Community Development Department
PO Box 2460
16345 Sixth Street
La Pine, Oregon 97739
Phone: (541) 536-1432, Fax: (541) 536-1462
Email: info@ci.la-pine.or.us

Site Plan Application

File Number # _____

Fee: Less than 1,000 sq ft	Fee: $ 1,100.00
Fee: 1,001 to 5,000 sq ft	Fee: $ 2,000.00
Fee: 5,001 to 10,000 sq ft	Fee: $ 3,500.00
Fee: More than 10,000 sq ft	Fee: $ 4,000.00

PROPERTY OWNER AND APPLICANT INFORMATION

Applicant Name David Reed Phone (541)551-0057 Fax N/A

Address PO Box 1808 City Bandon State OR Zip Code 97411

Email Info@waywardrstudio.com

Property Owner Ron LaFranchi Phone (541) 396-5571 Fax N/A

Address 580 N. Central Blvd City Coquille State OR Zip Code 97423

Email Ronsoil@yahoo.com

PROPERTY DESCRIPTION

Property Location (address, intersection of cross street, general area) _____

51385 Hwy 97, La Pine Oregon (22S-10E-15/TL 700) - Parcel 1 of parition file # 05PA-23 and TL 800

Tax lot number: T-15 R-13 Section _____ Tax Lot(s) _____

Zoning TC Total Land Area ___ _____ (Square Ft.) 1.04 (Acres)

Present Land Use Commercial - Motel

Describe Project (i.e. type of use, hours of operation, other project characteristics):

Narrative attached

PROJECT DESCRIPTION

Please give a brief description of the project: _____

Narrative attached

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PROFESSIONAL SERVICES

Architect/Designer/Engineer David Reed Phone 541 / 551-0057 Fax ____/_____

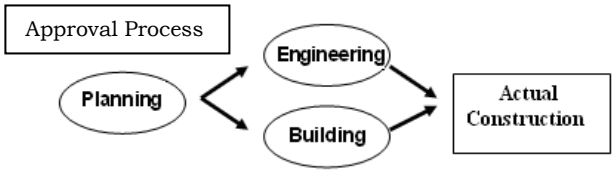
Address PO Box 1808 City Bandon State OR Zip Code 97411

Email Info@waywardrstudio.com

FOR OFFICE USE ONLY

Date Received: _____

Rec'd By: _____



CHECKLIST

REQUIRED ITEMS TO BE SUBMITTED FOR SITE AND DESIGN REVIEW.

Note: additional information *may be required* depending on the actual project.

- ☑ Complete Application. The application *must be signed by the property owner and the applicant*.
- ☑ Burden of proof statement, three (3) copies addressing approval criteria.
- ☑ Title Report or Subdivision Guarantee verifying ownership, *including legal description of land*.
- ☑ Fee Schedule (please see attached).
- ☑ Site and Landscape plan; Building Elevations; seven (7) full sized copies of each which must be folded individually, or in sets to 8 ½" X 11" in size and 1 reduced (8 ½ by 11 or 11 by 17) copy.
- ☑ Floor plans, three copies for each building which must be folded individually, or in sets to 8 ½" X 11" in size, plus 1 reduced (8 ½ by 11 or 11 by 17). Include the class of construction.
- ☑ Vicinity map.
- ☑ Trip Generation statement prepared by a professional transportation planner or equivalent. 5 copies, Note: if more than 200 ADT result (or at the discretion of the City Engineer), a Traffic Impact Study may be required.
- ☑ Preliminary Grading and Storm Drainage Plan. 3 copies (11" x 17")
- ☐ Fire Flow Analysis
- ☑ CD or electronic version of submittal items (Word, Jpeg or PDF)

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SITE PLAN

- □ Project name, scale (not to exceed 1" = 50'), north arrow.
- □ Date the site plan is prepared.
- □ Street names and locations of all existing and proposed streets, curbs, and sidewalks within or adjacent to the proposed development. Show distance to centerline of street.
- □ Zoning of each adjacent property.
- □ Square footages by use – existing and proposed (storage, office, meeting, etc.)
- □ Percentage of lot coverage and square footage by;
    a) structures
    b) recreation areas
    c) landscaping
    d) non-permeable surfaces (including parking areas, access aisles)
- □ Total number of parking spaces (existing and proposed).
- □ Total landscaped area square footage (existing and proposed).
- □ All vehicle and pedestrian access points and paths.
- □ Location of all proposed and existing buildings, fences and structures within the project area. Indicate which ones are to remain and which are to be removed.
- □ Location and size of all public utilities in and adjacent to the site, including:
    a) Water lines and meter sizes.
    b) Sewers, manholes and cleanouts.
    c) Storm drains and catch basins.
- □ The proposed location of:
    a) Connection to the City water system.
    b) Connection to the City sewer system.
    c) The proposed method of drainage of the site.
    d) Postal box locations, if more than 7 units are proposed.
- □ Location of existing canals and laterals.
- □ Retention of on-site drainage.
- □ Existing easements on the property.
- □ Location and size of any public areas within the development.
- □ All fire hydrants, existing and proposed, within 500 feet of the site.
- □ A topographic map of the site if the slope of the site exceeds 5%.
- □ Locations of all existing natural features including trees, natural drainage ways, rock outcroppings, et cetera.

BUILDING ELEVATIONS

- □ Drawings or sketches of all four views of each new structure.
- □ Building materials, colors (fascia, doors, trim, etc.), pitch of roof, shape and other design features of the building(s).
- □ All exterior mechanical devices.

LANDSCAPE PLAN (may be included on the site plan for smaller projects)

- □ Tree and plant species.

LA PINE
OREGON

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- ☐ Tree and plant sizes (new only).
- ☐ All trees having a six-inch trunk diameter 3' above grade or greater shall be shown on the landscape plan.
- ☐ Location/placement of existing and proposed vegetation to be retained, planted or removed.
- ☐ Approximate location of irrigation lines, and type of irrigation system to be used.

FLOOR PLAN

- ☐ All significant rooms within each structure; label or number rooms, including square footage for each room.
- ☐ Electrical / mechanical equipment areas.

LIGHTING PLAN

- ☐ All exterior light locations.
- ☐ Brochure, illustration, cut sheet or photo for each light fixture type to be used.

By signing this application, the undersigned certifies that he / she has read and understands the submittal requirements stated above. Note: if the applicant makes a misstatement of fact on the application regarding ownership, authority to submit the application, acreage, or any other fact material relied upon in making a decision, the City may upon notice to the applicant and subject to an applicant's right to a hearing declare the application void.

Owner: _____ Date: 10/15/2024
Signature

Applicant: _____ Date: 10/18/2024
Signature

SCCL SOUTH COAST CONSULTING LLC

P.O. Box 1104
Bandon, OR 97411
T: (559)708-8899
E: info@southcoastconsultingllc.com
W: www.southcoastconsultingllc.com

Land Use Consulting - Permitting Assistance - Feasibility & Project Analysis

City of La Pine
Attn: Community Development Department
P.O. Box 2460
La Pine, OR 97739

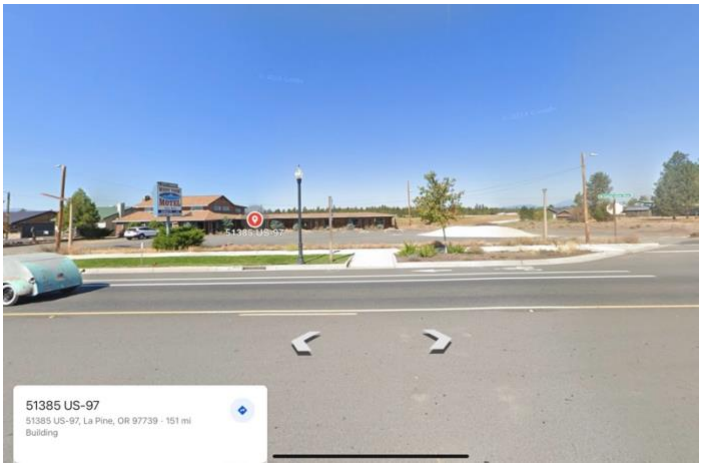
October 24, 2024

Re: Narrative and Burden of Proof for Commercial re-development at 22-10-15DA, TL 800 & a portion of TL 701, property more commonly known as 51385 Hwy 97, La Pine, OR.

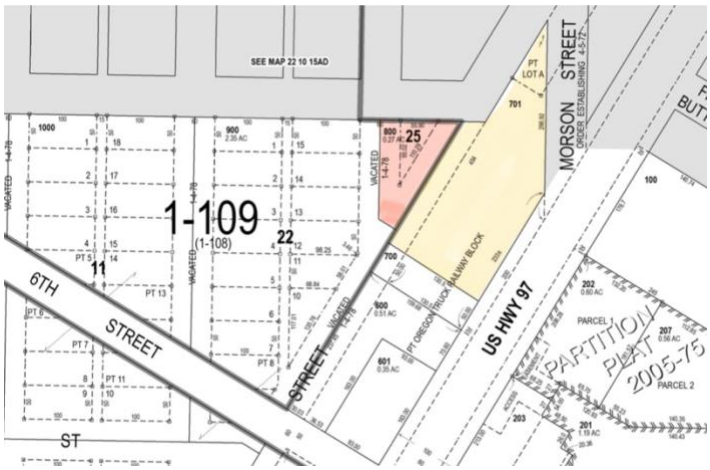
This document serves as the required burden of proof and proposed findings for the attached application; a consolidated request for Site Plan approval and a Lot Line Adjustment (consolidation) to construct a fuel station and convenience store on the subject property.

I. BACKGROUND

The current landowners purchased the subject property in 2021. At the time of purchase, the property was configured as two lots; a 0.27 acre, undeveloped lot (TL 800), and a 1.03 acre lot, developed with a 9-unit motel (TL 701).



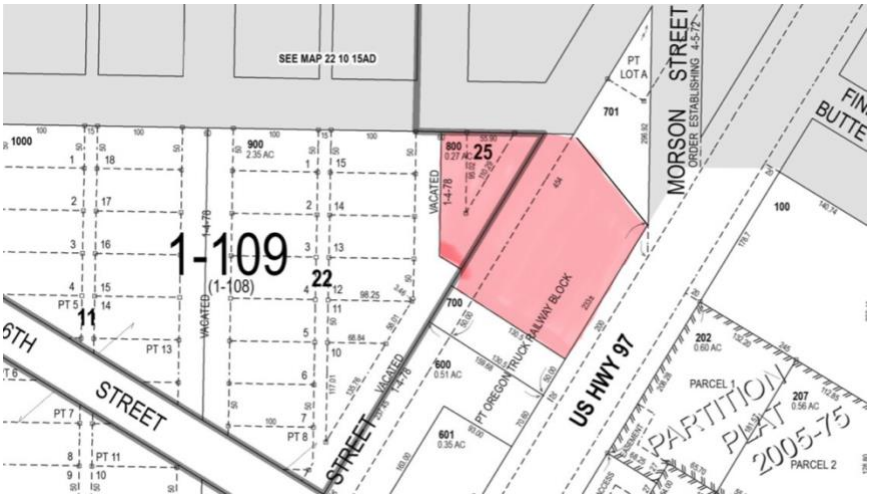
(Google Maps Streetview, October 2024)



(TL 800 and 701; Deschuttes County Plat Map, October 2024)

In 2023 the property owners applied to the City to partition the 1.03 acre lot (TL 701) into two smaller parcels (05PA-23). Tentative approval was granted on November 27, 2023, the property owners are diligently pursing final plat approval and intend to have all required public improvements approved for construction in 2025, prior to the tentative approval's November 27, 2025 expiration.

The subject property for the purpose of this application is comprised of an approximately 0.77 acre, newly created lot (portion of TL 701, referred to as "TL 701" in this application) and TL 800, 0.27 in size. Both lots are zoned Traditional Commercial and are in the Downtown Overlay Zone. This application also includes a request to consolidate TL 800 and TL 701, to create a 1.04 acres parcel referred to for the purpose of this application as "subject property".



(Subject property, incl. TL 800; not to scale, lot lines not exact)

The subject property's existing primary access is from Highway 97. No change in location of primary access is proposed. Improvement and use of the platted Hill Street right-of-way for secondary access to the proposed commercial development is requested in this application.

Portions of the subject property (TL 800) are located in the FEMA floodplain, Zone A; however, the development proposed in this application is not located within the areas of special flood hazard.

II. APPLICABLE CRITERIA – BURDEN OF PROOF

This request complies with all applicable criteria of the La Pine Code of Ordinances, as identified and described below:

ARTICLE 2: DEFINITIONS & USE CATEGORIES

CHAPTER 15.14 – COMMERCIAL USE CATEGORIES

Sec. 15.14.230. Quick vehicle servicing.

A.*Definition.* Quick vehicle servicing uses provide direct services for motor vehicles where the driver generally waits in the car before and while the service is performed. The development will include a drive-through facility, the area where the service is performed. Full-serve and mini-serve gas stations are always classified as a primary use (quick vehicle servicing), rather than an accessory use, even

when they are in conjunction with other uses.

B.*Examples.* Examples include full-serve and mini-serve gas stations, unattended card key stations, car washes, quick lubrication services, and department of environmental quality vehicle emission test sites.

C.*Accessory uses.* Accessory uses may include auto repair and tire sales.

D.*Exceptions.*

1.Truck stops are classified as industrial service.

2.Refueling facilities for the vehicles that belong to a specific use (fleet vehicles) which are on the site where the vehicles are kept, are accessory to the use.

Sec. 15.14.240. Retail sales and service.

A.*Definition.* Retail sales and service firms are involved in the sale, lease or rent of new or used products to the general public. They may also provide personal services or provide product repair or services for consumer and business goods.

B.*Examples.* Examples include uses from the three subgroups listed below:

1.*Sales-oriented.* Stores selling, leasing, or renting consumer, home, and business goods including art, art supplies, bicycles, clothing, dry goods, electronic equipment, fabric, furniture, garden supplies, gifts, groceries, hardware, home improvements, household products, jewelry, pets, pet food, pharmaceuticals, plants, printed material, stationery, and videos; food sales; and sales or leasing of consumer vehicles including passenger vehicles, motorcycles, light and medium trucks, and other recreational vehicles.

2.*Personal service-oriented.* Branch banks; laundromats; photographic studios; photocopy and blueprint services; health and fitness centers; hair, tanning, and personal care services; business, martial arts, and other trade schools; dance or music classes; taxidermists; mortuaries and funeral homes; veterinary clinics, kennels, and animal grooming services where limited to indoor facilities.

3.*Repair-oriented.* Repair of: TVs, bicycles, clocks, watches, shoes, guns, appliances and office equipment; photo or laundry drop off; quick printing; recycling drop-off; tailor; locksmith; and upholsterer.

C.*Accessory uses.* Accessory uses may include offices, storage of goods, manufacture or repackaging of goods for on-site sale, and parking.

Applicant's Finding: This application requests approval to re-develop the subject property with a 12 bay fuel station and ~3,000 square foot convenience store. The proposed uses are permitted in the property's base zone, and Downtown Overlay Zone.

Table 15.22-1. Use Regulations in the Commercial and Mixed-Use Zones

Use Category	*C*	*CRMX*	*CMX*	*CN*	*Special Use Standards*
Commercial Use Categories					
Campgrounds and RV parks	N	CU (2)	CU	CU	Section 15.108.020
Commercial lodging	P	L (2)	P	L (5)	—
Commercial parking	CU	L (2)	P	N	—
Commercial recreation	P	L (2)	P	P	Section 15.108.030
Eating and drinking establishments	P	L (2)	P	P	Mobile food unit sites subject to Section 15.108.070
Marijuana dispensary	P	N	P	N	Section 15.108.050
Quick vehicle servicing	P	CU	CU	N	—
Office	P	L (2)	P	P	—
Retail sales and service	P	L (2)	L/CU (4)	L/CU (6)	—

ARTICLE 3: ZONING DISTRICTS

CHAPTER 15.22 - COMMERCIAL ZONING

Sec.15.22.200. - Characteristics of the commercial and mixed-use zones.

A. *Traditional Commercial Zone (C).* The C zone allows the widest range of commercial uses and limits residential uses in order to preserve land for commercial needs and maintain compatibility between adjacent uses. A portion of the C zone is located in the Downtown La Pine Overlay Zone. The overlay zone restricts some uses and establishes additional design standards to facilitate the development of a pedestrian-oriented downtown area.

Applicant's Finding: This application requests approval to develop the subject property with two commercial uses. The property is located in the Downtown La Pine Overlay Zone and is subject to the pedestrian-friendly development standards of the overlay zone.

Sec. 15.22.300. – Use Regulations.

Applicant's Finding: Quick vehicle servicing and retail sales and service are permitted uses in the Traditional Commercial Zone (C). No special use standards are listed.

Sec. 15.22.400. - Development standards.

Applicant's Finding: The proposed development exceeds all minimum development standards, with a proposed 54-foot setback from fuel bays to the Hwy 97 boundary line, and a 84-foot setback from the Hwy 97 to the convenience store. The height of the proposed structures is approximately 24 feet, and lot coverage is 67%. A total of 15% landscaping is required, the proposed development includes 16% landscaping. Residential and mixed-use density standards do not apply.

Table 15.22-2. Development Standards in the Commercial and Mixed-Use Zones

Standard	*C*	*CRMX*	*CMX*	*CN*
Minimum lot width	None	None	None	25 feet
Minimum setbacks	—	—	—	—
- Front or street-side yard	20 feet	20 feet	20 feet	20 feet
- Side yard	None	10 feet; None for townhomes	10 feet; None for townhomes	10 feet; None for townhomes
- Rear yard	None	10 feet	10 feet	15 feet
Maximum building height	70 feet	45 feet	45 feet	45 feet
Maximum lot coverage	80%	60%	60%	50%
Minimum landscaped area	See 15.18.500 and chapter 15.82			
Minimum and maximum density	Residential and mixed-use developments are subject to the minimum and maximum density standards of the RMF zone (see section 15.18.500).			

Sec. 15.22.500. Additional standards.

A.Corner lot frontages. For commercial uses located on corner lots where one street is predominantly residential, and one street is predominantly commercial, any commercial structure shall front on the street that is predominantly commercial.

B.Landscaping standard. Any portion of a lot developed for commercial uses which are not used for buildings, other structures, parking or loading spaces, or aisles, driveways, sidewalks, and designated storage areas shall be planted and maintained with grass or other all-season ground cover vegetation. Grass shall be kept neatly mowed. Landscaping with trees and shrubs is permitted and encouraged. See additional landscaping and buffering standards in article 5.

C. Screening requirements.

1.Outdoor activities. Any business, servicing, or processing shall be conducted within a completely enclosed building, except for parking and loading facilities and for "drive-in" type establishments offering goods or services to customers waiting in parked motor vehicles.

2.Outdoor storage. All areas of a site containing or proposed to contain outdoor storage of materials, equipment, and vehicles, and areas containing junk, salvage materials, or similar contents, shall be screened from view from adjacent rights-of-way and residential uses by a sight-obscuring fence, wall, landscape screen, or combination of screening methods. See additional buffering and fence standards in article 5.

3.Outdoor merchandise display. The outdoor display of merchandise for sale is not required to be screened from view, provided that all merchandise is located behind building setback lines unless otherwise approved by the city (e.g., to allow sidewalk sales).

D.Vehicle access. Access driveways and entrances shall be permitted in a number and locations in which sight distance is adequate to allow safe movement of traffic in or out of the driveway or entrance, the free movement of normal highway traffic is not impaired, and the driveway or entrance will not create a hazard or

an area of undue traffic congestion on highways to which it has access. The city may require the permit applicant to submit engineering data and/or traffic analyses to support its proposed plan of access driveways and entrances. See additional access and circulation standards in article 5.

E. Emissions. No use shall emit any noxious, toxic, or corrosive fumes or gases nor shall it emit any offensive odors.

F. Noise. All uses shall provide necessary shielding or other protective measures against interference occasioned by mechanical equipment or uses or processes with electrical apparatus.

G.Lighting. All exterior lighting shall be so placed and shielded so as not to create a nuisance for adjacent properties.

Applicant's Finding: The subject property is not a corner lot. Proposed landscaping, screening, and vehicle access as depicted in the proposed plans complies with the applicable standards of Article 5. The requested uses do not emit any noxious, toxic, or corrosive fumes, or other offensive emissions or noises. Fuel station pumps are equipped with emission control devices as required by state and federal law. A lighting plan is not included in this application; however, the applicant agrees that all exterior lighting will be placed and shielded to mitigate potential nuisance for adjacent properties.

ARTICLE 4: OVERLAY ZONES

CHAPTER 15.30 – OVERLAY ZONES GENERALLY

Sec. 15.30.020. - Scope of overlay zones.
Overlay zone regulations are applied in conjunction with a base zone. The overlay zone provisions may modify any portion of the regulations of the base zone or other regulations of this Title. The provisions may apply additional requirements or allow exceptions to general regulations. The specific regulations of the base zone or other regulations of this Title apply unless the overlay zone provides other regulations for the same specific topic. However, when there is a conflict between the overlay zone regulations and the base zone or other regulations of this Title, the overlay zone regulations control.

Applicant's Finding: The subject property is located in the Downtown Overlay Zone which has separate regulations, specific but not limited to design standards, parking, etc. that are distinct from the property's base zoning. This proposal complies with all applicable standards of the Downtown Overlay Zone, and to the extent practical, the property's base zoning.

CHAPTER 15.40 – DOWNTOWN OVERLAY ZONE

Sec. 15.40.010. Purpose.

The purpose of the downtown overlay zone is to create a pedestrian-oriented downtown area that will serve as the center of commercial and civic activity in the community and as a destination for residents and visitors. Pedestrian-oriented places provide visual interest at eye-level, feel safe and comfortable for people walking, contain a variety of activities and services, are easy to navigate on foot, and provide open areas and amenities for gathering and resting. This overlay zone modifies the regulations of the underlying base zones to ensure pedestrian-oriented land uses and design. Within the overlay, streets have been designated as either "Storefront Streets" or "Pedestrian-Friendly Streets."

A. Storefront streets. Storefront streets prioritize the pedestrian experience. These streets provide places to walk that are not only safe and comfortable, but that also provide visually interesting and engaging experiences. This is achieved through placing buildings closer to the street, designing buildings with architectural detail, and encouraging storefront shopping.

B. Pedestrian-friendly streets. Pedestrian-friendly streets balance the pedestrian experience with the need to accommodate a range of development types. These streets are safe and comfortable for pedestrians. Buildings are encouraged to be placed close to the street, but not required. Other standards are relaxed slightly to provide flexibility in design while maintaining a pedestrian-friendly environment.

Applicant's Finding: The subject property abuts Highway 97 with a frontage of approximately 187-feet. Highway 97 is designated as a Pedestrian-Friendly Street.

Sec. 15.40.020. - Applicability.

A. Zone boundary and street designations. The boundaries of the downtown overlay zone are depicted in Figure 15.40-1. The standards of this chapter apply to development and redevelopment on properties within this boundary. Specific standards within this chapter apply to properties abutting streets designated as storefront streets and pedestrian friendly streets, as shown on Figure 15.40-1. Downtown Overlay Zone.

B.New buildings. The standards of this chapter apply to all buildings subject to site plan review that include over 200 square feet in floor area.

Applicant's Finding: The subject property is located in the Downtown La Pine Overlay Zone and the proposal is subject to the specific development standards of the overlay zone as well as the requirements of the property's base commercial zoning.

Sec. 15.40.025. Downtown design exception.

A.The planning commission may allow exceptions to the design standards in 15.40.060 through 15.40.090 without the need to obtain a variance pursuant to chapter 15.320. For each standard for which a design exception is sought, the applicant must demonstrate that at least one of the following circumstances is met:

1.The physical characteristics of the site or existing structure (e.g., steep slopes, wetlands, other bodies of water, trees or other significant natural features of the site, buildings or other existing development, utility lines and easements, etc.) make compliance with the standard impractical; or

2.The alternative design better complies with the following:

a.The purpose of the Downtown La Pine Overlay as described in section 15.40.010; and

b.The intent of the standard for which the exception is being sought.

B.Requests for a downtown design exception are subject to Type III review in accordance with the procedures in article 7. The request may be considered as part of the development application.

Applicant's Finding: No design exceptions are proposed.

Sec. 15.40.030. Uses.

Uses permitted in the underlying base zone are permitted in the downtown overlay zone, except that the following uses and activities are prohibited on sites abutting a storefront street:

A.New drive-up and drive-through uses.

B.New auto sales and service, including fuel stations.

C.Ground floor residential dwelling units, except for horizontal mixed use where the residential dwelling units are located behind other uses.

Applicant's Finding: The subject property does not abut a storefront street. The proposed activities and uses in this application are permitted uses on property abutting pedestrian-friendly streets.

Sec. 15.40.040. Options for required parking.

A.Credit for on-street parking. The off-street parking standards of chapter 15.86 may be reduced by one parking space for every one on-street parking spaces located adjacent to the subject site, provided the parking spaces meet the dimensional standards of section 15.86.030.

B.Off-site parking. To allow flexibility in the location of required parking and to encourage efficient utilization of land, required parking may be located up to 800 feet from the development. Such parking shall be designated and signed as assigned to the remote development. Confirmation of the parking assignment shall be required prior to occupancy of the development.

C.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) or that one of the sites has an excess supply of parking. The right of joint use must be evidenced by a recorded deed, lease, contract, or similar written instrument establishing the joint use. Shared parking requests shall be subject to review and approval through a Type II application.

Applicant's Finding: A total of sixteen (16) off-street parking spaces are proposed in compliance with chapter 15.86. No off-site parking is proposed. The total number of proposed parking spaces substantially exceeds the minimum number (6) of required off-street parking for the two proposed commercial uses.

Sec. 15.40.050. Summary of design standards.

Table 15.40-1 provides an overview of the design standards that apply within the downtown overlay zone. See the referenced section of this chapter for specific regulations.

Applicant's Finding: No parking is proposed between the building and Highway 97. The proposed development complies with all pedestrian-friendly street design standards.

Table 15.40-1. Summary of Design Standards

Standard	*Storefront Streets*	*Pedestrian-Friendly Streets*	*Code Section*
Building Setbacks			
No minimum front setbacks	√	√	15.40.060.B
No parking between building and the street	√	√	15.40.060.C
75% of building within 5 ft. of front lot line	√		15.40.060.D
Building Entries			
Required walkway connection	√	√	15.40.070.B
Entry orientation	√	√	15.40.070.C [15.40.070.D]
Entry design	√	√	15.40.070.D [15.40.070.C]
Window and Weather Protection Requirements			
Minimum window requirements (as % of the ground level wall area)	60%	40%	15.40.080.B
Weather protection required	√		15.40.080.C
Architectural Design Standards			
Architectural design standards	√	√	15.40.090

Sec. 15.40.060. Setbacks.

A.Intent. The intent of the setback standards is to help ensure that buildings are placed close to the sidewalk to create both visual interest and a sense of enclosure or "an outdoor room." Buildings set back from the street with parking next to the sidewalk are less interesting and less comfortable for pedestrians. These standards apply to the primary building(s) on a site (e.g., not to accessory structures).

B.Front setbacks. No minimum front setback standards apply to developments in the downtown overlay zone.

Applicant's Finding: Though no minimum front setback applies to this application, all proposed structures significantly exceed a 20 foot front setback. The proposed convenience store is located

approximately 84 feet from the front property line, with the first fuel island located approximately 54 feet from the front property line.

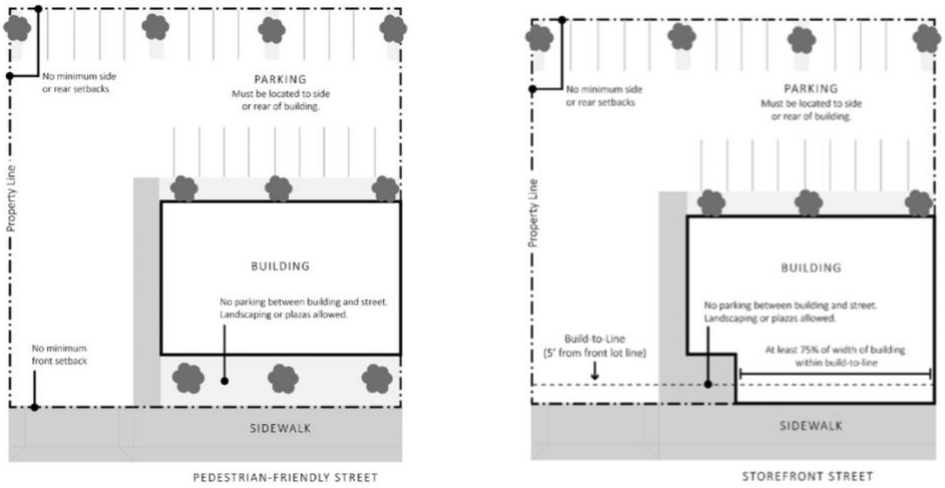
C.Location of parking areas. No vehicle parking or circulation areas are permitted between the front of the building and a storefront street or a pedestrian-friendly street (see Figure 15.40-3). If the development site has a frontage on both types of streets, then this standard only applies to the frontage on the storefront street. If the development site has frontage on more than one storefront street, then this standard shall only apply to one storefront street.

Applicant's Finding: No parking areas are proposed between the front of the building and Highway 97.

D.Build-to-line standard. Development sites abutting a storefront street must conform to a build-to-line standard

(see Figure 15.40-4). The purpose of this standard is to promote a continuous building frontage that creates visual interest and a sense of enclosure on the street. The standard is met when at least 75 percent of the width of the building is located within five feet of the front lot line that faces a storefront street. If the development site has frontage on more than one storefront street, then this standard shall only apply to one storefront street. The city planning official may waive this requirement where it finds that one of the following conditions is met:
1.The applicant proposes extending an adjacent sidewalk or plaza for public use, or some other pedestrian amenity is proposed to be placed between the building and public right-of-way.
2.A significant tree or other environmental feature precludes strict adherence to the standard and will be retained and incorporated in the design of the project.
3.A public utility easement or similar restricting legal condition that is outside the applicant's control makes conformance with the build-to line impossible. In this case, the building shall instead be placed as close to the street as possible given the legal constraint, and pedestrian amenities (e.g., plaza, courtyard, landscaping, outdoor seating area, etc.) shall be provided within the street setback.

No Parking between the Primary Building and a Pedestrian-Friendly or Storefront Streets



Applicant's Finding: Highway 97 is not a storefront street. These standards do not apply.

Sec. 15.40.070. Building entries.

B. [A.]Intent. These provisions ensure that all entrances to a primary building are visible and connected to the sidewalk by a pedestrian walkway. These features are important when the building is accessed by a pedestrian from the street (rather than from the parking lot). These standards apply to the primary building(s) on a site (e.g., not to accessory structures).

B.Required walkway. All primary entrances to a building (e.g., tenant entrance, lobby entrance, breezeway entrance, or courtyard entrance) must be connected to the sidewalk by a direct and continuous walkway.

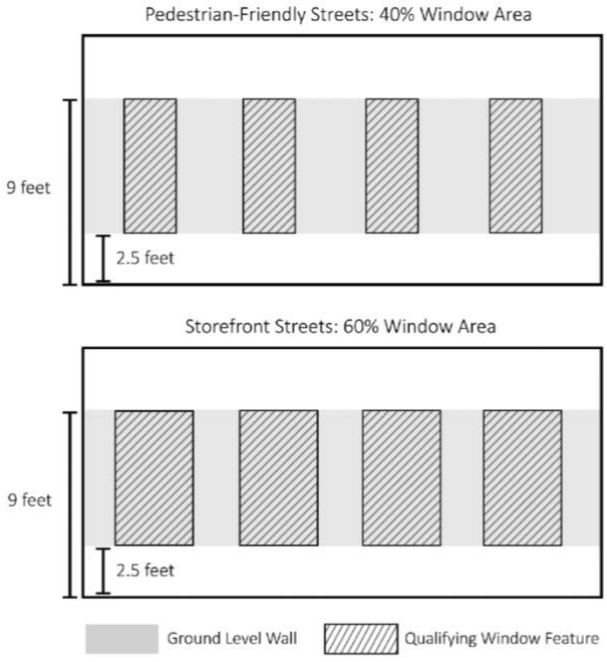
C.Entry design. The primary building entrances must be architecturally emphasized through the use of one or more of the following features: recessed doorway(s); overhangs or canopies; transom windows; ornamental light fixtures; larger, transparent or more prominent doors; or pilasters or columns that frame the principal doorway.

D.Entry orientation. All buildings must have at least one primary entrance facing that street (i.e., within 45 degrees of the street property line). For multi-tenanted nonresidential buildings, buildings with multiple entrances, or buildings with multiple frontages, only one primary entrance must comply with this standard. For multi-tenanted residential buildings on storefront streets, all residential units on the ground floor must have a private exterior entrance.

Applicant's Finding: The primary entrance to the convenience store is perpendicular to Highway 97, however secondary entry facing Highway 97 and a walkway from the Highway 97 sidewalk to the store is proposed to comply with these standards.

Sec. 15.40.080. Window and weather protection requirements.

C. [A.]Intent. Window area or "glazing" requirements ensure that building facades will be composed of windows that provide views of activity, people, and merchandise, creating an interesting pedestrian experience. The weather protection standards are intended to create a more comfortable experience for pedestrians on the sidewalk by providing protection from sun and rain. This standard is limited to storefront streets, where buildings are required to directly front the sidewalk and pedestrian comfort is a high priority. These standards apply to the primary building(s) on a site (e.g., not to accessory structures).



B.Window requirements.
1.Minimum window area required for nonresidential buildings.
a.Building facades facing a pedestrian-friendly street must have windows, display areas, or glass doorways for at least 40 percent of the area of the ground level wall area (see Figure 15.40-5).
b.Building facades facing a storefront street must have windows, display areas, or glass doorways for at least 60 percent of the area of the ground level wall area (see Figure 15.40-5).
c.The ground level wall area is the wall area above 30 inches and below 108 inches, as measured from finished grade.
2.Minimum window area required for residential buildings. Building facades that face a public street must have windows or glass doorways for at least 15 percent of the area of the entire facade.
3.Transparency. All ground floor windows shall have a visible transmittance of 60 percent or higher.

C.Weather protection. On building facades facing a storefront street, weather protection for pedestrians must be provided along at least 75 percent of the facade. Weather protection may be an awning, canopy, arcade, colonnade, recessed entry, or some combination of these elements. Where provided, weather protection shall meet the following standards:
a.Be constructed of glass, metal, or a combination of these materials;
b.Project at least five feet from the building facade;
c.Have at least ten feet clearance above the sidewalk;

d.Match the width of the storefront or the window opening(s); and
e.Not obscure any existing or proposed transom windows.

Applicant's Finding: The proposed convenience store does not face Hwy 97, which is a pedestrian friendly street; however, the front façade of the structure complies with the 40% window area requirement. Storefront street weather protection standards do not apply to this application, but a covered entry compliant with these standards is included in the proposal.

Sec. 15.40.090. Architectural design standards.

A.Intent. The facade articulation standards in [subsection] B work together to help ensure that building facades that have variation and depth in the plane of the building in order to create a more interesting and welcoming environment to pedestrians. The screening standard in [subsection] C ensures that mechanical equipment is screened or otherwise minimized so that it does not detract for the pedestrian environment. The materials and Cascadian Style standards in [subsections] D and E are intended to create a distinct brand or identity for Downtown La Pine.

B.Articulation. All building exterior walls greater than 100 feet in length that orient to a street or public space must have breaks in the wall plane (articulation) of not less than one break for every 40 feet of building length or width, as applicable, as follows:
1.A "break" is a feature or variation in the wall plane that projects or recedes at least six inches for a length of at least two feet. Breaks may include, but are not limited to, an offset, recess, window reveal, pilaster, frieze, pediment, cornice, parapet, gable, dormer, eave, coursing, canopy, awning, column, building base, balcony, permanent awning or canopy, marquee, or similar architectural feature.
2.Changes in paint color and features that are not designed as permanent architectural elements, such as display cabinets, window boxes, retractable and similar mounted awnings or canopies, and other similar features, do not meet the break-in-wall-plane standard.

Applicant's Finding: The proposed building is approximately 70 feet in length, articulation standards do not apply.

C.Screening of mechanical equipment.
1.Building walls. Where mechanical equipment, such as utility vaults, air compressors, generators, antennae, satellite dishes, or similar equipment, is permitted on a building wall that abuts a public right-of-way or civic space, it shall be screened from view from the right-of-way or civic space. Standpipes, meters, vaults, and similar equipment need not be screened but shall not be placed on a front elevation when other feasible alternatives exist; such equipment shall be placed on a side or rear elevation where feasible.
2.Rooftops. Except as provided below, rooftop mechanical units shall be setback or screened behind a parapet wall so that they are not visible from any public right-of-way or civic space. Where such placement and screening is not feasible, the decision authority may approve painting of mechanical units in lieu of screening; such painting may consist of muted, earth-tone colors that make the equipment visually subordinate to the building and adjacent buildings, if any.

3.Ground-mounted mechanical equipment. Ground-mounted equipment, such as generators, air compressors, trash compactors, and similar equipment, shall be limited to side or rear yards and screened with fences or walls constructed of materials similar to those on adjacent buildings. Hedges, trellises, and similar plantings may also be used as screens where there is adequate air circulation and sunlight, and irrigation is provided. The city may require additional setbacks and noise dampening equipment for compatibility with adjacent uses.

Applicant's Finding: No rooftop or ground mounted mechanical equipment is proposed in this application.

D.Materials. Building materials must be consistent with the Cascadian Style.
1.Primary materials. A primary material is the predominant building material that covers a minimum of 60 percent of the building's exterior walls. Acceptable primary materials are identified in Table 15.40-2.
2.Secondary materials. A secondary material is not the predominant building material. Any one secondary material shall not cover more than 40 percent of the building's exterior walls. Acceptable secondary materials are identified in Table 15.40-2.
3.Base materials. The building base shall be defined as the lower portion of a wall just above where it meets ground, to 24 inches above grade. Base materials are identified in Table 15.40-2. Use of these materials shall be limited to the building base unless the material is also identified as an acceptable primary or secondary material. If the base material is identical to material used on the portion of the wall directly above the base, then a change in material color, texture, or a horizontal band must be used to differentiate the base.

