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GENERAL INFORMATION

Property Owner and Applicant:	**CJRW, LLC** PO Box 2092 Lake Oswego, OR 97035 Contact: Robert Barman Phone: 503-720-2917 Email: bobbarmanaz717@gmail.com
Applicant's Representative:	**3J Consulting, Inc.** 9600 SW Nimbus Avenue, Suite 100 Beaverton, OR 97008 Contact: Mercedes Serra Phone: 503-946-9365 x211 Email: mercedes.serra@3j-consulting.com

SITE INFORMATION

Parcel Number:	1N119BC 500 & 600 (Consolidation PLA approved L1900411-PLA)
Address:	18450 NW West Union Road
Gross Size:	1.21 Acres
Zoning Designation:	Neighborhood Commercial District (NC)
Existing Use:	Commercial
Functional Classification:	NW West Union Road and NW 185th Avenue are classified as Arterial roads.
Surrounding Zoning:	The property to the south is zoned Institutional INST. The properties to the north are zoned Neighborhood Commercial District NC. The properties to the west are zoned Residential R-5.

INTRODUCTION

APPLICANT'S REQUEST

The Applicant seeks approval of an application for a Type II Special Use Development Review Application to construct an approximately 4,428 square foot convenience market with four covered fuel islands. This narrative has been prepared to describe the proposed development and to document compliance with the relevant sections of Washington County's Community Development Code. A Special Use Development Review Application is evaluated under the Type II administrative process. The County Planning Director will render the Type II decision.

SITE DESCRIPTION/SURROUNDING LAND USE

The subject site is located at 18450 NW West Union Road in Unincorporated Washington County and is zoned Neighborhood Commercial (NC). The gross site area is approximately 1.21 acres and consisted of two tax lots, 1N119BC00500 and 1N119BC00600 which were consolidated under casefile L1900411-PLA. The restaurant previously located on the site has been recently demolished, and the site is now vacant. The site is bordered on the west by NW 185th Avenue and on the south by Rock Creek Greenway. An off-site wetland associated with Springville Creek, a tributary to Bethany Lake, has been identified and delineated. The vegetative corridor associated with the wetland habitat extends onto the subject site's southern boundary.

PROPOSAL

The Applicant proposes to construct a two-story 4,428 square foot convenience market building with four covered fuel islands. The first floor of the convenience market is 3,010 square feet of retail space and 500 square feet dedicated to the drive-thru use. An additional 1,490 square feet of storage space has been located on the second-floor mezzanine level. Access to the site has been provided through a restricted right-in only access on NW West Union Road and a signalized access located on the eastern edge of the property. Four parking spaces have been provided directly in front of the proposed building, with an additional ten spaces provided southeast of the fuel pump structure, and eight spaces have been provided at the fuel islands. Bicycle parking has been located to the north of the building along the main parking area. A single trash enclosure area has been provided southeast of the main fuel structure. Two fuel storage tanks have been provided underground east of the fuel structure.

An 18-foot right-of-way dedication has been provided along NW West Union Road to accommodate a 48-foot half-street cross section. The applicant is not providing full half-street improvements, as NW West Union Road has been identified as a future Capital Improvement Project by the County. The applicant will improve the existing signal located at West Union Village to provide a fourth leg into the site. Infill sidewalks will be provided along the site's frontage in areas where the existing sidewalk is disturbed and along the south side of NW West Union Road just beyond the east end of the development site. Onsite significant habitat enhancement will include 3,853 square feet of

enhancement of the existing vegetative corridor, enhancement of the 537 square foot wetland on site and the creation of 6,713 square feet of on-site vegetative corridor area.

APPLICABLE CRITERIA

The following sections of Washington County's Community Development Code (CDC), the Sunset West Community Plan and Oregon Statewide Planning Goal 5 have been extracted as they have been deemed to be applicable to the proposal. Following each **bold** applicable criteria or design standard, the Applicant has provided a series of draft findings. The intent of providing code and detailed responses and findings is to document, with absolute certainty, that the proposed development has satisfied the approval criteria for a Type II Special Use Development Review Application.

WASHINGTON COUNTY COMMUNITY DEVELOPMENT CODE (CDC)

311 Neighborhood Commercial District (NC)

311-1 Intent and Purpose

The purpose of the Neighborhood Commercial District is to allow small to medium sized shopping and service facilities and limited office use in Neighborhood Commercial Centers. This District is intended to provide for the shopping and service needs of the immediate urban neighborhood. Neighborhood Commercial locations should be easily accessible by car and foot from neighborhoods in the area. Centers should have minimal negative impact on surrounding residential properties.

311-3 Uses Permitted Through a Type II Procedure

The following uses are permitted subject to the specific standards for the use set forth below and in applicable Special Use Sections of Section 430, as well as the general standards for the District, the Development Standards of Article IV and all other applicable standards of the Code. Approval may be further conditioned by the Review Authority pursuant to Section 207-5.

311-3.3 Convenience Groceries, with a maximum gross floor area of 5,000 square feet - Section 430-35.

311-3.5 Drive-In or Drive-up Establishments (includes beverage venders, film sales, locksmith and other similar uses) - Section 430-41.

311-3.15 Service Station - Section 430-123.

Findings: The proposed development will include a 4,428 square foot convenience grocery with a drive-thru and a four-fuel island (eight pump) service station. Convenience groceries, drive-up establishments, and service stations are permitted in the Neighborhood Commercial District through a Type II procedure.

311-6 Dimensional Requirements

311-6.1 Lot Area:

The minimum lot area shall be eight thousand five hundred (8500) square feet.

Findings: The subject site is approximately 1.21 acres in gross size. The net area of the site after the proposed right-of-way dedication will be 40,119 square feet, which exceeds the minimum lot area requirement of 8,500 square feet. The requirements of this section have been met.

311-6.2 Yard Requirements:

The minimum yard requirements shall be as follows:

Twenty (20) foot front yard;

Side yards:

When abutting a Residential or Office Commercial District, the side yard shall be no less than required by the abutting district;

A. **Except on corner lots, and as in one (1) above there is no required side yard;**
B. **On a corner lot, the side or rear yard abutting the street shall be twenty (20) feet;**
C. **Twenty (20) foot rear yard; and**
D. **Additional setbacks may be required as specified in Sections 411 and 418.**

Findings: The subject site is a corner lot. The NW 185th Avenue frontage is the front lot line, as it is the shortest of the two street frontage dimensions, as described in Section 106-113.1. The property frontage on NW West Union Road is a street side yard as described in subsection B above. The southern property line is considered to be a side yard, therefore there is no required setback per subsection A above. The proposed convenience store and fuel canopy meet the front, side and rear setback requirements.

This standard is met.

311-6.3 Height:

A. **The maximum height for structures shall be thirty-five (35) feet except as modified by other Sections of this Code.**
B. **Normal building appurtenances and projections such as spires, belfries, cupolas, chimneys, ventilators, elevator housings or other structures placed on or extending above roof level may exceed the thirty-five (35) foot building height limit to a maximum height of sixty-five (65) feet.**
C. **The height of telecommunication facilities are regulated by the Permitted Use sections of this Land Use District, Sections 201, 430-1, 430-109 and other applicable provisions of this Code.**

Findings: The proposed building will be two stories and will have a maximum height of 27 feet 8 inches. The canopy cover will have a maximum height of 20 feet 6 inches. This standard is met.

311-6.4 Lot Dimensions:

A. **The minimum average lot width shall be eighty-five (85) feet;**
B. **The minimum average lot depth shall be eighty-five (85) feet; and**
C. **The minimum lot width at the access point shall be forty (40) feet.**

Findings: A property line adjustment to consolidate the subject properties was approved as casefile L1900411-PLA. The subject site is triangular with three property lines. After

the proposed consolidation and right-of-way dedication the property lines will be approximately 123.70 feet, 646.42 feet and 628.85 feet in length. All lot dimensions exceed the minimum requirements. This standard is met.

404 Master Planning

404-1 Type I, Site Analysis of a New Use or Expansion of an Existing Use

Site Analysis is the review of an entire site, including contiguous property under the same ownership.

404-1.1 On-site analysis is required for all development except:

- **A. Development exempt from the public facilities standards of Section 501-2;**
- **B. A detached dwelling on a Lot of Record in the R-5 and R-6 Districts;**
- **C. One duplex on an approved duplex lot (Section 430-13.3) if the proposed duplex is exempt from public facilities standards per Section 501-2.2;**
- **D. A single dwelling outside the UGB.**

Findings: The proposed development does not meet the requirements for an exemption for on-site analysis, therefore on-site analysis is required.

404-1.2 Except as provided in 404-1.1 Off-Site Analysis is required of all new development and expansions which exceed fifty (50) percent of the existing development.

Findings: The proposed development is a new development therefore off-site analysis is required.

404-1.3 Where required, an On-Site Analysis including the area within fifty (50) feet of the proposed development and future site, if any, shall contain the requirements as listed in Table I, below.

404-1.4 Off-Site Analysis

Where required, an off-site analysis inside the UGB shall include at a minimum:

- **A. The land in an area created by an equal extension of the dimensions and configuration of the Master Plan in each direction (N, NE, E, SE, S, SW, W and NW) from the site.**
- **B. Where this extension crosses a limited access arterial or freeway, the road shall serve as one boundary.**

Findings: The applicant has submitted an Existing Conditions Plan prepared by a registered engineer under Appendix E which provide the site-analysis requirements listed in Table I. A Preliminary Drainage Report analyzing the existing and proposed surface flow directions, off-site impacts and water table prepared by a registered engineer has been provide under Appendix D and Geotechnical Report prepared by GeoEngineers analyzing the existing soils and geology as well as the proposed development has been provided under Appendix D. This standard is met.

405 Open Space

405-1 The following categories identified in the Site Analysis, Section 404-1, shall be preserved as open space, except as may be otherwise provided:

405-1.1 Confirmed land movement hazard areas, as identified through the application of the standards of Section 410, or mapped as a Significant Natural Area on the Community Plan;

405-1.2 Areas confirmed to have severe erosion potential due to soil type, geologic structure and vegetation, as identified through the application of the standards of Section 410, or mapped as a Significant Natural Area on the Community Plan;

405-1.3 Bodies of water such as rivers or lakes;

405-1.4 Land within the Flood Plain, Drainage Hazard Area or riparian zone, except as provided in Sections 421 and 422; or

405-1.5 Other specific areas identified for open space within the Community Plan, including areas identified as Density Restricted Lands in the North Bethany Subarea of the Bethany Community Plan, with the exception of slopes greater than twenty-five (25) percent that are located outside of the Natural Features Buffer shown on the Urban/Rural Edge Map of the North Bethany Subarea Plan.

405-2 Protection

Site Planning and development shall avoid disturbance of identified open space resources. Full use should be made of density transfers, siting of structures and roads, and other appropriate means in designing the development around the open space.

405-3 Classification

405-3.1 Private Open Space - Areas intended for the private use of an individual owner or group of owners (owners' association).

405-3.2 Public Open Space - Areas intended for common and public use either privately or publicly owned and maintained.

405-4 Maintenance

At a minimum, maintenance shall include the following:

405-4.1 In natural areas, areas of undisturbed vegetation or areas replanted with vegetation after construction and woodlands, woodland swamps or wetlands, maintenance is limited to removal of litter and hazardous plant materials. Except as provided by Section 421, natural water courses are to be maintained as free-flowing.

Stream channels shall be maintained so as not to alter flood plain or drainage hazard area levels, except as provided by Section 421;

405-4.2 For garden plots which are the division of open space into plots for cultivation as gardens by residents, maintenance may be limited to weeding and fallowing;

405-4.3 For recreational areas which are areas designed for specific active recreational uses such as totlots, tennis courts, swimming pools, ballfields, and similar uses, maintenance shall insure that no hazards, nuisances, or unhealthy conditions exist;

405-4.4 For greenways which are linear green belts linking residential areas with other open-space areas, maintenance shall insure that there exist no hazards, nuisances, or unhealthy

conditions. These greenways may contain bicycle paths, footpaths, and bridle paths. Connecting greenways between residences and recreational areas are encouraged;
405-4.5 For lawn areas which are grass with or without trees, maintenance may be limited to mowing to insure neatness and usability.

405-5 Ownership Maintenance
Open space areas shall be maintained so that their use and enjoyment as open space are not diminished or destroyed. Open space areas may be owned, preserved and maintained as required by this Section by any of the following mechanisms or combinations thereof:
405-5.1 Dedication of open space to an appropriate public agency, when a public agency is willing to accept the dedication.
405-5.2 Ownership of the open space by a homeowners' association or property owner(s) assuming full responsibility for its maintenance.
405-5.3 Dedication of development rights of open space to an appropriate public agency with ownership remaining with the applicant or owner or homeowners' association. Maintenance responsibility shall remain with the property owner.
405-5.4 Deed-restricted private ownership which prevents development of the open space land and provides for maintenance.

Findings: The subject parcel is located just north of Bethany Creek which has been mapped on the parcel to the south, which is part of the Rock Creek Greenway, a THPRD parkland resource. The vegetative corridor associated with the wetland located on the neighborhood property has been delineated.

The applicant has provided a Natural Resource Assessment prepared by Pacific Habitat Services and a Tier II Site Assessment through Clean Water Services as required under Section 422 of the CDC. The requirements of this section apply.

406 Building, Siting, and Architectural Design
406-1 Review Standards
The Review Authority shall evaluate all building and site plans, including detached dwelling units, for conformance to the following standards:
406-1.1 The development is permitted within the primary district;
406-1.2 The development is sited to maintain all minimum setback and lot coverage requirements; and
406-1.3 The development meets the maximum height requirements of the primary district.

Findings: Service stations and convenience stores are a permitted use within the NC zoning district. The proposed development meets all minimum setback, lot coverage, and minimum height requirements of the primary district, as demonstrated within this narrative. This standard is met.

406-2 Additional Requirements for Type II and Type III Development

In addition to the requirements of Section 406-1, all Type II and Type III structures and site plans shall:

406-2.1 Have a distance between primary structures on a single lot no less than the sum of the required setbacks;

Findings: The proposed development will consist of a single primary structure with an attached canopy on a single lot, therefore the requirements of this section are not applicable.

406-2.2 When required by the Uniform Building Code, provide facilities for the disabled pursuant to the Uniform Building Code, edition in effect at this time;

Findings: As shown on the attached Site Plan included under Appendix E, facilities for the disabled pursuant to the Uniform Building Code have been provided.

406-2.3 Incorporate design features which reflect or complement the surrounding structural and architectural character through building style and materials. Use, in open space or park settings, lines and materials (including plant materials) which blend with the natural features of the site or site background;

Findings: The proposed building design consists of a bay system with projected columns and recessed bays. The first floor incorporates storefront windows, as shown on the Exterior Elevations (Sheet A04.00 and A04.01). The design utilizes a mixture of cultured stone and brick. The West Union Village development to the North consists primarily of brick, stucco and cultured stone. The proposed development is consistent with the adjacent development character. This standard is met.

406-2.4 Renovate or revitalize existing structures identified within the Community Plan;

Findings: The subject site does not have existing structures identified within the Community Plan; therefore, the requirements of this section are not applicable.

406-2.5 Arrange structures and use areas for compatibility with adjacent developments and surrounding land uses, using the following design and siting techniques:

- **A. Locate and design structures and uses not to obscure or degrade identified scenic views or vistas from adjacent properties and public thoroughfares, considering setbacks, building height, bulk and landscaping;**
- **B. Orient major service activity areas (e.g., loading and delivery areas) of the proposed development away from existing dwellings;**
- **C. "Street furniture" such as bus shelters, streetlights, drinking fountains, benches and mailboxes shall be similar in design and materials to the buildings of the development.**

Findings: The subject site is a corner lot, with NW West Union Road to the north and NW 185th Avenue to the east. The proposed structure has been located within the corner of this intersection to minimize impact on views of the property to the south. The property is not located adjacent to existing dwellings. This standard is met.

406-3 Energy Conservation Guidelines

Type II and Type III Developments:

406-3.1 Where possible, lay out streets and building lots for multi-family, commercial, industrial and institutional developments to allow buildings maximum solar access, using techniques such as:

A. **East-west street direction so that principal building facades will face south;**
B. **Make configuration of lots to allow orientation of the front or rear of buildings within twenty (20) degrees of true south in order to maximize potential solar access.**

406-3.2 Where possible, design multi-family, commercial, industrial and institutional buildings conducive to energy efficiency and conservation.

406-3.3 Where possible, subject to compliance with applicable review standards, design multi-family developments so structures will not shade the buildable area of urban residential property to the north that is or will be developed with a single family dwelling or a manufactured dwelling in order to protect solar access to these properties.

406-3.4 Where applicable, compliance with the standards of Section 427-3.

Findings: The subject parcel is unable to accommodate a south-facing façade due to the configuration of the lot and existing street pattern. However, the structure will be built conducive to energy efficiency and conservation. The proposed building will utilize solar panels, a green roof canopy above the fuel pumps and a geothermal system. This standard is met.

406-4 Privacy Guidelines

Type II and Type III Developments, where possible shall:

406-4.1 Design entry areas in residential developments to act as an outdoor extension of each dwelling or transition between semi-public and private areas, using such techniques as:

A. **Changing the level, color, scale, texture or direction of a path; and**
B. **The use of gates, fences, doors and landscaping.**

406-4.2 Design and cluster units to maximize privacy, using such techniques as:

A. **Facing main housing areas toward garden areas, open space and exposure to sun; and**
B. **Placement of buildings to minimize the potential of windows facing directly toward primary living areas of other units/homes.**

Findings: The proposed structure is commercial and does not directly border residential properties, therefore the requirements of this section are not applicable.

406-5 Storage

Provide for storage of articles such as bicycles, barbecues, luggage, outdoor furniture, etc. These areas shall be completely enclosed and easily accessible to dwelling units.

Findings: The proposed development will meet the bicycle parking requirements of this code. Storage for outdoor activities is not proposed, as the proposed use is not residential. This standard is met.

406-6 Mixed Solid Waste and Recyclables Storage Facilities

Mixed solid waste and source-separated recyclables storage standards of this section shall apply to new or remodeled multi-unit and single family attached residential buildings containing five (5) or more units and to new or remodeled commercial, industrial and institutional construction that is subject to a Type II or III review procedure and is located inside the Regional Urban Growth Boundary.

New or remodeled construction shall incorporate functional and adequate space for on-site storage and efficient collection of mixed solid waste and source-separated recyclables prior to removal by haulers by complying with the standards of this section.

To provide for flexibility in the design of functional storage areas, this section provides three (3) different methods to meet the objectives of providing adequate storage space for mixed solid waste and recyclables and improving collection efficiency. An applicant shall choose one of the following three (3) methods to demonstrate compliance: 1) minimum standards; 2) waste assessment; or 3) a comprehensive recycling plan.

Findings: The proposed development is a new commercial development; therefore, the requirements of this section are applicable. The proposed development will meet the minimum standards requirement for mixed solid waste and recyclables storage facilities. A Service Provider Letter from Washington County's Health and Human Services Department (HHS), confirming that the proposed design meets the waste storage requirements has been provided under Appendix C of this application. This standard is met.

406-6.1 Minimum Standards Method

The Minimum Standards Method identifies dimensional standards for storage area facilities that are based upon the size and general use category of new or remodeled construction. This method is most appropriate when the specific use of a new or remodeled building is unknown. The size and location of the storage area(s) shall be indicated on the site plan of any construction subject to this section. Compliance with the general and specific requirements set forth below is verified during the site plan review process.

A. General Requirements:

(1) The storage area is based on the predominant use(s) of the building (e.g., residential, office, retail, wholesale/warehouse/manufacturing, educational/institutional, or other). If a building has more than one of the uses listed herein and that use occupies twenty (20) percent or less of the floor area of the building, the floor area occupied by that use shall be counted toward the floor area of the predominant use(s). If a building has more than one of the uses listed herein and that use occupies more than twenty (20) percent of the floor area of the building, then the storage area requirement for the entire building shall be the sum of the requirement for the area of each use.

(2) Storage areas for multiple uses on a single site and single family attached or multi-family buildings may be combined and shared.

(3) The specific requirements are based on an assumed storage height of four feet for solid waste/recyclables. Vertical storage higher than four (4) feet but no higher than seven (7) feet may be used to accommodate the same volume of storage in a reduced floor space (potential reduction of forty-three (43) percent of specific requirements). Where vertical or stacked storage is proposed, the site plan shall include drawings to illustrate the layout of the storage area and dimensions of containers.

B. Specific Requirements

(1) Multi-unit and single family attached residential buildings containing five to ten (5-10) units shall provide a minimum storage area of fifty (50) square feet. Buildings containing more than ten (10) units shall provide an additional five (5) square feet per unit for each unit above ten (10). Individual curbside collection for single family attached units may be permitted pursuant to Section 406-6.4 C. (4).

(2) Non-residential buildings shall provide a minimum storage area of ten (10) square feet plus:

Office: Four (4) square feet/one thousand (1000) square feet gross floor area (GFA);
Retail: Ten (10) square feet/one thousand (1000) feet GFA;
Wholesale/Warehouse/Manufacturing: Six (6) square feet/one thousand (1000) square feet GFA;
Educational and Institutional: Four (4) square feet/one thousand (1000) square feet GFA; and
Other: Four (4) square feet/one thousand (1000) square feet GFA.

Findings: The proposed retail development has approximately 4,428 square feet of gross floor area including the second-floor storage area; therefore, 60 square feet of storage area is required. The proposed storage area is approximately 204 square feet in floor area. This standard is met.

406-6.4 Location, Design and Access Standards for Storage Areas

The following location, design and access standards for storage areas are applicable to all three (3) methods of compliance:

1) minimum standards;
2) waste assessment; and
3) comprehensive recycling plan.

A. Location Standards:

(1) To encourage its use, the storage area for source-separated recyclables shall be co-located with the storage area for residual mixed solid waste.

Findings: The proposed storage area for source-separate recyclables will be co-located with storage area for residual mixed solid waste. This standard is met.

(2) Indoor and outdoor storage areas shall comply with Uniform Building Code requirements.

Findings: The proposed storage area will comply with the Uniform Building Code requirements. This standard is met.

(3) Storage area space requirements can be satisfied with a single location or multiple locations, and can combine both interior and exterior locations.

Findings: The proposed storage area will be located in a single exterior location, as shown on the Site Plan submitted under Appendix E.

(4) Exterior storage areas shall be located in central and visible locations on the site to enhance security for users.

Findings: The proposed storage area is located in a central and visible location on the site. This standard is met.

(5) Exterior storage areas can be located in a parking area, if the proposed use provides at least the minimum number of parking spaces required for the use after deducting the area used for storage.

Findings: The exterior storage area will be located in the parking area. The proposed use meets the minimum number of parking spaces required for the use. This standard is met.

(6) The storage area shall be accessible for collection vehicles and located so that the storage area will not obstruct pedestrian or vehicle traffic movement on the site or on public or private streets adjacent to the site.

Findings: The storage area is accessible for collection vehicles and is located so that the storage area will not obstruct pedestrian or vehicle traffic movement on the site or on public or private streets adjacent to the site. This standard is met.

(7) Exterior storage areas shall comply with the yard requirements of the primary district and the sight triangle requirements of Section 418-3.

Findings: The side yard setback along the southern property line is 0 feet. The trash enclosure has been located along the southern property line and will not impact sight-distance. This standard is met.

B. Design Standards:

(1) The floor area of an interior or exterior storage area required by Section 406-6 shall be excluded from the calculation of lot coverage and from the calculation of building floor area for purposes of determining minimum storage requirements.

(2) The dimensions of the storage area shall accommodate containers consistent with current methods of local collection.

(3) Storage containers shall meet Uniform Fire Code standards and be made and covered with waterproof materials or situated in a covered area.

(4) Exterior storage areas shall meet the enclosure and screening and buffering requirements of Section 403-2.3 E (3). Gate openings which allow access to users and haulers shall be provided. Gate openings for haulers shall be a minimum of 12 feet wide and shall be capable of being secured in a closed and open position.

(5) Storage area(s) and containers shall be clearly labeled to indicate the type of materials accepted.

Findings: As shown on the Site Plan submitted under Appendix E, the storage area has been designed to meet the requirements of this section.

C. Access Standards:

(1) Access to storage areas can be limited for security reasons. However, the storage area shall be accessible to users at convenient times of the day, and to collection service personnel on the day and approximate time they are scheduled to provide collection service.

(2) Storage areas shall be paved and designed to be easily accessible to collection trucks and equipment, considering paving, grade of storage areas and vehicle access. A minimum of twelve (12) feet horizontal clearance and fourteen (14) feet of vertical clearance is required if the storage area is covered.

(3) Storage areas shall be accessible to collection vehicles without requiring backing out onto a public or private street (includes alleys). If only a single access point is available to the storage area, adequate turning radius shall be provided to allow collection vehicles to safely exit the site in a forward motion.

(4) Curbside collection of solid waste and recyclables from individual dwelling units in single family attached buildings containing five or more units on a public or private street (includes alleys) may be permitted by the solid waste coordinator.

Findings: The proposed storage area will be accessible to users at convenient times of day and to collection service personnel at the times they are scheduled to provide collection service. The storage area is paved and designed to be easily accessible to collection trucks and equipment, with a minimum of twelve feet of horizontal clearance and fourteen feet of vertical clearance. The storage area will be accessible to collection vehicles without requiring backing out onto a public or private street. The site has been designed to provide adequate access to allow collection vehicles to exit the site in a forward motion. This standard is met.

406-7 Submittal Requirements

In all development review applications which are required to conform to the standards of Building Siting and Architectural Design, or are required to demonstrate compliance with standards related to building façade, the following information must be submitted:

406-7.1 Site Plan showing the location of all proposed structures, including required storage facilities for mixed solid waste and recyclables;
406-7.2 Building Floor Plans;
406-7.3 Building Elevations and Sections;
406-7.4 Building Materials for all nonresidential uses, except as specified otherwise by a provision of this Code; and
406-7.5 Building Shadow Plan.
406-7.6 For new or remodeled development (as required by Section 406-6) to provide mixed solid waste and recyclables storage facilities, a written statement from the Washington County Health & Human Services Solid Waste and Recycling Program concerning the adequacy of the proposed method, design, location and accessibility of the storage facilities as required by Sections 406-6.1, 406-6.2, 406-6.3, 406-6.4 A. (6), 406-6.4 B. (4), and 406-6.4 C.

Findings: The applicant has submitted all materials as required in this section.

407 Landscape Design

407-1.4 Commercial, Industrial and Institutional Districts:

- **A. For new development, the minimum area required for landscaping shall be fifteen (15) percent of the land area.**
- **B. For developed areas where fifteen (15) percent of the land area is not landscaped, where there are additions, alterations or changes, the following amounts of landscaping shall be provided until the fifteen (15) percent requirement is satisfied:**
  - **(1) On sites of two (2) acres or less:**
    - **(a) Changes in use which require an increase in parking, or structural additions up to one thousand nine hundred ninety-nine (1999) square feet, shall be required to landscape at least five (5) percent of the entire developed site area.**
    - **(b) Structural additions of two thousand (2000) to four thousand nine hundred ninety-nine (4999) square feet shall be required to landscape at least ten (10) percent of the entire developed site area.**
    - **(c) Structural additions of five thousand (5000) square feet or more shall be required to meet the current minimum landscape requirement for new development.**
  - **(2) On sites of more than two (2) acres:**
    - **(a) Changes in use which require an increase in parking shall be required to landscape at least five (5) percent of the developed site area.**
    - **(b) Any structural additions shall be required to provide landscaping proportional to the additional footage being proposed.**

      Example:

Lot Area x fifteen (15) percent required landscaping	**= X (Existing)**
Building Floor Area	**= Y**

Proposed Building Floor Area	**= Z**
Z / Y	**= A (Addition as percent of total building area)**
X x A	**= Required amount of landscaping**

(3) Where successive occupancy changes or additions occur the landscape requirement shall accumulate until total conformance is reached.

Findings: The site is 1.21 acres in gross size. A total landscape area of 7,907 square feet is required. The total area of landscaping on the site is 20,200 square feet, or 38% of the site which exceeds the minimum requirement. This standard is met.

407-1.7 The following interior landscaping requirements shall apply to all parking areas for ten or more vehicles:

A. Ten square feet of landscaping per parking space, excluding perimeter landscaping;

B. Landscaped islands shall be a minimum of 120 square feet.

Findings: The site has a parking area of more than 10 vehicles. The parking lot includes 14 parking stalls which meets the requirement for 4,983 square feet of retail store gross area. Based on 14 parking stalls, a total of 140 square feet of landscape island area is required. Two landscape islands have been provided within the parking lot area. Each landscape island has a minimum area of 120 square feet. The total landscape parking area is approximately 240 square feet. This standard is met.

407-6 Parking Area Landscaping

407-6.1 The landscaping located within and adjacent to access roads and parking areas shall consist of a mixture of ground covers, shrubs and trees.

Findings: As shown on the landscape plan submitted under Appendix E, the landscaping located adjacent to access roads and parking areas will consist of a mixture of ground covers, shrubs and trees. This standard is met.

407-6.2 Landscaped areas shall be located to provide shade for parking lots and to create small clusters of parking.

Findings: The landscape areas have been located to provide shade for the parking lots. The parking has been broken into two small clusters of parking areas. The fuel pump parking will be shaded by the green roof canopy. This standard is met.

407-6.3 In addition to pedestrian ways, parking areas and access roads shall be separated from the exterior wall of a structure with landscaping except where loading and access ways exist.

Findings: Seven of the proposed parking stalls have been located at the front entrance of the building. An accessible sidewalk with a width of 5 feet has been provide between the convenience store wall and the proposed parking to provide an accessible route along the front of the building. This standard is met.

407-6.4 A minimum 5-foot landscape strip shall be created along any parking lot boundary, including access roads, except where the use of joint parking or a zero setback is approved.

Findings: A minimum 5-foot landscape strip has been provided along the parking lot boundary, except along the south property line where a zero setback is allowed. This standard is met.

407-6.5 Landscape "islands" located within parking areas shall maintain a minimum width and length dimension of 5 feet (see Section 407-1.6).

Findings: The landscape islands located within the parking areas will maintain a minimum width and length dimension of 5 feet. This standard is met.

407-6.6 Entryways into parking lots shall be bordered by a minimum 5-foot-wide landscape strip.

Findings: Both entryways into the proposed parking lot will be bordered by a minimum 5-foot-wide landscape strip. This standard is met.

407-6.7 Landscape plans that do not meet the minimum area standard through requirements intended to provide landscaping around buildings and in parking and loading areas, and screening and buffering as required under Section 411, are required to focus landscaping along pedestrian walkways linking on-site building(s) to the street in order to meet the minimum area standard.

Findings: The proposed landscape plans meet the minimum area standards and screening and buffering as required under Section 411. Landscaping will be provided along the pedestrian walkway linking the on-site building to the street. This standard is met.

407-6.8 In the Pedestrian-Oriented Mixed-Use Districts, the applicable screening requirements between a surface parking area and an adjacent right-of-way are those listed in Section 392.

Findings: The proposed development is not located in a pedestrian-oriented mixed-use district. The requirements of this section are not applicable.

407-7 Urban Street Tree Standards

Inside an urban growth boundary, all new structures or land divisions fronting on public or private roadways or access drives, except the construction of a detached dwelling unit on an existing lot, shall be required to plant street trees in accordance with the following standards:

407-7.1 The species of street trees to be planted shall be chosen from the approved list of street trees unless approval of another species is given by the Director through a Type I procedure. Trees shall be selected and appropriately spaced to maximize canopy coverage and provide canopy overlap for shade. Trees shall be installed at an average of one tree per thirty-five (35) feet of lineal road frontage unless the selected species has a wide canopy. In those instances, the spacing of trees may be greater than thirty-five (35) feet provided the spacing will result in canopy overlap.

407-7.2 Exemption from the street tree requirements may be granted by the Director if existing trees can be used as a substitute. This exemption may be granted through a Type I procedure;

407-7.3 Street trees shall be installed on public or private property no more than five (5) feet from the designated right-of-way; and

407-7.4 Street trees shall be a minimum of one and one-half (1 1/2) inches in diameter.

Findings: NW West Union Road has been identified by the County as a future Capital Improvement Project. The applicant is proposing an 18-foot right-of-way dedication along the frontage to allow for a 48-foot half street section. The proposed development will include sidewalk improvements along NW West Union Road. The final improvements, including street trees will be provided as part of the County's Capital Improvement Project.

408 Neighborhood Circulation

408-4.1 For all development on a site of two (2) acres or less the applicant shall submit a circulation analysis which at a minimum meets the Off-Site analysis requirements of Section 404-1.4. A larger analysis area may be required in order for the applicant to demonstrate compliance with the requirements of 408-5 or 408-6.

Findings: The Applicant has submitted a circulation analysis which meets the minimum off-site analysis requirements of Section 404-1.4.

408-10 Internal Pedestrian Circulation

408-10.1 Number of Pedestrian Connections

- **A. All developments with fifty (50) or more parking spaces or that generate fourteen (14) or more additional ADT shall provide a pedestrian connection between the street and the main entrance of the primary structure on the lot. For lots with more than one (1) street frontage, a connection shall be provided to each street. As an alternate for new development on lots with multiple buildings, a pedestrian connection shall be provided between the street and the center of the internal pedestrian network. These requirements do not apply to single family or duplex residential development.**
- **B. All developments that generate five hundred (500) or more ADT shall provide:**
  - **(1) A connection from the main entrance of the primary structure to within twenty (20) feet of any transit stop located along the frontage of the subject property;**
  - **(2) A connection to within twenty (20) feet of any mid-block pedestrian crossing; and**
  - **(3) A connection for every two hundred (200) feet of street frontage including connections provided per (1) and (2) above. Connections shall be generally spaced to ensure direct access to buildings on the lot for pedestrians accessing the lot from any direction.**

Findings: As shown on the attached Site Plan, the site has approximately 500 linear feet of frontage but only a small portion of the site will be constructed with a building – the convenience store. A pedestrian connection has been provided along the street's frontage to allow for direct and convenient access to the store. This standard is met.

C. As an alternative to 408-10.1 A. and B. (1-3) above, pedestrian connections shall be provided for new development as part of campus development which connect each building within the campus area and directly connect the building complex to the most appropriate street(s) or pedestrian route(s). More than one (1) pedestrian connection may be required to a particular street or pedestrian route in order to decrease out of direction travel.

Findings: As shown on the attached Site Plan, the site has approximately 500 linear feet of frontage but only a small portion of the site will be constructed with a building – the convenience store. A pedestrian connection has been provided along the street's frontage to allow for direct and convenient access to the store. This standard is met.

D. In addition to pedestrian connections required by 408-10.1 A. and 408-10.1 B., connections shall be provided between the proposed development and all off-site pedestrian connections on adjacent properties or streets as required by Sections 408-5 or 408-6.

Findings: As shown on the attached Site Plan, a pedestrian connection has been provided along the street's frontage to allow for direct and convenient access to the store. As the site's only frontage is along NW West Union, this criterion is met.

E. The most reasonably direct internal pedestrian connections shall also be provided between different major developments on the lot, such as from one building to another, or between an on-site recreation facility to a building. Connections are not required between buildings or portions of a lot which are not intended for or likely to be used by pedestrians.

Findings: As shown on the attached Site Plan, a pedestrian connection has been provided along the street's frontage to allow for direct and convenient access to the store. Pedestrian connections internally have been provided via the proposed drive-isles. All surfaces adjacent to the pumps have been paved for pedestrian and vehicular circulation.

F. For new development that is part of a larger existing use that shares common automobile parking spaces and access and is under common ownership, and the total larger use generates five hundred (500) or more ADT and does not meet the standards of 408-10.1 B. 408-10.1 C., 408-10.1 D. or 408-10.1 E., the following pedestrian connections shall be provided:

(1) For new development that results in an increase of more than ten (10) percent, but less than fifty (50) percent of the ADT of the larger use, a pedestrian connection shall be provided between the abutting street with the highest functional classification (except freeways) and the internal pedestrian network of the larger use or the main entrance of the primary structure on the site. If one or more abutting streets of the larger use have the same functional classification, a connection shall be provided to

all streets with the highest functional classification. Pedestrian connections shall be designed consistent with Section 408-9.3.

(2) For new development that results in an increase of fifty (50) percent or more of the ADT of the larger use, the larger use shall meet the standards of 408-9.1 B., 408-9.1 C., 408-9.1 D., and 408-9.1 E.

Findings: As shown on the attached Site Plan, a pedestrian connection has been provided between the street and the main entrance of the primary structure on the lot. The closest transit stop is located north of the Site on NW 185th Avenue, approximately 255 feet from the frontage of the site. The proposed pedestrian connection will provide access via the public sidewalk to the transit stop. This standard is met.

408-10.2 Reduction of Number of Pedestrian Connections

A reduction of the number of pedestrian connections required by 408-9.1 A. through D. may be granted by the Review Authority based on a determination that reducing the number of connections would not result in an increase in out of direction travel from the street or trail to any main building entrance for pedestrians or cyclists accessing the site from:

1) An off-site accessway or trail,

2) The sidewalk or shoulder along the street where the property has frontage,

3) A transit stop,

4) Pedestrian crossings on Arterials and Collectors, and

5) from pedestrian oriented uses across a Collector, Neighborhood Route or Local Street.

Findings: As shown on the attached Site Plan, a pedestrian connection has been provided between the street and the main entrance of the primary structure on the lot. The closest transit stop is located north of the Site on NW 185th Avenue, approximately 255 feet from the frontage of the site. The proposed pedestrian connection will provide access via the public sidewalk to the transit stop. This standard is met.

408-10.3 Pedestrian Connection Design

A. Connections shall be as direct as practicable; circuitous routes shall be avoided.

B. Where connections cross driveways, parking areas, or loading areas, the connection must be clearly identifiable through the use of striping, elevation changes, speed bumps, a different paving material, or other similar method. If striping is used to identify a connection, the striping must be thermal plastic striping or other heavy-duty material that will have relatively little maintenance. Where connections are parallel and adjacent to an auto travel lane, the connection must be safely separated from the auto travel lane through the use of a raised path, a raised curb, bollards, landscaping or other physical barrier.

C. Connections shall be at least ten (10) feet in paved unobstructed width when bicycles are intended to share the connection. When bicycle travel is otherwise adequately provided, connections shall be at least five feet in paved unobstructed width. Connections which are likely to be used at night must be lighted. If lighting for other

purposes provides adequate light to a pedestrian connection, separate lighting is not required.

Findings: A pedestrian connection has been provided from the public sidewalk to the entrance of the building in a direct path. The connection is five feet in unobstructed width and meets ADA design standards. This standard is met.

410 Grading and Drainage

410-1 General Provisions

410-1.1 All grading and drainage activities are to occur pursuant to the provisions of Chapter 14.12 of the Washington County Code and the applicable State of Oregon Plumbing Code or its successor and this Code. All grading and drainage activities on lands located within the Clean Water Services (CWS) boundary shall also occur pursuant to the provisions of the "Design and Construction Standards for Sanitary Sewer and Surface Water Management" or its successor. In the event of any conflict between the provisions of this Code, the Community Plan, the Rural/Natural Resource Plan, and Chapter 14.12, the more restrictive standard shall prevail.

Grading applications may be processed through a two-step procedure consisting of a preliminary review (grading plan) and a final review (grading permit), unless the Director consolidates the applications into one review.

No grading and drainage activities that are subject to Section 410 shall be undertaken without a grading permit.

For Type I development, preliminary grading plans may be submitted as a standalone application. For development reviewed through the Type II and III procedure, preliminary grading plans are to be submitted with the development application.

The purpose of a preliminary grading plan (conceptual) is to determine whether or not it is feasible to comply with the grading permit review standards of Section 410-3. Full engineering drawings are not required at the preliminary review stage. However, preliminary grading plans shall be accurate enough to provide a basis for determining whether or not the proposed activity, as designed and to be implemented, will meet the applicable Code requirements for a grading permit.

All grading permit applications (the second step) shall include detailed plans, per Section 410-2, rather than preliminary grading plans.

410-1.2 Grading Plan

The grading plan shall include:

- **A. A vicinity map.**
- **B. A site plan which includes the following:**
  - **(1) A graphic representation drawn to a scale which is noted on the drawing. In all cases the scale used shall be standard, being ten (10), twenty (20), thirty (30), forty (40), fifty (50), or sixty (60) feet to the inch or multiples of ten (10) of any one of these scales;**

(2) Except as required by Section 421, applications for land inside the UGB shall show existing and proposed topography using the following contour intervals:

(a) For slopes of five (5) percent or less, contour intervals not more than one (1) foot; or

(b) For slopes greater than five (5) percent and up to and including ten (10) percent, contour intervals not more than two (2) feet; or

(c) For slopes greater than ten (10) percent, contour intervals not more than five (5) feet.

(3) Except as required by Section 421, applications for land outside the UGB shall show existing and proposed topography using the following contour intervals:

(a) For slopes of ten (10) percent or less, generalized existing contours and drainage channels, including areas of the subject site and adjoining properties that will be affected by the disturbance either directly or through drainage alterations; or

(b) For slopes greater than ten (10) percent, contour intervals not more than five (5) feet.

(4) Proposed elevations after grading is completed, including any modifications to drainage channels;

(5) Any required retaining walls or other means of retaining cuts or fills including typical cross sections;

(6) Typical cross sections showing existing and proposed elevations. Cross sections are to be taken through the areas that will show the most detail of the grading project;

(7) The site plan shall show the area of the site where construction, grading, cut or fill is proposed, plus a minimum of fifty (50) feet surrounding the area;

(8) Flow lines of surface waters onto and off the site;

(9) Proposed building pad, areas with an impervious surface and existing and proposed finished floor and street elevations if building or parking construction is proposed;

(10) Existing and proposed water quality sensitive areas, vegetated corridors, and drainage channels including drainage swales, wetlands, ditches and berms;

(11) Location and design of any proposed facilities for storage or for conveyance of runoff into indicated drainage channels, including sumps, basins, channels, culverts, ponds, storm drains and drop inlets;

(12) Location of any buildings or structures, parking areas or accessways existing or proposed on the site within fifty (50) feet of the area that may be affected by the proposed grading operations;

(13) Location of any proposed streets; and

(14) Location of any proposed stockpile areas, either on site or off.

C. Written narrative and/or supplemental information including all of the following:

(1) Explanation of the reason for the proposed grading, which must be an allowed use in the district;

(2) Estimates of surface area disturbed by proposed grading and total parcel size;

(3) Estimates of cut/fill volume in cubic yards; and

(4) Estimates of existing and increased runoff resulting from the proposed improvements.

(5) Soil Map, including a soil survey legend, range of percent slopes (e.g., three [3] to seven [7] percent slopes), and soil description if no limitations exist from the USDA, Soil Conservation Service, Soil Survey Report, Washington County, July 1982. Soil limiting features must address depth to bedrock from pages 120-123 from the report, and other features which may be restrictive to construction, drainage and revegetation of property;

(6) Provision for saving the site topsoil (surface twelve [12"]) for later revegetation and landscaping, including the locations of any temporary stockpile areas;

(7) Provisions for the disposal of excavated material, including the location of disposal;

(8) Written statement demonstrating the feasibility of complying with Section 410-3. Demonstrating feasibility does not require detailed solutions, but there must be enough information for the review authority to find that solutions to problems are possible and likely.

D. Erosion Control Plan:

(1) For areas inside the Tualatin River and Oswego Lake sub-basins, an erosion control plan as required by Section 426 shall be submitted.

(2) For areas outside the Tualatin River and Oswego Lake sub-basins, an erosion control plan that complies with the requirements of the "Washington County Erosion Control Plans Technical Guidance Book," January 1991, or its successor, is required when:

(a) Grading requiring a permit is proposed to be conducted or left in an unfinished state during the period from October 1 through May 1; or

(b) Land disturbance activities are conducted in geologically unstable areas, on slopes in excess of twenty (20) percent, or there is disturbance of more than six thousand (6000) square feet of development area, or within fifty (50) feet of any drainage hazard area or flood plain area.

E. A request for an imported fill material more than five thousand (5000) cubic yards in an EFU or AF-20 District shall be accompanied by a written recommendation from the Soil and Water Conservation District.

F. A request for a Clean Fill Site shall include a reclamation schedule.

Finding: The Applicant has prepared and submitted a Preliminary Grading and Erosion Control Plan (Sheet C241 and C442), prepared by a licensed engineer and Preliminary Drainage Report for the site consistent with the requirements of this section. The applicant's proposed grading plan for the site is appropriate for the proposed use of the property and will not create site disturbances

which are greater than required to facilitate use of the property. This standard is met.

410-5 North Bethany Drainage Master Plan

410-5.1 Introduction

Clean Water Services (CWS) adopted the North Bethany Drainage Master Plan (the Plan) that is applicable to most of the North Bethany Subarea. A portion of the Portland Community College Rock Creek Campus is not subject to the Plan. The Plan addresses regional stormwater management (water quality and quantity) and 100-year flood plain and drainage hazard areas. It also addresses stormwater management for streets and at the individual building site level.

410-5.2 Applicability

Properties subject to the Plan are identified in the North Bethany Subarea. Development within the boundaries of the Plan is subject to review by CWS for consistency with the Plan. For street low impact development approaches (LIDA), coordination with the County Engineer is required.

Findings: The subject parcel is not located in the North Bethany Subarea. Therefore, the requirements of this section do not apply.

411 Screening and Buffering

411-2 Location

Screening and Buffering shall be located on the perimeter of a lot or parcel, extending to the lot or parcel boundary line. Buffering shall not be located on any portion of an existing or dedicated public or private street or right-of-way. In a case of two overlapping types of buffers, the higher type shall prevail.

411-3 Determination of Screening and Buffering Requirements

411-3.1 To determine the type of Screening and Buffering required, the following procedure shall be used:

- **A. Identify the primary district of the subject site by referring to the applicable Community Plan;**
- **B. Identify the primary district(s) of the surrounding properties by referring to the applicable plan(s);**
- **C. Determine the Screening and Buffering type by referring to the Screening and Buffering Matrix (Section 411-5); and**
- **D. Determine the Screening and Buffering Standards by referring to the Screening and Buffering Standards (Section 411-6).**

411-3.2 Responsibility for Screening and Buffering:

- **A. When a property is the first to develop adjacent to a vacant parcel, the first property shall provide the buffer identified in the vacant land use category as shown on the Screening and Buffering Matrix, Section 411-5.**

B. The second use to develop shall, at the time it develops, provide all additional plant materials, landscaping, and land necessary to provide total screening and buffering required by the Screening and Buffering Matrix for developed uses.

C. Screening and buffering is not required when lots or parcels are separated by a public street or road.

D. Where two adjacent developments in different districts are developed with the same housing type and maintain the same standards as the lower density district, the screening and buffering requirements may be reduced to the level of the lower density use through a Type II procedure when a recorded legal instrument (such as a deed restriction) ensures that the lot and house type will remain the same as the lower density requirements for the life of development.

411-4 Limitations

All areas for screening and buffering shall remain void of buildings, building mechanical equipment (e.g., heat pumps, air conditioners), parking, service areas (e.g., solid waste and recyclables storage and pick-up facilities, loading and delivery areas), signing, lighting (except lighting of pathways) and utilities (unless underground). Area required for screening and buffering may be used to satisfy landscape and open space requirements and be included in the density calculation of the site.

Findings: The subject parcel zoned NC and is bordered to the south by a property zoned institutional (INST). A screening and buffering requirement has not been specified as required between properties zoned NC and INST. The site to the south consists of Goal 5 resources and a developed THPRD park. The resource and park land provide a buffer between the proposed development. The existing trail on the site to the south is located 300 feet from the subject site and is buffered from view by existing vegetation on the site. As part of an agreement with THPRD, the Applicant will provide a small retaining wall along the southern property line with a four-foot-tall fence to provide a visual buffer for vehicle lights. This standard is met.

413 Parking and Loading

413-3 Off-Street Parking Lot Design

All off-street parking lots including up to 50% of the spaces for compact cars, shall be designed in accordance with County standards for stalls and aisles dimensions as set forth in the following drawings and tables:

Vehicle Type	A parking angle	B stall width	C stall depth	D aisle width	E** stall width	F** module width	G bumper overhang	H backing area	I module intermesh
Standard	75°	8.5’	19.6’	23’	8.8’	62.2’	2.5’	5’	60’
	90°	8.5’	18’	24’	8.5’	59.5’	3’	5’	59.5’

413-3.1 For one row of stalls use "C" plus "D" as minimum bay width.

413-3.2 The minimum aisle width for two-way traffic and for emergency vehicle operations area is 24 feet. The minimum aisle width for emergency vehicle (one-way traffic) is 15 feet.

413-3.3 Where appropriate bumper overhang area is provided (extruded curbs), "G" can be subtracted from "C" to determine stall depth.

413-3.4 Parallel Parking:

Space dimensions are to be 9 by 22 feet. Aisle dimensions for parallel parking are to be 12 feet for one-way aisles and 24 feet for two-way aisles.

Findings: The parking lot has been designed with two 90-degree stalls at the building entrance. These spaces are designed to be 9 feet wide and 18 feet long. The two 75-degree spaces at the building entrance are designed to be 9 feet wide and 19.6 feet long, with a one-way drive aisle width of 19.5 feet.

A single parallel space has been provided along the southern property line meeting the required 9 by 22 feet space dimension. Nine additional 75-degree parking spaces are provided along the southern property boundary. These spaces are designed to be 8.5 feet wide by 19.6 feet long. All two-way drive aisle widths have all been designed to exceed 24 feet. All one-way drive aisles have been designed to be at last 15 feet wide. This standard is met.

413-3.5 Pedestrian Access:

In parking lots for customers, residents or employees of 50 or more spaces and two or more rows of parking stalls, separate internal pedestrian connections shall be provided consistent with 408-10 to minimize vehicular-pedestrian conflicts, and allow safe pedestrian movement within the lot. Parking lots dedicated to the display and storage of automobile, recreational and other vehicle sales are exempt.

Findings: The proposed development does not provide 50 or more spaces or two or more rows of parking. The requirements of this section are not applicable.

413-3.6 If provided, electric vehicle charging parking spaces, either public or private, shall comply with the following requirements:

- **A. Electric vehicle charging parking spaces may substitute for required minimum off-street parking spaces of Section 413-6.1 at a 1:1 ratio.**
- **B. A minimum of one electric vehicle charging space shall be ADA compliant.**
- **C. Electric vehicle charging parking spaces shall be posted with signage not to exceed 5 square feet in size.**
- **D. Electric vehicle charging unit outlets and operable parts shall be no less than 18 inches off the ground if indoors and 24 inches off the ground if outdoors and no higher than 48 inches off the ground to ensure easy access.413-3.7Motorcycle Parking:**

A maximum of 5%, not to exceed five motorcycle parking spaces total, shall be allowed to count toward the minimum off-street parking requirements of Section 413-6.1.

Findings: Electric vehicle charging parking spaces are not proposed. The requirements of this section are not applicable.

413-3.8 Pedestrian-Oriented Mixed-Use Districts, parking location:

In the Pedestrian-Oriented Mixed-Use Districts (Section 392), all off-street parking areas and vehicular circulation facilities shall be located to the side or rear of buildings.

Findings: The proposed development is not located in a Pedestrian-Oriented Mixed-Use District. The requirements of this section are not applicable.

413-4 Off-Street Parking Standards

413-4.1 All required off-street parking and loading areas inside the urban growth boundary shall be surfaced with concrete or asphaltic material to conform with either of the following standards:

A. A minimum of 4 inches of concrete for vehicles and 6 inches for commercial vehicles or trucks; or

B. Two inches of asphalt overlaying a 6-inch base (compacted) of crushed stone.

C. In lieu of being constructed as described under A. or B. above, required off-street parking and loading areas may be constructed of pervious paving materials when the applicant's engineer provides written certification with the application that appropriate site conditions exist for the use of pervious materials and that the proposed design and construction will be equal to or superior to the structural standards specified in A. or B. above.

Findings: All off-street parking and loading areas will be surfaced with a minimum of 4 inches of concrete and will be surfaced with 6 inches of concrete along commercial vehicle circulation routes. This standard is met.

413-4.4 Based upon approval of a grading plan pursuant to Section 410, for the purpose of temporary or overflow parking, or storage of heavy equipment or vehicles in the Industrial District, a gravel surface may be approved with a minimum 4 inches of base rock with 2 inches of three-quarter-inch minus leveling course.

Findings: Gravel surfaces are not proposed. The requirements of this section are not applicable.

413-4.5 All required off-street parking areas, except for detached or two unit attached dwellings on a single lot and areas outside the UGB not required to be surfaced to the standards of Section 413-5.1, shall be constructed with curbs of concrete or asphalt. Driveways for detached dwelling units that are less than 100 feet in length shall be paved. All driveways for single-family attached dwelling units shall be paved. Those areas constructed with a gravel surface may use curbs of wood or other materials as may be approved by the Review Authority.

Findings: All parking areas will be surfaced to the standards of Section 413-5.1 and will be constructed with curbs of concrete. This standard is met.

413-4.6 Parking spaces in paved parking areas having more than three stalls are to be marked with paint striping, a minimum of 2 inches in width. Parking spaces in gravel surfaced lots may be identified by wheel stop barriers.

Findings: All parking spaces will be marked with paint striping a minimum 2 inches in width. This standard is met.

413-4.7 Covered parking spaces are to have a vertical clearance of at least 7 feet, 6 inches above the parking lot surface for all uses except residential.

Findings: The covered parking spaces located under the fuel canopy will have a vertical clearance of at least 7 feet, six inches. This standard is met.

413-4.8 The finished grade of a parking lot is not to exceed 5% slope.

Findings: The finished grade of the parking lot will not exceed 5% slope. This standard is met.

413-4.9 Parking and loading areas that are not associated with a structure shall have no less than a 10-foot front and rear yard setback and shall conform to the street side yard requirements of the primary district.

Findings: All parking and loading areas are associated with a structure. The requirements of this section are not applicable.

413-4.10 All parking lots shall be landscaped as required by Section 407-6.

Findings: The parking lot will be landscaped as required by Section 407-6 which has been addressed within this narrative. This standard is met.

413-4.12 Driveways for two individual lots, each containing a single-family attached or detached dwelling unit, may be combined when the following standards are met:

A. The minimum combined driveway width shall be 20 feet; and

B. Driveway surface within each lot shall measure a minimum continuous width of 10 feet.

Findings: The proposed development will not include a shared driveway. The requirements of this section are not applicable.

413-4.13 There shall be at least 18 feet of curb face along the street between combined and/or single driveways where a required on-street parking space is proposed.

Findings: On-street parking is not proposed. The requirements of this section are not applicable.

413-6 Minimum and Maximum Off-Street Parking Requirements

413.6.1 Minimum Off-Street Parking Requirements

C. Business and Commercial:

(2) Automobile Service Station	**Two for each lubrication, stall rack or pit; and one for each gasoline pump**

(6) Drive-in restaurant or similar drive-in used for the sale of beverages, food or refreshments for consumption off the premises	**Five per 1,000 square feet of gross floor area**
(14) Retail stores, except as otherwise specified herein	**2.5 for each 1,000 square feet of gross area**

Findings: The Applicant has proposed to construct approximately 4,428 square foot two-story convenience store and fuel station. The convenience store will have a drive-thru component that will operate in 500 square feet of the ground floor of the building. The remaining 3,928 square feet will operate as a convenience retail use. Four gasoline islands have been proposed to operate in front of the convenience store with a total of eight fueling pumps.

Automobile Service Stations are required to provide one parking space for each gas pump. In this case, a total of eight parking spaces are required. Retail stores are required to provide a total of 2.5 spaces for every thousand square feet of floor area, or 9.8 spaces. Drive-in uses are required to provide a total of 5 spaces for every thousand square feet of floor area, or 2.5 spaces. The total parking required on site is 21 spaces.

The Applicant has proposed to meet this standard by providing 14 traditional parking spaces, specifically intended to meet the parking demands related to the retail business. An additional eight spaces have also been provided in front of the pump islands. The two distinct types of uses proposed on site require different types of parking. While the site will attract a limited number of retail-only customers, the gas station will attract customers who may finalize transactions at the pumps or who may elect to complete transactions inside while making purchases within the convenience store. These customers will be provided with a covered walkway to the convenience store from the island parking and fueling stations. This standard is met.

413-6.3 Maximum Off-Street Parking Requirements

A. In accordance with the Community Plans' Parking Maximum Designations, urban unincorporated properties shall be identified as being located in either Zone A or Zone B. Properties brought into the Urban Growth Boundary after adoption of the Parking Maximum Designations shall be considered to be located within Zone B for the purposes of Section 413 unless the property meets the following Zone A criteria. Zone A properties are located within one-quarter (1/4) mile of a bus route that provides twenty (20) minute peak hour service or within one-half (1/2) mile of a light rail station. Zone B properties are the remaining urban unincorporated areas.

B. The maximum number of allowable off-street parking spaces by type of use shall be determined by the following:

MAXIMUM OFF-STREET PARKING RATIOS IN ZONE A AND ZONE B AS ILLUSTRATED IN THE COMMUNITY PLANS (parking ratios are based on spaces per 1,000 gross square feet unless otherwise stated)	
Use	**Zone A (Transit Accessible Areas)**
Retail stores and shopping centers (except as otherwise specified in Section 413-6.1	**5.1**

Findings: The proposed development is identified in the Sunset West Community Plan as being in Zone A. The convenience store has a gross area of 4,428 square feet and will have 14 parking spaces, which does not exceed the maximum off-street parking ratio of 5.1 for retail stores. The fuel station use does not have a maximum parking ratio. This standard is met.

414 Signs

414-2 Commercial and Institutional Districts

414-2.1 Scope:

This Section shall apply to all Commercial Districts and the Institutional District.

414-2.2 Number and Size:

For each lot or parcel, signing at the listed size may be allowed:

In the Neighborhood Commercial (NC), Office Commercial (OC), Institutional (INST), Neighborhood Corner Commercial (NCC NB), Neighborhood Commercial Mixed Use (NCMU NB), and Institutional North Bethany (INST NB) districts, except as otherwise required within standards for the particular district or use, signs shall not exceed thirty-five (35) square feet.

Findings: As detailed in the Site Plan (Sheet C211 and C212), a small pole mounted sign has been proposed along the project's frontage along NW West Union Road. The sign is proposed to be located within the area which is being dedicated to the County for future ROW improvements along West Union Road. The sign will be moved back onto the subject property once the County completes road improvements along NW West Union. The proposed sign is approximately 19 square feet, which is less than the 35 square foot maximum. This standard is met.

415 Lighting

415-1 Applicability

The roadways, access drives, parking lots and sidewalks of all new developments of attached units shall be lighted in conformance to the standards of this Section (415). This Section is not intended to apply to public street lighting.

Findings: The proposed development is commercial. The requirements of this section are applicable.

415-2 Lighting Plan

Prior to the issuance of a Development Permit for a structure other than a detached dwelling or attached dwelling of less than three (3) units, an Exterior Lighting Plan shall be submitted in

order to determine whether the requirements of this Section (415) have been met. This plan shall include:

415-2.1 Site Plan and Building Floor Plans and Elevations showing luminaire location;

415-2.2 Luminaire details;

415-2.3 Lighting coverage and cutoffs; and

415-2.4 Any additional information necessary to insure compliance with Section 415.

Findings: The Applicant has provided a Photometric Plan (Sheet E1.0) demonstrating compliance with Section 415 as part of this application. This standard is met.

415-4 Standards

The following standards are required of all exterior lighting except the outdoor recreational uses specifically exempted below. Many uses have the option of providing a lower light post with a non-cutoff type luminaire or a higher pole, up to forty (40) feet, with a luminaire that totally cuts off light spillover at a cutoff angle smaller than ninety (90) degrees (Figure 1). The maximum light post height permitted is dependent on the amount of cutoff provided. This is designed as a protection against excessive glare and light spilling over to neighboring properties. The exceptions which are permitted provide adequate protection for neighboring residential property. Exterior lighting shall meet one (1) of the following standards:

415-4.1 When light source or luminaire has no cutoff:

District	Maximum Permitted Illumination	Maximum Permitted Height of Luminaire
Residential & Institutional	0.20	10 feet
Commercial & Industrial	0.30	20 feet

415-4.2 When a luminaire has total cutoff of an angle greater than ninety (90) degrees (Figure 2), (as compared to [90] degrees exactly [Figure 3]), the maximum illumination and the maximum permitted luminaire height shall be:

District	Maximum Permitted Illumination	Maximum Permitted Height of Post
Residential & Institutional	0.5	20 feet
Commercial & Industrial	1.0	30 feet

415-4.3 When a luminaire has total cutoff of light at an angle less than ninety (90) degrees (Figure 1) and is located so that the bare light bulb, lamp, or light source is completely shielded from the direct view of an observer five (5) feet above the ground at the point where the cutoff angle intersects the ground, then the maximum permitted illumination and the maximum permitted height of the luminaire shall be:

District	Maximum Permitted Illumination	Maximum Permitted Height of Post
Residential & Institutional	0.5	20 feet
Commercial & Industrial	3.0	40 feet

415-5 General Provisions

Notwithstanding any other provision of this Section (415) to the contrary:

415-5.1 No flickering or flashing lights shall be permitted.

415-5.2 Light sources or luminaires shall not be located within areas identified for screening or buffering except on pedestrian walkways.

415-5.3 Lighting shall be located and oriented so as not to shine excessive light into nearby habitat areas.

Findings: The Applicant has submitted a Site Photometrics Plan (Sheet E1.0) detailing the proposed lighting for the subject site. Lighting has been designed to conform to the maximum permitted illumination outlined in this section and to minimize glare on to adjacent areas and are not in areas identified for screening or buffering. No flickering or flashing lights are proposed. This standard is met.

416 Utility Design

416-1 General Provisions

416-1.1 All utility distribution facilities supplying electric, communication, or similar or associated service, installed in and for the purpose of supplying such service to any development shall be placed underground; provided however, that the word "facilities" as used herein shall not include standards used for street lighting, traffic signals, pedestals for police and fire system communications and alarms, pad-mounted transformers, pedestals, pedestal-mounted terminal boxes and meter cabinets, concealed ducts, substations, or facilities used to carry voltage higher than fifty thousand (50,000) volts.

416-1.2 Notwithstanding Section 416-1.1, overhead utility distribution lines may be permitted upon approval of the Review Authority through a Type I procedure when terrain, soil, or geologic conditions prohibit underground installation, or when proposed development is part of an urban infill process and surrounding developments do not have underground utilities. Location of such overhead utilities shall be along rear or side lot lines wherever feasible.

416-1.3 Easements necessary for sewers, water mains, electric lines, stormwater facilities, or other public utilities shall be provided. The easements will vary according to the need of various utilities. When possible, the easement shall be located on one side of a lot line.

416-1.4 The location, design, installation and maintenance of all utility lines and facilities shall conform to ORS Ch. 92 and be carried out with minimum, feasible disturbance of soil and site.

Findings: A Preliminary Composite Utility Plan (Sheet C301 and C302) prepared by a registered engineer in coordination with County engineering staff detailing the proposed utility design on site has been provided under Appendix E.

418 Setbacks

418-1 Obstruction in Required Yards

Required yards shall be horizontally unobstructed except as follows:

418-1.1 Cornices, eaves, belt courses, sills, canopies, or other similar architectural features (not including bay windows or vertical projections) may extend, or project into a required side yard not more than two (2) inches for each (1) foot of width of such side yard and may extend or project into a required front or rear yard not more than thirty (30) inches. Chimneys may not project into a front or rear yard more than twenty-four (24) inches. Chimneys may project up to twenty-four (24) inches into a side yard setback, but no closer than three (3) feet to a property line.

418-1.2 Open balconies and unenclosed stairways more than thirty (30) inches in height and not covered by a roof or canopy, may extend or project into a required rear yard not more than four (4) feet and such porches may extend into a required front yard not more than thirty (30) inches.

418-1.3 A ground level deck not more than thirty (30) inches in height and not covered by a roof or canopy may be allowed in any yard regardless of the setback requirements.

418-1.4 A deck more than thirty (30) inches in height, not covered by a roof or canopy, may be allowed in a required rear yard not closer than five (5) feet to the rear property line when the rear yard abuts a designated open space or public non-buildable tract. Such tracts may include flood plains, power line easements, or drainage courses.

Findings: The proposed building will meet the front, side, and rear yard setbacks. The proposed fuel canopy will extend approximately 20 inches into the side yard setback along NW West Union Road as allowed by this code. This standard is met.

418-2 Additional Setbacks Required for Future Right-of-Way

418-2.1 Where a yard or setback abuts a street having insufficient right-of-way width, the minimum yard or setback requirement shall be increased to accommodate the future right-of-way. The yard or setbacks shall be measured from the centerline of the existing right-of-way. The yard or setback shall be measured from the future edge of right-of-way and allow for half the maximum right-of-way as shown in the following diagram. The maximum right-of-way width shall be determined by the Transportation System Plan, including the Functional Classification Map, the Functional Classification Design Parameters Table and the Lane Numbers Map. The County Engineer may designate an alternative future right-of-way for streets where the area of the right-of-way is not balanced with respect to the current right-of-way centerline.

418-2.2 Prior to issuance of a building permit where the land use action is subject to growth management, an applicant shall dedicate the additional right-of-way to meet the County standard. Notwithstanding the above, outside the UGB, dedication of additional right-of-way

to meet the county standards shall be required prior to the issuance of any building permit where required as a valid condition of approval.

418-2.3 Setback requirements shall be determined from future rights-of-way as set forth by the official Washington County Functional Classification System Map, and as indicated on the Washington County Transportation System Plan. When a stub street abuts a site, the property owner shall place all on-site structures in such a way as to not preclude extension of that stub street into or through the site.

418-2.4 The setback requirements of this Code shall not apply to existing structures when the setback is reduced by a public dedication. If the setback is not reduced by a public dedication, the structure(s) shall meet the setback requirements of this section.

418-3 Corner Vision

Lots or parcels on street corners (public and/or private) shall maintain a sight triangle with no sight obstruction between three (3) feet and ten (10) feet in height as measured from street grade. Sight obstructions include, but are not limited to, fences, vegetation, berms, and structures. The sight triangle shall be measured from the street corner (apex), a distance of twenty (20) feet along each street side (see Figure 1). For the purpose of this Section, street corner is defined as that point where the extended edge of the road surface of two intersecting streets meet. The county may require additional vision clearance based on a hazard identified by the county. Nothing in this Section shall supersede proper application of the sight distance standards in Section 501-8.5 F.

Findings: The setbacks have been provided from the future right-of-way line along NW West Union Road. An 18-foot right-of-way dedication has been provided along NW West Union Road. This standard is met.

418-4 Fences and Retaining Walls

The setback requirements of this Code are not applicable to the following fence or retaining wall structures (or any combination thereof) except as required by Section 418-3:

418-4.1 A fence, wall (includes retaining wall), screen or lattice work not more than seven (7) feet in height.

418-4.2 A fence, wall (includes retaining wall), screen or lattice work not more than eight (8) feet in height along a rear, side or front yard which abuts an arterial or limited-access highway.

418-4.3 A combination fence (not more than six [6] feet in height) and retaining wall structure (not more than four [4] feet in height) located in a side or rear yard (for design standards see Section 419-4).

418-4.4 Tiered retaining wall structures not exceeding seven (7) feet in height in any required yard. The maximum height measurement includes all tiers located within the yard or setback area. All non-tiered retaining walls located within the yard or setback area shall not exceed a combined total of seven (7) feet in height.

418-4.5 All retaining wall structures, exceeding seven (7) feet in height, not within a required yard or setback area, on two or more contiguous properties, are exempt from the side yard setback requirement.

418-4.6 A wall not more than eight (8) feet in height along a side or rear property line as required by Section 411.

418-4.7 Residential lots or parcels shall maintain a clear vision area with no sight obscuring fence or wall (does not include retaining wall) more than three (3) feet in height, measured from finished grade, within a fifteen (15) by fifteen (15) foot square along a driveway. A clear vision area shall be measured from the property line, sidewalk, or easement for public travel, whichever is closest to the fence line (for design standards see Figure 2 and Figure 3).

Findings: The proposed development does not include any new fences or retaining walls along the site frontage. The existing retaining walls along the frontage do not obstruct sight-distance from the ingress and egress locations.

419 Height

In addition to the height restrictions in the primary districts, the following limitations shall apply:

419-1 Within twenty (20) feet of another primary district with a lower height restriction, the height restriction of the adjacent district shall apply.

419-2 Beyond the twenty (20) foot area in Section 419-1 above, the height may increase on the subject property at a ratio of one (1) foot of height to one (1) foot of horizontal distance from the adjacent primary district with a lower height limitation, to the maximum height permitted in the primary district.

419-3 A fence, lattice work, screen or wall (includes retaining wall) not more than seven (7) feet in height may be located in any required side, front or rear yard, except as required by Section 418-3 (corner vision). Where a rear, side or front yard abuts an arterial or limited access highway, fence height along the yard may be increased to eight (8) feet. Any fence over seven (7) feet in height requires a building permit. Any retaining wall over four (4) feet in height requires a building permit (the height measurement of a retaining wall is from the bottom of footing to the top of the retaining wall).

419-4 A combination fence and retaining wall structure may be located in a side or rear yard. This structure shall consist of a retaining wall [not more than four (4) feet in height] and a fence [not more than six (6) feet in height]. The fence portion shall be measured from the back-filled or highest side of this structure and may not exceed six (6) feet in height. The non-back-filled or lowest side measurement may not exceed a combined total of ten (10) feet in height. This provision may only be used when there is an existing or proposed grade difference between properties and a retaining wall is required by the Building Official (see Figure 1). This structure is exempt from a structural building permit only when the backfill is level for a proportional horizontal distance to the height of the retaining wall or as approved by the Building Official.

419-5 Tiered retaining wall structures shall not exceed seven (7) feet in height in any required yard. The maximum height measurement includes all tiers located within the yard or setback area. All non-tiered retaining walls located within the yard or setback area shall not exceed a combined total of seven (7) feet in height.

419-6 There shall be no limitation of vegetation such as hedges, except as provided in Section 418-3.

419-7 No structure or structural part shall exceed height standards for any airport in the county established in accordance with Federal Aviation Administration's Aviation Regulations.

Findings: A combination retaining wall and fence will be provided along the side yard southern property line. The retaining wall height will vary between two and a half feet and five feet. The fence will have a height of four feet. No other walls or fences are proposed. This standard is met.

421 Flood Plain and Drainage Hazard Area Development

The County administers and enforces the State of Oregon Specialty Codes pursuant to the requirement established in ORS 455. The Oregon Specialty Codes contain certain provisions that apply to the design and construction of buildings and structures located in Special Flood Hazard Areas. Therefore, this Section is intended to be administered and enforced in conjunction with the Oregon Specialty Codes.

421-1 Lands Subject to Flood Plain and Drainage Hazard Area Standards

421-1.1 Flood Plain

The following data sources shall be referenced for purposes of determining lands subject to flood plain standards. In any event, the most restrictive flood boundary information shall be utilized. The maps referenced herein are on file at the offices of the Washington County Department of Land Use & Transportation.

- **A. The following maps are adopted by reference.**
  - **(1) "Flood Insurance Rate Map, Washington County, Oregon," effective date October 19, 2018 with amendments; and**
  - **(2) "Flood Insurance Study for Washington County, Oregon and Incorporated Areas," dated October 19, 2018 with amendments.**
- **B. Where base flood elevation data has not been provided (approximate A Zone):**
  - **(1) "Flood Plain Series, Washington County, Oregon, revision 5/01/1974, 1/03/1978, 1/1981, 5/25/1983 and 12/12/1983" based upon data from the U.S. Army Corps of Engineers.**
  - **(2) In addition, the Director shall obtain, review and reasonably utilize any base flood elevation data available from a federal or state source, or hydrologic and hydraulic analysis performed in accordance with standard engineering practice by a licensed professional engineer, in order to administer this Section.**

C. In addition to the information sources identified in A. and B. above, the Director may also utilize any other available authoritative flood data, including but not limited to high water marks, photographs of past flooding or historical flood data.

Findings: The Applicant has submitted a delineation of the 100-year Flood Plain boundary (Zone X) shown on the Existing Conditions Plan (Sheet C101) and the Tentative Plat (Sheet C201) submitted under Appendix E. Base flood elevations provided in this application are source from FEMA's flood insurance study date Nov. 4th, 2016 (no. 41067CV001A). The proposed development is not located within the mapped Flood Plain.

421-1.2 Drainage Hazard Areas:

The following data sources shall be referenced for the purposes of determining lands subject to drainage hazard area standards. In the event, the most restrictive flood boundary information shall be utilized. The maps referenced herein area on file at the offices of the Washington County Department of Land Use & Transportation.

A. "Flood Plain Series, Washington County, Oregon, revision 5/01/1974, 1/03/1978, 1/1981, 5/25/1983 and 12/12/1983" based upon data from the U.S. Army Corps of Engineers.

B. In addition, the Director shall obtain, review and reasonably utilize any flood elevation data available from a federal or state source, or hydrologic and hydraulic analysis performed in accordance with standard engineering practice by a licensed professional engineer, in order to administer this section.

C. In addition to the information sources identified in A. and B. above, the Director may also utilize any other available authoritative flood data, including but not limited to high water marks, photographs of past flooding or historical flood data.

Findings: The Applicant has submitted a delineation of the flood plain, wetland, and associated vegetative corridor located off-site showing one-foot contour intervals, on the Existing Conditions Plan submitted under Appendix E – Sheet C101 and the Natural Resource Assessment submitted under Appendix D. This standard is met.

421-1.3 Persons seeking to develop within a flood plain or drainage hazard area must do so with the understanding that they and their successors assume the risks and that the risks cannot be eliminated, even with strict compliance with the standards adopted herein. This section does not imply that lands outside of flood plain or drainage hazard areas, or development permitted within, will be free from flooding or flood damage.

Findings: The Applicant understands that they assume the risks associated with development within the flood plain or drainage hazard area. The proposed development is not located within a delineated flood hazard area.

421-3 Submittal Requirements

In addition to the requirements of Sections 203-4 and 410, an application for a flood plain or drainage hazard area alteration shall contain the following information for the area proposed

to be disturbed. This information shall be prepared by a licensed professional engineer and may be submitted with or be made part of a site plan or grading plan for the proposed development.

421-3.1 Recognizing that the scale may be such that the true and accurate flood plain or drainage hazard area boundaries cannot be determined from the maps referenced in Section 421-1.1 and 1.2 alone, all persons seeking a development permit for lands within said areas and within 250 feet of the map boundary of a flood plain or drainage hazard area identified in Section 421-1.1 and 1.2, except as noted below for land divisions and property line adjustments, shall submit with the development permit application:

- **A. A delineation of the flood plain and the floodway boundaries, established by a registered engineer or a registered surveyor from the surface elevations for the flood plain based upon maps or other data sources referenced in Section 421-2.2; and**
- **B. A delineation of the drainage hazard area and the drainageway, established by a registered engineer or a registered surveyor from surface elevations for the drainage hazard area based upon maps or other data sources referenced in Section 421-1.2. Such delineation shall be based on mean sea level datum and be field located from recognized landmarks.**
- **C. Land divisions and property line adjustments outside the UGB may provide only generalized flood plain information, such as contour maps and aerial photos, which need not be prepared by an engineer. Notwithstanding this provision, for the purpose of implementing the requirements of Section 421-14.7, applicants may be required to submit detailed delineations as specified in 421-3.1 A and B above.**
- **D. For each of the above, submitted plans shall be accurately dawn and at an appropriate scale that will enable ready identification and understanding of the submitted information. The plans shall include the locations of any existing or proposed property lines, buildings, structures, parking areas, streets, accessways, or other relevant information on the subject property, and within 50 feet of the delineation.**

Findings: The Applicant has submitted a delineation of the flood plain, wetland, and associated vegetative corridor located off-site showing one-foot contour intervals, on the Existing Conditions Plan submitted under Appendix E – Sheet C101 and the Natural Resource Assessment submitted under Appendix D. This standard is met.

421-3.2 Existing and proposed topography within the boundaries of the flood area using the following contour intervals:

- **A. For slopes of five percent or less, contour intervals not more than one foot;**
- **B. For slopes greater than five percent and up to and including 10 percent, contour intervals not more than two feet; and**
- **C. For slopes greater than 10 percent, contour intervals not more than five feet.**

Findings: The Applicant has submitted a delineation of the flood plain, wetland, and associated vegetative corridor located off-site showing one-foot contour intervals, on the Existing Conditions Plan submitted under Appendix E – Sheet C101 and the Natural Resource Assessment submitted under Appendix D. This standard is met.

421-3.3 For applications for Type II and III flood plain or drainage hazard area alterations, documentation which demonstrates compliance with the applicable review standards of Section 421-7 through 421-14.

Findings: The applicable review standards of Section 421-7 through 421-14 have been addressed within this narrative.

421-3.4 Upon demonstration by the Director of no other alternative, applicants shall obtain a Conditional Letter of Map Revision (CLOMR) from FEMA before an encroachment, including fill, new construction, substantial improvement, fences or other development, in the regulatory floodway is permitted that will cause any increase in the base flood elevation. The CLOMR shall be submitted prior to the application being deemed complete.

Findings: The Applicant has submitted plans and materials sufficient to illustrate the extent of the site's topography, existing and proposed grading, natural features, and the location of the flood plain, wetland, and vegetative corridor. This standard is met.

421-5 Uses and Activities Allowed Through a Type II Procedure

Unless specifically prohibited in the applicable Community Plan, the Rural/Natural Resource Plan, Section 422, or Clean Water Service's "Design and Construction Standards for sanitary sewer and surface water management", a development permit may be approved in a flood area through a Type II procedure for the following:

421-5.12 Removal of vegetation down to duff or bare soil in areas designated as Significant Natural Resource in the applicable Community Plan or the Rural/Natural Resource Plan.

Findings: The Applicant has submitted all required plans including existing conditions and post development plans to illustrate the proposed impacts to the vegetative corridor on the site. This standard is met.

421-7 Development Standards for all Type II and Type III Flood Plain and Drainage Hazard Area Uses or Activities

The applicant for a proposed flood plain or drainage hazard area development shall demonstrate compliance with the following applicable standards as required by Section 421-3 above:

421-7.1 Development proposed to encroach into a regulatory floodway adopted and designated pursuant to FEMA regulations shall:

A. Demonstrate through hydrologic and hydraulic analysis, performed in accordance with standard engineering practice by a licensed professional engineer, that the cumulative effect of the proposal, when combined with all other existing and anticipated

development within the basin based upon full development of the basin as envisioned in the applicable Community Plan or the Rural/Natural Resource Plan, will not result in any increase in flood levels during the occurrence of the base flood discharge.

B. Comply with all applicable flood hazard reduction provisions of Section 421.

Findings: The proposed development will not encroach into the regulatory floodway; therefore, the requirements of this section are not applicable.

421-7.2 Notwithstanding Section 421-7.1, development that would result in an increase in flood levels may be approved if the County, at the sole expense of the applicant, first obtains FEMA approval in accordance with 44 CFR Ch. 1, Part 65 (October 1, 1990 edition, or its successor).

421-7.3 Development proposed on a flood plain site where the development does not encroach into an adopted FEMA regulatory floodway shall demonstrate through hydrologic and hydraulic analysis, performed in accordance with standard engineering practice by a licensed professional engineer, that the cumulative effect of the proposal, when combined with all other existing and anticipated development within the basin based upon full development of the basin as envisioned in the applicable Community Plan or the Rural/Natural Resource Plan, will not increase flood levels during the occurrence of the base flood discharge more than one foot.

Findings: The eastern corner of the subject parcel currently contains FEMA Zone X and AE Zones. After the dedication of an 18-foot portion of right-of-way to the County, this area will be further reduced to an insignificant portion of the site. No development is proposed within the designated flood plain, and the proposed development will not increase flood levels. The requirements of this section have been met.

421-7.4 In areas where a regulatory floodway has not been designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within flood areas on the Flood Insurance Rate Map (FIRM), unless it is demonstrated through hydrologic and hydraulic analysis, performed in accordance with standard engineering practice by a licensed professional engineer, that the cumulative effect of the proposal, when combined with all other existing and anticipated development within the basin based upon full development of the basin as envisioned in the applicable Community Plan or the Rural/Natural Resource Plan, will not increase flood levels during the occurrence of the base flood discharge more than one foot.

Findings: The eastern corner of the subject parcel currently contains FEMA Zone X and AE Zones. After the dedication of an 18-foot portion of right-of-way to the County, this area will be further reduced to an insignificant portion of the site. No development is proposed within the designated flood plain, and the proposed development will not increase flood levels. This standard is met.

421-7.5 Notwithstanding Sections 421-7.3 and 421-7.4, an increase in flood levels in excess of one foot may be approved in the County, at the sole expense of the applicant, first obtains

FEMA approval in accordance with 44 CFR Ch. 1, Part 65 (October 1, 1990 edition, or its successor)

Findings: The eastern corner of the subject parcel currently contains FEMA Zone X and AE Zones. After the dedication of an 18-foot portion of right-of-way to the County, this area will be further reduced to an insignificant portion of the site. No development is proposed within the designated flood plain, and the proposed development will not increase flood levels. This standard is met.

421-7.6 Development proposed on a drainage hazard area site shall demonstrate through hydrologic and hydraulic analysis, performed in accordance with standard engineering practice by a licensed professional engineer, that the cumulative effect of the proposal, when combined with all other existing and anticipated development within the basin based upon full development of the basin as envisioned in the applicable Community Plan or the Rural/Natural Resource Plan, will not result in any increase to the drainage hazard area elevation at any point in the community.

Notwithstanding this provision, an increase may be approved if the area in which the rise will occur contains no structures and the owner of such property signs a written acceptance of any increase in the drainage hazard area elevation.

Findings: The proposed development is not located in a drainage hazard area (i.e. an area subject to flooding as the result of a twenty-five-year storm). The development will impact the vegetative corridor associated with a wetland located on an adjacent parcel. The applicant has provided a hydrologic analysis within the preliminary drainage report submitted under Appendix D of this application. The stormwater conveyance system will be sized in the final design phase. A hydraulic analysis will be provided at that time. This standard is met.

421-7.7 Encroachments into a floodway allowed under Section 421-7.1 shall be designed so as to minimize the risk that the encroachment will catch substantial debris or otherwise significantly impede floodwater flows. Designs may include, but are not limited to, adequate sizing of openings, secured breakaway bridges, diverters or spacing of supports.

Findings: The Applicant is not proposing encroachments into the floodway. This standard is met.

421-7.8 The proposal will not increase the existing velocity of flood flows so as to exceed the erosive velocity limits of soils in the flood area. Energy dissipation devices or other measures to control the mean velocity so as not to cause erosion of the flood area may be used to meet this standard. "Open Channel Hydraulics" by V.T. Chow, McGraw-Hill Book Company, Inc., 1988, is presumed to be the best available reference for maximum permissible velocity. "Hydraulic Engineering Circular No. 14, "hydraulic Design of Energy Dissipators for Culverts and Channels,

published by the Federal Highway Administration, September 1983, is presumed to be the best available reference for the design of energy dissipators.

Findings: The Applicant has provided a detailed Preliminary Drainage Report under Appendix D which details the proposed stormwater management system, which will release the stormwater at predevelopment rates. This standard is met.

421-7.9 All cut and fill shall be structurally sounds and designed to minimize erosion. All fill below the flood surface elevation shall be accompanied by an equal amount of cut or storage within the boundary of the development site unless:

- **A. The proposed cut and fill is found to be in compliance with an adopted Drainage Master Plan; or**
- **B. Off-site excavation will be utilized to balance a fill, provided:**
  - **(1) The off-site excavation area will be part of the application for the development proposing to place the fill;**
  - **(2) The off-site excavation area will be located in the same drainage basin as the proposed fill area;**
  - **(3) The off-site excavation area will be located within points of constriction on the drainage system, if any, and as close to the fill site as practicable. The applicant's licensed professional engineer shall conduct a storage routing analysis to determine the location of the fill;**
  - **(4) The off-site excavation area will be constructed as part of the development placing the fill;**
  - **(5) Any use or future development of the excavated area shall comply with the standards of Section 421 and Section 422 if the area is designated as a Significant Natural Resource; and**
  - **(6) Ownership of the excavated area shall be by one of the following mechanisms:**
    - **(a) Dedication of the area to an appropriate public agency when a public agency is willing to accept the dedication;**
    - **(b) Ownership of the area by the applicant of the proposed development;**
    - **(c) Dedication of the development rights of the area to an appropriate public agency with ownership remaining with the property owner. Maintenance of the area shall be the responsibility of the applicant or property owner; and**
    - **(d) Deed or easement-restricted private ownership which prevents any use or future development of the area as specified by Section 421-7.9 B(5). Maintenance of the area shall be the responsibility of the applicant o property owner. A contract for conditions shall be recorded in the Department of Assessment & Taxation, Recording Division.**

Findings: The Applicant is not proposing any cut or fill within the flood plain or regulatory floodway. This standard is met.

421-7.10 There is adequate storm drainage behind a dike such as a lift pump or flap gate to drain the flood plain or drainage hazard area behind the dike.

Applicant's Findings: The site does not have a dike. The requirements of this section are not applicable.

421-7.11 That the environmental impact of the disturbance or alteration of riparian wildlife and vegetation has been minimized to the extent practicable as required by Section 422. Enhancement of riparian habitats through planting or other such improvements may be required to mitigate adverse effects. Significant features such as natural ponds, large trees and endangered vegetation within the flood area shall be protected when practicable.

Findings: The environmental impact of the disturbance has been minimized where possible. The site has been graded and revegetated to match the existing vegetation on site as practicable. The site improvements did not disturb significant natural features on the site. This standard is met.

421.7.12 Drainage systems shall be designed and constructed according to the adopted Drainage Master Plan for the area, if one exists.

Findings: The proposed drainage system has been designed according to all applicable standards. The applicant has submitted a preliminary drainage report under Appendix D of this application detailing the proposed system. This standard is met.

421-7.13 Proposed partitions and subdivisions shall minimize flooding by complying with the applicable standards of Sections 410, 421, 426, 605-3.2 and 610-3.1, and Clean Water Services Design and Construction Standards for sanitary sewer and surface water management.

421-7.14 Public utilities and facilities in proposed partitions and subdivisions shall be located and constructed in a manner that will minimize flood damage.

421-7.15 Proposed partitions and subdivisions shall provide adequate drainage to reduce exposure to flood damage by complying with the standards of Section 410 and applicable standards of Section 605-3.2 or 610-3.2, whichever is applicable.

Findings: The proposed development is not a partition or subdivision. This standard is met.

421-14 General Requirements and Prohibitions

421-14.1 Property owners shall maintain the flood area in such a manner as to prevent reduction of the natural carrying capacity. Maintenance outside of the public right-of-way shall be done by means of hand implements unless a development permit for an alteration is first obtained (lawn mowers are considered hand implements).

Findings: The subject site does not have mapped flood plain or floodway on site. The proposed development will not impact the carrying capacity of a flood area.

421-14.2 Storage of petroleum products, explosives, herbicides, pesticides, insecticides, poisons, defoliants, fungicides, desiccants, nematocides and rodenticide is prohibited.

421-14.3 Dumping of solid waste in the flood area is prohibited.

Applicant's Findings: The Applicant will not store the prohibited materials listed in 421-14.2 within the flood area. The Applicant will not dump solid waste into the flood area. This standard is met.

421-14.4 Section 421 is in addition to any and all Federal, State or special district laws and regulations in force at the time of approval of the development permit. Any permits required from a local, state or federal agency shall be obtained prior to any development within the flood area.

Findings: The applicant will obtain any required permits from local, state or federal agencies. This standard is met.

421-14.5 The standards and criteria of this Section are cumulative and in addition to any other requirements of this Code. Any more stringent provisions of an applicable Community Plan or the Rural/Natural Resource Plan Element shall control.

Findings: The Applicant has addressed all relevant sections of the development code. This standard is met.

421-14.6 The Review Authority may condition any Type II or III development permit to the extent necessary to avoid any specifically identified deleterious impacts on the natural integrity of the flood area or to wildlife and vegetation within the flood area.

Findings: The Applicant understands that the Review Authority may condition the development to the extent necessary to avoid any specific identified deleterious impacts on the natural integrity of the flood area. This standard is met.

421-14.7 In the case of the partitioning or subdivision of land for the location of structures for human occupancy, such site shall provide a building site, which includes the ground under the structure plus a ten (10) foot setback around all sides of the structure, with a ground elevation at least one (1) foot above the flood surface elevation. No partition or subdivision shall create a lot whose dimensions do not meet this standard.

Findings: The Applicant is not proposing partition or subdivision. The requirements of this section are not applicable.

421-14.8 There shall be no dumping of fill in a flood area without a flood plain or drainage hazard area alteration permit.

Findings: The Applicant is not proposing dumping or filling in the flood area. This standard is met.

421-14.9 The applicant shall submit to the Floodplain Administrator technical data as set forth in Section

Findings: The Applicant has submitted the materials required by this section. This standard is met.

421-14.10 prior to any watercourse alteration that will result in the expansion, relocation or elimination of the special flood hazard area. 421-14.10 Within six (6) months of project completion, an applicant who obtains a CLOMR from FEMA, or whose development alters a watercourse, modifies floodplain boundaries, or Base Flood Elevations shall obtain from FEMA a Letter of Map Revision (LOMR) reflecting the as-built changes to the Flood Insurance Study (FIS) and/or Flood Insurance Rate Map (FIRM).

Findings: The proposed development will not result in the expansion, relocation or elimination of the special flood hazard area. This standard is met.

422 Significant Natural Resources

422-3.3 Development within a Riparian Corridor, Water Areas and Wetlands, and Water Areas and Wetlands and Fish and Wildlife Habitat:

A. No new or expanded alteration of the vegetation or terrain of the Riparian Corridor (as defined in Section 106) or a significant water area or wetland (as identified in the applicable Community Plan or the Rural/Natural Resource Plan Element) shall be allowed except for the following:

(1) Crossings for streets, roads or other public transportation facilities.

(2) Construction or reconstruction of streets, roads or other public transportation facilities.

(3) Installation or construction of the following utilities: sewer and water lines, electric, communication and signal lines; and gas distribution and transmission lines.

(4) Wildlife viewing areas and recreation or nature trails.

(5) Bank maintenance, restoration or stabilization, including riprapping for erosion control, of a river or other watercourse or body of water provided there is compliance with the requirements of Section 421-4.6. This use is not subject to Section 422-3.5 or Section 422-3.6.

(6) Detached dwellings and accessory structures on a lot of record, provided there is insufficient suitable, existing buildable land area to permit construction outside the riparian corridor (as defined in Section 106) or a significant water area or wetland (as identified in the applicable Community Plan or the Rural/Natural Resource Plan) and all required local, state or federal permits are obtained.

(7) Where it can be demonstrated, with concurrence of the Clackamas District biologist or other applicable district biologist of the Oregon Department of Fish and Wildlife, that a riparian corridor, Water Areas and Wetlands, or Water Areas and Wetlands and Fish and Wildlife Habitat has been degraded, an enhancement of these areas which conforms to the definition and criteria listed in Section 422-3.4 may be permitted through a Type II procedure.

(8) Enhancement or alteration of a non-degraded portion of these areas is permitted when it is in conjunction with and it is needed to support the enhancement of the degraded area. Where development is proposed that would have negative impacts on these areas it is the county's policy to follow state and federal regulatory guidelines for mitigation proposals.

(9) All activities and uses associated with an expansion of Barney Reservoir; including but not limited to impoundment structures, water diversion and transmission facilities, road construction and related land alterations. Such activities and uses may be permitted through a Type III procedure.

(10) In addition in the Rural/Natural Resource Area:

(a) Propagation or harvesting of timber for personal consumption, provided that the use of a caterpillar tractor, yarder, backhoe, grader or similar heavy mechanized equipment is prohibited;

(b) Commercial forestry activities when in compliance with the Oregon Forest Practices Act and Administrative Rules; and

(c) Farming or raising of livestock not utilizing a structure.

(d) Operations for the exploration for and production of geothermal resources, oil and gas.

(11) All public use airport related uses and activities allowed pursuant to Section 387-4.

(12) Wetland mitigation, creation, enhancement and restoration within public use airport approach surface areas and airport direct impact boundaries shall be allowed upon demonstration of compliance with the requirements of Section 388-9.

B. Where development or alteration of the riparian corridor is permitted under the above exceptions, the flood plain and drainage hazard area development criteria shall be followed.

C. Fencing adjacent to stream buffers or other wildlife habitat areas shall be designed to allow the passage of wildlife. Designs must incorporate openings appropriately sized and spaced to accommodate passage of wildlife common to urban Washington County (common mammals needing access to streams in urban Washington County include but are not limited to: deer, beaver, coyote, muskrat, rabbit, raccoon and skunk).

422-3.6 For any proposed use in a Significant Natural Resource Area, there shall be a finding that the proposed use will not seriously interfere with the preservation of fish and wildlife areas and habitat identified in the Washington County Comprehensive Plan, or how the interference can be mitigated. This section shall not apply in areas where a Goal 5 analysis has been completed and a program decision has been adopted that allows a "conflicting use" to occur pursuant to OAR 660-023-0040(5)(c) (effective September 1, 1996).

Findings: The Applicant has provided a Natural Resource Assessment under Appendix D of this land use application. The proposed development will impact a portion of the vegetative corridor associated with a wetland located on the site south of the subject site, including a Goal 5 Resource Area and Title 13 Regional Riparian area along the southern property line (Class I and II). This area is under the jurisdiction of Clean Water Services, and as such, the Applicant has provided a mitigation and enhancement plan within the Natural Resource Area Report.

Clean Water Services requires the application of a Tier II Alternatives Analysis demonstrating that the proposed development minimizes incursion into identified Sensitive Areas or Vegetated Corridors, enhances existing areas where necessary, and no practicable alternative to the location of redevelopment exists.

There will be three areas of remaining vegetated corridor, 2,240 square foot / 0.05 acres located within the southwestern portion of the site, and two areas totaling 1,613 square feet / 0.04 acres in the eastern portion of the site. All three of these areas are in degraded corridor condition, and therefore, will be enhanced to good corridor condition by removing and controlling undesirable vegetation and revegetating these areas with native species of trees and shrubs. Enhancement of these areas, in addition to the proposed VC creation area, will result in a total of 10,566 square feet / 0.24 acres of contiguous good condition vegetated corridor, which is an increase in the area and improvement of the vegetated corridor condition than is currently present. Within the planting areas, bare areas greater than 25 square feet will be seeded with a native seed mix. Trees and shrubs to be installed in the mitigation and enhancement areas will be in compliance with the spacing, density, and native species requirements per CWS Current Design & Construction Standards. The proposed plantings will also be in compliance with BPA corridor standards for height requirements.

Restoration and enhancement will be consistent with Clean Water Services' standards The overall goal will be to enhance the corridor to "good" condition, as required by Clear Water Services. Plant locations to be determined by the landscape architect and incorporated into the landscape plan. The vegetated corridor will be contained in a conservation tract and easement and shall not be part of any parcel to be used fo future development.

In addition to the replacement mitigation described above, the applicant will also enhance the degraded wetland at the east end of the site by removing invasive non-native species and planting native species of shrubs and herbs (Table 5, Figure 5). The enhancement of degraded wetland will provide a public benefit to water quality. Several large boulders that are present within the eastern end of the site will be left in the VC creation and enhancement areas and will further uplift the natural resources on site by providing enhanced habitat for smaller animals, such as herptiles. Per THPRD's request, the applicant will also install a fence along the southern property line of the development site, adjacent to the gas station building and parking lot and

repair/fill-in a gap in the sidewalk along the south side of NW West Union Road just beyond the east end of the development site.

This standard is met.

423 Environmental Performance

The provisions of Section 423 are known as performance standards. All uses and activities shall observe these standards in order to achieve the purpose and objectives of this Code. Continued compliance is required and may be required to be demonstrated by the owner, if the Director has reason to believe incidence of noncompliance has occurred.

423-2 New Uses

Development after the effective date of this Code shall observe the following requirements:

423-2.1 When federal, state and local standards apply, the most restrictive shall govern.

423-2.2 Prior to issuance of a development permit or certificate of occupancy, the Director may require:

A. **Evidence that mandatory federal, state and local permits have been or will be obtained.**
B. **Information demonstrating that the proposed development complies with applicable standards set forth in this Section. This information may be required as a report of findings prepared by qualified engineers or other technical consultants.**

Findings: All mandatory federal, state and local permits will be obtained. The applicant will document compliance will all necessary standards.

423-3 Measurements

Accurate and representative measurements, as necessary, shall be made according to accepted engineering practice. Measurements shall be made at or anywhere outside the property lines of the property from which an emission is generated.

423-4 Air Quality

All development shall comply with the State Department of Environmental Quality Air Quality Standards.

423-5 Odor

All development shall comply with the State Department of Environmental Quality Standards pertaining to odor.

423-6 Noise

All development shall comply with the State Department of Environmental Quality Standards relating to noise. Demonstration of compliance may be required by the Review Authority.

Findings: The proposed development will comply with the State Department of Environmental Quality air, odor and noise standards.

423-7 Vibration

No development shall generate ground vibration which is perceptible by the Director beyond the property line of origin without use of instruments. Ground vibrations caused by motor vehicles, trains, aircraft, or temporary construction work are exempt from strict application of these standards, but good faith efforts to control such vibrations shall be made by the originator.

Findings: The proposed development will not generate ground vibration which is perceptible beyond the property line beyond the vibrations caused by construction or motor vehicles. This standard is met.

423-8 Heat and Glare

Heat and glare shall be limited as follows:

423-8.1 Except for exterior lighting, operations producing heat or glare shall be conducted entirely within an enclosed building.

423-8.2 Exterior lighting shall be directed entirely away from adjacent properties.

Findings: The proposed development will not produce heat or glare outside of the proposed structure. All exterior lighting will be directed away from adjacent properties. The applicant will provide a lighting plan which meets these standards prior to applying for a site development permit. This standard is met.

423-9 Storage

423-9.1 All materials, including wastes, shall be stored and all grounds maintained in a manner which will not attract or aid the propagation of insects or rodents or create a health hazard.

423-9.2 No open storage of materials and equipment shall be permitted unless contained by a site obscuring fence or landscaped screening.

423-9.3 Fencing will be allowed between the required landscaping and use where necessary to protect the property concerned or to protect the public from a dangerous condition subject to the following provisions:

A. No fence shall be constructed in the required setback from the public road right-of-way.

B. Fences shall be constructed as required through development review.

C. Fencing or sight obscuring screening for storage areas must be at least six (6) feet, but no more than ten (10) feet high.

Findings: The waste enclosure will be constructed of brick and cultured stone and will screen the waste bins. The waste enclosure is located at the southern property line, away from the public right-of-way and will not obstruct sight-distance. This standard is met.

423-9.4 Storage of Hazardous Materials

Developments which store hazardous materials must comply with state standards, OAR 340-063, and the federal standards, 40 CFR Part 262 and 264 and shall demonstrate such compliance. All hazardous materials must be stored above ground. Transport of and disposal of such materials shall be in conformance with all applicable local, state and federal regulations with such compliance demonstrated.

Findings: The proposed development will comply with all state and federal standards for material storage.

423-10 Drainage and Waste Water

All development shall comply with the state Department of Environmental Quality Water Quality Standards for all runoff, drainage and waste water.

Findings: The proposed development will comply with the DEQ water quality standards for runoff, drainage and wastewater. A composite utility plan and preliminary drainage report have been submitted with this application.

423-11 Adequate Water Supply

All development shall be required to have an adequate water supply. Adequacy shall include:

423-11.1 Adequate supply for the use prior to issuance of a building permit (see Section 501-7.1, Critical Services).

Findings: A Service Provider Letter has been provided by Tualatin Valley Water demonstrating that there is an adequate water supply to serve the site. A composite utility plan has been provided under Appendix E of this land use application.

423-12 Radioactive Materials

The handling and storage of radioactive materials, the discharge of radioactive materials into air or water, and the disposal of radioactive waste in connection with all uses shall be in conformance with all applicable local, state, and federal regulations with such compliance demonstrated.

Findings: The applicant is not proposing to store radioactive materials on site. The requirements of this section are not applicable.

423-13 Toxic or Noxious Matter

All development shall comply with the state Department of Environmental Quality standards pertaining to omission of toxic or noxious matter and such compliance shall be demonstrated.

Findings: The proposed development will comply with all state Department of Environmental Quality standards pertaining to omission of toxic or noxious matter. This standard is met.

423-14 Determination of Violation

Alleged violations of the performance standards set forth in this Section shall be determined and enforced in the following manner:

423-14.1 County Determination:

Where it can be determined by the Director or a state official, the determination shall be so made and an order of compliance requiring correction of the violation within a reasonable time period shall be issued. If necessary to eliminate a violation, the Director shall take or cause to

be taken, lawful action as provided for in the Washington County Community Development Code.

423-14.2 Third Party Determination:

Where determination of a violation entails the use of highly skilled personnel or expensive instruments not ordinarily available to the county, and when, in the judgment of the Director, a violation may exist, the Director shall so notify the person who owns or controls the use in question.

423-14.3 Notice:

The notice shall describe the particulars of the alleged violation and state the reasons why the Director believes the violation exists. The notice shall also require a determination of compliance or correction of the alleged violation within a reasonable time limit to be set by the Director. The notice shall further state that if the alleged violation is not corrected, a technical determination based on the performance standards set forth in this Code shall be made by qualified engineers or other technical consultants, and that if a violation as alleged is found, enforcement action shall be taken according to Section 215 of this Code.

423-15 Conflicting Provisions

Where standards set forth in this Section conflict with provisions elsewhere in the law, the more stringent shall govern

Findings: The applicant acknowledges the County's process for a violation. This standard is met.

429 Bicycle Parking

429-3 General Bicycle Parking Criteria

429-3.1 Bicycle parking requirements shall be provided in amounts specified for the particular use;

429-3.2 Requirements for a use not mentioned shall be the same as the most similar mentioned use, as determined by the Review Authority;

429-3.3 Required bicycle parking spaces shall be available for use by residents, guests, customers, patrons and employees only and shall not be rented, leased or assigned to any other person or organization. No parking of bicycles that are not associated with the legal use of the premises shall be permitted in the required parking areas. Bicycle parking spaces may only be rented or leased where required motor vehicle parking is rented or leased or at Transit Centers and Park and Ride lots.

429-4 General Requirements

429-4.1 Proper maintenance of bicycle parking facilities shall be a continuing obligation of the property owner.

429-4.2 In case of enlargement of a building or a change in the use of a building, the number of parking spaces required shall be based on floor area or capacity of the entire use of the building. If the building is part of a larger existing use with multiple buildings, only the subject building shall meet the parking requirements.

429-4.3 In the event several uses occupy a single structure or parcel of land, the total requirements for bicycle parking shall be the sum of the requirements of the several uses computed separately.

429-4.4 All applications for a development permit shall include a plot plan drawn to scale, showing the bicycle parking facilities to be provided. The required plot plan shall include but not be limited to:

- **A. Location of short-term and long-term bicycle parking facilities;**
- **B. Bicycle parking access to the public right-of-way, existing and proposed bikeways, and well-used building entrances;**
- **C. Circulation area necessary to serve bicycle parking facilities;**
- **D. Bicycle parking facility design;**
- **E. Bicycle parking space dimensions;**
- **F. Bicycle parking signing; and**
- **G. Bicycle parking lighting;**

Findings: The applicant has submitted a Site Plan set under Appendix E which provides the location and size of the provided bicycle parking. This standard is met.

429-6 Number of Bicycle Parking Spaces Required

The minimum number of bicycle parking spaces required for long-term use is specified by land use category and shall be in accordance with Table A. The minimum number of bicycle parking spaces required for short-term use is specified by land use category and shall be in accordance with Table B.

Table A.

429-6.3	Business and Commercial	
D.	Retail stores, except as otherwise specified herein	Two (2) spaces, or one (1) space for each fifty (50) employees on maximum working shift

TABLE B

MINIMUM REQUIRED SHORT-TERM BICYCLE PARKING SPACES

429-6.8	Business and Commercial	
G.	Retail stores, except as otherwise specified herein	Two (2) spaces or one (1) space for each five thousand (5000) square feet of gross floor space

Findings: The applicant has provided two short-term bicycle parking stalls and two long-term bicycle parking stalls, consistent with the requirements in Table A and B. This standard is met.

429-7 Bicycle Parking Location

- **A. Short-term:**

Short-term parking must be located on site and within fifty (50) feet of a well-used building entrance. In those instances where motor vehicle parking is adjacent to a use (such as a convenience market), short-term parking shall be located within thirty (30) feet from the entrance. Bicycle parking shall have direct access to public right-of-way, existing and proposed bikeways and the main entrance of the principal use. With the permission of the Director, short-term parking may be located in the public right-of-way. Where no short-term bicycle parking is required, long-term parking spaces shall be made available for short-term bicycle parking.

All other parking requirements identified in Subsections 429-7 C., 1-4 shall also be met for short-term parking.

B. Long-term:

Long-term parking shall be located in a secure well lighted area no farther from a well-used building entrance than the nearest long-term motor vehicle parking space [with the exception of disabled parking or clustered parking allowed consistent with 429-7 C. (1)]. Bicycle parking may also be provided inside a well-marked area within a building in a secure and accessible location. Outside bicycle parking facilities shall have direct access to public right-of-way and existing and proposed bikeways. All other parking requirements identified in Subsection 429-7 C. (1 - 4) shall also be met for long-term parking.

C. All Bicycle Parking:

(1) On property with multiple uses, buildings, building entrances, or parking lots (such as in a commercial center or college) bicycle parking may be clustered in one (1) or more locations. Short-term parking shall be located on site and within fifty (50) feet of a well-used building entrance for which the parking is intended and must meet all other requirements for bicycle parking as found in Subsection 429-7 A. Long-term parking shall be located in a secure well lighted area and have direct access to public right-of-way and existing and proposed bikeways. Such parking shall be located in areas which offer security and convenience to bicyclists.

(2) Bicycle parking facilities shall be separated from motor vehicle parking and maneuvering areas by a barrier or a minimum of five (5) feet. Areas set aside for required bicycle parking must be clearly marked and reserved for bicycle parking only.

(3) Bicycle parking shall not obstruct pedestrian walkways.

(4) If a portion of motor vehicle parking spaces are protected from precipitation, the same percentage of bicycle parking spaces must be covered by an awning, eave, overhang, or other means. If a parking structure is provided for motor vehicles, bicycle parking spaces must also be provided for within the parking structure.

Findings: Bicycle parking has been provided within 50 feet of the main building entrance. The parking is south of the entrance in alignment with the vehicle parking stalls. This standard is met.

429-8 Bicycle Parking Facility Design

A. **Bicycle parking facilities shall offer security in the form of either a lockable enclosure in which the bicycle can be stored or a stationary rack to which the bicycle can be locked.**
B. **Bicycle racks must hold bicycles securely by means of the frame. The frame must be able to be supported so that the bicycle cannot be pushed or fall to one side in a manner that will damage the wheels. Bicycle racks shall accommodate:**
    (1) **Locking the frame and one (1) wheel to the rack with a high-security U-shaped shackle lock;**
    (2) **Locking the frame and both wheels to the rack with a chain or cable not longer than six (6) feet without removal of the front wheel.**
C. **Bicycle parking facilities at Transit Centers and Park & Ride Lots shall offer security in the form of either a lockable enclosure in which the bicycle can be stored or in an area where parking would be monitored by a concessionaire or parking lot attendant.**

    All bicycle racks, lockers, or other facilities shall be permanently anchored to the surface of the ground or to a structure. Pavement surrounding outdoor parking facilities shall consist of a smooth, durable and well-drained surface.

Findings: Bicycle parking has been provided with a stationary rack that holds bicycles securely by means of frame. This standard is met.

429-9 Bicycle Parking Space Dimensions

Each required bicycle parking space shall be at least twenty-two (22) inches by six (6) feet and, when covered, provide a vertical clearance of seven (7) feet. An aisle for bicycle maneuvering shall be provided and maintained beside or between each row of bicycle parking. This aisle shall be at least five (5) feet wide. Bicycle racks shall also be located so that at least two (2) feet shall be provided and maintained in front of and behind each row of bicycle parking spaces so as not to impede the use of the rack (see figure 1).

429-10 Bicycle Parking Signing

Where bicycle parking facilities are not directly visible and obvious from the public right(s)-of-way, entry and directional signs shall be provided to direct bicyclists from the public right-of-way to the bicycle parking facility. Bicycle parking signing shall be in accordance with Subsection 414.

Findings: Each bicycle parking space is twenty-two inches by six feet. This standard is met.

429-11 Bicycle Parking Lighting

Lighting shall be provided in a bicycle parking area so that all facilities are thoroughly illuminated and visible from adjacent sidewalks or motor vehicle parking lots during all hours of use. If lighting for other purposes satisfies the bicycle parking lighting requirements, separate lighting is not required. Bicycle parking lighting shall be in accordance with Section 415.

Findings: The Applicant has submitted a Site Photometrics Plan (Sheet E1.0) detailing the anticipated distribution of proposed lighting. Facilities will be illuminated and visible from the adjacent sidewalks and parking area as required by this section. This standard is met.

430 Special Use Standards

430-35 - Convenience Grocery

A convenience grocery store is one which sells frequently purchased foods and sundries to residents of an immediate area and/or to the traveling public. Convenience grocery stores may be permitted subject to the following:

430-35.1 Entrances and Exits:

A. Access shall be determined based upon a site inspection which considers the following:

(1) Site Size;

(2) Road Classification;

(3) Sight distance and allowed m.p.h.; and

(4) Adjacent development.

B. Consolidation of access with adjoining uses shall be encouraged.

Findings: The Applicant's proposed access points have been selected in order to create a mid-block access to the site from West Union and a second access point which will create a fourth leg of an existing intersection. The proposed access point is the most logical access point given the site's frontage and the proposed use which will require large fuel trucks to enter and exit the site. This standard is met.

430-35.2 In consideration of possible negative impact on nearby residential uses, lighting, sign illumination, height and hours of operation may be restricted through the development review process.

Findings: The Applicant has submitted a Site Photometrics Plan (Sheet E1.0) detailing the anticipated distribution of proposed lighting. Lighting has been designed to minimize impacts on surrounding residential uses. The proposed pole-mounted sign will not be illuminated. The proposed height and hours of operation are in conformance with the requirements of the underlying zoning district and will not negatively impact surrounding uses. This standard is met.

430-35.3 When a convenience grocery is located in the R-25+ District, it shall be pedestrian oriented.

Findings: The proposed development is not located in the R-25+ District. The requirements of this section are not applicable.

430-35.4 When a convenience grocery is located in the Office Commercial District, hours of operation shall be limited to normal hours of operation in the Office Commercial District. Normal hours of operation are 7:00 a.m. to 6:00 p.m.

Findings: The proposed development is not located in the Office Commercial District. The requirements of this section are not applicable.

430-41 - Drive-in or Drive-up Establishment

Any establishment or portion of an establishment designed and operated to serve a patron while seated in an automobile (not including drive-in theaters).

430-41.1Entrances and Exits:

A. Access shall be determined based upon a site inspection which considers the following:

(1) Site size;

(2) Road Classification;

(3) Sight distance and allowed m.p.h.;

(4) Adjacent development.

B. Consolidation of access with adjoining uses shall be encouraged; and

C. Driveway entrances and exits shall be clearly marked.

Findings: The Applicant's proposed access points have been selected in order to create a mid-block access to the site from West Union and a second access point which will create a fourth leg of an existing intersection. The proposed access point is the most logical access point given the site's frontage and the proposed use which will require large fuel trucks to enter and exit the site. This standard is met.

430-41.2 Drive-in facilities located in the parking lot or part of a larger commercial center shall not have separate access points to the street and shall utilize the center's access points;

Findings: The proposed convenience store with a drive-thru and fuel station will share the two access points on site. No other uses are proposed on site. This standard is met.

430-41.3 Lighting, sign illumination and height, and hours of operation may be restricted through the development review process to insure compatibility within the Office Commercial District; and

Findings: The Applicant has submitted a Site Photometrics Plan (Sheet E1.0) detailing the anticipated distribution of proposed lighting. Lighting has been designed to minimize impacts on surrounding residential uses. The proposed pole-mounted sign will not be illuminated. The proposed height and hours of operation are in conformance with the requirements of the underlying zoning district and will not negatively impact surrounding uses. This standard is met.

430-41.4 In an Office Commercial District, hours of operation shall be limited to normal hours of operation in the Office Commercial District. Normal hours of operation are 7:00 a.m. to 6:00 p.m.

Findings: The proposed development is not located within the Office Commercial District. This requirement is not applicable.

430-123 - Service Station and/or Car Wash

A commercial establishment primarily involved with sales and services of motor fuels. In addition, the following may occur: supplying goods and services generally required in the operation and maintenance of automotive vehicles, including sales of petroleum products, sale and servicing of tires, batteries, automotive accessories and replacement items; car washing and lubricating services; the performance of minor automotive maintenance and repair, and the supplying of other incidental customer services and products. No merchandise or incidental items, including prizes or premiums, shall be displayed outside an enclosed building. Major automotive repairs, painting and fender work are excluded. Service Stations and car washes are subject to the following:

430-123.1 Entrances and Exits

- **A. Access shall be determined based upon a site inspection which considers:**
  - **(1) Site size;**
  - **(2) Road classification;**
  - **(3) Sight distance and allowed m.p.h.; and**
  - **(4) Adjacent development.**
- **B. Consolidation of access with adjoining uses shall be encouraged, particularly when the proposed driveway is within ten (10) feet of the side property line.**

Findings: The Applicant's proposed access points have been selected in order to create a mid-block access to the site from West Union and a second access point which will create a fourth leg of an existing intersection. The proposed access point is the most logical access point given the site's frontage and the proposed use.

430-123.2 Lighting, sign illumination, height and hours of operation may be restricted through the development review process in consideration of possible negative impact on nearby residential uses.

Findings: The Applicant has submitted a Site Photometrics Plan (Sheet E1.0) detailing the anticipated distribution of proposed lighting. Lighting has been designed to minimize impacts on surrounding residential uses. The proposed pole-mounted sign will not be illuminated. The proposed height and hours of operation are in conformance with the requirements of the underlying zoning district and will not negatively impact surrounding uses. This standard is met.

430-123.3 No display of merchandise outside the building except small items such as oil, windshield wiper blades and tires (limited to one rack of twenty [20]).

Findings: The applicant acknowledges that the display of merchandise outside the building is limited to small items as listed above.

430-123.4 No outside storage or sale of vehicles is permitted for more than twenty-four (24) hours per vehicle.

Findings: The applicant acknowledges that no outside storage or sale of vehicles is permitted for more than twenty-four (24) hours per vehicle.

430-123.5 Hours of operation shall be limited to normal hours of operation in the Office Commercial District. Normal hours of operation are 7:00 a.m. to 6:00 p.m.

Findings: The proposed development is not located in the Office Commercial District. The requirements of this section are not applicable.

501 Public Facility and Service Requirements

501-6 Exceptions for Critical and Essential Services

501-6.1 Development proposals that cannot ensure critical and essential services other than those required by Sections 501-8.1 B. (4) or 501-8.2 G. [Half-street improvements] within the required time frames shall be denied unless all of the following findings can be made:

B. The approval of the development application will not substantially interfere with the ability to later provide the particular inadequate facility(ies) or service(s) to anticipated uses in the vicinity of the subject property;

Findings: The applicant does not propose half-street improvements at this time as NW West Union Road has been identified as a future Capital Improvement Project by the County. The applicant is providing an 18-foot right-of-way dedication for NW West Union Road along the property frontage in order to accommodate future improvements. This standard is met.

C. The approval of the development application without the assurance of the particular inadequate facility(ies) and service(s) will not cause a danger to the public or residents in the vicinity of the subject property; and

Findings: Attached to this application is a Transportation Operations Assessment submitted under Attachment D, which concludes that the existing transportation and access facilities will be able to accommodate the proposed development. Sidewalk replacement will be provided in the areas disturbed by the development to ensure the proposal will not cause a danger to the public or nearby residents. This standard is met.

501-6.3 Development proposals that cannot ensure improvements required by Sections 501-8.1 B. (4) or 501-8.2 G. [Half-street improvements] within the required time frames shall be denied unless the Review Authority determines that the findings required under Sections 501-6.1 B.

and C. plus the findings required by at least one of Sections 501-6.3 A. through C. below can be made.

A. Within five hundred (500) feet of the subject site (not including the subject site), measured in each direction along the frontage road, but not beyond the nearest intersecting Collector or Arterial road:

(1) No similar frontage improvements exist on the same side of the street as the subject site; and

(2) Seventy-five (75) percent or more of the parcels fronting on the same side as the subject site cannot be divided based on the allowed minimum lot size or density requirements of the applicable land use district(s).

Findings: NW West Union Road is planned for a future widening of the roadway to accommodate a second westbound through lane. These improvements have not been developed on the south side of NW West Union Road within 500 feet of the subject property boundaries, measured in each direction along West Union Road but not beyond its intersection with NW 185th Avenue. Additionally, more than 75% of the parcels fronting on the south side of West Union Road cannot be divided based on the allowed minimum lot size requirements of the land use district in which it resides.

The applicant is providing an 18-ft dedication of right-of-way for the purpose of expanding the roadway, which is a sufficient and proportionate contribution from the property owner.

Therefore, and in accordance with 501-6.3(A), half street improvements are not required in conjunction with the development of the proposed project.

501-8 Standards for Development

501-8.1 Critical Services

A. An applicant for development shall provide documentation from the appropriate non-county service provider that adequate water, sewer and fire protection can be provided to the proposed development prior to occupancy. The documentation shall be no more than ninety (90) days old.

Findings: The Applicant has provided all necessary service provider letters to document that the site is able to be served by critical services, including water, sewer and fire protection. This standard is met.

B. No development shall be approved without an adequate level of access to the proposed development in place or assured at the time of occupancy, with "adequate" defined for critical road services as:

(1) Those Local and Neighborhood Route roads, new or existing, lying wholly within the property's real property boundaries or future roadway alignments designated in the Washington County Transportation System Plan (TSP). Roadways shall be developed in accordance with Washington County's Road

Design and Construction Standards and roadway alignments designated in the TSP may be adjusted within the subject property as approved by the County Engineer; and

Findings: The subject site is not located on local or neighborhood route roads. The requirements of this section are not applicable.

(2) For those access roads lying adjacent to and between the property owner's proposed development and the nearest adequate Collector or Arterial road, as defined in Essential Services, or future roadway alignments designated in the Washington County Transportation System Plan, likely to attract the highest traffic volume from the proposed development (based on existing and/or forecast traffic volumes) the road(s) must meet the following minimum standards:

Findings: The subject site is not located on an access road. The requirements of this section are not applicable.

(3) For a proposed development which abuts an existing Local or Neighborhood Route stub street, the applicant must develop a site plan which extends the stub street into or through the development site.

Findings: The subject site does not abut an existing Local or Neighborhood Route stub street. The requirements of this section are not applicable.

(4) A half-street improvement shall be constructed along the site's frontage of existing Local and Neighborhood Route roads which abut the site and are not improved in accordance with the Washington County Transportation System Plan and Road Design and Construction Standards.

Applicant's Findings: The subject site does not abut an existing Local or Neighborhood Route stub street. The requirements of this section are not applicable.

C. No development shall be approved without adequate drainage as prescribed by the county Drainage Master Plan or the adopted Drainage Ordinance or Resolution and Order, and adequate provisions for stormwater, surface water and water quality management as required by the Clean Water Services' "Design and Construction Standards for Sanitary Sewer and Surface Water Management" or its successor.

Findings: The applicant has provided a preliminary drainage report which provides a detailed analysis of the proposed drainage system on site. The proposed system has been designed to meet all applicable standards.

D. No development shall be approved on property that is located outside of the Washington County Urban Road Maintenance District. The subject property shall be annexed into this district prior to being granted final approval of a development

application. For applications where both preliminary and final approval are not required, the property shall annex into the district prior to being granted preliminary approval.

Findings: The subject site is not located outside of the Washington County Urban Road Maintenance District. This standard is met.

E. For development in a Transit Oriented District, or development outside a Transit Oriented District but adjacent to a designated Special Area street, a nine (9) foot pedestrian/utility easement shall be recorded adjacent to frontage on a Special Area Neighborhood Route or Special Area Commercial street. A ten (10) foot pedestrian/utility easement shall be recorded adjacent to a Special Area Local street. If the required sidewalk width is greater than the sidewalk/utility easement, additional sidewalk easements shall be recorded to the outside edge of the required sidewalk.

Findings: The subject site is not located in a Transit Oriented District or a Special Area street. The requirements of this section are not applicable.

501-8.2 Essential Services

A. Service Provider Documentation

(1) An applicant shall provide documentation from the appropriate school district, police or sheriff department, transit agency, trail provider and highway department that adequate levels of service are available or will be available to the proposed development within the time-frames required by the service provider.

