1645
Q Serve(g_s), s	2.8	0.0	0.0	0.0	0.0	0.8	0.5	0.0	3.6	0.4	0.0	4.7
Cycle Q Clear(g_c), s	3.3	0.0	0.0	0.5	0.0	0.8	0.5	0.0	3.6	0.4	0.0	4.7
Prop In Lane	0.62		0.24	0.32		1.00	1.00		0.05	1.00		0.17
Lane Grp Cap(c), veh/h	438	0	0	446	0	262	585	0	685	623	0	647
V/C Ratio(X)	0.38	0.00	0.00	0.08	0.00	0.16	0.08	0.00	0.39	0.06	0.00	0.49
Avail Cap(c_a), veh/h	1389	0	0	1508	0	1246	1008	0	2231	999	0	2098
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.2	0.0	0.0	11.1	0.0	11.2	5.4	0.0	6.8	5.3	0.0	7.3
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.5	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	0.2	0.0	0.2	0.1	0.0	0.8	0.1	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	0.0	0.0	11.2	0.0	11.4	5.4	0.0	7.4	5.3	0.0	8.2
LnGrp LOS	B	A	A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		165			76			313			355	
Approach Delay, s/veh		12.6			11.3			7.1			7.9	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	16.9		9.7	5.8	16.7		9.7				
Change Period (Y+Rc), s	4.5	4.5		4.0	4.5	4.5		4.0				
Max Green Setting (Gmax), s	8.5	41.5		27.0	9.5	40.5		27.0				
Max Q Clear Time (g_c+I1), s	2.4	5.6		5.3	2.5	6.7		2.8				
Green Ext Time (p_c), s	0.0	4.4		1.1	0.0	5.4		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			8.8									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	6	21	39	0	39	0	31	1	0	5	1	0
Future Vol, veh/h	6	21	39	0	39	0	31	1	0	5	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	57	57	57	57	57	57	57	57	57
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	11	37	68	0	68	0	54	2	0	9	2	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	68	0	0	105	0	0	162	161	71	162	195	68
Stage 1	-	-	-	-	-	-	93	93	-	68	68	-
Stage 2	-	-	-	-	-	-	69	68	-	94	127	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1546	-	-	1499	-	-	808	735	997	808	704	1001
Stage 1	-	-	-	-	-	-	919	822	-	947	842	-
Stage 2	-	-	-	-	-	-	946	842	-	918	795	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1546	-	-	1499	-	-	802	729	997	802	698	1001
Mov Cap-2 Maneuver	-	-	-	-	-	-	802	729	-	802	698	-
Stage 1	-	-	-	-	-	-	912	815	-	939	842	-
Stage 2	-	-	-	-	-	-	944	842	-	909	789	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	9.8	9.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	799	1546	-	-	1499	-	-	783
HCM Lane V/C Ratio	0.07	0.007	-	-	-	-	-	0.013
HCM Control Delay (s)	9.8	7.3	0	-	0	-	-	9.7
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

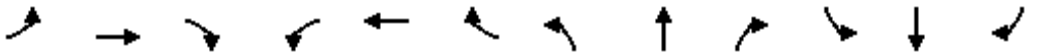
Intersection	
Int Delay, s/veh	10.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	143	5	46	11	1	36	24	388	12	44	288	139
Future Vol, veh/h	143	5	46	11	1	36	24	388	12	44	288	139
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	165	-	-	-	170	-	-	170	-	120
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	1	0	0	0	0	0	0	5	0	0	4	1
Mvmt Flow	163	6	52	13	1	41	27	441	14	50	327	158

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	950	936	327	1037	1087	448	485	0	0	455	0	0
Stage 1	427	427	-	502	502	-	-	-	-	-	-	-
Stage 2	523	509	-	535	585	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.11	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	241	267	719	211	218	615	1088	-	-	1116	-	-
Stage 1	608	589	-	555	545	-	-	-	-	-	-	-
Stage 2	539	541	-	533	501	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	212	249	719	182	203	615	1088	-	-	1116	-	-
Mov Cap-2 Maneuver	212	249	-	182	203	-	-	-	-	-	-	-
Stage 1	593	562	-	541	531	-	-	-	-	-	-	-
Stage 2	490	527	-	467	478	-	-	-	-	-	-	-