Table 15.40-2. Building Materials (Exterior Walls)

Material	*Allowed on Exterior Wall?*		
	Primary	*Secondary*	*Base*
Masonry, which includes natural and natural-looking stone, and rusticated brick or split-faced, colored concrete blocks	Yes	Yes	Yes
Wood board siding or wood shingles. Fiber cement boards or fiber reinforced extruded composite boards are also acceptable provided they have the appearance of natural wood	Yes	Yes	No
Architectural grade plywood, fiber cement, or wood composite panels (T1-11 plywood or OSB siding are not permitted)	No	Yes	No
Glass (except mirrored glass)	Yes	Yes	No
Commercial-grade stucco	No	Yes	Yes
Commercial-grade brick	No	Yes	Yes
Steel	No	Yes	No
Cast-in-place or pre-cast concrete	No	Yes	Yes
Plastic	No	No	No
Vinyl siding	No	No	No
Mirrored glass	No	No	No
Corrugated metal or fiberglass	No	No	No
Standard form concrete block (not including split-faced, colored or other block designs that mimic stone, brick or other similar masonry)	No	No	No
Back-lighted fabrics, except that awning signs may be backlit fabrics for individual letter or logos	No	No	No

Applicant's Finding: The proposed building is designed with a mix of fiber cement board material, including board and batten, shakes, and board lap siding. Changes in material, color, texture and a horizontal band are included comply with these standards.

E.Cascadian architectural elements. Building exterior walls facing a public street shall incorporate at least three of the following features. Using these features may also help meet other Development Code requirements, such as those related to building articulation or weather protection:
1.Exposed, heavy timbers;
2.Exposed natural wood color beams, posts, brackets and/or trim (e.g., eaves or trim around windows);
3.Natural wood color shingles used as siding or to accent gable ends (or similar usage);
4.Metal canopies;
5.Heavy metal brackets (e.g., cast iron or similar appearance), which may be structural brackets or applied as cosmetic detailing;
6.Pitched roof over more than 50 percent of the building (roof pitch must have a rise/span ratio of at least 4/12) which is constructed of either metal painted a muted earthtone or other fire resistant material (e.g., no wood shingle roofs are permitted); and
7.Other similar features.

Applicant's Finding: Cedar fascia boards, box beams, and metal roofed overhangs are proposed for the Highway 97 facing façade to comply with this standard.

ARTICLE 5: DEVELOPMENT STANDARDS

CHAPTER 15.82 – LANDSCAPING, BUFFERING & FENCING

Sec. 15.82.010. Landscaping and buffering requirements.

The following minimum landscape requirements are established for all developments subject to site plan approval, unless approved otherwise by the reviewing authority:

A.Exemption. The provisions of this section may be exempted for uses existing on or before the effective date of this Development Code that are a permitted use in a specific zone in an existing building or buildings on a lot or parcel of land of the scale that there is no remaining room for landscaping; this exemption shall also apply to the exterior remodeling and/or expansion of not more than 25 percent of the total square footage of all enclosed structures on a lot or parcel existing under a unit ownership on or before the effective date of this Development Code.

Applicant's Finding: No exemption to this section of the Development Code is requested.

B.Area required. Except as approved otherwise by the city, the following minimum percent of a parcel area shall be landscaped for the following uses:

1. Duplexes and triplexes: 25 percent.
2. Multi-family dwelling complexes containing four or more units and commercial residential mixed uses (CRMX): 20 percent.
3. Commercial uses including mixed use commercial (CMX): 15 percent.
4. Industrial uses. A minimum five-foot landscaped buffer along any adjoining public right-of-way of a collector or arterial street or highway, which may be computed toward an overall requirement of ten percent.
5. Minimum area requirements may include landscaping around buildings, in parking and loading areas, outdoor recreational use areas, screening and buffering areas, and surface water drainage areas.

Applicant's Finding: This application is a request for approval of commercial development, the proposed landscaping area is approximately 16% which complies with the 15% minimum required.

C.Landscaping defined. Required landscaping may include, but is not limited to, a combination of any of the following materials: living plant material such as trees, shrubs, groundcover, flowers and lawn (including native vegetation); and nonliving materials such as benches, walkways and courtyards, consisting of brick, decorative rock or other decorative materials. The total amount of nonliving materials (including bark dust, chips, aggregate, or other non-plant ground covers) shall not exceed more than 50 percent of the required landscape area.

Applicant's Finding: Proposed landscaping is a mixture of native plants, grasses and hardscaping, as described in the enclosed landscape plan. The total amount of hardscaping does not exceed 50% of the required landscape area.

D.Existing vegetation. Existing site vegetation may be utilized to the maximum extent possible consistent with building placement and the applicable proposed landscape plan.

Applicant's Finding: All landscaping proposed in this application is new. Existing site vegetation will be removed during the demolition of the motel.

E.Parking lots. Parking lots with space for ten or more vehicles must be landscaped in accordance with the following minimum requirements:

1.In commercial and residential developments, parking areas shall be divided into bays, and between or at the end of each parking bay a curbed planter containing at least 16 square feet may be required.

2.If required, each planter shall contain at least one tree or shrub and ground cover.

3.The areas shall be designed to be protected from being damaged by vehicles using the parking area.

4.Unless sidewalks are provided adjacent to a structure, customer or resident parking areas should be separated from the exterior wall of a commercial or residential structure by a minimum five-foot strip of landscaping.

5.Where a parking, loading or driveway area serving a multi-family, commercial, industrial or government use abuts a public right-of-way of a collector or arterial street or a local street across from a residential zone, or abuts a residential zone, a screen planting or other approved landscaped planter strip may be required between the parking area and the right-of-way without encroaching into a clear vision area or sidewalk.

Applicant's Finding: The proposed parking lot features 16 spaces in two parking bays with curbed, landscaped planters. Sidewalks, adjacent to the proposed structure are are proposed, as well as a planter strip along the front property line between Highway 97.

F.Buffering and screening.

1.Purpose. The purpose of buffering and screening requirements are to reduce the impacts of a proposed use on adjacent uses and zones which provide for different types of uses. The city may waive or reduce the requirements where existing topography or vegetation is appropriate or otherwise negates the effectiveness or intended purpose or benefits of the buffering and screening.

2.Where any permitted principal and/or accessory use in a commercial or industrial zone abuts any land zoned RSF, RMF, RMP or TA the following buffer and screening shall be required. These requirements shall apply in instances where such use is being newly developed on vacant land, expanded in floor area by 50 percent or greater, or removed and a new use developed.

3.Within commercial zones. A buffer strip at least ten feet wide shall be provided and maintained along the entire length of a side or rear yard where it abuts an RSF, RMF, RMP, or TA zone. Buffer strips shall not be used for parking, storage of vehicles, equipment, or materials, nor for any other use incompatible with their purpose as a visual, noise, dust, and pollution barrier. The buffer strip shall contain suitable screening, defined as either of the following:

a.A solid fence or wall, architecturally compatible with existing structures in the area, no less than five feet nor more than eight feet in height; or

b.A sight-obscuring planting of evergreens, not less than four feet in height at the time of planting and of a variety that will maintain full, dense growth from the ground up to a height of not less than six feet upon maturity, planted at a spacing of the lesser of eight feet or the diameter of a mature specimen of the species being planted.

c.Areas of the buffer strip not covered with a fence, wall, or screening plantings, shall be planted with appropriate ground cover vegetation, including native species. Xeriscape methods are highly encouraged.

d.Installation and maintenance of the buffer and screening shall be the responsibility of the owner of the property on which the "C" type zone permitted use is located. Installation must be completed prior to issuance of a certificate of use and occupancy by the city. Fences or walls must be maintained in safe and structurally sound condition. Dead or diseased plants shall be removed and replaced in a timely manner. Grass shall be kept neatly mowed.

4.Within industrial zones. A buffer strip at least 30 feet wide shall be provided and maintained along the entire length of a side or rear yard where it abuts any RSF, RMF, RMP, or TA zoned land. Buffer strips shall not be used for parking, storage of vehicles, equipment, or materials, nor for any other use incompatible with their purpose as a visual, noise, dust, and pollution barrier. The buffer shall meet the following standards:

a.The buffer shall be planted with evergreens capable of obtaining and maintaining a dense growth to a full height and a full canopy diameter of no less than 12 feet. The minimum height at

the time of planting shall be six feet. Plants shall be situated in two rows within the buffer strip, each row being located at least ten feet from the edge of the buffer strip. Plants in each row shall be spaced no more than 20 feet center-to-center and the two rows shall be situated in an alternating pattern so that the trees in one row are located centrally between the trees in the other row. Plants shall be allowed to obtain a minimum height of 12 feet and shall not be trimmed below that height thereafter.

b. Installation and maintenance of the buffer and screening shall be the responsibility of the owner of the property on which the industrial use is located. Installation must be completed prior to issuance of a certificate of use and occupancy by the city. Dead or diseased plants shall be removed and replaced in a timely manner. Xeriscape methods and use of native species is highly encouraged.

c. A property owner may not sell, lease, or otherwise transfer property if such action results in a reduction of a separation distance for a commercial or light manufacturing use below the minimum required in this section. Likewise, a property owner may not remove or alter natural vegetation or landforms serving upon a waiver from the city as buffer and screening for a commercial or light manufacturing use if such action results in the natural buffer and screening being less effective than as required in this and other sections of this Development Code.

5. A buffer or screening area may only be occupied by screening utilities and landscaping materials, but the same may be located within the required yard or setback requirements provided vision clearance requirements are complied with.

6. In lieu of the foregoing requirements, an applicant may provide for landscaping and screening, including plantings, fences, walls, walks and other features designed to afford the same degree of buffering as the standards above. A plan and specifications for an alternative shall be reviewed and approved by the review authority.

Applicant's Finding: The subject property does not abut residential zoned land, is not zoned industrial, and is not identified in the TA overlay zone. These provisions do not apply.

G. Plant material installation standards. Except as otherwise approved by the city, the following standards shall apply to plant materials and the installation thereof as provided in accordance with the provisions of this section:

1. Landscape plant materials shall be properly guyed and staked, and shall not interfere with vehicular or pedestrian traffic or parking and loading.
2. Trees shall be a minimum size of six feet in height and be fully branched at the time of planting.
3. Shrubs shall be supplied in one-gallon containers or six-inch burlap balls with a minimum spread of 12 inches.
4. Rows of plants should be staggered to provide for more effective coverage.

Applicant's Finding: The proposed landscaping plan complies with these code provisions as depicted in the landscaping plan.

H. Maintenance and plant survival. All landscaping approved or required as a part of a development plan shall be continuously maintained, including necessary watering, weeding, pruning and replacement of plant materials. Except where the applicant proposes landscaping consisting of drought-resistant plantings and materials that can be maintained and can survive without irrigation, landscaped areas shall be irrigated. If plantings fail to survive, it is the responsibility of the property owner to replace them.

Applicant's Finding: The property owner acknowledges this code provision and has proposed a landscaping plan designed with drought resistant plantings and materials that can be maintained and survive without irrigation.

CHAPTER 15.86 – PARKING & LOADING

Sec. 15.86.020. Off-street loading.

A.Every commercial and industrial use which requires the receipt or distribution of material or merchandise by trucks with a 40-foot or longer wheelbase at a frequency of one or more vehicles per week shall provide off street loading spaces in sufficient number to adequately serve the number and frequency of vehicle shipping and receiving projected for the use. The applicant shall provide supporting evidence of the projected shipping and receiving and how the number of spaces to be provided will be adequate.

Applicant's Finding: Approximately 1,200 square feet of off-street loading to accommodate the proposed uses is depicted in the proposed site and circulation plan. Location of this area onsite in an area that will not affect regular circulation of the site. Actual shipping and receiving needs will vary based on seasonal demands.

B.Where an off-street loading space is required, it shall be large enough to accommodate the largest vehicle that is expected to serve the use without obstructing vehicles or pedestrian traffic on adjacent streets and driveways. Each off-street loading space shall not be less than 12 feet wide by 55 feet long unless otherwise approved by the city through site design review.

Applicant's Finding: Proposed off-street loading space is approximately 17 feet by 75 feet in length.

C.Off-street loading space(s) shall also have adequate adjacent area for vehicle maneuvering so that vehicles using the space(s) are not required to back-up onto or back-up from a public street or alley to use the space. Where parking areas are prohibited between a building and the street, loading areas are also prohibited.

Applicant's Finding: Proposed off-street loading area is oriented to allow continuous circulation of the site without impeding access or vision clearance.

D.Exceptions and adjustments. The city, through site design review, may approve a loading area adjacent to or within a street right-of-way where it finds that loading and unloading operations are short in duration (i.e., less than one hour), infrequent, do not obstruct traffic during peak traffic hours, do not interfere with emergency response services, and are acceptable to the applicable roadway authority.

Applicant's Finding: Off-street loading needs are expected to be short in duration. The proposed location for this area was chosen to allow continuous site access and traffic circulation without impeding vision clearance areas or driveways.

Sec. 15.86.030. Off-street parking - required.

A.Location of off-street loading and parking spaces. Except as otherwise permitted by this Development Code, required off-street loading and parking spaces shall be located on the same lot with the principal use they are intended to serve. In no case shall a required loading space be part of the area used to satisfy the parking requirements and vice versa. Also, in no case shall the required loading or parking space(s) of one use be used to satisfy the loading or parking space requirements of another use.

Applicant's Finding: This application includes a lot line adjustment request to consolidate TL 800, to comply with this code provision. Nine of the proposed 16 parking spaces are located on TL 800.

B.Encroachment or reduction. A required loading or parking space shall not be encroached upon by a structure, storage, or other use, nor shall the number of spaces be reduced without replacement of a commensurate number of spaces in accordance with this section unless a special exception or variance has been approved.

Applicant's Finding: Required loading and parking spaces comply with this provision.

C.Calculations of amounts of required and allowed parking.

1.When computing parking spaces based on floor area, parking structures and non-leasable floor spaces, such as storage closets, mechanical equipment rooms, and similar spaces, are not counted.

2.The number of parking spaces is computed based on the primary uses on the site except as stated in subsection 3, below. When there are two or more separate primary uses on a site, the minimum and maximum parking for the site is the sum of the required or allowed parking for the individual primary uses. For shared parking, see subsection I below.

3.When more than 20 percent of the floor area on a site is in an accessory use, the required or allowed parking is calculated separately for the accessory use. An example would be a 10,000 square foot building with a 7,000 square foot warehouse and a 3,000 square foot accessory retail area. The minimum and maximum parking would be computed separately for the retail and warehouse uses.

Applicant's Finding: A total of sixteen (16) off-street parking spaces are proposed which exceeds the Six (6) required parking for the proposed uses.

D.Use of required parking spaces. Except as otherwise provided by this section, required parking spaces must be available for residents, customers, or employees of the use. Fees may be charged for the use of required parking spaces. Required parking spaces may not be assigned in any way to a use on another site, except for shared parking pursuant to subsection I.

Applicant's Finding: The property owner acknowledges this provision.

E.Improvement of parking areas. Motorized vehicle parking is allowed only on streets with an improved shoulder of sufficient width; within garages, carports, and other approved structures; and on driveways or parking lots that have been developed in conformance with this Development Code.

Applicant's Finding: No street parking is proposed. The proposed parking lot has been designed in conformance with this Development Code.

F.Minimum number of off-street automobile parking spaces. Except as required for Americans with Disabilities Act compliance under subsection L, off-street parking shall be provided pursuant to one of the following three standards:

1.The standards in Table 15.86-1;

2.A standard from Table 15.86-1 for a use that the planning official determines is similar to the proposed use. For uses not specified in the table, the city shall determine parking based on submission of technical data from applicant or city sources; or

3.Subsection (H), parking exceptions, which includes a parking demand analysis option.

Applicant's Finding: Proposed parking is calculated based on the standards of Table 15.86-1.

G.Maximum number of off-street automobile parking spaces. The following standards for maximum number of automobile parking spaces promote efficient use of land and compact development patterns.

1.Applicability. Developments subject to site plan review must conform to the maximum parking standards.

2.Standards. Unless otherwise approved by the city through site plan review, the maximum number of off-street automobile parking spaces allowed for a commercial development equals the minimum number of required spaces, pursuant to Table 15.86-1 times a factor of 2.0. Parking spaces that are located in snow storage areas do not count toward the maximum parking space requirements.

Applicant's Finding: A total of sixteen off-street parking spaces are proposed. Nine of the proposed spaces are located in snow storage areas. The minimum required off-street parking for this

proposal is six (6). Excluding the spaces located in snow storage areas, a total of seven (7) off-street parking is provided, which complies with this code provision.

H.Exceptions and reductions to off-street parking. An applicant may propose a parking standard that is different than the standards under subsections F or G, for review and action by the planning official through a Type II procedure. The applicant's proposal shall consist of a written request and a parking analysis prepared by a qualified professional. The parking analysis, at a minimum, shall assess the average parking demand and available supply for existing and proposed uses on the subject site; opportunities for shared parking with other uses in the vicinity; existing public parking in the vicinity; transportation options existing or planned near the site, such as frequent bus service, carpools, or private shuttles; and other relevant factors. The number of required off-street parking spaces may also be reduced through the provision of shared parking, pursuant to subsection I.

Applicant's Finding: No exceptions to off-street parking are requested in this application.

I.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. Shared parking requests shall be subject to review and approval through site plan review.

Applicant's Finding: The proposed parking exceeds the minimum required parking for both of the requested uses. There is no need for shared parking.

J.Parking stall design and minimum dimensions. Where a new off-street parking area is proposed, or an existing off-street parking area is proposed for expansion, the entire parking area shall be improved in conformance with this Development Code. At a minimum the parking spaces and drive aisles shall be paved with asphalt, concrete, or other city-approved materials, provided the Americans with Disabilities Act requirements are met, and shall conform to the minimum dimensions in Table 15-86-2 and the figures below. All off-street parking areas shall contain wheel stops, perimeter curbing, bollards, or other edging as required to prevent vehicles from damaging buildings or encroaching into walkways, landscapes, or the public right-of-way. Parking areas shall also provide for surface water management.

Applicant's Finding: The property owner acknowledges this code provision.

K.Adjustments to parking area dimensions. The dimensions in subsection (J) are minimum standards. The city planning official, through a Type II procedure, may adjust the dimensions based on evidence that a particular use will require more or less maneuvering area.

Applicant's Finding: The property owner acknowledges this code provision.

L.Americans with Disabilities Act (ADA). Parking shall be provided consistent with ADA requirements, including, but not limited to, the minimum number of spaces for automobiles, van-accessible spaces, location of spaces relative to building entrances, accessible routes between parking areas and building entrances, identification signs, lighting, and other design and construction requirements.

Applicant's Finding: The property owner acknowledges this code provision.

Sec. 15.86.050. Bicycle parking.

A.Exemptions. This section does not apply to single-family and duplex housing, home occupations, and agricultural uses. The planning official may exempt other uses upon finding that, due to the nature of the use or its location, it is unlikely to have any patrons or employees arriving by bicycle.

Applicant's Finding: Four (4) bicycle parking spaces are required for the proposed use. A total of four (4) bicycle parking spaces are proposed.

B.Standards. Bicycle parking spaces shall be provided with new development and, where a change of use occurs, at a minimum, shall follow the standards in Table 15.86-3. Where an application is subject to conditional use permit approval or the applicant has requested a reduction to an automobile-parking standard, the city may require bicycle parking spaces in addition to those in Table 15.86-3.

Applicant's Finding: No reduction in automobile parking standards is requested in this application. Bicycle parking is proposed in accordance with the standards in Table 15.86-3.

C.Design. Bicycle parking shall consist of staple-design steel racks or other city-approved racks, lockers, or storage lids providing a safe and secure means of storing a bicycle. At a minimum, bicycle parking facilities shall be consistent with the following design guidelines:

1. All bicycle parking shall be within 100 feet from a building entrance and located within a well-lit and clearly visible area;
2. Bicycle parking shall be convenient and easy to find. Where necessary, a sign shall be used to direct users to the parking facility;
3. Each bicycle parking space shall be at least two feet by six feet with a vertical clearance of six feet;
4. An access aisle of at least five feet shall be provided in each bicycle parking facility;
5. Bicycle parking facilities shall offer security in the form of either a lockable enclosure in which the bicycle can be stored or a stationary object, i.e., a "rack," upon which the bicycle can be locked. Structures that require a user-supplied lock shall accommodate both cables and U-shaped locks and shall permit the frame and both wheels to be secured (removing the front wheel may be necessary). Note: businesses may provide long-term, employee parking by allowing access to a secure room within a building.

Applicant's Finding: The property owner acknowledges this code provision.

D.Hazards. Bicycle parking shall not impede or create a hazard to pedestrians or vehicles, and shall be located so as to not conflict with the vision clearance standards of section 15.88.040.

Applicant's Finding: Proposed location of bicycle parking does not create a hazard to pedestrians or vehicles and does not conflict with vision clearance standards.

Sec. 15.86.060. Snow storage areas.

A.Purpose. The purpose of these standards is to ensure that adequate space is be provided within a development for storage of snow in winter months in order to accommodate space needed for access, circulation, and off-street parking.

B.Applicability. Snow storage standards apply to all subdivisions and to developments subject to site plan review.

C.Standards.

1. Minimum area. Snow storage areas must be designated on a site plan. The areas must total a minimum of 15 percent of the area to be cleared, including all access drives, parking areas, and walkways.

2. Location. Snow storage is not permitted on landscaped areas, except where these areas are limited to

grass or rock cover. Snow storage may be permitted in parking areas, provided that the site can still accommodate enough parking spaces to meet minimum off-street parking requirements in winter months. Parking spaces that are located in snow storage areas do not count toward the maximum parking space requirements. It is encouraged that snow storage areas be located away from public view and that additional impervious surface areas are not created for the sole purpose of snow storage.

3. Exceptions and adjustments. The city may reduce or eliminate the required snow storage areas if a snow removal plan is presented which provides a continuous guarantee of removal.

Applicant's Finding: A total of 4,211 square feet of designated snow storage is proposed, approximately 15% of the property's areas to be cleared.

CHAPTER 15.88 – ACCESS & CIRCULATION

Sec. 15.88.020. Applicability.

Chapter 15.88 applies to new development and changes in land use necessitating a new or modified street or highway connection. Except where the standards of a roadway authority other than the city supersede city standards, chapter 15.88 applies to all connections to a street or highway, and to driveways and walkways.

Applicant's Finding: This is an application for new development, including a new street, and new street connection.

Sec. 15.88.030. Vehicular access and circulation.

A.*Purpose and intent.*Section 15.88.030 implements the street access guidelines of the City of La Pine Transportation System Plan. It is intended to promote safe vehicle access and egress to properties, while maintaining traffic operations in conformance with adopted standards. "Safety," for the purposes of this chapter, extends to all modes of transportation.

B.*Permit required.* Vehicular access to a public street (e.g., a new or modified driveway connection to a street or highway) requires an approach permit approved by the applicable roadway authority.

C.*Traffic study requirements.* The city, in reviewing a development proposal or other action requiring an approach permit, may require a traffic impact analysis, pursuant to section 15.90.080, to determine compliance with this Development Code.

D.*Approach and driveway development standards.* Access management restrictions and limitations consist of provisions managing the number of access points and/or providing traffic and facility improvements that are designed to maximize the intended function of a particular street, road or highway. The intent is to achieve a balanced, comprehensive program which provides reasonable access as new development occurs while maintaining the safety and efficiency of traffic movement. Intersections, approaches and driveways shall conform to access spacing guidelines in the City of La Pine Transportation System Plan and the roadway authority's engineering standards. In the review of all new development, the reviewing authority shall consider the following techniques or considerations in providing for or restricting access to certain transportation facilities.

1.Access points to arterials and collectors may be restricted through the use of the following techniques:
   a.Restricting spacing between access points based on the type of development and the speed along the serving collector or arterial.
   b.Sharing of access points between adjacent properties and developments.
   c.Providing access via a local order of street; for example, using a collector for access to an arterial, and using a local street for access to a collector.
   d.Constructing frontage or marginal access roads to separate local traffic from through traffic.
   e.Providing service drives to prevent overflow of vehicle queues onto adjoining roadways.

2.Consideration of the following traffic and facility improvements for access management:

a.Providing of acceleration, deceleration and right-turn-only lanes.
b.Offsetting driveways to produce T-intersections to minimize the number of conflict points between traffic using the driveways and through traffic.
c.Installation of median barriers to control conflicts associated with left turn movements.
d.Installing side barriers to the property along the serving arterial or collector to restrict access width to a minimum.

E.*ODOT approval.* Where a new approach onto a state highway or a change of use adjacent to a state highway requires ODOT approval, the applicant is responsible for obtaining ODOT approval. The city may a approve a development conditionally, requiring the applicant first obtain required ODOT permit(s) before commencing development, in which case the city will work cooperatively with the applicant and ODOT to avoid unnecessary delays.

F.*Other agency approval.* Where an approach or driveway crosses a drainage ditch, canal, railroad, or other feature that is under the jurisdiction of another agency, the applicant is responsible for obtaining all required approvals and permits from that agency prior to commencing development.

G.*Exceptions and adjustments.* The city may approve adjustments to the spacing standards of subsections above, where an existing connection to a city street does not meet the standards of the roadway authority and the proposed development moves in the direction of code compliance.

H.*Joint use access easement and maintenance agreement.* Where the city approves a joint use driveway, the property owners shall record an easement with the deed allowing joint use of and cross access between adjacent properties. The owners of the properties agreeing to joint use of the driveway shall record a joint maintenance agreement with the deed, defining maintenance responsibilities of property owners. The applicant shall provide a fully executed copy of the agreement to the city for its records, but the city is not responsible for maintaining the driveway or resolving any dispute between property owners.

Applicant's Finding: The property owner acknowledges these code provisions which are addressed in the enclosed Traffic Study and preliminary plans.

Sec. 15.88.040. Clear vision areas (visibility at intersections).

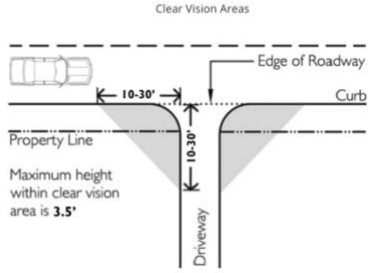
A.In all zones, a clear vision area shall be maintained on the corners of all property at the intersection of two streets or a street and a railroad. A clear vision area shall contain no planting, wall, structure, private signage, or temporary or permanent obstruction exceeding 3½ feet in height, measured from the top of the curb or, where no curb exists, from the established street centerline grade, except that trees exceeding this height may be located in this area provided all branches and foliage are removed to a height of eight feet above the grade.

B.A clear vision area shall consist of a triangular area on the corner of a lot at the intersection of two streets or a street and a railroad (see Figure 18.88-1). Where lot lines have rounded corners, the specified distance is measured from a point determined by the extension of the lot lines to a point of intersection. The third side of the triangle is the line connecting the ends of the measured sections of the street lot lines. The following measurements shall establish clear vision areas within the city:

1.In an agricultural, forestry or industrial zone, the minimum distance shall be 30 feet; or at intersections including an alley, ten feet.

2.In all other zones, the minimum distance shall be in relationship to street and road right-of-way widths as follows:

Right-of-Way Width	*Clear vision*
80 feet or more	20 feet
Less than 80 feet	30 feet



Applicant's Finding: The proposed development complies with all required clear vision areas and minimum visibility areas at intersections as depicted in the preliminary plans.

Sec. 15.88.050. Pedestrian access and circulation.

A.*Purpose and intent.* This section implements the pedestrian access and connectivity policies of City of La Pine Transportation System Plan and the requirements of the Transportation Planning Rule (OAR 660-012). It is intended to provide for safe, reasonably direct, and convenient pedestrian access and circulation.

B.*Standards.* New subdivisions, multi-family developments, planned developments, commercial developments and institutional developments shall conform to all of the following standards for pedestrian access and circulation:

1.*Continuous walkway system.* A pedestrian walkway system shall extend throughout the development site and connect to adjacent sidewalks, if any, and to all future phases of the development, as applicable.

2.*Safe, direct, and convenient.* Walkways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent parking areas, recreational areas, playgrounds, and public rights-of-way conforming to the following standards:

a.The walkway is reasonably direct. A walkway is reasonably direct when it follows a route that does not deviate unnecessarily from a straight line or it does not involve a significant amount of out-of-direction travel.

b.The walkway is designed primarily for pedestrian safety and convenience, meaning it is reasonably free from hazards and provides a reasonably smooth and consistent surface and direct route of travel between destinations. The city may require landscape buffering between walkways and adjacent parking lots or driveways to mitigate safety concerns.

c.Vehicle/walkway separation. Except as required for crosswalks, per subsection d., below, where a walkway abuts a driveway or street it shall be raised six inches and curbed along the edge of the driveway or street. Alternatively, the city may approve a walkway abutting a driveway at the same grade as the driveway if the walkway is physically separated from all vehicle-maneuvering areas. An example of such separation is a row of bollards (designed for use in parking areas) with adequate minimum spacing between them to prevent vehicles from entering the walkway.

d.Crosswalks. Where a walkway crosses a parking area or driveway ("crosswalk"), it shall be clearly marked with contrasting paving materials (e.g., pavers, light-color concrete inlay between asphalt, or similar contrasting material). The crosswalk may be part of a speed table to improve driver-visibility of pedestrians.

e.Walkway construction. Walkway surfaces may be concrete, asphalt, brick or masonry pavers, or other city-approved durable surface meeting ADA requirements. Walkways shall be not less than four feet in width, except that the city may require five-foot wide, or wider, sidewalks in developments where pedestrian traffic warrants walkways wider than four feet.

f.Multi-use pathways. Multi-use pathways, where approved, shall be ten feet wide and constructed of asphalt, concrete or other city-approved durable surface meeting ADA requirements consistent with the applicable city engineering standards.

Applicant's Finding: To comply with these provisions a 7-foot-wide walkway with crosswalk is proposed from Highway 97 to the convenience store. The nature of the proposed commercial uses is inherently not pedestrian friendly; however, the proposed walkway is in compliance with the provisions of this code section.

CHAPTER 15.90 – PUBLIC FACILITIES

Sec. 15.90.020. Developer responsibility for streets and other public facilities.

A.*Duties of developer.* It shall be the responsibility of the developer to construct all streets, curbs, sidewalks, sanitary sewers, storm sewers, water mains, electric, telephone and cable television lines necessary to serve the use or development in accordance with the specifications of the city and/or the serving entity.

B.*Over-sizing.* The city may require as a condition of development approval that sewer, water, or storm drainage systems serving new development be sized to accommodate future development within the area as projected by the applicable facility master plan, and the city may authorize other cost-recovery or cost-sharing methods as provided under state law.

C.*Inadequate existing streets.* Whenever existing streets, adjacent to, within a tract or providing access to and/or from a tract, are of inadequate width and/or improvement standards, additional right-of-way and/or improvements to the existing streets may be required.

D. *Half streets.* Half streets, while generally not acceptable, may be approved where essential to the reasonable development of a proposed land development, and when the city finds it will be practical to require dedication and improvement of the other half of the street when the adjoining property is developed. Whenever a half street exists adjacent to a tract of land proposed for development, the other half of the street shall be dedicated and improved.

Applicant's Finding: The property owner acknowledges these code provisions, which are addressed in the enclosed preliminary plans. No half streets are proposed. To mitigate potential safety issues along the Morson Street frontage and/or Highway 97, this application proposes improvements to the platted Hill Street right-of-way for use as secondary access for the proposed development and future development of nearby vacant property.

Sec. 15.90.030. Sewer and water.

A.*Sewer and water plan approval.* Development permits for sewer and water improvements shall not be issued until the public works director has approved all sanitary sewer and water plans in conformance with city standards.

B.*Inadequate facilities.* Development permits may be restricted or rationed 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 city may require water booster pumps, sanitary sewer lift stations, and other critical facilities be installed with backup power.

Applicant's Finding: The property owner acknowledges these code provisions.

Sec. 15.90.040. Stormwater.

A.*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.

B.*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.

Applicant's Finding: Preliminary drainage and grading plans are submitted with this application in compliance with these provisions.

Sec. 15.90.060. Public street/highway improvement.

The following public streets and highway improvement activities are permitted outright in all zones and are exempt from the permit requirements of this Development Code.

A.Installation of additional and/or passing lanes, including pedestrian ways and/or bikeways, within a public street or highway right-of-way existing as of the effective date of this chapter, unless such adversely impacts on-street parking capacities and patterns.

B.Reconstruction or modification of public roads and highways, not including the addition of travel lanes, where no removal or displacement of buildings would occur, and/or no new land parcels result.

C.Temporary public road and highway detours that will be abandoned and restored to original condition or use at such time when no longer needed.

D.Minor betterment of existing public roads and highway related facilities such as maintenance yards, weigh stations, waysides, and, rest areas within a right-of-way existing as of the effective date of this Development Code. In addition, also exempt are contiguous public-owned property utilized to support the operation and maintenance of public roads and highways provided such is not located within a duly designated residential zone, or adjacent to or across the street from a lot or parcel within such a zone.

E.The construction, reconstruction, or modification of a public street or highway that is identified as a priority project in a transportation system plan (TSP) or the state transportation improvement plan (STIP) that was duly adopted on or before the effective date of this chapter.

F.The design, construction, operation, and maintenance of a tourist-oriented or public wayside.

Applicant's Finding: This application requests use and improvement of the City's platted Hill Street right-of-way as secondary access to the subject property.

Sec. 15.90.070. Design of streets and other public facilities.

A.*Traffic circulation system.* The overall street system shall ensure an adequate traffic circulation system with intersection angles, grades, tangents and curves appropriate for the traffic to be carried considering the terrain of the development and the area. An analysis of the proposed traffic circulation system within the land division, and as such system and traffic generated therefrom affects the overall City of La Pine transportation, will be required to be submitted with the initial land division review application. The location, width and grade of streets shall be considered in their relationship to existing and planned streets, to topographical conditions, to public convenience and safety and to the proposed use or development to be served thereby.

Applicant's Finding: A traffic study has been prepared as part of this application.

B.*Street location and pattern.* The proposed street location and pattern shall be shown on the development plan, and the arrangement of streets shall:

1.Provide for the continuation or appropriate projection of existing principal streets in surrounding areas; or

2.Conform to a plan for the general area of the development approved by the city to meet a particular situation where topographical or other conditions make continuance or conformance to existing streets impractical; and

3.Conform to the adopted La Pine Transportation System Plan as may be amended.

Applicant's Finding: This criteria is discussed in the Transight Consulting LLC traffic study.

C.*Access ways.* The city, in approving a land use application with conditions, may require a developer to provide an access way where the creation of a cul-de-sac or dead-end street is unavoidable and the access way connects the end of the street to another street, a park, or a public access way. Where an access way is required, it shall be not less than ten feet wide and shall contain a minimum six-foot-wide paved surface or other all-weather surface approved by the city. Access ways shall be contained within a public right-of-way or public access easement, as required by the city.

Applicant's Finding: The applicant understands this provision. The proposed Hill Street improvements exceed access way standards.

D.*Future street extensions.* Where necessary to give access to or permit future subdivision or development of adjoining land, streets shall be extended to the boundary of the proposed development or subdivision. Where a subdivision is proposed adjacent to other developable land, 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 subdivision. The street plan is not binding, but is intended to show potential future street extensions with future development. The plan must demonstrate, pursuant to city standards, that the proposed development does not preclude future street connections to adjacent development land. Wherever appropriate, street stubs shall be provided to allow access to future abutting subdivisions and to logically extend the street system into the surrounding area. Street ends shall contain turnarounds constructed to Uniform Fire Code standards, as the city deems applicable, and shall be designed to facilitate future extension in terms

of grading, width, and temporary barricades.

Applicant's Finding: Hill Street improvement from Morson Street to the boundary of the subject property is proposed in this application. Future extension of Hill Street, beyond the subject property, is not precluded by the proposed improvements.

E.*Minimum right-of-way and roadway widths.* Unless otherwise approved in the tentative development plan, street, sidewalk and bike rights-of-way and surfacing widths shall not be less than the minimum widths in feet set forth in the La Pine Transportation System Plan, and shall be constructed in conformance with applicable standards and specifications set forth by the city.

Applicant's Finding: This application requests approval to improve the Hill Street right-of-way to the City's local street standard. If approval is granted, plans will be prepared for future review and approval in conformance with any conditions of approval of this application.

F.*Sidewalks.* Unless otherwise required in this chapter or other city ordinances or other regulations, or as otherwise approved by the commission, sidewalks shall be required as specified in the La Pine Transportation System Plan. In lieu of these requirements, however, the city may approve a development without sidewalks if alternative pedestrian routes and facilities are provided.

Applicant's Finding: No sidewalks are proposed along the proposed Hill Street improvements; however, the applicant was required to provide sidewalks along Morson Street in a 2023 partition of the subject property, which is a safer, alternative pedestrian route that connects this area to the sidewalks along Hwy 97.

G.*Bike lanes.* Unless otherwise required in this chapter or other city ordinances or other regulations, bike lanes shall be required as specified in the La Pine Transportation System Plan, except that the planning commission may approve a development without bike lanes if it is found that the requirement is not appropriate to or necessary for the extension of bicycle routes, existing or planned, and may also approve a development without bike lanes in the streets if alternative bicycle routes and facilities are provided.

Applicant's Finding: No bike lanes are proposed or required by the local street standards adopted in the City's TSP.

H.*Culs-de-sac.* A cul-de-sac street shall only be used where the city determines that environmental or topographical constraints, existing development patterns, or compliance with other applicable city requirements preclude a street extension. Where the city determines that a cul-de-sac is allowed, all of the following standards shall be met:

1.The cul-de-sac shall not exceed a length of 400 feet, except where the city through a Type II procedure determines that topographic or other physical constraints of the site require a longer cul-de-sac. The length of the cul-de-sac shall be measured along the centerline of the roadway from the near side of the intersecting street to the farthest point of the cul-de-sac.

2.A cul-de-sac shall terminate with a circular turn around with a minimum radius of 45 feet of paved driving

surface and a 50 foot right-of-way and meeting the Uniform Fire Code.
3.The cul-de-sac shall provide, or not preclude the opportunity to later install, a pedestrian and bicycle access way between it and adjacent developable lands.

Applicant's Finding: No cul-de-sac is proposed in this application.