(2) If the service provider documents that an adequate level of service is not available or will not be available within the time-frame required, the service provider shall be requested to provide information regarding the service provider's ability to provide adequate levels of services and alternative means which could be employed to provide adequate levels of service. Documentation of adequacy and alternatives to provide adequate levels of services may include but are not limited to the following:

(a) Schools:

(a) Amount of bonded indebtedness;

(b) Use of double shifting;

(c) Extended school periods;

(d) Bussing to underutilized facilities;

(e) Year-round school;

(f) Construction of new facilities;

(g) Portable classrooms;

(h) Impact fees;

(i) Any combination of these or other alternatives.

(b) Police or Sheriff Services:

(i) Contracting with private agency;

(ii) Contracting with other public agency;

(iii) Impact fees;

(iv) Any combination of these or other alternatives.

(c) Provision of Transit Improvements:

(i) All applications subject to Article V shall provide documentation from the transit agency which demonstrates whether or not an appropriate level of transit access to the proposed site exists. The documentation from the Transit District shall indicate: a) whether existing transit service exists near the site, and if it does b) whether bus stops located near the site are adequate, and, if not, what improvements are necessary.

(ii) Property located along a Regular Bus Service route, Frequent Bus Service route or an Existing High Capacity Transit station; as designated on the Transportation System Plan. If an existing or planned transit stop is located in front of the subject property, the Transit District may request via the service availability letter that the county require an easement or dedication of right-of-way at the stop in order to make future passenger boarding facility improvements.

(3) Additionally, the Transit District may relocate a stop or request via the service availability letter that the county require a new stop in front of the property along with an easement at the stop. The Transit District shall make the determination as to whether or not additional right-of-way or an easement is necessary.

(iii) Properties subject to this section may also be subject to more expansive transit related requirements as set forth in Section 380, Convenient Access to Transit Overlay District.

(d) Regional Trails

(a) The applicant shall provide documentation from the current or identified long-term trail provider about needed open space or easement reservations or dedications and/or any necessary improvements for any identified Regional Trail on the Transportation System Plan; and

(b) The applicant shall include in the submitted site plan any open space or easement reservation or dedication area and/or off-street trail, pathway or walkway identified by the trail provider in the documentation provided pursuant to (i) above.

Findings: The applicant has provided Service Provider Letters from all necessary services, as identified in the pre-application conference notes documenting adequate service for the site.

B. Adequate Level of Arterial and Collector Roads

(1) No development shall be approved without an adequate level of Arterial and Collector roads available to the proposed development in place or assured at the time of occupancy. This requirement is satisfied by payment of the Transportation Development Tax. In addition, payment of the Transportation Development Tax is not an assurance for improvements required by Sections 501-8.2 C. through J. In addition to payment of the Transportation Development Tax an applicant shall, at a minimum, assure the following with said assurance provided prior to issuance of a building permit:

(1) All identified safety improvements within the impact and analysis area (pursuant to Resolution and Order No. 86-95 "Determining Traffic Safety Improvements under the Traffic Impact Fee Ordinance - Process Documentation" as modified or updated), shall be constructed prior to occupancy of the development;

(2) On-site road drainage is adequate to protect the facility. On-site means all lands in the land use application and one-half (1/2) the right-of-way of existing roads lying adjacent to such lands;

(3) Entering sight distance meets standards as specified in "A Policy on Geometric Design of Highways and Streets," American Association of State Highway and Transportation Officials (AASHTO);

(4) Right-of-way on or adjacent to the frontage property meets Washington County Functional Classification Standards including Streetscape Overlay and Enhanced Major Street Bikeway designations;

(5) Access to Arterials and Collectors is in accordance with Section 501-8.5; and

(6) Collectors or Arterials inside the UGB that abut a site and have an existing gravel surface must be brought up to urban standards in accordance with Section 501-8.2 E.

C. Street Lighting

(1) For all new Local, Neighborhood Route, Collector and Arterial streets, and half-street improvements an applicant shall provide street lighting consistent with county engineering standards and procedures and the requirements of the electrical utility company providing service to the area. The applicant shall ensure the construction, maintenance and power costs of street light facilities through the annexation and petition for service to an existing county service district for lighting or other funding method approved by the County Engineer.

D. Applicants shall be required to dedicate or reserve appropriate right-of-way for the planned transit corridor if it is determined in the development review process that the county has the funds available to pay for the land to be acquired or the applicant chooses to receive the density bonus provided in Section 375-13.2.

Findings: The applicant is providing an 18-foot right-of-way dedication for NW West Union Road along the property frontage. NW West Union Road has been identified as a future Capital Improvement Project by the County. Additionally, the applicant will provide a fourth leg to the existing three leg intersection on the site. Sidewalk replacement will be provided in the areas disturbed by the development.

E. Gravel roads are unacceptable for development within the Urban Growth Boundary and they shall be improved in accordance with the Washington County Transportation System Plan and Road Design and Construction Standards, including the installation of street lights consistent with County engineering standards and procedures and the requirements of the electrical utility company providing service to the area. The applicant shall ensure the construction, maintenance and power costs of street light facilities through the annexation and petition for service to an existing county service district for lighting or other funding method approved by the County Engineer.

Findings: The applicant is not proposing gravel roads. The requirements of this section are not applicable.

F. Future alignments of Collectors or Arterials as designated on the Transportation System Plan (TSP) or an adopted study, lying within or adjacent to the development's boundary shall be constructed in accordance with the Washington County TSP and Road Design and Construction Standards. Roadway alignments identified in the TSP may be adjusted within the subject property, as approved by the County Engineer.

Findings: The subject site is not located in an area that has a future alignment of a collector or arterial as designated on the TSP. The requirements of this section are not applicable.

G. A half-street improvement shall be constructed along the site's frontage of existing Collector and Arterial roads which abut the site and are not improved in accordance with the Washington County Transportation System Plan and Road Design and Construction Standards.

Findings: The applicant is providing an 18-foot right-of-way dedication for NW West Union Road along the property frontage. NW West Union Road has been identified as a future Capital Improvement Project by the County. Additionally, the applicant will provide a fourth leg to the existing three leg intersection on the site. Sidewalk replacement will be provided in the areas disturbed by the development.

H. For development in a Transit Oriented District, a nine (9) foot pedestrian/utility easement shall be recorded adjacent to frontage on a Special Area Collector street. If

the required sidewalk width is greater than this sidewalk/utility easement, additional sidewalk easements shall be recorded to the outside edge of the required sidewalk.

Findings: The subject site is not located in a Transit Oriented District or a Special Area street. The requirements of this section are not applicable.

I. Where off-site road improvements are otherwise required as a condition of development approval, they shall include facilities accommodating convenient pedestrian and bicycle travel, including bicycle ways along Arterials and Collectors. The level of pedestrian and bicycle improvement shall be determined by the Review Authority, based upon the impact of the proposed development.

Findings: The applicant is providing an 18-foot right-of-way dedication for NW West Union Road along the property frontage. NW West Union Road has been identified as a future Capital Improvement Project by the County. Additionally, the applicant will provide a fourth leg to the existing three leg intersection on the site. Sidewalk replacement will be provided in the areas disturbed by the development.

J. When a development site includes frontage on a roadway that is identified as a "Pedestrian Parkway" or "Streetscape Overlay" on the Pedestrian System Map in the Transportation System Plan, the Director shall determine if additional right-of-way, setbacks, easements or right-of-way reservations are required so that implementation of Pedestrian System designations will not be precluded.

Findings: The applicant is providing an 18-foot right-of-way dedication for NW West Union Road along the property frontage. NW West Union Road has been identified as a future Capital Improvement Project by the County. Additionally, the applicant will provide a fourth leg to the existing three leg intersection on the site. Sidewalk replacement will be provided in the areas disturbed by the development.

K. Law Enforcement Services

(1) No development shall be approved on property that is located outside of the Washington County Enhanced Sheriff's Patrol District. The subject property shall be annexed into the district prior to being granted final approval of a development application. For applications where both preliminary and final approval are not required, the property shall annex into the district prior to being granted preliminary approval.

Findings: The applicant has provided a Service Provider Letter from the Washington County Sheriff's office documenting that the site can be adequately served law enforcement.

L. Applications may be conditioned to provide on- and off-site Regional Trails including appropriate on-site open space or easement reservations or dedications, when identified by the appropriate agency. Applications shall address any regional trail, identified on the Transportation System Plan Pedestrian System map, or the applicable

community plan, that is adjacent to or in proximity to the subject site. Specifically, the applicant shall:

(a) Provide documentation from the current or identified long-term trail provider about needed open space or easement reservations or dedications and/or any necessary improvements for any Regional Trail or pathway identified on the Transportation System Plan Pedestrian System map or on the applicable community plan; and

(b) Show on the submitted site plans any open space or easement reservation or dedication area for any Regional Trail, pathway or walkway identified by the trail provider in the documentation provided pursuant to (a) above.

Findings: The subject site does not connect to any on- or off-site Regional Trails. The applicant has not provided additional regional trails.

501-8.3 Desirable Services

A. Pedestrian walkways, Community Trails and other off-street accessways, traffic calming devices, and mid-block crossings, pathways and bicycle facilities

(1) Applications may be conditioned to provide Community Trail connections identified on the Transportation System Plan Pedestrian System map, on- and off- site traffic calming devices, on- and off-site mid-block crossings, on- and off-site pedestrian walkways, off-street trails and pathways; and on- and off-site bicycle facilities, including appropriate open space or easement reservations or dedications, when identified by the appropriate agency and a direct impact or benefit to the proposed use is identified.

Mid-block crossings or traffic calming devices may be required if all the following circumstances are met:

(a) The County Engineer makes a written determination that traffic calming devices or mid-block crossings are necessary.

(b) Placement of traffic calming devices on or within the pavement must be coordinated with fire protection service provider.

(c) Traffic calming devices and mid-block crossings shall be constructed in accordance with the Road Design and Construction Standards.

Findings: The subject site does not connect to any on- or off-site Regional Trails. The applicant has not provided additional regional trails. The proposed development does not include any proposed traffic calming devices, mid-block crossings, off-street trails and pathways. The applicant is providing a sidewalk connection between the proposed building entrance and the sidewalk along the frontage. This standard is met.

(2) Applications shall address any Community Trail, off-street trail, pathway, walkway or other feature identified on the Transportation System Plan

Pedestrian System map or the applicable Community Plan (including facilities identified in Pedestrian Connectivity Areas), that is on, adjacent to or in proximity to the subject site. Specifically, the applicant shall:

(a) Provide documentation from the current or identified long-term trail provider about needed open space or easement reservations or dedications and/or any necessary improvements for any identified Community Trail, on- or off-site walkway, or pathway; and

(b) Include in the submitted site plan any open space or easement reservation or dedication area and/or Community Trail, off-street trail, pathway or walkway identified by the trail provider in the documentation provided pursuant to (a) above.

Findings: The subject site does have any identified community trails, off-street trails, pathways, walkways or other features on the Transportation System Plan Pedestrian System map or the applicable Community Plan. This standard is met.

B. Park and recreation facilities

(1) Properties not currently located within the boundary of a Park District shall annex to the District when the following conditions are met:

(a) The property lies within an area identified for park service by the Park District in an urban service agreement; or,

(b) If no urban service agreement applies to the property, the property lies between the Hillsboro, Tigard and Portland Urban Service Boundaries or lies within an area for which the District is designated a party in a cooperative agreement; and

(c) The Park District has adopted a Park Master Plan for the area the property is located in.

(2) Provision of park and recreation services to properties added to the UGB after 1998:

(3) No development shall be approved on property added to the UGB after 1998 when a Park District is identified as the long-term park and recreation service provider and the subject property is located outside of the Park District's boundary unless the property is annexed to the District.

(4) If the conditions in Subsection (1) and (2) exist, the development application shall not be approved unless the applicant has filed with the county a legally sufficient petition for annexation to the Park District containing the consent of all property owners and a majority of the electors for the property that is the subject of the application.

Further, the application shall be conditioned that documentation of final annexation approval be provided prior to issuance of final approval for land divisions and prior to issuance of final approval and building permits for other

development. The requirements of Subsections (1) and (2) may be waived only if the applicant provides documentation from the Park District that the District is unable or unwilling to accept annexation of the property into the District.

Findings: The subject site is located within the Tualatin Hills Park and Recreation District. This standard is met.

501-8.4 Dedication of Right-of-Way

Except as provided in Section 418-2.2, dedication of right-of-way shall be required pursuant to the classification of the facility as designated by the Washington County Transportation System Plan and based upon the county Road Standards.

Findings: The applicant has provided an 18-foot dedication of right-of-way to the County. This standard is met.

501-8.5 Access to public roads

All developments shall have legal access to a public road. Except for interim access as provided in Section 501-8.5 E. (Interim Access), access onto any public road in the unincorporated or incorporated urban area shall be permitted only upon issuance of an access permit upon demonstration of compliance with the provisions of the county road standards and the standards of Section 501.

A. Roadway Access

See following access diagram where R/W = Right-of-Way; and P.I. = Point-of-Intersection where P.I. shall be located based upon a 90 degree angle of intersection between ultimate right-of-way lines.

(1) Minimum right-of-way radius at intersections shall conform to the county Road Standards.

(2) All minimum distances stated in the following sections shall be governed by sight distance requirements according to county Road Standards.

(3) All minimum distances stated in the following sections shall be measured to the nearest easement line of the access or edge of travel lane of the access on both sides of the road.

(4) All minimum distances between accesses shall be measured from existing or approved accesses on both sides of the road.

(5) Minimum spacing between driveways shall be measured from Point "C" to Point "C" as shown below:

B. Roadway Access:

No use will be permitted to have direct access to a street or road except as specified below, or as provided in Section 501-8.5 E. (Interim Access), exceptions to access criteria are provided for in subsection C below. Access spacing shall be measured from existing or approved accesses on either side of a street or road.

(1) Local Streets

Minimum right-of-way radius is fifteen (15) feet. Access will not be permitted within ten (10) feet of Point "B," if no radius exists, access will not be permitted within twenty-five (25) feet of Point "A." Access points near an intersection with a Collector or Arterial shall be located beyond the influence of standing queues of the intersection in accordance with AASHTO standards. This requirement may result in an access spacing greater than ten (10) feet. Interim access may be permitted, pursuant to the standards of Section 501-8.5 E. (Interim Access).

(2) Neighborhood Routes

All residential, commercial, institutional and industrial uses with seventy (70) feet or more of frontage will be permitted direct access to a Neighborhood Route. Uses with less than seventy (70) feet of frontage shall not be permitted a permanent single or separate direct access to a Neighborhood Route. Interim access which does not preclude a future common entrance with adjacent property may be permitted pursuant to the standards of Section 501-8.5 E. (Interim Access). Where a common access is available it shall be used, provided that such use will not result in serious operational or safety problems.

No use will be permitted direct access to a Neighborhood Route within fifty (50) feet of Point "A"; or future "P.I." as designated in or consistent with the Transportation System Plan (TSP). New Neighborhood Route alignments identified in the TSP can be adjusted within the subject property, as approved by the County Engineer. In the case of a Neighborhood Route which is entirely within a development, double aisle parking areas will be permitted direct access to that Neighborhood Route. Minimum spacing between driveways (Point "C" to Point "C") shall be fifty (50) feet with the exception of single family residential lots in a recorded subdivision. Such lots shall not be subject to a minimum spacing requirement between driveways (Point "C" to Point "C"). In all instances, access points near an intersection with a Collector or Arterial shall be located beyond the influence of standing queues of the intersection in accordance with AASHTO standards. This requirement may result in an access spacing greater than fifty (50) feet.

(3) Collectors

All commercial, industrial and institutional uses with one hundred fifty (150) feet or more of frontage will be permitted direct access to a Collector. Uses with less than one hundred fifty (150) feet of frontage shall not be permitted direct access to Collectors. Interim access which does not preclude future common entrance with adjacent property may be permitted pursuant to the standards of Section 501-8.5 E. (Interim Access). Where a common access is available it shall be used, provided that such use will not result in serious operational or safety problems. No use will be permitted direct access to a Collector within one hundred (100) feet of any present Point "A"; or future "P.I." as designated in the

Transportation System Plan (TSP). New Collector Street alignments identified in the TSP may be adjusted within the subject property, as approved by the County Engineer.

In the case of a Collector which is entirely within a single development and which provides circulation only within that development, double aisle parking areas will be permitted access to that Collector. Minimum spacing between driveways (Point "C" to Point "C") shall be one hundred (100) feet. In all instances, access points near an intersection with a Collector or Arterial shall be located beyond the influence of standing queues of the intersection in accordance with AASHTO standards. Additionally, access shall be located to provide adequate left turn refuge as required by Resolution and Order No. 86-95 as modified or updated. This requirement may result in an access spacing greater than one hundred (100) feet.

(4) Arterials

Direct access to arterial roads shall be from collector or other arterial streets. Exceptions for local streets and private accesses may be allowed through a Type II process when collector access is found to be unavailable and impracticable by the Director. New Arterial Street alignments identified in the TSP may be adjusted within the subject property, as approved by the County Engineer. Access to arterials shall comply with the following standards:

(a) Arterials

Direct access to an arterial will be permitted provided that Point 'A' of such access is more than six hundred (600) feet from any intersection Point 'A' or other access to that Minor Arterial (Point 'C').

(b) Principal Arterials

Principal Arterials shall be designed and developed as limited access facilities. Access to a Principal Arterial is subject to approval by ODOT through the State's Access Management Policy and its implementing measures. Access to Tualatin Valley Highway, between SW 170th and SW 209th Avenues, is subject to the provisions of the TV Highway Access Management Plan contained in the Aloha-Reedville-Cooper Mountain Community Plan.

(c) On sites where direct access may be provided to more than one Arterial or Principal Arterial only one such access shall be granted.

Findings: The subject site is located at the intersection of two arterial roads. Access to the site is proposed via a right-in only along NW West Union Road and a newly constructed south leg of the existing West Union/Albertsons traffic signal. An exception to access criteria has been requested as part of the Access Management Plan application.

C. Exception to Access Criteria

(1) Alternate points of access may be allowed if an access management plan which maintains the classified function and integrity of the applicable facility is reviewed and approved by the Review Authority after considering the applicant's compliance with this Article.

Findings: Access to the site is proposed via a right-in only along NW West Union Road and a newly constructed south leg of the existing West Union/Albertsons traffic signal. A Traffic Operations Assessment prepared by Kittelson and Associates has been submitted under Appendix D of this application. This standard is met.

(2) An application for an Access Management Plan shall explain the need for the modification and demonstrate that the modification maintains the classified function and integrity of the facility. References to standards or publications used to prepare the Access Management Application shall be included with the application.

(3) An access management plan shall address the safety and operational problems which would be encountered should a modification to the access spacing standards be granted. An access management plan shall be prepared and certified by a traffic or civil engineer registered in the State of Oregon. An access management plan shall at minimum contain the following:

(a) The minimum study area shall include the length of the site's frontage plus the distance of the applicable access spacing standard, as set forth in Section 501-8.5 B., measured from the property lines or access point(s), whichever is greater. For example, a property with five hundred (500) feet of frontage on a minor arterial (required six hundred [600] foot access spacing standard) shall have a minimum study area which is one thousand seventeen hundred (1700) feet in length.

(b) The access management plan shall address the potential safety and operational problems associated with the proposed access point. The access management plan shall review both existing and future access for all properties within the study area as defined above.

(c) The access management plan shall include a comparison of all alternatives examined. At a minimum, the access management plan shall evaluate the proposed modification to the access spacing standard and the impacts of a plan utilizing the county standard for access spacing. Specifically, the access management plan shall identify any impacts on the operations and/or safety of the various alternatives.

(d) The access management plan shall include a list of improvements and recommendations necessary to implement the proposed access

modification, specifically addressing all safety and operational concerns identified.

Findings: A Traffic Operations Assessment prepared by Kittelson and Associates has been submitted under Appendix D of this application. The Traffic Operations Assessment provides explanation for the need for the modification to accommodate heavy vehicle maneuverability. The heavy vehicles will enter the site from the west right-in driveway and exit the site via the traffic signal. The Traffic Operations Assessment provides an assessment for how the modification will maintain the classified function and integrity of the facility including Washington County Motor Vehicle Performance Measure targets. This standard is met.

(4) Notice for a proposed access management plan shall include all property owners within the study area defined in 501-8.5 C. (3) (a).

Findings: Notice for the proposed access management plan will include all property owners within the study area. This standard is met.

D. Access in Transit Oriented Districts and the North Bethany Subarea Plan

(2) Access points shown in the Transportation System Plan, on a Community Plan within a Transit Oriented District, or in the North Bethany Subarea Plan are not subject to the access spacing standards and do not need an access spacing variance or an access management plan. However, as part of the development review process, the exact location of such access points shall be determined and safety impacts associated with such access points shall be identified and mitigated. Additional access points are subject to the access spacing standards.

Findings: The subject site is not located within a Transit Oriented District or the North Bethany Subarea. The requirements of this section are not applicable.

E. Interim Access

(3) No development shall be denied a Development Permit for the sole reason that the parcel for which it is sought cannot physically accommodate the access spacing requirements of this Code. In such an event, the use may be issued an interim access permit which shall expire when access as required under Article V becomes available. An interim access permit may be granted based upon the following:

(1) The site is situated such that adequate access cannot otherwise be provided in accord with the access spacing requirements of this Code.

(2) The interim access shall meet minimum county traffic safety and operational requirements, including sight distance.

(3) Alternate access shall not be deemed adequate and connections to alternate access shall not be required if the resulting route of access

would require a trip in excess of one (1) block or five hundred (500) feet out of direction (whichever is less).

(4) New interim access locations on Arterials and Collectors shall be posted with a sign. The sign shall note that the access is interim and will be removed once ultimate access is available. The sign and its location shall be approved by the County Engineer.

(5) The property owner signs a waiver of the right to remonstrate against the formation of a Local Improvement District or similar financing mechanism for the primary purpose of constructing a public road or right-of-way providing access to the arterial or collector road; such access shall meet the minimum applicable county standard.

(6) The property owner records an agreement to participate in any project that would consolidate access points where such project would not result in new or more severe traffic operation or safety problems.

(7) The property owner records an agreement to abandon use of the existing private access way when an adequate alternative access becomes available.

(8) The property owner records an agreement stating that the interim access shall ultimately be removed.

Findings: Interim access is not proposed. The requirements of this section are not applicable.

F. Sight Distance

The following specifies the minimum requirements for sight distance for roads intersecting each other and for driveways intersecting public roads. It is the intent of this section to regulate the creation of new access points and new lots or parcels and development in the county in a manner that will insure that each new access point or each new lot or parcel created or development will have a safe access to a public road.

(4) Inside a UGB, existing access points which do not meet the sight distance standards and are on property included with a development action which will not add any additional vehicle trips to that access, are exempt from this Section (501-8.5 F.), except as required by Section 501-2.1 A.

Improvements at these existing access points may be required to maximize sight distance to the extent practicable by the county Operations Division through an Access Permit or Right-of-way Permit.

(5) The minimum intersectional sight distance shall be based on the vehicular speeds of the road. The vehicular speeds for the purpose of determining intersectional sight distance shall be the greater of the following unless the eighty-five percentile speed is determined to be less by the Review Authority pursuant to the standards of Section 501-8.5 F. (2)(c).

(a) Design Speed - A speed selected by a registered engineer (Oregon) for purposes of design and correlation of those features of a road, such as curvature, superelevation, and sight distance, upon which the safe operation of vehicles is dependent.

(b) Posted Speed - That speed which has been established by the Oregon State Speed Control Board and is posted by the county.

(c) Eighty-five (85) Percentile Speed - That speed as certified by a registered engineer (Oregon) below which eighty-five (85) percent of all traffic units travel, and above which fifteen (15) percent travel. The eighty-fifth (85) percentile speed shall be measured at the point where the sight restriction occurs.

(6) The intersectional sight distance shall:

(a) Be based on an eye height of three and one-half (3.5) feet and an object height of four and one-quarter (4.25) feet above the road; and

(b) Be assumed to be fifteen (15) feet from the near edge of pavement or the extended curb line or the near edge of the graveled surface of a gravel road to the eye of the driver of a stopped vehicle.

(7) Minimum intersectional sight distance shall be equal to ten (10) times the vehicular speed of the road as determined by the standards of Section 501-8.5 F. (1) and (2) such as in the following table.

(8) Intersectional sight distance values shall conform with section (3) and (4) above. For significant road improvement projects, the above intersectional standards shall be met in addition to the AASHTO remaining sight distance standards.

(9) For land development actions, the following specifies the procedure for determining whether or not minimum sight distance requirements are met:

(a) Current Planning personnel will review the Traffic Impact Statement.

(b) County personnel will perform the initial sight distance measurements.

(c) If the measurements made under (b) above do not meet the minimum requirements shown in the table, the applicant may retain a State of Oregon registered professional engineer to perform the field measurements. If the applicant's engineer does perform the measurements and submits the information to the county for acceptance, the information must bear the stamp and signature of the engineer and must meet the minimum sight distance requirements.

(10) In those instances where there are no access locations available to the site that meet or can meet the sight distance requirements, a written request for modification may be submitted to the Director. The request for modification shall be specifically stated in the notice for the accompanying development permit and shall be considered as part of said development permit. The request

for modification of the sight distance requirements shall be subject to the following:

(a) Submitted and certified by a registered engineer (Oregon);

(b) Documented and reference nationally accepted specifications or standards;

(c) Certified that the modification will not compromise safety or the intent of the county's transportation standards, which include but are not limited to the following: Washington County Transportation System Plan; Washington County Road Design and Construction Standards; Resolution and Order No. 86-95 as modified or updated, (Determining Traffic Safety Improvements Under the Traffic Impact Ordinance - Process Documentation); Community Plans; Comprehensive Framework Plan for the Urban Area; and the Community Development Code;

(d) The cost of any modifications agreed to must be borne by the applicant; and

(e) There shall be no location available to provide access to the proposed development site which currently meets the sight distance requirements, or which can be altered to meet the sight distance requirements. Alterations needed to provide adequate sight distance include but are not limited to grading and the removal of vegetation. For the purpose of this subsection alternative access location means:

1. Any location on the proposed development site which meets or can meet the sight distance requirements; or

2. Any location off the proposed development site which:

(i) Can provide access to the site by an existing access easement or through an access easement which will be provided to the site as part of the development application; and

(ii) Meets or can meet the sight distance requirements.

Findings: A sight-distance analysis has been provided for the proposed accesses under Appendix D. This standard is met.

G. Motor Vehicle Access Restriction

(11) In order to implement the access spacing and safety requirements of this article, a motor vehicle access restriction shall be recorded along a development site's frontage on a Collector or Arterial road, except at approved motor vehicle access locations. The Review Authority may require a motor vehicle access restriction to be recorded along a site's frontage on a Local or Neighborhood

Route street that intersects with a Collector or Arterial road in order to address operational and safety concerns at the intersection(s).

(12) The motor vehicle access restriction shall be recorded as a restrictive covenant or, if a plat is filed, as a partition or subdivision plat restriction.

Findings: The applicant acknowledges that a motor vehicle access restriction may be recorded along the development site's frontage on NW West Union Road.

H. Road Standards

(13) All roads proposed to be of public ownership shall conform to the county Road Standards.

(14) All proposed curve radii shall be designed to county Road Standards for truck-turning requirements.

(15) All roads not proposed to be of public ownership shall conform to Section 409 (Private Streets).

Findings: The proposed development does not include new roadways. The requirements of this section are not applicable.

605 – Land Divisions and Property Line Adjustments Inside a UGB

605-1 Property Line Adjustment (Property Line Relocation)

A property line adjustment is the relocation or consolidation of a common boundary line between two or more abutting properties where an additional lot or parcel is not created.

605-1.1

A. General Limitations

Property line adjustments are limited as follows:

(1) Existing lots or parcels reduced in size by a property line adjustment may not be reduced below the minimum lot size established by the applicable land use district, unless authorized by Section 605-1.1 B.

(2) For property line adjustments on lots or parcels with two or more land use districts, the minimum lot size shall be based on the predominant land use district of the parcel.

B. Property Line Adjustments Permitted Through a Type I Procedure

Property line adjustments shall be processed through a Type I procedure, unless otherwise specified in this Code, provided that:

(1) Both properties meet or exceed the minimum lot or parcel size for the applicable district; or

(2) Equal land areas are exchanged; or

(3) For properties entirely outside the boundary of a city, one or both of the abutting properties are smaller than the minimum lot or parcel size for the applicable district before the property line adjustment and, after the

adjustment, one is as large as or larger than the minimum lot or parcel size for the applicable district; or

(4) For properties entirely outside the boundary of a city, both abutting properties are smaller than the minimum lot or parcel size for the applicable district before and after the property line adjustment.

Findings: The subject site exceeds the minimum lot size for the NC zone. Therefore, the requirements of this section are applicable.

605-1.2 Submission Requirements

In addition to the requirements of Section 203-4, all applications for a property line adjustment shall include the following:

A. Name(s), address(es) and telephone number(s) of the owner(s), agent(s) and surveyor(s).

B. A plot plan showing:

(1) All existing and proposed lot lines;

(2) All existing and proposed structures;

(3) Existing and proposed easements;

(4) The location of any flood plain, drainage hazard areas and other areas subject to flooding or ponding; and

(5) The location of any water quality sensitive areas and vegetated corridors.

C. Existing and proposed lot sizes.

Findings: A tentative plat showing the proposed information has been submitted under Appendix E of this application.

605-1.3 Review Standards

The proposed property line adjustment must be found to comply with the applicable provisions of this Code and the applicable Community Plan, including the definition set forth above and the dimensional requirements of the district except as described in Section 605-1.1 B. No property line adjustment shall result in a boundary line that violates the setback standards of the applicable land use district unless a variance to the setback is approved. Property line adjustments shall comply with Section 501-8.5 (Access to county and public roads) except as provided in this subsection. Property line adjustments for parcels or lots which do not meet the sight distance standards of Section 501-8.5 F., (including existing accesses), shall be approved if the parcel or lot's sight distance is not decreased as a result of the property line adjustment.

605-1.4 Survey Requirements

As set forth in Section 602-11.

605-1.5 Filing and Recording

As set forth in Section 602-1.

Findings: Attached to this application is a Partition Plan (Sheet 201) detailing the proposed PLA with all required components listed above.

Sunset West Community Plan

General Design Elements

1. **In the design of new development, flood plains, drainage hazard areas, streams and their tributaries, riparian and wooded areas, steep slopes, scenic features, and power line easements and rights-of-way shall be:**
   a. **used to accent, define, or separate areas of differing residential densities and differing planned land uses;**
   b. **preserved and protected consistent with the provisions of the Community Development Code to enhance the economic, social, wildlife, open space, scenic, recreation qualities of the community; and**
   c. **where appropriate, interconnected as part of a park and open space system.**

Findings: The subject site is located north of a drainage hazard area, riparian and wooded area, and power line easement. Attached to this application is a Natural Resource Assessment (Appendix D), detailing the proposed mitigation and enhancement strategies to ensure the area will be preserved and protected consistent with the provisions of the Community Development Code.

2. **Master Planning-Planned Development and/or Master Planning-Primary Use shall be required for development on land which includes a Significant Natural Resource and steep slopes as a means of protecting the resource while accommodating new development. A density transfer from the resource area to the buildable portion shall be allowed for any Significant Natural Resource site as specified in the Community Development Code.**

Findings: The subject site does not contain a Significant Natural Resource as shown on Map 4.1 of the Sunset West Community Plan. The requirements of this section do not apply.

3. **Trees located within a Significant Natural Resource area shall not be removed without first obtaining a development permit for tree removal as provided for within the Community Development Code. A permit shall not be required for tree removal from powerline rights-of-way, public parks and playgrounds, or mineral aggregate sites.**

Findings: The applicant does not propose the removal of a tree within a Significant Natural Resource area. The requirements of this section do not apply.

4. **Significant historical and/or cultural resources shall not be altered, defaced, demolished or relocated without first obtaining a development permit as provided for in the Historic and Cultural Management Overlay District contained in the Community Development Code.**

Findings: The subject parcel does not contain significant historical or cultural resources. The requirements of this section do not apply.

5. **All new subdivisions, attached unit residential developments, and commercial development shall provide for pedestrian/bicycle pathways which allow public access through or along the development and connect adjacent developments and/or shopping areas, schools, public transit, and park and recreation sites.**

   Findings: The applicant is providing an 18-foot right-of-way dedication for NW West Union Road along the property frontage, which will provide bicycle pathways when improved. Any disturbed sidewalks will be replaced by the applicant to preserve pedestrian access along the development. This standard is met.

6. **Open space shall be utilized for park and recreation facilities or passive recreation and dedicated to the appropriate recreation service provider wherever feasible.**

   Findings: The subject parcel does not contain designated open space. The requirements of this section do not apply.

7. **Bicycle parking facilities shall be required as part of all commercial, industrial and institutional developments. Residential developments which have parking lots of 20 or more spaces shall provide bicycle parking facilities.**

   Findings: The applicant has provided two short-term bicycle parking stalls and two long-term bicycle parking stalls, consistent with the requirements in Section 429. This standard is met.

8. **In the design of road improvements that are required of new development to meet the County's growth management policies, pedestrian/ bicycle pathways identified in Washington County's Transportation System Plan (TSP) shall be included.**

   Findings: The applicant is providing an 18-foot right-of-way dedication for NW West Union Road along the property frontage, which will provide bicycle pathways when improved. This standard is met.

9. **The County shall emphasize non-auto (transit, bicycle and pedestrian) measures as an interim solution to circulation issues. These measures shall be used to facilitate access to transit centers.**

   Findings: The Applicant has submitted a circulation analysis which meets the requirements of Section 408. The site has approximately 500 linear feet of frontage but only a small portion of the site will be constructed with a building – the convenience store. A pedestrian connection has been provided along the street's frontage to allow for direct and convenient access to the store.

10. **Noise reduction measures shall be incorporated into all new developments located adjacent to Arterials and Collectors. Noise reduction alternatives include vegetative buffers, berms, wall and other design techniques such as insulation, setbacks and orientation of windows away from the road.**

Findings: Landscaping, buffering, and setbacks are not proposed as noise reduction measures given the proposed use as a service station and site dimensional limitations. However, the proposed retail store features insulation and windows oriented away from the adjacent arterials to mitigate noise.

11. **Where the impact of noise and lighting associated with commercial or industrial uses on adjacent residential areas does not meet the standards in the Community Development Code, the commercial development shall be subject to limited hours of operation.**

Findings: The Applicant has submitted a Photometric Plan (Sheet 1.0) demonstrating mitigation of light trespass onto adjacent properties. Noise associated with the proposed use will be comparable to the existing traffic noise on the adjacent arterials. Therefore, the requirements of this section do not apply.

12. **New development shall, when determined appropriate through the development review process, dedicate right-of-way for road extensions and alignments indicated in Washington County's TSP Plan or the Sunset West Community Plan. New development shall also be subject to conditions set forth in the County's growth management policies during the development review process.**

Findings: The applicant is providing an 18-foot right-of-way dedication for NW West Union Road along the property frontage to accommodate future improvements per the County's Capital Improvements Program. This standard is met.

13. **New access onto Arterials and Collectors shall be limited. Shared or consolidated access shall be required prior to the issuance of a development permit for land divisions or structures located adjacent to these facilities, unless demonstrated to be infeasible.**

Findings: The proposed development includes a right-in only access and a signalized access on to NW West Union Road, an Arterial. The applicant has provided a Traffic Impact Statement and Access Management Plan. The access configuration has been designed to allow for large fuel vehicles to access and exit the site without having to back up on site. This standard is met.

14. **Commercial and industrial development adjacent to the Sunset Highway shall consider through building siting, landscaping, setbacks and other design techniques, impacts to the visual corridor created by the highway. Steps shall be taken during the development review process to minimize impacts and intrusions to the visual features of the Sunset Highway Corridor.**

Findings: The subject parcel is not located adjacent to the Sunset Highway. The requirements of this section do not apply.

15. **Certain industrial properties within the Sunset West Community Planning area have received land development approvals based upon the assumption of the ultimate development pattern being a mix of fifty percent (50%) industrial uses and fifty percent**

(50%) office-related uses. Development and growth management approvals have been received by Cornell Oaks and Twin Oaks based upon this mixed-use assumption. Therefore, they have met the standards for the industrial Business Park in the 1983 Community Development Code and can continue to proceed with development actions based upon previously granted approvals and conditions regarding the mixture of industrial and office uses. Prior to March 1, 1984, industrial developments receiving growth management approvals based upon a 50/50 mix of office and industrial land uses, shall be permitted to proceed based upon approvals granted and conditions applied.

Findings: The proposed use is not an industrial or office-related use. The requirements of this section do not apply.

16. **The required amount of parking for development shall be determined by the Parking Maximum Designations and the standards of the Community Development Code.**

Findings: As discussed earlier in this narrative, the proposed development meets the applicable requirements of Section 413.

Rock Creek Design Elements

1. **Three creeks cross the Rock Creek subarea: Rock Creek, Bronson Creek and Willow Creek. Portions of Rock Creek and Willow Creek have already been preserved and incorporated into site development plans as open space during previous land development actions. As development continues, flood plains shall be preserved, protected and incorporated into site development plans as set forth in the Community Development Code. These steps are particularly important for the Bronson Creek flood plain which is relatively undisturbed by adjacent development. Additionally, Bronson Creek is used as a buffer between low density and medium density areas.**

Applicant's Findings: The proposed development is not adjacent to Rock, Bronson, or Willow Creek. The proposed development abuts Bethany Creek. Attached to this application is a Natural Resource assessment detailing the proposed mitigation and enhancement techniques to preserve and protect natural resources associated with the flood plain. This standard is met.

2. **Power line easements provide an opportunity to establish a multi-purpose trail system in the Sunset West planning area. This has already been demonstrated in both the Rock Creek and Oak Hills areas where soccer fields and bicycle paths are found in the power line easements. The power line easement in the central portion of the Rock Creek subarea has been identified as a part of the proposed off right-of-way bike route system in the TSP. For development that occurs adjacent to the power line easement, the opportunity to establish a bike route using the power line easement shall be considered an important site design element in the development review process.**

Findings: The proposed development is not located adjacent to the power line easement identified in this standard. The requirements of this section do not apply.

Oregon Statewide Planning Goals

Goal 5: Natural Resources, Scenic and Historic Areas, and Open Spaces

OAR 660-015-0000(5)
To protect natural resources and conserve scenic and historic areas and open spaces.
The following resources shall be inventoried:
a. Riparian corridors, including water and riparian areas and fish habitat;
b. Wetlands;
c. Wildlife Habitat;
d. Federal Wild and Scenic Rivers;
e. State Scenic Waterways;
f. Groundwater Resources;
g. Approved Oregon Recreation Trails;
h. Natural Areas;
i. Wilderness Areas;
j. Mineral and Aggregate Resources;
k. Energy sources;
l. Cultural areas.

Local governments and state agencies are encouraged to maintain current inventories of the following resources:
a. Historic Resources;
b. Open Space;
c. Scenic Views and Sites.

Following procedures, standards, and definitions contained in commission rules, local governments shall determine significant sites for inventoried resources and develop programs to achieve the goal.

Applicant's Finding: Goal 5 requires local governments to inventory and protect natural resources. The site is in an area identified as an 'Area Where Nearby Activities Have an Impact on Resources" on Metro's Regionally Significant Fish & Wildlife Habitat Inventory Map. The subject site is in an area that has been identified as a wetland with an associated riparian corridor.

A Natural Resource Assessment has been provided under Appendix D of this land use application which includes a delineation of the wetland and associated vegetative corridor on and adjacent to the site. The boundary for Bethany Creek

wetlands, 100-year floodplain and associated vegetative corridor has also been shown on the Demolition and Existing Conditions Plan (Sheet C121-C122) and the Site Plan (Sheet C211-C212).

The proposed development does not include development within a field-verified water area, wetland or water-related fish and wildlife habitat. A Natural Resource Assessment has been provided under Appendix D of this land use application which includes a delineation of the wetland and associated vegetative corridor on and adjacent to the site. The boundary for Bethany Creek wetlands, 100-year floodplain and associated vegetative corridor has also been shown on the Demolition and Existing Conditions Plan (Sheet C121-C122) and the Site Plan (Sheet C211-C212). The proposed development will include enhancement to the existing degraded wetland on site as well as enhancement of the existing degraded vegetative corridor. New vegetative corridor area will be created on site.

The subject site does not have areas that have been identified as Upland Habitat Area. The site has mapped wetland and associated CWS Vegetative Corridor. The trees proposed for removal are located within the CWS Vegetative Corridor which will be mitigated on site with wetland and vegetative corridor enhancement and creation.

Goal 5 is met.

SUMMARY AND CONCLUSION

Based upon the materials submitted herein, the Applicant respectfully requests approval from the County's Planning Department of this application for a Type II Special Use Development Review Application.

WASHINGTON COUNTY
Dept. of Land Use & Transportation
Planning and Development Services
Current Planning
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
http://www.co.washington.or.us

Development Application

CASEFILE #: _____ (to be assigned by county)

PROCEDURE/CATEGORY TYPE: TYPE III

CPO: 7 **COMMUNITY PLAN:** Sunset West

EXISTING LAND USE DISTRICTS: Neighborhood Commercial (NC)

ASSESSOR MAP:	TAX LOT NUMBER(S):
1N1 19BC	500 and 600

NOTE: *Contiguous property under identical ownership will be reviewed as part of this application and may be subject to conditions of approval. List assessor map and tax lot numbers of all contiguous property under identical ownership:*

SITE ADDRESS: 18430 NW West Union Road

SITE SIZE: 1.21 Acres

Date of Pre-app. Conference: Waiver

Staff Member: Paul Schaefer

(Please attach copy of Pre-application notes)

APPLICANT:

COMPANY: West Union & 185th Food Mkt., Inc., DBA West Union Chevron Extra Mile
CONTACT: Robert Barman
ADDRESS: PO Box 2092
Lake Oswego, OR 97035
PHONE: _____
FAX: _____
E-MAIL ADDRESS: bobbarmanaz717@gmail.com

APPLICANT'S REPRESENTATIVE: *NOTE: The Applicant's Representative will be the primary contact for the County.*

COMPANY: 3J Consulting, Inc.v
CONTACT: Mercedes Serra
ADDRESS: 9600 SW Nimbus Avenue, Suite 100
Beaverton, OR 97008
PHONE: 503-946-9365 x211
FAX: _____
E-MAIL ADDRESS: mercedes.serra@3j-consulting.com

OWNER(S): *(attach additional sheets if needed)*

NAME: West Union & 185th Food Mkt., Inc., DBA West Union Chevron Extra Mile
ADDRESS: PO Box 2092
Lake Oswego, OR 97035
PHONE: _____
FAX: _____
E-MAIL ADDRESS: bobbarmanaz717@gmail.com

ALSO NOTIFY:

NAME: _____
ADDRESS: _____
PHONE: _____
FAX: _____

EXISTING USE OF SITE: Restaurant/Vacant

PROPOSED DEVELOPMENT ACTION: Special Use, Dev. Review for drive-thru 4,428 SF convenience store & gas station (4 fuel islands) and an Access Management Plan to permit access to NW West Union.

We, the undersigned, hereby authorize the filing of this application and certify that the information contained in this application is complete and correct to the best of our knowledge. This also authorizes the designated Applicant's Representative (if applicable) to act on behalf of the Applicant for the processing of the request.

X RJ Barman 5/4/22
☒ OWNER ☐ CONTRACT PURCHASER DATE
Print Name: _____

X RJ Barman 5/4/22
APPLICANT DATE
Print Name: Bob Barman

X _____
☐ OWNER ☐ CONTRACT PURCHASER DATE
Print Name: _____

X _____
APPLICANT DATE
Print Name: _____

PLEASE NOTE:

- *This application must be signed by ALL the owners or ALL the Contract Purchasers of the subject property.*
- *If this application is signed by the Contract Purchaser(s), the Contract Purchaser is also certifying that the Contract Vendor has been notified*
- *The Applicant or a Representative should be present at all Public Hearings.*
- *No approval will be effective until the appeal period has expired.*
- *Corporations require proof of signature authority for that entity according to their Articles of Incorporation or as registered with the State of Oregon Corporation Division at http://www.filinginoregon.com*

Save & Print Reset Form

WASHINGTON COUNTY
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CASEFILE #: _____

Assessor Map No.	Tax Lot No(s).
1n1 19BC	500 and 600

DEVELOPMENT REVIEW VALUATION

Applicant: Robert Barman

Project Description

☒ Commercial ☐ Industrial ☐ Institutional

Gross Square Footage of Building(s): 5,000

Estimated Number of Employees: Maximum Shift: 3

☐ Residential Number of Units: _____ One Bedroom

_____ Two Bedroom

_____ Three Bedroom

_____ Four Bedroom

_____ **Total**

Parking: Number of Standard Spaces 14 Compact Spaces: 0

Improvements

		In Square Feet or Acres		% of Site		Valuation*	
1.	Buildings	5,000.00	Sq. Ft. / Acre	12.5	%	$ 1,575,034	**
2.	Landscaping (Includes irrigation)	9,322	Sq. Ft. / Acre	36.4	%	$ 115,747	
3.	Paving (Includes hard surfaced storm drainage & private streets)	26,480	Sq. Ft. / Acre	56.1	%	$ 145,000	
4.	Required Open Space (As defined in §405 of the Community Development Code)	0	Sq. Ft. / Acre		%	$	
	TOTALS:	40,120	**Sq. Ft. / Acre**	**100**	**%**	**$** 1,835,781 **(Project Cost)**	

* *Total cost of all on-site improvements – does not include such things as land cost, adminstrative and professional fees and other governmental fees.*

** *UBC Fee Schedule or Bid Cost (whichever is higher).*

WASHINGTON COUNTY PRE-APPLICATION WAIVER

"STATEMENT OF UNDERSTANDING"

The Washington County Department of Land Use and Transportation staff, pursuant to Section 203-2.1B of Ordinance 264 Washington County Community Development Code, is required to meet and confer with prospective applicants to discuss the requisites for formal application for land use actions. For this purpose a regularly scheduled appointment may be reserved with the staff on a first come-first served basis throughout the year. At this meeting the applicant may discuss his proposal with staff and ask questions regarding the feasibility of approval.

As an alternative the applicant, at his own option, may wish to forego this formal process and proceed with only the benefit of the instructions included on the forms as briefly explained by staff, without the benefit of a pre-application meeting. The applicant recognizes that he/she is solely responsible for submitting a complete application being aware that upon failure to do so, the staff has no alternative but to reject it until it is complete or to recommend the request for denial regardless of its potential merit.

I have read and understand the above statement.

Tax Map: 1N119BC Tax Lot(s): 500 & 600

APPLICANT: CJRW, LLC C/O Robert Barman

RTB 5/4/2022

APPLICANT'S SIGNATURE DATE

19-002970

WASHINGTON COUNTY
Dept. of Land Use & Transportation
Planning and Development Services
Current Planning
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
http://www.co.washington.or.us

Request For Statement Of Service Availability (Service Provider Letter)

PRE-APPLICATION DATE: 9/30/2020

Service Provider: PLEASE RETURN THIS FORM TO: APPLICANT:

COMPANY: 3J Consulting, Inc.
CONTACT: Mercedes Serra
ADDRESS: 9600 SW Nimbus Ave. Suite 100
Beaverton, OR 97008
PHONE: (503)-946-9365 x211

☐ WATER DISTRICT: _____
☐ FIRE DISTRICT: _____
☐ CITY OF: _____
☒ CLEAN WATER SERVICES (Sanitary Sewer)

Additionally, you'll need our separate, individual request forms titled:

- **Clean Water Services (Surface Water Mgmt.)**
- **Tri-Met**
- **School**
- **Sheriff / Police**
- **Tualatin Hills Park & Recreation District**

OWNER(S): West Union and 185th Food Mkt. Inc.
NAME: DBA West Union Chevron Extra Mile
ADDRESS: PO Box 2092
Lake Oswego, OR 97035
PHONE:

Property Desc.: Tax Map(s): 1N1 19BC Lot Number(s): 500 and 600

Site Size: 1.21 acres
Site Address: 18450 NW West Union Road
Nearest cross street (or directions to site): NW 185th Avenue

PROPOSED PROJECT NAME: West Union Chevron

PROPOSED DEVELOPMENT ACTION: (DEVELOPMENT REVIEW, SUBDIVISION, MINOR PARTITION, SPECIAL USE)

Special Use and Development Review, and PLA to consolidate TL 500 & 600

EXISTING USE: Commercial - Restaurant PROPOSED USE: Drive-Thru Convenience Store & Fuel Station

IF RESIDENTIAL:
NO. OF DWELLING UNITS: _____
SINGLE FAM. _____ MULTI-FAM. _____

IF INDUSTRIAL/COMMERCIAL:
TYPE OF USE: Commercial
NO. OF SQ. FT. (GROSS FLOOR AREA) 5,000 SF

IF INSTITUTIONAL:
NO. SQ. FT. _____
NO. STUDENTS/EMPLOYEES/MEMBERS: _____

*****ATTENTION SERVICE PROVIDER*****

PLEASE INDICATE THE LEVEL OF SERVICE AVAILABLE TO THE SITE (ADEQUATE OR INADEQUATE).
RETURN THIS COMPLETED FORM TO THE APPLICANT AS LISTED ABOVE.
(Do NOT return this form to Washington County. The applicant will submit the completed form with their Land Development Application submittal).

☒ SERVICE LEVEL IS **ADEQUATE** TO SERVE THE PROPOSED PROJECT. (Use additional sheets if necessary.)
Please indicate what improvements, or revisions to the proposal are needed for you to provide adequate service to this project.

SIGNATURE: Nicholas Crossett POSITION: ET2 DATE: 3/18/22

☐ SERVICE LEVEL IS **INADEQUATE** TO SERVICE THE PROPOSED PROJECT.
Please indicate why the service level is inadequate.

SIGNATURE: _____ POSITION: _____ DATE: _____

19-002970

WASHINGTON COUNTY
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http://www.co.washington.or.us

Request For Statement Of Design Considerations For Surface Water Management. (Clean Water Services)

☒ CWS (Clean Water Services)
2550 SW Hillsboro Hwy
Hillsboro, OR 97123-9379
503-681-3600

☐ OTHER _____

PRE-APPLICATION DATE: _____

Service Provider: PLEASE RETURN THIS FORM TO:
APPLICANT:
COMPANY: 3J Consulting, Inc.
CONTACT: Mercedes Serra
ADDRESS: 9600 SW Nimbus Ave. Suite 100
Beaverton, OR 97008
PHONE: (503)-946-9365 x211

OWNER(S): West Union and 185th Food Mkt. Inc.
NAME: DBA West Union Chevron Extra Mile
ADDRESS: PO Box 2092
Lake Oswego, OR 97035
PHONE:

Property Desc.: Tax Map(s): 1N1 19BC Lot Number(s): 500 and 600

Site Size: 1.21 acres

Site Address: 18450 NW West Union Road
Nearest cross street (or directions to site):
NW 185th Avenue

PROPOSED PROJECT NAME: West Union Chevron

PROPOSED DEVELOPMENT ACTION: (DEVELOPMENT REVIEW, SUBDIVISION, MINOR PARTITION, SPECIAL USE)
Special Use and Development Review, and PLA to consolidate TL 500 & 600

EXISTING USE: Commercial - Restaurant PROPOSED USE: Convenience Store & Fuel Station

IF RESIDENTIAL:
NO. OF DWELLING UNITS: _____
SINGLE FAM. _____ MULTI-FAM. _____

IF INDUSTRIAL/COMMERCIAL:
TYPE OF USE: Commercial
NO. OF SQ. FT. (GROSS FLOOR AREA) 5,000 SF

IF INSTITUTIONAL:
NO. SQ. FT. _____
NO. STUDENTS/EMPLOYEES/MEMBERS: _____

*******ATTENTION SERVICE PROVIDER*******

PLEASE INDICATE THE LEVEL OF SERVICE AVAILABLE TO THE SITE (ADEQUATE OR INADEQUATE).
RETURN THIS COMPLETED FORM TO THE APPLICANT AS LISTED ABOVE.
(Do NOT return this form to Washington County. The applicant will submit the completed form with their Land Development Application submittal).

ATTACH THE FOLLOWING INFORMATION TO THIS APPLICATION:
1. Topographical map (minimum scale 1"= 200', contour interval no closer than 5 feet)
2. Development layout (streets, lots, parking areas, building configuration, pathways, creeks, wetland, landscape areas)
3. Vicinity map (minimum scale 1" – ¼ mile)

TO BE COMPLETED BY GOVERNING JURISDICTION. **DEVELOPMENT ACTION SUBMITTAL MUST CONSIDER:**

Water Quality Facility required	☒ Y	☐ N	**Water Quantity Facility required**	☒ Y	☒ N Depends on analysis
Hydraulic and hydrological analysis required	☒ Y	☐ N	**Vegetated corridor required**	☒ Y	☐ N

COMMENTS/EXPLANATION:

Variable vegetated corridor width per SPL 21-000384 issued on July 28, 2021

SIGNATURE: Nicholas Crossett POSITION: ET2 DATE: 3/18/22

WASHINGTON COUNTY
Dept. of Land Use & Transportation
Planning and Development Services
Current Planning
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
http://www.co.washington.or.us

Request for Statement of Service Availability (Service Provider Letter)

☒ Washington County Health & Human Services Solid Waste & Recycling Program

Mixed solid waste and recyclables storage requirements apply to new multi-unit and single family attached residential buildings with five or more units and to new commercial, industrial and institutional construction inside the UGB.

This letter serves to comply with the submittal requirements of Washington County CDC §406-7.6.

PRE-APPLICATION DATE: _____

Service Provider: PLEASE RETURN THIS FORM TO: APPLICANT:

COMPANY: 3J Consulting, Inc.
CONTACT: Mercedes Serra
ADDRESS: 9600 SW Nimbus Ave. Suite 100
Beaverton, OR 97008
PHONE: (503)-946-9365 x211

OWNER(S): West Union and 185th Food Mkt. Inc.
NAME: DBA West Union Chevron Extra Mile
ADDRESS: PO Box 2092
Lake Oswego, OR 97035
PHONE:

Property Desc.: Tax Map(s): 1N1 19BC Lot Number(s): 500 and 600

Site Size: 1.21 acres

Site Address: 18450 NW West Union Road
Nearest Cross Street (or directions to site): NW 185th Avenue

Applicant: Please include with this form to-scale site plans showing dimensional details and the location of the mixed solid waste and recyclables storage facility, and a site circulation plan showing the proposed path of access to the facility (11" x 17" minimum).

PROPOSED PROJECT NAME: West Union Chevron

PROPOSED DEVELOPMENT ACTION: (DEVELOPMENT REVIEW, SUBDIVISION, MINOR PARTITION, SPECIAL USE)
Special Use and Development Review, and PLA to consolidate TL 500 & 600

EXISTING USE: Commercial - Restaurant PROPOSED USE: _____

IF RESIDENTIAL:
NO. OF DWELLING UNITS: _____
SINGLE FAM. _____ MULTI-FAM. _____

IF INDUSTRIAL/COMMERCIAL:
TYPE OF USE: Commercial
NO. OF SQ. FT. (GROSS FLOOR AREA) 5,000 SF

IF INSTITUTIONAL:
NO. SQ. FT. _____
NO. STUDENTS/EMPLOYEES/MEMBERS: _____

Washington County Health & Human Services Solid Waste & Recycling Program Response:

☑ SERVICE LEVEL IS **ADEQUATE** TO SERVE THE PROPOSED PROJECT.

SIGNATURE: _____ POSITION: Operation Supervisor, SW&R DATE: 3/22/2022

☐ SERVICE LEVEL IS **INADEQUATE** TO SERVICE THE PROPOSED PROJECT.
Please indicate why the service level is inadequate, and indicate what improvements or revisions to the proposal are needed for you to provide adequate service to this project. (Use additional sheets if necessary.)

SIGNATURE: _____ POSITION: _____ DATE: _____

Comments: _____

Know what's below. Call before you dig.

SITE STATISTICS

SITE ADDRESS	18450 NW WEST UNION ROAD BEAVERTON, OR 97229
TAXLOT(S)	1N119BC00600 1N119BC00500
JURISDICTION	WASHINGTON COUNTY
GROSS SITE AREA	1.21 ACRES
PROPERTY ZONING	NEIGHBORHOOD COMMERCIAL (NC)
FLOOD INSURANCE RATE MAP	41067C0361E
PROPOSED BUILDING FFE	182.60-FT

VARIATIONS

BUILDING SETBACKS:	STANDARD	VARIATION
FRONT (NW 185TH AVE)	20 FT	NA
STREET SIDE (NW WEST UNION RD)	20 FT	NA
SIDE YARD (BETHANY CREEK)	0 FT	NA
REAR	20 FT	NA

APPROVED

SITE KEY NOTES

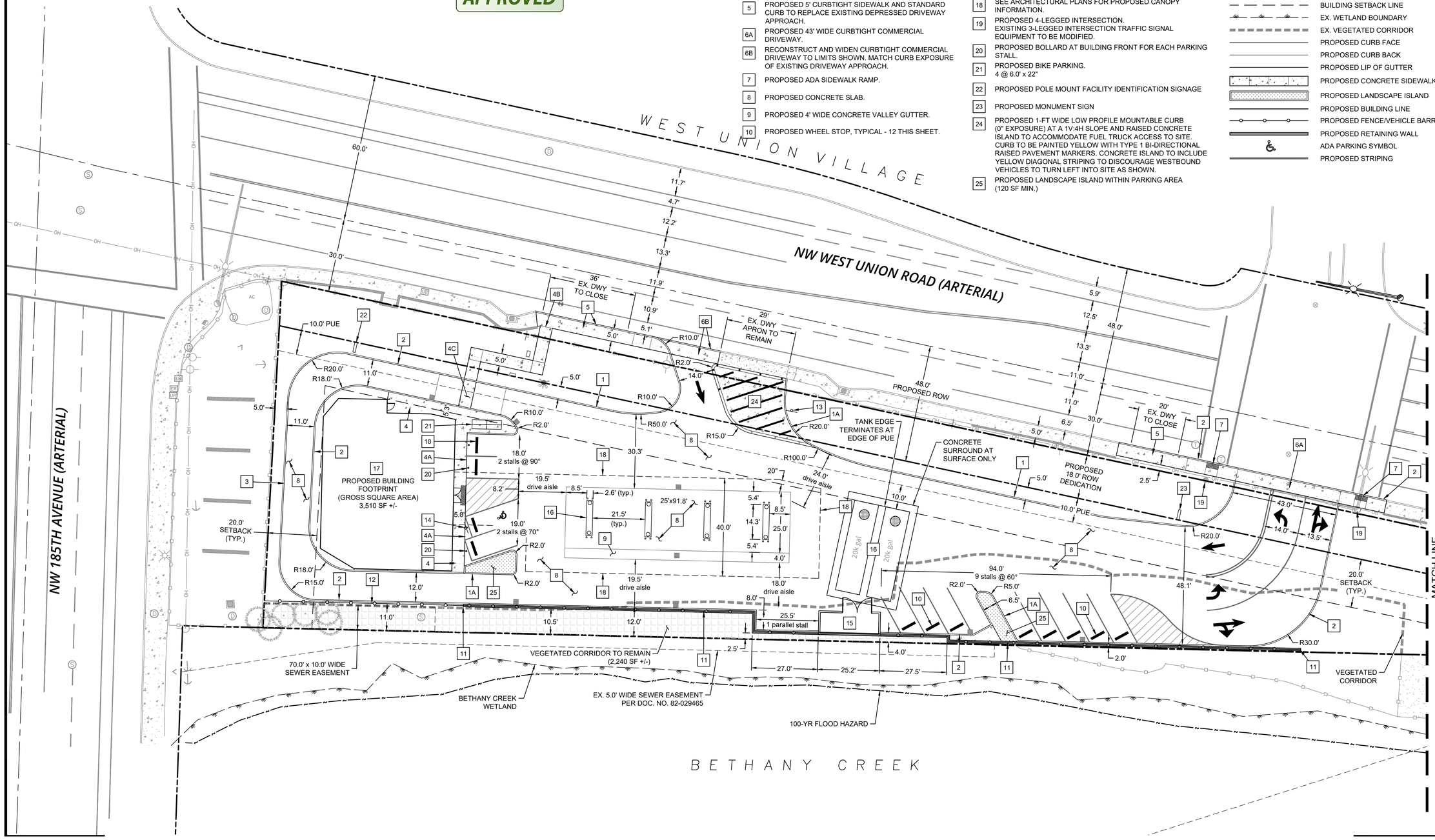
1. PROPOSED PLANTER CURB (6" EXPOSURE AND WEEP HOLES).
1A. PROPOSED PLANTER CURB ADJACENT TO RAISED CONCRETE ISLAND (EXPOSURE VARIES).
2. PROPOSED STANDARD CURB (6" EXPOSURE).
3. PROPOSED TALL CURB (6" EXPOSURE ON EAST/TRAFFIC SIDE, 12" EXPOSURE ON WEST/GRADING SIDE).
4. PROPOSED CONCRETE SIDEWALK, WIDTH PER PLAN.
4A. CONCRETE SIDEWALK TO BE FLUSH WITH CONCRETE SLAB AT FRONT OF BUILDING.
4B. PROPOSED ACCESSIBLE PEDESTRIAN CONNECTION TO PUBLIC SIDEWALK.
4C. RAISED PEDESTRIAN CROSSING
5. PROPOSED 5' CURBTIGHT SIDEWALK AND STANDARD CURB TO REPLACE EXISTING DEPRESSED DRIVEWAY APPROACH.
6A. PROPOSED 43' WIDE CURBTIGHT COMMERCIAL DRIVEWAY.
6B. RECONSTRUCT AND WIDEN CURBTIGHT COMMERCIAL DRIVEWAY TO LIMITS SHOWN. MATCH CURB EXPOSURE OF EXISTING DRIVEWAY APPROACH.
7. PROPOSED ADA SIDEWALK RAMP.
8. PROPOSED CONCRETE SLAB.
9. PROPOSED 4' WIDE CONCRETE VALLEY GUTTER.
10. PROPOSED WHEEL STOP, TYPICAL - 12 THIS SHEET.
11. PROPOSED RETAINING WALL WITH 6-FT PRIVACY WOOD FENCE INSTALLED ON TOP. (0' MIN. TO 5.6' MAX. WALL HEIGHT).
12. PROPOSED 6-FT PRIVACY WOOD FENCE.
13. PROPOSED SIGN - "DO NOT ENTER" (FOR RIGHT-IN ONLY).
14. PROPOSED SIGN - INTERNATIONAL SYMBOL OF ACCESSIBILITY AND DESIGNATION, "VAN ACCESSIBLE".
15. 8.5' x 24' TRASH ENCLOSURE WITH 12' OPENING. SEE ARCHITECTURAL PLANS FOR MORE INFORMATION.
16. SEE PETROLEUM PLANS FOR UNDERGROUND FUEL TANK AND PUMP INFORMATION. PROVIDE 10' SEPARATION FROM EDGE OF TANK TO EDGE OF PUE.
17. SEE ARCHITECTURAL PLANS FOR PROPOSED BUILDING INFORMATION.
18. SEE ARCHITECTURAL PLANS FOR PROPOSED CANOPY INFORMATION.
19. PROPOSED 4-LEGGED INTERSECTION. EXISTING 3-LEGGED INTERSECTION TRAFFIC SIGNAL EQUIPMENT TO BE MODIFIED.
20. PROPOSED BOLLARD AT BUILDING FRONT FOR EACH PARKING STALL.
21. PROPOSED BIKE PARKING. 4 @ 6.0' x 22"
22. PROPOSED POLE MOUNT FACILITY IDENTIFICATION SIGNAGE
23. PROPOSED MONUMENT SIGN
24. PROPOSED 1-FT WIDE LOW PROFILE MOUNTABLE CURB (0" EXPOSURE) AT A 1V:4H SLOPE AND RAISED CONCRETE ISLAND TO ACCOMMODATE FUEL TRUCK ACCESS TO SITE. CURB TO BE PAINTED YELLOW WITH TYPE 1 BI-DIRECTIONAL RAISED PAVEMENT MARKERS. CONCRETE ISLAND TO INCLUDE YELLOW DIAGONAL STRIPING TO DISCOURAGE WESTBOUND VEHICLES TO TURN LEFT INTO SITE AS SHOWN.
25. PROPOSED LANDSCAPE ISLAND WITHIN PARKING AREA (120 SF MIN.)

N W E S

SCALE: 1" = 20'
0 20 40 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- BUILDING SETBACK LINE
- EX. WETLAND BOUNDARY
- EX. VEGETATED CORRIDOR
- PROPOSED CURB FACE
- PROPOSED CURB BACK
- PROPOSED LIP OF GUTTER
- PROPOSED CONCRETE SIDEWALK
- PROPOSED LANDSCAPE ISLAND
- PROPOSED BUILDING LINE
- PROPOSED FENCE/VEHICLE BARRIER
- PROPOSED RETAINING WALL
- ADA PARKING SYMBOL
- PROPOSED STRIPING



REGISTERED PROFESSIONAL ENGINEER
85017PE
OREGON
DEC. 17, 2014
JAMES EVERETT JOHNSTON
PRELIMINARY
EXPIRES: 06/30/23

PUBLISH DATE
MARCH 17, 2022
ISSUED FOR
LAND USE DOCUMENTS
REVISIONS

PRELIMINARY SITE PLAN
WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION

3J PROJECT #	18509
TAX LOT(S)	1N119BC00(600,500)
LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

SHEET NUMBER
C211

P:\18509-WEST UNION CHEVRON\CAD\DD\SHEETS\C210 SITE PLAN.DWG

WASHINGTON COUNTY
Dept. of Land Use & Transportation
Planning and Development Services
Current Planning
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
http://www.co.washington.or.us

Request for Statement of Service Availability for Schools

PRE-APPLICATION DATE: 9/30/2020

Service Provider: PLEASE RETURN THIS FORM TO: APPLICANT:

COMPANY: 3J Consulting, Inc.
CONTACT: Mercedes Serra
ADDRESS: 9600 SW Nimbus Ave. Suite 100
Beaverton, OR 97008
PHONE: (503)-946-9365 x211

☒ SCHOOL DISTRICT NO.: #48

OWNER(S): West Union and 185th Food Mkt. Inc.
NAME: DBA West Union Chevron Extra Mile
ADDRESS: PO Box 2092
Lake Oswego, OR 97035
PHONE:

Property Desc.: Tax Map(s): 1N1 19BC Lot Number(s): 500 and 600

Site Size: 1.21 acres

Site Address: 18450 NW West Union Road
Nearest cross street (or directions to site): NW 185th Avenue

PROPOSED PROJECT NAME: West Union Chevron

PROPOSED DEVELOPMENT ACTION: (DEVELOPMENT REVIEW, SUBDIVISION, MINOR PARTITION, SPECIAL USE)
Special Use and Development Review, and PLA to consolidate TL 500 & 600

EXISTING USE: Commercial - Restaurant PROPOSED USE: Convenience Store & Fuel Station

IF RESIDENTIAL:
NO. OF DWELLING UNITS:
SINGLE FAM. MULTI-FAM.

IF INDUSTRIAL/COMMERCIAL:
TYPE OF USE: Commercial
NO. OF SQ. FT. (GROSS FLOOR AREA) 5,000 SF

IF INSTITUTIONAL:
NO. SQ. FT.
NO. STUDENTS/EMPLOYEES/MEMBERS:

*****ATTENTION SERVICE PROVIDER*****

PLEASE INDICATE THE LEVEL OF SERVICE AVAILABLE TO THE SITE.
RETURN THIS COMPLETED FORM TO THE APPLICANT AS LISTED ABOVE.
(Do NOT return this form to Washington County. The applicant will submit the completed form with their Land Development Application submittal).

☒ SERVICE LEVEL IS **ADEQUATE** TO SERVE THE PROPOSED PROJECT.

SIGNATURE: POSITION: Facilities Planning Coordinator DATE: 3/18/2022

☐ FOR SERVICE LEVEL INFORMATION, SEE ATTACHED LETTER. (Per CDC §501-8.2 A)

SIGNATURE: POSITION: DATE:

☐ SERVICE LEVEL IS **INADEQUATE** TO SERVE THE PROPOSED PROJECT.
If the present or future service level is inadequate, please provide information documenting your inability to provide an adequate level of service. Additionally, provide information regarding whether the use of alternative means can be employed to provide an adequate service level. Documentation of adequacy and alternatives to provide an adequate service level may include but not be limited to the following:
1. Amount of bonded indebtedness; 2. Use of double shifting; 3. Extended school periods; 4. Bussing to underutilized facilities; 5. Year-around school; 6. Construction of new facilities; 7. Portable Classrooms; 8. Impact Fees; 9. Any combination of these or other alternatives.

SIGNATURE: POSITION: DATE:

WASHINGTON COUNTY
Dept. of Land Use & Transportation
Planning and Development Services
Current Planning
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
http://www.co.washington.or.us

Request For Statement Of Service Availability For Sheriff / Police Services

PRE-APPLICATION DATE: _____

Service Provider: PLEASE RETURN THIS FORM TO: APPLICANT:

COMPANY: 3J Consulting, Inc.
CONTACT: Mercedes Serra
ADDRESS: 9600 SW Nimbus Ave. Suite 100
Beaverton, OR 97008
PHONE: (503)-946-9365 x211

☒ WASHINGTON COUNTY SHERIFF

OWNER(S): West Union and 185th Food Mkt. Inc.
NAME: DBA West Union Chevron Extra Mile
ADDRESS: PO Box 2092
Lake Oswego, OR 97035
PHONE: _____

Property Desc.: Tax Map(s): 1N1 19BC Lot Number(s): 500 and 600

Site Size: 1.21 acres

Site Address: 18450 NW West Union Road
Nearest cross street (or directions to site): NW 185th Avenue

PROPOSED PROJECT NAME: West Union Chevron

PROPOSED DEVELOPMENT ACTION: (DEVELOPMENT REVIEW, SUBDIVISION, MINOR PARTITION, SPECIAL USE)
Special Use and Development Review, and PLA to consolidate TL 500 & 600

EXISTING USE: Commercial - Restaurant PROPOSED USE: Convenience Store & Fuel Station

IF RESIDENTIAL:
NO. OF DWELLING UNITS: _____
SINGLE FAM. _____ MULTI-FAM. _____

IF INDUSTRIAL/COMMERCIAL:
TYPE OF USE: Commercial
NO. OF SQ. FT. (GROSS FLOOR AREA) 5,000 SF

IF INSTITUTIONAL:
NO. SQ. FT. _____
NO. STUDENTS/EMPLOYEES/MEMBERS: _____

*****ATTENTION SERVICE PROVIDER*****

PLEASE INDICATE THE LEVEL OF SERVICE AVAILABLE TO THE SITE (ADEQUATE OR INADEQUATE).
RETURN THIS COMPLETED FORM TO THE APPLICANT AS LISTED ABOVE.
(Do NOT return this form to Washington County. The applicant will submit the completed form with their Land Development Application submittal).

☑ SERVICE LEVEL IS **ADEQUATE** TO SERVE THE PROPOSED PROJECT. (Use additional sheets if necessary.)
Please indicate what improvements, or revisions to the proposal are needed for you to provide adequate service to this project.

SIGNATURE: Jordan Weston POSITION: Lieutenant DATE: 03/8/22

☐ SERVICE LEVEL IS **INADEQUATE** TO SERVICE THE PROPOSED PROJECT.
If the present or future service level is inadequate, please provide information documenting your inability to provide an adequate level of service. Please also provide information regarding whether the use of alternative means can be employed to provide an adequate service level. Documentation of adequacy and alternatives to provide an adequate service level may include but not be limited to the following:
1. Contracting with private agency; 2. Contracting with other public agency; 3. Impact fees; 4. Any combination of these or other alternatives.

SIGNATURE: _____ POSITION: _____ DATE: _____

WASHINGTON COUNTY
Dept. of Land Use & Transportation
Planning and Development Services
Current Planning
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
http://www.co.washington.or.us

Request For Statement Of Service Availability THPRD

TUALATIN HILLS PARK & REC. DISTRICT

PRE-APPLICATION DATE: _____

Service Provider: PLEASE RETURN THIS FORM TO: APPLICANT:

COMPANY: 3J Consulting, Inc.
CONTACT: Mercedes Serra
ADDRESS: 9600 SW Nimbus Ave. Suite 100
Beaverton, OR 97008
PHONE: (503)-946-9365 x211

OWNER(S):

NAME: CJRW, LLC
ADDRESS: PO Box 2092
Lake Oswego, OR 97035
PHONE: 503-720-2917

Property Desc.: Tax Map(s): 1N1 19BC Lot Number(s): 500 and 600

Site Size: 1.21 acres

Site Address: 18450 NW West Union Road
Nearest cross street (or directions to site): NW 185th Avenue

PROPOSED PROJECT NAME: West Union Chevron

PROPOSED DEVELOPMENT ACTION: (DEVELOPMENT REVIEW, SUBDIVISION, MINOR PARTITION, SPECIAL USE)

Special Use and Development Review, and PLA to consolidate TL 500 & 600

EXISTING USE: Commercial - Restaurant PROPOSED USE: Drive-Thru Convenience Store & Fuel Station

IF RESIDENTIAL:
NO. OF DWELLING UNITS: _____
SINGLE FAM. _____ MULTI-FAM. _____

IF INDUSTRIAL/COMMERCIAL:
TYPE OF USE: Commercial
NO. OF SQ. FT. (GROSS FLOOR AREA) 4,800 SF

IF INSTITUTIONAL:
NO. SQ. FT. _____
NO. STUDENTS/EMPLOYEES/MEMBERS: _____

*****ATTENTION SERVICE PROVIDER*****

PLEASE INDICATE THE LEVEL OF SERVICE AVAILABLE TO THE SITE (ADEQUATE OR INADEQUATE).
RETURN THIS COMPLETED FORM TO THE APPLICANT AS LISTED ABOVE.
(Do NOT return this form to Washington County. The applicant will submit the completed form with their Land Development Application submittal).

☐ SERVICE LEVEL IS **ADEQUATE** TO SERVE THE PROPOSED PROJECT. (Use additional sheets if necessary.)
Please indicate what improvements, or revisions to the proposal are needed for you to provide adequate service to this project.

☒ This project is IN the THPRD.

☐ This project is OUT of the THPRD.
☐ This project IS required to annex into the THPRD service district prior to plat recordation.
☐ This project IS NOT required to annex.

SIGNATURE: _____ POSITION: _____ DATE: _____

☒ SERVICE LEVEL IS **INADEQUATE** TO SERVICE THE PROPOSED PROJECT.
Please indicate why the service level is inadequate.

SIGNATURE: _____ POSITION: Planner II DATE: 3/24/2022

Know what's below. Call before you dig.

SITE STATISTICS

SITE ADDRESS	18450 NW WEST UNION ROAD BEAVERTON, OR 97229
TAXLOT(S)	1N119BC09600 1N119BC00500
JURISDICTION	WASHINGTON COUNTY
GROSS SITE AREA	1.21 ACRES
PROPERTY ZONING	NEIGHBORHOOD COMMERCIAL (NC)
FLOOD INSURANCE RATE MAP	41067C0361E
PROPOSED BUILDING FFE	182.65-FT

VARIATIONS

BUILDING SETBACKS:	STANDARD	VARIATION
FRONT (NW 185TH AVE)	20 FT	NA
STREET SIDE (NW WEST UNION RD)	20 FT	NA
SIDE YARD (BETHANY CREEK)	0 FT	NA
REAR	20 FT	NA

SITE KEY NOTES

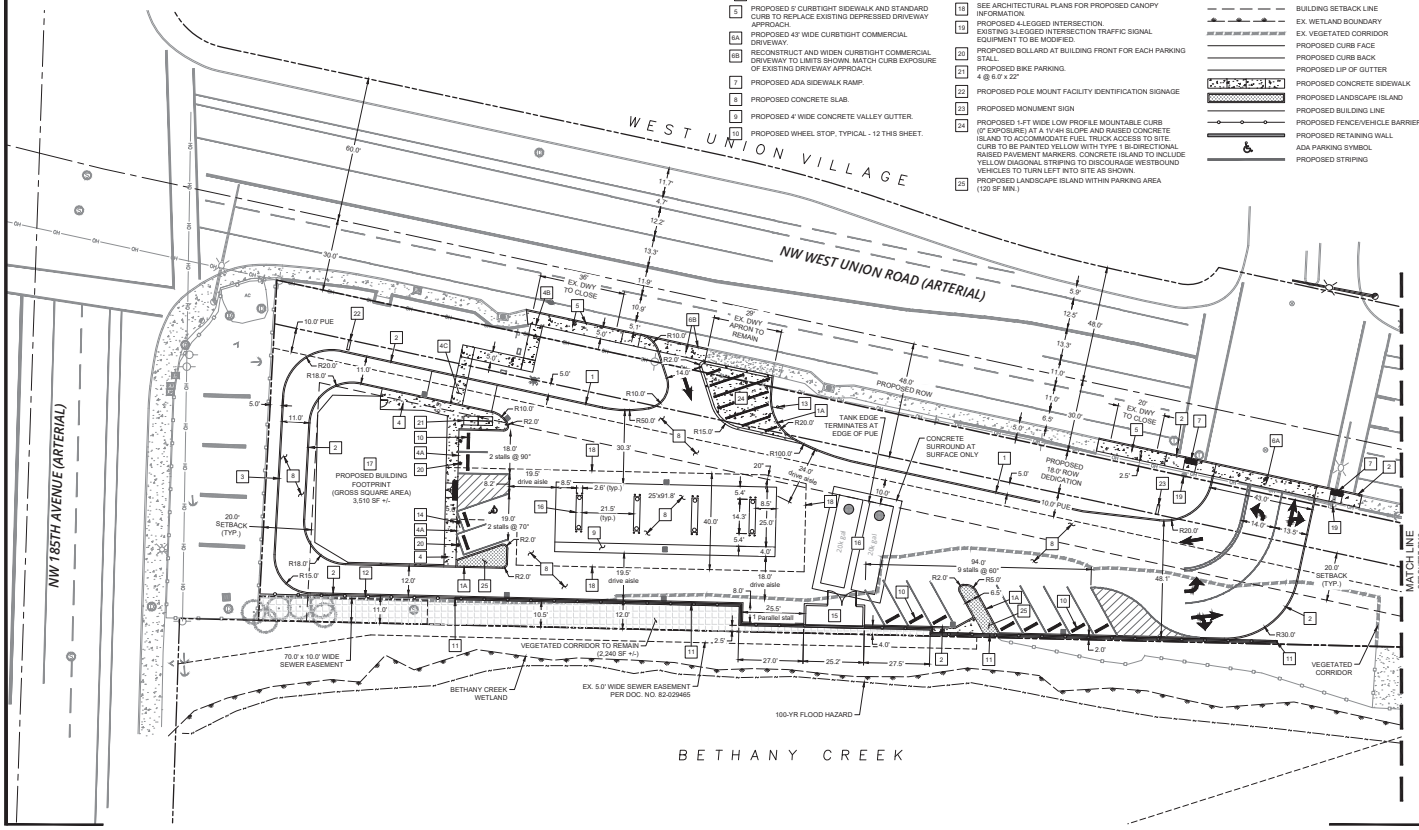
1. PROPOSED PLANTER CURB (6" EXPOSURE AND WEEP HOLES).
1A. PROPOSED PLANTER CURB ADJACENT TO RAISED CONCRETE ISLAND (EXPOSURE VARIES).
2. PROPOSED STANDARD CURB (6" EXPOSURE).
3. PROPOSED TALL CURB (6" EXPOSURE ON EAST/TRAFFIC SIDE, 12" EXPOSURE ON WEST/GRADING SIDE).
4. PROPOSED CONCRETE SIDEWALK, WIDTH PER PLAN.
4A. CONCRETE SIDEWALK TO BE FLUSH WITH CONCRETE SLAB AT FRONT OF BUILDING.
4B. PROPOSED ACCESSIBLE PEDESTRIAN CONNECTION TO PUBLIC SIDEWALK.
4C. RAISED PEDESTRIAN CROSSING
5. PROPOSED 5' CURBTIGHT SIDEWALK AND STANDARD CURB TO REPLACE EXISTING DEPRESSED DRIVEWAY APPROACH.
6A. PROPOSED 43' WIDE CURBTIGHT COMMERCIAL DRIVEWAY.
6B. RECONSTRUCT AND WIDEN CURBTIGHT COMMERCIAL DRIVEWAY TO LIMITS SHOWN. MATCH CURB EXPOSURE OF EXISTING DRIVEWAY APPROACH.
7. PROPOSED ADA SIDEWALK RAMP.
8. PROPOSED CONCRETE SLAB.
9. PROPOSED 4' WIDE CONCRETE VALLEY GUTTER.
10. PROPOSED WHEEL STOP, TYPICAL - 12 THIS SHEET.
11. PROPOSED RETAINING WALL WITH 6-FT PRIVACY WOOD FENCE INSTALLED ON TOP. (0' MIN. TO 5.6' MAX. WALL HEIGHT).
12. PROPOSED 6-FT PRIVACY WOOD FENCE.
13. PROPOSED SIGN - "DO NOT ENTER" (FOR RIGHT-IN ONLY).
14. PROPOSED SIGN - INTERNATIONAL SYMBOL OF ACCESSIBILITY AND DESIGNATION, "VAN ACCESSIBLE".
15. SEE ARCHITECTURAL PLANS FOR TRASH ENCLOSURE INFORMATION.
16. SEE PETROLEUM PLANS FOR UNDERGROUND FUEL TANK AND PUMP INFORMATION. PROVIDE 10' SEPARATION FROM EDGE OF TANK TO EDGE OF PUE.
17. SEE ARCHITECTURAL PLANS FOR PROPOSED BUILDING INFORMATION.
18. SEE ARCHITECTURAL PLANS FOR PROPOSED CANOPY INFORMATION.
19. PROPOSED 4-LEGGED INTERSECTION. EXISTING 3-LEGGED INTERSECTION TRAFFIC SIGNAL EQUIPMENT TO BE MODIFIED.
20. PROPOSED BOLLARD AT BUILDING FRONT FOR EACH PARKING STALL.
21. PROPOSED BIKE PARKING. 4 @ 6.0' x 22'
22. PROPOSED POLE MOUNT FACILITY IDENTIFICATION SIGNAGE
23. PROPOSED MONUMENT SIGN
24. PROPOSED 1-FT WIDE LOW PROFILE MOUNTABLE CURB (0" EXPOSURE) AT A 1V:4H SLOPE AND RAISED CONCRETE ISLAND TO ACCOMMODATE FUEL TRUCK ACCESS TO SITE CURB TO BE PAINTED YELLOW WITH TYPE 1 BI-DIRECTIONAL RAISED PAVEMENT MARKERS. CONCRETE ISLAND TO INCLUDE YELLOW DIAGONAL STRIPING TO DISCOURAGE WESTBOUND VEHICLES TO TURN LEFT INTO SITE AS SHOWN.
25. PROPOSED LANDSCAPE ISLAND WITHIN PARKING AREA (120 SF MIN.)

N W E S

SCALE: 1" = 20'
0 20 40 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- BUILDING SETBACK LINE
- EX. WETLAND BOUNDARY
- EX. VEGETATED CORRIDOR
- PROPOSED CURB FACE
- PROPOSED CURB BACK
- PROPOSED LIP OF GUTTER
- PROPOSED CONCRETE SIDEWALK
- PROPOSED LANDSCAPE ISLAND
- PROPOSED BUILDING LINE
- PROPOSED FENCE/VEHICLE BARRIER
- PROPOSED RETAINING WALL
- ADA PARKING SYMBOL
- PROPOSED STRIPING



PRELIMINARY

PUBLISH DATE
MARCH 17, 2022

ISSUED FOR
LAND USE DOCUMENTS

REVISIONS

PRELIMINARY SITE PLAN

WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100, BEAVERTON, OR 97008

PROJECT INFORMATION

3J PROJECT #	18509
TAX LOT(S)	1N119BC00(600,500)
LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

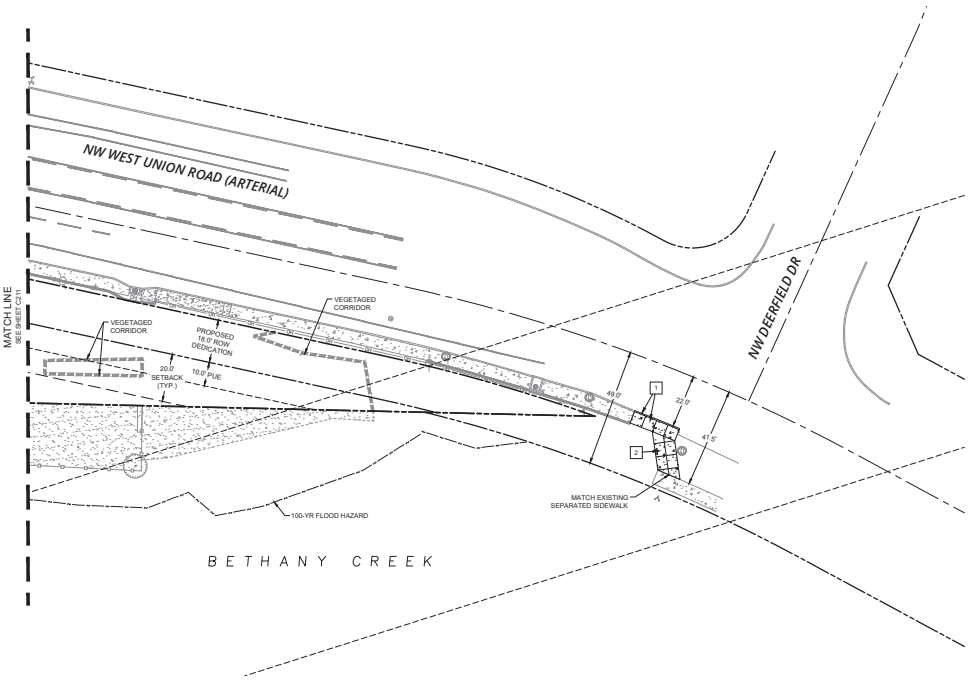
SHEET NUMBER
C211

P:\18509\WEST UNION CHEVRON\CAD\DGN\SHEETS\C2\18 SITE PLAN.DWG

Know what's below. Call before you dig.

SITE KEY NOTES

1. PROPOSED 5' CURBTIGHT SIDEWALK AND STANDARD CURB (6" EXPOSURE).
2. PROPOSED CURBTIGHT SIDEWALK TO SEPARATED SIDEWALK CONNECTION.



LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- BUILDING SETBACK LINE
- EX. WETLAND BOUNDARY
- EX. VEGETATED CORRIDOR
- PROPOSED CURB FACE
- PROPOSED CURB BACK
- PROPOSED CONCRETE SIDEWALK

LICENSED PROFESSIONAL ENGINEER — 80010 — OREGON — JANUARY 15, 2008 — ANDREW J. JOHNSON — PRELIMINARY — NOT FOR CONSTRUCTION — EXPIRES: 06/30/22

PUBLISH DATE
MARCH 17, 2022

ISSUED FOR
LAND USE DOCUMENTS

REVISIONS

PRELIMINARY SITE PLAN

WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100 | BEAVERTON, OR 97008

PROJECT INFORMATION

3J PROJECT #	18509
TAX LOT(S)	1N119BC00(600,500)
LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

SHEET NUMBER
C212

P:\18509\WEST UNION CHEVRON\C-ADD\DISHEETS\C212 SITE PLAN.DWG

March 24, 2022

Mercedes Serra, Senior Urban Designer
3J Consulting, Inc.
9600 SW Nimbus Ave., Suite 100
Beaverton, OR 97008
By Email: mercedes.serra@3j-consulting.com

Re: West Union Chevron – Tax Lot 1N119BC 500 and 600

Dear Ms. Serra,

The Tualatin Hills Park & Recreation District (THRPD) has received your Request for Service Availability form for the above referenced project. The property is located within THPRD's service area and is not required to annex per Washington County development code.

THPRD approved its Parks Functional Plan (PFP) in 2019. This plan identifies the area surrounding your proposed development as being below THPRD's service threshold according to the PFP's Figure 5 – Perspective D: Gaps in Walk Access to All Recreation map (see Attachment A). To improve walkable access to parks within the area surrounding this project, THPRD requests that the applicant considers repairing the break in the sidewalk on the eastern edge of the property (see Attachment B). Additionally, THPRD has concerns about illegal dumping within the THPRD-owned Rock Creek Greenway natural area and requests the applicant considers installing fencing to separate the subject property from THPRD's Rock Creek Greenway (see Attachment B). Finally, because the Rock Creek Greenway contains sensitive wildlife habitat, THPRD requests the applicant considers installing dark sky-friendly lighting within the proposed development.

THPRD appreciates your consideration of these requests. If you have any questions or would like to discuss this further, please feel free to contact Bruce Barbarasch, Nature & Trails Manager at 503-614-1214 or b.barbarasch@thrpd.org, or myself at (503) 619-3981 or pswinton@thprd.org.

Sincerely,

Peter Swinton
Planner II, THPRD

CC: Bruce Barbarasch, Natural & Trails Manager

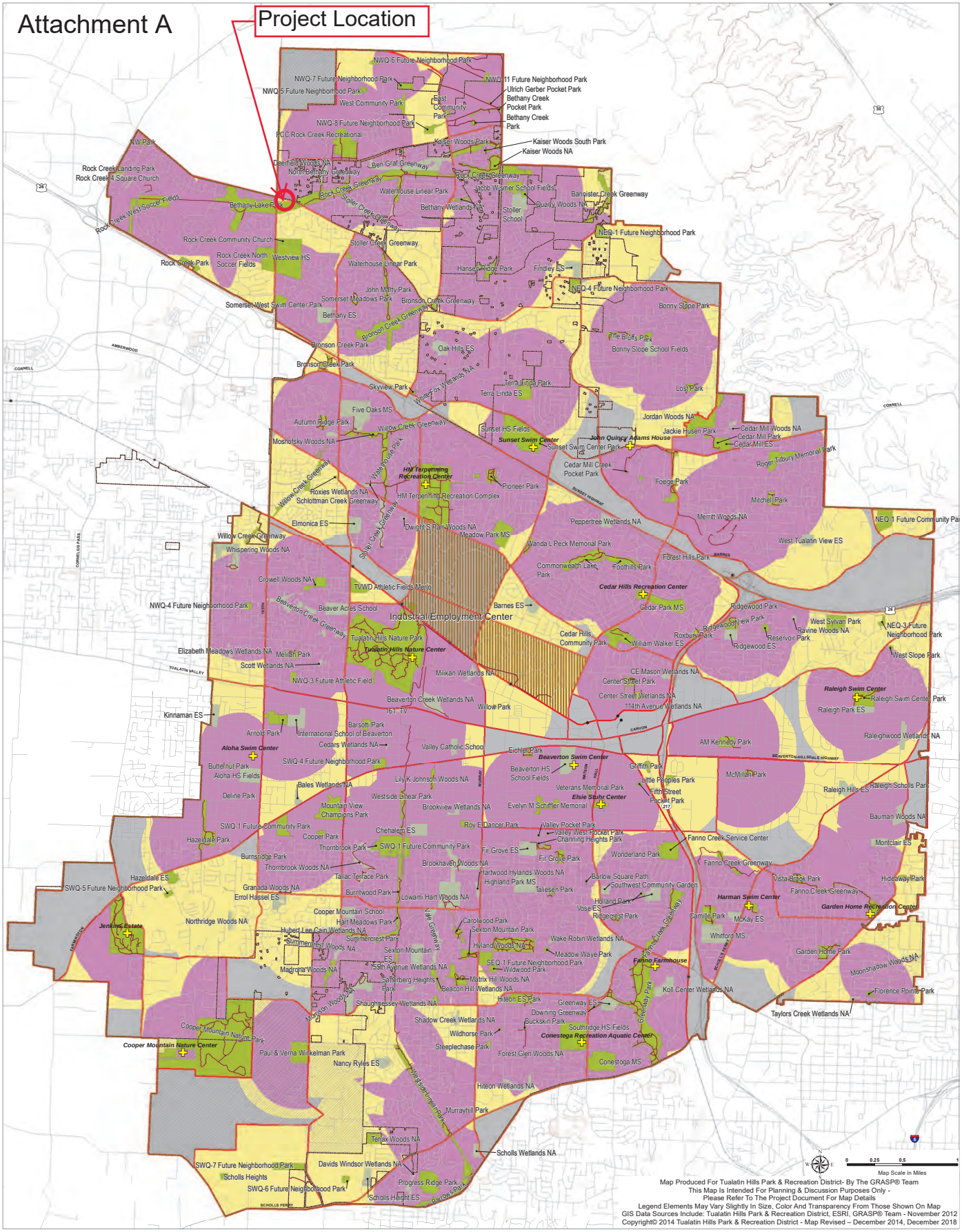


Figure 5. Perspective D: Gaps in Walk Access to All Recreation

ATTACHMENT B:

General Property Line

Break in sidewalk. Currently a small asphalt connection shown in dashed line

Area where illegal dumping has occurred on site and on THPRD-owned land.

Know what's below. Call before you dig.

THIS PLAN HAS BEEN PREPARED FOR PLANNING AND ILLUSTRATIVE PURPOSES ONLY. THIS FIRE ACCESS PLAN SHOWS PROPOSED FIRE HOSE LINE PULL EXTENTS FROM ASSUMED FIRE TRUCK ACCESS LOCATIONS AND EXISTING HYDRANT COVERAGE.

N
W E
S

SCALE: 1" = 20'
0 20 40 FT

FIRE HYDRANT KEY NOTES

1. EXISTING HYDRANT LOCATED BEHIND CURB AT WEST UNION VILLAGE NORTHEAST CURB RETURN.
2. EXISTING HYDRANT LOCATED BEHIND SIDEWALK AT 185TH AVE SOUTHWEST CURB RETURN.
3. PROPOSED FIRE HYDRANT.

PETROLEUM KEY NOTES

1. UNDERGROUND FUEL STORAGE TANKS, AS SHOWN:
   20,000 GALLON DIESEL (37.5' x 10' DIA.)
   20,000 GALLON REGULAR GASOLINE (37.5' x 10' DIA.)

Fire flow demand and fire flow calculations are required for this project and will be submitted as a deferred submittal.

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- EX. WETLAND BOUNDARY
- FW — PR. WATER FIRE SERVICE
- PR. HYDRANT
- PR. VALVE
- PR. FIRE HOSE LINE PULL EXTENTS FROM FIRE TRUCK
- PR. 400' RADIUS HYDRANT COVER
- FIRE TRUCK

400' RADIUS HYDRANT COVERAGE (1)

2 400' RADIUS HYDRANT COVERAGE

WEST UNION VILLAGE

NW WEST UNION ROAD (ARTERIAL)

NW 185TH AVENUE (ARTERIAL)

18" D.I. WATER (PER AS-BUILTS)

8" D.I. WATER (PER AS-BUILTS)

EXISTING R/W

PROPOSED R/W

PROPOSED BUILDING FOOTPRINT

150' HOSE PULL

147' HOSE PULL

Bollards required to protect fire hydrant in accordance with OFC Sections 312.2 & 507.5.5

Curbing to be painted red at this location with stencils that state "No Parking Fire Lane"

20k gal

20k gal

PROPOSED PUE

Note: This project will require a final inspection from TVF&R

BETHANY CREEK WETLAND

100-YR FLOOD HAZARD

BETHANY CREEK

Tualatin Valley Fire & Rescue
APPROVED PLANS
APPROVAL OF PLANS IS NOT AN APPROVAL OF OMISSIONS OR OVERSIGHTS.
Jeremy Foster
Deputy Fire Marshal II

TVF&R Permit # 2022-0048

REGISTERED PROFESSIONAL ENGINEER
85017PE
OREGON
DEC. 17, 2014
ANDREW EVERETT JOHNSTON
PRELIMINARY
EXPIRES: 06/30/23

PUBLISH DATE
MARCH 17, 2022
ISSUED FOR
LAND USE DOCUMENTS
REVISIONS

FIRE ACCESS PLAN
WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100, BEAVERTON, OR 97008

PROJECT INFORMATION
3J PROJECT # | 18509
TAX LOT(S) | 1N119BC00(600,500)
LAND USE # | --
DESIGNED BY | JEJ
CHECKED BY | AJM

SHEET NUMBER
C223

P:\18509-WEST UNION CHEVRON\CAD\DGN\SHEETS\C223 FIRE ACCESS PLAN.DWG

Know what's below. Call before you dig.

SITE STATISTICS

SITE ADDRESS	18450 NW WEST UNION ROAD BEAVERTON, OR 97229
TAXLOT(S)	1N119BC00600 1N119BC00500
JURISDICTION	WASHINGTON COUNTY
GROSS SITE AREA	1.21 ACRES
PROPERTY ZONING	NEIGHBORHOOD COMMERCIAL (NC)
FLOOD INSURANCE RATE MAP	41067C0361E
PROPOSED BUILDING FFE	182.60-FT

VARIATIONS

BUILDING SETBACKS:	STANDARD	VARIATION
FRONT (NW 185TH AVE)	20 FT	NA
STREET SIDE (NW WEST UNION RD)	20 FT	NA
SIDE YARD (BETHANY CREEK)	0 FT	NA
REAR	20 FT	NA

SITE KEY NOTES

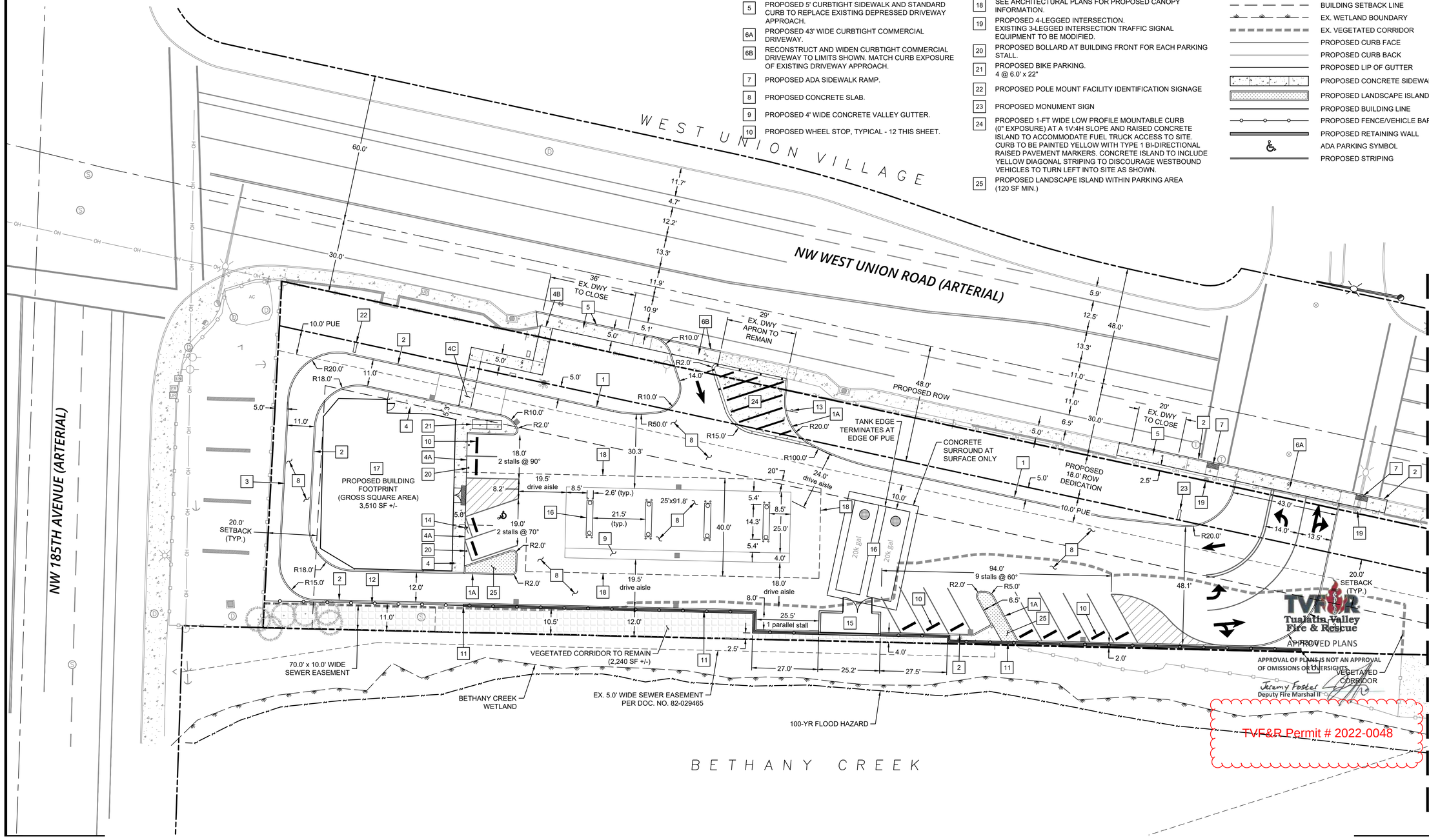
1. PROPOSED PLANTER CURB (6" EXPOSURE AND WEEP HOLES).
1A. PROPOSED PLANTER CURB ADJACENT TO RAISED CONCRETE ISLAND (EXPOSURE VARIES).
2. PROPOSED STANDARD CURB (6" EXPOSURE).
3. PROPOSED TALL CURB (6" EXPOSURE ON EAST/TRAFFIC SIDE, 12" EXPOSURE ON WEST/GRADING SIDE).
4. PROPOSED CONCRETE SIDEWALK, WIDTH PER PLAN.
4A. CONCRETE SIDEWALK TO BE FLUSH WITH CONCRETE SLAB AT FRONT OF BUILDING.
4B. PROPOSED ACCESSIBLE PEDESTRIAN CONNECTION TO PUBLIC SIDEWALK.
4C. RAISED PEDESTRIAN CROSSING
5. PROPOSED 5' CURBTIGHT SIDEWALK AND STANDARD CURB TO REPLACE EXISTING DEPRESSED DRIVEWAY APPROACH.
6A. PROPOSED 43' WIDE CURBTIGHT COMMERCIAL DRIVEWAY.
6B. RECONSTRUCT AND WIDEN CURBTIGHT COMMERCIAL DRIVEWAY TO LIMITS SHOWN. MATCH CURB EXPOSURE OF EXISTING DRIVEWAY APPROACH.
7. PROPOSED ADA SIDEWALK RAMP.
8. PROPOSED CONCRETE SLAB.
9. PROPOSED 4' WIDE CONCRETE VALLEY GUTTER.
10. PROPOSED WHEEL STOP, TYPICAL - 12 THIS SHEET.
11. PROPOSED RETAINING WALL WITH 6-FT PRIVACY WOOD FENCE INSTALLED ON TOP. (0' MIN. TO 5.6' MAX. WALL HEIGHT).
12. PROPOSED 6-FT PRIVACY WOOD FENCE.
13. PROPOSED SIGN - "DO NOT ENTER" (FOR RIGHT-IN ONLY).
14. PROPOSED SIGN - INTERNATIONAL SYMBOL OF ACCESSIBILITY AND DESIGNATION, "VAN ACCESSIBLE".
15. SEE ARCHITECTURAL PLANS FOR TRASH ENCLOSURE INFORMATION.
16. SEE PETROLEUM PLANS FOR UNDERGROUND FUEL TANK AND PUMP INFORMATION. PROVIDE 10' SEPARATION FROM EDGE OF TANK TO EDGE OF PUE.
17. SEE ARCHITECTURAL PLANS FOR PROPOSED BUILDING INFORMATION.
18. SEE ARCHITECTURAL PLANS FOR PROPOSED CANOPY INFORMATION.
19. PROPOSED 4-LEGGED INTERSECTION. EXISTING 3-LEGGED INTERSECTION TRAFFIC SIGNAL EQUIPMENT TO BE MODIFIED.
20. PROPOSED BOLLARD AT BUILDING FRONT FOR EACH PARKING STALL.
21. PROPOSED BIKE PARKING. 4 @ 6.0' x 22"
22. PROPOSED POLE MOUNT FACILITY IDENTIFICATION SIGNAGE
23. PROPOSED MONUMENT SIGN
24. PROPOSED 1-FT WIDE LOW PROFILE MOUNTABLE CURB (0" EXPOSURE) AT A 1V:4H SLOPE AND RAISED CONCRETE ISLAND TO ACCOMMODATE FUEL TRUCK ACCESS TO SITE. CURB TO BE PAINTED YELLOW WITH TYPE 1 BI-DIRECTIONAL RAISED PAVEMENT MARKERS. CONCRETE ISLAND TO INCLUDE YELLOW DIAGONAL STRIPING TO DISCOURAGE WESTBOUND VEHICLES TO TURN LEFT INTO SITE AS SHOWN.
25. PROPOSED LANDSCAPE ISLAND WITHIN PARKING AREA (120 SF MIN.)

N W E S

SCALE: 1" = 20'
0 20 40 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- BUILDING SETBACK LINE
- EX. WETLAND BOUNDARY
- EX. VEGETATED CORRIDOR
- PROPOSED CURB FACE
- PROPOSED CURB BACK
- PROPOSED LIP OF GUTTER
- PROPOSED CONCRETE SIDEWALK
- PROPOSED LANDSCAPE ISLAND
- PROPOSED BUILDING LINE
- PROPOSED FENCE/VEHICLE BARRIER
- PROPOSED RETAINING WALL
- ADA PARKING SYMBOL
- PROPOSED STRIPING



REGISTERED PROFESSIONAL ENGINEER
85017PE
OREGON
DEC. 17, 2014
JAMES EVERETT JOHNSTON
PRELIMINARY
EXPIRES: 06/30/23

PUBLISH DATE
MARCH 17, 2022

ISSUED FOR
LAND USE DOCUMENTS

REVISIONS

PRELIMINARY SITE PLAN
WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION

3J PROJECT #	18509
TAX LOT(S)	1N119BC00(600,500)
LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

SHEET NUMBER
C211

P:\18509-WEST UNION CHEVRON\CAD\DD\SHEETS\C210 SITE PLAN.DWG

Know what's below. Call before you dig.

SITE KEY NOTES

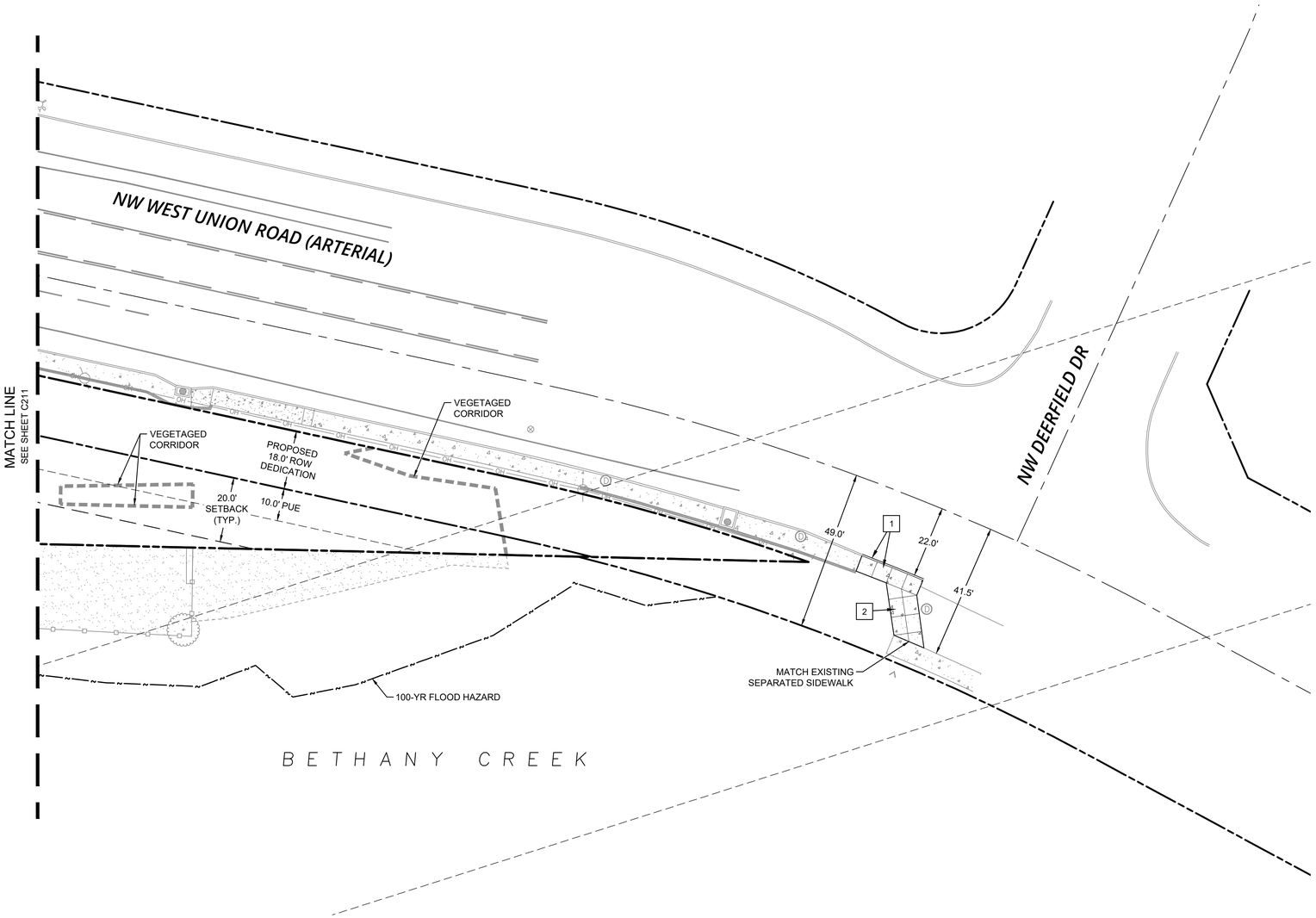
1. PROPOSED 5' CURBTIGHT SIDEWALK AND STANDARD CURB (6" EXPOSURE).
2. PROPOSED CURBTIGHT SIDEWALK TO SEPARATED SIDEWALK CONNECTION.

N
W E
S

SCALE: 1" = 20'
0 20 40 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- BUILDING SETBACK LINE
- EX. WETLAND BOUNDARY
- EX. VEGETATED CORRIDOR
- PROPOSED CURB FACE
- PROPOSED CURB BACK
- PROPOSED CONCRETE SIDEWALK



TVF&R Tualatin Valley Fire & Rescue

APPROVED PLANS

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Jeremy Foster
Deputy Fire Marshal II

TVF&R Permit # 2022-0048

REGISTERED PROFESSIONAL ENGINEER
85017PE
OREGON
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ANDREW EVERETT JOHNSTON
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PRELIMINARY SITE PLAN

WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
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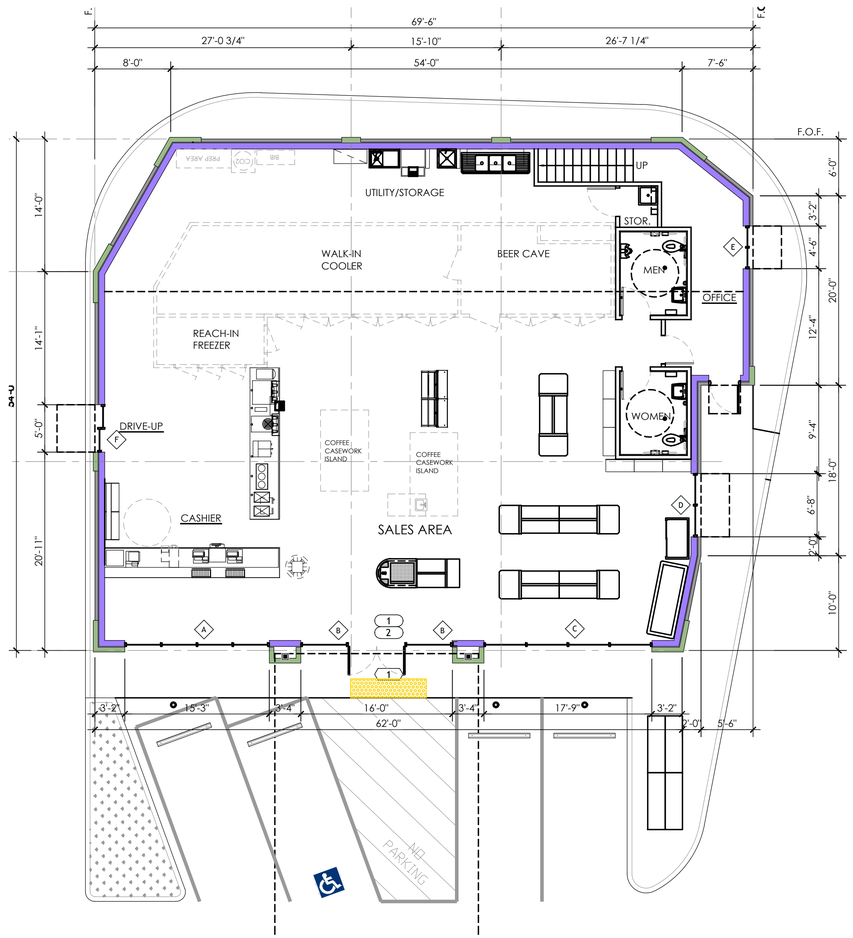
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION

3J PROJECT #	18509
TAX LOT(S)	1N119BC00(600,500)
LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

SHEET NUMBER
C212

P:\18509-WEST UNION CHEVRON\CAD\DD\SHEETS\C210 SITE PLAN.DWG



GROUND FLOOR PLAN — 1/8" = 1'-0" — 5

KEY	DESCRIPTION
	(N) EXTERIOR WALL CLADDING - MASONRY (BRICK OR STONE AS OCCURS)
	(N) EXTERIOR WALL - 1 HOUR RATED
	(N) EXTERIOR WALL - 2 HOUR RATED
	(N) INTERIOR PARTITION - TYP. U.N.O.
	(N) EXTERIOR WALL CLADDING - MASONRY (BRICK OR STONE AS OCCURS)

WALL LEGEND — -- — 1

X KEYNOTE DESCRIPTION

1. ALL DOORS IN THE MEANS OF EGRESS SHALL BE OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT; THE UNLATCHING OF ANY DOOR SHALL NOT REQUIRE MORE THAN ONE OPERATION. NO MORE THAN 5LBS OF PRESSURE TO OPERATE.

2. FOR GROUP M OCCUPANCY, KEY-OPERATED LOCKING DEVICES, FROM THE EGRESS SIDE MAY BE USED ON THE MAIN EXTERIOR DOORS PROVIDED;
   A. THE LOCKING DEVICE IS READILY DISTINGUISHABLE LOCKED; AND;
   B. THERE IS A READILY VISIBLE SIGN ON OR ADJACENT TO THE DOOR STATING "THIS DOOR SHALL REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED; AND;
   C. THIS SIGN SHALL BE IN LETTERS NOT LESS THAN 1 INCH HIGH ON A CONTRASTING BACKGROUND; AND;
   D. THE USE OF THIS EXCEPTION MAY BE REVOKED BY THE BUILDING OFFICIAL AT ANY TIME FOR DUE CAUSE.

CONSTRUCTION PLAN KEYNOTES — -- — 3

NOT USED — -- — 2

Tualatin Valley Fire & Rescue
APPROVED PLANS
APPROVAL OF PLANS DOES NOT PREVENT THE CORRECTION OF OMISSIONS OR OVERSIGHTS.
Jeremy Foster
Deputy Fire Marshal II

TVF&R Permit # 2022-0048

KEN McCRACKEN, ARCHITECT
Architecture • Program Management • Permitting
19120 SE 34th Street
Suite 115
Vancouver, WA 98683
CONTACT: MARTIN D. LAKEY
PHONE: 360.719.1952
EMAIL: MLAKEY@PMDGINC.COM

SEAL:

PRELIMINARY - NOT FOR CONSTRUCTION

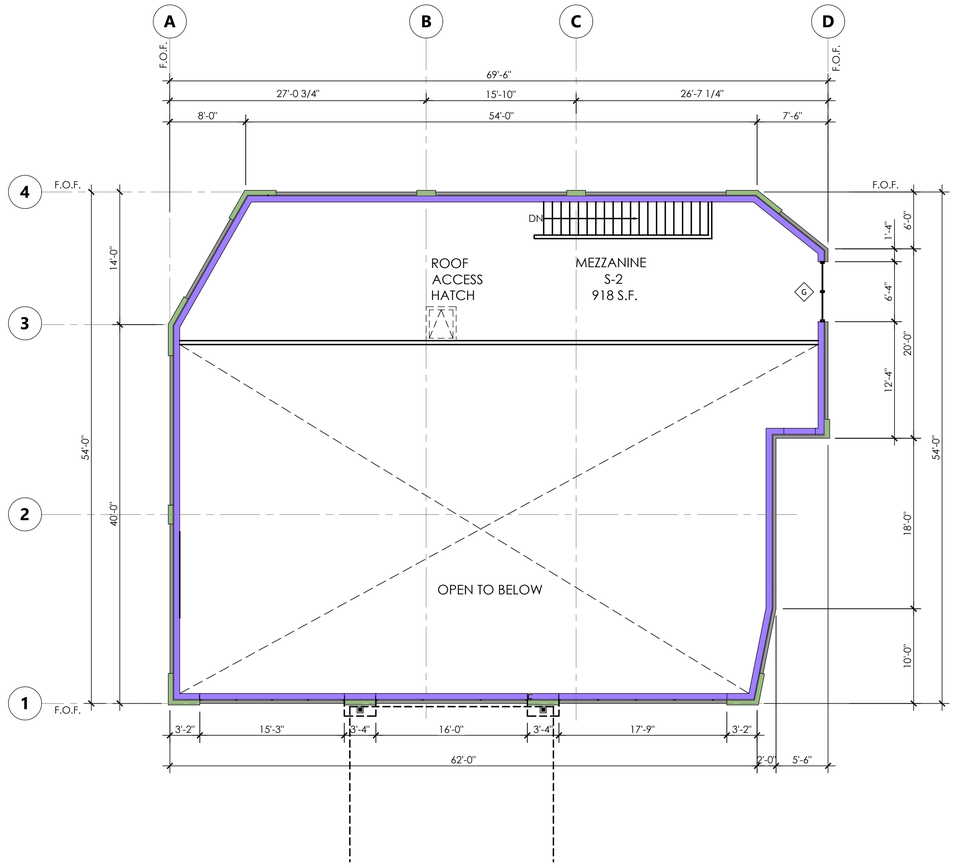
CONSULTANT:

HILLSBORO FAST SERVE

STORE NO.:
18450 NW WEST UNION ROAD
WASHINGTON COUNTY
HILLSBORO, OR 97229

REV	DATE	DESCRIPTION
1	06.18.21	UPDATE
2	04.12.22	UPDATE

DRAWN BY: CG
CHECKED BY: DW
ARCH. PROJECT NO.: CHV18022.0
SHEET NAME: GROUND FLOOR PLAN
SHEET NUMBER: **A02.10**



MEZZANINE FLOOR PLAN — 1/8" = 1'-0" — 5

X KEYNOTE DESCRIPTION

1. ALL DOORS IN THE MEANS OF EGRESS SHALL BE OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT; THE UNLATCHING OF ANY DOOR SHALL NOT REQUIRE MORE THAN ONE OPERATION. NO MORE THAN 5LBS OF PRESSURE TO OPERATE.

2. FOR GROUP M OCCUPANCY, KEY-OPERATED LOCKING DEVICES, FROM THE EGRESS SIDE MAY BE USED ON THE MAIN EXTERIOR DOORS PROVIDED;
   A. THE LOCKING DEVICE IS READILY DISTINGUISHABLE LOCKED; AND;
   B. THERE IS A READILY VISIBLE SIGN ON OR ADJACENT TO THE DOOR STATING "THIS DOOR SHALL REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED; AND;
   C. THIS SIGN SHALL BE IN LETTERS NOT LESS THAN 1 INCH HIGH ON A CONTRASTING BACKGROUND; AND;
   D. THE USE OF THIS EXCEPTION MAY BE REVOKED BY THE BUILDING OFFICIAL AT ANY TIME FOR DUE CAUSE.

CONSTRUCTION PLAN KEYNOTES — -- — 3

NOT USED — -- — 2

KEY	DESCRIPTION
	(N) EXTERIOR WALL CLADDING - MASONRY (BRICK OR STONE AS OCCURS)
	(N) EXTERIOR WALL - 1 HOUR RATED
	(N) EXTERIOR WALL - 2 HOUR RATED
	(N) INTERIOR PARTITION - 1 HOUR RATED
	(N) EXTERIOR WALL CLADDING - MASONRY (BRICK OR STONE AS OCCURS)

APPROVED PLANS MAY BE SUBJECT TO CORRECTION OF OMISSIONS OR OVERSIGHTS.

