NOTICE OF DECISION
Fairfield by Marriott Inn & Suites – 900 Block N Brutscher Street
Design Review/Variance – DR222-0001/VAR22-0002

September 1, 2022

Patrick Nofield
Escape Lodging Newberg LLC
1315 S. Hemlock #3
Cannon Beach, Oregon 9711

Dear Mr. Nofield,

The Newberg Community Development Director has approved the proposed design review and variance DR222-0001/VAR22-0002 Fairfield Inn at the 900 Block of N Brutscher Street, R3216 01900, subject to the conditions listed in the attached report. The decision will become effective on September 15, 2022, unless an appeal is filed.

You may appeal this decision to the Newberg Planning Commission within 14 calendar days of this decision in accordance with Newberg Development Code 15.100.170. All appeals must be in writing on a form provided by the Planning Division. Anyone whttps://www.newbergoregon.gov/meetingsishing to appeal must submit the written appeal form together with the required fee of $547.00 plus a 5% Technology Fee to the Planning Division within 14 days of the date of this decision.

The deadline for filing an appeal is 4:30 pm on September 14, 2022

At the conclusion of the appeal period, please remove all notices from the site.

Design review approval is only valid for one year from the effective date above. If building or construction permits are not issued within this time period, then design review approval becomes null and void and no construction may take place. If design review approval on your project is approaching its expiration date, contact the Planning Division regarding extension opportunities.

Please note that final building plans submitted for building permit review must comply with the attached conditions. You must comply with all conditions required through the design review process before final occupancy will be granted.

Due to file size the full decision with attachments can be accessed at:

https://www.newbergoregon.gov/planning/page/dr222-0001var22-0002-fairfield-inn

The report attached does not include the attachments.

If you have any questions, please contact me at doug.rux@newbergoregon.gov or 503-537-1212.

Sincerely,

Doug Rux, AICP
Community Development Director

Attachment

STAFF REPORT
Fairfield by Marriott Inn & Suites - Design Review/Variance – DR222-0001/VAR22-0002

FILE NO:	DR222-0001/VAR22-0002
REQUEST:	Development of a 79-room hotel
LOCATION:	Brutscher and Pacific Highway West
TAX LOT:	R3216 Tax Lot 1900 (and former Tax Lot 02002)
APPLICANT:	Escape Lodging Newberg, LLC, and Hawkins Companies
OWNER:	Werth Family, LLC
ZONE:	C-2, General Commercial
OVERLAY:	Airport Overlay (Airport Inner Horizontal Surface)

CONTENTS

Attachments:

1. Application Material
2. Agency Comments
3. Revised Site Plan Concept
4. Ingress/Egress Easement Document
5. Termination of Easement Document

Section I: Application Information

A. DESCRIPTION OF APPLICATION: The applicant seeks approval for development of a 4 story, 79-room hotel on 1.95 acres (Attachment 1). The development will include parking, lighting, landscaping, and outdoor swimming pool, The application is subject to a Type II Design Review and Variance.

The property is located south of E Portland Road and west of N Brutscher Street just to the south of Columbia Bank and Newberg Veterinary Hospital. The site originally contained two tax lots, with a building located on the western tax lot across N Brutscher Street, and existing parking east of N Brutscher Street. See below for the lot line adjustment. The site is zoned C-2 (General Commercial).

ADJP17-0005 approved a lot line adjustment between Tax Lot 01900 and 02002 which increased the size of Tax Lot 01900. Staff received a copy of the Record of Survey on April 11, 2022, and a copy of the recorded deeds on April 15, 2022, from the property owner for the lot line adjustment. The adjusted lot is now Tax Lot 01900 and is 1.95 acres in size.

B. SITE INFORMATION:

1. Location: N Brutscher Street (south of E Portland Road)
2. Size: 1.95 acres
3. Topography: Flat
4. Current Land Uses: Undeveloped property
5. Natural Features: None
6. Adjacent Land Uses:

Site Aerial - Location

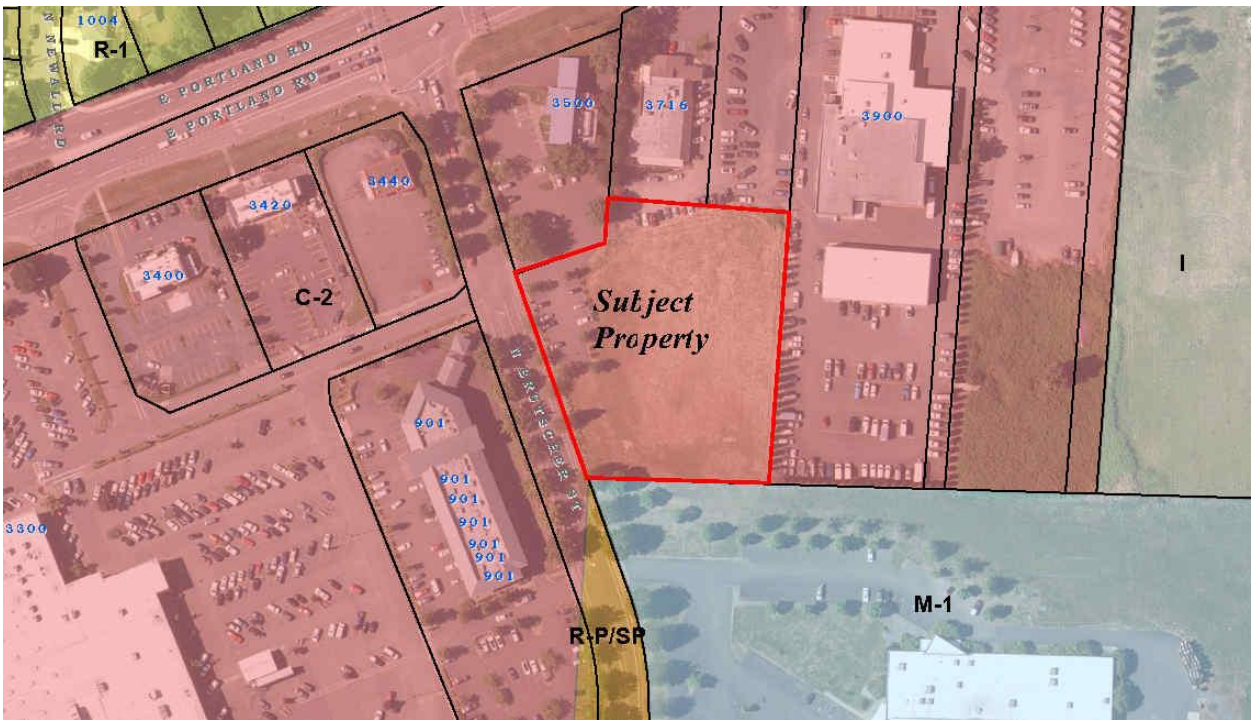
a. North: Columbia Bank, Newberg Veterinary Hospital, Newberg Ford

b. East: Newberg Ford

c. South: Argyle Winery

d. West: Valley Bank Building (commercial offices), and Jiffy Lube

1. Zoning: The following zoning districts abut the subject property.



a. North: Community Commercial (C-2)

b. East: Community Commercial (C-2)

c. South: Light Industrial District (M-1)

d. West: Community Commercial (C-2)

2. Access and Transportation: A new access to the proposed development is proposed from N Brutscher Street on the south end of the site and from an existing shared driveway on the north end of the site. It is classified as a major collector.

3. Utilities:

Water: There is a 12-inch ductile iron water line along N Brutscher Street. There appears to be an existing 2-inch and ¾"-inch meters to the property.

Wastewater: The City's GIS shows a there is a wastewater line near the north end of the applicant's property. It is a 6-inch line which transitions to an 8-inch line west of the manhole in N Brutscher Street.

Stormwater: There is an existing 18-inch stormwater line north of the property in N Brutscher Street that terminates in a manhole near the northern entrance driveway to Fred Meyer. There is an existing 12-inch stormwater line south of the property in N Brutscher Street that terminates in a manhole near the southern entrance driveway to Fred Meyer.

Overhead Lines: Any new connection the property will need to be undergrounded. See NMC 15.430.010 for exception provisions.

Other Site Conditions: The City is scheduled to pave Brutscher Street this year. The applicant is advised to reference: The Public Works Design and Construction Standards Chapters 5.21 and 5.22 for trench cut repair requirements. The city would like to avoid having new pavement cut into due to the required utility extensions to serve this property

C. **PROCESS:** The Design Review and Variance is a Type II application and follows the procedures in Newberg Development Code 15.100.030. Following a 14-day public comment period, the Community Development Director makes a decision on the application based on the criteria listed in the attached findings. The Director's decision is final unless appealed.

Important dates related to this application are as follows:

1.	3/17/2022:	The Community Development Director deemed the application complete.
2.	3/23/2022:	The applicant mailed notice to the property owners within 500 feet of the site.
3.	3/23/2022:	The applicant posted notice on the site.
4.	4/7/2022:	The 14-day public comment period ended.
5.	6/4/2022:	The applicant requested an extension to address resolving of an existing ingress/egress issue with properties to the north of the subject site.
6.	7/27/22:	The applicant requested a 2nd extension to address resolving of an existing ingress/egress issue with properties to the north of the subject site.
7.	9/1/2022:	The Community Development Director issued a decision on the application.

D. **AGENCY COMMENTS:** The application was routed to several public agencies for

review and comment (Attachment 1). Comments and recommendations from city departments have been incorporated into the findings and conditions. As of the writing of this report, the city received the following agency comments:

1. Ziply: Reviewed, no conflict
2. Building Official: Reviewed, no conflict
3. City Manager: Reviewed, no conflict
4. Finance: Reviewed, no conflict
5. Police: Reviewed, no conflict
6. Public Works Director: Reviewed, no conflict
7. Public Works Wastewater Treatment Superintendent: Must have grease interceptor, Pool must be shown attaching to wastewater
8. Public Works Maintenance: Grease interceptor was not shown in the food preparation area
9. Public Works Wastewater, Reviewed, no conflict
10. Public Works Maintenance Supervisor: Grease interceptor
11. TVF&R: See list of comments in Attachment 2

E. PUBLIC COMMENTS:

No public comments were submitted.

Section II: Findings – File /VAR22-0002
Variance – Fairfield by Marriott Inn & Suites

15.215.040 Type II variance criteria.
The Type II procedure shall be used to process a variance request. The hearing body shall grant the variance if the following criteria are satisfied:

A. That strict or literal interpretation and enforcement of the specified regulation would result in practical difficulty or unnecessary physical hardship inconsistent with the objectives of this code.

Finding: NMC 15.220.070B requires that a pedestrian pathway be provided from the street to the main building entrance and that the distance be no more than 60 feet. The proposed hotel has its primary entrance facing N Brutscher Street which is the primary street that meets the requirement. There is no clearly delineated pathway from the building entrance to N Brutscher Street. There is a path on the south side of the south driveway entrance, but the path does not cross the drive aisle. In front of the building there is a path that leads to the main building entrance, Staff's scaling of the site plan indicates that a possible path alignment would be a distance of 140 feet that would extend from N Brutscher Street along the south side of the southern driveway then crossing the drive aisle and connect to the path along the west frontage of the building to the main building entrance. This path alignment exceeds the 60-foot requirement. The positioning of the building on the site and site access creates a sense of arrival to the hotel. Other development in the vicinity, such as Fred Meyer, exceeds this 60-foot requirement but does provide a pedestrian connection. The applicant has proposed a pedestrian connection that exceeds the 60 feet and is proposed to approximately 140 feet in length. and meets the intent of the pedestrian connection and in this situation strict or literal interpretation and enforcement of the specified regulation would result in practical difficulty or unnecessary physical hardship inconsistent with the objectives of this code.

The second variance issue relates to NMC 15.440.080 Off-street loading. The building is over 10,000 square feet. The Code requires 2 loading berths, and one berth is proposed. The applicant has provided information that other hotel facilities they operate in Beaverton and The Dalles have no designated loading berths. The applicant further indicates that deliveries are by UPS and Fed Ex sized local delivery trucks. There is no restaurant in the proposed hotel so larger delivery vehicles form vendors such as US Foods or Sysco with larger trucks will not be accessing the site. Finally, the applicant indicates that deliveries would consist of cleaning supplies, office supplies, pool supplies, guest room amenities, and other miscellaneous housekeeping and maintenance supplies. The strict or literal interpretation and enforcement of the specified regulation would result in practical difficulty or unnecessary physical hardship inconsistent with the objectives of this code if two loading berth were required and one loading berth would be sufficient for the proposed hotel.

B. That there are exceptional or extraordinary circumstances or conditions applicable to the property involved or to the intended use of the property which do not apply generally to other properties classified in the same zoning district.

Finding: The site has existing improvements that drive the positioning of the building on the site beyond the 60-foot distance for a pedestrian path. The north driveway is an existing shared access driveway that serves both Columbia Bank and the proposed hotel site. The second issue is parking. There is an existing parking lot on the proposed hotel site that will be utilized by the development. The eastern edge of this parking area is 65 feet behind the right-of-way. The hotel design is also creating a sense of entry with the porte cochere at the main entrance for guest drop-off and departure. These are factors that are exceptional or extraordinary circumstances or conditions applicable to the property involved or to the intended use of the property which do not apply generally to other properties classified in the same zoning district

Regarding the loading berth requirement the hotel is not an industrial use or large retail commercial use that requires large delivery trucks, instead utilizing smaller delivery vehicles. As noted in the applicant's material the interior usable space of the first floor of the hotel is below 10,000 square feet that would only require one loading berth. In this situation the hotel is 4-story which pushes it above the 10,000 square foot size threshold.

C. That strict or literal interpretation and enforcement of the specified regulation would deprive the applicant of privileges enjoyed by the owners of other properties classified in the same zoning district.

Finding: The requirement for the 60-foot pedestrian path length maximum would deprive the applicant of privileges enjoyed by other owners of property. Examples are Fred Meyer, Newberg Chevrolet, Walgreens, and Wilco, as examples. The applicant will be providing a pedestrian pathway from N Brutscher Street to the main entrance oriented towards the street for the hotel, the length of the pathway will be approximately 140 feet meeting the intent to provide a pedestrian pathway.

Regarding the loading berth requirement Newberg has other hotel operations with Holiday Inn, Best Western and Travel Lodge. These facilities do not have loading berths.

D. That the granting of the variance will not constitute a grant of special privilege inconsistent with the limitations on other properties classified in the same zoning district.

Finding: Having the pathway be more than 60 feet in length is not inconsistent with other development in the C-2 district such as Fred Meyer, Newberg Chevrolet, Walgreens, and Wilco, as examples.

Regarding the loading berth requirement Newberg has other hotel operations with Holiday Inn, Best Western and Travel Lodge. These facilities do not have loading berths.

E. That the granting of the variance will not be detrimental to the public health, safety or welfare or materially injurious to properties or improvements in the vicinity.

Finding: Granting of the variance for the pedestrian pathway length will not be detrimental to the public health, safety, or welfare or materially injurious to properties or improvements in the vicinity because a pedestrian pathway will be provided from N Brutscher Street to the main building entrance and the pathway will be approximately 140 feet in length.

Regarding the loading berth requirement Newberg has other hotel operations with Holiday Inn, Best Western and Travel Lodge. These facilities do not have loading berths.

CONCLUSION: Approve the application based on the above findings which indicate that the project meets the criteria required within the Newberg Development Code with conditions. The development will be subject to completion of the attached conditions.

Section III: File DR222-0001
Design Review – Fairfield by Marriott Inn & Suites

15.220.050 Criteria for design review (Type II process).

B. Type II. The following criteria are required to be met in order to approve a Type II design review request:

1. Design compatibility. The proposed design review request incorporates an architectural design which is compatible with and/or superior to existing or proposed uses and structures in the surrounding area. This shall include, but not be limited to, building architecture, materials, colors, roof design, landscape design, and signage.

Finding: The proposed hotel is a 4-story structure with 79-rooms. The architecture of the building incorporates a variety of building materials including fiber cement siding, wood plank siding, stone veneer, stone coping, and metal. The roof line has varying elevation heights to break up the building mass. In addition, the horizontal planes of the building include recess and relief to break up the building mass along with windows on the four elevations. A porte cochere (canopy) is provided at the main building entrance. The building will be painted a series of colors as detailed on the Exterior Finish Schedule on Sheet A211.

Landscaping and signage are reviewed later in this report.

The design of buildings in the vicinity include variety of architectural styles and materials. To the south is an industrial building constructed of tilt up concrete wall panels.

To the west is Fred Meyer constructed of tilt up concrete wall panels, a 2-story office building with an exterior of brick. There are fast food restaurants with a variety of material consisting of, brick, EFIS, stone and wood accents, and a Jiffy Lube constructed of concrete masonry block and metal.

To the north is Columbia Bank which is a one-story building with brick and metal exterior siding, and Newberg Veterinary Hospital which is a one-story building with wood exterior siding.

To the east is Newberg Ford which is a 1-story building constructed of masonry block and metal siding.

The Fairfield Inn incorporates building materials that are generally represented in other structures within the vicinity and is compatible with development in the vicinity.

The criterion is met.

15.220.030 Site design review requirements.

12. Trash and Refuse Storage. All trash or refuse storage areas, along with appropriate screening, shall be indicated on the plans. Refuse storage areas must be constructed of brick, concrete block or other similar products as approved by the director.

Finding: The Landscape Plan Sheet L1.0 indicates a trash area at the northeast corner of the site. No details on the trash enclosure have been provided to comply with NMC 15.220.030(12). Because no information has been submitted the requirement is not met. The applicant shall provide details for a trash enclosure in conformance with NMC 15.220.030(12) Trash and Refuse Storage. All trash or refuse storage areas, along with appropriate screening, shall be indicated on the plans. Refuse storage areas must be constructed of brick, concrete block or other similar products as approved by the director at the time of Building Permit submittal.

This criterion will be met with the adherence to the aforementioned condition of approval.

15.220.070 Additional requirements for development in the C-2 zoning district.

The purpose of this section is to ensure that development in the C-2 zoning district is designed to promote pedestrian and bicycle uses and improve aesthetics and compatibility. An applicant for a new development or redevelopment within the C-2 zoning district, which is subject to the site design review process, must demonstrate that the following site and building design elements have been incorporated into the design of the project. Exceptions to these additional development requirements may be granted if the requirements would result in construction that is out of character with surrounding development. Applicants for redevelopment of a designated landmark will not be subject to these additional requirements, except for requirements regarding parking and service drives.

A. Building Entrances. Each building on a lot shall have a primary pedestrian entrance oriented to the primary street. "Oriented to a street" means that the building entrance faces the street or is connected to the street by a direct and convenient pathway not exceeding 60 feet in length. "Primary street" means the street which has the highest estimated volume of pedestrian traffic. This requirement does not apply to buildings that are located behind other buildings on the lot such that 50 percent or more of their building frontage is blocked by the front building, as measured by sight lines that are perpendicular to the street right-of-way. Such rear buildings shall have a primary entrance oriented to an internal sidewalk or pedestrian pathway system which is internally connected and provides a connection to the primary street.

Finding: The proposed hotel has its primary entrance facing N Brutscher Street which is the primary street that meets the requirement. There is no clearly delineated pathway from the building entrance to N Brutscher Street. There is a path on the south side of the south driveway entrance, but the path does not cross the drive aisle. In front of the building there is a path that leads to the main building entrance, Staff's scaling of the site plan indicates that a possible path

alignment would be a distance of 140 feet that would extend from N Brutscher Street along the south side of the southern driveway then crossing the drive aisle and connect to the path along the west frontage of the building to the main building entrance. This path alignment exceeds the 60-foot requirement. As noted in the Variance section of this report it has been determined that the 60-foot requirement can be exceed and that the path will be approximately 140 feet in length.

> ***B. Parking and Service Drives. No off-street parking or service drives shall be placed within the required front yard setback. No off-street parking shall be placed between the front property line of the primary street, as defined in subsection (A) of this section, and the building. This requirement does not apply to buildings that are located behind other buildings on the lot such that 50 percent or more of their building frontage is blocked by the front building, as measured by sight lines that are perpendicular to the street right-of-way.***

Finding: There is an existing parking lot located on the former Tax Lot 02002 that contains 17 parking spaces. The submitted application identifies expanding this lot by an additional 2 spaces. In addition, there are 61 new spaces proposed on Tax Lot 01900. Thirty-two of the existing, proposed expansion, and new parking spaces are between the building and the front property line (N Brutscher Street the primary street) and does not meet the criterion. No variance has been submitted to deviate from this criterion and the exception to this requirement is discussed below.

> ***C. Exceptions. The review body may approve exceptions to the above, provided there are no reasonable alternatives that would allow access to or parking on the lot.***

Finding: The development area is unique in that encompasses what was two tax lots that have been adjusted by a lot line adjustment in 2017 and recorded in 2022 and is surrounded by existing development. There is an existing parking lot on Tax Lot 02002 that will become part of the development and be expanded by two parking spaces and will have landscape islands constructed. The north driveway access is a shared access with the property to the north (Columbia Bank). There is a south driveway access as well to create a circular movement pattern through the site. The site also has an irregular shape making it challenging to site a hotel while providing the amenities proposed for the pool and outdoor patio area.

Modern day suburban hotels typically have a drop off area at the main building entrance for the convenience of guests to the facility. Relocating the building closer towards N Brutscher Street may eliminate the parking but pushes the parking to the back of the site and changes the building design to require two primary entrance points making it difficult management of guests for check in and check out. It also surrounds the outdoor pool space with guest parking. Additionally, there are driveway spacing and alignment issues on the west side of N Brutscher Street that need to be adhered to.

Staff evaluation is the proposed parking lot layout and service drives are acceptable as proposed and that alternatives to relocate the building closer to N Brutscher Street and relocating parking

to the rear of the site will encumber site access and circulation. Furthermore, with the existing parking lot in place on former Tax Lot 02002 utilizing those spaces is beneficial rather than removing this already constructed improvement.

> ***D. Building Mass. Where building elevations are oriented to the street in conformance with subsection (A) of this section, architectural features such as windows, pedestrian entrances, building offsets, projections, detailing, change in materials or similar features, shall be used to break up and articulate large building surfaces and volumes.***

Finding: The building is oriented to face N Brutscher Street but not parallel to the street due to the lot configuration and existing parking on the former Tax Lot 02002. The building length is approximately 175 feet. The building design provides windows for each guest room. The main entrance is located on the west elevation to face N Brutscher Street. A porte cochere (canopy) is provided at the main entrance for guest check-in and departure. The building has a variety of offsets on the wall plane facing N Brutscher Street to break up a long linear wall. This same building articulation is provided on the east, north and south building elevations. Materials on the elevation facing the street include fiber cement siding, wood plank siding, stone veneer, stone coping, and metal.

The north, south and east building elevations that do not face the street utilize a similar design theme for material. The east elevation reflects the design elements as the west elevation.

The criterion is met.

> ***E. Corner Lots. Buildings on corner lots shall have their primary entrance oriented to the street corner, or within 40 feet of the street corner (i.e., as measured from the lot corner). In this case, the street corner shall provide an extra-wide sidewalk or plaza area with landscaping, seating or other pedestrian amenities. The building corner shall provide architectural detailing or beveling to add visual interest to the corner.***

Finding: The development area is not a corner lot, and this criterion does apply.

> ***F. Pedestrian-Scale Building Entrances. Recessed entries, canopies, and/or similar features shall be used at the entries to buildings in order to create a pedestrian scale.***

Finding: The entrance to the building incorporates a main entrance with a porte cochere (canopy) to direct pedestrians to the main entrance. The main entrance is also detailed with differing materials. The entrance is connected to walkways to the various parking areas and to the public street. The criterion is met.

> ***G. Windows.***

1. On commercial building facades facing a public street, windows shall comprise a minimum of 40 percent of the ground floor facade. For large-scale buildings and developments meeting the standards under subsection (H) of this section, windows shall comprise a minimum of 20 percent of the ground floor facade.

Finding: Windows are provided on the west elevation that faces N Brutscher Street. The percentage of windows on the ground floor has not been indicated in the application material. Because no information was submitted the criterion is not met. The applicant shall provide a calculation for the commercial building facade facing a public street and meet the requirement that windows shall comprise a minimum of 40 percent of the ground floor façade as part of the Building Permit plan submittal.

This criterion will be met with the adherence to the aforementioned condition of approval.

2. For large-scale buildings and developments meeting the standards under subsection (H) of this section, 50 percent of all required window area shall allow view into an active space. An "active space" is defined as any area within a building that is used for shopping, dining, office space, and so forth. Merchandise display windows with displays that change at least semi-annually shall be considered an active space. Examples of areas that are considered nonactive spaces are storage and mechanical equipment areas, and windows that are obscured by shelving or material affixed to the window.

Finding: This criterion does not apply as the building is not a large-scale building over 30,000 square on the first floor.

H. Design of Large-Scale Buildings and Developments. All buildings on a development site shall conform to the design standards included under this subsection where the total square footage of one commercial building exceeds 30,000 square feet of total ground floor area or all commercial buildings exceed 50,000 square feet of total ground floor area. Deviations from these standards may be approved, where appropriate, through the conditional use permit process.

Finding: The ground floor area of the building is approximately 10,382 and under the 30,000 square feet threshold. Because the building first floor is under 30,000 square feet the criterion does not apply.

1. Facade Articulation. Incorporate changes in building direction (i.e., articulation), and divide large masses into varying heights and sizes. Such changes may include building offsets; projections; changes in elevation or horizontal direction; sheltering roofs; terraces; a distinct pattern of divisions in surface materials; and use of windows, screening trees; small-scale lighting (e.g., wall-mounted lighting); and similar features. At least five of the following

elements shall be included along each 100 feet of building frontage facing a street:

a. A building offset or projection of at least six feet depth and width.
b. An awning or roof sheltering a pedestrian walkway or seating area.

c. A building facade shall be comprised of at least two building materials, with the lesser comprising not less than 10 percent of the total facade.

d. Contrasting brick, stone, or natural wood trim.

e. Pitched roofs or gable-end roofs.

f. Curved arches or roof line features.

g. A tower, spire, or cupola.

h. A cornice.

i. Second story windows that comprise a minimum of 10 percent of the second floor facade.

Finding: The criteria of 1. a. – h. do not apply because the building first floor is under 30,000 square feet.

2. Pedestrian Entrance. Every building elevation facing a street with a horizontal dimension of more than 100 feet, as measured from end-wall to end-wall, shall have a building entrance no more than 100 feet from another entrance or end-wall; except that building elevations that are unable to provide an entrance due to the internal function of the building space (e.g., mechanical equipment, areas where the public or employees are not received, etc.) may not be required to meet this standard. Pathways shall connect all entrances to the street right-of-way.

Finding: The above criterion does not apply because the building first floor is under 30,000 square feet.

3. Building Facades Not Fronting a Street. For all ground floor facades that do not face a public street, windows shall comprise a minimum of 20 percent of the ground floor facade or a landscape strip shall be provided adjacent to the building. The landscape strip shall be a minimum of five feet in width and include a combination of trees, shrubs, and groundcover or grass. Plant material shall be selected from at least two of the different plant material groups (example: trees and shrubs, or lawn and shrubs, or lawn and trees and

shrubs). The type of tree selected shall have a crown of less than 15 feet at maturity. Exceptions to this standard include building facades that abut outdoor storage areas, loading docks, and mechanical equipment areas.

Finding: The above criterion does not apply because the building first floor is under 30,000 square feet.

4. Building Orientation. All buildings shall be oriented to a primary street as defined in subsection (A) of this section or oriented to a plaza or open space within the development site that connects to the primary street. "Oriented to a plaza or open space" means that the building entrance faces the plaza, open space, shared parking area or is connected to the plaza by a direct and convenient pathway not exceeding 60 feet in length.

Finding: The above criterion does not apply because the building first floor is under 30,000 square feet.

5. On-Site Landscaping and Screening.

a. A continuous landscape strip, with a five-foot minimum width, shall be located perpendicular to groups of two or more parking stalls. Within the landscape strip, at a minimum, one deciduous shade tree per seven parking spaces shall be planted to create a partial tree canopy over and around the parking area. The type of tree shall be chosen from the City of Newberg preferred street tree list and have a minimum crown spread of 25 feet. This standard shall apply unless otherwise approved by the director based on the following alternative standards:

i. No more than seven parking stalls shall be grouped together without a landscape island. The landscape island shall have a width and depth no less than five feet and contain no less than one deciduous shade tree; or

Finding: The above criteria do not apply because the building first floor is under 30,000 square feet.

ii. Provision of tree planting landscape islands, each of which is at least 16 square feet in size, and spaced no more than 50 feet apart on average, with a maximum of 75 feet, within areas proposed for grouped parking. For every seven planting landscape islands, one shall be no less than 500 square feet in size.

Finding: The above criterion does not apply because the building first floor is under 30,000 square feet.

b. At a minimum 50 percent of the parking area shall drain to a stormwater mitigation area. The mitigation area shall be designed using best management stormwater practices including, but not limited to, bioswales, rain gardens, or similar design intended to reduce stormwater flow and improve stormwater quality.

Finding: The above criterion does not apply because the building first floor is under 30,000 square feet.

c. A 20-foot-wide landscaped buffer shall be provided between the development and any adjoining residential district. The buffer shall include a continuous six-foot-high sight-obscuring fence or wall, a continuous hedge and/or berm designed to achieve a height of six feet upon maturity, a row of trees not more than 35 feet on-center, and shrubs or living groundcover.

Finding: The above criterion does not apply because the building first floor is under 30,000 square feet.

d. Outdoor storage areas, loading docks, and mechanical equipment areas shall be fenced with 75 percent opaque site-obscuring fencing or screened with landscaping between the area and public streets.

Finding: The above criterion does not apply because the building first floor is under 30,000 square feet.

e. One square foot of interior open space or plaza space shall be required for every five square feet of gross floor area. The following features shall be included in the open space or plaza area:

i. One linear foot of seating space shall be required for every 30 square feet of open space or plaza space.

ii. One tree shall be provided for every 800 square feet of plaza space or open space.

iii. Pedestrian-scale lighting according to subsection (H)(7) of this section.

Finding: The above criteria do not apply because the building first floor is under 30,000 square feet.

6. Vehicle and Pedestrian Connectivity.

a. Public streets may be required to be dedicated where needed to improve internal circulation, to connect to neighboring properties or streets, to break up large blocks, or to reduce travel around a site.

Finding: The above criterion does not apply because the building first floor is under 30,000 square feet.

b. At a minimum, 95 percent of the parking spaces shall be located within 75 feet of a private walkway or public sidewalk.

Finding: The above criterion does not apply because the building first floor is under 30,000 square feet.

7. Pedestrian-Scale Lighting. Pedestrian-scale lighting shall be located along all internal walkways and provide a minimum illumination of one foot-candle. Building entrances shall have a minimum illumination of five foot-candles. Lighting shall be fully shielded so that no light is emitted at an angle above the horizontal plane as illustrated by the lighting plan. The type of features that should be considered include, but are not limited to, street lamps, light fixtures attached to buildings, and light bollards. All pedestrian-scale light fixtures shall not exceed a maximum height of 15 feet as measured from grade to the fixture lamp. The lens material for all pedestrian-scale lighting shall be constructed of acrylic or similar shatter-resistant material as determined by the director. Glass lenses shall not be used for any pedestrian-scale lighting.

Finding: The above criterion does not apply because the building first floor is under 30,000 square feet.

8. Parking. The number of parking stalls shall not exceed 125 percent of the minimum number of stalls required. Parking stalls constructed of grass blocks, grasscrete, pervious asphalt or concrete, or similar pervious material shall not be counted in this limit.

Finding: The above criterion does not apply because the building first floor is under 30,000 square feet.

9. Existing Development. Any existing legal conforming site, through future development, exceeding the square footage threshold contained in this subsection (H) shall follow the standards contained in Chapter 15.205 NMC, Nonconforming Uses and Buildings.

Finding: The above criterion does not apply because the building first floor is under 30,000 square feet.

10. Vacancy Agreement. All large-scale retail development sites as defined in this subsection (H) shall have an abandoned building surety agreement filed with the city. The purpose of the agreement is to ensure a continued attractive business environment in case a building goes vacant. The agreement shall provide measures to maintain the on-site landscaping and exterior of the buildings to their prevacancy condition, and to assist in finding a future tenant. "Vacancy" is defined as a period exceeding one year without legal occupancy. The terms of the agreement shall include:

a. A surety bond equal to one percent of the total valuation of the buildings on site.

b. If the owner fails to maintain the physical exterior of the property or any building on site, the bond may be used for items including, but not limited to: landscape maintenance, exterior building repairs, parking lot paving, amenities in the public right-of-way (lighting, benches, landscaping, etc.). If the cost of maintenance exceeds the amount of the bond, the city will bill the owner. Any unpaid amounts will become a lien on the property.

c. If the owner fails to legally occupy the site, the bond may be used as an incentive for prospective tenants including, but not limited to: payment of permit fees, application fees, system development charges, funding for on-site landscaping, and facade improvements.

d. If the surety bond is expended in any amount, the owner shall provide a new surety bond prior to occupancy by a new tenant. The amount of the bond shall be equal to one percent of the value of the building at the time of occupancy.

e. If at any time prior to one-year vacancy, the director finds the property is in need of maintenance, the director shall notify the owner in writing of the need to maintain the property and the intent to use the bond. Unless the owner provides the needed maintenance or objects within 30 days of the notice, the surety may be used to maintain the property. If the owner objects, the city council will hear the matter and determine whether the surety will be used.

Finding: The above criteria does not apply because the building first floor is under 30,000 square feet.

11. Environmental Impact. All new large-scale retail development as defined in subsection (H) of this section shall be LEED certified as defined by the U.S. Green Building Council. The terms of approval are as follows:

a. The applicant shall demonstrate to the director the extent to which the applicant has complied with the commitment to earn a LEED new construction certification rating for a completed project. Demonstration of LEED certification shall be completed prior to the issuance of final certificate of occupancy for the new structure by submitting a report analyzing the extent credits earned toward such rating from the U.S. Green Building Council or another independent entity approved by the director.

b. With specific regard to the LEED stormwater design category, all buildings shall obtain a total of at least two points in this category.

c. With specific regard to the LEED water efficiency category, all buildings shall obtain a total of at least one point in this category.

d. In this section the term "leadership in energy and environmental design (LEED)" means a green building rating system promulgated by the United States Green Building Council (USGBC) that provides specific principles and practices, some mandatory but the majority discretionary, that may be applied during the design, construction, and operation phases, which enable the building to be awarded points from reaching present standards of environmental efficiency so that it may achieve LEED certification from the USGBC as a "green" building, as such rating system exists on January 1, 2009.

e. The USGBC intends to release a revised version of the LEED green building rating system every three years, and the director shall refer to the most current version of the LEED when reviewing a new building construction permit project or renovation.

f. The LEED existing building rating system shall be used during retrofit projects of existing structures.

Finding: The above criteria does not apply because the building first floor is under 30,000 square feet.

Exterior Lighting

15.425.020 Applicability and exemptions.

A. Applicability. Outdoor lighting shall be required for safety and personal security in areas of assembly, parking, and traverse, as part of multifamily residential, commercial, industrial, public, recreational and institutional uses. The applicant for any Type I or Type II development permit shall submit, as part of the site plan,

evidence that the proposed outdoor lighting plan will comply with this section. This information shall contain but not be limited to the following:

1. The location, height, make, model, lamp type, wattage, and proposed cutoff angle of each outdoor lighting fixture.

2. Additional information the director may determine is necessary, including but not limited to illuminance level profiles, hours of business operation, and percentage of site dedicated to parking and access.

3. If any portion of the site is used after dark for outdoor parking, assembly or traverse, an illumination plan for these areas is required. The plan must address safety and personal security.

Finding: Sheet EL2 provides details on proposed on site lighting including make, model, lamp type and model. Five on site pole lights are proposed. Lights consist of 25-foot poles with a shoebox fixture with LED lights. Sheet EL1 identifies the location of the five light poles. The proposed lighting location will illuminate the parking areas, service drives and loading area on the development site. This criterion is met.

B. Exemptions. The following uses shall be exempt from the provisions of this section:

1. Public street and airport lighting.

2. Circus, fair, carnival, or outdoor governmentally sponsored event or festival lighting.

3. Construction or emergency lighting, provided such lighting is discontinued immediately upon completion of the construction work or abatement of the emergency necessitating said lighting.

4. Temporary Lighting. In addition to the lighting otherwise permitted in this code, a lot may contain temporary lighting during events as listed below:

a. Grand Opening Event. A grand opening is an event of up to 30 days in duration within 30 days of issuance of a certificate of occupancy for a new or remodeled structure, or within 30 days of change of business or ownership. No lot may have more than one grand opening event per calendar year. The applicant shall notify the city in writing of the beginning and ending dates prior to the grand opening event.

b. Other Events. A lot may have two other events per calendar year. The events may not be more than eight consecutive days in duration, nor less than 30 days apart.

5. Lighting activated by motion sensor devices.

6. Nonconforming lighting in place as of September 5, 2000. Replacement of nonconforming lighting is subject to the requirements of NMC 15.205.010 through 15.205.100.

7. Light Trespass onto Industrial Properties. The lighting trespass standards of NMC 15.425.040 do not apply where the light trespass would be onto an industrially zoned property. [Ord. 2720 § 1(18), 11-2-09; Ord. 2537, 11-6-00. Code 2001 § 151.586.]

Finding: This criterion is not applicable as no exemption has been requested by the applicant.

15.425.030 Alternative materials and methods of construction, installation, or operation.

The provisions of this section are not intended to prevent the use of any design, material, or methods of installation or operation not specifically prescribed by this section, provided any such alternate has been approved by the director. Alternatives must be an approximate equivalent to the applicable specific requirement of this section and must comply with all other applicable standards in this section.

Finding: This criterion applies as LED lighting is proposed. Analysis is provided below.

15.425.040 Requirements.

A. General Requirements – All Zoning Districts.

1. Low-level light fixtures include exterior lights which are installed between ground level and six feet tall. Low-level light fixtures are considered nonintrusive and are unrestricted by this code.

Finding: Lighting is not proposed that is between ground level and six feet tall. This criterion does not apply.

2. Medium-level light fixtures include exterior lights which are installed between six feet and 15 feet above ground level. Medium-level light fixtures must either comply with the shielding requirements of subsection (B) of this section, or the applicant shall show that light trespass from a property has been designed not to exceed one-half foot-candle at the property line.

Finding: Lighting is not proposed that is between ground level and six feet tall. This criterion does not apply.

3. High-level light fixtures include exterior lights which are installed 15 feet or more above ground level. High-level light fixtures must comply with the shielding requirements of subsection (B) of this section, and light trespass from a property may not exceed one-half foot-candle at the property line.

Finding: Sheet EL2 provides details on proposed on site lighting including make, model, lamp type and model. Five on site pole lights are proposed. Lights consist of 25-foot poles with a shoebox fixture with LED lights. Sheet EL1 identifies the location of the five light poles. The proposed lighting locations will illuminate the parking areas, service drives and loading area on the development site. Sheet EL1 provides the illumination levels at the property line. The north, east, and west data indicates compliance with the .5 footcandle requirement. Staff has questions about the illumination levels on the south side of the development site illuminated by Pole #1 and Pole #2. The footcandle numbers stop at the curb line and do not extend to the south property line. The applicant shall provide information on compliance with the .5-foot candle requirement on the south side of the development site as part of the Building Permit submittal process.

This criterion will be met with the adherence to the aforementioned condition of approval.

B. Table of Shielding Requirements.

Fixture Lamp Type	Shielded
Low/high pressure sodium, mercury vapor, metal halide and fluorescent over 50 watts	Fully
Incandescent over 160 watts	Fully
Incandescent 160 watts or less	None
Fossil fuel	None
Any light source of 50 watts or less	None
Other sources	As approved by NMC 15.425.030

Finding: The applicant is proposing LED lights which are not on the above schedule and will fall into the Other Sources category. The LED lighting is an approximate equivalent to lighting on the schedule and meets the requirement.

2. Parking and On-Site Circulation. Parking areas shall meet the requirements of NMC 15.440.010. Parking studies may be required to determine if adequate parking and circulation are provided for uses not specifically identified in NMC 15.440.010. Provisions shall be made to provide efficient and adequate on-site circulation without using the public streets as part of the parking lot circulation pattern. Parking areas shall be designed so that vehicles can efficiently enter and exit the public streets with a minimum impact on the functioning of the public street.

15.440.010 Required off-street parking.

A. Off-street parking shall be provided on the development site for all R-1, C-1, M-1, M-2 and M-3 zones. In all other zones, the required parking shall be on the development site or within 400 feet of the development site which the parking is required to serve. All required parking must be under the same ownership as the development site served except through special covenant agreements as approved by the city attorney, which bind the parking to the development site.

1. In cases where the applicant is proposing off-street parking, refer to subsection (F) of this section for the maximum number of parking spaces.

Finding: There are 80 parking spaces identified on the site plan. The 80 spaces are located on Tax Lot 01900 and the former tax lot 02002 that is the development site. With the revisions for ingress and egress for lots to the north represented on Attachments 3-5 there are 82 proposed spaces. Two of these spaces will become part of the ingress/egress in the future for the Newberg Veterinary Clinic to the north. Two of the represented spaces will be removed with the ingress/egress easement. In addition a landscape island will be required to separate the ingress/egress easement from parking on the hotel site east of the easement area. This will reduce the represented parking on Attachment 3 to 79 which is the minimum required. All the parking is on site and under the same ownership as the development site. The 6 parking spaces located the northwest corner of the site shall be modified to accommodate the ingress/egress easement by deleting two spaces and providing a landscape island so that 3 spaces are represented as part of the plans submitted for Building Permit review.

B. Off-street parking is required pursuant to NMC 15.440.030 in the C-2 district.

1. In cases where the applicant is proposing off-street parking, refer to subsection (F) of this section for the maximum number of parking spaces.

Finding: See the analysis under subsection (F) below.

C. Off-street parking is not required in the C-3 district, except for:

1. Dwelling units meeting the requirements noted in NMC 15.305.020.

2. New development which is either immediately adjacent to a residential district or separated by nothing but an alley.

3. In cases where the applicant is proposing off-street parking, refer to subsection (F) of this section for the maximum number of parking spaces.

Finding: These criteria do not apply because the site is not in the C-3 district.

> ***D. Within the C-4 district, the minimum number of required off-street parking spaces shall be 50 percent of the number required by NMC 15.440.030, except that no reduction is permitted for residential uses.***

Finding: The development area is not within the C-4 district and is not applicable.

> ***E. All commercial, office, or industrial developments that have more than 20 off-street parking spaces and that have designated employee parking must provide at least one preferential carpool/vanpool parking space. The preferential carpool/vanpool parking space(s) must be located close to a building entrance.***

Finding: A total of 80 parking spaces are proposed. There is no designated employee parking for the hotel employees as the predominant parking demand will be from hotel guests.

With the revisions for ingress and egress for lots to the north represented on Attachment 3 there are 82 proposed spaces. Two of these spaces will become part of the ingress/egress for the Newberg Veterinary Clinic to the north. Two of the represented spaces will be removed with the ingress/egress easement. In addition a landscape island will be required to separate the ingress/egress easement from parking on the hotel site. This will reduce the represented parking on Attachment 3 to 79 which is the minimum required. All the parking is on site and under the same ownership as the development site. The 6 parking spaces located the northwest corner of the site shall be modified to accommodate the ingress/egress easement by deleting two spaces and providing a landscape island so that 3 spaces are represented as part of the plans submitted for Building Permit review.

Because there is no designated employee parking the requirement for carpool/vanpool parking does not apply.

> ***F. Maximum Number of Off-Street Automobile Parking Spaces. The maximum number of off-street automobile parking spaces allowed per site equals the minimum number of required spaces, pursuant to NMC 15.440.030, multiplied by a factor of:***
>
> ***1. One and one-fifth spaces for uses fronting a street with adjacent on-street parking spaces; or***
>
> ***2. One and one-half spaces for uses fronting no street with adjacent on-street parking; or***
>
> ***3. A factor determined according to a parking analysis.***

Finding: A total of 80 parking spaces are proposed on the site. There is no on-street parking provided on N Brutscher Street. The development is proposing parking that meets the requirements of 1 space per guest room.

With the revisions for ingress and egress for lots to the north represented on Attachment 3 there are 82 proposed spaces. Two of these spaces will become part of the ingress/egress for the Newberg Veterinary Clinic to the north. Two of the represented spaces will be removed with the ingress/egress easement. In addition a landscape island will be required to separate the ingress/egress easement from parking on the hotel site. This will reduce the represented parking on Attachment 3 to 79 which is the minimum required. All the parking is on site and under the same ownership as the development site. The 6 parking spaces located the northwest corner of the site shall be modified to accommodate the ingress/egress easement by deleting two spaces and providing a landscape island so that 3 spaces are represented as part of the plans submitted for Building Permit review.

Because the development is proposing the required number of parking spaces the above criteria do not apply.

15.440.020 Parking area and service drive design.

A. All public or private parking areas, parking spaces, or garages shall be designed, laid out and constructed in accordance with the minimum standards as set forth in NMC 15.440.070.

Finding: A total of 80 parking spaces are proposed. The parking spaces are designed to meet the size requirements for 90° angle parking as further analyzed under NMC 15.440.070.

With the revisions for ingress and egress for lots to the north represented on Attachment 3 there are 82 proposed spaces. Two of these spaces will become part of the ingress/egress for the Newberg Veterinary Clinic to the north. Two of the represented spaces will be removed with the ingress/egress easement. In addition a landscape island will be required to separate the ingress/egress easement from parking on the hotel site. This will reduce the represented parking on Attachment 3 to 79 which is the minimum required. All the parking is on site and under the same ownership as the development site. The 6 parking spaces located the northwest corner of the site shall be modified to accommodate the ingress/egress easement by deleting two spaces and providing a landscape island so that 3 spaces are represented as part of the plans submitted for Building Permit review.

B. Groups of three or more parking spaces, except those in conjunction with a single-family detached dwelling, duplex dwelling, triplex dwelling, quadplex dwelling, townhouse dwelling or cottage cluster project on a single lot, shall be served by a service drive so that no backward movement or other maneuvering of a

vehicle within a street, other than an alley, will be required. Service drives shall be designed and constructed to facilitate the flow of traffic, provide maximum safety in traffic access and egress and maximum safety of pedestrian and vehicular traffic on the site, but in no case shall two-way and one-way service drives be less than 20 feet and 12 feet, respectively. Service drives shall be improved in accordance with the minimum standards as set forth in NMC 15.440.060.

Finding: Service drives are provided to the various parking locations that facilitates the flow of traffic within the development area to the designated parking areas as represented in the original submittal and on Attachment 3. The service drives are identified to be minimum of 24 feet or greater in width exceeding the 20-foot minimum. Pedestrian safety will be provided by striping pedestrian crossings in conformance with NMC 15.440.140(B-D). The criterion is met.

C. Gates. A private drive or private street serving as primary access to more than one dwelling unit shall not be gated to limit access, except as approved by variance.

Finding: The criterion does not apply because there are no private drives or streets.

D. In the AI airport industrial district and AR airport residential district, taxiways may be used as part of the service drive design where an overall site plan is submitted that shows how the circulation of aircraft and vehicles are safely accommodated, where security fences are located, if required, and is approved by the fire marshal, planning director, and public works director. The following submittal must be made:

1. A drawing of the area to be developed, including the probable location, height, and description of structures to be constructed; the location and description of a security fence or gate to secure the aircraft operations areas of off-airport property from the other nonsecured pedestrian/auto/truck areas of on-airport property; the proposed location of the proposed taxiway access in accordance with FAA specifications (refer to Federal Aviation Administration Advisory Circular No. 150/5300-13 regarding airport design, and AC/5370-10B regarding construction standards for specifications that should be used as a guideline); and the identification of the vehicular traffic pattern area clearly separated from aircraft traffic. Once specific buildings have been designed, FAA Form 7460-1, Notice of Proposed Construction or Alteration, must be submitted to the City of Newberg, the private airport owner, and the FAA for airspace review

Finding: This criterion is not applicable as the development area is not in an AI or AR district.

15.440.030 Parking spaces required.

Use	*Minimum Parking Spaces Required*
Hotels, motels, motor hotels, etc.	*1 for each guest room*

Finding: There are 79 guest rooms proposed. With the revisions for ingress and egress for lots to the north represented on Attachment 3 there are 82 proposed spaces. Two of these spaces will become part of the ingress/egress for the Newberg Veterinary Clinic to the north. Two of the represented spaces will be removed with the ingress/egress easement. In addition a landscape island will be required to separate the ingress/egress easement from parking on the hotel site. This will reduce the represented parking on Attachment 3 to 79 which is the minimum required. All the parking is on site and under the same ownership as the development site. The 6 parking spaces located the northwest corner of the site shall be modified to accommodate the ingress/egress easement by deleting two spaces and providing a landscape island so that 3 spaces are represented as part of the plans submitted for Building Permit review.

The adjusted 79 parking spaces proposed meets the minimum requirement. This criterion is met with compliance with the condition of approval.

15.440.040 Parking requirements for uses not specified.
The parking space requirements for buildings and uses not set forth herein shall be determined by the director through a Type I procedure. Such determination shall be based upon the requirements for the most comparable building or use specified herein.

Finding: A hotel is specified use in NMC 15.440.030. This criterion is not applicable.

15.440.050 Common facilities for mixed uses.

A. In the case of mixed uses, the total requirements for off-street parking spaces shall be the sum of the requirements for the various uses. Off-street parking facilities for one use shall not be considered as providing parking facilities for any other use except as provided below.

Finding: This criterion is not applicable as the proposed use is a single use, hotel.

B. Joint Uses of Parking Facilities. The director may, upon application, authorize the joint use of parking facilities required by said uses and any other parking facility; provided, that:

1. The applicant shows that there is no substantial conflict in the principal operating hours of the building or use for which the joint use of parking facilities is proposed.

2. The parking facility for which joint use is proposed is no further than 400 feet from the building or use required to have provided parking.
3. The parties concerned in the joint use of off-street parking facilities shall evidence agreement for such joint use by a legal instrument approved by the city attorney as to form and content. Such instrument, when approved as conforming to the provisions of the ordinance, shall be recorded in the office of the county recorder and copies of the instrument filed with the director.

Finding: This criterion is not applicable because the applicant is not proposing joint use parking facilities.

C. Commercial establishments within 200 feet of a commercial public parking lot may reduce the required number of parking spaces by 50 percent.

Finding: This criterion is not applicable because there is no public parking lot in the vicinity and the applicant is not requesting a reduction in the number of spaces required.

Parking and Service Drives

15.440.060 Parking area and service drive improvements.
All public or private parking areas, outdoor vehicle sales areas, and service drives shall be improved according to the following:

A. All parking areas and service drives shall have surfacing of asphaltic concrete or Portland cement concrete or other hard surfacing such as brick or concrete pavers. Other durable and dust-free surfacing materials may be approved by the director for infrequently used parking areas. All parking areas and service drives shall be graded so as not to drain stormwater over the public sidewalk or onto any abutting public or private property.

Finding: The proposed parking areas are proposed to be paved with asphaltic concrete and meet the criterion.

B. All parking areas shall be designed not to encroach on public streets, alleys, and other rights-of-way. Parking areas shall not be placed in the area between the curb and sidewalk or, if there is no sidewalk, in the public right-of-way between the curb and the property line. The director may issue a permit for exceptions for unusual circumstances where the design maintains safety and aesthetics.

Finding: Submitted plans indicate that parking and service drive areas will not encroach onto public streets and that no parking areas are proposed between the curb and sidewalk in the public right-of-way. This criterion is met.

> ***C. All parking areas, except those required in conjunction with a single-family detached, duplex, triplex, quadplex or townhouse dwelling, or cottage cluster project, shall provide a substantial bumper which will prevent cars from encroachment on abutting private and public property.***

Finding: The parking lot layout provides perimeter curbing that prevents cars from encroachment on abutting private and public property, and landscape areas. This criterion is met.

> ***D. All parking areas, including service drives, except those required in conjunction with single-family detached, duplex, triplex, quadplex or townhouse dwellings or cottage cluster projects, shall be screened in accordance with NMC 15.420.010(B).***

Finding: See response to NMC 15.420.010(B).

> ***E. Any lights provided to illuminate any public or private parking area or vehicle sales area shall be so arranged as to reflect the light away from any abutting or adjacent residential district.***

Finding: This criterion is not applicable because the subject property does not abut and is not adjacent to any residential zoning districts.