I.*Marginal access streets.* Where a land development abuts or contains an existing or proposed arterial street, the city may require marginal access streets, reverse frontage lots with suitable depth, screen-plantings contained in a non-access reservation strip along the rear or side property line or other treatments deemed necessary for adequate protection of residential properties and the intended functions of the bordering street, and to afford separation of through and local traffic.

Applicant's Finding: No marginal access streets are proposed in this application.

J.*Streets adjacent to railroad right-of-way.* Whenever a proposed land development contains or is adjacent to a railroad right-of-way, provisions may be required for a street approximately parallel to the ROW at a distance suitable for the appropriate use of land between the street and the ROW. The distance shall be determined with consideration at cross streets of the minimum distance required for approach grades to a future grade separation and to provide sufficient depth to allow screen planting or other separation requirements along the ROW.

Applicant's Finding: No streets adjacent to a railroad right-of-way are involved in this application.

K.*Reserve strips.* Reserve strips or street plugs controlling access to streets will not be approved unless deemed necessary for the protection of public safety and welfare and may be used in the case of a dead-end street planned for future extension, and in the case of a half street planned for future development as a standard, full street.

Applicant's Finding: No reserve strips or street plugs are proposed in this application.

L.*Alignment.* All streets, as far as practicable, shall be in alignment with existing streets by continuations of the center lines thereof. Necessary staggered street alignment resulting in intersections shall, wherever possible, leave a minimum distance of 200 feet between the center lines of streets of approximately the same direction, and in no case shall the off-set be less than 100 feet.

Applicant's Finding: The applicant acknowledges this code provision.

M.*Intersection angles.* Streets shall be laid out to intersect at angles as near to right angles as practicable, and in no case shall an acute angle be less than 80 degrees unless there is a special intersection design approved by the city engineer or other duly designated city representative as applicable. Other streets, except alleys, shall have at least 50 feet of tangent adjacent to the intersection, and the intersection of more than two streets at any one point will not be approved.

Applicant's Finding: The applicant acknowledges this code provision.

N.*Curves.* Centerline radii of curves should not be less than 500 feet on major arterials, 300 feet on minor arterials, 200 feet on collectors or 100 feet on other streets and shall be on an even ten feet. Where existing conditions, particularly topography, make it otherwise impractical to provide building sites, the city may accept steeper grades and sharper curves than provided for herein in this subsection.

Applicant's Finding: The applicant acknowledges this code provision.

O.*Street grades.* Street grades shall not exceed eight percent on arterials, ten percent on collectors and 12 percent on all other streets including private driveways entering upon a public street or highway; however, for streets at intersections, and for driveways entering upon a public street or highway, there should be a distance of three or more car lengths (approximately 50 feet) where the grade should not exceed six percent to provide for proper stopping distance during inclement weather conditions.

Applicant's Finding: The applicant acknowledges this code provision.

P.*Street names.* Except for the extension of existing streets, no street names shall be used which will duplicate or be confused with the name of an existing street in the city or within a radius of six miles of the city or within the boundaries of a special service district such as fire or ambulance. Such street names shall be approved by the Deschutes County street name coordinator.

Applicant's Finding: The applicant acknowledges this code provision.

Q.*Street name signs.* Street name signs shall be installed at all street intersections by the developer in accordance with applicable city, county or state requirements. One street sign shall be provided at the intersection of each street, and two street signs shall be provided at four-way intersections.

Applicant's Finding: The applicant acknowledges this code provision.

R.*Traffic control signs.* Traffic control signs shall be provided for and installed by the developer as required and approved by the appropriate city, county and/or state agency or department.

Applicant's Finding: The applicant acknowledges this code provision.

S.*Alleys.* Alleys are not necessary in residential developments, but may be required in commercial and industrial developments unless other permanent provisions for access to off-street parking and loading facilities are approved by the city.

Applicant's Finding: No alleys are proposed in this application.

T.*Curbs.* Curbs shall be required on all streets in all developments, and shall be installed by the developer in accordance with standards set forth by the city unless otherwise approved by the city. Approval of streets

without curbs shall be at the discretion of the city engineer, and shall be so determined during the tentative plan land division review process on the basis of special circumstances to the development.

Applicant's Finding: The applicant acknowledges this code provision.

U.*Street lights.* Street lights may be required and, if so required, shall be installed by the developer in accordance with standards set forth by the city and the serving utility company. Streets lights, if required, shall include one fixture and be located at the intersection of streets.

Applicant's Finding: The applicant acknowledges this code provision.

V.*Utilities.* The developer shall make necessary arrangements with the serving utility companies for the installation of all proposed or required utilities, which may include electrical power, natural gas, telephone, cable television and the like.

Applicant's Finding: The applicant acknowledges this code provision.

W.*Drainage facilities.* Drainage facilities shall be provided as required by the city in accordance with all applicable city and Oregon Department of Environmental Quality standards.

Applicant's Finding: The applicant acknowledges this code provision.

X.*Gates.* Except where approved as part of a master planned development, private streets and gated drives serving more than two dwellings (i.e., where a gate limits access to a development from a public street), are prohibited.

Applicant's Finding: No gates are proposed in this application.

Sec. 15.90.080. Traffic impact analysis.

A.*Purpose.* The purpose of this subsection is [to] coordinate the review of land use applications with roadway authorities and to implement section 660-012-0045(2)(e) of the state Transportation Planning Rule, which requires the city to adopt a process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities. The following provisions also establish when a proposal must be reviewed for potential traffic impacts; when a traffic impact analysis must be submitted with a development application in order to determine whether conditions are needed to minimize impacts to and protect transportation facilities; the required contents of a traffic impact analysis; and who is qualified to prepare the analysis.

B.*When a traffic impact analysis is required.* The city or other road authority with jurisdiction may require a traffic impact analysis (TIA) as part of an application for development, a change in use, or a change in access. A TIA shall be required where a change of use or a development would involve one or more of the following:

1.A change in zoning or a plan amendment designation;

2.Operational or safety concerns documented in writing by a road authority;

3.An increase in site traffic volume generation by [300] average daily trips (ADT) or more;

4.An increase in peak hour volume of a particular movement to and from a street or highway by [20] percent or more;

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

6.Existing or proposed approaches or access connections that do not meet minimum spacing or sight distance requirements or are located where vehicles entering or leaving the property are restricted, or such vehicles are likely to queue or hesitate at an approach or access connection, creating a safety hazard;

7.A change in internal traffic patterns that may cause safety concerns; or

8.A TIA required by ODOT pursuant to OAR 734-051.

C.*Traffic impact analysis preparation.* A professional engineer registered by the State of Oregon, in accordance with the requirements of the road authority, shall prepare the traffic impact analysis.

D.*Waiver or deferral.* The city may waive or allow deferral of standard street improvements, including sidewalk, roadway, bicycle lane, undergrounding of utilities, and landscaping, as applicable, where one or more of the following conditions in [subsections] 1 through 4 is met. Where the city agrees to defer a street improvement, it shall do so only where the property owner agrees not to remonstrate against the formation of a local improvement district in the future:

1.The standard improvement conflicts with an adopted capital improvement plan.

2.The standard improvement would create a safety hazard.

3.It is unlikely due to the developed condition of adjacent property that the subject improvement would be extended in the foreseeable future, and the improvement under consideration does not by itself significantly improve transportation operations or safety.

4.The improvement under consideration is part of an approved partition in the [RL or RM] and the proposed partition does not create any new street.

Applicant's Finding: A Traffic Impact Analysis (TIA) in compliance with these code provisions has been prepared by Transight Consulting LLC and provided as part of this application. Waiver of the City's minimum street standards related to sidewalks and landscaping is requested. The proposed Morson/Hill Street intersection and street extension will primarily serve the subject property and one newly created commercial lot (05PA-23). Surrounding properties are developed with residential uses

or are vacant tracts of farmland, heavily impacted by floodplain. Requiring standard street improvements for sidewalks and landscaping would not significantly improve transportation operations or safety.

ARTICLE 8: APPLICATION & REVIEWS

CHAPTER 15.312 – SITE PLAN REVIEW

Sec. 15.312.050. Approval criteria - all residential and nonresidential.

To ensure that the stated purposes of the site plan review process are met, the review authority shall be governed by the criteria below as they evaluate and render a decision on a proposal.

A.Statement of intent.

1.The site plan review criteria are intended to provide a frame of reference for the applicant in the development of a site, building and landscape plans, as well as providing the city with a means of reviewing proposed plans.

2.These criteria provide a clear and objective means of evaluating residential development (and the residential components of a mixed use development) in accordance with ORS 197.

3.The review authority is not authorized as a part of the site plan review process to approve projects which exceed specific development standards set forth by the applicable zone unless the exceptions are approved in accordance with specific variance or other provisions set forth in this Development Code.

B.Site plan evaluation criteria. The following criteria shall be used in evaluating all site development plans:

1.The application is complete, in accordance with the applicable procedures in article 7.

2.The application complies with all applicable provisions of the underlying zoning district in article 3, including, but not limited to, setbacks, lot dimensions, density, lot coverage, building height, and other applicable standards.

3.The application complies with the provisions of the any applicable overlay zones in article 4.

4.The proposal complies with all applicable development and design standards of article 5.

5.The application complies with all applicable special use standards in article 6.

6.Adequate public facilities and utilities are available or can be made prior to occupancy to serve the proposed development.

7.The proposed site plan conforms to the standards within the adopted La Pine Transportation System Plan (TSP), as may be amended from time to time, unless other design standards are specifically

approved by the city.

8.The proposed site plan conforms to the La Pine Sewer and Water Standards, as may be amended from time to time, unless other design standards are specifically approved by the city. All sewer improvements must comply with Oregon Administrative Rules chapter 340 division 52 requirements, including Appendix A - Sewer Pipelines.

9.The proposed site plan conforms to the Central Oregon Stormwater Manual (COSM), as may be amended from time to time, unless other design standards are specifically approved by the city.

10.All utilities shall be installed underground, unless otherwise specifically approved by the city.

11.The proposal meets all existing conditions of approval for the site or use, as required by prior land use decision(s), as applicable.

Note(s)—Compliance with other city codes and requirements, though not applicable land use criteria, may be required prior to issuance of building permits.

Applicant's Finding: This is an application for Site Plan Review, a Type II application under the applicable procedures in article 7. As discussed in this document, the proposal complies with all applicable provisions of Articles 3, 4, and 5. There are no special uses requested in this application. The subject property was previously developed and contains existing underground utilities. That infrastructure will be reused to the greatest extent practicable, or replaced with adequate underground systems. Preliminary plans are included in this application.

Sec. 15.312.060. Additional approval criteria - nonresidential development.

In addition to the approval criteria in section 15.312.050, to ensure that the stated purposes of the site plan review process are met, the review authority shall also be governed by the criteria below as they evaluate and render a decision on a nonresidential development proposal.

A.Statement of intent.

1.The site plan review criteria for nonresidential development are intended to provide a frame of reference for the applicant in the development of a site, building and landscape plans, as well as providing the city with a means of reviewing proposed plans.

2.These criteria are not intended to be inflexible requirements, nor are they intended to discourage creativity. The specification of one or more architectural styles is not intended by these criteria.

3.The review authority is not authorized as a part of the design review process to approve projects which exceed specific development standards set forth by the applicable zone unless the exceptions are approved in accordance with specific variance or other provisions set forth in this chapter.

B.Site plan evaluation criteria. In addition to the approval criteria in section 15.312.050, the following criteria shall be used in evaluating nonresidential site development plans:

1.The arrangement of all functions, uses and improvements has been designed so as to reflect and harmonize with the natural characteristics and limitations of the site and adjacent sites.

Applicant's Finding: The subject property is a commercial parcel along the Highway 97 corridor. The proposed development includes two commercial uses permitted in the property's base and overlay zones. Orientation of proposed fuel stations, parking, loading, landscaping and building site for the convenience store has been designed to comply with the elevated development standards and architectural design requirements of the Downtown Overlay Zone, which is the controlling zone in this area of La Pine. The proposed development is comparable to nearby properties which have been recently developed or reviewed for development approval, with other permitted commercial uses.

2.In terms of setback from streets or sidewalks, the design creates a visually interesting and compatible relationship between the proposed structures and/or adjacent structures.

Applicant's Finding: The proposed development maintains or exceeds all required minimum setbacks and provides alternative facilities (bike paths, crosswalks, sidewalks) to mitigate potential pedestrian safety impacts and create visually interesting and compatible relationships between the proposed structures and adjacent structures.

3.The design incorporates existing features, such as streams, rocks, slopes, vegetation and the like, as part of the overall design.

Applicant's Finding: The design of the proposed development incorporates slope of the property into its design. As a commercially developed property, there are minimal existing natural features to include in the current proposal; however, native vegetation and other regionally common landscape elements are incorporated into the design.

4.Where appropriate, the design relates or integrates the proposed landscaping/open space to the adjoining landscape/open space in order to create a pedestrian/bike pathway and/or open system that connects several properties or uses.

Applicant's Finding: The design enhances the subject property's current landscaping and open space, and the development proposal includes public improvements to the Hill Street right-of-way to create a new, safer, connection to Morson Street for the subject property and other properties in the area.

5.The arrangement of the improvements on the site do not unreasonably degrade the scenic values of the community and the surrounding area in particular.

Applicant's Finding: The arrangement of the improvements onsite do not unreasonably degrade the scenic values of the community and surrounding in area. The Highway 97 corridor is a major

commercial hub in La Pine. The area surrounding the subject property is largely developed with similar permitted commercial uses.

6.Where appropriate, the design includes a parking and circulation system that encourages a pedestrian and/or bicycle rather than vehicular orientation, including a separate service area for delivery of goods.

Applicant's Finding: The proposed uses are inherently not pedestrian friendly, but the design aims to mitigate this by providing secondary access that directs vehicles away from existing pedestrian facilities along Highway 97.

7.The design gives attention to the placement of storage, mechanical equipment, utilities or waste collection facilities so as to screen such from view, both from within and from outside the site.

Applicant's Finding: All proposed storage, mechanical equipment, utilities and waste collection facilities are located unground or screened from view.

C.Landscape design evaluation criteria. The following criteria shall be used in evaluating landscape plans:

1.The overall design substantially complements the natural environment of the city and the character of the site and the surrounding area.

2.The design acknowledges the growing conditions for this climatic zone, and the unique requirements that its specific site location makes upon plant selection.

3.Provision has been made for the survival and continuous maintenance of the landscape and its vegetation.

4.The design contributes to the stabilization of slopes and the protection of other natural features and resources where applicable.

Applicant's Finding: The proposed landscape plan is designed to complement the landscaping of surrounding developed properties, and incorporates plant species tolerant of the local climate and conditions.

ARTICLE 9: LAND DIVISIONS

CHAPTER 15.414 - REPLATTING AND BOUNDARY LINE ADJUSTMENTS

Sec. 15.414.020. Boundary line adjustments.

A.*Submission requirements.* All applications for boundary line adjustment shall be made on forms provided by the city and shall include information required for a Type I review, pursuant to article 7. The application shall include a preliminary lot line map drawn to scale identifying all existing and proposed lot lines and dimensions,

footprints and dimensions of existing structures (including accessory structures), location and dimensions of driveways and public and private streets within or abutting the subject lots, location of lands subject to the flood plain overlay or other overlay zones, existing fences and walls, and any other information deemed necessary by the planning official for ensuring compliance with city codes. The application shall be signed by all of the owners as appearing on the deeds of the subject lots.

B.*Approval criteria.* The planning official shall approve or deny a request for a property line adjustment in writing, based on all of the following criteria:

1.*Parcel creation.* No additional parcel or lot is created by the lot line adjustment;

2.*Lot standards.* All lots and parcels conform to the applicable lot standards of the zoning district (article 3), including lot area, dimensions, setbacks, and coverage. As applicable, all lots and parcels shall conform the flood plain overlay or other applicable overlay zones (article 4); and

3.*Access and road authority standards.* All lots and parcels conform to the standards or requirements of article 5 [chapter 15.88], access and circulation, and all applicable road authority requirements are met. If a lot is non-conforming to any city or road authority standard, it shall not be made less conforming by the boundary line adjustment.

Applicant's Finding: The proposed adjustment is a lot consolidation; no additional parcel is created. Consolidation of the property complies with all standards of Articles 3, 5, and 5.

III. SUMMARY – RESTATED REQUEST

This consolidated request complies with all applicable approval criteria of the La Pine Code of Ordinances.

Proposed Conditions of Approval:

1) Construction plans for the proposed Hill Street improvements, designed to the standards approved in this application, shall be provided by the applicant for approval by the City of La Pine prior to commencement of construction.

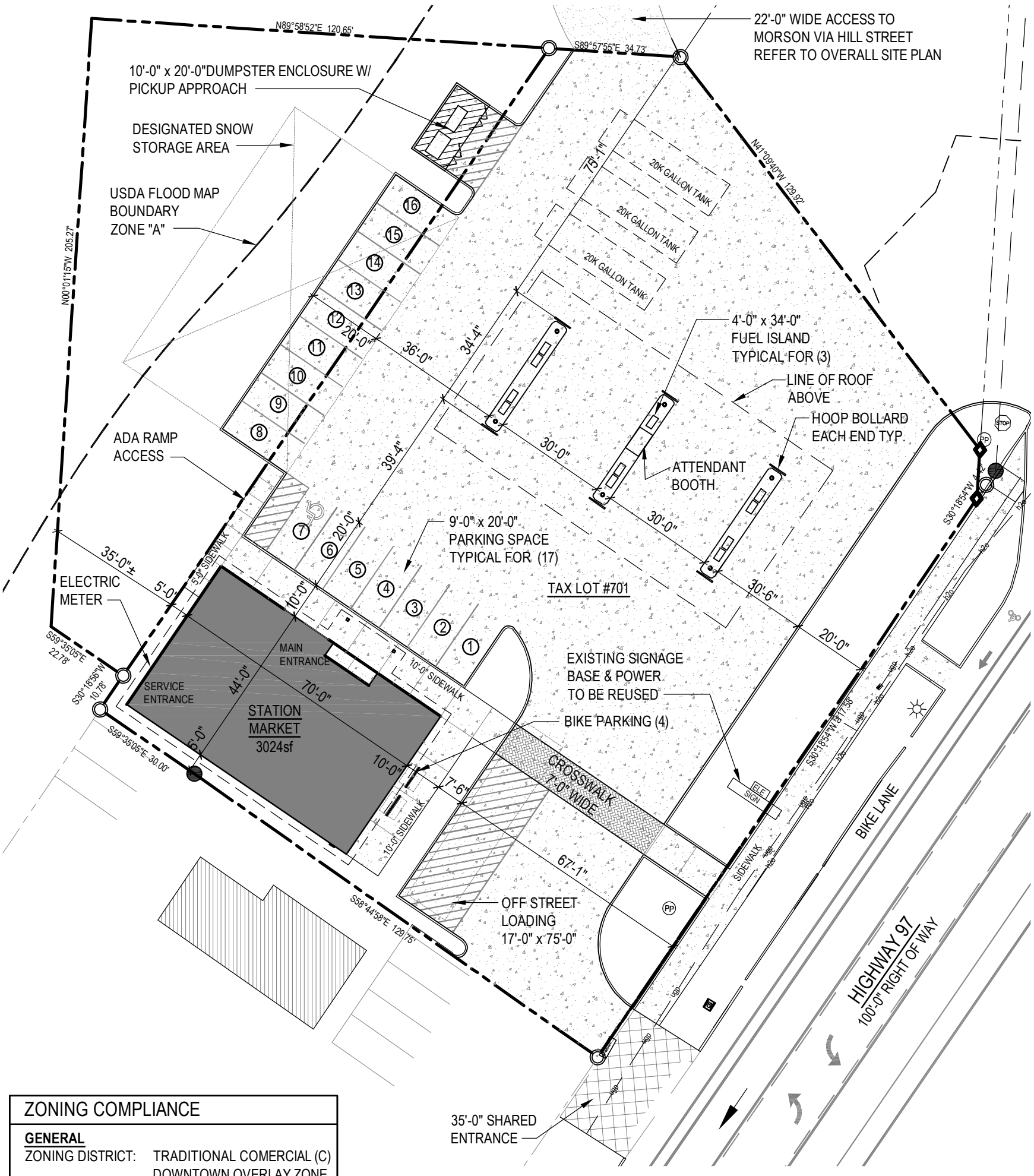
2) Application for final plat approval of 05PA-23 shall be modified to include the proposed lot consolidation.

RON'S OIL CO.

FUEL STATION & MARKET

51385 HIGHWAY 97 LAPINE OR. 97739

10-22-2024



ZONING COMPLIANCE

GENERAL

ZONING DISTRICT:	TRADITIONAL COMERCIAL (C) DOWNTOWN OVERLAY ZONE
LOT SIZE:	1.04 ACRES (45,401sf)
PERMEABLE SURFACE:	14,917sf
IMPERMIABLE SURFACE	30,484sf
LOT COVERAGE	67% < 80%

LANDSCAPING

REQUIRED	15%	(6,810sf)
PROVIDED	16%	(7,245sf)

OFF STREET PARKING

REQUIRED
ONE SPACE PER 400sf OF RETAIL FLOOR AREA
1209sf / 400sf = 4 SPACES REQUIRED
QUICK VEHICLE = 2 SPACES
TOTAL = 6 SPACES

PROVIDED

STANDARD	15 SPACES
ACCESSIBLE	1 SPACE
TOTAL =	16 SPACES*

*16 SPACES FOR SUMMER 7 FOR WINTER

BIKE PARKING

REQUIRED: 1 PER 5 SPACES = 4
PROVIDED: 4

SNOW STORAGE AREA

REQUIRED:
WALKWAYS, ACCESS & PARKING:
0.15 x 27,444 = 4,117sf
PROVIDED: 4,211sf

PROPERTY IDENTIFICATION

PROPERTY LOCATED IN THE NE 1/4 OF THE SE 1/4 OF SECTION 15, TOWNSHIP 22 SOUTH, RANGE 10 EAST OF THE WILLAMETTE MERIDIAN, CITY OF La PINE, DESCHUTES COUNTY, OREGON
SITUS ADDRESS: 51385 HWY 97, La PINE, OR 97739
DEED INST. # 2021-48656
APN DESIGNATION: TAX LOT 701 & 800 MAP: 22-10-15 DA
ZONING DESIGNATION: TRADITIONAL COMMERCIAL (C)

LEGEND

	FOUND PROPERTY CORNER PER SURVEY MAP 20943
	TO SET PROPERTY CORNER
	PROPERTY LINE
ST	SEPTIC TANK
– swr –	SEWER LINE
CO	PVC SEWER CLEANOUT
T	TELECOM. PEDISTAL
– tele –	UNDERGROUND TELECOMM.
C	CABLE PEDISTAL
	LANDSCAPING
	CONCRETE PAVING
– h2o –	WATER LINE
WV	WATER VALVE
WM	WATER METER
CB	CATCH BASIN
	LIGHT POLE
PP	POWER POLE
– ugp –	UNDERGROUND POWER LINE
ELE	ELECTRIC BOX
– gas –	GAS LINE
– cabl –	UNDERGROUND CABLE TV

WAYWARD R STUDIO
P.O. BOX 1808 BANDON OR. 97411
INFO@WAYWARDRSTUDIO.COM

PROPOSED SITE PLAN

SCALE: 1" = 30'-0"

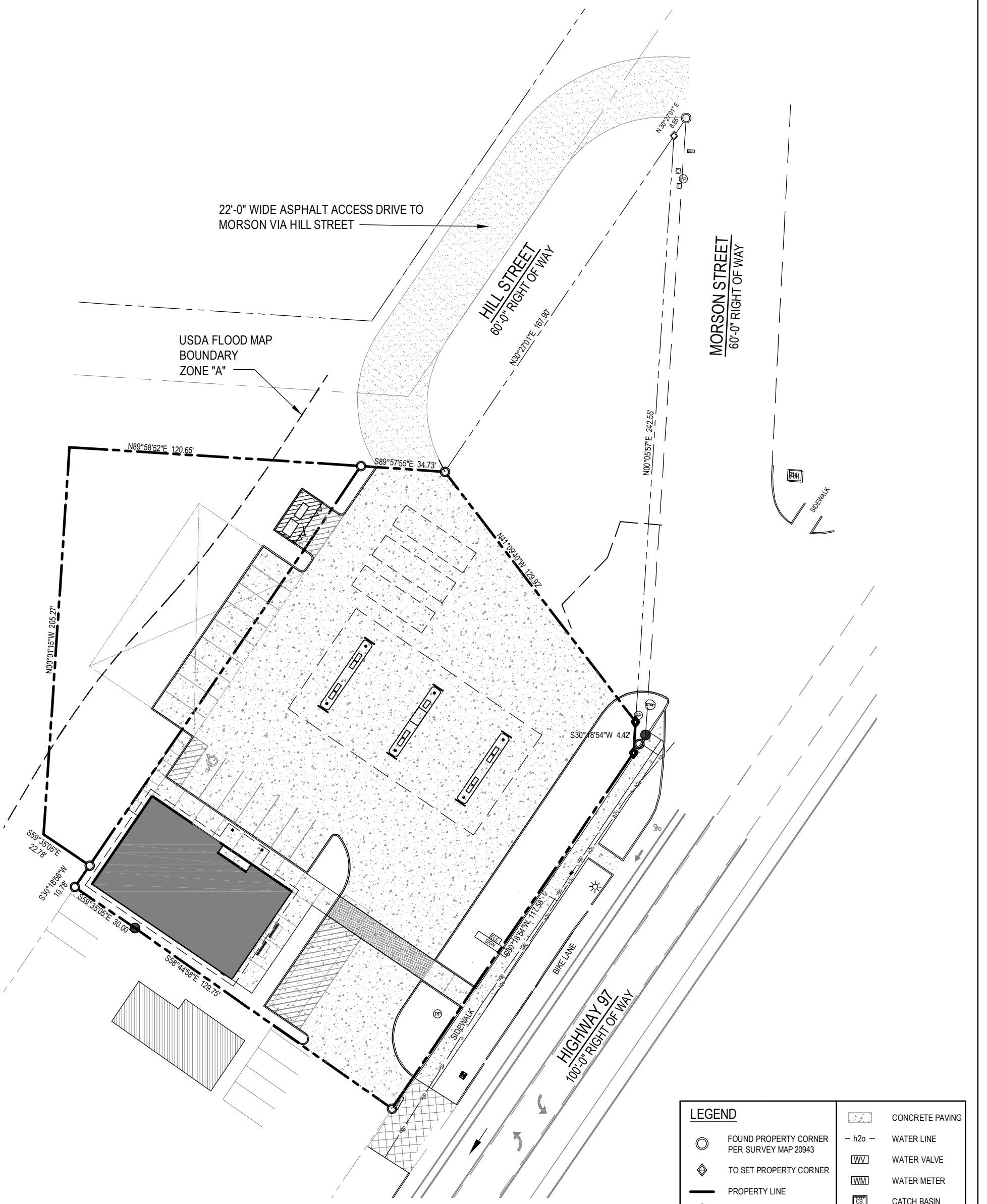
NORTH

RON'S OIL CO.

FUEL STATION & MARKET

51385 HIGHWAY 97 LAPINE OR. 97739

10-22-2024



WAYWARD R STUDIO

P.O. BOX 1808 BANDON OR. 97411

INFO@WAYWARDRSTUDIO.COM

PROPOSED ACCESS SITE PLAN

SCALE: 1" = 40'-0"

NORTH

RON'S OIL CO.

FUEL STATION & MARKET

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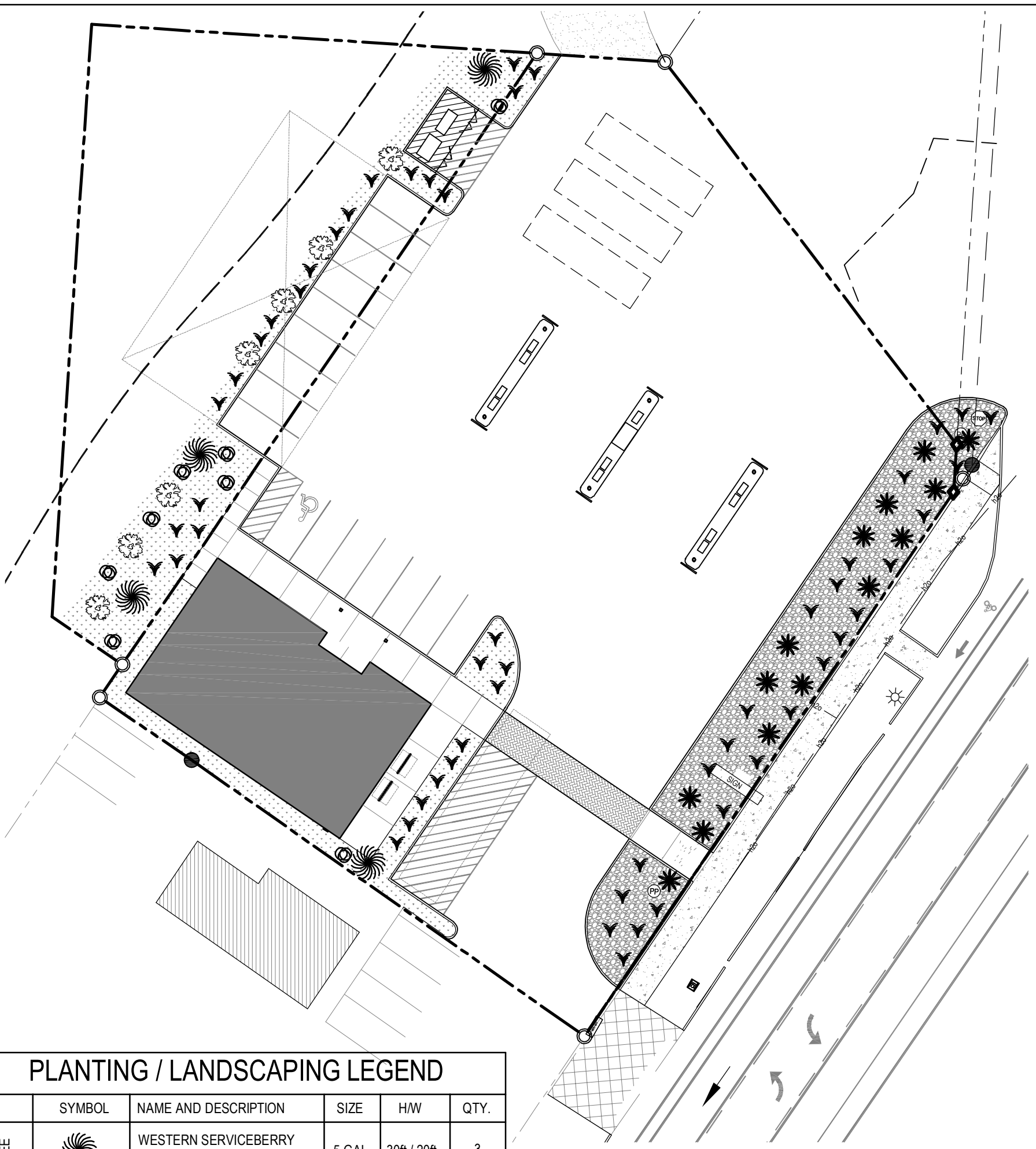
10-22-2024



PLANTING / LANDSCAPING LEGEND

	SYMBOL	NAME AND DESCRIPTION	SIZE	H/W	QTY.
TREE		WESTERN SERVICEBERRY AMELANCHIER ALNIFOLIA	5 GAL.	30ft / 20ft	3
SHRUB		SAGEBRUSH ARTEMESIA TRIDENTATA	5 GAL.	6ft / 6ft	7
GROUNDCOVER		MOUNT ATLAS DAISY / MAT DAISY ANACYCLUS DEPRESSUS	1 GAL.	1in / 12in	8
		STONECROP SEDUM SPECIES	1 GAL.	12in / 24in	13
GRASSES		FEATHER REED GRASS / KARL FOERSTER CALAMAGROSTIS ACUTIFLORA	1 GAL.	3ft / 1ft	54
		HARD FESCUE MIX FESTUCA TRACHYPHYLLA		12" HT	40 lb
LDSCP.		LANDSCAPING ROCK LAVA OR RIVER ROCK			400 YARDS

NOTE:

1. ALL PROPOSED LANDSCAPING IS NATIVE, NO IRRIGATION SPECIFIED

WAYWARD R STUDIO
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INFO@WAYWARDRSTUDIO.COM

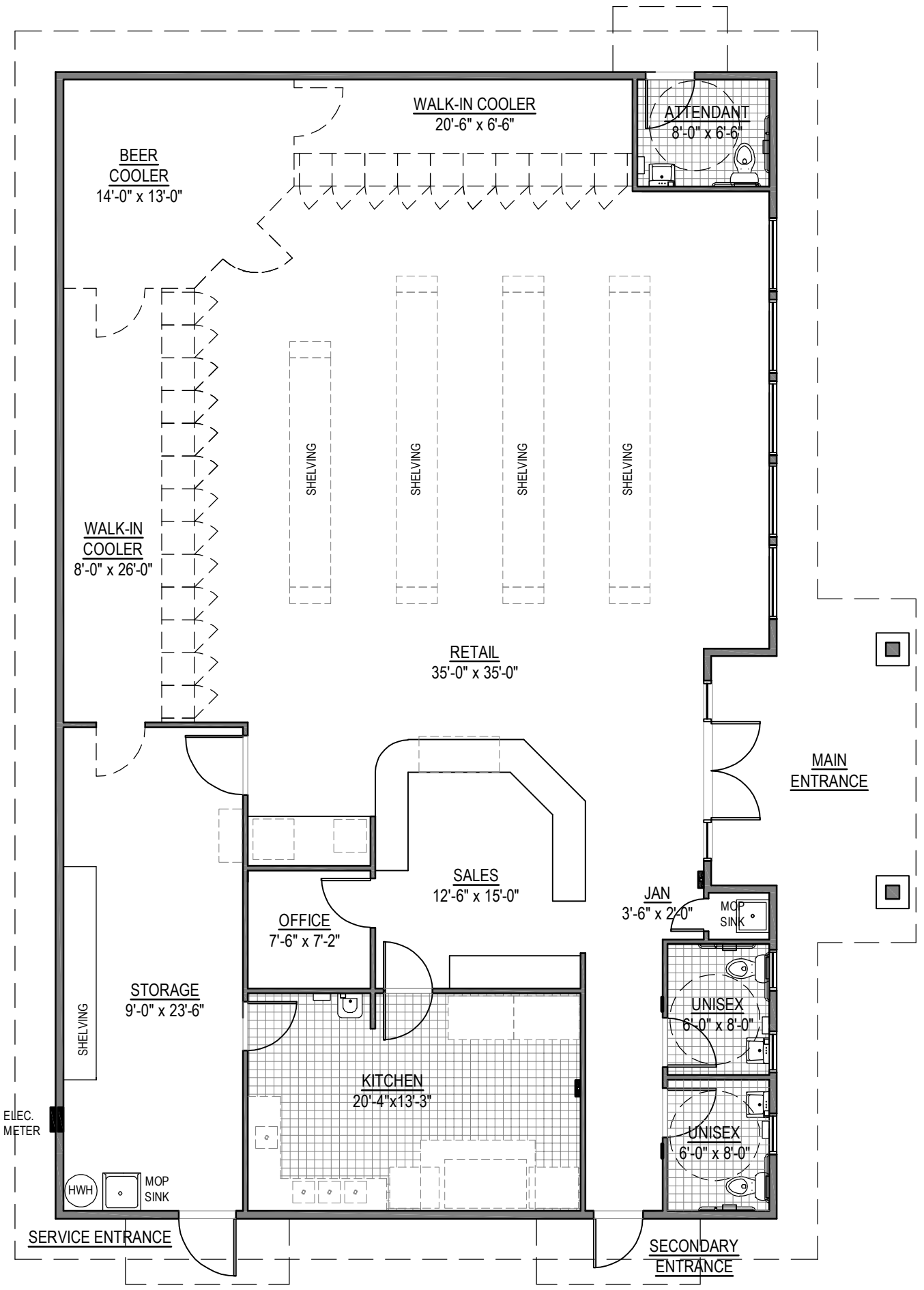
PROPOSED LANDSCAPE PLAN

SCALE: 1" = 30'-0"

NORTH

RON'S OIL CO.
FUEL STATION & MARKET
51385 HIGHWAY 97 LAPINE OR. 97739

10-22-2024



KITCHEN	280sf
OFFICE	61sf
UTILITY	30sf
RESTROOM	223sf
CORRIDOR	157sf
WALK-IN COOLER	531sf
SALES	178sf
RETAIL	1209sf
STORAGE	355sf
TOTAL	3024sf

WAYWARD R STUDIO
P.O. BOX 1808 BANDON OR. 97411
INFO@WAYWARDRSTUDIO.COM

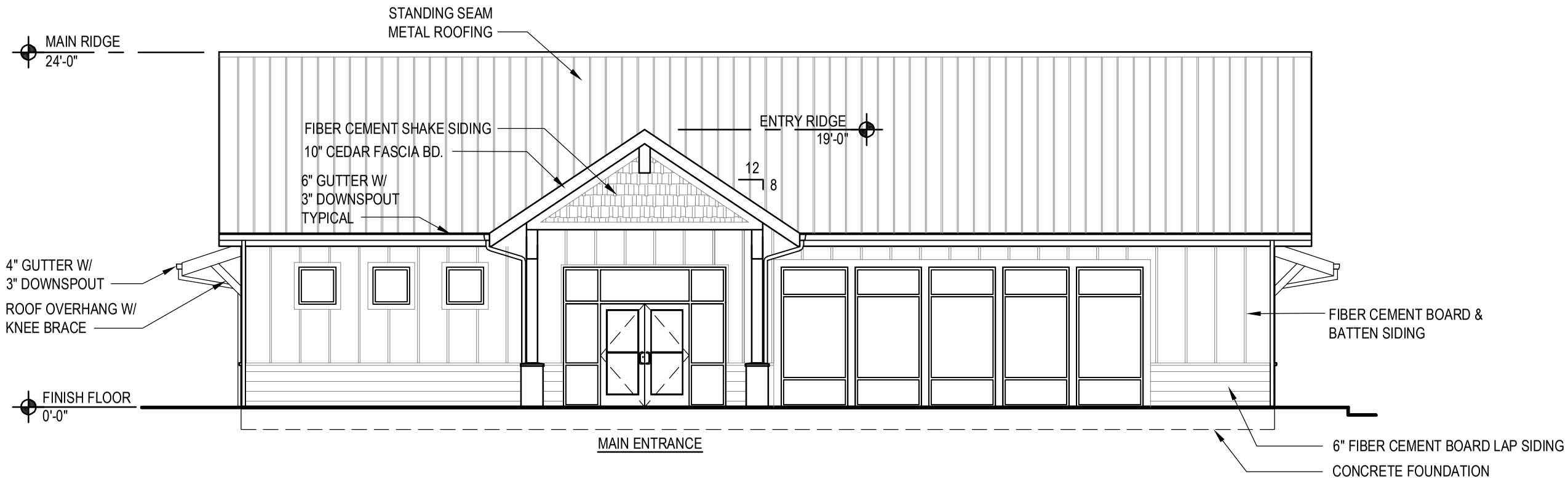
FLOOR PLAN
SCALE: 1/8" = 1'-0"

NORTH

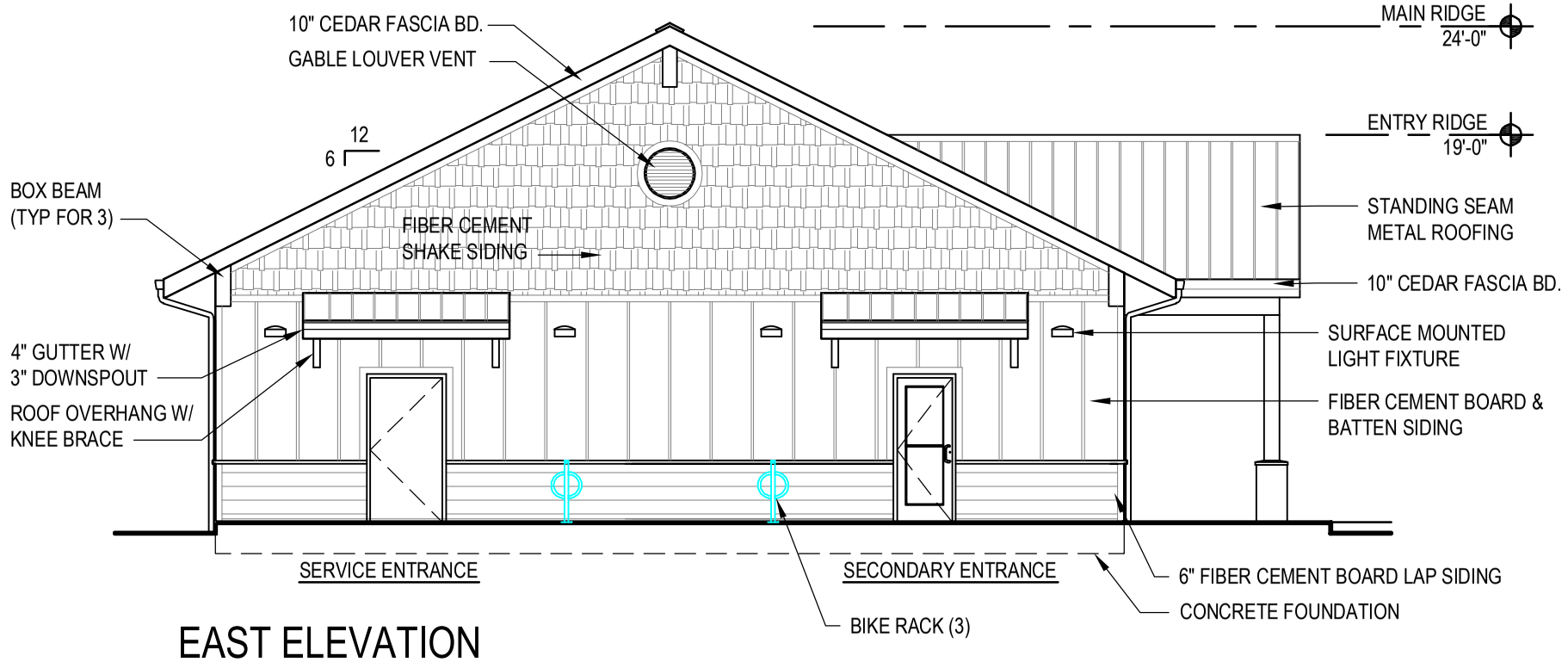
WAYWARD R STUDIO
P.O. BOX 1808 BANDON OR. 97411
INFO@WAYWARDRSTUDIO.COM

EXTERIOR ELEVATIONS

SCALE: 1/8" = 1'-0"



NORTH ELEVATION



EAST ELEVATION

RON'S OIL CO.