Jeremy Foster
Deputy Fire Marshal II

TVF&R Permit # 2022-0048

WALL LEGEND — -- — 1

KEN McCRACKEN, ARCHITECT
Architecture • Program Management • Permitting
19120 SE 34th Street
Suite 115
Vancouver, WA 98683
CONTACT: MARTIN D. LAKEY
PHONE: 360.719.1952
EMAIL: MLAKEY@PMDGINC.COM

SEAL:

PRELIMINARY - NOT FOR CONSTRUCTION

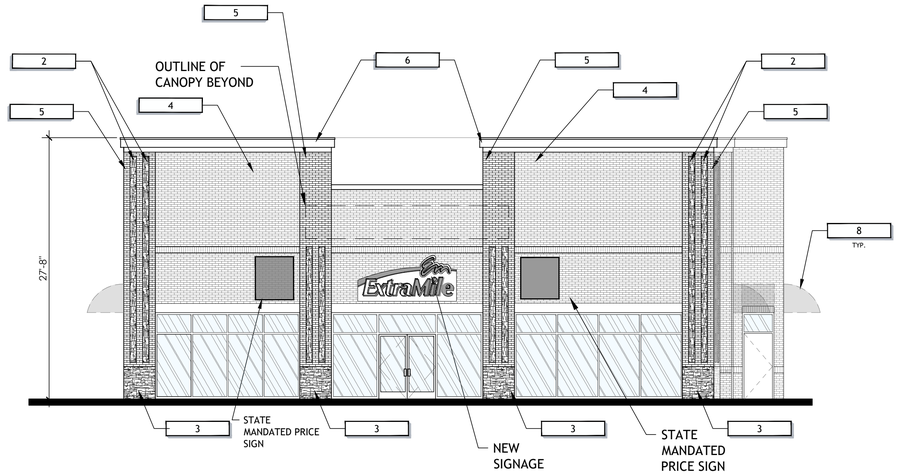
CONSULTANT:

HILLSBORO FAST SERVE

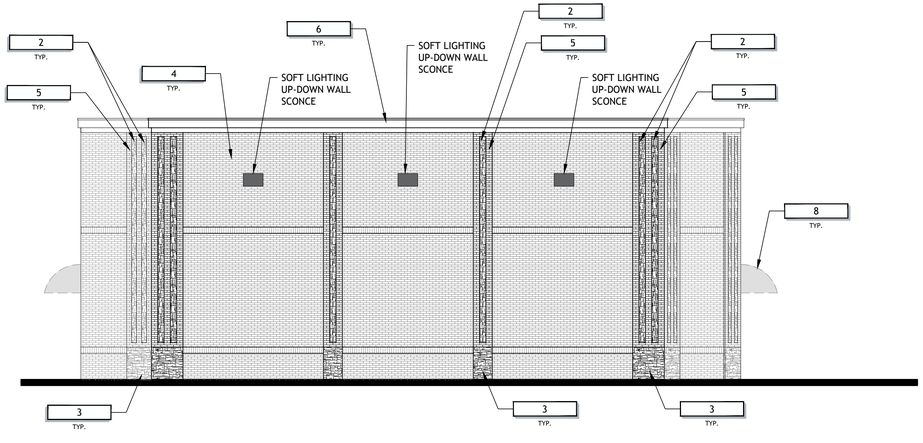
STORE NO.:
18450 NW WEST UNION ROAD
WASHINGTON COUNTY
HILLSBORO, OR 97229

REV	DATE	DESCRIPTION
△	06.18.21	UPDATE
△	04.12.22	UPDATE

DRAWN BY: CG
CHECKED BY: DW
ARCH. PROJECT NO.: CHV18022.0
SHEET NAME: MEZZANINE FLOOR PLAN
SHEET NUMBER: **A02.11**



EAST ELEVATION | 1/8" = 1'-0" | 7



WEST ELEVATION | 1/8" = 1'-0" | 5

X

NOTE:
EXTERIOR SIGNAGE IS TO BE SUBMITTED, REVIEWED, AND APPROVED UNDER A SEPARATE PERMIT.

EXTERIOR ELEVATION KEYNOTES | -- | 3

X-X

1. NOT USED
2. CULTURED STONE:
   TYPE: ARCHITECTURAL STONE TRIM
   COLOR: GRAY
   MFR: BORAL AMERICA
3. CULTURED STONE:
   TYPE: EUROPEAN CASTLE STONE
   COLOR: CHARDONNAY
   MFR: BORAL AMERICA
4. BRICK:
   TYPE: STANDARD
   COLOR: MOUNTAIN BLEND
   (BODY)
   MFR.: MUTUAL MATERIALS
5. BRICK:
   TYPE: STANDARD
   COLOR: CANYON MIST
   (ACCENT)
   MFR.: MUTUAL MATERIALS
6. 7/8" CEMENT PLASTER CORNICE
7. COLOR: PAINT TO MATCH CANYON MIST BRICK

   BLACK ALUMINUM:
   STOREFRONT FRAMES AND BREAK METAL
8. AWNINGS:
   QUARTER ROUND CANVAS OVER LIGHT METAL FRAMING
   COLOR: CHILLED WINE
   MFR: ROSE CITY AWNING CO.
9. ELECTRICAL CLOSET DOORS & EMERGENCY EXIT DOORS:
   COLOR: PAINT TO MATCH CANYON MIST BRICK

TVF&R
Tualatin Valley
Fire & Rescue
APPROVED PLANS

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MATERIALS LEGEND | -- | 4

KEN McCRACKEN, ARCHITECT
Architecture • Program Management • Permitting

16219 SE 12th Street
Suite 202
Vancouver, WA 98683

CONTACT: MARTIN D. LAKEY
PHONE: 360.719.1952
EMAIL: MLAKEY@PMDGINC.COM

SEAL:

PRELIMINARY - NOT FOR CONSTRUCTION

CONSULTANT:

HILLSBORO FAST SERVE

STORE NO.:
18450 NW WEST UNION ROAD
WASHINGTON COUNTY
HILLSBORO, OR 97229

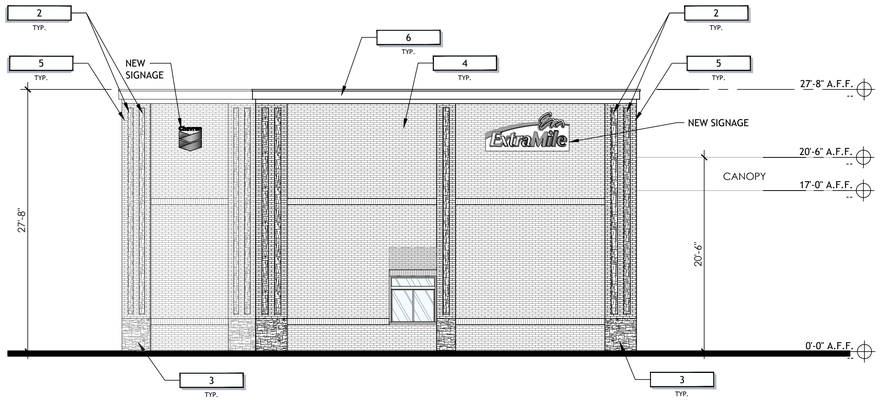
REV	DATE	DESCRIPTION
1	06.18.21	UPDATE
2	04.12.22	UPDATE

DRAWN BY: CG
CHECKED BY: DW

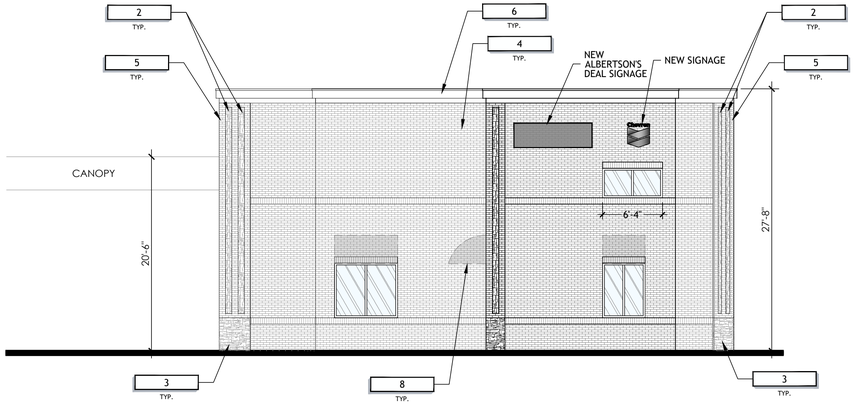
ARCH. PROJECT NO.:
CHV18022.0

SHEET NAME:
EXTERIOR ELEVATIONS

SHEET NUMBER:
FS-2



SOUTH ELEVATION | 1/8" = 1'-0" | **7**



NORTH ELEVATION | 1/8" = 1'-0" | **5**

EXTERIOR ELEVATION KEYNOTES | -- | **3**

X-X

1. NOT USED
2. CULTURED STONE:
   TYPE: ARCHITECTURAL STONE TRIM
   COLOR: GRAY
   MFR: BORAL AMERICA
3. CULTURED STONE:
   TYPE: EUROPEAN CASTLE STONE
   COLOR: CHARDONNAY
   MFR: BORAL AMERICA
4. BRICK:
   TYPE: STANDARD
   COLOR: MOUNTAIN BLEND
   (BODY)
   MFR.: MUTUAL MATERIALS
5. BRICK:
   TYPE: STANDARD
   COLOR: CANYON MIST
   (ACCENT)
6. MFR.: MUTUAL MATERIALS
7. 7/8" CEMENT PLASTER CORNICE
   COLOR: PAINT TO MATCH CANYON MIST BRICK
   BLACK ALUMINUM:
   STOREFRONT FRAMES AND BREAK METAL
8. AWNINGS:
   QUARTER ROUND CANVAS OVER LIGHT METAL FRAMING
   COLOR: CHILLED WINE
   MFR: ROSE CITY AWNING CO.
9. ELECTRICAL CLOSET DOORS & EMERGENCY EXIT DOORS:
   COLOR: PAINT TO MATCH CANYON MIST BRICK

Tualatin Valley Fire & Rescue
APPROVED PLANS

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Jeremy Foster
Deputy Fire Marshal II

TVF&R Permit # 2022-0048

MATERIALS LEGEND | -- | **4**

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CONSULTANT:

HILLSBORO FAST SERVE

STORE NO.:
18450 NW WEST UNION ROAD
WASHINGTON COUNTY
HILLSBORO, OR 97229

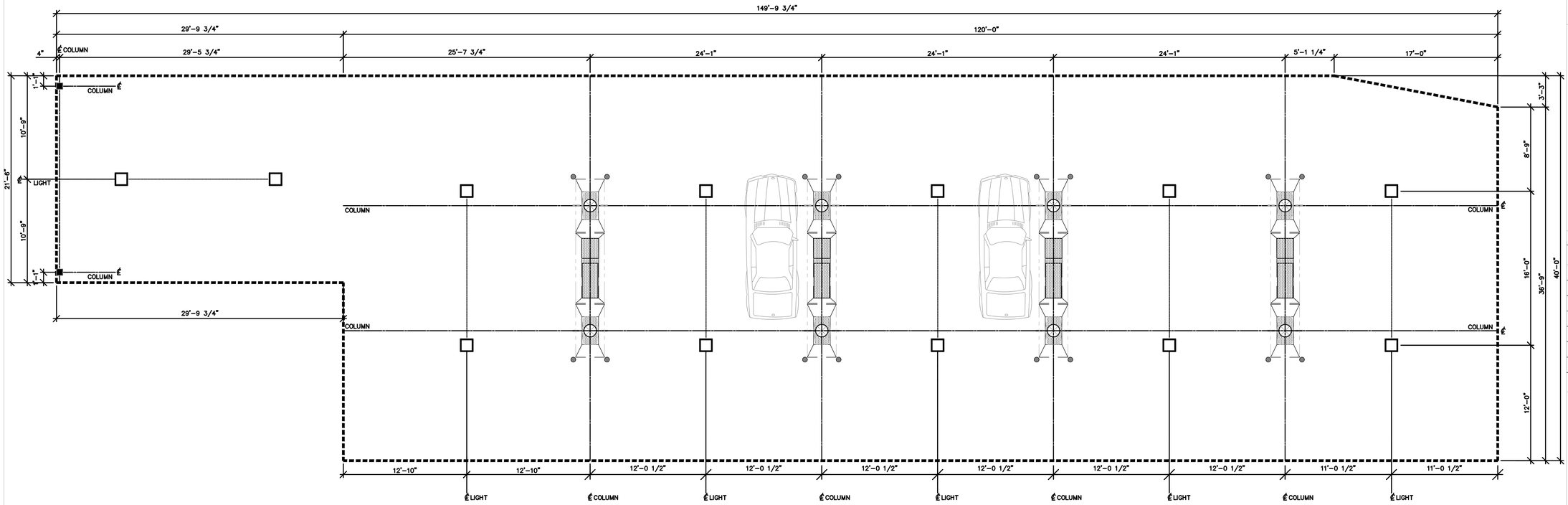
REV	DATE	DESCRIPTION
1	06.18.21	UPDATE
2	04.12.22	UPDATE

DRAWN BY: CG
CHECKED BY: DW

ARCH. PROJECT NO.:
CHV18022.0

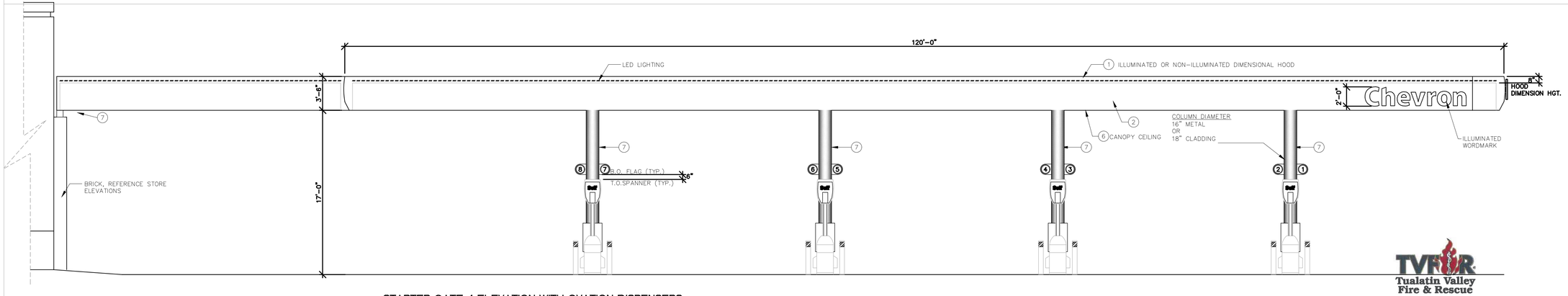
SHEET NAME:
EXTERIOR ELEVATIONS

SHEET NUMBER:
FS-3

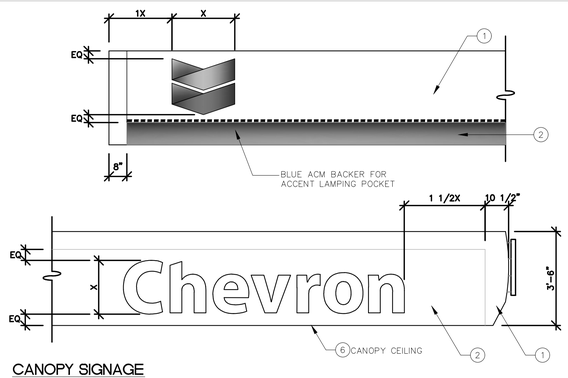


STARTER GATE 4 PLAN
SCALE 3/16"=1'-0"

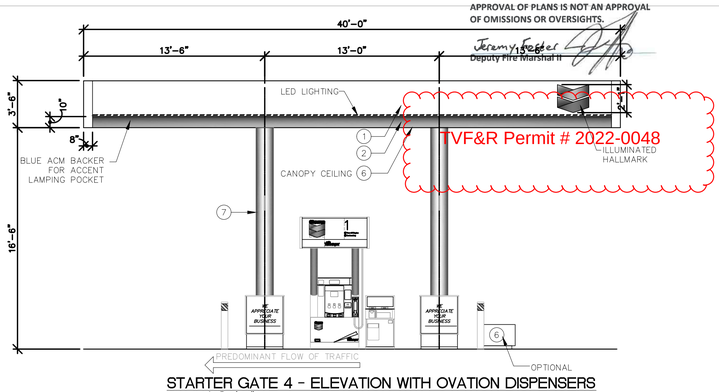
LIGHTING AS SHOWN IS BASED ON A CANOPY WITH 16" DECK PANS



STARTER GATE 4 ELEVATION WITH OVATION DISPENSERS
SCALE 3/16"=1'-0"



CANOPY SIGNAGE
SCALE 3/8"=1'-0"



STARTER GATE 4 - ELEVATION WITH OVATION DISPENSERS
SCALE 3/16"=1'-0"

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Jeremy Fowler
Deputy Fire Marshal II

TVF&R Permit # 2022-0048

TVF&R Tualatin Valley Fire & Rescue
APPROVED PLANS

GENERAL NOTES

1. Do not scale off this drawing.
2. This drawing is the property of the Chevron Property & Facilities Optimization Center of Focus & must not be used, copied or reproduced in whole or in part without prior written permission.
3. ☐ Canopy light fixture LSI CRU-SC-LED-HO-CW-WHT.
4. Refer to Hallmark 21 retail image guidelines for additional information.

COLOR LEGEND

	COLOR	PMS	FILM	JONES BLAIR HIGH GLOSS
1	IR WHITE	N/A	3M REFLECTIVE WHITE 680-10	N/A
2	IR BLUE	PMS 2935c	3M BRISTOL BLUE	N/A
3	LIGHT GRAY	PMS 428c	N/A	JB #A3W-6005
4	DARK GRAY	PMS 431c	N/A	JB# 4560-001
5	RED	PMS 186c	N/A	N/A
6	WHITE		N/A	JB#45081
7	IR SILVER	PMS 429c	N/A	JONES BLAIR #36

ALL PAINT TO BE V.O.C. COMPLIANT URETHANE

KEN McCRACKEN, ARCHITECT
Architecture • Program Management • Permitting
19120 SE 34th Street
Suite 115
Vancouver, WA 98683
CONTACT: MARTIN D. LAKEY
PHONE: 360.719.1952
EMAIL: MLAKEY@PMDGINC.COM

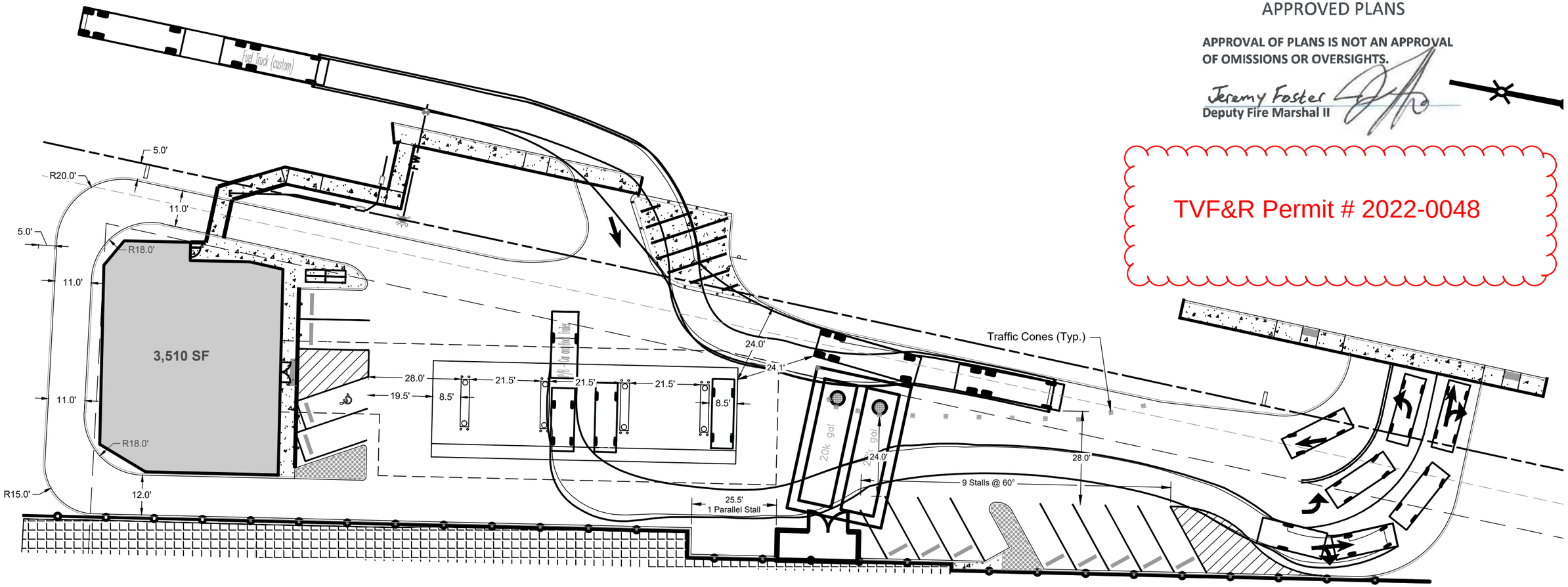
SEAL:

PRELIMINARY - NOT FOR CONSTRUCTION

HILLSBORO FAST SERVE
STORE NO.:
18450 NW WEST UNION ROAD
WASHINGTON COUNTY
HILLSBORO, OR 97229

REV	DATE	DESCRIPTION

DRAWN BY: CG
CHECKED BY: DW
ARCH. PROJECT NO.: CHV18022.0
SHEET NAME: FUEL CANOPY
SHEET NUMBER: **FC-1**



TVF&R
Tualatin Valley Fire & Rescue

APPROVED PLANS

APPROVAL OF PLANS IS NOT AN APPROVAL OF OMISSIONS OR OVERSIGHTS.

Jeremy Foster
Deputy Fire Marshal II

TVF&R Permit # 2022-0048

KITTELSON & ASSOCIATES
PHONE: (503) 535-7440 CONTACT: Fred Wismer, PE

Scale: 1" = 30'
30 15 0 30

60° Stall Alternative
West Union Chevron

P:\VAN01-Projects\Vancouver\Chevron\CHV18022.0 - HILLSBORO, OR\01-CURRENT DWGS\2022-04-12 New Layout\18509-XR-SITE-DriveThru-60deg.dwg Apr 20, 2022 - 12:44pm - jcolen Layout Tab: Kittelson Mods

WASHINGTON COUNTY
Dept. of Land Use & Transportation
Planning and Development Services
Current Planning
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
http://www.co.washington.or.us

Request For Statement Of Service Availability (Service Provider Letter)

PRE-APPLICATION DATE: _____

Service Provider: PLEASE RETURN THIS FORM TO: APPLICANT:

COMPANY: 3J Consulting, Inc.
CONTACT: Mercedes Serra
ADDRESS: 9600 SW Nimbus Ave. Suite 100
Beaverton, OR 97008
PHONE: (503)-946-9365 x211

- ☐ WATER DISTRICT: _____
- ☒ FIRE DISTRICT: TVFR
- ☐ CITY OF: _____
- ☐ CLEAN WATER SERVICES (Sanitary Sewer)

OWNER(S): West Union and 185th Food Mkt. Inc.
NAME: DBA West Union Chevron Extra Mile
ADDRESS: PO Box 2092
Lake Oswego, OR 97035
PHONE: _____

Property Desc.: Tax Map(s): 1N1 19BC Lot Number(s): 500 and 600

Site Size: 1.21 acres

Site Address: 18450 NW West Union Road
Nearest cross street (or directions to site): NW 185th Avenue

Additionally, you'll need our separate, individual request forms titled:

- **Clean Water Services (Surface Water Mgmt.)**
- **Tri-Met**
- **School**
- **Sheriff / Police**
- **Tualatin Hills Park & Recreation District**

PROPOSED PROJECT NAME: West Union Chevron

PROPOSED DEVELOPMENT ACTION: (DEVELOPMENT REVIEW, SUBDIVISION, MINOR PARTITION, SPECIAL USE)
Special Use and Development Review, and PLA to consolidate TL 500 & 600

EXISTING USE: Commercial - Restaurant PROPOSED USE: Convenience Store & Fuel Station

IF RESIDENTIAL:
NO. OF DWELLING UNITS: _____
SINGLE FAM. _____ MULTI-FAM. _____

IF INDUSTRIAL/COMMERCIAL:
TYPE OF USE: Commercial
NO. OF SQ. FT. (GROSS FLOOR AREA) 5,000 SF

IF INSTITUTIONAL:
NO. SQ. FT. _____
NO. STUDENTS/EMPLOYEES/MEMBERS: _____

*****ATTENTION SERVICE PROVIDER*****

PLEASE INDICATE THE LEVEL OF SERVICE AVAILABLE TO THE SITE (ADEQUATE OR INADEQUATE).
RETURN THIS COMPLETED FORM TO THE APPLICANT AS LISTED ABOVE.
(Do NOT return this form to Washington County. The applicant will submit the completed form with their Land Development Application submittal).

☒ SERVICE LEVEL IS **ADEQUATE** TO SERVE THE PROPOSED PROJECT. (Use additional sheets if necessary.)
Please indicate what improvements, or revisions to the proposal are needed for you to provide adequate service to this project.

See TVF&R Permit # 2022-0048 that includes plans.

SIGNATURE: Jeremy Foster POSITION: DFM II DATE: 4/13/2022

☐ SERVICE LEVEL IS **INADEQUATE** TO SERVICE THE PROPOSED PROJECT.
Please indicate why the service level is inadequate.

SIGNATURE: _____ POSITION: _____ DATE: _____

WASHINGTON COUNTY
Dept. of Land Use & Transportation
Planning and Development Services
Current Planning
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
http://www.co.washington.or.us

Request For Statement Of Service Availability (Service Provider Letter)

PRE-APPLICATION DATE: _____

Service Provider: PLEASE RETURN THIS FORM TO: APPLICANT:

COMPANY: 3J Consulting, Inc.
CONTACT: Mercedes Serra
ADDRESS: 9600 SW Nimbus Ave. Suite 100
Beaverton, OR 97008
PHONE: (503)-946-9365 x211

☒ WATER DISTRICT: TVW
☐ FIRE DISTRICT: _____
☐ CITY OF: _____
☐ CLEAN WATER SERVICES (Sanitary Sewer)

OWNER(S): West Union and 185th Food Mkt. Inc.
NAME: DBA West Union Chevron Extra Mile
ADDRESS: PO Box 2092
Lake Oswego, OR 97035
PHONE: _____

Additionally, you'll need our separate, individual request forms titled:

- **Clean Water Services (Surface Water Mgmt.)**
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IF RESIDENTIAL:
NO. OF DWELLING UNITS: _____
SINGLE FAM. _____ MULTI-FAM. _____

IF INDUSTRIAL/COMMERCIAL:
TYPE OF USE: Commercial
NO. OF SQ. FT. (GROSS FLOOR AREA) 5,000 SF

IF INSTITUTIONAL:
NO. SQ. FT. _____
NO. STUDENTS/EMPLOYEES/MEMBERS: _____

*****ATTENTION SERVICE PROVIDER*****

PLEASE INDICATE THE LEVEL OF SERVICE AVAILABLE TO THE SITE (ADEQUATE OR INADEQUATE).
RETURN THIS COMPLETED FORM TO THE APPLICANT AS LISTED ABOVE.
(Do NOT return this form to Washington County. The applicant will submit the completed form with their Land Development Application submittal).

☒ SERVICE LEVEL IS **ADEQUATE** TO SERVE THE PROPOSED PROJECT. (Use additional sheets if necessary.)
Please indicate what improvements, or revisions to the proposal are needed for you to provide adequate service to this project.

SIGNATURE: Digitally signed by Sarah Alton DN: C=US, E=sarah.alton@tvwd.org, O=TVWD, OU=Engineering, CN=Sarah Alton Date: 2022.03.22 11:12:43-07'00' POSITION: Development Services Engineer DATE: 3/22/2022

☐ SERVICE LEVEL IS **INADEQUATE** TO SERVICE THE PROPOSED PROJECT.
Please indicate why the service level is inadequate.

SIGNATURE: _____ POSITION: _____ DATE: _____

*R&O 2006-20
* MAILING LIST CREATED ON: 02/24/2022
LIST EXPIRES ON: 04/10/2022
BY TERI HEINO, WASHCO LUT
FUEL STATION/DRIVE THRU MARKET
1N119BC00500_600

*APP NOTE
* SUBMIT LAND USE APPLICATION
WITHIN 180 DAYS OF MEETING.
* IT IS OK TO ELIMINATE INCOMPLETE
AND DUPLICATE ADDRESSES

1N119BC11100
ALBERTSON'S STORES SUB LLC
BY PARADIGM TAX GROUP
PO BOX 800729
DALLAS TX 75380

1N119BC11200
ALBERTSON'S STORES SUB LLC
BY PARADIGM TAX GROUP
PO BOX 800729
DALLAS TX 75380

1N119BC06000
AL-MULLA, NAMEER S
5357 NW DEERFIELD WAY
PORTLAND OR 97229

1N119BC01200
ANGEL, BERNADINE ANGELA
18086 NW DEERFIELD DR
PORTLAND OR 97229

1N119BC11300
ASPEN NEWFOUNDLAND LLC
PO BOX 947
MCMINNVILLE OR 97128

1N119BC11500
ASPEN NEWFOUNDLAND LLC
PMB 239
930 TAHOE BLVD STE 802
INCLINE VLG NV 89451

1N119BC11600
ASPEN NEWFOUNDLAND LLC
PMB 239
930 TAHOE BLVD STE 802
INCLINE VLG NV 89451

SDBEAVERTON
BEAV S.D.- R. McCracken, Demographer
16550 SW MERLO ROAD
BEAVERTON OR 97006

1N119CB06100
BEDELL, JANE
4905 NW KAHNEETA DR
PORTLAND OR 97229

1N224AD04900
BETHANY LAKE ESTATES HOMEOWNERS
ASSOCIATION
00000

1N224AD05000
BETHANY LAKE ESTATES HOMEOWNERS
ASSOCIATION
00000

1N119CB06300
BOYLAN, NOEL C & CARRIE
PO BOX 14
PONAPE FSM MICRONESIA 96941

1N119BC06300
BROWN, JOHN F & JU YOUNG
MAPO-GU WORLD CUP BUK-RO
43-GIL 11, 103-1101
SEOUL SOUTH KOREA 03914

1N224AD03900
CADER, LISA M & JEREMY
5208 NW SHORELINE WAY
PORTLAND OR 97229

1N119CB07600
CHAUDHARI INVESTMENTS LLC
11892 NW TYLER CT
PORTLAND OR 97229

1N119BC06400
CHUNG, WING-KIT D
CHENG-CHUNG, LAI-KUEN ANNIE
PO BOX 55685
PORTLAND OR 97238

BEAVERTON
CITY OF BEAVERTON - COMMUNITY DEV
PO BOX 4755
BEAVERTON OR 97076

1N119BC00500
CJRW LLC
PO BOX 2092
LAKE OSWEGO OR 97035

1N119BC00600
CJRW LLC
PO BOX 2092
LAKE OSWEGO OR 97035

WASHCOMM
COMMUNICATIONS - (Attn: Melissa De Lyser)
155 N 1ST AVE, STE 250, MS # 16
HILLSBORO OR 97124

CPO7
CPO 7
4804 NW BETHANY BLVD STE 1-2, BOX 173
PORTLAND OR 97229

CPOPROGRAM
CPO COORDINATORS MS # 20
155 N 1ST AVE, STE 370
HILLSBORO OR 97124

1N119BC06600
FITZGERALD, MICHAEL L & JEN L
5338 NW DEERFIELD WAY
PORTLAND OR 97229

1N119BC11000
H&H MEDFORD LLC
13215 SE MILL PLAIN BLVD STE C-8 #529
VANCOUVER WA 98684

1N119BC11700
H&H MEDFORD LLC
13215 SE MILL PLAIN BLVD STE C-8 #529
VANCOUVER WA 98684

1N119CB07400
HERRICK, THOMAS
DAY, KENNETH
5065 NW KAHNEETA DR
PORTLAND OR 97229

1N119CB06000
HERSHISER, DONALD E
4895 NW KAHNETTA DR
PORTLAND OR 97229

1N224AD04000
HOANG, NHATHI T
5204 NW SHORELINE WAY
PORTLAND OR 97229

1N119BC11900
HUDSON BAY PARTNERS LP
301 WINDING RD
OLD BETHPAGE NY 11804

1N119BC11800
KCP RE LLC
BY SCHWARTZ, KALES ACCOUNTANCY CORP
6310 SAN VICENTE BLVD STE #250
LOS ANGELES CA 90048

1N224AD03800
LIU, FENGHUA
ZHANG, YING
5210 NW SHORELINE WAY
PORTLAND OR 97229

1N224AD03700
MATSUMURA, WAYNE H & LINH M
5212 NW SHORELINE WAY
PORTLAND OR 97229

1N119BC00800
PAVLATOS FAMILY TRUST
BY PAVLATOS, ANDREAS G &
PAVLATOS, NORMA J TRS
3300 NW 185TH #135
PORTLAND OR 97229

1N119BC06800
POLITOWSKI, NANCY LEE
5354 NE DEERFIELD WAY
PORTLAND OR 97229

1N119BC06200
SHA, LIN
WU, PENG
5347 NW SKYCREST PKWY
PORTLAND OR 97229

1N224AD03600
TERRALL, KELLY & ARATI
PO BOX 4017
BEAVERTON OR 97075

1N119CB07500
TORGESON, SANDER D
5075 NW KAHNEETA DR
PORTLAND OR 97229

1N119BC00401
TUALATIN HILLS PARK
RECREATION DISTRICT
15707 SW WALKER RD
BEAVERTON OR 97005

1N119CB06500
JOHNSON, DONALD K
POPE, ROBIN E
18021 NW ANASTASIA DR
PORTLAND OR 97229

1N119BC05900
KNISPEL, JODY
5365 NW DEERFIELD WAY
PORTLAND OR 97229

WASHCO
LUT DIRECTOR (in c/o Anne Elvers)
155 N 1ST AVENUE, #350-13
HILLSBORO OR 97124

1N119BC06500
NGUYEN, QUANG X & HANH
5317 NW DEERFIELD WAY
PORTLAND OR 97229

1N119BC12000
PAVLATOS, ANDREAS G
3300 NW 185TH AVE #135
PORTLAND OR 97229

1N224AD00100
ROCKING HORSE PROPERTIES LLC
HITCHING POST PROPERTIES LLC
BY BENNETT-HANES, ROBERT & CHRISTINE
5038 SW HILLTOP LN
PORTLAND OR 97221

1N119BC10700
STERNSTAIN, ALON
5391 NW 180TH PL
PORTLAND OR 97229

1N119BC01500
THORESEN FAMILY REVOCABLE TRUST
BY THORESEN, MEYLAN C & TERESA T TRS
18004 NW DEERFIELD DR
PORTLAND OR 97229

1N119CB06200
TRIPLETT, GARY R & MARY ELLEN T
4915 NW KAHNEETA DR
PORTLAND OR 97229

1N224AD05300
TUALATIN HILLS PARK &
RECREATION DISTRICT
15707 SW WALKER ROAD
BEAVERTON OR 97006

1N119CB07800
JOHNSON, JEREMY L & ERICA R
5080 NW KAHNEETA DR
PORTLAND OR 97229

1N119CB07700
LINDQUIST, JAYNEE
5090 NW KAHNEETA DR
PORTLAND OR 97229

1N224AD04200
MARIAPPAN, VIJAYABHARATHY
LOGANATHAN, SUGANYA SHANTHINI
5200 NW SHORELINE WAY
PORTLAND OR 97229

1N119CB06900
PATEL, MIHIR C & NILABEN M
4955 NW KAHNEETA DR
PORTLAND OR 97229

1N119BC01400
PHAY, RYAN R
18022 NW DEERFIELD DR
PORTLAND OR 97229

1N119BC01000
ROSALES DAZA, JAVIER P
DEROSALES, GLADYS T ALVAREZ ARCE
18162 NW DEERFIELD DR
PORTLAND OR 97229

1N224AD04100
SURAPANENI, RAJESH
5202 NW SHORELINE WAY
PORTLAND OR 97229

1N119BC10900
TITAN PROPERTIES CORP
00000

1N119BC00400
TUALATIN HILLS PARK
RECREATION DISTRICT
15707 SW WALKER RD
BEAVERTON OR 97005

1N224AD04800
TUALATIN HILLS PARK & RECREATION
DISTRICT
ATTN: ACCOUNTING DEPARTMENT
15707 SW WALKER RD
BEAVERTON OR 97006

1N119BC00200
TUALATIN HILLS PARK AND
RECREATION DISTRICT
15707 SW WALKER ROAD
BEAVERTON OR 97006

WDTVW
TVWD - SARAH ALTON
1850 SW 170TH AVE
BEAVERTON OR 97003

1N119BC01100
WALKER, MADELINE
SACCARECCIA, NICHOLAS
18138 NW DEERFIELD DR
PORTLAND OR 97229

1N119BC10800
WILLIAMS, JAMES S & EMILY E
5367 NW 180TH PL
PORTLAND OR 97229

1N119BC01300
YOUNG, FRANKLIN & RAVY S
5076 NW 171ST PL
PORTLAND OR 97229

1N119BD05700
TUALATIN HILLS PARK AND
RECREATION DISTRICT
15707 SW WALKER ROAD
BEAVERTON OR 97006

1N119BC06100
VEMPRALA, NAGA S & SRI SAI LALITHA
15430 NW MARIANNA ST
PORTLAND OR 97229

1N2240000200
WEST UNION DEVELOPMENT LLC
WEST OREGON NURSERY INC ET AL
BY WESTHOOD INC
4675 SW 229TH AVE
ALOHA OR 97007

1N119CB07000
WOLF, PAULA A REVOCABLE LIVING TRUST
BY WOLF, PAULA A & GERALD E TRS
4965 NW KAHNEETA DR
PORTLAND OR 97229

FDTVFR
T-V FIRE & RESCUE
11945 SW 70TH AV
TIGARD OR 97223

1N119CB06400
VENTURA, CARIN M
4935 NW KAHNEETA DR
PORTLAND OR 97229

1N2240000200
WEST UNION DEVELOPMENT LLC
WEST OREGON NURSERY INC ET AL
BY WESTHOOD INC
4675 SW 229TH AVE
ALOHA OR 97007

1N119BC06700
XU, QIURONG REVOCABLE TRUST
696 N V ST
WASHOUGAL WA 98671


1N119BC00500_600
Notification Area for a Fuel Station and Drive-Thru Market created 2/24/22 by Teri Heino, WashCo LUT
PCC ROCK CREEK CAMPUS
NW SPRINGVILLE ROAD
NW CHEMEKETA LANE
NW 181ST AVENUE
NW 183RD AVENUE
NW 178TH AVENUE
NW 179TH AVENUE
NW 185TH AVENUE
NW DEERFIELD WAY
NW DEERFIELD DRIVE
NW WEST UNION ROAD
NW SHORELINE WAY
NW LAPINE STREET
NW ILLAHE STREET
NW 186TH AVENUE
NW IDANHA STREET
NW KAHNEETA DRIVE
NW DEERCREEK COURT

MEETING NOTICE

PROPOSAL: FUEL STATION & DRIVE-THRU

MEETING DATE: MARCH 30, 2022

TIME: 6:00 PM - 7:00 PM

JOIN OUR VIRTUAL MEETING:

LINK: HTTPS://US06WEB.ZOOM.US/J/83229188520?PWD=VZHGYVJUUKHKL0ZLTXVOAW5HQJH5UT09

BY PHONE: +1-253-215-8782

CONTACT PERSON: MERCEDES SERRA

PHONE NUMBER: (503)946-9365 x211

3J CONSULTING
9600 SW NIMBUS AVENUE, SUITE 100
BEAVERTON, OREGON 97008
PH: (503) 946.9365
WWW.3JCONSULTING.COM

March 9, 2022

RE: Virtual Neighborhood Review Meeting
Proposed Development: Fuel Station and Market at 18450 NW West Union Road

Dear Neighbor,

3J Consulting, Inc represents the owner of the property located at 18450 NW West Union Road, in the Neighborhood Commercial (NC) District, more specifically shown by the attached tax map. The property owners are considering a proposal for Special Use application to develop a fuel station and drive-thru market. A concurrent lot consolidation is proposed for the two parcels. Prior to applying to the Washington County Department of Land Use and Transportation we would like to take the opportunity to discuss the proposal in more detail with you.

The purpose of this **VIRTUAL** meeting is to provide a forum for the applicant and surrounding property owners/residents to review the proposal and identify issues so that they may be considered before a land development application is submitted to the County. This meeting gives you the opportunity to share with us any special information you know about the property involved. We will attempt to answer questions which may be relevant to meeting development standards consistent with Washington County's Community Development Code and the respective Community Plan.

Pursuant to Washington County's Resolution & Order no. 2006-20,
you are invited to attend a **VIRTUAL WEBINAR** zoom meeting on:
Wednesday, March 30, 2022, 6:00pm – 7:00pm
Join at: https://us06web.zoom.us/j/88024438746?pwd=aGxkTzBaRis4TE1TY0ljbG9NS0pxZz09
or join by phone: +1 253 215 8782

Please note this meeting will be an informational meeting on preliminary development plans. These plans may be altered prior to submittal of the application to the county. Depending upon the type of land use action required, you may receive official notice from Washington County for you to participate with written comments and/or an opportunity to attend a public hearing.

We look forward to more specifically discussing the proposal with you. Additional information on the proposed project can be downloaded at: https://app.box.com/folder/157278847961?utm_source=trans&utm_medium=email&utm_campaign=collab%2Bauto%20accept%20user

Questions and comments can be mailed to 9600 SW Nimbus Ave. Suite 100, Beaverton, OR 97008 or you can contact us by phone at 503-946-9365x211 or email at mercedes.serra@3j-consulting.com.

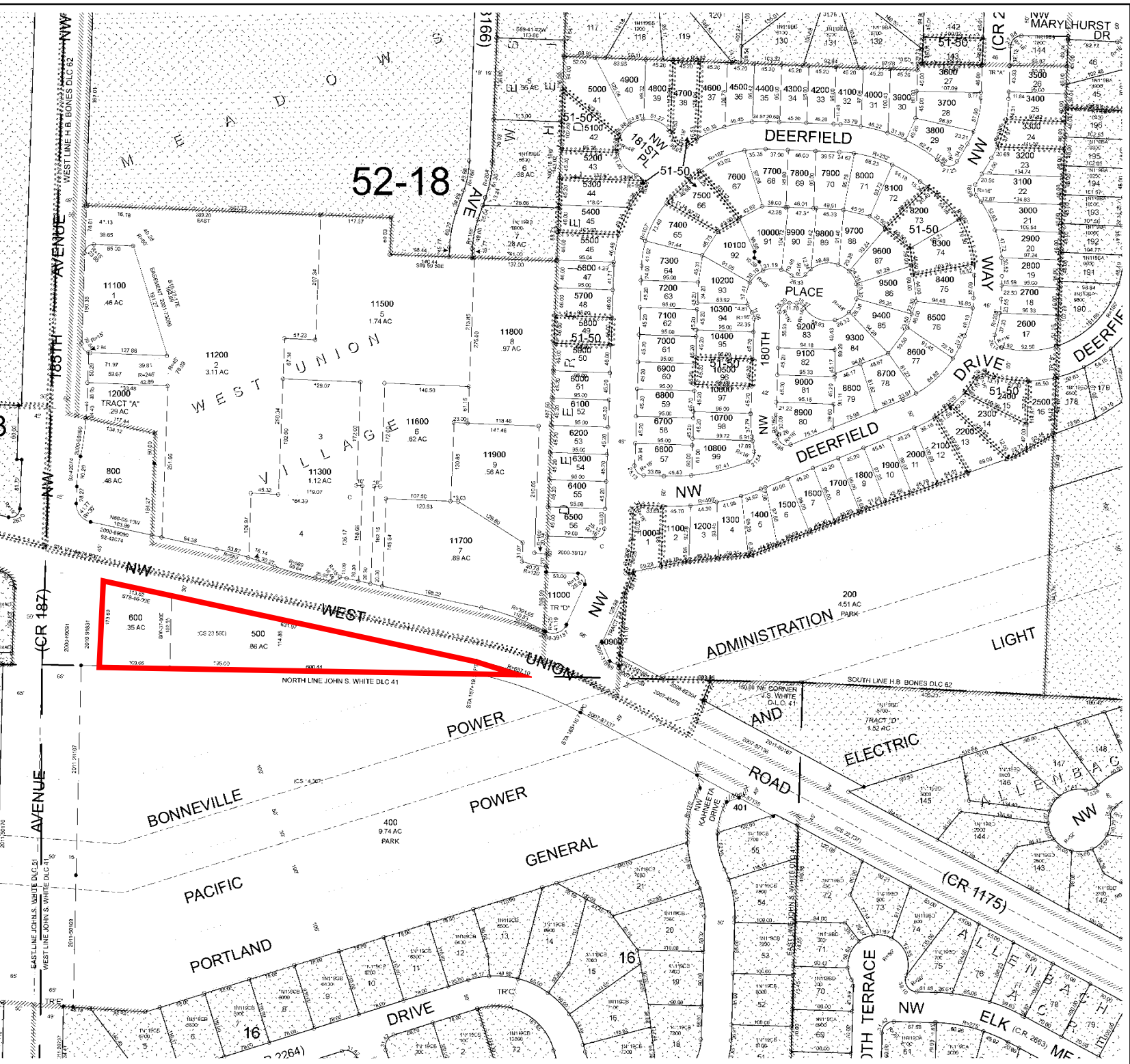
Sincerely,

Mercedes Serra
Senior Planner
3J Consulting, Inc.

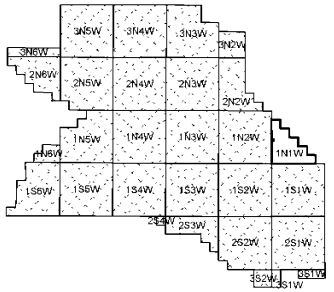
WEST UNION CHEVRON

PRELIMINARY SITE PLAN

MARCH 2022



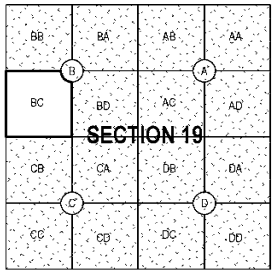
1N119BC



WASHINGTON COUNTY OREGON
SW 1/4 NW 1/4 SECTION 19 T1N R1W W.M.
SCALE 1" = 100'

36	31	32	33	34	35	36	31
1	6	5	4	3	2	1	6
12	7	8	9	10	11	12	7
13	18	17	16	15	14	13	18
24	19	20	21	22	23	24	19
25	30	29	28	27	26	25	30
36	31	32	33	34	35	36	31
1	6	5	4	3	2	1	6

FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT
www.co.washington.or.us



Cancelled Taxlots For: 1N119BC
100,900,801,11400,701,300,700,

Feet
0 50 100 200 300

Assessment CARTOGRAPHY Taxation

PLOT DATE: 6/30/2020
Rotation: 0
FOR ASSESSMENT PURPOSES ONLY - DO NOT RELY ON FOR OTHER USE

Map areas delineated by either gray shading or a cross-hatched pattern are for reference only and may not indicate the most current property boundaries. Please consult the appropriate map for the most current information.

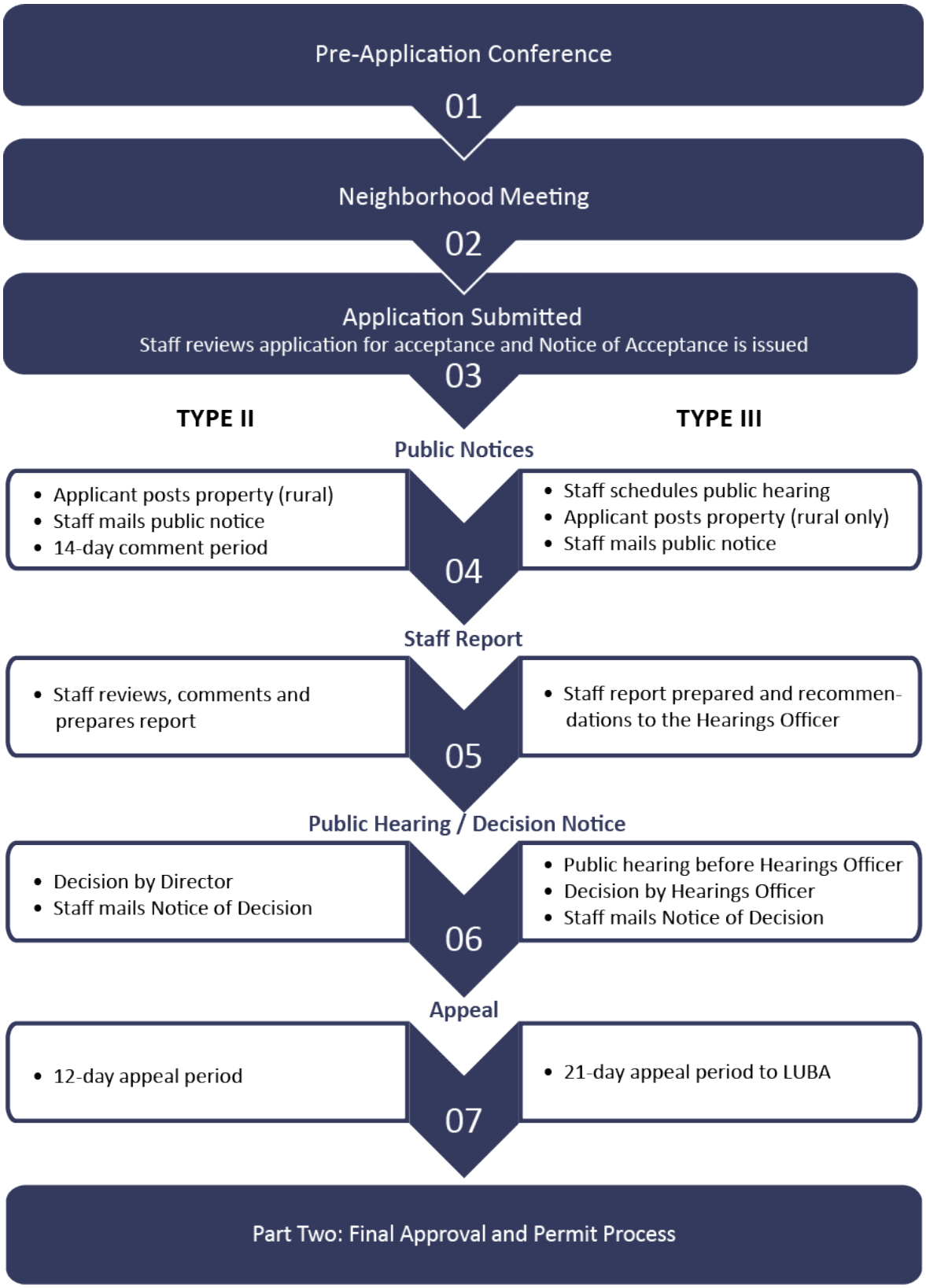
Digmap

1N119BC

Washington County Department of Land Use & Transportation

Summary of Type II & Type III Land Development Application Process

(Attachment C)



Welcome to a Neighborhood Review Meeting (Attachment B)

The citizens of Washington County have an individual and a collective responsibility to assure that neighborhoods are developed in a manner that is consistent with Washington County's Community Development Code (CDC). Before submitting certain land use development applications* to Washington County for review, the applicant must meet with neighbors who live near the proposed development, as required by Washington County's CDC. This meeting has been scheduled by, and will be conducted by, the applicant. The applicant is sometimes the property owner but can be the property owner's representative, such as the architectural or engineering firm, builder or developer.

It must be recognized that the applicant has a right to develop or change the property involved in accordance with the CDC, the Community Plan and any previous Conditions of Approval for an approved development application. After submission, a copy of your Community Plan or the development application may be obtained from Washington County's Department of Land Use & Transportation (DLUT) for a nominal fee. Community Plans and the Community Development can be viewed on the County's website.

Community Plans: www.co.washington.or.us/LUT/Divisions/LongRangePlanning/Publications/index.cfm
Community Development Code: www.co.Washington.or.us/DevCode

MEETING PURPOSE: The purpose of a neighborhood meeting is to provide a forum for the applicant, surrounding neighbors, and interested members of the Community Participation Organization (CPO) to consider the proposed application and to discuss issues/concerns before the development application is submitted to the County. This meeting gives everyone the opportunity to share with the applicant any special information about the property involved and to express all concerns about the proposed development. The applicant is required to take notes during this meeting and to provide a record of comments and their answers, which will be turned into the County as part of the development application. The meeting may be tape-recorded in order to assist an applicant with note taking, but the formal meeting minutes are required to be documented in written form, including meeting date/time, names/addresses of attendees and verbal/written comments received.

MEETING GOAL: The goal of a neighborhood meeting is to inform and encourage citizen involvement early in the development process so that the resultant development application may be more responsive to neighborhood concerns.

WHAT'S NEXT? Neighbors and others requesting notification will have opportunities, after a development application has been submitted, to express their ideas and concerns either during a public comment period or a public hearing (see Attachment C for details on Type II and Type III processes). Notification of public input/review time periods are sent to property owners with property within 500 feet of an urban development (1000 feet for rural) and as a courtesy to those registered on the sign-in sheet at the neighborhood meeting. Progress of the submitted application will be reported in the CPO Newsletters or individuals can request to be included on the notification list by contacting Current Planning at 503-846-8761, faxing your request to 503-846-2908, or email lutdev@co.washington.or.us. You can also visit the **Projects Under Review** webpage at http://www.co.washington.or.us/LUT/Divisions/CurrentPlanning/Projects/projectsunderreview.cfm

The development application submitted to the County may differ from the one presented at this meeting. The CPO leaders receive a copy of the complete land use development application initially proposed (including detailed drawings and descriptions) and can share that information upon request. CPO leaders' contact information is listed in the CPO newsletters. If there are serious concerns, it is necessary to be involved at each stage of the development since changes are a natural part of the development process.

To receive a copy of the County's recommendation and staff report for the application and/or the Notice of Decision and staff report for the application, you will need to become a party of record to the application. To become a party of record for a Type II application (administrative decision without a public hearing), submit a written request during the public comment period for the application. To become a party of record for a Type III application (decision requiring a public hearing) submit a written request after the notice of the hearing has been mailed and prior to the public hearing date. The Notice of Decision will be mailed to all those within the Public Notice boundary.

You are strongly discouraged from writing or calling DLUT immediately after this Neighborhood Meeting. The County will be unaware of this proposal until the development application has been submitted, at which time a case file number and staff person will be assigned. Once the application is deemed complete, notices will be sent to neighboring properties (within 500' urban and 1,000' rural) and the area CPO. Submit comments after receipt of the notice from the County and include the case file number. The DLUT Staff Report, written prior to the final Conditions of Approval, will respond to all written comments received during the comment period.

Individuals who live in, or have a business in Washington County are members of the county's Community Participation Organization (CPO) program. To receive a free monthly CPO newsletter for your area, contact the CPO Office and request to receive either an electronic or paper newsletter. Consider signing up for the electronic copy which saves the CPO program funds. Subscribers will receive one monthly email informing that the CPO newsletter is posted online.

Individuals who prefer to receive a paper copy of the CPO newsletter can give their name and address to the CPO representative at this meeting, if one is present, or call the CPO offices at 503-846-6288, or sign-up online at http://www.co.washington.or.us/cao/cpo/ .

* Refer to Washington County Community Development Code section 203-3

3J CONSULTING
9600 SW NIMBUS AVENUE, SUITE 100
BEAVERTON, OREGON 97008
PH: (503) 946.9365
WWW.3JCONSULTING.COM

March 21, 2022

RE: Virtual Neighborhood Review Meeting

Proposed Development: Fuel Station and Market at 18450 NW West Union Road

Dear Neighbor,

A letter was mailed to you on March 9th, 2022, concerning a proposal for a Special Use application to develop a fuel station and drive-thru market. It has come to our attention that the website link in the second-to-last paragraph – where additional information about the proposed project can be viewed electronically – was for administrators only, and therefore incorrect. The link has been corrected and a revised copy of that letter is on the next page. The correct link, for ease of reference, is also displayed below:

https://app.box.com/s/513m7jo899btg2qljvv2exeebxxr8cne

Nothing about the proposal or the virtual zoom meeting where the proposal will be discussed has changed whatsoever.

We apologize for any inconvenience this may have caused.

Sincerely,

Mercedes Serra
Senior Planner
3J Consulting, Inc.

3J CONSULTING
9600 SW NIMBUS AVENUE, SUITE 100
BEAVERTON, OREGON 97008
PH: (503) 946.9365
WWW.3JCONSULTING.COM

March 21, 2022

RE: Virtual Neighborhood Review Meeting – **REVISED LINK BELOW**
Proposed Development: Fuel Station and Market at 18450 NW West Union Road

Dear Neighbor,

3J Consulting, Inc represents the owner of the property located at 18450 NW West Union Road, in the Neighborhood Commercial (NC) District, more specifically shown by the attached tax map. The property owners are considering a proposal for Special Use application to develop a fuel station and drive-thru market. A concurrent lot consolidation is proposed for the two parcels. Prior to applying to the Washington County Department of Land Use and Transportation we would like to take the opportunity to discuss the proposal in more detail with you.

The purpose of this **VIRTUAL** meeting is to provide a forum for the applicant and surrounding property owners/residents to review the proposal and identify issues so that they may be considered before a land development application is submitted to the County. This meeting gives you the opportunity to share with us any special information you know about the property involved. We will attempt to answer questions which may be relevant to meeting development standards consistent with Washington County's Community Development Code and the respective Community Plan.

Pursuant to Washington County's Resolution & Order no. 2006-20,
You are invited to attend a **VIRTUAL WEBINAR** zoom meeting on:
Wednesday, March 30, 2022, 6:00pm – 7:00pm
Join at: https://us06web.zoom.us/j/88024438746?pwd=aGxkTzBaRis4TE1TY0ljbG9NS0pxZz09
or join by phone: +1 253 215 8782

Please note this meeting will be an informational meeting on preliminary development plans. These plans may be altered prior to submittal of the application to the county. Depending upon the type of land use action required, you may receive official notice from Washington County for you to participate with written comments and/or an opportunity to attend a public hearing. We look forward to more specifically discussing the proposal with you. Additional information on the proposed project can be downloaded at https://app.box.com/s/513m7jo899btg2qljvv2exeebxxr8cne

Questions and comments can be mailed to 9600 SW Nimbus Ave. Suite 100, Beaverton, OR 97008 or you can contact us by phone at 503-946-9365x211 or email at mercedes.serra@3j-consulting.com.

Sincerely,

Mercedes Serra
Senior Planner
3J Consulting, Inc.

APPLICANT NOTE:
Upon completion, submit this form with your Current Planning development application
Attachment E

NEIGHBORHOOD MEETING

AFFIDAVIT OF MAILING MEETING NOTES TO THE COMMUNITY PARTICIPATION ORGANIZATION (CPO)

STATE OF OREGON)
) ss
County of Washington)

I, Barbara Duda, being duly sworn, depose and say that on the 12TH day of April, 2022 I caused to have mailed to CPO 7 the meeting notes for the neighborhood meeting held on the _____ day of March, 2022 to discuss a proposed development at 184 [illegible] Rd, a copy of the meeting notes so mailed is attached hereto and made a part hereof.

I further state that said meeting notes were enclosed in envelopes plainly addressed to CPO 7 and were deposited on the date indicated above in the United States Post Office with postage prepaid thereon.

Barbara Duda
Signature

Subscribed and sworn to, or affirmed, before me this 22 day of April, 2022.

OFFICIAL STAMP
AUDREY L JONES
NOTARY PUBLIC - OREGON
COMMISSION NO. 990916
MY COMMISSION EXPIRES SEPTEMBER 03, 2023

Audrey L Jones
Notary Public for the State of Oregon
County of Washington

My Commission expires: September 03, 2023

APPLICANT NOTE:
Upon completion, submit this form with your Current Planning development application
Attachment E

NEIGHBORHOOD MEETING
AFFIDAVIT OF MAILING

STATE OF OREGON)
) ss
County of Washington)

I, Mercedes Serra, being duly sworn, depose and say that on the 9TH day of March, 20 22 I caused to have mailed to each of the persons on the attached list a notice of a meeting to discuss a proposed development at 18450 NW West Union Road, a copy of which notice so mailed is attached hereto and made a part hereof.

I further state that said notices were enclosed in envelopes plainly addressed to said persons and were deposited on the date indicated above in the United States Post Office with postage prepaid thereon.

Signature

Subscribed and sworn to, or affirmed, before me this 19 day of April, 20 22.

OFFICIAL STAMP
AUDREY L JONES
NOTARY PUBLIC - OREGON
COMMISSION NO. 990916
MY COMMISSION EXPIRES SEPTEMBER 03, 2023

Notary Public for the State of Oregon
County of Washington

My Commission expires: September 03, 2023

APPLICANT NOTE:
Upon completion, submit this form with your Current Planning development application
Attachment E

NEIGHBORHOOD MEETING AFFIDAVIT OF POSTING NOTICE

Name of Applicant CJRW, LLC

Subject Property: Tax Lot(s) 500, 600 Tax Map(s) 1N119BC

Address or General Location: 18450 NW West Union Road

I, Sevin Simpson, do swear or affirm that I am (represent) the party initiating interest in a proposed Fuel Station and Drive-thru Market affecting the land located at 18450 NW West Union Road, and that pursuant to R&O No. 2006-20, did on the 9TH day of March, 2022 personally post the notice indicating that the site may be proposed for a Fuel Station and Drive-thru Development application.

The sign was posted at Site frontage on West Union
(Location of sign on property)

☐ Map attached showing approximate sign notice location. (check if attached)

This 9th day of March, 2022

Signature

Subscribed and sworn to, or affirmed, before me this 9th day of March, 2022.

OFFICIAL STAMP
AUDREY L JONES
NOTARY PUBLIC - OREGON
COMMISSION NO. 990916
MY COMMISSION EXPIRES SEPTEMBER 03, 2023

Audrey L Jones
Notary Public for the State of Oregon
County of Washington

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WWW.3JCONSULTING.COM

NEIGHBORHOOD MEETING
West Union Chevron
Virtual Neighborhood Meeting
March 30, 2022

NAME	ADDRESS	EMAIL
George Cabaniss	5045 NW 180th Ter Portland, OR 97229	
Virginia Bruce – CPO 1	3270 NW KINSLEY TERRACE PORTLAND OR 97229	
Brian Torres		
Peter Swinton – THPRD	THPRD, 15707 SW WALKER RD., BEAVERTON, OR 97006	
Jeremy Johnson	5080 NW KAHNEETA DR PORTLAND OR 97229	
John Brewer	17684 NW Deerbrook Ct Portland, OR 97229	
Jolene Chen		
Sally Segar		ssegar@pamplinmedia.com
Anne Goldfeld	18090 NW CORNELL RD BEAVERTON, OR 97006	
Tanya and Layton Rosencrance		tanya.rosencrance@gmail.com
Erin VanDomelen		
Andrew and Carter VanDomelen		
Tom Kiley		
Shelley Signett	18900 NW LAPINE ST., PORTLAND, OR 97229	
Robert Carlson		
Brandon Philips	16822 NW VETTER DR PORTLAND OR 97229	
Lahni Skinner		
Stefanie		
Mike		
Jassi		
Hudson		
Hayley		
1503-866-8791		
1541-760-6375		

3J CONSULTING
9600 SW NIMBUS, SUITE 100
BEAVERTON, OREGON 97008
PH: (503) 946.9365
WWW.3J-CONSULTING.COM

Neighborhood Meeting Notes – West Union Chevron

Meeting Date: March 30, 2022
Project: West Union Chevron
3J No.: 18509

Presenters: Mercedes Serra (3J Consulting), Bob Barman (West Union Chevron)

In preparation for the submission of a land use application for the West Union Chevron, the applicant conducted a neighborhood meeting with residents within proximity to the project site.

The neighborhood meeting was conducted virtually via Zoom, with meeting information posted online and available for download. The meeting started at 6:00 p.m. on Wednesday, March 30, 2022.

The neighborhood meeting included information via PowerPoint on the site zoning, proposed uses, the land use process, the proposed development and improvements, the neighboring wetlands and vegetative corridor, the fuel storage system and safety protocols. The end of the meeting included time for public comment and questions, which was facilitated using the Zoom Q&A function.

CPO Secretary Brandon Philips provided a statement on his campaign against the project proposed on this site.

The following is a list of questions which were answered during the meeting.

Q – In case this is not discussed, what are the planned hours of operation for the location?
A – All of our stores operate 24 hours a day.

Q – Please review any mitigation feature for runoff from paved areas in the development.
A – The project will be providing both treatment and detention with a stormwater system located on site catching any runoff from the paved areas. The runoff will be treated and detained prior to releasing it into the system in accordance with County and Clean Water Services standards.

Q – How has the "half street requirement" been addressed?
A – In this case because there is a capital improvement project planned for the street in front of the property, we are paying into that capital improvement project and that improvement will be made by the County. In the interim we will be providing sidewalk and landscaping along the frontage of the property.

Q – Please specifically address any attempt to mitigate runoff from paved areas into the wetlands, or any attempts to monitor runoff from paved areas into the wetlands.
A – As stated before, we will provide a stormwater system. County and CWS requirements require us to capture all runoff and treat and detain that. We will be meeting the requirements through the County and CWS.

Q – Hudson Hood here, 8 years old from Bethany. I would like to make a statement
Q - I'd like to make a statement.
A – We see a couple of people would like to make statements. This is not a public hearing. The CPO does make a statement as part of the neighborhood meeting. We are going to get through the comments and questions posted. We'd encourage you to provide your statement here and we will read it, or you can submit a statement to us via email or directly to the County.

Q - I submitted information on a real-time water quality monitoring system developed at Oregon State University and deployed in Corvallis and Grand Rapids, MI to both 3J and WashCo. Is there any attempt to monitor runoff water quality in real time?
A – We do not have a plan for that type of system for here. We will comply with all local, state, and federal regulations as they are currently imposed.

Q - On the Fuel Management System side, will someone save those men from inside the tanks? I won't be comfortable filling my vehicle here knowing those laborers are trapped within the tanks.
A – The fuel management system is a computer system that is able to be monitored from inside the convenience store. There will not be people inside the tanks monitoring the system.

Q – Do you know the timing of that improvement by the county?
A – The County does not have a schedule set for the project.

Q - Is surface runoff not captured by the drainage system included?
A – We have addressed this. All surface water runoff will be captured by the drainage system.

Q - How many millions of gallons are estimated to be delivered and stored with the new tank design? The old estimate was 3.6 Million gallons a year.
A – The pump ability depends on a lot of factors. The 3.6 million gallon a year estimate is not accurate, and we aren't sure where this number came from. A traditional station is about 1.8 million a year.

Q - Can you please specify or show a slide of the runoff management system proposed for this property?
A – The stormwater report is being generated and will be submitted with our land use application which will be available to the public for review. We do not have a slide today to show of the stormwater system.

Q - Where does the captured storm water go?
A – The stormwater will be captured and treated through mechanical treatment. It will then be released at a metered rate into the stormwater system.

Q - Has anyone talked with THPRD about this proposed development?
A – Yes, the project team has been working with THPRD on the proposed development. They have requested mitigation options. We will be providing vegetation enhancement, a fence along the

property line, removal of encroachments on their property and fixing a portion of the sidewalk off the property that provides pedestrian connection to the east.

Q - How can the public access the stormwater system report?
Q - What is it treated with, details please
A – The report will be submitted to the County as part of the land use application. The County will provide notice to the neighbors when the application is submitted which will allow for review and public comment on the submitted materials. Those materials will be made available to you at your request.

Q - Has the developer prepared a funding model for decommissioning the gas station? How will that be covered if the company goes insolvent or bankrupt?
A – This is not related to land use, and not typically done as part of a development. We understand why you are asking this question. The developer has not prepared a funding model for decommissioning the gas station. The development has been designed to be long lasting with future use.

Q - Your presentation cited other properties developed by Mr. Barman. Do you see this development as differing in any way from Mr. Barman's previous developments?
A – Each project is different. Mr. Barman tries to utilize many of the same strategies in his designs for his green gas stations, so many of those elements will be utilized here and have been utilized elsewhere. The size of the market and the number of pumps will change depending on the site.

Q - Are there any neighborhood cleanup initiatives being coordinated or considered by the leaders of this project, given a 24/7 convenience store typically brings in a considerable amount of foot traffic that wasn't there before and has direct correlation to littering.
A – At this time we are not proposing any neighborhood cleanup initiatives prior to the development of the project. This would be something that could be addressed if there was an issue, but at this time there is not an issue to be addressed.

Q - Oregon DEQ data shows that other sites owned by Bob Barman have had tank cleanup and removal of materials contaminated with petroleum. Can Bob share the costs for those cleanups?
A – For the Cornelius Station, Union Oil cleaned up the site, we bought it and they were responsible for the cleanup after we had purchased it. We are not sure what the cost of cleanup was for them. We have not had a cleanup cost that was our liability.

Q - Can you specify any features of this design - adjacent to a wetland - that differ from Mr. Barman's sites not adjacent to sensitive environmental areas?
A – On this site, we are providing mitigation and enhancement of the sensitive area on site including the vegetative corridor. The site currently has a degraded vegetative corridor. It is a Clean Water Services (CWS) jurisdictional area. We are meeting all CWS, state, and federal requirements for Goal 5 habitat.

Q - Will the recording for this meeting be available for later viewing? If so, where?

A – We are recording this meeting for our records and will be typing up meeting minutes based on these notes. We will post the meeting minutes to the drop box link that was provided in the invitation and will be providing the minutes to the CPO chair. We won't circulate the video these files are very large and difficult to circulate.

Q – 24-hour operation will have profound effects on wildlife near here - and especially nesting waterfowl. How to address lighting/noise? Do you find this important?
A – We will be putting landscaping between our station and the area to the south to help mitigate light pollution. The goal is to keep the lighting on the property. We hire consultants to help prepare our lighting plans. We are utilizing a two-story building to help minimize light pollution off site. We'd encourage you to take a trip to Murray/Allen at night to see the station. All of the lights are recessed to help minimize lighting on site.

Q – I am happy to host the video on my website if needed.
A – We will look into this. The meeting minutes will be the best source for circulating.

Q – I'm interpreting your response to my previous question as there are no approaches to mitigating environmental damage from the impact of a gas station unique to this site. In other words, siting this gas station is no different from an environmental contamination standpoint than any station Mr. Barman has developed at any street intersection. Is this interpretation correct?
A – We are not mitigating environmental damage that hasn't occurred. We are providing preventative measures through our design to prevent any contamination from occurring with our tank system which has advance monitoring. We will be meeting all CWS, County, State and Federal requirements for protection of habitat.

Q - Would you consider an art installation along the wetland side of the development that would enhance the view and further block light?
A – This would have to be done in partnership with THPRD and CWS. They have asked for a fence along the property line, and we are providing this fence to meet the request. An art installation visible on their side of the property would really have to go through them.

Q - What is meant by "near net zero" for the solar roof? By my calculations the roof would cover a fraction of a percent of the energy of the gasoline sold. So, is this "near net zero" definition covering the electrical requirements for the pumps, lighting, etc.
A – The site will utilize both a geothermal heat pump and solar panels to help mitigate the energy used by the station. These will be used along with other green strategies outlined previously

Q - Is there any mitigation planned to limit the amount of gas vapors that are leaked into the surrounding area?
A – The State and County have regulations and requirements which we will meet.

Q - Has Mr. Barman ever developed a gas station adjacent to a wetland?
A – We've discussed Mr. Barman's other projects. They are not adjacent to a wetland.

Q - Will services such as Propane and Propane accessories be provided at this location? Like what Megalo Mart provides?
A – We typically just provide cylinder replacements rather than tanks for filling up.

Q - Are you not concerned that a large portion of the neighborhood that does not want your station in our community due to noise and environmental concerns not important to you? Would you propose a similar station adjacent to Lake Oswego?
A – We aware of the neighborhood and we are working to address to the best of our abilities many of the concerns the neighborhood has brought up while still providing for the needs of the gas station. We acknowledge your concern and appreciate your attendance tonight. Our application will meet the requirements outlined by the County for this type of development.

Q - Will there be any electric car charging stations?
A – Yes, it is planned to provide an EV charging station.

Q - The previous design stored 52,000 gallons of petroleum in underground storage tanks near the wetlands. You mentioned that there are only two tanks now. What is the new total storage?
A – The total storage will now be 40,000 gallons.

Q - Are you going to have tires and accessories for sale out front - and banners advertising various products?
A – Fuel stations are categorized as a Special Use within the County which provides requirements for displays like those you mentioned. Any displays we would provide would comply with the County requirements.

Q - Will the decrease in storage capacity to 40,000 gallons 80 ft from the wetlands increase the delivery frequency?
A – We've removed the diesel fuel from the site, so this would not change the delivery frequency, but rather would change the type and would not include diesel.

Q - Is there anything that can be raised as a concern tonight that would prevent this gas station to move forward?
A – We as the applicants do our best to take in neighbor's comments and questions while still moving forward with the development that we are proposing. It is our intention to move forward with the development, which is consistent with all County requirements.

Q - One last question…how many gas stations in the Portland metro area are adjacent to wetlands?
A – We do not know how many gas stations are adjacent to wetlands in the Portland Metro area.

Q - Will Diesel be provided as well?
A – Diesel will not be provided on the site. The number of tanks and pumps have been reduced and diesel has been removed.

Q - Why did you waste our time with repeated delays and reschedules and only now have an open session for Q&A?
A – We've had a neighborhood meeting in the past related to a previous land use application. At the hearing for the previous application, we heard from a lot of neighbors that setbacks were a major concern along with other concerns. We decided to take a look at the design of the project and redesign the market to meet the setbacks. In the redesign it was decided to add a new drive-thru use which requires a new land use application. If we were able to just revise the previous application we would, however the County requires us to go through this process again.

Q - How can you take in concerns if you don't listen to community statements?
A – We are utilizing the Q&A function tonight to take in questions and concerns. We are happy to take in these statements and read them. In the Zoom format it is difficult to promote everyone and have everyone make statements, so we are requesting that you provide those in the Q&A function. If your statement is longer, we would invite you to provide that via email or send it to the County.

Q - When will construction begin?
A – We are slated to submit land use in the next month or so. The land use review timeline is 120-days. Once we have a land use decision, we will begin the permitting process. We do not have a specific construction date set yet.

Q - Will we be compensated for the value of our property devalued?
A – No, we will not be compensating neighbors for property devaluation.

Q - What ITE code and edition are you using for the drive-thru use and how much will it increase traffic when compared to the previous design?
A – We do not have our traffic engineer here with us, but we will be submitting a traffic impact analysis with our application. We will be using the most current and required edition by the ounty. It is estimated that the drive-thru use will increase traffic, but that it will be within the capacity of the surrounding system.

Q - I live in Rock Creek and I am against the gas station plans on West Union. I think it's a bad idea because it could harm the animals' habitat. Signed, Hudson Hood (8 years old)
A – Thank you for providing your statement.

Q - Bob seems to have no concern for the neighborhood. I WILL NOT BE A CUSTOMER.
A – Thank you for providing your statement.

Q - Why do you believe this is the right thing to do for the environment?
A – Fossil fuels are still utilized in the current market. Mr. Barman does his best to provide an energy efficient station to the best of his ability while still providing this product. We look at our projects as a lesson in how to do ecofriendly buildings in commercial development.

Q - You mentioned an automatic shutoff system. Can you provide some details on that system and how it links to the dispensers? For example, in October of 2021 1,300 gallons leaked from a dispenser in Pasadena, CA when the automatic shutoff valve was fouled from a car crashing into it.

A – We do not have the designer of the tanks with us tonight. The system will be detailed in the permitting process. We are not familiar with the case in California that you mentioned. All fuel tanks are double walled and double lined. We have monitoring shut off valves that shuts down the system. We do daily, monthly, and annual testing which is submitted to DEQ.

Q - This community has existed and grown for the past 30 years without a gas station. How can you take the stand that it is necessary?
A – We thank you for your comment. This is the developer's choice as a businessman and developer to provide a gas station on this site based on what will be economic for the neighborhood. We understand that many may not feel the same way and appreciate your comment.

Q - How many people total are in attendance at this meeting?
A – The participate list has changed off and on throughout the meeting. We currently have about 16 attendees in the meeting.

Q – Is Bob aware that the zip codes that this gas station will be servicing is adopting EVs 3x faster than the average in Oregon? In fact, 97229 has the highest EV registration per capita of any zip code in the state. The data is available on the Oregon DMV website in GIS format.
A – We understand that this may or may not be true, but this is not necessarily impactful to this project.

Q – Specifically, why would you build this next to a wetland knowing there is any sort of risk?
A – We are going to be meeting all state and federal requirements for environmental protection. We understand your concerns about the risk for development. We are mitigating and preventing for any potential risk. We always treat the development with respect from an environmental standpoint.

Q - How do you guarantee the stewardship though? Are you prepared to fund a trust or put liens against other properties to guarantee funding in case of an accident?
A – We are not new; we have been recognized as great stewards. We will not be funding a trust or put liens against other properties.

The meeting concluded at approximately 7:00 p.m.

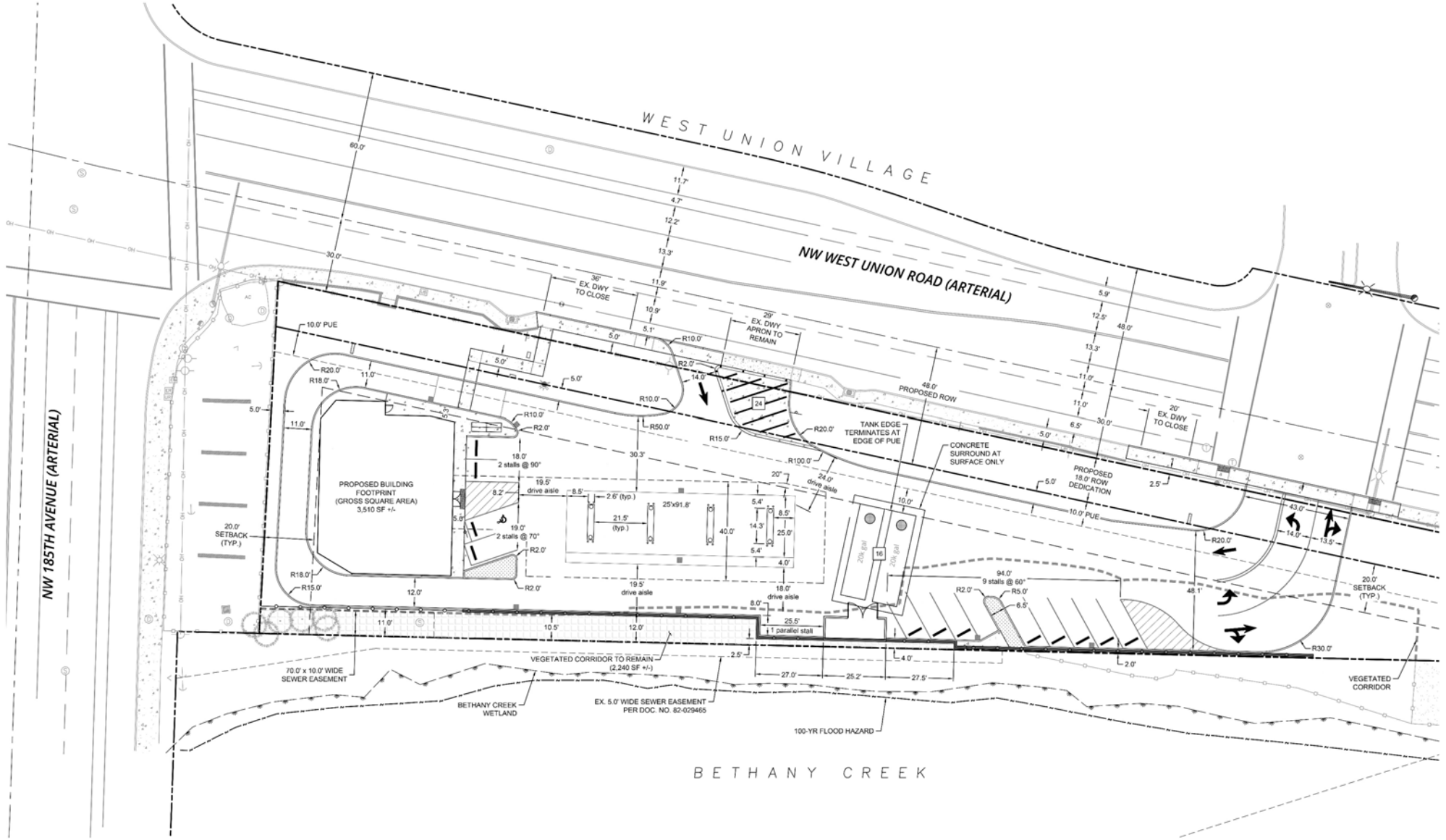
WEST UNION CHEVRON & EXTRA MILE

Presented by

3J CONSULTING


NW WEST UNION ROAD
NW 185TH AVENUE
DRIVE THRU
MARKET
FUEL PUMPS
BETHANY CREEK

SITE PLAN



Presented by
3J CONSULTING

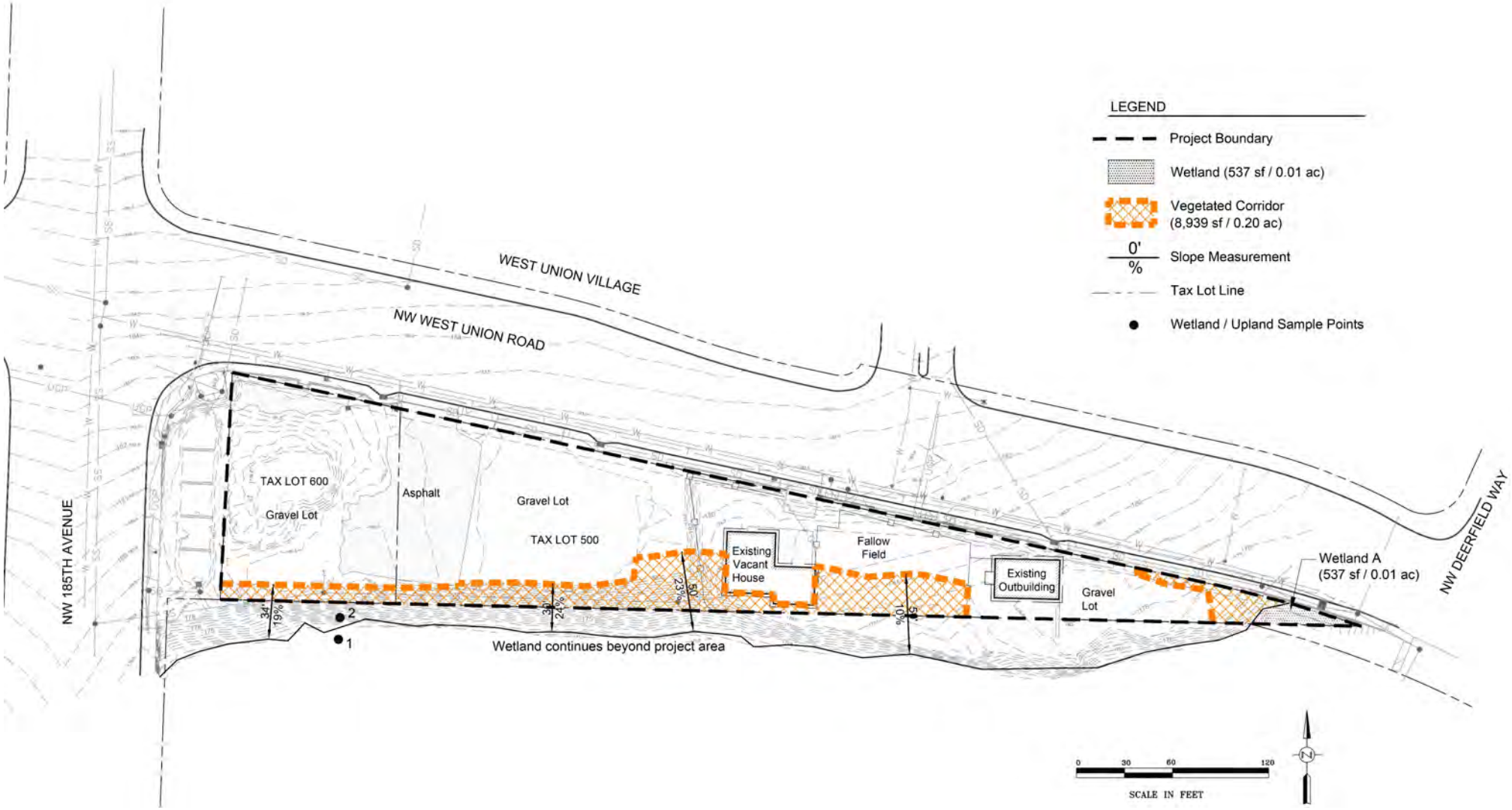
NEIGHBORHOOD COMMERCIAL (NC)

- Service Station
- Convenience Store
- Drive Thru

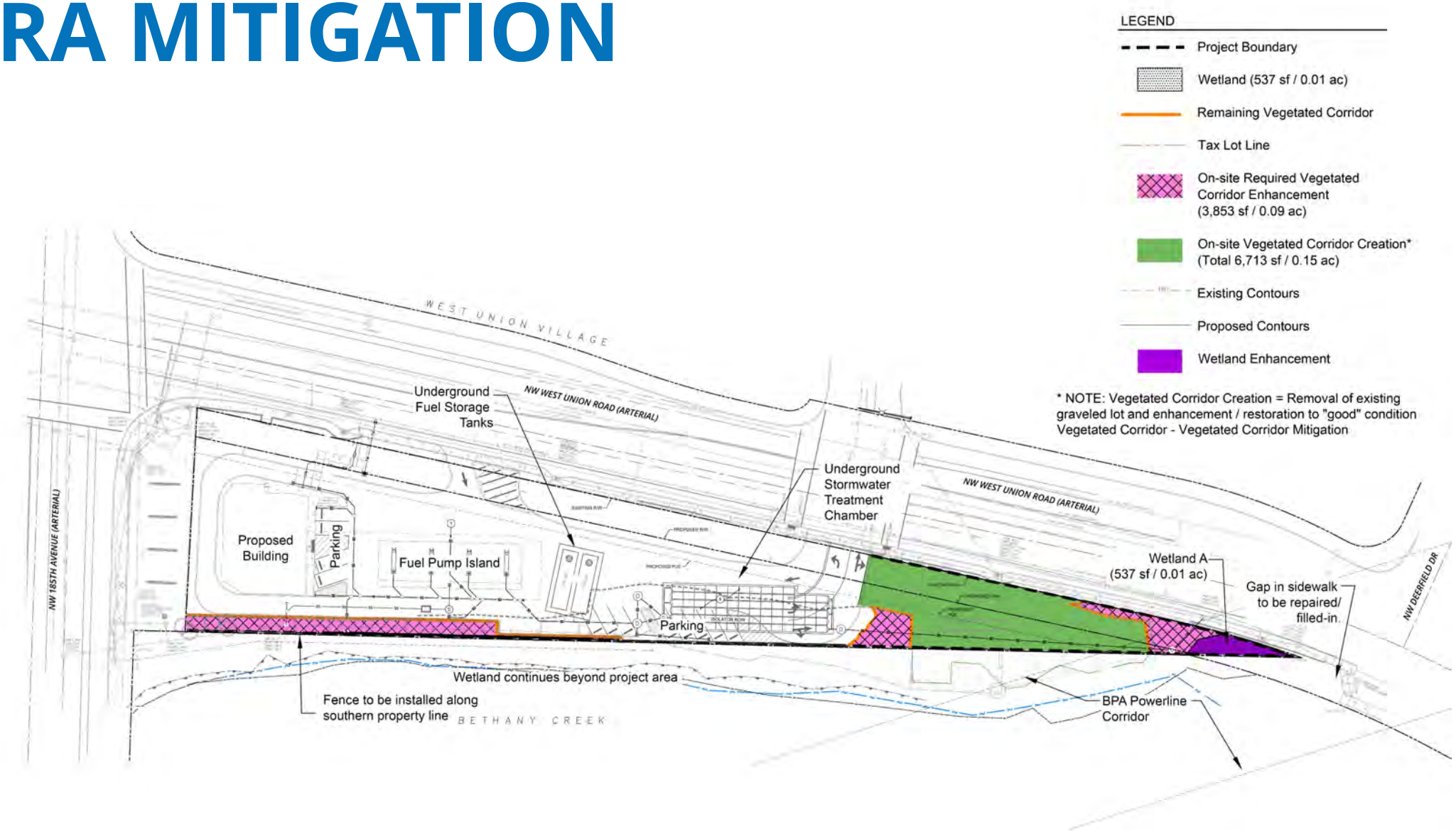
PROCESS

- Special Use
- Type II Dev. Review

NATURAL RESOURCE AREA (NRA)



NRA MITIGATION



GREEN STRATEGIES

- Geothermal Heating and Cooling System
- Native Greenroof
- 200+ Solar Panel Array
- 100% LED Halogen Lighting
- EV Charging Station
- Near Net Zero Energy Use

COMMITTED TO SUSTAINABILITY

DJC OREGON

Newsmakers 2012: Bob and Katy Barman

Owners of the nation's first green Chevron station

By Rick Arnett · in 1535 · February 23, 2012 · 9:23 am

DJC NEWSMAKERS 2012

"Turning a gas station into a sustainable venture didn't come cheap - some of the green features used cost more than twice as much as more traditional ones…but the Barmans were willing to spend more green to go green."

- Rick Arnett, Daily Journal of Commerce

OREGONLIVE
The Oregonian

Beaverton's Highland Chevron gas station pushes energy efficiency for 'net zero' consumption

"The petrochemical industry needs to change its (consumer perceived) position in the market from being oil companies to being energy companies. That's what we've done here."

– Bob Barman, Owner

Presented by
3J CONSULTING

WEST UNION CHEVRON & EXTRA MILE

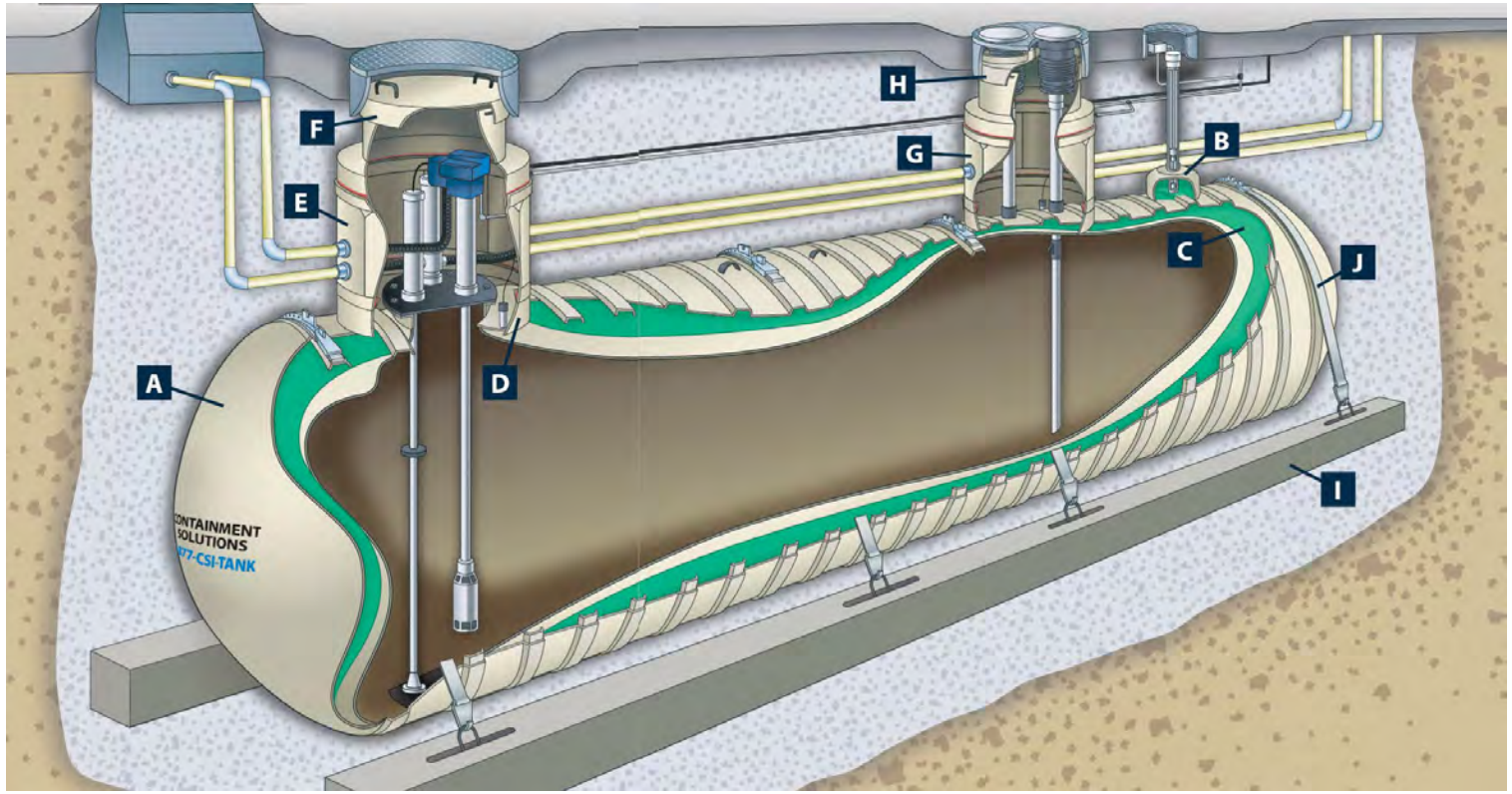
BEAVERTON, OR

Presented by
3J CONSULTING

FUEL MANAGEMENT SYSTEM

- Automated system
- Monitored from the convenience store in real time
- Built-in automatic shutdown features

PETROLEUM STORAGE



Standard Features

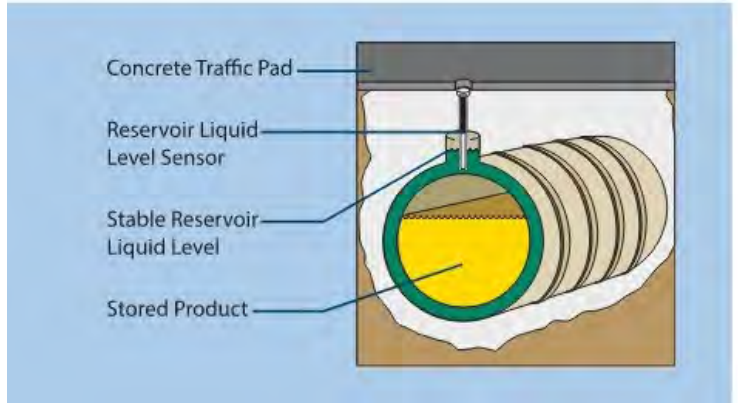
- **A** Double-Wall Tank
- **B** Hydrostatic Reservoir
- **C** Monitoring Fluid
- **D** Containment Collars
- **E** Turbine Tank Sump
- **F** Turbine Sump Lid
- **G** Fill / Vapor Tank Sump
- **H** Fill / Vapor Sump Lid
- **I** Deadman Anchor System
- **J** Split-Strap System

HYDROSTATIC TANK BREACH MONITORING

- System monitors inner or outer wall breach
- Alarm will notify station manager if compromised

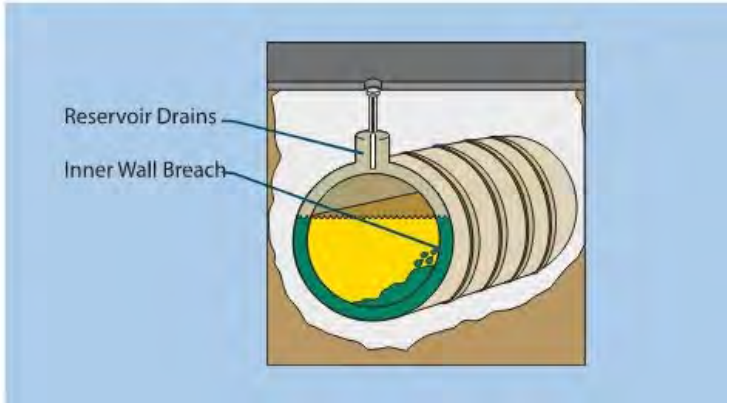
NORMAL CONDITIONS

The reservoir liquid level will be stable if both the inner and outer tank are tight. The reservoir sensor will activate an alarm if the reservoir drains or overfills.



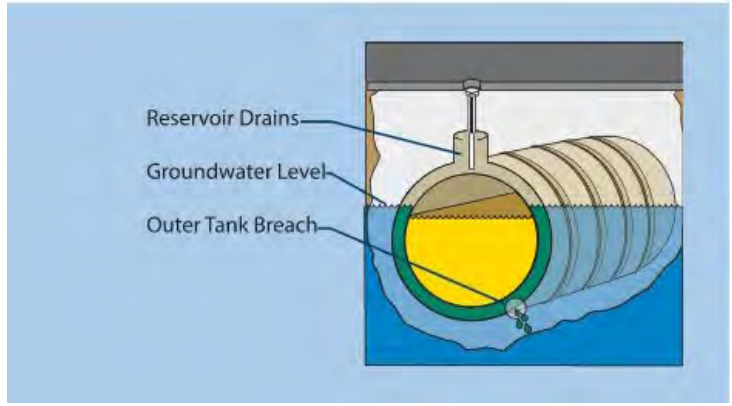
INNER WALL BREACH

Monitor fluid drains into the primary tank causing the reservoir to drain. The petroleum product remains safely contained in the primary tank.



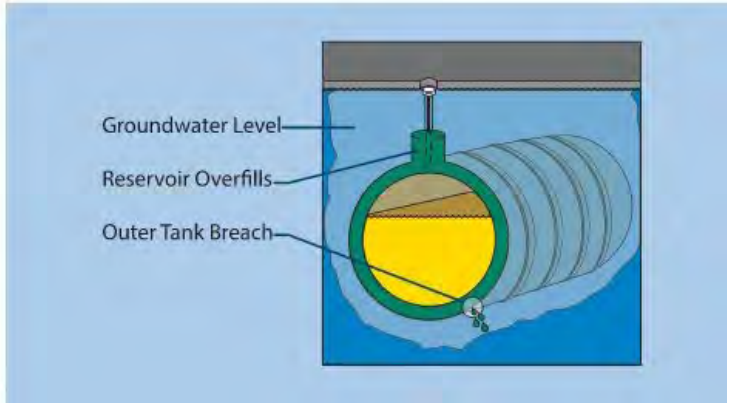
OUTER WALL BREACH

If the groundwater is below the tank top, the non-toxic monitor fluid drains into the ground causing the reservoir to drain.



HIGH GROUNDWATER

If the groundwater is over the tank top, the reservoir will overfill with groundwater and activate the high level alarm on the reservoir sensor.



QUESTIONS?

mercedes.serra@3j-consulting.com

Q&A – Questions

Chat – Name and Mailing Address

Presented by
3J CONSULTING

Clean Water Services
Our commitment is clear.

CWS File Number
21-000384

AMENDED Service Provider Letter

This form and the attached conditions will serve as your Service Provider Letter in accordance with Clean Water Services Design and Construction Standards (R&O 19-5, as amended by R&O 19-22).

Jurisdiction:	Washington County	**Review Type:**	Tier 2 Analysis
		SPL Original Date:	July 28, 2021
Site Address / Location:	18300 & 18450 NW West Union Rd Portland, OR 97229	**SPL Amendment Date:**	June 14, 2022
		SPL Expiration Date:	June 13, 2024

Applicant Information:		**Owner Information:**	
Name	RJ BARMAN	Name	Same as Applicant
Company	CJRW LLC	Company	
Address	PO BOX 2092	Address	
	LAKE OSWEGO OR 97035		
Phone/Fax	(503) 720-2917	Phone/Fax	
E-mail:	bobbarmanaz717@gmail.com	E-mail:	

Tax lot ID	**Development Activity**
1N119BC00500 & 600	West Union Chevron Extra Mile

Pre-Development Site Conditions:		**Post Development Site Conditions:**	
Sensitive Area Present:	[X] On-Site [X] Off-Site	Sensitive Area Present:	[X] On-Site [X] Off-Site
Vegetated Corridor Width:	Variable	Vegetated Corridor Width:	Variable
Vegetated Corridor Condition:	Degraded		

Enhancement of Remaining Vegetated Corridor Required: [X]

Square Footage to be enhanced: 3,853

Encroachments into Pre-Development Vegetated Corridor:

Type and location of Encroachment:	Square Footage:
Building & associated parking, fuel pump isle & driveway, underground stormwater treatment chamber (Permanent encroachment; Mitigation required)	6,673
Trenching for utility lines (Temporary encroachment; Restoration & planting in-place required)	546

Mitigation Requirements:

Type/Location	Sq. Ft./Ratio/Cost
On-site Replacement Mitigation (removal of existing imperious surface & restore to 'good' VC)	6,822
On-site Wetland Enhancement as public benefit	537
On-site Interpretive/Education Signs as public benefit (2 signs)	2

[X] Conditions Attached [X] Development Figures Attached (3) [ ] Planting Plan Attached [ ] Geotech Report Required

This Service Provider Letter does NOT eliminate the need to evaluate and protect water quality sensitive areas if they are subsequently discovered on your property.

ALTERNATIVES ANALYSIS

1. The proposed encroachment area is mitigated in accordance with Section 3.08.

Mitigation for the permanent impacts to the VC will be achieved through onsite VC replacement mitigation, through removal of existing impervious gravel area and restoration to “good” condition corridor, as outlined in Section 3.08 of CWS Design & Construction Standards. The mitigation criteria are intended to protect water quality for public benefit. Additional public benefit, in excess of the mitigation requirement, will be achieved through enhancement of onsite wetland area and placement of educational/interpretive signs. Temporary encroachments will be mitigation in-place through returning the ground to pre-construction grade and re-vegetation to comply with Section 3.05.5.

2. The enhancement mitigation protects the functions and values of the Vegetated Corridor and Sensitive Area.

The VC to be impacted is “degraded” condition corridor and there will be no impact to sensitive areas, which are in majority, located offsite. The applicant will utilize CWS’ replacement mitigation standards, as outlined in Section 3.08 of the CWS Design & Construction Standards, to mitigated for the proposed encroachment. All proposed enhancements onsite will protect the function of the adjoining VC and sensitive areas.

3. Enhancement of the replacement area, if not already in Good Corridor Condition, and either the remaining Vegetated Corridor on the site or the first 50 feet of width closest to the resource, whichever is less, to a Good Corridor Condition.

Due to the necessary design elements in the site plan, a portion of the VC will be impacted. The proposed replacement mitigation area will be enhanced to “good” condition corridor, as will temporary encroachment areas and required enhancement areas, in accordance with CWS Standards. The proposed replacement area was identified based upon the location and limits of existing VC and existing developed areas.

4. A District Stormwater Connection Permit is likely to be issued based on proposed plans.

The applicant reasonably expects to obtain a District Stormwater Connection Permit based on proposed plans for the project.

5. Location of development and site planning minimizes incursion into the Vegetated Corridor.

Encroachment into the on-site VC has been minimized to the maximum extent practicable. However, due to the severely limiting unconventional wedge shape of this subject site, VC encroachments are necessary for the construction of the fuel islands and other required infrastructure within the developable portions of the site. Encroachment minimizations were made scale back encroachments from the proposed building and retain six (6) existing on-site ponderosa pine trees. Section 5.3 #6, below, details the reasons why this property was chosen for the proposed development, and why encroachment into VC is necessary.

6. No practicable alternative to the location of the development exists that will not disturb the Sensitive Area or Vegetated Corridor.

The proposed site was chosen for several reasons, including the absence of and need for such a facility in a highly populated and traveled area north of US Highway 26; the lack of readily available sites of sufficient size and appropriate zoning to accommodate the necessary infrastructure for a service station; the ease of travel to and from other parts of the region; and recognizing the potential of redeveloping a vacant site that has continued to deteriorate over the years into more and more of an eyesore in a highly visible location, subjected to illegal dumping of garbage onto the site and into the vegetated corridor and wetland area to the south. These are some of the reasons that led the applicant to choose the proposed development site as the preferred site.

The western half of the site is the only area suitable for a service station, a minimum of 4 fuel islands, EV charging stations, and the required turning radius for vehicles to safely move into and out of the site; no alternative location for these facilities exists on the site.

Three alternatives were considered for the site.

Alternative 1: "No build" alternative. The no build alternative would mean that the service station would not be constructed and the existing vacant lot would continue to deteriorate with weedy vegetation, and be subject to ongoing illegal dumping of garbage onto the site and into the vegetated corridor and wetland

area to the south, remaining an eyesore in a highly visible location; and leaving a rapidly growing area to travel further to refuel their vehicles, and thus generate more pollutants associated with auto travel.

Alternative 2: Alternative 2 would have maximized the buildable area by having additional parking in the eastern portion of the site and a car wash in the central portion, and thereby, providing an additional service to customers. This alternative would have resulted in little to no remaining Vegetated Corridor to enhance and greater impervious surface areas in the eastern portion of the site.

Alternative 3: Alternative 3 included a larger building footprint to accommodate a slightly larger sales floor and a fuel pump island with six fuel dispensers (capable of fueling 12 cars). The larger building design has been favorable through customer demand of fresh produce options, more variety of beverages, health and beauty items, non-gendered bathrooms, ADA space, and other conveniences. Additionally, the larger building size supports economical installation and use of the planned solar and geothermal systems. This alternative would have resulted no Vegetated Corridor, yet would have provided a more balance economic model for fuel stations of this type.

Alternative 4: Alternative 4 designed by minimizing VC impacts to the greatest extent practicable while keeping the project feasible. In this alternative, wetland impact is completely avoided and VC impacts are further reduced by reducing the building footprint and locating it further to the north, and by reducing the fuel pump island from an island with six fuel dispensers to an island with five dispensers (only capable of fueling ten cars). This alternative allows us to maintain the onsite wetland and VC areas. VC creation and enhancement will be maximized in the eastern portion of the site, an area of VC enhancement will also occur within the southwestern portion of the site. In addition, the presence of the proposed service station will provide 24/7 surveillance of the site, which will deter illegal dumping of garbage into the VC and wetland areas. This alternative comes at the cost of eliminating customer amenities for a customer service-related business. This design did not meet the neighborhood commercial zone requirements for a 20-foot setback from NW West Union Road and NW 185th Avenue, and therefore, an alternative site design (Alternative 5) is presented below.

Alternative 5: Preferred Alternative, which was designed by completely avoiding wetland impact and minimizing VC impacts to the greatest extent practicable while keeping the project feasible and meeting the neighborhood commercial zone requirements for a 20-foot setback from NW West Union Road and NW 185th Avenue. The building footprint and fuel cover canopy have been reduced in order to meet the setback requirements of the zone, reducing the building footprint from 4,034 sf to 3,510 sf. The site plan features a drive-through aisle along the north, west and south sides of the building. As part of the redesign, parking has been shifted on the site, with four parking stalls located at the building entrance and ten stalls along the southern property line east of the fuel canopy. The fuel island has also been reduced from an island with five fuel dispensers to an island with four dispensers (only capable of fueling eight cars). The diesel fuel tank has also been removed with two 20,000-gallon fuel tanks remaining. Perimeter parking lot landscaping will be provided along the frontage of NW West Union Road and NW 185th Avenue. Compared to the previously approved site plan (Alternative 4), the preferred Alternative 5 site plan will result in an increase in landscape area from 17,500 sf to 20,200 sf, and a decrease in impervious area from 35,743 sf to 33,757 sf. No additional VC encroachments will result from this site design. VC mitigation and enhancement areas will remain the same as previously approved, and an additional 109-sf area of onsite VC creation will be added to the southwestern corner of the site, and will be contiguous with the proposed VC enhancement area.

7. The proposed encroachment provides public benefits.

The proposed removal of the existing degraded structures and compacted, impermeable surfaces, and replacing these areas with native vegetation, and providing stormwater treatment for the site will improve water quality and provide a public benefit to water quality. The applicant will create 6,822 square feet / 0.15 acres of vegetated corridor, where none currently exists, and enhance 3,853 square feet / 0.09 acres of vegetated corridor that is in "degraded" corridor condition; thereby, creating and enhancing a total of 10,675 square feet / 0.25 acres of vegetated corridor to “good” condition adjacent to a large wetland floodplain associated with Springville Creek. In addition, the small wetland area in the eastern tip of the site will receive enhancements above and beyond the requirement through invasive species removal, plantings of native scrub/shrub/emergent wetland plantings and maintenance and monitoring. Educational and interpretive signs will also be installed at two (2) locations in high focal areas for both customers and the general public to view. The signs will discuss/highlight natural resource restoration, the importance of urban wetlands, important surrounding habitat and water quality benefit. Managing invasive species, creating VC where there once was impervious surface, increasing the native vegetation surrounding

wetlands, and providing interpretive and educational signage is a direct benefit to water quality, natural resources, and an improvement to local residents.

In order to comply with Clean Water Services water quality protection requirements the project must comply with the following conditions:

1. No structures, development, construction activities, gardens, lawns, application of chemicals, uncontained areas of hazardous materials as defined by Oregon Department of Environmental Quality, pet wastes, dumping of materials of any kind, or other activities shall be permitted within the sensitive area or Vegetated Corridor which may negatively impact water quality, except those allowed in R&O 19-5, Chapter 3, as amended by R&O 19-22.
2. Prior to any site clearing, grading or construction the Vegetated Corridor and water quality sensitive areas shall be surveyed, staked, and temporarily fenced per approved plan. During construction the Vegetated Corridor shall remain fenced and undisturbed except as allowed by R&O 19-5, Section 3.06.1, as amended by R&O 19-22 and per approved plans.
3. If there is any activity within the sensitive area, the applicant shall gain authorization for the project from the Oregon Department of State Lands (DSL) and US Army Corps of Engineers (USACE). The applicant shall provide Clean Water Services or its designee (appropriate city) with copies of all DSL and USACE project authorization permits. **No sensitive area impacts proposed with this project.**
4. An approved Oregon Department of Forestry Notification is required for one or more trees harvested for sale, trade, or barter, on any non-federal lands within the State of Oregon.
5. **Prior to any ground disturbing activities, an erosion control permit is required. Appropriate Best Management Practices (BMP's) for Erosion Control, in accordance with Clean Water Services' Erosion Prevention and Sediment Control Planning and Design Manual, shall be used prior to, during, and following earth disturbing activities.**
6. Prior to construction, a Stormwater Connection Permit from Clean Water Services or its designee is required pursuant to Ordinance 27, Section 4.B.
7. Activities located within the 100-year floodplain shall comply with R&O 19-5, Section 5.10, as amended by R&O 19-22.
8. Removal of native, woody vegetation shall be limited to the greatest extent practicable.
9. The water quality swale and detention pond shall be planted with Clean Water Services approved native species, and designed to blend into the natural surroundings.
10. **Should final development plans differ significantly from those submitted for review by Clean Water Services, the applicant shall provide updated drawings, and if necessary, obtain a revised Service Provider Letter.**
11. The Vegetated Corridor width for sensitive areas within the project site shall be a minimum of 50 feet wide, as measured horizontally from the delineated boundary of the sensitive area.
12. **For Vegetated Corridors up to 50 feet wide, the applicant shall enhance the entire Vegetated Corridor to meet or exceed good corridor condition as defined in R&O 19-5, Section 3.14.2, Table 3-3, as amended by R&O 19-22.**
13. Prior to any site clearing, grading or construction, the applicant shall provide Clean Water Services with a Vegetated Corridor enhancement/restoration plan. Enhancement/restoration of the Vegetated Corridor shall be provided in accordance with R&O 19-5, Appendix A, as amended by R&O 19-22, and shall include planting specifications for all Vegetated Corridor, including any cleared areas larger than 25 square feet in Vegetated Corridor rated ""good.""
14. Prior to installation of plant materials, all invasive vegetation within the Vegetated Corridor shall be removed per methods described in Clean Water Services' Integrated Pest Management Plan, 2019. During removal of invasive vegetation care shall be taken to minimize impacts to existing native tree and shrub species.
15. Clean Water Services shall be notified 72 hours prior to the start and completion of enhancement/restoration activities. Enhancement/restoration activities shall comply with the

guidelines provided in Planting Requirements (R&0 19-5, Appendix A, as amended by R&O 19-22).

16. **Maintenance and monitoring requirements shall comply with R&O 19-5, Section 2.12.2, as amended by R&O 19-22. If at any time during the warranty period the landscaping falls below the 80% survival level, the owner shall reinstall all deficient planting at the next appropriate planting opportunity and the two-year maintenance period shall begin again from the date of replanting.**
17. **Performance assurances for the Vegetated Corridor shall comply with R&O 19-5, Section 2.07.2, Table 2-1 and Section 2.11, Table 2-2, as amended by R&O 19-22.**
18. **Clean Water Services shall require an easement over the Sensitive Area and Vegetated Corridor conveying storm and surface water management to Clean Water Services or the City that would prevent the owner of the Vegetated Corridor from activities and uses inconsistent with the purpose of the corridor and any easements therein.**

FINAL PLANS

19. **Final construction plans shall include landscape plans.** In the details section of the plans, a description of the methods for removal and control of exotic species, location, distribution, condition and size of plantings, existing plants and trees to be preserved, and installation methods for plant materials is required. Plantings shall be tagged for dormant season identification and shall remain on plant material after planting for monitoring purposes.
20. **A Maintenance Plan shall be included on final plans** including methods, responsible party contact information, and dates (minimum two times per year, by June 1 and September 30).
21. **Final construction plans shall clearly depict the location and dimensions of the sensitive area and the Vegetated Corridor** (indicating good, marginal, or degraded condition). Sensitive area boundaries shall be marked in the field.
22. Protection of the Vegetated Corridors and associated sensitive areas shall be provided by the installation of permanent fencing and signage between the development and the outer limits of the Vegetated Corridors. **Fencing and signage details to be included on final construction plans.**

This Service Provider Letter is not valid unless CWS-approved site plan is attached.

Please call (503) 681-3653 with any questions.

Lindsey Obermiller
Environmental Plan Review

Attachments (3)

COLOR COPY

CWS FILE NO. 21-000384
Approved
Clean Water Services
FOR ENVIRONMENTAL REVIEW
By LD Date 06/14/2022
SPL ATTACHMENT 1 OF 3

AMENDED

LEGEND

- Project Boundary
- Wetland (537 sf / 0.01 ac)
- Vegetated Corridor (10,508 sf / 0.24 ac)
- Plant Community A (Degraded) (8,953 sf / 0.20 ac)
- Tax Lot Line
- Wetland / Upland Sample Points
- Vegetation Sample Point
- Photo Point

WEST UNION VILLAGE

NW WEST UNION ROAD

NW 185TH AVENUE

NW DEERFIELD WAY

TAX LOT 600

Graveled Lot

Asphalt

Graveled Lot

TAX LOT 500

Existing Vacant House

Fallow Field

Existing Outbuilding

Graveled Lot

Wetland A (537 sf / 0.01 ac)

A

B

C

D

1

2

Wetland continues beyond project area

0 30 60 120

SCALE IN FEET

Survey provided by 3J Consulting (2017).
Survey accuracy is sub-centimeter.

Pacific Habitat Services,Inc.
9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax (503) 570-0855

Vegetated Corridor Plant Community
18300 & 18450 NW West Union Road - Portland, Oregon

FIGURE 3

2-2-2021

X:\Project Directories\6600\6689 West Union Chevron (old # 5410, 6261)\AutoCAD\PlotDwgs\Fig3 VCPlant Comm.dwg, 2/2/2021 2:34:42 PM

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CWS FILE NO. 21-000384
Approved
Clean Water Services
FOR ENVIRONMENTAL REVIEW
By LD Date 06/14/2022
SPL ATTACHMENT 2 OF 3

AMENDED

LEGEND

- Project Boundary
- Wetland (537 sf / 0.01 ac)
- Vegetated Corridor (10,508 sf / 0.24 ac)
- Tax Lot Line
- Vegetated Corridor Encroachment (Permanent 6,673 sf / 0.15 ac)
- Vegetated Corridor Encroachment (Temporary 546 sf / 0.01 ac)
- Existing Contours
- Proposed Contours

0 30 60 120
SCALE IN FEET

WEST UNION VILLAGE
NW WEST UNION ROAD
NW 185TH AVENUE
NW DEERFIELD WAY
Underground Fuel Storage Tanks
Proposed Building
Parking
Fuel Pump Island
Underground Stormwater Treatment Chamber
Wetland A (537 sf / 0.01 ac)
Wetland continues beyond project area
Six Pine Trees To Be Retained
BPA Powerline Corridor

Pacific Habitat Services,Inc.
9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax (503) 570-0855

Base provided by 3J Consulting (2017).

Site Plan with Vegetated Corridor Encroachments
18300 & 18450 NW West Union Road - Portland, Oregon

FIGURE 4

4-19-2022

C:\Users\Lisa\Desktop\WorkFromHome\6689 West Union Cherveron (old # 5410, 6261)\AutoCAD\PlotDwgs\Fig4 Site Plan.dwg, 4/19/2022 9:35:54 AM, AutoCAD PDF (High Quality Print).pc3

Proposed Wetland Enhancement Plants

Botanical Name	Common Name	Size	Quantity
***SHRUBS (30 Total)**			
Cornus stolonifera	Red-osier dogwood	1 gallon	10
Rosa pisocarpa	Clustered rose	1 gallon	10
Spiraea douglasii	Douglas's spiraea	1 gallon	10
HERBACEOUS (Native Seed Mix)			
Deschampsia elongata	Slender hairgrass	Seed	1# per 1,000 SF
Glyceria occidentalis	Western manna-grass		

*Plant locations to be determined by landscape architect and incorporated into landscape plan.

Proposed Vegetated Corridor Enhancement / Creation Plants

Botanical Name	Common Name	Size	Quantity
***TREES (104 Total)**			
*Acer macrophyllum***	Big-leaf maple	2 gallon	24
*Arbutus menziesii***	Pacific madrone	2 gallon	20
Cornus nuttallii	Pacific dogwood	2 gallon	20
Rhamnus purshiana	Cascara	2 gallon	18
*Thuja plicata***	Western red cedar	2 gallon	22
***SHRUBS (522 Total)**			
Cornus stolonifera	Red-osier dogwood	1 gallon	124
Mahonia aquifolium	Tall Oregon grape	1 gallon	84
Polystichum munitum	Western sword fern	1 gallon	140
Rosa nutkana	Nootka rose	1 gallon	70
Symphoricarpos albus	Snowberry	1 gallon	104
HERBACEOUS (Native Seed Mix)			
Bromus carinatus	California brome	Seed	1# per 1,000 SF
Elymus glaucus	Blue wild-rye		

*Plant locations to be determined by landscape architect and incorporated into landscape plan.
**To be planted only within central and western two-thirds of VC planting area, not along north edge of property nor eastern end of VC planting area (per BPA corridor standards).