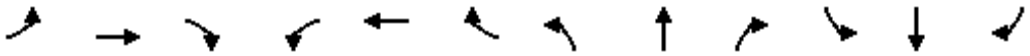
Approach	EB	WB	NB	SB
HCM Control Delay, s	52.4	15.8	0.5	0.8
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1088	-	-	213	719	387	1116	-	-
HCM Lane V/C Ratio	0.025	-	-	0.79	0.073	0.141	0.045	-	-
HCM Control Delay (s)	8.4	-	-	65.4	10.4	15.8	8.4	-	-
HCM Lane LOS	A	-	-	F	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	5.6	0.2	0.5	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	29	36	10	21	47	41	235	29	32	244	51
Future Volume (vph)	94	29	36	10	21	47	41	235	29	32	244	51
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.98		1.00	0.97	
Flt Protected		0.97			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1601			1706	1488	1662	1691		1614	1645	
Flt Permitted		0.80			0.91	1.00	0.54	1.00		0.58	1.00	
Satd. Flow (perm)		1317			1574	1488	943	1691		992	1645	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	32	39	11	23	51	45	255	32	35	265	55
RTOR Reduction (vph)	0	14	0	0	0	42	0	5	0	0	8	0
Lane Group Flow (vph)	0	159	0	0	34	9	45	282	0	35	312	0
Heavy Vehicles (%)	5%	0%	0%	3%	0%	0%	0%	2%	0%	3%	4%	2%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)		7.1			7.1	7.1	19.4	17.4		19.0	17.2	
Effective Green, g (s)		7.1			7.1	7.1	20.4	17.9		20.0	17.7	
Actuated g/C Ratio		0.18			0.18	0.18	0.52	0.46		0.51	0.45	
Clearance Time (s)		4.0			4.0	4.0	4.5	4.5		4.5	4.5	
Vehicle Extension (s)		2.5			2.5	2.5	2.5	4.0		2.5	4.0	
Lane Grp Cap (vph)		237			284	268	535	770		541	740	
v/s Ratio Prot							c0.01	0.17		0.00	c0.19	
v/s Ratio Perm		c0.12			0.02	0.01	0.04			0.03		
v/c Ratio		0.67			0.12	0.03	0.08	0.37		0.06	0.42	
Uniform Delay, d1		15.0			13.5	13.3	4.7	7.0		4.8	7.3	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.6			0.1	0.0	0.0	0.4		0.0	0.5	
Delay (s)		21.6			13.6	13.3	4.7	7.4		4.9	7.9	
Level of Service		C			B	B	A	A		A	A	
Approach Delay (s)		21.6			13.4			7.0			7.6	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	39.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	29	36	10	21	47	41	235	29	32	244	51
Future Volume (veh/h)	94	29	36	10	21	47	41	235	29	32	244	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1682	1750	1750	1709	1750	1750	1750	1723	1750	1709	1695	1723
Adj Flow Rate, veh/h	102	32	39	11	23	51	45	255	32	35	265	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	0	0	3	0	0	0	2	0	3	4	2
Cap, veh/h	315	70	61	197	260	274	577	598	75	598	532	110
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.06	0.40	0.38	0.05	0.39	0.39
Sat Flow, veh/h	756	379	330	272	1411	1483	1667	1501	188	1628	1362	283
Grp Volume(v), veh/h	173	0	0	34	0	51	45	0	287	35	0	320
Grp Sat Flow(s),veh/h/ln	1464	0	0	1683	0	1483	1667	0	1689	1628	0	1645
Q Serve(g_s), s	2.9	0.0	0.0	0.0	0.0	0.9	0.5	0.0	4.0	0.4	0.0	4.8
Cycle Q Clear(g_c), s	3.5	0.0	0.0	0.5	0.0	0.9	0.5	0.0	4.0	0.4	0.0	4.8
Prop In Lane	0.59		0.23	0.32		1.00	1.00		0.11	1.00		0.17
Lane Grp Cap(c), veh/h	446	0	0	457	0	274	577	0	673	598	0	643
V/C Ratio(X)	0.39	0.00	0.00	0.07	0.00	0.19	0.08	0.00	0.43	0.06	0.00	0.50
Avail Cap(c_a), veh/h	1416	0	0	1535	0	1274	943	0	2125	969	0	2069
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.2	0.0	0.0	11.0	0.0	11.2	5.5	0.0	7.1	5.5	0.0	7.5
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.6	0.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	0.2	0.0	0.3	0.1	0.0	0.9	0.1	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	0.0	0.0	11.1	0.0	11.5	5.5	0.0	7.7	5.5	0.0	8.4
LnGrp LOS	B	A	A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		173			85			332			355	
Approach Delay, s/veh		12.6			11.3			7.4			8.1	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	17.0		10.0	5.8	16.7		10.0				
Change Period (Y+Rc), s	4.5	4.5		4.0	4.5	4.5		4.0				
Max Green Setting (Gmax), s	8.5	40.5		28.0	8.5	40.5		28.0				
Max Q Clear Time (g_c+I1), s	2.4	6.0		5.5	2.5	6.8		2.9				
Green Ext Time (p_c), s	0.0	4.8		1.2	0.0	5.4		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		9.0	
HCM 6th LOS		A	