> ***F. All service drives and parking spaces shall be substantially marked and comply with NMC 15.440.070.***

Finding: The submitted site plan, including Attachment 3, identifies that all parking spaces will be marked. This criterion is met.

> ***G. Parking areas for residential uses shall not be located in a required front yard, except as follows:***
>
> ***1. Single-family detached, duplex, triplex, quadplex, and townhouse dwellings: parking is authorized in a front yard on a service drive which provides access to an improved parking area outside the front yard.***

Finding: This criterion of the NMC is not applicable because the use is not residential.

> ***H. A reduction in size of the parking stall may be allowed for up to a maximum of 30 percent of the total number of spaces to allow for compact cars. For high***

turnover uses, such as convenience stores or fast-food restaurants, at the discretion of the director, all stalls will be required to be full-sized.

Finding: A total of 10 compact parking spaces are proposed Based on the Revised Site Plan in Attachment 3. This is 13% of the provided parking and meets the criterion. This percentage could change in order to meet the landscape island width requirements. If adjustments are made to the parking to accommodate the required landscape island width the applicant shall submit revised plans showing compliance with NMC 15.420.010(1f) as part of the Building Permit submittal.

This criterion will be met with the adherence to the aforementioned condition of approval.

I. Affordable housing projects may use a tandem parking design, subject to approval of the community development director.

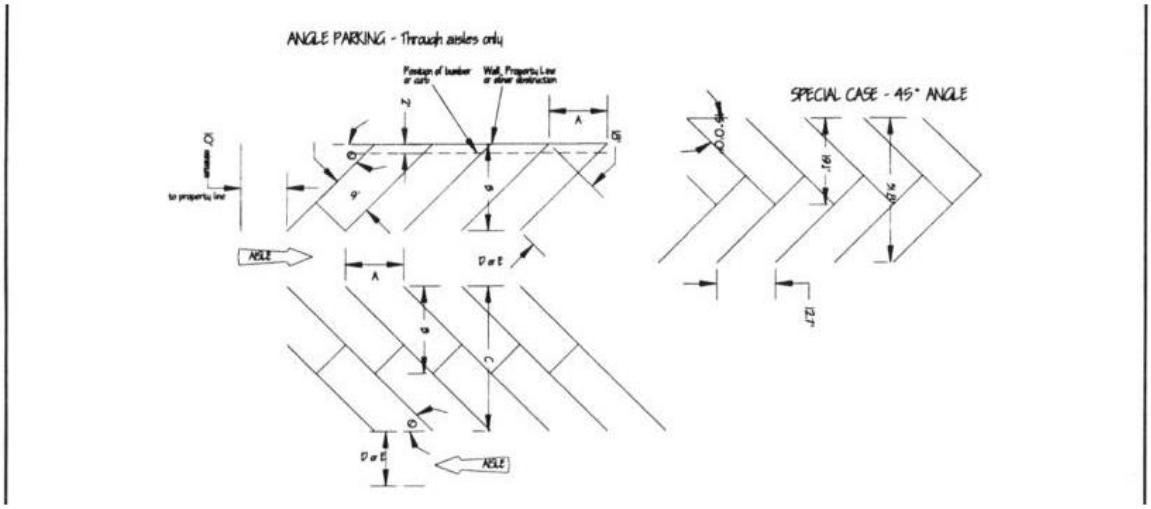
Finding: The proposed project is not an affordable housing project, and this criterion does not apply.

J. Portions of off-street parking areas may be developed or redeveloped for transit-related facilities and uses such as transit shelters or park-and-ride lots, subject to meeting all other applicable standards, including retaining the required minimum number of parking spaces.

Finding: This criterion is not applicable because the applicant is not proposing transit-related facilities or uses and there is no immediate plan to locate one of these facilities by other governmental entities within the project area.

15.440.070 Parking tables and diagrams.

Diagram 1



Finding: All surface parking stalls are identified to be striped and meet the required dimensions of 18 feet by 9 feet for 90º angle parking. Compact spaces are identified as 9 feet by16 feet for 90º angle parking. Two parallel spaces are identified on Attachment 3 which meet the required size requirement. The criteria are met.

15.440.080 Off-street loading.

A. Buildings to be built or substantially altered which receive and distribute materials and merchandise by trucks shall provide and maintain off-street loading berths in sufficient number and size to adequately handle the needs of the particular use.

1. The following standards shall be used in establishing the minimum number of berths required:

Gross Floor Area of the Building in Square Feet	No. of Berths
Up to 10,000	1
10,000 and over	2

Finding: The gross floor area of the building is approximately 40,000. This is over 10,000 square feet and requires 2 loading berths. One loading berth is proposed in the application

material. The applicant applied for a variance to the loading berth number as analyzed earlier in this report. It has been determined that one loading berth will be required.

> ***2. A loading berth shall contain a space 10 feet wide and 35 feet long and have a vertical clearance of 14 feet. Where the vehicles generally used for loading and unloading exceed these dimensions, the required length of these berths shall be increased.***

Finding: The one loading berth is 17 feet wide and 35 feet in length. The unobstructed height is 14 feet. The criterion is met. Loading for the hotel will generally be by smaller delivery vehicles and not larger semi-trucks and trailers.

> ***3. Additional off-street loading requirements within the C-4 district are described in NMC 15.352.040(H)(7).***

Finding: This criterion is not applicable as the site is not in the C-4 district.

> ***4. Where a facility includes an aircraft hangar, the off-street loading requirement is not required since loading may occur through the hangar doors.***

Finding: There is no aircraft hangar proposed for the development and this criterion does not apply.

> ***B. The following provisions shall apply to off-street loading facilities:***
>
> ***1. The provision and maintenance of off-street loading space is a continuing obligation of the property owner. No building permit shall be issued until plans are presented that show property that is and will remain available for exclusive use as off-street loading space. The subsequent use of property for which the building permit is issued shall be conditional upon the unqualified continuance and availability of the amount of loading space required by this code. Should the owner or occupant of any building change the use to which the building is put, thereby increasing off-street loading requirements, it shall be unlawful and a violation of this code to begin or maintain such altered use until such time as the increased off-street loading requirements are met.***

Finding: One loading berth is provided on the site. This criterion is met.

> ***2. Owners of two or more buildings may agree to utilize jointly the same loading spaces when the hours of operation do not overlap; provided, that satisfactory legal evidence is presented to the city attorney in the form of deeds, leases or contracts to establish the joint use.***

Finding: This criterion is not applicable because owners of two or more buildings are not proposing to jointly use the same loading area. This criterion does not apply.

3. A plan drawn to scale, indicating how the off-street loading requirements are to be fulfilled, shall accompany an application for a building permit.

Finding: One loading berth is proposed on the site. The identification of the proposed loading berth shall be identified on the plans as part of the Building Permit application.

This criterion will be met with compliance with the aforementioned condition of approval.

4. Design Requirements for Loading Areas.

a. Areas used for standing and maneuvering of vehicles shall have durable and dustless surfaces of asphaltic concrete or Portland cement concrete, maintained adequately for all-weather use and so drained as to avoid flow of water across the sidewalks.

b. Loading areas adjacent to residential zones designed to minimize disturbance of residents.

c. Artificial lighting which may be provided shall be so deflected as not to shine or create glare in any residential zone or on any adjacent dwelling.

d. Access aisles shall be of sufficient width for all vehicular turning and maneuvering.

e. Vision clearance standards as identified in NMC 15.410.060 shall apply.

Finding: The proposed loading area is constructed of asphaltic concrete. The loading area is not adjacent to a residential zone. Lighting is proposed as shown on Sheet L.10 to illuminate the loading area. The access aisle is of sufficient width to meet the size of vehicle that will be using the loading area. The loading area is not adjacent to a vision clearance area and is not applicable. The design requirement is met.

Bicycle Parking

15.440.100 Facility requirements.

Bicycle parking facilities shall be provided for the uses shown in the following table. Fractional space requirements shall be rounded up to the next whole number.

Use	*Minimum Number of Bicycle Parking Spaces Required*
New commercial, industrial, office, and institutional developments, including additions that total 4,000 square feet or more	*One bicycle parking space for every 10,000 square feet of gross floor area. In C-4 districts, two bicycle parking spaces, or one per 5,000 square feet of building area, must be provided, whichever is greater*

Finding: The overall building square footage is approximately 40,000. This requires four bicycle spaces. Four bicycle spaces have been provided. The criterion has been met.

15.440.110 Design.

A. Bicycle parking facilities shall consist of one or more of the following:

1. A firmly secured loop, bar, rack, or similar facility that accommodates locking the bicycle frame and both wheels using a cable or U-shaped lock.

2. An enclosed locker.

3. A designated area within the ground floor of a building, garage, or storage area. Such area shall be clearly designated for bicycle parking.

4. Other facility designs approved by the director.

Finding: No information was submitted with the application on the type of rack to secure the bicycles to. Because no information was submitted the criterion is not met. The applicant shall provide details on the type of bike rack to be utilized in conformance with 15.440.110(A) as part of the Building Permit submittal.

This criterion will be met with compliance with the aforementioned condition of approval.

B. All bicycle parking spaces shall be at least six feet long and two and one-half feet wide. Spaces shall not obstruct pedestrian travel.

Finding: No information was submitted with the application on the size of the bicycle parking spaces. Because no information was submitted the criterion is not met. The applicant shall provide details on the size of the bicycle parking spaces in conformance with 15.440.110(B) as part of the Building Permit submittal.

This criterion will be met with compliance with the aforementioned condition of approval.

C. All spaces shall be located within 50 feet of a building entrance of the development.

Finding: The four bicycle spaces are located 35 feet from the building entrance and meet the criterion. The location of the proposed bicycle parking conflicts with the Landscape Plan which identifies the bicycle parking as a grass area. The applicant shall modify the Landscape Plan to identify the location of the proposed bicycle parking as part of the Building Permit submittal.

This criterion will be met with compliance with the aforementioned condition of approval.

D. Required bicycle parking facilities may be located in the public right-of-way adjacent to a development subject to approval of the authority responsible for maintenance of that right-of-way.

Finding: No bicycle parking spaces are proposed within the public right-of-way. This criterion does not apply.

Article III. Private Walkways

15.440.120 Purpose.

Sidewalks and private walkways are part of the city's transportation system. Requiring their construction is part of the city's plan to encourage multimodal travel and to reduce reliance on the automobile. Considerable funds have and will be expended to install sidewalks along the streets in the city. Yet there is little point to this expense if it is not possible for people to walk from the sidewalk to the developments along each side. The following requirements are intended to provide safe and convenient paths for employees, customers, and residents to walk from public sidewalks to development entrances, and to walk between buildings on larger sites.

Finding: See the analysis below under 15.440.140(A-G).

15.440.130 Where required.

Private walkways shall be constructed as part of any development requiring Type II design review, including mobile home parks. In addition, they may be required as part of conditional use permits or planned unit developments. In the airport industrial (AI) district and residential (AR) district, on-site walks are not required in aircraft operations areas, such as parking aprons, taxiways, and runways.

15.440.140 Private walkway design.

A. All required private walkways shall meet the applicable building code and Americans with Disabilities Act requirements.

Finding: Walkways are provided on the development site that will require compliance with Americans with Disabilities Act requirements. The applicant will be required to ensure all private walkways meet the applicable building code and ADA requirements as part of the Building Permit plan submittal.

This criterion will be met with compliance with the aforementioned condition of approval.

B. Required private walkways shall be a minimum of four feet wide.

Finding: The private walkways identified are a minimum of 5 feet wide meeting the criterion. A walkway will be required to cross the service drive as noted under NMC 15.440.140. This walk shall be a minimum of 5 feet in width and comply with ADA requirements and be shown on the Building Permit submittal plans.

This criterion will be met with compliance with the aforementioned condition of approval.

C. Required private walkways shall be constructed of Portland cement concrete or brick.

Finding: The private walkways identified are identified to be concrete. A walkway will be required to cross the service drive. This walkway shall be a minimum of 5 feet in width and comply with ADA requirements, NMC 15.440.140, and be shown on the Building Permit plan submittal.

This criterion will be met with compliance with the aforementioned condition of approval.

D. Crosswalks crossing service drives shall, at a minimum, be painted on the asphalt or clearly marked with contrasting paving materials or humps/raised crossings. If painted striping is used, it should consist of thermoplastic striping or similar type of durable application.

Finding: No striping or surface makings have been identified where the path crosses the service drive. Because no walkway has been identified across the service drive to get to the sidewalk on N Brutscher Street this requirement is not met. The applicant shall revise plans to identify where the walkway crosses a service drive that at a minimum it be painted on the asphalt or clearly marked with contrasting paving materials or humps/raised crossings as part of the Building Permit plan submittal. If painted striping is used, it should consist of thermoplastic striping or similar type of durable application.

This criterion will be met with compliance with the aforementioned condition of approval.

> ***E. At a minimum, required private walkways shall connect each main pedestrian building entrance to each abutting public street and to each other.***

Finding: The walkway identified between N Brutscher Street and the main building entrance has a gap where it crosses a service drive, so it does not connect the main pedestrian entrance of the building to the public street. Because there is not a continuous connect the requirement is not met. The applicant shall revise plans so that at a minimum, required private walkways shall connect each main pedestrian building entrance to each abutting public street and to each other on the Building Permit plan submittal.

This criterion will be met with compliance with the aforementioned condition of approval.

> ***F. The review body may require on-site walks to connect to development on adjoining sites.***

Finding: Connection to abutting properties can be achieved by utilization of the public sidewalks and a separate walkway connection to properties to the east, not, and south are not required.

> ***G. The review body may modify these requirements where, in its opinion, the development provides adequate on-site pedestrian circulation, or where lot dimensions, existing building layout, or topography preclude compliance with these standards.***

Finding: The review body has not identified any necessary modifications per this criterion.

3. Setbacks and General Requirements. The proposal shall comply with NMC 15.415.010 through 15.415.060 dealing with height restrictions and public access; and NMC 15.405.010 through 15.405.040 and NMC 15.410.010 through 15.410.070 dealing with setbacks, coverage, vision clearance, and yard requirements.

15.405.010 Minimum and maximum lot area.

> ***A. In the following districts, each lot or development site shall have an area as shown below except as otherwise permitted by this code:***
>
> > ***1. In the R-1, R-2, R-3, R-P and AR districts, the following minimum lot area standards apply:***

Zone	Minimum lot area for single family	Minimum lot area For duplex	Minimum lot area for triplex dwelling	Minimum lot area for quadplex dwelling	Minimum lot area for townhouse	Minimum lot area for cottage cluster	Minimum lot area Per dwelling for multifamily
R-1	5,000 SF	5,000 SF	5,000 SF	7,000 SF	1,500 SF	7,000 SF	Per conditional use review
R-2	3,000 SF	3,000 SF	5,000 SF	7,000 SF	1,500 SF	7,000 SF	3,000 SF
R-3	2,500 SF	2,500 SF	4,500 SF	6,000 SF	1,500 SF	6,000 SF	1,500 SF
R-P	3,000 SF	3,000 SF	5,000 SF	7,000 SF	1,500 SF	7,000 SF	3,000 SF
AR	5,000 SF	5,000 SF	5,000 SF	7,000 SF	1,500 SF	7,000 SF	—

Finding: The site is zoned General Commercial (C-2). The above lot area requirements do not apply.

> ***2. In the AI, C-1, C-2, and C-3 districts, each lot or development site shall have a minimum area of 5,000 square feet or as may be established by a subdistrict.***

Finding: The development area total is 1.95 acres. The former Tax Lot 02002 is 14,365 square feet and Tax Lot 01900 is 70,495 square feet. The development area exceeds the minimum 5,000 square foot minimum.

> ***3. In the M-1, M-2, M-3, and M-E districts, each lot or development site shall have a minimum area of 20,000 square feet.***

Finding: This criterion is not applicable because this development area is not in a M-1, M-2, M-3, or M-E district.

> ***4. Institutional districts shall have a minimum size of five contiguous acres in order to create a large enough campus to support institutional uses; however, additions to the district may be made in increments of any size.***

Finding: This criterion is not applicable because this development area is not in an Institutional district.

> ***5. Within the commercial and mixed employment district(s) of the riverfront overlay subdistrict, there is no minimum lot size required, provided the other standards of this code can be met.***

Finding: This criterion is not applicable because this development area is not in a commercial or mixed employment district of the riverfront overlay subdistrict.

15.405.040 Lot coverage and parking coverage requirements.

A. Purpose. The lot coverage and parking coverage requirements below are intended to:

1. Limit the amount of impervious surface and storm drain runoff on residential lots.

2. Provide open space and recreational space on the same lot for occupants of that lot.

3. Limit the bulk of residential development to that appropriate in the applicable zone.

Finding: Lot coverage does not apply in the C-2 district.

C. All other districts and uses not listed in subsection (B) of this section shall not be limited as to lot coverage and parking coverage except as otherwise required by this code.

Finding: The development area is in the C-2 district and is not limited by lot coverage. The criterion does not apply.

15.410.010 General yard regulations.

A. No yard or open space provided around any building for the purpose of complying with the provisions of this code shall be considered as providing a yard or open space for any other building.

Finding: No yards are proposed that that would apply towards a yard or open space for any other building. This criterion is met.

B. No yard or open space on adjoining property shall be considered as providing required yard or open space for another lot or development site under the provisions of this code.

Finding: No yards are proposed that that would apply towards a yard or open space for any other lot or development site. This criterion is met.

C. No front yards provided around any building for the purpose of complying with the regulations of this code shall be used for public or

private parking areas or garages, or other accessory buildings, except as specifically provided elsewhere in this code.

Finding: NMC 15.220.070(B-C) analyzed parking in the front yard and concluded the parking area was acceptable and prudent for this development.

D. When the common property line separating two or more contiguous lots is covered by a building or a permitted group of buildings with respect to such common property line or lines does not fully conform to the required yard spaces on each side of such common property line or lines, such lots shall constitute a single development site and the yards as required by this code shall then not apply to such common property lines.

Finding: This criterion is not applicable because no building covers a common property line.

E. Dwellings Where Permitted above Nonresidential Buildings. The front and interior yard requirements for residential uses shall not be applicable; provided, that all yard requirements for the district in which such building is located are complied with.

Finding: This criterion is not applicable because no dwellings are proposed.

F. In the AI airport industrial district, clear areas, safety areas, object-free areas, taxiways, parking aprons, and runways may be counted as required yards for a building, even if located upon an adjacent parcel.

Finding: This criterion is not applicable because the development area is not in the AI airport industrial district.

G. In the AR airport residential district, clear areas, safety areas, object-free areas, taxiways, parking aprons, and runways may be counted as required yards for a building, if located upon an adjacent parcel.

Finding: This criterion is not applicable because the development area is not in the AR airport residential district.

15.410.020 Front yard setback.

B. Commercial.

1. All lots or development sites in the C-1 district shall have a front yard of not less than 10 feet. There shall be no minimum front yard setback for C-1 zoned property that has frontage on E. Portland Road or

Highway 99 W. The maximum front yard setback for C-1 zoned property that has frontage on E. Portland Road or Highway 99 W. shall be no greater than 10 feet. A greater front yard setback is allowed for C-1 zoned property having frontage on E. Portland Road or Highway 99 W. when a plaza or other pedestrian amenity is provided; however, said front yard setback should be the minimum setback needed to accommodate a pedestrian amenity. Said yard shall be landscaped and maintained.

Finding: This criterion is not applicable because the development area is not in the C-1 district.

2. All lots or development sites in the C-2 district shall have a front yard of not less than 10 feet. There shall be no minimum front yard setback for C-2 zoned property that has frontage on E. Portland Road or Highway 99 W. The maximum front yard setback for C-2 zoned property that has frontage on E. Portland Road or Highway 99 W. shall be no greater than 10 feet. A greater front yard setback is allowed for C-2 zoned property having frontage on E. Portland Road or Highway 99 W. when a plaza or other pedestrian amenity is provided; however, said front yard setback should be the minimum setback needed to accommodate a pedestrian amenity. No parking shall be allowed in said yard. Said yard shall be landscaped and maintained.

Finding: The proposed front yard setback is 110 feet at its closest point to N Brutscher Street. This exceeds the 10-foot minimum. The development area is not on E Portland Road or Highway 99W. The criterion is met.

3. All lots or development sites in the C-3 district shall have no minimum front yard requirements. The maximum allowable front yard shall be 20 feet. In the case of a through lot with two front yards, at least one front yard must meet the maximum setback requirement. In the case of three or more front yards, at least two front yards must meet the maximum setback requirements. No parking shall be allowed in said yard. Said yard shall be landscaped and maintained.

Finding: This criterion is not applicable because the development area is not in the C-3 district.

4. All lots or development sites in the C-4 district will comply with the front yard requirements described in NMC 15.352.040(E).

Finding: This criterion is not applicable because the development area is not in the C-4 district.

15.410.030 Interior yard setback.

B. Commercial.

1. All lots or development sites in the C-1 and C-2 districts have no interior yards required where said lots or development sites abut property lines of commercially or industrially zoned property. When interior lot lines of said districts are common with property zoned residentially, interior yards of not less than 10 feet shall be required opposite the residential districts.

Finding: The development area abuts commercial (C-2)) to the north and east. To the south the abutting property is Limited Industrial (M-1). N Brutscher Street separates the development area to the C-2 property to the west. The development area does not abut residential property. Setbacks are proposed of 78 feet to the north, 53 feet to the east, and 65 feet to the south. The criterion is met.

2. All lots or development sites in the C-3 district shall have no interior yard requirements.

Finding: This criterion is not applicable because the development area is not in the C-3 district.

3. All lots or development sites in the C-4 district will comply with the interior yard requirements described in NMC 15.352.040(E).

Finding: This criterion is not applicable because the development area is not in the C-4 district.

15.410.060 Vision clearance setback.

The following vision clearance standards shall apply in all zones (see Appendix A, Figure 9).

A. At the intersection of two streets, including private streets, a triangle formed by the intersection of the curb lines, each leg of the vision clearance triangle shall be a minimum of 50 feet in length.

Finding: This criterion is not applicable because there are not intersecting streets adjacent to the development area.

B. At the intersection of a private drive and a street, a triangle formed by the intersection of the curb lines, each leg of the vision clearance triangle shall be a minimum of 25 feet in length.

Finding: There are two driveways that will access the development site. The north driveway is existing. The Site Plan indicates the vision clearance triangle on the south side of the driveway meeting the required dimensions.

The Site Plan indicates the south driveway vision clearance triangle on the north and south side of the driveway meeting the required dimensions.

The criterion is met.

> ***C. Vision clearance triangles shall be kept free of all visual obstructions from two and one-half feet to nine feet above the curb line. Where curbs are absent, the edge of the asphalt or future curb location shall be used as a guide, whichever provides the greatest amount of vision clearance.***

Finding: The Site Plan identifies the vision clearance triangles at the two driveways. The south driveway does not identify any visual obstructions by landscaping or signage. At the north driveway on the south side a directional sign and shrubby are identified on the Landscape Plan Sheet L1.0 that appears to be located in the vision clearance triangle and wood project into the 30' height limitation. Because of the projections into the vision clearance area at the north driveway the criterion is not me. The Landscape Plan Sheet L1.0 shall be revised so that it is kept free of all visual obstructions from two and one-half feet to nine feet above the curb line and submitted as part of the Building Permit plan submittal.

This criterion will be met with compliance with the aforementioned condition of approval.

> ***D. There is no vision clearance requirement within the commercial zoning district(s) located within the riverfront (RF) overlay subdistrict.***

Finding: This criterion is not applicable because the development site is not within the Riverfront (RD) overlay subdistrict.

> ***15.410.070 Yard exceptions and permitted intrusions into required yard setbacks.***
> ***The following intrusions may project into required yards to the extent and under the conditions and limitations indicated:***
>
> > ***A. Depressed Areas. In any district, open work fences, hedges, guard railings or other landscaping or architectural devices for safety protection around depressed ramps, stairs or retaining walls may be located in required yards; provided, that such devices are not more than three and one-half feet in height.***

Finding: This criterion is not applicable because there are no depressed areas within the development site for fences, hedges, guard railings or other landscaping or architectural devices for safety protection around depressed ramps, stairs or retaining.

> ***B. Accessory Buildings. In front yards on through lots, where a through lot has a depth of not more than 140 feet, accessory buildings may be located in one of the required front yards; provided, that every portion of such accessory building is not less than 10 feet from the nearest street line.***

Finding: This criterion is not applicable because there are no accessory buildings.

> ***C. Projecting Building Features. The following building features may project into the required front yard no more than five feet and into the required interior yards no more than two feet; provided, that such projections are no closer than three feet to any interior lot line:***
>
> ***1. Eaves, cornices, belt courses, sills, awnings, buttresses or other similar features.***
>
> ***2. Chimneys and fireplaces, provided they do not exceed eight feet in width.***
>
> ***3. Porches, platforms or landings which do not extend above the level of the first floor of the building.***
>
> ***4. Mechanical structures (heat pumps, air conditioners, emergency generators and pumps).***

Finding: This criterion is not applicable because there are no projecting features into the required front yard.

> ***D. Fences and Walls.***
>
> ***1. In the residential district, a fence or wall shall be permitted to be placed at the property line or within a yard setback as follows:***
>
> ***a. Not to exceed six feet in height. Located or maintained within the required interior yards. For purposes of fencing only, lots that are corner lots or through lots may select one of the street frontages as a front yard and all other yards shall be considered as interior yards, allowing the placement of a six-foot fence on the property line. In no case may a fence extend into the clear vision zone as defined in NMC 15.410.060.***

b. Not to exceed four feet in height. Located or maintained within all other front yards.

Finding: This criterion is not applicable because the development site is not in a residential district.

2. In any commercial, industrial, or mixed employment district, a fence or wall shall be permitted to be placed at the property line or within a yard setback as follows:

a. Not to exceed eight feet in height. Located or maintained in any interior yard except where the requirements of vision clearance apply. For purposes of fencing only, lots that are corner lots or through lots may select one of the street frontages as a front yard and all other yards shall be considered as interior yards, allowing the placement of an eight-foot fence on the property line.

b. Not to exceed four feet in height. Located or maintained within all other front yards.

Finding: This criterion is not applicable because no fencing is proposed. There will be a fence around the swimming pool, but it is not adjacent to a property line and is interior to the site.

3. If chain link (wire-woven) fences are used, they are manufactured of corrosion-proof materials of at least 11-1/2 gauge.

Finding: This criterion is not applicable because no chain link fencing is proposed on the site. An existing chain link fence is located along the east property line constructed as part of the Newberg Ford development. There will be a metal decorative fence around the swimming pool, it is not chain link, is not adjacent to a property line and is interior to the site.

4. The requirements of vision clearance shall apply to the placement of fences.

Finding: This criterion is not applicable because no fencing is proposed in the vision clearance triangles.

E. Parking and Service Drives (Also Refer to NMC 15.440.010 through 15.440.080).

1. In any district, service drives or accessways providing ingress and egress shall be permitted, together with any appropriate traffic control devices in any required yard.

Finding: There are two driveway connections to N Brutscher Street in the required front yard and they meet the requirement. The northern driveway is a shared driveway with Columbia Bank and the Newberg Veterinary Clinic through existing easements.

2. In any residential district, public or private parking areas and parking spaces shall not be permitted in any required yard except as provided herein:

a. Required parking spaces shall be permitted on service drives in the required front yard in conjunction with any single-family detached dwelling, duplex dwelling, triplex dwelling, quadplex dwelling, or townhouse dwelling on a single lot.

b. Recreational vehicles, boat trailers, camperettes and all other vehicles not in daily use are restricted to parking in the front yard setback for not more than 48 hours; and recreational vehicles, boat trailers, camperettes and all other vehicles not in daily use are permitted to be located in the required interior yards.

c. Public or private parking areas, parking spaces or any building or portion of any building intended for parking which have been identified as a use permitted in any residential district shall be permitted in any interior yard that abuts an alley, provided said parking areas, structures or spaces shall comply with NMC 15.440.070, Parking tables and diagrams (Diagrams 1 through 3).

d. Public or private parking areas, service drives or parking spaces which have been identified as a use permitted in any residential district shall be permitted in interior yards; provided, that said parking areas, service drives or parking spaces shall comply with other requirements of this code.

Finding: These criteria do not apply because the development site is not in a residential district.

3. In any commercial or industrial district, except C-1, C-4, M-1, and M-E, public or private parking areas or parking spaces shall be permitted in any required yard (see NMC 15.410.030). Parking requirements in the C-4 district and the M-E district within the riverfront overlay subdistrict are described in NMC 15.352.040(H).

Finding: Parking is proposed on the north, south and west sides of the development site. Parking on the north and south are in the interior yards. Parking in the front yard is regulated by NMC15. 220.070(B) and has been determined to meet requirements.

> ***4. In the I district, public or private parking areas or parking spaces may be no closer to a front property line than 20 feet, and no closer to an interior property line than five feet.***

Finding: This criterion is not applicable because the development site is not in the I district.

> ***F. Public Telephone Booths and Public Transit Shelters. Public telephone booths and public transit shelters shall be permitted; provided, that vision clearance is maintained for vehicle requirements for vision clearance.***

Finding: This criterion is not applicable because no Public Telephone Booths and Public Transit Shelters are proposed or required.

> ***G. Hangars within the AR airport residential district may be constructed with no yard setbacks to property lines adjacent to other properties within the airport residential or airport industrial districts.***

Finding: This criterion is not applicable because the development site is not in the AR airport residential district.

> ***15.415.020 Building height limitation.***
> ***B. Commercial and Industrial.***
>
> > ***2. In the AI, C-2, C-3, M-1, M-2, and M-3 districts there is no building height limitation, except, where said districts abut upon a residential district, the maximum permitted building height shall not exceed the maximum building height permitted in the abutting residential district for a distance of 50 feet from the abutting boundary.***

Finding: The development site is in the C-2 district which does not have a height limit. The height limit is regulated by the airport overlay conical surfaces. The development Site is not adjacent to a residential district.

> ***E. Alternative Building Height Standard. As an alternative to the building height standards above, any project may elect to use the following standard (see Figure 24 in Appendix A). To meet this standard:***

1. Each point on the building must be no more than 20 feet higher than the ground level at all points on the property lines, plus one vertical foot for each horizontal foot of distance from that property line; and

2. Each point on the building must be no more than 20 feet higher than the ground level at a point directly north on a property line, plus one vertical foot for each two horizontal feet of distance between those points. This second limit does not apply if the property directly to the north is a right-of-way, parking lot, protected natural resource, or similar unbuildable property.

Finding: This criterion is not applicable because no alternative building height calculation is being proposed.

F. Buildings within the airport overlay subdistrict are subject to the height limits of that subdistrict.

Finding: The development site is within the Airport Inner Horizontal Surface (AIHS) and is addressed below in Section 8 under 15.340.040.

15.415.030 Building height exemptions.
Roof structures and architectural features for the housing of elevators, stairways, tanks, ventilating fans and similar equipment required to operate and maintain the building, fire or parapet walls, skylights, towers, flagpoles, chimneys, smokestacks, wireless masts, TV antennas, steeples and similar structures may be erected above the height limits prescribed in this code; provided, that no roof structure, feature or any other device above the prescribed height limit shall be allowed or used for the purpose of providing additional floor space. Further, no roof structure or architectural feature under this exemption shall be erected more than 18 feet above the height of the main building, whether such structure is attached to it or freestanding, nor shall any such structure or feature exceed the height limits of the airport overlay subdistrict.

Finding: The C-2 district does not have a maximum height restriction. No exemptions are applied for the proposed application. This section of the NMC is not applicable.

15.415.040 Public access required.
No building or structure shall be erected or altered except on a lot fronting or abutting on a public street or having access to a public street over a private street or easement of record approved in accordance with provisions contained in this code. New private streets may not be created to provide access except as allowed under MC 15.332.020(B)(24), 15.336.020(B)(8), and in the M-4 zone. Existing private streets may not be used for access for new dwelling units, except as allowed under NMC 15.405.030. No building or structure shall be erected or altered without provisions for access roadways as required in the Oregon Fire Code, as adopted by the city.

Finding: The development site abuts N Brutscher Street, a public street, that provides access to the site. The site is accessed by two driveways. The north driveway is a shared driveway with the property to the north (Columbia Bank). The south drive serves only the development site. TVF&R has provided comments on access contained in Attachment 2. The applicant shall comply with the access requirements of TVF&R as noted in Attachment 2.

This criterion will be met with compliance with the aforementioned condition of approval.

4. Landscaping Requirements. The proposal shall comply with NMC 15.420.010 dealing with landscape requirements and landscape screening.

15.420.010 Required minimum standards.

B. Required Landscaped Area. The following landscape requirements are established for all developments except single-family detached dwellings, duplex dwellings, triplex dwellings, quadplex dwellings, townhouse dwellings and cottage cluster projects:

1. A minimum of 15 percent of the lot area shall be landscaped; provided, however, that computation of this minimum may include areas landscaped under subsection (B)(3) of this section. Development in the C-3 (central business district) zoning district and M-4 (large lot industrial) zoning district is exempt from the 15 percent landscape area requirement of this section. Additional landscaping requirements in the C-4 district are described in NMC 15.352.040(K). In the AI airport industrial district, only a five percent landscaping standard is required with the goal of "softening" the buildings and making the development "green" with plants, where possible. The existence of the runway, taxiway, and approach open areas already provide generally for the 15 percent requirement. Developments in the AI airport industrial district with a public street frontage shall have said minimum landscaping between the front property line and the front of the building.

Finding: The site is within the C-2 district. A total of 30% of the site is landscaped. Based on revisions to address the ingress/egress easement in Attachment 3 the applicant shall recalculate the landscape requirements to meet the 15% minimum requirement as part of the Building Permit plan submittal as part of the parking lot modifications to accommodate the ingress/egress easement for the Newberg Veterinary Hospital.

2. All areas subject to the final design review plan and not otherwise improved shall be landscaped.

Finding: Landscaping will be provided on the site in areas that are not a building, parking, drive aisles or walkways as represented on the Landscape Plan Sheet L1.0. This criterion is met.

3. The following landscape requirements shall apply to the parking and loading areas:

a. A parking or loading area providing 10 or more spaces shall be improved with defined landscaped areas totaling no less than 25 square feet per parking space.

Finding: There are 79 parking spaces (revised per the ingress/egress easement and applied conditions) proposed on the development site. Because no information has been provided on the 25 square feet of landscape islands per parking stall requirement staff cannot determine compliance. The applicant shall provide calculations with the building permit application that a parking or loading area providing 10 or more spaces shall be improved with defined landscaped areas totaling no less than 25 square feet per parking space as art of the Building Permit plan submittal.

This criterion will be met with compliance with the aforementioned condition of approval.

b. A parking, loading area, or drive aisle which runs adjacent to a property line shall be separate from any lot line adjacent to a street by a landscaped strip at least 10 feet in interior width or the width of the required yard, whichever is greater, and any other lot line by a landscaped strip of at least five feet in interior width. See subsections (B)(3)(c) and (d) of this section for material to plant within landscape strips.

Finding: The landscape strip along the street frontage is 10 feet in width and meets the requirement. The interior yards have a minimum 5-foot landscape strip or larger and meets the requirement. Planting material utilized is discussed in (B)(3)(c) and (d).

c. A landscaped strip separating a parking area, loading area, or drive aisle from a street shall contain street trees spaced as appropriate to the species, not to exceed 50 feet apart on average, and a combination of shrubs and ground cover, or lawn. This landscaping shall provide partial screening of these areas from the street.

Finding: Street trees are existing on N Brutscher Street that meet the criterion. The planter strip is rough grass. Behind the landscape strip and sidewalk are shrubbery that provides partial screening. The criterion is met.

d. A landscaped strip separating a parking area, loading area, or drive aisle from an interior lot line shall contain any combination of trees, shrubs, ground cover or lawn. Plant material shall be selected from at least two different plant material groups (example: trees and shrubs, or lawn and shrubs, or lawn and trees and shrubs).

Finding: Landscaping proposed on the Landscape Plan Sheet L1.0 identifies a combination of groundcover, shrubs and trees (deciduous and evergreen) along the interior property lines and exceeds the minimum of two different plant material groups and meets the criterion.

e. Landscaping in a parking or loading area shall be located in defined landscaped areas which are uniformly distributed throughout the parking or loading area.

Finding: Landscape islands are proposed and distributed uniformly through the parking areas. The condition on a landscape island associated with the ingress/egress easement for the Newberg Veterinary Hospital with further the distribution of landscaping in parking areas. The loading area is separated from parking areas by a landscape island. The criterion is met.

f. Landscaping areas in a parking lot, service drive or loading area shall have an interior width of not less than five feet.

Finding: The Site Plan Sheet C1 identifies a typical landscape island with of 5 feet from exterior curb to exterior curb which does not meet the requirement. The applicant shall revise plans to identify landscaping areas in a parking lot, service drive or loading area that have an interior width of not less than five feet as part of the Building Permit application submittal.

This criterion will be met with compliance with the aforementioned condition of approval.

g. All multifamily, institutional, commercial, or industrial parking areas, service drives, or loading zones which abut a residential district shall be enclosed with a 75 percent opaque, site-obscuring fence, wall or evergreen hedge along and immediately adjacent to any interior property line which abuts the residential district. Landscape plantings must be large enough to provide the required minimum screening requirement within 12 months after initial installation. Adequate provisions shall be maintained to protect walls, fences or plant materials from being damaged by vehicles using said parking areas.

Finding: This criterion does not apply because the development site is not adjacent to a residential district.

h. An island of landscaped area shall be located to separate blocks of parking spaces. At a minimum, one deciduous shade tree per seven parking spaces shall be planted to create a partial tree canopy over and around the parking area. No more than seven parking spaces may be grouped together without an island separation unless otherwise approved by the director based on the following alternative standards:

i. Provision of a continuous landscaped strip, with a five-foot minimum width, which runs perpendicular to the row of parking spaces (see Appendix A, Figure 13).

ii. Provision of tree planting landscape islands, each of which is at least 16 square feet in size, and spaced no more than 50 feet apart on average,

within areas proposed for back-to-back parking (see Appendix A, Figure 14).

Finding: The Landscape Plan Sheet L1.0 indicates that the parking areas are broken up with landscape islands so that no more than seven parking spaces in a row occur. Each of the landscape islands has an identified deciduous tree. The landscape island on the north side of the site is located within a public wastewater easement. Trees are not permitted to be planted within a public wastewater easement. The applicant shall modify the landscape plan to not show parking lot shade trees in the public wastewater easement.

In the front yard parking area, a continuous landscape strip is also provided to break up row of parking that exceeds the 5-foot width. The criterion is met.

4. Trees, Shrubs and Ground Covers. The species of street trees required under this section shall conform to those authorized by the city council through resolution. The director shall have the responsibility for preparing and updating the street tree species list which shall be adopted in resolution form by the city council.

a. Arterial and minor arterial street trees shall have spacing of approximately 50 feet on center. These trees shall have a minimum two-inch caliper tree trunk or stalk at a measurement of two feet up from the base and shall be balled and burlapped or boxed.

Finding: N Brutscher Street is a collector street and not an arterial street. This criterion does not apply.

b. Collector and local street trees shall be spaced approximately 35 to 40 feet on center. These trees shall have a minimum of a one and one-half or one and three-fourths inch tree trunk or stalk and shall be balled and burlapped or boxed.

Finding: N Brutscher Street is a collector street. The street trees are existing, and no new trees are proposed or required. This criterion is met.

c. Accent Trees. Accent trees are trees such as flowering cherry, flowering plum, crab-apple, Hawthorne and the like. These trees shall have a minimum one and one-half inch caliper tree trunk or stalk and shall be at least eight to 10 feet in height. These trees may be planted bare root or balled and burlapped. The spacing of these trees should be approximately 25 to 30 feet on center.

Finding: Accent trees are proposed throughout the site development area. The trees exceed the 1 ½ inch caliper and spacing requirement. This criterion is met.

> ***d. All broad-leafed evergreen shrubs and deciduous shrubs shall have a minimum height of 12 to 15 inches and shall be balled and burlapped or come from a two-gallon can. Gallon-can size shrubs will not be allowed except in ground covers. Larger sizes of shrubs may be required in special areas and locations as specified by the design review board. Spacing of these shrubs shall be typical for the variety, three to eight feet, and shall be identified on the landscape planting plan.***

Finding: The Landscape Plan Sheet L1.0 identifies a variety of shrubs to be used on development site. All shrubs meet the minimum two-gallon size and meet the spacing requirement. This criterion is met.

> ***e. Ground Cover Plant Material. Ground cover plant material such as greening juniper, cotoneaster, minor Bowles, English ivy, hypericum and the like shall be one of the following sizes in specified spacing for that size:***

Gallon cans	***3 feet on center***
4'' containers	***2 feet on center***
2-1/4'' containers	***18'' on center***
Rooted cuttings	***12'' on center***

Finding: The applicant's Landscape Plan Sheet L1.0 identifies the size of containers for ground cover. The container size and spacing meet the criterion. This criterion is met.

> ***5. Automatic, underground irrigation systems shall be provided for all areas required to be planted by this section. The director shall retain the flexibility to allow a combination of irrigated and nonirrigated areas. Landscaping material used within nonirrigated areas must consist of drought- resistant varieties. Provision must be made for alternative irrigation during the first year after initial installation to provide sufficient moisture for plant establishment.***

Finding: The Landscape Plan Sheet L1.0 has under General Notes that all the landscaping will be irrigated with an underground irrigation system. The criterion is met.

6. Required landscaping shall be continuously maintained.

Finding: The applicant is proposing new landscape areas. Following the first year, the applicant shall continuously maintain all landscape areas in accordance with NMC 15.420.010B.6.

This criterion will be met if the aforementioned condition of approval is adhered to.

7. Maximum height of tree species shall be considered when planting under overhead utility lines.

Finding: There are no existing overhead facilities that would interfere with the proposed tree plantings. The criterion is met.

8. Landscaping requirements and standards for parking and loading areas (subsection (B)(3) of this section) will apply to development proposals unless the institution has addressed the requirements and standards by an approved site development master plan. With an approved site development master plan, the landscape requirements will be reviewed through an administrative Type I review process.

Finding: This criterion does not apply because the development is not an institutional use.

9. In the M-4 zone, landscaping requirements and standards for parking and loading areas (subsection (B)(3) of this section) do not apply unless within 50 feet of a residential district.

Finding: This criterion does not apply because the development site is not in the M-4 zone.

C. Installation of Landscaping. All landscaping required by these provisions shall be installed prior to the issuance of occupancy permits, unless security equal to 110 percent of the cost of the landscaping as determined by the director is filed with the city, insuring such installation within six months of occupancy. A security – cash, certified check, time certificates of deposit, assignment of a savings account, bond or such other assurance of completion as shall meet with the approval of the city attorney – shall satisfy the security requirements. If the installation of the landscaping is not completed within the six-month period, or within an extension of time authorized by the director, the security may be used by the city to complete the installation. Upon completion of the installation, any portion of the remaining security deposited with the city shall be returned to the applicant.

Finding: The applicant has provided in their narrative that landscaping will be installed prior to final occupancy permits, or the appropriate security provided per this subsection. All proposed landscaping installation shall comply with NMC 15.420.010C. If the applicant does not install the required landscaping prior to the issuance of occupancy permits then, per Section 15.420.010(C), a security equal to 110 percent the cost of the landscaping is required.

This criterion will be met with the adherence to the aforementioned condition of approval.

15.420.020 Landscaping and amenities in public rights-of-way.

The following standards are intended to create attractive streetscapes and inviting pedestrian spaces. A review body may require any of the following landscaping and amenities to be placed in abutting public rights-of-way as part of multifamily, commercial, industrial, or institutional design reviews, or for subdivisions and planned unit developments. In addition, any entity improving existing rights-of-way should consider including these elements in the project. A decision to include any amenity shall be based on comprehensive plan guidelines, pedestrian volumes in the area, and the nature of surrounding development.

A. Pedestrian Space Landscaping. Pedestrian spaces shall include all sidewalks and medians used for pedestrian refuge. Spaces near sidewalks shall provide plant material for cooling and dust control, and street furniture for comfort and safety, such as benches, waste receptacles and pedestrian-scale lighting. These spaces should be designed for short-term as well as long-term use. Elements of pedestrian spaces shall not obstruct sightlines and shall adhere to any other required city safety measures. Medians used for pedestrian refuge shall be designed for short-term use only with plant material for cooling and dust control, and pedestrian-scale lighting. The design of these spaces shall facilitate safe pedestrian crossing with lighting and accent paving to delineate a safe crossing zone visually clear to motorists and pedestrians alike.

1. Street trees planted in pedestrian spaces shall be planted according to NMC 15.420.010(B)(4).

Finding: Street trees are existing along the property frontage of N Brutscher Street. The standard is not applicable.

2. Pedestrian spaces shall have low (two and one-half feet) shrubs and ground covers for safety purposes, enhancing visibility and discouraging criminal activity.

a. Plantings shall be 90 percent evergreen year-round, provide seasonal interest with fall color or blooms, and at maturity maintain growth within the planting area (refer to plant material matrix below).

b. Plant placement shall also adhere to clear sight line requirements as well as any other relevant city safety measures.

Finding: Not applicable as the landscape strip is already improved with grass.

3. Pedestrian-scale lighting shall be installed along sidewalks and in medians used for pedestrian refuge.

a. Pole lights as well as bollard lighting may be specified; however, the amount and type of pedestrian activity during evening hours, e.g., transit stops, nighttime service districts, shall ultimately determine the type of fixture chosen.

b. Luminaire styles shall match the area/district theme of existing luminaires and shall not conflict with existing building or roadway lights causing glare.

c. Lighting heights and styles shall be chosen to prevent glare and to designate a clear and safe path and limit opportunities for vandalism (see Appendix A, Figure 17, Typical Pedestrian Space Layouts).

d. Lighting shall be placed near the curb to provide maximum illumination for spaces furthest from building illumination. Spacing shall correspond to that of the street trees to prevent tree foliage from blocking light.

Finding: This criterion is not applicable because pedestrian scale lighting is not proposed or required for the proposed site improvements. The landscape strip is already improved with street trees and grass.

4. Street furniture such as benches and waste receptacles shall be provided for spaces near sidewalks only.

a. Furniture should be sited in areas with the heaviest pedestrian activity, such as downtown, shopping districts, and shopping centers.

b. Benches should be arranged to facilitate conversation between individuals with L-shaped arrangements and should face the area focal point, such as shops, fountains, plazas, and should divert attention away from nearby traffic.

Finding: This criterion is not applicable because street furniture is not required within this area of the C-2 district.

5. Paving and curb cuts shall facilitate safe pedestrian crossing and meet all ADA requirements for accessibility.

Finding: Findings and conditions of approval have been recommended under Street Standards in Section 15.505.030 that address curb cuts and paving to meet ADA requirements.

> ***B. Planting Strip Landscaping. All planting strips shall be landscaped. Planting strips provide a physical and psychological buffer for pedestrians from traffic with plant material that reduces heat and dust, creating a more comfortable pedestrian environment. Planting strips shall have different arrangements and combinations of plant materials according to the frequency of on-street parking (see Appendix A, Figures 18 and 19).***
>
> > ***1. Planting strips which do not have adjacent parking shall have a combination of ground covers, low (two and one-half feet) shrubs and trees. Planting strips adjacent to frequently used on-street parking, as defined by city staff, shall only have trees protected by tree grates, and planting strips adjacent to infrequently used on-street parking shall be planted with ground cover as well as trees (see Appendix A, Figures 18 and 19, Typical Planting Strip Layouts). District themes or corridor themes linking individual districts should be followed utilizing a unifying plant characteristic, e.g., bloom color, habit, or fall color. When specifying thematic plant material, monocultures should be avoided, particularly those species susceptible to disease.***

Finding: The landscape strip is already improved with street trees and grass. The grass is overgrown and has not been maintained. To comply with 15.420.020(B)(1) the grass in the landscape strip along N Brutscher Street shall be re-established.

> > ***2. Street trees shall be provided in all planting strips as provided in NMC 15.420.010(B)(4).***
> >
> > > ***a. Planting strips without adjacent parking or with infrequent adjacent parking shall have street trees in conjunction with ground covers and/or shrubs.***
> > >
> > > ***b. Planting strips with adjacent parking used frequently shall have only street trees protected by tree grates.***

Finding: The landscape strip is already improved with street trees. A prior condition requires to re-establish the grass in the landscape strip.

> > ***3. Shrubs and ground covers shall be provided in planting strips without adjacent parking with low (two and one-half feet) planting masses to enhance visibility, discourage criminal activity, and provide a physical as well as psychological buffer from passing traffic.***

a. Plantings shall be 90 percent evergreen year-round, provide seasonal interest with fall color or blooms and at maturity maintain growth within the planting area.

b. Ground cover able to endure infrequent foot traffic shall be used in combination with street trees for planting strips with adjacent occasional parking (refer to plant material matrix below).

c. All plant placement shall adhere to clear sight line requirements as well as any other relevant city safety measures.

Finding: The landscape strip is already improved with street trees. A prior condition requires to re-establish the grass in the landscape strip.

C. Maintenance. All landscapes shall be maintained for the duration of the planting to encourage health of plant material as well as public health and safety. All street trees and shrubs shall be pruned to maintain health and structure of the plant material for public safety purposes.

Finding: The landscape strip is already improved with street trees that meet the requirement. A prior condition requires to re-establish the grass in the landscape strip. The applicant is required to maintain the landscape strip in accordance with NMC15.420.020(C).

The criterion is not applicable.

D. Exception. In the AI airport industrial district and AR airport residential district, no landscape or amenities except for grass are required for any area within 50 feet of aircraft operation areas including aircraft parking areas, taxiways, clear areas, safety areas, object-free areas, and the runway.

Finding: This criterion is not applicable because the site is not in the AI or AR residential district.

5. Signs. Signs shall comply with NMC 15.435.010 et seq dealing with signs.

15.435.010 Purpose.

A. The citizens of Newberg desire a clean, attractive, economically vibrant, and safe community. Well-planned and constructed signs can contribute to the community's success by directing and informing the public about commercial and other activities, and by creating attractive commercial and other neighborhoods. On the other hand, unregulated signage can create clutter, distractions, and hazards.

B. These regulations are designed:

1. To improve, maintain and preserve Newberg as a pleasing environment so as to improve the quality of life of all residents.

2. To enhance the attractiveness of Newberg as a place to conduct business.

3. To enable the identification of places of residence and business.

4. To allow freedom of expression.

5. To reduce distractions and obstructions from signs which would adversely affect safety.

6. To reduce the hazards from improperly placed or constructed signs. [Ord. 2782 § 1 (Exh. A), 9-8-15; Ord. 2499, 11-2-98. Code 2001 § 151.590.]

15.435.030 Permit required.

A. Except as follows, no person or entity shall place any sign within the city without first obtaining a permit from the director.

B. The following do not require sign permits, but must otherwise comply with the standards of this chapter:

1. Minor freestanding signs.

2. Minor attached signs.

3. Temporary signs.

4. Portable signs.

5. Flag display (one allowed on each street frontage).

6. If any of the signs listed above require permits under the current edition of the Oregon Structural Specialty Code, the sign shall be placed only following the issuance of such permit. [Ord. 2782 § 1 (Exh. A), 9-8-15; Ord. 2499, 11-2-98. Code 2001 § 151.592.]

Finding: The applicant has a variety of signs for the development. Wall signs are proposed on the west, east, north, and south building elevations. Additionally, a monument sign is proposed on the south side of the southern entrance. Finally, a directional sign is identified on the south side of the northern site entrance. The complete details of the signage have not been provided with the application. Therefore, no signage is approved as a part of this application. Sign review applications will be required in order to approve signs.

This section of the NMC will be met with adherence to the aforementioned condition of approval.

> ***6. Manufactured Dwelling, Mobile Home and RV Parks. Manufactured dwelling and mobile home parks shall also comply with the standards listed in NMC 15.445.075 through 15.445.100 in addition to the other clear and objective criteria listed in this section. RV parks also shall comply with NMC 15.445.170 in addition to the other criteria listed in this section.***

Finding: The criteria of NMC 445.075 through 15.445.100 do not apply because a manufactured dwelling or mobile home park is not being proposed.