COLOR COPY

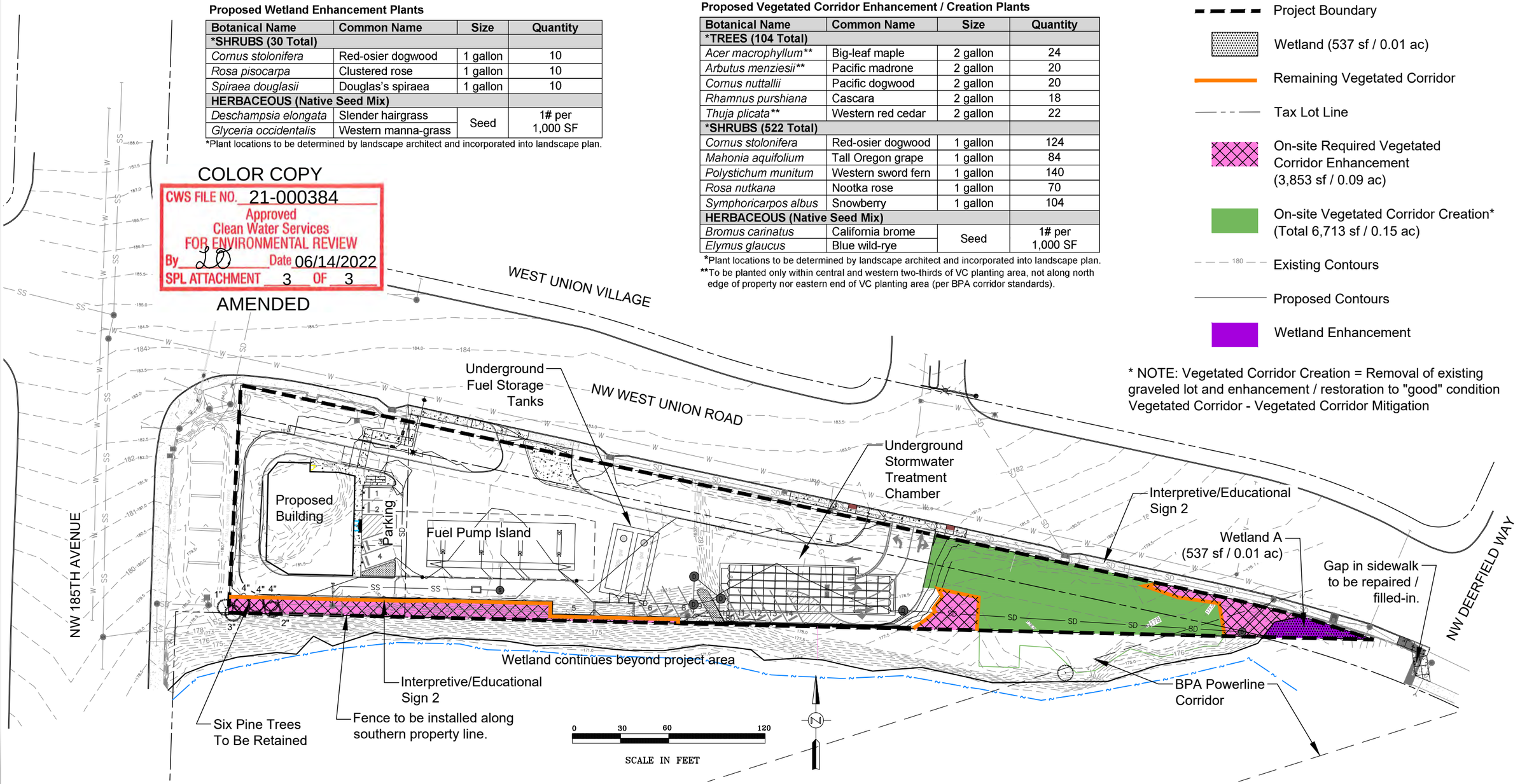
CWS FILE NO. 21-000384
Approved
Clean Water Services
FOR ENVIRONMENTAL REVIEW
By LO Date 06/14/2022
SPL ATTACHMENT 3 OF 3

AMENDED

LEGEND

- Project Boundary
- Wetland (537 sf / 0.01 ac)
- Remaining Vegetated Corridor
- Tax Lot Line
- On-site Required Vegetated Corridor Enhancement (3,853 sf / 0.09 ac)
- On-site Vegetated Corridor Creation* (Total 6,713 sf / 0.15 ac)
- Existing Contours
- Proposed Contours
- Wetland Enhancement

* NOTE: Vegetated Corridor Creation = Removal of existing graveled lot and enhancement / restoration to "good" condition Vegetated Corridor - Vegetated Corridor Mitigation



Pacific Habitat Services,Inc.
9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax (503) 570-0855

Base provided by 3J Consulting (2017).

Site Plan with Vegetated Corridor Mitigation and Enhancement and Wetland Enhancement
18300 & 18450 NW West Union Road - Portland, Oregon

FIGURE 5

4-19-2022

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Natural Resource Assessment
18300 & 18450 NW West Union Road
Portland, Oregon

(Township 1 North, Range 1 West, Section 19BC,
Tax lots 500 & 600, Washington County)

Prepared for

CJRW, LLC
Attn: RJ Barman
PO Box 2092
Lake Oswego, OR 97035

Prepared by

Caroline Rim
John van Staveren

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, Oregon 97070
(503) 570-0800
(503) 570-0855 FAX

PHS Project Number: 6689
January 28, 2021

TABLE OF CONTENTS

1.0 INTRODUCTION

Pacific Habitat Services, Inc. (PHS) conducted a natural resource assessment on two parcels located along the south side of NW West Union Road in Portland, Oregon (Township 1 North, Range 1 West, Section 19BC, Tax lots 500 & 600, Washington County); see Figure 1 for limits of the study area. All figures are in Appendix A. This project involves the construction of an eco-friendly gas/service station.

This report presents the definitions and the methodology used to assess the natural resources within the project site as required by Clean Water Services (CWS) design and construction standards (R&O 07-20). The field component of the natural resource assessment for this site was completed on July 25, 2017.

2.0 EXISTING CONDITIONS

The study area is located along the south side of NW West Union Road at 18300 and 18450 NW West Union Road, west of NW Deerfield Drive, and east of NW 185th Avenue in Portland, Washington County, Oregon. The site consists of tax lots 500 and 600, and is bounded to the south by a wetland floodplain associated with Springville Creek, a tributary to Bethany Lake located west of NW 185th Avenue. The south end of the proposed development site sits approximately 8 - 10 feet above the floodplain. Land use around the study area includes residential, commercial, open space, and agriculture. The study area is relatively level, with site elevations ranging from approximately 183 feet National Geodetic Vertical Datum (NGVD) in the northern portions of the site along NW West Union Road, to approximately 178 feet NGVD along the southern edge of the site.

The west end of the study area (tax lot 600) is located at the southeast corner of NW 185th Avenue and NW West Union Road and includes the remnants of a restaurant building that is no longer present and an asphalt/graveled parking lot. The remaining central and eastern portions of the site (tax lot 500) consist of an asphalt/graveled parking lot associated with the previously present restaurant at the west end; a vacant single-family residence with a driveway that extends onto NW West Union Road; and a graveled lot at the east end of the site with an outbuilding, storage yard, and a driveway that extends onto NW West Union Road.

With the exception of a scattering of landscaped trees within the southwestern and south-central portions of the site, the property lacks overstory vegetation and structure. A few, small Ponderosa pine (*Pinus ponderosa*) are located along the southern edge of the property at the west end of the site; a shore pine (*Pinus contorta*) is located on the west side of the vacant house in the central portion of the property; and a row of three large conifers, one Douglas fir (*Pseudotsuga menziesii*) and two giant sequoia (*Sequoiadendron gigantium*) are located along the southern property line, east of the vacant house. The remaining site vegetation consists of fallow fields, primarily composed of weedy grasses and forbs, including tall fescue (*Schedonorus arundinaceus*), orchard grass (*Dactylis glomerata*), common velvet grass (*Holcus lanatus*), brome (*Bromus sp.*), sweet vernal grass (*Anthoxanthum odoratum*), Queen Anne's lace (*Daucus carota*), common dandelion (*Taraxacum officinale*), white moth mullein (*Verbascum blattaria*), chicory (*Cichorium intybus*), garden vetch (*Vicia sativa*), and colonial bentgrass (*Agrostis capillaris*); also present are Himalayan blackberry (*Rubus armeniacus*) thickets.

Four driveways allow for access onto and off of the site; one is located at the northeast corner of tax lot 600 in the western portion of the site, which allows access onto the asphalt/graveled parking lot; a second driveway, just to the east of the first one, also allows access onto the asphalt/graveled parking lot; a paved third driveway extends from the vacant house in the central portion of the site onto NW West Union Road; and a fourth driveway located at the east end of the site allows for access from the asphalt/graveled lot/storage yard at the east end of the site onto NW West Union Road.

3.0 DISCUSSION OF WATER QUALITY SENSITIVE AREAS

Wetland

With the exception of a small wetland area (537 sf / 0.01 acre) within the very eastern tip of the site, no other wetland or waters of the state/US are present on the property. This small wetland is an extension of a larger wetland area located off-site to the south. The larger wetland area is a floodplain wetland associated with Springville Creek, a tributary to Bethany Lake, which is located west of NW 185th Avenue. The Cowardin class is palustrine, emergent, persistent, seasonally flooded (PEM1C) and the Hydrogeomorphic (HGM) class is Slope.

4.0 VEGETATED CORRIDOR ASSESSMENT

4.1 Vegetated Corridor Width Determination

The only portion of the site that has wetland is the very eastern tip of the study area; however, the large wetland area to the south of the site is within 200 feet of the southern property boundary, and therefore, the slope adjacent to the sensitive area/wetland was assessed in order to determine the width of the vegetated corridor (VC). The location of the VC, adjacent slopes, VC widths, and wetland/upland sample points are shown on Figure 2; plant community, VC sample point location and photograph locations are shown on Figure 3.

The vegetated corridor widths on the proposed development site are determined to be as follows:

Table 1. Summary of VC Width

Sensitive Area	VC Width	Justification
Wetland	Variable 10 to 50 feet	• Wetland size is greater than 0.5 acre • Not Isolated • Adjacent slopes are <25%

The slopes adjacent to wetland are less than 25%, and therefore, the adjacent VC width should be 50 feet; however, because the subject site is already developed, with the southern portion of the site including remnants/foundation of a restaurant, parking lots, a vacant house, outbuilding, and a storage yard, the VC is truncated along the edges of the existing development. As such, the VC width varies from approximately 10 to 50 feet.

The proposed development will remove the vacant house and outbuilding from the central and eastern portions of the site. The southern portions of the vacant house and outbuilding are located within the 50-foot VC setback, and therefore, these portions of the vacant house and outbuilding are included within the VC. Areas to the west, south and east of the outbuilding consist of impermeable compacted gravel and concrete that will be included as part of the proposed development, and as such, these areas are excluded from the VC.

4.2 Vegetated Corridor Plant Community

There is one plant community located within the subject site, Plant Community A. Plant Community A (8,953 square feet / 0.20 acres) is located along the north side of the southern property boundary and primarily consists of fallow fields along the southern edges of the asphalt/graveled areas, and within the back and side yards of the vacant house. Vegetation in Plant Community A is predominantly composed of weedy grasses and forbs including such species as sweet vernal grass, common velvet grass, Colonial bentgrass (*Agrostis capillaris*), tall fescue, Queen Anne's lace, orchard grass, California brome (*Bromus carinatus*), chicory, common dandelion, moth mullein, hairy cat's ear (*Hypochaeris radicata*), and garden vetch (*Vicia sativa*); Himalayan blackberry and Scott's broom (*Cytisus scoparius*) were also observed in this area, as well as a few trees, Ponderosa pine in the southwestern corner of the site, and shore pine, Douglas fir and giant sequoia on the west and east sides of the vacant house in the central portion of the property.

See Appendix B for wetland/upland data sheets, and Appendix C for plant species and percent cover as documented within the plant community. Appendix C also includes photographs of the sensitive area/wetland and the VC. See Figure 3 for photo point locations.

4.3 Vegetated Corridor Plant Community Condition

Table 2 shows the percent composition of native versus non-native species, and tree canopy cover in accordance with Clean Water Services' standards.

Table 2. Summary of Plant Community

		Plant Community
Corridor Condition		**A**
Good	>80% cover of native plants, and >50% tree canopy	
Marginal	50% - 80% cover of native plants, and 26-50% tree canopy	
Degraded	<50% cover of native plants, and < 25% tree canopy	**8% natives; 0% tree canopy**

The condition of the VC is defined by the percentages of native species and canopy cover. Plant Community A has 8% native species and 0% tree canopy, and therefore, it is in "Degraded" corridor condition.

5.0 PROPOSED PROJECT

The proposed project consists of redeveloping an already existing developed site by constructing an eco-friendly gas/service station "West Union Chevron Extra Mile". One of the major goals of the service station is to get as close as possible in achieving "net zero energy use". Some of the key features of this service station in attaining this goal are quite unique in this type of industry and include the following: the use of existing geothermal heat transfer to heat the station during the winter; installing eco-roofs, which can intercept rainwater which in turn will decrease the rate of storm run-off and associated erosion, while also capturing carbon dioxide in the air, and providing a noise buffer; the use of solar panels; and low-energy, mercury-free halogen bulbs to provide the lighting needs of the station.

The proposed development will include a service station store, six fuel pump islands, electric vehicle (EV) charging stations, associated parking, stormwater treatment, and landscaping along the perimeter (Figure 4). The site is comprised of two tax lots, which will be consolidated into one. Access onto and off of the site will be from NW West Union Road, in the western and central potions of the site. The stormwater plan will adhere to the design and construction standards of CWS. Stormwater from impervious surfaces will be directed into an on-site underground detention/treatment system, which will connect to an existing storm sewer system beneath NW West Union Road.

5.1 Vegetated Corridor Encroachments and Mitigation

A total of approximately 8,895 square feet / 0.20 acres of permanent vegetated corridor encroachment will result from the construction of the proposed service station (Figure 4). In addition, there will be 170 square feet of temporary VC encroachment resulting from the installation of storm drain pipes in the eastern portion of the site; once the pipes have been installed, these areas will be restored and enhanced to good corridor condition. No impacts of any kind are proposed for the wetland.

The proposed development will also include the installation of a 48-inch manhole along the south side of the development site, on THPRD property. The manhole and all work related to its installation will be conducted within an existing sewer easement located on THPRD property. The purpose of the manhole will be to provide maintenance access to an east-to-west sanitary sewer line that is located along the southern edge of the applicant's property, and is being decommissioned. VC encroachment associated with the manhole installation will be temporary and the encroachment area (158.1 square feet) will be restored and re-vegetated to good corridor condition. Installation of the manhole is an allowable use under CWS Section 3.05.5.c., and complies with Section 3.05.5 Utility Infrastructure criteria as follows: the permanent utility corridor is less than 20 feet wide, it is 15 feet wide; the temporary construction/access corridor is less than 50 feet wide, it ranges from 9.33 to 11.73 feet; there are no native trees in the vicinity; and the impacted area of the VC will be restored and re-vegetated with native herbs and shrubs, such as California brome (*Bromus carinatus*), Blue wild-rye (*Elymus glaucus*), and Western sword fern (*Polystichum munitum*). The placement of the 48-inch manhole is an allowable minor permanent encroachment (less than 13 square feet), and therefore, no mitigation is required. It should be noted that the applicant's engineers have been working with the CWS Engineering Plan Review department regarding the decommissioning of the sewer line and installation of the 48-inch manhole.

Two areas of existing vegetated corridor, totaling 1,613 square feet / 0.04 acres, will remain in the eastern portion of the site; both areas are in degraded corridor condition, and therefore, will be enhanced to good corridor condition. The outbuilding and associated asphalt/graveled parking area and storage yard that are located in between the two remaining VC areas, will be removed/graded and planted with native trees and shrubs, which will result in creating 6,713 square feet / 0.15 acres of onsite vegetated corridor that currently does not exist. The unusual wedge shape and size of the development site poses challenges for finding available onsite space for all of the replacement mitigation, and therefore, the applicant is coordinating with THPRD for use of a portion of their property for the remaining area needed for mitigation, and public benefit. Vegetated corridor will also be created on THPRD property along the southern edge of the site and be contiguous with the proposed onsite VC creation area. The offsite VC area is an extension of the asphalt/graveled parking area and storage yard, and as such, this area will also be graded and planted to create an additional 2,230 square feet / 0.05 acres of VC, which will result in a total of 8,943 square feet / 0.20 acres of contiguous VC creation. In addition, 4,378 sf / 0.10 acre of degraded VC on the THPRD property, along the southern edge of the VC enhancement and creation areas, will also be enhanced to good corridor condition. The proposed VC creation area, totaling 8,943 square feet / 0.20 acres will meet the meet the 1:1 replacement mitigation ratio, and the additional 4,378 square feet / 0.10 acres of VC enhancement will be in excess of the required mitigation; the additional area will be contiguous with and provide continuity to the larger VC area to the south of the site (Table 3 and Figure 5). This complies with the standard CWS requirement under Section 3.08.2.a and also provides a public benefit. The on-/offsite mitigation areas will be created and enhanced to "good" quality condition in accordance with CWS Section 3.14.2. Temporary encroachment areas will also be enhanced to "good" quality condition at the end of the construction period. Enhancement will include the removal of any invasive non-native species by hand and comply with Appendix A: Planting Requirements (R&O 17-5).

Table 3. Replacement Mitigation

			VC Mitigation Area	
			13,321 square feet / 0.30 acres	
Location of Replacement Mitigation	**Permanent Encroachment Acreage**	**Mitigation Ratio**	**Replacement Acreage**	**Mitigation for Public Benefit**
On-site	0.20	1:1	0.15	-
Off-site / Contiguous to the south on THPRD property	-	1:1	0.05	-
Off-site / Contiguous to the south on THPRD property	-	-	-	0.10
Total	**0.20**	**-**	**0.30**	

In addition to the replacement mitigation described above, the applicant will be installing a fence along the southern property line of the development site, and repairing/filling-in a gap in the sidewalk along the south side of NW West Union Road just beyond the east end of the development site (Figure 5), per THPRD's request.

5.2 Vegetated Corridor Enhancement and Mitigation

Both of the two remaining onsite VC areas and the offsite VC area are in degraded corridor condition, and therefore, will be enhanced to good corridor condition by removing and controlling undesirable vegetation and revegetating these areas with native species of trees and shrubs; in addition, the on- and offsite VC creation areas will also be enhanced with native trees and shrubs, which will result in a total of 14,934 square feet / 0.34 acres of VC in good corridor condition (Figure 5). Within the planting areas, bare areas greater than 25 square feet will be seeded with a native seed mix. Trees and shrubs to be installed in the mitigation and enhancement areas will be in compliance with the spacing, density, and native species requirements per CWS Current Design & Construction Standards - R&O 17-05 Appendix A "Planting Requirements". Table 4 (Figure 5) lists native plants suitable for installation throughout the vegetated corridor. The plant species were chosen for 1) their suitability to the soils and hydrology of the site, 2) their natural occurrence in the area and 3) their local availability.

Table 4. Proposed Native Vegetation for VC Mitigation and Enhancement Areas

Botanical Name	Common Name	Size	Quantity	Height (ft)
***TREES (149 total)**				
Acer macrophyllum	Big-leaf maple	2 gallon	36	3'
Arbutus menziesii	Pacific madrone	2 gallon	28	2'
Cornus nuttallii	Pacific dogwood	2 gallon	27	2'
Rhamnus purshiana	Cascara	2 gallon	26	2'
Thuja plicata	Western red cedar	2 gallon	32	2'
***SHRUBS (746 total)**				
Cornus stolonifera	Red-osier dogwood	1 gallon	176	2'
Mahonia aquifolium	Tall Oregon grape	1 gallon	120	0.5'
Polystichum munitum	Western sword fern	2 gallon	200	n/a
Rosa nutkana	Nootka rose	1 gallon	100	2'
Symphoricarpos albus	Snowberry	1 gallon	150	1.5'
GRASS SEED (Native Seed Mix)				
Bromus carinatus	California brome	Seed	1# per 1,000 SF	n/a
Elymus glaucus	Blue wild-rye			n/a

*****Plant locations to be determined by landscape architect incorporated into landscape plan.

Restoration and enhancement will be consistent with Clean Water Services' standards (refer to *Appendix A: Planting Requirements* of R&O 07-20). The overall goal will be to enhance the corridor to "good" condition, as required by Clean Water Services. Plant locations to be determined by the landscape architect and incorporated into the landscape plan. The vegetated corridor will be contained in a conservation tract and easement, and shall not be part of any parcel to be used for future development.

5.3 Alternatives Analysis

As discussed above, the proposed project consists of redeveloping an existing developed site by constructing an eco-friendly service station within the Bethany area at the southeast corner of NW 185th Avenue and NW West Union Road. As the proposed development plan will encroach into a VC that is in "Degraded" corridor condition and exceeds 30% of the depth of the VC or 40% of the length of the VC, a Tier 2 Alternatives Analysis is required. The elimination of a portion of the VC will meet all Tier 2 Alternative Analysis criteria through the following:

1. The proposed encroachment area is mitigated in accordance with Section 3.08.

Mitigation for permanent impacts to the VC will be achieved through on-/offsite VC replacement mitigation, as outlined in Section 3.08 of CWS Design and Construction Standards. The mitigation criteria are intended to protect water quality for public benefit. Additional public benefit, in excess of the mitigation requirement, will be achieved through additional offsite mitigation that is contiguous with the on-/offsite mitigation and enhancement areas. Temporary encroachments will be mitigated in place through re-vegetation to comply with Section 3.05.5.

2. The enhancement mitigation protects the functions and values of the Vegetated Corridor and Sensitive Area.

The VC to be impacted is in "degraded" corridor condition and there will be no impact to sensitive areas, which are located on- and offsite. The applicant will utilize CWS' replacement mitigation standard, as outlined in Section 3.08 of CWS Design and Construction Standards, to mitigate for the proposed encroachment. All proposed enhancements on-site and offsite will protect the functioning of adjoining VC and sensitive areas.

3. Enhancement of the replacement area, if not already in Good Corridor Condition, and either the remaining Vegetated Corridor on the site or the first 50 feet of width closest to the resource, whichever is less, to a Good Corridor Condition.

Due to necessary design elements in the site plan, a portion of the VC will be impacted. The proposed replacement mitigation area will be enhanced to "good" corridor condition, as will temporary encroachment areas and required enhancement areas in accordance with CWS standards. The proposed replacement area was identified based upon the location and limits of the existing VC and existing development.

4. A District Stormwater Connection Permit is likely to be issued based on proposed plans.

The applicant reasonably expects to obtain a District Stormwater Connection Permit based on proposed plans for the project.

5. Location of the development and site planning minimizes incursion into the Vegetated Corridor.

Encroachment into the on-site vegetated corridor has been minimized to the maximum extent practicable. However, due to the severely limiting unconventional wedge shape of the subject site, vegetated corridor encroachments are necessary for the construction of the building as proposed, to accommodate access roads and movement areas near fuel islands, parking areas, and other required infrastructure within the developable portions of the site. Section 5.3 #6, below, details

the reasons why this property was chosen for the proposed development, and why encroachment into the vegetated corridor is necessary.

6. No practicable alternative to the location of the development exists that will not disturb the Sensitive Area or Vegetated Corridor.

The proposed site was chosen for several reasons, including the absence of and need for such a facility in a highly populated and traveled area north of US Highway 26; the lack of readily available sites of sufficient size and appropriate zoning to accommodate the necessary infrastructure for a service station; the ease of travel to and from other parts of the region; and recognizing the potential of redeveloping a vacant site that has continued to deteriorate over the years into more and more of an eyesore in a highly visible location, subjected to illegal dumping of garbage onto the site and into the vegetated corridor and wetland area to the south. These are some of the reasons that led the applicant to choose the proposed development site as the preferred site.

The western half of the site is the only area suitable for a service station, a minimum of six fuel islands, EV charging stations, and the required turning radius for vehicles to safely move into and out of the site; no alternative location for these facilities exists on the site.

Three alternatives were considered for the site.

Alternative 1: "No build" alternative. The no build alternative would mean that the service station would not be constructed and the existing vacant lot would continue to deteriorate with weedy vegetation, and be subject to ongoing illegal dumping of garbage onto the site and into the vegetated corridor and wetland area to the south, remaining an eyesore in a highly visible location; and leaving a rapidly growing area to travel further to refuel their vehicles, and thus generate more pollutants associated with auto travel.

Alternative 2: Alternative 2 (Figure 6) would have maximized the buildable area by having additional parking in the eastern portion of the site and a car wash in the central portion, and thereby, providing an additional service to customers. This alternative would have resulted in less remaining Vegetated Corridor to enhance and greater impervious surface areas in the eastern portion of the site.

Alternative 3: Alternative 3 (Figure 5) is the preferred alternative, which was designed by further minimizing VC impacts to the greatest extent practicable while keeping the project feasible. In this alternative, the car wash and the additional parking area in the eastern portion of the site have been completely eliminated, and instead, VC creation and enhancement will be maximized in the eastern portion of the site. In addition, the presence of the proposed service station would provide 24/7 surveillance of the site, which would deter illegal dumping of garbage into the VC and wetland areas.

7. The proposed encroachment provides public benefits.

The proposed removal of the existing degraded structures and compacted, impermeable surfaces, and replacing these areas with native vegetation, and providing stormwater treatment for the site will improve water quality and provide a public benefit to water quality. Given that the applicant will create 8,943 square feet / 0.20 acres of vegetated corridor, where none currently exists, and

enhance 5,991 square feet / 0.14 acres of vegetated corridor that is in "degraded" corridor condition; thereby, creating a total of 14,934 square feet / 0.34 acres of vegetated corridor in good condition adjacent to a large wetland floodplain associated with Springville Creek, the public and the sensitive area will benefit from project implementation. The current corridor contains some invasive species likely to inundate the VC further without enhancement. Increasing the native vegetation within the existing VC is a direct benefit to water quality, native plant communities, and an improvement to local residents.

5.4 Discussion of Wetland and Vegetated Corridor Functions and Values

As a requirement of the Tier 2 analysis, a function and values assessment is required for the sensitive areas on site. The functions and values of the sensitive area, as well as the adjoining VC, were assessed within the study area using the HGM Classification Judgmental Assessment Method.

Water quality and quantity

Precipitation, overland flow and groundwater are the main sources of hydrology for the small wetland area that is located within the very eastern tip of the site, and which is part of a larger wetland area located offsite to the south that is a floodplain wetland associated with Springville Creek. Precipitation, overland flow and runoff from impervious surfaces are the main contributors to hydrology within the VC. Any chemicals or nutrients in the wetland are from surface runoff from adjacent uplands. There is no potential for standing water within the VC as the sloped terrain does not retain hydrology for prolonged duration. Major inorganic nutrients, such as nitrogen, phosphorus and ammonium nitrate, are likely partially removed due to the VC's dense herbaceous vegetation, which uplifts water quality to the sensitive area. It is likely the VC is a nutrient sink, allowing plants to take up and hold nutrients during the summer months. Substrate surrounding the sensitive area primarily consists of compacted, impermeable gravel and asphalt, which likely allows runoff to enter the sensitive area especially during storm events. There is no complex micro topography on the site and any long-term saturation is concentrated to a single part of the site, within the wetland.

Fish and Wildlife

The sensitive area is densely vegetated and does not provides fish habitat; however, because it is connected to a larger wetland area, it is capable of providing habitat for small mammals and other types of wildlife, including herptiles. The adjacent VC does not provide fish habitat but contains enough woody debris, native and non-native trees and shrubs that likely provide habitat for small mammals, birds and herptiles. The VC does not contain areas of long-term standing water, which decreases the likelihood of suitable breeding habitat for amphibians; however, it is located adjacent to a larger wetland area, which seasonally may contain enough water to provide suitable breeding habitat for amphibians, which in turn may travel through parts of the VC that are located along the edge of the onsite wetland. Adjoining uplands are mostly impermeable surfaces consisting of compacted gravel and modified substrate or fill. Despite heavy traffic along adjacent roads, larger species such as beaver, rodents, coyote and deer are likely present in the VC due to its location adjacent to a larger wetland area, which is part of the Springville Creek corridor.

Native Plant Communities and Species Diversity

A few large trees are present within the VC but vegetation within the VC primarily consists of overgrown weedy, non-native groundcover and invasive shubs, such as Himalayan blackberry. (Appendix C). Species diversity and structure in the sensitive area and in the VC are generally low, and according to CWS' regulations, the VC to be impacted on the site is considered to be in "degraded" condition due to a dominance of invasive and non-native species, and lack of canopy cover.

Recreation and Education

Recreation and educational opportunities are not known to occur at this location.

6.0 REFERENCES

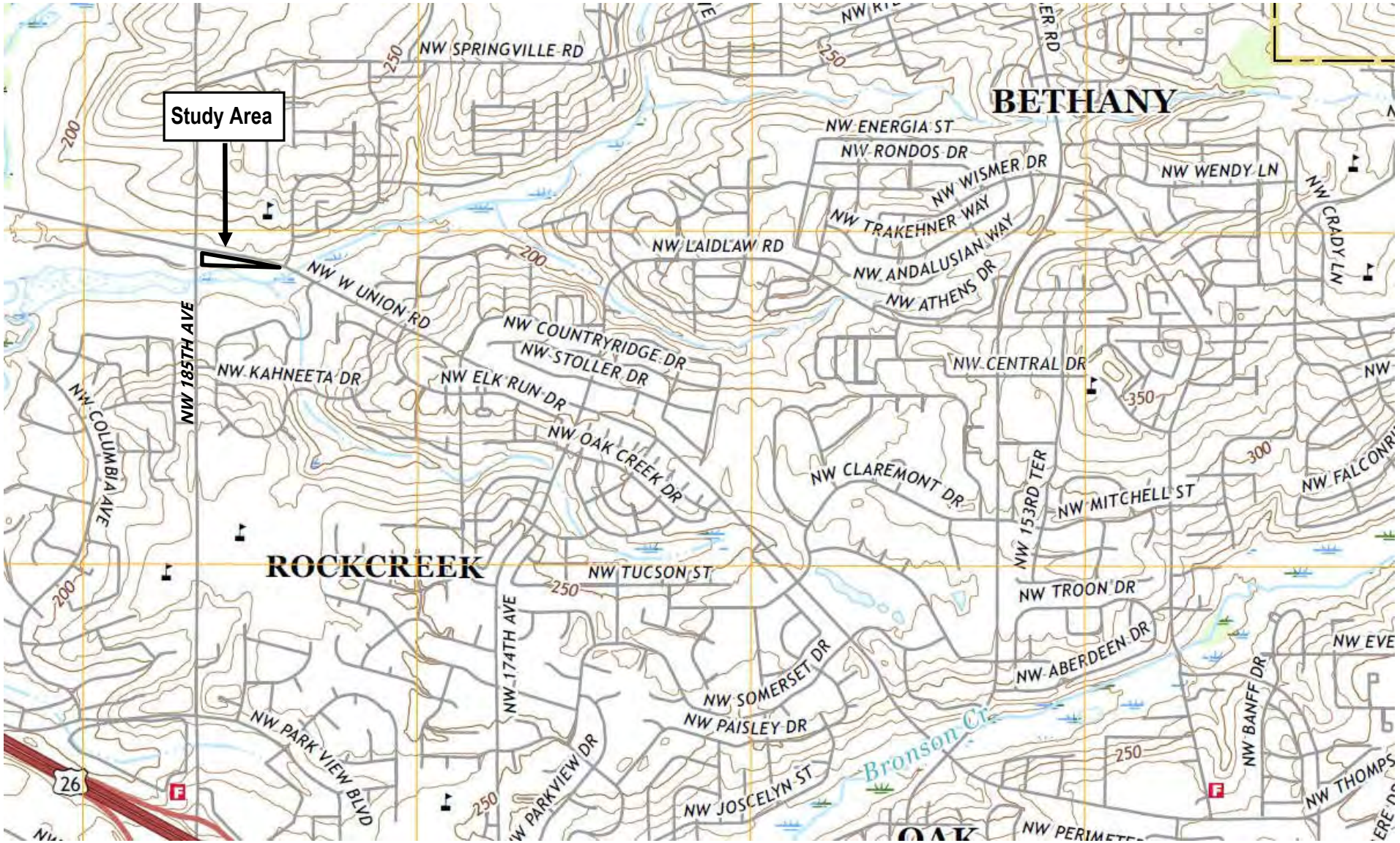
Adamus, P.R. 2001. *Guidebook for Hydrogeomorphic (HGM)–based Assessment of Oregon Wetland and Riparian Sites: Statewide Classification and Profiles*. Oregon Division of State Lands, Salem, OR.

Clean Water Services, 2017. *Design and Construction Standards (R&O 17-05)*.

US Geologic Survey, 2017. *7.5-minute topographic map, Linnton, Oregon quadrangle*.

Appendix A

Figures



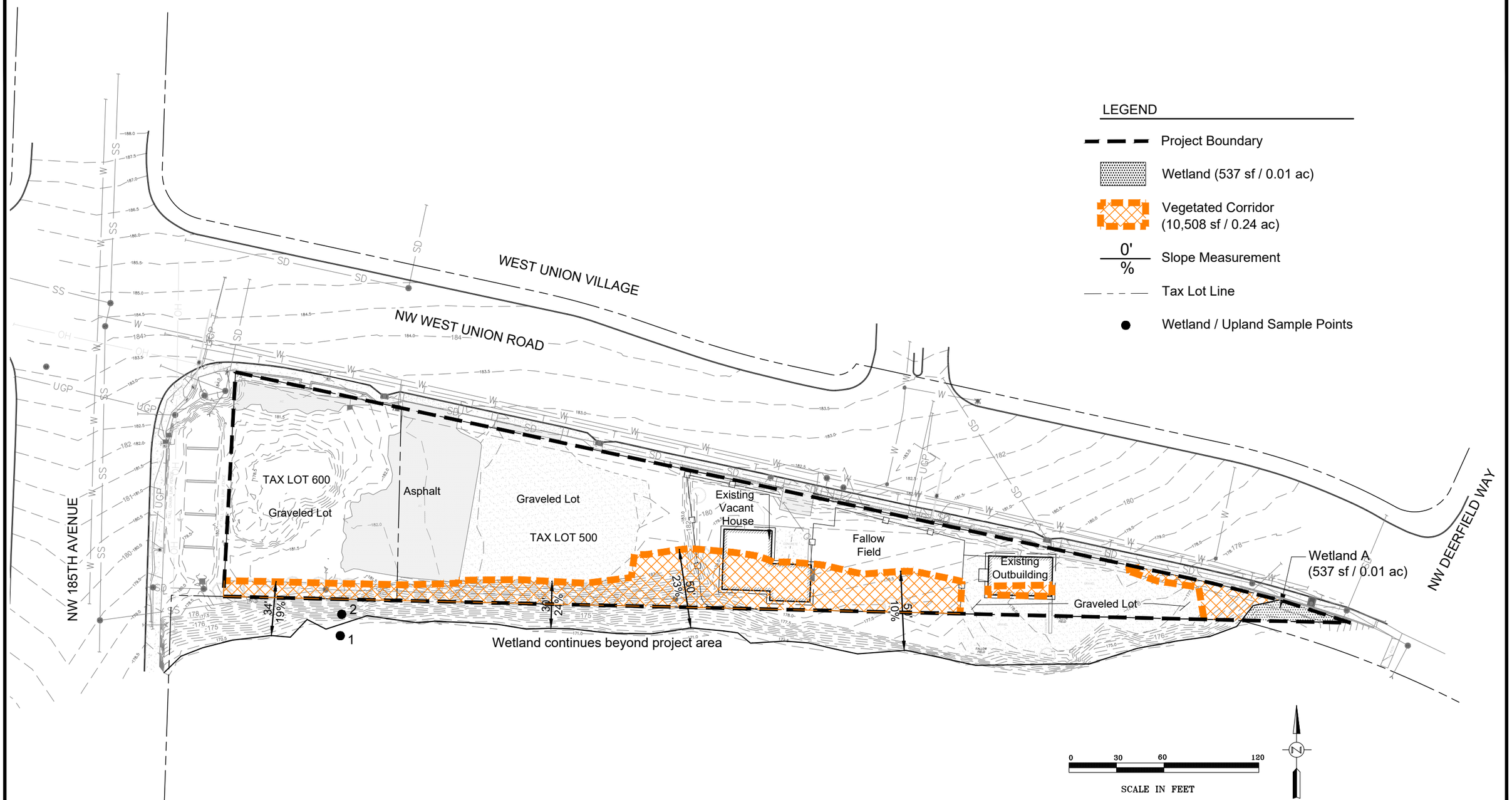
#6689
10/26/2019

PHS

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

General Location and Topography
18300 & 18450 NW West Union Road - Portland, Oregon
United States Geological Survey (USGS), Linnton, Oregon, 7.5 Quadrangle, 2017
(viewer/nationalmap.gov/basic)

FIGURE
1



PHS
Pacific Habitat Services,Inc.
9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax (503) 570-0855

Survey provided by 3J Consulting (2017).
Survey accuracy is sub-centimeter.

Existing Conditions
18300 & 18450 NW West Union Road - Portland, Oregon

FIGURE
2

2-2-2021

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LEGEND

- Project Boundary
- Wetland (537 sf / 0.01 ac)
- Vegetated Corridor (10,508 sf / 0.24 ac)
- Plant Community A (Degraded) (8,953 sf / 0.20 ac)
- Tax Lot Line
- Wetland / Upland Sample Points
- Vegetation Sample Point
- Photo Point

WEST UNION VILLAGE

NW WEST UNION ROAD

NW 185TH AVENUE

NW DEERFIELD WAY

TAX LOT 600

Graveled Lot

Asphalt

Graveled Lot

TAX LOT 500

Existing Vacant House

Fallow Field

Existing Outbuilding

Graveled Lot

Wetland A (537 sf / 0.01 ac)

A

B

C

D

1

2

Wetland continues beyond project area

0 30 60 120

SCALE IN FEET

Survey provided by 3J Consulting (2017).
Survey accuracy is sub-centimeter.

Pacific Habitat Services,Inc.
9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax (503) 570-0855

Vegetated Corridor Plant Community
18300 & 18450 NW West Union Road - Portland, Oregon

FIGURE 3

2-2-2021

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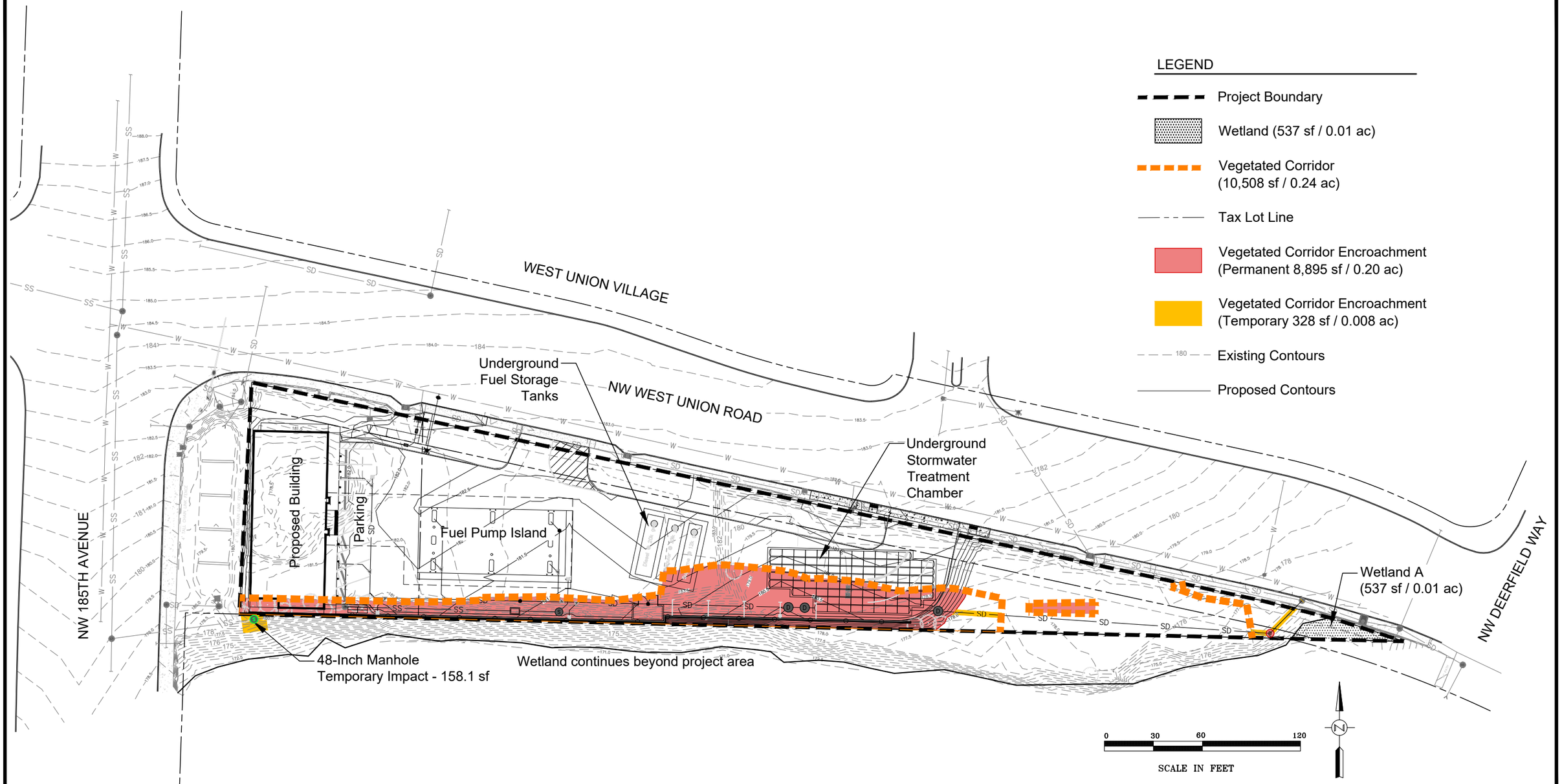


Pacific Habitat Services,Inc.
9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax (503) 570-0855

Base provided by 3J Consulting (2017).

Site Plan with Vegetated Corridor Encroachments
18300 & 18450 NW West Union Road - Portland, Oregon

FIGURE 4

2-2-2021

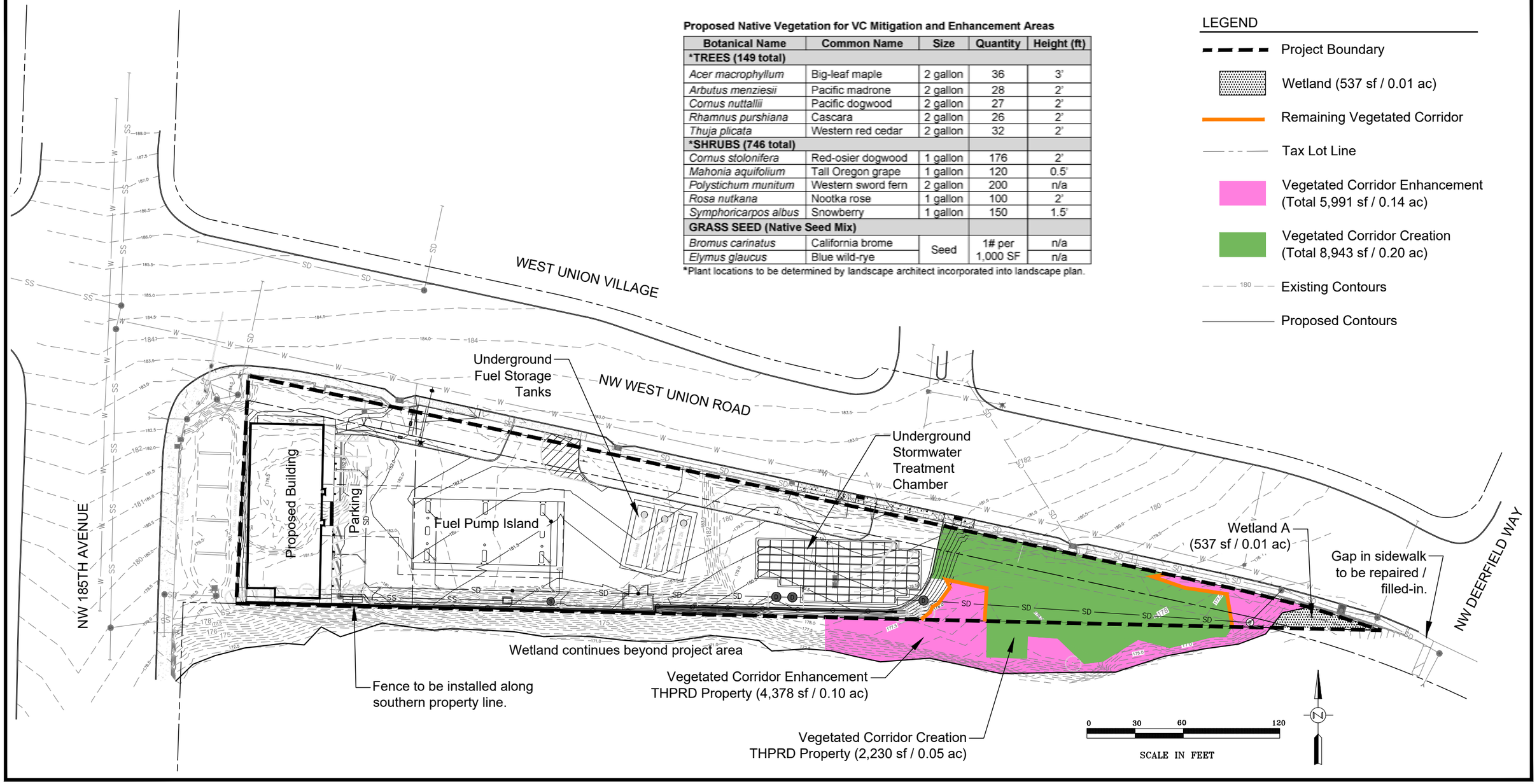
Proposed Native Vegetation for VC Mitigation and Enhancement Areas

Botanical Name	Common Name	Size	Quantity	Height (ft)
***TREES (149 total)**				
Acer macrophyllum	Big-leaf maple	2 gallon	36	3'
Arbutus menziesii	Pacific madrone	2 gallon	28	2'
Cornus nuttallii	Pacific dogwood	2 gallon	27	2'
Rhamnus purshiana	Cascara	2 gallon	26	2'
Thuja plicata	Western red cedar	2 gallon	32	2'
***SHRUBS (746 total)**				
Cornus stolonifera	Red-osier dogwood	1 gallon	176	2'
Mahonia aquifolium	Tall Oregon grape	1 gallon	120	0.5'
Polystichum munitum	Western sword fern	2 gallon	200	n/a
Rosa nutkana	Nootka rose	1 gallon	100	2'
Symphoricarpos albus	Snowberry	1 gallon	150	1.5'
GRASS SEED (Native Seed Mix)				
Bromus carinatus	California brome	Seed	1# per 1,000 SF	n/a
Elymus glaucus	Blue wild-rye			n/a

*Plant locations to be determined by landscape architect incorporated into landscape plan.

LEGEND

- Project Boundary
- Wetland (537 sf / 0.01 ac)
- Remaining Vegetated Corridor
- Tax Lot Line
- Vegetated Corridor Enhancement (Total 5,991 sf / 0.14 ac)
- Vegetated Corridor Creation (Total 8,943 sf / 0.20 ac)
- 180 Existing Contours
- Proposed Contours



Pacific Habitat Services,Inc.
9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax (503) 570-0855

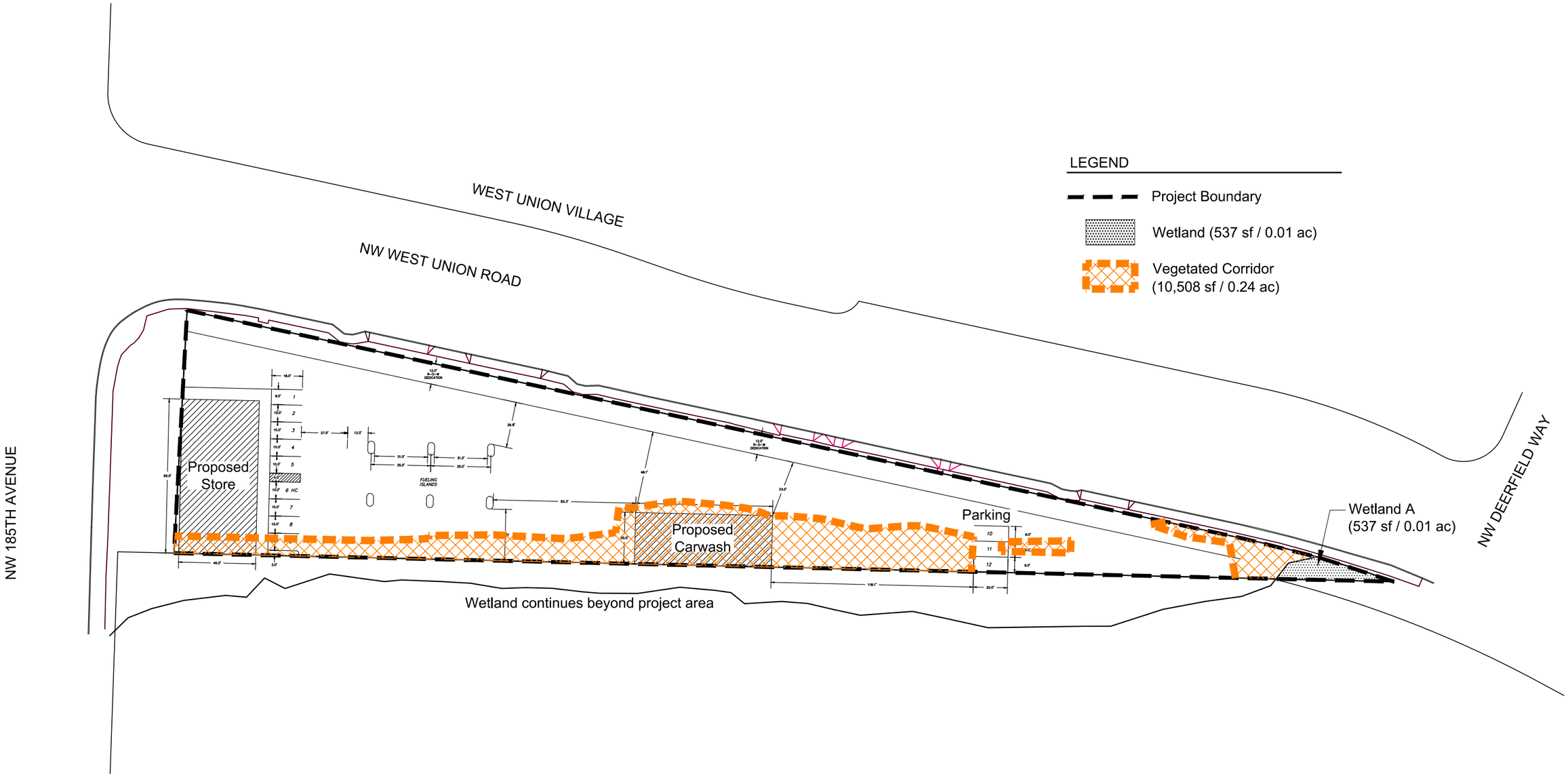
Base provided by 3J Consulting (2017).

Site Plan with Vegetated Corridor Mitigation and Wetland Enhancement
18300 & 18450 NW West Union Road - Portland, Oregon

FIGURE 5

2-2-2021

X:\Project Directories\6600\6689 West Union Chevron (old # 5410, 6261)\AutoCAD\PlotDwgs\Fig5 VC Enhance-Create.dwg, 2/2/2021 1:42:09 PM



PHS
Pacific Habitat Services,Inc.
9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax (503) 570-0855

Alternative plan provided by 3J Consulting (2017).

Alternative Site Plan
18300 & 18450 NW West Union Road - Portland, Oregon

FIGURE
6

2-1-2021

Appendix B

Wetland Determination Data Sheets

PHS # 6689

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: 18300, 18450 NW West Union Rd | City/County: Portland/Washington | Sampling Date: 7/25/2017

Applicant/Owner: CJRW, LLC | State: OR | Sampling Point: 1

Investigator(s): CT/CR | Section, Township, Range: Section 19BC, Township 1N, Range 1W

Landform (hillslope, terrace, etc.): Floodplain Terrace | Local relief (concave, convex, none): None | Slope (%): <5%

Subregion (LRR): LRR A | Lat: 45.557419 | Long: -122.883333 | Datum: WGS84

Soil Map Unit Name: Verboort Silty Clay Loam | NWI Classification: PEM1C

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	X	No		
Hydric Soil Present?	Yes	X	No	**Is Sampled Area within a Wetland?**	Yes X No
Wetland Hydrology Present?	Yes	X	No		

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)			
1			
2			
3			
4			
	0	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb Stratum (plot size: 10)			
1 *Leersia oryzoides*	95	X	OBL
2 *Impatiens capensis*	5		FACW
3 *Holcus lanatus*	5		FAC
4 *Polygonum persicaria*	2		FACW
5			
6			
7			
8			
	107	= Total Cover	
Woody Vine Stratum (plot size: ____)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

X 2- Dominance Test is >50%

____ 3-Prevalence Index is ≤ 3.0[1]

____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ 5- Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL PHS # 6689 Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	2.5Y 3/1	100					Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ Histosol (A1)
- ____ Histic Epipedon (A2)
- ____ Black Histic (A3)
- ____ Hydrogen Sulfide (A4)
- ____ Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ____ Sandy Mucky Mineral (S1)
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ____ 2 cm Muck (A10)
- ____ Red Parent Material (TF2)
- ____ Very Shallow Dark Surface (TF12)
- ____ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ____

Depth (inches): ____

Hydric Soil Present? Yes X **No** ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Surface Soil Cracks (B6)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- ____ Salt Crust (B11)
- ____ Aquatic Invertebrates (B13)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres along Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Plowed Soils (C6)
- ____ Stunted or Stressed Plants (D1) **(LRR A)**
- ____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ____ Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- ____ Drainage Patterns (B10)
- ____ Dry-Season Water Table (C2)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X Fac-Neutral Test (D5)
- ____ Raised Ant Mounds (D6) **(LRR A)**
- ____ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	____	No X	Depth (inches):	____
Water Table Present?	Yes	X	No ____	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes	X	No ____	Depth (inches):	0

Wetland Hydrology Present? Yes X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHS # 6689

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: 18300, 18450 NW West Union Rd | City/County: Portland/Washington | Sampling Date: 7/25/2017

Applicant/Owner: CJRW, LLC | State: OR | Sampling Point: 2

Investigator(s): CR/CT | Section, Township, Range: Section 19BC, Township 1N, Range 1W

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): None | Slope (%): <25%

Subregion (LRR): LRR A | Lat: 45.557444 | Long: -122.866944 | Datum: WGS84

Soil Map Unit Name: Aloha Silt Loam | NWI Classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (if no, explain in Remarks)

Are vegetation ____ Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation ____ Soil ____ or Hydrology ____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	Is Sampled Area within a Wetland?	Yes	No X
Hydric Soil Present?	Yes	No X			
Wetland Hydrology Present?	Yes	No X			

Remarks:

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: 30)			
1 *Alnus rubra*	5	X	FAC
2			
3			
4			
	5	= Total Cover	
Sapling/Shrub Stratum (plot size: 15)			
1 *Abies grandis*	10		FACU
2 *Mahonia aquifolium*	20		FACU
3 *Rubus parviflorus*	30	X	FACU
4 *Rosa pisocarpa*	30	X	FAC
5 *Symphoricarpos albus*	20		FACU
	110	= Total Cover	
Herb Stratum (plot size: 5)			
1 *Holcus lanatus*	50	X	FAC
2 *Equisetum arvense*	5		FAC
3 *Anthoxanthum odoratum*	15		FACU
4 *Agrostis capillaris*	30	X	FAC
5			
6			
7			
8			
	100	= Total Cover	
Woody Vine Stratum (plot size:)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	0
FACW species		x 2 =	0
FAC Species		x 3 =	0
FACU Species		x 4 =	0
UPL Species		x 5 =	0
Column Totals	0 (A)		0 (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

X 2- Dominance Test is >50%

____ 3-Prevalence Index is ≤ 3.0[1]

____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ 5- Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

PHS # 6689 Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100					Silt Loam	Rock/gravel fill at 12+ inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- _____ Histosol (A1)
- _____ Histic Epipedon (A2)
- _____ Black Histic (A3)
- _____ Hydrogen Sulfide (A4)
- _____ Depleted Below Dark Surface (A11)
- _____ Thick Dark Surface (A12)
- _____ Sandy Mucky Mineral (S1)
- _____ Sandy Gleyed Matrix (S4)
- _____ Sandy Redox (S5)
- _____ Stripped Matrix (S6)
- _____ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- _____ Loamy Gleyed Matrix (F2)
- _____ Depleted Matrix (F3)
- _____ Redox Dark Surface (F6)
- _____ Depleted Dark Surface (F7)
- _____ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- _____ 2 cm Muck (A10)
- _____ Red Parent Material (TF2)
- _____ Very Shallow Dark Surface (TF12)
- _____ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- _____ Surface Water (A1)
- _____ High Water Table (A2)
- _____ Saturation (A3)
- _____ Water Marks (B1)
- _____ Sediment Deposits (B2)
- _____ Drift Deposits (B3)
- _____ Algal Mat or Crust (B4)
- _____ Iron Deposits (B5)
- _____ Surface Soil Cracks (B6)
- _____ Inundation Visible on Aerial Imagery (B7)
- _____ Sparsely Vegetated Concave Surface (B8)
- _____ Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- _____ Salt Crust (B11)
- _____ Aquatic Invertebrates (B13)
- _____ Hydrogen Sulfide Odor (C1)
- _____ Oxidized Rhizospheres along Living Roots (C3)
- _____ Presence of Reduced Iron (C4)
- _____ Recent Iron Reduction in Plowed Soils (C6)
- _____ Stunted or Stressed Plants (D1) **(LRR A)**
- _____ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- _____ Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- _____ Drainage Patterns (B10)
- _____ Dry-Season Water Table (C2)
- _____ Saturation Visible on Aerial Imagery (C9)
- _____ Geomorphic Position (D2)
- _____ Shallow Aquitard (D3)
- _____ Fac-Neutral Test (D5)
- _____ Raised Ant Mounds (D6) **(LRR A)**
- _____ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	_____	No X	Depth (inches):	_____
Water Table Present?	Yes	_____	No X	Depth (inches):	>16
Saturation Present? (includes capillary fringe)	Yes	_____	No X	Depth (inches):	>16

Wetland Hydrology Present?

Yes _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix C

Vegetated Corridor Data Sheet and Site Photos

Vegetated Corridor Sample Site

Plant Community	A
Sample Point	**1**
TREES	
Native	
Acer macrophyllum	
Fraxinus latifolia	
Populus balsamifera	
Non native	
Robinia pseudoacacia	
SHRUBS & SAPLINGS	
Native	
Acer circinatum	
Alnus rubra	
Rubus ursinus	2
Spiraea douglasii	
Symphoricarpos albus	
Invasive	
Cytsus scoparius	3
Rubus armeniacus	20
Rubus lacinatus	
Non native	
Crataegus monogyna	
Rosa multiflora	
HERBS	
Native	
Bromus carinatus	10
Galium aparine	
Urica dioica	
Invasive	
Cirsium arvense	
Phalaris arundinacea	
Polygonum cuspidatum	
Taraxacum officinale	5
Verbascum blattaria	5
Non Native	
Anthoxanthum odoratum	
Agrostis capillaris	15
Dactylis glomerata	15
Daucus carota	20
Holcus lanatus	20
Hypochaeris radicata	5
Madia glomerata	
Plantago lanceolata	
Rumex crispus	
Schedonorus arundinaceus	20
Trifolium pratense	
Vicia sativa	5
	A
Canopy cover	**0**
% Native Species	**8**
% Invasive Species	**23**
Total cover	**145**

Photo A

Looking east at Springville Creek, adjacent wetland, slope along edge of wetland, and southern edge of project site.

Photo B

Looking west at wetland and vegetated corridor in eastern end of site.

#6689
10/26/2019

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
18300 & 18450 NW West Union Road, Portland, Oregon
Both photos taken on July 25, 2017

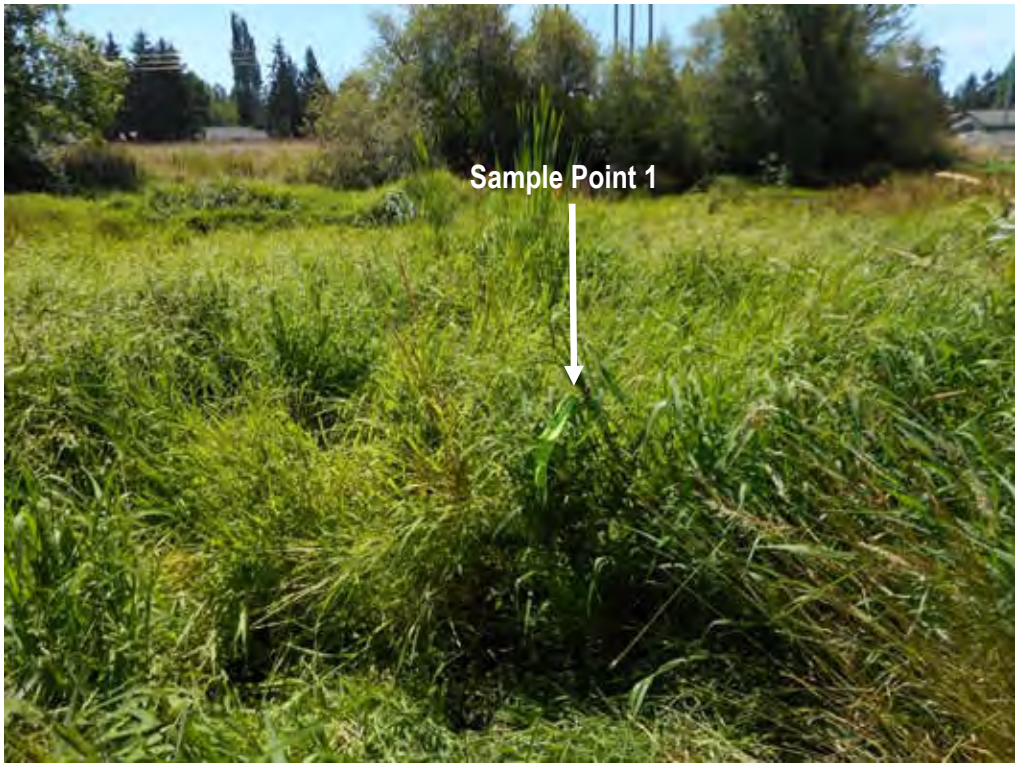


Photo C

Looking south at Sample Point 1.

Photo D

Looking north at Sample Point 2.

#6689
10/26/2019

Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photodocumentation
18300 & 18450 NW West Union Road, Portland, Oregon
Both photos taken on July 25, 2017

Appendix D

NRA Definitions and Methodology and References

NATURAL RESOURCE ASSESSMENT (NRA)

Regulatory Jurisdiction

Clean Water Services, as part of their revised Design and Construction Standards, requires that natural resource assessments be conducted for Sensitive Natural Resource Areas within their jurisdiction. Sensitive Natural Resource Areas include intermittent and perennial creeks, wetlands, springs and seeps, and associated vegetated corridors. The intent of these requirements is to "…prevent or reduce adverse impacts to the drainage system and water resources of the Tualatin River Basin" (CWS 2017). CWS requires a wetland determination/delineation and vegetated corridor assessment on projects that contain or are within 200 feet of a Sensitive Area.

Natural Resource Assessment Methodology

The Natural Resource Assessment (NRA) contains two components: a delineation of the water quality sensitive areas and a vegetated corridor evaluation. A detailed discussion of the methodology is included in Chapter 3 of CWS's revised Design and Construction Standards (CWS, 2017). A brief description of each component is included below.

Delineation of water quality sensitive areas

A delineation of all on-site water quality sensitive areas (wetland, intermittent/perennial streams, springs, and natural lakes or ponds) must be conducted. For wetlands, the required criteria and suggested methodologies of the *Corps of Engineers Wetland Delineation Manual Technical Report Y-87-1*, (Environmental Laboratory, 1987) must be used to delineate the boundaries. This manual defines wetlands as requiring indicators of hydric soils, a dominance of hydrophytic vegetation, and wetland hydrology. A determination as to whether streams are intermittent or perennial must be made. The extent of all streams, springs, and natural lakes or ponds must also be determined.

When known sensitive areas exist on adjacent properties, an attempt must be made by the applicant to obtain access to delineate the limits of these off-site features, especially if vegetated corridors associated with an off-site sensitive area may extend onto a proposed development site.

Determine Vegetated Corridor Width and Condition

The width of the vegetated corridor must be determined at least every 100 feet along the boundary of the water quality sensitive area. The corridor width can range between 15 and 200 feet and is measured horizontally from the outer edge of the water quality sensitive area. The boundaries of the sensitive areas and their vegetated corridors must be staked, surveyed, and mapped within the property and within 200 feet of the property line on a base map. The vegetated corridor width is based on the type of water resource (wetland, lake, stream), the size and nature of the water resource (acreage and/or perennial/intermittent), the size of the watershed, and the adjacent slope.

Upon identification of the regulated vegetated corridor boundary, the existing condition of the vegetated corridor must also be determined. This is accomplished by 1) identifying the plant community types present in the vegetated corridor, 2) documenting representative sample points, 3) characterizing each plant community type, 4) determining the cover by native species, invasive species, and noxious plants, and 5) based on this information determining whether the existing vegetated corridor condition for each plant community is good, marginal, or degraded.

Clean Water Services

Clean Water Services File Number

21-000384

Request for SPL Amendment

1. Reason for Amendment

The neighborhood commercial zone requires a 20-foot setback from West Union and 185th Avenue. The new building footprint and fuel cover canopy have been reduced in order to meet the setback requirements of the zone. The site plan will now feature a drive-thru aisle along the north, west and south sides of the building. As part of the redesign, parking has been shifted on the site, with four parking stalls located at the building entrance and an additional ten stalls located along the southern property line east of the fuel canopy. The number of fuel islands has been reduced to four, with eight total pumps. The diesel fuel tank has also been removed, with two 20,000 gallon fuel tanks remaining. Perimeter parking lot landscaping will be provided along the frontage of West Union and 185th Avenue. The redesign will not result in any additional encroachments (permanent or temporary) into the sensitive area or vegetated corridor. The proposed vegetated corridor mitigation and enhancement, and wetland enhancement will remain the same as the current Service Provider Letter. Attached are updated Figure 4 "Site Plan with Vegetated Corridor Encroachments" and Figure 5 "Site Plan with Vegetated Corridor Mitigation and Enhancement and Wetland Enhancement".

2. Will the project involve any additional off-site work? ☐ Yes ☒ Same as current Service Provider Letter

If yes, location and description of additional off-site work: _____

Please note additional encroachments into the Sensitive Area or Vegetated Corridor may require revisions to the Natural Resources Assessment and development figures. If the Request for Amendment is in response to a red line comment, please provide a copy of the red line with your submittal.

3. Owner Information

Name: RJ BARMAN
Company: CJRW, LLC
Address: PO BOX 2092
City, State, Zip: LAKE OSWEGO, OR 97035
Phone/Fax: (503) 720-2917
E-Mail: bobbarmanaz717@gmail.com

4. Applicant Information

Name: SAME AS OWNER
Company: _____
Address: _____
City, State, Zip: _____
Phone/Fax: _____
E-Mail: _____

5. Property Information *(example 1S234AB01400)*

Tax lot ID(s): 1N119BC00500 & 600
Site Address: 18300 & 18450 NW West Union Road
City, State, Zip: Portland, OR 97229
Nearest Cross Street: SE corner of West Union & 185th

6. Contact Information

Name: SAME AS OWNER
Company: _____
Address: _____
City, State, Zip: _____
Phone/Fax: _____
E-Mail: _____

For District Use Only

Amendment Number _____

❑ Major Amendment: Encroaches an additional 100 SF or more into the vegetated corridor.

❑ Minor Amendment: Encroaches less than an additional 100 SF into the vegetated corridor.

LEGEND

- Project Boundary
- Wetland (537 sf / 0.01 ac)
- Vegetated Corridor (10,508 sf / 0.24 ac)
- Tax Lot Line
- Vegetated Corridor Encroachment (Permanent 6,673 sf / 0.15 ac)
- Vegetated Corridor Encroachment (Temporary 546 sf / 0.01 ac)
- Existing Contours
- Proposed Contours

0 30 60 120

SCALE IN FEET

WEST UNION VILLAGE

NW WEST UNION ROAD

NW 185TH AVENUE

NW DEERFIELD WAY

Underground Fuel Storage Tanks

Underground Stormwater Treatment Chamber

Proposed Building

Parking

Fuel Pump Island

Wetland A (537 sf / 0.01 ac)

Wetland continues beyond project area

Six Pine Trees To Be Retained

BPA Powerline Corridor

Base provided by 3J Consulting (2017).

Pacific Habitat Services,Inc.
9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax (503) 570-0855

Site Plan with Vegetated Corridor Encroachments
18300 & 18450 NW West Union Road - Portland, Oregon

FIGURE 4

4-19-2022

C:\Users\Lisa\Desktop\WorkFromHome\6689 West Union Cherveron (old # 5410, 6261)\AutoCAD\PlotDwgs\Fig4 Site Plan.dwg, 4/19/2022 9:35:54 AM, AutoCAD PDF (High Quality Print).pc3

Proposed Wetland Enhancement Plants

Botanical Name	Common Name	Size	Quantity
***SHRUBS (30 Total)**			
Cornus stolonifera	Red-osier dogwood	1 gallon	10
Rosa pisocarpa	Clustered rose	1 gallon	10
Spiraea douglasii	Douglas's spiraea	1 gallon	10
HERBACEOUS (Native Seed Mix)			
Deschampsia elongata	Slender hairgrass	Seed	1# per 1,000 SF
Glyceria occidentalis	Western manna-grass		

*Plant locations to be determined by landscape architect and incorporated into landscape plan.

Proposed Vegetated Corridor Enhancement / Creation Plants

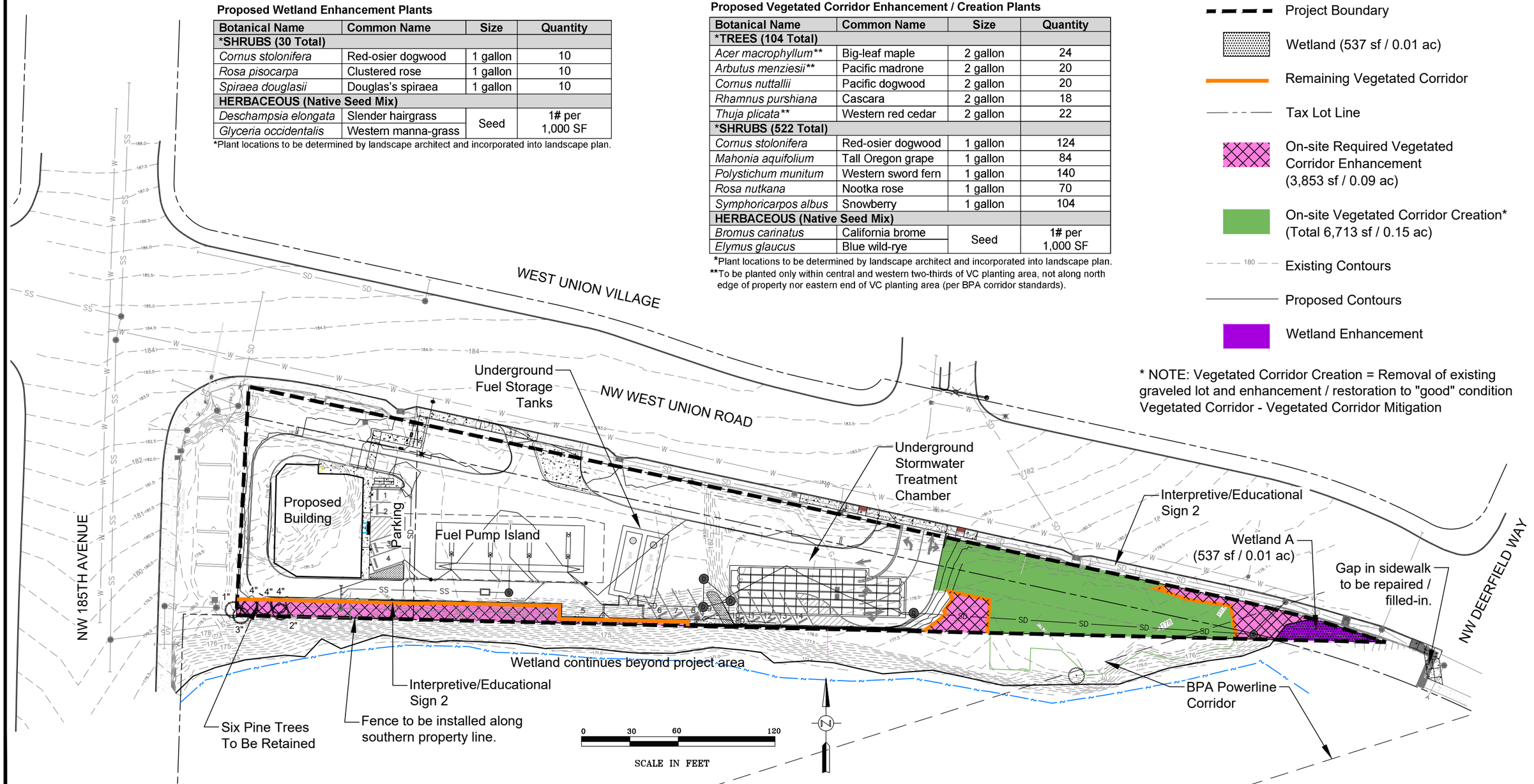
Botanical Name	Common Name	Size	Quantity
***TREES (104 Total)**			
*Acer macrophyllum***	Big-leaf maple	2 gallon	24
*Arbutus menziesii***	Pacific madrone	2 gallon	20
Cornus nuttallii	Pacific dogwood	2 gallon	20
Rhamnus purshiana	Cascara	2 gallon	18
*Thuja plicata***	Western red cedar	2 gallon	22
***SHRUBS (522 Total)**			
Cornus stolonifera	Red-osier dogwood	1 gallon	124
Mahonia aquifolium	Tall Oregon grape	1 gallon	84
Polystichum munitum	Western sword fern	1 gallon	140
Rosa nutkana	Nootka rose	1 gallon	70
Symphoricarpos albus	Snowberry	1 gallon	104
HERBACEOUS (Native Seed Mix)			
Bromus carinatus	California brome	Seed	1# per 1,000 SF
Elymus glaucus	Blue wild-rye		

*Plant locations to be determined by landscape architect and incorporated into landscape plan.
**To be planted only within central and western two-thirds of VC planting area, not along north edge of property nor eastern end of VC planting area (per BPA corridor standards).

LEGEND

- Project Boundary
- Wetland (537 sf / 0.01 ac)
- Remaining Vegetated Corridor
- Tax Lot Line
- On-site Required Vegetated Corridor Enhancement (3,853 sf / 0.09 ac)
- On-site Vegetated Corridor Creation* (Total 6,713 sf / 0.15 ac)
- Existing Contours
- Proposed Contours
- Wetland Enhancement

* NOTE: Vegetated Corridor Creation = Removal of existing graveled lot and enhancement / restoration to "good" condition Vegetated Corridor - Vegetated Corridor Mitigation



Base provided by 3J Consulting (2017).

Site Plan with Vegetated Corridor Mitigation and Enhancement and Wetland Enhancement
18300 & 18450 NW West Union Road - Portland, Oregon

FIGURE 5

4-19-2022

Pacific Habitat Services,Inc.
9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax (503) 570-0855

C:\Users\Lisa\Desktop\WorkFromHome\6689 West Union Cherveron (old # 5410, 6261)\AutoCAD\PlotDwgs\Fig5 VC Enhance-Create.dwg, 4/19/2022 9:36:26 AM, AutoCAD PDF (High Quality Print).pc3

3J CONSULTING

CIVIL ENGINEERING | WATER RESOURCES | COMMUNITY PLANNING

PRELIMINARY STORMWATER REPORT

WEST UNION CHEVRON
Washington County, OR 97229

April 27, 2022

Prepared For:

CJRW, LLC
PO Box 2092
Lake Oswego, OR 97035

Prepared By:

3J Consulting, Inc.
9600 SW Nimbus Avenue, Suite 100
Beaverton, Oregon 97008
Project No: 18509
PJP/KEF

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DESIGNER'S CERTIFICATION & STATEMENT

I hereby certify that this Stormwater Report for the West Union Chevron has been prepared by me or under my supervision and meets minimum standards of the Clean Water Services and normal standards of engineering practice. I hereby acknowledge and agree that the jurisdiction does not and will not assume liability for the sufficiency, suitability, or performance of drainage facilities designed by me.

EXECUTIVE SUMMARY

The proposed West Union Chevron project is located at 18450 NW West Union Road in unincorporated Washington County, Oregon (tax lots 1N1 19BC 00500 & 00600). The project site is within the jurisdictions of Washington County and Clean Water Services (CWS). The design and analysis of all required stormwater management approaches will be per CWS' *Design & Construction Standards for Sanitary Sewer & Surface Water Management* (CWS D&C; 2019).

The private property where the project is proposed is currently developed with a lot size of 1.21 ac; however, the area of analysis (project site) for this report is 1.27 ac, which includes on- and offsite areas to be disturbed. The project proposes a new gas station onsite and frontage improvements along West Union Road.

The project modifies 26,127 sf of existing impervious area, which consists of 24,318 sf onsite and 1,809 sf in the ROW. The project's post-developed impervious area is tentatively 33,757 sf, consisting of 32,117 sf onsite and 1,640 sf in the ROW. As a result, this project generates 7,630 sf of new impervious area. Subsequently, CWS requires the implementation of stormwater management approaches, which will be addressed as follows:

- Water Quality Approaches
  - A BayFilter Manhole with two (2) BF-522 cartridges is proposed onsite to treat 32,117 sf of impervious area.
  - A Fee-In-Lieu will address the remaining 1,640 sf of untreated impervious area.
- Quantity Control Approaches
  - Peak Flow Matching via StormTech Chamber system (Underground Detention) is proposed onsite and will over-detain for offsite impervious areas that cannot be captured. The tentative storage volume of the facility is 6,700 cf.
  - Quantity Control for Conveyance Capacity – A Downstream Analysis demonstrated that this project does not result in downstream conveyance deficiencies; therefore, no additional water quantity management criteria are required.

An Operations & Maintenance Plan will be provided in the final Stormwater Report for all stormwater management facilities.

Please refer to this project's Land Use Plans for locations of all stormwater management facilities.

The purpose of this report is to accomplish the following.

- Describe pre- and post-developed basins and drainage;
- Describe the design and analysis of the proposed stormwater management facilities; and,
- Demonstrate compliance with Clean Water Services standards pertaining to stormwater management.

PROJECT DESCRIPTION

The West Union Chevron project proposes a new gas station, which includes site and utility improvements. All existing onsite structures and impervious area will be demolished. The project site is located at 18450 NW West Union Road in unincorporated Washington County, Oregon. The project site is within the jurisdictions of Washington County and Clean Water Services (CWS). The design and analysis of all required stormwater management approaches will be per CWS' *Design & Construction Standards for Sanitary Sewer & Surface Water Management* (CWS D&C; 2019).

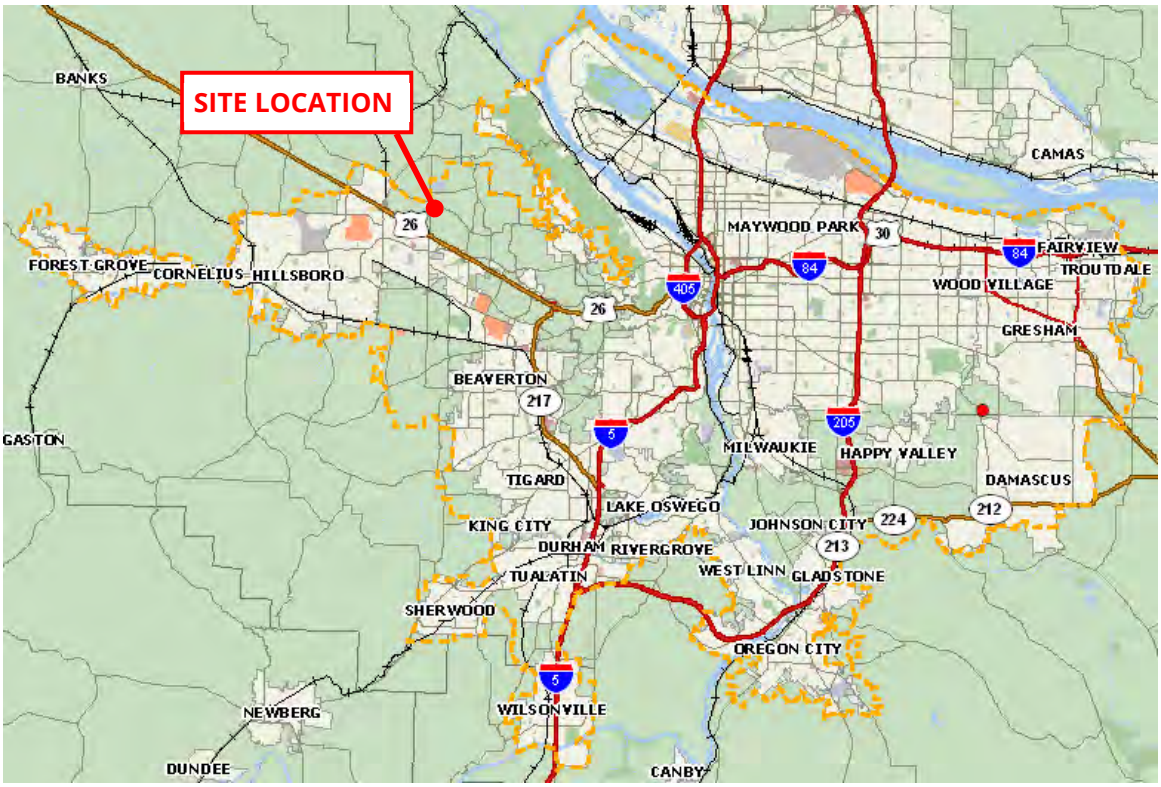


Figure 1 - Vicinity Map

Figure 2 - Site Location

EXISTING CONDITIONS

Site & Drainage

The existing site contains multiple existing structures, paved areas, and gravel areas. All existing onsite impervious areas will be demolished. The size of the private lot is 1.21 ac; however, the area of analysis (project site) for this report is 1.27 ac, which includes on- and offsite areas disturbed for this project (See Technical Appendix: Exhibits – Existing Conditions).

There is no known existing onsite storm drain system. The existing site generally drains from north to south directly into Bethany Creek. Onsite elevations range between 183 and 176 feet, and onsite slopes are shallow.

Upstream Areas

Minor incidental areas in the public right-of-way (ROW) drain onto the private property. As mentioned above, these areas are lumped into the area of analysis (project site) for drainage analysis and sizing of stormwater facilities.

Flood Map

The site is located within Zone X (un-shaded) per flood insurance rate map (FIRM) community-panel number 41067 C0361E (See Technical Appendix: Exhibits – FIRMette). FEMA's definition of Zone X (un-shaded) is an area of minimal flood risk outside the 1-percent-annual-chance floodplain. Just south of the proposed development is the floodplain for Bethany Creek. All work will be located outside of the 100-year floodplain.

Geology

The hydrologic soil groups (HSG) coinciding with the project site, as classified by the USDA, are indicated in Table 1 (See Technical Appendix: Exhibits – Hydrologic Soil Group).

Soil Type	HSG	Site Coverage
Aloha Silt Loam	C/D	97%
Verboort Silt Clay Loam	D	3%

Table 1 - Soil Characteristics

For simplicity and conservativeness, the site is assumed to be completely underlain with D soils.

Infiltration

A Geotechnical Investigation was performed by GeoEngineers on January 21, 2019 (See Technical Appendix: Geotechnical Report). Soils onsite were observed to be man-made fills, underlain by flood deposits silt with an occasional layer of fine sandy silt. Four infiltration tests were performed onsite and infiltration rates for the site were measured between 0 in/hr to 1.50 in/hr. Infiltration facilities are not recommended as a sole source for stormwater disposal and any infiltration facility should include an overflow that conveys water to an approved discharge point. As a result, infiltration will not be considered in sizing stormwater facilities.

Basin Areas

Table 2 summarizes the basin areas for the project site in existing conditions (See Technical Appendix: Exhibits – Existing Conditions).

Existing Basin Areas	sf	ac
Impervious Area (all Modified) Replaced = 17,606 sf Removed = 8,521 sf	26,127	0.60
Pervious Area	29,141	0.67
Total Area	55,268	1.27

Table 2 – Existing Basin Areas

POST-DEVELOPED CONDITIONS

Site & Drainage

The proposed site will consist of a new Chevron Gas Station, to include fueling pumps, parking lot, driveways, utility improvements, and storm drain system. Due to the amount of impervious area generated by the project, stormwater management facilities must be proposed. The design and analysis of the stormwater facilities are described in a later section.

Stormwater runoff is captured by a proposed storm drain system, which will consist of the stormwater facilities. The system will discharge to the public storm system in West Union Road; the downstream system ultimately outfalls to Bethany Creek.

Basin Areas

Table 3 summarizes the basin areas for the project site in post-developed conditions (See Technical Appendix: Exhibits – Existing Conditions).

Post-Developed Basin Areas	sf	ac
Impervious Area	33,757	0.77
Pervious Area	21,511	0.49
Total Area	55,268	1.27

Table 3 – Post-Developed Basin Areas

Comparing Tables 2 & 3 indicates that the project generates 7,630 sf of new impervious area.

HYDROLOGIC ANALYSIS

Design Guidelines

The site is located within the jurisdiction of Washington County and Clean Water Services (CWS). Hydrologic analysis guidelines reflect current CWS *Design & Construction Standards* (CWS D&C, 2019).

Hydrograph Method

Naturally occurring rainstorms dissipate over long periods of time. An effective way of estimating storm rainfall is by using a hydrograph method. In compliance with CWS standards, the Santa Barbara Urban Hydrograph (SBUH) method was used to develop runoff rates. The computer software XPSTORM was used to perform the SBUH method for predeveloped and post-developed basins. This method incorporates design rainfall depths (in the NRCS Type IA rainfall distribution), runoff curve numbers, and times of concentration. Each parameter is described below.

Design Storm

Table 4 outlines the jurisdictional design rainfall depths to be incorporated with the NRCS Type IA rainfall distribution.

Recurrence Interval (yr)	Precip. Depth (in)
2	2.50
5	3.10
10	3.45
25	3.90
100	4.50

Table 4 - Design Storms

Runoff Curve Number

Runoff curve numbers (CN) help estimate runoff volumes and peak flow rates based on hydrologic soil group, cover type, treatment, hydrologic condition, and antecedent runoff condition. CNs were assigned to basin areas per the TR-55 *Urban Hydrology for Small Watersheds* manual (See Technical Appendix: Exhibits – Runoff Curve Numbers).

Predeveloped basins and upstream areas to remain undisturbed were evaluated with a CN of 77 (woods, good condition). Per the CWS D&C, modified impervious areas may be modeled with a CN of 75 in predeveloped conditions.

In post-developed conditions, impervious and pervious (landscaped) areas were modeled with CNs of 98 and 80 (lawn, good condition), respectively.

Time of Concentration

Times of concentration (Tc) were calculated using methods outlined in the TR-55 manual. Longest flow path lengths and slopes were derived from surveyed topo data.

The Tc of the predeveloped basin was estimated to be 30 minutes (See Technical Appendix: Calculations – Time of Concentration). The post-developed basin was also assumed to have a Tc of 5 minutes.

Basin Runoff

Table 5 compares pre- and post-developed peak runoff rates for the project site (See Technical Appendix: Hydrographs).

Recurrence Interval (yr)	Peak Runoff Rates (cfs)		
	Predeveloped	Post-Developed	Change
2	0.09	0.53	+0.44
5	0.17	0.70	+0.53
10	0.23	0.80	+0.57

Table 5 - Peak Runoff Rates

WATER QUALITY TREATMENT

LIDA Feasibility

Per the CWS D&C, new development shall reduce its hydrologic impacts through Low Impact Development Approaches unless the criteria in §4.05.2 apply. Site and drainage constraints make the implementation of LIDA approaches onsite infeasible. Therefore, post-developed impervious areas will drain to Proprietary Treatment Devices PTDs to the maximum extent practicable. Areas that cannot effectively discharge to proposed water quality approaches will be addressed with a Fee-In-Lieu.

Required Treatment Area

Per the CWS D&C, the impervious area requiring water quality treatment is evaluated as the new impervious area plus three times the replaced impervious area. Due to the amount of impervious area (IA) permanently removed, the modified IA is reduced by the removed IA to yield the replaced IA. The following calculation were performed to determine the required treatment area.

Treatment Area = New Impervious Area + 3 x (Modified – Removed Impervious Area)
= 32,117 sf + 3 x (26,127 sf – 8,521 sf) = 60,448 sf

The calculated treatment area exceeds the post-developed impervious area (i.e., 33,757 sf); therefore, the required treatment area is 33,757 sf.

Water Quality Approaches

Proprietary Treatment Device

The proposed PTD to treat onsite runoff BayFilter Manhole, which will be equipped with BayFilter 522 (BF-522) cartridges. Each cartridge has a treatment capacity of 22.5 gpm. A portion of the post-developed impervious area could be captured onsite and conveyed to the proposed PTD and will be addressed with a Fee-In-Lieu and described in the next subsection. The contributing impervious area for the BayFilter Manhole is 32,117 sf.

Per the CWS D&C, water quality treatment facilities shall treat 0.36" of precipitation falling over a 4-hr period with a 96-hr return period. The following calculations were performed to determine the Water Quality Volume (WQV) and design flow rate (WQF) for sizing the PTD.

WQV = Imp. Area (sf) x 0.36 (in) / (12 in/ft) = 32,117 sf x 0.36 in / (12 in/ft) = 964 cf

WQF = WQV (cf) / [4 (hr) x (3600 s/hr)] = 964 cf / [(4 hr x (3600 s/hr)] = 0.07 cfs

Two (2) BF-522 cartridges are proposed to treat this WQF; as a result, the treatment capacity of this PTD is 45 gpm (0.10 cfs).

Fee-in-Lieu

The proposed frontage improvements, consisting of 1,640-sf of post-developed impervious area, will discharge to the existing storm drain system in NW West Union Road. A Fee-In-Lieu is proposed for this area because they cannot be captured by the proposed PTD.

Summary of Approaches

Table 6 summarizes the provided treatment by each proposed approach.

Water Quality Approach	Imp. Area (sf)
PTD – BayFilter Manhole	32,117
Fee-In-Lieu	1,640
Total	33,757

Table 6 – Water Quality Approaches

Table 6 demonstrates that the required treatment area (33,757 sf) is addressed with the proposed Water Quality Approaches.

Pretreatment Manhole

A pretreatment manhole (per CWS Standard Dwg. No. 250) is proposed upstream of the onsite PTD. The sump volume of the pretreatment MH was sized using the following equation in accordance with the CWS D&C.

Sump Volume = (20 cf / 1 cfs) x (25-yr Peak Flow)

The contributing 25-yr peak flow to the pretreatment manhole was evaluated to be 0.68 cfs (See Technical Appendix: Hydrographs). For a 60"-diameter MH, the required sump volume and depth were calculated to be 13.6 cf and 8.3", respectively. The sump depth will be increased to the minimum 36" and will be implemented below the snout within the pretreatment MH.

HYDROMODIFICATION MANAGEMENT

Design Guidelines

Due to development creating or modifying 1,000 sf or greater of impervious surface, CWS requires the implementation of hydromodification approaches to reduce impacts to the downstream receiving waterbody.

Hydromodification Assessment

The proposed site is located in an area designated as having moderate hydromodification risk (See Technical Appendix: Exhibits – Hydromod Planning Tool). The existing storm line in NW West Union Road outfalls to Bethany Creek in Allenbach Acres, south of the proposed site. Approximately 790 ft downstream of the outfall, water is conveyed through a box culvert under NW 185th Ave and discharges to Bethany Lake. The downstream analysis continues westerly for approximately 1/4 miles and outfalls to Bethany Lake (See Technical Appendix: Downstream Analysis).

Based on the location, existing conditions onsite, and size of the proposed development, the site falls under Project Category 2, which represents a moderate hydromodification risk.

Hydromodification Approach

Underground detention facilities are proposed to detain and release flows to meet mitigate flows within the hydromodification regime. Details of the detention facilities are provided in a later section.

DOWNSTREAM ANALYSIS

Design Guidelines & Criteria

CWS requires a downstream analysis when a project proposes new impervious area of greater than 5,280 sf or collecting and discharging greater than 5,280 sf of impervious area.

Per Section 2 of the CWS D&C, the analysis must demonstrate capacity in the downstream system for the additional volume of water generated by the development. The analysis shall extend downstream to a point where the additional flow from the proposed development drops to less than 10% of the total tributary drainage flow. When the additional flow drops below the 10% threshold the analysis must continue for ¼ of a mile or until the additional flow is less than 5% of total drainage flow.

Model Overview

System Description

The proposed site will discharge runoff to the existing system in West Union Road. Water is conveyed east via a 12” pipe approximately 460 ft and discharges to a 15” pipe, which conveys flow an additional 20 ft. The system then outfalls to Bethany Creek in Allenbach Acres to the south via two (2) separate pipes, consisting of 12” and 15” pipes. Water is conveyed west for approximately 790 ft, crossing NW 185th Avenue via a box culvert and discharging to Bethany Lake (See Technical Appendix: Downstream Analysis – Downstream Exhibits & Photos).

Model Description

XPSTORM was used to model the hydraulic response of the downstream storm drain system for the 25- and 100-yr storm events up to the Bethany Creek outfalls. This was done to ensure that there is sufficient capacity for the increase in runoff due to the post-developed project site. For

conservativeness, the downstream system was modeled without factoring in any attenuating effects from existing or proposed detention facilities.

Basins were delineated using available GIS data (See Technical Appendix: Downstream Analysis – Downstream Basin Delineation). Areas within the right-of-way were assumed to be 100% impervious and developed areas outside of the right-of-way were assumed to be 80% impervious. The CN for the downstream basins were based on land coverage and hydrologic soils group. A roughness coefficient (n) of 0.013 was assumed for the storm drain pipes. All elevation and pipe data were based on the CWS Sanitary & Storm Sewer Map.

Results

The storm line in NW West Union Road was determined to have capacity for the proposed development. The system has capacity to convey the 25-year design storm without surcharging; the minimum evaluated freeboard was 3.11 ft.

Additionally, the system has capacity to convey the 100-year design storm with a minimum freeboard of 3.04 ft. At the outfalls, the proposed development constitutes 10% of the overall basin peak runoff rate.

Certificate of Investigation

Bethany Creek was visually inspected for any downstream obstructions or deficiencies. The basin contributing to Bethany Creek was estimated to exceed 1,000 acres. Based on inspection of Bethany Creek and Bethany Lake, the drainage is unobstructed and there are no deficiencies (See Technical Appendix: Downstream Analysis – Downstream Exhibits & Photos). A Certificate of Investigation is provided (See Technical Appendix: Downstream Analysis – Certificate of Investigation).

WATER QUANTITY MANAGEMENT

Design Guidelines & Criteria

Due to the results of the Hydromodification Assessment and Downstream Analysis above, Table 7 summarizes all flow control requirements for the proposed detention facilities in accordance with the CWS D&C.

Post-Development Peak Runoff Rate	Predevelopment Peak Runoff Rate Target
2-yr, 24-hr	50% 2-yr, 24-hr
5- yr, 24-hr	5-yr, 24-hr
10- yr, 24-hr	10-yr, 24-hr

Table 7 – Flow Control Requirements

Over-Detention

The post-developed impervious areas in the public ROW cannot be captured by onsite stormwater management facilities. As a result, the proposed onsite detention facility will be designed to over-detain for these offsite areas.

LIDA Feasibility

Due to the Geotech Report not recommending onsite infiltration, LIDA approaches cannot be implemented to address quantity control. As a result, Underground Detention will be implemented to meet the flow control criteria.

Quantity Control Approaches

Detention Facility

A StormTech Chamber system is proposed onsite in conjunction with a flow control manhole to capture and slowly release stormwater to meet the flow control criteria. The system tentatively consists of SC-740 StormTech Chambers with 6" of drain rock above and below for storage. It is preliminarily estimated that the detention facility must be able to detain 6,700 cf (See Technical Appendix: Calculations – StormTech Stage-Storage Table).

Release Rates

The flow control manhole will be designed to meet the flow control criteria. Full details on the flow control manhole will be provided the final Stormwater Report. Table 8 outlines the required release rates per recurrence interval; the peak flows are derived from Table 5 above.

Recurrence Interval (yr)	Predev Runoff Rate (cfs)	Post-Dev Req. Release Rate (cfs)
2	0.09	0.05
5	0.17	0.17
10	0.23	0.23

Table 8 – Required Release Rates

HYDRAULIC ANALYSIS

In accordance with the CWS D&C, the private storm drain systems will be sized in the final design phase of the project to convey all storm events up to and including the 25-yr with a minimum freeboard of 1 ft of freeboard. The 100-year storm event will be conveyed without any out-of-system flooding.

OPERATIONS & MAINTENANCE

An Operations & Maintenance Plan (OMP) will be prepared and provided in the final Stormwater Report.

TECHNICAL APPENDIX

Exhibits

- FIRMette
- Hydrologic Soil Group
- Runoff Curve Numbers
- Hydromod Planning Tool
- Existing Conditions
- Post-Developed Conditions

Calculations

- Time of Concentration
- StormTech Stage-Storage Table

Hydrographs

- Runoff Rate Hydrographs – Predeveloped & Post-Developed
- 25-yr Storm Hydrograph – Pretreatment Manhole

Downstream Analysis

- Downstream System & Photos
- Basin Delineation
- Clean Water Services – Sewer Map
- Hydrologic Soil Group
- Runoff Curve Numbers
- XPSTORM Hydraulic Layout
- XPSTORM Runoff Data
- XPSTORM Conveyance Data
- Downstream Certificate of Investigation

Geotechnical Report

Operations & Maintenance Plan (will be provided in final Stormwater Report)

REFERENCES

1. *Design & Construction Standards for Sanitary Sewer & Surface Water Management*. Dec 2019, Clean Water Services
2. *Urban Hydrology for Small Watersheds (Technical Release 55)*. June 1986, U.S. Department of Agriculture

EXHIBITS

National Flood Hazard Layer FIRMette

FEMA

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/20/2019 at 3:54:00 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Map Scale: 1:1,110 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, Oregon
Survey Area Data: Version 16, Sep 18, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 3, 2014—Aug 23, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Aloha silt loam	C/D	1.4	97.0%
2027A	Verboort silty clay loam, 0 to 3 percent slopes	D	0.0	3.0%
Totals for Area of Interest			**1.4**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Table 2-2a Runoff curve numbers for urban areas [1/]

Cover description		Curve numbers for hydrologic soil group			
Cover type and hydrologic condition	Average percent impervious area [2/]	A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) [3/]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) [4/]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation) [5/]		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

1 Average runoff condition, and $I_a = 0.2S$.

2 The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

3 CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

4 Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

5 Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

Table 2-2c Runoff curve numbers for other agricultural lands [1/]

Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition	A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. [2/]	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element. [3/]	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 [4/]	48	65	73
Woods—grass combination (orchard or tree farm). [5/]	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods. [6/]	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 [4/]	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

1 Average runoff condition, and $I_a = 0.2S$.

2 *Poor:* <50%) ground cover or heavily grazed with no mulch.
Fair: 50 to 75% ground cover and not heavily grazed.
Good: > 75% ground cover and lightly or only occasionally grazed.

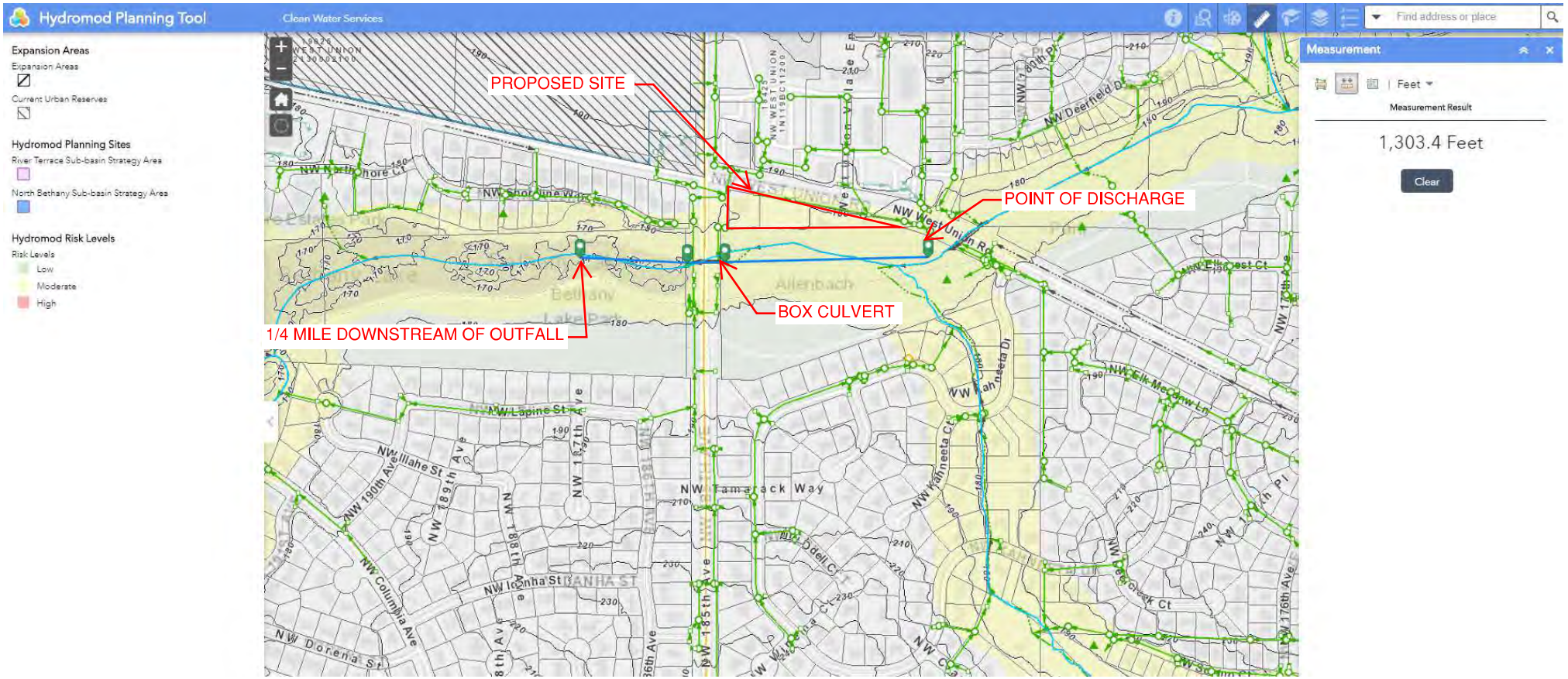
3 *Poor*: <50% ground cover.
Fair: 50 to 75% ground cover.
Good: >75% ground cover.

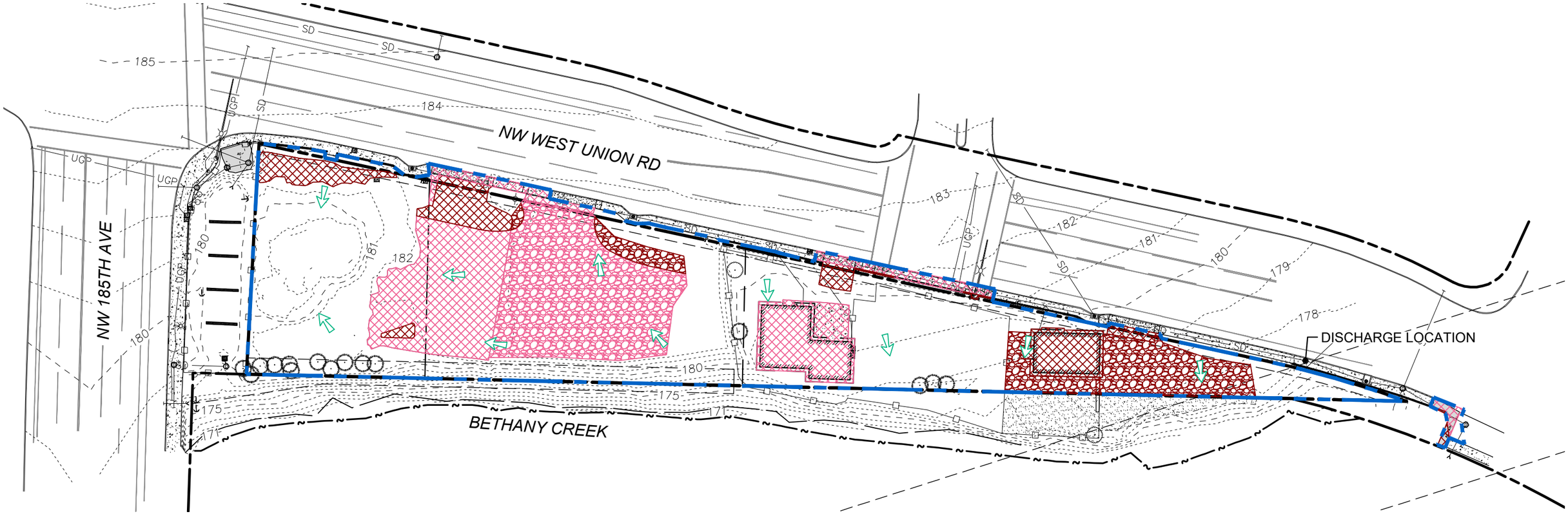
4 Actual curve number is less than 30; use CN = 30 for runoff computations.

5 CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.

6 *Poor:* Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.
Fair: Woods are grazed but not burned, and some forest litter covers the soil.
Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

Hydromod Planning Tool





LEGEND

- BASIN BOUNDARY
- MODIFIED & REPLACED IMPERVIOUS AREA
- MODIFIED & REMOVED IMPERVIOUS AREA
- FLOW DIRECTION

EXISTING BASIN AREA SUMMARY

IMPERVIOUS AREA (ALL MODIFIED) =	26,127 SF =	0.60 AC
MOD. & REPLACED = 17,606 SF		
MOD. & REMOVED = 8,521 SF		
PERVIOUS AREA =	29,141 SF =	0.67 AC
TOTAL AREA =	55,268 SF =	1.27 AC

N
W E
S

SCALE: 1" = 60'
0 60 FT

WEST UNION CHEVRON

APR 2022

CJRW, LLC

EXISTING CONDITIONS

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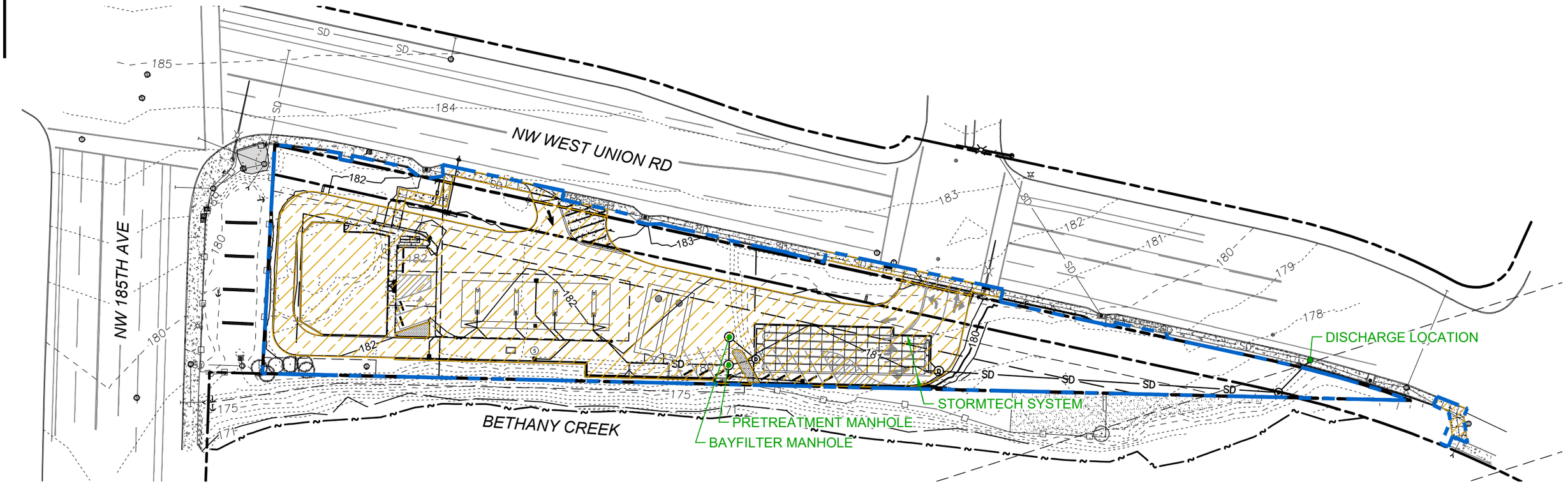

LEGEND

BASIN BOUNDARY

IMPERVIOUS AREA

POST-DEV. BASIN AREA SUMMARY

IMPERVIOUS AREA =	33,757 SF =	0.77 AC
PERVIOUS AREA =	21,511 SF =	0.49 AC
TOTAL AREA =	55,268 SF =	1.27 AC

N W E S

SCALE: 1" = 60'

0 60 FT

WEST UNION CHEVRON

APR 2022

CJRW, LLC

POST-DEVELOPED CONDITIONS

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CALCULATIONS

TIME OF CONCENTRATION

PROJECT NO. 18509.37	BY PJP	DATE 4/7/2022

SHEET FLOW			
INPUT	**Predev. Basin**		
Surface Description	**Type 9 Woods (light_underbrush)**	Type #N/A	Type #N/A
Manning's "n"	**0.4**	#N/A	#N/A
Flow Length, L	**90** ft	0 ft	0 ft
2-Yr 24 Hour Rainfall, P_2	**2.5** in	2.5 in	2.5 in
Land Slope, s	**0.01** ft/ft	0.0000 ft/ft	0.0000 ft/ft
OUTPUT			
Travel Time	0.50 hr	#N/A hr	#N/A hr

SHALLOW CONCENTRATED FLOW			
INPUT	**VALUE**	VALUE	VALUE
Surface Description	**Unpaved**	Unpaved	Unpaved
Flow Length, L	**0** ft	0 ft	0 ft
Watercourse Slope*, s	**0** ft/ft	0 ft/ft	0 ft/ft
OUTPUT			
Average Velocity, V	0.02 ft/s	0.00 ft/s	0.00 ft/s
Travel Time	0.000 hr	#DIV/0! hr	#DIV/0! hr

CHANNEL FLOW			
INPUT	**VALUE**	VALUE	VALUE
Cross Sectional Flow Area, a	**0** ft^2	0 ft^2	0 ft^2
Wetted Perimeter, P_w	**0** ft	0 ft	0 ft
Channel Slope, s	**0** ft/ft	0 ft/ft	0 ft/ft
Manning's "n"	**0.24**	0.24	0.24
Flow Length, L	**0** ft	0 ft	0 ft
OUTPUT			
Average Velocity	0.00 ft/s	0.00 ft/s	0.00 ft/s
Hydraulic Radius, r = a / P_w	1.00 ft	1.00 ft	1.00 ft
Travel Time	0.00 hr	0.00 hr	0.00 hr
Watershed or Subarea T_c =	**0.50 hr**	#N/A hr	#N/A hr
Watershed or Subarea T_c =	**30 minutes**	#N/A minutes	#N/A minutes

Project: 18509 - West Union Chevron (Prelim)

Chamber Model -	SC-740	
Units -	**Imperial**	Click Here for Metric
Number of chambers -	81	
Voids in the stone (porosity) -	40	%
Base of Stone Elevation -	174.14	ft
Amount of Stone Above Chambers -	6	in
Amount of Stone Below Chambers -	6	in
Area of system -	3191	sf Min. Area - 2738 sf min. area

☑ Include Perimeter Stone in Calculations

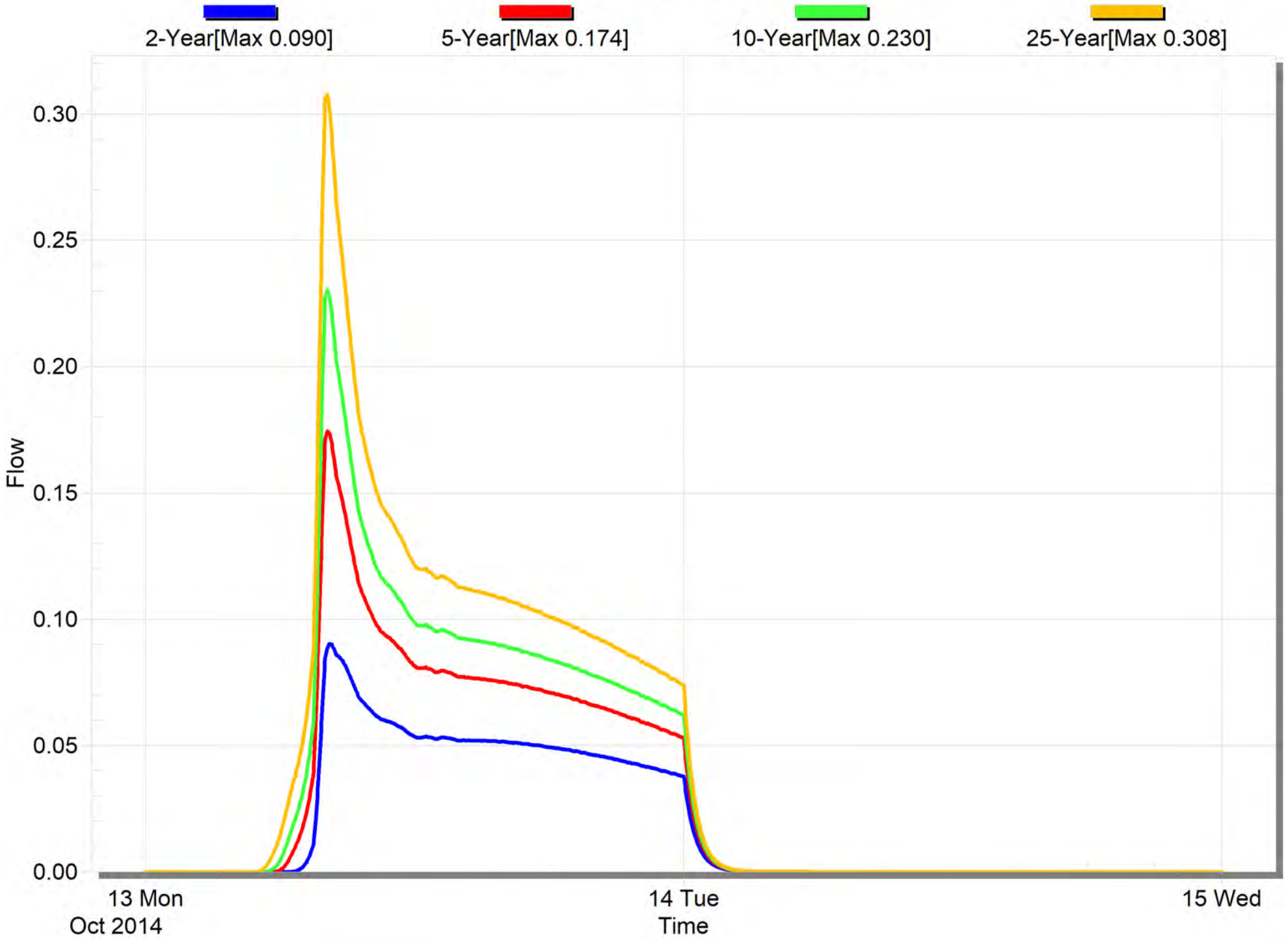
Height of System *(inches)*	Incremental Single Chamber *(cubic feet)*	Incremental Total Chamber *(cubic feet)*	Incremental Stone *(cubic feet)*	Incremental Ch & St *(cubic feet)*	Cumulative Chamber *(cubic feet)*	Elevation *(feet)*
42	0.00	0.00	106.37	106.37	6700.61	177.64
41	0.00	0.00	106.37	106.37	6594.24	177.56
40	0.00	0.00	106.37	106.37	6487.88	177.47
39	0.00	0.00	106.37	106.37	6381.51	177.39
38	0.00	0.00	106.37	106.37	6275.14	177.31
37	0.00	0.00	106.37	106.37	6168.78	177.22
36	0.05	4.45	104.58	109.04	6062.41	177.14
35	0.16	13.20	101.09	114.28	5953.37	177.06
34	0.28	22.84	97.23	120.07	5839.09	176.97
33	0.60	48.92	86.80	135.72	5719.02	176.89
32	0.80	64.94	80.39	145.33	5583.30	176.81
31	0.95	77.00	75.56	152.57	5437.97	176.72
30	1.07	87.04	71.55	158.59	5285.40	176.64
29	1.18	95.62	68.12	163.74	5126.81	176.56
28	1.27	102.52	65.36	167.88	4963.07	176.47
27	1.36	109.76	62.46	172.22	4795.20	176.39
26	1.45	117.78	59.25	177.04	4622.97	176.31
25	1.52	123.50	56.97	180.47	4445.94	176.22
24	1.58	128.17	55.10	183.27	4265.47	176.14
23	1.64	133.02	53.16	186.18	4082.20	176.06
22	1.70	137.66	51.30	188.96	3896.02	175.97
21	1.75	141.99	49.57	191.56	3707.06	175.89
20	1.80	146.03	47.96	193.98	3515.50	175.81
19	1.85	150.25	46.26	196.52	3321.52	175.72
18	1.89	153.34	45.03	198.37	3125.00	175.64
17	1.93	156.65	43.70	200.36	2926.63	175.56
16	1.97	159.97	42.38	202.35	2726.27	175.47
15	2.01	162.80	41.25	204.05	2523.91	175.39
14	2.04	165.64	40.11	205.75	2319.87	175.31
13	2.07	168.07	39.14	207.21	2114.11	175.22
12	2.10	170.50	38.17	208.67	1906.90	175.14
11	2.13	172.68	37.30	209.97	1698.24	175.06
10	2.15	174.46	36.58	211.04	1488.27	174.97
9	2.18	176.34	35.83	212.17	1277.22	174.89
8	2.20	178.07	35.14	213.21	1065.05	174.81
7	2.21	178.79	34.85	213.64	851.84	174.72
6	0.00	0.00	106.37	106.37	638.20	174.64
5	0.00	0.00	106.37	106.37	531.83	174.56
4	0.00	0.00	106.37	106.37	425.47	174.47
3	0.00	0.00	106.37	106.37	319.10	174.39
2	0.00	0.00	106.37	106.37	212.73	174.31
1	0.00	0.00	106.37	106.37	106.37	174.22

Calculations
Stage-Storage Table
(Preliminary)

HYDROGRAPHS

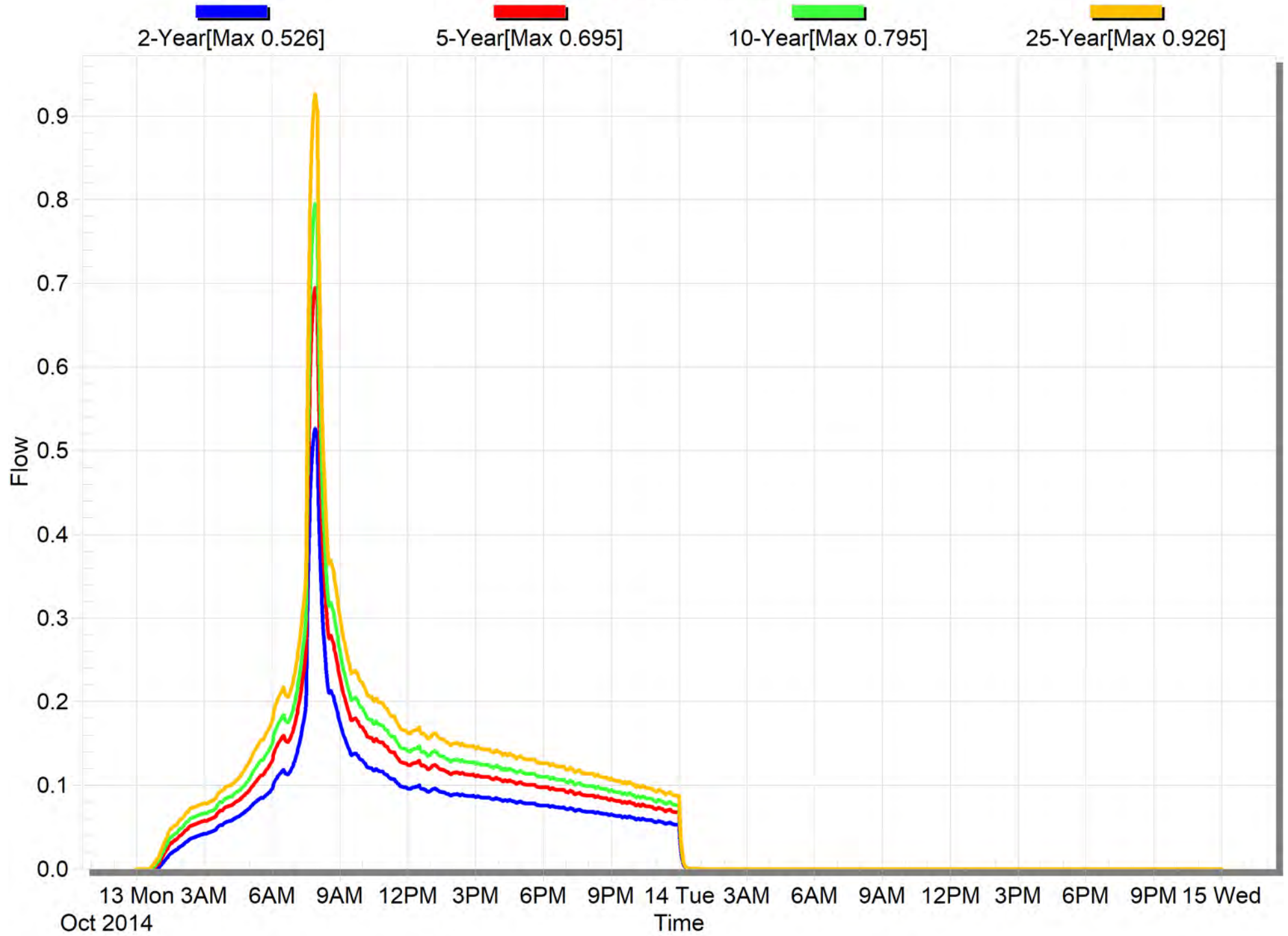
Runoff Rate Hydrographs (cfs)

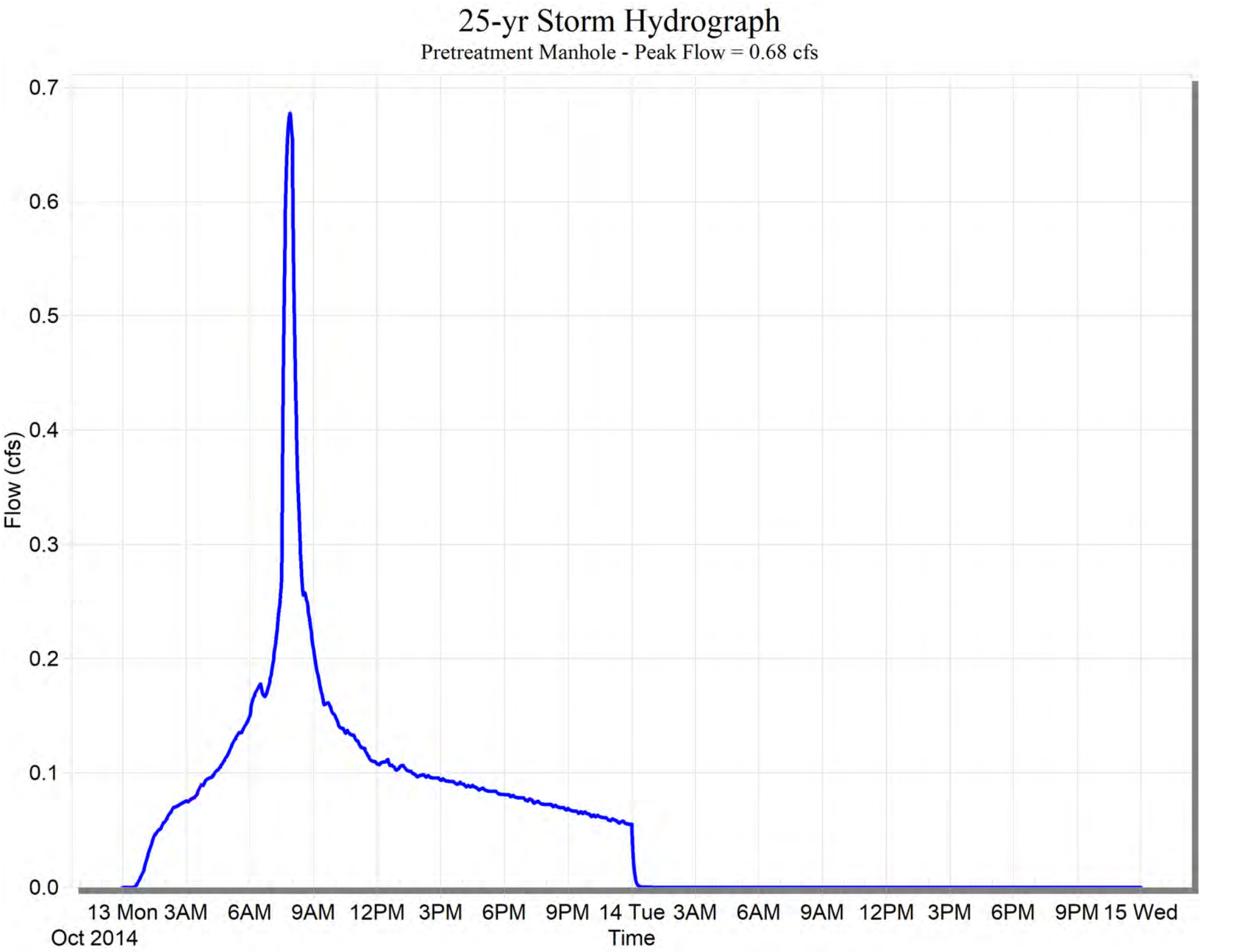
Predeveloped Conditions



Runoff Rate Hydrographs (cfs)

Post-Developed Conditions




25-yr Storm Hydrograph
Pretreatment Manhole - Peak Flow = 0.68 cfs
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Flow (cfs)
13 Mon 3AM
6AM
9AM
12PM
3PM
6PM
9PM
14 Tue 3AM
6AM
9AM
12PM
3PM
6PM
9PM
15 Wed
Oct 2014
Time

DOWNSTREAM ANALYSIS

DOWNSTREAM SYSTEM & PHOTOS

CWS Sanitary & Storm Sewer Map – Extent of Downstream Analysis

12” Outfall

DOWNSTREAM SYSTEM & PHOTOS

Downstream Discharge Area

Bethany Creek Upstream of NW 185 Ave

DOWNSTREAM SYSTEM & PHOTOS

Bethany Creek Downstream of NW 185th Ave (Bethany Lake)

Upstream Side of Box Culvert Under NW 185th Ave

DOWNSTREAM SYSTEM & PHOTOS

Downstream Side of Box Culvert Under NW 185th Ave

Overall Downstream System

LEGEND

- BASIN BOUNDARY
- # BASIN TAG
- (SD) ANALYZED DOWNSTREAM STORM SYSTEM (PER CWS SANITARY & STORM SEWER MAP)

BASIN AREAS

Basin	Total Area ac	Impervious %	CN (pervious)	Downstream XP Node
1	0.32	100	98	CB-154058
2	0.33	100	98	CB-154059
3	0.98	100	98	CB-154062
4	0.47	100	98	CB-311798
5	0.83	80	87.9[1]	MH-311797
6	2.87	80	86.6[1]	MH-311797
7[2]	1.21	61	80	CB-154062

[1]Spatially weighted average. [2]Contains project site.