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	30	21	39	0	39	0	31	1	0	5	1	8
Future Vol, veh/h	30	21	39	0	39	0	31	1	0	5	1	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	57	57	57	57	57	57	57	57	57
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	53	37	68	0	68	0	54	2	0	9	2	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	68	0	0	105	0	0	253	245	71	246	279	68
Stage 1	-	-	-	-	-	-	177	177	-	68	68	-
Stage 2	-	-	-	-	-	-	76	68	-	178	211	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
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	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1546	-	-	1499	-	-	704	661	997	712	632	1001
Stage 1	-	-	-	-	-	-	829	756	-	947	842	-
Stage 2	-	-	-	-	-	-	938	842	-	828	731	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1546	-	-	1499	-	-	673	637	997	691	609	1001
Mov Cap-2 Maneuver	-	-	-	-	-	-	673	637	-	691	609	-
Stage 1	-	-	-	-	-	-	798	728	-	912	842	-
Stage 2	-	-	-	-	-	-	923	842	-	795	704	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	0	10.8	9.5
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	672	1546	-	-	1499	-	-	830
HCM Lane V/C Ratio	0.084	0.034	-	-	-	-	-	0.03
HCM Control Delay (s)	10.8	7.4	0	-	0	-	-	9.5
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.1

Cottage Grove St Vincent de Paul
Cottage Grove

APPENDIX D QUEUING OUTPUTS

Intersection: 3: Row River Rd & Walmart Drwy/Arby Drwy, Interval #1

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	L	R
Maximum Queue (ft)	91	25	35	34	22	8
Average Queue (ft)	58	19	21	13	5	2
95th Queue (ft)	100	36	43	41	21	11
Link Distance (ft)	266		219			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		165		170	170	120
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Row River Rd & Walmart Drwy/Arby Drwy, Interval #2

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	L	R
Maximum Queue (ft)	92	47	45	35	27	12
Average Queue (ft)	45	19	16	6	5	1
95th Queue (ft)	76	40	40	26	22	6
Link Distance (ft)	266		219			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		165		170	170	120
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Row River Rd & Walmart Drwy/Arby Drwy, All Intervals

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	L	R
Maximum Queue (ft)	101	47	45	40	27	12
Average Queue (ft)	48	19	17	7	5	1
95th Queue (ft)	84	39	41	30	21	7
Link Distance (ft)	266		219			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		165		170	170	120
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: Thornton Rd & Row River Rd, Interval #1

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	136	21	43	30	68	26	55
Average Queue (ft)	68	8	11	14	28	8	29
95th Queue (ft)	130	27	39	36	78	27	61
Link Distance (ft)	290	120			234		353
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			120	200		150	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: Thornton Rd & Row River Rd, Interval #2