> ***7. Zoning District Compliance. The proposed use shall be listed as a permitted or conditionally permitted use in the zoning district in which it is located as found in NMC 15.305.010 through 15.336.020. Through this site review process, the director may make a determination that a use is determined to be similar to those listed in the applicable zoning district, if it is not already specifically listed. In this case, the director shall make a finding that the use shall not have any different or more detrimental effects upon the adjoining neighborhood area than those specifically listed.***

Finding: The site is in the C-2 district. The proposed use is a permitted use per NMC 15.305.020. As noted in this report the proposed use complies with NMC 15.305.010 through 15.336.020 as conditioned.

The criteria are met.

> ***8. Subdistrict Compliance. Properties located within subdistricts shall comply with the provisions of those subdistricts located in NMC 15.340.010 through 15.348.060.***

Finding: The development site is located in the Airport Overlay Inner Horizontal Surface (AIHS).

> ***15.340.040 Procedures.***
> ***B. FAA Notice Required. To meet the requirements of Federal Aviation Regulations Part 77, FAA Form 7460-1, Notice of Proposed Construction or Alteration, must be submitted for any construction or alteration of greater height than an imaginary surface extending outward and upward at a slope of 50 to one for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of the airport. Notice is not required for construction or alteration that is shielded by existing structures or terrain as defined in Section 77.15 of Part 77 of the Federal Aviation Regulations.***

Finding: <u>The applicant shall file with the FAA, Part 77, FAA Form 7460-1, Notice of Proposed Construction or Alteration and submit a copy of the FAA determination as part of the Building Permit plan submittal.</u>

9. Traffic Study Improvements. If a traffic study is required, improvements identified in the traffic study shall be implemented as required by the director.

15.220.030(B)(14) Traffic Study.

A traffic study shall be submitted for any project that generates in excess of 40 trips per p.m. peak hour. This requirement may be waived by the director when a determination is made that a previous traffic study adequately addresses the proposal and/or when off-site and frontage improvements have already been completed which adequately mitigate any traffic impacts and/or the proposed use is not in a location which is adjacent to an intersection which is functioning at a poor level of service. A traffic study may be required by the director for projects below 40 trips per p.m. peak hour where the use is located immediately adjacent to an intersection functioning at a poor level of service. The traffic study shall be conducted according to the City of Newberg design standards. [Ord. 2619, 5-16-05; Ord. 2451, 12-2-96. Code 2001 § 151.192.]

Finding: The applicant has submitted a traffic impact analysis performed by Global Transportation Engineering. The study did not find impacts of the proposed development would create new problems on the surrounding transportation facilities. Oregon Department of Transportation reviewed the traffic impact analysis and provided substantial comments regarding the methodology. They did conclude, however, that a new analysis incorporating their recommendation would not alter the outcomes. This requirement has been met.

10. Alternative Circulation, Roadway Frontage Improvements and Utility Improvements

If more than $30,000 of improvements are made to the property, street/frontage improvements can be required, see NMC 12.05.090.

Chapter 12.05 Street and Sidewalks

12.05.090 Permits and certificates.

A. Concurrent with the issuance of a building permit for the construction of a building for residential use or business structures or an addition to a dwelling or business structure, the value of which is $30,000 or more except as the city engineer may require on building permits of lesser value in accordance with NMC 12.05.040, the owner, builder or contractor to whom the building permit is issued shall meet the following requirements:

1. Construct a sidewalk within the dedicated right-of-way for the full frontage in which a sidewalk in good repair does not exist. The sidewalk construction shall be completed within the building construction period or prior to issuance of an occupancy permit, whichever is the lesser.

Finding: The submitted plans show an existing 5-feet-wide Type A sidewalk with planter strip along the project frontage. Because the condition of the existing sidewalks is uncertain, the applicant will be responsible for replacement of any sidewalk panels that don't meet current ADA standards along the project frontage. Determination of any sidewalk panels to be replaced will be part of the permit plan review process.

This criterion will be met if the aforementioned condition of approval is adhered to.

2. Dedicate right-of-way in accordance with the city transportation plan.

Finding: The submitted plans show an existing 5-feet-wide Type A sidewalk that is located outside of the existing public right-of-way. Because the existing Type A sidewalk is outside of the existing right-of-way, the applicant will be required to dedicate sufficient right-of-way to ensure that the 5-feet-wide Type A sidewalk is located within the public right-of-way in accordance with the Public Works Design and Construction Standards which require 1-foot from back of sidewalk to the right-of-way.

This criterion will be met if the aforementioned condition of approval is adhered to.

Chapter 15.220 Site Design Review Requirements
15.220.030 Site design review requirements. B

13. Roadways and Utilities. The proposed plans shall indicate any public improvements that will be constructed as part of the project, including, but not limited to, roadway and utility improvements.

Findings: The applicant is proposing new streetlights and one new fire hydrant. This requirement is met.

15.430.010 Underground utility installation.
A. All new utility lines, including but not limited to electric, communication, natural gas, and cable television transmission lines, shall be placed underground. This does not include surface-mounted transformers, connections boxes, meter cabinets, service cabinets, temporary facilities during construction, and high-capacity electric lines operating at 50,000 volts or above.
B. Existing utility lines shall be placed underground when they are relocated, or when an addition or remodel requiring a Type II design review is proposed, or when a developed area is annexed to the city.
C. The director may make exceptions to the requirement to underground utilities based on one or more of the following criteria:
1. The cost of undergrounding the utility is extraordinarily expensive.

2. There are physical factors that make undergrounding extraordinarily difficult.
3. Existing utility facilities in the area are primarily overhead and are unlikely to be changed.

Finding: The submitted narrative and plans describe all new utilities installed underground. Because final plans have not been submitted, final plans showing utilities installed underground will be required with the building permit application.

This criterion will be met if the aforementioned condition of approval is adhered to.

15.505 Public Improvements Standards

15.505.020 Applicability.
The provision and utilization of public facilities and services within the City of Newberg shall apply to all land developments in accordance with this chapter. No development shall be approved unless the following improvements are provided for prior to occupancy or operation, unless future provision is assured in accordance with NMC 15.505.030(E).

A. Public Works Design and Construction Standards. The design and construction of all improvements within existing and proposed rights-of-way and easements, all improvements to be maintained by the city, and all improvements for which city approval is required shall comply with the requirements of the most recently adopted Newberg public works design and construction standards.

Finding: All improvements reviewed under this application are identified in the NMC 15.505 section specific to them and are conditioned to comply with the Public Works Design and Construction Standards in those sections. This requirement is met.

B. Street Improvements. All projects subject to a Type II design review, partition, or subdivision approval must construct street improvements necessary to serve the development.

Finding: N Brutscher Street adjacent to the proposed development is already improved. This requirement is met.

C. Water. All developments, lots, and parcels within the City of Newberg shall be served by the municipal water system as specified in Chapter 13.15 NMC.

Finding: The plans show a 4-inch and a 6-inch water service connection to the water line in N Brutscher Street. They also show a new 4-inch meter, a fire department connection, and a new fire hydrant. Fire flow test results need to be submitted with Building Permit applications to be reviewed by the Fire Marshall for approval.

This criterion will be met if the aforementioned condition of approval is adhered to.

> ***D. Wastewater. All developments, lots, and parcels within the City of Newberg shall be served by the municipal wastewater system as specified in Chapter 13.10 NMC.***

Finding: The submitted plans show a wastewater connection to the manhole at the north end of the property. This requirement is met.

> ***E. Stormwater. All developments, lots, and parcels within the City of Newberg shall manage stormwater runoff as specified in Chapters 13.20 and 13.25 NMC.***

Finding: The proposed development will create more than 500 square feet of impervious area. The applicant has submitted a preliminary stormwater report. Two stormwater management facilities are shown on the plans. They connect to a manhole which connects to the stormwater collection line in N Brutscher Street. This requirement is met.

> ***F. Utility Easements. Utility easements shall be provided as necessary and required by the review body to provide needed facilities for present or future development of the area.***

Finding: The title report submitted with the application identifies a sanitary sewer easement and a public utility easement within the property. The plans do not clearly show these easements. The 6-inch sanitary sewer line and manhole in the shared driveway and north end of the site should have an easement associated with them. There should also be a public utility easement along the site frontage. Because final plans have not been submitted, final plans identifying existing easements on the property, any necessary easements for the proposed development and a 10-foot-wide public utility easement along the project frontage shall be submitted with the Building Permit application. Recorded easements are to be submitted as part of the building permit process.

This criterion will be met if the aforementioned condition of approval is adhered to.

> ***G. City Approval of Public Improvements Required. No building permit may be issued until all required public facility improvements are in place and approved by the director, or are otherwise bonded for in a manner approved by the review authority, in conformance with the provisions of this code and the Newberg Public Works Design and Construction Standards. [Ord. 2810 § 2 (Exhs. B, C), 12-19-16.]***

Finding: Any required public improvement permit(s) for this project must be submitted, approved and issued prior to Building Permits being issued.

This criterion will be met if the aforementioned condition of approval is adhered to.

15.505.030 Street standards.

A. Purpose. The purpose of this section is to:

1. Provide for safe, efficient, and convenient multi-modal transportation within the City of Newberg.

2. Provide adequate access to all proposed and anticipated developments in the City of Newberg. For purposes of this section, "adequate access" means direct routes of travel between destinations; such destinations may include residential neighborhoods, parks, schools, shopping areas, and employment centers.

3. Provide adequate area in all public rights-of-way for sidewalks, wastewater and water lines, stormwater facilities, natural gas lines, power lines, and other utilities commonly and appropriately placed in such rights-of-way. For purposes of this section, "adequate area" means space sufficient to provide all required public services to standards defined in this code and in the Newberg public works design and construction standards.

B. Applicability. The provisions of this section apply to:

1. The creation, dedication, and/or construction of all public streets, bike facilities, or pedestrian facilities in all subdivisions, partitions, or other developments in the City of Newberg.

2. The extension or widening of existing public street rights-of-way, easements, or street improvements including those which may be proposed by an individual or the city, or which may be required by the city in association with other development approvals.

3. The construction or modification of any utilities, pedestrian facilities, or bike facilities in public rights-of-way or easements.

4. The designation of planter strips. Street trees are required subject to Chapter 15.420 NMC.

5. Developments outside the city that tie into or take access from city streets.

C. Layout of Streets, Alleys, Bikeways, and Walkways. Streets, alleys, bikeways, and walkways shall be laid out and constructed as shown in the Newberg transportation system plan. In areas where the transportation system plan or future street plans do not show specific transportation improvements, roads and streets shall be laid out so as to conform to previously approved subdivisions, partitions, and other developments for adjoining properties, unless it is found in the public interest to modify these patterns. Transportation improvements shall conform to the standards within the Newberg Municipal Code, the Newberg public works design and construction standards, the Newberg transportation system plan, and other adopted city plans.

D. Construction of New Streets. Where new streets are necessary to serve a new development, subdivision, or partition, right-of-way dedication and full street

improvements shall be required. Three-quarter streets may be approved in lieu of full street improvements when the city finds it to be practical to require the completion of the other one-quarter street improvement when the adjoining property is developed; in such cases, three-quarter street improvements may be allowed by the city only where all of the following criteria are met:

1. The land abutting the opposite side of the new street is undeveloped and not part of the new development; and

2. The adjoining land abutting the opposite side of the street is within the city limits and the urban growth boundary.

Finding: N Brutscher Street is improved adjacent to the property. The requirements of A, B, C, and D are met.

E. Improvements to Existing Streets.

1. All projects subject to partition, subdivision, or Type II design review approval shall dedicate right-of-way sufficient to improve the street to the width specified in subsection (G) of this section.

Finding: The submitted plans show an existing 5-feet-wide Type A sidewalk that is located outside of the existing public right-of-way. Because the existing Type A sidewalk is outside of the existing right-of-way, the applicant will be required to dedicate sufficient right-of-way to ensure that the 5-feet-wide Type A sidewalk is located within the public right-of-way in accordance with the Public Works Design and Construction Standards which require 1-foot from back of sidewalk to the right-of-way.

This criterion will be met if the aforementioned condition of approval is adhered to.

2. All projects subject to partition, subdivision, or Type II design review approval must construct a minimum of a three-quarter street improvement to all existing streets adjacent to, within, or necessary to serve the development. The director may waive or modify this requirement where the applicant demonstrates that the condition of existing streets to serve the development meets city standards and is in satisfactory condition to handle the projected traffic loads from the development. Where a development has frontage on both sides of an existing street, full street improvements are required.

Finding: N Brutscher Street adjacent to the property is improved. Due to the existence of the curb, sidewalk, and planter strip along N Brutscher Street, the applicant will not be required to update those cross-sectional elements to meet NMC 15.505.030(G). This requirement does not apply.

3. In lieu of the street improvement requirements outlined in NMC 15.505.040(B), the review authority may elect to accept from the applicant monies to be placed in a fund dedicated to the future reconstruction of the subject street(s). The amount of money deposited with the city shall be 100 percent of the estimated cost of the required street improvements (including any associated utility improvements), and 10 percent of the estimated cost for inflation. Cost estimates used for this purpose shall be based on preliminary design of the constructed street provided by the applicant's engineer and shall be approved by the director.

Finding: The applicant is not proposing a fee in lieu of street improvements. This criterion is not applicable.

F. Improvements Relating to Impacts. Improvements required as a condition of development approval shall be roughly proportional to the impact of the development on public facilities and services. The review body must make findings in the development approval that indicate how the required improvements are roughly proportional to the impact. Development may not occur until required transportation facilities are in place or guaranteed, in conformance with the provisions of this code. If required transportation facilities cannot be put in place or be guaranteed, then the review body shall deny the requested land use application.

Finding: The proposed improvements are directly related to the impacts of the development. This criterion is met.

G. ***Street Width and Design Standards.***

1. Design Standards. All streets shall conform with the standards contained in Table 15.505.030(G). Where a range of values is listed, the director shall determine the width based on a consideration of the total street section width needed, existing street widths, and existing development patterns. Preference shall be given to the higher value. Where values may be modified by the director, the overall width shall be determined using the standards under subsections (G)(2) through (10) of this section.

Table 15.505.030(G) Street Design Standards

Type of Street	*Right-of-Way Width*	*Curb-to-Curb Pavement Width*	*Motor Vehicle Travel Lanes*	*Median Type*	*Striped Bike Lane (Both Sides)*	*On-Street Parking*
Arterial Streets						
Expressway**	***ODOT***	***ODOT***	***ODOT***	***ODOT***	***ODOT***	***ODOT***
Major arterial	***95 – 100 feet***	***74 feet***	***4 lanes***	***TWLTL or median****	***Yes***	***No****
Minor arterial	***69 – 80 feet***	***48 feet***	***2 lanes***	***TWLTL or median****	***Yes***	***No****
Collectors						
Major	***57 – 80 feet***	***36 feet***	***2 lanes***	***None****	***Yes***	***No****
Minor	***61 – 65 feet***	***40 feet***	***2 lanes***	***None****	***Yes****	***Yes****
Local Streets						
Local residential	***54 – 60 feet***	***32 feet***	***2 lanes***	***None***	***No***	***Yes***
Limited residential, parking both sides	***44 – 50 feet***	***28 feet***	***2 lanes***	***None***	***No***	***Yes***
Limited residential, parking one side	***40 – 46 feet***	***26 feet***	***2 lanes***	***None***	***No***	***One side***
Local commercial/ Industrial	***55 – 65 feet***	***34 feet***	***2 lanes***	***None****	***No****	***Yes****

Table 15.505.030(G) Street Design Standards

Type of Street	*Right-of-Way Width*	*Curb-to-Curb Pavement Width*	*Motor Vehicle Travel Lanes*	*Median Type*	*Striped Bike Lane (Both Sides)*	*On-Street Parking*

* ***May be modified with approval of the director. Modification will change overall curb-to-curb and right-of-way width. Where a center turn lane is not required, a landscaped median shall be provided instead, with turning pockets as necessary to preserve roadway functions.***

** ***All standards shall be per ODOT expressway standards.***

Finding: N Brutscher is a major collector and is improved adjacent to the property. Due to the existence of the curb, sidewalk, and planter strip along N Brutscher Street, the applicant will not be required to update those cross-sectional elements to meet NMC 15.505.030(G). This requirement does not apply.

> ***2. Motor Vehicle Travel Lanes. Collector and arterial streets shall have a minimum width of 12 feet.***

Finding: No new collector or arterial streets are proposed. This criterion is not applicable.

> ***3. Bike Lanes. Striped bike lanes shall be a minimum of six feet wide. Bike lanes shall be provided where shown in the Newberg transportation system plan.***

Finding: N Brutscher is a major collector with existing stripped bike lanes along the project's frontage. This requirement is met.

> ***4. Parking Lanes. Where on-street parking is allowed on collector and arterial streets, the parking lane shall be a minimum of eight feet wide.***

Finding: There are no parking lanes proposed on the collector street. This criterion is not applicable.

5. Center Turn Lanes. Where a center turn lane is provided, it shall be a minimum of 12 feet wide.

Finding: A center turn lane is shown existing on N Brutscher Street. No new center turn lanes are proposed. This criterion is not applicable.

6. Limited Residential Streets. Limited residential streets shall be allowed only at the discretion of the review authority, and only in consideration of the following factors:

a. The requirements of the fire chief shall be followed.
b. The estimated traffic volume on the street is low, and in no case more than 600 average daily trips.
c. Use for through streets or looped streets is preferred over cul-de-sac streets.
d. Use for short blocks (under 400 feet) is preferred over longer blocks.
e. The total number of residences or other uses accessing the street in that block is small, and in no case more than 30 residences.
f. On-street parking usage is limited, such as by providing ample off-street parking, or by staggering driveways so there are few areas where parking is allowable on both sides.

Finding: Limited residential streets are not proposed. These criteria are not applicable.

7. Sidewalks. Sidewalks shall be provided on both sides of all public streets. Minimum width is five feet.

Finding: The submitted plans show an existing 5-feet-wide Type A sidewalk with planter strip along the project frontage. Because the condition of the existing sidewalks is uncertain, the applicant will be responsible for replacement of any sidewalk panels that don't meet current ADA standards along the project frontage. Determination of any sidewalk panels to be replaced will be part of the permit plan review process.

This criterion will be met if the aforementioned condition of approval is adhered to.

8. Planter Strips. Except where infeasible, a pl. er strip shall be provided between the sidewalk and the curb line, with a minimum width of five feet. This strip shall be landscaped in accordance with the standards in NMC 15.420.020. Curb-side sidewalks may be allowed on limited residential streets. Where curb-side sidewalks are allowed, the following shall be provided:

a. Additional reinforcement is done to the sidewalk section at corners.
b. Sidewalk width is six feet.

Finding: The submitted plans show an existing 5-foot-wide Type A sidewalk with planter strip along the project frontage. This requirement is met.

9. Slope Easements. Slope easements shall be provided adjacent to the street where required to maintain the stability of the street.

Finding: The applicant is not proposing a slope easement. This criterion does not apply.

10. Intersections and Street Design. The street design standards in the Newberg public works design and construction standards shall apply to all public streets, alleys, bike facilities, and sidewalks in the city.

Finding: The applicant is not proposing street improvements, and none are required. This criterion does not apply**.**

11. The planning commission may approve modifications to street standards for the purpose of ingress or egress to a minimum of three and a maximum of six lots through a conditional use permit.

Finding: The applicant is not proposing modifications to street standards for the purpose of ingress or egress. This criterion does not apply.

H. Modification of Street Right-of-Way and Improvement Width. The director, pursuant to the Type II review procedures of Chapter 15.220 NMC, may allow modification to the public street standards of subsection (G) of this section, when the criteria in both subsections (H)(1) and (2) of this section are satisfied:

1. The modification is necessary to provide design flexibility in instances where:

a. Unusual topographic conditions require a reduced width or grade separation of improved surfaces; or

b. Lot shape or configuration precludes accessing a proposed development with a street which meets the full standards of this section; or

c. A modification is necessary to preserve trees or other natural features determined by the city to be significant to the aesthetic character of the area; or

d. A planned unit development is proposed and the modification of street standards is necessary to provide greater privacy or aesthetic quality to the development.

2. Modification of the standards of this section shall only be approved if the director finds that the specific design proposed provides adequate vehicular access based on anticipated traffic volumes.

Finding: The applicant has not proposed modifications to these street standards. This criterion does not apply.

I. Temporary Turnarounds. Where a street will be extended as part of a future phase of a development, or as part of development of an abutting property, the street may be terminated with a temporary turnaround in lieu of a standard

street connection or circular cul-de-sac bulb. The director and fire chief shall approve the temporary turnaround. It shall have an all-weather surface, and may include a hammerhead-type turnaround meeting fire apparatus access road standards, a paved or graveled circular turnaround, or a paved or graveled temporary access road. For streets extending less than 150 feet and/or with no significant access, the director may approve the street without a temporary turnaround. Easements or right-of-way may be required as necessary to preserve access to the turnaround.

Finding: The applicant is not proposing a temporary turnaround. This criterion does not apply.

J. Topography. The layout of streets shall give suitable recognition to surrounding topographical conditions in accordance with the purpose of this code.

Finding: The applicant is not proposing new streets. This requirement does not apply.

K. Future Extension of Streets. All new streets required for a subdivision, partition, or a project requiring site design review shall be constructed to be "to and through": through the development and to the edges of the project site to serve adjacent properties for future development.

Finding: There are no possible future street extensions as part of this project. This criterion does not apply.

L. Cul-de-Sacs.

1. Cul-de-sacs shall only be permitted when one or more of the circumstances listed in this section exist. When cul-de-sacs are justified, public walkway connections shall be provided wherever practical to connect with another street, walkway, school, or similar destination.

a. Physical or topographic conditions make a street connection impracticable. These conditions include but are not limited to controlled access streets, railroads, steep slopes, wetlands, or water bodies where a connection could not be reasonably made.

b. Buildings or other existing development on adjacent lands physically preclude a connection now or in the future, considering the potential for redevelopment.

c. Where streets or accessways would violate provisions of leases, easements, or similar restrictions.

d. Where the streets or accessways abut the urban growth boundary and rural resource land in farm or forest use, except where the adjoining land is designated as an urban reserve area.

2. Cul-de-sacs shall be no more than 400 feet long (measured from the centerline of the intersection to the radius point of the bulb).

3. Cul-de-sacs shall not serve more than 18 single-family dwellings. Each cul-de-sac shall have a circular end with a minimum diameter of 96 feet, curb-to-curb, within a 109-foot minimum diameter right-of-way. For residential uses, a 35-foot radius may be allowed if the street has no parking, a mountable curb, curbside sidewalks, and sprinkler systems in every building along the street.

Finding: The applicant is not proposing a cul-de-sac. These criteria are not applicable.

M. Street Names and Street Signs. Streets that are in alignment with existing named streets shall bear the names of such existing streets. Names for new streets not in alignment with existing streets are subject to approval by the director and the fire chief and shall not unnecessarily duplicate or resemble the name of any existing or platted street in the city. It shall be the responsibility of the land divider to provide street signs.

Finding: The applicant is not naming streets. This criterion does not apply.

N. Platting Standards for Alleys.

1. An alley may be required to be dedicated and constructed to provide adequate access for a development, as deemed necessary by the director.
2. The right-of-way width and paving design for alleys shall be not less than 20 feet wide. Slope easements shall be dedicated in accordance with specifications adopted by the city council under NMC 15.505.010 et seq.
3. Where two alleys intersect, 10-foot corner cut-offs shall be provided.
4. Unless otherwise approved by the city engineer where topographical conditions will not reasonably permit, grades shall not exceed 12 percent on alleys, and centerline radii on curves shall be not less than 100 feet.
5. All provisions and requirements with respect to streets identified in this code shall apply to alleys the same in all respects as if the word "street" or "streets" therein appeared as the word "alley" or "alleys" respectively.

Finding: The applicant is not proposing alleys. These criteria do not apply.

O. Platting Standards for Blocks.

1. Purpose. Streets and walkways can provide convenient travel within a neighborhood and can serve to connect people and land uses. Large, uninterrupted blocks can serve as a barrier to travel, especially walking and biking. Large blocks also can divide rather than unite neighborhoods. To promote connected neighborhoods and to shorten travel distances, the following minimum standards for block lengths are established.
2. Maximum Block Length and Perimeter. The maximum length and perimeters of blocks in the zones listed below shall be according to the following table. The review body for a subdivision, partition, conditional use permit, or a

Type II design review may require installation of streets or walkways as necessary to meet the standards below.

Zone(s)	*Maximum Block Length*	*Maximum Block Perimeter*
R-1	*800 feet*	*2,000 feet*
R-2, R-3, RP, I	*1,200 feet*	*3,000 feet*

3. Exceptions.

a. If a public walkway is installed mid-block, the maximum block length and perimeter may be increased by 25 percent.

b. Where a proposed street divides a block, one of the resulting blocks may exceed the maximum block length and perimeter standards provided the average block length and perimeter of the two resulting blocks do not exceed these standards.

c. Blocks in excess of the above standards are allowed where access controlled streets, street access spacing standards, railroads, steep slopes, wetlands, water bodies, preexisting development, ownership patterns or similar circumstances restrict street and walkway location and design. In these cases, block length and perimeter shall be as small as practical. Where a street cannot be provided because of these circumstances but a public walkway is still feasible, a public walkway shall be provided.

d. Institutional campuses located in an R1 zone may apply the standards for the institutional zone.

e. Where a block is in more than one zone, the standards of the majority of land in the proposed block shall apply.

f. Where a local street plan, concept master site development plan, or specific plan has been approved for an area, the block standards shall follow those approved in the plan. In approving such a plan, the review body shall follow the block standards listed above to the extent appropriate for the plan area.

Finding: The applicant is not proposing blocks. This criterion does not apply.

P. Private Streets. New private streets, as defined in NMC 15.05.030, shall not be created, except as allowed by NMC 15.240.020(L)(2).

Finding: The applicant is not proposing private streets. This criterion does not apply.

Q. Traffic Calming.

1. The following roadway design features may be required in new street construction where traffic calming needs are anticipated:

a. Serpentine alignment.
b. Curb extensions.
c. Traffic diverters/circles.
d. Raised medians and landscaping.
e. Other methods shown effective through engineering studies.

2. Traffic-calming measures such as speed humps should be applied to mitigate traffic operations and/or safety problems on existing streets. They should not be applied with new street constructions.

Finding: The applicant is not proposing traffic calming. This criterion does not apply.

R. Vehicular Access Standards.

1. Purpose. The purpose of these standards is to manage vehicle access to maintain traffic flow, safety, roadway capacity, and efficiency. They help to maintain an adequate level of service consistent with the functional classification of the street. Major roadways, including arterials and collectors, serve as the primary system for moving people and goods within and through the city. Access is limited and managed on these roads to promote efficient through movement. Local streets and alleys provide access to individual properties. Access is managed on these roads to maintain safe maneuvering of vehicles in and out of properties and to allow safe through movements. If vehicular access and circulation are not properly designed, these roadways will be unable to accommodate the needs of development and serve their transportation function.

2. Access Spacing Standards. Public street intersection and driveway spacing shall follow the standards in Table 15.505.R below. The Oregon Department of Transportation (ODOT) has jurisdiction of some roadways within the Newberg city limits, and ODOT access standards will apply on those roadways.

Table 15.505.R. Access Spacing Standards

Roadway Functional Classification	*Area[1]*	*Minimum Public Street Intersection Spacing (Feet)[2]*	*Driveway Setback from Intersecting Street[3]*
Expressway	*All*	*Refer to ODOT Access Spacing Standards*	*NA*

Table 15.505.R. Access Spacing Standards

Roadway Functional Classification	*Area*[1]	*Minimum Public Street Intersection Spacing (Feet)*[2]	*Driveway Setback from Intersecting Street*[3]
Major arterial	*Urban* *CBD*	*Refer to ODOT Access Spacing Standards*	
Minor arterial	*Urban* *CBD*	*500* *200*	*150* *100*
Major collector	*All*	*400*	*150*
Minor collector	*All*	*300*	*100*

[1] *"Urban" refers to intersections inside the city urban growth boundary outside the central business district (C-3 zone).*
"CBD" refers to intersections within the central business district (C-3 zone).
"All" refers to all intersections within the Newberg urban growth boundary.

[2] *Measured centerline to centerline.*

[3] *The setback is based on the higher classification of the intersecting streets. Measured from the curb line of the intersecting street to the beginning of the driveway, excluding flares. If the driveway setback listed above would preclude a lot from having at least one driveway, including shared driveways or driveways on adjoining streets, one driveway is allowed as far from the intersection as possible.*

Finding: The applicant is proposing a new access on N Brutscher Street, which is a major collector. The new access is over 150 feet from the closest intersection. These criteria are met.

3. Properties with Multiple Frontages. Where a property has frontage on more than one street, access shall be limited to the street with the lesser classification.

Finding: This property does not have multiple frontages. This criterion does not apply.

4. Driveways. More than one driveway is permitted on a lot accessed from either a minor collector or local street as long as there is at least 40 feet of lot frontage separating each driveway approach. More than one driveway is permitted on a lot accessed from a major collector as long as there is at least 100 feet of lot frontage separating each driveway approach.

Finding: This proposal adds a second driveway to the site on N Brutscher, which is a major collector. These driveways are more than 100 feet apart. This criterion is met.

5. Alley Access. Where a property has frontage on an alley and the only other frontages are on collector or arterial streets, access shall be taken from the alley only. The review body may allow creation of an alley for access to lots that do not otherwise have frontage on a public street provided all of the following are met:

a. The review body finds that creating a public street frontage is not feasible.

b. The alley access is for no more than six dwellings and no more than six lots.

c. The alley has through access to streets on both ends.

d. One additional parking space over those otherwise required is provided for each dwelling. Where feasible, this shall be provided as a public use parking space adjacent to the alley.

Finding: The applicant's property does not have alley access. These criteria are not applicable.

6. Closure of Existing Accesses. Existing accesses that are not used as part of development or redevelopment of a property shall be closed and replaced with curbing, sidewalks, and landscaping, as appropriate.

Finding: The access existing on this property is currently used. This criterion does not apply.

7. Shared Driveways.

a. The number of driveways onto arterial streets shall be minimized by the use of shared driveways with adjoining lots where feasible. The city shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes. Where there is an abutting developable property, a shared driveway shall be provided as appropriate. When shared driveways are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway temporarily ends at the property line, but may be accessed or extended in the future as the adjacent parcel develops. "Developable" means that a parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).

b. Access easements (i.e., for the benefit of affected properties) and maintenance agreements shall be recorded for all shared driveways, including pathways, at the time of final plat approval or as a condition of site development approval.

c. No more than four lots may access one shared driveway.

d. Shared driveways shall be posted as no parking fire lanes where required by the fire marshal.

e. Where three lots or three dwellings share one driveway, one additional parking space over those otherwise required shall be provided for each dwelling. Where feasible, this shall be provided as a common use parking space adjacent to the driveway.

Finding: There is a shared driveway on this property that serves two lots. Mutual Roadway Development and Access Easements exist for the shared driveway. It is not clear that 'No Parking" signs are posted. Because final plans have not been submitted, final plans identifying "No Parking" signs along the shared driveway shall be submitted with the building permit application.

This criterion will be met if the aforementioned condition of approval is adhered to.

8. Frontage Streets and Alleys. The review body for a partition, subdivision, or design review may require construction of a frontage street to provide access to properties fronting an arterial or collector street.

Finding: No new frontage street is proposed. This criterion does not apply.

9. ODOT or Yamhill County Right-of-Way. Where a property abuts an ODOT or Yamhill County right-of-way, the applicant for any development project shall obtain an access permit from ODOT or Yamhill County.

Finding: The property does not abut ODOT or Yamhill County right-of-way. This criterion does not apply.

10. Exceptions. The director may allow exceptions to the access standards above in any of the following circumstances:

a. Where existing and planned future development patterns or physical constraints, such as topography, parcel configuration, and similar conditions, prevent access in accordance with the above standards.

b. Where the proposal is to relocate an existing access for existing development, where the relocated access is closer to conformance with the standards above and does not increase the type or volume of access.

c. Where the proposed access results in safer access, less congestion, a better level of service, and more functional circulation, both on street and on site, than access otherwise allowed under these standards.

Finding: The applicant is not requesting an exception. These criteria do not apply.

11. Where an exception is approved, the access shall be as safe and functional as practical in the particular circumstance. The director may require that the

applicant submit a traffic study by a registered engineer to show the proposed access meets these criteria.

Finding: The applicant is not proposing any exceptions. This criterion is not applicable.

S. Public Walkways.

1. Projects subject to Type II design review, partition, or subdivision approval may be required to provide public walkways where necessary for public safety and convenience, or where necessary to meet the standards of this code. Public walkways are meant to connect cul-de-sacs to adjacent areas, to pass through oddly shaped or unusually long blocks, to provide for networks of public paths according to adopted plans, or to provide access to schools, parks or other community destinations or public areas. Where practical, public walkway easements and locations may also be used to accommodate public utilities.

2. Public walkways shall be located within a public access easement that is a minimum of 15 feet in width.

3. A walk strip, not less than 10 feet in width, shall be paved in the center of all public walkway easements. Such paving shall conform to specifications in the Newberg public works design and construction standards.

4. Public walkways shall be designed to meet the Americans with Disabilities Act requirements.

5. Public walkways connecting one right-of-way to another shall be designed to provide as short and straight of a route as practical.

6. The developer of the public walkway may be required to provide a homeowners' association or similar entity to maintain the public walkway and associated improvements.

7. Lighting may be required for public walkways in excess of 250 feet in length.

8. The review body may modify these requirements where it finds that topographic, preexisting development, or similar constraints exist.

Finding: No public walkway is proposed or required. These criteria do not apply.

T. Street Trees. Street trees shall be provided for all projects subject to Type II design review, partition, or subdivision. Street trees shall be installed in accordance with the provisions of NMC 15.420.010(B)(4).

Finding: Street trees are existing along N Brutscher Street. No new street trees are required.

U. Street Lights. All developments shall include underground electric service, light standards, wiring and lamps for street lights according to the specifications and standards of the Newberg public works design and construction standards. The developer shall install all such facilities and make the necessary arrangements with the serving electric utility as approved by the city. Upon the city's acceptance of the public improvements associated with the development, the street lighting system, exclusive of utility-owned service lines, shall be and become property of the city unless otherwise designated by the city through agreement with a private utility.

Finding: The applicant is proposing new streetlights and has included lighting notes with their proposed plans. Because the applicant has not submitted final plans, final plans shall be submitted with the public improvement permit application showing via a lighting analysis that the proposed street lighting meets City standards or provide additional Option A street lighting that is compliant with the City's Public Works Design and Construction Standards.

The criterion will be met if the aforementioned condition of approval is adhered to.

V. Transit Improvements. Development proposals for sites that include or are adjacent to existing or planned transit facilities, as shown in the Newberg transportation system plan or adopted local or regional transit plan, shall be required to provide any of the following, as applicable and required by the review authority:

1. Reasonably direct pedestrian connections between the transit facility and building entrances of the site. For the purpose of this section, "reasonably direct" means a route that does not deviate unnecessarily from a straight line or a route that does not involve a significant amount of out-of-direction travel for users.

2. A transit passenger landing pad accessible to disabled persons.

3. An easement of dedication for a passenger shelter or bench if such facility is in an adopted plan.

4. Lighting at the transit facility.

Finding: The applicant is not proposing transit improvements and the site is not adjacent to existing or planned transit facilities. This criterion does not apply.

15.505.040 Public utility standards.

A. Purpose. The purpose of this section is to provide adequate services and facilities appropriate to the scale and type of development.

B. Applicability. This section applies to all development where installation, extension or improvement of water, wastewater, or private utilities is required to serve the development or use of the subject property.

C. General Standards.

1. The design and construction of all improvements within existing and proposed rights-of-way and easements, all improvements to be maintained by the city, and all improvements for which city approval is required shall conform to the Newberg public works design and construction standards and require a public improvements permit.

2. The location, design, installation and maintenance of all utility lines and facilities shall be carried out with minimum feasible disturbances of soil and site. Installation of all proposed public and private utilities shall be coordinated by the developer and be approved by the city to ensure the orderly extension of such utilities within public right-of-way and easements.

D. Standards for Water Improvements. All development that has a need for water service shall install the facilities pursuant to the requirements of the city and all of the following standards. Installation of such facilities shall be coordinated with the extension or improvement of necessary wastewater and stormwater facilities, as applicable.

1. All developments shall be required to be linked to existing water facilities adequately sized to serve their intended area by the construction of water distribution lines, reservoirs and pumping stations which connect to such water service facilities. All necessary easements required for the construction of these facilities shall be obtained by the developer and granted to the city pursuant to the requirements of the city.

2. Specific location, size and capacity of such facilities will be subject to the approval of the director with reference to the applicable water master plan. All water facilities shall conform with city pressure zones and shall be looped where necessary to provide adequate pressure and fire flows during peak demand at every point within the system in the development to which the water facilities will be connected. Installation costs shall remain entirely the developer's responsibility.

3. The design of the water facilities shall take into account provisions for the future extension beyond the development to serve adjacent properties, which, in

4. Design, construction and material standards shall be as specified by the director for the construction of such public water facilities in the city. The judgment of the city, cannot be feasibly served otherwise.

Finding: The plans show a 4-inch and a 6-inch water service connection to the water line in N Brutscher Street. They also show a new 4-inch meter, a fire department connection, and a new fire hydrant. The two connections to the water line in N Brutscher will require a public works permit. A fire flow test has been submitted. Because final plans have not been submitted, final

plans that address requirements for water services outlined in the Public Works Design and Construction Standards are required to be submitted with the permit applications.

This criterion will be met if the aforementioned condition of approval is adhered to.

> ***E. Standards for Wastewater Improvements. All development that has a need for wastewater services shall install the facilities pursuant to the requirements of the city and all of the following standards. Installation of such facilities shall be coordinated with the extension or improvement of necessary water services and stormwater facilities, as applicable.***
>
> ***1. All septic tank systems and on-site sewage systems are prohibited. Existing septic systems must be abandoned or removed in accordance with Yamhill County standards.***
>
> ***2. All properties shall be provided with gravity service to the city wastewater system, except for lots that have unique topographic or other natural features that make gravity wastewater extension impractical as determined by the director. Where gravity service is impractical, the developer shall provide all necessary pumps/lift stations and other improvements, as determined by the director.***
>
> ***3. All developments shall be required to be linked to existing wastewater collection facilities adequately sized to serve their intended area by the construction of wastewater lines which connect to existing adequately sized wastewater facilities. All necessary easements required for the construction of these facilities shall be obtained by the developer and granted to the city pursuant to the requirements of the city.***
>
> ***4. Specific location, size and capacity of wastewater facilities will be subject to the approval of the director with reference to the applicable wastewater master plan. All wastewater facilities shall be sized to provide adequate capacity during peak flows from the entire area potentially served by such facilities. Installation costs shall remain entirely the developer's responsibility.***
>
> ***5. Temporary wastewater service facilities, including pumping stations, will be permitted only if the director approves the temporary facilities, and the developer provides for all facilities that are necessary for transition to permanent facilities.***
>
> ***6. The design of the wastewater facilities shall take into account provisions for the future extension beyond the development to serve upstream properties, which, in the judgment of the city, cannot be feasibly served otherwise.***
>
> ***7. Design, construction and material standards shall be as specified by the director for the construction of such wastewater facilities in the city.***

Finding: The submitted plans show a wastewater connection to the public manhole at the north end of the property. A grease interceptor will be required as well. The submitted landscape plans show a parking lot tree within a planter island that is within the alignment of the public

wastewater easement and over the exiting public wastewater line. Because final plans have not been submitted, final plans that address requirements for wastewater services outlined in the Public Works Design and Construction Standards, including a grease interceptor, will be required to be submitted with the permit applications. Trees shall not be located within the public wastewater easement.

This criterion will be met if the aforementioned condition of approval is adhered to.

> ***F. Easements. Easements for public and private utilities shall be provided as deemed necessary by the city, special districts, and utility companies. Easements for special purpose uses shall be of a width deemed appropriate by the responsible agency. Such easements shall be recorded on easement forms approved by the city and designated on the final plat of all subdivisions and partitions. Minimum required easement width and locations are as provided in the Newberg public works design and construction standards.***

Finding: The title report submitted with the application identifies a sanitary sewer easement and a public utility easement. The plans do not identify those easements. The 6-inch sanitary sewer line and manhole in the shared driveway and north end of the site should have an easement associated with them. There should also be a public utility easement along the site frontage. Because final plans have not been submitted, final plans identifying existing easements on the property, any necessary easements for the proposed development and a 10-foot-wide public utility easement along the project frontage shall be submitted with the building permit application. Recorded easements are to be submitted as part of the building permit process.

This criterion will be met if the aforementioned condition of approval is adhered to.

15.505.050 Stormwater system standards.

> ***A. Purpose. The purpose of this section is to provide for the drainage of surface water from all development; to minimize erosion; and to reduce degradation of water quality due to sediments and pollutants in stormwater runoff.***
> ***B. Applicability. The provisions of this section apply to all developments subject to site development review or land division review and to the reconstruction or expansion of such developments that increases the flow or changes the point of discharge to the city stormwater system. Additionally, the provisions of this section shall apply to all drainage facilities that impact any public storm drain system, public right-of-way or public easement, including but not limited to off-street parking and loading areas.***
> ***C. General Requirement. All stormwater runoff shall be conveyed to a public storm wastewater or natural drainage channel having adequate capacity to carry the flow without overflowing or otherwise causing damage to public and/or private property.***

The developer shall pay all costs associated with designing and constructing the facilities necessary to meet this requirement.

Finding: The plans propose a comprehensive onsite drainage system with two stormwater management facilities. This system is shown connecting to a public stormwater manhole in N Brutscher Street. This connection will require a public works improvement permit. Because final plans have not been submitted, final plans showing the connection to the public stormwater system in N Brutscher Street will be required for the public works improvement permit application.

This criterion will be met if the aforementioned condition of approval is adhered to.

This requirement will be met if improvements that address the requirements outlined in the Public Works Design and Construction Standards in accordance with NMC 13.25 Stormwater Management are constructed.

D. Plan for Stormwater and Erosion Control. No construction of any facilities in a development included in subsection (B) of this section shall be permitted until an engineer registered in the State of Oregon prepares a stormwater report and erosion control plan for the project. This plan shall contain at a minimum:

1. The methods to be used to minimize the amount of runoff, sedimentation, and pollution created from the development both during and after construction.
2. Plans for the construction of stormwater facilities and any other facilities that depict line sizes, profiles, construction specifications, and other such information as is necessary for the city to review the adequacy of the stormwater plans.
3. Design calculations shall be submitted for all drainage facilities. These drainage calculations shall be included in the stormwater report and shall be stamped by a licensed professional engineer in the State of Oregon. Peak design discharges shall be computed based upon the design criteria outlined in the public works design and construction standards for the city.

Finding: The proposed project appears to disturb more than 1acre and will require a DEQ 1200 C Erosion Control Permit. Because the applicant has not provided documentation of an erosion and sedimentation control permit for the development site, the applicant will be required to obtain a DEQ 1200 C Erosion Control Permit prior to any ground disturbing activity.

The criterion will be met if the aforementioned condition of approval is adhered to.

E. Development Standards. Development subject to this section shall be planned, designed, constructed, and maintained in compliance with the Newberg public works design and construction standards.

Finding: The applicant has submitted a preliminary stormwater report prepared by HBH Consulting Engineers. This report describes a detention/infiltration facility and a flow through planter to manage water quantity and quality. The analysis demonstrated downstream capacity for the anticipated flows. Because the applicant has not provided construction plans and a final stormwater report, the applicant will be required to provide detailed construction plans and a final stormwater report that address requirements outlined in the Public Works Design and Construction Standards in accordance with NMC 13.25 Stormwater Management.

A private maintenance agreement for the stormwater facilities will be required. Because a private maintenance agreement for the stormwater facilities has not been recorded, the applicant is required to submit a private maintenance agreement for the onsite stormwater facilities and have the approved agreement recorded.

The criterion will be met if the aforementioned condition of approval is adhered to.

CONCLUSION: Approve the application based on the above findings which indicate that the project meets the criteria required within the Newberg Development Code with conditions. The development will be subject to completion of the attached conditions.

Section IV: Conditions – File VAR22-0002/DR222-0001
Variance and Design Review – Fairfield by Marriott Inn & Suites

A. THE FOLLOWING MUST BE COMPLETED BEFORE THE CITY WILL ISSUE A BUILDING PERMIT:

1. Permit Submittal: Submit a building permit application and two (2) complete working drawing sets of the proposed project. Show all the features of the plan approved through design review.

2. Conditions of Approval: Either write or otherwise permanently affix the conditions of approval contained within this report onto the first page of the plans submitted for building permit review.

3. Design Compatibility:

a. The applicant shall provide details for a trash enclosure in conformance with NMC 15.220.030(12) Trash and Refuse Storage. All trash or refuse storage areas, along with appropriate screening, shall be indicated on the plans. Refuse storage areas must be constructed of brick, concrete block or other similar products as approved by the director at the time of Building Permit submittal.

b. The applicant shall provide a calculation for the commercial building facade facing a public street and meet the requirement that windows shall comprise a minimum of 40 percent of the ground floor façade as part of the Building Permit plan submittal.

c. The applicant shall file with the FAA, Part 77, FAA Form 7460-1, Notice of Proposed Construction or Alteration and submit a copy of the FAA determination as part of the Building Permit plan submittal.

4. Exterior On-site Lighting:

a. The applicant shall provide information on compliance with the .5 footcandle requirement on the south side of the development site as part of the Building Permit submittal process.

5. Parking, On-Site Circulation and Loading:

a. The 6 parking spaces located the northwest corner of the site shall be modified to accommodate the ingress/egress easement by deleting two spaces and providing a landscape island so that 3 spaces are represented as part of the plans submitted for Building Permit review.

b. If adjustments are made to the parking to accommodate the required landscape island width the applicant shall submit revised plans showing compliance with NMC 15.420.010(1f) as part of the Building Permit

submittal.

c. The identification of the proposed loading berth shall be identified on the plans as part of the Building Permit application.

6. Bicycle Parking:

a. The applicant shall provide details on the type of bike rack to be utilized in conformance with 15.440.110(A) as part of the Building Permit submittal.

b. The applicant shall provide details on the size of the bicycle parking spaces in conformance with 15.440.110(B) as part of the Building Permit submittal.

7. Private Walkways:

a. The applicant will be required to ensure all private walkways meet the applicable building code and ADA requirements as part of the Building Permit plan submittal.

b. A walkway will be required to cross the service drive as noted under NMC 15.440.140. This walk shall be a minimum of 5 feet in width and comply with ADA requirements and be shown on the Building Permit submittal plans.

c. A walkway will be required to cross the service drive. This walkway shall be a minimum of 5 feet in width and comply with ADA requirements, NMC 15.440.140, and shown on the Building Permit plan submittal.

d. The applicant shall revise plans to identify where the walkway crosses a service drive that at a minimum it be painted on the asphalt or clearly marked with contrasting paving materials or humps/raised crossings as part of the Building Permit plan submittal. If painted striping is used, it should consist of thermoplastic striping or similar type of durable application.

e. The applicant shall revise plans so that at a minimum, required private walkways shall connect each main pedestrian building entrance to each abutting public street and to each other on the Building Permit plan submittal.

8. Public Access:

a. The applicant shall comply with the access requirements of TVF&R as noted in Attachment 2.

b. Final plans identifying “No Parking” signs along the shared driveway shall be submitted with the building permit application.

9. Landscaping:

a. The applicant shall modify the Landscape Plan to identify the location of

the proposed bicycle parking as part of the Building Permit submittal.

b. The Landscape Plan Sheet L1.0 shall be revised so that it is kept free of all visual obstructions from two and one-half feet to nine feet above the curb line and submitted as part of the Building Permit plan submittal.

c. The applicant shall recalculate the landscape requirements to meet the 15% minimum requirement as part of the Building Permit plan submittal as part of the parking lot modifications to accommodate the ingress/egress easement for the Newberg Veterinary Hospital.

d. The applicant shall provide calculations with the building permit application that a parking or loading area providing 10 or more spaces shall be improved with defined landscaped areas totaling no less than 25 square feet per parking space.

e. The applicant shall revise plans to identify landscaping areas in a parking lot, service drive or loading area that have an interior width of not less than five feet as part of the Building Permit application submittal.

f. The applicant shall modify the landscape plan to not show parking lot shade trees in the public wastewater easement

g. The applicant shall continuously maintain all landscape areas in accordance with NMC 15.420.010B.6.

h. If the applicant does not install the required landscaping prior to the issuance of occupancy permits then, per Section 15.420.010(C), a security equal to 110 percent the cost of the landscaping is required.

i. To comply with 15.420.020(B)(1) the grass in the landscape strip along N Brutscher Street shall be re-established.

j. The applicant is required to maintain the landscape strip in accordance with NMC15.420.020(C).

10. Signs:

a. Separate sign review applications will be required in order to approve signs.

11. Sidewalks:

a. The applicant will be responsible for replacement of any sidewalk panels that don't meet current ADA standards along the project frontage. Determination of any sidewalk panels to be replaced will be part of the permit plan review process.

12. Right-of-way:

a. The applicant will be required to dedicate sufficient right-of-way to ensure that the 5-feet-wide Type A sidewalk is located within the public right-of-way in accordance with the Public Works Design and Construction

Standards which require 1-foot from back of sidewalk to the right-of-way.

13. Utilities:

a. Final plans showing utilities installed underground will be required with the building permit application. .

b. Final plans identifying existing easements on the property, any necessary easements for the proposed development and a 10-foot-wide public utility easement along the project frontage shall be submitted with the building permit application. Recorded easements are to be submitted as part of the building permit process.

14. Permits:

a. Any required public improvement permit(s) for this project must be submitted, approved and issued prior to building permits being issued..

15. Street Lighting:

a. Final plans shall be submitted with the public improvement permit application showing via a lighting analysis that the proposed street lighting meets City standards or provide additional Option A street lighting that is compliant with the City's Public Works Design and Construction Standards

16. Water:

a. Fire flow test results need to be submitted with building permit applications to be reviewed by the Fire Marshall for approval.

b. Final plans that address requirements for water services outlined in the Public Works Design and Construction Standards are required to be submitted with the permit applications.

17. Wastewater:

a. Final plans that address requirements for wastewater services outlined in the Public Works Design and Construction Standards, including a grease interceptor, will be required to be submitted with the permit applications. Trees shall not be located within the public wastewater easement.

18. Stormwater:

a. Final plans showing the connection to the public stormwater system in N Brutscher Street will be required for the public works improvement permit application.

b. The applicant will be required to obtain a DEQ 1200 C Erosion Control Permit prior to any ground disturbing activity.

c. The applicant will be required to provide detailed construction plans and a final stormwater report that address requirements outlined in the Public Works Design and Construction Standards in accordance with NMC 13.25 Stormwater Management.

d. The applicant is required to submit a private maintenance agreement for the onsite stormwater facilities and have the approved agreement recorded.

19. THE FOLLOWING MUST BE ACCOMPLISHED PRIOR TO OCCUPANCY

a. **Fire Department Requirements:** This project is subject to compliance with all Fire Department (TVF&R) standards relating to access and fire protection.

b. **Design Review Conditions:** Contact the Planning Division (503-537-1240) to verify that all design review conditions have been completed.

c. **Site Inspection:** Contact the Building Division (503-537-1240) for Building, Mechanical, and Plumbing final inspections. Contact the Fire Department (503-537-1260) for Fire Safety final inspections. Contact Yamhill County (503-538-7302) for electrical final inspections. Contact the Planning Division (503-537-1240) for landscaping final inspections.

20. DEVELOPMENT NOTES

a. Systems development charges (SDCs) will be collected when building permits are issued. For questions regarding SDCs please contact the Engineering Division.