W S N E

SCALE: 1" = 100'

0 100 FT

WEST UNION CHEVRON

APR 2022

CJRW, LLC

DOWNSTREAM BASIN DELINEATION

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Clean Water Services -- Sewer Map

Legend

- Cleanout
- Fitting
- Valve
- Manhole
- Inlet
- Pond
- Vault
- Treatment Plant
- Pump Station
- Gravity Line
- Pressure Line
- Open Channel
- Virtual Flow
- Pond Outline
- CWS Boundary
- County Boundary
- Urban Growth Boundary
- X Abandoned
- CWS Sani
- CWS Storm
- Partner Sani
- Partner Storm

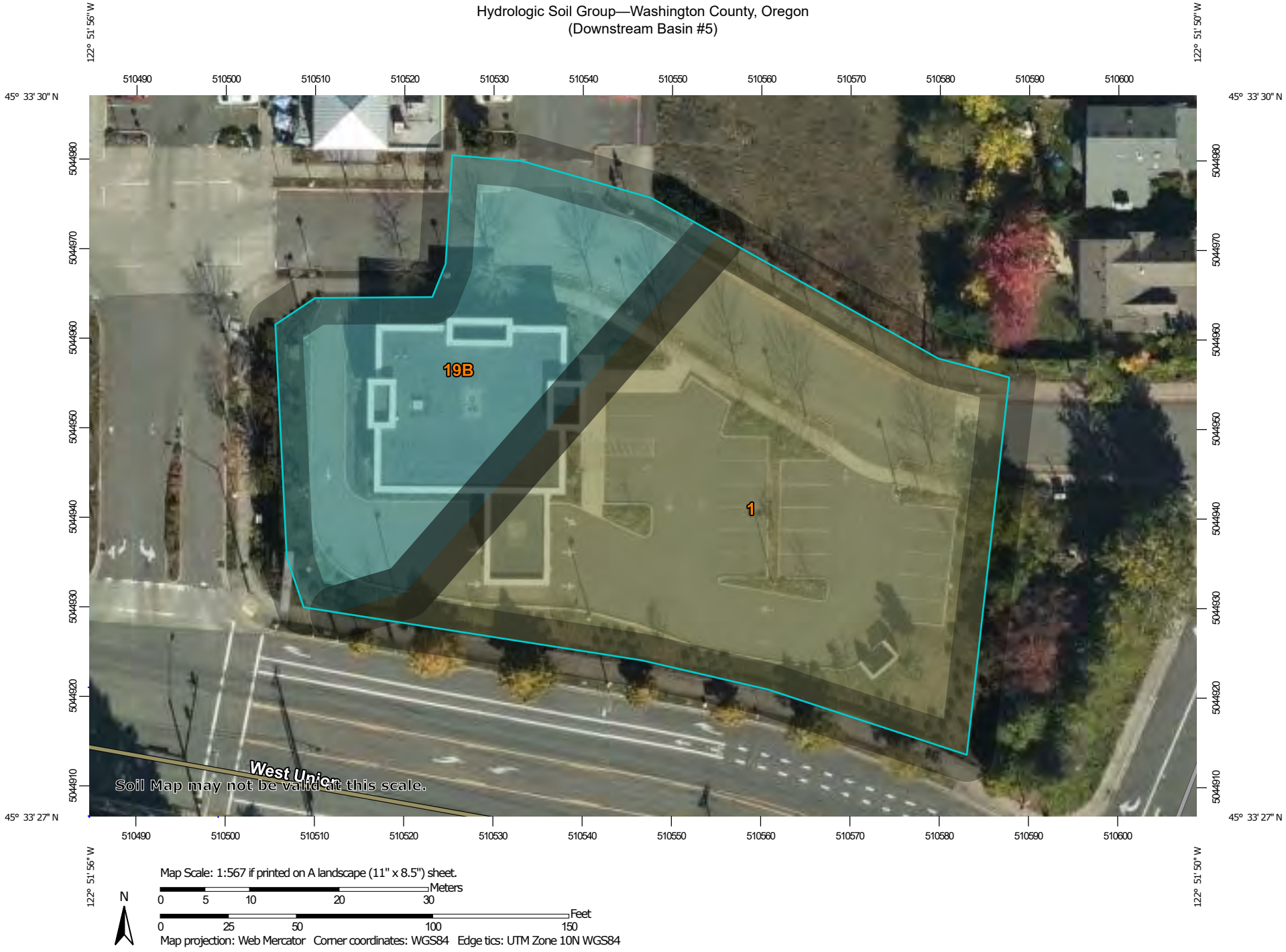
N

0 0.01 0.02 0.04 mi

Disclaimer: This product and its associated data is for informational purposes only and was derived from several databases. It was not prepared for, and is not suitable for legal, engineering or surveying purposes. Users of this information should review or consult the primary data and information sources to ensure accuracy. Clean Water Services cannot accept any responsibility for errors, omissions or positional accuracy. There are no warranties for this product. Mainline and service lateral locations are depicted using best available information but must be field verified and located before digging. Service laterals are marked in the field as "Unlocatable underground facilities" as defined in OAR 952-001-0010 (20). Easement data is not currently completed District-wide and should be used for general reference only. All sanitary or storm sewer data, with the exception of sanitary lines 24" and larger located within the city limits of Beaverton, Cornelius, Forest Grove, Hillsboro, Lake Oswego, Portland, Sherwood, Tigard or Tualatin, need to be verified by contacting the individual city. Notification of any errors would be appreciated. Clean Water Services, Development Services, 2550 SW Hillsboro Highway, Hillsboro OR 97123, (503) 681-5100.

Clean Water Services

Hydrologic Soil Group—Washington County, Oregon
(Downstream Basin #5)



Map Scale: 1:567 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 5 10 20 30

Feet
0 25 50 100 150

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, Oregon
Survey Area Data: Version 18, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 19, 2018—Oct 20, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Aloha silt loam	C/D	0.6	63.8%
19B	Helvetia silt loam, 2 to 7 percent slopes	C	0.3	36.2%
Totals for Area of Interest			**0.9**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Hydrologic Soil Group—Washington County, Oregon
(Downstream Basin #6)

Map Scale: 1:1,710 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, Oregon
Survey Area Data: Version 16, Sep 18, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 3, 2014—Aug 23, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Aloha silt loam	C/D	0.4	15.1%
19B	Helvetia silt loam, 2 to 7 percent slopes	C	2.0	80.7%
2027A	Verboort silty clay loam, 0 to 3 percent slopes	D	0.1	4.1%
Totals for Area of Interest			**2.5**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Table 2-2a Runoff curve numbers for urban areas [1/]

Cover description		Curve numbers for hydrologic soil group			
Cover type and hydrologic condition	Average percent impervious area [2/]	A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) [3/]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) [4/]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation) [5/]		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

1 Average runoff condition, and $I_a = 0.2S$.

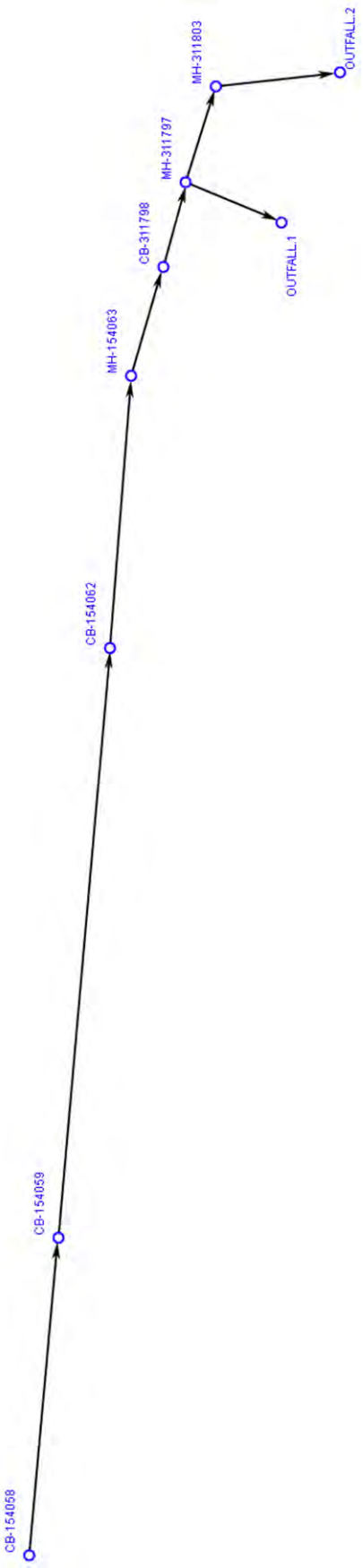
2 The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

3 CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

4 Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

5 Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

Downstream Analysis - XPSTORM Hydraulic Layout



XPSTORM-DOWNSTREAM - RUNOFF DATA								
WEST UNION CHEVRON - 25-YR STORM EVENT								
Node Name	Runoff Input Parameters				Runoff Output			
	Area	Impervious	CN	Tc	P	S	Surface Runoff (Q)	
	acre	%		min.	in	in	in	cfs
CB-154059	0.330	100	98	5	3.90	1.94	1.96	1.19
	0.740	100	98	5				
	0.470	0	80	5				
CB-154062	0.980	100	98	5	3.90	0.00	3.66	0.90
CB-311798	0.470	100	98	5	3.90	0.00	3.66	0.43
MH-311797	2.870	80	86.6	5	3.90	0.46	3.44	3.24
	0.830	80	87.9	5				
CB-154058	0.320	100	98	5	3.90	0.00	3.66	0.29

XPSTORM-DOWNSTREAM - RUNOFF DATA								
WEST UNION CHEVRON - 100-YR STORM EVENT								
Node Name	Runoff Input Parameters				Runoff Output			
	Area	Impervious	CN	Tc	P	S	Surface Runoff (Q)	
	acre	%		min.	in	in	in	cfs
CB-154059	0.330	100	98	5	4.50	2.04	2.46	1.41
	0.740	100	98	5				
	0.470	0	80	5				
CB-154062	0.980	100	98	5	4.50	0.00	4.26	1.04
CB-311798	0.470	100	98	5	4.50	0.00	4.26	0.50
MH-311797	2.870	80	86.6	5	4.50	0.47	4.03	3.79
	0.830	80	87.9	5				
CB-154058	0.320	100	98	5	4.50	0.00	4.26	0.34

XPSTORM DOWNSTREAM - CONVEYANCE DATA											
WEST UNION CHEVRON - 25-YR STORM EVENT											
Location			Conduit Properties			Conduit Results					
Link	Station		Diameter	Length	Slope	Design Capacity	Qmax/ Qdesign	Max Flow	Max Velocity	Max Flow Depth	y/d0
	From	To	ft	ft	%	cfs		cfs	ft/s	ft	
Link11	CB-154059	CB-154062	1.00	289.00	0.7	3.04	0.49	1.48	3.84	0.49	0.49
Link12	CB-154062	MH-154063	1.00	131.54	1.7	4.71	0.50	2.38	6.01	0.50	0.50
Link13	MH-154063	CB-311798	1.00	37.00	1.1	3.70	0.64	2.38	4.79	0.63	0.63
Link14	CB-311798	MH-311797	1.25	20.00	0.5	4.57	0.61	2.81	3.74	0.75	0.60
Link15	MH-311797	OUTFALL.1	1.00	3.00	0.5	2.52	1.16	2.93	4.70	0.75	0.75
Link16	MH-311797	MH-311803	1.25	45.00	0.5	4.62	0.68	3.12	4.19	0.75	0.60
Link17	MH-311803	OUTFALL.2	1.25	21.40	0.6	4.84	0.64	3.12	4.29	0.72	0.58
Link18	CB-154058	CB-154059	1.00	140.00	0.5	2.52	0.12	0.29	2.15	0.24	0.24

Location			Conduit Profile							
Link	Station		US Grnd. Elev.	DS Grnd. Elev.	US IE	DS IE	US Freeboard	DS Freeboard	US HGL	DS HGL
	From	To	ft	ft	ft	ft	ft	ft	ft	ft
Link11	CB-154059	CB-154062	179.52	177.22	173.20	170.90	4.33	4.32	175.19	172.90
Link12	CB-154062	MH-154063	177.22	173.60	170.90	169.90	4.32	3.11	172.90	170.49
Link13	MH-154063	CB-311798	173.60	174.50	169.90	169.40	3.11	4.37	170.49	170.13
Link14	CB-311798	MH-311797	174.50	174.48	169.40	169.30	4.37	4.43	170.13	170.05
Link15	MH-311797	OUTFALL.1	174.48	174.00	169.30	169.29	4.43	3.98	170.05	170.02
Link16	MH-311797	MH-311803	174.48	174.32	169.30	164.47	4.43	4.63	170.05	169.69
Link17	MH-311803	OUTFALL.2	174.32	174.00	164.47	168.85	4.63	4.44	169.69	169.56
Link18	CB-154058	CB-154059	180.22	179.52	175.10	173.20	3.38	4.33	176.84	175.19

XPSTORM DOWNSTREAM - CONVEYANCE DATA											
WEST UNION CHEVRON - 100-YR STORM EVENT											
Location			Conduit Properties			Conduit Results					
Link	Station		Diameter	Length	Slope	Design Capacity	Qmax/ Qdesign	Max Flow	Max Velocity	Max Flow Depth	y/d0
	From	To	ft	ft	%	cfs		cfs	ft/s	ft	
Link11	CB-154059	CB-154062	1.00	289.00	0.7	3.04	0.58	1.75	4.00	0.54	0.54
Link12	CB-154062	MH-154063	1.00	131.54	1.7	4.71	0.59	2.78	6.24	0.55	0.55
Link13	MH-154063	CB-311798	1.00	37.00	1.1	3.70	0.75	2.78	4.93	0.70	0.70
Link14	CB-311798	MH-311797	1.25	20.00	0.5	4.57	0.72	3.28	3.93	0.81	0.65
Link15	MH-311797	OUTFALL.1	1.00	3.00	0.5	2.52	1.38	3.49	5.14	0.81	0.81
Link16	MH-311797	MH-311803	1.25	45.00	0.5	4.62	0.78	3.58	4.38	0.81	0.65
Link17	MH-311803	OUTFALL.2	1.25	21.40	0.6	4.84	0.74	3.58	4.49	0.78	0.63
Link18	CB-154058	CB-154059	1.00	140.00	0.5	2.52	0.14	0.34	2.24	0.25	0.25

Location			Conduit Profile							
Link	Station		US Grnd. Elev.	DS Grnd. Elev.	US IE	DS IE	US Freeboard	DS Freeboard	US HGL	DS HGL
	From	To	ft	ft	ft	ft	ft	ft	ft	ft
Link11	CB-154059	CB-154062	179.52	177.22	173.20	170.90	4.28	4.27	175.24	172.95
Link12	CB-154062	MH-154063	177.22	173.60	170.90	169.90	4.27	3.04	172.95	170.56
Link13	MH-154063	CB-311798	173.60	174.50	169.90	169.40	3.04	4.30	170.56	170.20
Link14	CB-311798	MH-311797	174.50	174.48	169.40	169.30	4.30	4.37	170.20	170.11
Link15	MH-311797	OUTFALL.1	174.48	174.00	169.30	169.29	4.37	3.92	170.11	170.08
Link16	MH-311797	MH-311803	174.48	174.32	169.30	164.47	4.37	4.57	170.11	169.75
Link17	MH-311803	OUTFALL.2	174.32	174.00	164.47	168.85	4.57	4.39	169.75	169.61
Link18	CB-154058	CB-154059	180.22	179.52	175.10	173.20	3.37	4.28	176.85	175.24

CERTIFICATE OF INVESTIGATION

Per section 2.04.2.m.3.D of the Clean Water Services' Design & Construction Standards, a Certificate of Investigation is required when a downstream analysis has not been conducted for at least one-quarter mile stating that the downstream system has been visually inspected and no observable downstream impacts to structures were observed.

The contributing drainage area to Bethany Creek, which this project discharges to, is greater than 1,000 acres in size. Due to the size and complexity, the total upstream basin was not delineated and the proposed increase in runoff from the site is assumed to be negligible to the total flow in the creek (i.e., assumed to be less than 5% of contributing flow). Based on visual inspection and drone-based aerial photos, there were no downstream obstructions or deficiencies observed.

In conclusion, it is assumed that the increase in runoff from the proposed West Union Chevron project will not adversely impact the downstream system.

Apr 6 2022 4:24 PM DocuSign

Phillip Patague, PE
Senior Water Resources Engineer

GEOTECHNICAL REPORT

NOTE: This is a truncated version of the original report to provide relevant information for the Stormwater Report. The full report may be provided upon request.

Geotechnical Engineering Report

West Union Chevron
18450 NW West Union Road
Portland, Oregon

for
West Union Chevron

January 21, 2019

GeoEngineers

4000 Kruse Way Place
Building 3, Suite 200
Lake Oswego, Oregon 97035
503.624.9274

Geotechnical Engineering Report

West Union Chevron
18450 NW West Union Road
Portland, Oregon

File No. 23698-001-00

January 21, 2019

Prepared for:

West Union Chevron
c/o Bob Barman and Danny Draper
PO Box 2092
Lake Oswego, Oregon 97035

Prepared by:

GeoEngineers, Inc.
4000 Kruse Way Place
Building 3, Suite 200
Lake Oswego, Oregon 97035
503.624.9274

Tyler A. Pierce, PE

Julio C. Vela, PhD, PE, GE

REGISTERED PROFESSIONAL ENGINEER
60833
01/21/19
OREGON
FEBRUARY 08, 2000
JULIO C VELA

EXPIRES: 06/30/20

TAP:JCV:cje

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LIST OF FIGURES

APPENDICES

Subsurface Conditions

We completed field explorations for this study at the site on December 4 and 17, 2018. Our explorations included six drilled borings (B-1 through B-6) to depths of 6½ to 31½ feet bgs, and four infiltration tests (IT-1 through IT-4) at depths of 4½ to 5½ feet bgs. A summary of our exploration methods as well as the boring logs can be found in Appendix A. Laboratory test results are also provided in the exploration logs and described in Appendix A. The approximate locations of the explorations are shown in the Site Plan, Figure 2.

In general, the site is mantled by a varied mixture of man-made fills and underlain by flood deposits silt with occasional layers or lenses of fine sandy silt. The surface of the site is mantled with a mixture of soil and artificial materials ranging from demolition debris, presumably generated during demolition of the 18450 residence, asphalt and gravel pavement and soil fill. Fill encountered in B-1 consisted of 1½ feet of gravel with debris. In explorations B-3 through B-5 the fill consisted of 2 to 4½ feet of silt fill with debris. Below the fills in B-1 and B-3 through B-5, and at the ground surface in B-2 and B-6, we encountered medium stiff to stiff, and occasionally soft to medium stiff intermediate-depth flood deposits consisting of silt and find sandy silt to 31.5 feet, the maximum depth explored.

Groundwater

We encountered groundwater at approximately 23 feet bgs in B-5 during drilled explorations. This groundwater was confined and rose approximately 7 feet (to approximately 16 feet bgs) in approximately 25 minutes. Groundwater should be expected to rise several feet during periods of extended rainfall as well as from capillary rise. Dewatering of trenches and excavations will be required when groundwater seepage and/or perched groundwater are encountered. Groundwater conditions at the site are expected to vary seasonally due to rainfall events and other factors not observed in our explorations.

CONCLUSIONS

General

Based on our explorations, testing, and analyses, it is our opinion that the site is suitable for the proposed project from a geotechnical engineering standpoint, provided the recommendations in this report are included in design and construction. We offer the following conclusions regarding geotechnical engineering design at the site.

- The upper silt soil at the site will likely become disturbed from earthwork occurring during periods of wet weather or when the moisture content of the soil is more than a few percentage points above optimum. Wet weather construction practices will be required, except during the dry summer months.
- Groundwater was observed at depths between approximately 20 and 23 feet bgs. Following extended periods of wet weather, groundwater depths may be as shallow as 12 to 15 feet bgs. Due to groundwater fluctuations and capillary rise, dewatering or similar methods will be required for excavations deeper than about 15 feet below existing ground surface, except during the dry season. Even during drier periods, dewatering may be required for some deeper excavations.
- Excavations for the proposed fuel tanks and deep utilities will be required to be sloped back or temporarily shored.

- Structures should be set back at least two times the total height of slope to the south measured from the top of the crest of the slope. Based on a review of the preliminary site plan, the proposed location of the building provides a sufficient setback from the top of the slope.
- The native alluvial soils will generally be suitable for reuse as structural fill provided they are properly moisture conditioned ("dried back") as a part of placement and compaction. On-site material is not recommended for structural fill during the wet season or when prolonged wet weather persists.
- Proposed structures can be satisfactorily supported on continuous and isolated shallow foundations supported on the firm native soils, or on structural fill that extends to the firm native soils.
- Based on the assumed design loads described above, we estimate total settlements will be less than 1 inch for foundations constructed as recommended. If larger structural loads are anticipated, we should review and reassess the estimated settlement.
- Slabs-on-grade can be satisfactorily supported on aggregate base that is founded on the firm native soils, or on structural fill that extends to the firm native soils. We recommend that slabs-on-grade be provided with proper moisture control by constructing a sub-slab Aggregate Base section as a capillary break and providing a vapor barrier for moisture-sensitive applications.
- Tanks installed below the static groundwater level may require some form of downward ballasting or anchoring against potential buoyant forces (uplift). Elements to anchor and resist uplift forces on the tank may consist of tie-down anchorages embedded to sufficient depth and structurally tied to the tanks, or a widened integrated concrete foundation using the soil mass over the widened portion or a sufficiently massive concrete section or helical pier/micropiles to mitigate the buoyant force.
- Tested infiltration rates at the site were minimal. In addition, infiltration rates provided below are in-place infiltration rates and will require correction factors to account for repeated wetting and drying that occur in the area, degree of in-system filtration, frequency and type of system maintenance, vegetation, potential for siltation and bio-fouling, etc., as well as system design correction factors for overflow or redundancy and base and facility size. Depending on proposed depth of infiltration, shallow groundwater conditions or proximity to creek slopes may limit potential infiltration locations or design infiltration rates.
- Standard pavement sections, consisting of AC over Aggregate Base and/or Aggregate Subbase, over properly prepared subgrade, can be used to support the estimated traffic loads provided the pavement sections are designed and constructed as recommended in this report.
- Retaining walls 8 feet or less in height can be designed with the equivalent fluid densities provided in this report.

The following sections present the results of our analyses and general geotechnical engineering recommendations for designing and constructing the proposed development.

INFILTRATION TESTING

As requested, we conducted on-site infiltration tests to assist in site evaluation for stormwater infiltration design. We conducted infiltration testing in general accordance with the City of Portland Stormwater Design Manual (2014) at depths between approximately 4½ and 5½ feet bgs. Each test location was pre-soaked over a 4-hour period by repeated addition of water into the embedded pipe when necessary.

After the saturation period, the hole was filled with clean water to at least 12 inches above the soil in the bottom of the boring,

The drop in water level was measured over a period of time after the soak period, and refilled to repeat the test a minimum of three times. In the case where the water level falls during the time-measured testing, infiltration rates diminish as a result of less head from the water column in the test. Field test results are summarized in Table 1. The data and incremental infiltration rate over time are included in the infiltration test data summary in Appendix A, Figures A-8 through A-11.

TABLE 1. INFILTRATION RESULTS

Infiltration Test No.	Depth (feet)	USCS Material Type	Soil Description	Field Measured Infiltration Rate[1] (inches/hour)
IT-1	4.5	ML	Yellow-brown silt	0
IT-2	5.0	ML	Yellow-brown silt	0
IT-3	5.5	ML	Yellow-brown silt	0.13
IT-4	5.0	ML	Yellow-brown silt	1.50

Notes:

[1] Appropriate factors should be applied to the field-measured infiltration rate, based on the design methodology and specific system used.

USCS = Unified Soil Classification System

The infiltration rates shown in Table 1 represent a field-measured infiltration rate. This measurement represents a short-term rate, and factors of safety have not been applied for the type of infiltration system being considered, or for variability that may be present across large areas in the on-site soil. In our opinion, and consistent with the state of the practice, correction factors should be applied to this measured rate to reflect the localized area of testing relative to the field sizes.

Appropriate correction factors should also be applied by the project civil engineer to account for long-term infiltration parameters. From a geotechnical perspective, we recommend a factor of safety (correction factor) of at least 2 be applied to the field infiltration values to account for potential soil variability with depth and location within the area tested. In addition, the stormwater system design engineer should determine and apply appropriate remaining correction factor values, or factors of safety, to account for repeated wetting and drying that occur in this area, degree of in-system filtration, frequency and type of system maintenance, vegetation, potential for siltation and bio-fouling, etc., as well as system design correction factors for overflow or redundancy, and base and facility size.

The actual depths, lateral extent and estimated infiltration rates can vary from the values presented above. Field testing/confirmation during construction is often required in large or long systems or other situations where soil conditions may vary within the area where the system is constructed. The results of this field testing might necessitate that the infiltration locations be modified to achieve the design infiltration rate.

The infiltration flow rate of a focused stormwater system like a drywell or small infiltration box or pond typically diminishes over time as suspended solids and precipitates in the stormwater further clog the void spaces between the soil particles or cake on the infiltration surface or in the engineered media. The serviceable life of an infiltration media in a stormwater system can be extended by pre-filtering or with on-

going accessible maintenance. Eventually, most systems will fail and will need to be replaced or have media regenerated or replaced.

We recommend that infiltration systems include an overflow that is connected to a suitable discharge point. Also, infiltration systems can cause localized, high groundwater levels and should not be located near basement walls, retaining walls, or other embedded structures unless these are specifically designed to account for the resulting hydrostatic pressure. Infiltration locations should not be located on sloping ground, unless it is approved by a geotechnical engineer, and should not be infiltrated at a location that allows for flow to travel laterally toward a slope face, such as a mounded water condition or too close to a slope face that could cause instability of the slope.

Suitability of Infiltration System

Successful design and implementation of stormwater infiltration systems and whether a system is suitable for a development depend on several site-specific factors. Stormwater infiltration systems are generally best suited for sites having sandy or gravelly soil with saturated hydraulic conductivities greater than 2 inches per hour. Sites with silty soil such as encountered at this site, and sites with fine sand, silty sand, or gravel that has a high percentage of silt or clay in the matrix, or sites with relatively shallow underlying decomposed rock (residual soil) are generally not well suited for exclusive stormwater infiltration. Soil that has fine-grained matrices is susceptible to volumetric change and softening during wetting and drying cycles. Fine-grained soil also has large variations in the magnitude of infiltration rates because of bedding and stratification that occurs during deposition and often has thin layers of less permeable or impermeable soil within a larger layer.

As a result of shallow groundwater, fine-grained soil conditions, and very low measured infiltration rates, we recommend infiltration of stormwater not be used as the sole source of stormwater management at this site

EARTHWORK RECOMMENDATIONS

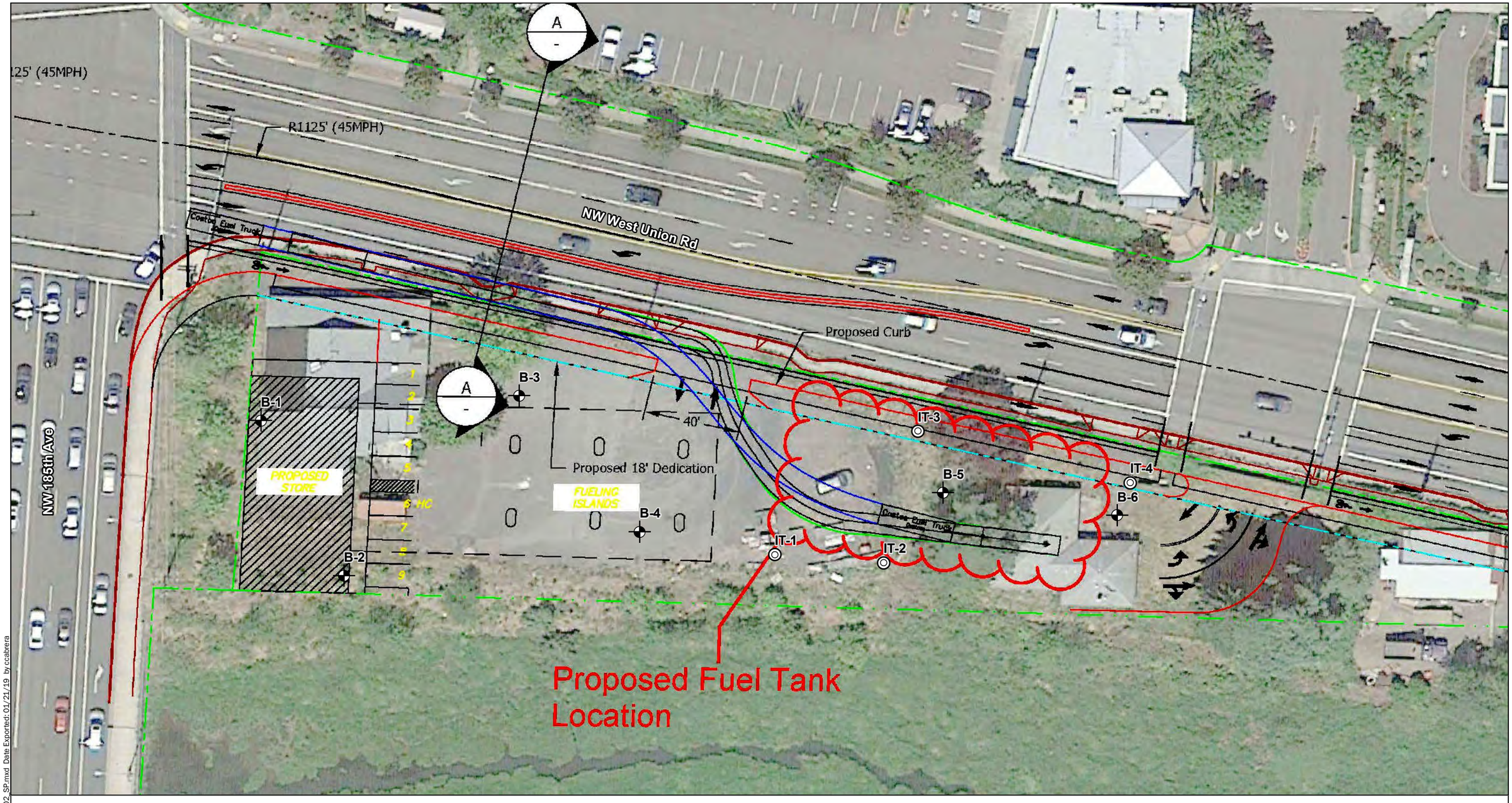
Site Preparation

In general, site preparation will include demolition of existing structural improvements, removing or relocating existing site utilities, stripping and grubbing of site organics, and grading the site per development plans.

Demolition

All existing structural elements, including above-grade structures, pavement, sidewalks or other hardscape features should be demolished and removed from proposed structural areas. All below-grade structural elements should be excavated and removed as a part of site demolition. If present, existing utilities that will be abandoned on site should be identified prior to project construction. Abandoned utility lines beneath proposed structural areas should be completely removed or filled with grout if abandoned, and left in place in order to reduce potential settlement or caving in the future. Materials generated during demolition of existing structural improvements should be transported off site for disposal.

Sites previously developed in an urban environment over several phases or used in multiple capacities (agricultural, storage, structurally developed) often have remnant buried features from previous uses such



Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Base drawing from Kittelson and Associates, July 18, 2018.

Projection: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

Legend

- Boring Number and Approximate Location
- Infiltration Test Number and Approximate Location

N W E S

40 0 40

Feet

Site Plan

West Union Chevron
Portland, Oregon

GeoEngineers

Figure 2

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OPERATIONS & MAINTENANCE PLAN

(Will be provided in final Stormwater Report)

KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

November 8, 2019 Project #: 24323.0

Stacy Shetler
County Engineer/Division Manager
Washington County Road Engineering
1400 SW Walnut Street M/S 17
Hillsboro, OR 97123

RE: PPLT at West Union Village Drive/West Union Road Intersection

Dear Stacy,

The purpose of this letter is to provide the results of a further investigation into existing and projected weekday peak hour traffic operational conditions at the signalized intersection of West Union Village Drive and West Union Road in Hillsboro, Oregon. This further investigation was requested by Washington County staff during a meeting on September 4 and focuses on the near-term need for PPLT phasing to serve the EB-to-NB left-turn movement.

In accordance with the September 4 request by Washington County staff, manual turning movement counts were conducted and summarized at the West Union Village Drive/West Union Road intersection on Thursday, September 12 from 7:00am – 9:00am and also from 4:00pm – 6:00pm. This day was selected for additional data collection because it was a mid-week day and the same day of week (Thursday) when earlier traffic counts were conducted at the same intersection in April 2019[1]. It was also selected because it was a day when most of the surrounding schools had been back in session for over one week[2]. On-site observations before, during, and after these counts revealed the following:

- Available tenant space within West Union Village shopping center is completely occupied with the exception of the Key Bank building that is being proposed for redevelopment into a Starbucks store.
- Starbucks is already present and currently offers products and services within the Albertson's store that is part of the West Union Village shopping center.
- There were no apparent road closures or diversions within the area and no crashes or special events were noted during the data collection effort that might have affected local traffic patterns.

[1] Manual turning movement counts were conducted at this intersection on April 11, 2019 by Gary's Traffic Data; these counts are summarized in Attachment B.

[2] It should be noted that Portland Community College had not yet begun its fall term when the turning movement counts were collected on September 12, 2019 even though all other local schools were in session on this date.

- The manager of the KinderCare facility located within West Union Village shopping center reported that September 12 was a typical day of activity with no special events and no unexpected arrival or departure patterns.

The results of these manual counts are included as Attachment A to this letter. Table 1 presents an assessment of the intersection's ability to achieve the minimum warrant threshold for introduction of PPLT phasing capability (50,000[3]) both with and without the proposed Starbucks development.

Table 1. Minimum PPLT Warrant Threshold Analysis

Time Period	Cross-Product without Starbucks	Minimum Warrant Threshold Met?	Cross-Product with Starbucks[4]	Minimum Warrant Threshold Met?
Morning Period (8:00-9:00 am)	23,300	No	35,088	No
Evening Period (4:25-5:25 pm)	48,081	No	55,590	Yes

These results suggest that the near-term potential need for PPLT is limited to the weekday evening peak hour, which even then is only marginally within the minimum warrant threshold of 50,000 for the cross-product of the EB left-turn volume and the WB through volume. It should also be noted that EB left-turn vehicles cross only a single lane of opposing through traffic. Their view of oncoming traffic is unobstructed by horizontal or vertical curves. These factors make the EB left-turn an easier and safer movement to execute than would be the case if the left-turning vehicles were required to cross multiple through lanes and/or if their view of oncoming traffic was constrained.

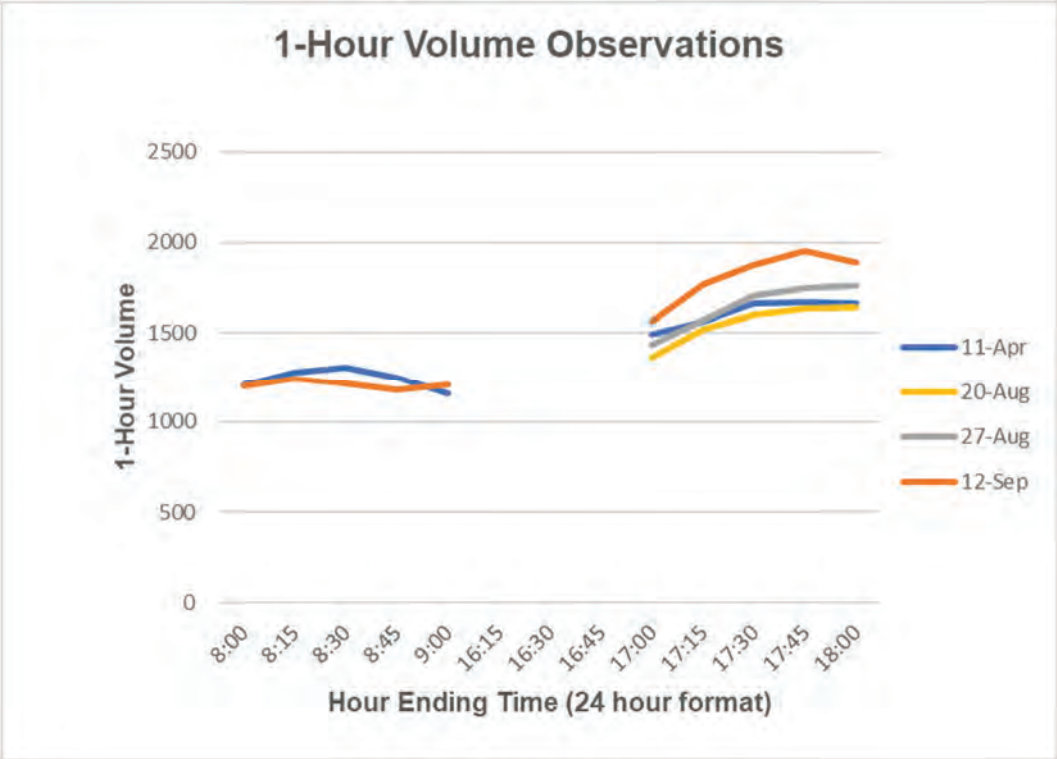
Figure 1 summarizes the one-hour intersection volume counts recorded at this intersection on several different days in 2019. It should be noted that all local area schools were in session only on April 11 and most were in session on September 12[5]. The information in Figure 1 confirms the reasonableness of the count data upon which the PPLT analysis presented in Table 1 relies, since the differences among the various volume counts are small and within the range of random variability in travel demand that is typically experienced throughout the transportation system on a day-to-day basis.

[3] Oregon Department of Transportation. *Traffic Signal Policy and Guidelines* (September 2017). Pages 13-14

[4] Estimates of Starbucks-generated traffic during each time period were taken from Figure 1 of a letter report prepared by Access Engineering on June 21, 2019 and titled "Proposed Starbucks Development, 18215 NW West Union Road, Washington County, Oregon – Revised Traffic Operations and Queuing Analysis".

[5] Portland Community College had not yet begun its fall term when the turning movement counts were collected on September 12, 2019 whereas all other local schools were in session on this date.

Figure 1. Manual Count Results at West Union Village /West Union Road Intersection



A drone was used to better assess the near-term need for PPLT phasing by capturing overhead videos during the same time periods that the manual counts described above were collected. Each video was approximately 5 minutes in duration and the videos were recorded at approximately 15-minute intervals to capture conditions throughout the entire morning and evening count periods. Electronic file copies of these overhead videos have been separately transmitted to Washington County staff for their review and records.

The term "Extended WB queue" will be used hereafter to describe an event that occurs when a WB vehicle queue at the 185th/West Union Road intersection extends to or through the upstream West Union Village Drive/West Union Road intersection. Each of the 18 videos that resulted from this effort was analyzed and the following information was collected:

- If one or more EB left-turning vehicles were waiting in queue when an extended WB queue event occurred, then this fact was noted.
- The blockage duration, if any, was noted whenever an extended WB queue event prevented EB left-turning vehicles from being able to complete their maneuver.
- The maximum observed EB left-turn queue length was noted for each of the 18 recorded video segments.

A spreadsheet detailing the information thus collected from the 18 videos has also been separately transmitted to Washington County staff for their review and records.

The results of this additional investigation are summarized as follows:

Morning Study Period (7:00am – 9:00am)

1. 13 instances of an extended WB queue were recorded within the nine drone videos obtained during the morning study period.
    a. An EB left-turning vehicle was waiting in queue during five of these instances. In each instance, the EB left-turn maneuver was facilitated by the extended WB queue. This was because WB through vehicles did not block the intersection and stopped on the far side of the intersection so that the EB left turn maneuver could be made safely.
    b. For each of the eight remaining instances when no EB left-turning vehicle was present, WB through vehicles still stopped on the far side of the intersection, leaving it clear for an EB left turn maneuver to be made safely.
2. The maximum observed EB left turn queue was three vehicles and EB through vehicles were never impeded by the queued left-turning vehicles.

Evening Study Period (4:00pm – 6:00pm)

3. One instance of an extended WB queue was recorded within the nine drone videos obtained during the evening study period.
    a. An EB left-turning vehicle was present in this single instance and the intersection was blocked for about 10 seconds before it was sufficiently cleared for the EB left-turn maneuver to be safely made. No observable safety problem or "near miss" potential occurred during this time because all affected vehicles were stopped and in clear view of one another.
4. The maximum observed EB left turn queue was seven vehicles.
    a. EB through vehicles were not blocked at any point during the time when seven EB left-turning vehicles were queued.
    b. A seven-vehicle queue was observed only once, and outside of this single observation the maximum observed EB left turn queue was two vehicles. EB through vehicles were never impeded by the queued left-turning vehicles, even throughout the duration of the seven-vehicle queue.

The observations and analyses described earlier in this letter report, together with the previously completed traffic impact analysis reports and analyses that have also been submitted to Washington County regarding the proposed Starbucks development, lead to the following conclusions and recommendations:

- PPLT phasing is a desirable future capability for the West Union Village Drive/West Union Road intersection but is not currently required to maintain safe operation.
- Current signal modification plans at this intersection are expected to result in the implementation of PPLT phasing capability on or before April 2021. With the possible exception

noted in the following bullet item, no safety or operational issues are expected to develop during this time period that would require earlier implementation of PPLT capability.

- Conditions currently unforeseen and not expected could nevertheless conceivably result from the new Starbucks operation that accelerate the need for implementation of PPLT capability. It is therefore recommended that, approximately one month after start-up of the Starbucks operation, an additional field data collection and analysis effort be undertaken to assess the safety and operational characteristics of the intersection at that time.
- If as a result of the field-based assessment noted above or if Washington County's engineers determine for other reasons that the EB left-turn movement should receive additional protection prior to the full installation and deployment of PPLT capability, feasible temporary control options are available for implementation in the interim:
    - A five-section "doghouse" signal head could be installed as temporary replacement of the signal head that currently serves EB through traffic, which would then allow for protected-permitted left-turn phasing to be implemented as necessary. The installation of a doghouse signal head would be contingent upon the structural ability of the existing pole and/or possible additional infrastructure to support this type of signal head.
    - Temporary wood poles could be installed to support a strain wire and a single signal head that would provide the necessary PPLT capability in the interim until the current signal modification plans are completed.
    - Time-of-day restrictions on EB left turn movements could be implemented through the installation of appropriate signage.

Sincerely,
KITTELSON & ASSOCIATES, INC.

Wayne Kittelson, P.E.
Principal Engineer

EXPIRES 6/30/2021

ATTACHMENT A

September 12, 2019 Manual Traffic Count Summaries

West Union Village Drive/West Union Road (Hillsboro, OR)

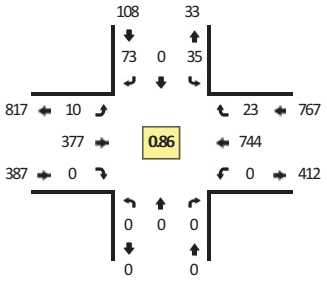
Type of peak hour being reported: Intersection Peak

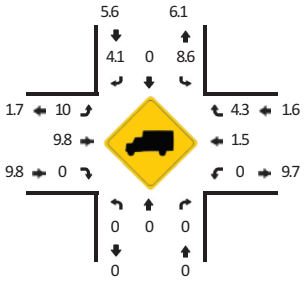
Method for determining peak hour: Total Entering Volume

LOCATION: Shopping Center Dwy -- NW West Union Rd
CITY/STATE: Washington, OR

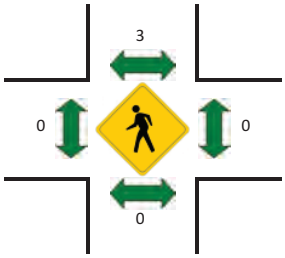
QC JOB #: 15060104
DATE: Thu, Sep 12 2019

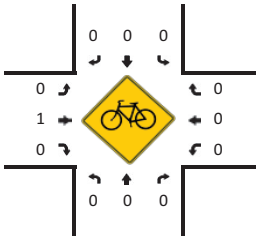
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

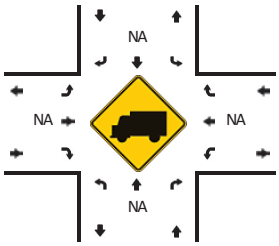


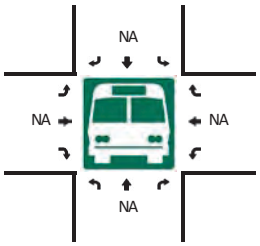


Quality Counts
DATA THAT DRIVES COMMUNITIES









5-Min Count Period Beginning At	Shopping Center Dwy (Northbound)				Shopping Center Dwy (Southbound)				NW West Union Rd (Eastbound)				NW West Union Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	2	0	4	0	0	10	0	0	0	39	4	0	59	
7:05 AM	0	0	0	0	0	0	7	0	2	13	0	0	0	42	1	0	65	
7:10 AM	0	0	0	0	5	0	9	0	3	19	0	0	0	63	1	0	100	
7:15 AM	0	0	0	0	6	0	8	0	0	21	0	0	0	74	1	0	110	
7:20 AM	0	0	0	0	3	0	13	0	1	33	0	0	0	63	2	0	115	
7:25 AM	0	0	0	0	3	0	4	0	0	39	0	0	0	68	2	0	116	
7:30 AM	0	0	0	0	4	0	2	0	1	35	0	0	0	76	1	0	119	
7:35 AM	0	0	0	0	2	0	7	0	1	40	0	0	0	74	0	0	124	
7:40 AM	0	0	0	0	0	0	6	0	1	47	0	0	0	66	2	0	122	
7:45 AM	0	0	0	0	2	0	4	0	1	51	0	0	0	51	2	0	111	
7:50 AM	0	0	0	0	1	0	6	0	1	29	0	0	0	40	3	0	80	
7:55 AM	0	0	0	0	1	0	4	0	1	19	0	0	0	49	5	0	79	1200
8:00 AM	0	0	0	0	3	0	5	0	0	26	0	0	0	50	0	0	84	1225
8:05 AM	0	0	0	0	5	0	5	0	0	18	0	0	0	70	4	0	102	1262
8:10 AM	0	0	0	0	4	0	2	0	4	26	0	0	0	47	0	0	83	1245
8:15 AM	0	0	0	0	1	0	12	0	5	25	0	0	0	62	2	0	107	1242
8:20 AM	0	0	0	0	4	0	9	0	4	28	0	0	0	52	2	0	99	1226
8:25 AM	0	0	0	0	4	0	4	0	4	32	0	0	0	62	0	0	106	1216
8:30 AM	0	0	0	0	4	0	2	0	5	34	0	0	0	64	1	0	110	1207
8:35 AM	0	0	0	0	2	0	6	0	0	24	0	0	0	68	4	0	104	1187
8:40 AM	0	0	0	0	5	0	10	0	2	30	0	0	0	63	1	0	111	1176
8:45 AM	0	0	0	0	4	0	5	0	3	27	0	0	0	52	0	0	91	1156
8:50 AM	0	0	0	0	2	0	9	0	1	29	0	0	0	65	1	0	107	1183
8:55 AM	0	0	0	0	2	0	2	0	4	26	0	0	0	70	2	0	106	1210

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	24	0	60	0	12	488	0	0	0	864	12	0	1460
Heavy Trucks	0	0	0		4	0	0		4	48	0		0	4	0		60
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 9/16/2019 4:08 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

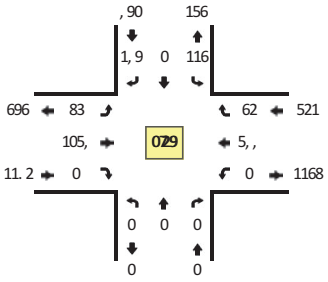
Type of peak hour being reported: Intersection Peak

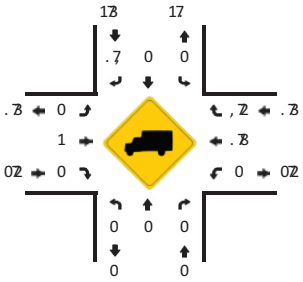
Method for determining peak hour: Total Entering Volume

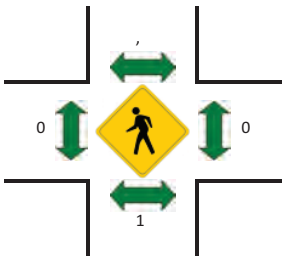
LOCATION: Shopping Center Dwy -- NW West Union Rd
CIT4YSTATE: Washington/OR

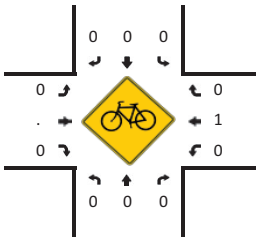
QC JOB #: 15060105
DATE: Thu/Sep 1, , 012

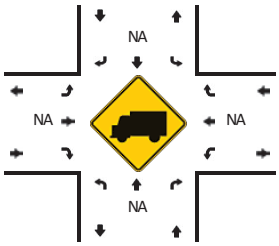
Peak-Hour: 9:50 PM -- 5:50 PM
Peak 15-Min: 5:05 PM -- 5:, 0 PM

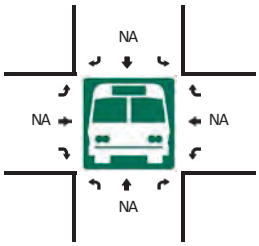












5-Min Count Period Beginning At	Shopping Center Dwy (Northbound)				Shopping Center Dwy (Southbound)				NW West Union Rd (Eastbound)				NW West Union Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:00 PM	0	0	0	0	5	0	5	0	6	9,	0	0	0	. 0	11	0	22	
9:05 PM	0	0	0	0	3	0	3	0	5	98	0	0	0	, 2	5	0	101	
9:10 PM	0	0	0	0	6	0	6	0	3	93	0	0	0	. 3	6	0	102	
9:15 PM	0	0	0	0	11	0	.	0	5	58	0	0	0	. 1	.	0	111	
9:, 0 PM	0	0	0	0	6	0	19	0	.	95	0	0	0	. 8	5	0	111	
9:, 5 PM	0	0	0	0	8	0	2	0	2	30	0	0	0	. .	,	0	1. 1	
9:. 0 PM	0	0	0	0	10	0	3	0	6	60	0	0	0	96	9	0	1. .	
9:. 5 PM	0	0	0	0	6	0	8	0	6	30	0	0	0	99	9	0	1. 8	
9:90 PM	0	0	0	0	2	0	8	0	6	38	0	0	0	91	2	0	151	
9:95 PM	0	0	0	0	9	0	19	0	3	35	0	0	0	91	9	0	195	
9:50 PM	0	0	0	0	9	0	1.	0	10	83	0	0	0	50	9	0	168	
9:55 PM	0	0	0	0	6	0	11	0	.	86	0	0	0	51	11	0	168	1565
5:00 PM	0	0	0	0	2	0	11	0	8	86	0	0	0	95	3	0	166	16. ,
5:05 PM	0	0	0	0	11	0	1,	0	19	81	0	0	0	. .	8	0	152	1620
5:10 PM	0	0	0	0	8	0	1,	0	.	23	0	0	0	61	3	0	188	1362
5:15 PM	0	0	0	0	16	0	15	0	15	32	0	0	0	90	10	0	135	18. .
5:, 0 PM	0	0	0	0	1,	0	8	0	6	63	0	0	0	. ,	9	0	1, 2	1851
5:, 5 PM	0	0	0	0	1,	0	5	0	9	2,	0	0	0	. 6	9	0	15.	183.
5:. 0 PM	0	0	0	0	10	0	1,	0	5	106	0	0	0	. 3	.	0	13.	121.
5:. 5 PM	0	0	0	0	6	0	2	0	11	100	0	0	0	5.	.	0	18,	1253
5:90 PM	0	0	0	0	1,	0	11	0	.	85	0	0	0	. 9	9	0	192	1255
5:95 PM	0	0	0	0	10	0	5	0	5	86	0	0	0	50	9	0	160	1230
5:50 PM	0	0	0	0	6	0	.	0	9	65	0	0	0	91	5	0	1, 9	12, 6
5:55 PM	0	0	0	0	3	0	9	0	6	3.	0	0	0	. 8	.	0	1. 1	1882

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	190	0	156	0	1, 8	10, 8	0	0	0	5. 6	100	0	, 088
Heavy Trucks	0	0	0		0	0	9		0	1,	0		0	16	8		90
Pedestrians		0				9				0				0			9
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1
Railroad Stopped Buses																	

Comments:

Report generated on 2Y16Y, 012 9:08 PM

SOURCE: Quality Counts/LLC (http:YYwww7qualitycounts7net) 1-833-580-, , 1,

ATTACHMENT B

April 11, 2019 Manual Traffic Count Summaries

West Union Village Drive/West Union Road (Hillsboro, OR)

Gary's Traffic Data

310 Pitney Lane, Unit 39
Junction City, OR 97448

Fast, Accurate, High Quality Counts

Weather: Cloudy, showers
46 degrees AM, 54 PM
Collected By: G.Mc.

File Name : Bethany W. Union Rd. @ Shopping Ctr. Dwy
Site Code : Bethany
Start Date : 4/11/2019
Page No : 1

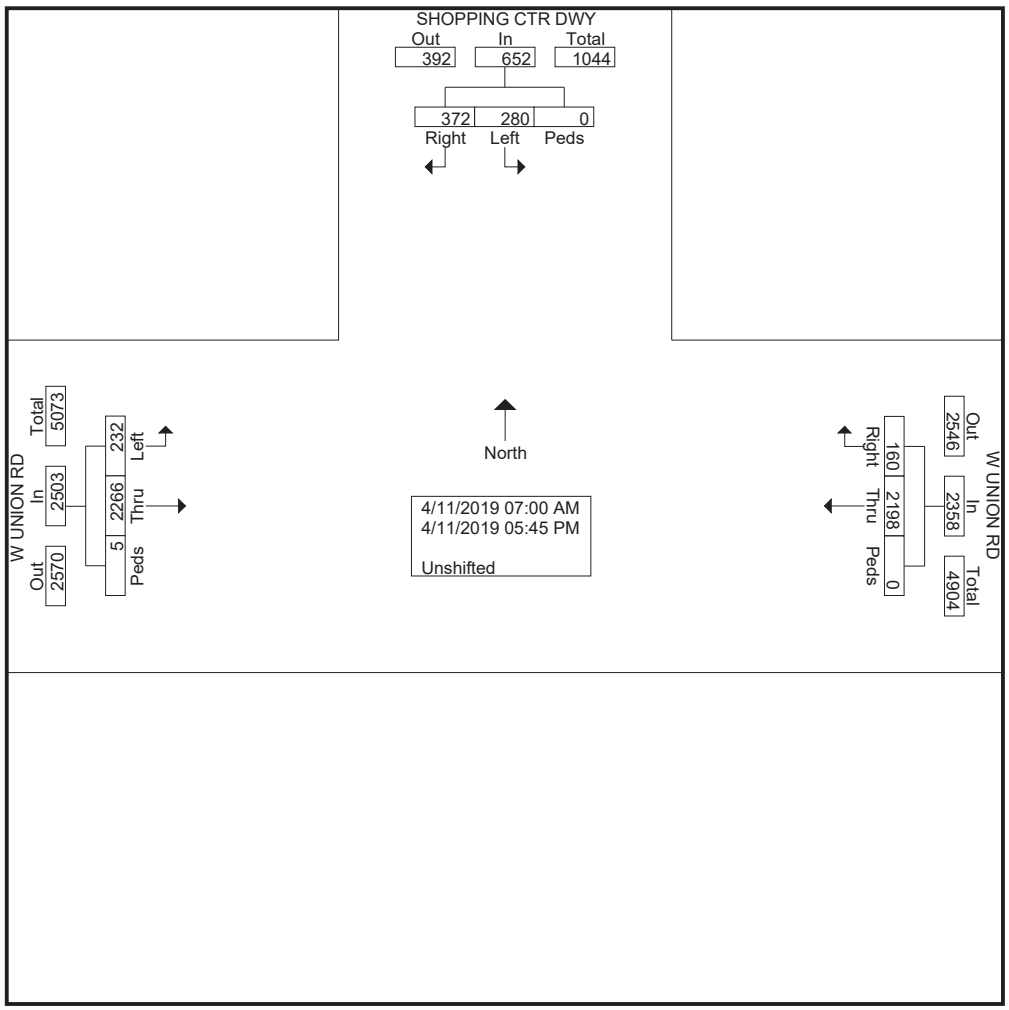
Groups Printed- Unshifted

	SHOPPING CTR DWY From North				W UNION RD From East				W UNION RD From West				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
07:00 AM	5	18	0	23	128	4	0	132	6	40	0	46	201
07:15 AM	6	15	0	21	173	3	0	176	3	63	0	66	263
07:30 AM	12	15	0	27	199	5	0	204	9	112	0	121	352
07:45 AM	14	30	0	44	164	10	0	174	29	146	0	175	393
Total	37	78	0	115	664	22	0	686	47	361	0	408	1209
08:00 AM	8	19	0	27	170	2	0	172	7	67	0	74	273
08:15 AM	12	14	0	26	165	1	0	166	6	88	0	94	286
08:30 AM	10	22	0	32	151	6	0	157	6	104	0	110	299
08:45 AM	15	17	0	32	168	3	0	171	9	86	0	95	298
Total	45	72	0	117	654	12	0	666	28	345	0	373	1156
*** BREAK ***													
04:00 PM	15	30	0	45	97	8	0	105	10	127	0	137	287
04:15 PM	18	24	0	42	93	17	0	110	20	150	0	170	322
04:30 PM	22	19	0	41	115	16	0	131	21	187	0	208	380
04:45 PM	21	45	0	66	123	20	0	143	19	237	1	257	466
Total	76	118	0	194	428	61	0	489	70	701	1	772	1455
05:00 PM	28	27	0	55	108	19	0	127	16	190	0	206	388
05:15 PM	31	28	0	59	126	16	0	142	23	208	0	231	432
05:30 PM	26	26	0	52	92	10	0	102	22	211	0	233	387
05:45 PM	37	23	0	60	126	20	0	146	26	250	4	280	486
Total	122	104	0	226	452	65	0	517	87	859	4	950	1693
Grand Total	280	372	0	652	2198	160	0	2358	232	2266	5	2503	5513
Apprch %	42.9	57.1	0		93.2	6.8	0		9.3	90.5	0.2		
Total %	5.1	6.7	0	11.8	39.9	2.9	0	42.8	4.2	41.1	0.1	45.4	

Gary's Traffic Data
310 Pitney Lane, Unit 39
Junction City, OR 97448
Fast, Accurate, High Quality Counts

Weather: Cloudy, showers
46 degrees AM, 54 PM
Collected By: G.Mc.

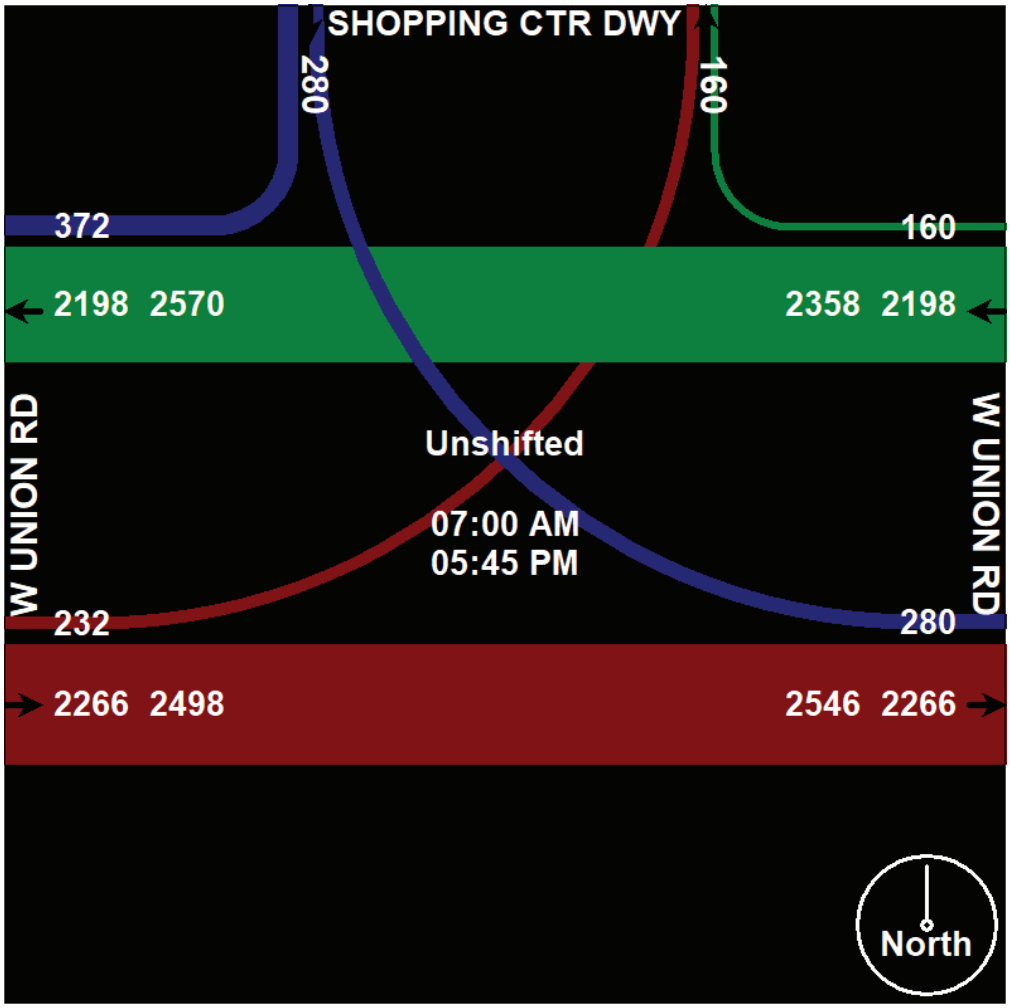
File Name : Bethany W. Union Rd. @ Shopping Ctr. Dwy
Site Code : Bethany
Start Date : 4/11/2019
Page No : 2



Gary's Traffic Data
310 Pitney Lane, Unit 39
Junction City, OR 97448
Fast, Accurate, High Quality Counts

Weather: Cloudy, showers
46 degrees AM, 54 PM
Collected By: G.Mc.

File Name : Bethany W. Union Rd. @ Shopping Ctr. Dwy
Site Code : Bethany
Start Date : 4/11/2019
Page No : 3



Gary's Traffic Data
310 Pitney Lane, Unit 39
Junction City, OR 97448
Fast, Accurate, High Quality Counts

Weather: Cloudy, showers
46 degrees AM, 54 PM
Collected By: G.Mc.

File Name : Bethany W. Union Rd. @ Shopping Ctr. Dwy
Site Code : Bethany
Start Date : 4/11/2019

	SHOPPING CTR DWY From North				W UNION RD From East				W UNION RD From West				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	28	27	0	55	108	19	0	127	16	190	0	206	388
05:15 PM	31	**28**	0	59	**126**	16	0	142	23	208	0	231	432
05:30 PM	26	26	0	52	92	10	0	102	22	211	0	233	387
05:45 PM	**37**	23	0	**60**	126	**20**	0	**146**	**26**	**250**	**4**	**280**	**486**
Total Volume	122	104	0	226	452	65	0	517	87	859	4	950	1693
% App. Total	54	46	0		87.4	12.6	0		9.2	90.4	0.4		
PHF	.824	.929	.000	.942	.897	.813	.000	.885	.837	.859	.250	.848	.871

Peak Hour Analysis From 07:00 AM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				07:15 AM				05:00 PM			
+0 mins.	21	**45**	0	**66**	173	3	0	176	16	190	0	206
+15 mins.	28	27	0	55	**199**	5	0	**204**	23	208	0	231
+30 mins.	**31**	28	0	59	164	**10**	0	174	22	211	0	233
+45 mins.	26	26	0	52	170	2	0	172	**26**	**250**	**4**	**280**
Total Volume	106	126	0	232	706	20	0	726	87	859	4	950
% App. Total	45.7	54.3	0		97.2	2.8	0		9.2	90.4	0.4	
PHF	.855	.700	.000	.879	.887	.500	.000	.890	.837	.859	.250	.848

Gary's Traffic Data
310 Pitney Lane, Unit 39
Junction City, OR 97448
Fast, Accurate, High Quality Counts

Weather: Cloudy, showers
46 degrees AM, 54 PM
Collected By: G.Mc.

File Name : Bethany W. Union Rd. @ Shopping Ctr. Dwy
Site Code : Bethany
Start Date : 4/11/2019
Page No : 5

KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

MEMORANDUM

Date:	August 8, 2020	Project #: 21539.0
To:	Michael C. Robinson Schwabe Williamson & Wyatt 1211 SW Fifth Avenue, STE 1900 Portland, OR 97204	
From:	Wayne Kittelson	
Project:	West Union Gas Station	
Subject:	Supplemental Trip Generation Information	

This memorandum presents an in-depth analysis of the net new average weekday vehicle trips expected to be generated by the proposed West Union Gas station located on the south-east corner of NW West Union Road and NW 185th Avenue in Washington County, OR. Based on the analysis details herein, the proposed development is estimated to add an average of 403 weekday vehicle trips to the segment of NW West Union Road that is adjacent to the site. This increase represents an increase of less than three percent to existing weekday traffic volumes. This conclusion is different from that reported in our Traffic Operations Assessment dated October 18, 2019, and the difference reflects the more accurate characterization we have developed since last October of trip characteristics associated with the site's previous use – Mad Greek Deli Restaurant. This memorandum also uses recent empirical data collected at similar sites in Oregon and the Pacific Northwest to confirm the conservatively high nature of the trip generation characteristics estimated for the proposed new development.

Mad Greek Deli Restaurant Operating Characteristics

To further refine and more accurately represent the operating characteristics of the Mad Greek Deli Restaurant (prior to its closure in 2015), we interviewed Mr. Stafanos Vertopoulos, the brother-in-law of the now-deceased restaurant's owner-operator, and was a frequent visitor, customer, and observer of the restaurant's operations. Mr. Vertopoulos also served as the Trustee of the restaurant owner-operator's estate and was the legal custodian responsible for the sale of the property to the applicant.

Mr. Vertopoulos confirmed that the restaurant was generally open approximately 11 hours per day, typically from 10:00 AM to 9:00 PM. For the first seven or eight hours of each day (that is, between about 10:00 am and 5:00 – 6:00 pm), the restaurant operated according to what the Institute of Transportation Engineers (ITE) *Trip Generation Manual (10th Edition)* would characterize as a "Fast Casual" restaurant. This characterization is a result of the following characteristics:

- **No wait staff or table service.** Orders were made and paid for first before food was prepared.

- **Freshly-made food.** The food was made at the time the order was placed as opposed to having been pre-assembled, with higher-quality ingredients and more unique made-to-order menu items.
- **Priced around $10 per typical meal.** This compares with $5.00 for a fast-food meal and $15 for a high-turnover sit-down restaurant.
- **An inviting ambience** characterized by a lot of activity and chatter.
- **Restaurant staff were generally wage workers**, although some customers did also tip.

Mr. Vertopoulos also reported that, during the evening hours, the restaurant operated differently and in a way that ITE's *Trip Generation (10th Edition)* Manual would characterize as "High-Turnover Sit-Down" restaurant:

- **Wait staff and table service was provided.** Orders were made from a menu and payment was made after the meal had been served, with tips being customary.
- **No reservations** were made – customers were seated as they arrived.
- **$15-$20 for a typical meal.** Alcoholic beverages were also available.
- **Duration of stay was typically between 1 and 1 ½ hours.**

Based on the restaurant operations information provided by Mr. Vertopoulos, we conclude that the most accurate ITE representation of Mad Greek Deli Restaurant per ITE's *Trip Generation* Land Use Categories is a "Fast Casual" restaurant during the daytime hours (i.e., about two-thirds of its operating hours) and a "High-Turnover Sit-Down" restaurant during the evening hours (i.e., about one-third of its operating hours).

Empirical Confirmation of the ITE *TRIP GENERATION Estimates Used for the Proposed Development*

The October 2019 Traffic Operations Assessment Report used Land Use Code 945 (Gas Station with Convenience Store) from the ITE *Trip Generation Manual* with the number of fueling positions as the independent variable to estimate the proposed development's likely trip generating characteristics. Washington County staff have suggested that it might have been more appropriate to apply Land Use Category Code 960 (Super Convenience Market/Gas Station) instead. While either approach is reasonable, ITE's *Trip Generation Manual* also states that, where possible, the most accurate method for estimating the trip generating characteristics of a particular land use is through empirical data collected at similar sites within the area.

The applicant operates numerous Chevron gas stations with convenience stores throughout the region. Annual (2019) sales volume information was provided by the applicant for the applicant's highest-performing Chevron "gas station with convenience store" facility in the area, along with the following additional information:

- Of all the gasoline brands, Chevron is the number one marketer with respect to sales volume.

- The data provided is for the Chevron "gas station with convenience store" facility located at the Woodburn Interchange on I-5 (hereafter referred to as the "Woodburn Chevron").
    - In 2019 this facility ranked #2 in gasoline sales volume for all of the Chevron facilities located in the Pacific Northwest.
    - The number of fueling stations provided at this gas station (12) is identical to the number in the proposed development
    - The size of the convenience store at this gas station (approximately 4,500 square feet) is nearly the same size as the convenience store in the proposed development.
    - The average annual daily traffic (AADT) on I-5 in the vicinity of the gas station was 94,100 vehicles per day (vpd) in 2018, and the AADT on Highway 214 was 22,200 vpd. Both traffic counts are significantly higher than the existing average weekday traffic volume on West Union Road in the vicinity of the proposed development (approximately 15,000 vpd).
    - Only about 25% of the transactions at this facility do not include the purchase of gasoline.
    - The average amount of gas sold per transaction is ten (10) gallons.
    - In 2019 this facility sold 3,590,287 gallons of fuel.
    - Weekend activity Is generally higher than weekday activity, meaning that an average daily calculation based on annual sales volume will overestimate the sales volume on an average weekday.

On this basis, the average annual weekday trips generated by the Chevron station at the I-5/Woodburn interchange can be calculated as follows:

*{[(3,590,287 gal/yr) * (2 trip ends/customer transaction)] /[(365 days/yr) * (10 gal/transaction)]} * 1.25 =* ***2,459 avg wkday trips***

The October 2019 Traffic Operations Assessment Report estimated on the basis of Land Use Code 945 that the proposed development will generate 2,464 average weekday trips, which compares very favorably to the calculation result given above. It is important to note that the Woodburn Chevron station is nearly identical to the proposed development in all respects except the volume of traffic on the adjacent roadways, which is nearly eight times higher than the volume on West Union Road. Because of this significant exposure discrepancy, it is concluded that the Traffic Operations Assessment Report's estimate of 2,464 average weekday trips is a conservatively high estimate.

Average Daily Weekday Net Trip Generation

The following table provides details supporting the number of net average daily weekday trips expected to be generated by the proposed development.

Land Use	ITE Land Use Code	Size	Weekday Daily Trips	Pass-by Trips	Net Total Weekday Daily Trips
Gas station with Convenience Store	945	12 Fueling Positions	2,464	-1,380	1,084
Mad Greek Deli Restaurant – Fast Casual Operation (2/3)	930	4,828 Square Feet	1,195[1]	-514[1]	681
Mad Greek Deli Restaurant – High Turnover Sit-Down (1/3)	932				
Net New Weekday Daily Trips (Proposed Gas Station minus Mad Greek Deli)					**403**

[1] Represents a weighted average trip generation of 2/3 Fast Casual Restaurant and 1/3 High Turnover Sit Down Restaurant.

The 403 net new average weekday daily trips expected to result from the proposed development are reflective of the net new trips generated by the proposed development (1,084) less the net new trips that were being generated by the Mad Greek Deli Restaurant (681) when it was operating on the same site.

This result is higher than what was reported in the October 2019 Traffic Operations Assessment; however, we find it to be a more accurate expectation because it relies on better background information than was available at the time the October 2019 report was prepared. The higher estimate that results from this supplemental analysis is not a substantial enough change to affect the findings and conclusions of the October 2019 Traffic Operations Assessment. It may also be important to recognize that the 403 net new weekday daily trip-ends represent a less than three percent increase to the existing traffic volume on West Union Road immediately adjacent to the development site.

KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

September 16, 2020 Project #: 21539.0

Stacy Shetler
County Engineer/Division Manager
Washington County Road Engineering
1400 SW Walnut Street M/S 17
Hillsboro, OR 97123
Delivered by email: Stacy_Shetler@co.washington.or.us

Subject: Proposed development near NW 185th Avenue/West Union Road

Dear Stacy:

In mid-August we discussed the option of making a fee-in-lieu payment to meet the County's expected frontage improvement conditions associated with the subject proposal. Attached to this letter are the following supporting documents:

1. The ultimate design for the frontage improvements that resulted from a collaborative effort with Washington County's Road Engineering staff;
2. The Engineer's Conceptual Estimate for completion of the frontage improvements according to the ultimate design; and
3. An email from Sean Arnold of PGE to Aaron Murphy of 3J Consulting confirming that a 10-foot Public Utility Easement (PUE) will be sufficient for utility relocation purposes. It will be helpful for you to know that both the canopy and the fuel tanks are more than 10 feet from the PUE under the current design proposal.

I calculate TDT charge to be $348,396 (based on ITE Code 853 and 12 fueling positions) less $111,145 due to the previous use (based on ITE Code 932 and 4,348 square feet) for a net total of $237,250. I also conclude that this TDT charge is more than offset by the TDT-eligible credits that will be generated by the traffic signal upgrade project when it is completed and final construction invoices are submitted; this conclusion is based on a) the current construction cost estimate for the signal upgrade of approximately $535,000; b) the previous determination that 75% of the project's construction cost is eligible as TDT credits; and c) the additional allowance of 13.5% of engineering costs associated with the signal upgrade to be eligible as a TDT credit. In addition to all of this there could also be TDT-eligible credits arising out of the frontage improvements that are expected to be conditioned, but only if the fee-in-lieu option is not adopted.

The traffic signal upgrade project is still underway, and I am unclear at this time when it is scheduled to be completed, although it will certainly be finished prior to completion of the proposed development. The TDT-eligible credits generated by the traffic signal upgrade project will need to be

available at the time the TDT charge for the proposed development is due. For this reason, it may be necessary for payment of the TDT charge to be deferred until occupancy. From the TDT Procedures Manual, I understand that this will be an acceptable payment option for this development proposal.

As the project team prepares its application for re-submittal, we will very much appreciate written confirmation from you that a fee-in-lieu payment in the amount of $477,453 will be acceptable to Washington County in accordance with the attached documents. We will also appreciate confirmation that the TDT calculations and conclusions above are reasonably accurate, recognizing that some minor adjustments to the credit estimates will undoubtedly be necessary as final construction invoices are received.

Sincerely,
KITTELSON & ASSOCIATES, INC.

Wayne Kittelson, P.E.
Principal Engineer

Know what's below. Call before you dig.

SITE KEY NOTES

1. PROPOSED STANDARD CURB AND GUTTER.
2. PROPOSED PLANTER CURB (6" EXPOSURE AND WEEP HOLES).
2A. PROPOSED PLANTER CURB ADJACENT TO RAISED CONCRETE ISLAND (2" EXPOSURE).
3. PROPOSED PRIVATE ROAD ENTRANCE.
4. RAISED CONCRETE ISLAND WITH 1-FT WIDE LOW PROFILE MOUNTABLE CURB AND CUT-THROUGH PEDESTRIAN ROUTE. CURB TO BE PAINTED YELLOW WITH TYPE 1 BI-DIRECTIONAL RAISED PAVEMENT MARKERS.
5. PROPOSED CONCRETE SIDEWALK (5' WIDE).
5A. PROPOSED ACCESSIBLE PEDESTRIAN CONNECTION TO PUBLIC SIDEWALK.
6. PROPOSED SIGN - "DO NOT ENTER" (FOR RIGHT-IN ONLY).
7. PROPOSED POLE MOUNT FACILITY IDENTIFICATION SIGNAGE.
8. PROPOSED MONUMENT SIGN.

N W E S

SCALE: 1" = 20'
0 20 40 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- EX. WETLAND BOUNDARY
- PROPOSED CURB FACE
- PROPOSED CURB BACK
- PROPOSED LIP OF GUTTER
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE SCORING
- PROPOSED BUILDING LINE
- PROPOSED FENCE/VEHICLE BARRIER
- PROPOSED RETAINING WALL
- ADA PARKING SYMBOL
- PROPOSED STRIPING

WEST UNION VILLAGE

NW WEST UNION ROAD (ARTERIAL)

60.0'
30.0'
EXISTING HALF R/W
11.7'
4.7'
12.3'
12.0'
13.0'
12.0'
2.0'
12.0'
7.5'
4.5'
5.0'
3.0'
48.0'
PROPOSED HALF ROW
30.0'
48.0'
PROPOSED 18.0' ROW DEDICATION
10.0' PUE
PR. R/W
PR. PUE
EX. R/W
R3.0'
R15.0'
R20.0'
R50.0'
10.0' PUE
MATCH EXTG. CURB AND GUTTER
MATCH EXTG. SIDEWALK
PROPOSED BUILDING FOOTPRINT
Diesel @ 20k gal
Regular @ 20k gal
Supreme @ 12k gal
MATCH LINE
SEE SHEET C712

NW 185TH AVENUE (ARTERIAL)

BETHANY CREEK WETLAND
FEMA FLOOD HAZARD - ZONE X (APPROX. LOCATION PER GIS)
FEMA FLOOD HAZARD - ZONE AE (APPROX. LOCATION PER GIS)
FEMA FLOODWAY (APPROX. LOCATION PER GIS)
TAXLOT 1N119BC00400
BETHANY CREEK

REGISTERED PROFESSIONAL ENGINEER
85017PE
OREGON
DEC. 17, 2019
JAMES EVERETT JOHNSTON
PRELIMINARY
EXPIRES: 06/30/21

PUBLISH DATE
SEPTEMBER 10, 2020
ISSUED FOR
LAND USE DOCUMENTS
REVISIONS

FRONTAGE IMPROVEMENT PLAN I WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION
3J PROJECT # | 18509
TAX LOT(S) | 1N119BC00(600,500)
LAND USE # | --
DESIGNED BY | JEJ
CHECKED BY | AJM

SHEET NUMBER
C711

P:\18509-WEST UNION CHEVRON\CAD\DGN\SHEETS\C700 FRONTAGE.DWG

Know what's below. Call before you dig.

SITE KEY NOTES

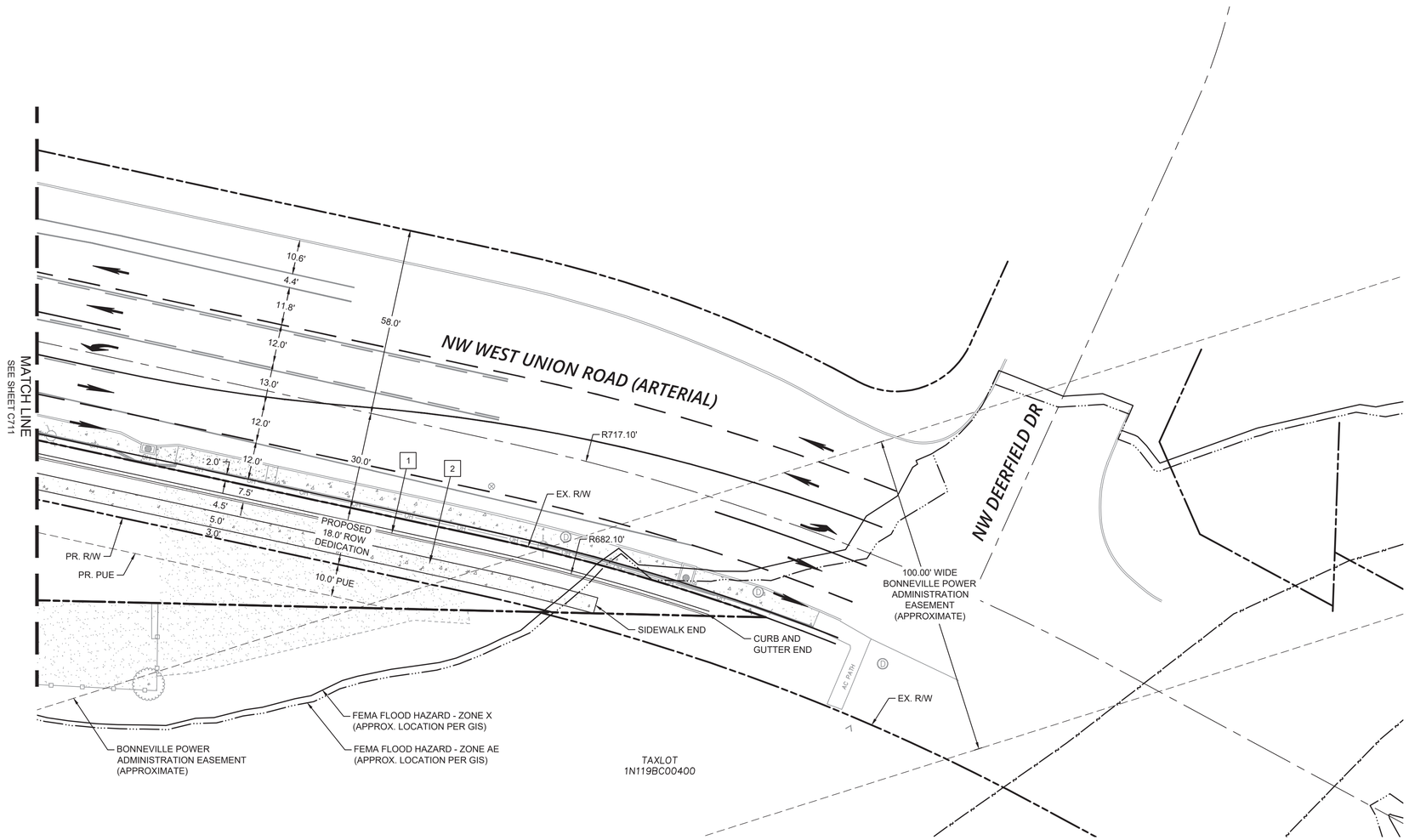
1. PROPOSED STANDARD CURB AND GUTTER.
2. PROPOSED CONCRETE SIDEWALK (5' WIDE).

N
W E
S

SCALE: 1" = 20'
0 20 40 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- PROPOSED CURB FACE
- PROPOSED CURB BACK
- PROPOSED LIP OF GUTTER
- PROPOSED CONCRETE SIDEWALK
- PROPOSED STRIPING



REGISTERED PROFESSIONAL ENGINEER
85017PE
OREGON
DEC. 17, 2019
JAMES EVERETT JOHNSTON
PRELIMINARY
EXPIRES: 06/30/21

PUBLISH DATE
SEPTEMBER 10, 2020

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LAND USE DOCUMENTS

REVISIONS

FRONTAGE IMPROVEMENT PLAN II
WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION

3J PROJECT #	18509
TAX LOT(S)	1N119BC00(600,500)
LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

SHEET NUMBER
C712

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West Union Chevron

Ultimate West Union Improvements

Bob Barman

Engineer's Conceptual Estimate

Prepared By: Fred Wismer, PE		*Date: August 18, 2020*		
Prepared By: Wayne Kittelson, PE				
This Estimate has a Rating of:		**2B**	*(See rating scale guide below.)*	
ITEM	UNIT	TOTAL QUANTITY	UNIT PRICE	TOTAL COST
Mobilization	LS	ALL	$38,000.00	$38,000.00
Traffic Control	LS	ALL	$19,000.00	$19,000.00
Erosion Control	LS	ALL	$6,000.00	$6,000.00
Removal of Structures and Obstructions	LS	ALL	$8,000.00	$8,000.00
Clearing and Grubbing	LS	ALL	$8,000.00	$8,000.00
General Earthworks	CY	1,420	$25.00	$35,500.00
Asphalt Roadway - Full Depth	SF	15,045	$6.70	$100,801.50
Subgrade Geotextile	SY	1,672	$1.00	$1,672.00
Concrete Curbs - Standard Curb & Gutter	LF	784	$25.70	$20,148.80
Private Road Approach	SF	939	$16.30	$15,305.70
Concrete Walks	SF	3,214	$7.20	$23,140.80
Detectable Warnings	EA	6	$500.00	$3,000.00
Extra for Pedestrian Ramps	EA	6	$750.00	$4,500.00
Storm Water System & Water Quality Treatment, Complete	LS	ALL	$62,000.00	$62,000.00
Permanent Landscaping	SF	3,074	$3.70	$11,373.80
Pavement Markings, Complete	LS	ALL	$5,000.00	$5,000.00
Signage, Complete	LS	ALL	$4,000.00	$4,000.00
Illumination System, Complete	LS	ALL	$28,600.00	$28,600.00
Traffic Signal Modifications, Complete	LS	ALL	$40,000.00	$40,000.00
TOTAL CONSTRUCTION COST			$	434,043
10% Contingency			$	43,410
TOTAL ESTIMATED PROJECT COST			$	477,453

Assumptions:

- The traffic signal modifications only include adjustments to pedestrian push button poles and signal head lane realignments.
- Private utilities will be required to relocate at their own costs.

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 50%.

Wayne Kittelson

From: Sean Arnold <sean.arnold@pgn.com>
Sent: Wednesday, August 19, 2020 12:42 PM
To: Aaron Murphy; Bob Barman
Cc: Danny Draper; Erick S. Peterson; Wayne Kittelson; Diego Arguea
Subject: RE: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

Hello Aaron,

The minimum working clearance is 10' for people not certified as linemen. Having the edge of a building/canopy right at 10' would make construction complicated as no construction workers could work on that nearest edge without encroaching on the restricted zone.

Regards,

Sean Arnold
Associate Service and Design Project Manager
503-672-5479
sean.arnold@pgn.com

From: Aaron Murphy <aaron.murphy@3j-consulting.com>
Sent: Wednesday, August 19, 2020 12:21 PM
To: Sean Arnold <sean.arnold@pgn.com>; Bob Barman <bobbarmanaz717@gmail.com>
Cc: Danny Draper <draper99@hotmail.com>; Erick S. Peterson <epeterson@pmdginc.com>; Wayne Kittelson <wkittelson@kittelson.com>; Diego Arguea <darguea@kittelson.com>
Subject: RE: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

*****Please take care when opening links, attachments or responding to this email as it originated outside of PGE.*****

Sean:

Can you confirm the minimum clearance between the proposes canopy and the overhead lines?

My understanding is 10' from the neutral to any proposed structures. Is this a correct assumption?

Best Regards,

Aaron Murphy, P.E. | Senior Project Manager | **3J Consulting**
O: 503.946.9365 x.218 | C: 720.220.3915

From: Aaron Murphy
Sent: Wednesday, August 19, 2020 10:39 AM
To: Sean Arnold <sean.arnold@pgn.com>; Bob Barman <bobbarmanaz717@gmail.com>
Cc: Danny Draper <draper99@hotmail.com>; Erick S. Peterson <epeterson@pmdginc.com>; Andrew Tull Emails <andrew.tull@3j-consulting.com>; Wayne Kittelson <wkittelson@kittelson.com>; Diego Arguea

<darguea@kittelson.com>
Subject: RE: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

Sean:

The following link may be helpful, it contains images taken with our drone last year. https://files.3j-consulting.com:4433/?u=Lb8r&p=nmW0 [files.3j-consulting.com]

Best Regards,

Aaron Murphy, P.E. | Senior Project Manager | **3J Consulting**
O: 503.946.9365 x.218 | C: 720.220.3915

From: Aaron Murphy
Sent: Wednesday, August 19, 2020 10:20 AM
To: Sean Arnold <sean.arnold@pgn.com>; Bob Barman <bobbarmanaz717@gmail.com>
Cc: Danny Draper <draper99@hotmail.com>; Erick S. Peterson <epeterson@pmdginc.com>; Andrew Tull Emails <andrew.tull@3j-consulting.com>; Wayne Kittelson <wkittelson@kittelson.com>; Diego Arguea <darguea@kittelson.com>
Subject: RE: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

Thanks Sean, this is very helpful.

We'll be able to report load etc. for gas station once we get a little further along with the design.

I'll keep you posted.

Best Regards,

Aaron Murphy, P.E. | Senior Project Manager | **3J Consulting**
O: 503.946.9365 x.218 | C: 720.220.3915

From: Sean Arnold <sean.arnold@pgn.com>
Sent: Wednesday, August 19, 2020 10:17 AM
To: Aaron Murphy <aaron.murphy@3j-consulting.com>; Bob Barman <bobbarmanaz717@gmail.com>
Cc: Danny Draper <draper99@hotmail.com>; Erick S. Peterson <epeterson@pmdginc.com>; Andrew Tull Emails <andrew.tull@3j-consulting.com>; Wayne Kittelson <wkittelson@kittelson.com>; Diego Arguea <darguea@kittelson.com>
Subject: RE: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

Hello Aaron,

I believe that Comcast and Ziply (Frontier) are on the poles along the West Union frontage. I would need to make a trip out to be sure though. I'll most likely be in the area later this week or early next week and report back.

Were you able to get together the expected load info for the gas station?

Regards,

Sean Arnold
Associate Service and Design Project Manager

503-672-5479
sean.arnold@pgn.com

From: Aaron Murphy <aaron.murphy@3j-consulting.com>
Sent: Wednesday, August 19, 2020 9:50 AM
To: Sean Arnold <sean.arnold@pgn.com>; Bob Barman <bobbarmanaz717@gmail.com>
Cc: Danny Draper <draper99@hotmail.com>; Erick S. Peterson <epeterson@pmdginc.com>; Andrew Tull Emails <andrew.tull@3j-consulting.com>; Wayne Kittelson <wkittelson@kittelson.com>; Diego Arguea <darguea@kittelson.com>
Subject: RE: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

*****Please take care when opening links, attachments or responding to this email as it originated outside of PGE.*****

Good morning Sean,

Would you have any idea what other services share the PGE along this frontage?

Looking at Google Street View, it would appear Comcast and possibly Centurylink could be on the poles, too?

Best Regards,

Aaron Murphy, P.E. | Senior Project Manager | **3J Consulting**
O: 503.946.9365 x.218 | C: 720.220.3915

From: Aaron Murphy
Sent: Wednesday, July 22, 2020 9:41 AM
To: Sean Arnold <sean.arnold@pgn.com>; Bob Barman <bobbarmanaz717@gmail.com>
Cc: Danny Draper <draper99@hotmail.com>; Erick S. Peterson <epeterson@pmdginc.com>; Andrew Tull <andrew.tull@3j-consulting.com>; Wayne Kittelson <wkittelson@kittelson.com>; Diego Arguea <darguea@kittelson.com>
Subject: RE: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

Good morning Sean,

Thank you for your swift response.

We'll be sure to amend the fuel tank locations in accordance with PGE's separation rule and send back an updated site plan when complete.

We'll follow up with electrical demand information soon.

Best Regards,

Aaron Murphy, P.E. | Senior Project Manager | **3J Consulting**
O: 503.946.9365 x.218 | C: 720.220.3915

From: Sean Arnold <sean.arnold@pgn.com>
Sent: Wednesday, July 22, 2020 9:00 AM
To: Bob Barman <bobbarmanaz717@gmail.com>; Aaron Murphy <aaron.murphy@3j-consulting.com>
Cc: Danny Draper <draper99@hotmail.com>; Erick S. Peterson <epeterson@pmdginc.com>; Andrew Tull

<andrew.tull@3j-consulting.com>; Wayne Kittelson <wkittelson@kittelson.com>; Diego Arguea <darguea@kittelson.com>
Subject: RE: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

Good morning all,

I have some clarification regarding the width of PUE need to underground our distribution lines. A 10' PUE would be of sufficient size. The widest vault that we utilize to run feeder underground is just shy of 7' wide.

I do see an issue with the location of the underground gasoline and diesel tanks in the site plan. We require that there be a minimum of 10' clearance between our underground conduit and any buried fuel tank as per section 5.5 in our Electric Services Requirements book.

If I can answer any additional immediate questions, please let me know. Otherwise, I will be in contact with you when I begin the design for the new service.

Thank you,

Sean Arnold
Service and Design Project Manager, BLC
503-672-5479
sean.arnold@pgn.com

From: Bob Barman <bobbarmanaz717@gmail.com>
Sent: Tuesday, July 21, 2020 2:57 PM
To: Aaron Murphy <aaron.murphy@3j-consulting.com>
Cc: Sean Arnold <sean.arnold@pgn.com>; Danny Draper <draper99@hotmail.com>; Erick S. Peterson <epeterson@pmdginc.com>; Andrew Tull <andrew.tull@3j-consulting.com>; Wayne Kittelson <wkittelson@kittelson.com>; Diego Arguea <darguea@kittelson.com>
Subject: Re: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

*****Please take care when opening links, attachments or responding to this email as it originated outside of PGE.*****

Hi Sean: We are looking at building the facility in early 2021. If you have any questions about the footprint-design-power usage of the facility please feel free to reach out to our architect Erick Peterson. Erick will be able to answer your questions or get answers to your questions.
I appreciate you looking into this issue. If you have any questions directly for me I can be reached at this email or on my cell at 503-720-2917. Sincerely Bob Barman

Sent from my iPhone

> On Jul 21, 2020, at 10:39 AM, Aaron Murphy <aaron.murphy@3j-consulting.com> wrote:
>
> Hi Sean,
>
> Thank you for your response.

The PUE width is of most importance at this time as we finalize site plan dimensions. We want to be sure that any undergrounding of PGE infrastructure in the future will be considered and implemented in the ultimate site plan.

The expected construction schedule is a little unknown at the moment but developer/owner, Bob Barman can speak better to this.

I've included the project architect, Erick Peterson on this email. He may be able to shed some light on the electrical demand but I know that it will be low since Bob is incorporating renewable energy options where possible.

We would really appreciate you getting back to our team at your earliest convenience on the PUE width so we can incorporate into our plans.

Best Regards,

Aaron Murphy, P.E. | Senior Project Manager | **3J Consulting**
O: 503.946.9365 x.218 | C: 720.220.3915

From: Sean Arnold <sean.arnold@pgn.com>
Sent: Thursday, July 16, 2020 2:40 PM
To: Aaron Murphy <aaron.murphy@3j-consulting.com>
Cc: bobbarmanaz717@gmail.com
Subject: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

Good afternoon,

My name is Sean Arnold and I will be the Project Manager helping with your service request. I should have a chance early next week to visit the site and get an idea of the scope of the project based upon PGE's existing facilities in the area.

A quick question and request:

What is the timeline for this construction project?
Could you please forward more details regarding expected load, and HVAC and electric motor size being installed in the gas station?

As for your questions; looking at your site plan there will be sufficient clearance between the building and canopy and our overhead facilities. I am reaching out to a colleague about PUE size needed for future undergrounding and will get back to you as soon as I have an answer.

I've attached two documents that help describe PGE's new service process. Please feel free to contact me with any additional questions or concerns. I look forward to working with you on this project.

Regards,

<image001.png>

Sean Arnold
Service and Design Project Manager, BLC
503-672-5479
sean.arnold@pgn.com

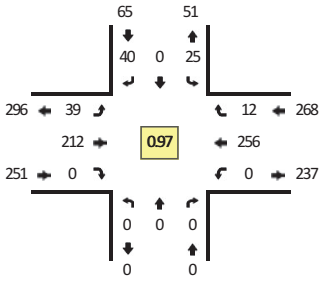
Type of peak hour being reported: Intersection Peak

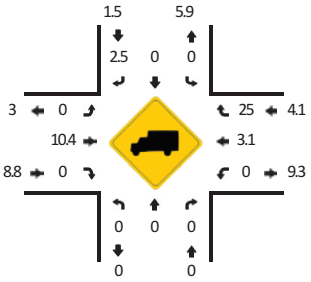
Method for determining peak hour: Total Entering Volume

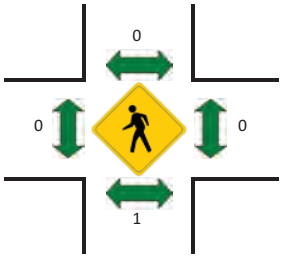
LOCATION: Shopping Center Dwy -- NW West Union Rd
CITY/STATE: Rockcreek, OR

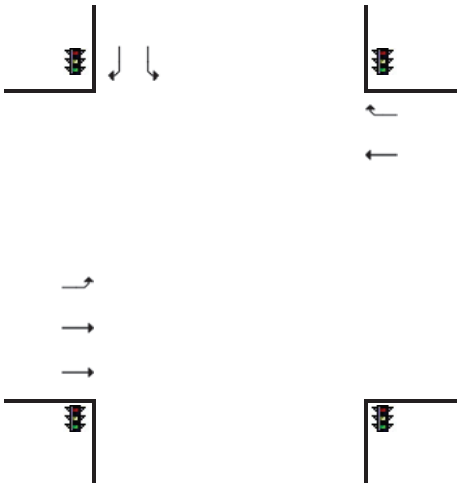
QC JOB #: 15299903
DATE: Tue, Oct 13 2020

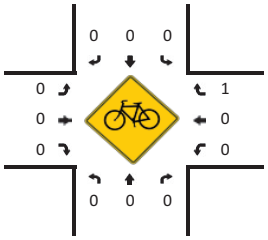
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

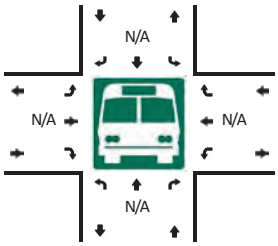


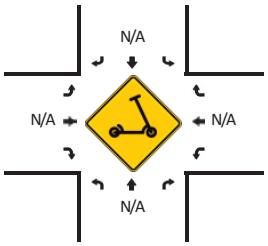












5-Min Count Period Beginning At	Shopping Center Dwy (Northbound)				Shopping Center Dwy (Southbound)				NW West Union Rd (Eastbound)				NW West Union Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	2	0	5	0	2	13	0	0	0	16	1	0	39	
7:05 AM	0	0	0	0	2	0	2	0	2	5	0	0	0	20	0	0	31	
7:10 AM	0	0	0	0	1	0	1	0	0	3	0	0	0	19	2	0	26	
7:15 AM	0	0	0	0	1	0	3	0	3	11	0	0	0	18	0	0	36	
7:20 AM	0	0	0	0	1	0	3	0	0	7	0	0	0	19	2	0	32	
7:25 AM	0	0	0	0	0	0	6	0	3	7	0	0	0	14	1	0	31	
7:30 AM	0	0	0	0	2	0	4	0	3	14	0	0	0	17	1	0	41	
7:35 AM	0	0	0	0	0	0	1	0	4	15	0	0	0	20	0	0	40	
7:40 AM	0	0	0	0	1	0	2	0	1	17	0	0	0	23	3	0	47	
7:45 AM	0	0	0	0	2	0	2	0	5	24	0	0	0	16	0	0	49	
7:50 AM	0	0	0	0	3	0	2	0	5	17	0	0	0	24	1	0	52	
7:55 AM	0	0	0	0	2	0	7	0	2	18	0	0	0	20	1	0	50	474
8:00 AM	0	0	0	0	2	0	4	0	6	19	0	0	0	16	0	0	47	482
8:05 AM	0	0	0	0	5	0	7	0	1	16	0	0	0	19	2	0	50	501
8:10 AM	0	0	0	0	3	0	2	0	2	9	0	0	0	23	1	0	40	515
8:15 AM	0	0	0	0	2	0	5	0	2	24	0	0	0	25	1	0	59	538
8:20 AM	0	0	0	0	2	0	2	0	3	16	0	0	0	18	1	0	42	548
8:25 AM	0	0	0	0	0	0	3	0	7	15	0	0	0	22	3	0	50	567
8:30 AM	0	0	0	0	2	0	2	0	0	17	0	0	0	23	0	0	44	570
8:35 AM	0	0	0	0	0	0	0	0	2	17	0	0	0	24	0	0	43	573
8:40 AM	0	0	0	0	2	0	4	0	4	20	0	0	0	26	2	0	58	584
8:45 AM	0	0	0	0	3	0	3	0	2	12	0	0	0	20	1	0	41	576
8:50 AM	0	0	0	0	1	0	4	0	3	20	0	0	0	23	3	0	54	578
8:55 AM	0	0	0	0	1	0	5	0	0	17	0	0	0	22	0	0	45	573

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	28	0	44	0	48	236	0	0	0	240	8	0	604
Heavy Trucks	0	0	0		0	0	0		0	20	0		0	8	0		28
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	4		4
Scooters																	

Comments:

Report generated on 10/19/2020 1:24 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

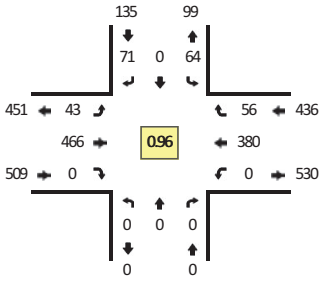
Type of peak hour being reported: Intersection Peak

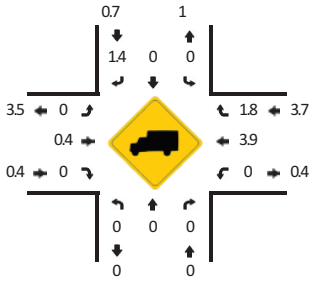
Method for determining peak hour: Total Entering Volume

LOCATION: Shopping Center Dwy -- NW West Union Rd
CITY/STATE: Rockcreek, OR

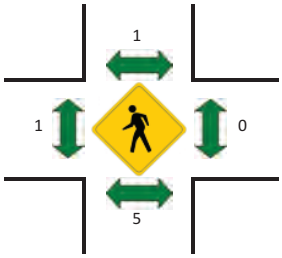
QC JOB #: 15299904
DATE: Tue, Oct 13 2020

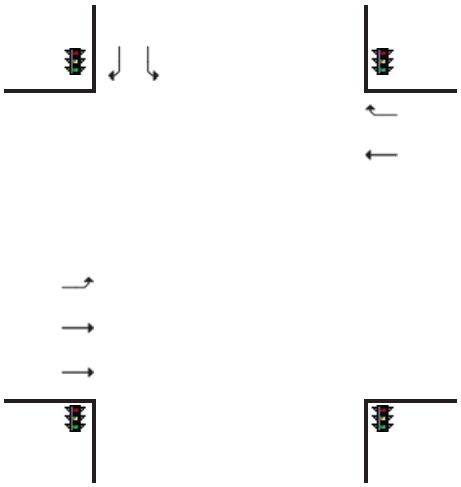
Peak-Hour: 4:10 PM -- 5:10 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

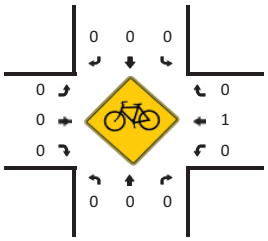


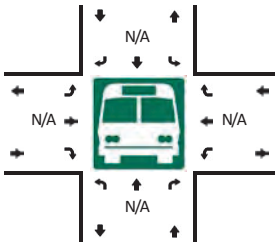


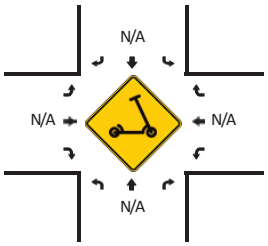
Quality Counts
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	Shopping Center Dwy (Northbound)				Shopping Center Dwy (Southbound)				NW West Union Rd (Eastbound)				NW West Union Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	3	0	6	0	3	25	0	0	0	25	5	0	67	
4:05 PM	0	0	0	0	3	0	3	0	3	22	0	0	0	25	6	0	62	
4:10 PM	0	0	0	0	6	0	7	0	0	37	0	0	0	41	4	0	95	
4:15 PM	0	0	0	0	8	0	3	0	1	41	0	0	0	29	1	0	83	
4:20 PM	0	0	0	0	4	0	5	0	7	39	0	0	0	40	4	0	99	
4:25 PM	0	0	0	0	4	0	7	0	5	33	0	0	0	32	4	0	85	
4:30 PM	0	0	0	0	5	0	6	0	4	50	0	0	0	29	3	0	97	
4:35 PM	0	0	0	0	3	0	6	0	3	36	0	0	0	27	3	0	78	
4:40 PM	0	0	0	0	4	0	4	0	2	37	0	0	0	36	3	0	86	
4:45 PM	0	0	0	0	6	0	11	0	3	36	0	0	0	31	5	0	92	
4:50 PM	0	0	0	0	9	0	3	0	7	48	0	0	0	29	8	0	104	
4:55 PM	0	0	0	0	2	0	7	0	6	30	0	0	0	24	5	0	74	1022
5:00 PM	0	0	0	0	8	0	5	0	1	43	0	0	0	28	6	0	91	1046
5:05 PM	0	0	0	0	5	0	7	0	4	36	0	0	0	34	10	0	96	1080
5:10 PM	0	0	0	0	4	0	9	0	3	40	0	0	0	32	4	0	92	1077
5:15 PM	0	0	0	0	6	0	9	0	5	25	0	0	0	34	4	0	83	1077
5:20 PM	0	0	0	0	5	0	7	0	3	39	0	0	0	33	6	0	93	1071
5:25 PM	0	0	0	0	9	0	7	0	2	39	0	0	0	20	10	0	87	1073
5:30 PM	0	0	0	0	7	0	10	0	2	32	0	0	0	30	5	0	86	1062
5:35 PM	0	0	0	0	4	0	7	0	8	45	0	0	0	21	3	0	88	1072
5:40 PM	0	0	0	0	7	0	6	0	4	26	0	0	0	29	6	0	78	1064
5:45 PM	0	0	0	0	2	0	7	0	5	30	0	0	0	29	6	0	79	1051
5:50 PM	0	0	0	0	6	0	7	0	2	30	0	0	0	26	4	0	75	1022
5:55 PM	0	0	0	0	7	0	10	0	3	40	0	0	0	21	1	0	82	1030

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	76	0	72	0	48	484	0	0	0	384	64	0	1128
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	12	4		16
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/19/2020 1:24 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

MEMORANDUM

Date:	February 16, 2022	Project #: 21539.0
To:	Jinde Zhu, PE Washington County DLUT – Traffic Engineering 1400 SW Walnut Street MS17 Hillsboro, OR 97213	
From:	Wayne Kittelson	
Project:	West Union / 185th Property Development	
Subject:	Traffic Operations Assessment	

Robert Barman is proposing to redevelop the property located on the south-east corner of NW West Union Road and NW 185th Avenue, in Hillsboro, Washington County. This proposal is referenced throughout the remainder of this letter as "the current proposal". Under the current proposal, the site will be redeveloped into a gas station with eight fueling positions, a convenience store with a 3,010 SF footprint, a mezzanine area that will house compressors and equipment to support solar panels, and a fast-food component consisting of a 500 SF footprint and a drive-through window[1]. No land use zone change is required. Figure 1 provides a plan view of the design elements associated with the current proposal.

Mr. Barman has previously applied for redevelopment of this same property into a gas station with 12 fueling positions and a convenience store consisting of approximately 4,800 SF. This previously submitted proposal is referenced throughout the remainder of this letter as "the previous proposal". All access locations, configuration and design elements associated with the current proposal are identical to those contained in the previous proposal. The application associated with the previous proposal is still active and is pending a Hearing before the Washington County Hearings Officer under Case File L2000057-SU/D(C)/AMP/V/M. A Traffic Operations Assessment letter from Kittelson & Associates, Inc. dated October 18, 2019 was included in the previous proposal's application and is also part of the Staff Report contained within the Case File. Washington County's review findings associated with this Traffic Operations Assessment letter are documented in a May 4, 2020 letter to Paul Schafer from Jinde Zhu (Traffic Analysis File #1573, C/File) and included the following recommendations:

[1] Because the mezzanine area will not be accessible to the public and will be used only to house electrical-mechanical equipment such as support for rooftop solar panels and geothermal heating/cooling devices, it is not expected to have any significant trip generating potential and therefore is not included in the trip generation estimates that follow.

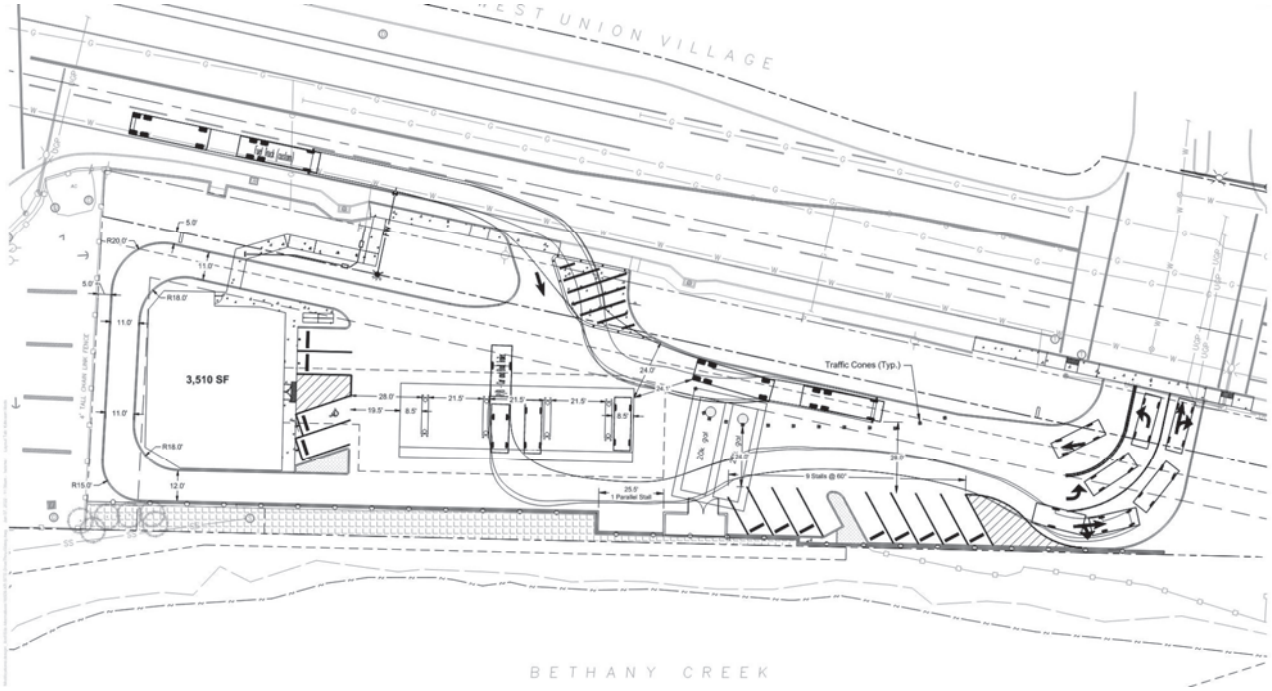


Figure 1. Current proposal site plan.

- The proposed right-in access and the new south leg at the existing West Union Road/Albertsons entrance signal can be approved subject to the following traffic conditions:
    - Provide adequate illumination at the proposed right-in access on NW West Union Road
    - Construct the right-in access to restrict the access as right-in only.
    - Construct the south leg of the existing West Union Road/Albertsons signal with two outbound lanes (one left turn lane and one shared through/right lane) and one inbound lane. Coordinate with Washington County, design and construct the new added traffic signal for the proposed access and modify the existing traffic signal as needed.
    - Install protected-plus-permitted left turn phasing capacity for the EB-to-NB left turn movement at the West Union Village Drive/West Union Road intersection prior to the issuance of certificate of the building occupancy.

The purpose of the new traffic operations assessment contained in this memorandum is to document that the current proposal will generate fewer driveway trips than were projected under the previous proposal. When combined with the fact that there are no differences between the current proposal and the previous proposal with respect to site access elements, it is concluded that Washington County's Assessment Letter dated May 4, 2020 remains valid and without need for change.

TRAFFIC OPERATIONS ASSESSMENT

A trip generation estimate was prepared for the previous proposal based on ITE trip generation rates provided in the 10th Edition of the *Trip Generation Manual* (Reference 1). Table 1 summarizes the driveway trip generation estimate.

Table 1: Trip Generation (Previous Proposal, 10th Edition *Trip Generation Manual*)

Land Use	ITE Code	Size (Fueling Positions)	Weekday Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Gas Station with Convenience Store	945	12	2 464	150	76	74	168	86	82

Currently, the most recent available edition of *Trip Generation Manual* is the 11th Edition, which was published by ITE in October 2021 (Reference 2). An estimate of the driveway trips generated by the

previous proposal and based on data contained in the 11th Edition *Trip Generation Manual* is presented in Table 2[2].

Table 2: Trip Generation (Previous Proposal, 11th Edition *Trip Generation Manual*)

Land Use	ITE Code	Size (Fueling Positions)	Size (Gross Sq. Ft)	Weekday Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
					Total	In	Out	Total	In	Out
Gas Station with Convenience Store	945	12	4,800	3,224	298	149	149	267	133	134

An estimate of the driveway trips expected to be generated by the current proposal based on data contained in the 11th Edition *Trip Generation Manual* is presented in Table 3.

Table 3: Trip Generation (Current Proposal, 11th Edition *Trip Generation Manual*)

Land Use	ITE Code	Size (Fueling Positions)	Size (Gross Sq. Ft)	Weekday Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
					Total	In	Out	Total	In	Out
Gas Station with Convenience Store	945	8	3,010	2,000	126	63	63	146	73	73
Fast Food Restaurant with Drive-Through Window	934	-	500	234	22	11	11	17	9	8
Total Driveway Trips				2,234	148	74	74	163	82	81

Comparison of the estimated total driveway trips shown in Tables 1, 2, and 3 reveals that the current proposal is expected to generate fewer driveway trips than the previous proposal during all investigated time periods, including weekday daily, AM peak hour, and PM peak hour conditions. This finding remains unchanged whether the 10th Edition or the 11th Edition *Trip Generation Manual* is used to estimate driveway trips for the previous proposal.

FINDINGS AND CONCLUSIONS

Based on the assessment provided herein, the findings and conclusions are summarized below.

[2] Multiple subcategories were added to ITE's Land Use Code 945 in the 11th Edition to allow for multi-variable evaluations. Sites are categorized according to both number of fueling positions and gross square feet of convenience store floor area. As a result, two estimates of site-generated trips are produced, both of which can be considered when determining a site trip generation estimate. In this analysis, the average of the two estimates is the best available estimate and this average is reported in both Table 2 and Table 3 for Land Use Code 945.

- Driveway trips generated by the current proposal are expected to be below the number of driveway trips generated by the previous proposal during the weekday daily, AM peak hour, and PM peak hour time periods.
- The location, configuration, and design details associated with all site access points will remain unchanged between the previous proposal and the current proposal.
- Washington County's Assessment Letter dated May 4, 2020 remains valid and without need for change with respect to its applicability to the current proposal.

We trust this memorandum adequately summarizes the traffic operational analyses for the current proposal. Please contact us if you have any questions or comments.

Sincerely,
KITTELSON & ASSOCIATE, INC.

Wayne Kittelson, PE
Principal

REFERENCES

1. Institute of Transportation Engineers. *Trip Generation*, 10th Edition. 2017.
2. Institute of Transportation Engineers. *Trip Generation,* 11th Edition. 2021

KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

MEMORANDUM

Date:	August 8, 2020	Project #: 21539.0
To:	Michael C. Robinson Schwabe Williamson & Wyatt 1211 SW Fifth Avenue, STE 1900 Portland, OR 97204	
From:	Wayne Kittelson	
Project:	West Union Gas Station	
Subject:	Supplemental Trip Generation Information	

This memorandum presents an in-depth analysis of the net new average weekday vehicle trips expected to be generated by the proposed West Union Gas station located on the south-east corner of NW West Union Road and NW 185th Avenue in Washington County, OR. Based on the analysis details herein, the proposed development is estimated to add an average of 403 weekday vehicle trips to the segment of NW West Union Road that is adjacent to the site. This increase represents an increase of less than three percent to existing weekday traffic volumes. This conclusion is different from that reported in our Traffic Operations Assessment dated October 18, 2019, and the difference reflects the more accurate characterization we have developed since last October of trip characteristics associated with the site's previous use – Mad Greek Deli Restaurant. This memorandum also uses recent empirical data collected at similar sites in Oregon and the Pacific Northwest to confirm the conservatively high nature of the trip generation characteristics estimated for the proposed new development.