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	155	56	46	39	90	33	67
Average Queue (ft)	72	14	15	11	23	6	22
95th Queue (ft)	136	43	39	33	62	23	52
Link Distance (ft)	290	120			234		353
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			120	200		150	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: Thornton Rd & Row River Rd, All Intervals

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	180	56	52	39	99	33	68
Average Queue (ft)	71	12	14	11	24	7	24
95th Queue (ft)	135	40	40	34	66	24	55
Link Distance (ft)	290	120			234		353
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			120	200		150	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 9: TacoBell Dr/Gold Rush drwy & Thornton Rd, Interval #1

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	27	23
Average Queue (ft)	22	6
95th Queue (ft)	38	22
Link Distance (ft)	158	142
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: TacoBell Dr/Gold Rush drwy & Thornton Rd, Interval #2

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	27	23
Average Queue (ft)	15	4
95th Queue (ft)	36	18
Link Distance (ft)	158	142
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: TacoBell Dr/Gold Rush drwy & Thornton Rd, All Intervals

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	27	23
Average Queue (ft)	17	4
95th Queue (ft)	38	19
Link Distance (ft)	158	142
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, All Intervals: 0

Intersection: 3: Row River Rd & Walmart Drwy/Arby Drwy, Interval #1

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	L	R
Maximum Queue (ft)	108	29	40	30	27	8
Average Queue (ft)	60	19	24	10	7	1
95th Queue (ft)	104	38	46	34	26	9
Link Distance (ft)	266		219			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		165		170	170	120
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Row River Rd & Walmart Drwy/Arby Drwy, Interval #2

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	L	R
Maximum Queue (ft)	87	43	49	35	27	9
Average Queue (ft)	43	20	19	7	6	1
95th Queue (ft)	76	40	44	29	24	6
Link Distance (ft)	266		219			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		165		170	170	120
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Row River Rd & Walmart Drwy/Arby Drwy, All Intervals

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	L	R
Maximum Queue (ft)	111	43	54	35	27	17
Average Queue (ft)	48	20	20	8	6	1
95th Queue (ft)	85	40	45	30	24	7
Link Distance (ft)	266		219			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		165		170	170	120
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: Thornton Rd & Row River Rd, Interval #1

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	174	31	39	34	53	17	88
Average Queue (ft)	86	12	15	18	27	7	33
95th Queue (ft)	165	33	46	44	61	23	79
Link Distance (ft)	290	120			234		353
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			120	200		150	
Storage Blk Time (%)							0
Queuing Penalty (veh)							0

Intersection: 6: Thornton Rd & Row River Rd, Interval #2

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	168	53	47	45	86	30	84
Average Queue (ft)	81	15	17	12	25	8	24
95th Queue (ft)	146	43	43	37	63	25	61
Link Distance (ft)	290	120			234		353
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			120	200		150	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: Thornton Rd & Row River Rd, All Intervals

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	186	53	49	45	87	30	93
Average Queue (ft)	82	14	16	14	26	7	26
95th Queue (ft)	151	41	44	39	63	25	66
Link Distance (ft)	290	120			234		353
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			120	200		150	
Storage Blk Time (%)							0
Queuing Penalty (veh)							0

Intersection: 9: TacoBell Dr/Gold Rush drwy & Thornton Rd, Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	11	37	23
Average Queue (ft)	2	20	10
95th Queue (ft)	12	44	29
Link Distance (ft)	120	158	142
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: TacoBell Dr/Gold Rush drwy & Thornton Rd, Interval #2

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	40	23
Average Queue (ft)	15	3
95th Queue (ft)	39	15
Link Distance (ft)	158	142
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: TacoBell Dr/Gold Rush drwy & Thornton Rd, All Intervals

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	11	41	23
Average Queue (ft)	0	16	5
95th Queue (ft)	6	40	20
Link Distance (ft)	120	158	142
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, All Intervals: 0