Attachment 1: Application Material

TYPE II APPLICATION (LAND USE) -- 2019

File #: _____

TYPES – PLEASE CHECK ONE:

- [x] **Design review**
- [ ] **Tentative Plan for Partition**
- [ ] **Tentative Plan for Subdivision**
- [ ] **Type II Major Modification**
- [ ] **Variance** _____
- [ ] **Other: (Explain)** _____

APPLICANT INFORMATION:

APPLICANT: Hawkins Companies
ADDRESS: 855 W. Broad Street, Suite 300, Boise, ID 83702
EMAIL ADDRESS: belliott@hcollc.com
PHONE: 208.908.5637 MOBILE: N/A FAX: N/A
OWNER (if different from above): Werth Family, LLC PHONE: N/A
ADDRESS: 33180 NE Haugen Road
ENGINEER/SURVEYOR: _____ PHONE: _____
ADDRESS: _____

GENERAL INFORMATION:

PROJECT NAME: Marriott PROJECT LOCATION: Brutscher and Pacific Highway West
PROJECT VALUATION: Unknown
PROJECT DESCRIPTION/USE: Hotel
MAP/TAX LOT NO. (i.e.3200AB-400): Yamhill County Assessor's Map 3216 Tax Lot 1900 & 2002 ZONE: _____ SITE SIZE: Approx 1.93 acres SQ. FT. ☐ ACRE ☐
COMP PLAN DESIGNATION: Commercial TOPOGRAPHY: Generally Flat
CURRENT USE: Vacant Lot
SURROUNDING USES:
NORTH: Columbia Bank and Veterinarian Hospital SOUTH: Argyle Wine Distribution
EAST: Newberg Ford WEST: Brutscher Street and Crustal Crossroads

SPECIFIC PROJECT CRITERIA AND REQUIREMENTS ARE ATTACHED

General Checklist: ☐ Fees ☐ Public Notice Information ☐ Current Title Report ☐ Written Criteria Response ☐ Owner Signature

For detailed checklists, applicable criteria for the written criteria response, and number of copies per application type, turn to:

The above statements and information herein contained are in all respects true, complete, and correct to the best of my knowledge and belief. Tentative plans must substantially conform to all standards, regulations, and procedures officially adopted by the City of Newberg. All owners must sign the application or submit letters of consent. Incomplete or missing information may delay the approval process.

Brittnee Elliott Digitally signed by Brittnee Elliott DN: C=US, E=belliott@hcollc.com, O="Hawkins Companies, LLC", OU="Hawkins Comaprnies, LLC", CN=Brittnee Elliott Date: 2021.12.17 14:56:28-07'00'
Applicant Signature Date

Brittnee Elliott
Print Name

Owner Signature Date

WERTH FAMILY LLC
Print Name

Attachments: General Information, Fee Schedule, Criteria, Checklists

TYPE II APPLICATION – LAND USE

File #: DR-222-0001

TYPES – PLEASE CHECK ONE:

- ☐ **Design review**
- ☐ **Tentative Plan for Partition**
- ☐ **Tentative Plan for Subdivision**
- ☐ **Type II Major Modification**
- ☑ **Variance**
- ☐ **Other: (Explain)**

APPLICANT INFORMATION:

APPLICANT: Escape Newberg, LLC dba Marriott Fairfield Inn
ADDRESS: po box 1037, Cannon Beach, OR 97110
EMAIL ADDRESS: patrick@escapelodging.com
PHONE: 503.436.2480 MOBILE: 503.738.2884 FAX: 503.436.2490
OWNER (if different from above): Werth Family, LLC PHONE: 503.704.7881 (Howard)
ADDRESS: 33180 NE Haugen Road
ENGINEER/SURVEYOR: AKS Engineering PHONE: 503.563.6151
ADDRESS: 12965 sw Hermand Rd. # 100, Tualatin, OR 97062

GENERAL INFORMATION:

PROJECT NAME: Marriott Fairfield PROJECT LOCATION: Brutscher and Pacific Highway
PROJECT DESCRIPTION/USE: Hotel Development PROJECT VALUATION: N/A
MAP/TAX LOT NO. (i.e.3200AB-400): Map 3216 Tax Lot 1900 & 2002 ZONE: C-2 SITE SIZE: 1.93 SQ. FT. ☐ ACRE ☐
COMP PLAN DESIGNATION: Commercial TOPOGRAPHY: Flat
CURRENT USE: Vacant
SURROUNDING USES:
NORTH: Columbia Bank and Veterinarian Hospital SOUTH: Argyle Wine Distribution
EAST: Newberg Ford WEST: Brutscher Street and Crustal Crossroads

SPECIFIC PROJECT CRITERIA AND REQUIREMENTS ARE ATTACHED

General Checklist: ☑ Fees ☐ Public Notice Information ☐ Current Title Report ☑ Written Criteria Response ☐ Owner Signature

For detailed checklists, applicable criteria for the written criteria response, and number of copies per application type, turn to:

The above statements and information herein contained are in all respects true, complete, and correct to the best of my knowledge and belief. Tentative plans must substantially conform to all standards, regulations, and procedures officially adopted by the City of Newberg. All owners must sign the application or submit letters of consent. Incomplete or missing information may delay the approval process.

Applicant Signature — Date: 4-16-22
Print Name: Patrick Nofield

Owner Signature — Date
Print Name: Werth Family, LLC

Escape Newberg LLC is seeking a variance for code provisions ***15.220.070 and 15.220.070*** in relation to the construction and development of a 79 room Marriott Fairfield Inn at N. Brutscher in Newberg, Oregon.

Have you met the criteria for a variance? Use these questions to help you determine whether your application meets the above criteria.

1) What code requirement and code section applies to the proposed variance (i.e: setback, lot coverage, height, etc.)? ***15.220.070 and 15.220.070.***

2) What is the reason for the variance? ***Please see applicants written statement below.***

3) What difficulty or hardship would result from complying with the standard in the code? ***Please see applicants written statement below.***

4) How is your situation unique or exceptional and how is this different from other properties that have the same zoning (i.e: unusual lot shape, steep topography, stream on the property, etc.)? ***Specific to the use as the development will provide overnight guest lodging***.

5) What type of impacts would granting the variance have on the neighboring properties? ***There is no impact to neighboring properties.***

6) Are you aware of any concerns previously voiced by the neighbors and if so what are they? ***None.***

7) What can you offer to minimize or mitigate the requested variance (i.e: landscaping, screening, public improvements, etc.)? ***Please see applicants written statement below.***

On the following pages please see;

1. The specific provision.
2. The city's findings
3. The applicants written statement

15.220.070 Additional requirements for development in the C-2 zoning district.

The purpose of this section is to ensure that development in the C-2 zoning district is designed to promote pedestrian and bicycle uses and improve aesthetics and compatibility. An applicant for a new development or redevelopment within the C-2 zoning district, which is subject to the site design review process, must demonstrate that the following site and building design elements have been incorporated into the design of the project. Exceptions to these additional development requirements may be granted if the requirements would result in construction that is out of character with surrounding development. Applicants for redevelopment of a designated landmark will not be subject to these additional requirements, except for requirements regarding parking and service drives.

> ***A. Building Entrances. Each building on a lot shall have a primary pedestrian entrance oriented to the primary street. "Oriented to a street" means that the building entrance faces the street or is connected to the street by a direct and convenient pathway not exceeding 60 feet in length. "Primary street" means the street which has the highest estimated volume of pedestrian traffic. This requirement does not apply to buildings that are located behind other buildings on the lot such that 50 percent or more of their building frontage is blocked by the front building, as measured by sight lines that are perpendicular to the street right-of-way. Such rear buildings shall have a primary entrance oriented to an internal sidewalk or pedestrian pathway system which is internally connected and provides a connection to the primary street.***

Finding: The proposed hotel has its primary entrance facing N Brutscher Street which is the primary street that meets the requirement. There is no clearly delineated pathway from the building entrance to N Brutscher Street. There is a path on the south side of the south driveway entrance, but the path does not cross the drive aisle. In front of the building there is a path that leads to the main building entrance, Staff's scaling of the site plan indicates that a possible path alignment would be a distance of 140 feet that would extend from N Brutscher Street along the south side of the southern driveway then crossing the drive aisle and connect to the path along the west frontage of the building to the main building entrance. This path alignment exceeds the 60-foot requirement. No variances has been submitted to request a path that exceeds the 60-foot maximum. _____.

Applicant Written Statement: 15.220.070

"The applicant proposes a path alignment that would extend from Brutscher Street along the south side of the southern driveway crossing the drive aisle and connecting to the path along the west frontage of the building to the main building entrance.

This path alignment would be an approximate distance of 140 feet.

The current building site creates a sense of arrival and locating the building closer to N. Brutscher Street to accommodate the 60' minimum would require us to relocate parking to the rear of the site which would compromise site access and circulation.

There is also existing parking on tax lot 02002 and using the existing improved spaces is ideal."

15.440.080 Off-street loading.

A. Buildings to be built or substantially altered which receive and distribute materials and merchandise by trucks shall provide and maintain off-street loading berths in sufficient number and size to adequately handle the needs of the particular use.

1. The following standards shall be used in establishing the minimum number of berths required:

Gross Floor Area of the Building in Square Feet	No. of Berths
Up to 10,000	1
10,000 and over	2

Finding: The gross floor area of the building is _____. This is over 10,000 square feet and requires 2 loading berths. One loading berth is proposed in the application material.

2. A loading berth shall contain a space 10 feet wide and 35 feet long and have a vertical clearance of 14 feet. Where the vehicles generally used for loading and unloading exceed these dimensions, the required length of these berths shall be increased.

Finding: The one loading berth is 17 feet wide and 35 feet in length. The unobstructed height is 14 feet. The criterion is met. Loading for the hotel will generally be by smaller delivery vehicles and not larger semi-trucks and trailers.

***Applicant Written Statement:* 15.440.080**

"The gross floor area of the first floor of the building is 10.813 SF (outside of Siding) and the gross first floor Interior (inside of GWB) is 10,382 SF

If we were to calculate square footage based on first floor interior 'usable square footage' we would be below 10,000 SF.

With our two other Marriott properties, the 112 room Towneplace Suites in Beaverton and the 80 room Fairfield Inn and Suites in the Dalles; there are no designated loading berths primarily due to the minimum size of delivery vehicles and the infrequency of deliveries.

Most deliveries are via UPS or Fedex and are typical sized delivery vehicles. As the proposed hotel does not have an on-site restaurant there is no need for food deliveries via US Foods or Sysco.

Typical deliveries will consist of cleaning supplies, office supplies, pool supplies, guest room amenities, and other miscellaneous housekeeping and maintenance supplies.

The designated loading berth is more than sufficient to accommodate required deliveries."

Land Use Application for Site Design Review Fairfield Inn By MARRIOTT

Date: December 16, 2021

Revised: February 14, 2022

Submitted to:

City of Newberg
Planning Department
414 E 1st Street
Newberg, OR 97132

Applicant:

Hawkins Companies
855 West Broad
Boise, ID 83702

Table of Contents

Exhibits

Land Use Application for Site Design Review Fairfield by Marriott

Submitted to:	City of Newberg Planning Department 414 E 1st Street Newberg, OR 97132
Applicant:	Hawkins Companies 855 West Broad, STE 300 Boise, ID 83702
Owner:	Werth Family, LLC 33180 NE Haugen Road Newberg, OR 97132
Site Location:	Brutscher and Pacific Highway West
Assessor's Map:	Yamhill County Assessor's Map 3216 Tax Lot 1900 & 2002
Site Size:	±1.95 acres total
Land Use Districts:	C-2 (Community Commercial District)

I. Executive Summary

Hawkins Companies (the Applicant) is submitting this application for Type II site design review for development of the property near the southeast corner of Brutscher Street and Pacific Highway, on the remainder of Tax Map 3216 Tax Lots 1900 and 2002. The property is ±1.53 acres. This project proposes an 79-room, 4-story hotel, a Fairfield Inn by MARRIOTT. This structure will be placed at the center of the property, facing Brutscher Avenue, with all necessary site development improvements. Primary access is planned for the southern-most access point to Brutscher Street, and additional points of entry are shared with the existing property owner to the north. All proposed development will meet the requirements of the City of Newberg Municipal Code (*NMC*).

This application includes the City application forms, written materials, and preliminary plans necessary for City staff to review and determine compliance with the applicable approval criteria. The evidence is substantial and supports the City's approval of the application.

II. Site Description/Setting

The subject property is a rectangular-shaped ±1.95-acre parcel with generally flat topography. The property is zoned C-2 (Community Commercial). The adjacent lot to the north is developed with Columbia Bank, and the Newberg Veterinarian Hospital. Property to the east is developed with Newberg Ford. Property to the south is improved with Argyle Wine Distribution. Property to the west is Brutscher Street, and the Crystal Crossroads office building. The property has a comprehensive plan designation of C (Commercial). The objective of this designation is to provide a compatible mixture of commercial uses, such as retail businesses, retail food establishments, personal service establishments, and offices.

III. Applicable Review Criteria

Design Compatibility: The proposed design review request incorporates an architectural design which is compatible with and/or superior to existing or proposed uses and structures in the surrounding area. This shall include, but not limited to, building architecture, materials, colors, roof design, landscape design and signage.

RESPONSE: As proposed, the Fairfield Inn is compatible with or superior to existing or proposed uses and structures in the surrounding area. The building is designed to create interest and durability through the use of fiber cement and wood plank siding. Elements of stone veneer, stone coping, steel canopies and fascia create subtle tones and features to create interest in design.

Parking and On-Site Circulation: Parking areas shall meet the requirements of NMC 15.440.010. Parking studies may be required to determine if adequate parking and circulation are provided for uses not specifically identified in *NMC* 15.440.010. Provisions shall be made to provide efficient and adequate on-site circulation without using the public streets as part of the parking lot circulation pattern. Parking areas shall be designed so that vehicles can efficiently enter and exit the public streets with a minimum impact on the functioning of the public street.

RESPONSE: Section NMC 15.440.010 of the Newberg Development Code defines the off-street parking facilities that are required of new development. NMC 15.440.030 defines the required number of required off-street parking spaces, by land use. Hotels are required to provide one (1) off-street parking space for each guest room provided. Our proposed Fairfield Inn will have 80 guest rooms, and the developed site improvements will provide 80 off-street parking spaces, which meets the NMC standards.

To facilitate safe and convenient access on and off the property, we have specifically emphasized the southern-most access point on Brutscher Street to be the main access point. That will allow vehicles to enter the property in a fashion that brings then directly to the front door of the Fairfield Inn, under the porte cochere. Upon completion of checking in to the Fairfield Inn, patrons can then safely exit the structure to park their vehicle.

Setbacks and General Requirements: The proposal shall comply with NMC 15.415.010 through 15.415.060 dealing with height restrictions and public access; and NMC 15.405.010 through 15.405.040 and 15.410.010 through 15.410.070 dealing with setbacks, coverage, clear vision triangles, and yard requirements.

RESPONSE: The Fairfield Inn hotel will be considered the "main building" (15.415.010) on the property. Though the C-2 zoning district does not have a height limitation, the Fairfield Inn is proposed to be four stories in height (15.415.020). The Fairfield Inn will be a business open to the general public, and access to the facility is provided by Brutscher Street, which is public right of way (15.415.040).

NMC 15.405.010 states that any lot within the C-2 district shall be a minimum of 5,000 square feet. Our parcel is 1.92 acres, thereby meeting that standard.

NMC 15.405.030 establishes the standards for Lot dimensions and frontage. Our property has 250 linear feet of frontage on Brutscher, and approximately 70 feet in depth, meeting both the lot frontage and lot depth requirement.

Landscaping Requirements: The proposal shall comply with NMC 15.420.010 dealing with landscape requirements and landscape screening.

RESPONSE: This section of the code defines the criteria established for required landscaping and screening requirements. Per Section 15.420.010, our site is required to provide two different landscaping standards. 15% of the overall site shall be improved with landscaping, and 25 square feet of landscaping, per parking space provided within the parking field.

Our property is 83,683 square feet in area, which would require 12,552 square feet of landscaping. Our site provides 25,881 square feet of landscaping, which exceeds the district minimum standard.

Our parking field provides 80 off-street parking spaces, which would require 2,000 square feet of landscaping within the parking field. Our side provides 10,311 square feet, which exceeds the district minimums.

Section 15.420.B.3.h states that "One deciduous shade per seven parking spaces shall be planted to create a partial canopy over and around the parking area."

Our parking field has 80 off-street parking spaces (80/7=11), which would require 11 deciduous trees located within the parking field. Our plans show a minimum of 15 deciduous trees within the parking field, thereby exceeded this standard.

Landscape plans submitted also meet street tree frontage requirements, as well as shrubs and groundcovers.

Signs: Signs shall comply with NMC 15.435.010 dealing with signs.

RESPONSE: The Fairfield Inn package has identified three types of signage for the business: free-standing monument; wall signage on the porte cochere to high-light the entrance; and attached wall signage on all four sides of the building.

A free-standing monument will emphasize the main entrance from Brutscher Street. This sign will be six feet in height, and have 45 square feet of copy area. The structure of the sign will be built using similar materials as the hotel, and the pan channel letters will be internally illuminated.

The porte cochere will be located on the west elevation, and approximately 8 square feet in area. This sign will also use pan channel letters that will be internally illuminated.

Plans also show attached wall signage on all four sides of the structure. Section 15.435.070 states that businesses within the C-2 zone are allowed one square feet of copy area per each linear foot of building that the sign will be mounted upon.

The north and south elevations of the building will use the same size of attached wall signage. Each frontage is approximately 50' linear feet, which would allow a 50 square foot sign. Fairfield Inn proposes attached wall signage that is 46 square feet, which is less than what the code will allow.

The west and east elevations of the building will also use the same size of attached wall signage. Each of these frontages is approximately 175 linear feet in length, which would allow a 175 square foot sign on each elevation. Fairfield Inn proposes attached wall signage that is 94 square feet, which is substantially less than what the code will allow.

All of the attached wall signage will use pan channel letters that are directly mounted to the building. They will be internally illuminated for night time use.

Manufactured Dwelling, Mobile Home and RV Parks: Manufactured dwelling and mobile home parks shall also comply with the standards listed in NMC 15.445.075 through 15.445.100 in addition to the other clear and objective criteria listed in this section.

RESPONSE: Our application is not for a manufactured dwelling unit, mobile home, nor Recreational Vehicle (RV) park. Therefore, this section is Not Applicable.

Zoning District Compliance: The proposed use shall be listed as a permitted or conditionally permitted use in the zoning district in which it is located as found in NMC 15.305.010 through 15.336.020. Through this Site Review process, the Director may make a determination that a use is determined to be similar to those listed in the applicable zoning district, if it is not already specifically listed. In this case, the Director shall make a finding that the use shall not have any different or more detrimental effects upon the adjoining neighborhood area than

those specifically listed.

RESPONSE: Per the Zoning Use Table contained within the NMC, a "hotel" is listed as a Permitted use in the C-2 zone.

Sub District Compliance: Properties located within sub-districts shall comply with the provisions of those sub-districts located in NMC 15.348.060.

RESPONSE: Per the Newberg Comprehensive Plan, the property for the proposed Fairfield Inn & Suites is not located within the Institutional Overlay District, and therefore this section is Not Applicable.

Alternative Circulation, Roadway Frontage Improvements and Utility Improvements: Where applicable, new developments shall provide for access for vehicles and pedestrians to adjacent properties which are currently developed or will be developed in the future. This may be accomplished through the provision of local public streets or private access and utility easements. At the time of development of a parcel, provisions shall be made to develop the adjacent street frontage in accordance with City street standards and the standards contained in the Transportation Plan. At the discretion of the City, these improvements may be deferred through use of a deferred improvement agreement or other form of security.

RESPONSE: All required street improvements to Brutscher Street are in place, and no street expansion is a part of the plan to develop this property.

Traffic Study Improvements: If a traffic study is required, improvements identified in the traffic study shall be implemented as required by the Director.

RESPONSE: Hawkins Companies has completed the traffic study. It has been submitted and ODOT comments have been received and are contained within the application.

CITY OF NEWBERG DEVELOPMENT CODE

Chapter 15.100 LAND USE PROCESSES AND PROCEDURES

15.100.030 Type II procedure.

A. Type II development actions shall be decided by the director.

B. Type II actions include, but are not limited to:

1. Site design review.

C. The applicant shall provide notice pursuant to the requirements of NMC 15.100.200 et seq.

D. The director shall make a decision based on the information presented and shall issue a development permit if the applicant has complied with all of the relevant requirements of this code. The director may add conditions to the permit to ensure compliance with all requirements of this code.

E. Appeals may be made by an affected party, Type II, in accordance with NMC 15.100.160 et seq. All Type II development action appeals shall be heard and decided by the planning commission.

F. If the director's decision is appealed as provided in subsection (E) of

this section, the hearing shall be conducted pursuant to the Type III quasi-judicial hearing procedures as identified in NMC 15.100.050.

G. The decision of the planning commission on any appeal may be further appealed to the city council by an affected party, Type III, in accordance with NMC 15.100.160 et seq. and shall be a review of the record supplemented by written or oral arguments relevant to the record presented by the parties.

H. An applicant shall have the option to request at the time the development permit application is submitted that the proposal be reviewed under the Type III procedure.

Response: Our application is for site plan and design review of a hotel located within the C-2 Community Commercial zone, which is a Type II application with the city of Newberg.

15.100.140 Permit decision – Type II.

A. The director shall approve or deny the development permit for a Type II action within 60 days of accepting a complete permit application, unless it is a subdivision which has been converted to a Type III process pursuant to NMC 15.235.030(A).

B. The applicant shall provide notice pursuant to NMC 15.100.200 et seq. together with a 14-day comment period for the submission of written comments prior to the decision.

C. The decision of the director shall be based upon the application, the evidence, comments from referral agencies, and approvals required by others.

D. The director shall notify the applicant and others entitled to notice of the disposition of the application. The notice shall indicate the date that the decision will take effect and describe the right of appeal pursuant to NMC 15.100.160 et seq. A decision on a Type II development shall take effect on the fifteenth day following the notice of a decision unless an appeal is filed pursuant to NMC 15.100.160 et seq.

E. Approval or denial of a Type II development permit application shall be accompanied by written findings that explain the criteria, facts and justification for the decision.

F. The director shall approve a permit application if applicable approvals by others have been granted and the proposed development or land use request otherwise conforms to the requirements of this code. The director may add conditions to the permit to ensure compliance with all requirements of this code.

G. The director shall deny the permit application if required approvals are not obtained or the application otherwise fails to comply with code requirements.

H. Notice of approval or denial of a Type II decision shall be provided to the applicant, parties providing written testimony, or anyone requesting such notice. Notice shall include a description of the item, the decision, conditions that may have been added, and the rights of appeal.

I. Type II applications are required to be reviewed under the Type III procedures at the request of the applicant, or the application is a subdivision which has been converted to a Type III process pursuant to NMC 15.235.030(A), or through an appeal of the director's

decision. Type II development permit applications that require a Type III procedure must conclude the hearing procedure before a land use or construction permit application can be considered to be completed by the director. Upon receiving a final decision by the hearing body on a Type III application, the subsequent review of a permit application may be reviewed by the director as a Type I process.

Response: This application is for a Type II site design review. It is understood the permit decision and appeal procedures of the above-listed sections apply to this application.

5.100.160 Appeal procedures.

A. Type I. An appeal of a Type I decision by the director may be appealed within 14 calendar days of the date of the decision by the director. Appeals may be made only by an affected party, Type I (the person or party submitting the application). Appeals of a Type I application are processed as a Type III procedure and proceed to the planning commission.

B. Type II. An appeal of a Type II decision by the director may be appealed within 14 calendar days of the date of the decision. Appeals may be made only by an affected party, Type II (the applicant, any party entitled to receive notice of the decision, or anyone providing written comments within 14 calendar days prior to the date of the decision). Appeals of a Type II application are processed as a Type III procedure and proceed to the planning commission.

C. Type III. An appeal of a Type III decision by the planning commission may be appealed within 14 calendar days of the date of the planning commission's written decision. Appeals may be made only by an affected party, Type III.

Response: This application is for a Type II site design review. It is understood the permit decision and appeal procedures of the above-listed sections apply to this application.

5.100.170 Notice of appeal – Type I, II and III.

A. An appeal for Type I, II, and III decisions shall include an identification of the decision sought to be reviewed, the date of the decision and shall be accompanied by a notice of appeal form provided by the planning and building department. The notice of appeal shall be completed by the applicant and shall contain:

1. An identification of the decision sought to be reviewed, including the date of the decision.

2. A statement of the interest of the person seeking review and that they were a party to the initial proceedings.

3. A detailed statement of the specific grounds on which the appeal is filed.

B. Notice shall be filed with the community development department together with the filing fee and deposit for transcript costs.

Response: This application is for a Type II site design review. It is understood the permit decision and appeal procedures of the above-listed sections apply to this application.

15.100.200 Compliance required.

Notice on all Type I through Type IV actions, including appeals, shall be conducted in accordance with this article.

Response: This application is for a Type II site design review. It is understood the permit decision and appeal procedures of the above-listed sections apply to this application.

15.100.210 Mailed notice.

Mailed notice shall be provided as follows:

A. Type I Actions. No public notice is required.

B. Type II and Type III Actions. The applicant shall provide public notice to:

1. The owner of the site for which the application is made; and

2. Owners of property within 500 feet of the entire site for which the application is made. The list shall be compiled from the most recent property tax assessment roll. For purposes of review, this requirement shall be deemed met when the applicant can provide an affidavit or other certification that such notice was deposited in the mail or personally delivered.

3. To the owner of a public use airport, subject to the provisions of ORS 215.416 or 227.175.

C. The director may request that the applicant provide notice to people other than those required in this section if the director believes they are affected or otherwise represent an interest that may be affected by the proposed development. This includes, but is not limited to, neighborhood associations, other governmental agencies, or other parties the director believes may be affected by the decision.

D. The director shall provide the applicant with the following information regarding the mailing of notice:

1. The latest date by which the notice must be mailed;

2. An affidavit of mailing (to be signed and returned) certifying that the notice was mailed, acknowledging that a failure to mail the notice in a timely manner constitutes an agreement by the applicant to defer the 120-day process limit and acknowledging that failure to mail will result in the automatic postponement of a decision on the application; and

3. A sample notice.

E. The notice of a Type II and Type III development application shall be reasonably calculated to give actual notice and shall:

1. Set forth the street address or other easily understood geographical reference to the subject property;

2. List, by commonly used citation, the applicable criteria for the decision;

3. Include the name and phone number of a local government contact person, the telephone number where additional information may be obtained and where information may be examined;

4. Explain the nature of the application and the proposed use or uses which could be authorized;

5. State that a copy of the application, all documents and evidence relied upon by the applicant and applicable criteria are available for inspection at no cost and will be provided at a reasonable cost.

F. Prior to mailing or posting any notice required by this code, the applicant shall submit a copy of the notice to the director.

G. The applicant shall mail the notice for Type II actions at least 14 days before a decision is rendered. The applicant shall file with the director an affidavit of mailing as identified in subsection (D) of this section within two business days after notice is mailed.

H. The applicant shall mail the notice for Type III actions at least 20 days before the first new hearing, or if two or more new hearings are allowed, 10 days before the first new hearing. The applicant shall file with the director an affidavit of mailing as identified in subsection (D) of this section within two business days after notice is mailed.

I. All public notices shall be deemed to have been provided or received upon the date the notice is deposited in the mail or personally delivered, whichever occurs first. The failure of a property owner to receive notice shall not invalidate an action if a good faith attempt was made to notify all persons entitled to notice. An affidavit of mailing issued by the person conducting the mailing shall be conclusive evidence of a good faith attempt to contact all persons listed in the affidavit.

J. Failure to mail the notice and affirm that the mailing was completed in conformance with the code shall result in:

1. Postponement of a decision until the mailing requirements have been met; or

2. Postponement of the hearing to the next regularly scheduled meeting or to such other meeting as may be available for the hearing; or

3. The entire process being invalidated; or

4. Denial of the application.

Response: The Applicant will provide public notice as required by NMC 15.100.210. A mailing list and a draft mailing notice are included. The criteria are met or will be met when applicable.

15.100.220 Additional notice procedures of Type II development applications.

In addition to the requirements of NMC 15.100.210, mailed notice for development actions shall also contain the following:

A. Provide a 14-day period from the date of mailing for the submission of written comments prior to the decision;

B. State that issues that may provide a basis for appeal must be raised in writing during the comment period;

C. State that issues must be raised with sufficient specificity to enable the local government to respond to the issue;

D. State the place, date and time that comments are due;

E. State that notice of the decision, including an explanation of appeal rights, will be provided to any person who submits comments under subsection (A) of this section;

F. Briefly summarize the local decision-making process.

G. Type II notice for subdivisions shall also include a description of how an interested party may request a public hearing before the planning commission.

Response: Draft notice materials meeting the requirements of this section are included. The criteria are met.

15.100.260 Procedure for posted notice for Type II and III procedures.

A. Posted Notice Required. Posted notice is required for all Type II and III procedures. The notice shall be posted on the subject property by the applicant.

B. Notice Information Provided by City. The director shall provide the applicant with the following information regarding the posting of notice:

1. The number of notices required;

2. The latest date by which the notice must be posted;

3. An affidavit of posting (to be signed and returned) certifying that the notice was posted on site, acknowledging that a failure to post the notice in a timely manner constitutes an agreement by the applicant to defer the 120-day process limit and acknowledging that failure to post will result in the automatic postponement of a decision on the application; and

4. A sample notice.

C. Submission of Notice. Prior to posting any notice required by this section, the applicant shall submit a copy of the notice to the director for review.

D. Size, Number and Location Requirements. A waterproof notice which measures a minimum of two feet by three feet shall be placed on each frontage of the site. If a frontage is over 600 feet long, a notice is required for each 600 feet, or fraction of 600 feet. If possible, notices shall be posted within 10 feet of a street lot line and shall be visible to pedestrians and motorists in clear view from a public right-of-way. Notices shall not be posted in a public right-of-way or on trees.

E. Contents of Notice. The posted notice shall only contain the following information: planning action number, brief description of the proposal, phone number and address for contact at the Newberg planning and building department.

F. Standards and Timing, Type II Actions. The applicant shall post the notice at least 14 days before a decision is rendered. The applicant shall file with the director an affidavit of posting as identified in subsection (B) of this section within two business days after notice is posted.

G. Standards and Timing, Type III Actions. The applicant shall post the notice at least 10 days before the first scheduled hearing. The applicant shall file with the director an affidavit of posting as

identified in subsection (B) of this section within two business days after notice is posted.

H. Removal of Notice. The applicant shall not remove the notice before the final decision. All posted notice shall be removed by the applicant within 10 days following the date of the final decision on the request.

I. Failure to Post Notice. The failure of the posted notice to remain on the property shall not invalidate the proceedings. Failure by the applicant to post a notice and affirm that the posting was completed in conformance with the code shall result in:

1. Postponement of a decision until the mailing requirements have been met; or

2. Postponement of the hearing to the next regularly scheduled meeting or to such other meeting as may be available for the hearing; or

3. The entire process being invalidated; or

4. Denial of the application.

Response: This application is for a site design review and is, therefore, a Type II action. The posted notice requirements for Type II procedures listed in this section apply to this application. Notice will be posted and documented as required. Exhibit D includes draft notice materials meeting the requirements of this section. The criteria are met or will be met when applicable.

Division 15.200 Land Use Applications

Chapter 15.220 SITE DESIGN REVIEW

15.220.020 Site design review applicability.

A. Applicability of Requirements. Site design review shall be required prior to issuance of building permits or commencement of work for all improvements noted below. Site design review permits shall be processed as either Type I or Type II, as noted below.

1. Type I.

a. Single-family dwellings;

b. Duplexes;

c. Institutional, commercial or industrial additions which do not exceed 1,000 square feet in gross floor area;

d. Multifamily additions which do not exceed 1,000 square feet in gross floor area and do not add any new units, or new construction incidental to the main use on an existing developed site which do not exceed 1,000 square feet in gross floor area and do not add any new units;

e. Institutional, commercial or industrial interior remodels which do not exceed 25 percent of the assessed valuation of the existing structure;

f. Multifamily remodels which do not exceed 25 percent of the assessed valuation of the existing structure and do not add any new units;

g. Signs which are not installed in conjunction with a new development or remodel;

h. Modifications, paving, landscaping, restriping, or regrading of an existing duplex, multifamily, institutional, commercial or industrial parking lot;

i. Fences and trash enclosures.

j. Accessory dwelling units.

Response: The planned improvement is not listed as a Type I review use. Therefore, Type II site design review is applicable to this application.

2. Type II.

a. Any new development or remodel which is not specifically identified within subsection (A)(1) of this section.

b. Telecommunications facilities.

Response: The planned improvement is not listed as a Type I review use. Therefore, Type II site design review is applicable to this application.

3. Exemptions to Type I and Type II Process. The following development activities are exempt from Type I or Type II standards:

a. Replacement of an existing item such as a roof, floor, door, window or siding.

b. Plumbing and/or mechanical alterations which are completely internal to an existing structure.

Response: The planned improvement involves new development. These exemptions are not applicable to this application.

B. Development in Accord with Plans. Construction, site development, and landscaping shall be carried out in substantial accord with the plans, drawings, sketches, and other documents approved as part of a final decision on a site design review.

Response: It is understood future development will need to be carried out in substantial accord with the plans, drawings, sketches, and other documents approved as part of the final decision for this application.

C. Site Design Review Time Limit. An approved site design review plan intended to be constructed in a single phase shall be valid for one year from the date of the notice of final decision. A building permit must be acquired within this time period or the design review approval shall terminate. The director under a Type I procedure may grant an extension for up to six months if the applicant files a request in writing prior to the expiration of the approval and demonstrates compliance with the following:

1. The land use designation of the property has not been changed since the initial design review approval; and

2. The applicable standards in this code which applied to the project have not changed.

Response: The time limits of this section apply to this application.

D. Phased Design Review Approval. If a site plan is approved to be constructed in phases, completion of each phase shall extend the expiration of the original design review approval by 12 months from the date of its expiration. Prior to the expiration of each phase, the applicant may apply for an extension to the phase which is about to expire through subsection (C) of this section. The extension of a phase under subsection (C) of this section shall also extend any subsequent phases. The total number of extensions shall not extend the original design review approval more than five years from its original approval date.

Response: This application does not involve phased construction. This section is not applicable.

E. Modification to an Approved Design Review. Following design review approval, an applicant may make modifications to the plan consistent with the following procedures. The director will determine whether the proposed modification is a minor or a major modification.

1. Minor modifications are those which are in substantial compliance with the layout, uses and conditions of the original design review. Generally, the characteristics of the project, such as the layout or size of buildings, number of units, number of parking spaces, landscaping areas, and similar changes, are within five percent of those in the original proposal. The director may approve a minor modification under a Type I procedure upon finding that the modification is substantially consistent with the approved design review, is consistent with the provisions of this code and the conditions of approval, and does not have substantially greater impacts on surrounding properties than the original plan. Changes shall meet all development code requirements.

2. Other modifications are major modifications. A change in the whole application or substantive parts of an application shall be considered a new application. The modified application shall be reviewed under the same procedure as the original application. The criteria for approval shall be those for design review.

3. All applications for modifications under this provision shall be considered new applications for the purposes of the 120-day time limit for processing applications in accordance with NMC 15.100.100 and state statutes. The applicant shall acknowledge in writing that this is a new application for purposes of the 120-day rule.

4. The city council shall establish a fee for modification of approved design review by resolution.

Response: It is understood the requirements and procedures listed in this section apply to this

application.

15.220.030 Site design review requirements.

A. Type I. Applications for Type I permit decisions shall be submitted upon forms established by the director.

Response: The planned improvement is not listed as a Type I review use. The requirements of this section are not applicable.

B. Type II. The following information is required to be submitted with all Type II applications for site design review:

1. Site Development Plan. A site development plan shall be to scale and shall indicate the following as appropriate to the nature of the use:

a. Access to site from adjacent right-of-way, streets and arterials;

b. Parking and circulation areas;

c. Location and design of buildings and signs;

d. Orientation of windows and doors;

e. Entrances and exits;

f. Private and shared outdoor recreation spaces;

g. Pedestrian circulation;

h. Outdoor play areas;

i. Service areas for uses such as mail delivery, trash disposal, above-ground utilities, loading and delivery;

j. Areas to be landscaped;

k. Exterior lighting;

l. Special provisions for handicapped persons;

m. Other site elements and spaces which will assist in the evaluation of site development;

n. Proposed grading, slopes, and proposed drainage;

o. Location and access to utilities including hydrant locations; and

p. Streets, driveways, and sidewalks.

Response: The Preliminary Development Plans show the information required for a site development plan per the requirements of this section. The criteria are met.

2. Site Analysis Diagram. A site analysis diagram shall be to scale and shall indicate the following characteristics on the site and within 100 feet of the site:

a. Relationship of adjacent lands;

b. Location of species of trees greater than four inches in diameter at four feet above ground level;

c. Existing and proposed topography;

d. Natural drainage and proposed drainage and grading;

e. Natural features and structures having a visual or other significant relationship with the site.

Response: The Preliminary Development Plans show the information required for a site analysis diagram per the requirements of this section. The criteria are met.

3. Architectural Drawings. Architectural drawings shall be prepared which identify floor plans and elevations.

Response: Architectural drawings are included with the Preliminary Development Plans. The criteria are met.

4. Landscape Plan. The landscape plan shall indicate:

a. The size, species and approximate locations of plant materials to be retained or placed on the site together with a statement which indicates the mature size and canopy shape of all plant materials;

b. Proposed site contouring; and

c. A calculation of the percentage of the site to be landscaped.

Response: The Preliminary Development Plans include a landscape plan meeting the requirements of this section. The criteria are met.

5. Special Needs for Handicapped. Where appropriate, the design review plan shall indicate compliance with handicapped accessibility requirements including, but not limited to, the location of handicapped parking spaces, the location of accessible routes from the entrance to the public way, and ramps for wheelchairs.

6. Existing Features and Natural Landscape. The plans shall indicate existing landscaping and existing grades. Existing trees or other features intended to be preserved or removed shall be indicated on the plans.

7. Drives, Parking and Circulation. Proposed vehicular and pedestrian circulation, parking spaces, parking aisles, and the location and number of access points shall be indicated on the plans. Dimensions shall be provided on the plans for parking aisles, back-up areas, and other items as appropriate.

8. Drainage. The direction and location of on- and off-site drainage shall be indicated on the plans. This shall include, but not be limited to, site drainage, parking lot drainage, size and location of storm drain lines, and any retention or detention facilities necessary for the project.

9. Buffering and Screening. Buffering and screening of areas, structures and facilities for storage, machinery and equipment, services (mail, refuse, utility wires, and the like), loading and parking and similar accessory areas and

structures shall be shown on the plans.

10. Signs and Graphics. The location, colors, materials, and lighting of all exterior signs, graphics or other informational or directional features shall be shown on the plans.

11. Exterior Lighting. Exterior lighting within the design review plan shall be indicated on the plans. The direction of the lighting, size and type of fixtures, and an indication of the amount of lighting shall be shown on the plans.

12. Trash and Refuse Storage. All trash or refuse storage areas, along with appropriate screening, shall be indicated on the plans. Refuse storage areas must be constructed of brick, concrete block or other similar products as approved by the director.

13. Roadways and Utilities. The proposed plans shall indicate any public improvements that will be constructed as part of the project, including, but not limited to, roadway and utility improvements.

Response: The Preliminary Development Plans include the information required by NMC 15.220.030, B (5) – (13), including handicapped accessibility features, existing conditions, parking and circulation, drainage and erosion control, buffers and screening, exterior lighting, trash and recycling areas, and planned roadway and utilities improvements. The criteria are met.

14. Traffic Study. A traffic study shall be submitted for any project that generates in excess of 40 trips per p.m. peak hour. This requirement may be waived by the director when a determination is made that a previous traffic study adequately addresses the proposal and/or when off-site and frontage improvements have already been completed which adequately mitigate any traffic impacts and/or the proposed use is not in a location which is adjacent to an intersection which is functioning at a poor level of service. A traffic study may be required by the director for projects below 40 trips per p.m. peak hour where the use is located immediately adjacent to an intersection functioning at a poor level of service. The traffic study shall be conducted according to the City of Newberg design standards.

Response: The ITE Trip Generation Handbook – 10th Edition, Volume 2: Data indicates our "hotel" designation is estimated to generate 48 p.m. peak hour weekday vehicle trips. This rate is exceeds the "40 trips per p.m. peak hour" threshold to require a traffic study. Thus, a traffic study is included and has been submitted.

15.220.050 Criteria for design review (Type II process).

A. Type I. The following criteria are required to be met in order to approve a Type I design review request:

Response: The planned improvement is not listed as a Type I review use. The requirements of this section are not applicable.

B. Type II. The following criteria are required to be met in order to approve a Type II design review request:

1. **Design Compatibility. The proposed design review request incorporates an architectural design which is compatible with and/or superior to existing or proposed uses and structures in the surrounding area. This shall include, but not be limited to, building architecture, materials, colors, roof design, landscape design, and signage.**

Response: Architectural drawings are included with the Preliminary Development Plans The drawings show a four-story hospitality structure clad in cement fiber board; wood plank siding; stone veneer and metal accents. The surrounding uses were built over many years and incorporate a variety of architectural styles. The planned structure is harmonious with the street-level location and is intended to be compatible with current and future surrounding uses. The criterion is met.

2. **Parking and On-Site Circulation. Parking areas shall meet the requirements of NMC 15.440.010. Parking studies may be required to determine if adequate parking and circulation are provided for uses not specifically identified in NMC 15.440.010. Provisions shall be made to provide efficient and adequate on-site circulation without using the public streets as part of the parking lot circulation pattern. Parking areas shall be designed so that vehicles can efficiently enter and exit the public streets with a minimum impact on the functioning of the public street.**

Response: As discussed elsewhere in this narrative, the Preliminary Development Plans show that the planned improvements meet the parking and circulation requirements of NMC 15.440.010. The criteria are met.

3. **Setbacks and General Requirements. The proposal shall comply with NMC 15.415.010 through 15.415.060 dealing with height restrictions and public access; and NMC 15.405.010 through 15.405.040 and 15.410.010 through 15.410.070 dealing with setbacks, coverage, vision clearance, and yard requirements.**

Response: As discussed elsewhere in this narrative, the Preliminary Development Plans show the planned improvements comply with the applicable standards for setbacks, height, access, and other requirements listed in these subsections. The criterion is met.

4. **Landscaping Requirements. The proposal shall comply with NMC 15.420.010 dealing with landscape requirements and landscape screening.**

Response: The Preliminary Development Plans show landscaping associated with this project meets the requirements of NMC 15.420.010. The criteria are met.

5. **Signs. Signs shall comply with NMC 15.435.010 et seq. dealing with signs.**

Response: Signs are a part of this application. Submitted free-standing and attached wall-sign associated with this project comply with NMC 15.435.010. The criteria is met.

6. **Manufactured Dwelling, Mobile Home and RV Parks. Manufactured dwelling and mobile home parks shall also comply with the standards listed in NMC 15.445.075 through 15.445.100 in addition to the other clear and objective criteria**

listed in this section. RV parks also shall comply with NMC 15.445.170 in addition to the other criteria listed in this section.

Response: This application does not involve manufactured dwellings, mobile homes, or RV parks. The criterion is inapplicable.

7. Zoning District Compliance. The proposed use shall be listed as a permitted or conditionally permitted use in the zoning district in which it is located as found in NMC 15.305.010 through 15.336.020. Through this site review process, the director may make a determination that a use is determined to be similar to those listed in the applicable zoning district, if it is not already specifically listed. In this case, the director shall make a finding that the use shall not have any different or more detrimental effects upon the adjoining neighborhood area than those specifically listed.

Response: "Hotel" is a "Permitted" use in the C-2 district, according to the Newberg Development Code – Zoning Use Table in Section 15.305.020. The criterion is met.

8. Alternative Circulation, Roadway Frontage Improvements and Utility Improvements. Where applicable, new developments shall provide for access for vehicles and pedestrians to adjacent properties which are currently developed or will be developed in the future. This may be accomplished through the provision of local public streets or private access and utility easements. At the time of development of a parcel, provisions shall be made to develop the adjacent street frontage in accordance with city street standards and the standards contained in the transportation plan. At the discretion of the city, these improvements may be deferred through use of a deferred improvement agreement or other form of security.

Response: The Preliminary Development Plans show improvements in the vicinity for the project. Sidewalks, planter strips, street trees, and other required circulation and utility improvements are shown to meet City standards. The criteria, as applicable, are met.

9. Traffic Study Improvements. If a traffic study is required, improvements identified in the traffic study shall be implemented as required by the director.

Response: As discussed above for NMC 15.220.030.B(14), a traffic study has been generated for this application.

Division 15.300 Zoning Districts

Chapter 15.305 ZONING USE TABLE

15.305.010 Classification of uses.

The zoning use table under NMC 15.305.020 identifies the land uses that are allowed in the various zoning districts. The specific land use categories are described in Chapter 15.303 NMC. The table identifies each use as one of the following:

P Permitted Use. The use is a permitted use within the zone. Note that the use still may require design review, building permits, or other

approval in order to operate.

C Conditional Use. A conditional use permit is required for the use. See Chapter 15.225 NMC.

S Special Use. The use is subject to specific standards as identified within this code. The applicable section is included in the last column of the table.

(#) A note indicates specific limits on the use. These notes are listed at the bottom of the table.

X Prohibited Use. The use is specifically prohibited.

15.305.020 Zoning use table – Use districts.

Newberg Development Code – Zoning Use Table			
#	Use	C-2	Notes and Special Use Standards
460	Hotel	P	

Response: This project involves the improvements associated with a hotel. As a hotel use, it is permitted in the C-2 district.

Chapter 15.340 AIRPORT OVERLAY (AO) SUBDISTRICT

15.340.050 Limitations.

A. To meet the standards and reporting requirements established in FAA Regulations, Part 77, no structure shall penetrate into the airport imaginary surfaces as defined in this code except as provided in NMC 15.340.030(B).

Response: The site is located within the Inner Horizontal Surface, which has a 150-foot height restriction per Federal Aviation Regulation (FAR) Part 77. As shown on the Preliminary Development Plans (Exhibit A), the maximum height of the flat roof is ±53 feet 0 inches. The proposed structure is below the 150-foot height maximum. This criterion is met.

B. High density public uses as defined in this code shall not be permitted in the airport approach safety zone or the displaced threshold approach surface zone.

Response: The site is not located within the airport approach safety zone or the displaced threshold approach surface zone. This criterion is not applicable.

C. Following July 1990, if FAA funds are used by the city to improve or enhance the airport, new structures, buildings and dense uses shall be prohibited in the runway protection zone consistent with federal requirements.

Response: This application does not involve development at or in conjunction with the airport. This criterion is not applicable.

D. Whenever there is a conflict in height limitations prescribed by this overlay zone and the primary zoning district, the lowest height

limitation fixed shall govern; provided, however, that the height limitations here imposed shall not apply to such structures customarily employed for aeronautical purposes.

Response: The site is located within Area C-2, as shown in Exhibit "A" of Ordinance 2006-2657: Specific Plan Map Amendment. As shown on the Preliminary Development Plans (Exhibit A), at ±53 feet 0 inches, the height of the flat roof is below the 150-foot height maximum per NMC 15.346.070(B)(6)(c) below. This criterion is met.

E. No glare-producing materials shall be used on the exterior of any structure located within the airport approach safety zone.

Response: The proposed building is clad in cement fiber and wood siding, with standard roofing materials for a flat roof and standing seem metal. No materials will produce glare. This criterion is met.

F. In noise-sensitive areas (within 1,500 feet of an airport or within established noise contour boundaries of 55 Ldn and above for identified airports) where noise levels are a concern, a declaration of anticipated noise levels shall be attached to any building permit or development approval. In areas where the noise level is anticipated to be 55 Ldn and above, prior to issuance of a building permit for construction of noise-sensitive land use (real property normally used for sleeping or normally used as schools, churches, hospitals, or public libraries) the permit applicant shall be required to demonstrate that the indoor noise level will not exceed 55 Ldn. The director will review building permits for noise-sensitive developments.

Response: Subject site is more than 1,500 feet from the airport and not within established noise contour boundaries. This criterion is not applicable.

A. Priority of Standards and Procedures. Unless otherwise noted, the standards and procedures of the specific plan overlay subdistrict shall supplement and supersede standards and procedures of this code. The specific plan shall be adopted as an exhibit to the SP overlay zone subdistrict and the SP overlay plan district.

Response: It is understood the standards and procedures of the Specific Plan Subdistrict shall supplement and supersede other standards and procedures of this code.

base zone and the subdistrict.

1. Street and Pedestrian Pathway Standards. Street and pedestrian pathway development standards are established in NMC 15.505.010 et seq. and NMC 15.505.210 et seq.

Response: The Preliminary Development Plans show planned frontage improvements for the project meet the requirements of NMC 15.505.010 and NMC 15.505.210. This standard is met.

2. Residential Design. Multiple, nonrepetitive home designs (detached dwelling units) shall be used in the development. No two identical designs shall be located closer than every three residences on any street frontage.

Response: This application does not involve residential development. This standard does not apply.

Response: The site is located within Area C-2, as shown in Exhibit "A" of Ordinance 2006-2657: Specific Plan Map Amendment. Interior yard setbacks will be 5 feet, per the section above. Because the development does not involve residential uses, other setbacks will be determined by the base zone as stated in NMC 15.346.070(B)(6)(b). Setback standards for the site are discussed Chapter 15.410 NMC below. This standard is met.

a. **Building Heights. Building height limits shall be the same as those in the base zone. An exception is for areas F-1 and F-2, which shall have a maximum building height of 50 feet.**

Response: The site is located within Area C-2, as shown in Exhibit "A" of Ordinance 2006-2657: Specific Plan Map Amendment. As shown on the Preliminary Development Plans (Exhibit A), at ±53 feet 0 inches, the height of the flat roof is below the 150-foot height maximum. This standard is met.

b. **Maximum lot coverage is described in NMC 15.405.040.**

Response: The Preliminary Development Plans (Exhibit A) show lot coverage for this project meets the standards of NMC 15.405.014(C). This standard is met.

3. **Sign Standards. Signs must comply with NMC 15.435.010 through 15.435.120.**

Response: Signs are a part of this application. Plans contained within Exhibit A show free-standing and attached wall signage for the hotel. These proposed signs comply with NMC 15.435.010–15.435.020 below. The criteria can be met.

4. **Plan Amendments. Proposed amendments and adjustments to the specific plan will follow the procedure described in NMC 15.346.050. Exceptions to this amendment and adjustment procedure are as follows:**

a. **Proposed boundary modifications for development areas B through E (see Appendix A, Figure 20) that increase any individual area no more than five percent of its original total acreage will be reviewed under a Type I process. Proposed boundary modifications that change the total acreage of any of the aforementioned development areas more than five percent will be reviewed under a Type III process.**

b. **Proposed boundary modifications for development areas F and G that move a boundary less than 50 feet and do not change the total acreage in a development area by more than 0.1 acre will be reviewed under a Type I process. Other proposed boundary modifications will be reviewed under a Type III process.**

c. **Proposed boundary changes for areas A and H will be reviewed under a Type III process.**

Response: Proposed development is located in Development Area F but does not propose boundary modifications. These exceptions do not apply.

5. Residential Design. Multiple, nonrepetitive home designs (detached dwelling units) shall be used in the development. No two identical designs shall be located closer than every three residences on any street frontage.

Response: This application does not involve residential development. This standard does not apply.

Division 15.400 Development Standards

Chapter 15.405 LOT REQUIREMENTS

15.405.010 Lot area – Lot areas per dwelling unit.

A. In the following districts, each lot or development site shall have an area as shown below except as otherwise permitted by this code:

1. In the R-1 district, each lot or development site shall have a minimum area of 5,000 square feet or as may be established by a subdistrict. The average size of lots in a subdivision intended for single-family development shall not exceed 10,000 square feet.

Response: Proposed development is located in the C-2 zoning district. This standard does not apply.

2. In the R-2, R-3, and RP districts, each lot or development site shall have a minimum area of 3,000 square feet or as may be established by a subdistrict. In the R-2 and R-P districts, the average size of lots in a subdivision intended for single-family development shall not exceed 5,000 square feet.

Response: Proposed development is located in the C-2 zoning district. This standard does not apply.

3. In the AI, AR, C-1, C-2, and C-3 districts, each lot or development site shall have a minimum area of 5,000 square feet or as may be established by a subdistrict.

4. In the M-1, M-2 and M-3 districts, each lot or development site shall have a minimum area of 20,000 square feet.

5. Institutional districts shall have a minimum size of five contiguous acres in order to create a large enough campus to support institutional uses; however, additions to the district may be made in increments of any size.

6. Within the commercial zoning district(s) of the riverfront overlay subdistrict, there is no minimum lot size required, provided the other standards of this code can be met.

Response: Proposed development is located in the C-2 zoning district. This standard is met.