Mad Greek Deli Restaurant Operating Characteristics

To further refine and more accurately represent the operating characteristics of the Mad Greek Deli Restaurant (prior to its closure in 2015), we interviewed Mr. Stafanos Vertopoulos, the brother-in-law of the now-deceased restaurant's owner-operator, and was a frequent visitor, customer, and observer of the restaurant's operations. Mr. Vertopoulos also served as the Trustee of the restaurant owner-operator's estate and was the legal custodian responsible for the sale of the property to the applicant.

Mr. Vertopoulos confirmed that the restaurant was generally open approximately 11 hours per day, typically from 10:00 AM to 9:00 PM. For the first seven or eight hours of each day (that is, between about 10:00 am and 5:00 – 6:00 pm), the restaurant operated according to what the Institute of Transportation Engineers (ITE) *Trip Generation Manual (10th Edition)* would characterize as a "Fast Casual" restaurant. This characterization is a result of the following characteristics:

- **No wait staff or table service.** Orders were made and paid for first before food was prepared.

- **Freshly-made food.** The food was made at the time the order was placed as opposed to having been pre-assembled, with higher-quality ingredients and more unique made-to-order menu items.
- **Priced around $10 per typical meal.** This compares with $5.00 for a fast-food meal and $15 for a high-turnover sit-down restaurant.
- **An inviting ambience** characterized by a lot of activity and chatter.
- **Restaurant staff were generally wage workers**, although some customers did also tip.

Mr. Vertopoulos also reported that, during the evening hours, the restaurant operated differently and in a way that ITE's *Trip Generation (10th Edition)* Manual would characterize as "High-Turnover Sit-Down" restaurant:

- **Wait staff and table service was provided.** Orders were made from a menu and payment was made after the meal had been served, with tips being customary.
- **No reservations** were made – customers were seated as they arrived.
- **$15-$20 for a typical meal.** Alcoholic beverages were also available.
- **Duration of stay was typically between 1 and 1 ½ hours.**

Based on the restaurant operations information provided by Mr. Vertopoulos, we conclude that the most accurate ITE representation of Mad Greek Deli Restaurant per ITE's *Trip Generation* Land Use Categories is a "Fast Casual" restaurant during the daytime hours (i.e., about two-thirds of its operating hours) and a "High-Turnover Sit-Down" restaurant during the evening hours (i.e., about one-third of its operating hours).

Empirical Confirmation of the ITE *TRIP GENERATION Estimates Used for the Proposed Development*

The October 2019 Traffic Operations Assessment Report used Land Use Code 945 (Gas Station with Convenience Store) from the ITE *Trip Generation Manual* with the number of fueling positions as the independent variable to estimate the proposed development's likely trip generating characteristics. Washington County staff have suggested that it might have been more appropriate to apply Land Use Category Code 960 (Super Convenience Market/Gas Station) instead. While either approach is reasonable, ITE's *Trip Generation Manual* also states that, where possible, the most accurate method for estimating the trip generating characteristics of a particular land use is through empirical data collected at similar sites within the area.

The applicant operates numerous Chevron gas stations with convenience stores throughout the region. Annual (2019) sales volume information was provided by the applicant for the applicant's highest-performing Chevron "gas station with convenience store" facility in the area, along with the following additional information:

- Of all the gasoline brands, Chevron is the number one marketer with respect to sales volume.

- The data provided is for the Chevron "gas station with convenience store" facility located at the Woodburn Interchange on I-5 (hereafter referred to as the "Woodburn Chevron").
    - In 2019 this facility ranked #2 in gasoline sales volume for all of the Chevron facilities located in the Pacific Northwest.
    - The number of fueling stations provided at this gas station (12) is identical to the number in the proposed development
    - The size of the convenience store at this gas station (approximately 4,500 square feet) is nearly the same size as the convenience store in the proposed development.
    - The average annual daily traffic (AADT) on I-5 in the vicinity of the gas station was 94,100 vehicles per day (vpd) in 2018, and the AADT on Highway 214 was 22,200 vpd. Both traffic counts are significantly higher than the existing average weekday traffic volume on West Union Road in the vicinity of the proposed development (approximately 15,000 vpd).
    - Only about 25% of the transactions at this facility do not include the purchase of gasoline.
    - The average amount of gas sold per transaction is ten (10) gallons.
    - In 2019 this facility sold 3,590,287 gallons of fuel.
    - Weekend activity Is generally higher than weekday activity, meaning that an average daily calculation based on annual sales volume will overestimate the sales volume on an average weekday.

On this basis, the average annual weekday trips generated by the Chevron station at the I-5/Woodburn interchange can be calculated as follows:

*{[(3,590,287 gal/yr) * (2 trip ends/customer transaction)] /[(365 days/yr) * (10 gal/transaction)]} * 1.25 =* ***2,459 avg wkday trips***

The October 2019 Traffic Operations Assessment Report estimated on the basis of Land Use Code 945 that the proposed development will generate 2,464 average weekday trips, which compares very favorably to the calculation result given above. It is important to note that the Woodburn Chevron station is nearly identical to the proposed development in all respects except the volume of traffic on the adjacent roadways, which is nearly eight times higher than the volume on West Union Road. Because of this significant exposure discrepancy, it is concluded that the Traffic Operations Assessment Report's estimate of 2,464 average weekday trips is a conservatively high estimate.

Average Daily Weekday Net Trip Generation

The following table provides details supporting the number of net average daily weekday trips expected to be generated by the proposed development.

Land Use	ITE Land Use Code	Size	Weekday Daily Trips	Pass-by Trips	Net Total Weekday Daily Trips
Gas station with Convenience Store	945	12 Fueling Positions	2,464	-1,380	1,084
Mad Greek Deli Restaurant – Fast Casual Operation (2/3)	930	4,828 Square Feet	1,195[1]	-514[1]	681
Mad Greek Deli Restaurant – High Turnover Sit-Down (1/3)	932				
Net New Weekday Daily Trips (Proposed Gas Station minus Mad Greek Deli)					**403**

[1] Represents a weighted average trip generation of 2/3 Fast Casual Restaurant and 1/3 High Turnover Sit Down Restaurant.

The 403 net new average weekday daily trips expected to result from the proposed development are reflective of the net new trips generated by the proposed development (1,084) less the net new trips that were being generated by the Mad Greek Deli Restaurant (681) when it was operating on the same site.

This result is higher than what was reported in the October 2019 Traffic Operations Assessment; however, we find it to be a more accurate expectation because it relies on better background information than was available at the time the October 2019 report was prepared. The higher estimate that results from this supplemental analysis is not a substantial enough change to affect the findings and conclusions of the October 2019 Traffic Operations Assessment. It may also be important to recognize that the 403 net new weekday daily trip-ends represent a less than three percent increase to the existing traffic volume on West Union Road immediately adjacent to the development site.

KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

MEMORANDUM

Date:	February 16, 2022	Project #: 21539.0
To:	Jinde Zhu, PE Washington County DLUT – Traffic Engineering 1400 SW Walnut Street MS17 Hillsboro, OR 97213	
From:	Wayne Kittelson	
Project:	West Union / 185th Property Development	
Subject:	Traffic Operations Assessment	

Robert Barman is proposing to redevelop the property located on the south-east corner of NW West Union Road and NW 185th Avenue, in Hillsboro, Washington County. This proposal is referenced throughout the remainder of this letter as "the current proposal". Under the current proposal, the site will be redeveloped into a gas station with eight fueling positions, a convenience store with a 3,010 SF footprint, a mezzanine area that will house compressors and equipment to support solar panels, and a fast-food component consisting of a 500 SF footprint and a drive-through window[1]. No land use zone change is required. Figure 1 provides a plan view of the design elements associated with the current proposal.

Mr. Barman has previously applied for redevelopment of this same property into a gas station with 12 fueling positions and a convenience store consisting of approximately 4,800 SF. This previously submitted proposal is referenced throughout the remainder of this letter as "the previous proposal". All access locations, configuration and design elements associated with the current proposal are identical to those contained in the previous proposal. The application associated with the previous proposal is still active and is pending a Hearing before the Washington County Hearings Officer under Case File L2000057-SU/D(C)/AMP/V/M. A Traffic Operations Assessment letter from Kittelson & Associates, Inc. dated October 18, 2019 was included in the previous proposal's application and is also part of the Staff Report contained within the Case File. Washington County's review findings associated with this Traffic Operations Assessment letter are documented in a May 4, 2020 letter to Paul Schafer from Jinde Zhu (Traffic Analysis File #1573, C/File) and included the following recommendations:

[1] Because the mezzanine area will not be accessible to the public and will be used only to house electrical-mechanical equipment such as support for rooftop solar panels and geothermal heating/cooling devices, it is not expected to have any significant trip generating potential and therefore is not included in the trip generation estimates that follow.

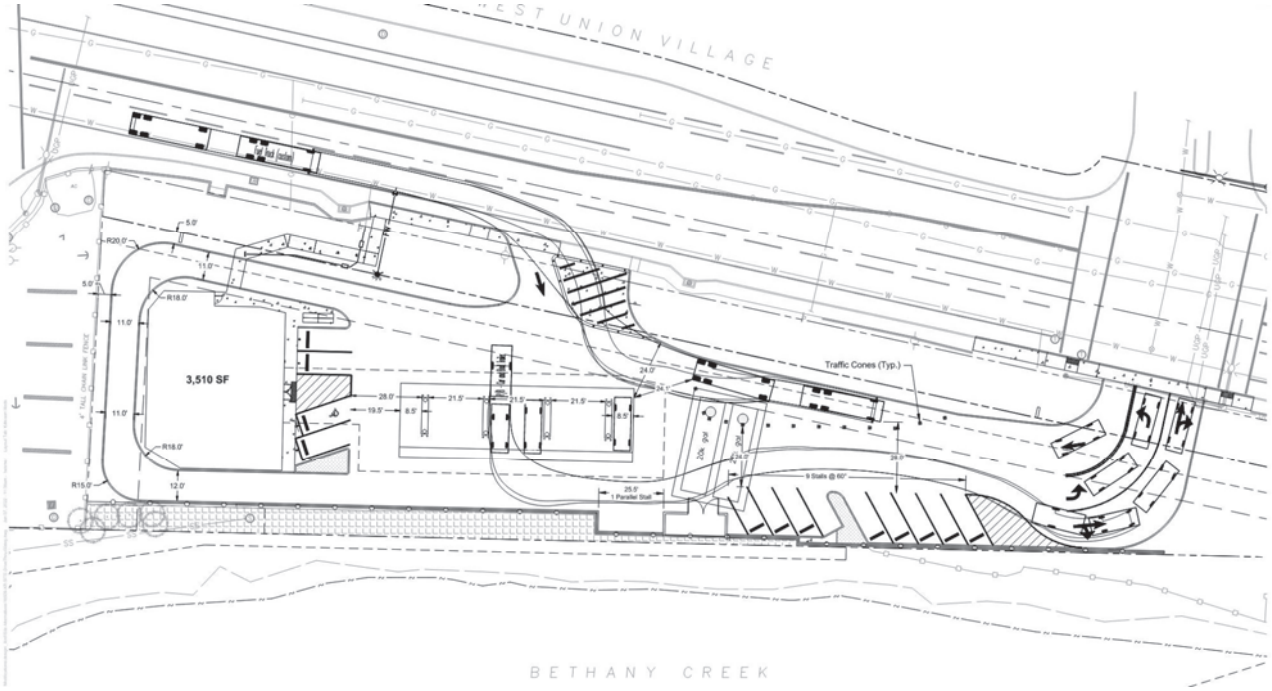


Figure 1. Current proposal site plan.

- The proposed right-in access and the new south leg at the existing West Union Road/Albertsons entrance signal can be approved subject to the following traffic conditions:
    - Provide adequate illumination at the proposed right-in access on NW West Union Road
    - Construct the right-in access to restrict the access as right-in only.
    - Construct the south leg of the existing West Union Road/Albertsons signal with two outbound lanes (one left turn lane and one shared through/right lane) and one inbound lane. Coordinate with Washington County, design and construct the new added traffic signal for the proposed access and modify the existing traffic signal as needed.
    - Install protected-plus-permitted left turn phasing capacity for the EB-to-NB left turn movement at the West Union Village Drive/West Union Road intersection prior to the issuance of certificate of the building occupancy.

The purpose of the new traffic operations assessment contained in this memorandum is to document that the current proposal will generate fewer driveway trips than were projected under the previous proposal. When combined with the fact that there are no differences between the current proposal and the previous proposal with respect to site access elements, it is concluded that Washington County's Assessment Letter dated May 4, 2020 remains valid and without need for change.

TRAFFIC OPERATIONS ASSESSMENT

A trip generation estimate was prepared for the previous proposal based on ITE trip generation rates provided in the 10th Edition of the *Trip Generation Manual* (Reference 1). Table 1 summarizes the driveway trip generation estimate.

Table 1: Trip Generation (Previous Proposal, 10th Edition *Trip Generation Manual*)

Land Use	ITE Code	Size (Fueling Positions)	Weekday Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Gas Station with Convenience Store	945	12	2 464	150	76	74	168	86	82

Currently, the most recent available edition of *Trip Generation Manual* is the 11th Edition, which was published by ITE in October 2021 (Reference 2). An estimate of the driveway trips generated by the

previous proposal and based on data contained in the 11th Edition *Trip Generation Manual* is presented in Table 2[2].

Table 2: Trip Generation (Previous Proposal, 11th Edition *Trip Generation Manual*)

Land Use	ITE Code	Size (Fueling Positions)	Size (Gross Sq. Ft)	Weekday Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
					Total	In	Out	Total	In	Out
Gas Station with Convenience Store	945	12	4,800	3,224	298	149	149	267	133	134

An estimate of the driveway trips expected to be generated by the current proposal based on data contained in the 11th Edition *Trip Generation Manual* is presented in Table 3.

Table 3: Trip Generation (Current Proposal, 11th Edition *Trip Generation Manual*)

Land Use	ITE Code	Size (Fueling Positions)	Size (Gross Sq. Ft)	Weekday Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
					Total	In	Out	Total	In	Out
Gas Station with Convenience Store	945	8	3,010	2,000	126	63	63	146	73	73
Fast Food Restaurant with Drive-Through Window	934	-	500	234	22	11	11	17	9	8
Total Driveway Trips				2,234	148	74	74	163	82	81

Comparison of the estimated total driveway trips shown in Tables 1, 2, and 3 reveals that the current proposal is expected to generate fewer driveway trips than the previous proposal during all investigated time periods, including weekday daily, AM peak hour, and PM peak hour conditions. This finding remains unchanged whether the 10th Edition or the 11th Edition *Trip Generation Manual* is used to estimate driveway trips for the previous proposal.

FINDINGS AND CONCLUSIONS

Based on the assessment provided herein, the findings and conclusions are summarized below.

[2] Multiple subcategories were added to ITE's Land Use Code 945 in the 11th Edition to allow for multi-variable evaluations. Sites are categorized according to both number of fueling positions and gross square feet of convenience store floor area. As a result, two estimates of site-generated trips are produced, both of which can be considered when determining a site trip generation estimate. In this analysis, the average of the two estimates is the best available estimate and this average is reported in both Table 2 and Table 3 for Land Use Code 945.

- Driveway trips generated by the current proposal are expected to be below the number of driveway trips generated by the previous proposal during the weekday daily, AM peak hour, and PM peak hour time periods.
- The location, configuration, and design details associated with all site access points will remain unchanged between the previous proposal and the current proposal.
- Washington County's Assessment Letter dated May 4, 2020 remains valid and without need for change with respect to its applicability to the current proposal.

We trust this memorandum adequately summarizes the traffic operational analyses for the current proposal. Please contact us if you have any questions or comments.

Sincerely,
KITTELSON & ASSOCIATE, INC.

Wayne Kittelson, PE
Principal

REFERENCES

1. Institute of Transportation Engineers. *Trip Generation*, 10th Edition. 2017.
2. Institute of Transportation Engineers. *Trip Generation,* 11th Edition. 2021

KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

MEMORANDUM

Date: October 15, 2019 Project #: 21539

To: Jinde Zhu, PE
Washington County DLUT - Traffic Engineering
1400 SW Walnut Street MS 17
Hillsboro, OR 97213

From: Diego Arguea and Nick Platte

Project: West Union Gas Station

Subject: Traffic Operations Assessment

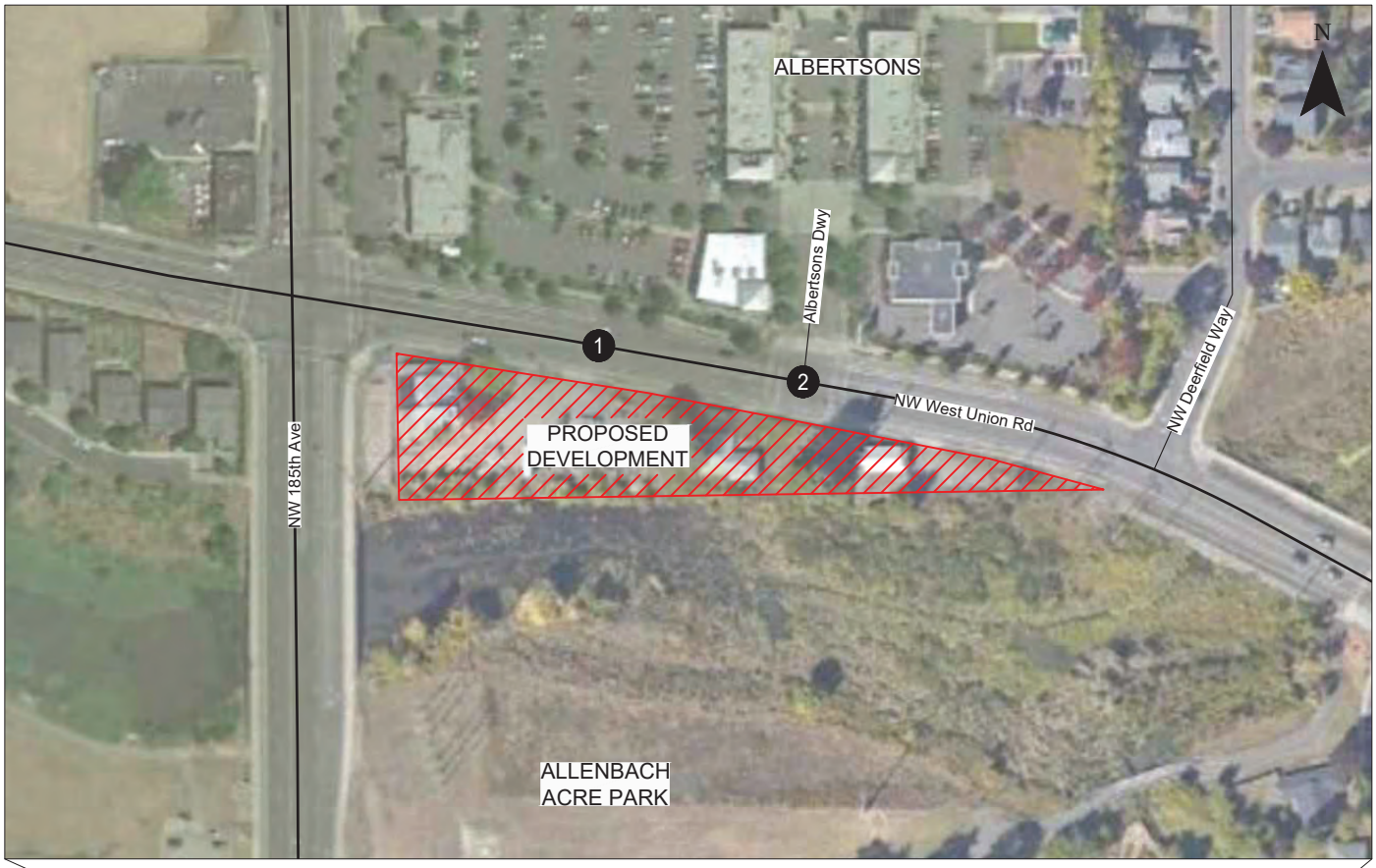
Robert Barman is proposing to redevelop the property located on the south-east corner of NW West Union Road and NW 185th Avenue, Hillsboro, Washington County. The site will be redeveloped into a gas station with a convenience store consisting of 12 fueling positions. No land use zone change is required. This memorandum documents a traffic operations assessment for the redevelopment of the proposed West Union Gas Station. Figure 1 shows the site vicinity.

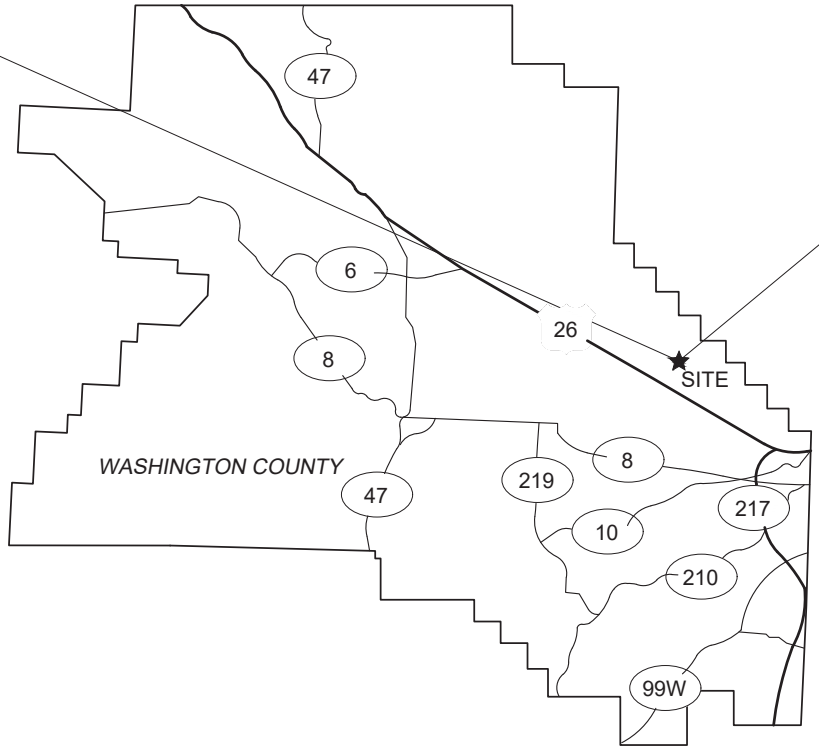
Access is proposed via a right-in only along NW West Union Road and via a newly constructed south leg of the existing West Union/Albertsons traffic signal. Figure 2 provides the proposed site plan. Buildout is expected by 2021.

As documented herein, the proposed accesses can support the proposed site redevelopment.

BACKGROUND

The existing site is currently zoned as Neighborhood Commercial (NC) The land parcel has a unique triangular shape and the proposed site has been designed to accommodate heavy vehicle turning movements as well as the potential future roadway widening project along NW West Union Road. This project is intended to upgrade West Union Road to 4-5 lanes (Reference 1). Currently one through lane is provided in the westbound direction along NW West Union Road. This will be upgraded to two through lanes in the future. Refer to Exhibit 1 for an extract from the Washington County Transportation System Plan or TSP (Reference 1).





● - Study Intersection

Site Vicinity Map
Washington County, OR

Figure
1

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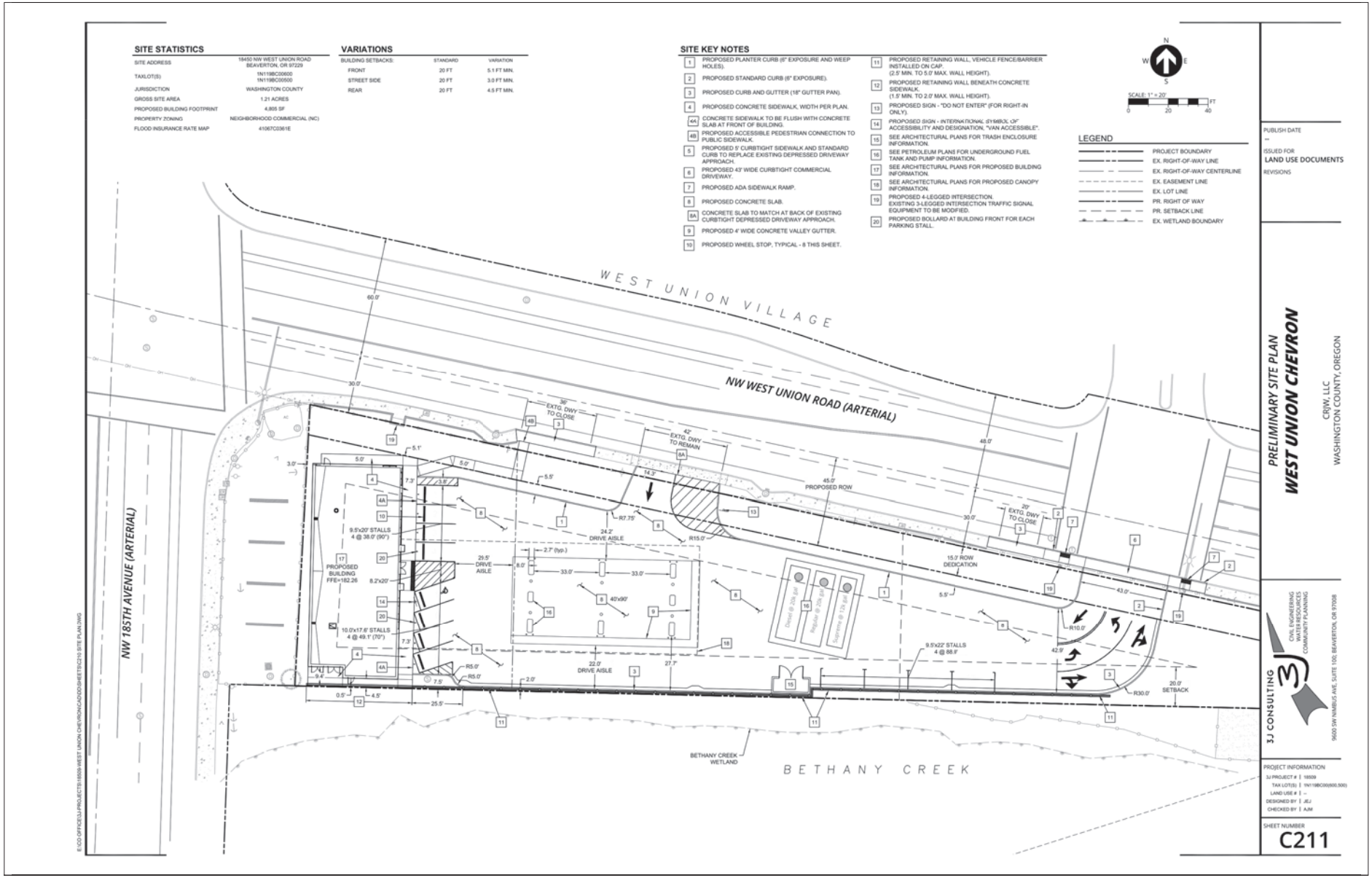

Site plan provided by 3J Consulting on July 8, 2019

Proposed Redevelopment Site Plan
Washington County, OR

Figure
2

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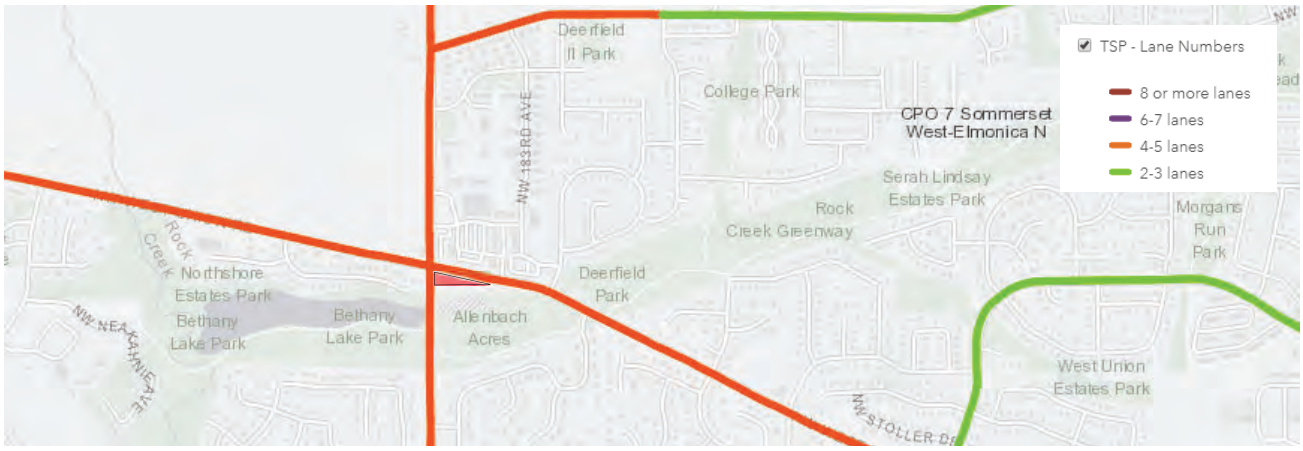


Exhibit 1: Washington County TSP (Lane Numbers)

Table 1 provides estimated trip generation characteristics assuming full occupancy of the site for the existing land use. The trip generation estimates are based on information provided in the standard reference manual, *Trip Generation, 10th Edition,* published by the Institute of Transportation Engineers (ITE – Reference 2) The trip generation estimate for existing approved land use type was categorized as a Fast-Food Restaurant without Drive-Through Window.

Table 1: Trip Generation (Existing Land Use)

Land Use	ITE Code	Size (SF)	Weekday Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Existing Land Uses - To Be Demolished (ITE Rates)									
Fast-Food Restaurant without Drive-Through Window	933	4 828	1 672	122	74	48	136	68	68
Pass-by Trips (43% Daily, 43% AM, 43% PM)			*-718*	*-52*	*-32*	*-20*	*-58*	*-29*	*-29*
Total Trips (net)			954	70	42	28	78	39	39

WASHINGTON COUNTY REQUIREMENTS

Traffic study requirements per Washington County are as follows:

- A transportation impact statement (TIS) is required if the development generates more than 40 daily trips.
- An Access Report is required if the development generates more than 500 daily trips.

The development is expected to generate a net increase of daily trips between 40 and 500. The site therefore requires a TIS and was prepared in accordance with Washington County staff direction to address traffic operations at the signal and at the proposed access. In addition, if the site is expected to generate a net increase in peak hour trips compared with the existing approved land use, an analysis of the NW West Union Road/NW 185th traffic signal would also be required.

TRAFFIC OPERATIONS ASSESSMENT

The following sections address the Washington County requirements for the proposed development.

Proposed Development

It is proposed to redevelop the site into a gas station with 12 fueling positions and a convenience store. All existing buildings will be removed. Access is proposed via a right-in only driveway along NW West Union Road and via a newly constructed south leg of the existing NW West Union Road/Albertsons traffic signal (refer to Figure 2). The site was developed to accommodate heavy vehicle maneuverability. It is expected that all heavy vehicles will enter the site from the west. These vehicles will enter the site via the right-in driveway and will subsequently exit the site via the traffic signal.

A trip generation estimate was prepared for the proposed redevelopment based on ITE trip generation rates (Reference 2). Table 2 summarizes the trip generation estimate. Pass-by trip reduction rates were also based on ITE data and recommended methodology.

Table 2: Trip Generation (Proposed Land Use)

Land Use	ITE Code	Size (Fueling Positions)	Weekday Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Proposed Land Use (ITE Rates)									
Gas Station with Convenience Store	945	12	2 464	150	76	74	168	86	82
Pass-by Trips (56% Daily, 62% AM, 56% PM)			*-1 380*	*-94*	*-48*	*-46*	*-94*	*-48*	*-46*
Total Trips (net)			1 084	56	28	28	74	38	36

Table 3 summarizes the proposed trips compared with the existing potential trip generation under existing conditions.

Table 3: Trip Generation (Net Impact)

Trip Type	Weekday Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Total	In	Out	Total	In	Out
Net New Trips (Proposed - Existing)							
Gross Trips	792	28	2	26	32	18	14
Pass-by Trips	*-662*	*-42*	*-16*	*-26*	*-36*	*-19*	*-17*
Total Trips (net new on system)	130	-14	-14	0	-4	-1	-3

As shown in the table, the proposed development could generate up to approximately 130 more net daily trips, with 14 fewer in the weekday morning peak hour and 4 fewer in the evening commuter peak hour. Based on this finding and the Washington requirements as set out in the previous section, it is concluded that this report be limited to a TIS and an assessment of access operations.

Figure 3 illustrates the estimated trip distribution pattern, as well as the assignment of site-generated trips, and pass-by trips during the weekday AM and PM peak hours. The trip distribution pattern was calculated based on existing traffic patterns, locations of existing gas stations, and the location of major trip origins and destinations in the site vicinity. Pass by trips were assigned based on the existing distribution of traffic along NW West Union Road.

Traffic Operations

All traffic operations analyses described in this report were performed in accordance with the procedures stated in the *2000 Highway Capacity Manual* (Reference 3) and using Synchro 10 software. All LOS analyses used the peak 15-minute flow rate that occurred during the weekday AM and PM peak hours. Using the peak 15-minute flow rate provides analyses based on a reasonable worst-case scenario.

All intersection operations discussed hereafter are summarized in Figure 3.

Facility Standards

Table 4 in the Washington County TSP (Reference 1) provides Motor Vehicle Performance Measure targets as defined by volume-to-capacity (v/c) and level of Service (LOS) thresholds for roads within development areas. The target performance measure within the first peak hour is a v/c less than or equal to 0.90 and LOS equal to or better than D. The acceptable performance measure within the first hour is a v/c less than or equal to 0.99 and LOS equal to or better than E.

Traffic Volumes

Washington County Staff provided existing traffic volumes at the NW West Union Road/Albertsons intersection. These were obtained from a recent traffic study for a Starbucks (Reference 4) within the Albertsons shopping center. The volume estimates employed in this study therefore used the build volume scenarios from the Access Engineering report that was previously completed as part of the Starbucks application.

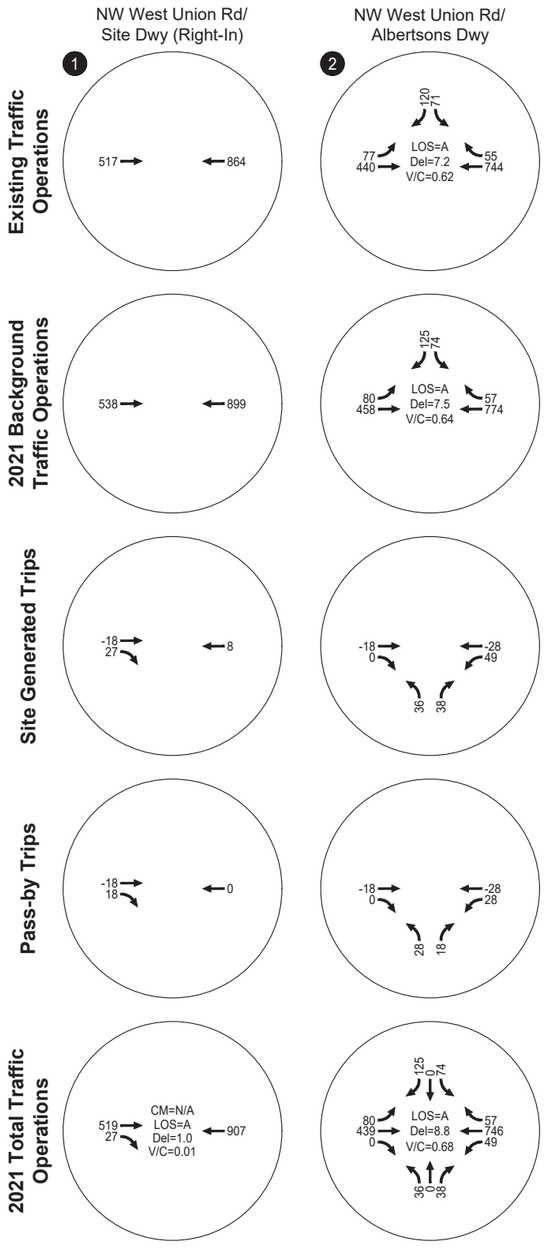
Attachment "A" contains the Starbucks Traffic Operations Queuing Analysis report.

Existing Traffic Conditions

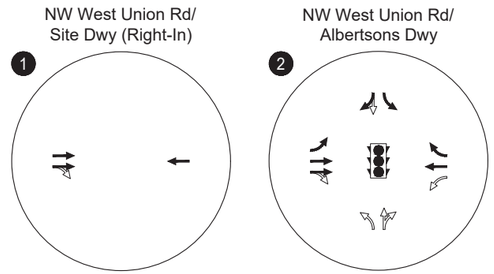
Figure 3 summarizes the results of the existing traffic conditions analysis. As shown, all of the study intersections currently operate within the Washington County standards during the weekday AM and PM peak hours.

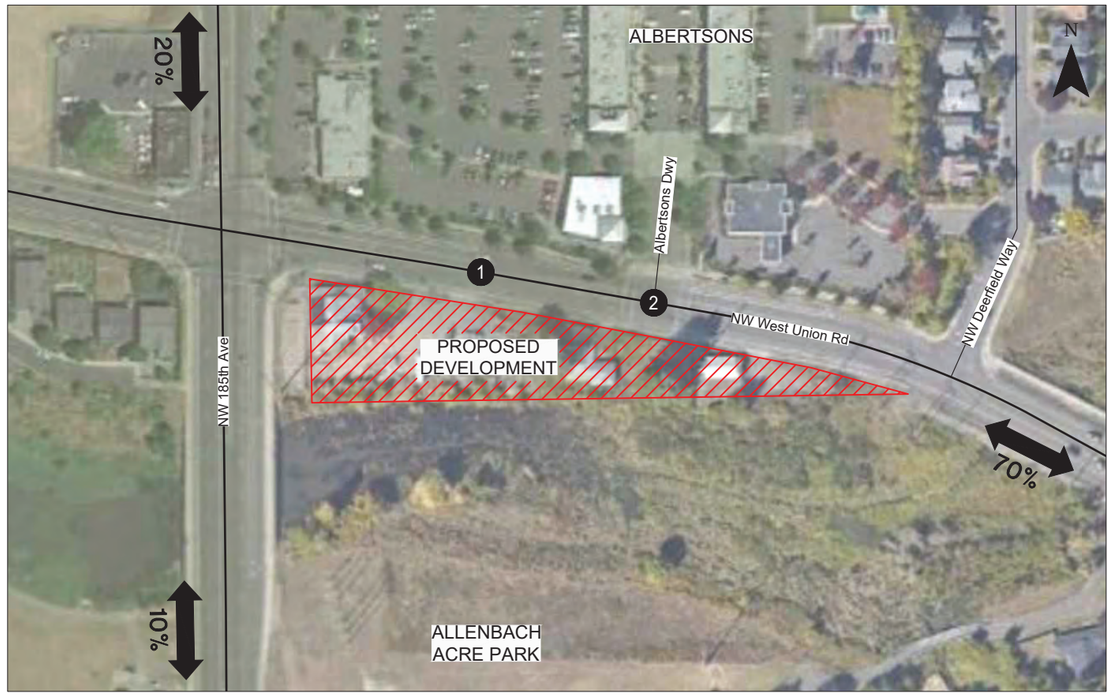
Weekday AM peak hour field observations revealed maximum westbound queuing to periodically extend from NW 185th Avenue through the signalized West Union Village Driveway and NW Deerfield Drive. All such queues were observed to dissipate after a single cycle. Maximum eastbound queues

Weekday AM Peak Hour

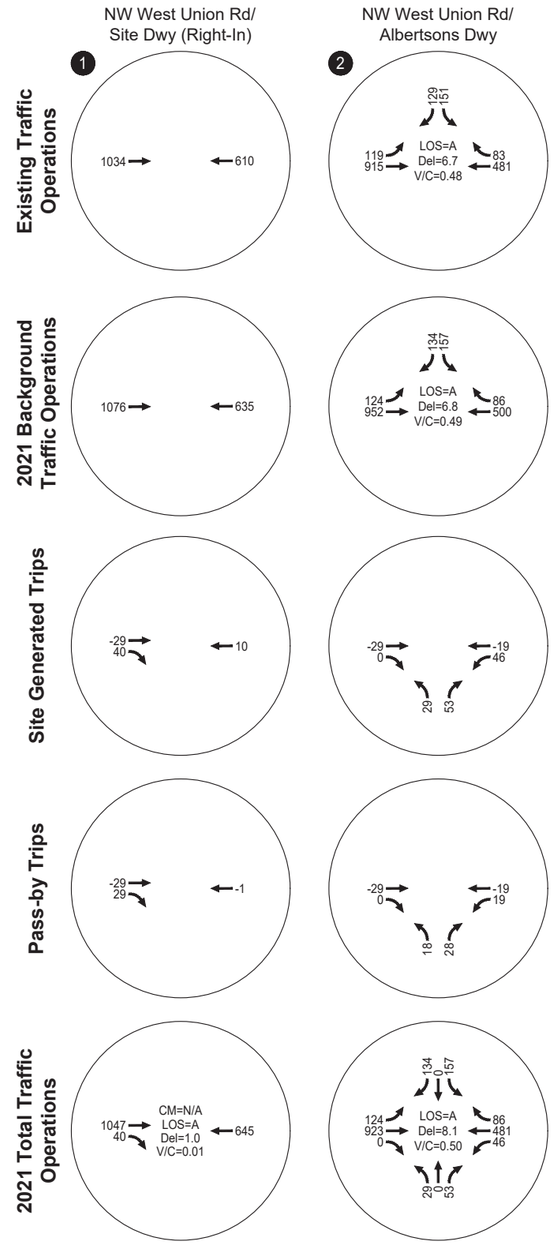


Existing and Future Lane Configurations & Traffic Control Devices





Weekday PM Peak Hour



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = CRITICAL MOVEMENT LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

- STOP SIGN
- TRAFFIC SIGNAL
- EXISTING
- FUTURE (BUILT, SITE SPECIFIC)

NEGATIVE TRIPS INDICATE PASS-BY TRIPS

Traffic Operations
Weekday AM and PM Peak Hours
Washington County, OR

Figure 3

KITTELSON & ASSOCIATES

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were always observed to be within the available space between the West Union Village Drive signal and the NW 185th Avenue traffic signal.

Attachment "B" contains the report and worksheets used for the traffic volumes at the study intersections and the existing signal timing plan for the NW West Union Road/Albertsons intersection.

2021 Background Traffic Conditions

Background traffic volumes were estimated based the existing traffic volumes and an assumed general regional growth rate of 2% compounded annually. This growth rate assumption was based on direction received from Washington County staff. The volumes do not account for the possible re-tenant of the property based on existing approved land use rights and estimated trip generation. The planned future widening of NW West Union Road was also excluded.

Figure 3 summarizes the background traffic volumes and operational analysis results at the study intersections during the weekday AM and PM peak hours. As shown, all study intersections are forecast to continue operating acceptably during both peak hours. The Synchro 95th percentile westbound through queues are projected to be 400 feet, which exceeds the 300 feet available between the unsignalized NW Deerfield Way intersection and the Albertsons study intersection.

Attachment "C" contains the worksheets used to evaluate background traffic conditions at the study intersections.

2021 Total Traffic Conditions

Total traffic volumes include the site-generated trips in addition to the 2021 background traffic volumes. No trips from the existing site were removed from the system, which is a conservative approach that most likely overestimates the total directional traffic volumes during each analysis time period. The 2021 total traffic volumes and operational results are shown in Figure 3 for the weekday AM and PM peak hours. As shown, all the study intersections are forecast to continue to satisfy their respective operational standards.

The 95th percentile queue length results indicate sufficient storage is currently available to accommodate the anticipated vehicle queues turning into the site. The westbound left turn queues are anticipated to be 25 and 50 feet during the weekday AM and PM peak hours, respectively.

The 95th percentile westbound through queues are projected to be 425 feet during the weekday AM peak hour[1] and go past the NW Deerfield Way intersection. As previously discussed, the analysis results

[1] 200 feet during the weekday PM peak hour.

indicate that this also occurs during the existing and background conditions . In addition, no site-generated trips are expected to use the westbound through movement.

The 95th percentile eastbound through queues are not projected to exceed 175 feet and will be within the 400 feet of storage available between the two traffic signals along NW West Union Road. Therefore, no queue mitigation measures are recommended as part of the site development. In addition, the future upgrade of NW West Union Road will be capable of providing whatever additional mitigation might be required.

The traffic signal was analyzed with permissive phasing on all approaches for the above narrative. The signal was also run with protected-permissive phasing for the east and west approaches to test the sensitivity of the operations. The results indicated that the signal will still satisfy the operational standards. Increased delay and queueing along the NW West Union Road is expected with this signal plan compared with permissive phasing on all approaches.

Attachment "D" contains the worksheets used to evaluate total traffic conditions at the study intersections.

CONCLUSIONS AND RECOMMENDATIONS

Based on the assessment provided herein, the findings and recommendations are summarized below.

- Trips generated by the proposed redevelopment of the site are not expected to exceed existing conditions during the weekday AM and PM peak hours.
- The proposed accesses can support the proposed site redevelopment and no additional queueing mitigation measures are required.
- Truck circulation will be inbound at the right-in only along NW West Union Road, and restricted to outbound left at the signal.
- All landscaping, signage, and utilities near the site access points should be placed and maintained to provide adequate sight distance.

We trust this memorandum adequately summarizes the traffic operational analyses for the proposed West Union Gas Station. Please contact us if you have any questions or comments.

Sincerely,
KITTELSON & ASSOCIATE, INC.

Wayne Kittelson, PE
Engineer

Nick Platte
Transportation Analyst

REFERENCES

1. Washington County. Transportation System Plan. Users' Guide. November 23, 2018. https://washcomultimedia.s3.amazonaws.com/CMSBigFiles/TSP+Flipbook+5.30.19/mobile/index.html
2. Institute of Transportation Engineers. *Trip Generation*, 10th Edition. 2017.
3. Transportation Research Board. *2000 Highway Capacity Manual*. 2000.
4. Access Engineering, *Proposed Starbucks Development, 18215 NW West Union Road, Washington County, Oregon – Traffic Operations Queueing Analysis*, April 24, 2019.

ATTACHMENTS

A. Access Engineering Starbucks Traffic Operations Queuing Analysis
B. Existing traffic conditions worksheets
C. 2021 Background traffic conditions worksheets
D. 2021 Total traffic conditions worksheets

Attachment A
Starbucks Traffic Operations
Queuing Analysis Report

Access Engineering

134 E. 13th Ave. Suite 2
Eugene, Oregon 97401
Phone & Fax
541-485-3215
info@accesseng.com

April 24, 2019

Patrick McKechnie,
Mark McKechnie
Oregon Architecture Inc.
132 West Main Street #101
Medford, Oregon 97501

RE: Proposed Starbucks Development, 18215 NW West Union Road, Washington County, Oregon - Traffic Operations Queuing Analysis

This is the Traffic Operations addendum to the April 17, 2019 Capacity Analysis for the development located at 19215 NW West Union Road, on the northwest quadrant of the West Union Road intersection with the Albertsons' Shopping Center Driveway. This report analyzes the queues on the approaches to the West Union Road and Shopping Center Driveway intersection during the AM and PM peak hours.

Queuing Analysis

The queuing analysis is based on the seasonally adjusted traffic volumes and the subsequent operational analysis of the two-phase traffic signal found in the April 17th Capacity Analysis. The queuing analysis uses the SimTraffic simulation component of the Synchro computer program. The results of the capacity analysis of the West Union Road at the shopping center driveway are summarized below.

Capacity Analysis Results

Intersection	AM Peak Hour				PM Peak Hour			
	No Build		Build		No Build		Build	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
W Union Rd @ Shopping Center Driveway	0.61	A	0.62	A	0.42	A	0.44	A

Even though the shopping center driveway intersection operates well within standards, the intersection is only approximately 500 feet east of the NW 185th Avenue and NW West Union Road intersection. There is a heavy westbound left-turn movement on West Union Road at 185th Avenue that currently limits the eastbound left-turn lane at the Shopping Center Driveway to 75 feet in length. The current striping on West Union Road between 185th and the driveway has a 250 feet westbound left-turn lane at 185th, a 115 feet transition, and a 75 feet eastbound left-turn. A queuing analysis is needed to determine the adequacy of that eastbound left-turn lane with and without the proposed Starbucks development.

SimTraffic was used to evaluate the queue lengths at the study area intersections following the guidelines in Chapter 8 of ODOT's "Analysis Procedures Manual" (APM v2).

Transportation Engineering
Traffic Design
Trip Generation
Access Management
Traffic Counts
Street Lighting

Five runs of the model with a random seed were averaged for the AM and PM peak hours. The intersection was modeled as an isolated intersection since we have no traffic movement or timing data for the 185th Avenue intersection. The 95th percentile and the maximum queues are reported and are rounded to the next nearest 25-feet increment. The Synchro and SimTraffic reports are attached. The results for existing conditions are tabulated below.

Queuing Analysis - Existing 75 Feet Eastbound Left Turn Storage

Intersection / Movement	Available Storage (ft.)	AM Peak Hour				PM Peak Hour			
		No Build		Build		No Build		Build	
		95th	Max	95th	Max	95th	Max	95th	Max
W. Union Rd. @ Driveway									
Eastbound Left turn	**75**	**100**	**150**	**100**	**150**	**75**	**100**	**100**	**125**
Eastbound Through	425	100	150	100	100	150	200	175	200
Westbound Through	300	200	225	250	325	150	200	200	300
Westbound Right turn	200	50	75	50	50	75	75	50	50
Southbound Left turn	100	75	75	75	100	100	125	125	175
Southbound Right turn	100	75	75	100	125	75	100	75	100

Since the eastbound left-turn lane exceeded the available storage of 75 feet with a 95th percentile queue of 100 feet and a maximum queue of 150 feet, the queuing analysis was rerun twice; with 100 feet of storage and with 125 feet storage. The results are shown below.

Queuing Analysis - 100 Feet Eastbound Left Turn Storage

Intersection / Movement	Available Storage (ft.)	AM Peak Hour				PM Peak Hour			
		No Build		Build		No Build		Build	
		95th	Max	95th	Max	95th	Max	95th	Max
W. Union Rd. @ Driveway									
Eastbound Left turn	**100**	**75**	**100**	**100**	**125**	**100**	**125**	**100**	**150**
Eastbound Through	425	75	100	100	100	150	175	200	275
Westbound Through	300	275	375	225	250	125	150	175	200
Westbound Right turn	200	50	75	50	50	50	75	50	75
Southbound Left turn	100	75	75	75	100	100	125	125	175
Southbound Right turn	100	75	125	75	100	75	100	75	100

Queuing Analysis - 125 Feet Eastbound Left Turn Storage

Intersection / Movement	Available Storage (ft.)	AM Peak Hour				PM Peak Hour			
		No Build		Build		No Build		Build	
		95th	Max	95th	Max	95th	Max	95th	Max
W. Union Rd. @ Driveway									
Eastbound Left turn	**100**	**75**	**75**	**100**	**100**	**100**	**100**	**100**	**100**
Eastbound Through	425	100	125	125	200	150	175	150	175
Westbound Through	300	275	375	300	375	150	200	150	150
Westbound Right turn	200	125	350	150	350	50	50	75	75
Southbound Left turn	100	50	75	100	125	100	125	100	125
Southbound Right turn	100	75	100	100	150	75	100	100	125

The results of the analyses indicate that a 100 feet eastbound left-turn lane would operate acceptably based on the 95th percentile queue and is recommended at this time. For a future improvement project for NW West Union Road at 185th Avenue, we recommend a 125 feet eastbound left-turn lane for West Union Road at the shopping center driveway to account for continued traffic volume growth in the area.

Yours very truly,

RENEWS
6/30/20

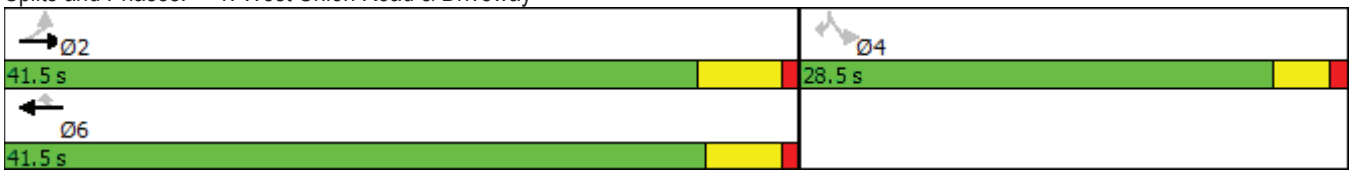
Michael Weishar, PE
Access Engineering LLC

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	54	440	744	19	49	83
Future Volume (vph)	54	440	744	19	49	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75			175	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		20	
Link Distance (ft)		535	367		175	
Travel Time (s)		9.1	6.3		6.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	2	2
Detector Template						
Leading Detector (ft)	75	323	283	143	75	75
Trailing Detector (ft)	1	157	157	137	0	0
Detector 1 Position(ft)	1	157	157	137	1	1
Detector 1 Size(ft)	74	6	6	6	74	74
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		317	277		0	0
Detector 2 Size(ft)		6	6		0	0
Detector 2 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0		0.0	0.0
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	10.0	5.0	5.0
Minimum Split (s)	26.5	26.5	27.3	27.3	28.5	28.5
Total Split (s)	41.5	41.5	41.5	41.5	28.5	28.5
Total Split (%)	59.3%	59.3%	59.3%	59.3%	40.7%	40.7%
Maximum Green (s)	36.0	36.0	36.5	36.5	24.5	24.5
Yellow Time (s)	4.5	4.5	4.0	4.0	3.0	3.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	1.5	-1.5	-1.0	-1.0	0.0	0.0
Total Lost Time (s)	7.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.1	3.1	3.1	3.1	2.9	2.9
Minimum Gap (s)	1.1	1.1	1.1	1.1	1.0	1.0
Time Before Reduce (s)	10.0	10.0	10.0	10.0	5.0	5.0
Time To Reduce (s)	15.0	15.0	15.0	15.0	10.0	10.0
Recall Mode	Min	Min	Min	Min	None	None
Walk Time (s)			5.0	5.0	5.0	5.0
Flash Dont Walk (s)			14.0	14.0	17.0	17.0
Pedestrian Calls (#/hr)			1	1	1	1
90th %ile Green (s)	36.0	36.0	36.5	36.5	22.0	22.0
90th %ile Term Code	Max	Max	Max	Max	Ped	Ped
70th %ile Green (s)	28.2	28.2	28.7	28.7	7.8	7.8
70th %ile Term Code	Hold	Hold	Gap	Gap	Gap	Gap
50th %ile Green (s)	23.3	23.3	23.8	23.8	7.0	7.0
50th %ile Term Code	Hold	Hold	Gap	Gap	Gap	Gap
30th %ile Green (s)	29.2	29.2	29.7	29.7	6.3	6.3
30th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Gap	Gap
10th %ile Green (s)	25.1	25.1	25.6	25.6	0.0	0.0
10th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Skip	Skip

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 45.7	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
90th %ile Actuated Cycle: 67.5	
70th %ile Actuated Cycle: 45.5	
50th %ile Actuated Cycle: 39.8	
30th %ile Actuated Cycle: 45	
10th %ile Actuated Cycle: 30.6	

Splits and Phases: 1: West Union Road & Driveway



Intersection: 1: West Union Road & Driveway

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	R	L	R
Maximum Queue (ft)	142	130	61	216	60	58	55
Average Queue (ft)	36	43	12	89	7	26	24
95th Queue (ft)	91	93	43	187	32	52	51
Link Distance (ft)		504	504	342		136	136
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75				175		
Storage Blk Time (%)	5	1		1			
Queuing Penalty (veh)	12	0		0			

Network Summary

Network wide Queuing Penalty: 13

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	77	440	744	55	71	120
Future Volume (vph)	77	440	744	55	71	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75			175	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		20	
Link Distance (ft)		535	367		175	
Travel Time (s)		9.1	6.3		6.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	2	2
Detector Template						
Leading Detector (ft)	75	323	283	143	75	75
Trailing Detector (ft)	1	157	157	137	0	0
Detector 1 Position(ft)	1	157	157	137	1	1
Detector 1 Size(ft)	74	6	6	6	74	74
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		317	277		0	0
Detector 2 Size(ft)		6	6		0	0
Detector 2 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0		0.0	0.0
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	10.0	5.0	5.0
Minimum Split (s)	26.5	26.5	27.3	27.3	28.5	28.5
Total Split (s)	46.5	46.5	46.5	46.5	28.5	28.5
Total Split (%)	62.0%	62.0%	62.0%	62.0%	38.0%	38.0%
Maximum Green (s)	41.0	41.0	41.5	41.5	24.5	24.5
Yellow Time (s)	4.5	4.5	4.0	4.0	3.0	3.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.5	-1.5	-1.0	-1.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.1	3.1	3.1	3.1	2.9	2.9
Minimum Gap (s)	1.1	1.1	1.1	1.1	1.0	1.0
Time Before Reduce (s)	10.0	10.0	10.0	10.0	5.0	5.0
Time To Reduce (s)	15.0	15.0	15.0	15.0	10.0	10.0
Recall Mode	Min	Min	Min	Min	None	None
Walk Time (s)			5.0	5.0	5.0	5.0
Flash Dont Walk (s)			14.0	14.0	17.0	17.0
Pedestrian Calls (#/hr)			1	1	1	1
90th %ile Green (s)	41.0	41.0	41.5	41.5	22.0	22.0
90th %ile Term Code	Max	Max	Max	Max	Ped	Ped
70th %ile Green (s)	41.0	41.0	41.5	41.5	9.1	9.1
70th %ile Term Code	Max	Max	Hold	Hold	Gap	Gap
50th %ile Green (s)	32.3	32.3	32.8	32.8	8.0	8.0
50th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
30th %ile Green (s)	20.7	20.7	21.2	21.2	6.6	6.6
30th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
10th %ile Green (s)	26.3	26.3	26.8	26.8	0.0	0.0
10th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Skip	Skip

Intersection Summary	
Area Type:	Other
Cycle Length: 75	
Actuated Cycle Length: 50.1	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
90th %ile Actuated Cycle: 72.5	
70th %ile Actuated Cycle: 59.6	
50th %ile Actuated Cycle: 49.8	
30th %ile Actuated Cycle: 36.8	
10th %ile Actuated Cycle: 31.8	

Splits and Phases: 1: West Union Road & Driveway

Intersection: 1: West Union Road & Driveway

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	R	L	R
Maximum Queue (ft)	130	87	60	314	35	86	110
Average Queue (ft)	43	45	19	123	17	34	48
95th Queue (ft)	83	85	55	236	43	69	84
Link Distance (ft)		504	504	342		136	136
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75				175		
Storage Blk Time (%)	3	1		2			
Queuing Penalty (veh)	7	1		1			

Network Summary

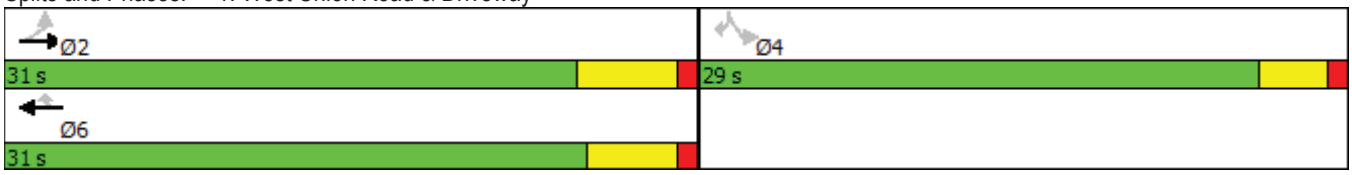
Network wide Queuing Penalty: 9

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	93	915	481	69	130	111
Future Volume (vph)	93	915	481	69	130	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75			175	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		20	
Link Distance (ft)		535	367		175	
Travel Time (s)		9.1	6.3		6.0	
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	2	2
Detector Template						
Leading Detector (ft)	75	323	283	143	75	75
Trailing Detector (ft)	1	157	157	137	0	0
Detector 1 Position(ft)	1	157	157	137	1	1
Detector 1 Size(ft)	74	6	6	6	74	74
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		317	277		0	0
Detector 2 Size(ft)		6	6		0	0
Detector 2 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0		0.0	0.0
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	10.0	5.0	5.0
Minimum Split (s)	26.5	26.5	27.3	27.3	28.5	28.5
Total Split (s)	31.0	31.0	31.0	31.0	29.0	29.0
Total Split (%)	51.7%	51.7%	51.7%	51.7%	48.3%	48.3%
Maximum Green (s)	25.5	25.5	26.0	26.0	25.0	25.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Yellow Time (s)	4.5	4.5	4.0	4.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	0.0	0.0
Total Lost Time (s)	4.0	4.0	3.5	3.5	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.1	3.1	3.1	3.1	2.9	2.9
Minimum Gap (s)	1.1	1.1	1.1	1.1	1.0	1.0
Time Before Reduce (s)	10.0	10.0	10.0	10.0	5.0	5.0
Time To Reduce (s)	15.0	15.0	15.0	15.0	10.0	10.0
Recall Mode	Min	Min	Min	Min	None	None
Walk Time (s)			5.0	5.0	5.0	5.0
Flash Dont Walk (s)			14.0	14.0	17.0	17.0
Pedestrian Calls (#/hr)			1	1	1	1
90th %ile Green (s)	25.5	25.5	26.0	26.0	22.0	22.0
90th %ile Term Code	Max	Max	Hold	Hold	Ped	Ped
70th %ile Green (s)	17.8	17.8	18.3	18.3	9.0	9.0
70th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
50th %ile Green (s)	15.9	15.9	16.4	16.4	7.7	7.7
50th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
30th %ile Green (s)	12.4	12.4	12.9	12.9	6.7	6.7
30th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
10th %ile Green (s)	24.5	24.5	25.0	25.0	0.0	0.0
10th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Skip	Skip

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 37	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
90th %ile Actuated Cycle: 57	
70th %ile Actuated Cycle: 36.3	
50th %ile Actuated Cycle: 33.1	
30th %ile Actuated Cycle: 28.6	
10th %ile Actuated Cycle: 30	

Splits and Phases: 1: West Union Road & Driveway



Intersection: 1: West Union Road & Driveway

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	R	L	R
Maximum Queue (ft)	82	190	186	181	62	110	81
Average Queue (ft)	38	78	46	73	20	55	36
95th Queue (ft)	61	140	110	144	51	95	61
Link Distance (ft)		504	504	342		136	136
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	75				175		
Storage Blk Time (%)	1	5		0			
Queuing Penalty (veh)	4	5		0			

Network Summary

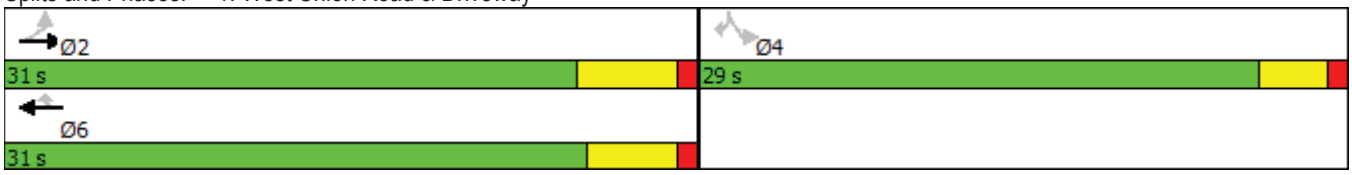
Network wide Queuing Penalty: 9

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	119	915	481	83	151	129
Future Volume (vph)	119	915	481	83	151	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75			175	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		20	
Link Distance (ft)		535	367		175	
Travel Time (s)		9.1	6.3		6.0	
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	2	2
Detector Template						
Leading Detector (ft)	75	323	283	143	75	75
Trailing Detector (ft)	1	157	157	137	0	0
Detector 1 Position(ft)	1	157	157	137	1	1
Detector 1 Size(ft)	74	6	6	6	74	74
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		317	277		0	0
Detector 2 Size(ft)		6	6		0	0
Detector 2 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0		0.0	0.0
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	10.0	5.0	5.0
Minimum Split (s)	26.5	26.5	27.3	27.3	28.5	28.5
Total Split (s)	31.0	31.0	31.0	31.0	29.0	29.0
Total Split (%)	51.7%	51.7%	51.7%	51.7%	48.3%	48.3%
Maximum Green (s)	25.5	25.5	26.0	26.0	25.0	25.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Yellow Time (s)	4.5	4.5	4.0	4.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	0.0	0.0
Total Lost Time (s)	4.0	4.0	3.5	3.5	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.1	3.1	3.1	3.1	2.9	2.9
Minimum Gap (s)	1.1	1.1	1.1	1.1	1.0	1.0
Time Before Reduce (s)	10.0	10.0	10.0	10.0	5.0	5.0
Time To Reduce (s)	15.0	15.0	15.0	15.0	10.0	10.0
Recall Mode	Min	Min	Min	Min	None	None
Walk Time (s)			5.0	5.0	5.0	5.0
Flash Dont Walk (s)			14.0	14.0	17.0	17.0
Pedestrian Calls (#/hr)			1	1	1	1
90th %ile Green (s)	25.5	25.5	26.0	26.0	22.0	22.0
90th %ile Term Code	Max	Max	Hold	Hold	Ped	Ped
70th %ile Green (s)	18.0	18.0	18.5	18.5	9.6	9.6
70th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
50th %ile Green (s)	17.1	17.1	17.6	17.6	8.1	8.1
50th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
30th %ile Green (s)	12.5	12.5	13.0	13.0	7.0	7.0
30th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
10th %ile Green (s)	24.5	24.5	25.0	25.0	0.0	0.0
10th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Skip	Skip

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 37.6	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
90th %ile Actuated Cycle: 57	
70th %ile Actuated Cycle: 37.1	
50th %ile Actuated Cycle: 34.7	
30th %ile Actuated Cycle: 29	
10th %ile Actuated Cycle: 30	

Splits and Phases: 1: West Union Road & Driveway



Intersection: 1: West Union Road & Driveway

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	R	L	R
Maximum Queue (ft)	112	183	134	289	36	156	77
Average Queue (ft)	52	91	49	86	20	60	38
95th Queue (ft)	92	158	94	176	45	122	62
Link Distance (ft)		504	504	342		136	136
Upstream Blk Time (%)						1	
Queuing Penalty (veh)						0	
Storage Bay Dist (ft)	75				175		
Storage Blk Time (%)	3	6		1			
Queuing Penalty (veh)	12	7		0			

Network Summary

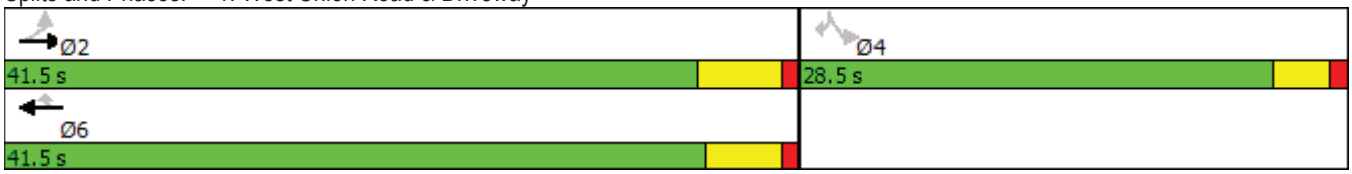
Network wide Queuing Penalty: 19

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	54	440	744	19	49	83
Future Volume (vph)	54	440	744	19	49	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			175	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		20	
Link Distance (ft)		535	367		175	
Travel Time (s)		9.1	6.3		6.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template						
Leading Detector (ft)	75	323	283	143	75	75
Trailing Detector (ft)	1	157	157	137	1	1
Detector 1 Position(ft)	1	157	157	137	1	1
Detector 1 Size(ft)	74	6	6	6	74	74
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		317	277			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	10.0	5.0	5.0
Minimum Split (s)	26.5	26.5	27.3	27.3	28.5	28.5
Total Split (s)	41.5	41.5	41.5	41.5	28.5	28.5
Total Split (%)	59.3%	59.3%	59.3%	59.3%	40.7%	40.7%
Maximum Green (s)	36.0	36.0	36.5	36.5	24.5	24.5
Yellow Time (s)	4.5	4.5	4.0	4.0	3.0	3.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	1.5	-1.5	-1.0	-1.0	0.0	0.0
Total Lost Time (s)	7.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.1	3.1	3.1	3.1	2.9	2.9
Minimum Gap (s)	1.1	1.1	1.1	1.1	1.0	1.0
Time Before Reduce (s)	10.0	10.0	10.0	10.0	5.0	5.0
Time To Reduce (s)	15.0	15.0	15.0	15.0	10.0	10.0
Recall Mode	Min	Min	Min	Min	None	None
Walk Time (s)			5.0	5.0	5.0	5.0
Flash Dont Walk (s)			14.0	14.0	17.0	17.0
Pedestrian Calls (#/hr)			1	1	1	1
90th %ile Green (s)	36.0	36.0	36.5	36.5	22.0	22.0
90th %ile Term Code	Max	Max	Max	Max	Ped	Ped
70th %ile Green (s)	28.1	28.1	28.6	28.6	7.7	7.7
70th %ile Term Code	Hold	Hold	Gap	Gap	Gap	Gap
50th %ile Green (s)	23.2	23.2	23.7	23.7	6.9	6.9
50th %ile Term Code	Hold	Hold	Gap	Gap	Gap	Gap
30th %ile Green (s)	29.1	29.1	29.6	29.6	6.2	6.2
30th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Gap	Gap
10th %ile Green (s)	25.1	25.1	25.6	25.6	0.0	0.0
10th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Skip	Skip

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 45.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
90th %ile Actuated Cycle: 67.5	
70th %ile Actuated Cycle: 45.3	
50th %ile Actuated Cycle: 39.6	
30th %ile Actuated Cycle: 44.8	
10th %ile Actuated Cycle: 30.6	

Splits and Phases: 1: West Union Road & Driveway



Intersection: 1: West Union Road & Driveway

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	R	L	R
Maximum Queue (ft)	81	88	35	361	56	60	107
Average Queue (ft)	34	38	11	111	5	32	31
95th Queue (ft)	74	75	36	260	26	59	70
Link Distance (ft)		504	504	342		136	136
Upstream Blk Time (%)				0			
Queuing Penalty (veh)				0			
Storage Bay Dist (ft)	100				175		
Storage Blk Time (%)	0	0		2			
Queuing Penalty (veh)	0	0		0			

Network Summary

Network wide Queuing Penalty: 0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	77	440	744	55	71	120
Future Volume (vph)	77	440	744	55	71	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			175	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		20	
Link Distance (ft)		535	367		175	
Travel Time (s)		9.1	6.3		6.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template						
Leading Detector (ft)	75	323	283	143	75	75
Trailing Detector (ft)	1	157	157	137	1	1
Detector 1 Position(ft)	1	157	157	137	1	1
Detector 1 Size(ft)	74	6	6	6	74	74
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		317	277			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	10.0	5.0	5.0
Minimum Split (s)	26.5	26.5	27.3	27.3	28.5	28.5
Total Split (s)	46.5	46.5	46.5	46.5	28.5	28.5
Total Split (%)	62.0%	62.0%	62.0%	62.0%	38.0%	38.0%
Maximum Green (s)	41.0	41.0	41.5	41.5	24.5	24.5
Yellow Time (s)	4.5	4.5	4.0	4.0	3.0	3.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.5	-1.5	-1.0	-1.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.1	3.1	3.1	3.1	2.9	2.9
Minimum Gap (s)	1.1	1.1	1.1	1.1	1.0	1.0
Time Before Reduce (s)	10.0	10.0	10.0	10.0	5.0	5.0
Time To Reduce (s)	15.0	15.0	15.0	15.0	10.0	10.0
Recall Mode	Min	Min	Min	Min	None	None
Walk Time (s)			5.0	5.0	5.0	5.0
Flash Dont Walk (s)			14.0	14.0	17.0	17.0
Pedestrian Calls (#/hr)			1	1	1	1
90th %ile Green (s)	41.0	41.0	41.5	41.5	22.0	22.0
90th %ile Term Code	Max	Max	Max	Max	Ped	Ped
70th %ile Green (s)	41.0	41.0	41.5	41.5	9.0	9.0
70th %ile Term Code	Max	Max	Hold	Hold	Gap	Gap
50th %ile Green (s)	32.2	32.2	32.7	32.7	7.9	7.9
50th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
30th %ile Green (s)	20.7	20.7	21.2	21.2	6.5	6.5
30th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
10th %ile Green (s)	26.3	26.3	26.8	26.8	0.0	0.0
10th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Skip	Skip

Intersection Summary	
Area Type:	Other
Cycle Length: 75	
Actuated Cycle Length: 50	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
90th %ile Actuated Cycle: 72.5	
70th %ile Actuated Cycle: 59.5	
50th %ile Actuated Cycle: 49.6	
30th %ile Actuated Cycle: 36.7	
10th %ile Actuated Cycle: 31.8	

Splits and Phases: 1: West Union Road & Driveway

Intersection: 1: West Union Road & Driveway

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	R	L	R
Maximum Queue (ft)	112	88	61	246	34	83	99
Average Queue (ft)	50	53	16	126	16	34	40
95th Queue (ft)	91	91	45	218	41	68	73
Link Distance (ft)		504	504	342		136	136
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100				175		
Storage Blk Time (%)	1	0		2			
Queuing Penalty (veh)	4	0		1			

Network Summary

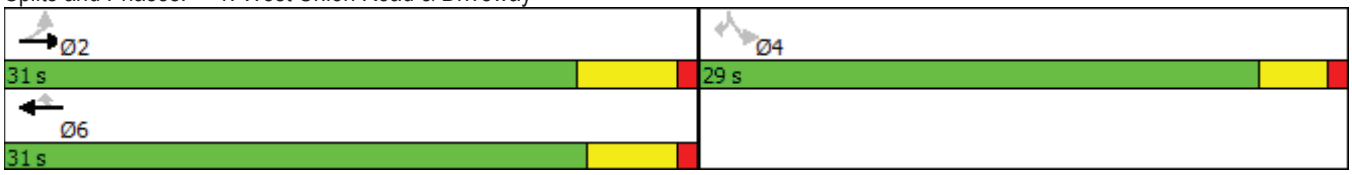
Network wide Queuing Penalty: 5

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	93	915	481	69	130	111
Future Volume (vph)	93	915	481	69	130	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			175	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		20	
Link Distance (ft)		535	367		175	
Travel Time (s)		9.1	6.3		6.0	
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template						
Leading Detector (ft)	75	323	283	143	75	75
Trailing Detector (ft)	1	157	157	137	1	1
Detector 1 Position(ft)	1	157	157	137	1	1
Detector 1 Size(ft)	74	6	6	6	74	74
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		317	277			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	10.0	5.0	5.0
Minimum Split (s)	26.5	26.5	27.3	27.3	28.5	28.5
Total Split (s)	31.0	31.0	31.0	31.0	29.0	29.0
Total Split (%)	51.7%	51.7%	51.7%	51.7%	48.3%	48.3%
Maximum Green (s)	25.5	25.5	26.0	26.0	25.0	25.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Yellow Time (s)	4.5	4.5	4.0	4.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	0.0	0.0
Total Lost Time (s)	4.0	4.0	3.5	3.5	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.1	3.1	3.1	3.1	2.9	2.9
Minimum Gap (s)	1.1	1.1	1.1	1.1	1.0	1.0
Time Before Reduce (s)	10.0	10.0	10.0	10.0	5.0	5.0
Time To Reduce (s)	15.0	15.0	15.0	15.0	10.0	10.0
Recall Mode	Min	Min	Min	Min	None	None
Walk Time (s)			5.0	5.0	5.0	5.0
Flash Dont Walk (s)			14.0	14.0	17.0	17.0
Pedestrian Calls (#/hr)			1	1	1	1
90th %ile Green (s)	25.5	25.5	26.0	26.0	22.0	22.0
90th %ile Term Code	Max	Max	Hold	Hold	Ped	Ped
70th %ile Green (s)	17.7	17.7	18.2	18.2	8.9	8.9
70th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
50th %ile Green (s)	15.9	15.9	16.4	16.4	7.6	7.6
50th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
30th %ile Green (s)	12.4	12.4	12.9	12.9	6.6	6.6
30th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
10th %ile Green (s)	24.5	24.5	25.0	25.0	0.0	0.0
10th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Skip	Skip

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 36.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
90th %ile Actuated Cycle: 57	
70th %ile Actuated Cycle: 36.1	
50th %ile Actuated Cycle: 33	
30th %ile Actuated Cycle: 28.5	
10th %ile Actuated Cycle: 30	

Splits and Phases: 1: West Union Road & Driveway



Intersection: 1: West Union Road & Driveway

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	R	L	R
Maximum Queue (ft)	109	162	83	138	60	113	80
Average Queue (ft)	41	87	42	66	17	55	36
95th Queue (ft)	86	140	72	112	46	99	66
Link Distance (ft)		504	504	342		136	136
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100				175		
Storage Blk Time (%)	1	1					
Queuing Penalty (veh)	3	1					

Network Summary

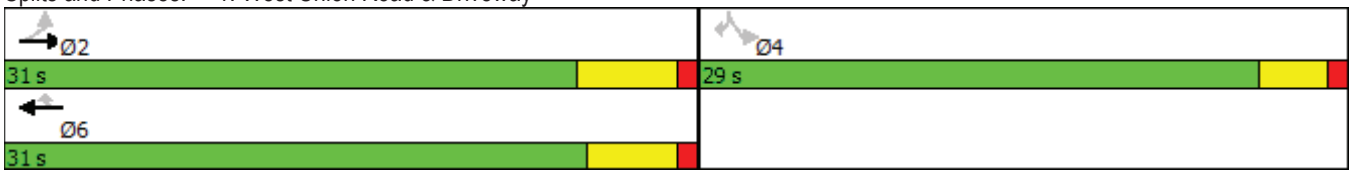
Network wide Queuing Penalty: 4

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	119	915	481	83	151	129
Future Volume (vph)	119	915	481	83	151	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			175	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		20	
Link Distance (ft)		535	367		175	
Travel Time (s)		9.1	6.3		6.0	
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template						
Leading Detector (ft)	75	323	283	143	75	75
Trailing Detector (ft)	1	157	157	137	1	1
Detector 1 Position(ft)	1	157	157	137	1	1
Detector 1 Size(ft)	74	6	6	6	74	74
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		317	277			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	10.0	5.0	5.0
Minimum Split (s)	26.5	26.5	27.3	27.3	28.5	28.5
Total Split (s)	31.0	31.0	31.0	31.0	29.0	29.0
Total Split (%)	51.7%	51.7%	51.7%	51.7%	48.3%	48.3%
Maximum Green (s)	25.5	25.5	26.0	26.0	25.0	25.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Yellow Time (s)	4.5	4.5	4.0	4.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	0.0	0.0
Total Lost Time (s)	4.0	4.0	3.5	3.5	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.1	3.1	3.1	3.1	2.9	2.9
Minimum Gap (s)	1.1	1.1	1.1	1.1	1.0	1.0
Time Before Reduce (s)	10.0	10.0	10.0	10.0	5.0	5.0
Time To Reduce (s)	15.0	15.0	15.0	15.0	10.0	10.0
Recall Mode	Min	Min	Min	Min	None	None
Walk Time (s)			5.0	5.0	5.0	5.0
Flash Dont Walk (s)			14.0	14.0	17.0	17.0
Pedestrian Calls (#/hr)			1	1	1	1
90th %ile Green (s)	25.5	25.5	26.0	26.0	22.0	22.0
90th %ile Term Code	Max	Max	Hold	Hold	Ped	Ped
70th %ile Green (s)	18.0	18.0	18.5	18.5	9.5	9.5
70th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
50th %ile Green (s)	17.1	17.1	17.6	17.6	8.0	8.0
50th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
30th %ile Green (s)	12.5	12.5	13.0	13.0	6.9	6.9
30th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
10th %ile Green (s)	24.5	24.5	25.0	25.0	0.0	0.0
10th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Skip	Skip

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 37.5	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
90th %ile Actuated Cycle: 57	
70th %ile Actuated Cycle: 37	
50th %ile Actuated Cycle: 34.6	
30th %ile Actuated Cycle: 28.9	
10th %ile Actuated Cycle: 30	

Splits and Phases: 1: West Union Road & Driveway



Intersection: 1: West Union Road & Driveway

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	R	L	R
Maximum Queue (ft)	132	254	225	191	60	156	77
Average Queue (ft)	57	102	68	97	20	60	43
95th Queue (ft)	92	192	147	165	49	118	70
Link Distance (ft)		504	504	342		136	136
Upstream Blk Time (%)						1	
Queuing Penalty (veh)						0	
Storage Bay Dist (ft)	100				175		
Storage Blk Time (%)	0	5		0			
Queuing Penalty (veh)	1	5		0			

Network Summary

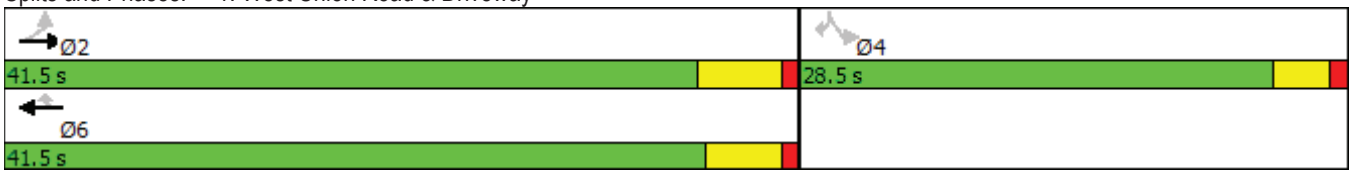
Network wide Queuing Penalty: 7

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	54	440	744	19	49	83
Future Volume (vph)	54	440	744	19	49	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			175	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		20	
Link Distance (ft)		535	367		175	
Travel Time (s)		9.1	6.3		6.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template						
Leading Detector (ft)	75	323	283	143	75	75
Trailing Detector (ft)	1	157	157	137	1	1
Detector 1 Position(ft)	1	157	157	137	1	1
Detector 1 Size(ft)	74	6	6	6	74	74
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		317	277			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	10.0	5.0	5.0
Minimum Split (s)	26.5	26.5	27.3	27.3	28.5	28.5
Total Split (s)	41.5	41.5	41.5	41.5	28.5	28.5
Total Split (%)	59.3%	59.3%	59.3%	59.3%	40.7%	40.7%
Maximum Green (s)	36.0	36.0	36.5	36.5	24.5	24.5
Yellow Time (s)	4.5	4.5	4.0	4.0	3.0	3.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	1.5	-1.5	-1.0	-1.0	0.0	0.0
Total Lost Time (s)	7.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.1	3.1	3.1	3.1	2.9	2.9
Minimum Gap (s)	1.1	1.1	1.1	1.1	1.0	1.0
Time Before Reduce (s)	10.0	10.0	10.0	10.0	5.0	5.0
Time To Reduce (s)	15.0	15.0	15.0	15.0	10.0	10.0
Recall Mode	Min	Min	Min	Min	None	None
Walk Time (s)			5.0	5.0	5.0	5.0
Flash Dont Walk (s)			14.0	14.0	17.0	17.0
Pedestrian Calls (#/hr)			1	1	1	1
90th %ile Green (s)	36.0	36.0	36.5	36.5	22.0	22.0
90th %ile Term Code	Max	Max	Max	Max	Ped	Ped
70th %ile Green (s)	28.1	28.1	28.6	28.6	7.7	7.7
70th %ile Term Code	Hold	Hold	Gap	Gap	Gap	Gap
50th %ile Green (s)	23.2	23.2	23.7	23.7	6.9	6.9
50th %ile Term Code	Hold	Hold	Gap	Gap	Gap	Gap
30th %ile Green (s)	29.1	29.1	29.6	29.6	6.2	6.2
30th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Gap	Gap
10th %ile Green (s)	25.1	25.1	25.6	25.6	0.0	0.0
10th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Skip	Skip

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 45.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
90th %ile Actuated Cycle: 67.5	
70th %ile Actuated Cycle: 45.3	
50th %ile Actuated Cycle: 39.6	
30th %ile Actuated Cycle: 44.8	
10th %ile Actuated Cycle: 30.6	

Splits and Phases: 1: West Union Road & Driveway



Intersection: 1: West Union Road & Driveway

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	R	L	R
Maximum Queue (ft)	61	112	35	361	342	57	78
Average Queue (ft)	36	37	9	115	16	23	37
95th Queue (ft)	68	78	33	269	120	50	70
Link Distance (ft)		504	504	342		136	136
Upstream Blk Time (%)				1	0		
Queuing Penalty (veh)				0	0		
Storage Bay Dist (ft)	125				175		
Storage Blk Time (%)		0		3			
Queuing Penalty (veh)		0		1			

Network Summary

Network wide Queuing Penalty: 1

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	77	440	744	55	71	120
Future Volume (vph)	77	440	744	55	71	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			175	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		20	
Link Distance (ft)		535	367		175	
Travel Time (s)		9.1	6.3		6.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template						
Leading Detector (ft)	75	323	283	143	75	75
Trailing Detector (ft)	1	157	157	137	1	1
Detector 1 Position(ft)	1	157	157	137	1	1
Detector 1 Size(ft)	74	6	6	6	74	74
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		317	277			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	10.0	5.0	5.0
Minimum Split (s)	26.5	26.5	27.3	27.3	28.5	28.5
Total Split (s)	46.5	46.5	46.5	46.5	28.5	28.5
Total Split (%)	62.0%	62.0%	62.0%	62.0%	38.0%	38.0%
Maximum Green (s)	41.0	41.0	41.5	41.5	24.5	24.5
Yellow Time (s)	4.5	4.5	4.0	4.0	3.0	3.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.5	-1.5	-1.0	-1.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.1	3.1	3.1	3.1	2.9	2.9
Minimum Gap (s)	1.1	1.1	1.1	1.1	1.0	1.0
Time Before Reduce (s)	10.0	10.0	10.0	10.0	5.0	5.0
Time To Reduce (s)	15.0	15.0	15.0	15.0	10.0	10.0
Recall Mode	Min	Min	Min	Min	None	None
Walk Time (s)			5.0	5.0	5.0	5.0
Flash Dont Walk (s)			14.0	14.0	17.0	17.0
Pedestrian Calls (#/hr)			1	1	1	1
90th %ile Green (s)	41.0	41.0	41.5	41.5	22.0	22.0
90th %ile Term Code	Max	Max	Max	Max	Ped	Ped
70th %ile Green (s)	41.0	41.0	41.5	41.5	9.0	9.0
70th %ile Term Code	Max	Max	Hold	Hold	Gap	Gap
50th %ile Green (s)	32.2	32.2	32.7	32.7	7.9	7.9
50th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
30th %ile Green (s)	20.7	20.7	21.2	21.2	6.5	6.5
30th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
10th %ile Green (s)	26.3	26.3	26.8	26.8	0.0	0.0
10th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Skip	Skip

Intersection Summary	
Area Type:	Other
Cycle Length: 75	
Actuated Cycle Length: 50	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
90th %ile Actuated Cycle: 72.5	
70th %ile Actuated Cycle: 59.5	
50th %ile Actuated Cycle: 49.6	
30th %ile Actuated Cycle: 36.7	
10th %ile Actuated Cycle: 31.8	

Splits and Phases: 1: West Union Road & Driveway

Intersection: 1: West Union Road & Driveway

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	R	L	R
Maximum Queue (ft)	87	186	109	361	342	110	129
Average Queue (ft)	49	51	22	133	27	40	44
95th Queue (ft)	91	110	59	278	129	82	86
Link Distance (ft)		504	504	342		136	136
Upstream Blk Time (%)				2	0		0
Queuing Penalty (veh)				0	0		0
Storage Bay Dist (ft)	125				175		
Storage Blk Time (%)		1		4			
Queuing Penalty (veh)		0		3			

Network Summary

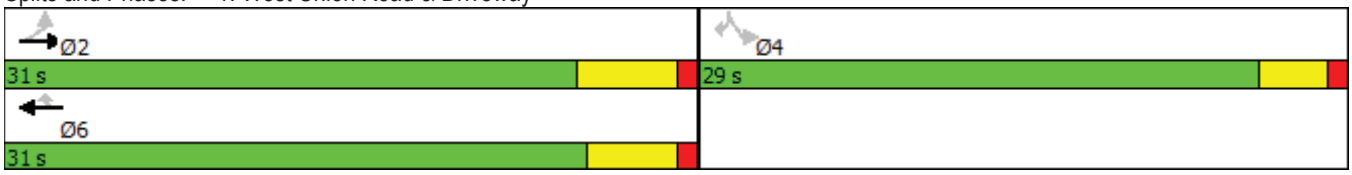
Network wide Queuing Penalty: 3

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	93	915	481	69	130	111
Future Volume (vph)	93	915	481	69	130	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			175	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		20	
Link Distance (ft)		535	367		175	
Travel Time (s)		9.1	6.3		6.0	
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template						
Leading Detector (ft)	75	323	283	143	75	75
Trailing Detector (ft)	1	157	157	137	1	1
Detector 1 Position(ft)	1	157	157	137	1	1
Detector 1 Size(ft)	74	6	6	6	74	74
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		317	277			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	10.0	5.0	5.0
Minimum Split (s)	26.5	26.5	27.3	27.3	28.5	28.5
Total Split (s)	31.0	31.0	31.0	31.0	29.0	29.0
Total Split (%)	51.7%	51.7%	51.7%	51.7%	48.3%	48.3%
Maximum Green (s)	25.5	25.5	26.0	26.0	25.0	25.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Yellow Time (s)	4.5	4.5	4.0	4.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	0.0	0.0
Total Lost Time (s)	4.0	4.0	3.5	3.5	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.1	3.1	3.1	3.1	2.9	2.9
Minimum Gap (s)	1.1	1.1	1.1	1.1	1.0	1.0
Time Before Reduce (s)	10.0	10.0	10.0	10.0	5.0	5.0
Time To Reduce (s)	15.0	15.0	15.0	15.0	10.0	10.0
Recall Mode	Min	Min	Min	Min	None	None
Walk Time (s)			5.0	5.0	5.0	5.0
Flash Dont Walk (s)			14.0	14.0	17.0	17.0
Pedestrian Calls (#/hr)			1	1	1	1
90th %ile Green (s)	25.5	25.5	26.0	26.0	22.0	22.0
90th %ile Term Code	Max	Max	Hold	Hold	Ped	Ped
70th %ile Green (s)	17.7	17.7	18.2	18.2	8.9	8.9
70th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
50th %ile Green (s)	15.9	15.9	16.4	16.4	7.6	7.6
50th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
30th %ile Green (s)	12.4	12.4	12.9	12.9	6.6	6.6
30th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
10th %ile Green (s)	24.5	24.5	25.0	25.0	0.0	0.0
10th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Skip	Skip

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 36.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
90th %ile Actuated Cycle: 57	
70th %ile Actuated Cycle: 36.1	
50th %ile Actuated Cycle: 33	
30th %ile Actuated Cycle: 28.5	
10th %ile Actuated Cycle: 30	

Splits and Phases: 1: West Union Road & Driveway



Intersection: 1: West Union Road & Driveway

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	R	L	R
Maximum Queue (ft)	88	152	105	190	35	114	76
Average Queue (ft)	44	89	51	81	19	53	36
95th Queue (ft)	84	132	88	147	45	93	66
Link Distance (ft)		504	504	342		136	136
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	125				175		
Storage Blk Time (%)		1		0			
Queuing Penalty (veh)		0		0			

Network Summary

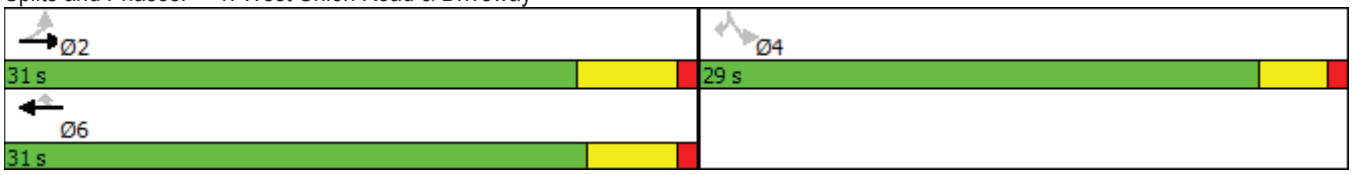
Network wide Queuing Penalty: 1

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	119	915	481	83	151	129
Future Volume (vph)	119	915	481	83	151	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			175	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100				25	
Right Turn on Red				Yes		Yes
Link Speed (mph)		40	40		20	
Link Distance (ft)		535	367		175	
Travel Time (s)		9.1	6.3		6.0	
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		10	10		10	
Two way Left Turn Lane			Yes			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template						
Leading Detector (ft)	75	323	283	143	75	75
Trailing Detector (ft)	1	157	157	137	1	1
Detector 1 Position(ft)	1	157	157	137	1	1
Detector 1 Size(ft)	74	6	6	6	74	74
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		317	277			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Detector Phase	2	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	8.0	8.0	10.0	10.0	5.0	5.0
Minimum Split (s)	26.5	26.5	27.3	27.3	28.5	28.5
Total Split (s)	31.0	31.0	31.0	31.0	29.0	29.0
Total Split (%)	51.7%	51.7%	51.7%	51.7%	48.3%	48.3%
Maximum Green (s)	25.5	25.5	26.0	26.0	25.0	25.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Yellow Time (s)	4.5	4.5	4.0	4.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.5	-1.5	-1.5	-1.5	0.0	0.0
Total Lost Time (s)	4.0	4.0	3.5	3.5	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.1	3.1	3.1	3.1	2.9	2.9
Minimum Gap (s)	1.1	1.1	1.1	1.1	1.0	1.0
Time Before Reduce (s)	10.0	10.0	10.0	10.0	5.0	5.0
Time To Reduce (s)	15.0	15.0	15.0	15.0	10.0	10.0
Recall Mode	Min	Min	Min	Min	None	None
Walk Time (s)			5.0	5.0	5.0	5.0
Flash Dont Walk (s)			14.0	14.0	17.0	17.0
Pedestrian Calls (#/hr)			1	1	1	1
90th %ile Green (s)	25.5	25.5	26.0	26.0	22.0	22.0
90th %ile Term Code	Max	Max	Hold	Hold	Ped	Ped
70th %ile Green (s)	18.0	18.0	18.5	18.5	9.5	9.5
70th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
50th %ile Green (s)	17.1	17.1	17.6	17.6	8.0	8.0
50th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
30th %ile Green (s)	12.5	12.5	13.0	13.0	6.9	6.9
30th %ile Term Code	Gap	Gap	Hold	Hold	Gap	Gap
10th %ile Green (s)	24.5	24.5	25.0	25.0	0.0	0.0
10th %ile Term Code	Dwell	Dwell	Dwell	Dwell	Skip	Skip

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 37.5	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
90th %ile Actuated Cycle: 57	
70th %ile Actuated Cycle: 37	
50th %ile Actuated Cycle: 34.6	
30th %ile Actuated Cycle: 28.9	
10th %ile Actuated Cycle: 30	

Splits and Phases: 1: West Union Road & Driveway



Intersection: 1: West Union Road & Driveway

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	R	L	R
Maximum Queue (ft)	87	162	135	137	60	110	107
Average Queue (ft)	50	79	56	76	22	58	47
95th Queue (ft)	86	129	104	129	52	98	78
Link Distance (ft)		504	504	342		136	136
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	125				175		
Storage Blk Time (%)		1					
Queuing Penalty (veh)		1					

Network Summary

Network wide Queuing Penalty: 1

Attachment B Existing traffic conditions worksheets

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	517	0	0	864	0	0
Future Volume (Veh/h)	517	0	0	864	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	623	0	0	1041	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	309			219		
pX, platoon unblocked					0.73	
vC, conflicting volume			623		1664	312
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			623		1725	312
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			968		59	690

Direction, Lane #	EB 1	EB 2	WB 1
Volume Total	415	208	1041
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.24	0.12	0.61
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			
Approach Delay (s)	0.0		0.0
Approach LOS			

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		48.8%	ICU Level of Service
Analysis Period (min)		15	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	93	530	896	66	86	145
v/c Ratio	0.27	0.20	0.65	0.06	0.40	0.51
Control Delay	7.0	3.7	8.6	2.0	29.9	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	3.7	8.6	2.0	29.9	15.2
Queue Length 50th (ft)	7	21	105	1	30	14
Queue Length 95th (ft)	42	66	353	14	59	48
Internal Link Dist (ft)		139	280		110	
Turn Bay Length (ft)	100			175	100	100
Base Capacity (vph)	340	2587	1376	1182	951	899
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.20	0.65	0.06	0.09	0.16

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	77	440	744	55	71	120
Future Volume (vph)	77	440	744	55	71	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.0	5.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	1863	1583	1770	1583
Flt Permitted	0.25	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	465	3539	1863	1583	1770	1583
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	93	530	896	66	86	145
RTOR Reduction (vph)	0	0	0	12	0	93
Lane Group Flow (vph)	93	530	896	54	86	52
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Actuated Green, G (s)	48.1	48.1	48.6	48.6	8.1	8.1
Effective Green, g (s)	48.1	48.1	48.6	48.6	8.1	8.1
Actuated g/C Ratio	0.73	0.73	0.74	0.74	0.12	0.12
Clearance Time (s)	5.5	5.5	5.0	5.0	4.0	4.0
Vehicle Extension (s)	3.1	3.1	3.1	3.1	2.9	2.9
Lane Grp Cap (vph)	340	2590	1378	1170	218	195
v/s Ratio Prot		0.15	c0.48			
v/s Ratio Perm	0.20			0.03	c0.05	0.03
v/c Ratio	0.27	0.20	0.65	0.05	0.39	0.27
Uniform Delay, d1	2.9	2.8	4.3	2.3	26.5	26.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	1.1	0.0	1.1	0.7
Delay (s)	3.4	2.8	5.4	2.3	27.7	26.8
Level of Service	A	A	A	A	C	C
Approach Delay (s)		2.9	5.2		27.1	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	65.7	Sum of lost time (s)	9.5
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1034	0	0	610	0	0
Future Volume (Veh/h)	1034	0	0	610	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	1055	0	0	622	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	309			219		
pX, platoon unblocked					0.82	
vC, conflicting volume			1055		1677	528
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1055		1715	528
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			668		68	501

Direction, Lane #	EB 1	EB 2	WB 1
Volume Total	703	352	622
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.41	0.21	0.37
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			
Approach Delay (s)	0.0		0.0
Approach LOS			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	121	934	491	85	154	132
v/c Ratio	0.29	0.52	0.50	0.10	0.40	0.29
Control Delay	9.0	8.2	9.1	2.5	14.7	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	8.2	9.1	2.5	14.7	4.7
Queue Length 50th (ft)	9	44	42	0	23	0
Queue Length 95th (ft)	55	153	179	18	62	25
Internal Link Dist (ft)		139	280		110	
Turn Bay Length (ft)	100			175	100	100
Base Capacity (vph)	816	3461	1825	1553	1642	1478
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.27	0.27	0.05	0.09	0.09

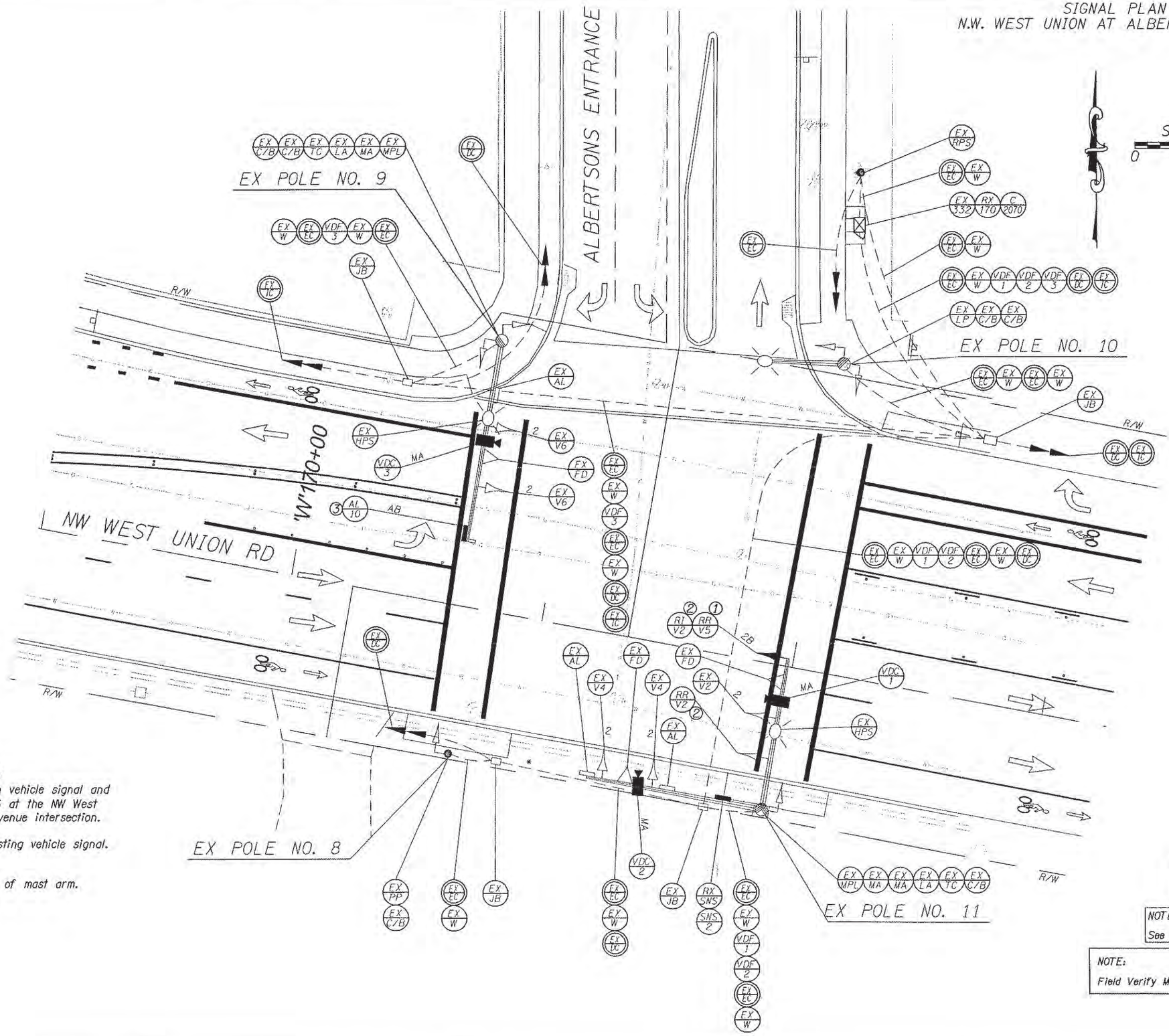
Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	119	915	481	83	151	129
Future Volume (vph)	119	915	481	83	151	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.0	5.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	1863	1583	1770	1583
Flt Permitted	0.45	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	835	3539	1863	1583	1770	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	121	934	491	85	154	132
RTOR Reduction (vph)	0	0	0	40	0	103
Lane Group Flow (vph)	121	934	491	45	154	29
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Actuated Green, G (s)	18.5	18.5	19.0	19.0	8.0	8.0
Effective Green, g (s)	18.5	18.5	19.0	19.0	8.0	8.0
Actuated g/C Ratio	0.51	0.51	0.53	0.53	0.22	0.22
Clearance Time (s)	5.5	5.5	5.0	5.0	4.0	4.0
Vehicle Extension (s)	3.1	3.1	3.1	3.1	2.9	2.9
Lane Grp Cap (vph)	429	1818	983	835	393	351
v/s Ratio Prot		c0.26	0.26			
v/s Ratio Perm	0.14			0.03	c0.09	0.02
v/c Ratio	0.28	0.51	0.50	0.05	0.39	0.08
Uniform Delay, d1	5.0	5.8	5.5	4.1	11.9	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.3	0.4	0.0	0.6	0.1
Delay (s)	5.3	6.0	5.9	4.2	12.5	11.2
Level of Service	A	A	A	A	B	B
Approach Delay (s)		6.0	5.6		11.9	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	36.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

SIGNAL PLAN
N.W. WEST UNION AT ALBERTSONS DRWY.



REGISTERED PROFESSIONAL ENGINEER
59948PE
OREGON
JULY 12, 2005
ANTHONY S. YI
3/4/11
EXPIRES: 06/30/12

CONSTRUCTION NOTES:

1. Remove existing left-turn vehicle signal and reinstall on new pole #6 at the NW West Union Road/NW 185th Avenue intersection.
2. Remove and reinstall existing vehicle signal. Utilize existing wires.
3. Mount sign to back side of mast arm.

"UTILITIES NOT SHOWN"
Contractor to contact utility companies for field locations.

NOTE:
See sheet TS-1 for Legend

NOTE:
Field Verify Measurements Before Construction

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
610 S.W. ALDER, SUITE 700
PORTLAND, OREGON 97205
(503) 228-5230

PLOT STAMP: 03/04/11 9:24A JHENRIKSEN
CAD: 11430-SIG1.DWG, TAB: TS-4

NO.	REVISIONS

NW 185TH AVENUE
NW EVERGREEN PARKWAY TO NW WEST UNION RD.
WASHINGTON COUNTY, OREGON

SIGNAL PLAN

PROJECT NUMBER
100091

SHEET NO.
138 OF 177

SHEET TITLE
TS-4

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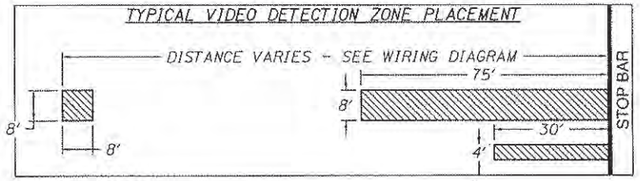
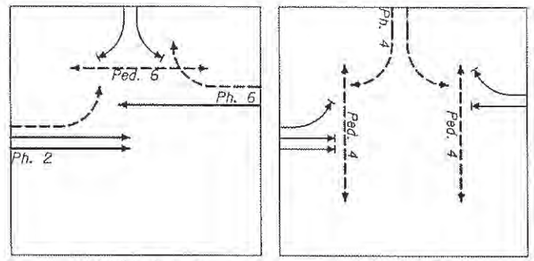
TYPICAL VIDEO DETECTION ZONE PLACEMENT



DESIGN APPROACH SPEEDS

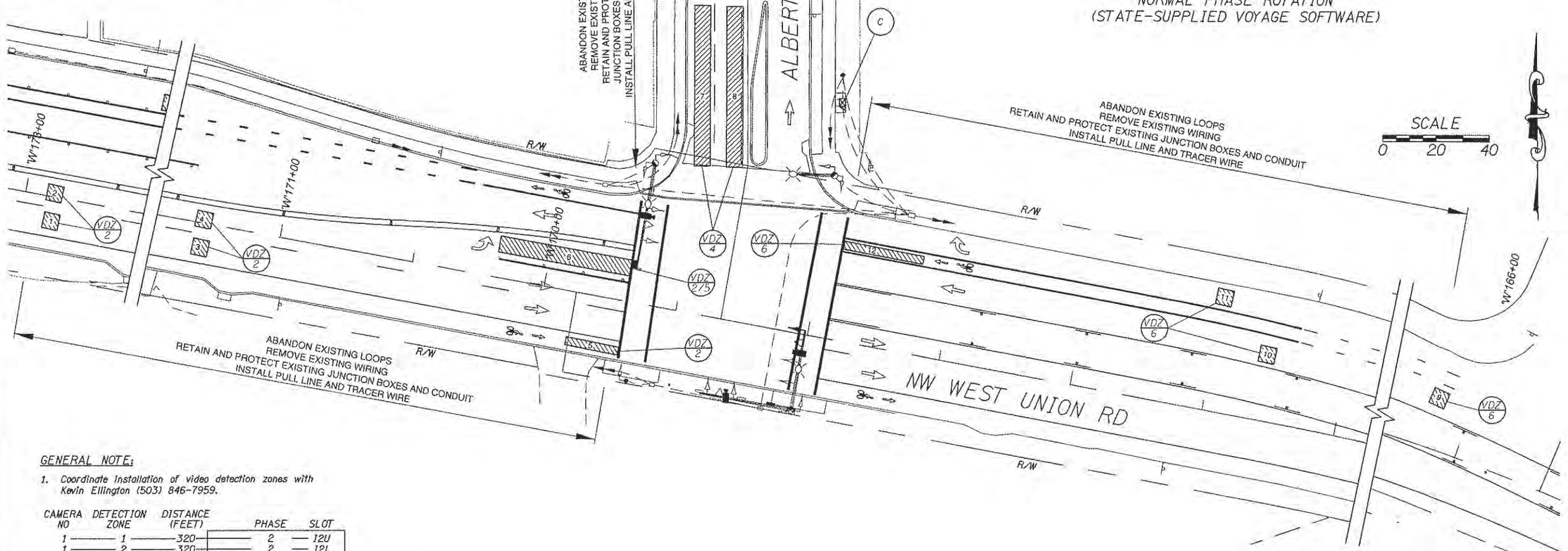
STREET	DESIGN SPEED
NW WEST UNION RD	45 MPH
ALBERTSONS ENTRANCE	25 MPH

DETECTOR PLAN
N.W. WEST UNION AT ALBERTSONS DRWY.



PHASES 2 & 6 — PHASE 4

NORMAL PHASE ROTATION
(STATE-SUPPLIED VOYAGE SOFTWARE)



SCALE
0 20 40

GENERAL NOTE:

1. Coordinate installation of video detection zones with Kevin Ellington (503) 846-7959.

CAMERA NO	DETECTION ZONE	DISTANCE (FEET)	PHASE	SLOT
1	1	320	2	12U
1	2	320	2	12L
1	3	160	2	13L
1	4	160		
1	5	30	2	13U
1	6	75	5(2)	J1
2	7	75	4	16U
2	8	75	4	16L
3	9	280	6	J2U
3	10	160	6	J2L
3	11	140	6	J3L
3	12	30	6	J3U

CONTROLLER CABINET

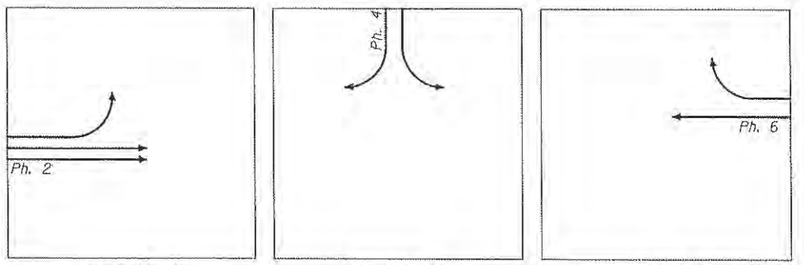
VIDEO DETECTOR WIRING DIAGRAM
DISTANCE IS FROM THE STOP BAR TO THE END OF DETECTION ZONE IN FEET.

NOTE:
See sheet TS-1 for Legend

N = VIDEO DETECTION ZONE NUMBER (N)

NOTE:
Field Verify Measurements Before Construction

"UTILITIES NOT SHOWN"
Contractor to contact utility companies for field locations.



CHANNEL A PHASE 2 — CHANNEL B PHASE 4 — CHANNEL C PHASE 6

FIRE PREEMPTION OPERATION

REGISTERED PROFESSIONAL ENGINEER
59948PE
OREGON
JULY 12, 2005
ANTHONY S. YI
3/4/11
EXPIRES: 06/30/12

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
610 S.W. ALDER, SUITE 700
PORTLAND, OREGON 97205
(503) 228-5230

PLOT STAMP: 03/04/11 9:24A JHENRIKSEN
CAD: 11430-SIG1.DWG, TAB: TS-5

NO.	REVISIONS

NW 185TH AVENUE
NW EVERGREEN PARKWAY TO NW WEST UNION RD.
WASHINGTON COUNTY, OREGON

DETECTOR PLAN

PROJECT NUMBER
100091

SHEET NO.
139 OF 177

SHEET TITLE
TS-5

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WASHI

Friday, January 11, 2013 15:43

Intersection Name	*2 - Albertsons*	**Local ID**	*2*
Intersection Telephone Number			
System Name	*11 - West Union*	**System ID**	*11*
Controller Type	*Voyage - C1-C11*		
Controller Serial Number		**Installation Date**	
Programmed by		**Programmed Date**	

Graphic Map Background	**Phase Rotation Diagram**

Control Data (next/2/2)

Controller Function and Timing (next/2/1, next/2/2)

Security, Sequence, Initialization

Security Code	****	0 = disabled, or 1000-9999
Sequence	*2*	0 = sequential, 1 = quad left turn, 2-6 = special A-E, 7 = lead lag

Lead Lag (next/2/2/3)			
Phases 1 - 2	**Phases 3 - 4**	**Phases 5 - 6**	**Phases 7 - 8**
0	*0*	*0*	*0*
0 = no reversal, 1 = reversal, 2 = by coord plan or clock			

Initialization and Flash (next/2/2/5)

	Initialization	**Flash Entry**	**Flash Exit**	
Ring 1 Phase	*2*	*0*	*2*	phase 1-8
Ring 2 Phase	*6*	*0*	*6*	phase 1-8
Interval	*0*	*0*	*0*	0 = red, 1 = yellow, 2 = green

Power up Flash	*0.0*	0.0 - 25.5 seconds		**First All Red**	*8.0*	0.0 - 25.5 seconds

Soft Flash (next/2/2/5)

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	0 = dark, 1=flash yel WIG, 2 = flash yel WAG, 3 = flash red WIG, 4 = flash red WAG				
	3	*4*	*3*	*4*	*3*	*4*	*3*	*4*					
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	
	3	*4*	*3*	*4*	*3*	*4*	*3*	*4*	*3*	*4*	*3*	*4*	same as phase
Internal Logic Output	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	
	0	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 = normal, 1 = dark, 2 = flash WIG

Per Phase Functions (next/2/2/3, next/2/2/1)

	1	2	3	4	5	6	7	8	
Phases Used		X		X		X		X	X = on
Restricted Phases									X = on (Sequence 2, 6, 7 only)
Exclusive Phases									X = on (Sequence 7 only)
Yellow Lock									
Min Recall		X				X			
Max Recall									
Ped Recall									
Red Lock									
Max Out Recall Inhibit		X		X		X		X	X = on
Soft Recall									
Free Walk Rest									
Conditional Ped									
Disable Inhibit Max Termination									
Call to Non Act 1									
Call to Non Act 2									

Dual Entry (next/2/2/9/3)

Mode	0	0 = off, 1 = on, 2 = Not Used, 3 = by coord plan, 4 = by time clock circuit 61

Dual Entry Phase -->	1	2	3	4	5	6	7	8	
Phase	0	0	0	0	0	0	0	0	0 = none, 1-8 = phase 1-8

Conditional Service, Five Section Head

Conditional Service (next/2/2/9/3)			**5 Section Head Logic (next/2/2/9/4)**							
					Anti-Trap				**Yellow Blanking LT**	
	Mode	**CS Max Time**	**X Omits Y**							
Phase 1	0	0	**X : Y**		**Trap Protected Phase**		**Next Phase**		**Phase**	
Phase 3	0	0	**6 : 1**	0	**1**		**< (5)**		**1**	
Phase 5	0	0	**8 : 3**	0	**3**		**< (7)**		**3**	
Phase 7	0	0	**2 : 5**	0	**5**		**< (1)**		**5**	
0 = off, 1 = C.S.On. 2 = C.S. on by TOD circuit 57, 3 = N/A, 4 = C.S. and C.R. On, 5 = C.R. on by TOD circuit 57.			**4 : 7**	0	**7**		**< (3)**		**7**	
			0=off, 1=side call, 2=no side call		X = On					

Phase Times (next/2/2/2, next/2/2/9/5)									
	1	2	3	4	5	6	7	8	
Movement									
Minimum Green	*0*	*8*	*0*	*5*	*0*	*8*	*0*	*0*	0 - 255 sec
Passage	*0.0*	*3.1*	*0.0*	*2.9*	*0.0*	*3.1*	*0.0*	*0.0*	0.0 - 25.5 sec
Yellow	*0.0*	*4.5*	*0.0*	*3.0*	*0.0*	*4.0*	*0.0*	*3.0*	0.0 - 25.5 sec
Red Clearance	*0.0*	*1.0*	*0.0*	*1.0*	*0.0*	*1.0*	*0.0*	*1.0*	0.0 - 25.5 sec or 0 - 255 sec
Max 1	*0*	*45*	*0*	*16*	*0*	*45*	*0*	*0*	0 - 255 sec
Max 2	*0*	*45*	*0*	*15*	*0*	*45*	*0*	*0*	0 - 255 sec
Walk	*0*	*0*	*0*	*4*	*0*	*5*	*0*	*5*	0 - 255 sec
Ped Clear	*0*	*0*	*0*	*15*	*0*	*14*	*0*	*17*	0 - 255 sec
Seconds Per Actuation	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec
Time Before Reduction	*0*	*10*	*0*	*5*	*0*	*10*	*0*	*0*	0 - 255 sec
Time to Reduce	*0*	*15*	*0*	*10*	*0*	*15*	*0*	*0*	0 - 255 sec
Minimum Gap	*0.0*	*1.1*	*0.0*	*1.0*	*0.0*	*1.1*	*0.0*	*0.0*	0.0 - 25.5 sec
Max Variable Initial	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec
Auto Max Adjust	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec
Auto Max Limit	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec
Inhibit Min Yellow									X = On
Red Decimal Off									X = On
Advance Walk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec
Other Controller Functions (next/2/2/9)									
Phase -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
Inhibit Simultaneous Gap Out									X = On
Last Car Passage	*2*	0 = recall phase, 1 = last car passage, 2 = NOT recall - Not last car passage							
Red Revert (+2 seconds)	*0.0*	0 - 25.5 sec							
Auto Ped Clear		X = On							
Flashing Don't Walk Into Yellow		X = On							
Soft Recall / Red Rest Delay	*0.0*	0 - 25.5 sec							
Ped Pushbutton	*0*	0 - 5 sec, 0 = disable							
Advance Flash Rate	*0*	0 = disable, 1 = 120 FPM							
Change Sequence		X = On (After a download with a power on - off cycle)							
Phase -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
Red Clear Extension Detector	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 = none 1 - 32 = detector 1 - 32
Red Clear Extension Red Time	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0 - 25.5 sec.