FUEL STATION & MARKET

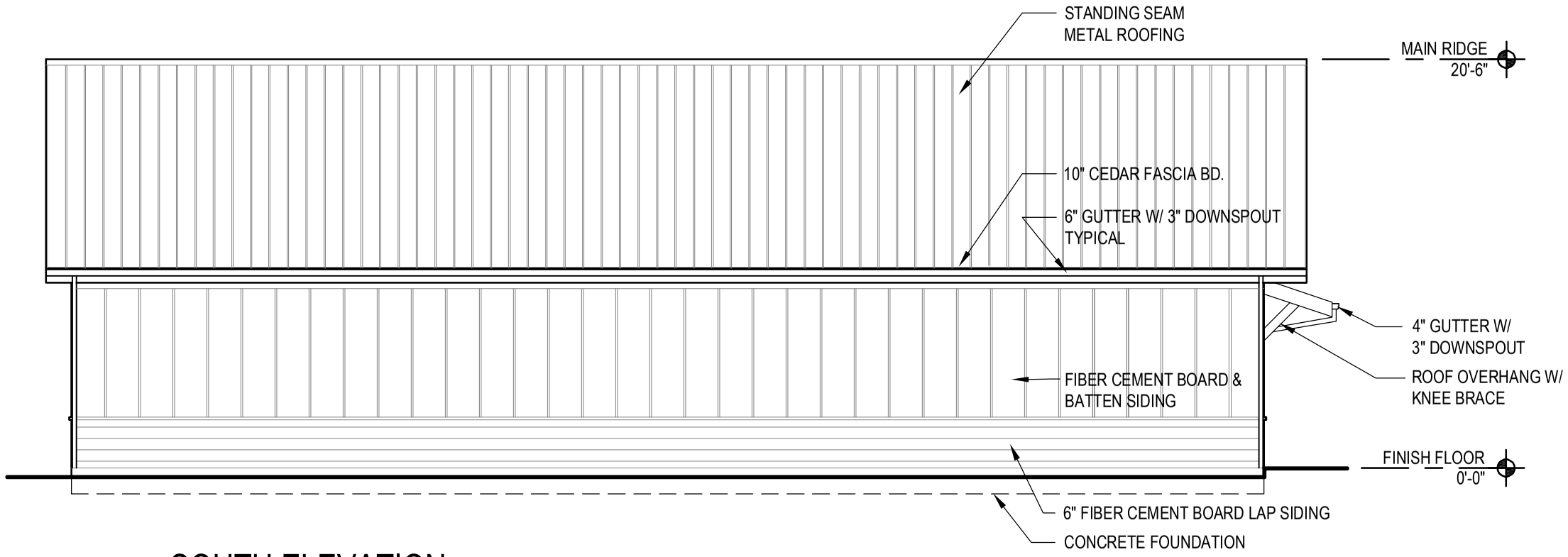
51385 HIGHWAY 97 LAPINE OR. 97739

10-22-2024

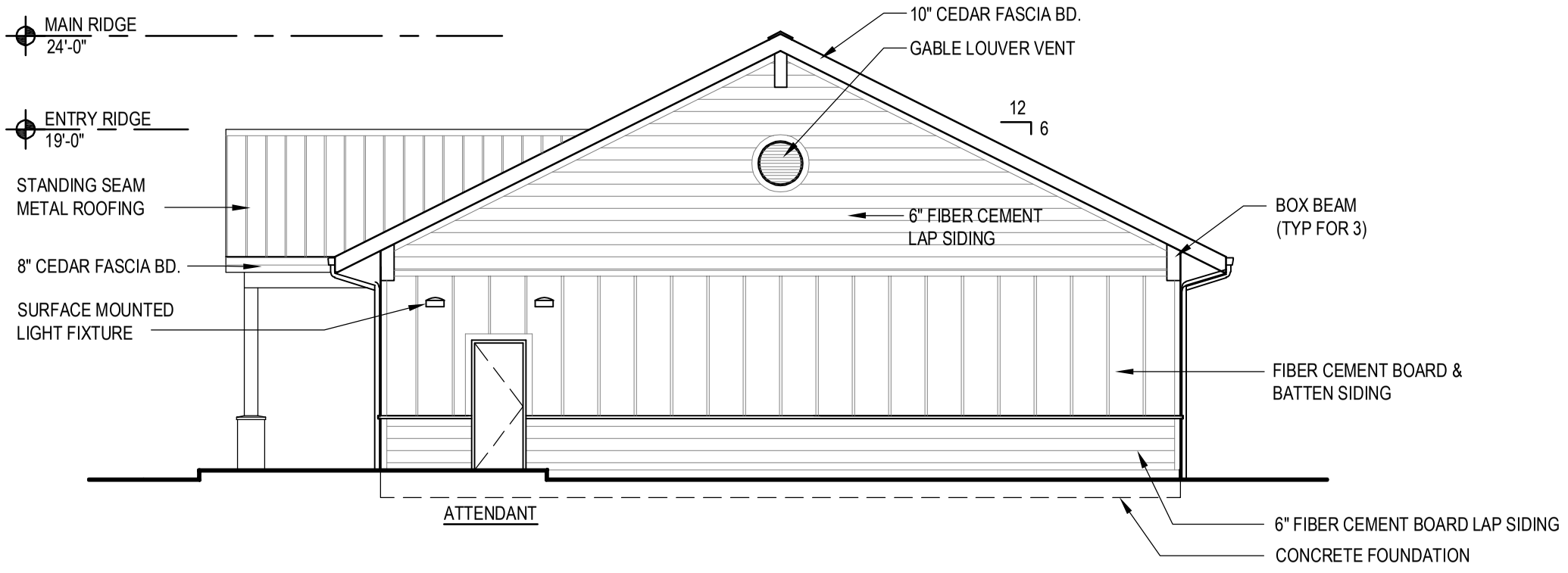
WAYWARD R STUDIO
P.O. BOX 1808 BANDON OR. 97411
INFO@WAYWARDRSTUDIO.COM

EXTERIOR ELEVATIONS

SCALE: 1/8" = 1'-0"



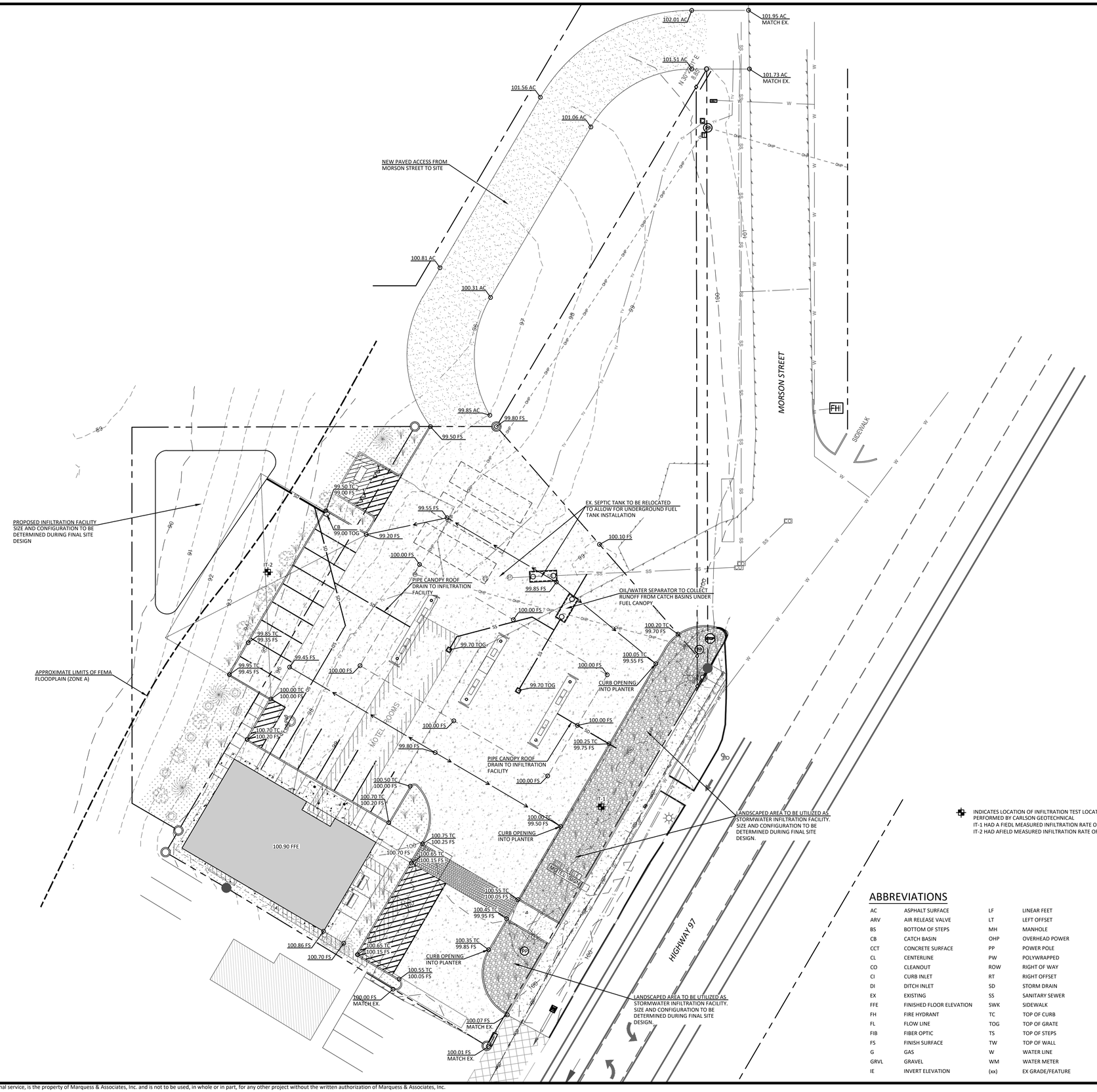
SOUTH ELEVATION



WEST ELEVATION

RON'S OIL CO.
FUEL STATION & MARKET
51385 HIGHWAY 97 LAPINE OR. 97739

10-22-2024



INDICATES LOCATION OF INFILTRATION TEST LOCATION
PERFORMED BY CARLSON GEOTECHNICAL
IT-1 HAD A FIEDL MEASURED INFILTRATION RATE OF 35.0 IN/HR.
IT-2 HAD AFIELD MEASURED INFILTRATION RATE OF 16.5 IN/HR.

ABBREVIATIONS

AC	ASPHALT SURFACE	LF	LINEAR FEET
ARV	AIR RELEASE VALVE	LT	LEFT OFFSET
BS	BOTTOM OF STEPS	MH	MANHOLE
CB	CATCH BASIN	OHP	OVERHEAD POWER
CCT	CONCRETE SURFACE	PP	POWER POLE
CL	CENTERLINE	PW	POLYWRAPPED
CO	CLEANOUT	ROW	RIGHT OF WAY
CI	CURB INLET	RT	RIGHT OFFSET
DI	DITCH INLET	SD	STORM DRAIN
EX	EXISTING	SS	SANITARY SEWER
FFE	FINISHED FLOOR ELEVATION	SWK	SIDEWALK
FH	FIRE HYDRANT	TC	TOP OF CURB
FL	FLOW LINE	TOG	TOP OF GRATE
FIB	FIBER OPTIC	TS	TOP OF STEPS
FS	FINISH SURFACE	TW	TOP OF WALL
G	GAS	W	WATER LINE
GRVL	GRAVEL	WM	WATER METER
IE	INVERT ELEVATION	(xx)	EX GRADE/FEATURE

20 10 0 20 40

SCALE: 1" = 20'

CALL BEFORE YOU DIG
1-800-332-2344
48 HOURS BEFORE BEGINNING EXCAVATION
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 AT 503-232-1987.

REGISTERED PROFESSIONAL ENGINEER
72868PE
PRELIMINARY
OREGON
MARCH 11, 2003
ROBERT SCOTT GUNTER
RENEWS: JUNE 30, 2025

MARQUESS & ASSOCIATES INC
CONSULTING ENGINEERS
P: 541-772-7115
F: 541-779-4079
WEB: www.mrorquess.com
1120 EAST JACKSON
MEDFORD, OR 97501

RON'S OIL CO.
51385 HIGHWAY 97
LA PINE, OREGON

CONCEPTUAL GRADING & DRAINAGE PLAN

REVISIONS

MAI JOB NO.	24-1006.1
DATE	09-20-2024
DRAWN	RSG
CHECKED	RSG

SHEET
C1
OF

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Carlson Geotechnical

A division of Carlson Testing, Inc.
Phone: (541) 330-9155
www.carlsontesting.com

Bend Office	**(541) 330-9155**
Eugene Office	**(541) 345-0289**
Salem Office	**(503) 589-1252**
Tigard Office	**(503) 684-3460**

Report of
Geotechnical Investigation & Infiltration Testing
Ron's Oil Company - Fuel Station and Market
51385 Highway 97
La Pine, Oregon

CGT Project Number B2402070

Prepared for

David Reed
Wayward R Studio
50219 Hwy 101
Brandon, Oregon 97411

August 13, 2024

Carlson Geotechnical

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August 13, 2024

David Reed
Wayward R Studio
50219 Hwy 101
Brandon, Oregon 97411

Report of
Geotechnical Investigation & Infiltration Testing
Ron's Oil Company - Fuel Station and Market
51385 Highway 97
La Pine, Oregon

CGT Project Number B2402070

Dear David Reed:

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing the results of our geotechnical investigation and infiltration testing report for the proposed Ron's Oil Company - Fuel Station and Market project. The site is located at 51385 Highway 97 in La Pine, Oregon. We performed our work in general accordance with CGT Proposal B24-099, dated July 17, 2024. Written authorization for our services was received on that same date.

We appreciate the opportunity to work with you on this project. Please contact us at (541) 330-9155 if you have any questions regarding this report.

Respectfully Submitted,
CARLSON GEOTECHNICAL

Gigi Stetler, G.I.T.
Geotechnical Staff III
gstetler@carlsontesting.com

Sam Kane, P.E.
Senior Geotechnical Engineer
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Doc ID: G:\GEOTECH\PROJECTS\2024 Projects\001 - Bend Projects\B2402070 - Ron's Oil Co. - Fuel Station and Market\008 - Deliverables\Report\B2402070 Geotechnical Investigation and Infiltration Testing Report.docx

TABLE OF CONTENTS

ATTACHMENTS

1.0 INTRODUCTION

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing the results of our geotechnical investigation and infiltration testing report for the proposed Ron's Oil Company - Fuel Station and Market project. The site is located at 51385 Highway 97 in La Pine, Oregon, as shown on the attached Site Location, Figure 1.

1.1 Project Information

CGT developed an understanding of the proposed project based on our correspondence with Megan Lawrence of South Coast Consulting LLC., and review of project documents provided to us. The documents provided included a project plan set, prepared by Wayward R Studio, dated June 3, 2024. Based on our review, we understand the project will include:

- Demolition of the existing Westview motel and its associated asphalt concrete (AC) surfaced parking lot.
- Construction of a new fuel station and commercial building. Although no detailed structural plans have been provided, we anticipate the building will be one story and wood or steel-framed, with a slab on grade floor and footprint of roughly 3,024 square feet. For the purposes of this report, we have assumed maximum column, continuous wall, and uniform floor slab loads will be on the order of 25 kips, 2 kips per lineal foot (klf), and 150 pounds per square foot (psf), respectively.
- Expansion and replacement of paved passenger car parking areas located north and east of the new building. We understand that new pavements will be surfaced with both asphalt concrete (AC) and Portland Cement Concrete (PCC).
- Although no detailed stormwater management plans have been provided, based on our recent correspondence, we understand stormwater collected from new impervious areas of the site will be disposed of, at least in part, via onsite infiltration. The project civil team requested two infiltration tests be performed at the site. See Appendix B for infiltration testing results. Design of infiltration facilities will rest with others.
- Although no grading plans have been provided, we anticipate permanent grade changes at the site will be minimal, with maximum cuts and fills on the order of 3 feet in depth.

1.2 Scope of Services

Our scope of work included the following:

- Contact the Oregon Utilities Notification Center to mark the locations of public utilities within a 20-foot radius of our explorations at the site.
- Explore subsurface conditions at the site by excavating eight test pits to depths of up to about 9 feet below ground surface (bgs). Details of the subsurface investigation are presented in Appendix A.
- Conduct infiltration testing in two of the test pits. Results of the infiltration testing are presented in Appendix B.
- Classify the soils encountered in the explorations in general accordance with ASTM D2488 (Visual-Manual Procedure).
- Provide a technical narrative describing surface and subsurface deposits, and local geology of the site, based on the results of our explorations and published geologic mapping.
- Provide recommendations for the Seismic Site Class, mapped maximum considered earthquake spectral response accelerations, and site seismic coefficients.

- Provide a qualitative evaluation of seismic hazards at the site, including earthquake-induced liquefaction, landsliding, and surface rupture due to faulting or lateral spread.
- Provide geotechnical recommendations for site preparation and earthwork.
- Provide geotechnical engineering recommendations for use in design and construction of shallow foundations, rigid retaining walls, floor slabs, and pavements.
- Provide this written report summarizing the results of our geotechnical investigation and recommendations for the project.

2.0 SITE DESCRIPTION

2.1 Site Geology

Based on available geologic mapping[1] of the area, the site is underlain by alluvium and surficial deposits consisting of unconsolidated, alluvial, locally pumiceous and cindery silt, sand and gravel, as well as eolian silt and ash. Nearby well logs suggest the thickness of this unit is in excess of 100 feet in the vicinity of the site. The alluvium and surficial deposits are underlain at depth by Pleistocene basalt flows consisting of gray, vesicular, olivine basalt erupted from vents on the flanks of Newberry volcano east of the site and medium to dark gray, vesicular to dense, olivine basalt and basaltic andesite erupted from vents on the flanks of the High Cascades west of the site.

2.2 Site Surface Conditions

The 1.08-acre site was bordered by residential properties to the north, Highway 97 and Morson Street to the east and north, undeveloped properties to the west, and developed commercial properties to the south. The project site is located approximately 430 feet east of Long Prairie Slough, which is a stream that flows south to north. The southern portion of the site was occupied by the existing Westview Motel, a shed structure and an associated parking lot (to be demolished). The western portion of the site was unoccupied and surfaced with short grasses and shrubs. The site was relatively level to gently descending to the west at an approximate slope gradient of 20H:1V (horizontal to vertical) and exhibited about 10 feet of vertical relief from the western edge to the eastern edge of the site. Site layout and surface conditions at the time of our field investigation are shown on the attached Site Plan (Figure 2) and Site Photographs (Figure 3).

2.3 Subsurface Conditions

2.3.1 Subsurface Investigation & Laboratory Testing

Our subsurface investigation consisted of eight test pits (TP-1 through TP-8) completed on August 5, 2024. The approximate exploration locations are shown on the Site Plan, attached as Figure 2. In summary, the test pits were excavated to depths ranging from about 3 to 9 feet bgs. Details regarding the subsurface investigation, logs of the explorations, and results of laboratory testing are presented in Appendix A. Subsurface conditions encountered during our investigation are summarized below.

2.3.2 Subsurface Materials

Logs of the explorations are presented in Appendix A. The following describes each of the subsurface materials encountered at the site.

[1] Peterson, Norman V., Groh, Edward A., Taylor, Edward M., Stensland, Donald E., 1976. Geology and mineral resources of Deschutes County Oregon: Oregon Department of Geology and Mineral Industries, Bulletin 89, scale 1:200,000.

Asphalt Concrete Pavement

Asphalt concrete (AC) pavement was encountered at the surface of test pits TP-3, TP-4, and TP-5 and was about 3 inches thick.

Undocumented Poorly Graded Gravel (GP Fill)

Undocumented poorly graded gravel fill (base rock) was encountered below the asphalt concrete pavement in test pits TP-3, TP-4 and TP-5. Undocumented fill refers to materials placed without (available) records of subgrade conditions or evaluation of compaction. The poorly graded gravel fill was typically gray, dry to moist, subangular to angular, and up to about ¾-inch in diameter. This soil extended to depths of about 1 foot bgs.

Undocumented Silty Sand with Gravel and Cobbles Fill (SM Fill)

Undocumented silty sand with gravel and cobbles fill was encountered at the surface of test pits TP-1 and TP-2. Undocumented fill refers to materials placed without (available) records of subgrade conditions or evaluation of compaction. The silty sand with gravel and cobbles fill was typically tan, dry, subangular to subrounded, fine- to medium-grained, contained nonplastic fines and varying amounts of subangular to subrounded gravel and cobbles up to 8 inches in diameter. This material also contained various debris including abandoned utility pipes and candy wrappers and extended to depths of about 4½ to 5 feet bgs.

Silty Sand (SM)

Underlying the undocumented fill materials (SM Fill, GP Fill) in test pits TP-1 through TP-5 and encountered at the surface of test pit TP-6, was native silty sand. The silty sand was typically medium dense to dense, brown to tan, dry to moist, subangular to subrounded, fine- to medium-grained, and contained nonplastic fines. This soil extended to depths up to 6½ feet bgs.

Poorly Graded Sand with Silt (SP-SM) to Poorly Graded Sand (SP)

Native poorly graded sand with silt and poorly graded sand was encountered at the surface of test pits TP-7 and TP-8 and underlying the native silty sand in test pits TP-1 through TP-6. This soil was typically medium dense, black to brown, dry to wet, subangular to subrounded, fine- to coarse-grained, and contained nonplastic fines. This soil extended to the full depths explored in the test pits, about 8½ to 9 feet bgs.

2.3.3 Groundwater

Static groundwater was encountered at depths ranging from 8 to 8½ feet bgs during our field investigation at the site in August 2024, as shown on the attached subsurface lots and attached Site Plan, Figure 2. We anticipate that groundwater levels will fluctuate due to seasonal and annual variations in precipitation, changes in site utilization, or other factors.

3.0 SEISMIC CONSIDERATIONS

3.1 Seismic Design

Section 1613.2.2 of the 2022 Oregon Structural Specialty Code (2022 OSSC) requires that the determination of the seismic site class be in accordance with Chapter 20 of the American Society of Civil Engineers Minimum Design Loads for Buildings and Other Structures (ASCE 7-16). We have assigned the site as Site Class D (“Default Site Class”) based on geologic mapping and subsurface conditions encountered during our investigation.

Earthquake ground motion parameters for the site were obtained in accordance with the 2022 OSSC using the Seismic Hazards by Location calculator on the ATC website[2]. The site Latitude 43.667061° North and Longitude 121.506998° West were input as the site location. The following table shows the recommended seismic design parameters for the site.

Table 1 Seismic Ground Motion Values

Parameter		Value
Mapped Acceleration Parameters	Spectral Acceleration, 0.2 second (S_s)	0.426g
	Spectral Acceleration, 1.0 second (S_1)	0.215g
Coefficients (Site Class D)	Site Coefficient, 0.2 second (F_A)	1.460
	Site Coefficient, 1.0 second (F_V)[1]	2.170
Adjusted MCE Spectral Response Parameters	MCE Spectral Acceleration, 0.2 second (S_{MS})	0.621g
	MCE Spectral Acceleration, 1.0 second (S_{M1})	0.467g
Design Spectral Response Accelerations	Design Spectral Acceleration, 0.2 second (S_{DS})	0.414g
	Design Spectral Acceleration, 1.0 second (S_{D1})	0.311g
Seismic Design Category (Risk Category II)		D

[1] Value determined from 2022 OSSC Table 1613.2.3(2).

3.2 Seismic Hazards

3.2.1 Liquefaction

In general, liquefaction occurs when deposits of loose/soft, saturated, cohesionless soils, generally sands and silts, are subjected to strong earthquake shaking. If these deposits cannot drain quickly enough, pore water pressures can increase, approaching the value of the overburden pressure. The shear strength of a cohesionless soil is directly proportional to the effective stress, which is equal to the difference between the overburden pressure and the pore water pressure. When the pore water pressure increases to the value of the overburden pressure, the shear strength of the soil approaches zero, and the soil can liquefy. The liquefied soils can undergo rapid consolidation or, if unconfined, can flow as a liquid. Structures supported by the liquefied soils can experience rapid, excessive settlement, shearing, or even catastrophic failure.

For fine-grained soils, susceptibility to liquefaction is evaluated based on penetration resistance and plasticity, among other characteristics. Criteria for identifying non-liquefiable, fine-grained soils are constantly evolving. Current practice to identify non-liquefiable, fine-grained soils is based on moisture content and plasticity characteristics of the soils[3,4,5]. The susceptibility of sands, gravels, and sand-gravel mixtures to liquefaction is typically assessed based on penetration resistance, as measured using SPTs, CPTs, or Becker Hammer Penetration tests (BPTs).

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[2] Applied Technology Council (ATC), 2024. USGS seismic design parameters determined using "Seismic Hazards by Location," *accessed August 2024*, from the ATC website https://hazards.atcouncil.org/.

[3] Seed, R.B. et al., 2003. Recent Advances in Soil Liquefaction Engineering: A Unified and Consistent Framework. Earthquake Engineering Research Center Report No. EERC 2003-06.

[4] Bray, Jonathan D., Sancio, Rodolfo B., et al., 2006. Liquefaction Susceptibility of Fine-Grained Soils, Journal of Geotechnical and Geoenvironmental Engineering, Volume 132, Issue 9, September 2006.

[5] Idriss, I.M., Boulanger, R.W., 2008. Soil Liquefaction During Earthquakes, Earthquakes Engineering Research Institute Monograph MNO-12.

The Oregon Department of Geology and Mineral Industries' Oregon Statewide Geohazards Viewer (HazVu)[6] shows a *high* hazard for liquefaction at the site and immediate vicinity. Based on the generally medium dense to better in-situ relative densities of the coarse-grained soils, we conclude the risk of liquefaction induced settlement at the project site is low. If the property owner wishes to further define the risk of liquefaction at the site, a quantitative liquefaction triggering and settlement analysis could be performed. Such an analysis would require borings using powered drilling equipment, and is outside the scope of this assignment.

3.2.2 Slope Instability

Due to the relatively level topography at and surrounding the site, the risk of slope instability at the site is considered low. The proposed grading includes relatively minimal planned changes in site grades and is not anticipated to significantly increase this risk.

3.2.3 Surface Rupture

3.2.3.1 Faulting

Although the site is situated in a region of the country with known active faults and historic seismic activity, no known faults exist on or immediately adjacent to the site. Therefore, the risk of surface rupture at the site due to faulting is considered low.

3.2.3.2 Lateral Spread

Surface rupture due to lateral spread can occur on sites underlain by liquefiable soils that are located on or immediately adjacent to slopes steeper than about 3 degrees (20H:1V), and/or adjacent to a free face, such as a stream bank or the shore of an open body of water. During lateral spread, the materials overlying the liquefied soils are subject to lateral movement downslope or toward the free face.

The soils encountered at the project site have a low risk of susceptibility to liquefaction, and are approximately 430 feet away from the nearest potential free-face of Long Prairie Slough. Accordingly, the risk of lateral spread during a design level earthquake should be considered very low.

4.0 CONCLUSIONS

Based on the results of our field explorations and analyses, the site may be developed as described in Section 1.1 of this report, provided the recommendations presented in this report are incorporated into the design and development. Satisfactory subgrade support for planned shallow foundations, rigid retaining walls, floor slabs, and pavements can be achieved by the native medium dense to better silty sand (SM), native poorly graded sand with silt (SP-SM), native poorly graded sand (SP) or new structural fill that is properly placed and compacted on these materials during construction. The primary geotechnical considerations for this project include:

- The presence of undocumented fill materials encountered at the site.
- The presence of near-surface, moisture-sensitive soils that are susceptible to disturbance during wet weather.
- The presence of relatively shallow groundwater encountered in our test pits.

[6] Oregon Department of Geology and Mineral Industries, 2024. Oregon Statewide Geohazards Viewer, *accessed August 2024*, from DOGAMI web site: http://www.oregongeology.org/sub/hazvu/index.htm.

These considerations are described in more detail in the following sections.

4.1 Undocumented Fill

As indicated in Section 2.3.2 above, we encountered undocumented fills within test pits TP-1 through TP-5 (SM Fill, GP Fill). The depths of undocumented fill materials encountered at the site are shown on the attached Site Plan, Figure 2. The existing fill materials where generally variable in terms of relative density, indicating that they were likely not placed in accordance with typical code requirements for structural fill. In addition, within test pits TP-1 and TP-2, we encountered abandoned utility pipes and candy wrappers. Due to the presence of debris observed within these soils and their variable density we do not recommend they be relied upon for subgrade support of shallow foundations, rigid retaining walls or floor slabs, due to inherent risk of (1) uneven subgrade response once loads are applied, and (2) excessive, long-term total differential settlements. Where encountered beneath new shallow foundations, rigid retaining walls, and floor slabs, we recommend the existing fill soils (SM Fill, GP Fill) be over-excavated to expose the underlying native sandy soils (SM, SP-SM, SP), and that the resulting excavation be backfilled to finish grades with structural fill in accordance with Section 5.4 of this report. Geotechnical recommendations for pavement subgrade are presented in Section 5.8.1 of this report.

4.2 Subgrade Moisture Sensitivity

The near-surface sandy soils with a fine-grained portion (SM, SP-SM) are susceptible to disturbance during wet weather. Trafficability of these soils may be difficult, and significant damage to the subgrade could occur, if earthwork is undertaken without proper precautions at times when the exposed soils are more than a few percentage points above optimum moisture content. In the event that construction occurs during wet weather, CGT recommends that measures be implemented to protect the fine-grained (silty) subgrade in areas of repeated construction traffic. Geotechnical recommendations for wet weather construction are presented in Section 5.3 of this report.

4.3 Shallow Groundwater & Proximity to Mapped Floodplain

As indicated in Section 2.3.3 above, we measured static groundwater at a depth of 8 feet bgs within test pit exploration TP-1 that was advanced at the site in early August 2024. We recommended that the groundwater level be modeled at a depth of 7 feet bgs to account for seasonal fluctuations. To the extent possible, we recommend that site grades be maintained at their current elevations, or raised to provide separation between anticipated seasonal high groundwater level and foundation bearing elevations. Excavations for utilities extending more than 7 feet below existing grades may encounter groundwater and dewatering may be required. Geotechnical recommendations for use in planning of temporary excavations and dewatering are presented in Section 5.2 and 5.2.4 of this report, respectively.

The western portion of the project site is mapped within the mapped flood plain of Long Prairie Slough, located approximately 430 feet west of the project site. We recommend that the project designer review the applicable City of La Pine development codes to ensure the new development is developed in conformance with local flood plain requirements.

5.0 RECOMMENDATIONS

The recommendations presented in this report are based on the information provided to us, results of our field investigation and analyses, laboratory data, and professional judgment. CGT has observed only a small portion of the pertinent subsurface conditions. The recommendations are based on the assumptions that the

subsurface conditions do not deviate appreciably from those found during the field investigation. CGT should be consulted for further recommendations if the design of the proposed development changes and/or variations or undesirable geotechnical conditions are encountered during site development.

5.1 Site Preparation

5.1.1 Demolition

Demolition of existing buildings and appurtenant structures should include complete removal of all structural elements, including foundations and concrete slabs. Abandoned buried utilities should similarly be removed or grouted full. Concrete or asphalt concrete debris resulting from demolition activities may be re-used as structural fill, provided it is processed in accordance with the recommendations presented in Section 5.4.1 of this report. Alternatively, demolition debris should be hauled off site for disposal.

5.1.2 Stripping

Existing vegetation, rooted soils, and undocumented fill soils (SM Fill, GP Fill) should be removed from within, and for a minimum 5-foot margin around, proposed building pad and pavement areas. Based on the results of our field explorations, topsoil stripping depths are anticipated to be less than ¼-foot bgs. Based on the results of our field explorations, undocumented fill encountered at the site extended to depths of about 5 feet bgs. These materials may be deeper or shallower at locations away from the completed explorations. The geotechnical engineer's representative should provide recommendations for actual stripping depths based on observations during site stripping. Stripped surface vegetation and rooted soils should be transported off-site for disposal, or stockpiled for later use in landscaped areas. Stripped, inorganic fill materials should be transported off-site for disposal, or may be stockpiled for later use as structural fill as described in Section 5.4.1 of this report.

5.1.3 Grubbing

Grubbing of trees should include the removal of the root mass and roots greater than ½-inch in diameter. Grubbed materials should be transported off-site for disposal. Root masses from larger trees may extend greater than 3 feet bgs. Where root masses are removed, the resulting excavation should be properly backfilled with structural fill in conformance with Section 5.4.2 of this report.

5.1.4 Test Pit Backfills

The test pits conducted at the site were loosely backfilled during our field investigation. Where test pits are located within finalized building, structural fill, or pavement areas, the loose backfill materials should be re-excavated. The resulting excavations should be backfilled with structural fill in conformance with Section 5.4 of this report.

5.1.5 Existing Utilities & Below-Grade Structures

All existing utilities at the site should be identified prior to excavation. Abandoned utility lines beneath the new building, pavements, and hardscaping features should be completely removed or grouted full. Soft, loose, or otherwise unsuitable soils encountered in utility trench excavations should be removed and replaced with structural fill in conformance with Section 5.4 this report. Buried structures (i.e. footings, foundation walls, retaining walls, slabs-on-grade, tanks, etc.), if encountered during site development, should be completely removed and replaced with structural fill in conformance with Section 5.4 of this report.