B. Lot or Development Site Area per Dwelling Unit

Response: This application does not involve residential development. This standard does not apply.

C. In calculating lot area for this section, lot area does not include land within public or private streets. In calculating lot area for maximum lot area/minimum density requirements, lot area does not include land within stream corridors, land reserved for public parks or open spaces, commons buildings, land for preservation of natural, scenic, or historic resources, land on slopes exceeding 15 percent or for avoidance of identified natural hazards, land in shared access easements, public walkways, or entirely used for utilities, land held in reserve in accordance with a future development plan, or land for uses not appurtenant to the residence.

Response: Lot area was calculated per the requirements of this section. This standard is met.

D. Lot size averaging is allowed for any subdivision. Some lots may be under the minimum lot size required in the zone where the subdivision is located, as long as the average size of all lots is at least the minimum lot size.

Response: This application does not involve proposed subdivisions. This standard does not apply.

15.405.030 Lot dimensions and frontage.

A. Width. Widths of lots shall conform to the standards of this code.

B. Depth to Width Ratio. Each lot and parcel shall have an average depth between the front and rear lines of not more than two and one-half times the average width between the side lines. Depths of lots shall conform to the standards of this code. Development of lots under 15,000 square feet are exempt from the lot depth to width ratio requirement.

C. Area. Lot sizes shall conform to standards set forth in this code. Lot area calculations shall not include area contained in public or private streets as defined by this code.

D. Frontage.

1. No lot or development site shall have less than the following lot frontage standards:

a. Each lot or development site shall have either frontage on a public street for a distance of at least 25 feet or have access to a public street through an easement that is at least 25 feet wide. No new private streets, as defined in NMC 15.05.030, shall be created to provide frontage or access.

b. Each lot in an R-2 and R-3 zone shall have a minimum width of 30 feet at the front building line.

c. Each lot in R-1 zone shall have a minimum width of 35 feet at the front building line and AI or RP shall have a minimum width of 50 feet at the front building line.

d. Each lot in an AR zone shall have a minimum width of 45 feet at the front building line.

Response: The subject property is subject to a recent lot consolidation (File No. PLC19-0001 in Exhibit M) in which conformance with the lot dimensions and frontage was established. The criteria are met.

2. The above standards apply with the following exceptions:

a. Legally created lots of record in existence prior to the effective date of the ordinance codified in this code.

b. Lots or development sites which, as a process of their creation, were approved with sub-standard widths in accordance with provisions of this code.

c. Existing private streets may not be used for new dwelling units, except private streets that were created prior to March 1, 1999, including paving to fire access roads standards and installation of necessary utilities, and private streets allowed in the airport residential and airport industrial districts.

Response: The subject property is subject to a recent lot consolidation (File no. PLC19-0001 in Exhibit M) in which conformance with the lot dimensions and frontage was established. Exceptions are not necessary.

15.405.040 Lot coverage and parking coverage requirements.

B. Residential uses in residential zones shall meet the following maximum lot coverage and parking coverage standards. See the definitions in NMC 15.05.030 and Appendix A, Figure 4.

1. Maximum Lot Coverage.

a. R-1: 30 percent, or 40 percent if all structures on the lot are one-story.

b. R-2 and RP: 50 percent.

c. AR and R-3: 50 percent.

2. Maximum Parking Coverage. R-1, R-2, R-3, and RP: 30 percent.

3. Combined Maximum Lot and Parking Coverage.

a. R-1, R-2 and RP: 60 percent.

b. R-3: 70 percent.

Response: This application does not involve residential development. This standard does not apply.

C. All other districts and uses not listed in subsection (B) of this section shall not be limited as to lot coverage and parking coverage except as otherwise required by this code.

Response: This application involves a hotel development in the C-2 zone district. Per this standard, there is no limit to lot and parking coverage except as created by landscaping and setbacks required elsewhere in this code. This standard is met.

Chapter 15.410 YARD SETBACK REQUIREMENTS

15.410.020 Front yard setback.

A. Residential (see Appendix A, Figure 10).

1. AR, R-1 and R-2 districts shall have a front yard of not less than 15 feet. Said yard shall be landscaped and maintained.

2. R-3 and RP districts shall have a front yard of not less than 12 feet. Said yard shall be landscaped and maintained.

3. The entrance to a garage or carport, whether or not attached to a dwelling, shall be set back at least 20 feet from the nearest property line of the street to which access will be provided. However, the foregoing setback requirement shall not apply where the garage or carport will be provided with access to an alley only.

Response: The Preliminary Development Plans (Exhibit A) show the proposed building location and compliance with the minimum front yard setback standards for the C-2district. The criteria are met.

B. Commercial.

Response: Proposed development is not located within an Industrial zone district. This standard does not apply.

C. Industrial.

Response: Proposed development is not located within an Industrial zone district. This standard does not apply.

D. Institutional and Community Facility.

Response: Proposed development is not located within an Institutional or Community Facility zone district. This standard does not apply.

15.410.030 Interior yard setback.

A. Residential.

1. All lots or development sites in the AR, R-1, R-2 and R-3 districts shall have interior yards of not less than five feet, except that where a utility easement is recorded adjacent to a side lot line, there shall be a side yard no less than the width of the easement.

2. All lots or development sites in the RP district shall have interior yards of not less than eight feet.

Response: This section is superseded by NMC 15.346.070(B)(6)(a)(iii), which allows an interior yard setback of 5 feet when development is in the RP zone district of Development Area F. This standard does not apply.

B. Commercial.

Response: Proposed development is not located within an Industrial zone district. This standard does not apply.

C. Industrial.

Response: Proposed development is not located within an Industrial zone district. This standard does not apply.

D. Institutional and Community Facility.

Response: Proposed development is not located within an Institutional or Community Facility zone district. This standard does not apply.

15.410.060 Vision clearance setback.

The following vision clearance standards shall apply in all zones (see Appendix A, Figure 9).

A. At the intersection of two streets, including private streets, a triangle formed by the intersection of the curb lines, each leg of the vision clearance triangle shall be a minimum of 50 feet in length.

B. At the intersection of a private drive and a street, a triangle formed by the intersection of the curb lines, each leg of the vision clearance triangle shall be a minimum of 25 feet in length.

C. Vision clearance triangles shall be kept free of all visual obstructions from two and one-half feet to nine feet above the curb line. Where curbs are absent, the edge of the asphalt or future curb location shall be used as a guide, whichever provides the greatest amount of vision clearance.

D. There is no vision clearance requirement within the commercial zoning district(s) located within the riverfront (RF) overlay subdistrict.

Response: The subject property is located on Brutscher Street. As shown on the Preliminary Development Plans (Exhibit A), vision clearance triangles are provided at the entrances from Brutscher Street. The criteria are met.

15.410.070 Yard exceptions and permitted intrusions into required yard setbacks.

The following intrusions may project into required yards to the extent and under the conditions and limitations indicated:

A. Depressed Areas. In any district, open work fences, hedges, guard railings or other landscaping or architectural devices for safety protection around depressed ramps, stairs or retaining walls may be located in required yards; provided, that such devices are not more than three and one-half feet in height.

B. Accessory Buildings. In front yards on through lots, where a through lot has a depth of not more than 140 feet, accessory buildings may be located in one of the required front yards; provided, that every portion of such accessory building is not less than 10 feet from the nearest street line.

C. Projecting Building Features. The following building features may project into the required front yard no more than five feet and into the required interior yards no more than two feet; provided, that such projections are no closer than three feet to any interior lot line:

1. Eaves, cornices, belt courses, sills, awnings, buttresses or other similar features.

2. Chimneys and fireplaces, provided they do not exceed eight feet in width.

3. Porches, platforms or landings which do not extend above the level of the first floor of the building.

4. Mechanical structures (heat pumps, air conditioners, emergency generators and pumps).

D. Fences and Walls.

1. In the residential district, a fence or wall shall be permitted to be placed at the property line or within a yard setback as follows:

a. Not to exceed six feet in height. Located or maintained within the required interior yards. For purposes of fencing only, lots that are corner lots or through lots may select one of the street frontages as a front yard and all other yards shall be considered as interior yards, allowing the placement of a six-foot fence on the property line. In no case may a fence extend into the clear vision zone as defined in NMC 15.410.060.

b. Not to exceed four feet in height. Located or maintained within all other front yards.

2. In any commercial or industrial district, a fence or wall shall be permitted to be placed at the property line or within a yard setback as follows:

   a. Not to exceed eight feet in height. Located or maintained in any interior yard except where the requirements of vision clearance apply. For purposes of fencing only, lots that are corner lots or through lots may select one of the street frontages as a front yard and all other yards shall be considered as interior yards, allowing the placement of an eight-foot fence on the property line.

   b. Not to exceed four feet in height. Located or maintained within all other front yards.

3. If chain link (wire-woven) fences are used, they are manufactured of corrosion-proof materials of at least 11-1/2 gauge.

4. The requirements of vision clearance shall apply to the placement of fences.

E. Parking and Service Drives (Also Refer to NMC 15.440.010 through 15.440.080).

1. In any district, service drives or accessways providing ingress and egress shall be permitted, together with any appropriate traffic control devices in any required yard.

2. In any residential district, public or private parking areas and parking spaces shall not be permitted in any required yard except as provided herein:

   a. Required parking spaces shall be permitted on service drives in the required front yard in conjunction with any single-family or two-family dwelling on a single lot.

   b. Recreational vehicles, boat trailers, camperettes and all other vehicles not in daily use are restricted to parking in the front yard setback for not more than 48 hours; and recreational vehicles, boat trailers, camperettes and all other vehicles not in daily use are permitted to be located in the required interior yards.

   c. Public or private parking areas, parking spaces or any building or portion of any building intended for parking which have been identified as a use permitted in any residential district shall be permitted in any interior yard that abuts an alley, provided said parking areas, structures or spaces shall comply with NMC 15.440.070, Parking tables and diagrams (Diagrams 1 through 3).

   d. Public or private parking areas, service drives or parking spaces which have been identified as a use permitted in any residential district shall be permitted in interior yards; provided, that said

parking areas, service drives or parking spaces shall comply with other requirements of this code.

3. In any commercial or industrial district, except C-1, C-4 and M-1, public or private parking areas or parking spaces shall be permitted in any required yard (see NMC 15.410.030). Parking requirements in the C-4 district are described in NMC 15.352.040(H).

4. In the I district, public or private parking areas or parking spaces may be no closer to a front property line than 20 feet, and no closer to an interior property line than five feet.

F. Public Telephone Booths and Public Transit Shelters. Public telephone booths and public transit shelters shall be permitted; provided, that vision clearance is maintained for vehicle requirements for vision clearance.

G. Hangars within the AR airport residential district may be constructed with no yard setbacks to property lines adjacent to other properties within the airport residential or airport industrial districts.

Response: At this time, the above-listed exceptions and intrusions into yard setbacks are not planned as necessary. The standards are not applicable.

Chapter 15.415 BUILDING AND SITE DESIGN STANDARDS

15.415.10 Main buildings and uses as accessory buildings.

A. Hereinafter, any building which is the only building on a lot is a main building.

B. In any residential district except RP, there shall be only one main use per lot or development site; provided, that home occupations shall be allowed where permitted.

C. In any residential district, there shall be no more than two accessory buildings on any lot or development site.

15.415.020 Building height limitation.

A. Residential.

1. In the R-1, R-2, AR, and RP districts, no main building shall exceed 30 feet in height. Accessory buildings in the R-1, R-2, R-3, AR, and RP districts are limited to 16 feet in height, except as follows:

a. Up to 800 square feet of an accessory building may have a height of up to 24 feet.

b. Aircraft hangars in the AR district may be the same height as the main building.

Response: This section is superseded by NMC 15.346.070(B)(6)(c), which allows a building height of 150 feet. This standard does not apply.

2. In the R-3 district, no main building shall exceed 45 feet in height, except, where an R-3 district abuts upon an R-1 district, the maximum permitted building height shall be limited to 30 feet for a distance of 50 feet from the abutting boundary of the aforementioned district.

3. Single-family dwellings permitted in commercial or industrial districts shall not exceed 30 feet in height.

Response: Proposed development is not located in an R-3 district and does not involve a single-family dwelling. These standards do not apply.

B. Commercial and Industrial.

Response: Proposed development is not located within an Industrial zone district. This standard does not apply.

C. The maximum height of buildings and uses permitted conditionally shall be stated in the conditional use permits.

Response: Proposed development does not involve a conditional use. This standard does not apply.

D. Institutional.

Response: Proposed development is not located within an Institutional zone district. This standard does not apply.

E. Alternative Building Height Standard. As an alternative to the building height standards above, any project may elect to use the following standard (see Figure 24 in Appendix A). To meet this standard:

1. Each point on the building must be no more than 20 feet higher than the ground level at all points on the property lines, plus one vertical foot for each horizontal foot of distance from that property line; and

2. Each point on the building must be no more than 20 feet higher than the ground level at a point directly north on a property line, plus one vertical foot for each two horizontal feet of distance between those points. This second limit does not apply if the property directly to the north is a right-of-way, parking lot, protected natural resource, or similar unbuildable property.

Response: The Preliminary Development Plans contain architectural drawings of the planned elevations of the structure for this project. The elevation drawings show the structure to be in compliance with NMC 15.346.070(B)(6)(c), which allows a building height of 50 feet. The criteria are not applicable.

F. Buildings within the airport overlay subdistrict are subject to the height limits of that subdistrict.

Response: The proposed development is located within the Inner Horizontal Surface of the airport overlay. The Preliminary Development Plans (Exhibit A) contain architectural drawings of the planned elevations of the structure for this project. The elevation drawings show the structure to be in compliance with NMC 15.346.070(B)(6)(c), which allows a building height of 50 feet, well under the 150 feet allowed by the airport overlay. The criterion is met.

15.415.030 **Building height exemptions.**

Roof structures and architectural features for the housing of elevators, stairways, tanks, ventilating fans and similar equipment required to operate and maintain the building, fire or parapet walls, skylights, towers, flagpoles, chimneys, smokestacks, wireless masts, TV antennas, steeples and similar structures may be erected above the height limits prescribed in this code; provided, that no roof structure, feature or any other device above the prescribed height limit shall be allowed or used for the purpose of providing additional floor space. Further, no roof structure or architectural feature under this exemption shall be erected more than 18 feet above the height of the main building, whether such structure is attached to it or freestanding, nor shall any such structure or feature exceed the height limits of the airport overlay subdistrict.

Response: As shown on the Preliminary Development Plans at ±47 feet 0 inches, the height of the flat roof is below the 50-foot height maximum per NMC 15.346.070(B)(6)(c) above. The sloped parapet extends up to ±57 feet 6 inches, under the allowable 18 feet. This criterion is met.

Chapter 15.420 LANDSCAPING AND OUTDOOR AREAS

15.420.010 **Required minimum standards.**

A. **Private and Shared Outdoor Recreation Areas in Residential Developments.**

Response: This application does not involve residential development. This standard does not apply.

b

1. **All areas subject to the final design review plan and not otherwise improved shall be landscaped.**

Response: All areas that are not proposed for improvement will be landscaped. The criterion is met.

2. The following landscape requirements shall apply to the parking and loading areas:

   a. A parking or loading area providing 10 or more spaces shall be improved with defined landscaped areas totaling no less than 25 square feet per parking space.

   b. A parking, loading area, or drive aisle which runs adjacent to a property line shall be separate from any lot line adjacent to a street by a landscaped strip at least 10 feet in interior width or the width of the required yard, whichever is greater, and any other lot line by a landscaped strip of at least five feet in interior width. See subsections (B)(3)(c) and (d) of this section for material to plant within landscape strips.

   c. A landscaped strip separating a parking area, loading area, or drive aisle from a street shall contain street trees spaced as appropriate to the species, not to exceed 50 feet apart on average, and a combination of shrubs and ground cover, or lawn. This landscaping shall provide partial screening of these areas from the street.

   d. A landscaped strip separating a parking area, loading area, or drive aisle from an interior lot line shall contain any combination of trees, shrubs, ground cover or lawn. Plant material shall be selected from at least two different plant material groups (example: trees and shrubs, or lawn and shrubs, or lawn and trees and shrubs).

   e. Landscaping in a parking or loading area shall be located in defined landscaped areas which are uniformly distributed throughout the parking or loading area.

   f. Landscaping areas in a parking lot, service drive or loading area shall have an interior width of not less than five feet.

   g. All multifamily, institutional, commercial, or industrial parking areas, service drives, or loading zones which abut a residential district shall be enclosed with a 75 percent opaque, site-obscuring fence, wall or evergreen hedge along and immediately adjacent to any interior property line which abuts the residential district. Landscape plantings must be large enough to provide the required minimum screening requirement within 12 months after initial installation. Adequate provisions shall be maintained to protect walls, fences or plant materials from being damaged by vehicles using said parking areas.

   h. An island of landscaped area shall be located to separate blocks of parking spaces. At a minimum, one deciduous shade tree per seven parking spaces

shall be planted to create a partial tree canopy over and around the parking area. No more than seven parking spaces may be grouped together without an island separation unless otherwise approved by the director based on the following alternative standards:

i. Provision of a continuous landscaped strip, with a five-foot minimum width, which runs perpendicular to the row of parking spaces (see Appendix A, Figure 13).

ii. Provision of tree planting landscape islands, each of which is at least 16 square feet in size, and spaced no more than 50 feet apart on average, within areas proposed for back-to-back parking (see Appendix A, Figure 14).

Response: The Preliminary Development Plans show that planned landscaping for parking and loading areas included with this project is in conformance with the requirements of this subsection, including islands, blocking, and screening. The criteria are met.

3. Trees, Shrubs and Ground Covers. The species of street trees required under this section shall conform to those authorized by the city council through resolution. The director shall have the responsibility for preparing and updating the street tree species list which shall be adopted in resolution form by the city council.

a. Arterial and minor arterial street trees shall have spacing of approximately 50 feet on center. These trees shall have a minimum two-inch caliper tree trunk or stalk at a measurement of two feet up from the base and shall be balled and burlapped or boxed.

b. Collector and local street trees shall be spaced approximately 35 to 40 feet on center. These trees shall have a minimum of a one and one-half or one and three-fourths inch tree trunk or stalk and shall be balled and burlapped or boxed.

c. Accent Trees. Accent trees are trees such as flowering cherry, flowering plum, crab-apple, Hawthorne and the like. These trees shall have a minimum one and one-half inch caliper tree trunk or stalk and shall be at least eight to 10 feet in height. These trees may be planted bare root or balled and burlapped. The spacing of these trees should be approximately 25 to 30 feet on center.

d. All broad-leafed evergreen shrubs and deciduous shrubs shall have a minimum height of 12 to 15 inches and shall be balled and burlapped or come from a two-gallon can. Gallon-can size shrubs will not be allowed except in ground covers. Larger sizes of shrubs may be required in special areas and locations as specified by the design review board.

Spacing of these shrubs shall be typical for the variety, three to eight feet, and shall be identified on the landscape planting plan.

e. Ground Cover Plant Material. Ground cover plant material such as greening juniper, cotoneaster, minor Bowles, English ivy, hypericum and the like shall be one of the following sizes in specified spacing for that size:

Ground Cover Plant Material	
Gallon cans	3 feet on center
4" containers	2 feet on center
2-1/4" containers	18" on center
Rooted cuttings	12" on center

Response: The Preliminary Development Plans show that the location and types of trees and groundcover planned for installation with this project meet the standards of this section. The criteria are met.

4. Automatic, underground irrigation systems shall be provided for all areas required to be planted by this section. The director shall retain the flexibility to allow a combination of irrigated and nonirrigated areas. Landscaping material used within nonirrigated areas must consist of drought- resistant varieties. Provision must be made for alternative irrigation during the first year after initial installation to provide sufficient moisture for plant establishment.

5. Required landscaping shall be continuously maintained.

6. Maximum height of tree species shall be considered when planting under overhead utility lines.

7. Landscaping requirements and standards for parking and loading areas (subsection (B)(3) of this section) will apply to development proposals unless the institution has addressed the requirements and standards by an approved site development master plan. With an approved site development master plan, the landscape requirements will be reviewed through an administrative Type I review process.

8. In the M-4 zone, landscaping requirements and standards for parking and loading areas (subsection (B)(3) of this section) do not apply unless within 50 feet of a residential district.

Response: The installation, irrigation, and maintenance requirements of NMC 15.42.010 apply to this project. The Preliminary Development Plans show planned landscape features in conformance with the subsections above. The criteria are met or can be met through future action.

B. Installation of Landscaping. All landscaping required by these provisions shall be installed prior to the issuance of occupancy permits, unless security equal to 110 percent of the cost of the landscaping as determined by the director is filed with the city, insuring such installation within six months of occupancy. A security – cash, certified check, time certificates of deposit, assignment of a savings account, bond or such other assurance of completion as shall meet with the approval of the city attorney – shall satisfy the security requirements. If the installation of the landscaping is not completed within the six-month period, or within an extension of time authorized by the director, the security may be used by the city to complete the installation. Upon completion of the installation, any portion of the remaining security deposited with the city shall be returned to the applicant.

Response: Landscaping required by this chapter will be installed prior to final occupancy permits, or the appropriate security must be provided per this subsection. The criteria are met.

15.420.020 Landscaping and amenities in public rights-of-way.

The following standards are intended to create attractive streetscapes and inviting pedestrian spaces. A review body may require any of the following landscaping and amenities to be placed in abutting public rights-of-way as part of multifamily, commercial, industrial, or institutional design reviews, or for subdivisions and planned unit developments. In addition, any entity improving existing rights-of-way should consider including these elements in the project. A decision to include any amenity shall be based on comprehensive plan guidelines, pedestrian volumes in the area, and the nature of surrounding development.

A. Pedestrian Space Landscaping. Pedestrian spaces shall include all sidewalks and medians used for pedestrian refuge. Spaces near sidewalks shall provide plant material for cooling and dust control, and street furniture for comfort and safety, such as benches, waste receptacles and pedestrian-scale lighting. These spaces should be designed for short-term as well as long-term use. Elements of pedestrian spaces shall not obstruct sightlines and shall adhere to any other required city safety measures. Medians used for pedestrian refuge shall be designed for short-term use only with plant material for cooling and dust control, and pedestrian-scale lighting. The design of these spaces shall facilitate safe pedestrian crossing with lighting and accent paving to delineate a safe crossing zone visually clear to motorists and pedestrians alike.

1. Street trees planted in pedestrian spaces shall be planted according to NMC 15.420.010(B)(4).

2. Pedestrian spaces shall have low (two and one-half feet) shrubs and ground covers for safety purposes, enhancing visibility and discouraging criminal activity.

a. Plantings shall be 90 percent evergreen year-round, provide seasonal interest with fall color or blooms, and at maturity maintain growth within the planting area (refer to plant material matrix below).

b. Plant placement shall also adhere to clear sight line requirements as well as any other relevant city safety measures.

3. Pedestrian-scale lighting shall be installed along sidewalks and in medians used for pedestrian refuge.

a. Pole lights as well as bollard lighting may be specified; however, the amount and type of pedestrian activity during evening hours, e.g., transit stops, nighttime service districts, shall ultimately determine the type of fixture chosen.

b. Luminaire styles shall match the area/district theme of existing luminaires and shall not conflict with existing building or roadway lights causing glare.

c. Lighting heights and styles shall be chosen to prevent glare and to designate a clear and safe path and limit opportunities for vandalism (see Appendix A, Figure 17, Typical Pedestrian Space Layouts).

d. Lighting shall be placed near the curb to provide maximum illumination for spaces furthest from building illumination. Spacing shall correspond to that of the street trees to prevent tree foliage from blocking light.

4. Street furniture such as benches and waste receptacles shall be provided for spaces near sidewalks only.

a. Furniture should be sited in areas with the heaviest pedestrian activity, such as downtown, shopping districts, and shopping centers.

b. Benches should be arranged to facilitate conversation between individuals with L-shaped arrangements and should face the area focal point, such as shops, fountains, plazas, and should divert attention away from nearby traffic.

5. Paving and curb cuts shall facilitate safe pedestrian crossing and meet all ADA requirements for accessibility.

Response: The Preliminary Development Plans show street trees and sidewalks included. The improvements meet the minimum requirements of the NMC and Public Works engineering standards. It is understood the review body may impose reasonable conditions upon landscaping and amenities in the public right-of-way, as indicated in this section. The criteria are met.

B. Planting Strip Landscaping. All planting strips shall be landscaped. Planting strips provide a physical and psychological buffer for pedestrians from traffic with plant material that reduces heat and dust, creating a more comfortable pedestrian environment. Planting strips shall have different arrangements and combinations of plant materials according to the frequency of on-street parking (see Appendix A, Figures 18 and 19).

1. Planting strips which do not have adjacent parking shall have a combination of ground covers, low (two and one-half feet) shrubs and trees. Planting strips adjacent to frequently used on-street parking, as defined by city staff, shall only have trees protected by tree grates, and planting strips adjacent to infrequently used on-street parking shall be planted with ground cover as well as trees (see Appendix A, Figures 18 and 19, Typical Planting Strip Layouts). District themes or corridor themes linking individual districts should be followed utilizing a unifying plant characteristic, e.g., bloom color, habit, or fall color. When specifying thematic plant material, monocultures should be avoided, particularly those species susceptible to disease.

2. Street trees shall be provided in all planting strips as provided in NMC 15.420.010(B)(4).

   a. Planting strips without adjacent parking or with infrequent adjacent parking shall have street trees in conjunction with ground covers and/or shrubs.

   b. Planting strips with adjacent parking used frequently shall have only street trees protected by tree grates.

3. Shrubs and ground covers shall be provided in planting strips without adjacent parking with low (two and one-half feet) planting masses to enhance visibility, discourage criminal activity, and provide a physical as well as psychological buffer from passing traffic.

   a. Plantings shall be 90 percent evergreen year-round, provide seasonal interest with fall color or blooms and at maturity maintain growth within the planting area.

   b. Ground cover able to endure infrequent foot traffic shall be used in combination with street trees for planting strips with adjacent occasional parking (refer to plant material matrix below).

   c. All plant placement shall adhere to clear sight line requirements as well as any other relevant city safety measures.

Response: The Preliminary Development Plans show planting strip landscaping— including street trees—in conformance with the requirements of this section. The criteria are met.

C. Maintenance. All landscapes shall be maintained for the duration of the planting to encourage health of plant material as well as public health and safety. All street trees and shrubs shall be pruned to maintain health and structure of the plant material for public safety purposes.

Response: Required landscaping—including street trees—installed as part of this project will be maintained and pruned for public safety. The criterion is met.

D. Exception. In the AI airport industrial district and AR airport residential district, no landscape or amenities except for grass are

required for any area within 50 feet of aircraft operation areas including aircraft parking areas, taxiways, clear areas, safety areas, object-free areas, and the runway.

Response: Proposed development is not located within AI or AR zone districts. This standard does not apply.

Chapter 15.425 EXTERIOR LIGHTING

15.425.020 Applicability and exemptions.

A. Applicability. Outdoor lighting shall be required for safety and personal security in areas of assembly, parking, and traverse, as part of multifamily residential, commercial, industrial, public, recreational and institutional uses. The applicant for any Type I or Type II development permit shall submit, as part of the site plan, evidence that the proposed outdoor lighting plan will comply with this section. This information shall contain but not be limited to the following:

1. The location, height, make, model, lamp type, wattage, and proposed cutoff angle of each outdoor lighting fixture.

2. Additional information the director may determine is necessary, including but not limited to illuminance level profiles, hours of business operation, and percentage of site dedicated to parking and access.

3. If any portion of the site is used after dark for outdoor parking, assembly or traverse, an illumination plan for these areas is required. The plan must address safety and personal security.

Response: The Preliminary Development Plans contain the information required per NMC 15.425.020 to satisfy the requirements of an outdoor lighting plan. The criteria are met.

B. Exemptions. The following uses shall be exempt from the provisions of this section:

1. Public street and airport lighting.

2. Circus, fair, carnival, or outdoor governmentally sponsored event or festival lighting.

3. Construction or emergency lighting, provided such lighting is discontinued immediately upon completion of the construction work or abatement of the emergency necessitating said lighting.

4. Temporary Lighting. In addition to the lighting otherwise permitted in this code, a lot may contain temporary lighting during events as listed below:

a. Grand Opening Event. A grand opening is an event of up to 30 days in duration within 30 days of issuance of a certificate of occupancy for a new or remodeled structure, or within 30 days of change of business or ownership. No lot may have more than one grand opening event per calendar year. The applicant shall notify the city in writing of the

beginning and ending dates prior to the grand opening event.

b. Other Events. A lot may have two other events per calendar year. The events may not be more than eight consecutive days in duration, nor less than 30 days apart.

5. Lighting activated by motion sensor devices.

6. Nonconforming lighting in place as of September 5, 2000. Replacement of nonconforming lighting is subject to the requirements of NMC 15.205.010 through 15.205.100.

7. Light Trespass onto Industrial Properties. The lighting trespass standards of NMC 15.425.040 do not apply where the light trespass would be onto an industrially zoned property.

Response: Exemptions are understood and will be utilized as applicable.

15.425.030 Alternative materials and methods of construction, installation, or operation.

The provisions of this section are not intended to prevent the use of any design, material, or methods of installation or operation not specifically prescribed by this section, provided any such alternate has been approved by the director. Alternatives must be an approximate equivalent to the applicable specific requirement of this section and must comply with all other applicable standards in this section.

15.425.040 Requirements.

A. General Requirements – All Zoning Districts.

1. Low-level light fixtures include exterior lights which are installed between ground level and six feet tall. Low-level light fixtures are considered nonintrusive and are unrestricted by this code.

2. Medium-level light fixtures include exterior lights which are installed between six feet and 15 feet above ground level. Medium-level light fixtures must either comply with the shielding requirements of subsection (B) of this section, or the applicant shall show that light trespass from a property has been designed not to exceed one-half foot-candle at the property line.

3. High-level light fixtures include exterior lights which are installed 15 feet or more above ground level. High-level light fixtures must comply with the shielding requirements of subsection (B) of this section, and light trespass from a property may not exceed one-half foot-candle at the property line.

B. Table of Shielding Requirements.

Table of Shielding Requirements	
Fixture Lamp Type	Shielded
Low/high pressure sodium, mercury vapor, metal halide and fluorescent over 50 watts	Fully
Incandescent over 160 watts	Fully
Incandescent 160 watts or less	None
Fossil fuel	None
Any light source of 50 watts or less	None
Other sources	As approved by NMC 15.425.030
Note: "Incandescent" includes tungsten-halogen (quartz) lamps.	

Response: The Preliminary Development Plans contain the information required per NMC 15.425.020 to satisfy the requirements of an outdoor lighting plan. Required lighting will meet 15.425.030–040 for the installation of outdoor lighting. The criteria are met.

Chapter 15.430 UNDERGROUND UTILITY INSTALLATION

15.430.010 Underground utility installation.

A. All new utility lines, including but not limited to electric, communication, natural gas, and cable television transmission lines, shall be placed underground. This does not include surface-mounted transformers, connections boxes, meter cabinets, service cabinets, temporary facilities during construction, and high-capacity electric lines operating at 50,000 volts or above.

B. Existing utility lines shall be placed underground when they are relocated, or when an addition or remodel requiring a Type II design review is proposed, or when a developed area is annexed to the city.

C. The director may make exceptions to the requirement to underground utilities based on one or more of the following criteria:

1. The cost of undergrounding the utility is extraordinarily expensive.

2. There are physical factors that make undergrounding extraordinarily difficult.

3. Existing utility facilities in the area are primarily overhead and are unlikely to be changed.

Response: New utilities included with this project will be installed underground, where required by this chapter. The Preliminary Development Plans show planned utilities meeting these standards. The criteria are met.

Chapter 15.440 OFF-STREET PARKING, BICYCLE PARKING, AND PRIVATE WALKWAYS

Article I. Off-Street Parking Requirements

15.440.010 Required off-street parking.

A. Off-street parking shall be provided on the development site for all R-1, C-1, M-1, M-2 and M-3 zones. In all other zones, the required parking shall be on the development site or within 400 feet of the development site which the parking is required to serve. All required

parking must be under the same ownership as the development site served except through special covenant agreements as approved by the city attorney, which bind the parking to the development site.

Response: All proposed parking is located on-site. The criterion is met.

B. Off-street parking is not required in the C-3 district, except for.

C. Within the C-4 district, the minimum number of required off-street parking spaces shall be 50 percent of the number required by NMC 15.440.030, except that no reduction is permitted for residential uses.

Response: Proposed development is not located within the C-3 or C-4 district. The criteria are not applicable.

D. All commercial, office, or industrial developments that have more than 20 off-street parking spaces and that have designated employee parking must provide at least one preferential carpool/vanpool parking space. The preferential carpool/vanpool parking space(s) must be located close to a building entrance.

Response: Proposed development is not office, or industrial.

15.440.020 Parking area and service drive design.

A. All public or private parking areas, parking spaces, or garages shall be designed, laid out and constructed in accordance with the minimum standards as set forth in NMC 15.440.070.

B. Groups of three or more parking spaces, except those in conjunction with single-family or two-family dwellings on a single lot, shall be served by a service drive so that no backward movement or other maneuvering of a vehicle within a street, other than an alley, will be required. Service drives shall be designed and constructed to facilitate the flow of traffic, provide maximum safety in traffic access and egress and maximum safety of pedestrian and vehicular traffic on the site, but in no case shall two-way and one-way service drives be less than 20 feet and 12 feet, respectively. Service drives shall be improved in accordance with the minimum standards as set forth in NMC 15.440.060.

Response: The Preliminary Development Plans show ±80 off-street parking spaces. As shown on the plans, the space and drive aisle layout meet the minimum standards of this section for safety, traffic flow, etc. The criteria are met.

C. Gates. A private drive or private street serving as primary access to more than one dwelling unit shall not be gated to limit access, except as approved by variance.

Response: The site is not planned to be gated. This criterion is not applicable.

D. In the AI airport industrial district and AR airport residential district, taxiways may be used as part of the service drive design where an overall site plan is submitted that shows how the circulation of aircraft and vehicles are safely accommodated, where security fences

are located, if required, and is approved by the fire marshal, planning director, and public works director.

Response: Proposed development is not located within the AI or AR zoning districts. The criterion is not applicable.

15.440.030 Parking spaces required.

Parking Spaces Required	
Use	Minimum Parking Spaces Required
Hotel	80

Response: This project involves a new Hotel for Marriott. This is a permitted use per the base zone and the subdistrict. The Preliminary Development Plans show 80 total parking spaces. The criteria are met.

15.440.060 Parking area and service drive improvements.

All public or private parking areas, outdoor vehicle sales areas, and service drives shall be improved according to the following:

A. All parking areas and service drives shall have surfacing of asphaltic concrete or Portland cement concrete or other hard surfacing such as brick or concrete pavers. Other durable and dust-free surfacing materials may be approved by the director for infrequently used parking areas. All parking areas and service drives shall be graded so as not to drain stormwater over the public sidewalk or onto any abutting public or private property.

B. All parking areas shall be designed not to encroach on public streets, alleys, and other rights-of-way. Parking areas shall not be placed in the area between the curb and sidewalk or, if there is no sidewalk, in the public right-of-way between the curb and the property line. The director may issue a permit for exceptions for unusual circumstances where the design maintains safety and aesthetics.

C. All parking areas, except those required in conjunction with a single-family or two-family dwelling, shall provide a substantial bumper which will prevent cars from encroachment on abutting private and public property.

D. All parking areas, including service drives, except those required in conjunction with single-family or two-family dwellings, shall be screened in accordance with NMC 15.420.010(B).

E. Any lights provided to illuminate any public or private parking area or vehicle sales area shall be so arranged as to reflect the light away from any abutting or adjacent residential district.

F. All service drives and parking spaces shall be substantially marked and comply with NMC 15.440.070.

Response: The Preliminary Development Plans show the parking area design meets the minimum standards of this section. The criteria are met.

G. Parking areas for residential uses shall not be located in a required front yard, except as follows.

Response: This application does not involve residential development. The criteria do not apply.

H. A reduction in size of the parking stall may be allowed for up to a maximum of 30 percent of the total number of spaces to allow for compact cars. For high turnover uses, such as convenience stores or fast-food restaurants, at the discretion of the director, all stalls will be required to be full-sized.

Response: The Preliminary Development Plans (Exhibit A) show 80 dedicated parking spaces. The criterion is met.

I. Affordable housing projects may use a tandem parking design, subject to approval of the community development director.

Response: This application does not involve residential development. This criterion does not apply.

J. Portions of off-street parking areas may be developed or redeveloped for transit-related facilities and uses such as transit shelters or park-and-ride lots, subject to meeting all other applicable standards, including retaining the required minimum number of parking spaces.

Response: Transit-related facilities are not planned as a part of this development. This criterion does not apply.

15.440.070 Parking tables and diagrams.

The following tables provide the minimum dimensions of public or private parking areas

Table of Dimensions (in feet)					
Basic Stall			Back to Back	Aisles	
Angle- °	A	B	C	D (one-way)	E (two-way)
30°	18	16.8	25.8	12	20
38°	14.6	18.2	29.3	12	20
45°	12.7	19.1	31.8	12	20
52°	11.4	19.7	33.9	13	20

55°	11	19.9	34.6	14	20
60°	10.4	20.1	35.7	15	20
70°	9.6	20	36.9	18	20
80°	9.1	19.3.3	37	20	20

Notes:
1. Bumpers must be installed where paved areas abut street right-of-way (except at driveways).
2. No stalls shall be such that cars must back over the property line to enter or leave stall.
3. Stalls must be clearly marked and the markings must be maintained in good condition.
4. The sketches show typical situations to illustrate the required standards. For further information or advice, contact the community development department at 537-1210

Stall Width with Corresponding Table of dimensions (in feet)						
Stall Width = X	9	9.5	10	10.5	11	12
Aisle Width = Y	24	24	22	22	20	20

Notes:
1. Bumpers must be installed where paved areas abut street right-of-way (except at driveways).
2. No stalls shall be such that cars must back over the property line to enter or leave stall.
3. Stalls must be clearly marked and the markings must be maintained in good condition.
4. The sketches show typical situations to illustrate the required standards. For further information or advice, contact the planning department.

Response: The Preliminary Development Plans show 80 dedicated parking spaces. As shown on the plans, the space and drive aisle layout meet the minimum standards of this section. The criteria are met.

15.440.080 Off-street loading.

A. Buildings to be built or substantially altered which receive and distribute materials and merchandise by trucks shall provide and maintain off-street loading berths in sufficient number and size to adequately handle the needs of the particular use.

1. The following standards shall be used in establishing the minimum number of berths required:

Minimum Number of Berths Required	
Gross Floor Area of the Building in Square Feet	No. of Berths
Up to 10,000	1
10,000 and over	2

Response: This project involves a new Hotel.

2. A loading berth shall contain a space 10 feet wide and 35 feet long and have a vertical clearance of 14 feet. Where the vehicles generally used for loading and unloading exceed these dimensions, the required length of these berths shall be increased.

Response: The Preliminary Development show two dedicated loading berths. As shown on the plans, the loadings berth are 10 feet wide and 35 feet long, with no overhead obstructions. The criteria are met.

3. Additional off-street loading requirements within the C-4 district are described in NMC 15.352.040(H)(7).

4. Where a facility includes an aircraft hangar, the off-street loading requirement is not required since loading may occur through the hangar doors.

Response: Proposed development is not located within the C-4 district and does not include an aircraft hangar. The criteria are not applicable.

B. The following provisions shall apply to off-street loading facilities:

1. The provision and maintenance of off-street loading space is a continuing obligation of the property owner. No building permit shall be issued until plans are presented that show property that is and will remain available for exclusive use as off-street loading space. The subsequent use of property for which the building permit is issued shall be conditional upon the unqualified continuance and availability of the amount of loading space required by this code. Should the owner or occupant of any building change the use to which the building is put, thereby increasing off- street loading requirements, it shall be unlawful and a violation of this code to begin or maintain such altered use until such time as the increased off-street loading requirements are met.

Response: The provision and maintenance requirements of NMC 15.440.080 apply to this project. The Preliminary Development Plans (Exhibit A) show a planned off-street loading facility in conformance with the subsection above. The criteria are met or can be met through future action.

2. Owners of two or more buildings may agree to utilize jointly the same loading spaces when the hours of operation do not overlap; provided, that satisfactory legal evidence is presented to the city attorney in the form of deeds, leases or contracts to establish the joint use.

Response: The proposed loading facility is located on-site and is not subject to a joint use agreement. The criterion is not applicable.

3. A plan drawn to scale, indicating how the off-street loading requirements are to be fulfilled, shall accompany an application for a building permit.

4. Design Requirements for Loading Areas.

a. Areas used for standing and maneuvering of vehicles shall have durable and dustless surfaces of asphaltic concrete or portland cement concrete, maintained adequately for all-weather use and so drained as to avoid flow of water across the sidewalks.

b. Loading areas adjacent to residential zones designed to minimize disturbance of residents.

c. Artificial lighting which may be provided shall be so deflected as not to shine or create glare in any residential zone or on any adjacent dwelling.

d. Access aisles shall be of sufficient width for all vehicular turning and maneuvering.

e. Vision clearance standards as identified in NMC 15.410.060 shall apply.

Response: The Preliminary Development Plans show two dedicated loading berths meeting the standards above. The criteria are met.

Article II. Bicycle Parking

15.440.100 Facility requirements.

Bicycle parking facilities shall be provided for the uses shown in the following table. Fractional space requirements shall be rounded up to the next whole number.

Bicycle Parking Requirements	
Use	Minimum Number of Bicycle Parking Spaces Required
New commercial, industrial, office, and institutional developments, including additions that total 4,000 square feet or more	One bicycle parking space for every 10,000 square feet of gross floor area. In C-4 districts, two bicycle parking spaces, or one per 5,000 square feet of building area, must be provided, whichever is greater

15.440.110 Design.

A. Bicycle parking facilities shall consist of one or more of the following:

1. A firmly secured loop, bar, rack, or similar facility that accommodates locking the bicycle frame and both wheels using a cable or U-shaped lock.

2. An enclosed locker.

3. A designated area within the ground floor of a building, garage, or storage area. Such area shall be clearly designated for bicycle parking.

4. Other facility designs approved by the director.

B. All bicycle parking spaces shall be at least six feet long and two and one-half feet wide. Spaces shall not obstruct pedestrian travel.

C. All spaces shall be located within 50 feet of a building entrance of the development.

D. Required bicycle parking facilities may be located in the public right-of-way adjacent to a development subject to approval of the authority responsible for maintenance of that right-of-way.

Response: This project involves a new hotel.

Article III. Private Walkways

15.440.130 Where required.

Private walkways shall be constructed as part of any development requiring Type II design review, including mobile home parks. In addition, they may be required as part of conditional use permits or planned unit developments. In the airport industrial (AI) district and residential (AR) district, on-site walks are not required in aircraft operations areas, such as parking aprons, taxiways, and runways.

Response: Private walkways included with this project meet the standards of this chapter. The Preliminary Development Plans (Exhibit A) show the improvements as required below. The criteria are met.

15.440.140 Private walkway design.

A. All required private walkways shall meet the applicable building code and Americans with Disabilities Act requirements.

B. Required private walkways shall be a minimum of four feet wide.

C. Required private walkways shall be constructed of portland cement concrete or brick.

D. Crosswalks crossing service drives shall, at a minimum, be painted on the asphalt or clearly marked with contrasting paving materials or humps/raised crossings. If painted striping is used, it should consist of thermoplastic striping or similar type of durable application.

E. At a minimum, required private walkways shall connect each main pedestrian building entrance to each abutting public street and to each other.

F. The review body may require on-site walks to connect to development on adjoining sites.

G. The review body may modify these requirements where, in its opinion, the development provides adequate on-site pedestrian circulation, or where lot dimensions, existing building layout, or topography preclude compliance with these standards.

Response: The Preliminary Development Plans show several sections of private walkways within the project area. The exact location and layout of the private walkways is contingent on final design approval by the City. The criteria are met.

Division 15.500 Public Improvement Standards

Chapter 15.505 PUBLIC IMPROVEMENTS STANDARDS

15.505.020 Applicability.

The provision and utilization of public facilities and services within the City of Newberg shall apply to all land developments in accordance with this chapter. No development shall be approved unless the following improvements are provided for prior to occupancy or operation, unless future provision is assured in accordance with NMC 15.505.030(E).

A. Public Works Design and Construction Standards. The design and construction of all improvements within existing and proposed rights-of-way and easements, all improvements to be maintained by the city, and all improvements for which city approval is required shall comply with the requirements of the most recently adopted Newberg public works design and construction standards.

B. Street Improvements. All projects subject to a Type II design review, partition, or subdivision approval must construct street improvements necessary to serve the development.

C. Water. All developments, lots, and parcels within the City of Newberg shall be served by the municipal water system as specified in Chapter 13.15 NMC.

D. Wastewater. All developments, lots, and parcels within the City of Newberg shall be served by the municipal wastewater system as specified in Chapter 13.10 NMC.

E. Stormwater. All developments, lots, and parcels within the City of Newberg shall manage stormwater runoff as specified in Chapters 13.20 and 13.25 NMC.

F. Utility Easements. Utility easements shall be provided as necessary and required by the review body to provide needed facilities for present or future development of the area.

G. City Approval of Public Improvements Required. No building permit may be issued until all required public facility improvements are in place and approved by the director, or are otherwise bonded for in a manner approved by the review authority, in conformance with the provisions of this code and the Newberg Public Works Design and Construction Standards.

Response: Public improvements included with this project meet the standards of this chapter, as discussed with City staff. The Preliminary Development Plans show the improvements—including water, wastewater, stormwater, and associated utility easements (if needed)—are planned to be constructed to City Public Works design and engineering standards. The criteria are met.

15.505.030 Street standards.

B. Applicability. The provisions of this section apply to:

1. The creation, dedication, and/or construction of all public streets, bike facilities, or pedestrian facilities in all subdivisions, partitions, or other developments in the City of Newberg.

2. The extension or widening of existing public street rights-of-way, easements, or street improvements including those which may be proposed by an individual or the city, or which may be required by the city in association with other development approvals.

3. The construction or modification of any utilities, pedestrian facilities, or bike facilities in public rights-of-way or easements.

4. The designation of planter strips. Street trees are required subject to Chapter 15.420 NMC.

5. Developments outside the city that tie into or take access from city streets.

C. Layout of Streets, Alleys, Bikeways, and Walkways. Streets, alleys, bikeways, and walkways shall be laid out and constructed as shown in the Newberg transportation system plan. In areas where the transportation system plan or future street plans do not show specific transportation improvements, roads and streets shall be laid out so as to conform to previously approved subdivisions, partitions, and other developments for adjoining properties, unless it is found in the public interest to modify these patterns. Transportation improvements shall conform to the standards within the Newberg Municipal Code, the Newberg public works design and construction standards, the Newberg transportation system plan, and other adopted city plans.

Response: No new streets are anticipated with this development; however, frontage improvements are required. The Preliminary Development Plans show street improvements, sidewalks, planting strips, etc. as described in detail above.

D. Construction of New Streets. Where new streets are necessary to serve a new development, subdivision, or partition, right-of-way dedication and full street improvements shall be required. Three-quarter streets may be approved in lieu of full street improvements when the city finds it to be practical to require the completion of the other one-quarter street improvement when the adjoining property is developed; in such cases, three-quarter street improvements may be allowed by the city only where all of the following criteria are met:

1. The land abutting the opposite side of the new street is undeveloped and not part of the new development; and

2. The adjoining land abutting the opposite side of the street is within the city limits and the urban growth boundary.

Response: No new streets are anticipated for this project. The standards are not applicable.

E. Improvements to Existing Streets.

1. All projects subject to partition, subdivision, or Type II design review approval shall dedicate right-of-way sufficient to improve the street to the width specified in subsection (G) of this section.

2. All projects subject to partition, subdivision, or Type II design review approval must construct a minimum of a three-quarter street improvement to all existing streets

adjacent to, within, or necessary to serve the development. The director may waive or modify this requirement where the applicant demonstrates that the condition of existing streets to serve the development meets city standards and is in satisfactory condition to handle the projected traffic loads from the development. Where a development has frontage on both sides of an existing street, full street improvements are required.

3. In lieu of the street improvement requirements outlined in NMC 15.505.040(B), the review authority may elect to accept from the applicant monies to be placed in a fund dedicated to the future reconstruction of the subject street(s). The amount of money deposited with the city shall be 100 percent of the estimated cost of the required street improvements (including any associated utility improvements), and 10 percent of the estimated cost for inflation. Cost estimates used for this purpose shall be based on preliminary design of the constructed street provided by the applicant's engineer and shall be approved by the director.

Response: Improvements to existing streets are not required as part of development. The criteria are not applicable.

F. Improvements Relating to Impacts. Improvements required as a condition of development approval shall be roughly proportional to the impact of the development on public facilities and services. The review body must make findings in the development approval that indicate how the required improvements are roughly proportional to the impact. Development may not occur until required transportation facilities are in place or guaranteed, in conformance with the provisions of this code. If required transportation facilities cannot be put in place or be guaranteed, then the review body shall deny the requested land use application.

Response: The Preliminary Development Plans illustrate that all public utilities and facilities required to serve the development will be provided. The Applicant is aware that all conditions required as a result of development must be proportional to the impacts of the project. The criteria are met.

G. Street Width and Design Standards.

1. Design Standards. All streets shall conform with the standards contained in Table 15.505.030(G). Where a range of values is listed, the director shall determine the width based on a consideration of the total street section width needed, existing street widths, and existing development patterns. Preference shall be given to the higher value. Where values may be modified by the director, the overall width shall be determined using the standards under subsections (G)(2) through (10) of this section.

2. Motor Vehicle Travel Lanes. Collector and arterial streets shall have a minimum width of 12 feet.

3. Bike Lanes. Striped bike lanes shall be a minimum of six feet wide. Bike lanes shall be provided where shown in the Newberg transportation system plan.

4. Parking Lanes. Where on-street parking is allowed on collector and arterial streets, the parking lane shall be a minimum of eight feet wide.

5. Center Turn Lanes. Where a center turn lane is provided, it shall be a minimum of 12 feet wide.

6. Limited Residential Streets. Limited residential streets shall be allowed only at the discretion of the review authority, and only in consideration of the following factors:

   a. The requirements of the fire chief shall be followed.

   b. The estimated traffic volume on the street is low, and in no case more than 600 average daily trips.

   c. Use for through streets or looped streets is preferred over cul-de-sac streets.

   d. Use for short blocks (under 400 feet) is preferred over longer blocks.

   e. The total number of residences or other uses accessing the street in that block is small, and in no case more than 30 residences.

   f. On-street parking usage is limited, such as by providing ample off-street parking, or by staggering driveways so there are few areas where parking is allowable on both sides.

7. Sidewalks. Sidewalks shall be provided on both sides of all public streets. Minimum width is five feet.

8. Planter Strips. Except where infeasible, a planter strip shall be provided between the sidewalk and the curb line, with a minimum width of five feet. This strip shall be landscaped in accordance with the standards in NMC 15.420.020. Curb-side sidewalks may be allowed on limited residential streets. Where curb-side sidewalks are allowed, the following shall be provided:

   a. Additional reinforcement is done to the sidewalk section at corners.

   b. Sidewalk width is six feet.

9. Slope Easements. Slope easements shall be provided adjacent to the street where required to maintain the stability of the street.

10. Intersections and Street Design. The street design standards in the Newberg public works design and construction standards shall apply to all public streets, alleys, bike facilities, and sidewalks in the city.

11. The planning commission may approve modifications to street standards for the purpose of ingress or egress to a

minimum of three and a maximum of six lots through a conditional use permit.

Response: No new public or private streets are planned for this project. The Preliminary Development Plans show street improvements, sidewalks, planting strips, etc. as described in detail above. The criteria are met.

H. Modification of Street Right-of-Way and Improvement Width. The director, pursuant to the Type II review procedures of Chapter 15.220 NMC, may allow modification to the public street standards of subsection (G) of this section, when the criteria in both subsections (H)(1) and (2) of this section are satisfied:

1. The modification is necessary to provide design flexibility in instances where:

a. Unusual topographic conditions require a reduced width or grade separation of improved surfaces; or

b. Lot shape or configuration precludes accessing a proposed development with a street which meets the full standards of this section; or

c. A modification is necessary to preserve trees or other natural features determined by the city to be significant to the aesthetic character of the area; or

d. A planned unit development is proposed and the modification of street standards is necessary to provide greater privacy or aesthetic quality to the development.