Local Detectors (next/2/2/4)

Detector Data

	Yellow Lock	Detector Inhibit	Call Phase	Extend Phase	Switch Phase	Delay Time	Stretch / Disconnect Time	Delay or Disconnect Mode
Detector 1 -			*1*	*1*	*0*	*0*	*0.0*	*0*
Detector 2 -			*1*	*1*	*0*	*0*	*0.0*	*0*
Detector 3 -			*3*	*3*	*0*	*0*	*0.0*	*0*
Detector 4 -			*3*	*3*	*0*	*0*	*0.0*	*0*
Detector 5 -			*5*	*5*	*0*	*0*	*0.0*	*0*
Detector 6 -			*5*	*5*	*0*	*0*	*0.0*	*0*
Detector 7 -			*7*	*7*	*0*	*0*	*0.0*	*0*
Detector 8 -			*7*	*7*	*0*	*0*	*0.0*	*0*
Detector 9 -			*2*	*2*	*0*	*0*	*2.0*	*0*
Detector 10 -			*2*	*2*	*0*	*0*	*2.0*	*0*
Detector 11 -			*2*	*2*	*0*	*0*	*0.0*	*0*
Detector 12 -			*0*	*2*	*0*	*0*	*2.0*	*0*
Detector 13 -			*2*	*0*	*0*	*0*	*0.0*	*0*
Detector 14 -			*4*	*4*	*0*	*0*	*0.0*	*0*
Detector 15 -			*4*	*4*	*0*	*0*	*0.0*	*0*
Detector 16 -			*4*	*4*	*0*	*0*	*0.0*	*0*
Detector 17 -			*0*	*4*	*0*	*0*	*0.0*	*0*
Detector 18 -			*4*	*0*	*0*	*0*	*0.0*	*0*
Detector 19 -			*6*	*6*	*0*	*0*	*2.0*	*0*
Detector 20 -			*6*	*6*	*0*	*0*	*2.0*	*0*
Detector 21 -			*6*	*6*	*0*	*0*	*0.0*	*0*
Detector 22 -			*0*	*6*	*0*	*0*	*1.5*	*0*
Detector 23 -			*6*	*0*	*0*	*0*	*0.0*	*0*
Detector 24 -			*8*	*8*	*0*	*0*	*0.0*	*0*
Detector 25 -			*8*	*8*	*0*	*0*	*0.0*	*0*
Detector 26 -			*8*	*8*	*0*	*0*	*0.0*	*0*
Detector 27 -			*0*	*8*	*0*	*0*	*0.0*	*0*
Detector 28 -			*8*	*0*	*0*	*0*	*0.0*	*0*
Detector 29 -			*0*	*0*	*0*	*0*	*0.0*	*0*
Detector 30 -			*0*	*0*	*0*	*0*	*0.0*	*0*
Detector 31 -			*0*	*0*	*0*	*0*	*0.0*	*0*
Detector 32 -			*0*	*0*	*0*	*0*	*0.0*	*0*

yellow lock, detector inhibit, - X = On; call, extend, phase - 0 = none 1 - 8 = phase 1 - 8 ; delay time - 0 - 255 sec
stretch / disconnect time - 0.0 - 25.5 sec.; delay or disconnect Mode - 0 -13

Detector Plans (next/2/2/4/5)

	Loop Number									
	Plan Detectors	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 32, 0 = none, 1 -3 2 = detectors 1 - 32
Detector Plan 1	**Call Phase**									0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extend Phase	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
	Switch Phase	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
	Delay Time	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec
	Stretch/Disconnect Time	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec
	Delay/ Disconnect Mode	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 13
Detector Plan 2	**Call Phase**									0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extend Phase	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
	Switch Phase	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
	Delay Time	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec
	Stretch/Disconnect Time	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec
	Delay/ Disconnect Mode	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 13
Detector Plan 3	**Call Phase**									0 - 8, 0 = none, 1 - 8 = phase 1 - 8
	Extend Phase	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
	Switch Phase	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
	Delay Time	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec
	Stretch/Disconnect Time	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec
	Delay/ Disconnect Mode	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 13

Detector Fail Monitor (next/2/2/4/3)					Detectors 33-64 (next/2/2/4/6)		
	Fail Monitor Enable	Recall Phase	Min Counts	Max Counts		Call Phase	Extend Phase
Detector 1 -		*0*	*0*	*0*	Detector 33 -	0	0
Detector 2 -		*0*	*0*	*0*	Detector 34 -	0	0
Detector 3 -		*0*	*0*	*0*	Detector 35 -	0	0
Detector 4 -		*0*	*0*	*0*	Detector 36 -	0	0
Detector 5 -		*0*	*0*	*0*	Detector 37 -	0	0
Detector 6 -		*0*	*0*	*0*	Detector 38 -	0	0
Detector 7 -		*0*	*0*	*0*	Detector 39 -	0	0
Detector 8 -		*0*	*0*	*0*	Detector 40 -	0	0
Detector 9 -		*0*	*0*	*0*	Detector 41 -	0	0
Detector 10 -		*0*	*0*	*0*	Detector 42 -	0	0
Detector 11 -		*0*	*0*	*0*	Detector 43 -	0	0
Detector 12 -		*0*	*0*	*0*	Detector 44 -	0	0
Detector 13 -		*0*	*0*	*0*	Detector 45 -	0	0
Detector 14 -		*0*	*0*	*0*	Detector 46 -	0	0
Detector 15 -		*0*	*0*	*0*	Detector 47 -	0	0
Detector 16 -		*0*	*0*	*0*	Detector 48 -	0	0
Detector 17 -		*0*	*0*	*0*	Detector 49 -	0	0
Detector 18 -		*0*	*0*	*0*	Detector 50 -	0	0
Detector 19 -		*0*	*0*	*0*	Detector 51 -	0	0
Detector 20 -		*0*	*0*	*0*	Detector 52 -	0	0
Detector 21 -		*0*	*0*	*0*	Detector 53 -	0	0
Detector 22 -		*0*	*0*	*0*	Detector 54 -	0	0
Detector 23 -		*0*	*0*	*0*	Detector 55 -	0	0
Detector 24 -		*0*	*0*	*0*	Detector 56 -	0	0
Detector 25 -		*0*	*0*	*0*	Detector 57 -	0	0
Detector 26 -		*0*	*0*	*0*	Detector 58 -	0	0
Detector 27 -		*0*	*0*	*0*	Detector 59 -	0	0
Detector 28 -		*0*	*0*	*0*	Detector 60 -	0	0
Detector 29 -		*0*	*0*	*0*	Detector 61 -	0	0
Detector 30 -		*0*	*0*	*0*	Detector 62 -	0	0
Detector 31 -		*0*	*0*	*0*	Detector 63 -	0	0
Detector 32 -		*0*	*0*	*0*	Detector 64 -	0	0
fail monitor enable - X = On, recall phase - 0 = none 1 - 8 = phase 1 - 8, min, max					call / extend phase - 0 = none 1 - 8 = phase 1 - 8		

Detector Fail Sample Period (all detectors)	*0*	0 - 255 minutes

Video Fail Inputs (next/2/2/4/3) -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
Phase Recalled	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 = none, 1 - 8 = phase 1 - 8

System Detectors (next/2/2/4/4)

System Detectors -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
Local Detector	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 = none, 1 - 32 = phase 1 - 32

Overlaps / FYLTA (next/2/2/8)

Vehicle Overlaps		Phase or Movement	Phases 1	2	3	4	5	6	7	8	Extension Green	Clearance Yellow	Red
Overlaps	A		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	B		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	C		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	D		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	E		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	F		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	G		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	H		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	I		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	J		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	K		0	0	0	0	0	0	0	0	0.0	0.0	0.0
	L		0	0	0	0	0	0	0	0	0.0	0.0	0.0

A - D
0 = none
1 = overlap
2 = 60 FPM
3 = Not ped
4=Comp. Ph.
5=Prevent. Ext.
6=Not Veh.
7=Adv. FF

E - L
0 = no Overlap
1 = Overlap

Green,Yellow Red

Not Ped - Ped Overlaps (next/2/2/8/5)

Ped Overlaps ->		A	B	C	D	E	F	G	H
Overlaps	A								
	B								
	C								
	D								

X = Nor Ped Ped Overlap

Advance Warning (next/2/2/8/3)

	E	F	G	H	I	J	K	L	
Enable	0	0	0	0	0	0	0	0	0 = disabled, 1 = enabled
1st Conditional Overlap	0	0	0	0	0	0	0	0	0 = none, 1 - overlap E, 2 = overlap F, etc.
2nd Conditional Overlap	0	0	0	0	0	0	0	0	
Advance Deactivation Delay	0	0	0	0	0	0	0	0	0 - 99 seconds

Ped Overlaps (next/2/2/8/5)

Phase -->		1	2	3	4	5	6	7	8	Walk	Ped Clear	Ped Recall
Ped Overlap	A									0	0	
	B									0	0	
	C									0	0	
	D									0	0	
	E									0	0	
	F									0	0	
	G									0	0	
	H									0	0	

Phase, Ped Recall: X = on

Walk, Ped Clear: 0 - 255 seconds

Flashing Yellow Left Turn Arrow (FYLTA) (next/2/2/8/6)

Phase Pairs -->	1 - 2	3 - 4	5 - 6	7 - 8	
Enable	0	0	0	0	0 = off, 3 = 3 outputs, 4 = 4 outputs, 5 = 5 outputs
Even Omits Odd	0	0	0	0	0 = off, 1 = on, 2 = on, place call across barrier
Detector Switch Odd / Even	X	X	X	X	X = on, odd phase must be omitted
Red Transition	2.0	2.0	2.0	2.0	0.0 or 2.0 - 25.5 sec
Red Extension	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Return to GLTA	0	0	0	0	0 = off, 1 = max out, 2 = yellow lock

Flashing Yellow Left Turn Arrow (FYLTA) - Continued on last page

Service Plans (next/2/2/6)

		1	2	3	4	5	6	7	8	
	Phase -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
Service Plan 1	**Call Mode**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest									
	Minimum Green	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Passage	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec.
	Yellow	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 or 3.0 - 25.5
	Red	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec.
	Walk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Pedestrian Clearance	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Phase -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
Service Plan 2	**Call Mode**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest									
	Minimum Green	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Passage	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec.
	Yellow	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 or 3.0 - 25.5
	Red	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec.
	Walk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Pedestrian Clearance	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Phase -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
Service Plan 3	**Call Mode**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest									
	Minimum Green	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Passage	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec.
	Yellow	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 or 3.0 - 25.5
	Red	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec.
	Walk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Pedestrian Clearance	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Phase -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
Service Plan 4	**Call Mode**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest									
	Minimum Green	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Passage	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec.
	Yellow	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 or 3.0 - 25.5
	Red	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec.
	Walk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Pedestrian Clearance	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Phase -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
Service Plan 5	**Call Mode**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest									
	Minimum Green	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Passage	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec.
	Yellow	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 or 3.0 - 25.5
	Red	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec.
	Walk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Pedestrian Clearance	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Phase -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
Service Plan 6	**Call Mode**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest									
	Minimum Green	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Passage	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec.
	Yellow	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 or 3.0 - 25.5
	Red	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	0.0 - 25.5 sec.
	Walk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.
	Pedestrian Clearance	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec.

Service Plans Cont.

	Phase -->	1	2	3	4	5	6	7	8	
Service Plan 7	Call Mode	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest									
	Minimum Green	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0 - 255 sec.
	Pedestrian Clearance	0	0	0	0	0	0	0	0	0 - 255 sec.

	Phase -->	1	2	3	4	5	6	7	8	
Service Plan 8	Call Mode	0	0	0	0	0	0	0	0	
	0 = actuated, 1 = omit, 2 = CNA, 3 = min recall, 4 = max recall, 5 = soft recall, 6 = ped recall, 7 = omit ped, 8 = red rest									
	Minimum Green	0	0	0	0	0	0	0	0	0 - 255 sec.
	Passage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 or 3.0 - 25.5
	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec.
	Walk	0	0	0	0	0	0	0	0	0 - 255 sec.
	Pedestrian Clearance	0	0	0	0	0	0	0	0	0 - 255 sec.

Max Plans (next/2/2/7)

	Phase -->	1	2	3	4	5	6	7	8	
Max Plan 1	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 2	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 3	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 4	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 5	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 6	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 7	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec
Max Plan 8	Normal Max	0	0	0	0	0	0	0	0	0 - 255 sec
	Fail Max	0	0	0	0	0	0	0	0	
	Auto Max Adjust	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 - 25.5 sec
	Auto Max Limit	0	0	0	0	0	0	0	0	0 - 255 sec

Coordination Data (next/2/3)

Coordination Modes (next/2/3/1, next/2/3/4/1, next/2/3/4/3)

Flash Mode	*33*	0=off, 1=on, 33=time clock, 34=comm, 35=hardwire
Coordination Plan Mode	*33*	0=free, 1-32 = coord plan 1-32, 33=time clock, 34=comm, 35=hardwire
Offset Seeking Mode	*2*	0=add only, 1=dwell, 2=fastway
Late Ped	*0*	0 = off, 1 = on
Coord Walk Rest	*0*	0 = off, 1 = on, 2 = by TOD circuit 160, 3 = end of walk, 4 = coord ped during perms
Repeated Phase Service	*0*	0=off, 1=on (no coord ped), 2=on (beginning green coord ped), 3=on (coord ped always)
Zero Mode (TS2 only)	*1*	0=start of main street, 1=end of main street, 2=by TOD circuit 144

Phase -->	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	0 = service allowed 1 = service prevented
Omit Phase During Repeated Phase Service	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	
Auto Permissive Min Green	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 seconds

Coordination Plans (next/2/3/2)

Coord Plan	**Coordination Phases**		**Cycle Length**	**Offset Time**	**Min Cycle Length Dwell Time**	**Permissive**	**Service Plan**	**Max Plan**
	Ring 1	**Ring 2**						
1 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
3 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
4 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
5 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
6 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
7 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
8 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
9 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
10 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
11 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
12 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
13 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
14 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
15 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
16 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
17 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
18 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
19 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
20 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
21 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
22 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
23 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
24 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
25 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
26 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
27 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
28 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
29 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
30 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
31 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
32 -	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	0 - 8		0 - 255 sec.				0 - 8	

Coordination Plans cont.

Coord Plan	* = Force Offs / Split Times (TS2)								* = Yield Points / Actuated Times (TS2)	
	1	2	3	4	5	6	7	8	Ring 1	Ring 2
1 -	0	0	0	0	0	0	0	0	0	0
2 -	0	0	0	0	0	0	0	0	0	0
3 -	0	0	0	0	0	0	0	0	0	0
4 -	0	0	0	0	0	0	0	0	0	0
5 -	0	0	0	0	0	0	0	0	0	0
6 -	0	0	0	0	0	0	0	0	0	0
7 -	0	0	0	0	0	0	0	0	0	0
8 -	0	0	0	0	0	0	0	0	0	0
9 -	0	0	0	0	0	0	0	0	0	0
10 -	0	0	0	0	0	0	0	0	0	0
11 -	0	0	0	0	0	0	0	0	0	0
12 -	0	0	0	0	0	0	0	0	0	0
13 -	0	0	0	0	0	0	0	0	0	0
14 -	0	0	0	0	0	0	0	0	0	0
15 -	0	0	0	0	0	0	0	0	0	0
16 -	0	0	0	0	0	0	0	0	0	0
17 -	0	0	0	0	0	0	0	0	0	0
18 -	0	0	0	0	0	0	0	0	0	0
19 -	0	0	0	0	0	0	0	0	0	0
20 -	0	0	0	0	0	0	0	0	0	0
21 -	0	0	0	0	0	0	0	0	0	0
22 -	0	0	0	0	0	0	0	0	0	0
23 -	0	0	0	0	0	0	0	0	0	0
24 -	0	0	0	0	0	0	0	0	0	0
25 -	0	0	0	0	0	0	0	0	0	0
26 -	0	0	0	0	0	0	0	0	0	0
27 -	0	0	0	0	0	0	0	0	0	0
28 -	0	0	0	0	0	0	0	0	0	0
29 -	0	0	0	0	0	0	0	0	0	0
30 -	0	0	0	0	0	0	0	0	0	0
31 -	0	0	0	0	0	0	0	0	0	0
32 -	0	0	0	0	0	0	0	0	0	0
	0 - 255 sec * = force offs and yield points									

Circuit Mapping (next/2/3/3)

Circuit Map	Coord Plan	Time Clock Circuit		Time Clock Circuit		Time Clock Circuit		Time Clock Circuit		Time Clock Circuit		Time Clock Circuit		Time Clock Circuit		Time Clock Circuit	
1	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
2	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
3	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
4	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
5	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
6	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
7	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
8	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
9	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
10	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
11	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
12	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
13	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
14	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
15	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
16	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
17	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
18	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
19	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U
20	34	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U	0	N/U

coord plan - 0 = free, 1 - 32 = coord plan 1 - 32, 33 = any, 34 none selected
time clock circuits - 0 = not used, or circuits 6 - 196

Dynamic Phase Length (next/2/3/4/4)

		1	2	3	4	5	6	7	8	
Phase -->										
Back Detector		0	0	0	0	0	0	0	0	0 = none, 1-32 = detector 1-32
Lane Factor		0	0	0	0	0	0	0	0	0 = none, 1.0 - 5.0
Check Out Detector		0	0	0	0	0	0	0	0	0 = none, 1-32 = detector 1-32
Coord Delta Force Off	Set A	0	0	0	0	0	0	0	0	0 - 255 sec
	Set B	0	0	0	0	0	0	0	0	
	Set C	0	0	0	0	0	0	0	0	
	Set D	0	0	0	0	0	0	0	0	
Free Delta Max	Set A	0	0	0	0	0	0	0	0	
	Set B	0	0	0	0	0	0	0	0	
	Set C	0	0	0	0	0	0	0	0	
	Set D	0	0	0	0	0	0	0	0	

Platoon Progression (next/2/3/4/5)

Entry Local Only			Master Local Only		
Platoon Max	0	0 - 255 sec	Smoothing Factor	0.0	0.0 - 1.0
Min Platoon Green	0	0 - 255 sec			
Entry Detector Gap	0.0	0.0 - 25.5			
Min Platoon Cycle	0	0 - 255 sec			

Inbound			Outbound		
Only for Entry Inbound Local or Master Local			Only for Entry Outbound Local or Master Local		
Entry IB Local also Last OB Local	0	0 - 50	Entry OB Local also Last IB Local	0	0 - 50
Speed	0	0 - 55 mph	Speed	0	0 - 55 mph
Distance from Entry Local	0	0 - 65000 feet	Distance from Entry Local	0	0 - 65000 feet

Entry Local Only				Entry Local Only			
Distance from Entry Local Detector	0	0 - 999 feet		Distance from Entry Local Detector	0	0 - 999 feet	
Entry Local Detector	0	0	0 - 32	Entry Local Detector	0	0	0 - 32

Master Local				Master Local			
Master Mid - System Critical Detectors	0	0	0 - 16	Master Mid - System Critical Detectors	0	0	0 - 16

Force Off Percents

Inbound	1	3	4	5	7	8	Outbound	1	3	4	5	7	8
Split 1	0	0	0	0	0	0	Split 1	0	0	0	0	0	0
Split 2	0	0	0	0	0	0	Split 2	0	0	0	0	0	0
	0 - 100 %							0 - 100 %					

Time of Day Data (next/2/4)

Day Program (next/2/4/1)

	Day Prog.	Time	Coord Plan	Coord Plan or Circuit		State On / Off		Day Prog.	Time	Coord Plan	Coord Plan or Circuit		State On/Off
1							51						
2							52						
3							53						
4							54						
5							55						
6							56						
7							57						
8							58						
9							59						
10							60						
11							61						
12							62						
13							63						
14							64						
15							65						
16							66						
17							67						
18							68						
19							69						
20							70						
21							71						
22							72						
23							73						
24							74						
25							75						
26							76						
27							77						
28							78						
29							79						
30							80						
31							81						
32							82						
33							83						
34							84						
35							85						
36							86						
37							87						
38							88						
39							89						
40							90						
41							91						
42							92						
43							93						
44							94						
45							95						
46							96						
47							97						
48							98						
49							99						
50							100						
	1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196		X = on		1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196		X = on

Day Program cont.														
	Day Prog.	Time	Coord Plan	Coord Plan or Circuit		State On / Off		Day Prog.	Time	Coord Plan	Coord Plan or Circuit		State On / Off
101							151						
102							152						
103							153						
104							154						
105							155						
106							156						
107							157						
108							158						
109							159						
110							160						
111							161						
112							162						
113							163						
114							164						
115							165						
116							166						
117							167						
118							168						
119							169						
120							170						
121							171						
122							172						
123							173						
124							174						
125							175						
126							176						
127							177						
128							178						
129							179						
130							180						
131							181						
132							182						
133							183						
134							184						
135							185						
136							186						
137							187						
138							188						
139							189						
140							190						
141							191						
142							192						
143							193						
144							194						
145							195						
146							196						
147							197						
148							198						
149							199						
150							200						
	1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196		X = on		1 - 15	hh : mm	X = on	coord plan 0 - 32 or circuit 1-196		X = on

Week Program (next/2/4/2)

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	*3*	*1*	*1*	*1*	*1*	*1*	*2*
2	*1*	*1*	*1*	*1*	*1*	*1*	*1*
3	*1*	*1*	*1*	*1*	*1*	*1*	*1*
4	*1*	*1*	*1*	*1*	*1*	*1*	*1*
5	*1*	*1*	*1*	*1*	*1*	*1*	*1*
6	*1*	*1*	*1*	*1*	*1*	*1*	*1*
7	*1*	*1*	*1*	*1*	*1*	*1*	*1*
8	*1*	*1*	*1*	*1*	*1*	*1*	*1*
9	*1*	*1*	*1*	*1*	*1*	*1*	*1*
10	*1*	*1*	*1*	*1*	*1*	*1*	*1*

0 = none, 1 - 15 = day plan

Exception Days (next/2/4/6)

	DOW	WOM	DOM	MOY	Day Prog.
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
	0-10	0 - 5	0-31	0-12	0 - 15

Year Program (next/2/4/3)

From Date	To Date	Week Program
01/01/2013	*12/31/2013*	*1*

New Years Day - Date - January 1st

Martin Luther King Day - DOW WOM - 3rd Monday of January

President's Day - DOW WOM - 3rd Monday February

Memorial Day - DOW WOM - Last Monday May

Fourth of July - Date - July 4th

Labor Day - DOW WOM - 1st Monday September

Columbus Day - DOW WOM - 2nd Monday October

Veteran's Day - Date - November 11th

Thanksgiving - DOW WOM - 4th Thursday November

Christmas - Date - December 25th

Time Clock References (next/2/4/5)

Synch reference Mode	*0*	0 = timed, 1 = by event
Synch Reference Time	*00:00*	00:00 - 23:59
Daylight Savings Enable	*X*	X = on
Reset Time	*00:00*	00:00 - 23:59

Exception day headings - DOW = Day of Week, WOM = Week of Month, DOM = Day of Month, MOY = Month of Year

Circuit Overrides (next/2/4/4)							
1 - Coord Line 1	CL1	*TOD*	On / Off / TOD	51 - Ped Omit 3	PO3	*TOD*	On / Off / TOD
2 - Coord Line 2	CL2	*TOD*		52 - Ped Omit 4	PO4	*TOD*	
3 - Coord Line 4	CL4	*TOD*		53 - Ped Omit 5	PO5	*TOD*	
4 - Coord Line 8	CL8	*TOD*		54 - Ped Omit 6	PO6	*TOD*	
5 - Coord Line 16	C16	*TOD*		55 - Ped Omit 7	PO7	*TOD*	
6 - Coord Operation	CRD	*TOD*		56 - Ped Omit 8	PO8	*TOD*	
7 - Soft Flash	SFL	*TOD*		57 - Conditional Service	CVS	*TOD*	
8 - Enable System Relays	ESR	*On*		58 - Inhibit Simultaneous Gap Out	ISG	*On*	
9 - Call to Non Act 1	CN1	*TOD*		59 - Inhibit Hardwire	HWI	*TOD*	
10 - Call to Non Act 2	CN2	*TOD*		60 - Ped Override Mode	POM	*On*	
11 - Walk Rest Modifier	WRM	*TOD*		61 - Dual Entry	DLE	*On*	
12 - Min Recall	MIN	*TOD*		62 - Exclusive Ped	EPD	*TOD*	
13 - Max 2 Both Rings	MX2	*TOD*		63 - Call to Time Clock Mode	CTC	*TOD*	
14 - Coord Inhibit Max Ring 1, 2	IMT	*TOD*		64 - Dual Enhanced Ped	DEP	*TOD*	
15 - Not Used	N/U	*TOD*		65 - Service Plan 1	SP1	*TOD*	
16 - Call to Free	CTF	*TOD*		66 - Service Plan 2	SP2	*TOD*	
17 - TOD Output 1	TO1	*TOD*		67 - Service Plan 3	SP3	*TOD*	
18 - TOD Output 2	TO2	*TOD*		68 - Service Plan 4	SP4	*TOD*	
19 - TOD Output 3	TO3	*TOD*		69 - Service Plan 5	SP5	*TOD*	
20 - TOD Output 4	TO4	*TOD*		70 - Service Plan 6	SP6	*TOD*	
21 - TOD Output 5	TO5	*TOD*		71 - Service Plan 7	SP7	*TOD*	
22 - TOD Output 6	TO6	*TOD*		72 - Service Plan 8	SP8	*TOD*	
23 - TOD Output 7	TO7	*TOD*		73 - Max Plan 1	MP1	*TOD*	
24 - TOD Output 8	TO8	*TOD*		74 - Max Plan 2	MP2	*TOD*	
25 - Vehicle Call Phase 1	VC1	*TOD*		75 - Max Plan 3	MP3	*TOD*	
26 - Vehicle Call Phase 2	VC2	*TOD*		76 - Max Plan 4	MP4	*TOD*	
27 - Vehicle Call Phase 3	VC3	*TOD*		77 - Max Plan 5	MP5	*TOD*	
28 - Vehicle Call Phase 4	VC4	*TOD*		78 - Max Plan 6	MP6	*TOD*	
29 - Vehicle Call Phase 5	VC5	*TOD*		79 - Max Plan 7	MP7	*TOD*	
30 - Vehicle Call Phase 6	VC6	*TOD*		80 - Max Plan 8	MP8	*TOD*	
31 - Vehicle Call Phase 7	VC7	*TOD*		81 - Transit Priority Max Group 1	TG1	*TOD*	
32 - Vehicle Call Phase 8	VC8	*TOD*		82 - Transit Priority Max Group 2	TG2	*TOD*	
33 - Ped Call Phase 1	PC1	*TOD*		83 - Transit Priority Max Group 3	TG3	*TOD*	
34 - Ped Call Phase 2	PC2	*TOD*		84 - Transit Priority Max Group 4	TG4	*TOD*	
35 - Ped Call Phase 3	PC3	*TOD*		85 - Transit Priority Max Group 5	TG5	*TOD*	
36 - Ped Call Phase 4	PC4	*TOD*		86 - Transit Priority Max Group 6	TG6	*TOD*	
37 - Ped Call Phase 5	PC5	*TOD*		87 - Transit Priority Max Group 7	TG7	*TOD*	
38 - Ped Call Phase 6	PC6	*TOD*		88 - Transit Priority Max Group 8	TG8	*TOD*	
39 - Ped Call Phase 7	PC7	*TOD*		89 - Inhibit Volume Density 1	IV1	*TOD*	
40 - Ped Call Phase 8	PC8	*TOD*		90 - Inhibit Volume Density 2	IV2	*TOD*	
41 - Vehicle Omit 1	VO1	*TOD*		91 - Inhibit Volume Density 3	Iv3	*TOD*	
42 - Vehicle Omit 2	VO2	*TOD*		92 - Inhibit Volume Density 4	IV4	*TOD*	
43 - Vehicle Omit 3	VO3	*TOD*		93 - Inhibit Volume Density 5	IV5	*TOD*	
44 - Vehicle Omit 4	VO4	*TOD*		94 - Inhibit Volume Density 6	IV6	*TOD*	
45 - Vehicle Omit 5	VO5	*TOD*		95 - Inhibit Volume Density 7	IV7	*TOD*	
46 - Vehicle Omit 6	VO6	*TOD*		96 - Inhibit Volume Density 8	IV8	*TOD*	
47 - Vehicle Omit 7	VO7	*TOD*		97 - Lag 1	LG1	*TOD*	
48 - Vehicle Omit 8	VO8	*TOD*		98 - Lag 3	LG3	*TOD*	
49 - Ped Omit 1	PO1	*TOD*		99 - Lag 5	LG5	*TOD*	
50 - Ped Omit 2	PO2	*TOD*		100 - Lag 7	LG7	*TOD*	

Circuit Overrides cont.							
101 - Inhibit Overlap A	OLA	*TOD*		151 - Coord Hold 7	HD7	*TOD*	
102 - Inhibit Overlap B	OLB	*TOD*		152 - Coord Hold 8	HD8	*TOD*	
103 - Inhibit Overlap C	OLC	*TOD*		153 - PE Priority Return B	PRB	*TOD*	
104 - Inhibit Overlap D	OLD	*TOD*		154 - PE Priority Return C	PRC	*TOD*	
105 - Enable Schedule A Phone 1	AT1	*TOD*		155 - PE Priority Return D	PRD	*TOD*	
106 - Enable Schedule A Phone 2	AT2	*TOD*		156 - PE Priority Return E	PRE	*TOD*	
107 - Enable Schedule B Phone 1	BT1	*TOD*		157 - Platoon Inbound	PPI	*TOD*	
108 - Enable Schedule B Phone 2	BT2	*TOD*		158 - Platoon Outbound	PPO	*TOD*	
109 - Enable Schedule C Phone 1	CT1	*TOD*		159 - Platoon Spl 2	PS2	*TOD*	
110 - Enable Schedule C Phone 2	CT2	*TOD*		160 - Coord Walk Rest	CWR	*TOD*	
111 - Enable Volume to Call Phone 1	VT1	*TOD*		161 - Dynamic Phase Length Short Inhibit 1	SI1	*TOD*	
112 - Enable Volume to Call Phone 2	VT2	*TOD*		162 - Dynamic Phase Length Short Inhibit 2	SI2	*TOD*	
113 - Enable Volume Logging	EVL	*On*		163 - Dynamic Phase Length Short Inhibit 3	SI3	*TOD*	
114 - Enable MOE Logging	EML	*On*		164 - Dynamic Phase Length Short Inhibit 4	SI4	*TOD*	
115 - Detector Low Threshold Inhibit	DLI	*TOD*		165 - Dynamic Phase Length Short Inhibit 5	SI5	*TOD*	
116 - Detector Continue Presence Inhibit	DPI	*TOD*		166 - Dynamic Phase Length Short Inhibit 6	SI6	*TOD*	
117 - Inhibit Detector Based on Programming	IND	*TOD*		167 - Dynamic Phase Length Short Inhibit 7	SI7	*TOD*	
118 - Inhibit Detector Delay	IDD	*TOD*		168 - Dynamic Phase Length Short Inhibit 8	SI8	*TOD*	
119 - Inhibit Conditional Ped	ICP	*TOD*		169 - Coord Late Left Turn 1	CT1	*TOD*	
120 - Inhibit Transit Priority	ITP	*TOD*		170 - Coord Late Left Turn 3	CT3	*TOD*	
121 - Red Rest Ring 1,2	RRM	*TOD*		171 - Coord Late Left Turn 5	CT5	*TOD*	
122 - Not Used	N/U	*TOD*		172 - Coord Late Left Turn 7	CT7	*TOD*	
123 - Omit Red Clear Ring 1,2	ORC	*TOD*		173 - Dynamic Phase Length Enable A	DPA	*TOD*	
124 - Not Used	N/U	*TOD*		174 - Dynamic Phase Length Enable B	DPB	*TOD*	
125 - Ped Recycle Ring 1,2	PCY	*TOD*	On / Off / TOD	175 - Dynamic Phase Length Enable C	DPC	*TOD*	On / Off / TOD
126 - Not Used	N/U	*TOD*		176 - Dynamic Phase Length Enable D	DPD	*TOD*	
127 - Enable MOE Log to Call Phone 1	MT1	*TOD*		177 - Proactive Plan Select Average	PSA	*TOD*	
128 - Enable MOE Log to Call Phone 2	MT2	*TOD*		178 - Proactive Plan Select Inbound	PSI	*TOD*	
129 - Transit Inhibit Short Time 1	IS1	*TOD*		179 - Proactive Plan Select Outbound	PSO	*TOD*	
130 - Transit Inhibit Short Time 2	IS2	*TOD*		180 - Split Variant Inbound	SVI	*TOD*	
131 - Transit Inhibit Short Time 3	IS3	*TOD*		181 - Split Variant Outbound	SVO	*TOD*	
132 - Transit Inhibit Short Time 4	IS4	*TOD*		182 - Disable Coord Walk Rest Ring 1	DW1	*TOD*	
133 - Transit Inhibit Short Time 5	IS5	*TOD*		183 - Disable Coord Walk Rest Ring 2	DW2	*TOD*	
134 - Transit Inhibit Short Time 6	IS6	*TOD*		184 - Proactive Plan Select New Look	NLK	*TOD*	
135 - Transit Inhibit Short Time 7	IS7	*TOD*		185 - Disable Red Clearance Extension	DRX	*TOD*	
136 - Transit Inhibit Short Time 8	IS8	*TOD*		186 - Detector Plan Line 1	DL1	*TOD*	
137 - Enable Transit Priority Logging	ETL	*TOD*		187 - Detector Plan Line 2	DL2	*TOD*	
138 - Disable Flashing Yellow Arrow 1	DF1	*TOD*		188 - Disable LRT 1 Vertical Flashing Bar	DV1	*TOD*	
139 - Disable Flashing Yellow Arrow 3	DF3	*TOD*		189 - Disable LRT 2 Vertical Flashing Bar	DV2	*TOD*	
140 - Disable Flashing Yellow Arrow 5	DF5	*TOD*		190 - Disable LRT 3 Vertical Flashing Bar	DV3	*TOD*	
141 - Disable Flashing Yellow Arrow 7	DF7	*TOD*		191 - Disable LRT 4 Vertical Flashing Bar	DV4	*TOD*	
142 - Disable Auto Max	DAM	*TOD*		192 - Datakey Enable	DKE	*On*	
143 - Disable Repeat Phase Service	DRS	*TOD*		193 - Dynamic Phase Reversal Enable 1	DR1	*TOD*	
144 - Coord End of Main Street	EMS	*TOD*		194 - Dynamic Phase Reversal Enable 3	DR3	*TOD*	
145 - Coord Hold 1	HD1	*TOD*		195 - Dynamic Phase Reversal Enable 5	DR5	*TOD*	
146 - Coord Hold 2	HD2	*TOD*		196 - Dynamic Phase Reversal Enable 7	DR7	*TOD*	
147 - Coord Hold 3	HD3	*TOD*		197 - Enable Coord Logging	ECL	*TOD*	
148 - Coord Hold 4	HD4	*TOD*		198 - Disable Gap FYLTA 1,3,5,7	DGF	*TOD*	
149 - Coord Hold 5	HD5	*TOD*		199 - Coordination Auto Walk	CAW	*TOD*	
150 - Coord Hold 6	HD6	*TOD*		200 - Enable Coordinated Auto Max	ECM	*TOD*	

Preemption Data (next/2/5)

Sequence (next/2/5/1 - 8)

Sequences / Intervals		Instruction	Phases Serviced	Interval Time	Hold On Input	Outputs On	Output Mode
1	1	0	2	0	X		0
	2	98		0			0
	3	0		0			0
	4	0		0			0
	5	0		0			0
	6	0		0			0
	7	0		0			0
	8	0		0			0
	9	0		0			0
	10	0		0			0
2	1	0	4	0	X		0
	2	98		0			0
	3	0		0			0
	4	0		0			0
	5	0		0			0
	6	0		0			0
	7	0		0			0
	8	0		0			0
	9	0		0			0
	10	0		0			0
3	1	0	6	0	X		0
	2	98		0			0
	3	0		0			0
	4	0		0			0
	5	0		0			0
	6	0		0			0
	7	0		0			0
	8	0		0			0
	9	0		0			0
	10	0		0			0
4	1	0		0			0
	2	0		0			0
	3	0		0			0
	4	0		0			0
	5	0		0			0
	6	0		0			0
	7	0		0			0
	8	0		0			0
	9	0		0			0
	10	0		0			0
5	1	0		0			0
	2	0		0			0
	3	0		0			0
	4	0		0			0
	5	0		0			0
	6	0		0			0
	7	0		0			0
	8	0		0			0
	9	0		0			0
	10	0		0			0

Instructions
0 - Service Phases
1-9 = Special Interval 1-9
10 - Preempt Sequence Allows FYLTA
11 - Preempt Interval Disables FYLTA
15 - Alternate Trap Protection
90 - Go to all Red
91 - Soft Flash On
92 - Soft Flash Off
93 - Enable Ped
94 - Disable Peds
95 - Priority Return
96 - Enable Coordination with peds
97 - Enable Coordination without peds
98 - Return with NO Calls
99 - Return with Vehicle Calls
100 - jump to step in Interval Time
101 - Use Interval Time as Resetable Gap Timer
196 - Coord Re-synch with Peds
197 - Coord Re-synch without Peds
200 - Light Rail Train phase without Peds
201 - Light Rail Train phase with Peds
202 - Return to highest queue/delay phase (this uses the Dynamic Phase Length Back Detectors)
216 - Light Rail Train Coord Re-synch with Peds
217 - Light Rail Train Coord Re-synch without Peds

Phases Serviced - phases 1 - 8
Interval Time - 0 - 255 sec or interval 1 - 10
Hold on Input - X = on
Outputs On - output 1 - 8

Output Modes -
0 = all steady on
1 = all flash together
2 = odd flashes WIG, even flashes WAG
3 = 1 - 4 steady on, 5 - 8 all flash together

Sequence cont.							
Sequences / Intervals		Instruction	Phases Serviced	Interval Time	Hold On Input	Outputs On	Output Mode
6	1	0		0			0
	2	0		0			0
	3	0		0			0
	4	0		0			0
	5	0		0			0
	6	0		0			0
	7	0		0			0
	8	0		0			0
	9	0		0			0
	10	0		0			0
7	1	0		0			0
	2	0		0			0
	3	0		0			0
	4	0		0			0
	5	0		0			0
	6	0		0			0
	7	0		0			0
	8	0		0			0
	9	0		0			0
	10	0		0			0
8	1	0		0			0
	2	0		0			0
	3	0		0			0
	4	0		0			0
	5	0		0			0
	6	0		0			0
	7	0		0			0
	8	0		0			0
	9	0		0			0
	10	0		0			0

Sequence Timing (next/2/5/0)										
	Sequence -- >	1	2	3	4	5	6	7	8	
	Input Memory									X = on
	Input Priority	6	6	6	0	0	0	0	0	0 = lowest, - 8 = highest
Entry (Transition) Parameters	Min Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Walk	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0 would time the normal function time
	Ped Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Overlap Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
	Overlap Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Delay to Preempt	0	0	0	0	0	0	0	0	0 - 255 sec
	Delay Ped Omit	0	0	0	0	0	0	0	0	
	Delay Phase Omit	0	0	0	0	0	0	0	0	
	Min Reservice	0	0	0	0	0	0	0	0	0 - 255 min
Overlap Inhibits	A									X = inhibit
	B									
	C									
	D									
Exit Parameters	Exit to Coord Plan Offset by X	0	0	0	0	0	0	0	0	0 - 20
	Exit Coord Plan Time	0	0	0	0	0	0	0	0	0 - 60 min
	Exit to Max Plan	0	0	0	0	0	0	0	0	0 - 8
	Exit Free Time	0	0	0	0	0	0	0	0	0 - 60 min
	Override Time	0	0	0	0	0	0	0	0	
	Fail Time	0	0	0	0	0	0	0	0	
	Exit Mode Time	0	0	0	0	0	0	0	0	

Priority Return and Special Intervals (next/2/5/0/6, next/2/5/9)													
Phase / Overlap -->		1	2	3	4	5	6	7	8	A	B	C	D
Priority Return	Enable	0	0 = disabled, 1 = enabled, 2 = enabled, skip preemption phases on exit										
	A (max)	0	0	0	0	0	0	0	0	0 - 100% of currently used max			
	B (max)	0	0	0	0	0	0	0	0				
	C (max)	0	0	0	0	0	0	0	0				
	D (max)	0	0	0	0	0	0	0	0				
	E (max)	0	0	0	0	0	0	0	0				
	Ped Clear	0	0	0	0	0	0	0	0	0 - 100% of currently used ped clearance			
Queue Delay Recovery		0	0	0	0	0	0	0	0	0 - 255 sec.			
Special Intervals	1	0	0	0	0	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0	0	0	0	0
	9	0	0	0	0	0	0	0	0	0	0	0	0

0 = Dark
1 = green don't walk
2 = green walk
3 = green flashing don't walk
4 = yellow
5 = red
6 = flashing yellow WIG
7 = flashing yellow WAG
8 = flashing red WIG
9 = flashing red WAG
10 = walk only
11=flashing don't walk only

Light Rail Train (next/2/5/0/7)						
Light Rail Train -->	1	2	3	4	
Associated Preempt	0	0	0	0	0 = none, preempt 1 - 8
Time to Green	0	0	0	0	0 - 255 sec
Horizontal Bar Flash Time	0.0	0.0	0.0	0.0	0.0 - 25.5 sec
Vertical Bar Flash Time	0.0	0.0	0.0	0.0	
Min Duration	0	0	0	0	0 - 255 sec

Communications Data (next/2/6)

1st Central Phone Number		**2nd Central Phone Number**	
Modem Setup String		**Intersection Name**	*West Union @ Albertsons*
Subnet Mask	*255.0.0.0*		
IP (ethernet) Port	*5*		
Central Port	*4*		
System Mode	*0*		
System Port	*1*	**Alternate System Port**	*0*

System ID	*0*	**AB3418e Physical Address**	*0*		**IP Address**	*0.0.0.0*
Local ID	*0*	**AB3418e Group Address**	*0*		**Gateway Address**	*0.0.0.0*

Baud Rates		**Flow Control**	**Port Use**
Port 1 (Slot A2 Upper)	*0*	*1*	*Suggested Use - FSK*
Port 2 (Slot A2 Lower)	*0*	*1*	*Suggested Use - Not Used*
Port 3 (Slot A1 Upper)	*0*	*0*	*Suggested Use - Modem to Central*
Port 4 (Slot A1 Lower or C50S)	*2*	*N\U*	*Suggested Use - RS232 to Laptop*
0 = 1200, 1 = 2400, 2 = 9600, 3 = 19200 baud		0 = off, 1 = on	

Reports

Volume Log Period	*15*	0-255 min. or below	**MOE Log Period**	*15*	below

0 = disabled, 1,2,3,4,5,6,10,12,15,20,30,60 minutes

Function Schedule Mapping (next/2/6/7)

Alarm 1	*0*		**Soft Flash**	*1*	
Alarm 2	*0*		**Manual Control Enable (MCE)**	*4*	
Alarm 3	*0*		**Emergency or Railroad Preempt**	*1*	
Alarm 4	*0*		**Not Used**	*0*	
Alarm 5	*0*	0 = none	**Cycle Failure**	*2*	0 = none
Not Used	*0*	1 = schedule A	**Coordination Failure**	*2*	1 = schedule A
Not Used	*0*	2 = schedule B	**Keyboard use / Data Changed**	*3*	2 = schedule B
Not Used	*0*	3 = schedule C	**Coord Running / Free**	*2*	3 = schedule C
Not Used	*0*	4 = schedule R	**Cabinet Door**	*3*	4 = schedule R
Power On / Off	*1*		**Extended Ped Pushbutton**	*0*	
Checksum Failure	*4*		**Monitor Status**	*4*	
Video / Detector Failure	*4*				
Master to Local Comm Lost	*0*				

Miscellaneous Data

Transit Priority (next/2/7)

	1	2	3	4	5	6	7	8	
Phases									Phases 1 - 8 (max of 2 compatible phases)
PE Enable (6.25Hz TP call on PE)									X = 6.25 Hz signal will activate TP
Priority	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 8, 8 = highest
Memory									X = on
Delay Time	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec
Minimum Reservice Time (per input)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 min
Override Time	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec
Bus Extend	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0 - 255 sec
Minimum Reservice Time (all inputs)	*0*	0 - 255 min							
Free Operation Mode	*0*	0 = use shortest of max 1 or 2, 1 - 8 = use max time of group 1 - 8, 9 = use time of day							

Transit Priority Alternate Force Off Plans

Current Coord Plan	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Alternate TP Force Off Plan	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Current Coord Plan	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Alternate TP Force Off Plan	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

0 = none
17 - 32 = coord plan 17 - 32

Group Timing

	Phase -->	1	2	3	4	5	6	7	8
Group 1	**Max Times**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	Walk Times	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Group 2	**Max Times**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	Walk Times	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Group 3	**Max Times**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	Walk Times	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Group 4	**Max Times**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	Walk Times	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Group 5	**Max Times**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	Walk Times	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Group 6	**Max Times**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	Walk Times	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Group 7	**Max Times**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	Walk Times	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Group 8	**Max Times**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	Walk Times	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

0 - 255 sec
0 would time the normal function time

Truck Priority (next/2/7/9)

Truck Priority-->	**1**	**2**	**3**	**4**	
Associated Transit Priority	*0*	*0*	*0*	*0*	0 = none 1 - 8 = transit priority 1 - 8
Leading Detector	*0*	*0*	*0*	*0*	0 = none, 1 - 32 = detector 1 - 32
Trailing Detector	*0*	*0*	*0*	*0*	
Stop Bar Distance	*0*	*0*	*0*	*0*	0 - 999 feet
Trap Distance	*0*	*0*	*0*	*0*	0.0 - 99.9 feet
Minimum Speed	*0*	*0*	*0*	*0*	0 - 100 mph
Minimum Length	*0*	*0*	*0*	*0*	0 - 255 feet
Downhill Grade	*0*	*0*	*0*	*0*	0 - 20 %
Uphill Grade	*0*	*0*	*0*	*0*	
Undersized Vehicle					X = Enabled

Change I/O		X = On (After a download with a power on - off cycle)

Inputs (Non Default I/O is offset to the right) (next/2/8/1)											
C1-39	*101*	*VD9*	**C1-55**	*15*	*VD5*	**C1-67**	*22*	*PED2*	**C11-15**	*254*	*N/U*
C1-40	*113*	*VD19*	**C1-56**	*11*	*VD1*	**C1-68**	*26*	*PED6*	**C11-16**	*254*	*N/U*
C1-41	*106*	*VD14*	**C1-57**	*17*	*VD7*	**C1-69**	*24*	*PED4*	**C11-17**	*254*	*N/U*
C1-42	*118*	*VD24*	**C1-58**	*13*	*VD3*	**C1-70**	*28*	*PED8*	**C11-18**	*254*	*N/U*
C1-43	*102*	*VD10*	**C1-59**	*16*	*VD6*	**C1-71**	*151*	*PE1*	**C11-19**	*254*	*N/U*
C1-44	*114*	*VD20*	**C1-60**	*12*	*VD2*	**C1-72**	*152*	*PE2*	**C11-20**	*254*	*N/U*
C1-45	*107*	*VD15*	**C1-61**	*18*	*VD8*	**C1-73**	*153*	*PE3*	**C11-21**	*254*	*N/U*
C1-46	*161*	*VD25*	**C1-62**	*14*	*VD4*	**C1-74**	*154*	*PE4*	**C11-22**	*254*	*N/U*
C1-47	*105*	*VD13*	**C11-10**	*254*	*N/U*	**C1-75**	*254*	*N/U*	**C11-23**	*254*	*N/U*
C1-48	*117*	*VD23*	**C11-11**	*254*	*N/U*	**C1-76**	*104*	*VD12*	**C11-24**	*254*	*N/U*
C1-49	*112*	*VD18*	**C11-12**	*254*	*N/U*	**C1-77**	*116*	*VD22*	**C11-25**	*254*	*N/U*
C1-50	*164*	*VD28*	**C11-13**	*254*	*N/U*	**C1-78**	*111*	*VD17*	**C11-26**	*254*	*N/U*
C1-51	*199*	*PEDI*	**C1-63**	*103*	*VD11*	**C1-79**	*163*	*VD27*	**C11-27**	*254*	*N/U*
C1-52	*155*	*PE5*	**C1-64**	*115*	*VD21*	**C1-80**	*82*	*IADV*	**C11-28**	*254*	*N/U*
C1-53	*85*	*MCE*	**C1-65**	*108*	*VD16*	**C1-81**	*137*	*MONS*	**C11-29**	*254*	*N/U*
C1-54	*254*	*N/U*	**C1-66**	*162*	*VD26*	**C1-82**	*62*	*ST1*	**C11-30**	*254*	*N/U*

Outputs (Non Default I/O is offset to the right) (next/2/8/2)											
C1-2	*44*	*4DWK*	**C1-19**	*48*	*8DWK*	**C1-35**	*131*	*TO1*	**C1-91**	*41*	*1DWK*
C1-3	*64*	*4WLK*	**C1-20**	*68*	*8WLK*	**C1-36**	*132*	*TO2*	**C1-93**	*61*	*1WLK*
C1-4	*14*	*4RED*	**C1-21**	*18*	*8RED*	**C1-37**	*133*	*TO3*	**C1-94**	*106*	*OLBR*
C1-5	*24*	*4YEL*	**C1-22**	*28*	*8YEL*	**C1-38**	*134*	*TO4*	**C1-95**	*105*	*OLBY*
C1-6	*34*	*4GRN*	**C1-23**	*38*	*8GRN*	**C1-100**	*53*	*3PCL*	**C1-96**	*104*	*OLBG*
C1-7	*13*	*3RED*	**C1-24**	*17*	*7RED*	**C1-101**	*51*	*1PCL*	**C1-97**	*103*	*OLAR*
C1-8	*23*	*3YEL*	**C1-25**	*27*	*7YEL*	**C1-102**	*187*	*SFL*	**C1-98**	*102*	*OLAY*
C1-9	*33*	*3GRN*	**C1-26**	*37*	*7GRN*	**C1-103**	*147*	*WDOG*	**C1-99**	*101*	*OLAG*
C1-10	*42*	*2DWK*	**C1-27**	*46*	*6DWK*	**C1-83**	*43*	*3DWK*	**C11-1**	*254*	*N/U*
C1-11	*62*	*2WLK*	**C1-28**	*66*	*6WLK*	**C1-84**	*63*	*3WLK*	**C11-2**	*254*	*N/U*
C1-12	*12*	*2RED*	**C1-29**	*16*	*6RED*	**C1-85**	*116*	*OLDR*	**C11-3**	*254*	*N/U*
C1-13	*22*	*2YEL*	**C1-30**	*26*	*6YEL*	**C1-86**	*115*	*OLDY*	**C11-4**	*254*	*N/U*
C1-15	*32*	*2GRN*	**C1-31**	*36*	*6GRN*	**C1-87**	*114*	*OLDG*	**C11-5**	*254*	*N/U*
C1-16	*11*	*1RED*	**C1-32**	*15*	*5RED*	**C1-88**	*113*	*OLCR*	**C11-6**	*254*	*N/U*
C1-17	*21*	*1YEL*	**C1-33**	*25*	*5YEL*	**C1-89**	*112*	*OLCY*	**C11-7**	*254*	*N/U*
C1-18	*31*	*1GRN*	**C1-34**	*35*	*5GRN*	**C1-90**	*111*	*OLCG*	**C11-8**	*254*	*N/U*

Internal Logic (next/2/9)			
Step	**Inst.**	**Description**	**Comment**
1	*212*	Hold a Phase if Test(s) are True	Place hold on Phase 6 when Relay 1 is set
2	*6*	Phase - 6	
3	*35*	System Relay 1-8 - Tested for Set	
4	*1*	Relay - 1	
5	*20*	AND - Another Test	
6	*24*	NOT - Invert result of next test	
7	*29*	Preemption Active Test	
8	*9*	Any Preempt	
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Internal Logic cont.			
Step	Inst.	Description	Comment
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Internal Logic cont.			
Step	Inst.	Description	Comment
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Internal Logic cont.			
Step	Inst.	Description	Comment
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Internal Logic cont.			
Step	**Inst.**	**Description**	**Comment**
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255			
256			

FYLTA - Continued (next/2/2/8/6)							
	Phase Pairs -->	**1 - 2**	**3 - 4**	**5 - 6**	**7 - 8**	
Gap-Dependent FYLTA (next/2/2/8/6-A)	**Detector Input**	*0*	*0*	*0*	*0*	0 = disable, 1 - 64 detectors
	Min Delay	*0.0*	*0.0*	*0.0*	*0.0*	0 - 255 sec
	Detector Gap	*0*	*0*	*0*	*0*	0 - 25.5 sec
	Max Delay	*0*	*0*	*0*	*0*	0 - 255 sec
	Not Ped	*0*	*0*	*0*	*0*	0 - 255 sec

FYLTA Gap-Dependent Plans (next/2/2/8/6)						
	Phase Pairs -->	**1 - 2**	**3 - 4**	**5 - 6**	**7 - 8**	
FYLTA Gap-Dependent Plan A	**Detector Input**	*0*	*0*	*0*	*0*	0 = disable, 1 - 64 detectors
	Min Delay	*0*	*0*	*0*	*0*	0 - 255 sec
	Detector Gap	*0.0*	*0.0*	*0.0*	*0.0*	0 - 25.5 sec
	Max Delay	*0*	*0*	*0*	*0*	0 - 255 sec
	Not Ped	*0*	*0*	*0*	*0*	0 - 255 sec
FYLTA Gap-Dependent Plan B	**Detector Input**	*0*	*0*	*0*	*0*	0 = disable, 1 - 64 detectors
	Min Delay	*0*	*0*	*0*	*0*	0 - 255 sec
	Detector Gap	*0.0*	*0.0*	*0.0*	*0.0*	0 - 25.5 sec
	Max Delay	*0*	*0*	*0*	*0*	0 - 255 sec
	Not Ped	*0*	*0*	*0*	*0*	0 - 255 sec
FYLTA Gap-Dependent Plan C	**Detector Input**	*0*	*0*	*0*	*0*	0 = disable, 1 - 64 detectors
	Min Delay	*0*	*0*	*0*	*0*	0 - 255 sec
	Detector Gap	*0.0*	*0.0*	*0.0*	*0.0*	0 - 25.5 sec
	Max Delay	*0*	*0*	*0*	*0*	0 - 255 sec

	Not Ped	*0*	*0*	*0*	*0*	0 - 255 sec
FYLTA Gap-Dependent Plan D	**Detector Input**	*0*	*0*	*0*	*0*	0 = disable, 1 - 64 detectors
	Min Delay	*0*	*0*	*0*	*0*	0 - 255 sec
	Detector Gap	*0.0*	*0.0*	*0.0*	*0.0*	0 - 25.5 sec
	Max Delay	*0*	*0*	*0*	*0*	0 - 255 sec
	Not Ped	*0*	*0*	*0*	*0*	0 - 255 sec

Attachment C 2021 Background traffic conditions worksheets

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	538	0	0	899	0	0
Future Volume (Veh/h)	538	0	0	899	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	648	0	0	1083	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	309			219		
pX, platoon unblocked					0.70	
vC, conflicting volume			648		1731	324
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			648		1830	324
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			947		49	678

Direction, Lane #	EB 1	EB 2	WB 1
Volume Total	432	216	1083
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.25	0.13	0.64
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			
Approach Delay (s)	0.0		0.0
Approach LOS			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	96	552	933	69	89	151
v/c Ratio	0.31	0.21	0.68	0.06	0.41	0.54
Control Delay	7.9	3.7	9.5	2.1	30.2	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.9	3.7	9.5	2.1	30.2	17.9
Queue Length 50th (ft)	8	22	115	1	32	19
Queue Length 95th (ft)	45	69	383	14	61	54
Internal Link Dist (ft)		139	280		110	
Turn Bay Length (ft)	100			175	100	100
Base Capacity (vph)	314	2585	1375	1181	950	894
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.21	0.68	0.06	0.09	0.17

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	80	458	774	57	74	125
Future Volume (vph)	80	458	774	57	74	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.0	5.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	1863	1583	1770	1583
Flt Permitted	0.23	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	431	3539	1863	1583	1770	1583
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	96	552	933	69	89	151
RTOR Reduction (vph)	0	0	0	12	0	84
Lane Group Flow (vph)	96	552	933	57	89	67
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Actuated Green, G (s)	48.1	48.1	48.6	48.6	8.1	8.1
Effective Green, g (s)	48.1	48.1	48.6	48.6	8.1	8.1
Actuated g/C Ratio	0.73	0.73	0.74	0.74	0.12	0.12
Clearance Time (s)	5.5	5.5	5.0	5.0	4.0	4.0
Vehicle Extension (s)	3.1	3.1	3.1	3.1	2.9	2.9
Lane Grp Cap (vph)	315	2590	1378	1170	218	195
v/s Ratio Prot		0.16	c0.50			
v/s Ratio Perm	0.22			0.04	c0.05	0.04
v/c Ratio	0.30	0.21	0.68	0.05	0.41	0.34
Uniform Delay, d1	3.0	2.8	4.5	2.3	26.6	26.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.0	1.3	0.0	1.2	1.0
Delay (s)	3.6	2.8	5.8	2.3	27.8	27.4
Level of Service	A	A	A	A	C	C
Approach Delay (s)		2.9	5.6		27.5	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	65.7	Sum of lost time (s)	9.5
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1076	0	0	635	0	0
Future Volume (Veh/h)	1076	0	0	635	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	1098	0	0	648	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	309			219		
pX, platoon unblocked					0.82	
vC, conflicting volume			1098		1746	549
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1098		1801	549
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			643		59	485

Direction, Lane #	EB 1	EB 2	WB 1
Volume Total	732	366	648
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1700
Volume to Capacity	0.43	0.22	0.38
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			
Approach Delay (s)	0.0		0.0
Approach LOS			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	127	971	510	88	160	137
v/c Ratio	0.31	0.53	0.52	0.10	0.42	0.30
Control Delay	9.2	8.2	9.1	2.5	15.6	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	8.2	9.1	2.5	15.6	4.9
Queue Length 50th (ft)	10	48	46	0	25	0
Queue Length 95th (ft)	58	161	188	18	67	26
Internal Link Dist (ft)		139	280		110	
Turn Bay Length (ft)	100			175	100	100
Base Capacity (vph)	785	3451	1820	1549	1633	1471
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.28	0.28	0.06	0.10	0.09

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	124	952	500	86	157	134
Future Volume (vph)	124	952	500	86	157	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.0	5.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	1863	1583	1770	1583
Flt Permitted	0.43	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	805	3539	1863	1583	1770	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	127	971	510	88	160	137
RTOR Reduction (vph)	0	0	0	41	0	107
Lane Group Flow (vph)	127	971	510	47	160	30
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		2	6			
Permitted Phases	2			6	4	4
Actuated Green, G (s)	19.3	19.3	19.8	19.8	8.1	8.1
Effective Green, g (s)	19.3	19.3	19.8	19.8	8.1	8.1
Actuated g/C Ratio	0.52	0.52	0.54	0.54	0.22	0.22
Clearance Time (s)	5.5	5.5	5.0	5.0	4.0	4.0
Vehicle Extension (s)	3.1	3.1	3.1	3.1	2.9	2.9
Lane Grp Cap (vph)	421	1851	999	849	388	347
v/s Ratio Prot		c0.27	0.27			
v/s Ratio Perm	0.16			0.03	c0.09	0.02
v/c Ratio	0.30	0.52	0.51	0.06	0.41	0.09
Uniform Delay, d1	5.0	5.8	5.5	4.1	12.4	11.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.3	0.5	0.0	0.7	0.1
Delay (s)	5.4	6.1	5.9	4.1	13.0	11.6
Level of Service	A	A	A	A	B	B
Approach Delay (s)		6.0	5.6		12.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	36.9	Sum of lost time (s)	9.5
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Attachment D 2021 Total traffic conditions worksheets

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	519	27	0	907	0	0
Future Volume (Veh/h)	519	27	0	907	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	625	33	0	1093	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	309			219		
pX, platoon unblocked					0.62	
vC, conflicting volume			658		1734	329
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			658		1880	329
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			939		40	673

Direction, Lane #	EB 1	EB 2	WB 1
Volume Total	417	241	1093
Volume Left	0	0	0
Volume Right	0	33	0
cSH	1700	1700	1700
Volume to Capacity	0.25	0.14	0.64
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			
Approach Delay (s)	0.0		0.0
Approach LOS			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	96	529	59	899	69	43	46	89	151
v/c Ratio	0.39	0.22	0.10	0.72	0.06	0.17	0.08	0.32	0.34
Control Delay	12.8	5.3	6.0	13.1	1.9	20.1	0.2	21.9	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	5.3	6.0	13.1	1.9	20.1	0.2	21.9	7.0
Queue Length 50th (ft)	11	27	5	149	0	9	0	19	1
Queue Length 95th (ft)	57	75	25	405	12	36	0	62	34
Internal Link Dist (ft)		139		280			94		110
Turn Bay Length (ft)	100		175		175			100	
Base Capacity (vph)	327	3124	764	1644	1405	591	953	651	837
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.17	0.08	0.55	0.05	0.07	0.05	0.14	0.18

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	439	0	49	746	57	36	0	38	74	0	125
Future Volume (vph)	80	439	0	49	746	57	36	0	38	74	0	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5	5.5	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539		1805	1863	1583	1770	1615		1770	1583	
Flt Permitted	0.20	1.00		0.46	1.00	1.00	0.66	1.00		0.73	1.00	
Satd. Flow (perm)	370	3539		866	1863	1583	1231	1615		1354	1583	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	96	529	0	59	899	69	43	0	46	89	0	151
RTOR Reduction (vph)	0	0	0	0	0	25	0	38	0	0	120	0
Lane Group Flow (vph)	96	529	0	59	899	44	43	8	0	89	31	0
Heavy Vehicles (%)	2%	2%	0%	0%	2%	2%	2%	0%	0%	2%	0%	2%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Actuated Green, G (s)	31.6	31.6		31.6	31.6	31.6	8.7	8.7		8.7	8.7	
Effective Green, g (s)	31.6	31.6		31.6	31.6	31.6	8.7	8.7		8.7	8.7	
Actuated g/C Ratio	0.63	0.63		0.63	0.63	0.63	0.17	0.17		0.17	0.17	
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.1	3.1		3.1	3.1	3.1	2.9	2.9		2.9	2.9	
Lane Grp Cap (vph)	234	2245		549	1182	1004	215	282		236	276	
v/s Ratio Prot		0.15			c0.48			0.00			0.02	
v/s Ratio Perm	0.26			0.07		0.03	0.03			c0.07		
v/c Ratio	0.41	0.24		0.11	0.76	0.04	0.20	0.03		0.38	0.11	
Uniform Delay, d1	4.5	3.9		3.6	6.4	3.4	17.6	17.0		18.2	17.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	0.1		0.1	3.0	0.0	0.4	0.0		1.0	0.2	
Delay (s)	5.7	4.0		3.7	9.4	3.4	18.0	17.1		19.1	17.5	
Level of Service	A	A		A	A	A	B	B		B	B	
Approach Delay (s)		4.2			8.7			17.5			18.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	49.8	Sum of lost time (s)	9.5
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1047	40	0	645	0	0
Future Volume (Veh/h)	1047	40	0	645	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	1068	41	0	658	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	309			219		
pX, platoon unblocked					0.82	
vC, conflicting volume			1109		1746	554
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1109		1802	554
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			637		59	481

Direction, Lane #	EB 1	EB 2	WB 1
Volume Total	712	397	658
Volume Left	0	0	0
Volume Right	0	41	0
cSH	1700	1700	1700
Volume to Capacity	0.42	0.23	0.39
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			
Approach Delay (s)	0.0		0.0
Approach LOS			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	127	942	47	491	88	30	54	160	137
v/c Ratio	0.32	0.53	0.18	0.53	0.11	0.09	0.10	0.45	0.20
Control Delay	10.7	9.5	10.0	10.9	2.8	11.7	0.4	16.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.7	9.5	10.0	10.9	2.8	11.7	0.4	16.5	0.6
Queue Length 50th (ft)	14	61	5	61	0	5	0	27	0
Queue Length 95th (ft)	63	172	29	202	20	19	1	73	0
Internal Link Dist (ft)		139		280			94		110
Turn Bay Length (ft)	100		175		175			100	
Base Capacity (vph)	776	3402	493	1791	1525	677	938	731	1029
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.28	0.10	0.27	0.06	0.04	0.06	0.22	0.13

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	923	0	46	481	86	29	0	53	157	0	134
Future Volume (vph)	124	923	0	46	481	86	29	0	53	157	0	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5	5.5	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539		1805	1863	1583	1770	1615		1770	1583	
Flt Permitted	0.43	1.00		0.27	1.00	1.00	0.67	1.00		0.72	1.00	
Satd. Flow (perm)	806	3539		512	1863	1583	1247	1615		1345	1583	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	127	942	0	47	491	88	30	0	54	160	0	137
RTOR Reduction (vph)	0	0	0	0	0	44	0	40	0	0	100	0
Lane Group Flow (vph)	127	942	0	47	491	44	30	14	0	160	37	0
Heavy Vehicles (%)	2%	2%	0%	0%	2%	2%	2%	0%	0%	2%	0%	2%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6		6	8			4		
Actuated Green, G (s)	20.9	20.9		20.9	20.9	20.9	11.1	11.1		11.1	11.1	
Effective Green, g (s)	20.9	20.9		20.9	20.9	20.9	11.1	11.1		11.1	11.1	
Actuated g/C Ratio	0.50	0.50		0.50	0.50	0.50	0.27	0.27		0.27	0.27	
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.1	3.1		3.1	3.1	3.1	2.9	2.9		2.9	2.9	
Lane Grp Cap (vph)	405	1782		257	938	797	333	431		359	423	
v/s Ratio Prot		c0.27			0.26			0.01			0.02	
v/s Ratio Perm	0.16			0.09		0.03	0.02			c0.12		
v/c Ratio	0.31	0.53		0.18	0.52	0.06	0.09	0.03		0.45	0.09	
Uniform Delay, d1	6.1	7.0		5.6	6.9	5.3	11.4	11.2		12.6	11.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.3		0.4	0.5	0.0	0.1	0.0		0.8	0.1	
Delay (s)	6.5	7.3		6.0	7.5	5.3	11.5	11.3		13.5	11.5	
Level of Service	A	A		A	A	A	B	B		B	B	
Approach Delay (s)		7.2			7.1			11.4			12.6	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	41.5	Sum of lost time (s)	9.5
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	96	529	59	899	69	43	46	89	151
v/c Ratio	0.29	0.24	0.09	0.83	0.07	0.27	0.08	0.43	0.32
Control Delay	5.8	7.7	4.2	23.8	3.8	32.7	0.3	35.6	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.8	7.7	4.2	23.8	3.8	32.7	0.3	35.6	1.8
Queue Length 50th (ft)	8	52	5	308	1	18	0	38	0
Queue Length 95th (ft)	30	104	20	#639	19	43	0	75	0
Internal Link Dist (ft)		139		280			94		110
Turn Bay Length (ft)	100		175		175			100	
Base Capacity (vph)	369	2354	725	1208	1048	330	794	429	684
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.22	0.08	0.74	0.07	0.13	0.06	0.21	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	439	0	49	746	57	36	0	38	74	0	125
Future Volume (vph)	80	439	0	49	746	57	36	0	38	74	0	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5	5.5	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539		1805	1863	1583	1770	1615		1770	1583	
Flt Permitted	0.13	1.00		0.46	1.00	1.00	0.56	1.00		0.73	1.00	
Satd. Flow (perm)	236	3539		866	1863	1583	1041	1615		1354	1583	
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	96	529	0	59	899	69	43	0	46	89	0	151
RTOR Reduction (vph)	0	0	0	0	0	26	0	39	0	0	128	0
Lane Group Flow (vph)	96	529	0	59	899	43	43	7	0	89	23	0
Heavy Vehicles (%)	2%	2%	0%	0%	2%	2%	2%	0%	0%	2%	0%	2%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6		6	8			4		
Actuated Green, G (s)	51.6	45.4		45.8	42.5	42.5	11.0	11.0		11.0	11.0	
Effective Green, g (s)	51.6	45.4		45.8	42.5	42.5	11.0	11.0		11.0	11.0	
Actuated g/C Ratio	0.70	0.62		0.63	0.58	0.58	0.15	0.15		0.15	0.15	
Clearance Time (s)	4.0	5.5		4.0	5.5	5.5	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	3.1		2.5	3.1	3.1	2.9	2.9		2.9	2.9	
Lane Grp Cap (vph)	296	2194		584	1081	919	156	242		203	237	
v/s Ratio Prot	c0.03	0.15		0.00	c0.48			0.00			0.01	
v/s Ratio Perm	0.20			0.06		0.03	0.04			c0.07		
v/c Ratio	0.32	0.24		0.10	0.83	0.05	0.28	0.03		0.44	0.10	
Uniform Delay, d1	9.7	6.2		5.3	12.4	6.6	27.6	26.5		28.3	26.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		0.1	5.6	0.0	0.9	0.0		1.4	0.2	
Delay (s)	10.2	6.3		5.4	18.1	6.6	28.5	26.6		29.7	27.0	
Level of Service	B	A		A	B	A	C	C		C	C	
Approach Delay (s)		6.9			16.6			27.5			28.0	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	73.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1047	40	0	645	0	0
Future Volume (Veh/h)	1047	40	0	645	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	1068	41	0	658	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	309			219		
pX, platoon unblocked					0.78	
vC, conflicting volume			1109		1746	554
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1109		1815	554
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			637		56	481

Direction, Lane #	EB 1	EB 2	WB 1
Volume Total	712	397	658
Volume Left	0	0	0
Volume Right	0	41	0
cSH	1700	1700	1700
Volume to Capacity	0.42	0.23	0.39
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			
Approach Delay (s)	0.0		0.0
Approach LOS			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	127	942	47	491	88	30	54	160	137
v/c Ratio	0.26	0.53	0.11	0.68	0.13	0.10	0.09	0.50	0.19
Control Delay	6.5	12.0	6.0	20.6	4.2	18.5	0.3	25.0	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.5	12.0	6.0	20.6	4.2	18.5	0.3	25.0	0.6
Queue Length 50th (ft)	13	69	4	123	0	7	0	41	0
Queue Length 95th (ft)	44	230	20	280	25	29	0	111	0
Internal Link Dist (ft)		139		280			94		110
Turn Bay Length (ft)	100		175		175			100	
Base Capacity (vph)	549	3049	541	1605	1376	577	885	623	968
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.31	0.09	0.31	0.06	0.05	0.06	0.26	0.14

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	923	0	46	481	86	29	0	53	157	0	134
Future Volume (vph)	124	923	0	46	481	86	29	0	53	157	0	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5	5.5	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539		1805	1863	1583	1770	1615		1770	1583	
Flt Permitted	0.29	1.00		0.29	1.00	1.00	0.67	1.00		0.72	1.00	
Satd. Flow (perm)	541	3539		548	1863	1583	1247	1615		1345	1583	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	127	942	0	47	491	88	30	0	54	160	0	137
RTOR Reduction (vph)	0	0	0	0	0	52	0	42	0	0	106	0
Lane Group Flow (vph)	127	942	0	47	491	36	30	12	0	160	31	0
Heavy Vehicles (%)	2%	2%	0%	0%	2%	2%	2%	0%	0%	2%	0%	2%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6		6	8			4		
Actuated Green, G (s)	31.4	25.5		23.6	21.6	21.6	12.1	12.1		12.1	12.1	
Effective Green, g (s)	31.4	25.5		23.6	21.6	21.6	12.1	12.1		12.1	12.1	
Actuated g/C Ratio	0.59	0.48		0.44	0.41	0.41	0.23	0.23		0.23	0.23	
Clearance Time (s)	4.0	5.5		4.0	5.5	5.5	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.5	3.1		2.5	3.1	3.1	2.9	2.9		2.9	2.9	
Lane Grp Cap (vph)	456	1699		290	757	643	284	368		306	360	
v/s Ratio Prot	c0.03	0.27		0.01	c0.26			0.01			0.02	
v/s Ratio Perm	0.13			0.07		0.02	0.02			c0.12		
v/c Ratio	0.28	0.55		0.16	0.65	0.06	0.11	0.03		0.52	0.09	
Uniform Delay, d1	5.9	9.8		8.4	12.7	9.6	16.2	16.0		18.0	16.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.4		0.2	1.9	0.0	0.2	0.0		1.5	0.1	
Delay (s)	6.2	10.2		8.6	14.6	9.6	16.4	16.0		19.5	16.2	
Level of Service	A	B		A	B	A	B	B		B	B	
Approach Delay (s)		9.7			13.5			16.1			18.0	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	53.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

September 16, 2020 Project #: 21539.0

Stacy Shetler
County Engineer/Division Manager
Washington County Road Engineering
1400 SW Walnut Street M/S 17
Hillsboro, OR 97123
Delivered by email: Stacy_Shetler@co.washington.or.us

Subject: Proposed development near NW 185th Avenue/West Union Road

Dear Stacy:

In mid-August we discussed the option of making a fee-in-lieu payment to meet the County's expected frontage improvement conditions associated with the subject proposal. Attached to this letter are the following supporting documents:

1. The ultimate design for the frontage improvements that resulted from a collaborative effort with Washington County's Road Engineering staff;
2. The Engineer's Conceptual Estimate for completion of the frontage improvements according to the ultimate design; and
3. An email from Sean Arnold of PGE to Aaron Murphy of 3J Consulting confirming that a 10-foot Public Utility Easement (PUE) will be sufficient for utility relocation purposes. It will be helpful for you to know that both the canopy and the fuel tanks are more than 10 feet from the PUE under the current design proposal.

I calculate TDT charge to be $348,396 (based on ITE Code 853 and 12 fueling positions) less $111,145 due to the previous use (based on ITE Code 932 and 4,348 square feet) for a net total of $237,250. I also conclude that this TDT charge is more than offset by the TDT-eligible credits that will be generated by the traffic signal upgrade project when it is completed and final construction invoices are submitted; this conclusion is based on a) the current construction cost estimate for the signal upgrade of approximately $535,000; b) the previous determination that 75% of the project's construction cost is eligible as TDT credits; and c) the additional allowance of 13.5% of engineering costs associated with the signal upgrade to be eligible as a TDT credit. In addition to all of this there could also be TDT-eligible credits arising out of the frontage improvements that are expected to be conditioned, but only if the fee-in-lieu option is not adopted.

The traffic signal upgrade project is still underway, and I am unclear at this time when it is scheduled to be completed, although it will certainly be finished prior to completion of the proposed development. The TDT-eligible credits generated by the traffic signal upgrade project will need to be

available at the time the TDT charge for the proposed development is due. For this reason, it may be necessary for payment of the TDT charge to be deferred until occupancy. From the TDT Procedures Manual, I understand that this will be an acceptable payment option for this development proposal.

As the project team prepares its application for re-submittal, we will very much appreciate written confirmation from you that a fee-in-lieu payment in the amount of $477,453 will be acceptable to Washington County in accordance with the attached documents. We will also appreciate confirmation that the TDT calculations and conclusions above are reasonably accurate, recognizing that some minor adjustments to the credit estimates will undoubtedly be necessary as final construction invoices are received.

Sincerely,
KITTELSON & ASSOCIATES, INC.

Wayne Kittelson, P.E.
Principal Engineer

Know what's below. Call before you dig.

SITE KEY NOTES

1. PROPOSED STANDARD CURB AND GUTTER.
2. PROPOSED PLANTER CURB (6" EXPOSURE AND WEEP HOLES).
2A. PROPOSED PLANTER CURB ADJACENT TO RAISED CONCRETE ISLAND (2" EXPOSURE).
3. PROPOSED PRIVATE ROAD ENTRANCE.
4. RAISED CONCRETE ISLAND WITH 1-FT WIDE LOW PROFILE MOUNTABLE CURB AND CUT-THROUGH PEDESTRIAN ROUTE. CURB TO BE PAINTED YELLOW WITH TYPE 1 BI-DIRECTIONAL RAISED PAVEMENT MARKERS.
5. PROPOSED CONCRETE SIDEWALK (5' WIDE).
5A. PROPOSED ACCESSIBLE PEDESTRIAN CONNECTION TO PUBLIC SIDEWALK.
6. PROPOSED SIGN - "DO NOT ENTER" (FOR RIGHT-IN ONLY).
7. PROPOSED POLE MOUNT FACILITY IDENTIFICATION SIGNAGE.
8. PROPOSED MONUMENT SIGN.

N W E S

SCALE: 1" = 20'
0 20 40 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- EX. WETLAND BOUNDARY
- PROPOSED CURB FACE
- PROPOSED CURB BACK
- PROPOSED LIP OF GUTTER
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE SCORING
- PROPOSED BUILDING LINE
- PROPOSED FENCE/VEHICLE BARRIER
- PROPOSED RETAINING WALL
- ADA PARKING SYMBOL
- PROPOSED STRIPING

WEST UNION VILLAGE

NW WEST UNION ROAD (ARTERIAL)

60.0'
30.0'
EXISTING HALF R/W
11.7'
4.7'
12.3'
12.0'
13.0'
12.0'
2.0'
12.0'
7.5'
4.5'
5.0'
3.0'
48.0'
PROPOSED HALF ROW
30.0'
48.0'
PROPOSED 18.0' ROW DEDICATION
10.0' PUE
PR. R/W
PR. PUE
EX. R/W
R3.0'
R15.0'
R20.0'
R50.0'
10.0' PUE
MATCH EXTG. CURB AND GUTTER
MATCH EXTG. SIDEWALK
PROPOSED BUILDING FOOTPRINT
Diesel @ 20k gal
Regular @ 20k gal
Supreme @ 12k gal
MATCH LINE
SEE SHEET C712

NW 185TH AVENUE (ARTERIAL)

BETHANY CREEK WETLAND
FEMA FLOOD HAZARD - ZONE X (APPROX. LOCATION PER GIS)
FEMA FLOOD HAZARD - ZONE AE (APPROX. LOCATION PER GIS)
FEMA FLOODWAY (APPROX. LOCATION PER GIS)
TAXLOT 1N119BC00400
BETHANY CREEK

REGISTERED PROFESSIONAL ENGINEER
85017PE
OREGON
DEC. 17, 2019
JAMES EVERETT JOHNSTON
PRELIMINARY
EXPIRES: 06/30/21

PUBLISH DATE
SEPTEMBER 10, 2020
ISSUED FOR
LAND USE DOCUMENTS
REVISIONS

FRONTAGE IMPROVEMENT PLAN I WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION
3J PROJECT # | 18509
TAX LOT(S) | 1N119BC00(600,500)
LAND USE # | --
DESIGNED BY | JEJ
CHECKED BY | AJM

SHEET NUMBER
C711

P:\18509-WEST UNION CHEVRON\CAD\DGN\SHEETS\C700 FRONTAGE.DWG

Know what's below. Call before you dig.

SITE KEY NOTES

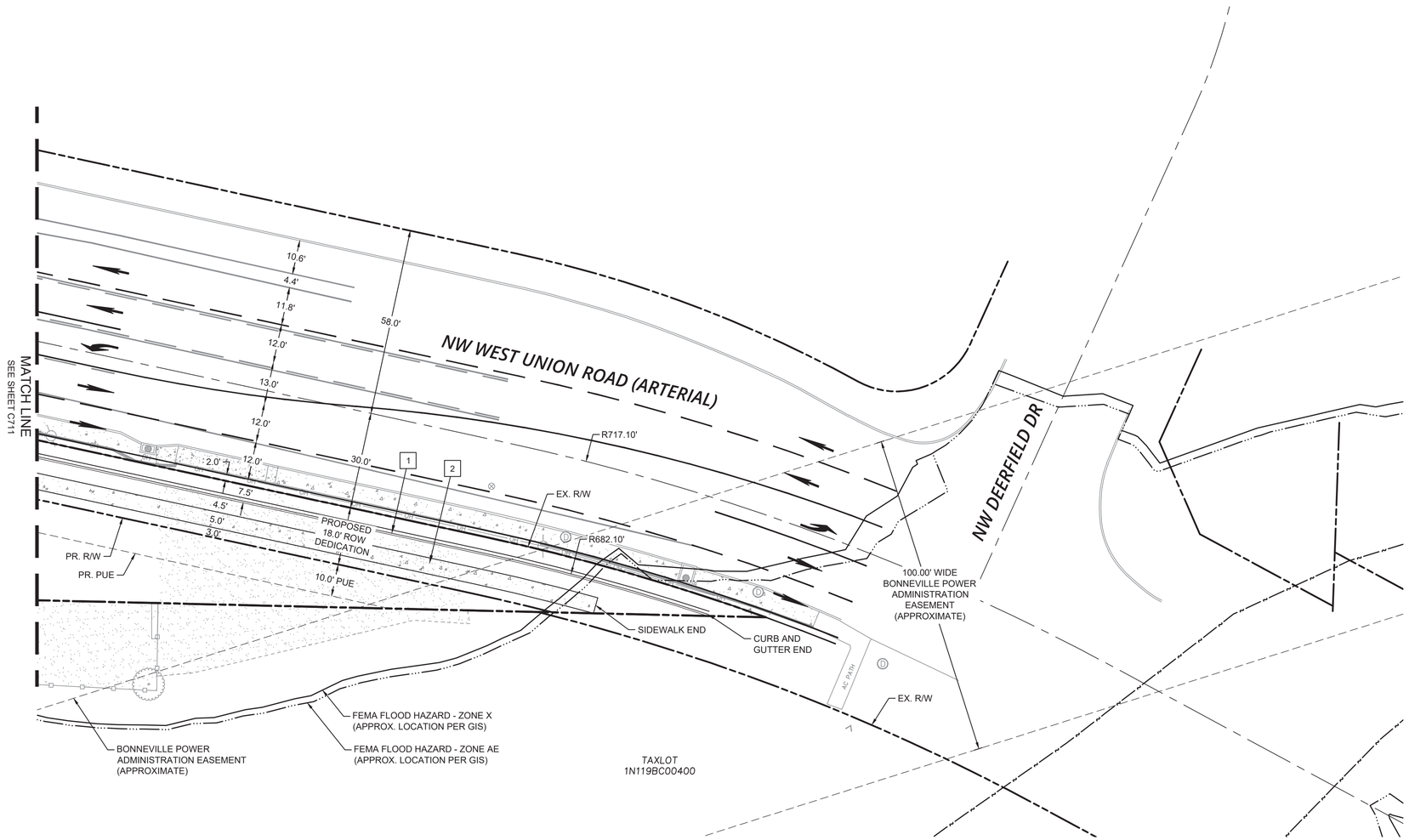
1. PROPOSED STANDARD CURB AND GUTTER.
2. PROPOSED CONCRETE SIDEWALK (5' WIDE).

N
W E
S

SCALE: 1" = 20'
0 20 40 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- PROPOSED CURB FACE
- PROPOSED CURB BACK
- PROPOSED LIP OF GUTTER
- PROPOSED CONCRETE SIDEWALK
- PROPOSED STRIPING



REGISTERED PROFESSIONAL ENGINEER
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DEC. 17, 2019
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PRELIMINARY
EXPIRES: 06/30/21

PUBLISH DATE
SEPTEMBER 10, 2020

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REVISIONS

FRONTAGE IMPROVEMENT PLAN II
WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

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LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

SHEET NUMBER
C712

P:\18509-WEST UNION CHEVRON\CAD\DD\SHEETS\C700 FRONTAGE.DWG

West Union Chevron

Ultimate West Union Improvements

Bob Barman

Engineer's Conceptual Estimate

Prepared By: Fred Wismer, PE		*Date: August 18, 2020*		
Prepared By: Wayne Kittelson, PE				
This Estimate has a Rating of:		**2B**	*(See rating scale guide below.)*	
ITEM	UNIT	TOTAL QUANTITY	UNIT PRICE	TOTAL COST
Mobilization	LS	ALL	$38,000.00	$38,000.00
Traffic Control	LS	ALL	$19,000.00	$19,000.00
Erosion Control	LS	ALL	$6,000.00	$6,000.00
Removal of Structures and Obstructions	LS	ALL	$8,000.00	$8,000.00
Clearing and Grubbing	LS	ALL	$8,000.00	$8,000.00
General Earthworks	CY	1,420	$25.00	$35,500.00
Asphalt Roadway - Full Depth	SF	15,045	$6.70	$100,801.50
Subgrade Geotextile	SY	1,672	$1.00	$1,672.00
Concrete Curbs - Standard Curb & Gutter	LF	784	$25.70	$20,148.80
Private Road Approach	SF	939	$16.30	$15,305.70
Concrete Walks	SF	3,214	$7.20	$23,140.80
Detectable Warnings	EA	6	$500.00	$3,000.00
Extra for Pedestrian Ramps	EA	6	$750.00	$4,500.00
Storm Water System & Water Quality Treatment, Complete	LS	ALL	$62,000.00	$62,000.00
Permanent Landscaping	SF	3,074	$3.70	$11,373.80
Pavement Markings, Complete	LS	ALL	$5,000.00	$5,000.00
Signage, Complete	LS	ALL	$4,000.00	$4,000.00
Illumination System, Complete	LS	ALL	$28,600.00	$28,600.00
Traffic Signal Modifications, Complete	LS	ALL	$40,000.00	$40,000.00
TOTAL CONSTRUCTION COST			$	434,043
10% Contingency			$	43,410
TOTAL ESTIMATED PROJECT COST			$	477,453

Assumptions:

- The traffic signal modifications only include adjustments to pedestrian push button poles and signal head lane realignments.
- Private utilities will be required to relocate at their own costs.

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 50%.

Wayne Kittelson

From: Sean Arnold <sean.arnold@pgn.com>
Sent: Wednesday, August 19, 2020 12:42 PM
To: Aaron Murphy; Bob Barman
Cc: Danny Draper; Erick S. Peterson; Wayne Kittelson; Diego Arguea
Subject: RE: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

Hello Aaron,

The minimum working clearance is 10' for people not certified as linemen. Having the edge of a building/canopy right at 10' would make construction complicated as no construction workers could work on that nearest edge without encroaching on the restricted zone.

Regards,

Sean Arnold
Associate Service and Design Project Manager
503-672-5479
sean.arnold@pgn.com

From: Aaron Murphy <aaron.murphy@3j-consulting.com>
Sent: Wednesday, August 19, 2020 12:21 PM
To: Sean Arnold <sean.arnold@pgn.com>; Bob Barman <bobbarmanaz717@gmail.com>
Cc: Danny Draper <draper99@hotmail.com>; Erick S. Peterson <epeterson@pmdginc.com>; Wayne Kittelson <wkittelson@kittelson.com>; Diego Arguea <darguea@kittelson.com>
Subject: RE: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

*****Please take care when opening links, attachments or responding to this email as it originated outside of PGE.*****

Sean:

Can you confirm the minimum clearance between the proposes canopy and the overhead lines?

My understanding is 10' from the neutral to any proposed structures. Is this a correct assumption?

Best Regards,

Aaron Murphy, P.E. | Senior Project Manager | **3J Consulting**
O: 503.946.9365 x.218 | C: 720.220.3915

From: Aaron Murphy
Sent: Wednesday, August 19, 2020 10:39 AM
To: Sean Arnold <sean.arnold@pgn.com>; Bob Barman <bobbarmanaz717@gmail.com>
Cc: Danny Draper <draper99@hotmail.com>; Erick S. Peterson <epeterson@pmdginc.com>; Andrew Tull Emails <andrew.tull@3j-consulting.com>; Wayne Kittelson <wkittelson@kittelson.com>; Diego Arguea

<darguea@kittelson.com>
Subject: RE: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

Sean:

The following link may be helpful, it contains images taken with our drone last year. https://files.3j-consulting.com:4433/?u=Lb8r&p=nmW0 [files.3j-consulting.com]

Best Regards,

Aaron Murphy, P.E. | Senior Project Manager | **3J Consulting**
O: 503.946.9365 x.218 | C: 720.220.3915

From: Aaron Murphy
Sent: Wednesday, August 19, 2020 10:20 AM
To: Sean Arnold <sean.arnold@pgn.com>; Bob Barman <bobbarmanaz717@gmail.com>
Cc: Danny Draper <draper99@hotmail.com>; Erick S. Peterson <epeterson@pmdginc.com>; Andrew Tull Emails <andrew.tull@3j-consulting.com>; Wayne Kittelson <wkittelson@kittelson.com>; Diego Arguea <darguea@kittelson.com>
Subject: RE: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

Thanks Sean, this is very helpful.

We'll be able to report load etc. for gas station once we get a little further along with the design.

I'll keep you posted.

Best Regards,

Aaron Murphy, P.E. | Senior Project Manager | **3J Consulting**
O: 503.946.9365 x.218 | C: 720.220.3915

From: Sean Arnold <sean.arnold@pgn.com>
Sent: Wednesday, August 19, 2020 10:17 AM
To: Aaron Murphy <aaron.murphy@3j-consulting.com>; Bob Barman <bobbarmanaz717@gmail.com>
Cc: Danny Draper <draper99@hotmail.com>; Erick S. Peterson <epeterson@pmdginc.com>; Andrew Tull Emails <andrew.tull@3j-consulting.com>; Wayne Kittelson <wkittelson@kittelson.com>; Diego Arguea <darguea@kittelson.com>
Subject: RE: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

Hello Aaron,

I believe that Comcast and Ziply (Frontier) are on the poles along the West Union frontage. I would need to make a trip out to be sure though. I'll most likely be in the area later this week or early next week and report back.

Were you able to get together the expected load info for the gas station?

Regards,

Sean Arnold
Associate Service and Design Project Manager

503-672-5479
sean.arnold@pgn.com

From: Aaron Murphy <aaron.murphy@3j-consulting.com>
Sent: Wednesday, August 19, 2020 9:50 AM
To: Sean Arnold <sean.arnold@pgn.com>; Bob Barman <bobbarmanaz717@gmail.com>
Cc: Danny Draper <draper99@hotmail.com>; Erick S. Peterson <epeterson@pmdginc.com>; Andrew Tull Emails <andrew.tull@3j-consulting.com>; Wayne Kittelson <wkittelson@kittelson.com>; Diego Arguea <darguea@kittelson.com>
Subject: RE: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

*****Please take care when opening links, attachments or responding to this email as it originated outside of PGE.*****

Good morning Sean,

Would you have any idea what other services share the PGE along this frontage?

Looking at Google Street View, it would appear Comcast and possibly Centurylink could be on the poles, too?

Best Regards,

Aaron Murphy, P.E. | Senior Project Manager | **3J Consulting**
O: 503.946.9365 x.218 | C: 720.220.3915

From: Aaron Murphy
Sent: Wednesday, July 22, 2020 9:41 AM
To: Sean Arnold <sean.arnold@pgn.com>; Bob Barman <bobbarmanaz717@gmail.com>
Cc: Danny Draper <draper99@hotmail.com>; Erick S. Peterson <epeterson@pmdginc.com>; Andrew Tull <andrew.tull@3j-consulting.com>; Wayne Kittelson <wkittelson@kittelson.com>; Diego Arguea <darguea@kittelson.com>
Subject: RE: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

Good morning Sean,

Thank you for your swift response.

We'll be sure to amend the fuel tank locations in accordance with PGE's separation rule and send back an updated site plan when complete.

We'll follow up with electrical demand information soon.

Best Regards,

Aaron Murphy, P.E. | Senior Project Manager | **3J Consulting**
O: 503.946.9365 x.218 | C: 720.220.3915

From: Sean Arnold <sean.arnold@pgn.com>
Sent: Wednesday, July 22, 2020 9:00 AM
To: Bob Barman <bobbarmanaz717@gmail.com>; Aaron Murphy <aaron.murphy@3j-consulting.com>
Cc: Danny Draper <draper99@hotmail.com>; Erick S. Peterson <epeterson@pmdginc.com>; Andrew Tull

<andrew.tull@3j-consulting.com>; Wayne Kittelson <wkittelson@kittelson.com>; Diego Arguea <darguea@kittelson.com>
Subject: RE: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

Good morning all,

I have some clarification regarding the width of PUE need to underground our distribution lines. A 10' PUE would be of sufficient size. The widest vault that we utilize to run feeder underground is just shy of 7' wide.

I do see an issue with the location of the underground gasoline and diesel tanks in the site plan. We require that there be a minimum of 10' clearance between our underground conduit and any buried fuel tank as per section 5.5 in our Electric Services Requirements book.

If I can answer any additional immediate questions, please let me know. Otherwise, I will be in contact with you when I begin the design for the new service.

Thank you,

Sean Arnold
Service and Design Project Manager, BLC
503-672-5479
sean.arnold@pgn.com

From: Bob Barman <bobbarmanaz717@gmail.com>
Sent: Tuesday, July 21, 2020 2:57 PM
To: Aaron Murphy <aaron.murphy@3j-consulting.com>
Cc: Sean Arnold <sean.arnold@pgn.com>; Danny Draper <draper99@hotmail.com>; Erick S. Peterson <epeterson@pmdginc.com>; Andrew Tull <andrew.tull@3j-consulting.com>; Wayne Kittelson <wkittelson@kittelson.com>; Diego Arguea <darguea@kittelson.com>
Subject: Re: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

*****Please take care when opening links, attachments or responding to this email as it originated outside of PGE.*****

Hi Sean: We are looking at building the facility in early 2021. If you have any questions about the footprint-design-power usage of the facility please feel free to reach out to our architect Erick Peterson. Erick will be able to answer your questions or get answers to your questions.
I appreciate you looking into this issue. If you have any questions directly for me I can be reached at this email or on my cell at 503-720-2917. Sincerely Bob Barman

Sent from my iPhone

> On Jul 21, 2020, at 10:39 AM, Aaron Murphy <aaron.murphy@3j-consulting.com> wrote:
>
> Hi Sean,
>
> Thank you for your response.

The PUE width is of most importance at this time as we finalize site plan dimensions. We want to be sure that any undergrounding of PGE infrastructure in the future will be considered and implemented in the ultimate site plan.

The expected construction schedule is a little unknown at the moment but developer/owner, Bob Barman can speak better to this.

I've included the project architect, Erick Peterson on this email. He may be able to shed some light on the electrical demand but I know that it will be low since Bob is incorporating renewable energy options where possible.

We would really appreciate you getting back to our team at your earliest convenience on the PUE width so we can incorporate into our plans.

Best Regards,

Aaron Murphy, P.E. | Senior Project Manager | **3J Consulting**
O: 503.946.9365 x.218 | C: 720.220.3915

From: Sean Arnold <sean.arnold@pgn.com>
Sent: Thursday, July 16, 2020 2:40 PM
To: Aaron Murphy <aaron.murphy@3j-consulting.com>
Cc: bobbarmanaz717@gmail.com
Subject: PGE WO# M2902122 New 200A 3p Overhead Service to Gas Station

Good afternoon,

My name is Sean Arnold and I will be the Project Manager helping with your service request. I should have a chance early next week to visit the site and get an idea of the scope of the project based upon PGE's existing facilities in the area.

A quick question and request:

What is the timeline for this construction project?
Could you please forward more details regarding expected load, and HVAC and electric motor size being installed in the gas station?

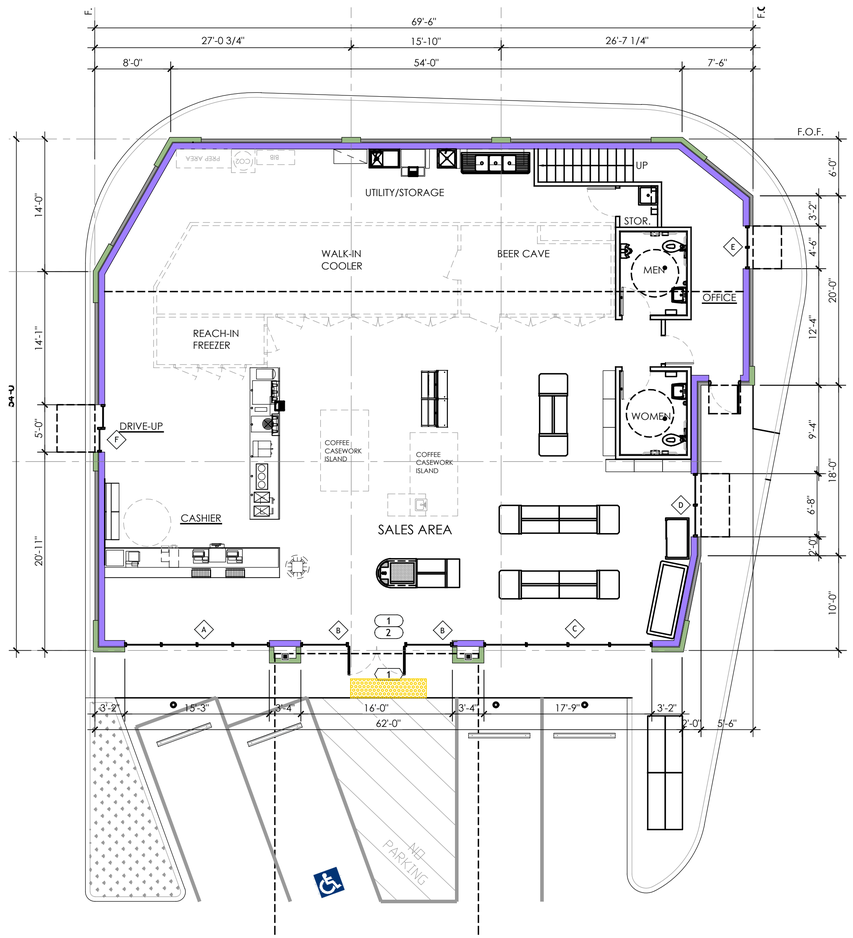
As for your questions; looking at your site plan there will be sufficient clearance between the building and canopy and our overhead facilities. I am reaching out to a colleague about PUE size needed for future undergrounding and will get back to you as soon as I have an answer.

I've attached two documents that help describe PGE's new service process. Please feel free to contact me with any additional questions or concerns. I look forward to working with you on this project.

Regards,

<image001.png>

Sean Arnold
Service and Design Project Manager, BLC
503-672-5479
sean.arnold@pgn.com



GROUND FLOOR PLAN — 1/8" = 1'-0" — 5

X KEYNOTE DESCRIPTION

1. ALL DOORS IN THE MEANS OF EGRESS SHALL BE OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT; THE UNLATCHING OF ANY DOOR SHALL NOT REQUIRE MORE THAN ONE OPERATION. NO MORE THAN 5LBS OF PRESSURE TO OPERATE.

2. FOR GROUP M OCCUPANCY, KEY-OPERATED LOCKING DEVICES, FROM THE EGRESS SIDE MAY BE USED ON THE MAIN EXTERIOR DOORS PROVIDED;
   A. THE LOCKING DEVICE IS READILY DISTINGUISHABLE LOCKED; AND;
   B. THERE IS A READILY VISIBLE SIGN ON OR ADJACENT TO THE DOOR STATING "THIS DOOR SHALL REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED; AND;
   C. THIS SIGN SHALL BE IN LETTERS NOT LESS THAN 1 INCH HIGH ON A CONTRASTING BACKGROUND; AND;
   D. THE USE OF THIS EXCEPTION MAY BE REVOKED BY THE BUILDING OFFICIAL AT ANY TIME FOR DUE CAUSE.

CONSTRUCTION PLAN KEYNOTES — -- — 3

NOT USED — -- — 2

KEY	DESCRIPTION
	(N) EXTERIOR WALL CLADDING - MASONRY (BRICK OR STONE AS OCCURS)
	(N) EXTERIOR WALL - 1 HOUR RATED
	(N) EXTERIOR WALL - 2 HOUR RATED
	(N) INTERIOR PARTITION - NOT RATED
	(N) EXTERIOR WALL CLADDING - MASONRY (BRICK OR STONE AS OCCURS)

WALL LEGEND — -- — 1

KEN McCRACKEN, ARCHITECT
Architecture • Program Management • Permitting
19120 SE 34th Street
Suite 115
Vancouver, WA 98683
CONTACT: MARTIN D. LAKEY
PHONE: 360.719.1952
EMAIL: MLAKEY@PMDGINC.COM

SEAL:

PRELIMINARY - NOT FOR CONSTRUCTION

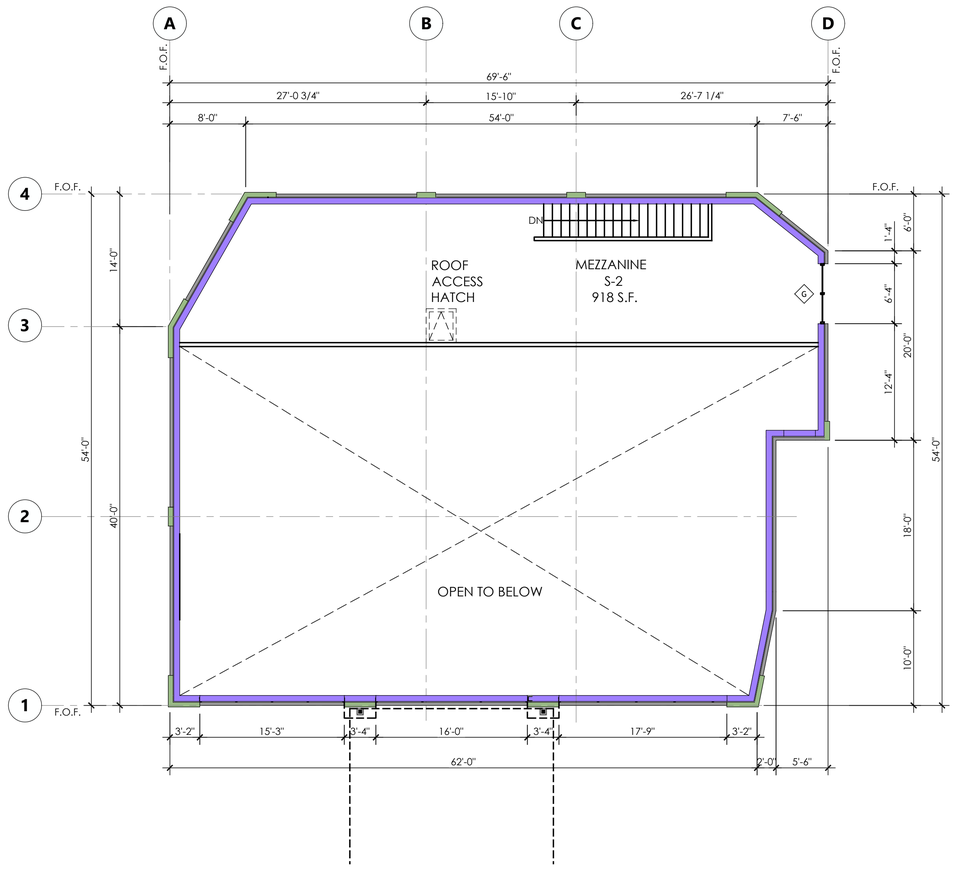
CONSULTANT:

HILLSBORO FAST SERVE

STORE NO.:
18450 NW WEST UNION ROAD
WASHINGTON COUNTY
HILLSBORO, OR 97229

REV	DATE	DESCRIPTION
1	06.18.21	UPDATE
2	04.12.22	UPDATE

DRAWN BY: CG
CHECKED BY: DW
ARCH. PROJECT NO.: CHV18022.0
SHEET NAME: GROUND FLOOR PLAN
SHEET NUMBER: **A02.10**



MEZZANINE FLOOR PLAN — 1/8" = 1'-0" — 5

X KEYNOTE DESCRIPTION

1. ALL DOORS IN THE MEANS OF EGRESS SHALL BE OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT; THE UNLATCHING OF ANY DOOR SHALL NOT REQUIRE MORE THAN ONE OPERATION. NO MORE THAN 5LBS OF PRESSURE TO OPERATE.

2. FOR GROUP M OCCUPANCY, KEY-OPERATED LOCKING DEVICES, FROM THE EGRESS SIDE MAY BE USED ON THE MAIN EXTERIOR DOORS PROVIDED;
   A. THE LOCKING DEVICE IS READILY DISTINGUISHABLE LOCKED; AND;
   B. THERE IS A READILY VISIBLE SIGN ON OR ADJACENT TO THE DOOR STATING "THIS DOOR SHALL REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED; AND;
   C. THIS SIGN SHALL BE IN LETTERS NOT LESS THAN 1 INCH HIGH ON A CONTRASTING BACKGROUND; AND;
   D. THE USE OF THIS EXCEPTION MAY BE REVOKED BY THE BUILDING OFFICIAL AT ANY TIME FOR DUE CAUSE.

CONSTRUCTION PLAN KEYNOTES — -- — 3

NOT USED — -- — 2

KEY	DESCRIPTION
	(N) EXTERIOR WALL CLADDING - MASONRY (BRICK OR STONE AS OCCURS)
	(N) EXTERIOR WALL - 1 HOUR RATED
	(N) EXTERIOR WALL - 2 HOUR RATED
	(N) INTERIOR PARTITION - NOT RATED
	(N) EXTERIOR WALL CLADDING - MASONRY (BRICK OR STONE AS OCCURS)

WALL LEGEND — -- — 1

KEN McCRACKEN, ARCHITECT
Architecture • Program Management • Permitting
19120 SE 34th Street
Suite 115
Vancouver, WA 98683
CONTACT: MARTIN D. LAKEY
PHONE: 360.719.1952
EMAIL: MLAKEY@PMDGINC.COM

SEAL:

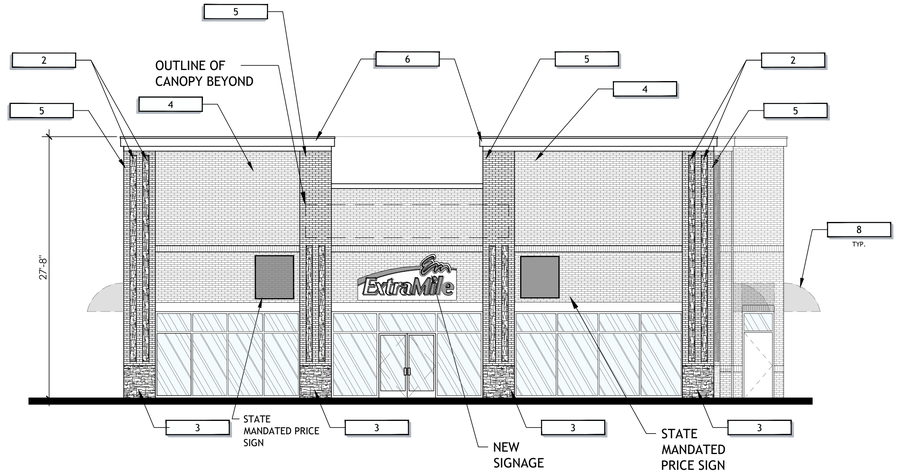
PRELIMINARY - NOT FOR CONSTRUCTION

CONSULTANT:

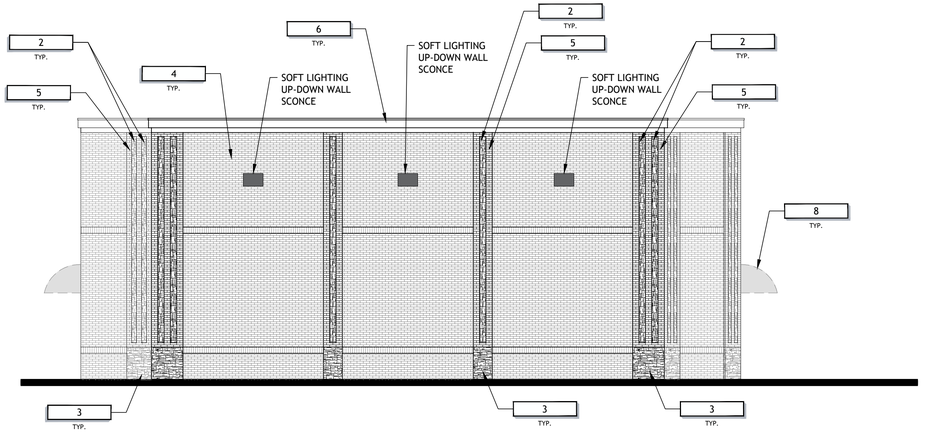
HILLSBORO FAST SERVE
STORE NO.:
18450 NW WEST UNION ROAD
WASHINGTON COUNTY
HILLSBORO, OR 97229

REV	DATE	DESCRIPTION
1	06.18.21	UPDATE
2	04.12.22	UPDATE

DRAWN BY: CG
CHECKED BY: DW
ARCH. PROJECT NO.: CHV18022.0
SHEET NAME: MEZZANINE FLOOR PLAN
SHEET NUMBER: **A02.11**



EAST ELEVATION | 1/8" = 1'-0" | 7



WEST ELEVATION | 1/8" = 1'-0" | 5

X

NOTE:
EXTERIOR SIGNAGE IS TO BE SUBMITTED, REVIEWED, AND APPROVED UNDER A SEPARATE PERMIT.

EXTERIOR ELEVATION KEYNOTES | -- | 3

X-X

1. NOT USED
2. CULTURED STONE:
   TYPE: ARCHITECTURAL STONE TRIM
   COLOR: GRAY
   MFR: BORAL AMERICA
3. CULTURED STONE:
   TYPE: EUROPEAN CASTLE STONE
   COLOR: CHARDONNAY
   MFR: BORAL AMERICA
4. BRICK:
   TYPE: STANDARD
   COLOR: MOUNTAIN BLEND
   (BODY)
   MFR.: MUTUAL MATERIALS
5. BRICK:
   TYPE: STANDARD
   COLOR: CANYON MIST
   (ACCENT)
6. MFR.: MUTUAL MATERIALS

   7/8" CEMENT PLASTER CORNICE
7. COLOR: PAINT TO MATCH CANYON MIST BRICK

   BLACK ALUMINUM:
   STOREFRONT FRAMES AND BREAK METAL
8. AWNINGS:
   QUARTER ROUND CANVAS OVER LIGHT METAL FRAMING;
   COLOR: CHILLED WINE
   MFR: ROSE CITY AWNING CO.
9. ELECTRICAL CLOSET DOORS & EMERGENCY EXIT DOORS:
   COLOR: PAINT TO MATCH CANYON MIST BRICK

MATERIALS LEGEND | -- | 4

KEN McCRACKEN, ARCHITECT
Architecture • Program Management • Permitting

16219 SE 12th Street
Suite 202
Vancouver, WA 98683

CONTACT: MARTIN D. LAKEY
PHONE: 360.719.1952
EMAIL: MLAKEY@PMDGINC.COM

SEAL:

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CONSULTANT:

HILLSBORO FAST SERVE

STORE NO.:
18450 NW WEST UNION ROAD
WASHINGTON COUNTY
HILLSBORO, OR 97229

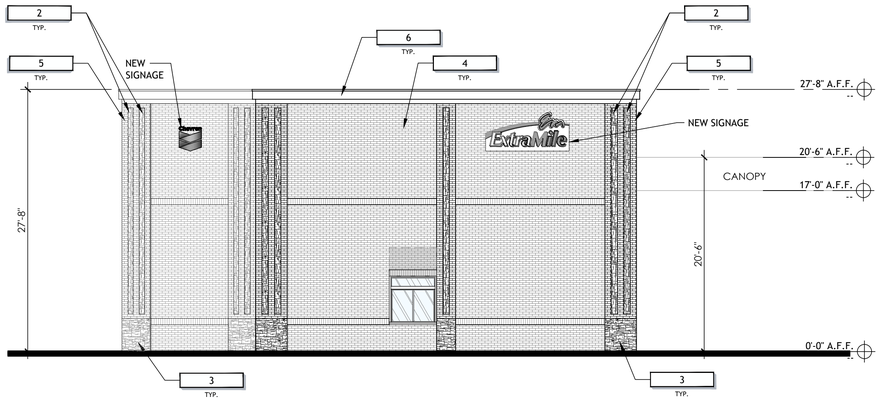
REV	DATE	DESCRIPTION
1	06.18.21	UPDATE
2	04.12.22	UPDATE

DRAWN BY: CG
CHECKED BY: DW

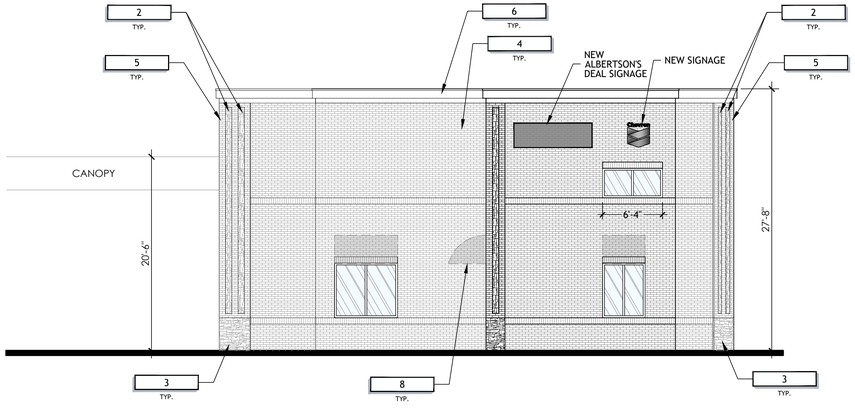
ARCH. PROJECT NO.:
CHV18022.0

SHEET NAME:
EXTERIOR ELEVATIONS

SHEET NUMBER:
FS-2



SOUTH ELEVATION | 1/8" = 1'-0" | **7**



NORTH ELEVATION | 1/8" = 1'-0" | **5**

EXTERIOR ELEVATION KEYNOTES | -- | **3**

X-X

1. NOT USED
2. CULTURED STONE:
   TYPE: ARCHITECTURAL STONE TRIM
   COLOR: GRAY
   MFR: BORAL AMERICA
3. CULTURED STONE:
   TYPE: EUROPEAN CASTLE STONE
   COLOR: CHARDONNAY
   MFR: BORAL AMERICA
4. BRICK:
   TYPE: STANDARD
   COLOR: MOUNTAIN BLEND
   (BODY)
   MFR.: MUTUAL MATERIALS
5. BRICK:
   TYPE: STANDARD
   COLOR: CANYON MIST
   (ACCENT)
6. MFR.: MUTUAL MATERIALS
   7/8" CEMENT PLASTER CORNICE
7. COLOR: PAINT TO MATCH CANYON MIST BRICK
   BLACK ALUMINUM:
   STOREFRONT FRAMES AND BREAK METAL
8. AWNINGS:
   QUARTER ROUND CANVAS OVER LIGHT METAL FRAMING;
   COLOR: CHILLED WINE
   MFR: ROSE CITY AWNING CO.
9. ELECTRICAL CLOSET DOORS & EMERGENCY EXIT DOORS:
   COLOR: PAINT TO MATCH CANYON MIST BRICK

MATERIALS LEGEND | -- | **4**

KEN McCRACKEN, ARCHITECT
Architecture • Program Management • Permitting

16219 SE 12th Street
Suite 202
Vancouver, WA 98683

CONTACT: MARTIN D. LAKEY
PHONE: 360.719.1952
EMAIL: MLAKEY@PMDGINC.COM

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CONSULTANT:

HILLSBORO FAST SERVE

STORE NO.:
18450 NW WEST UNION ROAD
WASHINGTON COUNTY
HILLSBORO, OR 97229

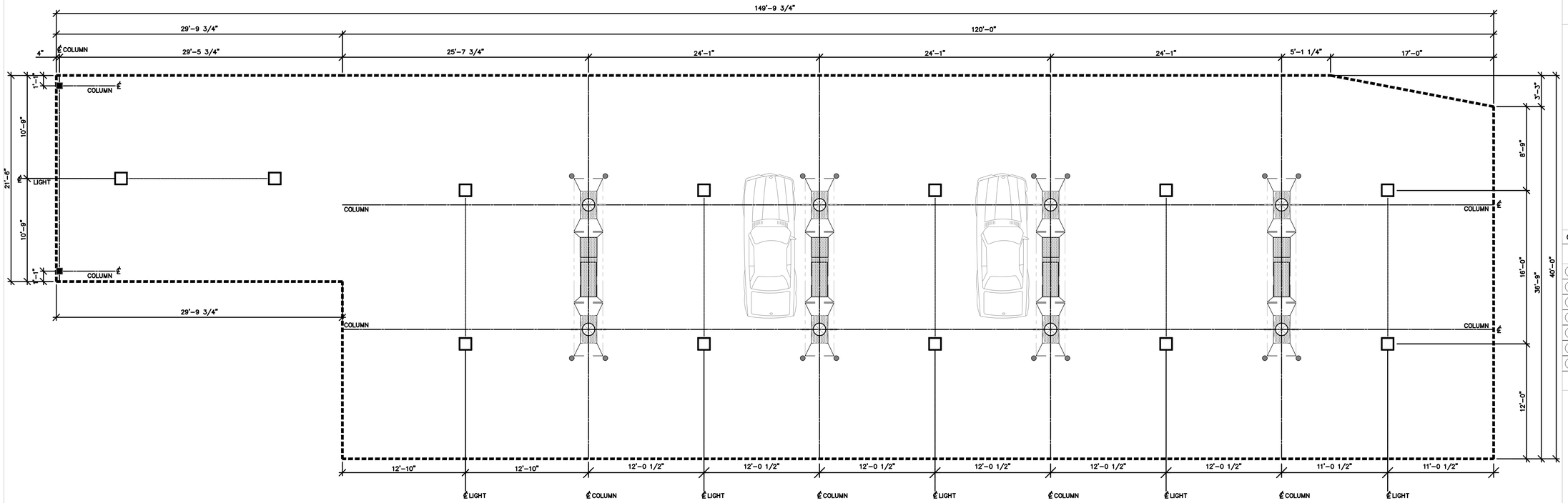
REV	DATE	DESCRIPTION
△	06.18.21	UPDATE
△	04.12.22	UPDATE

DRAWN BY: CG
CHECKED BY: DW

ARCH. PROJECT NO.:
CHV18022.0

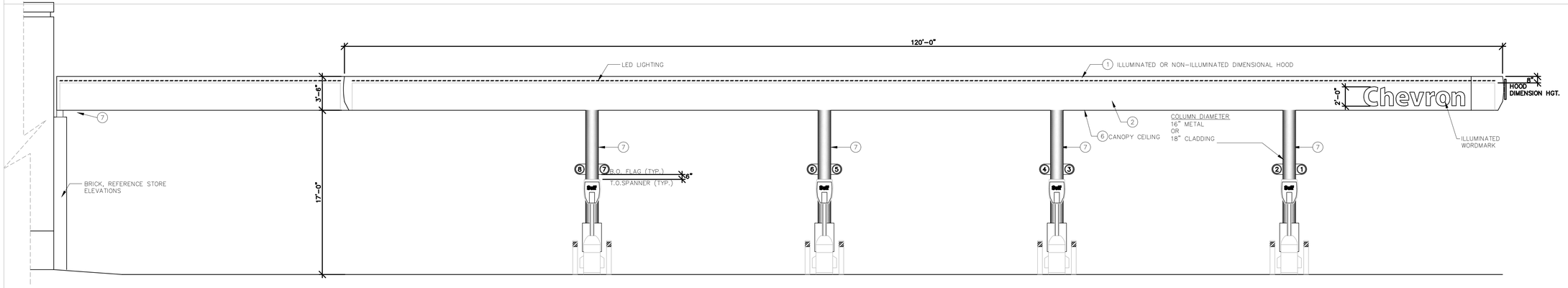
SHEET NAME:
EXTERIOR ELEVATIONS

SHEET NUMBER:
FS-3

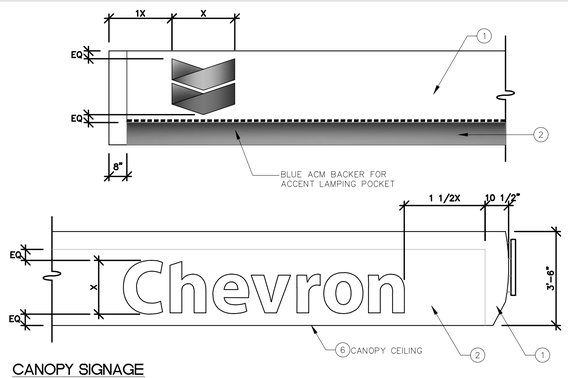


STARTER GATE 4 PLAN
SCALE 3/16"=1'-0"

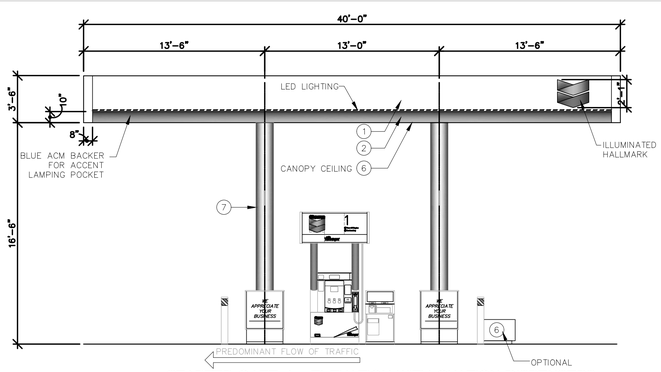
LIGHTING AS SHOWN IS BASED ON A CANOPY WITH 16" DECK PANS



STARTER GATE 4 ELEVATION WITH OVATION DISPENSERS
SCALE 3/16"=1'-0"



CANOPY SIGNAGE
SCALE 3/8"=1'-0"



STARTER GATE 4 - ELEVATION WITH OVATION DISPENSERS
SCALE 3/16"=1'-0"

GENERAL NOTES

1. Do not scale off this drawing.
2. This drawing is the property of the Chevron Property & Facilities Optimization Center of Focus & must not be used, copied or reproduced in whole or in part without prior written permission.
3. ☐ Canopy light fixture LSI CRU-SC-LED-HO-CW-WHT.
4. Refer to Hallmark 21 retail image guidelines for additional information.