5.1.6 Subgrade Preparation - Building Pad, Pavement Areas, and Areas to Receive Structural Fill

After site preparation as recommended above, but prior to placement of structural fill and/or aggregate base, the geotechnical engineer or their representative should observe the exposed subgrade soils in order to identify areas of excessive yielding through either proof rolling or probing. Proof rolling of subgrade soils is typically conducted during dry weather using a fully-loaded, 10- to 12-cubic-yard, tandem-axle, tire-mounted, dump truck or equivalent weighted water truck. Areas of limited access or that appear too soft or wet to support proof rolling equipment should be evaluated by probing. During wet weather, subgrade preparation should be performed in general accordance with the recommendations presented in Section 5.3 of this report. If areas of soft soil or excessive yielding are identified, the affected material should be over-excavated to firm, unyielding subgrade, and replaced with imported granular structural fill in conformance with Section 5.4.2 of this report.

5.1.7 Freezing Weather Considerations

For construction that occurs during extended periods of sub-freezing temperatures, the following special provisions are recommended:

- Structural fill should not be placed over frozen ground.
- Frozen soil should not be placed as structural fill.
- Fine-grained (silty) soils should not be placed as structural fill during sub-freezing temperatures.

Identification of frozen soils at the site should be in accordance with ASTM D4083-01 “Standard Practice for Description of Frozen Soils” or other approved method. The geotechnical engineer can aid the contractor with supplemental recommendations for earthwork that will take place during extended periods of sub-freezing weather, as required.

5.1.8 Erosion Control

Erosion and sedimentation control measures should be employed in accordance with applicable City, County, and State regulations.

5.2 Temporary Excavations

5.2.1 Overview

Conventional earthmoving equipment in proper working condition should be capable of making necessary excavations for the anticipated site cuts as described earlier in this report. All excavations should be in accordance with applicable OSHA and state regulations. It is the contractor's responsibility to select the excavation methods, to monitor site excavations for safety, and to provide any shoring required to protect personnel and adjacent improvements. A “competent person”, as defined by OR-OSHA, should be on-site during construction in accordance with regulations presented by OR-OSHA. CGT’s current role on the project does not include review or oversight of excavation safety.

5.2.2 OSHA Soil Type

For use in the planning and construction of temporary excavations up to 10 feet in depth, an OSHA soil type “C” should be used for the native sandy soils (SM, SP-SM, SP) encountered in the explorations.

5.2.3 Dewatering

As indicated in Section 2.3.3 above, groundwater was encountered at depths of about 8 to 8½ feet bgs in our explorations. The "seasonal high groundwater level" at the site should be assigned at a depth of 7 feet bgs to account for seasonal fluctuations. The soils encountered at these depths contained relatively low fines content, and are anticipated to exhibit moderate to high rates of transmissivity. Accordingly, we would expect moderate to high rates of seepage when excavations extend below the groundwater level. Pumping from sumps may be effective in removing groundwater within shallow or localized excavations at the site. Where utilized, the sumps or wells should be installed to remove water to a depth of at least 2 feet below the lowest elevation in the excavation. With regards to temporary dewatering, the contractor or his representative should determine the appropriate size, number, and location of the sumps or wells. Water discharge location(s) should be reviewed by the project design team. The project civil engineer or architect should evaluate requirements for disposal of the resultant discharge.

5.2.4 Utility Trenches

Temporary trench cuts should stand near vertical to depths of approximately 4 feet bgs in the native, sandy soils (SM, SP-SM, SP) encountered at the site. If caving of the sidewalls is observed during excavation, the sidewalls should be flattened or shored. Depending on the time of year trench excavations occur, trench dewatering may be required in order to maintain dry working conditions. If groundwater is present at the base of utility excavations, we recommend placing trench stabilization material at the base of the excavations. Trench stabilization material should be in conformance with Section 5.4.3 of this report.

5.2.5 Excavations Near Foundations

Excavations near footings should not extend within a 1 horizontal to 1 vertical (1H:1V) plane projected out and down from the outside, bottom edge of the footings. In the event excavation needs to extend below the referenced plane, temporary shoring of the excavation and/or underpinning of the subject footing may be required. The geotechnical engineer should be consulted to review proposed excavation plans for this design case to provide specific recommendations.

5.3 Wet Weather Considerations

Notwithstanding the generally arid conditions of the La Pine area, soil conditions should be evaluated in the field by the geotechnical engineer's representative at the initial stage of site preparation to determine whether the recommendations within this section should be incorporated into construction.

5.3.1 Overview

Due to its fines content, the near-surface sandy soils (SM, SP-SM) are moisture sensitive and susceptible to disturbance during wet weather. Trafficability of these soils may be difficult, and significant damage to subgrade soils could occur, if earthwork is undertaken without proper precautions at times when the exposed soils are more than a few percentage points above optimum moisture content. Site preparation activities may need to be accomplished using track-mounted equipment, loading removed material onto trucks supported on granular haul roads, or other methods to limit soil disturbance. The geotechnical engineer or their representative should evaluate the subgrade during excavation by probing rather than proof rolling. Soils that have been disturbed during site preparation activities, or soft or loose areas identified during probing, should be over-excavated to firm, unyielding subgrade, and replaced with imported granular structural fill in conformance with Section 5.4.2 of this report.

5.3.2 Geotextile Separation Fabric

We recommend a geotextile separation fabric be placed to serve as a barrier between the prepared subgrade and granular fill/base rock in areas of repeated or heavy construction traffic. The geotextile fabric should meet the requirements presented in the current Oregon Department of Transportation Standard Specification for Construction (ODOT SSC), Section 02320.

5.3.3 Granular Working Surfaces (Haul Roads & Staging Areas)

Haul roads subjected to repeated heavy, tire-mounted, construction traffic (e.g. dump trucks, concrete trucks, etc.) will require a minimum of 18 inches of imported granular material. For light staging areas, 12 inches of imported granular material is typically sufficient. Additional granular material or geo-grid reinforcement may be recommended based on site conditions and/or loading at the time of construction. The imported granular material should be in conformance with Section 5.4.2 and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. The prepared subgrade should be covered with geotextile fabric (Section 5.3.2) prior to placement of the imported granular material. The imported granular material should be placed in a single lift (up to 24 inches deep) and compacted using a smooth-drum, non-vibratory roller until well-keyed.

5.3.4 Footing Subgrade Protection

A minimum of 3 inches of imported granular material is recommended to protect fine-grained footing excavation subgrades from foot traffic during inclement weather. The imported granular material should be in conformance with Section 5.4.2. The maximum particle size should be limited to 1 inch. The imported granular material should be placed in one lift over the prepared, undisturbed subgrade, and compacted using non-vibratory equipment until well keyed.

5.4 Structural Fill

The geotechnical engineer should be provided the opportunity to review all materials considered for use as structural fill (prior to placement). Samples of the proposed fill materials should be submitted to the geotechnical engineer a minimum of 5 business days prior their use on site[7]. The geotechnical engineer or their representative should be contacted to evaluate compaction of structural fill as the material is being placed. Evaluation of compaction may take the form of in-place density tests and/or proof roll tests with suitable equipment. Structural fill should be evaluated at intervals not exceeding every 2 vertical feet as the fill is being placed.

5.4.1 On-Site Soils – General Use

5.4.1.1 Asphalt Concrete Debris

Debris resulting from the demolition of existing pavements can be re-used as structural fill if processed/crushed into material that is fairly well graded between coarse and fine. The processed/crushed concrete should contain no organic matter, debris, or particles larger than 4 inches in diameter. Moisture conditioning (wetting) should be expected in order to achieve adequate compaction. When used as structural fill, this material should be placed and compacted in general accordance with Section 5.4.2.

5.4.1.2 Concrete Debris

Concrete debris resulting from the demolition of existing rigid pavements and other features (foundations, floor slabs, sidewalks, etc.) can be re-used as structural fill if processed/crushed into material that is fairly

[7] Laboratory testing for moisture density relationship (Proctor) is required. Tests for gradation may be required.

well-graded between coarse and fine. The processed/crushed concrete should contain no organic matter, debris, or particles larger than 4 inches in diameter. Moisture conditioning (wetting) should be expected in order to achieve adequate compaction. When used as structural fill, this material should be placed and compacted in general accordance with Section 5.4.2.

5.4.1.3 Undocumented Fills: Silty Sand with Gravel & Cobbles Fill (SM Fill) & Poorly Graded Gravel (GP Fill)
Re-use of the on-site, relatively clean gravelly and sandy soils as structural fill is feasible, provided the materials are kept clean of organics, debris, and particles larger than 4 inches in diameter. Re-use of the onsite silty sand wilt gravel and cobbles may require processing (removal) of large cobbles. If reused as structural fill, these materials should be prepared in general accordance with Section 5.4.2.

5.4.1.4 Silty Sand (SM) & Poorly Graded Sand with Silt (SP-SM)
Re-use of these soils as structural fill may be difficult because they are sensitive to small changes in moisture content and difficult to adequately compact during wet weather. Moisture-conditioning (wetting) should be expected in order to achieve adequate compaction. If used as structural fill, these soils should be kept free of organic matter, debris, and particles larger than 4 inches. Processing (removal) of large cobbles and boulders may be required in some areas of the site, and should be factored. When used as structural fill, these soils should be placed in lifts with a maximum thickness of about 9 inches at moisture contents within –-4 and +2 percent of optimum, and compacted to not less than 92 percent of the material's maximum dry density as determined in accordance with ASTM D1557 (Modified Proctor).

5.4.1.5 Poorly Graded Sand (SP)
Re-use of the on-site, relatively clean sandy soils as structural fill is feasible, provided the materials are kept clean of organics, debris, and particles larger than 4 inches in diameter. If reused as structural fill, these materials should be prepared in general accordance with Section 5.4.2.

If the on-site materials cannot be properly moisture-conditioned and/or processed, we recommend using imported granular material for structural fill.

5.4.2 Imported Granular Structural Fill – General Use

Imported granular structural fill should consist of angular pit or quarry run rock, crushed rock, or crushed gravel that is fairly well graded between coarse and fine particle sizes. The granular fill should contain no organic matter, debris, or particles larger than 4 inches, and have less than 10 percent material passing the U.S. Standard No. 200 Sieve. For fine-grading purposes, the maximum particle size should be limited to 1½ inches. The percentage of fines can be increased to 15 percent of the material passing the U.S. Standard No. 200 Sieve if placed during dry weather, and provided the fill material is moisture-conditioned, as necessary, for proper compaction. Imported granular fill material should be placed in lifts with a maximum thickness of about 12 inches, and compacted to not less than 95 percent of the material's maximum dry density, as determined in general accordance with ASTM D1557 (Modified Proctor). Proper moisture conditioning and the use of vibratory equipment will facilitate compaction of these materials.

Granular fill materials with high percentages of particle sizes in excess of 1½ inches are considered non-moisture-density testable materials. As an alternative to conventional density testing, compaction of these materials should be evaluated by proof roll test observation (deflection tests), where accepted by the geotechnical engineer.

5.4.3 Trench Base Stabilization Material

If groundwater is present at the base of utility excavations, trench base stabilization material should be placed. Trench base stabilization material should consist of a minimum of 1 foot of well-graded granular material with a maximum particle size of 4 inches and less than 5 percent material passing the U.S. Standard No. 4 Sieve. The material should be free of organic matter and other deleterious material, placed in one lift, and compacted until well-keyed.

5.4.4 Trench Backfill Material

Trench backfill for the utility pipe base and pipe zone should consist of granular material as recommended by the utility pipe manufacturer. Trench backfill above the pipe zone should consist of well-graded granular material containing no organic matter or debris, have a maximum particle size of ¾ inch, and have less than 8 percent material passing the U.S. Standard No. 200 Sieve. As a guideline, trench backfill should be placed in maximum 12-inch-thick lifts. The earthwork contractor may elect to use alternative lift thicknesses based on their experience with specific equipment and fill material conditions during construction in order to achieve the required compaction. The following table presents recommended relative compaction percentages for utility trench backfill.

Table 2 Utility Trench Backfill Compaction Recommendations

Backfill Zone	Recommended Minimum Relative Compaction	
	Structural Areas[1,2]	Landscaping Areas
Pipe Base and Within Pipe Zone	90% ASTM D1557 or pipe manufacturer's recommendation	88% ASTM D1557 or pipe manufacturer's recommendation
Above Pipe Zone	92% ASTM D1557	90% ASTM D1557
Within 3 Feet of Design Subgrade	95% ASTM D1557	90% ASTM D1557

1 Includes proposed building, pavement areas, structural fill areas, exterior hardscaping, etc.
2 Or as specified by the local jurisdiction where located in the public right of way.

5.4.5 Controlled Low-Strength Material (CLSM)

CLSM is a self-compacting, cementitious material that is typically considered when backfilling localized areas. CLSM is sometimes referred to as "controlled density fill" or CDF. Due to its flowable characteristics, CLSM typically can be placed in restricted-access excavations where placing and compacting fill is difficult. If chosen for use at this site, we recommend the CLSM be in conformance with Section 00442 of the most recent, ODOT SSC. The geotechnical engineer's representative should observe placement of the CLSM and obtain samples for compression testing in accordance with ASTM D4832. As a guideline, for each day's placement, two compressive strength specimens from the same CLSM sample should be tested. The results of the two individual compressive strength tests should be averaged to obtain the reported 28-day compressive strength. If CLSM is considered for use on this site, please contact the geotechnical engineer for site-specific and application-specific recommendations.

5.5 Shallow Foundations

5.5.1 Subgrade Preparation

Satisfactory subgrade support for shallow foundations can be obtained from the native, medium dense to better sandy soils (SM, SP-SM, SP), or new structural fill that is properly placed and compacted on these

materials during construction. These materials were first encountered at depths of about 1-foot to 5 feet bgs within our explorations in the vicinity of the building pad.

The geotechnical engineer or their representative should be contacted to observe subgrade conditions prior to placement of forms, reinforcement steel, or granular backfill (if required). If soft, loose, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the geotechnical representative at the time of construction. The resulting over-excavation should be brought back to grade with imported granular structural fill in conformance with Section 5.4.2. The maximum particle size of over-excavation backfill should be limited to 1½ inches. All granular pads for footings should be constructed a minimum of 6 inches wider on each side of the footing for every vertical foot of over-excavation.

5.5.2 Minimum Footing Width & Embedment

Minimum footing widths should be in conformance with the current OSSC. As a guideline, CGT recommends individual spread footings have a minimum width of 24 inches. We recommend continuous wall footings have a minimum width of 18 inches. All footings should be founded at least 18 inches below the lowest, permanent adjacent grade to develop lateral capacity and for frost protection.

5.5.3 Bearing Pressure & Settlement

Footings founded as recommended above should be proportioned for a maximum allowable soil bearing pressure of 2,500 pounds per square foot (psf). This bearing pressure is a net bearing pressure, applies to the total of dead and long-term live loads, and may be increased by one-third when considering seismic or wind loads. For foundations founded as recommended above, total settlement of foundations is anticipated to be less than 1 inch. Differential settlements between adjacent columns and/or bearing walls should not exceed ½-inch. If an increased allowable soil bearing pressure is desired, the geotechnical engineer should be consulted.

5.5.4 Lateral Capacity

A maximum passive (equivalent fluid) earth pressure of 200 pounds per cubic foot (pcf) is recommended for design of footings cast neat into excavations in suitable native soil or confined by the recommended imported granular structural fill that is properly placed and compacted during construction. The recommended earth pressure was computed using a factor of safety of 1½, which is appropriate due to the amount of movement required to develop full passive resistance. In order to develop the above capacity, the following should be understood:

1. Concrete must be poured neat in excavations or the foundations must be backfilled with imported granular structural fill,
2. The adjacent grade must be level,
3. The static ground water level must remain below the base of the footings throughout the year.
4. Adjacent floor slabs, pavements, or the upper 12-inch-depth of adjacent, unpaved areas should not be considered when calculating passive resistance.

An ultimate coefficient of friction equal to 0.35 may be used when calculating resistance to sliding for footings founded on the native soils described above. An ultimate coefficient of friction equal to 0.45 may be used when calculating resistance to sliding for footings founded on a minimum of 6 inches of imported granular structural fill (crushed rock) that is properly placed and compacted during construction.

5.5.5 Subsurface Drainage

Recognizing the fine-grained soils encountered at this site, we recommend placing foundation drains at the exterior, base elevations of perimeter continuous wall footings. Foundation drains should consist of a minimum 4-inch diameter, perforated, PVC drainpipe wrapped with a non-woven geotextile filter fabric. The drains should be backfilled with a minimum of 2 cubic feet of open graded drain rock per lineal foot of pipe. The drain rock should also be encased in a geotextile fabric in order to provide separation from the surrounding fine-grained soils. Foundation drains should be positively sloped and should outlet to a suitable discharge point. The geotechnical engineer or their representative should observe the drains prior to backfilling. Roof drains should not be tied into foundation drains.

5.6 Rigid Retaining Walls

5.6.1 Footings

Retaining wall footings should be designed and constructed in conformance with the recommendations presented in Section 5.5, as applicable.

5.6.2 Wall Drains

We recommend placing retaining wall drains at the base elevation of the heel of retaining wall footings. Retaining wall drains should consist of a minimum 4-inch-diameter, perforated, HDPE (High Density Polyethylene) drainpipe wrapped with a non-woven geotextile filter fabric. The drains should be backfilled with a minimum of 2 cubic feet of open graded drain rock per lineal foot of pipe. The drain rock should be encased in a geotextile fabric in order to provide separation from the surrounding soils. Retaining wall drains should be positively sloped and should outlet to a suitable discharge point. The geotechnical engineer or their representative should be contacted to observe the drains prior to backfilling. Roof or area drains should not be tied into retaining wall drains.

5.6.3 Wall Backfill

Retaining walls should be backfilled with imported granular structural fill in conformance with Section 5.4.2 and contain less than 5 percent passing the U.S. Standard No. 200 Sieve. The backfill should be compacted to a minimum of 90 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor). When placing fill behind walls, care must be taken to minimize undue lateral loads on the walls. Heavy compaction equipment should be kept at least "H" feet from the back of the walls, where "H" is the height of the wall. Light mechanical or hand tamping equipment should be used for compaction of backfill materials within "H" feet of the back of the walls.

5.6.4 Design Parameters & Limitations

For rigid retaining walls founded, backfilled, and drained as recommended above, the following table presents parameters recommended for design.

Table 3 Design Parameters for Rigid Retaining Walls

Retaining Wall Condition	Modeled Backfill Condition	Static Equivalent Fluid Pressure (S_A)[1]	Seismic Equivalent Fluid Pressure (S_{AE})[1,2]	Surcharge from Uniform Load, q, Acting on Backfill Behind Retaining Wall
Not Restrained from Rotation	Level (i = 0)	29 pcf	36 pcf	0.22*q
Restrained from Rotation	Level (i = 0)	52 pcf	52 pcf	0.38*q

[1] Refer to the attached Figure 4 for a graphical representation of static and seismic loading conditions. Seismic resultant force acts at 0.6H above the base of the wall.

[2] Seismic (dynamic) lateral loads were computed using the Mononobe-Okabe Equation as presented in the 1997 Federal Highway Administration (FHWA) design manual. Static and seismic equivalent fluid pressures are not additive.

The above design recommendations are based on the assumptions that:

- The walls consist of concrete cantilevered retaining walls (β = 0 and δ = 24 degrees, see Figure 4).
- The walls are 10 feet or less in height.
- The backfill is drained and consists of imported granular structural fill (ϕ = 38 degrees).
- No area load, line load or point load surcharges are imposed behind the walls.
- The grade behind the wall is level, or sloping down and away from the wall, for a distance of 10 feet or more from the wall.
- The grade in front of the walls is level or ascending for a distance of at least 5 feet from the wall.

Re-evaluation of our recommendations will be required if the retaining wall design criteria for the project vary from these assumptions.

5.6.5 Surcharge Loads

Where present, surcharges from adjacent site features (i.e. buildings, slabs, pavements, etc.) should be evaluated in design of retaining walls at the site. Methods for calculating lateral pressures on rigid retaining walls from strip, line, and vertical point loads are presented on the attached Figure 5.

5.7 Floor Slabs

5.7.1 Subgrade Preparation

Satisfactory subgrade support for slabs constructed on grade, supporting up to 150 psf area loading, can be obtained from the native, medium dense to better sandy soils (SM, SP-SM, SP), or new structural fill that is properly placed and compacted on these materials during construction. The geotechnical engineer or their representative should observe floor slab subgrade soils to evaluate surface consistencies. If soft, loose, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the CGT geotechnical representative at the time of construction. The resulting over-excavation should be brought back to grade with imported granular structural fill as described in Section 5.4.2.

5.7.2 Crushed Rock Base

Concrete floor slabs should be supported on a minimum 6-inch-thick layer of crushed rock (base rock). Floor slab base rock should consist of well-graded granular material (crushed rock) containing no organic matter or debris, have a maximum particle size of ¾ inch, and have less than 5 percent material passing the U.S.

Standard No. 200 Sieve. Floor slab base rock should be placed in one lift and compacted to not less than 95 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor). We recommend "choking" the surface of the base rock with sand just prior to concrete placement. Choking means the voids between the largest aggregate particles are filled with sand, but does not provide a layer of sand above the base rock. Choking the base rock surface reduces the lateral restraint on the bottom of the concrete during curing. Choking the base rock also reduces punctures in vapor retarding membranes due to foot traffic where such membranes are used.

5.7.3 Design Considerations

For floor slabs constructed with a 6-inch thick base rock layer as recommended, an effective modulus of subgrade reaction of 225 pounds per cubic inch (pci) is recommended for the design of the floor slab. A higher effective modulus of subgrade reaction can be obtained by increasing the base rock thickness. Please contact the geotechnical engineer for additional recommendations if a higher modulus is desired. Floor slabs constructed as recommended will likely settle less than ½ inch. For general floor slab construction, slabs should be jointed around columns and walls to permit slabs and foundations to settle differentially.

5.7.4 Subgrade Moisture Considerations

Liquid moisture and moisture vapor should be expected at the subgrade surface. The recommended crushed rock base is anticipated to provide protection against liquid moisture. Where moisture vapor emission through the slab must be minimized, e.g. impervious floor coverings, storage of moisture sensitive materials directly on the slab surface, etc., a vapor retarding membrane or vapor barrier below the slab should be considered. Factors such as cost, special considerations for construction, floor coverings, and end use suggest that the decision regarding a vapor retarding membrane or vapor barrier be made by the architect and owner.

If a vapor retarder or vapor barrier is placed below the slab, its location should be based on current American Concrete Institute (ACI) guidelines, ACI 302 Guide for Concrete Floor and Slab Construction. In some cases, this indicates placement of concrete directly on the vapor retarder or barrier. Please note that the placement of concrete directly on impervious membranes increases the risk of plastic shrinkage cracking and slab curling in the concrete. Construction practices to reduce or eliminate such risk, as described in ACI 302, should be employed during concrete placement.

5.8 Pavements

5.8.1 Subgrade Preparation

Where native soils are encountered at pavement subgrade elevations, we conclude that satisfactory subgrade support can be obtained from the native, medium dense to better sandy soils (SM, SP-SM, SP) and no mitigation is required. The pavement subgrade surface should be prepared in accordance with Section 5.1.6 of this report.

Where undocumented fills are encountered at pavement subgrade elevations, we do not recommend the existing undocumented fill materials be *directly* relied upon for subgrade support of planned pavements. Two options for pavement subgrade preparation are presented below for consideration.

5.8.1.1 Option 1: Complete Over-Excavation & Replacement

The most conservative approach for pavement subgrade preparation would include the complete over-excavation of the existing undocumented fills to expose the underlying native sandy soils (SM, SP-SM, SP) and returning those areas to design subgrade elevations with structural fill in conformance with Section 5.1.6 of this report. As indicated on the Site Plan, Figure 2, undocumented fills were encountered throughout the site to depths up to 5½ feet bgs. The geotechnical engineer or his representative should provide recommendations for actual over-excavation depths based on observations during site preparation. Over-excavated fill materials may be re-used as structural fill, provided they are processed in accordance with Section 5.4.1 of this report.

5.8.1.2 Option 2: Scarification of Subgrade & Installation of Geotextile Fabric

A second (less conservative) approach for pavement subgrade preparation includes scarifying and re-compacting the existing fill materials (SM FILL, GP FILL) and placement of geotextile separation fabric. The owner will need to recognize and accept that this approach does not mitigate the potential for area-wide settlements to occur as a result of densification and resultant settlement from transient (vehicular) loads, and may require maintenance and/or repairs to the AC pavement being required sooner than expected. If the owner does not choose to accept this risk, we recommend Option 1 presented above be considered.

If Option 2 is chosen, the existing undocumented fill materials should be scarified to a depth of 12 inches below design subgrade elevation and re-compacted with suitable equipment. The subgrade should be compacted to a non-yielding state, and verified based on deflection (proof roll) testing. The proof roll test(s) should be conducted with a fully-loaded, tire-mounted, 10- to 12-cubic yard, dump truck (or equivalent weighted water truck) in order to identify areas of excessive yielding. The geotechnical engineer or their representative should witness the proof roll test(s). If areas of soft soil or excessive yielding are identified, the affected material should be over-excavated to firm, stable subgrade, and replaced with imported granular structural fill as described in Section 5.4.2 of this report.

Following scarification and re-compaction of the existing undocumented fill materials, but prior to the placement of pavement base rock, we recommend placing geotextile separation fabric over the exposed subgrade to serve as a barrier between the compacted undocumented fill subgrade and the new base rock. The geotextile should be in conformance with Section 5.3.2 of this report.

5.8.1.1 Asphalt Concrete Pavements

5.8.1.1.1 Input Parameters

Designs of the asphalt concrete (AC) pavement sections presented below were based on the parameters presented in the following table, the American Association of State Highway and Transportation Officials (AASHTO) 1993 “Design of Pavement Structures” manual, and pavement design manuals presented by APAO and ODOT[8].

[8] Oregon Department of Transportation (ODOT) Pavement Design Guide, January 2019

Table 4 Input Parameters Used in AC Pavement Design

Input Parameter	Design Value[1]	Input Parameter		Design Value[1]
Pavement Design Life	20 years	Resilient Modulus	Subgrade (Native Soils or Existing Fill Materials Processed Per This Report)[4]	7,500 psi
Annual Percent Growth	2 percent		Crushed Aggregate Base[2]	20,000 psi
Serviceability[2]	4.2 initial 2.5 terminal	Structural Coefficient[2]	Crushed Aggregate Base	0.10
Reliability[2]	75 percent		Asphalt	0.42
Standard Deviation[2]	0.49	Vehicle Traffic[5] (range in ESALs)	APAO Level I (Very Light)	Less than 10,000
			APAO Level II (Light)	10,000 to 50,000

[1] If any of the above parameters are incorrect, please contact us so that we may revise our recommendations, if warranted.
[2] Value based on guidelines presented in Section 5.3 of the 2019 ODOT Pavement Design Guide and APAO manual.
[3] Assumes good drainage away from pavement, base, and subgrade is achieved by proper crowning of subgrades.
[4] Values determined based on results of site investigation and experience with similar materials.
[5] ESAL = Total 18-Kip equivalent single axle load. Traffic levels taken from Table 3.1 of APAO manual. If an increased traffic load is estimated, please contact us so that we may refine the traffic loading and revise our recommendations, if warranted.

5.8.1.1.2 Recommended Minimum Pavement Sections

The following table presents the minimum flexible pavement sections for the traffic levels indicated in the preceding table, based on the referenced AASHTO procedures.

Table 5 Recommended Minimum Flexible Pavement Sections

Material	APAO Traffic Loading[2]	
	Level I (Passenger Car Traffic Only)	Level II (Entrance & Drive Lanes)
Asphalt Pavement (inches)	3	3
Crushed Aggregate Base (inches)	6	6½
Subgrade Soils	Prepared in accordance with Section 5.8.1 of this report.	

[1] Thicknesses shown assume dry weather construction. A thicker granular subbase section may be required in wet conditions in order to support construction traffic and protect the subgrade. Refer to Section 5.3 of this report for additional discussion.

5.8.1.1.3 AC Pavement Materials

We recommend pavement aggregate base consist of granular structural fill prepared in accordance with Section 5.4.2 of this report. We recommend the material consist of crushed rock or gravel, have a maximum particle size of 1½ inches, and have less than 10 percent material passing the U.S. Standard No. 200 Sieve. Aggregate base should be compacted to not less than 95 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor).

We recommend asphalt pavement consist of Level 2, ½-inch, dense-graded AC in conformance with the most recent ODOT SSC. Asphalt pavement should be compacted to at least 91.0 percent of the material's theoretical maximum density as determined in general accordance with ASTM D2041 (Rice Specific Gravity).

5.8.1.2 Rigid Concrete Pavements

5.8.1.2.1 Input Parameters

Design of rigid (Portland Cement Concrete, PCC) pavement sections presented below was based on the assumed parameters presented in the following table and the referenced AASHTO design manual. If any of the items listed need revision, please contact us and we will reassess the provided design sections. Jointing, reinforcement, and surface finish should be performed in accordance with the project civil engineer, architect, and owner requirements.

Table 6 Input Parameters Used in PCC Pavement Design

Parameter / Discussion		Design Value
Subgrade Modulus (k-value)		225 pci
Standard Deviation[1]		0.39
Load Transfer Devices incorporated?		Yes; Load Transfer Coefficient = 3.2
Minimum Concrete Modulus of Rupture		600 psi
Concrete Elastic Modulus		5.0 x 10^6 psi
Minimum Air-Entrained Concrete Compressive Strength		4,000 psi
Vehicle Traffic[2] (range in ESAL)	APAO Level I (Very Light)	Less than 10,000
	APAO Level II (Light)	10,000 to 50,000

1 Value based on guidelines presented in the ODOT Pavement Design Guide.

2 ESAL = Total 18-Kip equivalent single axle load. If actual traffic levels will be above those identified above, the geotechnical engineer should be consulted.

5.8.1.2.2 Recommended Minimum Rigid Pavement Sections

The following table presents the minimum rigid pavement sections for the traffic levels indicated in the preceding table, based on the referenced AASHTO procedures.

Table 7 Recommended Minimum Rigid Pavement Sections

Material	APAO Traffic Loading	
	Level I	Level II
Portland Cement Concrete, PCC[1] (inches)	4	4
All-Weather Base[2,3] (inches)	6	6
Subgrade Soils	Prepared in accordance with Section 5.8.1 of this report.	

1 Concrete strength and other properties should be in conformance with Table 6 above.

2 All-weather base (base rock) should be a minimum of 6 inches thick.

3 Assumes dry weather construction. Increased base rock sections and/or a geotextile separation fabric may be required in wet conditions in order to support construction traffic and protect the subgrade.

5.8.1.2.3 PCC Pavement Materials

We recommend all-weather base consist of granular structural fill in conformance with Section 5.4.2 of this report, with the following additional considerations. We recommend the material have a maximum particle size of ¾-inch and have less than 10 percent material passing the U.S. Standard No. 200 Sieve. Aggregate base should be compacted to no less than 95 percent of the material's maximum dry density, as determined in general accordance with ASTM D1557 (Modified Proctor).

Portland cement concrete (PCC) should be in conformance with Section 02001 of the most recent ODOT SSC and should meet properties detailed in Table 6 above.

5.9 Additional Considerations

5.9.1 Drainage

Subsurface drains should be connected to the nearest storm drain, on-site infiltration system (to be designed by others) or other suitable discharge point. Paved surfaces and grading near or adjacent to the building should be sloped to drain away from the building. Surface water from paved surfaces and open spaces should be collected and routed to a suitable discharge point. Surface water should not be directed into foundation drains, onto site slopes, or into undocumented fill materials (if encountered).

5.9.2 Expansive Potential

The near surface native soils consist of generally granular soils with low plasticity fines. Based on experience with similar soils in the region, these soils are not considered susceptible to appreciable movements from changes in moisture content. Accordingly, no special considerations are required to mitigate expansive potential of the near surface soils at the site.

6.0 RECOMMENDED ADDITIONAL SERVICES

6.1 Design Review

Geotechnical design review is of paramount importance. We recommend the geotechnical design review take place prior to releasing bid packets to contractors.

6.2 Observation of Construction

Satisfactory earthwork, foundation, floor slab, and pavement performance depends to a large degree on the quality of construction. Sufficient observation of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. Subsurface conditions observed during construction should be compared with those encountered during subsurface explorations, and recognition of changed conditions often requires experience. We recommend that qualified personnel visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those observed to date and anticipated in this report. We recommend the geotechnical engineer or their representative attend a pre-construction meeting coordinated by the contractor and/or developer. The project geotechnical engineer or their representative should provide observations and/or testing of at least the following earthwork elements during construction:

- Site Stripping and Demolition
- Subgrade Preparation for Shallow Foundations, Structural Fills, Rigid Retaining Walls, Floor Slabs, and Pavements
- Compaction of Structural Fill and Utility Trench Backfill
- Compaction of Base Rock for Floor Slabs & Pavements
- Compaction of Asphalt Concrete for Pavements

It is imperative that the owner and/or contractor request earthwork observations and testing at a frequency sufficient to allow the geotechnical engineer to provide a final letter of compliance for the earthwork activities.

7.0 LIMITATIONS

We have prepared this report for use by the owner/developer and other members of the design and construction team for the proposed development. The opinions and recommendations contained within this report are forwarded to assist in the planning and design process and are not intended to be, nor should they be construed as, a warranty of subsurface conditions.

We have made observations based on our explorations that indicate the soil conditions at only those specific locations and only to the depths penetrated. These observations do not necessarily reflect soil types, strata thickness, or water level variations that may exist between or away from our explorations. If subsurface conditions vary from those encountered in our site explorations, CGT should be alerted to the change in conditions so that we may provide additional geotechnical recommendations, if necessary. Observation by experienced geotechnical personnel should be considered an integral part of the construction process.

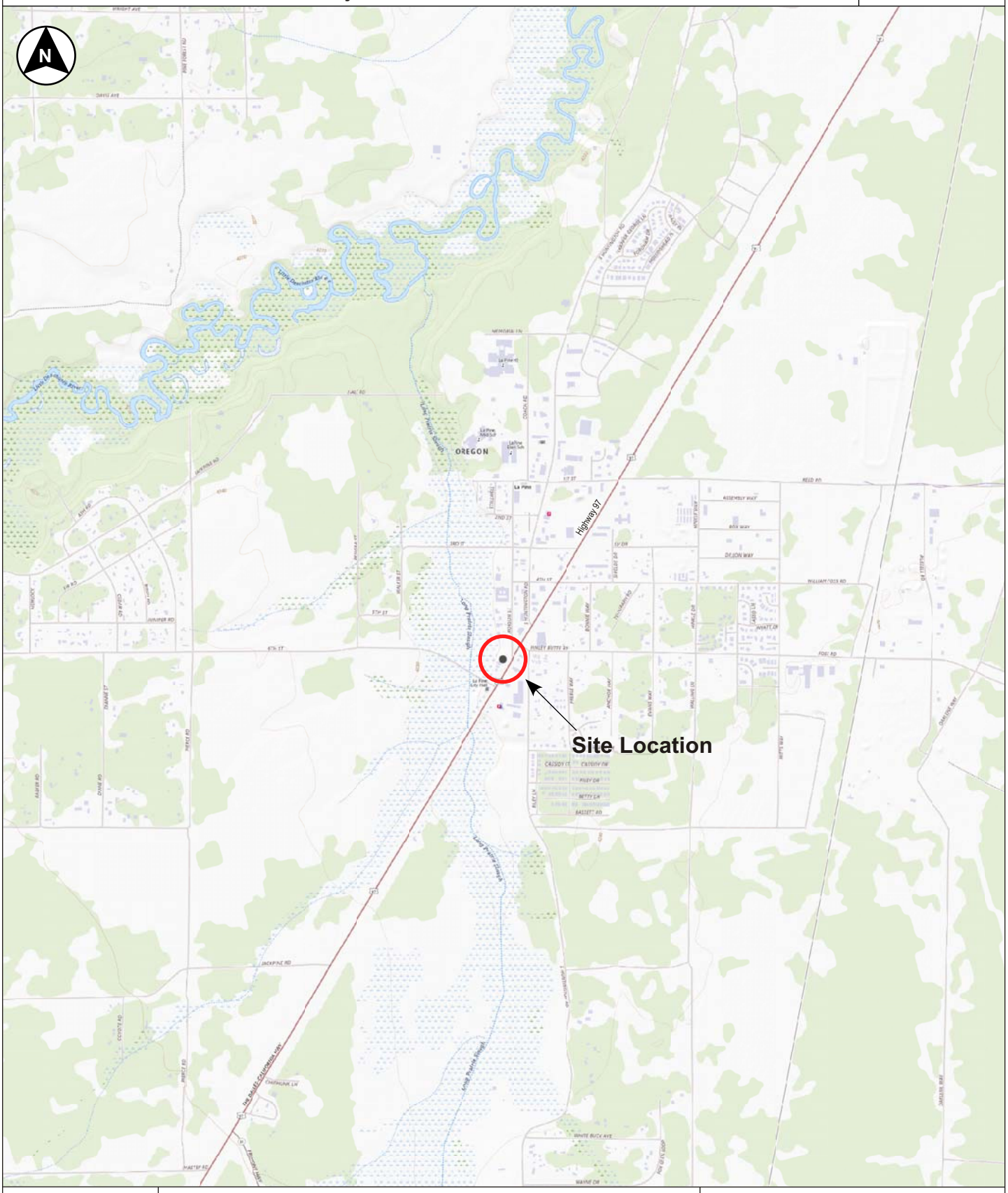
The owner/developer is responsible for ensuring that the project designers and contractors implement our recommendations. When the design has been finalized, prior to releasing bid packets to contractors, we recommend that the design drawings and specifications be reviewed by our firm to see that our recommendations have been interpreted and implemented as intended. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification. Design review and construction phase testing and observation services are beyond the scope of our current assignment, but will be provided for an additional fee.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor’s methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design.

Geotechnical engineering and the geologic sciences are characterized by a degree of uncertainty. Professional judgments presented in this report are based on our understanding of the proposed construction, familiarity with similar projects in the area, and on general experience. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared; no warranty, expressed or implied, is made. This report is subject to review and should not be relied upon after a period of three years.