2. Modification of the standards of this section shall only be approved if the director finds that the specific design proposed provides adequate vehicular access based on anticipated traffic volumes.

I. Temporary Turnarounds.

J. Topography.

K. Future Extension of Streets.

L. Cul-de-Sacs.

M. Street Names and Street Signs.

N. Platting Standards for Alleys.

O. Platting Standards for Blocks.

P. Private Streets. New private streets, as defined in NMC 15.05.030, shall not be created.

Response: No new public streets or extensions, cul-de-sacs, alleys, blocks, or private streets are planned to be included with this project. The criteria are not applicable.

Q. Traffic Calming.

1. The following roadway design features may be required in new street construction where traffic calming needs are anticipated:

   a. Serpentine alignment.

   b. Curb extensions.

   c. Traffic diverters/circles.

   d. Raised medians and landscaping.

   e. Other methods shown effective through engineering studies.

2. Traffic-calming measures such as speed humps should be applied to mitigate traffic operations and/or safety problems on existing streets. They should not be applied with new street constructions.

Response: No new streets or extensions are planned to be included with this project.

R. Vehicular Access Standards.

2. Access Spacing Standards. Public street intersection and driveway spacing shall follow the standards in Table 15.505.R below. The Oregon Department of Transportation (ODOT) has jurisdiction of some roadways within the Newberg city limits, and ODOT access standards will apply on those roadways.

3. Properties with Multiple Frontages. Where a property has frontage on more than one street, access shall be limited to the street with the lesser classification.

4. Driveways. More than one driveway is permitted on a lot accessed from either a minor collector or local street as long as there is at least 40 feet of lot frontage separating each driveway approach. More than one driveway is permitted on a lot accessed from a major collector as long as there is at least 100 feet of lot frontage separating each driveway approach.

Response: As shown on the Preliminary Development Plans one new driveway access point is planned. The existing shared driveway will be maintained. The criteria are met.

5. Alley Access.

Response: No alleys are planned to be included with this project. The criterion is not applicable.

6. Closure of Existing Accesses. Existing accesses that are not used as part of development or redevelopment of a property shall be closed and replaced with curbing, sidewalks, and landscaping, as appropriate.

Response: No access points currently exist. The criterion is not applicable.

7. Shared Driveways.

a. The number of driveways onto arterial streets shall be minimized by the use of shared driveways with adjoining lots where feasible. The city shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes. Where there is an abutting developable property, a shared driveway shall be provided as appropriate. When shared driveways are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway temporarily ends at the property line, but may be accessed or extended in the future as the adjacent parcel develops. "Developable" means that a parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).

b. Access easements (i.e., for the benefit of affected properties) and maintenance agreements shall be recorded for all shared driveways, including pathways, at the time of final plat approval or as a condition of site development approval.

c. No more than four lots may access one shared driveway.

d. Shared driveways shall be posted as no parking fire lanes where required by the fire marshal.

e. Where three lots or three dwellings share one driveway, one additional parking space over those otherwise required shall be provided for each dwelling. Where feasible, this shall be provided as a common use parking space adjacent to the driveway.

Response: This is a hospitality development with a dedicated parking area and driveways.

8. Frontage Streets and Alleys. The review body for a partition, subdivision, or design review may require construction of a frontage street to provide access to properties fronting an arterial or collector street.

Response: A frontage street is not necessary.

9. ODOT or Yamhill County Right-of-Way. Where a property abuts an ODOT or Yamhill County right-of-way, the applicant for any development project shall obtain an access permit from ODOT or Yamhill County.

Response: The property abuts a City street.

10. Exceptions. The director may allow exceptions to the access standards above in any of the following circumstances:

a. Where existing and planned future development patterns or physical constraints, such as topography, parcel configuration, and similar conditions, prevent access in accordance with the above standards.

b. Where the proposal is to relocate an existing access for existing development, where the relocated access is closer to conformance with the standards above and does not increase the type or volume of access.

c. Where the proposed access results in safer access, less congestion, a better level of service, and more functional circulation, both on street and on site, than access otherwise allowed under these standards.

11. Where an exception is approved, the access shall be as safe and functional as practical in the particular circumstance. The director may require that the applicant submit a traffic study by a registered engineer to show the proposed access meets these criteria.

Response: No exceptions are requested.

S. Public Walkways.

1. Projects subject to Type II design review, partition, or subdivision approval may be required to provide public walkways where necessary for public safety and convenience, or where necessary to meet the standards of this code. Public walkways are meant to connect cul-de-sacs to adjacent areas, to pass through oddly shaped or unusually long blocks, to provide for networks of public paths according to adopted plans, or to provide access to schools, parks or other community destinations or public areas. Where practical, public walkway easements and locations may also be used to accommodate public utilities.

2. Public walkways shall be located within a public access easement that is a minimum of 15 feet in width.

3. A walk strip, not less than 10 feet in width, shall be paved in the center of all public walkway easements. Such paving shall conform to specifications in the Newberg public works design and construction standards.

4. Public walkways shall be designed to meet the Americans with Disabilities Act requirements.

5. Public walkways connecting one right-of-way to another shall be designed to provide as short and straight of a route as practical.

6. The developer of the public walkway may be required to provide a homeowners' association or similar entity to maintain the public walkway and associated improvements.

7. Lighting may be required for public walkways in excess of 250 feet in length.

8. The review body may modify these requirements where it finds that topographic, preexisting development, or similar constraints exist.

Response: The Preliminary Development Plansshow existing public walkways (sidewalks) along the frontage, as described in detail above and meeting the criteria in this section. The walkways take into account the landscaping requirements for this development. The criteria are met.

T. Street Trees. Street trees shall be provided for all projects subject to Type II design review, partition, or subdivision. Street trees shall be installed in accordance with the provisions of NMC 15.420.010(B)(4).

Response: As discussed in the landscaping requirements section of this narrative and shown in the Preliminary Development Plans, street trees are planned to be provided per the requirements of NMC 15.420.010(B)(4). The criteria are met.

U. Street Lights. All developments shall include underground electric service, light standards, wiring and lamps for street lights according to the specifications and standards of the Newberg public works design and construction standards. The developer shall install all such facilities and make the necessary arrangements with the serving electric utility as approved by the city. Upon the city's acceptance of the public improvements associated with the development, the street lighting system, exclusive of utility-owned service lines, shall be and become property of the city unless otherwise designated by the city through agreement with a private utility.

Response: As discussed in the public improvements and design standards sections of this narrative, additional exterior lighting meeting City Public Works design standards is planned to be installed for this project. The Preliminary Development Plans show street lighting. After approval by the City, the lighting will be installed in coordination with City Public Works and the electrical utility. The criteria, as applicable, are met.

V. Transit Improvements. Development proposals for sites that include or are adjacent to existing or planned transit facilities, as shown in the Newberg transportation system plan or adopted local or regional transit plan, shall be required to provide any of the following, as applicable and required by the review authority:

1. Reasonably direct pedestrian connections between the transit facility and building entrances of the site. For the purpose of this section, "reasonably direct" means a route that does not deviate unnecessarily from a straight line or a route that does not involve a significant amount of out-of-direction travel for users.

2. A transit passenger landing pad accessible to disabled persons.

3. An easement of dedication for a passenger shelter or bench if such facility is in an adopted plan.

4. Lighting at the transit facility.

Response: Proposed development does not include transit-related facilities, and none currently exist or are planned to exist per the Newberg transportation system plan. The criteria are not applicable.

15.505.040 Public utility standards.

A. Purpose. The purpose of this section is to provide adequate services and facilities appropriate to the scale and type of development.

B. Applicability. This section applies to all development where installation, extension or improvement of water, wastewater, or private utilities is required to serve the development or use of the subject property.

C. General Standards.

1. The design and construction of all improvements within existing and proposed rights-of-way and easements, all improvements to be maintained by the city, and all improvements for which city approval is required shall conform to the Newberg public works design and construction standards and require a public improvements permit.

2. The location, design, installation and maintenance of all utility lines and facilities shall be carried out with minimum feasible disturbances of soil and site. Installation of all proposed public and private utilities shall be coordinated by the developer and be approved by the city to ensure the orderly extension of such utilities within public right-of-way and easements.

Response: The Preliminary Development Plans show the location of utilities included with this project. The design, installation, and maintenance of private and public utilities for this project will meet City of Newberg standards. The criteria are met.

D. Standards for Water Improvements. All development that has a need for water service shall install the facilities pursuant to the requirements of the city and all of the following standards. Installation of such facilities shall be coordinated with the extension or improvement of necessary wastewater and stormwater facilities, as applicable.

1. All developments shall be required to be linked to existing water facilities adequately sized to serve their intended area by the construction of water distribution lines, reservoirs and pumping stations which connect to such water service facilities. All necessary easements required for the construction of these facilities shall be obtained by the developer and granted to the city pursuant to the requirements of the city.

2. Specific location, size and capacity of such facilities will be subject to the approval of the director with reference to the applicable water master plan. All water facilities shall conform with city pressure zones and shall be looped where necessary to provide adequate pressure and fire flows during peak demand at every point within the system in the development to which the water facilities will be connected.

Installation costs shall remain entirely the developer's responsibility.

3. The design of the water facilities shall take into account provisions for the future extension beyond the development to serve adjacent properties, which, in the judgment of the city, cannot be feasibly served otherwise.

4. Design, construction and material standards shall be as specified by the director for the construction of such public water facilities in the city.

Response: The Preliminary Development Plans show that the location and size of water facilities meet the City of Newberg standards. The water improvements are planned to be installed and inspected in coordination with City Public Works. The criteria are met.

E. Standards for Wastewater Improvements. All development that has a need for wastewater services shall install the facilities pursuant to the requirements of the city and all of the following standards. Installation of such facilities shall be coordinated with the extension or improvement of necessary water services and stormwater facilities, as applicable.

1. All septic tank systems and on-site sewage systems are prohibited. Existing septic systems must be abandoned or removed in accordance with Yamhill County standards.

2. All properties shall be provided with gravity service to the city wastewater system, except for lots that have unique topographic or other natural features that make gravity wastewater extension impractical as determined by the director. Where gravity service is impractical, the developer shall provide all necessary pumps/lift stations and other improvements, as determined by the director.

3. All developments shall be required to be linked to existing wastewater collection facilities adequately sized to serve their intended area by the construction of wastewater lines which connect to existing adequately sized wastewater facilities. All necessary easements required for the construction of these facilities shall be obtained by the developer and granted to the city pursuant to the requirements of the city.

4. Specific location, size and capacity of wastewater facilities will be subject to the approval of the director with reference to the applicable wastewater master plan. All wastewater facilities shall be sized to provide adequate capacity during peak flows from the entire area potentially served by such facilities. Installation costs shall remain entirely the developer's responsibility.

5. Temporary wastewater service facilities, including pumping stations, will be permitted only if the director approves the temporary facilities, and the developer provides for all facilities that are necessary for transition to permanent facilities.

6. The design of the wastewater facilities shall take into account provisions for the future extension beyond the

development to serve upstream properties, which, in the judgment of the city, cannot be feasibly served otherwise.

7. Design, construction and material standards shall be as specified by the director for the construction of such wastewater facilities in the city.

Response: The Preliminary Development Plans show the location and size of sanitary sewer facilities meeting City of Newberg standards. The criteria are met.

F. Easements. Easements for public and private utilities shall be provided as deemed necessary by the city, special districts, and utility companies. Easements for special purpose uses shall be of a width deemed appropriate by the responsible agency. Such easements shall be recorded on easement forms approved by the city and designated on the final plat of all subdivisions and partitions. Minimum required easement width and locations are as provided in the Newberg public works design and construction standards.

Response: The Preliminary Development Plans do not show any necessary utility easements.

15.505.050 Stormwater system standards.

A. Purpose. The purpose of this section is to provide for the drainage of surface water from all development; to minimize erosion; and to reduce degradation of water quality due to sediments and pollutants in stormwater runoff.

B. Applicability. The provisions of this section apply to all developments subject to site development review or land division review and to the reconstruction or expansion of such developments that increases the flow or changes the point of discharge to the city stormwater system. Additionally, the provisions of this section shall apply to all drainage facilities that impact any public storm drain system, public right-of-way or public easement, including but not limited to off-street parking and loading areas.

C. General Requirement. All stormwater runoff shall be conveyed to a public storm wastewater or natural drainage channel having adequate capacity to carry the flow without overflowing or otherwise causing damage to public and/or private property. The developer shall pay all costs associated with designing and constructing the facilities necessary to meet this requirement.

D. Plan for Stormwater and Erosion Control. No construction of any facilities in a development included in subsection (B) of this section shall be permitted until an engineer registered in the State of Oregon prepares a stormwater report and erosion control plan for the project. This plan shall contain at a minimum:

1. The methods to be used to minimize the amount of runoff, sedimentation, and pollution created from the development both during and after construction.

2. Plans for the construction of stormwater facilities and any other facilities that depict line sizes, profiles, construction

specifications, and other such information as is necessary for the city to review the adequacy of the stormwater plans.

3. Design calculations shall be submitted for all drainage facilities. These drainage calculations shall be included in the stormwater report and shall be stamped by a licensed professional engineer in the State of Oregon. Peak design discharges shall be computed based upon the design criteria outlined in the public works design and construction standards for the city.

E. Development Standards. Development subject to this section shall be planned, designed, constructed, and maintained in compliance with the Newberg public works design and construction standards.

Response: The Preliminary Development Plans include a preliminary storm drainage plan meeting the design and construction standards of Newberg Public Works. The Preliminary Stormwater Report is included separately.

15.220.070 Additional requirements for development in the C-2 zoning district.

The purpose of this section is to ensure that development in the C-2 zoning district is designed to promote pedestrian and bicycle uses and improve aesthetics and compatibility. An applicant for a new development or redevelopment within the C-2 zoning district, which is subject to the site design review process, must demonstrate that the following site and building design elements have been incorporated into the design of the project. Exceptions to these additional development requirements may be granted if the requirements would result in construction that is out of character with surrounding development. Applicants for redevelopment of a designated landmark will not be subject to these additional requirements, except for requirements regarding parking and service drives.

A. Building Entrances. Each building on a lot shall have a primary pedestrian entrance oriented to the primary street. "Oriented to a street" means that the building entrance faces the street or is connected to the street by a direct and convenient pathway not exceeding 60 feet in length. "Primary street" means the street which has the highest estimated volume of pedestrian traffic. This requirement does not apply to buildings that are located behind other buildings on the lot such that 50 percent or more of their building frontage is blocked by the front building, as measured by sight lines that are perpendicular to the street right-of-way. Such rear buildings shall have a primary entrance oriented to an internal sidewalk or pedestrian pathway system which is internally connected and provides a connection to the primary street.

Response: The Preliminary Development Plans includes an entrance on the primary street. This requirement is met.

B. Parking and Service Drives. No off-street parking or service drives shall be placed within the required front yard setback. No off-street parking shall be placed between the front property line of

the primary street, as defined in subsection (A) of this section, and the building. This requirement does not apply to buildings that are located behind other buildings on the lot such that 50 percent or more of their building frontage is blocked by the front building, as measured by sight lines that are perpendicular to the street right-of-way.

Response: There are no buildings or parking within the setback. This requirement is met.

D. Building Mass. Where building elevations are oriented to the street in conformance with subsection (A) of this section, architectural features such as windows, pedestrian entrances, building offsets, projections, detailing, change in materials or similar features, shall be used to break up and articulate large building surfaces and volumes.

E. Corner Lots. Buildings on corner lots shall have their primary entrance oriented to the street corner, or within 40 feet of the street corner (i.e., as measured from the lot corner). In this case, the street corner shall provide an extra-wide sidewalk or plaza area with landscaping, seating or other pedestrian amenities. The building corner shall provide architectural detailing or beveling to add visual interest to the corner.

Response: The Preliminary Development Plans include a preliminary storm drainage plan meeting the design and construction standards of Newberg Public Works. The Preliminary Stormwater Report is included separately.

F. Pedestrian-Scale Building Entrances. Recessed entries, canopies, and/or similar features shall be used at the entries to buildings in order to create a pedestrian scale.

Response: This requirement is met. The building has a canopy at the entrance.

G. Windows.

1. On commercial building facades facing a public street, windows shall comprise a minimum of 40 percent of the ground floor facade. For large-scale buildings and developments meeting the standards under subsection (H) of this section, windows shall comprise a minimum of 20 percent of the ground floor facade.

2. For large-scale buildings and developments meeting the standards under subsection (H) of this section, 50 percent of all required window area shall allow view into an active space. An "active space" is defined as any area within a building that is used for shopping, dining, office space, and so forth. Merchandise display windows with displays that change at least semi-annually shall be considered an active space. Examples of areas that are considered nonactive spaces are storage and mechanical equipment areas, and windows that are obscured by shelving or material affixed to the window.

Response: This requirement is met for section 1. The building is less than 50,000 SF total.

H. Design of Large-Scale Buildings and Developments.
All buildings on a development site shall conform to the design standards included under this subsection where the total square footage of one commercial building exceeds 30,000 square feet of total ground floor area or all commercial buildings exceed 50,000 square feet of total ground floor area. Deviations from these standards may be approved, where appropriate, through the conditional use permit process.

1. Facade Articulation. Incorporate changes in building direction (i.e., articulation), and divide large masses into varying heights and sizes. Such changes may include building offsets; projections; changes in elevation or horizontal direction; sheltering roofs; terraces; a distinct pattern of divisions in surface materials; and use of windows, screening trees; small-scale lighting (e.g., wall-mounted lighting); and similar features. At least five of the following elements shall be included along each 100 feet of building frontage facing a street:

a. A building offset or projection of at least six feet depth and width.

b. An awning or roof sheltering a pedestrian walkway or seating area.

c. A building facade shall be comprised of at least two building materials, with the lesser comprising not less than 10 percent of the total facade.

d. Contrasting brick, stone, or natural wood trim.

e. Pitched roofs or gable-end roofs.

f. Curved arches or roof line features.

g. A tower, spire, or cupola.

h. A cornice.

i. Second story windows that comprise a minimum of 10 percent of the second floor facade.

Response: The Preliminary Development Plans include a, b, c, d, and i, listed above. The building is longer than 100'.

[Note: the example shown here is meant to illustrate these building design elements, and should not be interpreted as a required architectural style.]

3. **Pedestrian Entrance. Every building elevation facing a street with a horizontal dimension of more than 100 feet, as measured from end-wall to end-wall, shall have a building entrance no more than 100 feet from another entrance or end-wall; except that building elevations that are unable to provide an entrance due to the internal function of the building space (e.g., mechanical equipment, areas where the public or employees are not received, etc.) may not be required to meet this standard. Pathways shall connect all entrances to the street right-of-way.**

Response: See development plan. The building has a main reception area. The bedrooms and riser rooms are not public spaces and therefore cannot be entered.

4. **Building Facades Not Fronting a Street. For all ground floor facades that do not face a public street, windows shall comprise a minimum of 20 percent of the ground floor facade or a landscape strip shall be provided adjacent to the building. The landscape strip shall be a minimum of five feet in width and include a combination of trees, shrubs, and groundcover or grass. Plant material shall be selected from at least two of the different plant material groups (example: trees and shrubs, or lawn and shrubs, or lawn and trees and shrubs). The type of tree selected shall have a crown of less than 15 feet at maturity. Exceptions to this standard include building facades that abut outdoor storage areas, loading docks, and mechanical equipment areas.**

Response: Landscaping has been provided that is a minimum of 5' in depth with a combination of trees and shurbs. Due to the nature of the hotel, the windows have been designed to align with the rooms and are provided in sufficient quantity.

5.

4. **Building Orientation. All buildings shall be oriented to a primary street as defined in subsection (A) of this section or oriented to a plaza or open space within the development site that connects to the primary street. "**Oriented to a plaza or open space**" means that the building entrance faces the plaza, open space, shared parking area or is connected to the plaza by a direct and convenient pathway not exceeding 60 feet in length.**

Response: Confirmed, the building is orientated to the primary street.

5. **On-Site Landscaping and Screening.**

a. A continuous landscape strip, with a five-foot minimum width, shall be located perpendicular to groups of two or more parking stalls. Within the landscape strip, at a minimum, one deciduous shade tree per seven parking spaces shall be planted to create a partial tree canopy over and around the parking area. The type of tree shall be chosen from the City of Newberg preferred street tree list and have a minimum crown spread of 25 feet. This standard shall apply

unless otherwise approved by the director based on the following alternative standards:

i. No more than seven parking stalls shall be grouped together without a landscape island.
The landscape island shall have a width and depth no less than five feet and contain no less than one deciduous shade tree; or

ii. Provision of tree planting landscape islands, each of which is at least 16 square feet in size, and spaced no more than 50 feet apart on average, with a maximum of 75 feet, within areas proposed for grouped parking. For every seven planting landscape islands, one shall be no less than 500 square feet in size.

b. At a minimum 50 percent of the parking area shall drain to a stormwater mitigation area. The mitigation area shall be designed using best management stormwater practices including, but not limited to, bioswales, rain gardens, or similar design intended to reduce stormwater flow and improve stormwater quality.

c. A 20-foot-wide landscaped buffer shall be provided between the development and any adjoining residential district. The buffer shall include a continuous six-foot-high sight-obscuring fence or wall, a continuous hedge and/or berm designed to achieve a height of six feet upon maturity, a row of trees not more than 35 feet on-center, and shrubs or living groundcover.

d. Outdoor storage areas, loading docks, and mechanical equipment areas shall be fenced with 75 percent opaque site-obscuring fencing or screened with landscaping between the area and public streets.

e. One square foot of interior open space or plaza space shall be required for every five square feet of gross floor area. The following features shall be included in the open space or plaza area:

i. One linear foot of seating space shall be required for every 30 square feet of open space or plaza space.

ii. One tree shall be provided for every 800 square feet of plaza space or open space.

iii. Pedestrian-scale lighting according to subsection (H)(7) of this section.

Response: See the provided preliminary development plans and stormwater plan. Requirements are met.

6. Vehicle and Pedestrian Connectivity.

a. Public streets may be required to be dedicated where needed to improve internal circulation, to connect to neighboring properties or streets, to break up large blocks, or to reduce travel around a site.

b. At a minimum, 95 percent of the parking spaces shall be located within 75 feet of a private walkway or public sidewalk.

Response: The requirement for parking spaces has been met.

5. Pedestrian-Scale Lighting. Pedestrian-scale lighting shall be located along all internal walkways and provide a minimum illumination of one foot-candle. Building entrances shall have a minimum illumination of five foot-candles. Lighting shall be fully shielded so that no light is emitted at an angle above the horizontal plane as illustrated by the lighting plan. The type of features that should be considered include, but are not limited to, street lamps, light fixtures attached to buildings, and light bollards. All pedestrian-scale light fixtures shall not exceed a maximum height of 15 feet as measured from grade to the fixture lamp. The lens material for all pedestrian-scale lighting shall be constructed of acrylic or similar shatter-resistant material as determined by the director. Glass lenses shall not be used for any pedestrian-scale lighting.

Response: This requirement has been met. Please see the development plan sheet EL2.

6. Parking. The number of parking stalls shall not exceed 125 percent of the minimum number of stalls required. Parking stalls constructed of grass blocks, grasscrete, pervious asphalt or concrete, or similar pervious material shall not be counted in this limit.

Response: Parking is per code with one spot per guest unit. Eighty spots are required and eighty spots are provided. Requirement is met.

7. Existing Development. Any existing legal conforming site, through future development, exceeding the square footage threshold contained in this subsection (H) shall follow the standards contained in Chapter 15.205 NMC, Nonconforming Uses and Buildings.

Response: This does not apply

8.

10. Vacancy Agreement. All large-scale retail development sites as defined in this subsection (H) shall have an abandoned building surety agreement filed with the city. The purpose of the agreement is to ensure a continued attractive business environment in case a building goes vacant. The agreement shall provide measures to maintain the on-site landscaping and exterior of the buildings to their prevacancy condition, and to assist in

finding a future tenant. "Vacancy" is defined as a period exceeding one year without legal occupancy. The terms of the agreement shall include:

a. A surety bond equal to one percent of the total valuation of the buildings on site.

b. If the owner fails to maintain the physical exterior of the property or any building on site, the bond may be used for items including, but not limited to: landscape maintenance, exterior building repairs, parking lot paving, amenities in the public right-of-way (lighting, benches, landscaping, etc.). If the cost of maintenance exceeds the amount of the bond, the city will bill the owner. Any unpaid amounts will become a lien on the property.

c. If the owner fails to legally occupy the site, the bond may be used as an incentive for prospective tenants including, but not limited to: payment of permit fees, application fees, system development charges, funding for on-site landscaping, and facade improvements.

d. If the surety bond is expended in any amount, the owner shall provide a new surety bond prior to occupancy by a new tenant. The amount of the bond shall be equal to one percent of the value of the building at the time of occupancy.

e. If at any time prior to one-year vacancy, the director finds the property is in need of maintenance, the director shall notify the owner in writing of the need to maintain the property and the intent to use the bond. Unless the owner provides the needed maintenance or objects within 30 days of the notice, the surety may be used to maintain the property. If the owner objects, the city council will hear the matter and determine whether the surety will be used.

Response: Business owner and city to complete.

11. Environmental Impact. All new large-scale retail development as defined in subsection (H) of this section shall be LEED certified as defined by the U.S. Green Building Council. The terms of approval are as follows:

a. The applicant shall demonstrate to the director the extent to which the applicant has complied with the commitment to earn a LEED new construction certification rating for a completed project. Demonstration of LEED certification shall be completed prior to the issuance of final certificate of occupancy for the new structure by submitting a report analyzing the extent credits earned toward such rating from the U.S. Green Building Council or another independent entity approved by the director.

b. With specific regard to the LEED stormwater design category, all buildings shall obtain a total of at least two points in this category.

c. With specific regard to the LEED water efficiency category, all buildings shall obtain a total of at least one point in this category.

d. In this section the term "leadership in energy and environmental design (LEED)" means a green building rating system promulgated by the United States Green Building Council (USGBC) that provides specific principles and practices, some mandatory but the majority discretionary, that may be applied during the design, construction, and operation phases, which enable the building to be awarded points from reaching present standards of environmental efficiency so that it may achieve LEED certification from the USGBC as a "green" building, as such rating system exists on January 1, 2009.

e. The USGBC intends to release a revised version of the LEED green building rating system every three years, and the director shall refer to the most current version of the LEED when reviewing a new building construction permit project or renovation.

f. The LEED existing building rating system shall be used during retrofit projects of existing structures. [Ord. 2711 § 1, 3-16-09; O

Response: N/A

IV. Conclusion

The required findings have been made, and this written narrative and accompanying documentation demonstrate the application is consistent with the applicable provisions of the City of Newberg Municipal Code and Public Works engineering standards. The evidence in the record is substantial and supports approval of the application. Therefore, the Applicant respectfully requests the City approve this Type II site design review application.

Fairfield
BY MARRIOTT

GENERATION 4.5

4 STORY
80 GUEST UNITS

DECOR: MODERN CALM

APRIL 1, 2020

DESIGN DEVELOPMENT PHASE
PRICING SET
(NOT FOR CONSTRUCTION)

MARRIOTT PROJECT #: 11836
NEWBERG - OREGON - U.S.A.

PROJECT TEAM

DEVELOPER
HAWKINS COMPANIES, LLC
850 BROAD STREET, SUITE 300
BOISE, ID 83709
PHONE:

CONTACT: MARK MITCHELL

HOTEL MANAGEMENT
ESCAPE LODGING
1315 S HEMLOCK ST #3
CANNON BEACH, OR 97110
PHONE: 503-436-2480

CONTACT: PATRICK NOFIELD

ELECTRICAL ENGINEER
LANDIS CONSULTING
6446 FAIRWAY AVE SE
SUITE 220
SALEM, OR 97306
PHONE: 503-584-1576

CONTACT: BEN PERRY, P.E.

GENERAL CONTRACTOR
O'BRIEN & COMPANY
208 NW 21ST AVE, SUITE 201
PORTLAND, OR 97209
PHONE: 971-865-2483

CONTACT: KEELEY O'BRIEN

ARCHITECT
ABBOTT ARCHITECTURE, LLC
18510 POP KEENEY WAY
SUITE 103
BOTHELL, WA 98011
PHONE: 206-778-7008

CONTACT: MICHAEL ABBOTT, AIA, NCARB

MECHANICAL ENGINEER - HVAC
COMFORT FLOW HEATING & AC
1951 DON STREET
SPRINGFIELD, OR 97477
PHONE: 541-726-0100

CONTACT: MARK PENROD, P.E., LEED AP

SURVEY ENGINEER
AKS ENGINEERING
12965 SW HERMAN RD STE 100
TUALATIN, OR 97062
PHONE: 503-563-6151

CONTACT: NICK WHITE, PLS

GEOTECH ENGINEER
GEO-PACIFIC ENGINEERING, INC.
14835 SW 72ND AVENUE
PORTLAND, OR 97224
PHONE: 503-598-8445

CONTACT: BENJAMIN COOK, C.E.G.

MECHANICAL ENGINEER - PLUMBING
MECH ENGINEERING SERVICES
8630 SW SCHOLLS FERRY RD #220
BEAVERTON, OR 97008
PHONE: 503-457-1110

CONTACT: STEVEN VAN RIESSEN, P.E.

CIVIL ENGINEER
HBH CONSULTING ENGINEERS, INC.
501 E FIRST STREET
NEWBERG, OR 97132
PHONE: 503-554-9553

CONTACT: ANDREY CHERNISHOV, PE, CMRE

STRUCTURAL ENGINEER
SWENSON SAY FAGET
2124 THIRD AVENUE
SUITE 100
SEATTLE, WA 98121
PHONE: 206-443-6212

CONTACT: PETE KREBS, PE, SE

FIRE SPRINKLER ENGINEER
SPRINK-IT
PO BOX 2227
OREGON CITY, OR 97045
PHONE: 503-272-6650

CONTACT: TRAVIS SCHWEITZER

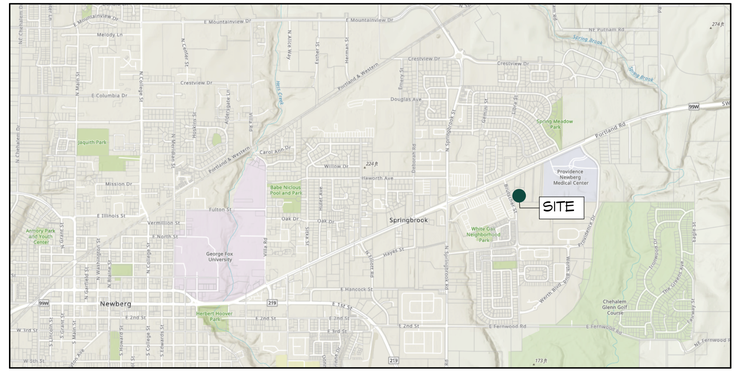
LANDSCAPE ARCHITECT
OTTEN + ASSOCIATES
LANDSCAPE ARCHITECTURE
3933 SW KELLY AVE., SUITE B
PORTLAND, OR 97239
PHONE: 503-972-0311

CONTACT: ERIN HOLSONBACK, LA

FRANCHISE
MARRIOTT INTERNATIONAL, INC.
10400 FERNWOOD ROAD
BETHESDA, MD 20817
PHONE: 301-380-3000

VICINITY MAP

901 N. BRUTSCHER STREET • NEWBERG • OR • 97132



FAIRFIELD INN AND SUITES
BY MARRIOTT
Newberg • Oregon • USA

NOT FOR CONSTRUCTION - DD PRICING SET ONLY

DATE:	4/1/2020
PROJECT:	1907
DRAWN BY:	MV-MA
LAYOUT NAME:	COVER SHEET

30% REVIEW SET/PRICING 12/9/2020
LAND USE REVIEW SET 3/3/2020
MARRIOTT 30% REVIEW 3/4/2020
DD SET - PRICING 4/1/2020

Fairfield Inn and Suites Marriott
901 N. Brutscher Street
Newberg, OR

A001

REGISTERED ARCHITECT
MICHAEL S. ABBOTT
SEATTLE, WA
STATE OF OREGON
PRELIMINARY

ABBOTT ARCHITECTURE
BOTHELL, WA
98011
P 206.778.7008

DRAFTING LEGEND

ELEVATION REFERENCES

INTERIOR ELEVATION REFERENCE

EXTERIOR ELEVATION REFERENCE

DETAIL REFERENCES

DETAIL REFERENCE

BUILDING SECTION REFERENCE

REVISION NUMBER REFERENCE

REVISION NUMBER REFERENCE

DOOR NUMBER REFERENCE

WINDOW TYPE

ACOUSTIC PARTITION REFERENCE

DATUM ELEVATION

COLUMN GRID NUMBER

BATHROOM ACCESSORY MARK NO.; REFER TO THE DESIGN GUIDE PROJECT MANUAL MASTER SECTION 10800.

FINISH TAG; REFER TO THE IFI WITHIN THE DESIGN GUIDE PROJECT MANUAL MASTER.

FURNISHING REFERENCE NO.; REFER TO THE INTERIOR DESIGN SPECIFICATION MANUAL.

LIGHT FIXTURE MARK NO. ,TYPICAL. SEE LIGHT FIXTURE MATRIX IN DESIGN GUIDE PROJECT MANUAL MASTER

PLUMBING FIXTURE MARK NO. ,TYPICAL. SEE PLUMBING FIXTURE MATRIX IN DESIGN GUIDE PROJECT MANUAL MASTER

LOBBY ROOM NAME

8'- 8" CEILING HEIGHT - ABOVE FIN. FLOOR

MARRIOTT STANDARD DETAIL

GENERAL INFORMATION

DEVELOPER:	HAWKINS COMPANIES, LLC 850 BROAD STREET, SUITE 300 BOISE, ID 83709 PHONE: CONTACT: MARK MITCHELL
PROJECT ADDRESS:	901 N BRUTSCHER STREET NEWBERG, OREGON 97132
JURISDICTION:	CITY OF NEWBERG, OR
LEGAL DESCRIPTION:	TAX LOTS 1900 & 2002, SW 1/4 SECTION 16, T. 3 S., R. 2 W., W.M. WITHIN THE CITY OF NEWBERG, COUNTY OF YAMHILL, STATE OF OREGON
PROJECT DESCRIPTION:	4 STORY, 80 UNIT HOTEL BUILDING WITH OUTDOOR POOL
GROSS BUILDING AREA:	42,885 SF
LOT SIZE:	85,060 SF (1.95 ACRE)
BUILDING CODE:	2019 OREGON STRUCTURAL SPECIALTY CODE (OSSC) SEE SHEET A004 FOR CODE ANALYSIS INFORMATION
ENERGY CODE:	2019 OREGON ENERGY EFFICIENCY SPECIALTY CODE (OEESC) - SEE 'ENERGY CODE INFORMATION' FOR PROJECT REQUIREMENTS
ACCESSIBLE CRITERIA:	2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

DEVELOPMENT CODE DATA

NEWBERG MUNICIPAL CODE - TITLE 15 - DEVELOPMENT CODE

ZONE:	C-2 (COMMUNITY COMMERCIAL DISTRICT)
OVERLAY:	AIRPORT OVERLAY (AO) SUB-DISTRICT
USE:	HOTEL (PERMITTED)

DEVELOPMENT STANDARDS

LOT/PARKING COVERAGE:	N/A
LANDSCAPE:	15% MIN. OVERALL
MAX BUILDING HEIGHT:	NONE
SETBACKS:	FRONT: 10 FEET (STREET) INTERIOR: 0 FEET
PARKING:	1 SPACE PER GUEST UNIT (HOTEL)
TOTAL REQUIRED:	80 STALLS
TOTAL SHOWN:	80 STALLS

DESIGN DOCUMENT COMPONENTS

THE DESIGN AND CONSTRUCTION DOCUMENTS
INCLUDE THE FOLLOWING COMPONENTS:

1. DESIGN STANDARDS - FAIRFIELD INN & SUITES (MODULES 1-16)
2. CONSTRUCTION DRAWINGS
3. PROJECT MANUAL & SPECIFICATIONS INCLUDING:
   - INTERIOR FINISH INDEX (IFI)
   - EXTERIOR FINISH INDEX (EFI)
   - SIGNAGE MANUAL
     - INTERIOR GRAPHICS PACKAGE
     - EXTERIOR GRAPHICS PACKAGE
   - FOOD SERVICE AND GUEST LAUNDRY EQUIPMENT PRODUCT MANUAL
   - TOILET AND BATH ACCESSORY MATRIX &
     - TOILET AND BATH ACCESSORY PRODUCT MANUAL (TECH SHEETS FOR ALL CFRST BRANDS)
   - PLUMBING FIXTURE MATRIX &
     - PLUMBING FIXTURE PRODUCT MANUAL (TECH SHEETS FOR ALL CFRST BRANDS)
   - LIGHT FIXTURE MATRIX &
     - LIGHT FIXTURE PRODUCT MANUAL (TECH SHEETS FOR ALL CFRST BRANDS)
4. INTERIOR DESIGN SPECIFICATION MANUAL

DRAWING SHEET INDEX - DD SET

MICHAEL S. ABBOTT
REGISTERED ARCHITECT
STATE OF OREGON
SEATTLE, WA
PRELIMINARY

ABBOTT ARCHITECTURE
BOTHELL, WA
98011
P 206.778.7008

FAIRFIELD INN AND SUITES
BY MARRIOTT
Newberg • Oregon • USA

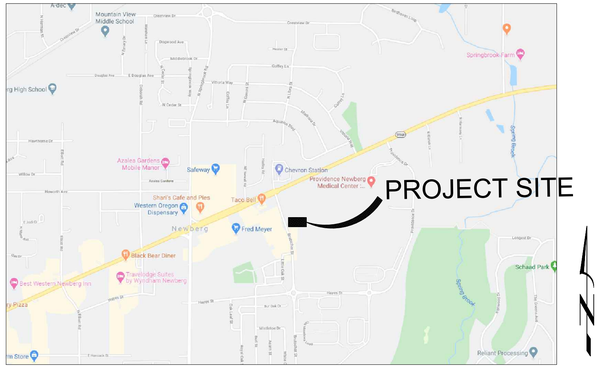
NOT FOR CONSTRUCTION - DD PRICING SET ONLY

Fairfield Inn and Suites Marriott
901 N. Brutscher Street
Newberg, OR

30% REVIEW SET/PRICING	1/20/2020
LAND USE REVIEW SET	3/3/2020
MARRIOTT 30% REVIEW	3/4/2020
DD SET - PRICING	4/1/2020
DATE:	4/1/2020
PROJECT:	1907
DRAWN BY:	MV-MA
LAYOUT NAME:	DRAWING INDEX & GENERAL INFORMATION

A002

FAIRFIELD INN
NEWBERG, OREGON
FEBRUARY, 2020



VICINITY MAP

NOT TO SCALE

LEGEND

SS	PROPOSED SANITARY SEWER
SD	PROPOSED STORM SEWER
W	PROPOSED WATER MAIN
FW	PROPOSED FIRE WATER MAIN
WS	PROPOSED WATER SERVICE
	PROPOSED SAWCUT LINE
	PROPOSED CONCRETE
	PROPOSED ASPHALT
	PROPOSED LANDSCAPING

ABBREVIATIONS

@	AT
AC	ASPHALT
BV	BUTTERFLY VALVE
CB	CATCH BASIN
C/L	CENTERLINE
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
COTG	CLEAN OUT TO GRADE
CY	CUBIC YARDS
DR	DRIVE
DIP	DUCTILE IRON PIPE
E	EAST
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EX	EXISTING
FLG	FLANGE
GUT	GUTTER
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HOR	HORIZONTAL
HP	HIGH POINT
HYD	HYDRANT
IE	INVERT ELEVATION
LF	LINEAR FEET
LN	LINE
LP	LOW POINT
LT	LEFT
MH	MANHOLE
MJ	MECHANICAL JOINT
N	NORTH
NE	NORTH EAST
NTS	NOT TO SCALE
NW	NORTH WEST
PC	POINT OF CURVATURE
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENCY
P/L	PROPERTY LINE
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
ROW	RIGHT OF WAY
RT	RIGHT
S	SOUTH
SE	SOUTH EAST
SW	SOUTH WEST
STM	STORM DRAIN
SF	SQUARE FEET
SAN	SANITARY SEWER
ST	STREET
STA	STATION
S=	SLOPE EQUALS
S/W	SIDEWALK
TB	THRUST BLOCK
TYP	TYPICAL
VER	VERTICAL
W	WEST
W/	WITH
WTR	WATER

TAX LOT INFORMATION

THIS PROJECT IS LOCATED ON TAX LOTS 1900 & 2002, SW ¼ SECTION 16, T. 3 S., R. 2 W., W.M. WITHIN THE CITY OF NEWBERG, COUNTY OF YAMHILL, STATE OF OREGON.

VERTICAL DATUM

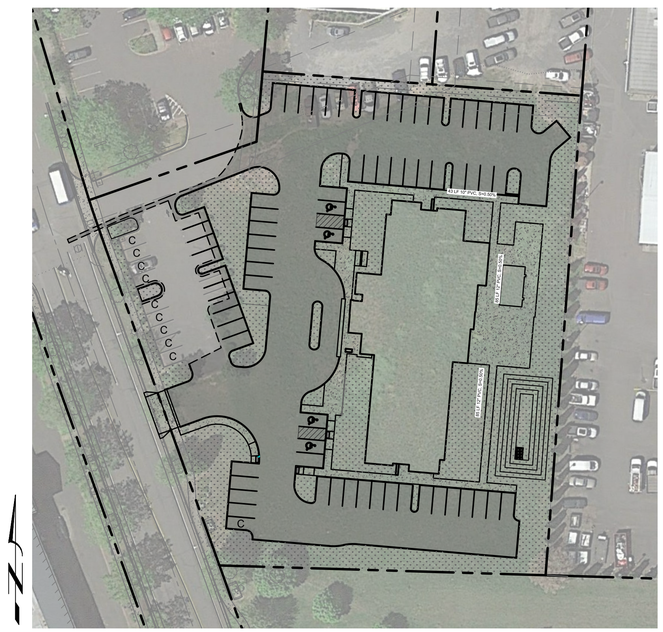
ELEVATIONS ARE BASED ON NAVD88 DERIVED FROM THE TRIMBLE NOW VRS.

PROJECT SITE ADDRESS

TAX LOT 1900 AND 2002
NEWBERG, OR 97132

LOCATE

(48 HOUR NOTICE PRIOR TO EXCAVATION) OREGON LAW REQUIRES YOU TO FOLLOW THE RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH 952-001-0090 & ORS 757.542 THROUGH 757.562 AND ORS 757.993. YOU MAY OBTAIN COPIES OF THE RULES FROM THE CENTER BY CALLING (503) 232-1987. ONE CALL SYSTEM NUMBER 1-800-332-2344.



SITE PLAN

1"=50'

DEVELOPER:

HAWKINS COMPANIES LCC (FOR ESCAPE LODGING COMPANY)
855 BROAD STREET, SUITE 300
BOISE, ID 83702
CONTACT: BRANDON WHALLON
PH: (208) 376-8522
EMAIL: BWHALLON@HCOLLC.COM

CIVIL ENGINEER

HBH CONSULTING ENGINEERS, INC.
501 E FIRST STREET
NEWBERG, OREGON 97132
CONTACT: ANDREY CHERNISHOV, PE
PH: (503) 554-9553
EMAIL: ACHERNISHOV@HBH-CONSULTING.COM

SURVEYOR:

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
PH: (503) 563-6151
CONTACT: NICK WHITE

SHEET LIST TABLE:

REGISTERED PROFESSIONAL ENGINEER
78347PE
OREGON
JANUARY 09, 2018
ANDREY R. CHERNISHOV
EXPIRES 12/31/2019
PRELIMINARY

H B H
501 E First Street
Newberg, Oregon 97132
CONSULTING 503/554-9553 ■ fax 503/537-9554
ENGINEERS email: mail@hbh-consulting.com

Designed By: ARB | Drawn By: ARB | Checked By: ARC | Submittal No: PRELIMINARY
File: L:\2020-006\4-Design\DWG\1 - Cover, Notes, Existing & Demo.dwg

REV.	DATE	DESCRIPTION	BY

0" 1"
IF THIS LINE IS NOT 1 INCH SCALE IS NOT AS SHOWN

HAWKINS COMPANIES LLC
855 BROAD ST. SUITE 300, BOISE ID 83702

NEWBERG FAIRFIELD INN
PARCELS 1900 + 2002, NEWBERG OR 97132

COVER

Sheet No. G1 | 1 of 11
Date 3/30/2020
2020-006

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE APPLICABLE REGULATIONS, SPECIFICATIONS, CODES AND REQUIREMENTS OF THE CITY OF NEWBERG PUBLIC WORKS DEPARTMENT AND ORDER 07-20, THE OREGON STATE PLUMBING SPECIALITY CODE, AND THE UNIFORM BUILDING CODE.

2. THE CONTRACTOR SHALL PERFORM ALL WORK NECESSARY TO COMPLETE THIS PROJECT IN ACCORDANCE WITH THE PLANS INCLUDING SUCH INCIDENTALS AS MAY BE NECESSARY TO MEET APPLICABLE AGENCY REQUIREMENTS AND OTHERS AS NECESSARY TO PROVIDE A COMPLETED PROJECT. THE CONTRACTOR SHALL HAVE APPROPRIATE PERMITS BEFORE COMMENCING WORK ON THIS PROJECT.

3. THE CONTRACTOR SHALL HAVE APPROPRIATE PERMITS BEFORE COMMENCING WORK ON THIS PROJECT.

4. THE CONTRACTOR SHALL KEEP AN APPROVED SET OF PLANS WITH ALL APPROVED REVISIONS ON THE PROJECT SITE AT ALL TIMES. ANY CHANGES SHALL BE DESIGNED BY THE ENGINEER AND SUBMITTED TO AGENCIES FOR APPROVAL.

5. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING UTILITIES ON THIS SITE. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN OR NOT ON THIS DRAWING, SHALL BE REPAIRED AND/OR REPLACED AT THE CONTRACTOR'S EXPENSE. EXISTING SURFACE FEATURES AND FENCING SHALL BE REPLACED IN KIND, UNLESS OTHERWISE NOTED ON THE PLANS.

6. THE CONTRACTOR SHALL HAVE ALL EXISTING UTILITIES LOCATED PRIOR TO STARTING ANY WORK, INCLUDING POTHOLING.

7. THE EXISTENCE AND APPROXIMATE LOCATION OF KNOWN UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE DRAWINGS WERE DETERMINED BY A SEARCH OF AVAILABLE PUBLIC RECORDS. THE LOCATIONS AND DEPTHS OF THESE UTILITIES ARE FROM THESE RECORDS AND ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR. NO RESPONSIBILITY IS ASSUMED BY EITHER THE OWNER OR THE ENGINEER FOR ACCURACY OR COMPLETENESS.

8. CONTRACTOR TO NOTIFY THE CITY OF NEWBERG PUBLIC WORKS DEPARTMENT AND ALL UTILITY COMPANIES A MINIMUM OF 48-HOURS (2 BUSINESS DAYS) PRIOR TO THE START OF CONSTRUCTION BY CALLING "ONE CALL" AT (503) 246-6699 OR 1-800-332-2344 AND ALL OTHER APPLICABLE AGENCIES, AND SHALL COMPLY WITH ALL OTHER REQUIREMENTS OF OAR 952-001-0010 THROUGH OAR 952- 001- 00 90.

9. AFTER LOCATES ARE REQUESTED AND UTILITY COMPANIES HAVE PROVIDED LOCATES, CONTRACTOR SHALL POTHOLE TO THE DEPTH OF THE PROPOSED UTILITY TO VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION AND PROVIDE (ENGINEERING COMPANY NAME) AND THE APPROPRIATE INSPECTOR, 72-HOURS NOTICE OF ANY POTENTIAL CONFLICTS.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE RELOCATION OF BURIED AND OVERHEAD UTILITIES.

11. THE CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES PRIOR TO CONSTRUCTION.

12. ALL EXISTING SITE CONDITIONS AND ELEVATIONS SHOWN ON THIS PLAN ARE FROM AS-BUILT DRAWINGS AND A SURVEY COMPLETED BY MACDONALD AND ASSOCIATES LAND SURVEYING. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND ELEVATIONS TO HIS OR HER SATISFACTION.

13. ANY ALTERATION OR VARIANCE FROM THESE PLANS, SHALL FIRST BE APPROVED BY THE APPLICABLE AGENCY REPRESENTATIVE.

14. ANY CONSTRUCTION OBSERVATION BY THE CITY OF NEWBERG PUBLIC WORKS DEPARTMENT OR THE ENGINEER, SHALL NOT, IN ANY WAY, RELIEVE THE CONTRACTOR FROM ANY OBLIGATION TO PERFORM THE WORK IN STRICT COMPLIANCE WITH THE APPLICABLE CODES AND AGENCY REQUIREMENTS.

15. APPROVED EROSION CONTROL MEASURES SHALL BE TAKEN. THE CONTRACTOR SHALL PROVIDE All MATERIAL, EQUIPMENT, AND PERSONNEL NECESSARY TO MAINTAIN SUCH EROSION PROTECTION MEASURES. ANY DAMAGE CAUSED BY EROSION SHALL BE CORRECTED BY THE CONTRACTOR.

16. DEMOLITION WORK SHALL INCLUDE REMOVAL OF ALL STUMPS AND VEGETATION DEBRIS. CONFORMANCE WITH ALL REGULATIONS AND PERMITTING REQUIREMENTS FOR SUCH WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

17. ALL OPEN CUTTING OF EXISTING STREETS SHALL BE PATCHED WITH A.C., COLD (TEMPORARY) OR HOT MIX, AT THE CLOSE OF EACH WORK DAY. TRENCHES SHALL NOT BE LEFT OPEN OVERNIGHT.

18. ALL TRAFFIC CONTROL SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS MODIFIED BY THE OREGON SUPPLEMENTS.

19. PROVIDE 12-GAGE TRACER WIRE FOR ALL UNDERGROUND STORM DRAINS, WATERLINES, AND SANITARY SEWERS. BLUE - WATER. GREEN - STORM AND SANITARY.

20. ALL PIPE BEDDING SHALL BE 3/4" - O" CRUSHED ROCK FROM A MINIMUM 4-INCHES BELOW THE BOTTOM OF THE PIPE TO THE SPRING LINE FOR PIPE SMALLER THAN 18-INCH DIAMETER, AND 6-INCH MINIMUM FOR 18-INCH DIAMETER OR LARGER. TRENCH BACKFILL SHALL BE AS NOTED IN THE TRENCH BACKFILL DETAIL.

21. A PRE-CONSTRUCTION MEETING IS REQUIRED WITH CITY INSPECTORS PRIOR TO STARTING ANY WORK. CITY OF NEWBERG PUBLIC WORKS INSPECTION REQUEST NUMBER: (503) 537-1236.

22. CONTRACTOR TO LOCATE ALL EXISTING PROPERTY MONUMENTS PRIOR TO CONSTRUCTION. ANY MONUMENTS DISTURBED DURING CONSTRUCTION OF THIS PROJECT SHALL BE REPLACED BY A REGISTERED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

23. CONTRACTOR TO MAINTAIN A SET OF CONSTRUCTION PLANS "REDLINED" DOCUMENTING THE INSTALLATION OF IMPROVEMENTS IN ACCORDANCE WITH THE CITY OF NEWBERG'S REQUIREMENTS FOR AS-BUILT RECORD DRAWING OF PUBLIC IMPROVEMENTS.

24. CONTRACTOR TO PROVIDE A SET OF AS-BUILT REDLINED PLANS TO THE OWNER AND ENGINEER IN ACCORDANCE WITH THE CITY OF NEWBERG'S REQUIREMENTS FOR AS-BUILT RECORD DRAWINGS.

MISC UTILITES

1. ELECTRICAL, TELEPHONE, GAS AND TV SERVICE SHALL BE COORDINATED BY THE CONTRACTOR WITH THE APPROPRIATE UTILITY COMPANY.

2. UTILITY TRENCHES ARE TO BE DUG, UTILITY CONDUIT IS TO BE PLACED, UTILITY TRENCHES ARE TO BE BACKFILLED, VAULTS ARE TO BE INSTALLED AND, TRANSFORMER PADS ARE TO BE POURED BY THE CONTRACTOR PER ELECTRICAL, TELEPHONE, GAS, AND TV SERVICE PLANS AND STANDARD SPECIFICATIONS.