Intersection: 3: Row River Rd & Walmart Drwy/Arby Drwy, Interval #1

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	L	R
Maximum Queue (ft)	105	34	45	34	32	4
Average Queue (ft)	69	20	29	8	14	1
95th Queue (ft)	113	38	46	32	42	6
Link Distance (ft)	266		219			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		165		170	170	120
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Row River Rd & Walmart Drwy/Arby Drwy, Interval #2

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	L	R
Maximum Queue (ft)	102	29	40	31	27	8
Average Queue (ft)	48	19	22	7	12	0
95th Queue (ft)	85	36	44	27	33	5
Link Distance (ft)	266		219			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		165		170	170	120
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Row River Rd & Walmart Drwy/Arby Drwy, All Intervals

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	L	R
Maximum Queue (ft)	118	34	53	35	32	13
Average Queue (ft)	53	19	23	7	12	0
95th Queue (ft)	95	37	45	28	36	5
Link Distance (ft)	266		219			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		165		170	170	120
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: Thornton Rd & Row River Rd, Interval #1

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	132	43	40	38	66	22	56
Average Queue (ft)	93	14	20	18	35	8	30
95th Queue (ft)	159	48	46	44	73	24	60
Link Distance (ft)	290	120			234		353
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			120	200		150	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: Thornton Rd & Row River Rd, Interval #2

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	162	53	33	34	76	34	88
Average Queue (ft)	78	14	18	11	29	7	26
95th Queue (ft)	149	40	39	34	63	26	63
Link Distance (ft)	290	120			234		353
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			120	200		150	
Storage Blk Time (%)							0
Queuing Penalty (veh)							0

Intersection: 6: Thornton Rd & Row River Rd, All Intervals

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	162	60	42	39	81	34	88
Average Queue (ft)	82	14	18	13	30	7	27
95th Queue (ft)	152	42	41	37	66	25	62
Link Distance (ft)	290	120			234		353
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			120	200		150	
Storage Blk Time (%)							0
Queuing Penalty (veh)							0

Intersection: 9: TacoBell Dr/Gold Rush drwy & Thornton Rd, Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	22	32	28
Average Queue (ft)	5	20	16
95th Queue (ft)	25	41	35
Link Distance (ft)	120	158	142
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: TacoBell Dr/Gold Rush drwy & Thornton Rd, Interval #2

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	27	23
Average Queue (ft)	15	9
95th Queue (ft)	36	27
Link Distance (ft)	158	142
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: TacoBell Dr/Gold Rush drwy & Thornton Rd, All Intervals

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	22	32	28
Average Queue (ft)	1	16	10
95th Queue (ft)	12	38	30
Link Distance (ft)	120	158	142
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, All Intervals: 0

Intersection: 3: Row River Rd & Walmart Drwy/Arby Drwy, Interval #1

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	L	R
Maximum Queue (ft)	106	38	35	30	27	4
Average Queue (ft)	67	23	26	8	8	1
95th Queue (ft)	114	41	41	30	28	6
Link Distance (ft)	266		219			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		165		170	170	120
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Row River Rd & Walmart Drwy/Arby Drwy, Interval #2

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	L	R
Maximum Queue (ft)	110	42	51	31	32	12
Average Queue (ft)	53	20	21	8	7	1
95th Queue (ft)	94	39	45	29	26	7
Link Distance (ft)	266		219			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		165		170	170	120
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Row River Rd & Walmart Drwy/Arby Drwy, All Intervals

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	L	R
Maximum Queue (ft)	120	46	51	31	32	17
Average Queue (ft)	56	20	22	8	7	1
95th Queue (ft)	100	40	45	29	27	7
Link Distance (ft)	266		219			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		165		170	170	120
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: Thornton Rd & Row River Rd, Interval #1

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	137	43	37	26	72	21	55
Average Queue (ft)	86	17	20	11	31	8	28
95th Queue (ft)	172	45	45	32	72	26	58
Link Distance (ft)	290	120			234		353
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			120	200		150	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: Thornton Rd & Row River Rd, Interval #2