RON'S OIL COMPANY - FUEL STATION AND MARKET - LA PINE, OREGON
Project Number B2402070

FIGURE 1
Site Location



CARLSON CGT GEOTECHNICAL
503-601-8250
Drafted by: GS

USGS Topographic base map created with The National Map, 2024, at https://apps.nationalmap.gov/viewer/

Township 22 South, Range 10 East, Section 15, Willamette Meridian

Latitude: 43.667061° North
Longitude: 121.506998° West

1 Inch = 2,000 feet

0 2000 4000

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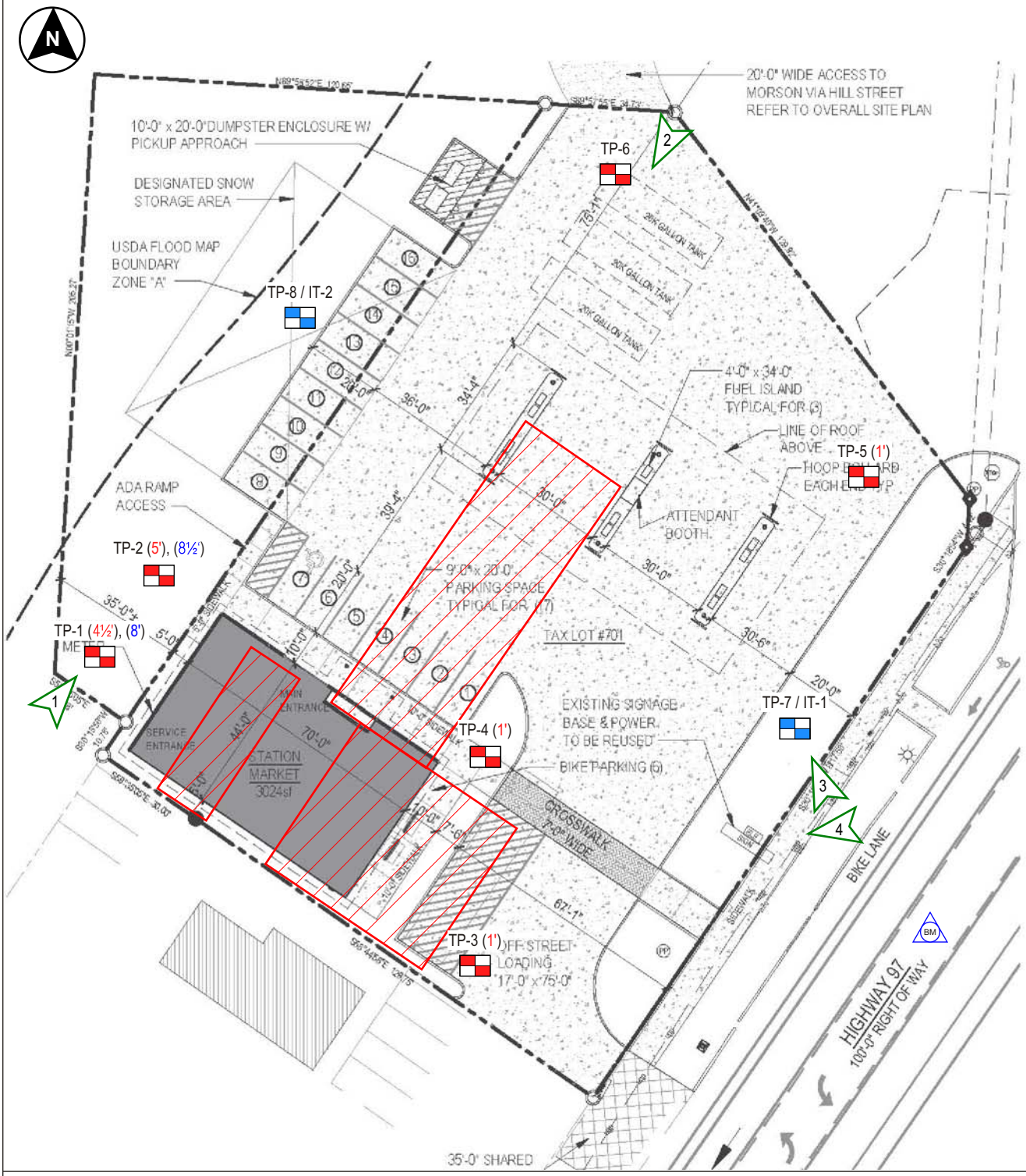
Project Number B2402070

FIGURE 2
Site Plan



LEGEND

TP-1 — Test pit exploration completed by CGT. Depth of undocumented fill if encountered, indicated in (red). Depth of groundwater if encountered, indicated in (blue).

IT-1 — Infiltration test pit location. See Appendix B for results.

1 — Orientation of site photographs shown on Figure 3.

BM — Elevation benchmark - Assumed 100-foot elevation at the exisiting elevation of Highway 97.

Approximate location of existing site structures.

CARLSON CGT GEOTECHNICAL 503-601-8250

Drafted by: GS

NOTES: Drawing based on, "Proposed Site Plan", produced by Wayward R Studio, dated June 3, 2024. All locations are approximate.

1 Inch = 40 Feet

0 40 80

Photograph 1

Photograph 2

Photograph 3

Photograph 4

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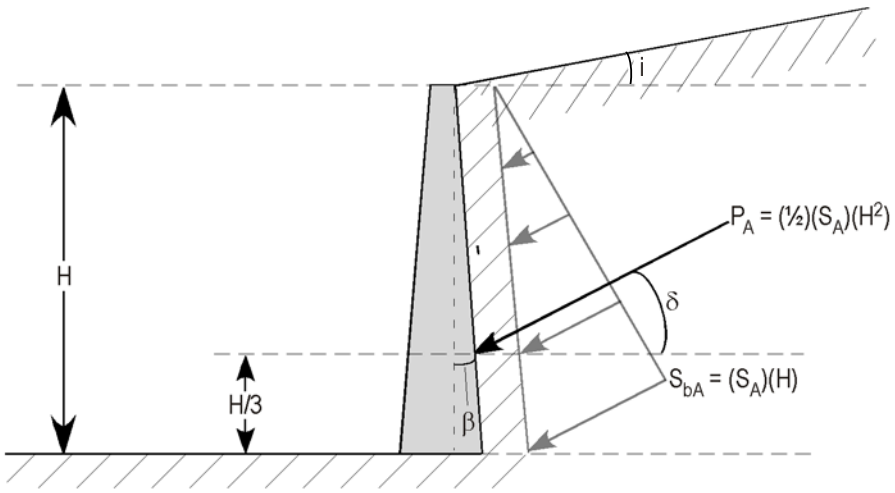
Project Number B2402070

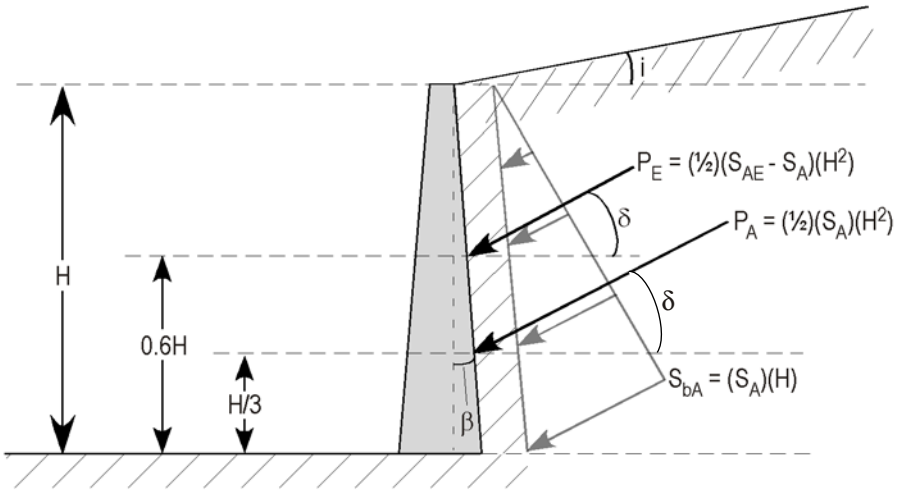
FIGURE 4
Retaining Walls

ACTIVE LATERAL PRESSURE DISTRIBUTION

STATIC LOADING CONDITIONS



SEISMIC LOADING CONDITIONS



LEGEND

S_A = Active lateral equivalent fluid pressure (lb/ft^3)*

S_{bA} = Active lateral earth pressure (static) at the bottom of wall (lb/ft^3)

S_{AE} = Active total (static + seismic) equivalent fluid pressure (lb/ft^3)*

i = Slope of backfill, relative to horizontal (degrees)**

β = Slope of back of wall, relative to vertical (degrees)**

P_A = Static active thrust force acting at H/3 from bottom of retaining wall (lb/ft)

P_E = Dynamic active thrust force acting at 0.6H from bottom of retaining wall (lb/ft)

δ = Angle from normal of back of wall (degrees). Based on friction developing between wall and backfill**

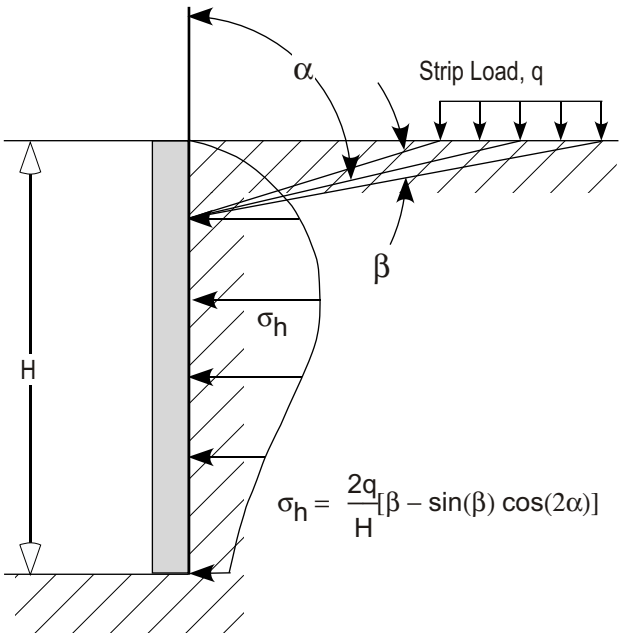
*Refer to report text for calculated values **Refer to report text for modeled/assumed values

CARLSON CGT GEOTECHNICAL 503-601-8250

Notes

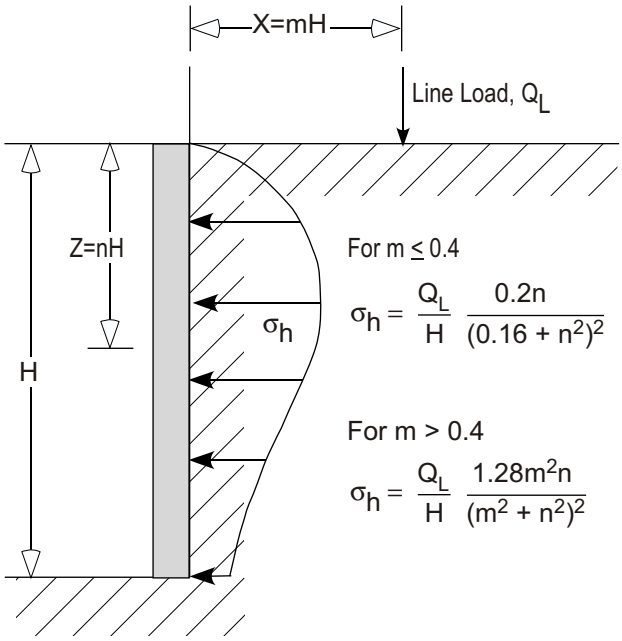
1. Uniform pressure distribution of seismic loading is based on empirical evaluations [Sherif et al, 1982 and Whitman, 1990].
2. Placement of seismic resultant force at 0.6H is based on wall behavior and model test results [Whitman, 1990].

STRIP LOAD PARALLEL TO WALL[1]



$$\sigma_h = \frac{2q}{H}[\beta - \sin(\beta)\cos(2\alpha)]$$

LINE LOAD PARALLEL TO WALL[2]



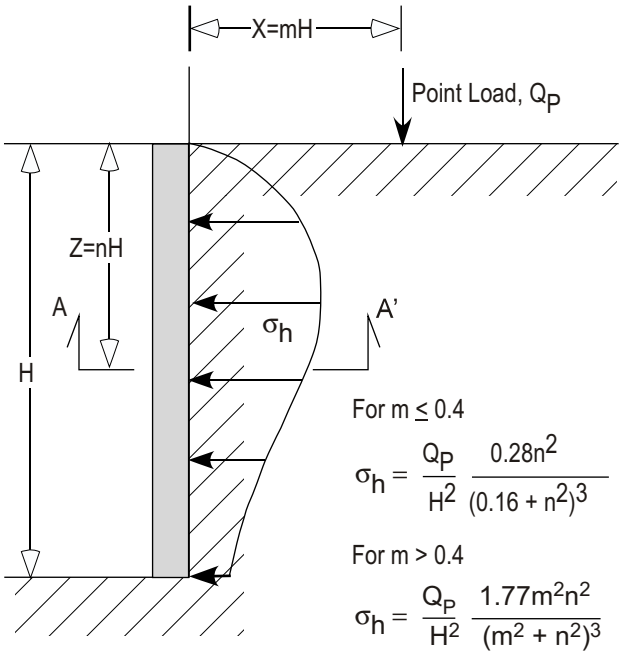
For $m \leq 0.4$

$$\sigma_h = \frac{Q_L}{H}\frac{0.2n}{(0.16 + n^2)^2}$$

For $m > 0.4$

$$\sigma_h = \frac{Q_L}{H}\frac{1.28m^2n}{(m^2 + n^2)^2}$$

VERTICAL POINT LOAD[2]



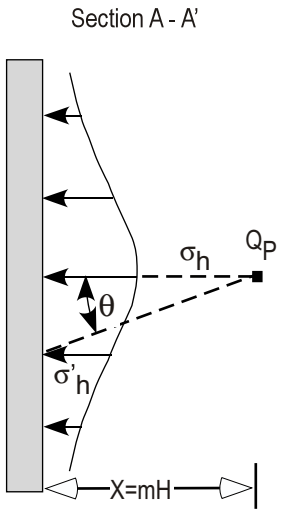
For $m \leq 0.4$

$$\sigma_h = \frac{Q_P}{H^2}\frac{0.28n^2}{(0.16 + n^2)^3}$$

For $m > 0.4$

$$\sigma_h = \frac{Q_P}{H^2}\frac{1.77m^2n^2}{(m^2 + n^2)^3}$$

Section A - A'



$$\sigma'_h = \sigma_h \cos^2(1.1\,\theta)$$

Notes: 1. Das, Principles of Geotechnical Engineering, 1990 Edition.
2. NAVFAC Design Manual 7.06.

Refer to the referenced design manuals for additional guidance. Contact CGT if there are any questions with modeling surcharge loads.

CARLSON CGT GEOTECHNICAL 503-601-8250

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Tigard Office	**(503) 684-3460**

Appendix A: Subsurface Investigation and Laboratory Testing

Ron's Oil Company - Fuel Station and Market
51385 Highway 97
La Pine, Oregon

CGT Project Number B2402070

August 13, 2024

Prepared For:

David Reed
Wayward R Studio
50219 Hwy 101
Brandon, Oregon 97411

Prepared by
Carlson Geotechnical

A.1.0 SUBSURFACE INVESTIGATION

Our field investigation consisted of eight test pits completed on August 5, 2024. The exploration locations are shown on the Site Plan, attached to the geotechnical report as Figure 2. The exploration locations shown therein were determined based on measurements from existing site features (buildings, etc.) and are approximate. Surface elevations indicated on the logs were estimated based on a temporary benchmark (assumed 100-foot elevation at finish grade elevation of Highway 97 to the east) shown on the referenced Site Plan and are approximate. The attached figures detail the exploration methods (Figure A1), soil classification criteria (Figure A2), and present detailed logs of the explorations (Figures A3 through A10), as discussed below.

A.1.1 Test Pits

CGT observed the excavation of eight test pits (TP-1 through TP-8) at the site, to depths of about 3 to 9 feet bgs. The test pits were excavated using a Takeuchi TB 260 mini-excavator provided and operated provided by our excavation subcontractor, Terry Shine Excavating of Bend, Oregon. The test pits were loosely backfilled with the excavated materials upon completion.

With the permission of our client, test pits TP-3, TP-4 and TP-5 were advanced through the existing asphalt concrete (AC) pavement. Upon the completion of each test pit, the area was returned to approximately level with the surrounding grades. Our scope of work did not include the placement of cold patch asphalt or similar surface restoration.

A.1.2 In-Situ Testing: Infiltration Testing

CGT performed two infiltration tests at the site, within test pits TP-7 / IT-1 and TP-8 / IT-2. Details regarding the test procedure and results of the tests are presented in Appendix B.

A.1.3 Material Classification & Sampling

Representative disturbed (grab) samples of the soils encountered were obtained at select intervals within the test pits. A qualified member of CGT's geological staff collected the samples and logged the soils in general accordance with the Visual-Manual Procedure (ASTM D2488). An explanation of this classification system is attached as Figure A2. The grab samples were stored in sealable plastic bags and transported to our soils laboratory for further examination and testing. Our geotechnical staff visually examined all samples in order to refine the initial field classifications.

A.1.4 Subsurface Conditions

Subsurface conditions are summarized in Section 2.3 of the geotechnical report. Detailed logs of the explorations are presented on the attached exploration logs, Figures A3 through A10.

A.2.0 LABORATORY TESTING

Laboratory testing was performed on samples collected in the field to refine our initial field classifications and determine in-situ parameters. Laboratory testing included the following:

- Four moisture content determinations (ASTM D2216).
- Three percentage passing the U.S. Standard No. 200 Sieve tests (ASTM D1140).

Results of the laboratory tests are shown on the exploration logs.

RON'S OIL COMPANY - FUEL STATION AND MARKET - LA PINE, OREGON
Project Number B2402070

FIGURE A1
Exploration Key

PL — MC — LL	Atterberg limits (plasticity) test results (ASTM D4318): PL = Plastic Limit, LL = Liquid Limit, and MC= Moisture Content (ASTM D2216)
☐ FINES CONTENT (%)	Percentage passing the U.S. Standard No. 200 Sieve (ASTM D1140)

SAMPLING

GRAB	Grab sample
BULK	Bulk sample
SPT	**Standard Penetration Test** (SPT) consists of driving a 2-inch, outside-diameter, split-spoon sampler into the undisturbed formation with repeated blows of a 140-pound, hammer falling a vertical distance of 30 inches (ASTM D1586). The number of blows (N-value) required to drive the sampler the last 12 inches of an 18-inch sample interval is used to characterize the soil consistency or relative density. The drill rig was equipped with an cat-head or automatic hammer to conduct the SPTs. The observed N-values, hammer efficiency, and N_{60} are noted on the boring logs.
MC	**Modified California** sampling consists of 3-inch, outside-diameter, split-spoon sampler (ASTM D3550) driven similarly to the SPT sampling method described above. A sampler diameter correction factor of 0.44 is applied to calculate the equivalent SPT N_{60} value per Lacroix and Horn, 1973.
CORE	**Rock Coring** interval
SH	**Shelby Tube** is a 3-inch, inner-diameter, thin-walled, steel tube push sampler (ASTM D1587) used to collect relatively undisturbed samples of fine-grained soils.
WDCP	**Wildcat Dynamic Cone Penetrometer** (WDCP) test consists of driving 1.1-inch diameter, steel rods with a 1.4-inch diameter, cone tip into the ground using a 35-pound drop hammer with a 15-inch free-fall height. The number of blows required to drive the steel rods is recorded for each 10 centimeters (3.94 inches) of penetration. The blow count for each interval is then converted to the corresponding SPT N_{60} values.
DCP	**Dynamic Cone Penetrometer** (DCP) test consists of driving a 20-millimeter diameter, hardened steel cone on 16-millimeter diameter steel rods into the ground using a 10-kilogram drop hammer with a 460-millimeter free-fall height. The depth of penetration in millimeters is recorded for each drop of the hammer.
POCKET PEN. (tsf)	**Pocket Penetrometer** test is a hand-held instrument that provides an approximation of the unconfined compressive strength in tons per square foot (tsf) of cohesive, fine-grained soils.

CONTACTS

	Observed (measured) contact between soil or rock units.
	Inferred (approximate) contact between soil or rock units.
	Transitional (gradational) contact between soil or rock units.

ADDITIONAL NOTATIONS

Italics	Notes drilling action or digging effort
{ Braces }	Interpretation of material origin/geologic formation (e.g. { Base Rock } or { Columbia River Basalt })

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All measurements are approximate.

RON'S OIL COMPANY - FUEL STATION AND MARKET - LA PINE, OREGON
Project Number B2402070

FIGURE A2
Soil Classification

Classification of Terms and Content

NAME: Group Name and Symbol
Relative Density or Consistency
Color
Moisture Content
Plasticity
Other Constituents
Other: Grain Shape, Approximate Gradation
Organics, Cement, Structure, Odor, etc.
Geologic Name or Formation

Grain Size

		U.S. Standard Sieve
Fines		<#200 (0.075 mm)
Sand	Fine	#200 - #40 (0.425 mm)
	Medium	#40 - #10 (2 mm)
	Coarse	#10 - #4 (4.75 mm)
Gravel	Fine	#4 - 0.75 inch
	Coarse	0.75 inch - 3 inches
Cobbles		3 to 12 inches
Boulders		> 12 inches

Coarse-Grained (Granular) Soils

Relative Density

SPT N_{60}-Value	Density
0 - 4	Very Loose
4 - 10	Loose
10 - 30	Medium Dense
30 - 50	Dense
>50	Very Dense

Minor Constituents

Percent by Volume	Descriptor	Example
0 - 5%	"Trace" as part of soil description	"trace silt"
5 - 15%	"With" as part of group name	"**POORLY GRADED SAND WITH SILT**"
15 - 49%	Modifier to group name	"**SILTY SAND**"

Fine-Grained (Cohesive) Soils

SPT N_{60}-Value	Torvane tsf Shear Strength	Pocket Pen tsf Unconfined	Consistency	Manual Penetration Test
<2	<0.13	<0.25	Very Soft	Thumb penetrates more than 1 inch
2 - 4	0.13 - 0.25	0.25 - 0.50	Soft	Thumb penetrates about 1 inch
4 - 8	0.25 - 0.50	0.50 - 1.00	Medium Stiff	Thumb penetrates about ¼ inch
8 - 15	0.50 - 1.00	1.00 - 2.00	Stiff	Thumb penetrates less than ¼ inch
15 - 30	1.00 - 2.00	2.00 - 4.00	Very Stiff	Readily indented by thumbnail
>30	>2.00	>4.00	Hard	Difficult to indent by thumbnail

Minor Constituents

Percent by Volume	Descriptor	Example
0 - 5%	"Trace" as part of soil description	"trace fine-grained sand"
5 - 15%	"Some" as part of soil description	"some fine-grained sand"
15 - 30%	"With" as part of group name	"**SILT WITH SAND**"
30 - 49%	Modifier to group name	"**SANDY SILT**"

Moisture Content

Dry: Absence of moisture, dusty, dry to the touch

Moist: Leaves moisture on hand

Wet: Visible free water, likely from below water table

	Plasticity	Dry Strength	Dilatancy	Toughness
ML	Non to Low	Non to Low	Slow to Rapid	Low, can't roll
CL	Low to Medium	Medium to High	None to Slow	Medium
MH	Medium to High	Low to Medium	None to Slow	Low to Medium
CH	Medium to High	High to Very High	None	High

Structure

Stratified: Alternating layers of material or color >6 mm thick

Laminated: Alternating layers < 6 mm thick

Fissured: Breaks along definite fracture planes

Slickensided: Striated, polished, or glossy fracture planes

Blocky: Cohesive soil that can be broken down into small angular lumps which resist further breakdown

Lenses: Has small pockets of different soils, note thickness

Homogeneous: Same color and appearance throughout

Visual-Manual Classification

Major Divisions			Group Symbols	Typical Names
Coarse Grained Soils: More than 50% retained on No. 200 sieve	Gravels: 50% or more *retained* on the No. 4 sieve	Clean Gravels	GW	Well-graded gravels and gravel/sand mixtures, little or no fines
			GP	Poorly-graded gravels and gravel/sand mixtures, little or no fines
		Gravels with Fines	GM	Silty gravels, gravel/sand/silt mixtures
			GC	Clayey gravels, gravel/sand/clay mixtures
	Sands: More than 50% *passing* the No. 4 sieve	Clean Sands	SW	Well-graded sands and gravelly sands, little or no fines
			SP	Poorly-graded sands and gravelly sands, little or no fines
		Sands with Fines	SM	Silty sands, sand/silt mixtures
			SC	Clayey sands, sand/clay mixtures
Fine-Grained Soils: 50% or more Passes No. 200 Sieve	Silt and Clays Low Plasticity Fines		ML	Inorganic silts, rock flour, clayey silts
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
			OL	Organic soil of low plasticity
	Silt and Clays High Plasticity Fines		MH	Inorganic silts, clayey silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic soil of medium to high plasticity
Highly Organic Soils			PT	Peat, muck, and other highly organic soils

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References:

ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D2488 Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)
Terzaghi, K., and Peck, R.B., 1948, Soil Mechanics in Engineering Practice, John Wiley & Sons.

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FIGURE A3

Test Pit TP-1

CLIENT David Reed of Wayward R Studio
PROJECT NAME Ron's Oil Company - Fuel Station and Market
PROJECT NUMBER B2402070
PROJECT LOCATION 51385 Highway 97 - La Pine, OR
DATE STARTED 8/5/24 **GROUND ELEVATION** 96 ft
ELEVATION DATUM See Figure 2
WEATHER Sunny 85°F **SURFACE** Sandy Soil
LOGGED BY GS **REVIEWED BY** PBR
EXCAVATION CONTRACTOR Terry Shine Excavating
SEEPAGE ---
EQUIPMENT Takeuchi TB 260 Mini Excavator
GROUNDWATER DURING DRILLING 8.5 ft / El. 87.5 ft
EXCAVATION METHOD 24" Rock Bucket
GROUNDWATER 1 HOURS AFTER EXCAVATION 8.0 ft / El. 88.0 ft

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ PL LL MC ☐ FINES CONTENT (%) ☐ 0 20 40 60 80 100
95		SM FILL	**SILTY SAND WITH GRAVEL AND COBBLES FILL:** Gray, dry, subangular to subrounded, fine- to medium-grained, nonplastic fines, with subangular to angular gravel and cobbles (25% by volume combined) up to 8 inches in diameter, various debris including candy wrappers.		0						
			Abandoned 4-inch diameter steel pipe encountered at 3 feet bgs.								
		SM	**SILTY SAND:** *Medium dense,* tan, dry to moist, subangular to subrounded, fine- to medium-grained, nonplastic fines.		5						
90		SP	**POORLY GRADED SAND:** *Medium dense,* black to brown, moist, subangular to subrounded, fine- to coarse-grained, trace nonplastic fines.								
			Minor to moderate sidewall caving observed below 7 feet bgs.								
			Groundwater first encountered at 8½ feet bgs.			GRAB 1					2 21
85			•Test pit terminated at 9 feet bgs (maximum reach of equipment). •Static groundwater observed at 8 feet bgs. •Minor to moderate sidewall caving encountered below 7 feet bgs. •Test pit loosely backfilled with excavated spoils upon completion.								

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FIGURE A4

Test Pit TP-2

CLIENT David Reed of Wayward R Studio
PROJECT NAME Ron's Oil Company - Fuel Station and Market
PROJECT NUMBER B2402070
PROJECT LOCATION 51385 Highway 97 - La Pine, OR
DATE STARTED 8/5/24 **GROUND ELEVATION** 96 ft
ELEVATION DATUM See Figure 2
WEATHER Sunny 85°F **SURFACE** Sandy Soil
LOGGED BY GS **REVIEWED BY** PBR
EXCAVATION CONTRACTOR Terry Shine Excavating
SEEPAGE ---
EQUIPMENT Takeuchi TB 260 Mini Excavator
GROUNDWATER DURING DRILLING 8.5 ft / El. 87.5 ft
EXCAVATION METHOD 24" Rock Bucket
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ PL LL MC ☐ FINES CONTENT (%) ☐ 0 20 40 60 80 100
95		SM FILL	**SILTY SAND WITH GRAVEL AND COBBLES FILL:** Gray, dry, subangular to subrounded, fine- to medium-grained, nonplastic fines, with subangular to subrounded gravel and cobbles (30% by volume combined) up to 6 inches in diameter. Abandoned 4-inch diameter steel pipe encountered at 3 feet bgs.		0						
90		SM	**SILTY SAND:** *Medium dense,* tan, dry to moist, subangular to subrounded, fine- to medium-grained, nonplastic fines.		5						
		SP-SM	**POORLY GRADED SAND WITH SILT:** *Medium dense,* black to brown, moist, subangular to subrounded, fine- to coarse-grained, nonplastic fines. Minor to moderate sidewall caving observed below 7½ feet bgs. Groundwater encountered at 8½ feet bgs.	▽		GRAB 1		16			
85			•Test pit terminated at 9 feet bgs (maximum reach of equipment). •Groundwater encountered at 8½ feet bgs. •Minor to moderate sidewall caving encountered below 7½ feet bgs. •Test pit loosely backfilled with excavated spoils upon completion.								

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FIGURE A5
Test Pit TP-3

CLIENT David Reed of Wayward R Studio
PROJECT NAME Ron's Oil Company - Fuel Station and Market
PROJECT NUMBER B2402070
PROJECT LOCATION 51385 Highway 97 - La Pine, OR
DATE STARTED 8/5/24 **GROUND ELEVATION** 100 ft **ELEVATION DATUM** See Figure 2
WEATHER Sunny 85°F **SURFACE** Asphalt **LOGGED BY** GS **REVIEWED BY** PBR
EXCAVATION CONTRACTOR Terry Shine Excavating **SEEPAGE** ---
EQUIPMENT Takeuchi TB 260 Mini Excavator **GROUNDWATER DURING DRILLING** ---
EXCAVATION METHOD 24" Rock Bucket **GROUNDWATER AFTER EXCAVATION** ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ / PL LL MC / ☐ FINES CONTENT (%) ☐ 0 20 40 60 80 100
			ASPHALT CONCRETE: 3 inches thick.		0						
		GP FILL	**POORLY GRADED GRAVEL FILL:** Gray, dry, subangular to angular, up to ¾-inch in diameter, trace nonplastic gray fines. {Base Rock}								
			SILTY SAND: *Medium dense,* tan, dry to moist, subangular to subrounded, fine- to medium-grained, nonplastic fines, trace rootlets.								
		SM									
95					5						
			POORLY GRADED SAND WITH SILT: *Medium dense,* black to brown, dry to moist, subangular to subrounded, fine- to coarse-grained, with nonplastic fines.			GRAB 1					7
		SP-SM									
90											
85											

•Test pit terminated at 9 feet bgs (maximum reach of equipment).
•No Groundwater encountered.
•No sidewall caving observed.
•Test pit loosely backfilled with excavated spoils upon completion.

CGT EXPLORATION WITH WDCP B2402070 TEST PIT LOGS.GPJ 8/12/24 DRAFTED BY: GS

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FIGURE A6
Test Pit TP-4

CLIENT David Reed of Wayward R Studio
PROJECT NAME Ron's Oil Company - Fuel Station and Market
PROJECT NUMBER B2402070
PROJECT LOCATION 51385 Highway 97 - La Pine, OR
DATE STARTED 8/5/24 **GROUND ELEVATION** 100 ft **ELEVATION DATUM** See Figure 2
WEATHER Sunny 85°F **SURFACE** Asphalt **LOGGED BY** GS **REVIEWED BY** PBR
EXCAVATION CONTRACTOR Terry Shine Excavating **SEEPAGE** ---
EQUIPMENT Takeuchi TB 260 Mini Excavator **GROUNDWATER DURING DRILLING** ---
EXCAVATION METHOD 24" Rock Bucket **GROUNDWATER AFTER EXCAVATION** ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ / PL LL MC / ☐ FINES CONTENT (%) ☐ 0 20 40 60 80 100
			ASPHALT CONCRETE: 3 inches thick.		0						
		GP FILL	**POORLY GRADED GRAVEL FILL:** Gray, dry, subangular to angular, up to ¾-inch in diameter, trace nonplastic gray fines. {Base Rock}								
			SILTY SAND: *Medium dense,* tan, dry to moist, subangular to subrounded, fine- to medium-grained, nonplastic fines, trace rootlets.			GRAB 1					
		SM									
95					5						
		SP-SM	**POORLY GRADED SAND WITH SILT:** *Medium dense,* black to brown, dry to moist, subangular to subrounded, fine- to coarse-grained, with nonplastic fines.								
90			•Test pit terminated at 9 feet bgs (maximum reach of equipment). •No groundwater encountered. •No sidewall caving observed. •Test pit loosely backfilled with excavated spoils upon completion.								
85											

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FIGURE A7
Test Pit TP-5

CLIENT David Reed of Wayward R Studio
PROJECT NAME Ron's Oil Company - Fuel Station and Market
PROJECT NUMBER B2402070
PROJECT LOCATION 51385 Highway 97 - La Pine, OR
DATE STARTED 8/5/24 **GROUND ELEVATION** 100 ft **ELEVATION DATUM** See Figure 2
WEATHER Sunny 85°F **SURFACE** Asphalt **LOGGED BY** GS **REVIEWED BY** PBR
EXCAVATION CONTRACTOR Terry Shine Excavating **SEEPAGE** ---
EQUIPMENT Takeuchi TB 260 Mini Excavator **GROUNDWATER DURING DRILLING** ---
EXCAVATION METHOD 24" Rock Bucket **GROUNDWATER AFTER EXCAVATION** ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ PL LL MC ☐ FINES CONTENT (%) ☐ 0 20 40 60 80 100
			ASPHALT CONCRETE: 3 inches thick.		0						
		GP FILL	**POORLY GRADED GRAVEL FILL:** Gray, dry, subangular to angular, up to ¾-inch in diameter, trace nonplastic gray fines. {Base Rock}								
			SILTY SAND: *Medium dense to dense,* tan, dry to moist, subangular to subrounded, fine- to medium-grained, nonplastic fines, trace rootlets.			GRAB 1					25
		SM									
95					5						
		SP-SM	**POORLY GRADED SAND WITH SILT:** *Medium dense,* black to brown, dry to moist, subangular to subrounded, fine- to coarse-grained, with nonplastic fines.								
90			•Test pit terminated at 9 feet bgs (maximum reach of equipment). •No groundwater encountered. •No sidewall caving observed. •Test pit loosely backfilled with excavated spoils upon completion.								
85											

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FIGURE A8

Test Pit TP-6

CLIENT David Reed of Wayward R Studio
PROJECT NAME Ron's Oil Company - Fuel Station and Market
PROJECT NUMBER B2402070
PROJECT LOCATION 51385 Highway 97 - La Pine, OR
DATE STARTED 8/5/24
GROUND ELEVATION 100 ft
ELEVATION DATUM See Figure 2
WEATHER Sunny 85°F
SURFACE Sandy Soil
LOGGED BY GS
REVIEWED BY PBR
EXCAVATION CONTRACTOR Terry Shine Excavating
SEEPAGE ---
EQUIPMENT Takeuchi TB 260 Mini Excavator
GROUNDWATER DURING DRILLING ---
EXCAVATION METHOD 24" Rock Bucket
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ / PL LL MC / ☐ FINES CONTENT (%) ☐ 0 20 40 60 80 100
			SILTY SAND: *Medium dense,* tan, dry to moist, subangular to subrounded, fine- to medium-grained, nonplastic fines, trace rootlets.		0						
		SM									
95					5						
			POORLY GRADED SAND WITH SILT: *Medium dense,* black to brown, dry to moist, subangular to subrounded, fine- to coarse-grained, with nonplastic fines.			GRAB 1					7
		SP-SM									
90			•Test pit terminated at 8½ feet bgs (maximum reach of equipment). •No groundwater encountered. •No sidewall caving observed. •Test pit loosely backfilled with excavated spoils upon completion.								
85											

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FIGURE A9

Test Pit TP-7 / IT-1

CLIENT David Reed of Wayward R Studio
PROJECT NAME Ron's Oil Company - Fuel Station and Market
PROJECT NUMBER B2402070
PROJECT LOCATION 51385 Highway 97 - La Pine, OR
DATE STARTED 8/5/24
GROUND ELEVATION 97 ft
ELEVATION DATUM See Figure 2
WEATHER Sunny 85°F
SURFACE Sandy Soil
LOGGED BY GS
REVIEWED BY PBR
EXCAVATION CONTRACTOR Terry Shine Excavating
SEEPAGE ---
EQUIPMENT Takeuchi TB 260 Mini Excavator
GROUNDWATER DURING DRILLING ---
EXCAVATION METHOD 24" Rock Bucket
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ PL LL MC ☐ FINES CONTENT (%) ☐ 0 20 40 60 80 100
96			**POORLY GRADED SAND WITH SILT:** *Medium dense,* tan, dry to moist, subangular to subrounded, fine- to medium-grained, nonplastic fines, trace rootlets.		0						
		SP-SM			2						
94						GRAB 1					7 ☐ ● 20
92			•Infiltration test IT-1 performed at 3 feet bgs. See Appendix B for results. •No groundwater encountered. •No sidewall caving observed. •Test pit loosely backfilled with excavated spoils upon completion.								
90											
88											

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FIGURE A10

Test Pit TP-8 / IT-2

CLIENT David Reed of Wayward R Studio
PROJECT NAME Ron's Oil Company - Fuel Station and Market
PROJECT NUMBER B2402070
PROJECT LOCATION 51385 Highway 97 - La Pine, OR
DATE STARTED 8/5/24
GROUND ELEVATION 97 ft
ELEVATION DATUM See Figure 2
WEATHER Sunny 85°F
SURFACE Sandy Soil
LOGGED BY GS
REVIEWED BY PBR
EXCAVATION CONTRACTOR Terry Shine Excavating
SEEPAGE ---
EQUIPMENT Takeuchi TB 260 Mini Excavator
GROUNDWATER DURING DRILLING ---
EXCAVATION METHOD 24" Rock Bucket
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ / PL LL MC / ☐ FINES CONTENT (%) ☐ 0 20 40 60 80 100
96			**POORLY GRADED SAND:** *Medium dense,* tan, dry to moist, subangular to subrounded, fine- to medium-grained, trace nonplastic fines, trace rootlets.		0						
		SP			2						
94						GRAB 1					2 6
					4						
92			•Infiltration test IT-2 performed at 4 feet bgs. See Appendix B for results. •No groundwater encountered. •No sidewall caving observed. •Test pit loosely backfilled with excavated spoils upon completion.								
90											
88											

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Tigard Office	**(503) 684-3460**

Appendix B: Results of Infiltration Testing

Ron's Oil Company - Fuel Station and Market
51385 Highway 97
La Pine, Oregon

CGT Project Number B2402070

August 13, 2024

Prepared For:

David Reed
Wayward R Studio
50219 Hwy 101
Brandon, Oregon 97411

Prepared by
Carlson Geotechnical

B.1.0 INTRODUCTION

The project civil engineering team requested that two infiltration tests be performed at the site at a location adjacent to Highway 97 and along the western portion of the site. The locations of each infiltration test are shown on the Site Plan, which is attached to the main report as Figure 2. Groundwater was not encountered during the excavation of the infiltration test pits at the test depths. Groundwater was first encountered within test pits TP-1 and TP-2 at approximately 8 feet bgs.