WATER LINES

1. NO VALVES SHALL BE OPENED OR CLOSED WITHOUT THE CITY OF NEWBERG PUBLIC WORKS DEPARTMENT PERSONNEL ON SITE TO OPERATE THEM.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE PROPER SEPARATION BETWEEN SANITARY SEWER LINES AND WATER LINES AS REQUIRED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY AND STATE DEPARTMENT OF HEALTH, AND AS SHOWN ON THESE PLANS.

3. WATER LINE DISINFECTION AND PRESSURE TESTING SHALL CONFORM TO AWWA C-601 AND THE CITY OF NEWBERG PUBLIC WORKS WATER SYSTEM STANDARDS.

4. CONTRACTOR TO PROVIDE INVENTORY OF ALL VALVES INSTALLED ON THE PROJECT PER CITY OF NEWBERG AS-BUILT REQUIREMENTS. CONTRACTOR TO IDENTIFY TYPES OF FITTING IN INVENTORY.

SITE PREPARATION

1. CONTRACTOR SHALL BE RESPONSIBLE FOR MANAGING CONSTRUCTION ACTIVITIES TO ENSURE THAT PUBLIC STREETS AND RIGHT-OF-WAYS ARE KEPT CLEAN OF MUD, DUST OR DEBRIS.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ON-SITE STREETS CLEAN OF MUD, DUST OR DEBRIS AND TO PREVENT TRACKING OF DIRT OR ROCKS ON TO STREETS LEADING TO AND FROM THE SITE. DUST ABATEMENT SHALL BE MAINTAINED BY ADEQUATE WATERING OF THE SITE BY THE CONTRACTOR.

3. AREAS OF PROPOSED BUILDINGS, STREETS, AND AREAS OF FILL TO BE CLEARED OF VEGETATION AND ORGANIC AND INORGANIC DEBRIS.
   a. INORGANIC DEBRIS TO BE REMOVED FROM THE SITE AND LAWFULLY DISPOSED OF BY THE CONTRACTOR.
   b. ORGANIC MATERIALS FROM CLEARING TO BE REMOVED FROM THE SITE AND PLACED AS LANDSCAPE FILL IN AREAS NOT PLANNED FOR STRUCTURES OR STREETS.

4. ORGANIC-RICH TOPSOIL TO BE STRIPPED FROM CONSTRUCTION AREAS AND LOCATIONS WHERE ENGINEERED FILL IS TO BE PLACED.
   a. THE FINAL DEPTH OF SOIL REMOVAL TO BE DETERMINED BASED ON SITE INSPECTIONS BY THE PROJECT GEOTECHNICAL ENGINEER AFTER INITIAL STRIPPING/EXCAVATION WORK.
   b. STRIPPED TOPSOIL TO BE STOCKPILED IN DESIGNATED AREAS.
   c. STRIPPING OPERATIONS TO BE OBSERVED AND DOCUMENTED BY THE GEOTECHNICAL ENGINEER OR S/HER REPRESENTATIVE.

5. UNDOCUMENTED FILLS, BURIED TOPSOIL AND SUBSURFACE STRUCTURES ENCOUNTERED DURING GRADING AND EXCAVATION TO BE REMOVED AND THE EXCAVATIONS BACKFILLED WITH ENGINEERED FILL.

6. EXPANSIVE SOILS ENCOUNTERED DURING GRADING AND EXCAVATION OPERATIONS TO BE COMPLETELY REMOVED BENEATH FOUNDATIONS AND SLABS ON GRADE TO AN AVERAGE DEPTH OF 3-FEET.
   a. EXCAVATIONS FOR EXPANSIVE SOIL REMOVAL TO BE BACKFILLED WITH ENGINEERED FILL IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT.
   b. EXPANSIVE SOILS TO BE COMPLETELY REMOVED 5-FEET BEYOND THE BUILDING ENVELOPES.

7. AFTER STRIPPING OF AN AREA IS APPROVED BY THE GEOTECHNICAL ENGINEER, THE AREA SHALL BE RIPPED OR TILLED TO A DEPTH OF 12-INCHES, MOISTURE CONDITIONED, ROOT PICKED, AND COMPACTED IN-PLACE PRIOR TO PLACEMENT OF ENGINEERED FILL OR CRUSHED AGGREGATE BASE FOR PAVEMENT.

8. EXPOSED SUBGRADE SOILS TO BE EVALUATED BY THE GEOTECHNICAL ENGINEER.
   a. FOR LARGE AREAS PERFORM A PROOF-ROLL OF THE EXPOSED SUBGRADE WITH A FULLY LOADED DUMP TRUCK OR OTHER MEANS ACCEPTABLE TO THE GEOTECHNICAL ENGINEER.

9. PRIOR TO PLACEMENT OF ENGINEERED FILL, OR IDENTIFIED SOFT/LOOSE SOILS ENCOUNTERED DURING SUBGRADE PREPARATION TO BE; a) COMPACTED TO A FIRM, UNYIELDING CONDITION, b) OVER-EXCAVATED AND REPLACED WITH ENGINEERED FILL c) STABILIZED WITH ROCK.

10. THE DEPTH OF OVER-EXCAVATION, IF REQUIRED, TO BE EVALUATED BY THE GEOTECHNICAL ENGINEER AT THE TIME OF CONSTRUCTION.

PAVING NOTES

1. PAVING NOTES AND DETAILS WITHIN THESE PLANS ARE INTENDED FOR DRY WEATHER CONSTRUCTION CONDITIONS.

2. POCKETS OF ORGANIC DEBRIS OR LOOSE FILL ENCOUNTERED DURING RIPPING OR FILL SHALL BE REMOVED AND REPLACED WITH ENGINEERED FILL.

3. PERFORM PROOF-ROLL DIRECTLY ON PREPARED SUBGRADE WITH A FULLY LOADED DUMP TRUCK DURING DRY WEATHER. SOFT AREAS THAT PUMP, RUT OR WEAVE TO BE STABILIZED PRIOR TO PAVING.
   a. PROOF-ROLL TO BE OBSERVED BY THE PROJECT GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE.

4. DENSITY TESTING FOR COMPLIANCE WITH PROJECT PLANS/SPECIFICATIONS TO BE PERFORMED BY THE PROJECT GEOTECHNICAL ENGINEER DURING PLACEMENT OF PAVEMENT SECTION MATERIALS.

GRADING NOTES

1. SPREADING OF MUD OR DEBRIS UPON ANY PUBLIC ROAD IS PROHIBITED. THE CITY OF NEWBERG PUBLIC WORKS DEPARTMENT MAY ORDER STOPPAGE OF WORK TO EFFECT CORRECTIVE ACTION, AT ANY TIME.

2. EFFECTIVE EROSION CONTROL, DUST CONTROL, AND DRAINAGE CONTROL IS REQUIRED AT ALL TIMES. THE CITY OF NEWBERG MAY ORDER STOPPAGE OF WORK TO EFFECT CORRECTIVE ACTION, AT ANY TIME.

3. EMBANKMENTS OR STRUCTURAL FILLS FOR ROADWAY CONSTRUCTION OR FILLS TO BE CONSTRUCTED ON BUILDABLE LOTS SHALL BE CONSTRUCTED FROM EXCAVATED MATERIALS ACCEPTABLE TO THE SOILS ENGINEER AND SHALL BE BROUGHT TO THE GRADE IN LIFTS NOT TO EXCEED 10-INCH LOOSE THICKNESS. EACH LIFT SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS OBTAINED BY AASTHO T-99 COMPACTION TEST.

4. STRUCTURAL FILLS SHALL COMPLY WITH APPENDIX CHAPTER 33 OF THE UNIFORM BUILDING CODE. THE FILL SLOPES SHALL NOT EXCEED 2:1 AT FINISH GRADE. NO ROCK OR SIMILAR MATERIAL EXCEEDING A 12-INCH DIAMETER SHALL BE ALLOWED IN THE STRUCTURAL FILL.

5. IF SPRINGS OR GROUND WATER ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE SOILS AND CIVIL ENGINEERS AND THE CITY OF NEWBERG PUBLIC WORKS DEPARTMENT OF THE CONDITIONS FOUND AND COORDINATE HIS ACTIVITIES IN A MANNER THAT WILL ALLOW THE ENGINEERS TIME TO REVIEW THE SITUATION AND PEPARE A PLAN TO PROPERLY MITIGATE THE WATER ENCOUNTERED. THE CONTRACTOR SHALL HAVE THE SOILS ENGINEER TAKE COMPACTION TESTS. A MINIMUM OF ONE TEST WILL BE REQUIRED FOR EACH 2-FEET OF FILL.

SANITARY SEWERS

1. THE ENDS OF SANITARY SERVICE LATERALS OR PIPE STUBS SHALL BE MARKED WITH A ONE PIECE 2"X4" MARKER EXTENDING A MINIMUM OF 24-INCHES ABOVE THE GROUND WITH THE END PAINTED GREEN. THE 2"X4" TOP TO BE MARKED WITH DEPTH OF LATERAL MEASURED FROM GROUND TO INVERT OF PIPE PER THE CITY OF NEWBERG PUBLIC WORKS STANDARDS.

2. ALL SANITARY SEWER PIPE SHALL BE PVC PIPE, CONFORMING TO ASTM D-3034 (SDR 35) INSTALLED IN ACCORDANCE WITH ASTM D-2321, UNLESS OTHERWISE NOTED.

3. ALL SANITARY SERVICE LATERAL CONNECTIONS ARE TO BE TEES UNLESS OTHERWISE NOTED.

4. MAINTAIN A MINIMUM 10-FOOT HORIZONTAL CLEAR DISTANCE BETWEEN WATER AND SANITARY SEWER LINES EXCEPT AT CROSSINGS. VERTICAL SEPARATION SHALL BE A MINIMUM OF 18-INCHES CLEAR - DISTANCE WHERE WATER LINES CROSS OVER SANITARY SEWER LINES.

5. BOTH SANITARY SEWER AND WATER LINES SHALL BE TESTED TO ENSURE SYSTEM INTEGRITY. BOTH SHALL BE TESTED AFTER CONSTRUCTION IS COMPLETED INCLUDING SERVICE LATERAL, BACKFILLING, AND COMPACTION OF BASE ROCK.

6. UNLESS OTHERWISE NOTED ON THE PLANS, LATERALS SHALL BE 4-INCH DIAMETER WITH A MINIMUM GRADE OF 2.0%.

7. THE LOCATION AND/OR STATIONING AND THE VERTICAL DISTANCE ROM THE GROUND TO THE INVERT ELEVATION OF ALL SEWER SERVICE LATERALS SHALL BE RECORDED BY THE CONTRACTOR AND PROVIDED TO THE ENGINEER.

8. BACKFILL MUST BE COMPACTED TO A DENSITY NOT LESS THAN 95% IN PAVED OR STRUCTURAL FILL AREAS. MINIMUM COMPACTION IN UNPAVED, NON-STRUCTURAL FILL AREAS IS 90%. COMPACTION IS TO BE PER ASTM D-1557. MAXIMUM COMPACTION TEST SPACING OVER PUBLIC SANITARY LINES IS 100-FEET.

9. ALL SANITARY SEWER LINES SHALL BE THOROUGHLY CLEANED PRIOR TO MANDRELL TESTING, AIR TESTING, VIDEO TAPING, AND MANHOLE TESTING. (VACUUM TEST REQUIRED.)

10. NOTIFY THE CITY OF NEWBERG PUBLIC WORKS INSPECTOR 48-HOURS PRIOR TO PERFORMING ANY WORK. CALL THE CITY OF NEWBERG INSPECTION REQUEST LINE AT (503) 537-1273.

11. CLEANOUTS REQUIRED FOR ALL LATERALS (SINGLE AND DOUBLE) AT RIGHT-OF-WAY.

STORM DRAINS

1. ALL STORM DRAIN CONNECTIONS ARE TO BE TEES UNLESS OTHERWISE NOTED.

2. ALL STORM DRAIN PIPE SHALL BE INSTALLED WITH WATERTIGHT JOINTS.

3. STORM DRAIN PIPE SHALL BE AS NOTED ON PLANS AND INSTALLED IN ACCORDANCE WITH ASTM D-2321, UNLESS OTHERWISE NOTED.

4. BACKFILL MUST BE COMPACTED TO A DENSITY NOT LESS THAN 95% IN PAVED OR STRUCTURAL FILL AREAS. MINIMUM COMPACTION IN UNPAVED, NON-STRUCTURAL FILL AREAS IS 90%. COMPACTION IS TO BE PER ASTM D-1557. MAXIMUM COMPACTION TEST SPACING OVER PUBLIC STORM LINES IS 100-FEET.

5. STORM DRAIN LINES SHALL BE TESTED ACCORDING TO THE REQUIREMENTS OF THE CITY OF NEWBERG PUBLIC WORKS DEPARTMENT. TESTING SHALL BE PERFORMED AFTER CONSTRUCTION IS COMPLETED INCLUDING BACKFILLING AND COMPACTION OF BASE ROCK.THE DEFLECTION TEST AS DESCRIBED IN THE AMERICAN PUBLIC WORKS ASSOCIATION MANUAL - OREGON CHAPTER AND THE CITY OF NEWBERG PUBLIC WORKS CONSTRUCTION STANDARDS IS REQUIRED. ALL STORM DRAIN LINES SHALL BE THOROUGHLY CLEANED PRIOR TO DOING ANY TESTING OR VIDEO TAPING.

6. THE ENDS OF STORM DRAIN LATERALS OR PIPE STUBS SHALL BE MARKED WITH A ONE PIECE 2"X4" MARKER EXTENDING A MINIMUM OF 24-INCHES ABOVE THE GROUND WITH THE END PAINTED WHITE.

7. NOTIFY THE CITY OF NEWBERG PUBLIC WORKS DEPARTMENT 48-HOURS PRIOR TO PERFORMING ANY WORK.

8. ALL LATERALS WILL BE 4-INCH DIAMETER, WHITE IN COLOR AND HAVE A MINIMUM SLOPE OF 2.0% UNLESS OTHERWISE NOTED ON PLANS.

9. THE LOCATION AN/OR STATIONING AND VERTICAL DISTANCE FROM THE GROUND TO THE INVERT ELEVATION OF ALL STORM SERVICE LATERALS SHALL BE RECORDED BY THE CONTRACTOR AND PROVIDED TO THE ENGINEER.

10. CLEANOUTS REQUIRED FOR ALL LATERALS AT RIGHT-OF-WAY

REGISTERED PROFESSIONAL ENGINEER
78347PE
OREGON
JANUARY 09, 2007
ANDREW R. CHERNISHOV
PRELIMINARY
EXPIRES 12/31/2019

H B H
501 E First Street
Newberg, Oregon 97132
CONSULTING ENGINEERS
503/554-9553 ■ fax 503/537-9554
email: mail@hbh-consulting.com

Designed By: ARB | Drawn By: ARB | Checked By: ARC | Submittal No: PRELIMINARY
File: L:\2020-006\4-Design\DWG\1 - Cover, Notes, Existing & Demo.dwg

REV.	DATE	DESCRIPTION	BY

0" 1"
IF THIS LINE IS NOT 1 INCH SCALE IS NOT AS SHOWN

HAWKINS COMPANIES LLC
855 BROAD ST. SUITE 300, BOISE ID 83702

NEWBERG FAIRFIELD INN
PARCELS 1900 + 2002, NEWBERG OR 97132

NOTES

Sheet No. G2 | 2 of 11
Date 3/30/2020
2020-006

NOTES:

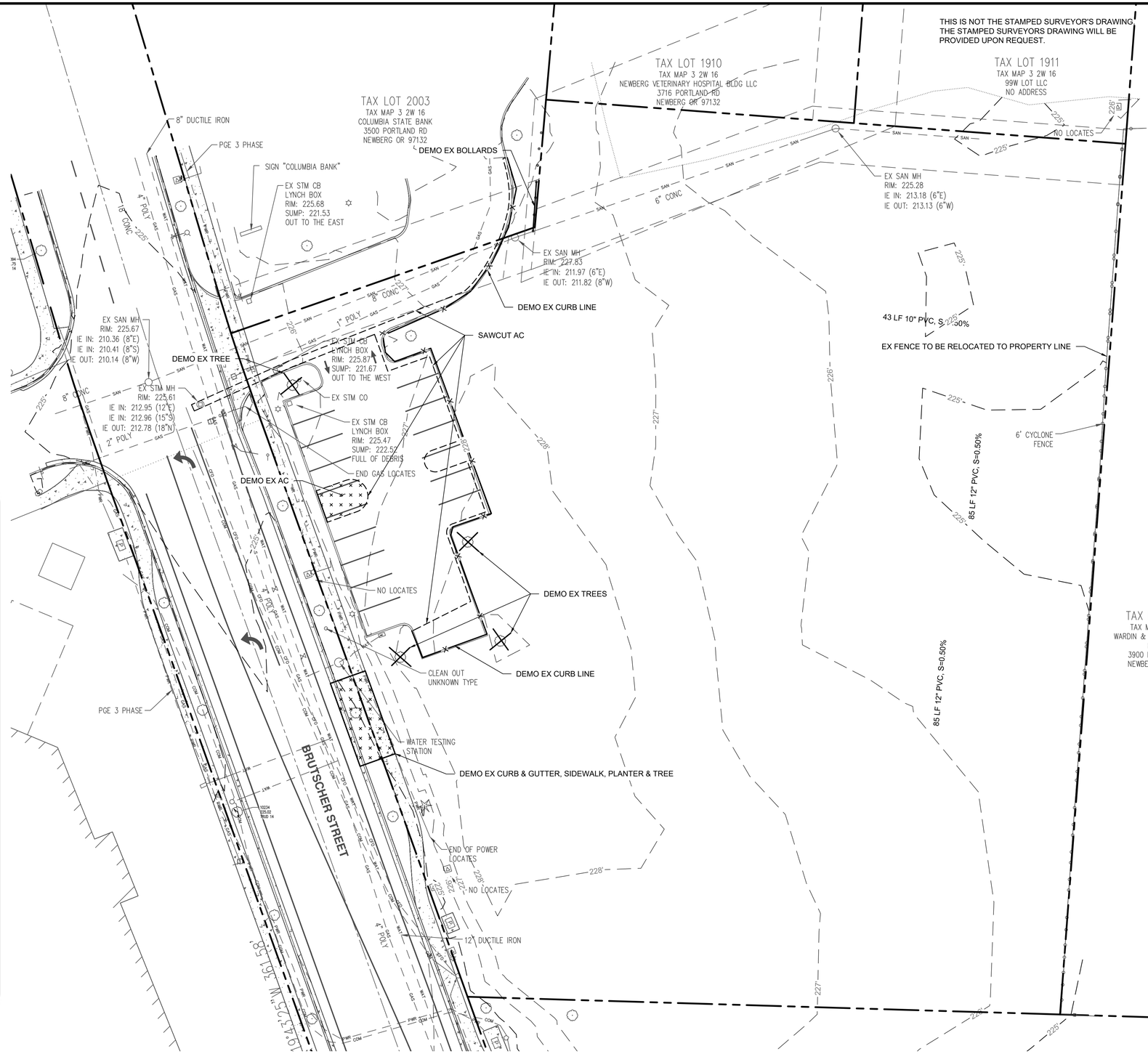
1. UTILITIES SHOWN ARE BASED ON UNDERGROUND UTILITY LOCATE MARKINGS AS PROVIDED BY OTHERS, PROVIDED PER UTILITY LOCATE TICKET NUMBER 17176043. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND LOCATES REPRESENT THE ONLY UTILITIES IN THE AREA. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.
2. FIELD WORK WAS CONDUCTED JULY 25-26, 2017 AND FEBRUARY 07, 2020.
3. VERTICAL DATUM: ELEVATIONS ARE BASED ON NAVD88 DERIVED FROM THE TRIMBLE NOW VRS.
4. HORIZONTAL DATUM: A LOCAL DATUM PLANE DERIVED FROM OREGON STATE PLANE NORTH 3601 NAD83 (2011) EPOCH 2010.0000 PROJECT MEAN COMBINED GROUND SCALE FACTOR 1.000109534 AT A CALCULATED CENTRAL PROJECT POINT WITH INTERNATIONAL FOOT GRID VALUES OF A NORTHING OF 607,562.07, AND A EASTING OF 7,573,991.16, AND MERIDIAN CONVERGENCE ANGLE OF -1°43'53" AT THE CENTRAL POINT. OREGON STATE PLANE DATUM IS DERIVED BY TRIMBLE VRS NOW NETWORK.
5. CONTOUR INTERVAL IS 1 FOOT.
6. TREES WITH DIAMETER OF 6" AND GREATER ARE SHOWN. TREE DIAMETERS WERE MEASURED UTILIZING A DIAMETER TAPE AT BREAST HEIGHT. TREE INFORMATION IS SUBJECT TO CHANGE UPON ARBORIST INSPECTION.

LEGEND

	EXISTING
DECIDUOUS TREE	
CONIFEROUS TREE	
FIRE HYDRANT	
WATER BLOWOFF	
WATER METER	
WATER VALVE	
DOUBLE CHECK VALVE	
AIR RELEASE VALVE	
SANITARY SEWER CLEAN OUT	
SANITARY SEWER MANHOLE	
SIGN	
STREET LIGHT	
MAILBOX	MB

	EXISTING
STORM SEWER CLEAN OUT	
STORM SEWER CATCH BASIN	
STORM SEWER AREA DRAIN	
STORM SEWER MANHOLE	
GAS METER	
GAS VALVE	
GUY WIRE ANCHOR	
UTILITY POLE	
POWER VAULT	P
POWER JUNCTION BOX	
POWER PEDESTAL	
COMMUNICATIONS VAULT	C
COMMUNICATIONS JUNCTION BOX	
COMMUNICATIONS RISER	

	EXISTING
RIGHT-OF-WAY LINE	
BOUNDARY LINE	
PROPERTY LINE	
CENTERLINE	
DITCH	
CURB	
EDGE OF PAVEMENT	
EASEMENT	
FENCE LINE	
GRAVEL EDGE	
POWER LINE	PWR
OVERHEAD WIRE	OHW
COMMUNICATIONS LINE	COM
FIBER OPTIC LINE	CFO
GAS LINE	GAS
STORM SEWER LINE	
SANITARY SEWER LINE	SAN
WATER LINE	WAT



EXISTING CONDITIONS + DEMO

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

SEE SURVEYOR'S STAMPED DRAWING

H B H
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email: mail@hbh-consulting.com

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REV.	DATE	DESCRIPTION	BY

0" 1"
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HAWKINS COMPANIES, LLC
855 BROAD ST., SUITE 300, BOISE ID, 83702

NEWBERG FAIRFIELD INN
PARCELS 1900 + 2002, NEWBERG OR 97132

EXISTING CONDITIONS + DEMO

Sheet No. G3 | 3 of 11
Date 3/30/2020
2020-006

SITE PLAN

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

REGISTERED PROFESSIONAL ENGINEER
76347PE
OREGON
JANUARY 09, 2018
ANDREW R. CHERNISHOV
EXPIRES 12/31/2019

PRELIMINARY

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Designed By: ARB | Drawn By: ARB | Checked By: ARC | Submittal No: PRELIMINARY
File: L:\2020-00604-Design\DWG\2 - Site Plan.dwg

REV.	DATE	DESCRIPTION	BY

0" 1"
IF THIS LINE IS NOT 1 INCH SCALE IS NOT AS SHOWN

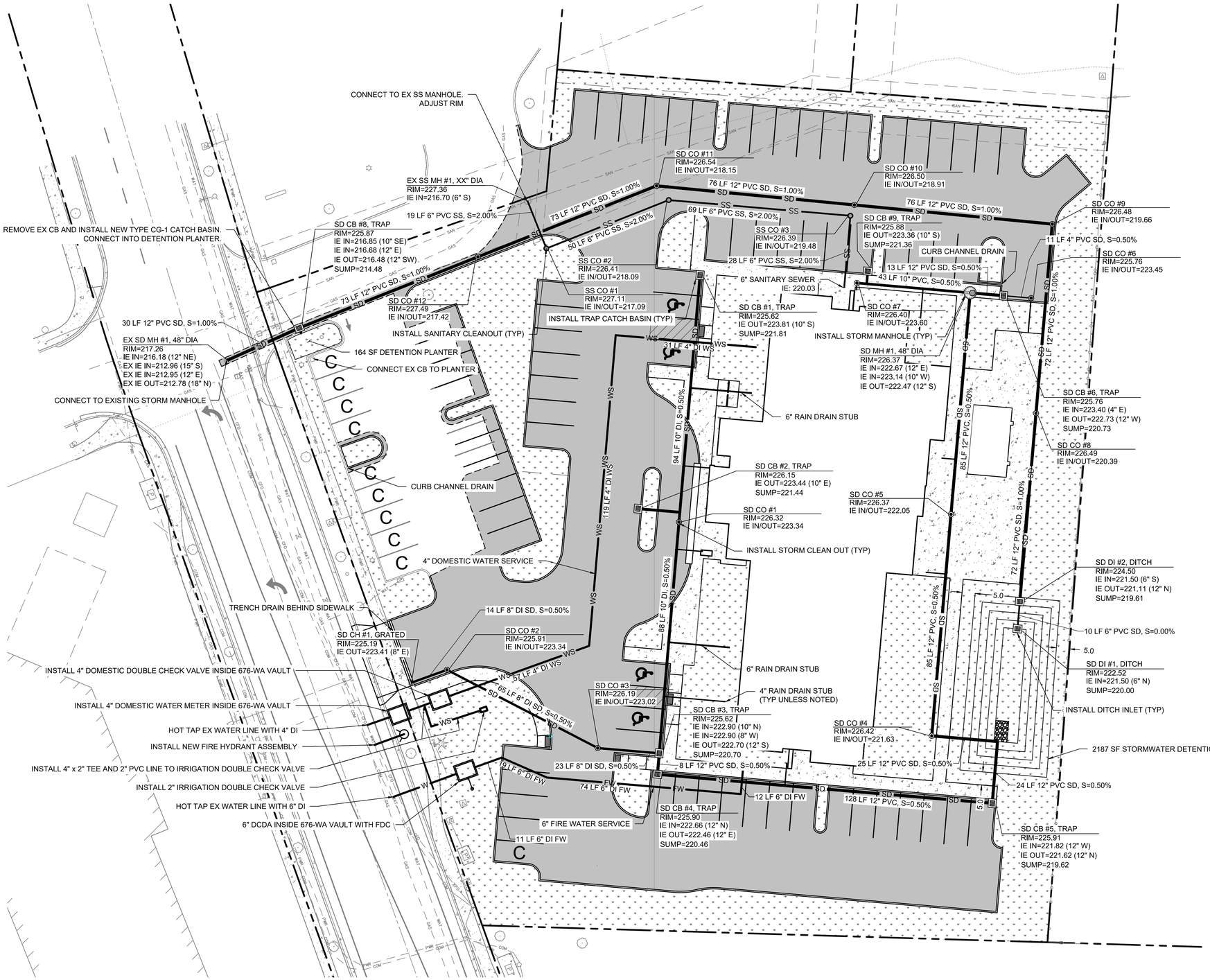
HAWKINS COMPANIES LLC
855 BROAD ST. SUITE 300, BOISE ID 83702

NEWBERG FAIRFIELD INN
PARCELS 1900 + 2002, NEWBERG OR 97132

SITE PLAN

Sheet No: C1
Date: 3/31/2020
4 of 11

2020-006



COMPOSITE UTILITY PLAN

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

REGISTERED PROFESSIONAL ENGINEER
78347PE
OREGON
JANUARY 09, 2018
ANDREW R. CHERNISHOV
EXPIRES 12/31/2019

PRELIMINARY

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Designed By: ARB
Drawn By: ARB
Checked By: ARC
Submittal No: PRELIMINARY
File: L:\2020-0064-Design\DWG\3 - Utilities.dwg

BY	DESCRIPTION	DATE	REV.

0" 1"
IF THIS LINE IS NOT 1 INCH SCALE IS NOT AS SHOWN

HAWKINS COMPANIES LLC
855 BROAD ST. SUITE 300, BOISE ID 83702

NEWBERG FAIRFIELD INN
PARCELS 1900 + 2002, NEWBERG OR 97132
COMPOSITE UTILITY PLAN

Sheet No. C2
Date 3/31/2020
5 of 11
2020-006

GRADING PLAN

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

REGISTERED PROFESSIONAL ENGINEER
78347PE
OREGON
ANDREW R. CHERNISHOV
EXPIRES 12/31/2019

PRELIMINARY

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Designed By: ARB | Drawn By: ARB | Checked By: ARC | Submittal No: PRELIMINARY
File: L:\2020-0064-Design\DWG\4 - Grading.dwg

REV.	DATE	DESCRIPTION	BY

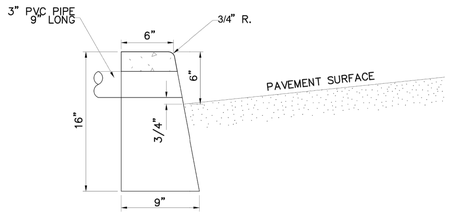
0" 1"
IF THIS LINE IS NOT 1 INCH
SCALE IS NOT AS SHOWN

HAWKINS COMPANIES, LLC
855 BROAD ST., SUITE 300, BOISE ID 83702

NEWBERG FAIRFIELD INN
PARCELS 1900 + 2002, NEWBERG OR 97132

GRADING PLAN

Sheet No. C3
Date 3/31/2020
6 of 11
2020-006



NOTES:

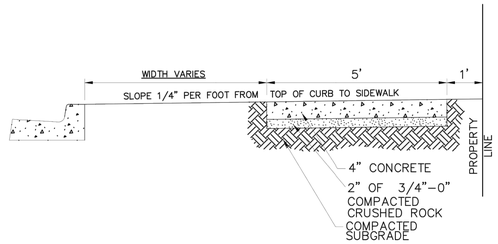
1. CONCRETE SHALL HAVE STRENGTH OF 3300 P.S.I. AT 28 DAYS.
2. TRANSVERSE CONTRACTION JOINTS – MAKE 1/8" x 1 1/2" DEEP CUT SPACED AT 15' INTERVALS.
3. THIS TYPE OF CURB TO BE USED ONLY WHERE SPECIFIED.
4. APPLY CURING COMPOUND (PETROLEUM BASE) TO FRESH CONCRETE TO RETAIN MOISTURE.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:
05/05/2015 - ASM

CURB - TYPE "C"

SCALE: N.T.S.
DATE: May 2015
APPROVED BY: K. Hofmann
STANDARD DRAWING 502



NOTES:

1. SLOPE FROM THE PROPERTY LINE TO THE STREET AT 2%.
2. WORK AGGREGATE INTO CONCRETE PRIOR TO FINISHING CONCRETE.
3. FINISHING DETAILS
   - –EDGE CONCRETE WITH 3" EDGING TROWEL.
   - –SCORE CONCRETE AT 5' INTERVALS.
   - –INSTALL 1/8" x 1 1/2" CONTRACTION JOINTS EVERY 15'.
   - –FABRIC TYPE EXPANSION JOINT NOT TO BE USED
   - –APPLY LIGHT BROOM FINISH TRANSVERSE TO THE SIDEWALK.
4. CONCRETE SHALL HAVE STRENGTH OF 3300 P.S.I. AT 28 DAYS.
5. APPLY CURING COMPOUND (PETROLEUM BASE) TO FRESH CONCRETE TO RETAIN MOISTURE.
6. TOLERANCES
   - –SURFACE SHALL NOT VARY MORE THAN 1/4" FROM A 10' STRAIGHT EDGE.
   - –ALIGNMENT SHALL BE WITHIN 1/4" OF TRUE LINE.

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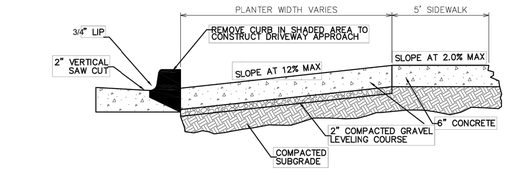
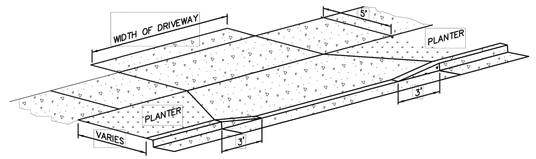
REVISIONS:
05/05/2015 - ASM

SIDEWALK TYPE "A"

SCALE: N.T.S.
DATE: May 2015
APPROVED BY: K. Hofmann
STANDARD DRAWING 503





NOTES
1. CONCRETE SHALL HAVE STRENGTH OF 3300 P.S.I. AT 28 DAYS.
2. LIMITS OF DRIVEWAY SHALL BE SAW CUT.
3. APPLY A LIGHT BROOM FINISH TRANSVERSE TO THE SIDEWALK.
4. CURB AND APPROACH SHALL BE POURED MONOLITHICALLY.
5. IF WIDTH IS GREATER THAN 15 FEET, INSTALL CONTRACTION JOINT IN CENTER OF THE DRIVEWAY.
6. FABRIC EXPANSION JOINT SHALL NOT BE USED.
7. WORK AGGREGATE INTO CONCRETE PRIOR TO FINISHING CONCRETE.
8. APPLY CURING COMPOUND TO FRESH CONCRETE TO RETAIN MOISTURE.
9. MINIMUM DRIVEWAY WIDTH OF 12' AND MAXIMUM WIDTH OF 24' 3 CAR GARAGE MAXIMUM WIDTH OF 28'

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
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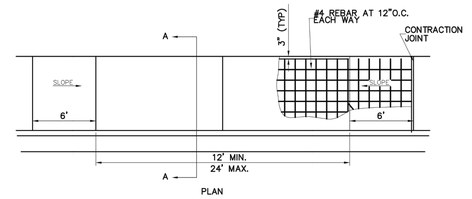
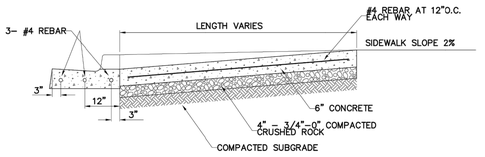
REVISIONS:
04/08/10
05/05/2015 - ASM
06/29/2015 - ASM

DRIVEWAY APRON CURB CUT TYPE "A" SIDEWALK

SCALE: N.T.S.
DATE: May 2015
APPROVED BY: K. Hofmann
STANDARD DRAWING 508





SECTION A–A

NOTES
1. SEE STANDARD DRAWING 501 FOR ADDITIONAL DETAILS.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
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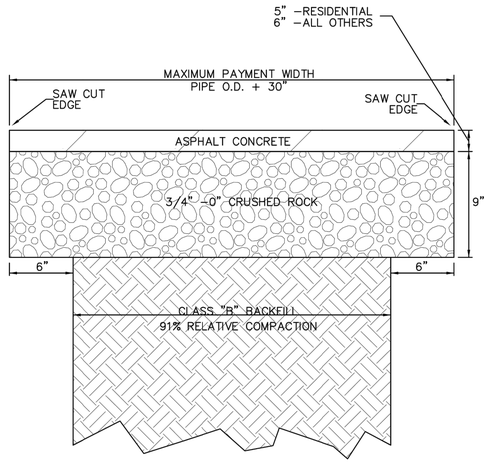
REVISIONS:
Jan. 2011

COMMERCIAL DRIVEWAY

SCALE: N.T.S.
DATE: May 2007
APPROVED BY: D. Danicic
STANDARD DRAWING 510



NOTES:

1. SAW CUT ASPHALT TO NEAT STRAIGHT LINES.
2. ASPHALT – CLASS "C" MIX PLACED IN 2 LIFTS.
3. ALL JOINTS SHALL BE SEALED WITH RUBBERIZED ASPHALT EMULSION (HOT OR COLD) AND DE–TACKED WITH SAND IF IMMEDIATE TRAFFIC IS NEEDED AT ALL JOINTS.
4. ACTUAL PAYMENT WIDTH TO BE DETERMINED AT SITE PRIOR TO PAVING.
5. REFERENCE DESIGN STANDARDS MANUAL SECTION 5.22 FOR ADDITIONAL TRENCH PAVING REQUIREMENTS.

City of Newberg
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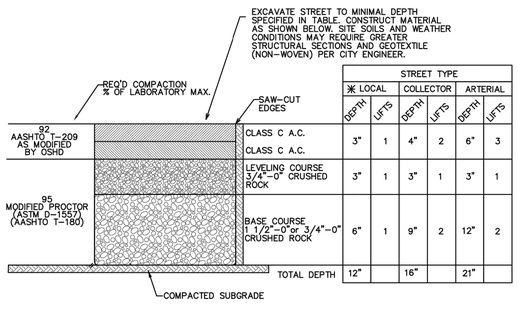
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:
Jan. 2011
05/07/2015 - ASM

TRENCH PAVING

SCALE: N.T.S.
DATE: May 2015
APPROVED BY: K. Hofmann
STANDARD DRAWING 517



	STREET TYPE					
	✳ LOCAL		COLLECTOR		ARTERIAL	
	DEPTH	LIFTS	DEPTH	LIFTS	DEPTH	LIFTS
CLASS C A.C.	3"	1	4"	2	6"	3
CLASS C A.C.						
LEVELING COURSE 3/4"–0" CRUSHED ROCK	3"	1	3"	1	3"	1
BASE COURSE 1 1/2"–0" or 3/4"–0" CRUSHED ROCK	6"	1	9"	2	12"	2
TOTAL DEPTH	12"		16"		21"	

GEOTEXTILE SPECIFICATIONS

PROPERTY	TEST	MIN. VALUE
TENSILE STRENGTH, lbs	ASTM D–4632	120
ELONGATION, WET %	ASTM D–4632	40
COEFFICIENT OF WATER PERMEABILITY, cm/sec	ASTM D–4491	0.10
PUNCTURE STRENGTH, lbs	ASTM D–4833	80
MULLEN BURST STRENGTH, psi	ASTM D–3786	250

✳ LOCAL STREET TYPE = INTERIOR RESIDENTIAL SINGLE FAMILY DETACHED ZONES

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:

STRUCTURAL STREET SECTIONS

SCALE: N.T.S
DATE: May 2007
APPROVED BY: D. Danicic
STANDARD DRAWING 527

OREGON TRANSPORTATION COMMISSION
Standards for Accessible Parking Places
August 2018

MINIMUM STANDARD SINGLE–ACCESSIBLE PARKING SPACE
(VAN–ACCESSIBLE DESIGNATION REQUIRED)

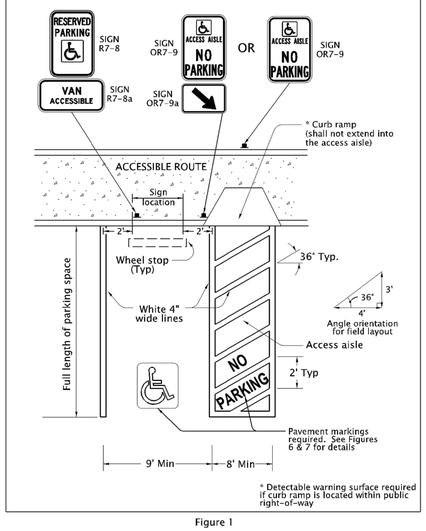
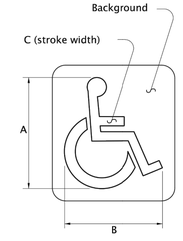


Figure 1

OREGON TRANSPORTATION COMMISSION
Standards for Accessible Parking Places
August 2018

PAVEMENT MARKING STENCIL



Pavement Marking Background: Optional: Blue, Retroreflective

Pavement Marking Stencil: White, Retroreflective

LEGEND	DIMENSIONS (INCHES)						
	A	B	C	D	E	F	G
MINIMUM	28	24	3				
STANDARD	41	36	4				

The pavement marking stencil shall be used to designate an accessible parking area reserved for vehicles with DMV permits.

Figure 6

REGISTERED PROFESSIONAL ENGINEER
78347PE
OREGON
JANUARY 29, 2010
ANDREW R. CHERNISHOV
PRELIMINARY
EXPIRES 12/31/2019

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503/554-9553 ■ fax 503/537-9554
email: mail@hbh-consulting.com

Designed By: ARB | Drawn By: ARB | Checked By: ARC | Submittal No: PRELIMINARY
File: L:\2020-0064-Design\DWG\5 - Details.dwg

BY	DESCRIPTION	DATE	REV.

0" ■ 1"
IF THIS LINE IS NOT 1 INCH SCALE IS NOT AS SHOWN

HAWKINS COMPANIES LLC
855 BROAD ST, SUITE 300, BOISE ID 83702

NEWBERG FAIRFIELD INN
PARCELS 1900 + 2002, NEWBERG OR 97132

DETAILS

Sheet No. C7
Date 3/31/2020
10 OF 11
2020-006

OREGON TRANSPORTATION COMMISSION
Standards for Accessible Parking Places
August 2018

PAVEMENT MARKING LEGEND

Pavement Marking Legend: White or Yellow, Retroreflective

The "No Parking" pavement marking is used to designate an access aisle reserved for persons use parking with a DMV permit. This marking shall be required for all access aisles next to accessible parking spaces. Engineering judgement should be used for placement location to give best visual location to prevent illegal use of access aisle. Yellow may be used instead of white to increase contrast between access aisle white lines and the "No Parking" legend.

Figure 7

OREGON TRANSPORTATION COMMISSION
Standards for Accessible Parking Places
August 2018

SIGN DESIGN
SIGN NO. R7-8

Sign Background: White, Retroreflective sheeting

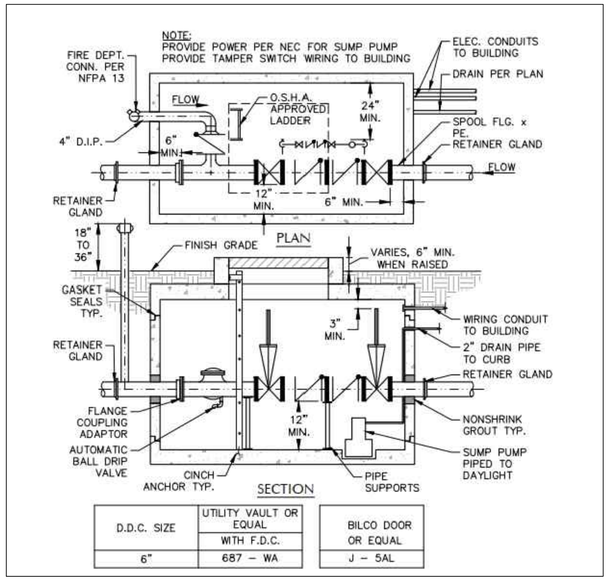
Sign Legend: Green, Retroreflective sheeting

Sign Symbol: White on Blue, Retroreflective sheeting

Refer to Standard Highway Signs book for details.

The Disabled Person parking sign is used to designate a parking area reserved for vehicles with DMV permit as stated.

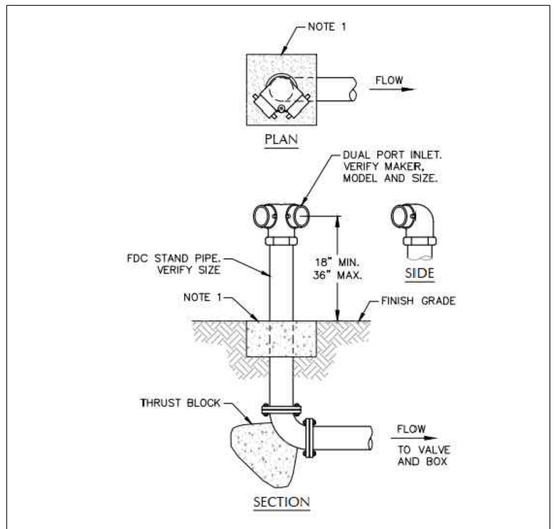
Figure 8



D.D.C. SIZE	UTILITY VAULT OR EQUAL WITH F.D.C.	BILCO DOOR OR EQUAL
6"	687 – WA	J – 5AL

DETAIL 1 – DOUBLE CHECK DETECTOR ASSEMBLY FIRE SERVICE VAULT WITH SUMP PUMP

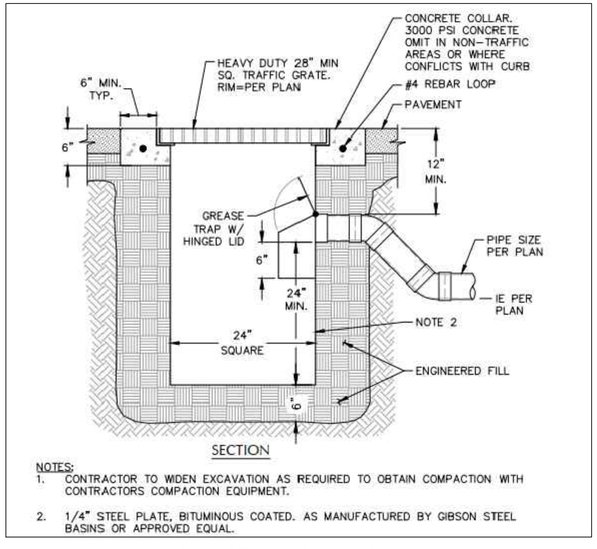
N.T.S.



NOTES:
1. CONCRETE ANCHOR PAD TO BE 12"x12"x6" THICK, UNLESS NOTED OTHERWISE. ELIMINATE IF INSTALLED IN CONCRETE PAVED AREA.
2. USE FLANGE OR THREADED FITTINGS.
3. CONTRACTOR SHALL PROVIDE SINGLE CHECK VALVE AND BALL DRIP VALVE IN ACCESSIBLE LOCATION INSIDE DDCV VAULT. COORDINATE WITH PLUMBING.

DETAIL 2 – FIRE DEPARTMENT CONNECTION (FDC)

N.T.S.



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

DETAIL 3 – TRAPPED CATCH BASIN

NTS

REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 09, 2018
ANDREW R. CHERNISHOV
PRELIMINARY
EXPIRES 12/31/2019

H B H
CONSULTING ENGINEERS
501 E First Street
Newberg, Oregon 97132
503/554-9553 ■ fax 503/537-9554
email: mail@hbh-consulting.com

Designed By: ARB | Drawn By: ARB | Checked By: ARC | Submittal No: PRELIMINARY
File: L:\2020-00614-Design\DWG\5 – Details.dwg

REV.	DATE	DESCRIPTION	BY

0" 1"
IF THIS LINE IS NOT 1 INCH SCALE IS NOT AS SHOWN

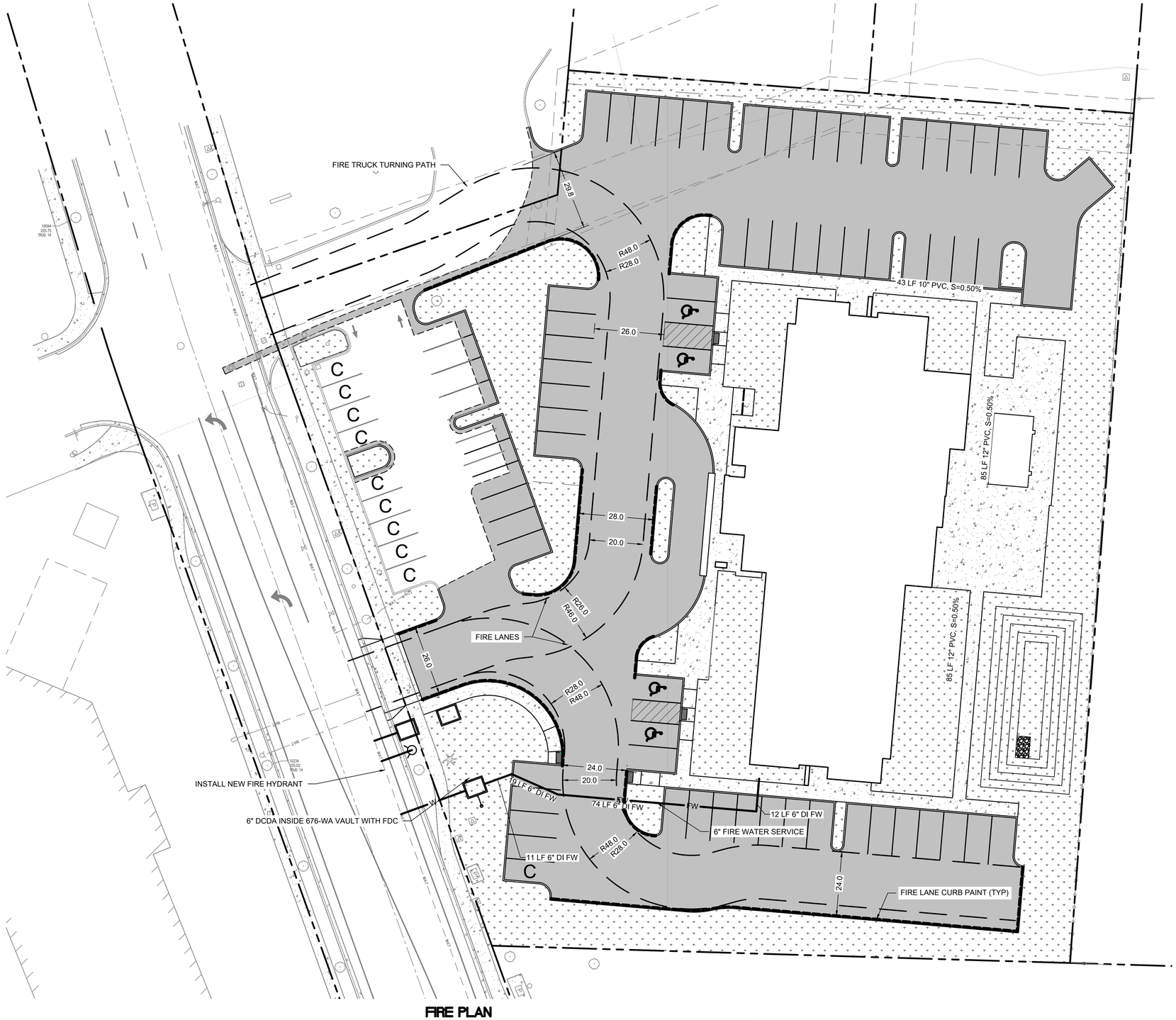
HAWKINS COMPANIES LLC
855 BROAD ST., SUITE 300, BOISE ID 83702

NEWBERG FAIRFIELD INN
PARCELS 1900 + 2002, NEWBERG OR 97132

DETAILS

Date: 3/31/2020
Sheet No.: C8
11 of 11

2020-006



FIRE PLAN

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

REGISTERED PROFESSIONAL ENGINEER
78347PE
OREGON
JULY 12, 2019
ANDREW R. CHERNISHOV
EXPIRES 12/31/2019

PRELIMINARY

H B H
CONSULTING ENGINEERS
501 E First Street
Newberg, Oregon 97132
503/554-9553 ■ fax 503/537-9554
email: mail@hbh-consulting.com

Designed By: ARB | Drawn By: ARB | Checked By: ARC | Submittal No: PRELIMINARY
File: L:\2020-00604-Design\DWG\6 - Fire Plan.dwg

REV.	DATE	DESCRIPTION	BY

0" 1"
IF THIS LINE IS NOT 1 INCH
SCALE IS NOT AS SHOWN

HAWKINS COMPANIES LLC
855 BROAD ST. SUITE 300, BOISE ID 83702

NEWBERG FAIRFIELD INN
PARCELS 1900 + 2002, NEWBERG OR 97132

FIRE PLAN

Date: 3/30/2020
Sheet No: F1
12 of 11

2020-006

LP / X = INSTALL LED LUMINAIRE ON A STEEL POLE.
(X= POLE NUMBER).

LP / EX = EXISTING PUBLIC COBRAHEAD LUMINAIRE ON AN ALUMINUM POLE.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

STREETLIGHTING DESIGN
Scale: 1"= 20'

Northstar Electrical Contractors
11055 S.W. Clay Street
Sherwood, Oregon 97140
Phone 503-612-0840
Fax 503-612-0891
Email adam.suminski@NorthStarElect.com

NorthStar ELECTRICAL CONTRACTORS

FAIRFIELD INN AND SUITES
NEWBERG, OR

NO.	REV DESCRIPTION	DATE

Title: PARKING LOT LIGHTING
Designed by: Adam Suminski
Checked by: Jesse Culp
Date: Feburary 24, 2020

DWG. NO
EL1

STREET LIGHTING NOTES:

1: LIGHT POLES SHALL BE 25–FOOT STEEL LIGHT POLE, WITH DARK PLATINUM FINISH.