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	153	52	37	34	76	26	79
Average Queue (ft)	72	15	17	11	27	7	28
95th Queue (ft)	136	45	40	34	64	24	67
Link Distance (ft)	290	120			234		353
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			120	200		150	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: Thornton Rd & Row River Rd, All Intervals

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	170	57	46	34	91	26	79
Average Queue (ft)	75	16	18	11	28	7	28
95th Queue (ft)	146	45	41	33	66	24	65
Link Distance (ft)	290	120			234		353
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			120	200		150	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 9: TacoBell Dr/Gold Rush drwy & Thornton Rd, Interval #1

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	32	19
Average Queue (ft)	20	7
95th Queue (ft)	41	25
Link Distance (ft)	158	142
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: TacoBell Dr/Gold Rush drwy & Thornton Rd, Interval #2

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	32	23
Average Queue (ft)	16	4
95th Queue (ft)	38	19
Link Distance (ft)	158	142
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: TacoBell Dr/Gold Rush drwy & Thornton Rd, All Intervals

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	36	23
Average Queue (ft)	17	5
95th Queue (ft)	39	20
Link Distance (ft)	158	142
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, All Intervals: 0

Intersection: 3: Row River Rd & Walmart Drwy/Arby Drwy, Interval #1

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	L	L
Maximum Queue (ft)	142	33	49	30	31
Average Queue (ft)	83	21	26	8	14
95th Queue (ft)	147	40	48	30	37
Link Distance (ft)	266		219		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		165		170	170
Storage Blk Time (%)	0				
Queuing Penalty (veh)	0				

Intersection: 3: Row River Rd & Walmart Drwy/Arby Drwy, Interval #2

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	L	R
Maximum Queue (ft)	120	33	55	31	40	9
Average Queue (ft)	51	19	23	7	12	0
95th Queue (ft)	92	37	48	28	36	5
Link Distance (ft)	266		219			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		165		170	170	120
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Row River Rd & Walmart Drwy/Arby Drwy, All Intervals

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	L	R
Maximum Queue (ft)	143	37	55	31	40	9
Average Queue (ft)	59	19	24	7	12	0
95th Queue (ft)	111	38	48	28	36	4
Link Distance (ft)	266		219			
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		165		170	170	120
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

Intersection: 6: Thornton Rd & Row River Rd, Interval #1

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	160	42	37	40	64	26	68
Average Queue (ft)	83	13	16	16	35	9	30
95th Queue (ft)	158	44	42	40	73	27	68
Link Distance (ft)	290	120			234		353
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			120	200		150	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: Thornton Rd & Row River Rd, Interval #2

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	193	49	47	40	84	22	90
Average Queue (ft)	76	14	18	13	31	7	30
95th Queue (ft)	158	41	42	37	71	24	73
Link Distance (ft)	290	120			234		353
Upstream Blk Time (%)	0						
Queuing Penalty (veh)	0						
Storage Bay Dist (ft)			120	200		150	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: Thornton Rd & Row River Rd, All Intervals

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	LT	R	L	TR	L	TR
Maximum Queue (ft)	199	56	52	45	88	26	99
Average Queue (ft)	78	14	18	14	32	8	30
95th Queue (ft)	158	42	42	38	71	25	71
Link Distance (ft)	290	120			234		353
Upstream Blk Time (%)	0						
Queuing Penalty (veh)	0						
Storage Bay Dist (ft)			120	200		150	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 9: TacoBell Dr/Gold Rush drwy & Thornton Rd, Interval #1

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	12	37	23
Average Queue (ft)	2	25	14
95th Queue (ft)	16	46	32
Link Distance (ft)	120	158	142
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: TacoBell Dr/Gold Rush drwy & Thornton Rd, Interval #2

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	12	36	28
Average Queue (ft)	1	16	7
95th Queue (ft)	7	38	25
Link Distance (ft)	120	158	142
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: TacoBell Dr/Gold Rush drwy & Thornton Rd, All Intervals

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	17	41	28
Average Queue (ft)	1	18	9
95th Queue (ft)	10	41	27
Link Distance (ft)	120	158	142
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, All Intervals: 0

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