B.2.0 INFILTRATION TESTING

B.2.1 Test Procedure

Testing was performed on August 5, 2024, in general accordance with the Test Pit Method described in Appendix 4C of the Central Oregon Stormwater Manual (dated August 2010). The dimensions of the test pits are shown in the tables below. Native poorly graded sand with silt (SP-SM) was exposed at the base of IT-1 and native poorly graded sand (SP) was exposed at the base of IT-2 at the test depths. Upon the completion of each excavation, water was introduced to the test pits from a 500-gallon water trailer provided by CGT. Water flow from the water trailer was controlled with a two-way restricted-flow valve.

The test pits were filled with water to a depth of about 5¼ to 11¼ inches and the water levels were maintained for a period of 2 hours in accordance with the constant head portion of the test method. A constant head was maintained by introducing a constant water flow from the trailer using the two-way restricted-flow valve. Inflow rates to the pits were monitored with an Assured Automation in-line electronic water meter, and were checked periodically to ensure constant head was maintained in each test pit. Water levels were recorded every 10 minutes during the constant head portion of the tests. Measurements were taken using a water level rod placed at the bottom of the pits and were recorded to the nearest one-quarter of an inch.

Upon completion of the constant-head portion of the test procedure, inflow to the test pits was halted and the falling-head portion of the test procedure began. During this portion of the test, water levels were measured on 5-minute intervals over a 30 minute testing period. Measurements for the falling-head portion were taken using the water level rod and were recorded to the nearest one-quarter of an inch.

B.2.2 Infiltration Test Results

The following tables present the details, raw data, and calculated infiltration rates observed during testing. Please note that the calculated infiltration rates do not include any safety or correction factors.

The normalized infiltration rate (q_N) was calculated using the following equation[1]:

$$q_N = \frac{Q/A}{H/2}$$

Where:

$q_N = normalized\ infiltration\ rate\ per\ square\ foot\ per\ foot\ of\ head\ (cfs)$
$Q = stabilized\ falling\ head\ rate\ (cfs)$
$A = wetted\ bottom\ and\ sidewall\ area\ of\ the\ flooded\ test\ pit\ (ft^2)$
$H = depth\ of\ water\ in\ the\ test\ pit\ (ft)$

[1] 2010 Central Oregon Stormwater Manual, Appendix 4C.

Table B1 Results of Infiltration Test TP-7 / IT-1

Saturated Pit Dimensions:	Test Depth:	Water Depth:	Wetted Area:	Tested Material Type:	
3 ft L x 2 ft W	3 feet bgs	11.25 inches	15.38 ft²	Poorly Graded Sand with Silt (SP-SM)	
Time	**Inflow Rate Q (cfs)**	**Time Interval (minutes)**	**Measurement (inches)**	**Change in Water Level (inches)**	**Comments**
10:10 AM	0.002	-	12	-	Constant Head Start, Inflow Start
10:20 AM	0.002	10	11	-1	
10:30 AM	0.002	10	11	0	
10:40 AM	0.002	10	11 1/4	1/4	
10:50 AM	0.002	10	11 1/4	0	
11:00 AM	0.002	10	11 1/4	0	
11:10 AM	0.002	10	11 1/4	0	
11:20 AM	0.002	10	11 1/4	0	
11:30 AM	0.002	10	11 1/4	0	
11:40 AM	0.002	10	11 1/4	0	
11:50 AM	0.002	10	11 1/4	0	
12:00 PM	0.002	10	11 1/4	0	
12:10 PM	0.002	10	11 1/4	0	Constant Head Stop, Q Recorded
12:15 PM	-	-	8 3/4	-2 1/2	Falling Head Start
12:20 PM	-	5	6 1/4	-2 1/2	
12:25 PM	-	5	3 3/4	-2 1/2	
12:30 PM	-	5	1 1/4	-2 1/2	
12:35 PM	-	5	0	-1 1/4	Water completely drained
Unfactored Falling Head Infiltration Rate (inches/hour):					**35.0**
Unfactored Normalized Infiltration Rate (qN, cfs per ft² per foot of total head):					**0.0003**

*Water level measurements taken in inches, measured to the nearest one-eight inch.

**Values calculated are raw (unfactored) rates.

Table B2 Results of Infiltration Test TP-8 / IT-2

Saturated Pit Dimensions:	Test Depth:	Water Depth:	Wetted Area:	Tested Material Type:	
3 ft L x 2 ft W	4 feet bgs	5.25 inches	10.38 ft²	Poorly Graded Sand (SP)	
Time	**Inflow Rate Q (cfs)**	**Time Interval (minutes)**	**Measurement (inches)**	**Change in Water Level (inches)**	**Comments**
12:50 PM	0.004	-	5 1/4	-	Constant Head Start, Inflow Start
1:00 PM	0.004	10	5 1/4	0	
1:10 PM	0.004	10	6	3/4	
1:20 PM	0.004	10	5 1/4	- 3/4	
1:30 PM	0.004	10	5 1/4	0	
1:40 PM	0.004	10	5 1/4	0	
1:50 PM	0.004	10	5 1/4	0	
2:00 PM	0.004	10	5 1/4	0	
2:10 PM	0.004	10	5 1/4	0	
2:20 PM	0.004	10	5 1/4	0	
2:30 PM	0.004	10	5 1/4	0	
2:40 PM	0.004	10	5 1/4	0	
2:50 PM	0.004	10	5 1/4	0	Constant Head Stop, Q Recorded
2:55 PM	-	-	2 3/4	-2 1/2	Falling Head Start
3:00 PM	-	5	1/4	-2 1/2	
3:05 PM	-	5	0	- 1/4	Water completely drained
Unfactored Falling Head Infiltration Rate (inches/hour):					**16.5**
Unfactored Normalized Infiltration Rate (qN, cfs per ft² per foot of total head):					**0.0018**

*Water level measurements taken in inches, measured to the nearest one-eight inch.

**Values calculated are raw (unfactored) rates.

B.1.0 DISCUSSION

As detailed above, we observed raw (unfactored) falling head infiltration rate of about 16½ to 35½ inches per hour where tests were performed within the native poorly graded sand with silt (SP-SM) and poorly graded sand (SP) at the tested locations. Note that these infiltration rates do not include any safety or correction factors. We recommend the stormwater infiltration system designers consult the appropriate design manual in order to assign appropriate safety/correction factors to calculate the design infiltration rate for the proposed infiltration system(s). Once the design is completed, we recommend the infiltration system design (provided by others) and location be reviewed by the geotechnical engineer. If the location and/or depth of the system(s) change from what was indicated at the time of our fieldwork, additional testing may be recommended.

TRANSIGHT CONSULTING, LLC
Transportation Engineering and Planning Services

Date:	August 28, 2024
To:	Brent Bybee, City of La Pine
Cc:	Ken Shonkwiler, ODOT Region 4
From:	Joe Bessman, PE
Project Reference No.:	1972
Project Name:	Ron's Oil Transportation Impact Analysis

The purpose of this memorandum is to provide a formal Transportation Impact Analysis (TIA) for the proposed Ron's Oil fuel center and convenience market in La Pine. This TIA follows the submittal of formal scoping materials.

This report was prepared to provide the City of La Pine and ODOT with information on the status and operational characteristics of its transportation system. La Pine Development Code Section 15.90.080 describes when a traffic impact analysis is required, but provides little detail on the requirements. The City's adopted Transportation System Plan contains recommended Code language for adoption providing additional clarification, but it does not appear that the City has yet adopted this language into its Development Code. Accordingly, typical TIA information is provided within this document to help the City understand infrastructure conditions and needs.

Area and Property Description

The site is located at 51385 Highway 97, which is the parcel on the southwest corner of the US 97/Morson Street intersection, as shown in Figure 1. Prior site use included a 9-room motel that will be demolished to support the proposed convenience market and fuel center. The site is located on a 0.77-acre property (a partition of tax lot 701 is pending) and is appropriately zoned as Traditional Commercial (C) within the Downtown Overlay Zone.

Figure 1. Site Vicinity Map. *Map Source: Deschutes County DIAL.*

Access to the subject property is provided onto Morson Street directly north of the US 97 sidewalks, as well as shared access onto US 97 along the boundary with the Country Financial office. Modifications to the Morson Street access are proposed, shifting the connection as far from the US 97 connection as possible by placing this access into the dedicated ROW for Hill Street north of the property, with a 20-foot paved access drive within this space. Figure 2 illustrates the proposed site access plan.

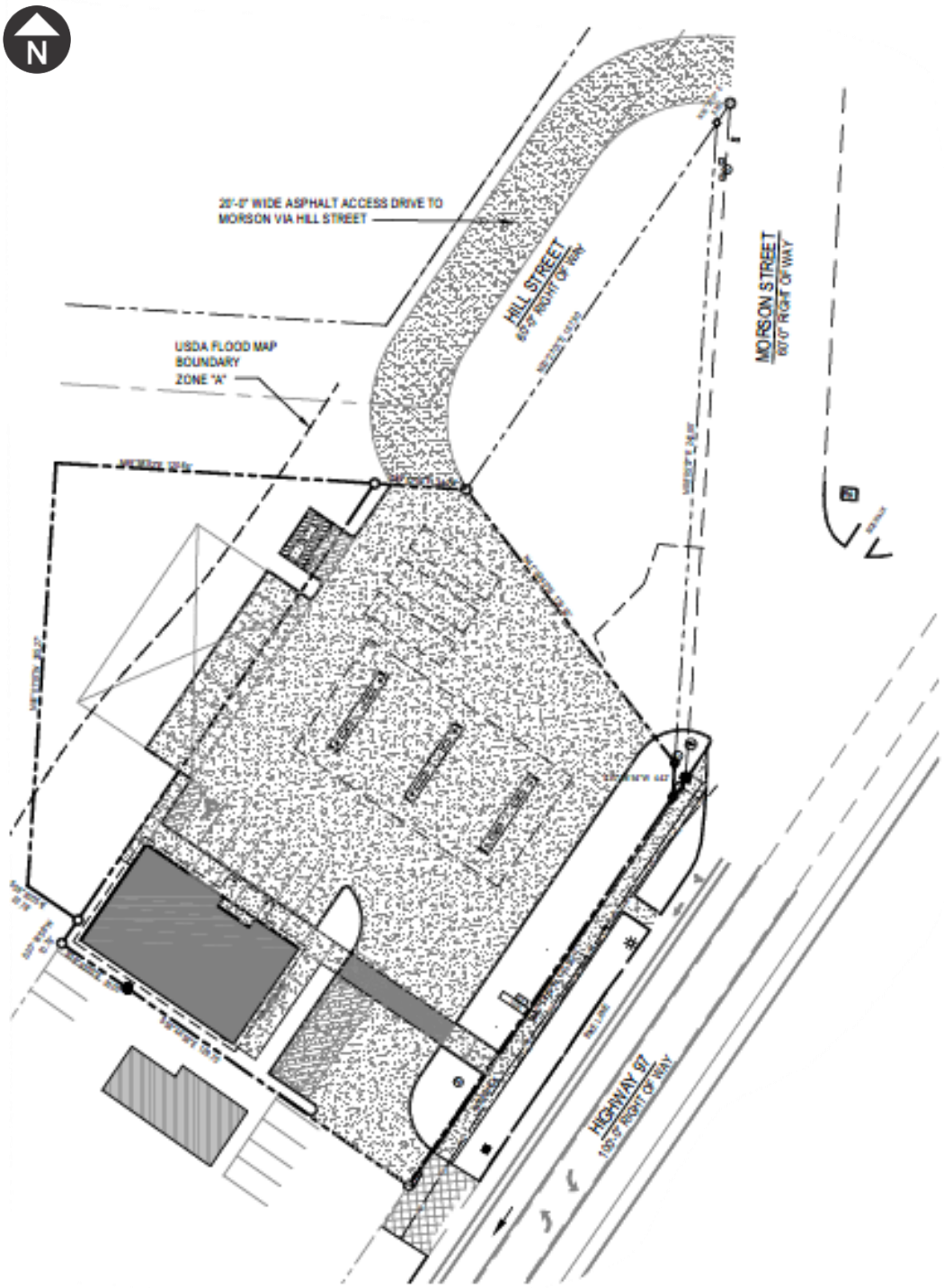


Figure 2. Proposed site access plan. *Source: Wayward R Studio, Dated June 3, 2024.*

The proposed development will include a 12-position fueling center (three islands with two fueling dispensers providing four fueling positions on each), and a 3,024 square-foot convenience market within the southwestern corner of the property. This layout provides suitable access for the types of larger vehicles common on the US 97 corridor to enter and circulate through the site, support on-site queuing at the fueling dispensers, and depart without requiring internal U-turn maneuvers.

AREA TRANSPORTATION INFRASTRUCTURE

The location of the proposed fuel center is along the US 97 corridor within the City's *Traditional Commercial* lands. The site is located on the west side of the corridor and will be served by Morson Street and US 97, with the connection to Morson Street occurring through the undeveloped Hill Street right-of-way.

The City of La Pine Transportation System Plan classifies Morson Street as a *Downtown Arterial* (see Figure 3), with this route planned for bicycle lanes, 6-foot sidewalks separated from the roadway with an 8-foot planter strip, and a 14-foot left-turn lane, for a total right-of-way width of 78-feet. The existing street right-of-way is only 60-feet wide, and currently lacks any of the planned "downtown arterial" components within the project vicinity. There are no sidewalks, bicycle lanes, and a limited gravel shoulder, as shown in Figure 4. Aside from the northeast corner of the site, the project has no frontage along Morson Street.

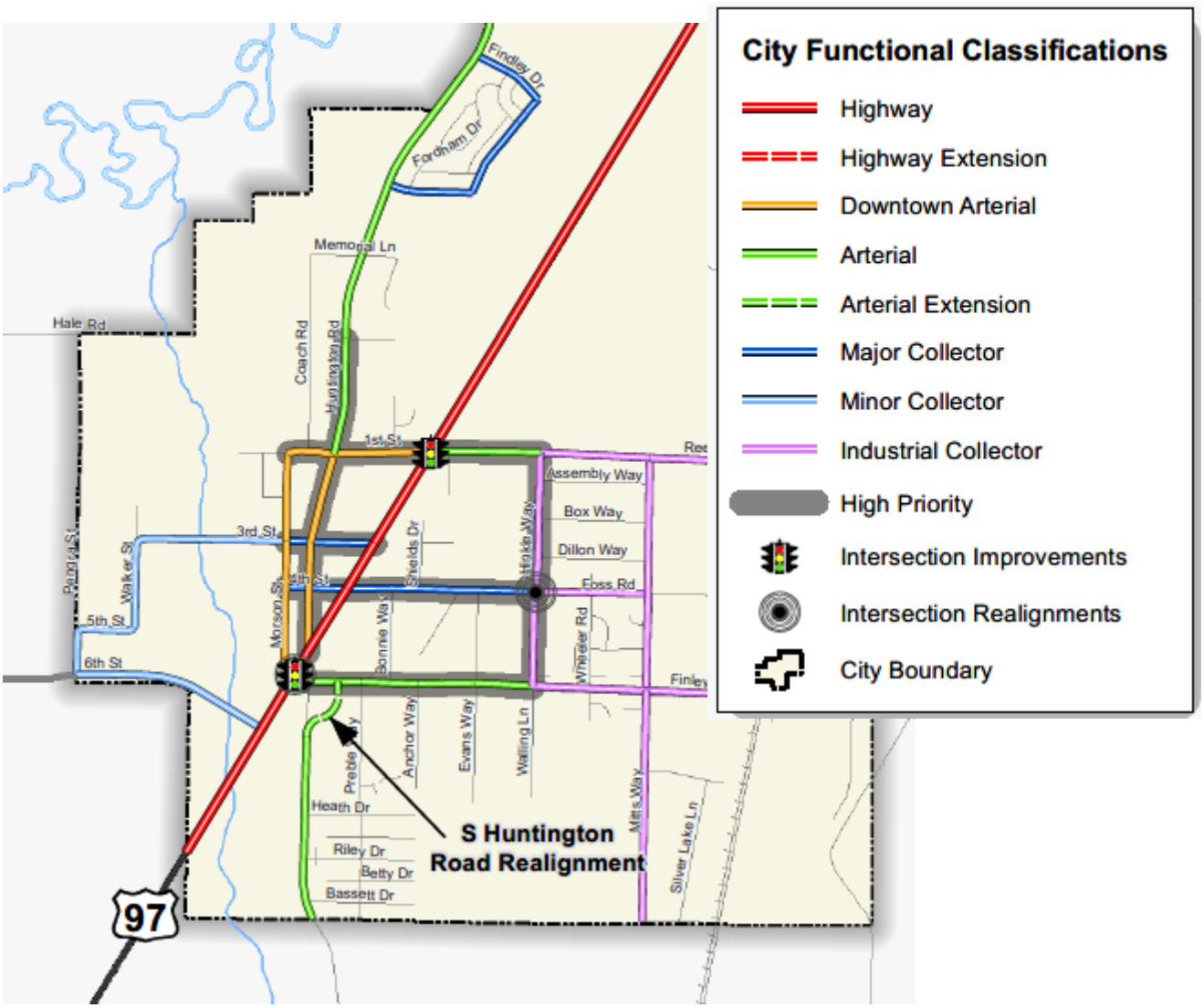


Figure 3. Roadway Functional Classification.
Source: City of La Pine Transportation System Plan, Figure 4-3.

Figure 4. Morson Street streetscape north of the project site (facing north)

US 97 is a Statewide Highway and Freight Route, and a fairly recent streetscape project was completed by ODOT to provide complete sidewalks and drainage swales along the west side of the highway. This project reconstructed the shared access with a standard concrete curb-apron, and provided accessibility improvements throughout the corridor, including ADA-compliant curb ramps. This streetscape project did not modify the alignment of Morson Street, which includes an approximately 90-foot crossing width due to the skewed approach. It appears that the US 97 curbing was built to support the planned widening of Morson Street, despite plans for this entire street to be realigned with Finley Butte Road (and signalized).

The US 97 corridor also includes buffered bicycle lanes throughout its length, and the three-lane roadway provides a continuous center left-turn lane. This storage area also includes pedestrian refuge islands, with enhanced pedestrian crossing treatments to better link uses on both sides of the highway. The nearest highway crossing is located approximately 180-feet north of the property corner, on the southern side of the Finley Butte intersection.

SAFETY REVIEW

This section provides an initial review of historical safety data surrounding the site based on the available records through the ODOT TransGIS site. This review considered the most recent five years of crash data available (January 2018 through December 2022) and noted the following:

- There were no reported crashes at either of the site access driveways within the analysis period.

- There were no reported crashes during the five-year period at the US 97/Morson Street intersection despite the skewed connection to the highway.
- There are no locations within the vicinity of the site that are identified within ODOT's Safety Priority Index System (SPIS).

This preliminary review of historical safety records shows no indication of an existing safety deficiency at the US 97/Morson Street intersection. It was noted that the City's Transportation System Plan identifies a plan to realign Morson Street as a perpendicular intersection aligned with Finley Butte Road, which is also planned for signalization in the future. This realignment would occur within the lands north of the site.

Intersection Sight Triangles

In addition to review of historical traffic safety data, intersection sight distance was also reviewed at the existing shared access onto US 97 and at the proposed access connection to Morson Street. This intersection sight distance review was conducted based on guidance cited within Conditions B1 (left-turn from minor road) and B2 (right-turn from minor road) of the AASHTO *Green Book*. All distances were measured from a vertex point located 14.5 feet from the major-road travel way along the center of the approaching travel lane, accounting for comfortable positioning distance from the travel way (6.5 feet) and the distance from the front of the vehicle to the driver eye (8.0 feet). The assumed eye height is 3.5 feet above the departing road and the object height is also 3.5 feet above the major road, providing enough space on the approaching vehicle to recognize it.

Intersection sight triangles vary based on the speed of the roadway and the number of travel lanes that a driver must cross. Based on the posted speed of 30 mph and the two-lane cross-section of Morson Street, Figure 5 illustrates the minimum recommended intersection sight distance measurements for this relocated access. The shared access onto US 97 connects to a three-lane highway with a posted speed of 35 miles per hour, so the applicable standards for this access are illustrated in Figure 6.

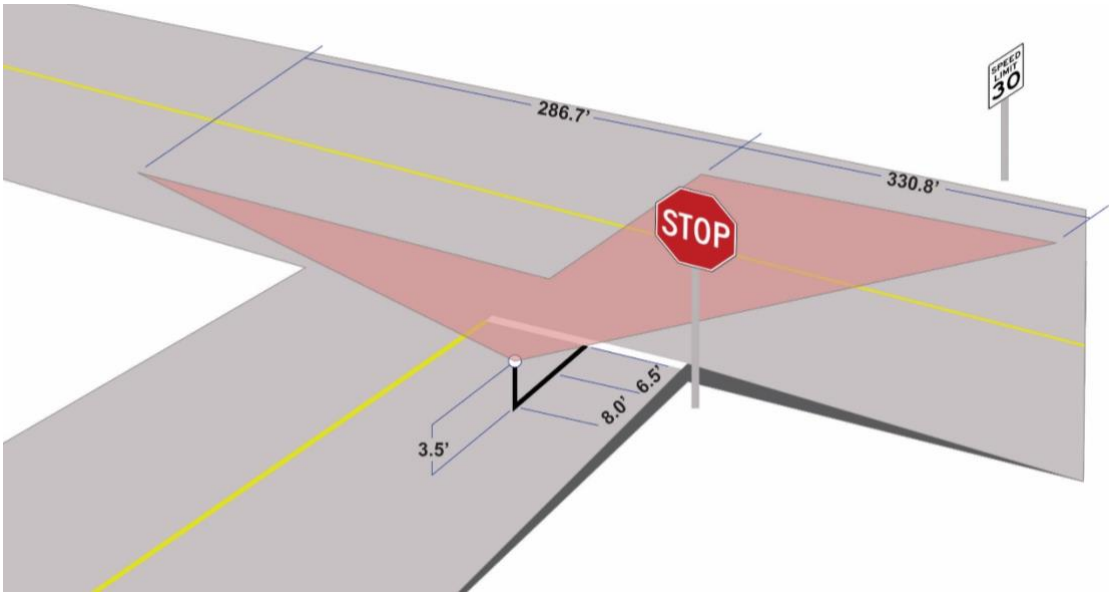


Figure 5. Intersection Sight Distance measurements for the relocated access onto Morson Street.

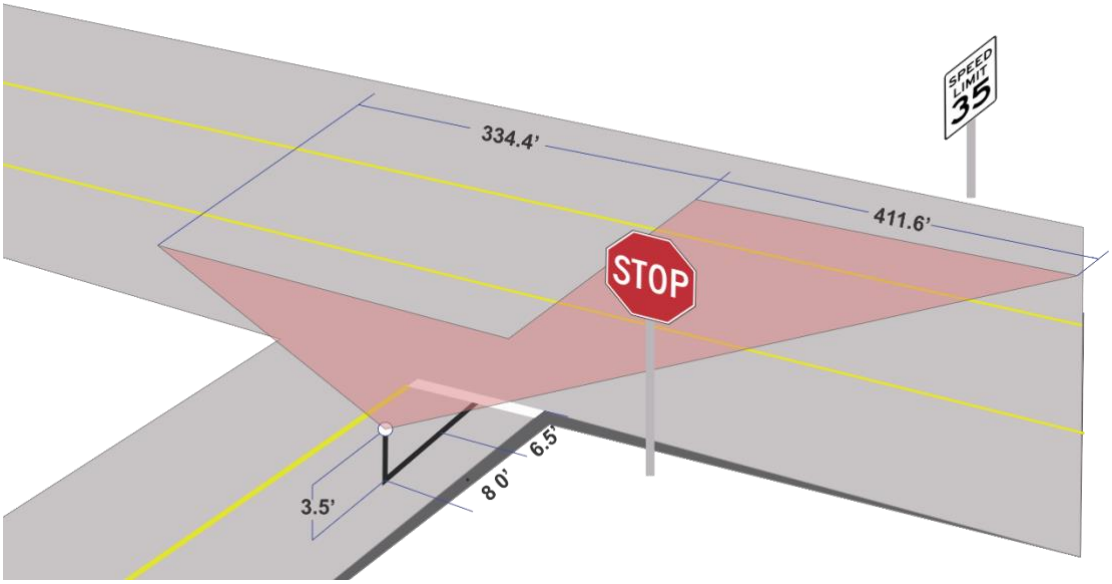


Figure 6. Intersection Sight Distance measurements for the shared access onto US 97.

As illustrated in Figures 7 and 8, clear sight lines are available from the relocated Morson Street access, with the new driveway providing clear views between US 97 and toward the north. Similarly, the existing shared access onto US 97 provides clear sight lines in both directions, easily exceeding the minimum recommended dimensions shown in Figures 9 and 10.

Figure 7. View from relocated Morson Street access facing south toward US 97

Figure 8. View from relocated Morson Street access facing north.

Figure 9. View from the shared US 97 access facing south.

Figure 10. View from the shared US 97 access facing north.

TRAFFIC COUNTS

Traffic counts were manually collected on August 7, 2024 between 4:00 and 6:00 p.m. at each of the study locations. These counts reflect the elevated summertime traffic volumes on the State highway system. The results of the unadjusted traffic counts at the US 97/Morson Street intersection are provided in Figure 11. These traffic count patterns are nearly identical to prior traffic counts collected at the intersection on August 31, 2023.

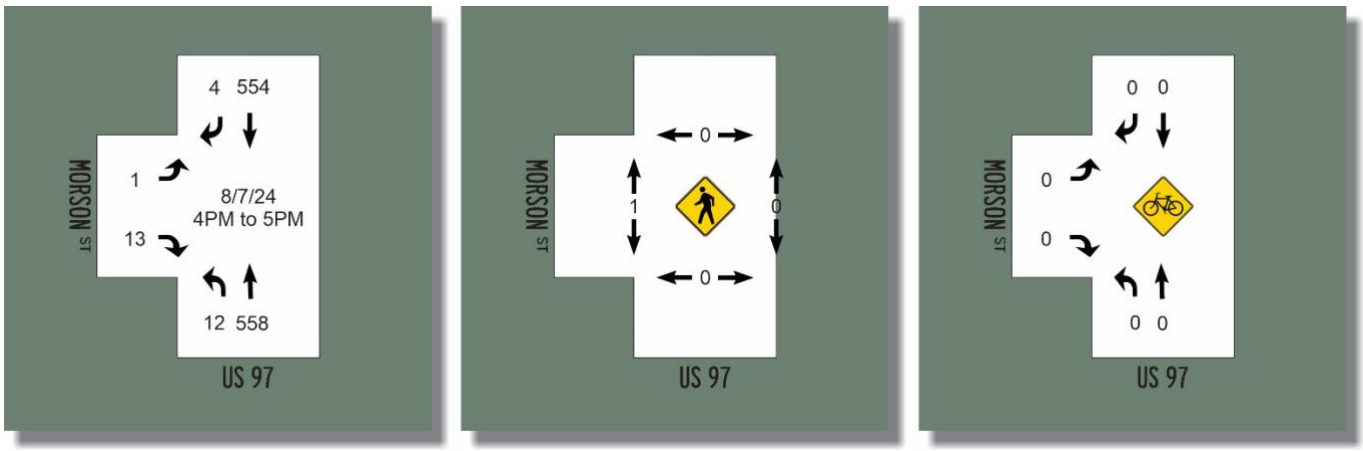


Figure 11. Unadjusted Traffic Count Summary, US 97 and Morson Street, August 7, 2024.

ODOT requires that traffic counts along the State Highway system reflect the 30th highest hourly volumes, which in Central Oregon typically correlate to mid-July conditions. The seasonal adjustment methodology is outlined within ODOT's Analysis Procedures Manual, and essentially uses the continuously collected traffic counts at ODOT's permanent counting stations to identify appropriate adjustment factors.

Seasonal adjustment factors were applied to the highway system based on data from ODOT's nearest permanent count station (ATR 09-003, located 0.17 miles south of China Hat Road). This permanent count station is the only count station between Bend and La Pine. A second permanent count station is located south of La Pine, but travel patterns between La Pine and Klamath Falls are not likely to reflect the intercity commute patterns that are more consistent toward the north for travel within Central Oregon. No adjustments were applied to Morson Street, as patterns within the City boundaries fluctuate less than the intercity patterns on US 97. Table 1 shows the ATR adjustments following the ODOT procedures.

Table 1. ATR 09-003 Seasonal Adjustments (2018 to 2022)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2022	86	95	101	101	109	121	126	125	114	108	89	90
2021	82	85	98	105	111	124	131	123	111	106	97	90
2020	89	101	87	78	99	121	134	133	121	117	96	94
2019	85	72	89	100	108	121	128	126	115	105	91	90
2018	83	85	93	100	107	119	126	123	112	103	94	87
3-Yr Avg	84.8	88.4	93.2	100.3	108.0	121.1	128.4	124.5	113.8	106.2	93.7	89.8
Adj Factor	51%	45%	38%	28%	19%	6%	0%	3%	13%	21%	37%	43%

Gray shading highlights minimum and maximum values that were excluded from the average to account for construction activities and other anomalies during the five-year period.

Application of the ATR data shows a 3 percent highway volume difference between the August traffic counts and peak July traffic flows along the US 97 corridor. These factors are heavily influenced by tourist traffic from Sunriver and nearby recreation areas, and are expected to be less pronounced within the southern portion of the La Pine core area near Morson Street. These seasonal adjustment factors were applied to the existing traffic counts to approximate peak July travel conditions.

TRANSPORTATION IMPACT ANALYSIS

TRAFFIC OPERATIONS

The analysis of traffic operations was prepared using Synchro 10 software and the Highway Capacity Manual 6th Edition methodology. All traffic operations within this report reflect peak fifteen-minute conditions during the peak hour. The study intersections are under the jurisdiction of the City of La Pine and ODOT so operational standards of both affected agencies were applied within this analysis to the respective facilities.

The City of La Pine Transportation System Plan Appendix 2 outlines the City's operational requirements for intersections. Performance standards in the City of La Pine vary based on intersection control type as summarized below:

- LOS "D" and a volume-to-capacity ratio less than 0.90 for signalized and all-way stop-controlled intersections.
- LOS "E" and a volume to capacity ratio less than 0.90 for the critical movement at unsignalized and at roundabout – controlled intersection.
- A queuing analysis must be performed to assess whether existing turn lane storage is adequate to accommodate 95th percentile vehicular queuing during the peak hour.

ODOT mobility standards are identified within the Oregon Highway Plan, and vary based on facility location and characteristics, highway designation, posted speed, and control type. Based on the classification of US 97 in the study area as a *Statewide Highway* with a Freight Route inside the Urban Growth Boundary and a 35-mph posted speed, the mobility standard for US 97 is a v/c ratio of 0.85. The Morson Street approach to US 97 has a mobility standard of a 0.95 v/c ratio.

Existing Traffic Conditions

The seasonally-adjusted traffic counts (see Figure 12) were analyzed on the system to identify current year operational conditions. Field review was also conducted to calibrate the analysis to the models. The results of the seasonally-adjusted analysis generally matched the observed August conditions, with the operational results summarized in Table 2.

Table 2. Summary of Existing Traffic Conditions, Weekday PM Peak Hour

Intersection	Jurisdiction	Performance Standard	Critical Movement	LOS	Delay (sec)	v/c Ratio	95th % Queue	Acceptable?
Morson Street/ Hill Street Access	City of La Pine	v/c < 0.90 LOS E						Yes
US 97/ Morson Street	ODOT	v/c < 0.95	EB	LOS B	13.4s	0.03	25 ft	Yes
US 97/ Shared Access	City of La Pine	v/c < 0.90 LOS E	EB	LOS B	12.4s	0.01	25 ft	Yes

Figure 12. Year 2024 Seasonally Adjusted Traffic Volumes, Weekday PM Peak Hour

Year 2026 No-Build Traffic Conditions

An analysis of year 2026 "No-build" traffic conditions was prepared to identify how the surrounding transportation system will operate without the proposed fuel center. This scenario is used to provide a basis of comparison to the "with project" conditions. This scenario includes application of a two-percent annual growth rate to account for regional growth throughout the study area, an account of previously approved but not constructed developments, and any planned and funded roadway changes.

Four private development projects were identified within the vicinity that are expected to contribute trips through the study area intersections. These include the following:

- *Anchor Way Subdivision* is a 22-lot residential project located on Anchor Way south of Finley Butte Road.
- *Evans Way Estate* consists of 60 single-family homes located adjacent to the site on the west side. Eight of these lots are assumed to be built out under existing conditions.
- *La Pine Commercial* is a commercial development located on the north and south sides of the US 97/Finley Butte Road intersection.
- *Finley Butte Ranch* is an 80-lot residential subdivision located east of US 97 with access from Finley Butte Drive.

There were no publicly- or privately-funded transportation improvement projects identified within the study area, so it was assumed that the existing infrastructure will remain in place in both the year 2026 "no-build" and "with project" analysis.

TRIP GENERATION ESTIMATES

To assess the potential impacts of the change in site use, trip generation estimates were prepared based on national data as contained within ITE's standard reference *Trip Generation, 11th Edition.* The proposed fueling center would be best classified using ITE's Land Use 945: Convenience Store/Gas Station, which is described as follows:

> *A convenience store/gas station is a facility with a co-located convenience store and gas station. The convenience store sells grocery and other everyday items that a person may need or want as a matter of convenience. The gas station sells automotive fuels such as gasoline and diesel. A convenience store/gas station is typically located along a major thoroughfare to optimize motorist convenience. Extended hours of operation (with many open 24 hours, 7 days a week) are common at these facilities. The convenience store product mix typically includes pre-packaged grocery items, beverages, dairy products, snack foods, confectionary, tobacco products, over-the-counter drugs, and toiletries. A convenience store may sell alcohol, often limited to beer and wine. Coffee and premade sandwiches are also commonly sold at a convenience store. Made-to-order food orders are sometimes offered. Some stores offer limited seating. The sites in this land use include both self-pump and attendant-pumped fueling positions and both pre-pay and post-pay operations.*

This recently released edition of the manual modifies the trip generation approach for fuel centers and convenience markets from prior editions, providing two separate means of estimating trips based either on the specific size of the convenience store and general range of fueling positions, or specific number of fueling positions and general size range of the convenience store. While no specific guidance is provided within the ITE manual as to which of these methods is more appropriate, typical practice is to average both values.

> *Multiple subcategories were added to this land use to allow for multi-variable evaluation of sites with single-variable data plots. All study sites are assigned to one of three subcategories, based on the number of vehicle fueling positions (VFP) at the site: between 2 and 8 VFP, between 9 and 15 VFP, and between 16 and 24 VFP. For each VFP range subcategory, data plots are presented with GFA as the independent variable for all time periods and trip types for which data are available. The use of both GFA and VFP (as the independent variable and land use subcategory, respectively) provides a significant improvement in the reliability of a trip generation estimate when compared to the single-variable data plots in prior editions of Trip Generation Manual.*

Further, the study sites were also assigned to one of three other subcategories, based on the gross floor area (GFA) of the convenience store at the site: between 2,000 and 4,000 square feet, between 4,000 and 5,500 square feet, and between 5,500 and 10,000 square feet. For each GFA subcategory range, data plots are presented with VFP as the independent variable for all time periods and trip types for which data are available. The use of both VFP and GFA (as the independent variable and land use subcategory, respectively) provides a significant improvement in the reliability of a trip generation estimate when compared to the single-variable data plots in prior editions of Trip Generation Manual.

In addition to the number of new driveway trips generated, the ITE Trip Generation Manual appendices also provide trip characteristics information that identify the proportion of diverted and pass-by trips for fuel centers. As expected, most trips to fuel centers are vehicles that are already on the transportation system that enter the site prior to continuing their prior journey. The appendices of the ITE Trip Generation Manual, 11th Edition, identify that about 75 percent of all trips for a fuel center and convenience market are pass-by trips. Table 3 summarizes the resultant trip generation estimates for the site, including credits for the existing motel.

Table 3. Estimated Trip Generation (Source: *ITE Trip Generation, 11th Edition*)

Land Use	ITE Code	Size	Weekday Daily Trips	Weekday PM Peak Hour		
				Total	In	Out
Existing Site Use (Trip Credits)						
Motel *ITE Trip Rate*	320	-12 Rooms	-40 *3.35/Room*	-4 *0.36/Room*	-2 *54%*	-2 *46%*
Proposed Site Use						
Opt 1: Convenience Store/Gas Station *(2-4k Convenience Store)* *Pass-by Trips (75%)* *Net New Trips*	945	*(GFA 2-4k)* 12 Positions	3,181 *-2,386* 795 *265.12/VFP*	221 *-166* 55 *18.42/VFP*	111 *-83* 28 *50%*	110 *-83* 27 *50%*
Opt 2: Convenience Store/Gas Station *(9-15 Fueling Positions)* *Pass-by Trips (75%)* *Net New Trips*	945	*(9-15 VFPs)* 3,024 SF	2,115 *-1,586* 529 *265.12/VFP*	165 *-124* 41 *18.42/VFP*	82 *-62* 20 *50%*	83 *-62* 21 *50%*
Average of Options 1 and 2			2,648 *-1,986* 662	193 *-145* 48	97 *-73* 24	96 *-72* 24
Total Impact (Proposed Site Use – Existing Site Use)						
Total Trips *Pass-by Trips* **Net New Trips**			2,608 *-1,986* **+622**	1189 *-145* **+44**	*95* *-73* **+22**	94 *-72* **+22**

The overall trip generation estimates shown in Table 3 shows that the proposed conversion of the motel to a fuel station with convenience market will generate about 622 more weekday daily trips on the transportation system, including about 44 more net new trips during the weekday p.m. peak hour.