COLOR LEGEND

	COLOR	PMS	FILM	JONES BLAIR HIGH GLOSS
1	IR WHITE	N/A	3M REFLECTIVE WHITE 680-10	N/A
2	IR BLUE	PMS 2935c	3M BRISTOL BLUE	N/A
3	LIGHT GRAY	PMS 428c	N/A	JB #A3W-6005
4	DARK GRAY	PMS 431c	N/A	JB# 4560-001
5	RED	PMS 186c	N/A	N/A
6	WHITE		N/A	JB#45081
7	IR SILVER	PMS 429c	N/A	JONES BLAIR #36

ALL PAINT TO BE V.O.C. COMPLIANT URETHANE

KEN McCRACKEN, ARCHITECT
Architecture • Program Management • Permitting
19120 SE 34th Street
Suite 115
Vancouver, WA 98683
CONTACT: MARTIN D. LAKEY
PHONE: 360.719.1952
EMAIL: MLAKEY@PMDGINC.COM

SEAL:

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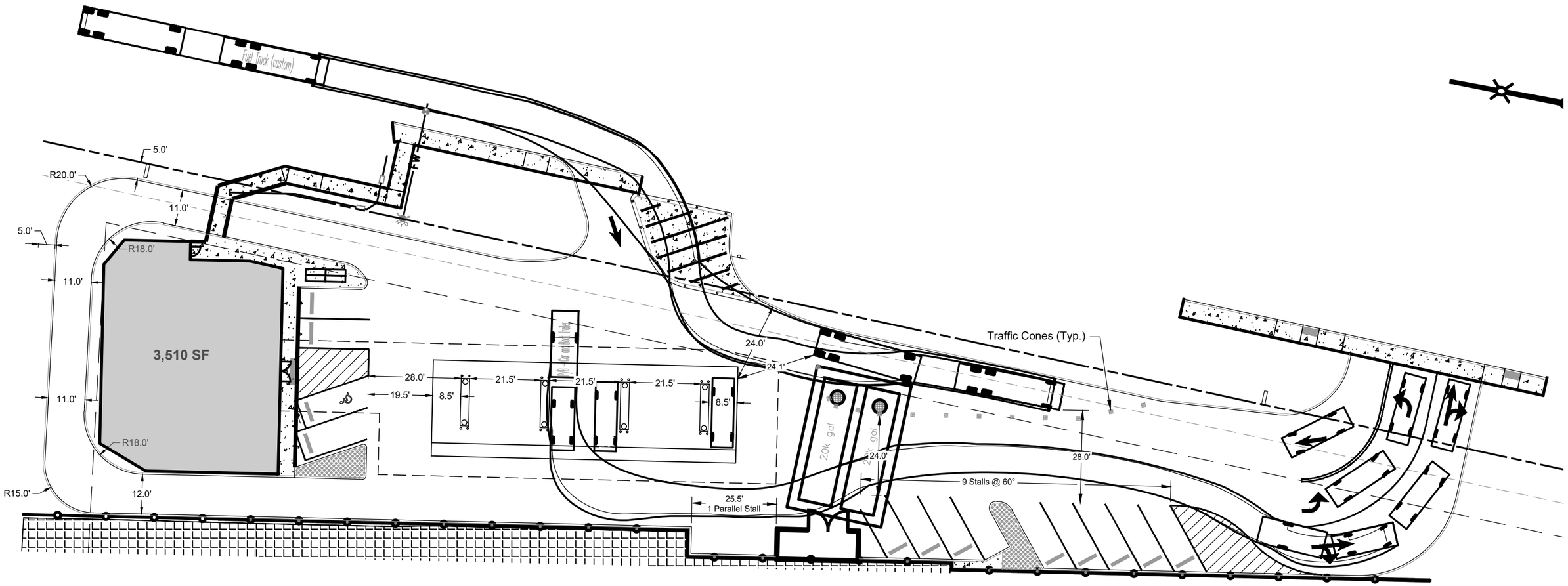
STORE NO.:
18450 NW WEST UNION ROAD
WASHINGTON COUNTY
HILLSBORO, OR 97229

REV	DATE	DESCRIPTION

DRAWN BY: CG
CHECKED BY: DW
ARCH. PROJECT NO.: CHV18022.0
SHEET NAME: FUEL CANOPY
SHEET NUMBER: **FC-1**



KITTELSON & ASSOCIATES
PHONE: (503) 535-7440 CONTACT: Fred Wismer, PE

Scale: 1" = 30'
30 15 0 30

60° Stall Alternative
West Union Chevron

P:\VAN\01-Projects\Vancouver\Chevron\CHV18022.0 - HILLSBORO, OR\01-CURRENT DWGS\2022-04-12 New Layout\18509-XR-SITE-DriveThru-60deg.dwg Apr 20, 2022 - 12:44pm - jcolen Layout Tab: Kittelson Mods

ABBREVIATIONS LIST

AC	ASPHALTIC CONCRETE
CHRY	CHERRY TREE
CSP	CORRUGATED STEEL PIPE
DEC	DECIDUOUS TREE
DFIR	DOUGLAS FIR TREE
DIP	DUCTILE IRON PIPE
EL	ELEVATION
EX.	EXISTING
FL	FLOW LINE
IE	INVERT ELEVATION
NO.	NUMBER
RDWD	REDWOOD TREE

EXISTING CONDITIONS PLAN

THIS PLAN HAS BEEN PREPARED FOR ILLUSTRATIVE PURPOSES ONLY. SITE BACKGROUND INFORMATION AND FEATURES HAVE BEEN GENERATED FROM A COMBINATION OF PUBLIC GIS DATA SOURCES, AERIAL PHOTOS, PHYSICAL SITE OBSERVATIONS, AND TOPOGRAPHIC SURVEY PROVIDED BY CRJW, LLC. AND PREPARED BY ANDY PARIS AND ASSOCIATES, INC. DATED APRIL 1, 2019. PROPOSED SITE FEATURES ARE PRELIMINARY IN NATURE AND SUBJECT TO CHANGE. NO WARRANTY OR GUARANTEE IS EXPRESSED OR IMPLIED.

NOTES

1. VERTICAL DATUM IS NGVD 29, BASED ON WASHINGTON COUNTY BENCHMARK NO. 194 HAVING AN ELEVATION OF 209.254 FEET.
2. NAVD 88 ELEVATIONS FROM FEMA FLOOD INSURANCE STUDY CONVERTED TO NGVD 29 BY SUBTRACTING 3.52 FEET.
3. THE BOUNDARIES AS SHOWN ON THIS MAP ARE BASED ON RECORD DATA AND FOUND MONUMENTS. THIS PLAN DOES NOT REPRESENT A SURVEY TO BE RECORDED, BUT WAS DONE FOR SITE / TOPOGRAPHIC INFORMATION ONLY. THIS PLAN DOES NOT CONSTITUTE A TITLE SEARCH. THERE MAY EXIST EASEMENTS, CONDITIONS, OR RESTRICTIONS THAT COULD AFFECT THE TITLE OF THIS PROPERTY. NO ATTEMPT HAS BEEN MADE TO SHOW SUCH MATTERS THAT MAY AFFECT TITLE.
4. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THE TOPOGRAPHIC SURVEY OR PREPARATION OF THIS EXISTING CONDITIONS PLAN. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS TRACT.
5. THE LOCATION AND OR EXISTENCE OF UTILITY SERVICE LINES AS SHOWN ON THIS MAP ARE BASED ON FIELD OBSERVATION ONLY. THERE MAY EXIST ADDITIONAL SERVICE LINES NOT SHOWN ON THIS SURVEY. NOT ALL SURFACE FEATURES OR UTILITIES MAY BE SHOWN. SITE FEATURES ARE PRELIMINARY IN NATURE AND SUBJECT TO CHANGE. NO WARRANTY OR GUARANTEE IS EXPRESSED OR IMPLIED. SEE UTILITY STATEMENT, THIS SHEET. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION TO DETERMINE WORK SPECIFIC DETAILS.

UTILITY STATEMENT

THE UNDERGROUND UTILITY LINES ARE FROM FIELD SURFACE LOCATIONS ONLY AND/OR RECORD INFORMATION FROM AS-BUILT MAPS, HOWEVER, LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY AND RELIABLE DEPICTED. WHERE ADDITIONAL OR MORE DETAILED INFORMATION IS REQUIRED, THE CLIENT IS ADVISED THAT EXCAVATION MAY BE NECESSARY.

FLOOD HAZARD NOTE

ZONE X (UN-SHADED) THE SITE IS LOCATED WITHIN ZONE X (UN-SHADED) PER FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY-PANEL NUMBER **41067 C0361E** FEMA'S DEFINITION OF ZONE X (UN-SHADED) IS AN AREA OF MINIMAL FLOOD HAZARD, USUALLY DEPICTED ON FIRMS AS ABOVE THE 500-YEAR FLOOD LEVEL. ZONE X IS THE AREA DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD AND PROTECTED BY LEVEE FROM 100-YEAR FLOOD. IN COMMUNITIES THAT PARTICIPATE IN THE NFIP, FLOOD INSURANCE IS AVAILABLE TO ALL PROPERTY OWNERS AND RENTERS IN THESE ZONES.

GEOTECHNICAL INFORMATION

BORING	DEPTH OF BORING (FT)	DEPTH TO GROUNDWATER (FT)	INFILTRATION TEST NO.	DEPTH (FT)	FIELD MEASURED INFILTRATION RATE (IN/HR)
B-1	16.5	*	IT-1	4.5	0
B-2	16.5	*	IT-2	5.0	0
B-3	6.5	*	IT-3	5.5	0.13
B-4	6.5	*	IT-4	5.0	1.50
B-5	31.5	23'			
B-6	31.5	*			

* GROUND WATER WAS NOT ENCOUNTERED IN BORING.

GROUNDWATER FOUND IN B-5 WAS CONFINED AND ROSE APPROX. 7 FT (TO APPROX. 16 BGS) IN APPROX. 25 MINUTES. GROUNDWATER SHOULD BE EXPECTED TO RISE SEVERAL FEET DURING PERIODS OF EXTENDED RAINFALL AS WELL AS FROM CAPILLARY RISE. GROUNDWATER CONDITIONS AT THE SITE ARE EXPECTED TO VARY SEASONALLY DUE TO RAINFALL EVENTS AND OTHER FACTORS NOT OBSERVED IN EXPLORATIONS BY THE GEOTECHNICAL ENGINEER.

SEE GEOTECHNICAL REPORT DATED JANUARY 21, 2019 BY GEOENGINEERS TO OBTAIN MORE DETAILED INFORMATION. INFORMATION PROVIDED HEREIN IS FOR INFORMATION ONLY AND SHOULD BE CONFIRMED BY THE CONTRACTOR.

TAX LOTS 500 & 600 LOCATED IN THE NW 1/4 OF SECTION 19, T.1N., R.1W., W.M. WASHINGTON COUNTY, OREGON

N W E S

SCALE: 1" = 30'
0 30 60 FT

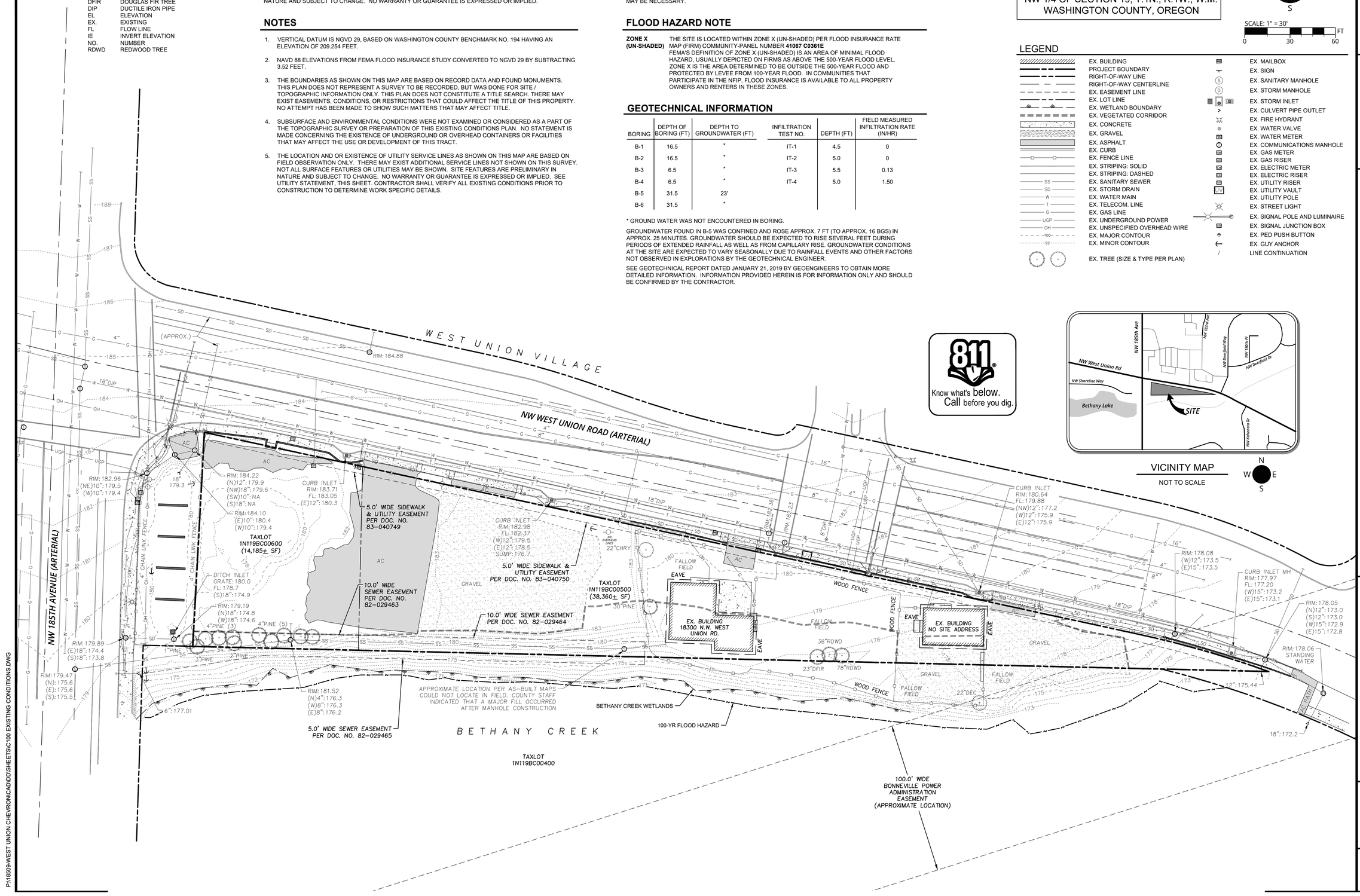
LEGEND

EX. BUILDING	EX. MAILBOX
PROJECT BOUNDARY	EX. SIGN
RIGHT-OF-WAY LINE	EX. SANITARY MANHOLE
RIGHT-OF-WAY CENTERLINE	EX. STORM MANHOLE
EX. EASEMENT LINE	EX. STORM INLET
EX. LOT LINE	EX. CULVERT PIPE OUTLET
EX. WETLAND BOUNDARY	EX. FIRE HYDRANT
EX. VEGETATED CORRIDOR	EX. WATER VALVE
EX. CONCRETE	EX. WATER METER
EX. GRAVEL	EX. COMMUNICATIONS MANHOLE
EX. ASPHALT	EX. GAS METER
EX. CURB	EX. GAS RISER
EX. FENCE LINE	EX. ELECTRIC METER
EX. STRIPING: SOLID	EX. ELECTRIC RISER
EX. STRIPING: DASHED	EX. UTILITY RISER
EX. SANITARY SEWER	EX. UTILITY VAULT
EX. STORM DRAIN	EX. UTILITY POLE
EX. WATER MAIN	EX. STREET LIGHT
EX. TELECOM. LINE	EX. SIGNAL POLE AND LUMINAIRE
EX. GAS LINE	EX. SIGNAL JUNCTION BOX
EX. UNDERGROUND POWER	EX. PED PUSH BUTTON
EX. UNSPECIFIED OVERHEAD WIRE	EX. GUY ANCHOR
EX. MAJOR CONTOUR	LINE CONTINUATION
EX. MINOR CONTOUR	
EX. TREE (SIZE & TYPE PER PLAN)	

Know what's below. Call before you dig.

VICINITY MAP
NOT TO SCALE

N W E S



REGISTERED PROFESSIONAL ENGINEER
85017PE
OREGON
DEC. 17, 2014
JEFF EVERETT JOHNSTON
EXPIRES: 06/30/23

PUBLISH DATE
MARCH 17, 2022

ISSUED FOR
LAND USE DOCUMENTS

REVISIONS

EXISTING CONDITIONS PLAN
WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION

3J PROJECT #	18509
TAX LOT(S)	1N119BC00(600,500)
LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

SHEET NUMBER
C101

P:\18509-WEST UNION CHEVRON\CAD\DD\SHEETS\C100 EXISTING CONDITIONS.DWG

Know what's below. Call before you dig.

EROSION CONTROL KEY NOTES

1. INSTALL SEDIMENT FENCE AT LIMITS OF GRADING.
2. INSTALL/MAINTAIN INLET PROTECTION.
3. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
4. INSTALL/MAINTAIN HIGH VISIBILITY ORANGE CONSTRUCTION FENCING.
5. PROPOSED STOCKPILE LOCATION TO BE COVERED WITH PLASTIC SHEETING DURING WET WEATHER AND SURROUNDED BY SEDIMENT CONTROL PERIMETER BARRIER SUCH AS WATTLES.

DEMOLITION KEY NOTES

1. REMOVE EXISTING HARD SURFACING AND BASE ROCK. DISPOSE OR RUBBLE AND REFUSE OFF-SITE.
2. EXISTING BUILDING, FOUNDATION, AND CONCRETE PAD TO BE DEMOLISHED. DEBRIS AND REFUSE TO BE DISPOSED OFF-SITE AT AN APPROVED LOCATION.
3. REMOVE EXISTING FENCING AND DISPOSE OFF-SITE.
4. PROTECT EXISTING 4' CHAIN LINK FENCE TO REMAIN.
5. PROTECT EXISTING PINE TREE TO REMAIN.
6. PROTECT EXISTING UTILITY POLE TO REMAIN.
7. REMOVE EXISTING UTILITY POLE AND GUY ANCHOR.
8. COORDINATE WITH UTILITY PROVIDER TO REMOVE EXISTING UTILITY AND DISPOSE OFF-SITE.
9. COORDINATE WITH UTILITY PROVIDER TO RELOCATE EXISTING UTILITY.
10. PROTECT EXISTING SANITARY SEWER MANHOLE TO REMAIN.
11. TVWD TO KILL EXISTING WATER METER AND CONNECT NEW WATER SERVICE LINE TO NEW WATER METER. SEE SHEET C301 FOR PROPOSED WATER SERVICE LINE CONNECTION.
12. TVWD TO KILL EXISTING WATER METER AND SERVICE LINE.
13. REMOVE EXISTING MAILBOX SUPPORT.
14. UTILIZE EXISTING DRIVEWAY FOR CONSTRUCTION ACCESS PRIOR TO REMOVAL OF EXISTING DEPRESSED DRIVEWAY APPROACH, CURB, AND 1' MIN. OF EXISTING PAVEMENT. DISPOSE OF RUBBLE AND REFUSE OFF-SITE.
15. REMOVE EXISTING SIDEWALK, PARALLEL PEDESTRIAN RAMP AND TRUNCATED DOMES, CURB, AND 1' MIN. OF EXISTING PAVEMENT. DISPOSE OF RUBBLE AND REFUSE OFF-SITE.
16. REMOVE EXISTING SANITARY SEWER LATERAL. SEE SHEET C301 FOR PROPOSED SANITARY SEWER CONNECTION.
17. REMOVE EXISTING SANITARY SEWER LATERAL AND MANHOLE. SANITARY SEWER MANHOLE LID MAY BE BURIED AND REQUIRE ADDITIONAL EFFORT TO LOCATE.
18. FILL AND ABANDON EXISTING SANITARY SEWER MAIN IN PLACE.
19. REMOVE EXISTING SIDEWALK, CURB, AND DRIVEWAY APPROACH TO LIMITS SHOWN. REMOVE 1' MIN. OF EXISTING PAVEMENT. DISPOSE OF RUBBLE AND REFUSE OFF-SITE.

SCALE: 1" = 20'
0 20 40 FT

N W E S

LEGEND

- EX. BUILDING
- PROJECT BOUNDARY
- RIGHT-OF-WAY LINE
- RIGHT-OF-WAY CENTERLINE
- EX. EASEMENT LINE
- EX. LOT LINE
- EX. WETLAND BOUNDARY
- EX. VEGETATED CORRIDOR
- EX. CONCRETE
- EX. GRAVEL
- EX. ASPHALT
- EX. CURB
- EX. FENCE LINE
- EX. STRIPING: SOLID
- EX. STRIPING: DASHED
- EX. SANITARY SEWER
- EX. STORM DRAIN
- EX. WATER MAIN
- EX. TELECOM. LINE
- EX. GAS LINE
- EX. UNDERGROUND POWER
- EX. UNSPECIFIED OVERHEAD WIRE
- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- EX. TREE (SIZE & TYPE PER PLAN)
- PR. STRAW WATTLE
- PR. SILT FENCING
- PR. CONSTRUCTION FENCING
- EX. CONCRETE
- PR. INLET PROTECTION
- EX. MAILBOX
- EX. SIGN
- EX. SANITARY MANHOLE
- EX. STORM MANHOLE
- EX. STORM INLET
- EX. CULVERT PIPE OUTLET
- EX. FIRE HYDRANT
- EX. WATER VALVE
- EX. WATER METER
- EX. COMMUNICATIONS MANHOLE
- EX. GAS METER
- EX. GAS RISER
- EX. ELECTRIC METER
- EX. ELECTRIC RISER
- EX. UTILITY RISER
- EX. UTILITY VAULT
- EX. UTILITY POLE
- EX. STREET LIGHT
- EX. SIGNAL POLE AND LUMINAIRE
- EX. SIGNAL JUNCTION BOX
- EX. PED PUSH BUTTON
- EX. GUY ANCHOR
- LINE CONTINUATION
- PR. STOCKPILE
- PR. TREE REMOVAL

WEST UNION VILLAGE

NW WEST UNION ROAD (ARTERIAL)

NW 185TH AVENUE (ARTERIAL)

BETHANY CREEK

BETHANY CREEK WETLAND

100-YR FLOOD HAZARD

EXISTING BUILDING 18300 N.W. WEST UNION RD.

MATCH LINE SEE SHEET C122

P:\18509-WEST UNION CHEVRON\CAD\DD\SHEETS\C120 CLEARING AND DEMO.DWG

REGISTERED PROFESSIONAL ENGINEER 85017PE OREGON DEC. 17, 2014 JAE EVERETT JOHNSTON

PRELIMINARY

EXPIRES: 06/30/23

PUBLISH DATE
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REVISIONS

DEMOLITION AND ESCP
WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION
3J PROJECT # | 18509
TAX LOT(S) | 1N119BC00(600,500)
LAND USE # | --
DESIGNED BY | JEJ
CHECKED BY | AJM

SHEET NUMBER
C121

811 Know what's below. Call before you dig.

EROSION CONTROL KEY NOTES

1. INSTALL SEDIMENT FENCE AT LIMITS OF GRADING.
2. INSTALL/MAINTAIN INLET PROTECTION.
3. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
4. INSTALL/MAINTAIN HIGH VISIBILITY ORANGE CONSTRUCTION FENCING.
5. PROPOSED STOCKPILE LOCATION TO BE COVERED WITH PLASTIC SHEETING DURING WET WEATHER AND SURROUNDED BY SEDIMENT CONTROL PERIMETER BARRIER SUCH AS WATTLES.

DEMOLITION KEY NOTES

1. REMOVE EXISTING HARD SURFACING AND BASE ROCK. DISPOSE OF RUBBLE AND REFUSE OFF-SITE.
2. EXISTING BUILDING, FOUNDATION, AND CONCRETE PAD TO BE DEMOLISHED. DEBRIS AND REFUSE TO BE DISPOSED OFF-SITE AT AN APPROVED LOCATION.
3. REMOVE EXISTING FENCING AND DISPOSE OFF-SITE.
4. COORDINATE WITH UTILITY PROVIDER TO REMOVE EXISTING UTILITY AND DISPOSE OFF-SITE.
5. REMOVE EXISTING SIDEWALK ENDING, CURB, AND ASPHALT PATHWAY TO LIMITS SHOWN. REMOVE 1' MIN. OF EXISTING PAVEMENT. DISPOSE OF RUBBLE AND REFUSE OFF-SITE.
6. REMOVE 1' MIN. OF EXISTING ONSITE GRAVEL DRIVEWAY FOR VEGETATED CORRIDOR ENHANCEMENT AND CREATION. DISPOSE OF RUBBLE AND REFUSE OFF-SITE.

LEGEND

- EX. BUILDING
- PROJECT BOUNDARY
- RIGHT-OF-WAY LINE
- RIGHT-OF-WAY CENTERLINE
- EX. EASEMENT LINE
- EX. LOT LINE
- EX. WETLAND BOUNDARY
- EX. VEGETATED CORRIDOR
- EX. CONCRETE
- EX. GRAVEL
- EX. ASPHALT
- EX. CURB
- EX. FENCE LINE
- EX. STRIPING: SOLID
- EX. STRIPING: DASHED
- EX. SANITARY SEWER
- EX. STORM DRAIN
- EX. WATER MAIN
- EX. TELECOM. LINE
- EX. GAS LINE
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- EX. MAJOR CONTOUR
- EX. MINOR CONTOUR
- EX. TREE (SIZE & TYPE PER PLAN)
- PR. STRAW WATTLE
- PR. SILT FENCING
- PR. CONSTRUCTION FENCING
- EX. CONCRETE
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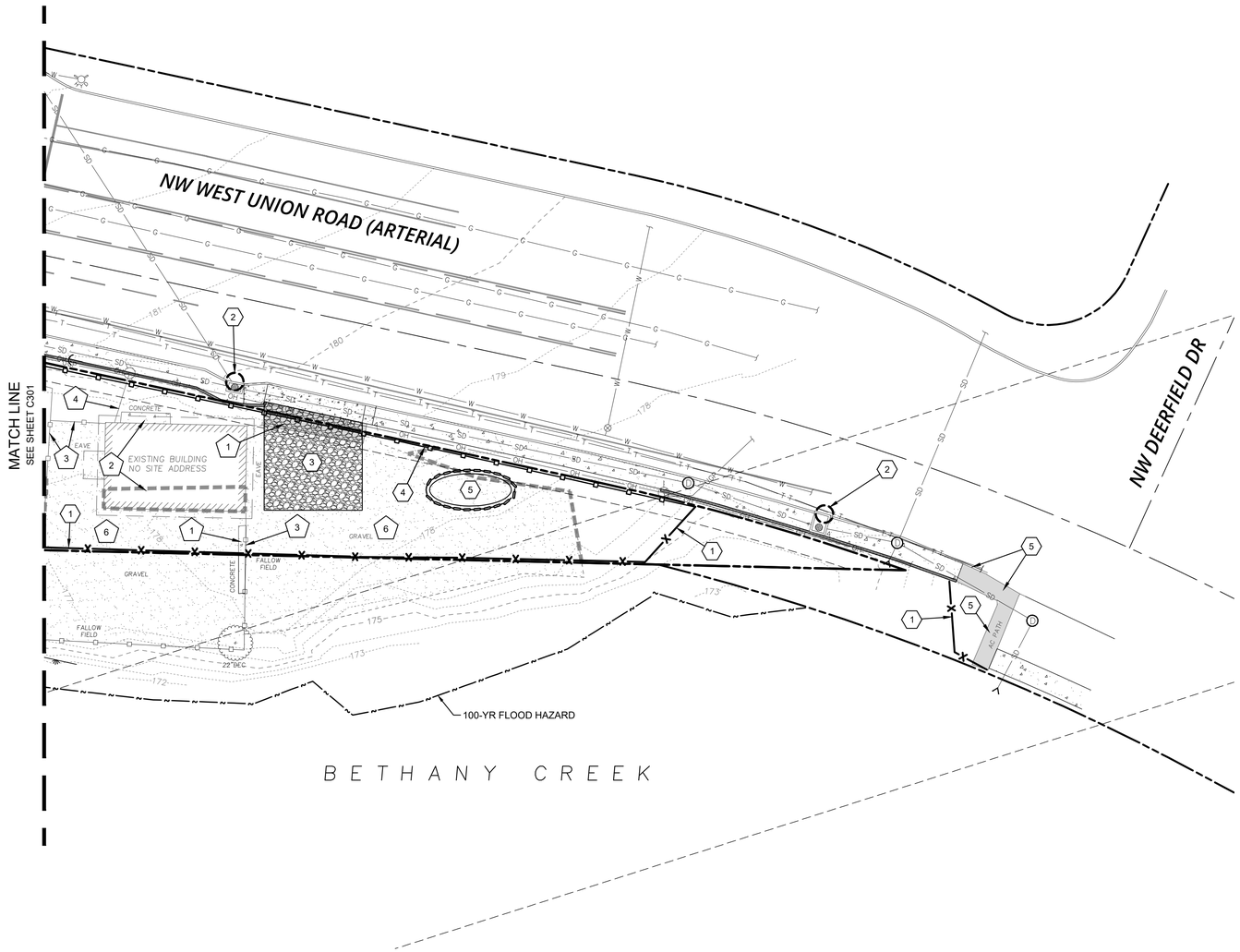
- EX. MAILBOX
- EX. SIGN
- EX. SANITARY MANHOLE
- EX. STORM MANHOLE
- EX. STORM INLET
- EX. CULVERT PIPE OUTLET
- EX. FIRE HYDRANT
- EX. WATER VALVE
- EX. WATER METER
- EX. COMMUNICATIONS MANHOLE
- EX. GAS METER
- EX. GAS RISER
- EX. ELECTRIC METER
- EX. ELECTRIC RISER
- EX. UTILITY RISER
- EX. UTILITY VAULT
- EX. UTILITY POLE
- EX. STREET LIGHT
- EX. SIGNAL POLE AND LUMINAIRE
- EX. SIGNAL JUNCTION BOX
- EX. PED PUSH BUTTON
- EX. GUY ANCHOR
- LINE CONTINUATION
- PR. STOCKPILE
- PR. TREE REMOVAL

N W E S

SCALE: 1" = 20'
0 20 40 FT



REGISTERED PROFESSIONAL ENGINEER
85017PE
OREGON
DEC. 17, 2014
JAMES EVERETT JOHNSTON
PRELIMINARY
EXPIRES: 06/30/23

PUBLISH DATE
MARCH 17, 2022

ISSUED FOR
LAND USE DOCUMENTS

REVISIONS

DEMOLITION AND ESCP
WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

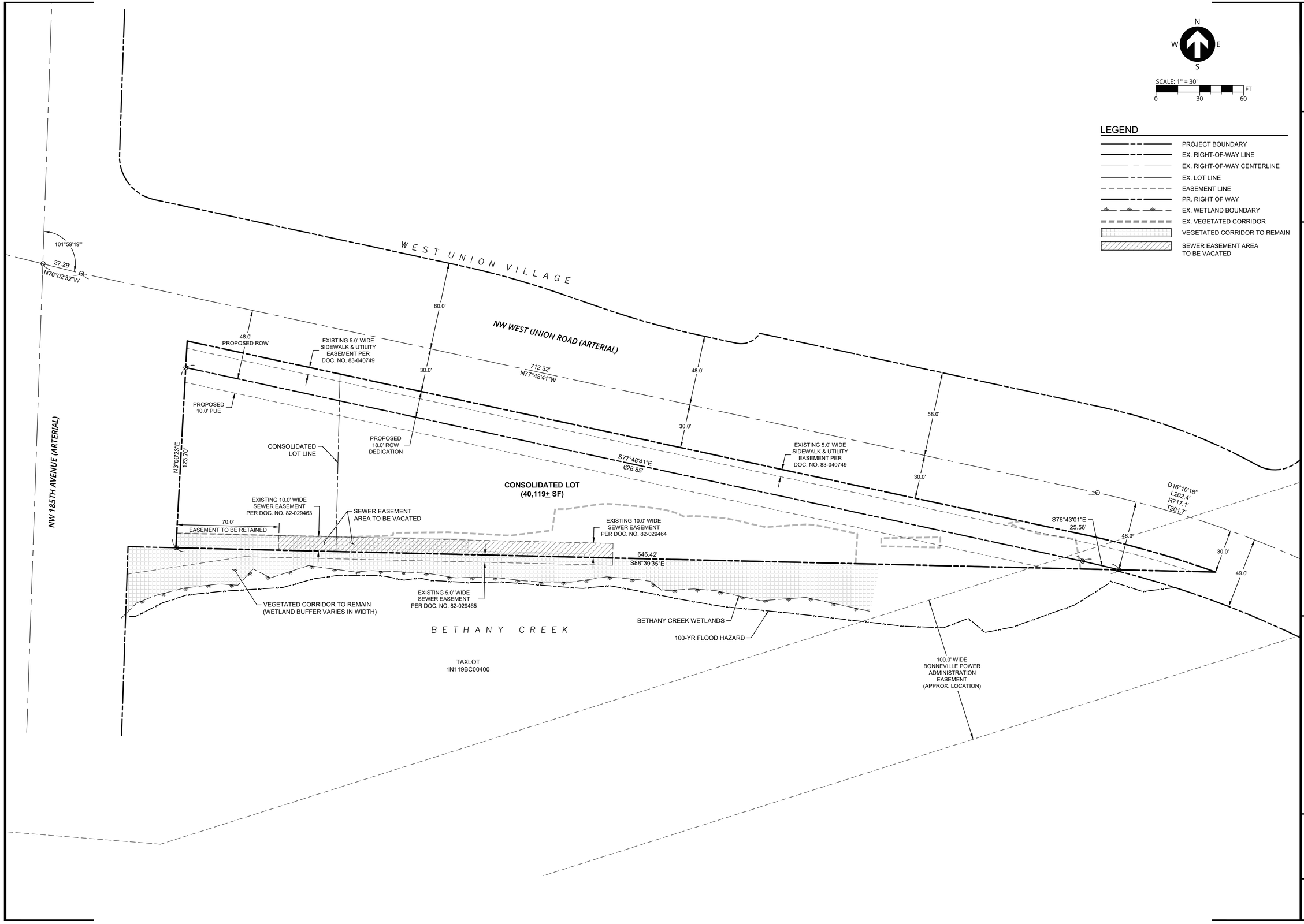
3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION

3J PROJECT #	18509
TAX LOT(S)	1N119BC00(600,500)
LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

SHEET NUMBER
C122

P:\18509-WEST UNION CHEVRON\CAD\DD\SHEETS\C120 CLEARING AND DEMO.DWG



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SCALE: 1" = 30'
0 30 60 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- EX. LOT LINE
- EASEMENT LINE
- PR. RIGHT OF WAY
- EX. WETLAND BOUNDARY
- EX. VEGETATED CORRIDOR
- VEGETATED CORRIDOR TO REMAIN
- SEWER EASEMENT AREA TO BE VACATED

REGISTERED PROFESSIONAL ENGINEER
85017PE
OREGON
DEC. 17, 2014
JAMES EVERETT JOHNSTON
PRELIMINARY
EXPIRES: 06/30/23

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REVISIONS

TENTATIVE PLAT
WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION

3J PROJECT #	18509
TAX LOT(S)	1N119BC00(600,500)
LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

SHEET NUMBER
C201

P:\18509-WEST UNION CHEVRON\CAD\DD\SHEETS\C200 TENTATIVE PLAT.DWG

Know what's below. Call before you dig.

SITE STATISTICS

SITE ADDRESS	18450 NW WEST UNION ROAD BEAVERTON, OR 97229
TAXLOT(S)	1N119BC00600 1N119BC00500
JURISDICTION	WASHINGTON COUNTY
GROSS SITE AREA	1.21 ACRES
PROPERTY ZONING	NEIGHBORHOOD COMMERCIAL (NC)
FLOOD INSURANCE RATE MAP	41067C0361E
PROPOSED BUILDING FFE	182.60-FT

VARIATIONS

BUILDING SETBACKS:	STANDARD	VARIATION
FRONT (NW 185TH AVE)	20 FT	NA
STREET SIDE (NW WEST UNION RD)	20 FT	NA
SIDE YARD (BETHANY CREEK)	0 FT	NA
REAR	20 FT	NA

SITE KEY NOTES

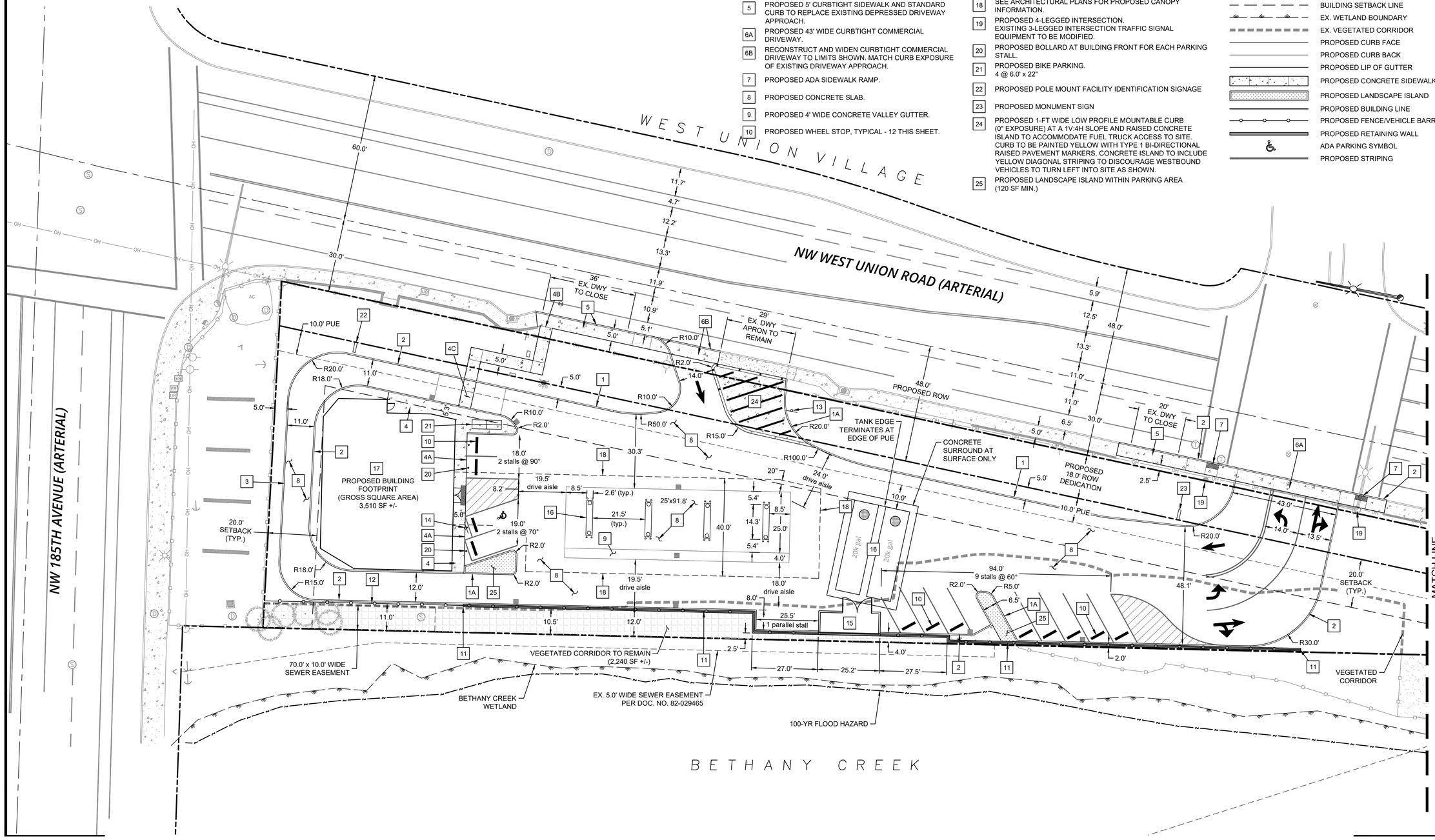
1. PROPOSED PLANTER CURB (6" EXPOSURE AND WEEP HOLES).
1A. PROPOSED PLANTER CURB ADJACENT TO RAISED CONCRETE ISLAND (EXPOSURE VARIES).
2. PROPOSED STANDARD CURB (6" EXPOSURE).
3. PROPOSED TALL CURB (6" EXPOSURE ON EAST/TRAFFIC SIDE, 12" EXPOSURE ON WEST/GRADING SIDE).
4. PROPOSED CONCRETE SIDEWALK, WIDTH PER PLAN.
4A. CONCRETE SIDEWALK TO BE FLUSH WITH CONCRETE SLAB AT FRONT OF BUILDING.
4B. PROPOSED ACCESSIBLE PEDESTRIAN CONNECTION TO PUBLIC SIDEWALK.
4C. RAISED PEDESTRIAN CROSSING
5. PROPOSED 5' CURBTIGHT SIDEWALK AND STANDARD CURB TO REPLACE EXISTING DEPRESSED DRIVEWAY APPROACH.
6A. PROPOSED 43' WIDE CURBTIGHT COMMERCIAL DRIVEWAY.
6B. RECONSTRUCT AND WIDEN CURBTIGHT COMMERCIAL DRIVEWAY TO LIMITS SHOWN. MATCH CURB EXPOSURE OF EXISTING DRIVEWAY APPROACH.
7. PROPOSED ADA SIDEWALK RAMP.
8. PROPOSED CONCRETE SLAB.
9. PROPOSED 4' WIDE CONCRETE VALLEY GUTTER.
10. PROPOSED WHEEL STOP, TYPICAL - 12 THIS SHEET.
11. PROPOSED RETAINING WALL WITH 4-FT PRIVACY WOOD FENCE INSTALLED ON TOP. (0' MIN. TO 5.6' MAX. WALL HEIGHT).
12. PROPOSED 4-FT PRIVACY WOOD FENCE.
13. PROPOSED SIGN - "DO NOT ENTER" (FOR RIGHT-IN ONLY).
14. PROPOSED SIGN - INTERNATIONAL SYMBOL OF ACCESSIBILITY AND DESIGNATION, "VAN ACCESSIBLE".
15. 8.5' x 24' TRASH ENCLOSURE WITH 12' OPENING. SEE ARCHITECTURAL PLANS FOR MORE INFORMATION.
16. SEE PETROLEUM PLANS FOR UNDERGROUND FUEL TANK AND PUMP INFORMATION. PROVIDE 10' SEPARATION FROM EDGE OF TANK TO EDGE OF PUE.
17. SEE ARCHITECTURAL PLANS FOR PROPOSED BUILDING INFORMATION.
18. SEE ARCHITECTURAL PLANS FOR PROPOSED CANOPY INFORMATION.
19. PROPOSED 4-LEGGED INTERSECTION. EXISTING 3-LEGGED INTERSECTION TRAFFIC SIGNAL EQUIPMENT TO BE MODIFIED.
20. PROPOSED BOLLARD AT BUILDING FRONT FOR EACH PARKING STALL.
21. PROPOSED BIKE PARKING. 4 @ 6.0' x 22"
22. PROPOSED POLE MOUNT FACILITY IDENTIFICATION SIGNAGE
23. PROPOSED MONUMENT SIGN
24. PROPOSED 1-FT WIDE LOW PROFILE MOUNTABLE CURB (0" EXPOSURE) AT A 1V:4H SLOPE AND RAISED CONCRETE ISLAND TO ACCOMMODATE FUEL TRUCK ACCESS TO SITE. CURB TO BE PAINTED YELLOW WITH TYPE 1 BI-DIRECTIONAL RAISED PAVEMENT MARKERS. CONCRETE ISLAND TO INCLUDE YELLOW DIAGONAL STRIPING TO DISCOURAGE WESTBOUND VEHICLES TO TURN LEFT INTO SITE AS SHOWN.
25. PROPOSED LANDSCAPE ISLAND WITHIN PARKING AREA (120 SF MIN.)

N W E S

SCALE: 1" = 20'
0 20 40 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- BUILDING SETBACK LINE
- EX. WETLAND BOUNDARY
- EX. VEGETATED CORRIDOR
- PROPOSED CURB FACE
- PROPOSED CURB BACK
- PROPOSED LIP OF GUTTER
- PROPOSED CONCRETE SIDEWALK
- PROPOSED LANDSCAPE ISLAND
- PROPOSED BUILDING LINE
- PROPOSED FENCE/VEHICLE BARRIER
- PROPOSED RETAINING WALL
- ADA PARKING SYMBOL
- PROPOSED STRIPING



REGISTERED PROFESSIONAL ENGINEER
85017PE
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JEFF EVERETT JOHNSTON
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REVISIONS

PRELIMINARY SITE PLAN
WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION

3J PROJECT #	18509
TAX LOT(S)	1N119BC00(600,500)
LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

SHEET NUMBER
C211

P:\18509-WEST UNION CHEVRON\CAD\DD\SHEETS\C210 SITE PLAN.DWG

Know what's below. Call before you dig.

SITE KEY NOTES

1. PROPOSED 5' CURBTIGHT SIDEWALK AND STANDARD CURB (6" EXPOSURE).
2. PROPOSED CURBTIGHT SIDEWALK TO SEPARATED SIDEWALK CONNECTION.

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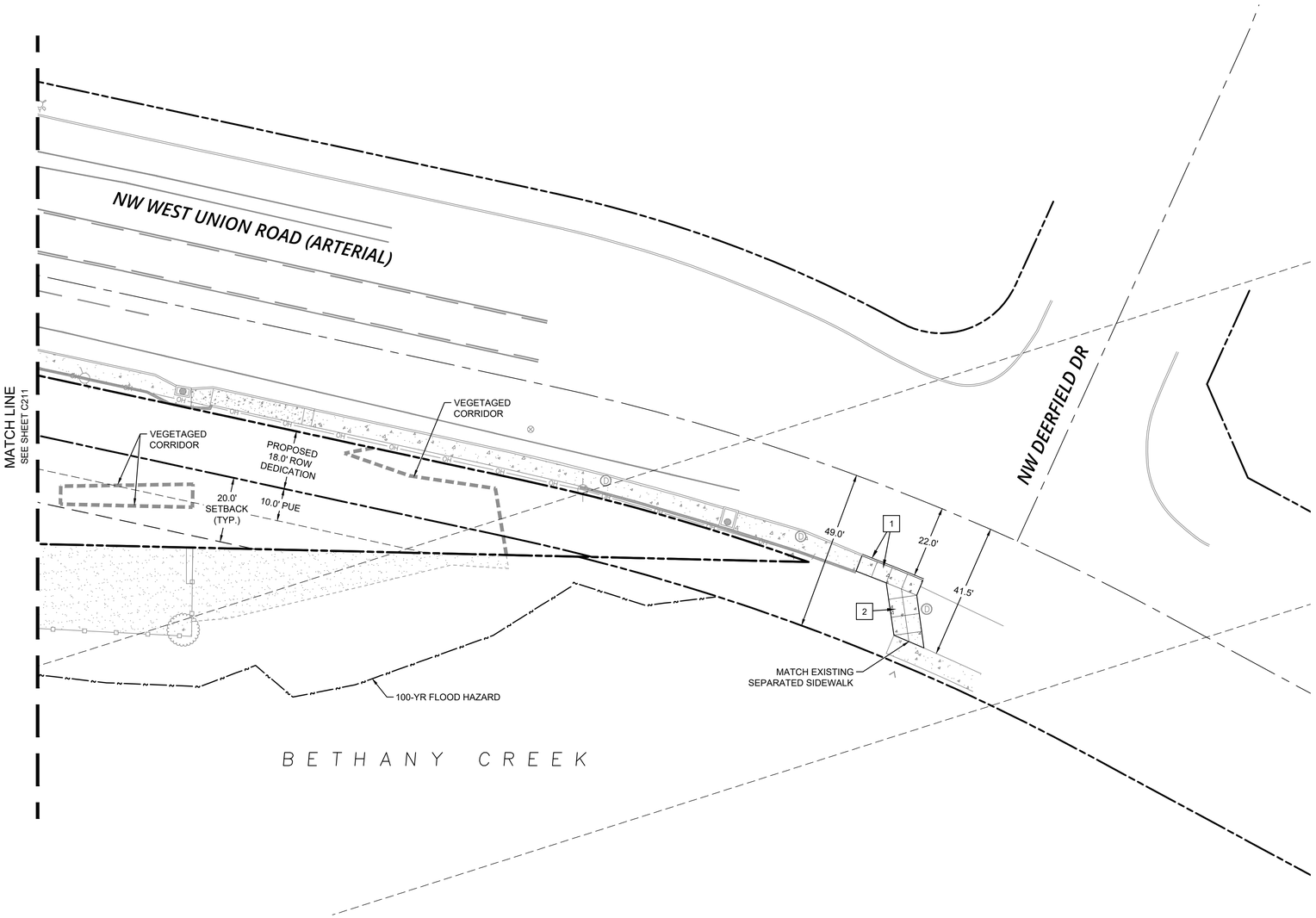
SCALE: 1" = 20'
0 20 40 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- BUILDING SETBACK LINE
- EX. WETLAND BOUNDARY
- EX. VEGETATED CORRIDOR
- PROPOSED CURB FACE
- PROPOSED CURB BACK
- PROPOSED CONCRETE SIDEWALK



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PRELIMINARY SITE PLAN
WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

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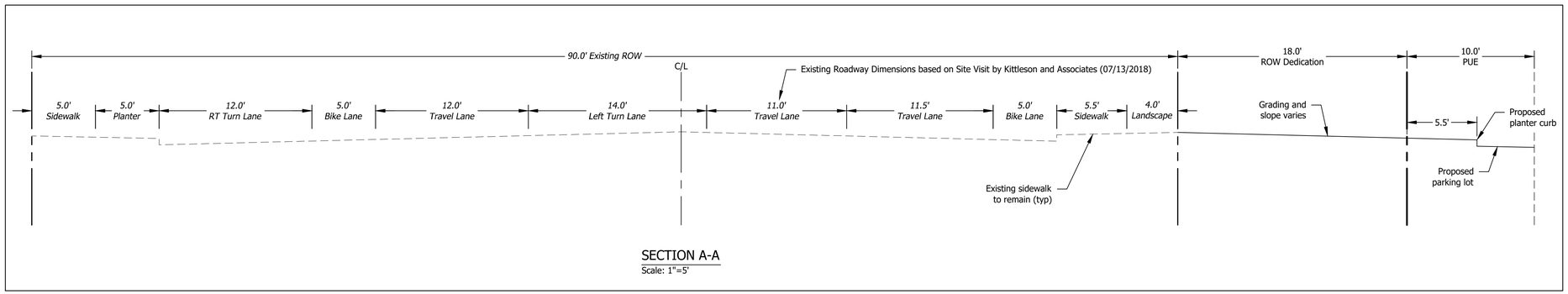
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION

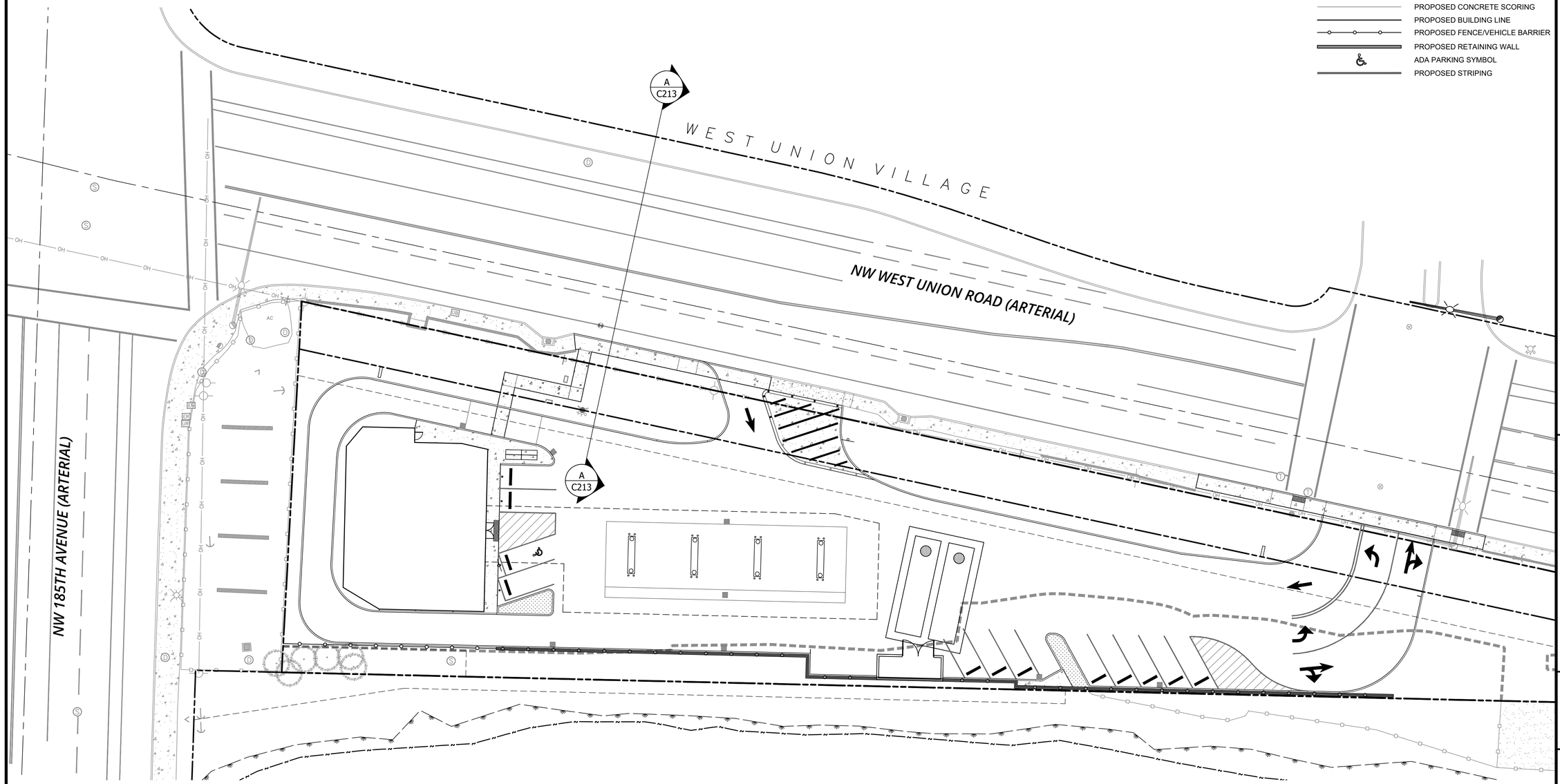
3J PROJECT #	18509
TAX LOT(S)	1N119BC00(600,500)
LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

SHEET NUMBER
C212

P:\18509-WEST UNION CHEVRON\CAD\DD\SHEETS\C210 SITE PLAN.DWG



SECTION A-A
Scale: 1"=5'



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W E
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SCALE: 1" = 20'
0 20 40 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- BUILDING SETBACK LINE
- EX. WETLAND BOUNDARY
- EX. VEGETATED CORRIDOR
- PROPOSED CURB FACE
- PROPOSED CURB BACK
- PROPOSED LIP OF GUTTER
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE SCORING
- PROPOSED BUILDING LINE
- PROPOSED FENCE/VEHICLE BARRIER
- PROPOSED RETAINING WALL
- ADA PARKING SYMBOL
- PROPOSED STRIPING

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WEST UNION ROAD CROSS SECTION
WEST UNION CHEVRON
CRJW, LLC
WASHINGTON COUNTY, OREGON

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PROJECT INFORMATION
3J PROJECT # | 18509
TAX LOT(S) | 1N119BC00(600,500)
LAND USE # | --
DESIGNED BY | JEJ
CHECKED BY | AJM

SHEET NUMBER
C213

P:\18509-WEST UNION CHEVRON\CAD\DD\SHEETS\C210 SITE PLAN.DWG

811 Know what's below. Call before you dig.

THIS PLAN HAS BEEN PREPARED FOR PLANNING AND ILLUSTRATIVE PURPOSES ONLY. THIS CIRCULATION PLAN SHOWS PROPOSED ON-SITE VEHICULAR AND PEDESTRIAN CIRCULATION AND CHANNELIZATION .

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W E
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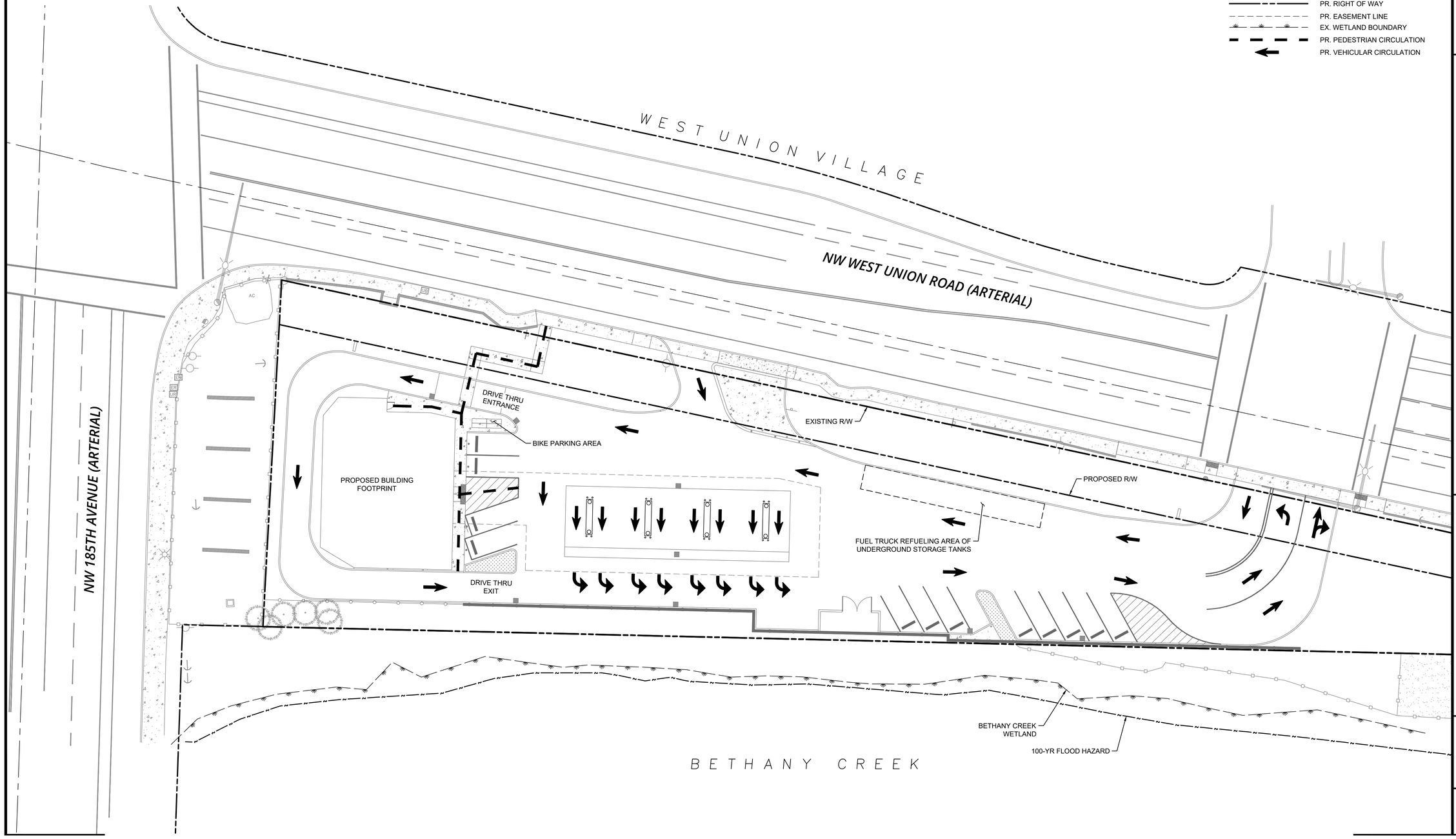
SCALE: 1" = 20'
0 20 40 FT

LEGEND
- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- EX. WETLAND BOUNDARY
- PR. PEDESTRIAN CIRCULATION
- PR. VEHICULAR CIRCULATION



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CIRCULATION PLAN
WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

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WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100, BEAVERTON, OR 97008

PROJECT INFORMATION
3J PROJECT # | 18509
TAX LOT(S) | 1N119BC00(600,500)
LAND USE # | --
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CHECKED BY | AJM

SHEET NUMBER
C222

P:\18509-WEST UNION CHEVRON\CAD\DGN\SHEETS\C222 CIRCULATION PLAN.DWG

811 Know what's below. Call before you dig.

THIS PLAN HAS BEEN PREPARED FOR PLANNING AND ILLUSTRATIVE PURPOSES ONLY. THIS FIRE ACCESS PLAN SHOWS PROPOSED FIRE HOSE LINE PULL EXTENTS FROM ASSUMED FIRE TRUCK ACCESS LOCATIONS AND EXISTING HYDRANT COVERAGE.

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SCALE: 1" = 20'
0 20 40 FT

FIRE HYDRANT KEY NOTES

1. EXISTING HYDRANT LOCATED BEHIND CURB AT WEST UNION VILLAGE NORTHEAST CURB RETURN.
2. EXISTING HYDRANT LOCATED BEHIND SIDEWALK AT 185TH AVE SOUTHWEST CURB RETURN.
3. PROPOSED FIRE HYDRANT.

PETROLEUM KEY NOTES

1. UNDERGROUND FUEL STORAGE TANKS, AS SHOWN:
   20,000 GALLON DIESEL (37.5' x 10' DIA.)
   20,000 GALLON REGULAR GASOLINE (37.5' x 10' DIA.)

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- EX. WETLAND BOUNDARY
- FW — PR. WATER FIRE SERVICE
- PR. HYDRANT
- PR. VALVE
- PR. FIRE HOSE LINE PULL EXTENTS FROM FIRE TRUCK
- PR. 400' RADIUS HYDRANT COVER
- FIRE TRUCK

400' RADIUS HYDRANT COVERAGE (1)

2 400' RADIUS HYDRANT COVERAGE

WEST UNION VILLAGE

NW WEST UNION ROAD (ARTERIAL)

NW 185TH AVENUE (ARTERIAL)

18" D.I. WATER (PER AS-BUILTS)

8" D.I. WATER (PER AS-BUILTS)

EXISTING R/W

PROPOSED R/W

PROPOSED BUILDING FOOTPRINT

150' HOSE PULL

147' HOSE PULL

20k gal

20k gal

PROPOSED PUE

BETHANY CREEK WETLAND

100-YR FLOOD HAZARD

BETHANY CREEK

P:\18509-WEST UNION CHEVRON\CAD\DGN\SHEETS\C223 FIRE ACCESS PLAN.DWG

REGISTERED PROFESSIONAL ENGINEER
85017PE
OREGON
DEC. 17, 2014
ANDREW EVERETT JOHNSTON
PRELIMINARY
EXPIRES: 06/30/23

PUBLISH DATE
MARCH 17, 2022

ISSUED FOR
LAND USE DOCUMENTS

REVISIONS

FIRE ACCESS PLAN
WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100, BEAVERTON, OR 97008

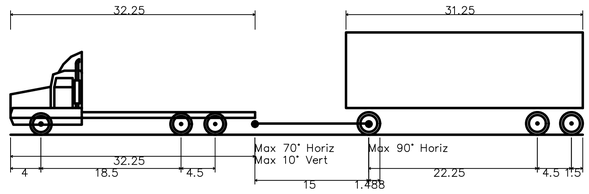
PROJECT INFORMATION
3J PROJECT # | 18509
TAX LOT(S) | 1N119BC00(600,500)
LAND USE # | --
DESIGNED BY | JEJ
CHECKED BY | AJM

SHEET NUMBER
C223

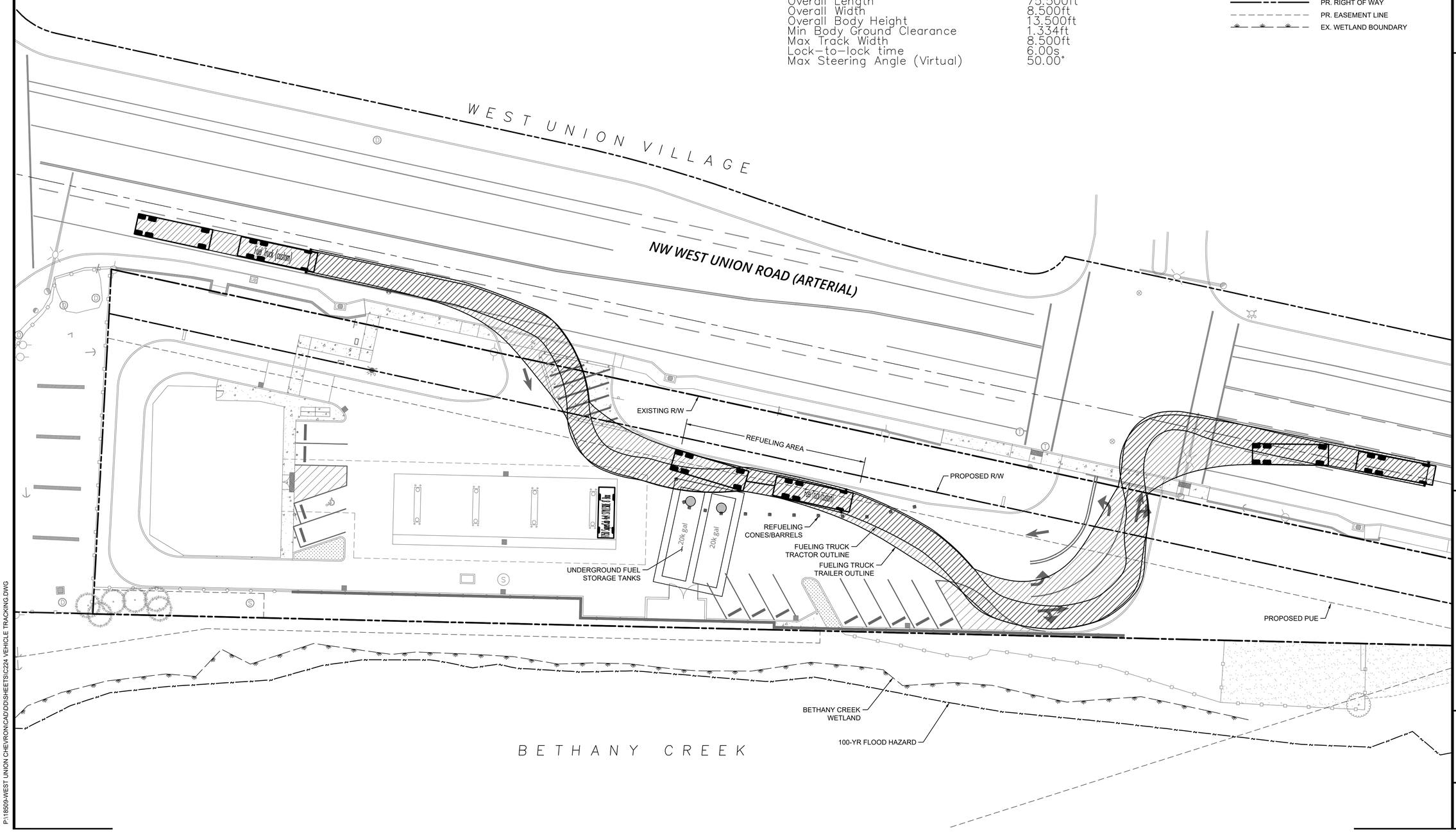
Know what's below. Call before you dig.

THIS PLAN HAS BEEN PREPARED FOR PLANNING AND ILLUSTRATIVE PURPOSES ONLY. THIS PLAN SHOWS ASSUMED FUELING TRUCK TURNING MOVEMENTS INTO, THROUGH, AND OUT OF THE SITE.

FUEL TRUCK PROFILE



Fuel Truck (custom)	
Overall Length	75.500ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	50.00°



N
W E
S

SCALE: 1" = 20'
0 20 40 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- EX. WETLAND BOUNDARY

REGISTERED PROFESSIONAL ENGINEER
85017PE
OREGON
DEC. 17, 2014
ANDREW EVERETT JOHNSTON
PRELIMINARY
EXPIRES: 06/30/23

PUBLISH DATE
MARCH 17, 2022

ISSUED FOR
LAND USE DOCUMENTS

REVISIONS

FUEL TRUCK TURNING MOVEMENT
WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION

3J PROJECT #	18509
TAX LOT(S)	1N119BC00(600,500)
LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

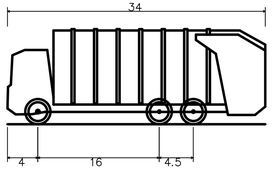
SHEET NUMBER
C224

P:\18509-WEST UNION CHEVRON\CAD\DD\SHEETS\C224 VEHICLE TRACKING.DWG

811 Know what's below. Call before you dig.

THIS PLAN HAS BEEN PREPARED FOR PLANNING AND ILLUSTRATIVE PURPOSES ONLY. THIS PLAN SHOWS ASSUMED GARBAGE/RECYCLING TRUCK TURNING MOVEMENTS INTO, THROUGH, AND OUT OF THE SITE.

GARBAGE TRUCK PROFILE



Custom Garbage Truck	
Overall Length	34.000ft
Overall Width	10.000ft
Overall Body Height	12.534ft
Min Body Ground Clearance	1.223ft
Track Width	9.500ft
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	35.000ft

N W E S

SCALE: 1" = 20'
0 20 40 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- EX. WETLAND BOUNDARY

WEST UNION VILLAGE

NW WEST UNION ROAD (ARTERIAL)

Custom Garbage Truck

EXISTING R/W

FUEL PUMP ISLAND CANOPY

PROPOSED R/W

GARBAGE TRUCK (FRONT LOADING)

GARBAGE TRUCK BODY OUTLINE

PROPOSED PUE

TRASH ENCLOSURE

BETHANY CREEK WETLAND

100-YR FLOOD HAZARD

BETHANY CREEK

P:\18509-WEST UNION CHEVRON\CAD\DD\SHEETS\C224 VEHICLE TRACKING.DWG

REGISTERED PROFESSIONAL ENGINEER 85017PE OREGON DEC. 17, 2014 ANDREW EVERETT JOHNSTON
PRELIMINARY
EXPIRES: 06/30/23

PUBLISH DATE
MARCH 17, 2022

ISSUED FOR
LAND USE DOCUMENTS

REVISIONS

GARBAGE TRUCK TURNING MOVEMENT

WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

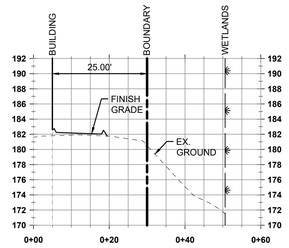
3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION

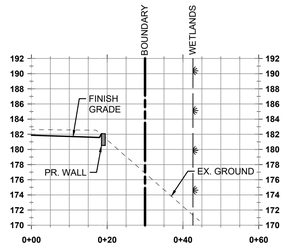
3J PROJECT #	18509
TAX LOT(S)	1N119BC00(600,500)
LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

SHEET NUMBER
C225

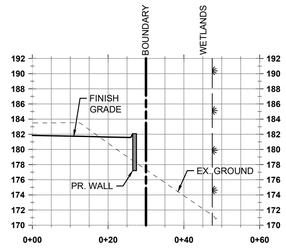
Know what's below. Call before you dig.



CROSS SECTION (A-A')
SCALE: 1"=20'H, 1"=10'V



CROSS SECTION (B-B')
SCALE: 1"=20'H, 1"=10'V



CROSS SECTION (C-C')
SCALE: 1"=20'H, 1"=10'V

EROSION CONTROL KEY NOTES

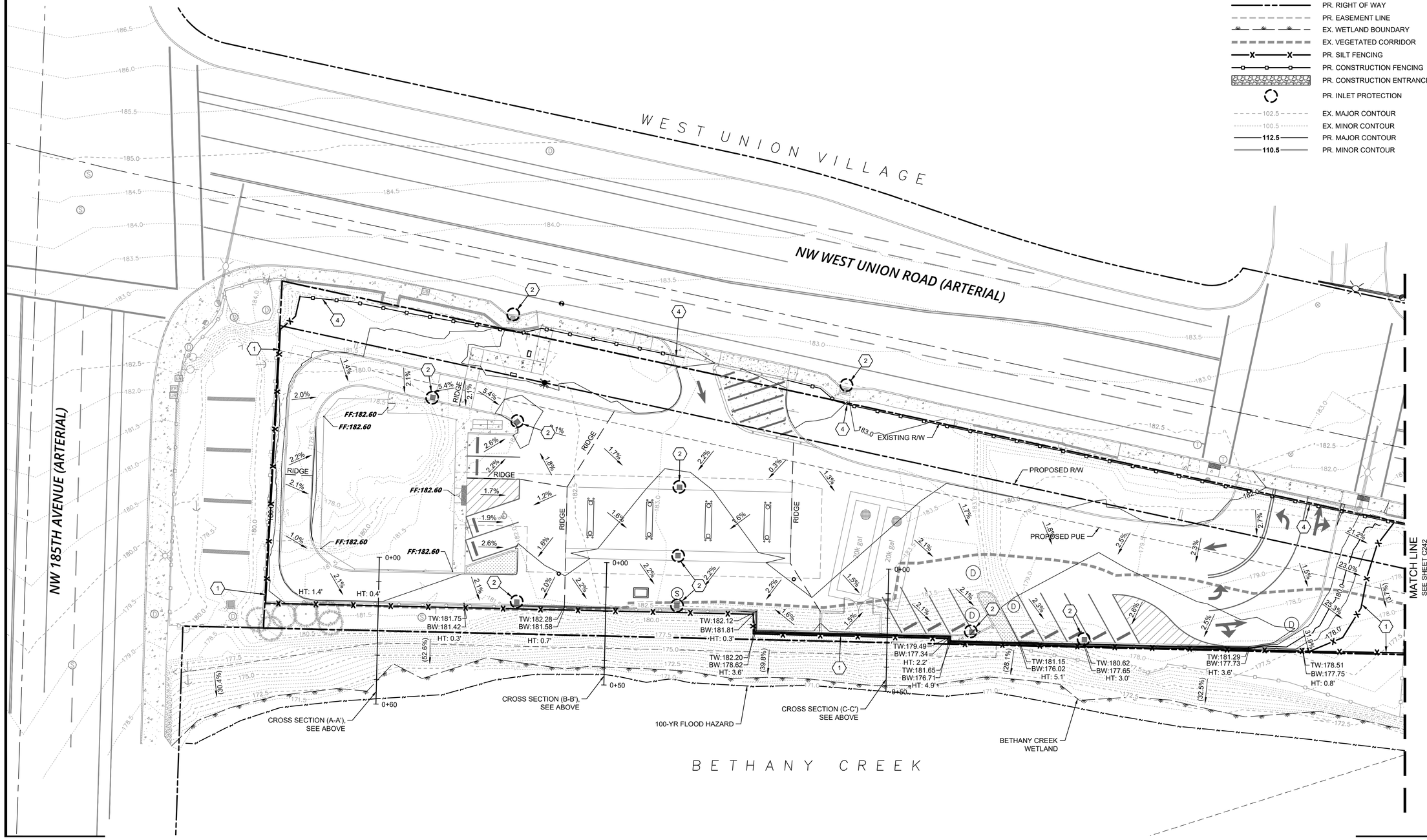
1. INSTALL SEDIMENT FENCE AT LIMITS OF GRADING.
2. INSTALL/MAINTAIN INLET PROTECTION.
3. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
4. INSTALL/MAINTAIN HIGH VISIBILITY ORANGE CONSTRUCTION FENCING.

N
W E
S

SCALE: 1" = 20'
0 20 40 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- EX. WETLAND BOUNDARY
- EX. VEGETATED CORRIDOR
- PR. SILT FENCING
- PR. CONSTRUCTION FENCING
- PR. CONSTRUCTION ENTRANCE
- PR. INLET PROTECTION
- 102.5 EX. MAJOR CONTOUR
- 100.5 EX. MINOR CONTOUR
- 112.5 PR. MAJOR CONTOUR
- 110.5 PR. MINOR CONTOUR



P:\18509-WEST UNION CHEVRON\CAD\DD\SHEETS\C240 GRADING PLAN.DWG

REGISTERED PROFESSIONAL ENGINEER
85017PE
OREGON
DEC. 17, 2014
JAMES EVERETT JOHNSTON
PRELIMINARY
EXPIRES: 06/30/23

PUBLISH DATE
MARCH 17, 2022
ISSUED FOR
LAND USE DOCUMENTS
REVISIONS

PRELIMINARY GRADING AND ESCP I
WEST UNION CHEVRON
CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION
3J PROJECT # | 18509
TAX LOT(S) | 1N119BC00(600,500)
LAND USE # | --
DESIGNED BY | JEJ
CHECKED BY | AJM

SHEET NUMBER
C241

Know what's below. Call before you dig.

EROSION CONTROL KEY NOTES

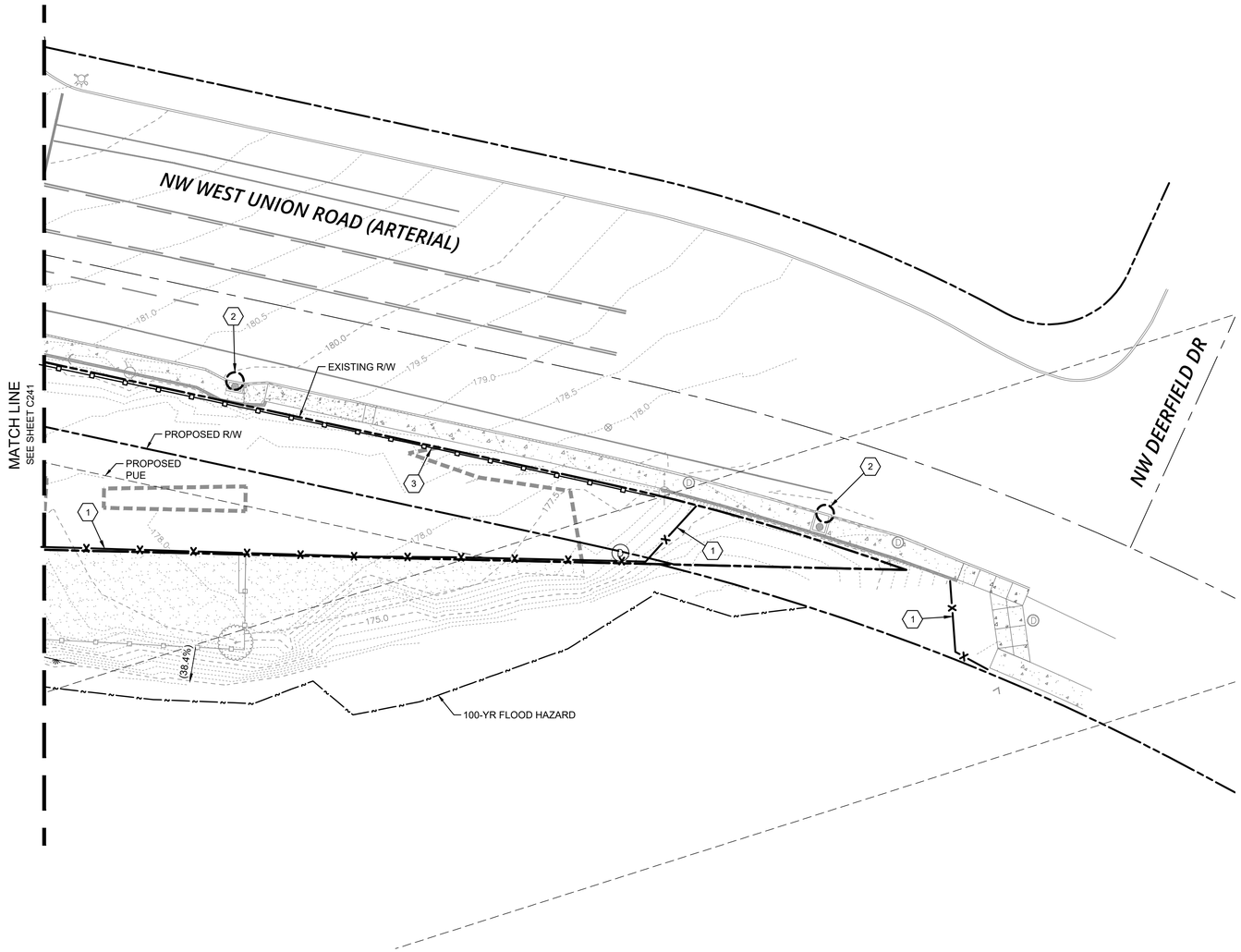
1. INSTALL SEDIMENT FENCE AT LIMITS OF GRADING.
2. INSTALL/MAINTAIN INLET PROTECTION.
3. INSTALL/MAINTAIN HIGH VISIBILITY ORANGE CONSTRUCTION FENCING.

N W E S

SCALE: 1" = 20'
0 20 40 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- EX. WETLAND BOUNDARY
- EX. VEGETATED CORRIDOR
- PR. SILT FENCING
- PR. CONSTRUCTION FENCING
- PR. CONSTRUCTION ENTRANCE
- PR. INLET PROTECTION
- 100.0 EX. MAJOR CONTOUR
- 92.5 EX. MINOR CONTOUR



REGISTERED PROFESSIONAL ENGINEER
85017PE
OREGON
DEC. 17, 2014
JAMES EVERETT JOHNSTON
PRELIMINARY
EXPIRES: 06/30/23

PUBLISH DATE
MARCH 17, 2022

ISSUED FOR
LAND USE DOCUMENTS

REVISIONS

PRELIMINARY GRADING AND ESCP II

WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION

3J PROJECT #	18509
TAX LOT(S)	1N119BC00(600,500)
LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

SHEET NUMBER
C242

P:\18509-WEST UNION CHEVRON\CAD\DD\SHEETS\C240 GRADING PLAN.DWG

Know what's below. Call before you dig.

STORM KEY NOTES

1. CONSTRUCT CATCH BASIN.
2. PROPOSED STORM DRAIN POINT OF CONNECTION FOR BUILDING ROOF DRAIN.
3. PROPOSED STORM DRAIN POINT OF CONNECTION FOR CANOPY ROOF DRAIN AT CANOPY COLUMNS.
4. INSTALL STORM DRAIN PIPING.
5. INSTALL STORM DRAIN CLEANOUT.
6. CONSTRUCT 60" WATER QUALITY MANHOLE.
7. CONSTRUCT 60" BAYFILTER MANHOLE (2-CARTRIDGE).
8. CONSTRUCT 60" STORM DRAIN MANHOLE.
9. PROPOSED ADS STORMTECH CHAMBER (SC-740) DETENTION SYSTEM WITH 6" UNDERDRAIN PIPE.
10. CONSTRUCT 60" FLOW CONTROL MANHOLE.

SANITARY SEWER KEY NOTES

1. CONSTRUCT CATCH BASIN.
2. PROPOSED SANITARY SEWER POINT OF CONNECTION AT BUILDING.
3. INSTALL SANITARY SEWER PIPING.
4. CONSTRUCT OIL STOP VALVE MANHOLE.
5. CONSTRUCT OIL WATER SEPARATOR VAULT WITH COALESCING MEDIA.
6. CONNECT TO EXISTING SANITARY SEWER MANHOLE.
7. CONSTRUCT 48" SANITARY SEWER MANHOLE OVER EXISTING SEWER MAIN.
8. FILL AND ABANDON EXISTING SANITARY SEWER MAIN IN PLACE.

WATER KEY NOTES

1. REMOVE EXISTING METER AND CONNECT NEW SERVICE LINE TO EXISTING SERVICE LINE.
2. INSTALL NEW WATER SERVICE LINE.
3. INSTALL NEW DOMESTIC WATER METER.
4. INSTALL NEW DOUBLE CHECK.
5. WATER SERVICE POINT OF CONNECTION TO BUILDING. SEE ARCHITECTURAL FOR EXACT LOCATION.
6. INSTALL NEW FIRE HYDRANT, LATERAL, AND VALVE. CONNECT TO EXISTING WATER MAIN. HYDRANT TO BE LOCATED AT FUTURE PLANTER STRIP.

UTILITY KEY NOTES

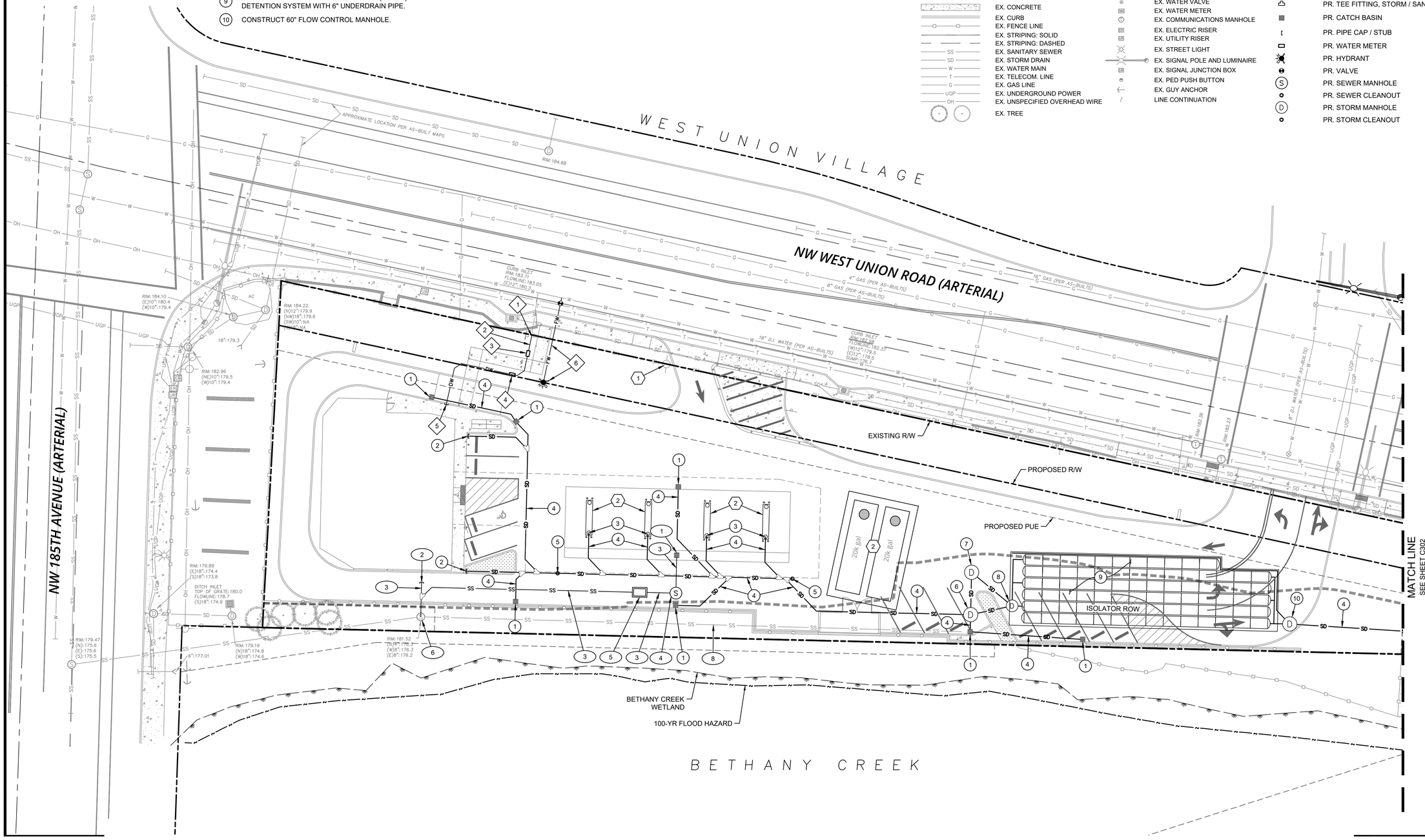
1. PROTECT EXISTING UTILITY POLE TO REMAIN.
2. SEE PETROLEUM PLANS FOR UNDERGROUND FUEL TANK AND PUMP INFORMATION

N / W / E / S

SCALE: 1" = 20'
0 20 40 FT

LEGEND

- EX. BUILDING
- PROJECT BOUNDARY
- RIGHT-OF-WAY LINE
- RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- EX. WETLAND BOUNDARY
- EX. VEGETATED CORRIDOR
- EX. CONCRETE
- EX. CURB
- EX. FENCE LINE
- EX. STRIPING: SOLID
- EX. STRIPING: DASHED
- EX. SANITARY SEWER
- EX. STORM DRAIN
- EX. WATER MAIN
- EX. TELECOM. LINE
- EX. GAS LINE
- EX. UNDERGROUND POWER
- EX. UNSPECIFIED OVERHEAD WIRE
- EX. TREE
- EX. SIGN
- EX. SANITARY MANHOLE
- EX. STORM MANHOLE
- EX. STORM INLET
- EX. CULVERT PIPE OUTLET
- EX. FIRE HYDRANT
- EX. WATER VALVE
- EX. WATER METER
- EX. COMMUNICATIONS MANHOLE
- EX. ELECTRIC RISER
- EX. UTILITY RISER
- EX. STREET LIGHT
- EX. SIGNAL POLE AND LUMINAIRE
- EX. SIGNAL JUNCTION BOX
- EX. PED PUSH BUTTON
- EX. GUY ANCHOR
- LINE CONTINUATION
- PR. STORM PIPE
- PR. SANITARY LATERAL
- PR. WATER DOMESTIC SERVICE
- PR. WATER FIRE SERVICE
- PR. WYE FITTING, STORM / SANITARY
- PR. TEE FITTING, STORM / SANITARY
- PR. CATCH BASIN
- PR. PIPE CAP / STUB
- PR. WATER METER
- PR. HYDRANT
- PR. VALVE
- PR. SEWER MANHOLE
- PR. SEWER CLEANOUT
- PR. STORM MANHOLE
- PR. STORM CLEANOUT



P:\18509-WEST UNION CHEVRON\CAD\DDISHEETS\C300 UTILITY PLAN.DWG

REGISTERED PROFESSIONAL ENGINEER
85017PE
OREGON
DEC. 17, 2014
ANDREW JAMES MACKIEWICZ
EXPIRES: 06/30/23

PRELIMINARY

PUBLISH DATE
MARCH 17, 2022

ISSUED FOR
LAND USE DOCUMENTS

REVISIONS

PRELIMINARY COMPOSITE UTILITY PLAN I

WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

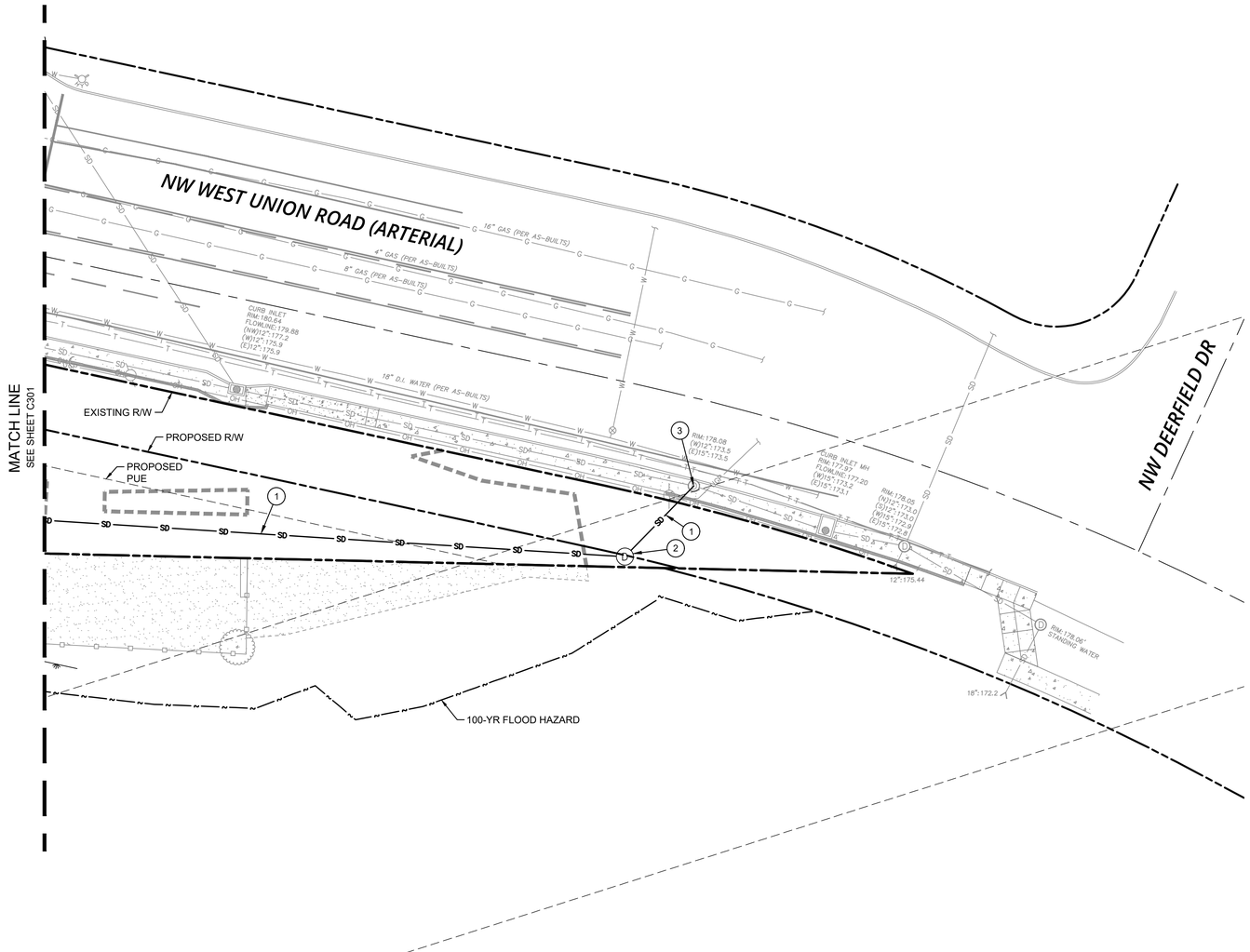
PROJECT INFORMATION
3J PROJECT # | 18509
TAX LOT(S) | 1N119BC00(600,500)
LAND USE # | --
DESIGNED BY | JEJ
CHECKED BY | AJM

SHEET NUMBER
C301

Know what's below. Call before you dig.

STORM KEY NOTES

1. INSTALL STORM DRAIN PIPING.
2. CONSTRUCT 48" STORM MANHOLE.
3. CONNECT TO EXISTING SHALLOW STORM MANHOLE.



LEGEND

- EX. BUILDING
- PROJECT BOUNDARY
- RIGHT-OF-WAY LINE
- RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- EX. CONCRETE
- EX. GRAVEL
- EX. VEGETATED CORRIDOR
- EX. CURB
- EX. FENCE LINE
- EX. STRIPING: SOLID
- EX. STRIPING: DASHED
- SD — EX. STORM DRAIN
- W — EX. WATER MAIN
- T — EX. TELECOM. LINE
- G — EX. GAS LINE
- UGP — EX. UNDERGROUND POWER
- OH — EX. UNSPECIFIED OVERHEAD WIRE
- EX. TREE
- S — EX. SANITARY MANHOLE
- D — EX. STORM MANHOLE
- EX. STORM INLET
- EX. CULVERT PIPE OUTLET
- EX. FIRE HYDRANT
- EX. WATER VALVE
- EX. GUY ANCHOR
- LINE CONTINUATION
- SD — PR. STORM PIPE
- D — PR. STORM MANHOLE

REGISTERED PROFESSIONAL ENGINEER
85017PE
OREGON
DEC. 17, 2010
JAMES EVERETT JOHNSTON
PRELIMINARY
EXPIRES: 06/30/23

PUBLISH DATE
MARCH 17, 2022

ISSUED FOR
LAND USE DOCUMENTS

REVISIONS

PRELIMINARY COMPOSITE UTILITY PLAN II

WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION

3J PROJECT #	18509
TAX LOT(S)	1N119BC00(600,500)
LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

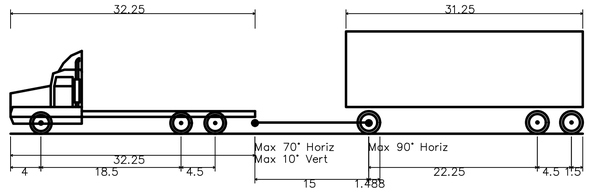
SHEET NUMBER
C302

P:\18509-WEST UNION CHEVRON\CAD\DGN\SHEETS\C300 UTILITY PLAN.DWG

811 Know what's below. Call before you dig.

THIS PLAN HAS BEEN PREPARED FOR PLANNING AND ILLUSTRATIVE PURPOSES ONLY. THIS PLAN SHOWS ASSUMED FUELING TRUCK TURNING MOVEMENTS INTO, THROUGH, AND OUT OF THE SITE *BASED ON ULTIMATE IMPROVEMENTS ALONG NW WEST UNION ROAD.*

FUEL TRUCK PROFILE



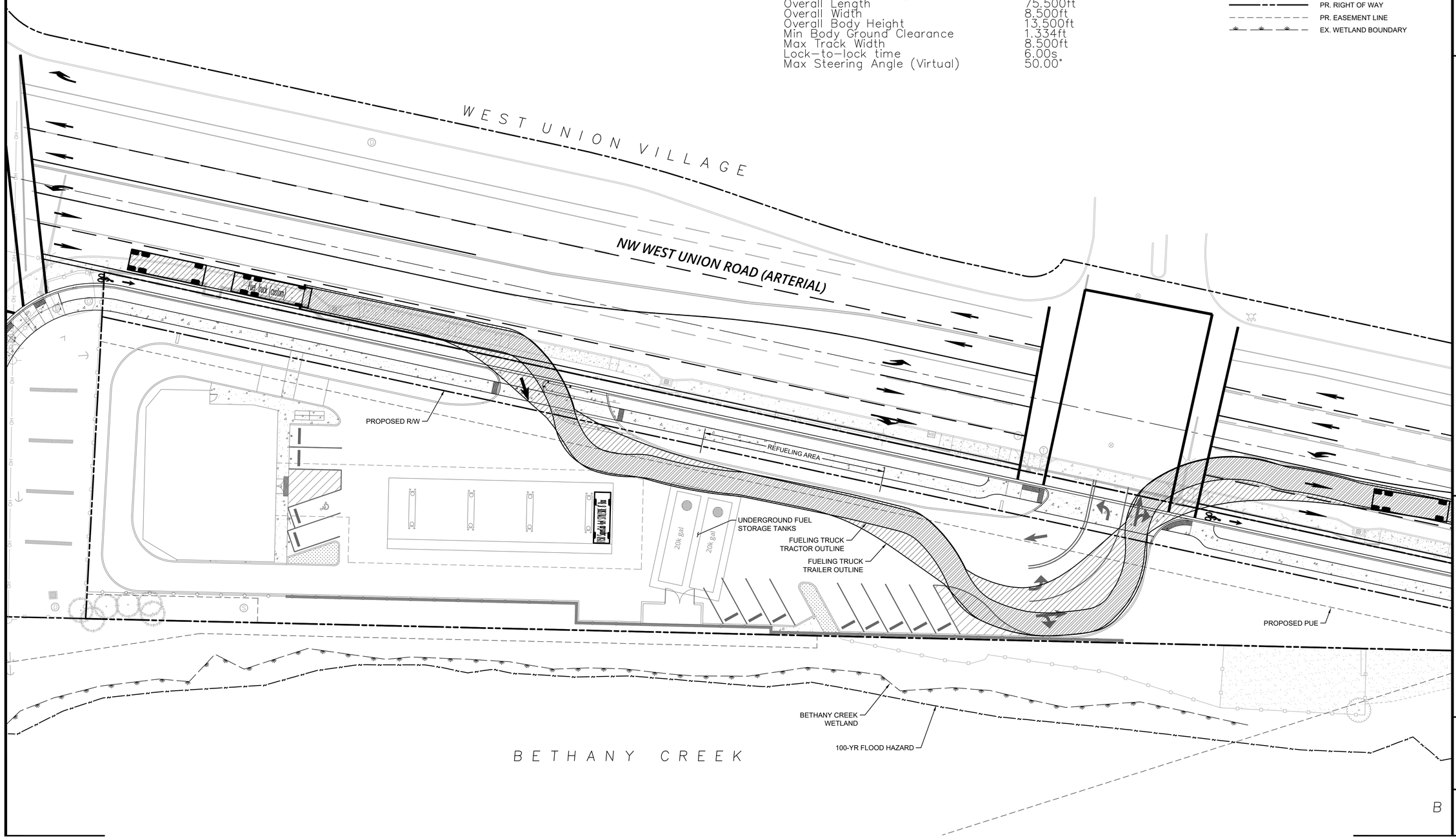
Fuel Truck (custom)	
Overall Length	75.500ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	50.00°

N W E S

SCALE: 1" = 20'
0 20 40 FT

LEGEND

- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- EX. WETLAND BOUNDARY



REGISTERED PROFESSIONAL ENGINEER 85017PE OREGON DEC. 17, 2014 ANDREW EVERETT JOHNSTON
PRELIMINARY
EXPIRES: 06/30/23

PUBLISH DATE
MARCH 17, 2022

ISSUED FOR
LAND USE DOCUMENTS

REVISIONS

FUEL TRUCK TURNING MOVEMENT (ULTIMATE)
WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION
3J PROJECT # | 18509
TAX LOT(S) | 1N119BC00(600,500)
LAND USE # | --
DESIGNED BY | JEJ
CHECKED BY | AJM

B

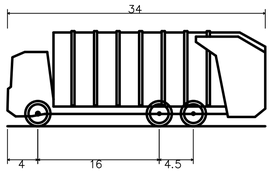
SHEET NUMBER
C824

P:\18509-WEST UNION CHEVRON\CADD\DISHEETS\C700 FRONTAGE.DWG

811 Know what's below. Call before you dig.

THIS PLAN HAS BEEN PREPARED FOR PLANNING AND ILLUSTRATIVE PURPOSES ONLY. THIS PLAN SHOWS ASSUMED GARBAGE/RECYCLING TRUCK TURNING MOVEMENTS INTO, THROUGH, AND OUT OF THE SITE *BASED ON ULTIMATE IMPROVEMENTS ALONG NW WEST UNION ROAD.*

GARBAGE TRUCK PROFILE

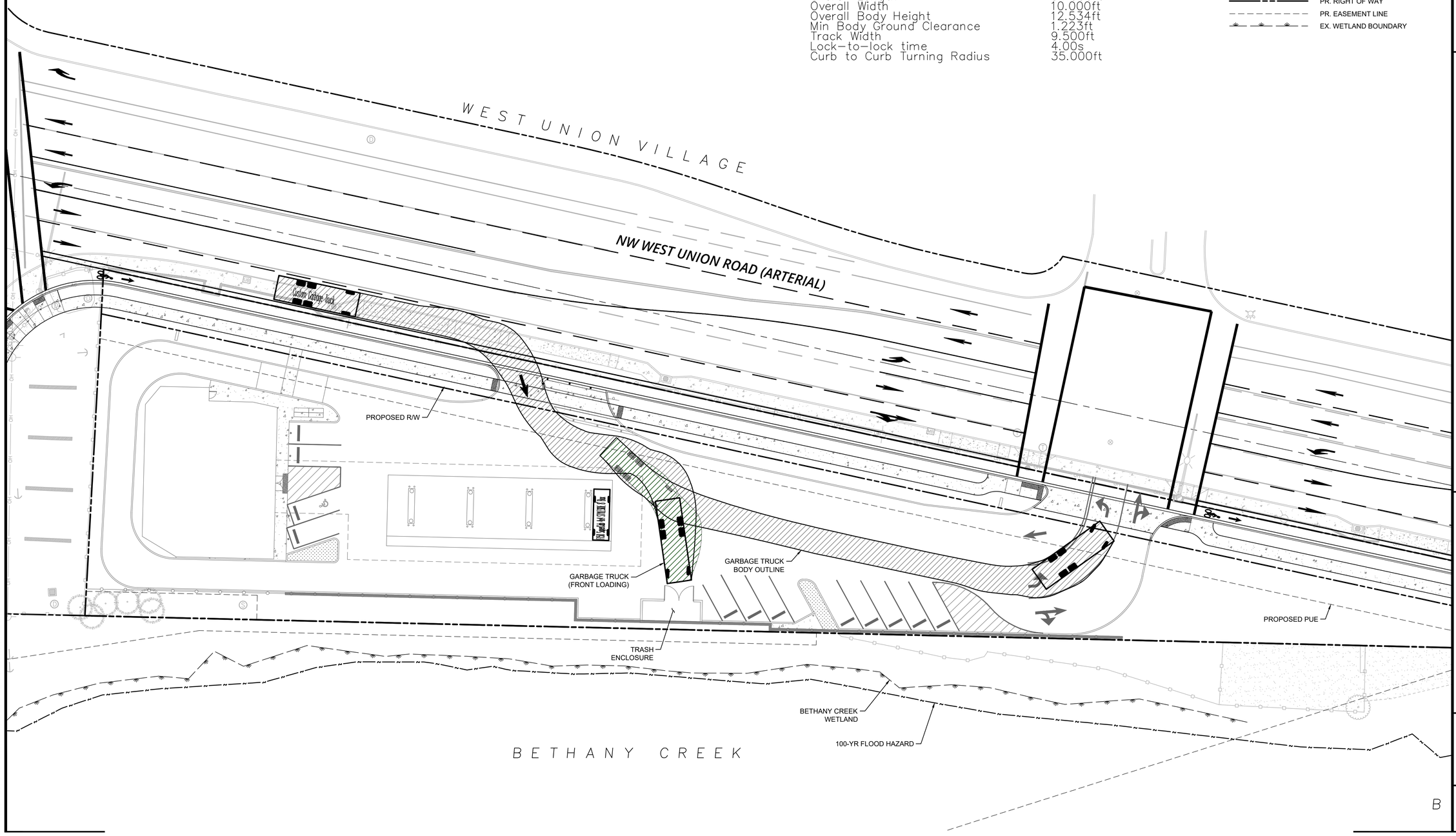


Custom Garbage Truck	
Overall Length	34.000ft
Overall Width	10.000ft
Overall Body Height	12.534ft
Min Body Ground Clearance	1.223ft
Track Width	9.500ft
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	35.000ft

N W E S

SCALE: 1" = 20'
0 20 40 FT

LEGEND
- PROJECT BOUNDARY
- EX. RIGHT-OF-WAY LINE
- EX. RIGHT-OF-WAY CENTERLINE
- PR. RIGHT OF WAY
- PR. EASEMENT LINE
- EX. WETLAND BOUNDARY



REGISTERED PROFESSIONAL ENGINEER 85017PE OREGON DEC. 17, 2014 ANDREW EVERETT JOHNSTON
PRELIMINARY
EXPIRES: 06/30/23

PUBLISH DATE
MARCH 17, 2022
ISSUED FOR
LAND USE DOCUMENTS
REVISIONS

GARBAGE TRUCK TURNING MOVEMENT (ULTIMATE)
WEST UNION CHEVRON

CRJW, LLC
WASHINGTON COUNTY, OREGON

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE., SUITE 100; BEAVERTON, OR 97008

PROJECT INFORMATION

3J PROJECT #	18509
TAX LOT(S)	1N119BC00(600,500)
LAND USE #	--
DESIGNED BY	JEJ
CHECKED BY	AJM

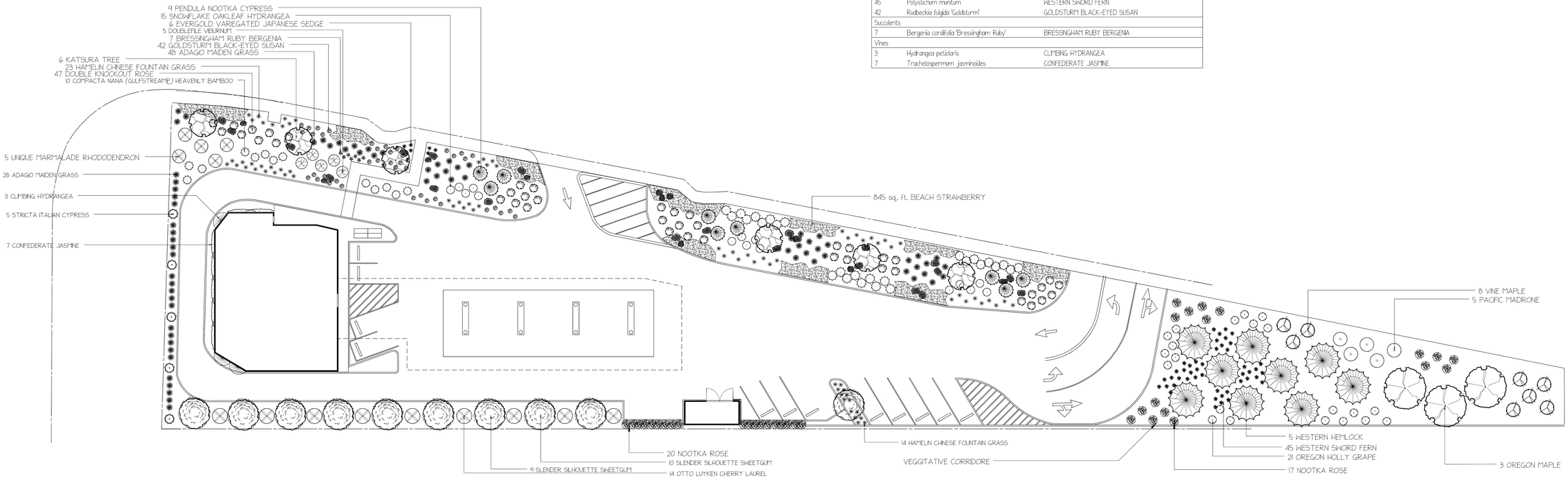
SHEET NUMBER
C825

B

P:\18509-WEST UNION CHEVRON\CAD\DD\SHEETS\C700 FRONTAGE.DWG

NOTE: THIS IS A CONCEPTUAL DESIGN ONLY, THE EXISTING CONDITIONS INCLUDING PROPERTY LINE LOCATIONS, UTILITY LOCATIONS ETC. AS SHOWN ON PLAN ARE APPROXIMATE. OWNER OR CONTRACTOR SHALL VERIFY ALL PROPERTY LINES, MISC. DIMENTIONS & ELEVATIONS.

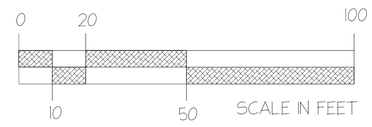
Qty	Botanical Name	Common Name
Trees		
8	Acer circinatum	VINE MAPLE
3	Acer macrophyllum	OREGON MAPLE
5	Arbutus menziesii	PACIFIC MADRONE
6	Cercidphyllum japonicum	KATSURA TREE
9	Chamaecyparis nootkatensis 'Pendula'	PENDULA NOOTKA CYPRESS
5	Cupressus sempervirens 'Stricta'	STRICTA ITALIAN CYPRESS
9	Liquidambar styraciflua 'Slender Silhouette'	SLENDER SILHOUETTE SWEETGUM
10	Liquidambar styraciflua 'Slender Silhouette'	SLENDER SILHOUETTE SWEETGUM
5	Tsuga heterophylla	WESTERN HEMLOCK
Shrubs		
15	Hydrangea quercifolia 'Snowflake'	SNOWFLAKE OAKLEAF HYDRANGEA
21	Mahonia aquifolium	OREGON HOLLY GRAPE
10	Nandina domestica 'Compacta Nana (Gulfstream®)'	COMPACTA NANA (GULFSTREAM®) HEAVENLY BAMBOO
14	Prunus laurocerasus 'Otto Luyken'	OTTO LUYKEN CHERRY LAUREL
5	Rhododendron sp. 'Unique Marmalade'	UNIQUE MARMALADE RHODODENDRON
37	Rosa nootkatensis	NOOTKA ROSE
47	Rosa sp.' Double Knockout'	DOUBLE KNOCKOUT ROSE
5	Viburnum plicatum f. tomentosum	DOUBLEFILE VIBURNUM
Ornamental Grasses		
6	Carex hachijoensis 'Evergold'	EVERGOLD VARIEGATED JAPANESE SEDGE
76	Miscanthus sinensis 'Adagio'	ADAGIO MAIDEN GRASS
37	Pennisetum alopecuroides 'Hamelin'	HAMELIN CHINESE FOUNTAIN GRASS
Perennials and Annuals		
845 sq. ft	Fragaria chiloensis	BEACH STRAWBERRY
45	Polystichum munitum	WESTERN SWORD FERN
42	Rudbeckia fulgida 'Goldsturm'	GOLDSTURM BLACK-EYED SUSAN
Succulents		
7	Bergenia cordifolia 'Bressingham Ruby'	BRESSINGHAM RUBY BERGENIA
Vines		
3	Hydrangea petiolaris	CLIMBING HYDRANGEA
7	Trachelospermum jasminoides	CONFEDERATE JASMINE



IRRIGATION AND PLANTING AREA INFO

APPROX 4,170 SQ FT GREEN ROOF LANDSCAPED AREA IRRIGATED WITH SPRAY IRRIGATION

APPROX 20200 SQ FT LANDSCAPED AREA WITH SPRAY IRRIGATION



N

NORTH

WEST UNION CHEVRON

PRELIMINARY LANSCAPE PLAN

SCALE 1"=16' DATE 03/30/2022 DRAWING #

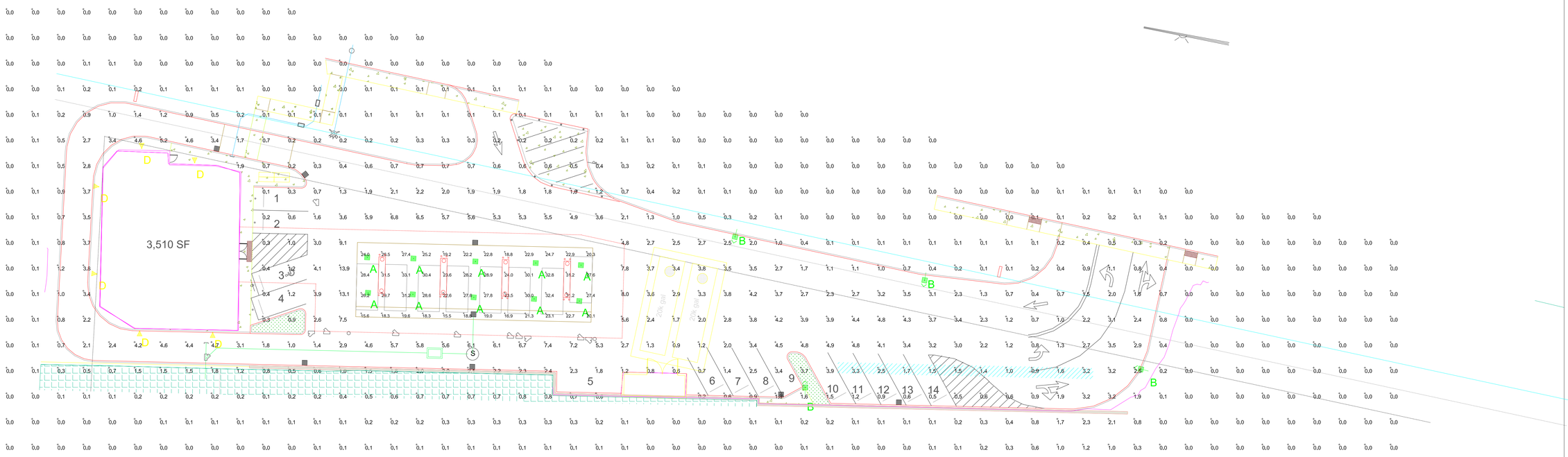
Powered by DynaSCAPE®

Based on the information provided, all dimensions and luminaire locations shown represent recommended positions. The engineer and/or architect must determine the applicability of the layout to existing or future field conditions.

This lighting plan represents illumination levels calculated from laboratory data taken under controlled conditions in accordance with The Illuminating Engineering Society (IES) approved methods. Actual performance of any manufacturer's luminaires may vary due to changes in electrical voltage, tolerance in lamps/LED's and other variable field conditions. Calculations do not include obstructions such as buildings, curbs, landscaping, or any other architectural elements unless noted. Fixture nomenclature noted does not include mounting hardware or poles. This drawing is for photometric evaluation purposes only and should not be used as a construction document or as a final document for ordering product.

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
ALL CALC POINTS AT GRADE	Illuminance	Fc	0.99	13.9	0.0	N.A.	N.A.
UNDER CANOPY SUMMARY	Illuminance	Fc	24.88	33.1	15.5	1.61	2.14
PARKING AND DRIVE SUMMARY	Illuminance	Fc	2.84	13.9	0.1	28.40	139.00



Luminaire Schedule

Symbol	Qty	Label	Arrangement	LLF	Description	Total Watts
	10	A	SINGLE	0.900	SCV-LED-13L-SC-50 - 15' MH	900
	4	B	SINGLE	0.900	SLM-LED-12L-SIL-FT-50-70CRI-IL-SINGLE ON 18' POLE + 2' BASE	340
	6	D	SINGLE	0.900	XWM-2-LED-03L-50 - 7' MH	135.6

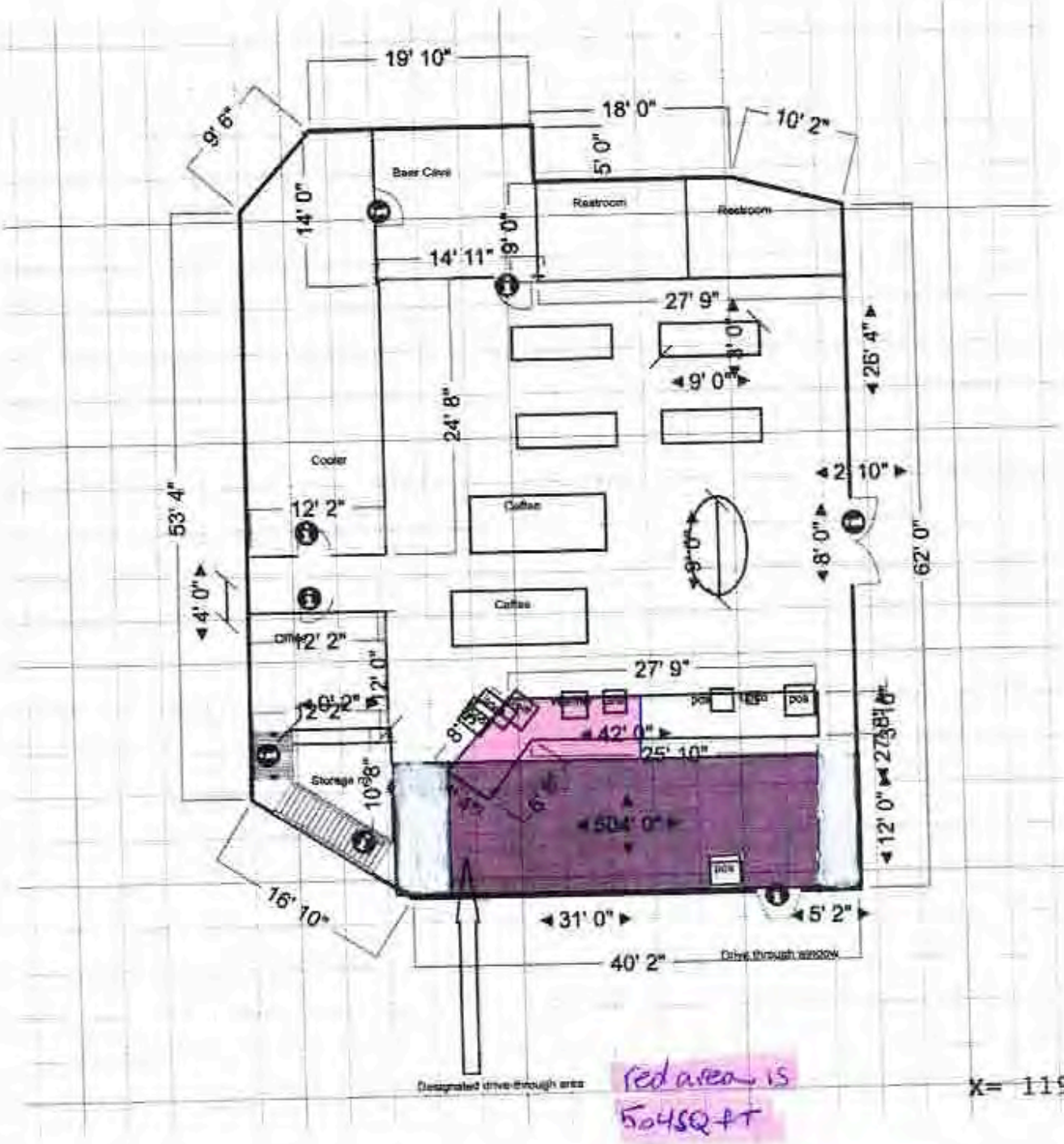
RCI
Rice-Christ, Inc.
Manufacturer's Representative
1-800-724-7423
10000 ALLIANCE ROAD
CINCINNATI, OH 45242

JOB NO.
RCI-0193-1

JOB NAME
CHEVRON
WEST UNION RD
HILLSBORO, OR

DESIGNER:LS | DATE:4/18/22 | SHEET 1 OF 1

SCALE: 1" : 20'


19' 10"
18' 0"
10' 2"
9' 6"
5' 0"
Beer Cave
14' 0"
Restroom
Restroom
14' 11"
9' 0"
27' 9"
3' 0"
9' 0"
26' 4"
24' 8"
Cooler
2' 10"
12' 2"
Coffee
9' 0"
8' 0"
62' 0"
53' 4"
4' 0"
Coffee
Office
12' 2"
27' 9"
12' 0"
10' 2"
12' 2"
8' 5"
42' 0"
25' 10"
Storage
10' 8"
6' 4"
504' 0"
12' 0"
27' 8"
16' 10"
31' 0"
5' 2"
40' 2"
Drive through window
Designated drive-through area
red area is
504SQ FT
X= 119