The site-generated trips were assigned to the transportation system in consideration of area travel patterns as well as the convenience of access. While historical traffic counts show that traffic volumes on the highway during the evening peak period are split about 47% northbound to 53% southbound.

Anecdotally, southbound drivers are more likely to visit this fuel center during the peak period as southbound travelers are able to avoid a left-turn maneuver onto the highway. Figure 13 illustrates the assignment of these trips to the surrounding study area to illustrate the general area impact of the proposed site redevelopment.

Figure 13 shows that beyond the immediate site access driveways and the US 97/Morson Street intersection the impact of the gas station is limited. The City of La Pine has not adopted specific trip generation thresholds, but site-generated impacts greater than 25 weekday p.m. peak hour trips is used to identify a project study area in Deschutes County. ODOT defaults to a higher level of significance of 50 or more trips, reflective of the higher volumes on the highway system. Based on these City and State thresholds, the following were identified as "Study Intersections" for the purposes of this Transportation Impact Analysis:

- Intersection 3: Morson Street (Hill Street) Site Access
- Intersection 4: US 97 Shared Access
- Intersection 6: US 97/Morson Street

The submittal of project scoping materials was provided to review agencies for comments on July 31, 2024, but no comments were obtained by the time this report was finalized.

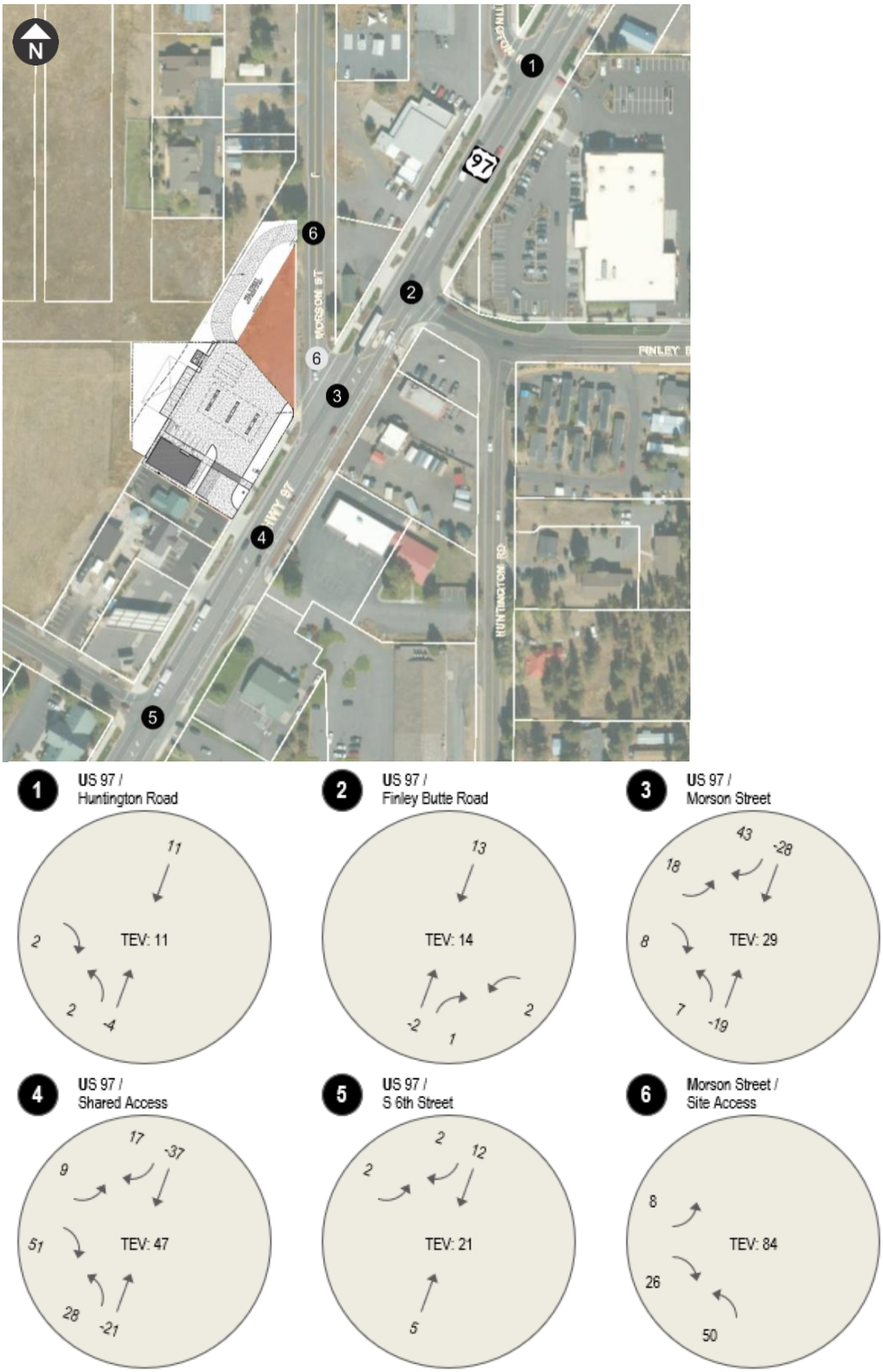


Figure 13. Estimated Trip Assignment, Weekday PM Peak Hour (Includes Credits for Motel)

Year 2026 "With Project" Traffic Conditions

The proposed commercial site will relocate the existing driveway onto Morson Street to the undeveloped Hill Street right-of-way located to the west, with a 20-foot paved connection linking these two streets. This relocation will provide additional queue storage and improve the spacing from US 97, which is critical as the current driveway is essentially a fourth leg of the US 97 intersection.

Analysis of the year 2026 "With Project" conditions was prepared by adding the site-generated trips (excluding trips from the prior motel, as this use has been discontinued and was not reflected in the traffic counts) to the traffic volumes identified within the "No Build" scenario. Figure 14 illustrates the resultant traffic volumes. A summary of 2026 intersection operations is provided in Table 4, which shows that all of the study area intersections are shown to operate acceptably through build-out.

As all of the study intersections operate acceptably today, in the future build-out year, and in the future build-out year with the proposed fuel center and convenience market, no project-specific mitigation is required.

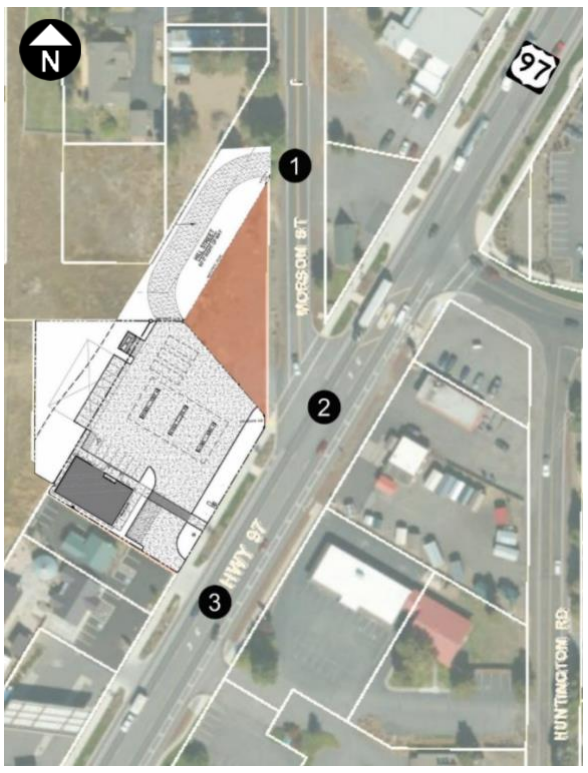


Figure 14. Year 2026 Traffic Conditions, Weekday PM Peak Hour

Year 2026 "No Build" Volumes	Added Trips (Excludes Motel Credits)	Year 2026 "With Project" Volumes
1 Morson Street / Site Access 15 17	1 Morson Street / Site Access 8 28 52	1 Morson Street / Site Access 15 8 28 52 17
2 US 97 / Morson Street 4 610 1 14 12 621	2 US 97 / Morson Street 44 -28 19 9 8 -19	2 US 97 / Morson Street 48 582 20 23 20 602
3 US 97 / Shared Access 4 619 3 3 634	3 US 97 / Shared Access 17 -36 9 51 28 -20	3 US 97 / Shared Access 21 583 9 54 31 614

Table 4. Summary of Intersection Operations, Seasonally Adjusted Weekday PM Peak Hour

Intersection	Jurisdiction	Performance Standard	Critical Movement	2026 No-Build Conditions				2026 With Project Conditions				Acceptable?
				LOS	Delay (sec)	v/c Ratio	95th % Queue	LOS	Delay (sec)	v/c Ratio	95th % Queue	
Morson Street/ (Hill Street) Access	City of La Pine	v/c < 0.90 LOS E						EB LOS A	8.7s	0.04	25 ft	Yes
US 97/ Morson Street	ODOT	v/c < 0.95	EB	LOS B	13.9s	0.04	25 ft	LOS C	21.9s	0.18	25 ft	Yes
US 97/ Shared Access	City of La Pine	v/c < 0.90 LOS E	EB	LOS B	12.8s	0.01	25 ft	LOS C	16.6s	0.18	25 ft	Yes

SITE ACCESS AND INTERNAL CIRCULATION

The proposed layout of the fuel center and convenience market has been prepared to support smooth vehicular access to the market and fuel dispensers. Fuel trucks can enter the site either from US 97 or from Morson Street, access the tanks, and continue along their route leaving the site in either direction. Vendor delivery trucks are provided with a dedicated loading area on the east side of the building that will facilitate deliveries without impacting customers. Garbage trucks can access the dumpster enclosure in the northern corner of the site by pulling directly into the enclosure area from the queue storage/maneuvering space.

The fuel dispensers include a 30-foot separation between pumps, which provides adequate width to allow vehicles to simultaneously fuel and exit through the central aisle (or with two fueling positions motorists can also back out). The layout of the site provides extensive queue storage area that is suitable for accommodating larger vehicles, such as those pulling trailers.

For multimodal access to the site, bicycle racks are provided along the east side of the building providing a direct route from the bicycle lanes along the highway. This location also avoids conflicts between cyclists and pedestrians near the building entrance. There is also convenient pedestrian access to from the sidewalks along US 97 to the market entrance, with a crosswalk designating a route directly from the sidewalks to the building entrance.

Field review noted that the shared access onto US 97 contains a raised island along the property boundary. This median appears to separate parking between the adjacent uses, but also has the unintended consequence of reducing the ability to queue with vehicles potentially using the driveway from opposing directions. It is recommended that this raised island be removed to the extent possible; it was unclear where the property boundary was located and which property has ownership.

ODOT CHANGE OF USE

As the property generates more than 500 total weekday daily trips it is considered a "Change of Use" for purposes of ODOT Division 051. As a private shared approach the access will be subject to the requirements within OAR 734-051-3020, which requires a new approach application. This new approach application will be separately provided to ODOT for review. Key items within this application are as follows:

- The access onto US 97 is a shared access that was reconstructed to ODOT standards as part of the recent highway streetscape improvements.
- Secondary access is needed to support internal circulation for larger vehicles, allowing these to circulate through the site without requiring an internal U-turn maneuver.
- The relocation of the Morson Street access away from US 97 to the Hill Street right-of-way substantially improves turning movements and reduces conflicts from the site.
- The removal of the internal island separating this site from the property to the south will improve queuing and circulation, if feasible (see Figure 15).

Figure 15. Existing internal splitter island near the shared US 97 access.

For these reasons it is recommended that the access configuration be considered "Moving in the Direction of Conformity" as it complies with the following provisions:

- Improving sight distance (driveway angle on the current Morson Street access results in very challenging sight lines)
- Improving distance between connections (the existing Morson Street driveway effectively acts as a highway access since it connects directly into the intersection influence area).
- Eliminating or combining existing connections to the highway resulting in a net reduction in the number of connections (the driveway was previously constructed as a shared access).
- Developing a throat on a connection to allow for more efficient movement of motorists from the highway (if possible with property boundaries or adjacent owner permission).

It is requested that ODOT review these criteria and confirm general support for this approach while the formal driveway permit application is filed.

FINDINGS AND RECOMMENDATIONS

Based on this Transportation Impact Analysis, the replacement of a former motel with the proposed development of the Ron's Oil fuel center and convenience market can comply with City and ODOT Code requirements. The proposed use generates more trips than the prior motel, but most of these trips are pass-by trips that are already on the highway system. The following summarizes key findings and recommendations of this review:

- The existing access onto Morson Street should be closed, with the driveway replaced with new curbing. The relocated access onto the undeveloped Hill Street ROW provides substantially improved spacing from the highway and provides clear sight lines in both directions.
- There are no historical crash issues within the area surrounding the proposed fuel station.

- The internal layout of the fuel center provides ideal separation between uses, with designated locations for vendor trucks, trash, fuel trucks, and patrons. The site layout allows fuel trucks to replenish the underground tanks while the dispensers remain operational, and the layout provides substantial on-site queuing that can support a wide range of vehicle types.
- To the extent possible, the dividing island separating the subject property from the parcel to the north located along the center of the shared US 97 access should be removed to improve queuing and driveway operations.
- The proposed development generates more than 500 additional weekday daily trips from the prior site use and therefore constitutes a "Change of Use" per ODOT Division 051. However, as the project only maintains the existing shared access onto US 97 and improves access onto Morson Street, it is proposed that this use reflects an overall benefit to the highway system and is therefore considered "moving in the direction of conformity." It is requested that ODOT provide comments while the formal permit application is being prepared.
- The project should contribute toward regional transportation system needs through the payment of Transportation SDC fees per the City's adopted fee schedule.
- It is recommended that any monument signage, above-ground utilities, landscaping, or other above-ground features remain outside the Intersection Sight Triangles.

Please let me know if you have any questions or comments on these transportation materials at (503) 997-4473 or via email at joe@transightconsulting.com.

Attachments:

- Traffic Count Worksheets
- Safety Worksheets
- Level of Service Worksheets

Community Development Department
PO Box 2460 16345 Sixth Street
La Pine, Oregon 97739
Phone: (541) 536-1432 Fax: (541) 536-1462
Email: info@lapineoregon.gov

Lot Line Adjustment Application

PLEASE NOTE: INCOMPLETE APPLICATIONS *WILL NOT BE ACCEPTED*

File Number # _____

☐ **Adjustment** ☒ **Consolidation**

PLEASE NOTE: INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

Property Owner: Ron LaFranchi (Ron's Oil)

Mailing Address: 580 N. Central Blvd, Coquille OR 97423 Phone: _____

Subject Property Address: 22-10-15DA TL 800 & portion (p.1) of 22-10-15DA TL 701

Applicant: Dave Reed

Address: P.O. Box 1808, Bandon OR 97411 Phone: (541) 551-0057

Email: Info@waywardrstudio.com

Property Description: T-15 R-1 Section _____ Tax Lots 800 & portion of 701

Reason for Adjustment: Consolidation to accomodate commercial development.

Adjoining Property involved in Lot Line Adjustment

Property Owner: Same as above

Address: _____ Phone: _____

Email: _____

Subject Property Address: _____

Property Description: T-15 R-13 Section _____ Tax Lots_____

Community Development Department
PO Box 2460 16345 Sixth Street
La Pine, Oregon 97739
Phone: (541) 536-1432 Fax: (541) 536-1462
Email: info@lapineoregon.gov

Applicant's Property - Tax Lot 800	**Adjoining Property - Tax Lot** Portion of 701
Present Zoning: TC	TC
Present Square footage: 0.27 acres	0.77 acres
Sq. Ft. After Adjustment: 0	1.04 acres

Applicant/Owner: _____ Date: 10/24/24
Signature

Adjoining Property Owner: _____ Date: 10/24/24
Signature

If you are the authorized agent, please attach a letter signed by the owner.

FOR OFFICE USE ONLY

Date Received: _____
Rec'd By: _____
Date App. Complete: _____
Date of Notice: _____
Fee Paid: _____
Receipt #: _____

Community Development Department
PO Box 2460 16345 Sixth Street
La Pine, Oregon 97739
Phone: (541) 536-1432 Fax: (541) 536-1462
Email: info@lapineoregon.gov

LOT LINE ADJUSTMENT

WHAT IS A LOT LINE ADJUSTMENT?

A lot line adjustment is a change to a property boundary that only modifies existing lots and does not create a new parcel or lot.

WHAT ARE THE STANDARDS?

- A lot line adjustment cannot create a new parcel. Creation of a new parcel requires approval of a land division.
- Following the lot line adjustment, all lots must comply with minimum lot size and dimensional standards of the applicable zone.
- If there are existing structures on the parcels, the lot line adjustment may not result in a setback violation.
- All lots must comply with access and frontage standards.

WHAT IS THE REVIEW PROCESS?

A lot line adjustment is subject to administrative review and decision. After approval, the lot line adjustment becomes effective only after a metes and bounds legal description of the adjusted lots is recorded by the applicant with the Deschutes County Clerks Office.

WHAT ARE SUBMITTAL REQUIREMENTS?

The following information and material must be submitted to the City by the applicant. Other information may be required in some cases.

□ Application and Fee. The application must be signed by the property owners of all lots affected by the application. Please see the attached fee schedule for the fee required by the City for the processing of a Lot Line Adjustment. Additionally, fees are required by Deschutes County for recording the lot line adjustment.

Community Development Department
PO Box 2460 16345 Sixth Street
La Pine, Oregon 97739
Phone: (541) 536-1432 Fax: (541) 536-1462
Email: info@lapineoregon.gov

- □ Preliminary Plan. Five (5) copies of the preliminary plan drawn to scale which must be folded individually, or in sets to 8 ½" X 11" in size and a copy of the plan on a CD.
- □ Title report or other documentation of ownership for each affected property.
- □ Location by Section, Township and Range, and a legal description sufficient to define the location and boundaries of the lot line adjustment.
- □ Names, addresses and phone numbers of the owner(s) of the property, designer of the preliminary plan, surveyor (if applicable) and the date of plan preparation.
- □ Streets, existing: Locations, names and right-of-way widths of all public and private streets adjacent to the subject tract.
- □ Access: Location and width of existing or proposed access points.
- □ Utilities: Location of existing public and private storm drains, sanitary sewer, water lines on or abutting the tract, and any irrigation ditches or easements.
- □ Lot Dimensions: All existing and proposed lot lines, their length (in feet) and bearing (in degrees, minutes and seconds).
- □ Lot size: All existing and proposed lot sizes in either square feet or acres.
- □ Easements: Locations, widths, and purposes of all existing and proposed easements on and abutting the tract(s).
- □ Existing Uses: Scaled location and present use of all structures.

[NOTE: Approval of a lot line adjustment expires within two years if not recorded with Deschutes County.]

LOT LINE ADJUSTMENT APPLICATION MAP FOR RON La FRANCHI

PROPERTY LOCATED IN THE NE 1/4 OF THE SE 1/4
& SE 1/4 OF THE NE 1/4 OF SECTION 15,
TOWNSHIP 22 SOUTH, RANGE 10 EAST OF THE WILLAMETTE MERIDIAN,
CITY OF La PINE, DESCHUTES COUNTY, OREGON
SITUS ADDRESS: 51385 HWY 97, La PINE, OR 97739
DEED INST. # 2021-48656
APN DESIGNATIONS: TAX LOTS 701 & 800 MAP: 22-10-15 DA
ZONING DESIGNATION: TRADITIONAL COMMERCIAL (C)

SURVEY FOR:
RON La FRANCHI
580 N. CENTRAL BLVD.
COQUILLE, OR 97423.
541-396-5571

SURVEY BY:
TERENCE CAMPBELL
LAND SURVEYING
5530 PALMER DRIVE
WEED, CA 96094
530-408-9013

LEGEND

- PROPERTY CORNER PER SURVEY MAP 20943
- CALCULATED POSITION PER SURVEY MAP 20943
- ( ) RECORD DIMENSION PER SURVEY MAP 20943
- PROPERTY LINE
- T TELECOM. PEDISTAL
- tele UNDERGROUND TELECOMM.
- C CABLE PEDISTAL
- cabl UNDERGROUND CABLE TV
- h2o WATER LINE
- WV WATER VALVE
- WM WATER METER
- FH FIRE HYDRANT
- CB CATCH BASIN
- ELE ELECTRIC BOX
- OHP OVERHEAD POWER LINE
- ugp UNDERGROUND POWER LINE
- LIGHT POLE
- PP POWER POLE
- gas GAS LINE
- FENCE
- ST SEPTIC TANK
- swr SEWER LINE
- CO PVC SEWER CLEANOUT
- CONCRETE

HILL ST. (UNIMPROVED 60' RIGHT-OF-WAY)
(N 30°26'40" E 176.76')
(N 90°00'00" E 275.00')
(S 00°00'00" E 187.88')
(S 00°00'00" W 255.15')
(N 89°58'52" E 155.38')
(120.59')
(34.79')
(N 00°01'15" W 160.29')
(S 30°24'55" W 199.29')
PROPERTY LINE TO BE EXTINGUISHED
(S 59°35'05" E 22.78')
(S 30°24'55" W 10.83')
(S 59°35'05" E 30.00')
(N 58°41'45" W 129.59')
(S 30°18'54" W 186.47')
(182.02')
(4.45')

La FRANCHI
TAX LOT 800
RAW UNDEVELOPED LAND
ZONING DESIGNATION:
TRADITIONAL COMMERCIAL
AREA:
11,937 SQR. FT.
0.27 ACRES

AREA AFTER LOT MERGER:
56,757 SQR. FT.
1.30 ACRES

La FRANCHI
TAX LOT 701
ZONING DESIGNATION:
TRADITIONAL COMMERCIAL
AREA:
44,820 SQR. FT.
1.03 ACRES

ESTIMATED LOCATION OF SEWER LINE
OLDER WORN PAVEMENT
PAVED PARKING AREA
PAVED PARKING AREA
FORMER MOTEL ROOMS
FORMER MOTEL OFFICE
SHED
PLANTER BOX
PLANTER
35' WIDE ENTRANCE
35' WIDE SHARED ENTRANCE
MORSON STREET
60 FOOT WIDE RIGHT-OF-WAY, 24'± PAVED TRAVEL SURFACE
EAST 1/4 COR.
SIDEWALK
BIKE LANE
SOUTHBOUND LANE TO KLAMATH FALLS
NORTHBOUND LANE TO BEND
HWY 97 100 FOOT WIDE RIGHT-OF-WAY, 60'± PAVED TRAVEL SURFACE

N W E S

SCALE
0 25 50
1 inch = 50 ft.

REGISTERED PROFESSIONAL LAND SURVEYOR
TERENCE A. CAMPBELL
(DIGITAL SIGNATURE)
OREGON
MAY 10, 2011
TERENCE ALBERT CAMPBELL
83800
RENEWS 12/31/2025

5530 Palmer Drive
Weed, CA 96094
530-408-9013

CAMPBELL SURVEYING
www.campbellsurveys.net

LOT LINE ADJUSMENT/ LOT MERGER MAP FOR RON La FRANCHI

SCALE: 1" = 50'
DRAWN BY: T. CAMPBELL
DATE: OCTOBER 17, 2024
PAGE: 1 OF 1

5530 Palmer Drive
Weed, CA 96094
530-408-9013

Legal Description of the Exterior Boundary After the Lot Line Adjustment/ Merger:

The land being adjusted/ merged is located in the Northeast Quarter (NE 1/4) of the Southeast Quarter (SE 1/4) and also in the Southeast Quarter (SE 1/4) of the Northeast Quarter (NE 1/4) of Section 15, Township 22 South, Range 10 East of the Willamette Meridian, City of La Pine, Deschutes County, Oregon, as described in Deschutes County Deed Instrument #2021-48656, whose exterior boundary is more particularly described as follows:

Beginning at a 5/8" X 30" Iron Rod with Yellow Plastic Cap Marked "Stuntzner Eng." where the West line of Morrison Street (Now Morson Street) and the East line of Hill Street intersect, if Morrison Street (Now Morson Street) were extended, said point being 275.00 feet West and 187.76 feet North of the East Quarter of Section Fifteen (15), Township Twenty-Two (22) South, Range Ten (10) East of the Willamette Meridian, Deschutes County Oregon.

Thence South 00°00'00" West a distance of 255.15 feet to a point on the westerly right of way line of The Dalles - California Highway

Thence South 30°18'54" West a distance of 186.47 feet to a 5/8" X 30" Iron Rod with Yellow Plastic Cap Marked "Stuntzner Eng."

Thence North 58°41'45" West a distance of 129.59 feet to a point

Thence North 59°35'05" West a distance of 30.00' to a 5/8" X 30" Iron Rod with Yellow Plastic Cap Marked "Stuntzner Eng."

Thence North 30°24'55" East a distance of 10.83 feet to a 5/8" X 30" Iron Rod with Yellow Plastic Cap Marked Stuntzner Eng."

Thence North 59°35'05" West a distance of 22.78 feet to a 5/8" X 30" Iron Rod with Yellow Plastic Cap Marked "Stuntzner Eng."

Thence North 00°01'15" West a distance of 160.29 feet to a 5/8" X 30" Iron Rod with Yellow Plastic Cap Marked "Stuntzner Eng."

Thence North 89°58'52" East a distance of 155.38 feet to a 5/8" X 30" Iron Rod with Yellow Plastic Cap Marked "Stuntzner Eng."

Thence North 30°26'40" East a distance of 176.76 feet to the Point Beginning.

Containing 1.30± Acres

Courses stated in this description are referenced to the courses shown on Deschutes County Survey #20943, Filed with the Deschutes County Surveyors office on 10/11/2022

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
MAY 10, 2011
TERENCE ALBERT CAMPBELL
83800

RENEWS 12/31/2025

AmeriTitle

Deschutes County Official Records **2021-48656**
D-D
Stn=7 AP **08/20/2021 01:12 PM**
$15.00 $11.00 $10.00 $61.00 $6.00 **$103.00**

I, Steve Dennison, County Clerk for Deschutes County, Oregon, certify that the instrument identified herein was recorded in the Official Records.
Steve Dennison - County Clerk

After recording return to:
Ron LaFranchi
580 N Central Blvd
Coquille, OR 97423

Until a change is requested all tax statements shall be sent to the following address:
Ron LaFranchi
580 N Central Blvd
Coquille, OR 97423
File No. 464858AM

STATUTORY WARRANTY DEED

Barbe Ann Nelson-Dodson,

Grantor(s), hereby convey and warrant to

Ron LaFranchi,

Grantee(s), the following described real property in the County of Deschutes and State of Oregon free of encumbrances except as specifically set forth herein:

See Attached Exhibit 'A'

FOR INFORMATION PURPOSES ONLY, THE MAP/TAX ACCT #(S) ARE REFERENCED HERE:

221015DA00701
221015DA00800

The true and actual consideration for this conveyance is $1,125,000.00.
The above-described property is free of encumbrances except all those items of record, if any, as of the date of this deed and those shown below, if any:

2021-2022 Real Property Taxes, a lien not yet due and payable

Return To: AmeriTitle

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

Dated this 17th day of August, 2021

Barbe Ann Nelson-Dodson

State of OR } ss
County of Deschutes }

On this 17 day of August, 2021, before me, Jennifer A Schossow a Notary Public in and for said state, personally appeared Barbe Ann Nelson-Dodson, known or identified to me to be the person(s) whose name(s) is/are subscribed to the within Instrument and acknowledged to me that he/she/they executed same.
IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

Notary Public for the State of OR
Residing at: OR
Commission Expires: 6-10-2024

OFFICIAL STAMP
JENNIFER ANN SCHOSSOW
NOTARY PUBLIC-OREGON
COMMISSION NO. 1000961
MY COMMISSION EXPIRES JUNE 10, 2024

EXHIBIT 'A'

File No. 464858AM

PARCEL 1:

A parcel of land lying in the Oregon Trunk Railway Block in town of La Pine, recorded August 1, 1918, in Cabinet A, Page 55, Deschutes County, Oregon, described as follows:

Beginning at a point where the West line of Morrison Street and the East line of Hill Street intersect, if Morrison Street were extended, said point being 275.00 feet West and 187.86 feet North of the East Quarter of Section Fifteen (15), Township Twenty-two (22) South, Range Ten (10), East of the Willamette Meridian, Deschutes County, Oregon, then South 269.92 feet more or less to a point on the Westerly right of way line of the Dalles-California Highway, the said point being at right angles and 50.00 feet distance to the center line of said highway; then South 30°28' West, 233.00 feet more or less along said Westerly right of way line to a point; thence North 59°04' West, 130.50 feet to the Easterly line of Hill Street to a point; then North 30°28' East, 454.00 feet along the Easterly line of Hill Street to the point of beginning; EXCEPTING the South 50.00 feet of the above described property.

Together with that portion of Vacated Hill Street that inured thereto.

PARCEL 2:

Block Twenty-five (25), in LA PINE, recorded August 1, 1918, in Cabinet A, Page 55, Deschutes County, Oregon.

Together with that portion of Vacated Hill Street that inured thereto.

CS 20943

MAP OF SURVEY

LOCATED IN:

THE NE 1/4 OF THE SE 1/4 AND THE SE 1/4 OF THE NE 1/4 OF SECTION 15, T22S, R10E, WILLAMETTE MERIDIAN, CITY OF LAPINE, DESCHUTES COUNTY, OREGON TAX LOTS 701 & 800 (22S 10E 15DA) 51385 HWY 97, LAPINE, OREGON

SURVEY NARRATIVE TO COMPLY WITH ORS 209.250

PURPOSE OF SURVEY: TO LOCATE AND MONUMENT THE BOUNDARY OF TAX LOTS 701 & 800, MAP NO. 22 10 15DA, WILLAMETTE MERIDIAN, DESCHUTES COUNTY, OR., AS DESCRIBED PER INSTRUMENT NO. 2021– 48656, DESCHUTES COUNTY OFFICIAL RECORDS AND AS PER THE CLIENTS REQUEST.

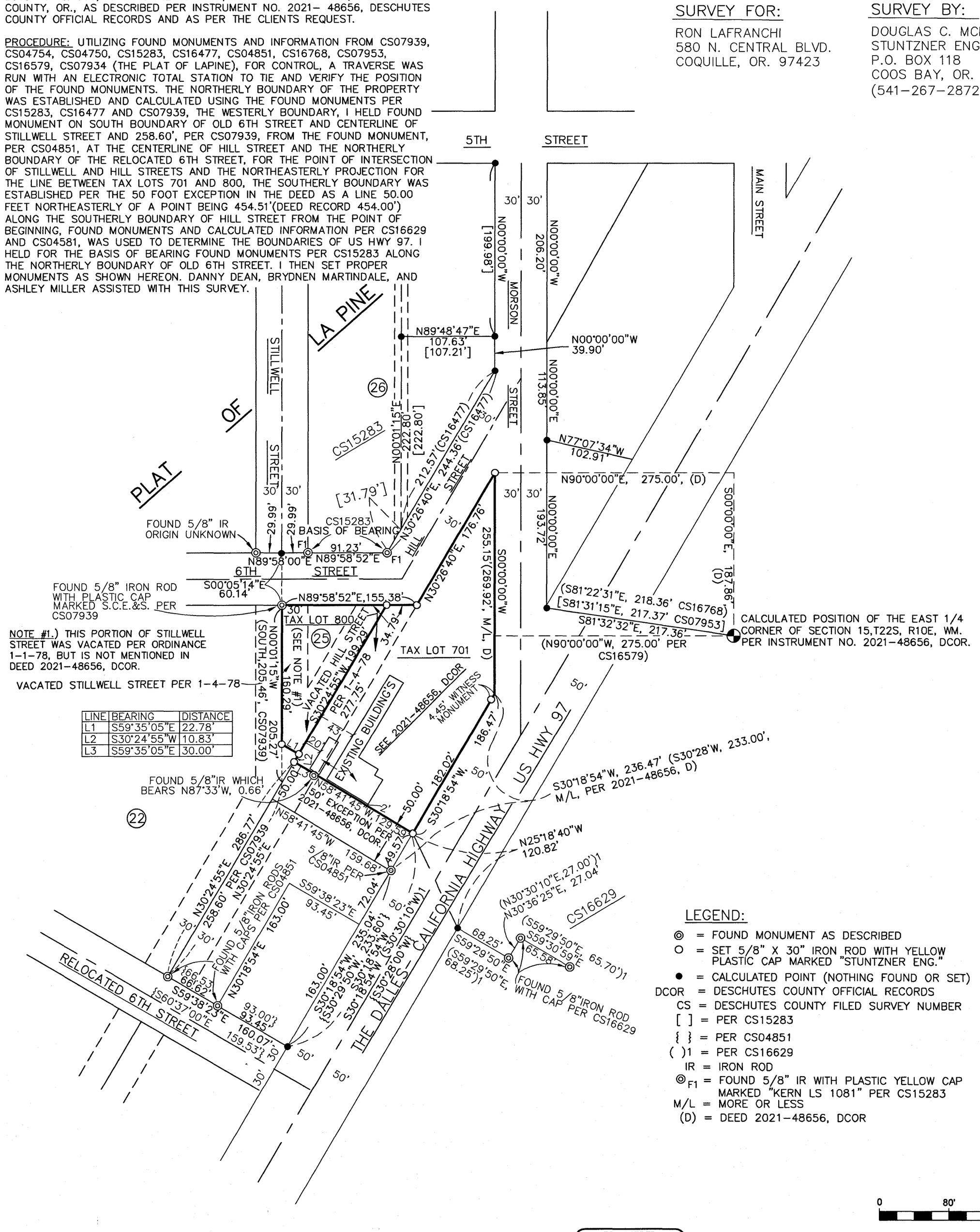
PROCEDURE: UTILIZING FOUND MONUMENTS AND INFORMATION FROM CS07939, CS04754, CS04750, CS15283, CS16477, CS04851, CS16768, CS07953, CS16579, CS07934 (THE PLAT OF LAPINE), FOR CONTROL, A TRAVERSE WAS RUN WITH AN ELECTRONIC TOTAL STATION TO TIE AND VERIFY THE POSITION OF THE FOUND MONUMENTS. THE NORTHERLY BOUNDARY OF THE PROPERTY WAS ESTABLISHED AND CALCULATED USING THE FOUND MONUMENTS PER CS15283, CS16477 AND CS07939, THE WESTERLY BOUNDARY, I HELD FOUND MONUMENT ON SOUTH BOUNDARY OF OLD 6TH STREET AND CENTERLINE OF STILLWELL STREET AND 258.60', PER CS07939, FROM THE FOUND MONUMENT, PER CS04851, AT THE CENTERLINE OF HILL STREET AND THE NORTHERLY BOUNDARY OF THE RELOCATED 6TH STREET, FOR THE POINT OF INTERSECTION OF STILLWELL AND HILL STREETS AND THE NORTHEASTERLY PROJECTION FOR THE LINE BETWEEN TAX LOTS 701 AND 800, THE SOUTHERLY BOUNDARY WAS ESTABLISHED PER THE 50 FOOT EXCEPTION IN THE DEED AS A LINE 50.00 FEET NORTHEASTERLY OF A POINT BEING 454.51'(DEED RECORD 454.00') ALONG THE SOUTHERLY BOUNDARY OF HILL STREET FROM THE POINT OF BEGINNING, FOUND MONUMENTS AND CALCULATED INFORMATION PER CS16629 AND CS04581, WAS USED TO DETERMINE THE BOUNDARIES OF US HWY 97. I HELD FOR THE BASIS OF BEARING FOUND MONUMENTS PER CS15283 ALONG THE NORTHERLY BOUNDARY OF OLD 6TH STREET. I THEN SET PROPER MONUMENTS AS SHOWN HEREON. DANNY DEAN, BRYDNEN MARTINDALE, AND ASHLEY MILLER ASSISTED WITH THIS SURVEY.

SURVEY FOR:

RON LAFRANCHI
580 N. CENTRAL BLVD.
COQUILLE, OR. 97423

SURVEY BY:

DOUGLAS C. MCMAHAN, PLS
STUNTZNER ENG. & FORESTRY
P.O. BOX 118
COOS BAY, OR. 97420
(541–267–2872)



LINE	BEARING	DISTANCE
L1	S59°35'05"E	22.78'
L2	S30°24'55"W	10.83'
L3	S59°35'05"E	30.00'

LEGEND:

- ◎ = FOUND MONUMENT AS DESCRIBED
- O = SET 5/8" X 30" IRON ROD WITH YELLOW PLASTIC CAP MARKED "STUNTZNER ENG."
- ● = CALCULATED POINT (NOTHING FOUND OR SET)
- DCOR = DESCHUTES COUNTY OFFICIAL RECORDS
- CS = DESCHUTES COUNTY FILED SURVEY NUMBER
- [ ] = PER CS15283
- { } = PER CS04851
- ( )1 = PER CS16629
- IR = IRON ROD
- ◎F1 = FOUND 5/8" IR WITH PLASTIC YELLOW CAP MARKED "KERN LS 1081" PER CS15283
- M/L = MORE OR LESS
- (D) = DEED 2021–48656, DCOR

N

0 80' 160'

DESCHUTES COUNTY SURVEYOR
FILED 10/11/2022 BY: Collins

REGISTERED PROFESSIONAL LAND SURVEYOR
Douglas C. McMahan
OREGON JULY 18, 1980 DOUGLAS C. McMAHAN NO. 1913
RENEWS 12/31/22

Stuntzner Engineering & Forestry, LLC
705 S. 4TH ST.
P.O. BOX 118
COOS BAY, OREGON 97420
PHONE: (541) 267-2872
FAX: (541) 267-0588
www.stuntzner.com
Engineering - Land Surveying - Forestry - Land Planning - Water Rights

JOB #: 122-3-036	PREPARED FOR:	JOSH LAFRANCHI 580 N. CENTRAL BLVD. COQUILLE, OR. 97423
DATE: SEP 29, 2022		
DRAWN BY: DCM		
CHECKED BY: ARM	FILE NAME: map of survey.dwg	SHEET 1 OF 1

CS 20943