APPROVED LIGHT POLES ARE:
LUMARK SSS–5–A–25–S–L–M–1

2. LUMINAIRES SHALL BE 131 WATT LED, 240V, MAST ARM MOUNTED, DARK PLATINUM, SHOEBOX FIXTURE, WITH TWISTLOCK P.E. RECEPTACLE.

APPROVED SHOEBOX LUMINAIRES ARE:
LP1: 131W LUMARK PRV C40–D–UNV–T3–SA–DP–HSS
LP2: 131W LUMARK PRV C40–D–UNV–T4–SA–DP–HSS
LP3: 131W LUMARK PRV C40–D–UNV–T4–SA–DP
LP4: 131W LUMARK PRV C40–D–UNV–T2–SA–DP
LP5: 131W LUMARK PRV C40–D–UNV–T4–SA–DP

3. LIGHTING CONTRACTOR/INSTALLER IS SOLELY RESPONSIBLE FOR INSTALLATION OF CORRECT MATERIAL BASED ON JURISDICTION SPECIFICATIONS AND STANDARDS. LIGHT POLE AND FIXTURE SUBMITTAL TO PROPER JURISDICTION IS REQUIRED.

LIGHT POLE LOCATION TABLE

POLE NUMBER	MH	WATTS	LUMENS	ARM	ARRANGEMENT	POLE TYPE
1	25 FT	131	15573	0.67	SINGLE	STEEL POLE
2	25 FT	131	15518	0.67	SINGLE	STEEL POLE
3	25 FT	131	17087	0.67	BACK–TO–BACK	STEEL POLE
4	25 FT	131	17172	0.67	SINGLE	STEEL POLE
5	25 FT	131	17087	0.67	SINGLE	STEEL POLE

NUMERIC SUMMARY

PROJECT: FAIRFIELD INN AND SUITES

LABEL	CALC TYPE	UNITS	AVG	MAX	MIN	AVG/MIN
PARKING LOT	ILLUMINANCE	FC	1.29	6.50	0.30	4.31

LIGHTING NOTES
Scale:

LIGHT LEVEL REQUIREMENTS

ROADWAY	CLASSIFICATION		LIGHT LEVEL	UNIFORMITY
PARKING LOT	PARKING LOT	TARGET	1.0 FC AVG	5:1 AVG/MIN
		ACHIEVED	1.29 FC AVG	4.31:1 AVG/MIN

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11055 S.W. Clay Street
Sherwood, Oregon 97140
Phone 503-612-0840
Fax 503-612-0891
Email adam.suminski@NorthStarElect.com

FAIRFIELD INN
AND SUITES
NEWBERG, OR

NO.	REV DATE	REV DESCRIPTION

Title: LIGHTING NOTES
Designed by: Adam Suminski
Checked by: Jesse Culp
Date: Feburary 24, 2020

DWG. NO
EL2

LP / X = INSTALL 101W LED COBRAHEAD LUMINAIRE ON AN ALUMINUM POLE. (X= POLE NUMBER).

= INSTALL COOPER B-LINE CUP4111-GRN STREET LIGHT CONTROLLER VERIFY POWER SOURCE WITH PGE

JB1 = INSTALL JB 10" X 17" WITH LID MARKED "STREET LIGHTING"

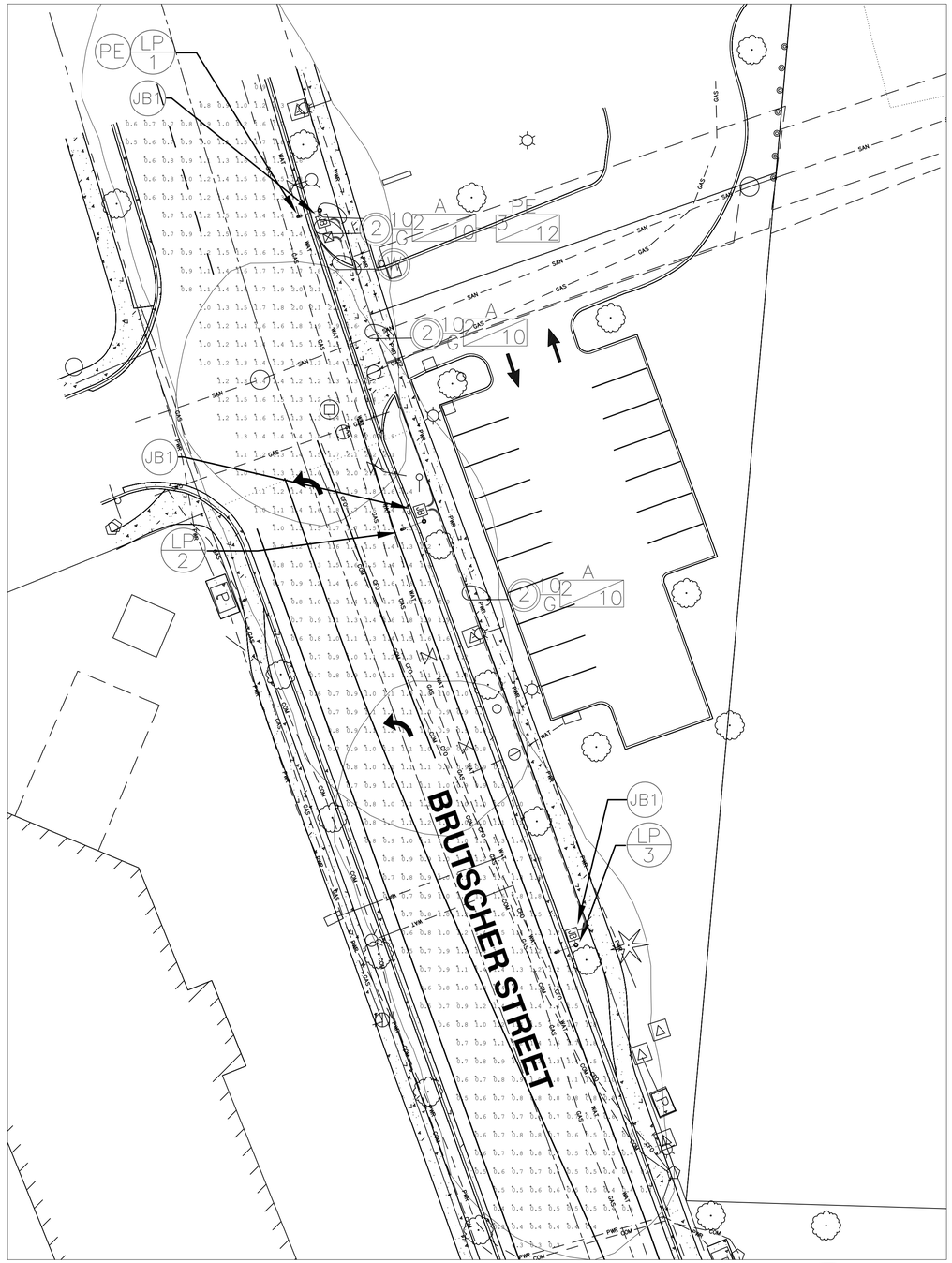
PE = INSTALL PHOTOELECTRIC CONTROL

W = INSTALL WIRE AND CONDUIT BASED ON PGE PLANS.

LEGEND

1 2 G 3 4 5

1 = CONDUIT SIZE IN INCHES
2 = GROUNDING CONDUCTOR SIZE
3 = NUMBER OF LIGHTING CONDUCTORS
4 = LIGHTING CONDUCTORS SIZE
5 = LIGHTING CIRCUIT NUMBER
G = DESIGNATES A GROUNDING CONDUCTOR



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

STREETLIGHTING DESIGN
Scale: 1"= 20'

REGISTERED PROFESSIONAL ENGINEER
10,250
OREGON
JULY 13, 1979
MARK J. VAN DUSER
EXPIRES 6-30-20

Northstar Electrical Contractors
11055 S.W. Clay Street
Sherwood, Oregon 97140
Phone 503-612-0840
Fax 503-612-0891
Email adam.suminski@NorthStarElect.com

NorthStar ELECTRICAL CONTRACTORS

FAIRFIELD INN AND SUITES
NEWBERG, OR

NO.	REV DESCRIPTION	REV DATE

Title: STREET LIGHTING
Designed by: Adam Suminski
Checked by: Jesse Culp
Date: Feburary 19, 2020

DWG. NO
EL3

STREET LIGHTING NOTES:

1: LIGHT POLES SHALL BE ALUMINUM LIGHT POLE, WITH 6' ELLIPTICAL MAST ARM, MOUNTED 30 FEET HIGH ON A PRECAST CONCRETE BASE.

CITY OF NEWBERG APPROVED LIGHT POLES ARE:
VALMONT 27084070514/1MA0632S

2. JUNCTION BOXES SHALL BE REINFORCED PRECAST CONCRETE, WITH TAMPER RESISTANT FASTENERS. ALL BOXES SHALL BE INSTALLED NO MORE THAN 3 FEET FROM THE LIGHT POLE.

"STREET LIGHTING" SHALL BE IN THE LID MARKING AREA.

3. LUMINAIRES SHALL BE CITY OF NEWBERG APPROVED 101 WATT LED, 240V, MAST ARM MOUNTED, GRAY, COBRAHEAD, FLAT LENS FIXTURE, WITH TWISTLOCK P.E. RECEPTACLE.

CITY OF NEWBERG PREFERRED COBRAHEAD LUMINAIRES ARE:
101W LEOTEK GC1-60F-MV-NW-2-GY-530-WL

4. THE PHOTOELECTRIC CONTROL SHALL BE CITY OF NEWBERG APPROVED TWISTLOCK, FAIL-ON ELECTRONIC, 105-300 VAC, 60 HZ PER ANSI 136.10, BRONZE HOUSING, 1.5 LUMEN TURN-ON, RATED 1000W TUNGSTEN (1800 VA BALLAST) 1.5:1 TURN-OFF/TURN-ON RATIO, SOLID BRASS PLUG BLADES, CONFORMALLY COATED CDS CELL, 160 JOULE MOV, 2-4 SEC. TURN-OFF DELAY.

CITY OF NEWBERG APPROVED PHOTOELECTRIC CONTROLS ARE:
DTL D124-1.5-1704

5. BASES SHALL BE CITY OF NEWBERG APPROVED PRECAST BASES:
CITY OF NEWBERG APPROVED PRECAST BASES ARE:
UTILITY VAULT 20R-LB-5

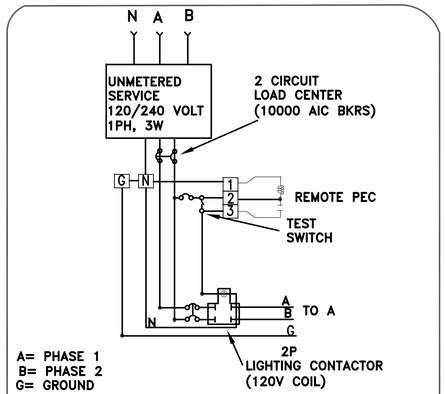
6. THE WIRING FROM THE SPLICE BOX TO THE LUMINAIRE SHALL BE PGE APPROVED #10 AWG, 600-VOLT, 3-CONDUCTOR, CLASS B STANDING TYPE TC WITH 45-MIL SUNLIGHT RESISTANT PVC JACKET, SUITABLE FOR DIRECT BURIED APPLICATIONS. RATED 90°C DRY AND 75°C WET.

FOR 240-VOLT APPLICATIONS, THE WIRING CONFIGURATION IS:
BLACK AND RED (HOT)
GREEN (GROUND)

7. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO P.G.E. SCHEDULE "95" OPTION "C" SPECIFICATIONS. ALL MATERIALS AND INSTALL BE APPROVED BY CITY OF NEWBERG. LIGHT POLES, BASES, CONDUIT, WIRES, AND STREET LIGHTS TO BE INSTALLED BY ELECTRICAL CONTRACTOR.

8. THE CONTRACTOR SHALL COORDINATE WORK WITH TRACY AGUILAR AT (503) 463-5139 TO DETERMINE POWER SOURCE FOR THE LIGHTING SYSTEM.

9. LIGHTING CONTRACTOR/INSTALLER IS SOLELY RESPONSIBLE FOR INSTALLATION OF CORRECT MATERIAL BASED ON CURRENT CITY OF NEWBERG APPROVED MATERIAL LIST AND JURISDICTION SPECIFICATIONS AND STANDARDS. LIGHT POLE, JUNCTION BOX, AND FIXTURE SUBMITTAL TO PROPER JURISDICTION IS REQUIRED.



WIRING DIAGRAM CITY OF NEWBERG

LIGHT POLE LOCATION TABLE

POLE NUMBER	MH	WATTS	LUMENS	ARM	ARRANGEMENT	STREET	POLE TYPE
1	30 FT	101	10388	6	SINGLE	BRUTSCHER STREET	ALUMINUM POLE
2	30 FT	101	10388	6	SINGLE	BRUTSCHER STREET	ALUMINUM POLE
3	30 FT	101	10388	6	SINGLE	BRUTSCHER STREET	ALUMINUM POLE

NUMERIC SUMMARY

PROJECT: FAIRFIELD INN AND SUITES

LABEL	CALC TYPE	UNITS	AVG	MAX	MIN	AVG/MIN
BRUTSCHER STREET	ILLUMINANCE	FC	1.20	2.20	0.30	4.00

LIGHT LEVEL REQUIREMENTS

ROADWAY	CLASSIFICATION		LIGHT LEVEL	UNIFORMITY
BRUTSCHER STREET	COLLECTOR	TARGET	1.2 FC AVG	4:1 AVG/MIN
		ACHIEVED	1.20 FC AVG	4.00:1 AVG/MIN

LIGHTING NOTES
Scale:

REGISTERED PROFESSIONAL ENGINEER 10,250 OREGON JULY 13, 1979 MARK J. VAN DUSER
EXPIRES 6-30-20

Northstar Electrical Contractors
11055 S.W. Clay Street
Sherwood, Oregon 97140
Phone 503-612-0840
Fax 503-612-0891
Email adam.suminski@NorthStarElect.com

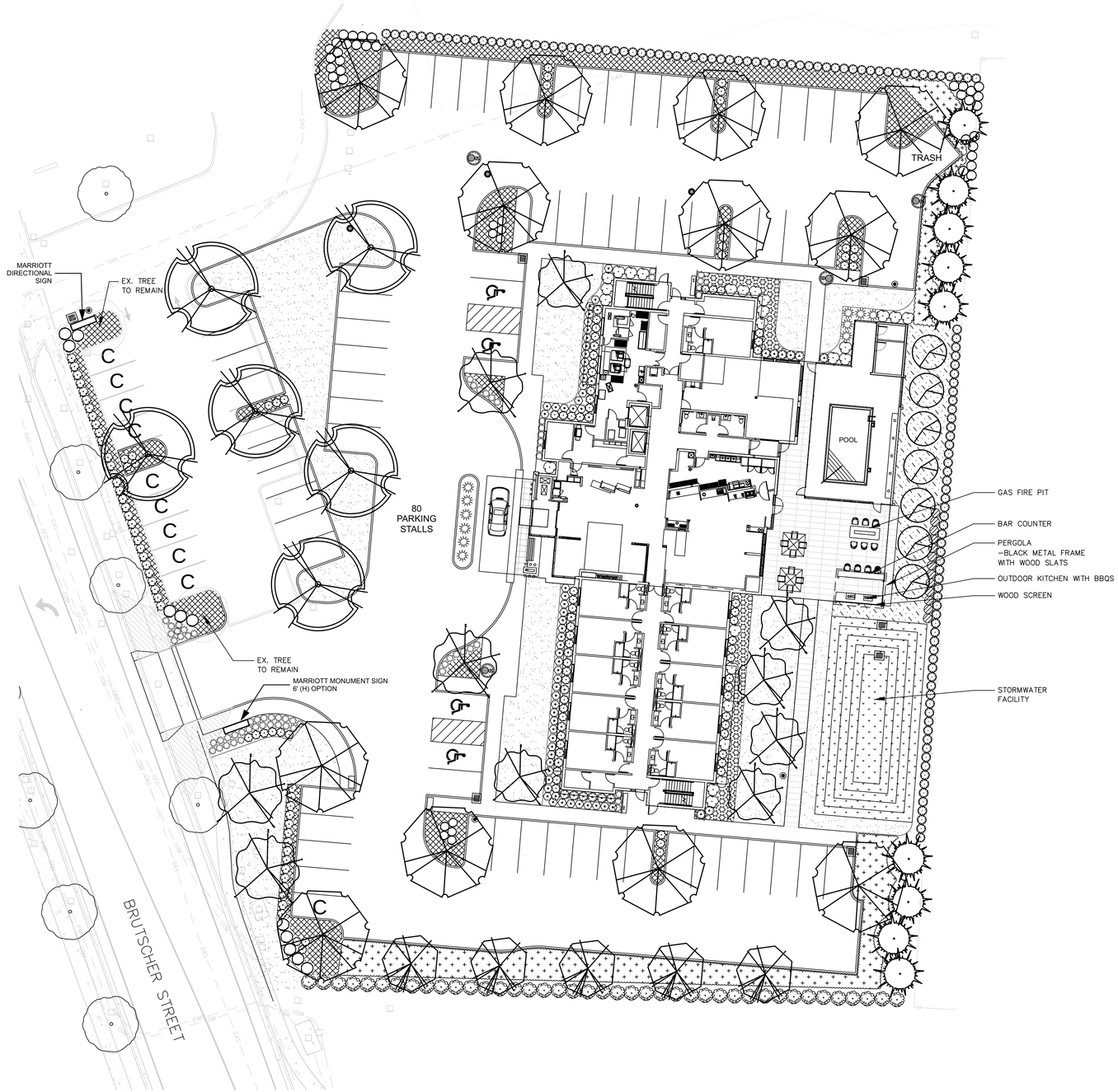
NorthStar ELECTRICAL CONTRACTORS

FAIRFIELD INN AND SUITES
NEWBERG, OR

NO.	REV DATE	REV DESCRIPTION

Title: LIGHTING NOTES
Designed by: Adam Suminski
Checked by: Jesse Culp
Date: Feburary 19, 2020

DWG. NO
EL4



LANDSCAPE PLAN

SCALE 1" = 20'–0"

PLANT LIST: GENERAL LANDSCAPING

SYMBOL	#	LATIN/COMMON NAME	SIZE	SPACING
		TREES		
	6	ACER RUBRUM 'SUNSET' Sunset Red Maple	2" cal	As shown
	5	CARPINUS BETULUS "FRANS FONTAINE" Frans Fontaine Hornbeam	2" cal.	As shown
	10	CERCIS CANADENSIS Eastern Redbud	1.5" cal.	As shown
	9	CUPRESSUS LEYLANDII Leyland Cypress	6–7' ht.	As shown
	12	ZELKOVA SERRATA 'GREEN VASE' Green VASE Zelkova	2" cal.	As shown
		EXISTING TREES		
		SHRUBS		
	54	ABELIA X GRANDIFLORA "KALEIDOSCOPE" Kaleidoscope Abelia	5 gal.	3' o.c.
	26	GARDENIA JASMINOIDES 'FROSTPROOF' Frostproof Gardenia	5 gal.	4' o.c.
	46	ILEX GLABRA "SHAMROCK" HAMROCK HOLLY	5 gal.	3' o.c.
	41	MYRICA CALIFORNICA Pacific Wax Myrtle	5 gal.	5' o.c.
	56	NANDINA DOMESTICA 'HARBOUR DWARF' HEAVENLY BAMBOO	2 gal.	30"' o.c.
	23	PIERIS JAPONICA 'LITTLE HEATH' Little Heath Lily Of The Valley	2 gal.	3' o.c.
	11	PHORMIUM TENAX "PURPUREUM" NEW ZEALAND FLAX	5 gal.	5' o.c.
	13	SPIRAEA BUM. 'ANTHONY WATERER' Anthony Waterer Spirea	2 gal.	4' o.c.
	126	THUJA OCCIDENTALLIS "SMARAGD" Emerald Green Arborvitae	6–7' ht.	3' o.c.
	86	VIBURNUM DAVIDII David Viburnum	5 gal.	3' o.c.
		PERENNIALS		
	64	CAREX OSHIMENSIS 'EVEREST' Everest Sedge	1 gal.	18" o.c.
		GROUNDCOVER		
	479	ARCTOSTAPHYLOS UVA–URSI "MASS." Massachusetts Kinnikinnick	1 gal.	3' o.c.
	292	MAHONIA REPENS Creeping Mahonia	1 gal.	3' o.c.
	170	EUONYMUS FORTUNEI 'COLORATUS' Wintercreeper Euonymus	1 gal.	3' o.c.
	273	LIRIOPE MUSCARI Big Blue Lily Turf	1 gal.	18" o.c.
	9,323 SF	FINE LAWN SEED MIX		
		STORMWATER PLANTING		

GENERAL NOTES:

1. Contractor is to verify all plant quantities.
2. Adjust plantings in the field as necessary.
3. Project is to be irrigated by an automatic, underground system, which will provide full coverage for all plant material. System is to be design/ build by Landscape Contractor. Guarantee system for a minimum one year. Show drip systems as alternate bid only.
4. All plants are to be fully foliaged, well branched and true to form.
5. Contractor is to notify Landscape Architect or Owner's Representative of any site changes or unforeseen conditions that may be detrimental to plant health, or cause future problems to any structural elements of the project.
6. Contractor shall notify the Landscape Architect if specified materials or methods are not consistent with local climate and/or practices.

NO.	DATE	REVISIONS

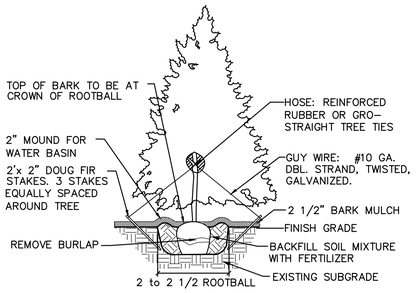
REGISTERED LANDSCAPE ARCHITECT
LA733
ERIN HOLSONBACK
OREGON
5/10/2013
EXP. 5/31/20

OTTEN + ASSOCIATES
LANDSCAPE ARCHITECTURE
3933 SW Kelly Avenue, Suite B · Portland, OR 97239
Phone: (503) 972-0311 · www.ottenla.com

FAIRFIELD INN AND SUITES MARRIOTT
901 N. BRUTSCHER STREET
NEWBERG, OR

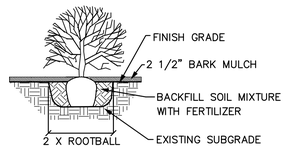
LANDSCAPE PLAN

DATE	2–28–2020
SCALE	NOTED
DRAWN	MPL
CHECKED	EH
SHEET NO	L1.0
	1 OF 2



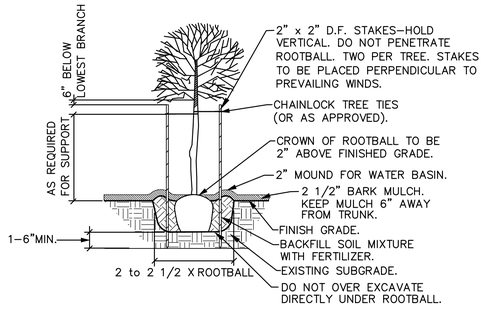
EVERGREEN TREE STAKING DETAIL

NOT TO SCALE



SHRUB PLANTING DETAIL

NOT TO SCALE



NOTE: ANY PROPOSED CHANGES TO OUR SPECIFICATION OR DETAIL SHOULD BE APPROVED BY THE LANDSCAPE ARCHITECT. LIKEWISE, IN ACCORDANCE WITH BEST PRACTICES OF LOCAL LANDSCAPE INSTALLATION, SHOULD THE LANDSCAPE CONTRACTOR FIND A PREFERRED ALTERNATE METHOD, THE LANDSCAPE ARCHITECT MAY BE SO ADVISED.

GENERAL DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE

OUTLINE SPECIFICATIONS PLANTING AND SEEDING:

GENERAL: All plants shall conform to all applicable standards of the latest edition of the "American Association of Nurserymen Standards", A.N.S.I. Z60.1 – 1973. Meet or exceed the regulations and laws of Federal, State, and County regulations, regarding the inspection of plant materials, certified as free from hazardous insects, disease, and noxious weeds, and certified fit for sale in Oregon.

The apparent silence of the Specifications and Plans as to any detail, or the apparent omission from them of a detailed description concerning any point, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of first quality are to be used. All interpretations of these Specifications shall be made upon the basis above stated.

Landscape contractor shall perform a site visit prior to bidding to view existing conditions.

PERFORMANCE QUALITY ASSURANCE: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary horticultural practices and who are completely familiar with the specified requirements and methods needed for the proper performance of the work of this section.

NOTIFICATION: Give Landscape Architect minimum of 2 days advance notice of times for inspections. Inspections at growing site does not preclude Landscape Architect's right of rejection of deficient materials at project site. Each plant failing to meet the above mentioned "Standards" or otherwise failing to meet the specified requirements as set forth shall be rejected and removed immediately from the premises by the Contractor and at his expense, and replaced with satisfactory plants or trees conforming to the specified requirements.

SUBSTITUTIONS: Only as approved by the Landscape Architect or the Owner's Representative.

GUARANTEE AND REPLACEMENT: All plant material shall be guaranteed from final acceptance for one full growing season or one year, whichever is longer. During this period the Contractor shall replace any plant material that is not in good condition and producing new growth (except that material damaged by severe weather conditions, due to Owner's negligence, normally unforeseen peculiarities of the planting site, or lost due to vandalism). Guarantee to replace, at no cost to Owner, unacceptable plant materials with plants of same variety, age, size and quality as plant originally specified. Conditions of guarantee on replacement plant shall be same as for original plant.

Landscape Contractor shall keep on site for Owner's Representative's inspection, all receipts for soil amendment and topsoil deliveries.

PROTECTION Protect existing roads, sidewalks, and curbs, landscaping, and other features remaining as final work. Verify location of underground utilities prior to doing work. Repair and make good any damage to service lines, existing features, etc. caused by landscaping installation.

PLANT QUALITY ASSURANCE: Deliver direct from nursery. Maintain and protect roots of plant material from drying or other possible injury. Store plants in shade and protect them from weather immediately upon delivery, if not to be planted within four hours.

Nursery stock shall be healthy, well branched and rooted, formed true to variety and species, full foliaged, free of disease, injury, defects, insects, weeds, and weed roots. Trees shall have straight trunks, symmetrical tips, and have an intact single leader. Any trees with double leaders will be rejected upon inspection. All Plants: True to name, with one of each bundle or lot tagged with the common and botanical name and size of the plants in accordance with standards of practice of the American Association of Nurserymen, and shall conform to the Standardized Plant Names, 1942 Edition.

Container grown stock: Small container-grown plants, furnished in removable containers, shall be well rooted to ensure healthy growth. **Grow container plants in containers a minimum of one year** prior to delivery, with roots filling container but not root bound. Bare root stock: Roots well-branched and fibrous. Balled and burlapped (B&B): Ball shall be of natural size to ensure healthy growth. Ball shall be firm and the burlap sound. No loose or made ball will be acceptable.

TOPSOIL AND FINAL GRADES: Landscape Contractor is to supply and place 12" of topsoil in planting beds and 6" in lawn areas. Landscape Contractor is to verify with the General Contractor if the on-site topsoil is or is not conducive to proper plant growth. The topsoil shall be a sandy loam, free of all weeds and debris inimical to lawn or plant growth. Furnish soil analysis by a qualified soil testing laboratory stating percentages of organic matter; gradation of sand, silt and clay content; cation exchange capacity; deleterious material; pH; and plant nutrient content of the topsoil. Report suitablility of topsoil for plant growth and recommended quantities of nitrogen, phosphorus and potash nutrients and soil amendments (including compost) to be added to produce satisfactory topsoil. If stockpiled topsoil on site is not conducive to proper plant growth, the Landscape Contractor shall import the required amount.

Landscaping shall include finished grades and even distribution of topsoil to meet planting requirements. Grades and slopes shall be as indicated. Planting bed grades shall be approximately 3" below adjacent walks, paving, finished grade lines, etc., to allow for bark application. Finish grading shall remove all depressions or low areas to provide positive drainage throughout the area.

PLANTING SPECIFICATIONS:

HERBICIDES: Prior to soil preparation, all areas showing any undesirable weed or grass growth shall be treated with Round-up in strict accordance with the manufacturer's instructions.

SOIL PREPARATION: Work all areas by rototilling to a minimum depth of 8". Remove all stones (over 1½" size), sticks, mortar, large clumps of vegetation, roots, debris, or extraneous matter turned up in working. Soil shall be of a homogeneous fine texture. Level, smooth and lightly compact area to plus or minus .10 of required grades.

In groundcover areas add 2" of compost (or as approved) and till in to the top 6" of soil.

PLANTING HOLE: Lay out all plant locations and excavate all soils from planting holes to 2 1/2 times the root ball or root system width. Loosen soil inside bottom of plant hole. Dispose of any "subsoil" or debris from excavation. Check drainage of planting hole with water, and adjust any area showing drainage problems.

SOIL MIX: Prepare soil mix in each planting hole by mixing:
2 part native topsoil (no subsoil)
1 part compost (as approved)

Thoroughly mix in planting hole and add fertilizers at the following rates:
Small shrubs – 1/8 lb./ plant
Shrubs – 1/3 to 1/2 lb./ plant
Trees – 1/3 to 1 lb./ plant

FERTILIZER: For trees and shrubs use Commercial Fertilizer "A" Inorganic (5-4-3) with micro-nutrients and 50% slow releasing nitrogen. For initial application in fine seed lawn areas use Commercial Fertilizer "B" (8-16-8) with micro-nutrients and 50% slow-releasing nitrogen. For lawn maintenance use Commercial Fertilizer "C" (22-16-8) with micro-nutrients and 50% slow-releasing nitrogen. DO NOT apply fertilizer to Water Quality Swale.

PLANTING TREES AND SHRUBS: Plant upright and face to give best appearance or relationship to adjacent plants and structures. Place 6" minimum, lightly compacted layer of prepared planting soil under root system. Loosen and remove twine binding and burlap from top 1/2 of root balls. Cut off cleanly all broken or frayed roots, and spread roots out. Stagger Plants in rows. Backfill planting hole with soil mix while working each layer to eliminate voids.

When approximately 2/3 full, water thoroughly, then allow water to soak away. Place remaining backfill and dish surface around plant to hold water. Final grade should keep root ball slightly above surrounding grade, not to exceed 1". Water again until no more water is absorbed. Initial watering by irrigation system is not allowed.

STAKING OF TREES: Stake or guy all trees. Stakes shall be 2" X 2" (nom.) quality tree stakes with point. They shall be of Douglas Fir, clear and sturdy. Stake to be minimum 2/3 the height of the tree, not to exceed 8'-0". Drive stake firmly 1'-6" below the planting hole. Tree ties for deciduous trees shall be "Chainlock" (or better). For Evergreen trees use "Gro-Strait" Tree Ties (or a reinforced rubber hose and guy wires) with guy wires of a minimum 2 strand twisted 12 ga. wire. Staking and guying shall be loose enough to allow movement of tree while holding tree upright.

MULCHING OF PLANTINGS: Mulch planting areas with dark, aged, medium grind fir or hemlock bark (aged at least 6 months) to a depth of 2" in ground cover areas and 2½" in shrub beds. Apply evenly, not higher than grade of plant as it came from the nursery, and rake to a smooth finish. Water thoroughly, then hose down planting area with fine spray to wash leaves of plants.

FINE LAWN AREAS: In fine lawn area apply Commercial Fertilizer Mix "B" at 4.5 lbs. Per 1,000 sq.ft. and rake into soil surface. Establish an even, fine textured seedbed meeting grades, surfaces and texture. Sow seed with a mechanical spreader at the uniform rates as noted below. Rake seed lightly to provide cover.

SEED: Bluetag grass seed conforming to applicable State laws. No noxious weed seeds. Submit Guaranteed analysis.
Fine Lawn Seed Mix: To contain 50% Top Hat Perennial Ryegrass, 30% Derby Supreme Ryegrass, 20% Longfellow Chewings Fescue (Hobbs and Hopkins Pro-Time 303 Lawn Mix or as approved) Sow Seed at 5 lbs. / 1000 sq. ft.

MAINTENANCE OF SEEDED AREAS:
Fine Lawn Areas: The lawn areas shall be maintained by watering, mowing, reseeding, and weeding for a minimum of 60 days after seeding. After 30 days, or after the second mowing, apply Commercial Fertilizer Mix "C" at 5 lbs. per 1,000 sq. ft. Mow and keep at 1½" to 2" in height. Remove clippings and dispose of off site.

GENERAL MAINTENANCE: Protect and maintain work described in these specifications against all defects of materials and workmanship, through final acceptance. Replace plants not in normal healthy condition at the end of this period. Water, weed, cultivate, mulch, reset plants to proper grade or upright position, remove dead wood and do necessary standard maintenance operations. Irrigate when necessary to avoid drying out of plant materials, and to promote healthy growth.

CLEAN-UP: At completion of each division of work all extra material, supplies, equipment, etc., shall be removed from the site. All walks, paving, or other surfaces shall be swept clean, mulch areas shall have debris removed and any soil cleared from surface. All areas of the project shall be kept clean, orderly and complete.

NO.	DATE	REVISIONS

REGISTERED LANDSCAPE ARCHITECT
LA793
ERIN HOLSONBACK
OREGON
5/10/2013
EXP. 5/31/20

OTTEN + ASSOCIATES
LANDSCAPE ARCHITECTURE
3933 SW Kelly Avenue, Suite B · Portland, OR 97239
Phone: (503) 972-0311 · www.ottenla.com

FAIRFIELD INN AND SUITES MARRIOTT
901 N. BRUTSCHER STREET
NEWBERG, OR

LANDSCAPE SPECS & DETAILS

DATE 2-28-2018
SCALE AS SHOWN
DRAWN MPL | CHECKED EH
SHEET NO L2.0
2 OF 2

TAX LOT 1910
TAX MAP 3 2W 16

TAX LOT 1911
TAX MAP 3 2W 16

TAX LOT 2003
TAX MAP 3 2W 16

8" DUCTILE IRON
PGE 3 PHASE
SIGN "COLUMBIA BANK"
4" POLY
C1 L=13.79'
S19°14'54"E 19.40'
2" POLY
30'
"CLOCK TOWER"
S68°01'01"W 189.22'
COVERED DRIVE THROUGH
PGE 3 PHASE
EXISTING BUILDING
S21°58'55"E 453.02'
BUS STOP SHELTER
BRUTSCHER STREET
N04°55'53"E 280.67'
S85°03'04"E 215.24'
S04°55'53"W 319.30'
N88°17'03"W 215.97'
PROPOSED DRIVE ACCESS
EXISTING DRIVE
EXISTING CURB CUT
PROPOSED CURB CUT
NO LOCATES
LANDSCAPE
TRASH
28 STALL LOT
(9 X 18')
EXISTING 18 STALL LOT
(9 X 18')
26 FOOT FIRE-LANE
80 STALLS
TOTAL FOR HOTEL
PROPOSED HOTEL
4 STORY - 80 ROOMS
LOBBY
OFFICE
LAUNDRY
FITNESS
DINING
PATIO
POOL
POOL FENCE
POOL WALL
POOL WALL-FENCE
GUEST ROOM
WATER TESTING STATION
END OF POWER LINES
34 STALL LOT
(9 X 18')
12" DUCTILE IRON
TAX LOT 1904
TAX MAP 3 2W 16
TAX LOT 2009
TAX MAP 3 2W 16

CONCEPT SITE PLAN
SCALE 1" = 20'

N

REGISTERED ARCHITECT
MICHAEL S. ABBOTT
STATE OF OREGON
SEATTLE, WA

PRELIMINARY

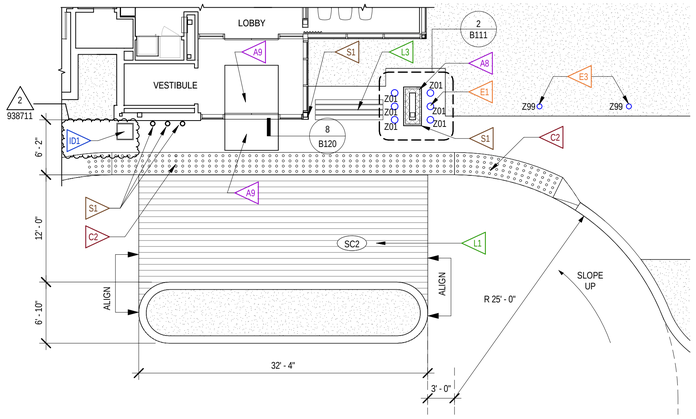
ABBOTT ARCHITECTURE
BOTHELL, WA 98011
P 206.778.7008

FAIRFIELD INN AND SUITES
BY MARRIOTT
Newberg • Oregon • USA

Fairfield Inn and Suites Marriott
901 N. Brutscher Street
Newberg, OR

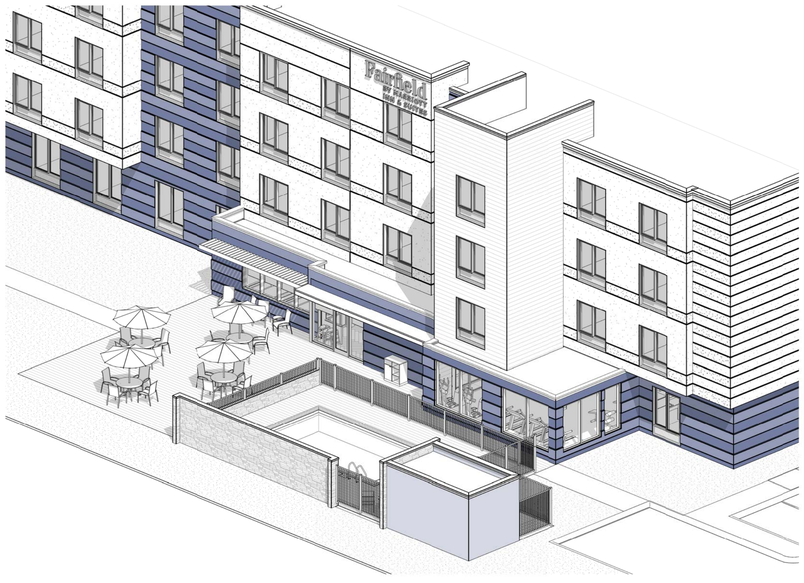
30% REVIEW SET/PRICING 1/20/2020	
DATE:	1/20/2020
PROJECT:	1907
DRAWN BY:	
LAYOUT NAME:	ARCHITECTURAL SITE PLAN

A100



4 PAVING DETAIL AT PORTE COCHERE

SCALE: 1/8" = 1'-0" Referenced from B100



2 EXTERIOR 3D VIEW - OUTDOOR POOL CONDITION

NO SCALE

REGISTERED ARCHITECT
MICHAEL S. ABBOTT
STATE OF OREGON
PRELIMINARY
SEATTLE, WA

ABBOTT ARCHITECTURE
BOTHELL, WA
98011
P 206.778.7008

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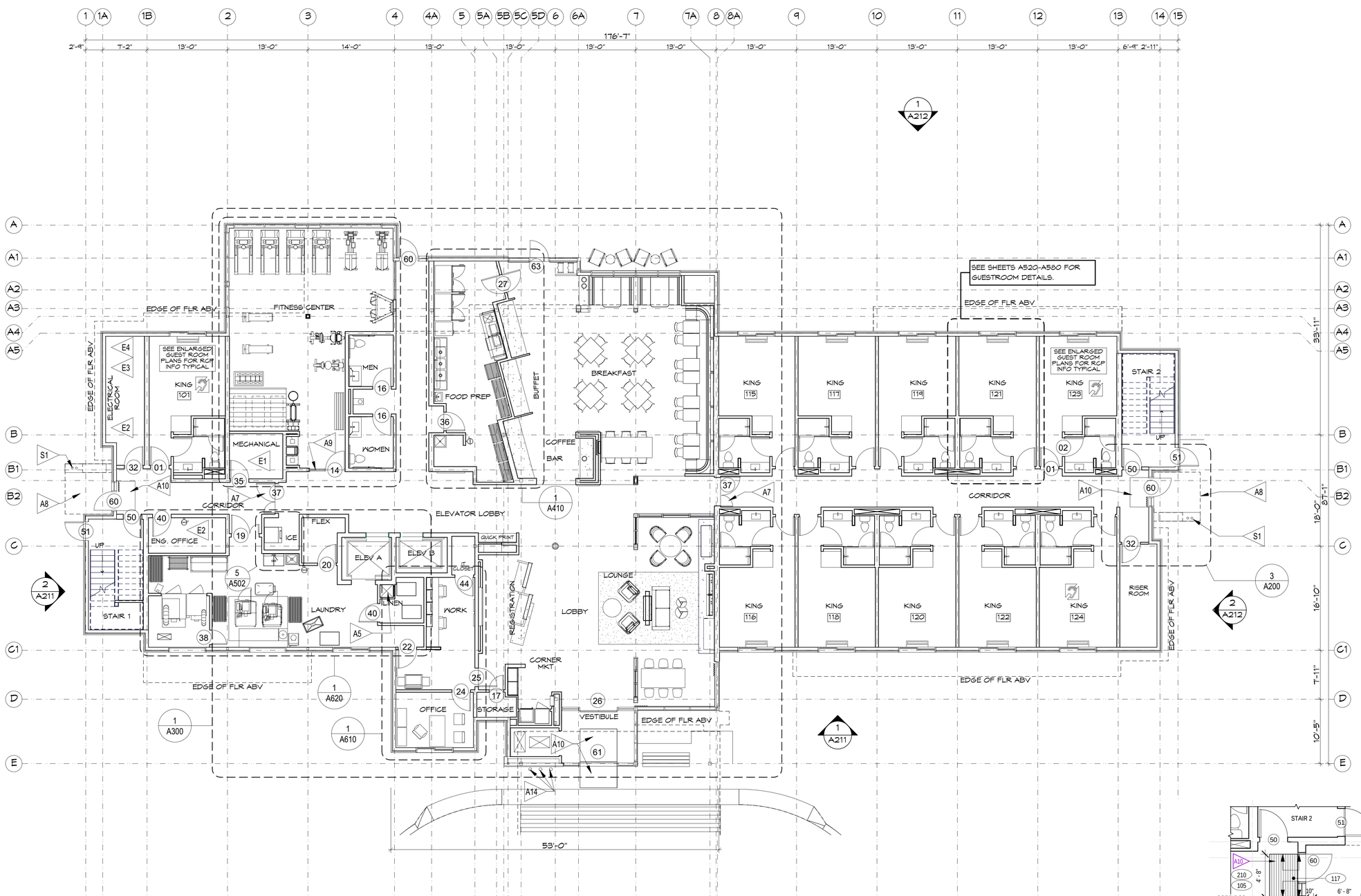
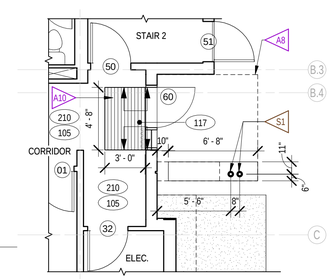
LAND USE REVIEW SET 3/3/2020	
MARRIOTT 30% REVIEW 3/4/2020	
DD SET - PRICING 4/1/2020	
DATE:	4/1/2020
PROJECT:	1907
DRAWN BY:	MV-MA
LAYOUT NAME:	SITE INFORMATION

A100.1



FIRST FLOOR PLAN

SCALE: 1/8" = 1'-0" 0 8' 16' 24'



3 FIRST FLOOR/LOBBY LEVEL - CORRIDOR END

SCALE: 3/16" = 1'-0" Referenced from B200

CRITERIA NOTES

CRITERIA NOTES ARE SHOWN CATEGORIZED BY DISCIPLINE AND COULD BE INTERPRETED TO APPLY TO MORE THAN ONE DISCIPLINE. FOR EFFICIENCY, NOTES ARE ONLY SHOWN UNDER ONE PREDOMINANT DISCIPLINE. CONSULTANTS SHOULD FAMILIARIZE THEMSELVES WITH ALL CRITERIA NOTES.

ARCHITECTURE:

A1 COORDINATE BAY WIDTHS W/ ELEVATOR SHAFT. PROVIDE 4'-0" MIN. CLEAR AT VENDING ON FLOORS ABOVE (SEE TYP. FLOOR PLAN). COORDINATE CENTER TO CENTER ON BAY TO MAINTAIN REQ'D - 12' - 6" CLEAR @ GUESTROOMS.

A2 ELEVATORS. SEE DESIGN STANDARDS FOR ALL ELEVATOR REQUIREMENTS AND SHAFT SIZE MINIMUMS.

A3 TYPICAL GUESTROOM DOORS. STAGGER ENTRANCES TO CREATE RELIEF ALONG CORRIDOR.

A4 CONNECTING DOOR REQUIRED AT ACCESSIBLE GUESTROOMS. (NOT REQUIRED AT ACCESSIBLE SUITES).

A5 SELF CLOSING, RATED LINEN CHUTE DISCHARGE HATCH W/ FUSIBLE LINK TIED TO FIRE ALARM SYSTEM. PROVIDE CLEAR DOOR SPACE BELOW DISCHARGE AREA. SEE PROJECT MANNUAL MASTER FOR ADDITIONAL INFO.

A6 ENSURE THAT NO GUESTROOM DOORS ARE LOCATED IMMEDIATELY ACROSS FROM ELEVATOR.

A7 PROVIDE POCKET DOORS IN OPEN POSITION, WITH THE ELECTROMAGNETIC HOLD-OPEN TIED TO FIRE ALARM SYSTEM.

A8 SIDE ENTRY CANOPY ABOVE.

A9 INTERIOR GLAZED STOREFRONT. SEE FITNESS CENTER SHEET FOR DETAILS.

A10 RECESSED WALK OFF MAT WITH FRAME. SEE SHEETS B120 AND B340 FOR DETAILS.

A12 PROVIDE SMOKE DOORS TO PROTECT ELEVATOR OPENINGS WHERE REQUIRED BY CODE.

A13 SELF CLOSING, RATED LINEN CHUTE INTAKE HATCH. SEE PROJECT MANNUAL MASTER FOR ADDITIONAL INFO.

A14 (3) DECORATIVE STEEL COLUMNS, PAINT TO MATCH EXTERIOR WHITE METAL TRIM TRHOUGHOUT.

ENGINEERING:

E1 COORDINATE SIZE OF MECHANICAL ROOM WITH EQUIPMENT AND REQUIRED CLEARANCES. MECHANICAL ROOM TO SERVICE PUBLIC SPACES ON FIRST FLOOR AND OCCURS ON FIRST FLOOR ONLY. SEE ALSO B700 SHEETS.

E2 COORDINATE SIZE OF ELECTRICAL ROOM WITH ELECTRICAL EQUIPMENT AND REQUIRED CLEARANCES. ALLOCATE ADDITIONAL SPACE IN ENGINEER'S OFFICE, STORAGE, MECHANICAL, AND / OR SYSTEMS ROOMS WHERE NEEDED.

E3 EXTERIOR STORAGE/SERVICE ROOMS SHOULD HAVE SUPPLEMENTAL HEATERS WHERE CLIMATE CONDITIONS WOULD RESULT IN TEMPERATURES BELOW 40 DEGREES. MOUNT HEATERS HIGH TO PREVENT DAMAGE.

E4 MECHANICAL, ELECTRICAL, SYSTEMS AND EQUIPMENT ROOMS ARE TO BE ADEQUATELY VENTED AND WHERE NECESSARY SHALL BE MECHANICALLY EXHAUSTED TO PREVENT HEAT BUILD UP.

E5 SHAFTS FOR: OUTSIDE AIR: TO ROOFTOP UNITS; AND FOR EXHAUST. PROVIDE FIRE DAMPERS IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION.

STRUCTURAL:

S1 PAINTED STEEL SUPPORT COLUMNS.

SYMBOLS

D DOOR TYPE

PRELIMINARY

REGISTERED ARCHITECT
MICHAEL S. ABBOTT
SEATTLE, WA
STATE OF OREGON

ABBOTT ARCHITECTURE
BOTHELL, WA 98011
P 206.778.7008

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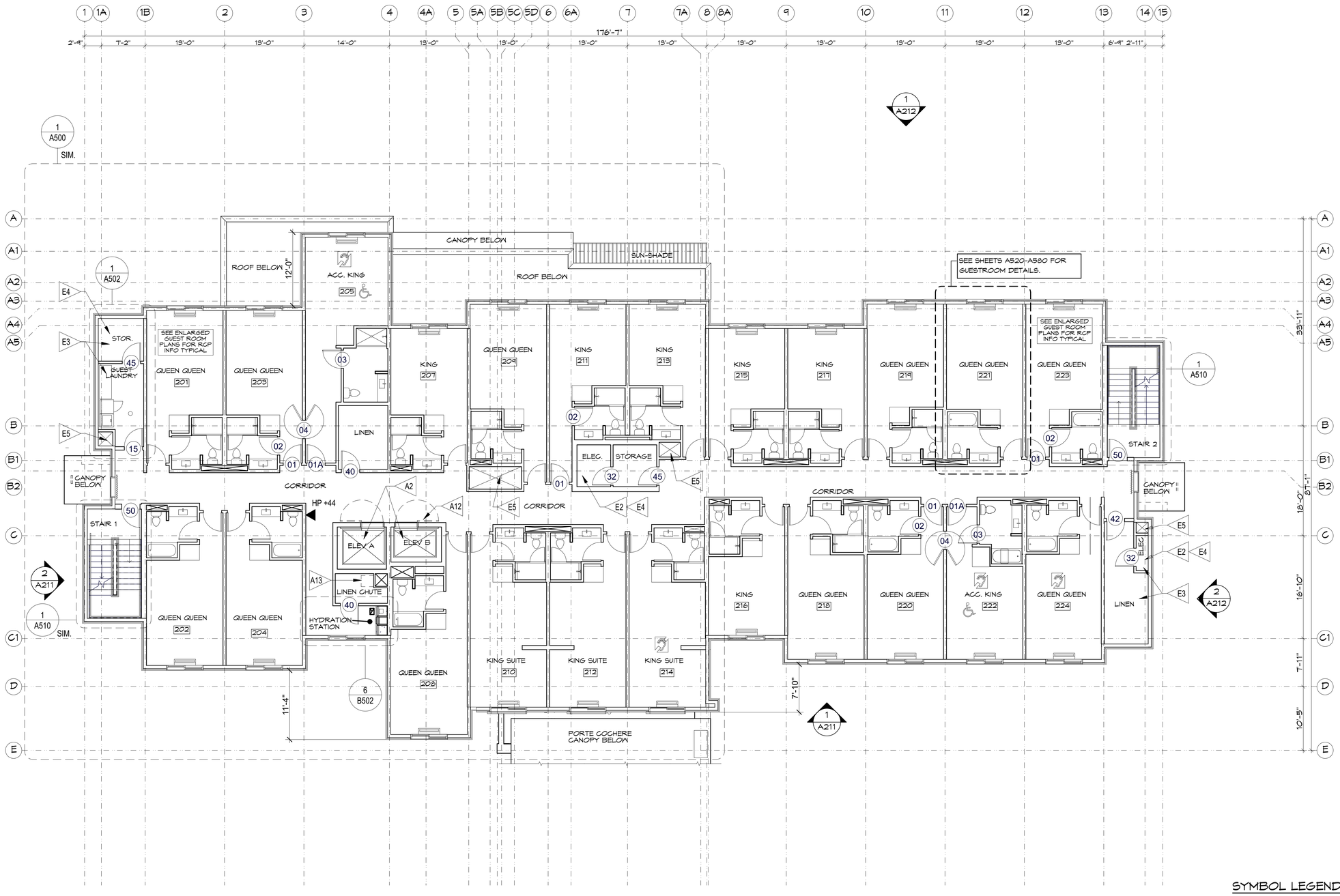
LAND USE REVIEW SET 3/3/2020
MARRIOTT 30% REVIEW 3/4/2020
DD SET - PRICING 4/1/2020

DATE: 4/1/2020
PROJECT: 1907
DRAWN BY: MV-MA
LAYOUT NAME: FIRST FLOOR PLAN

A201



SECOND FLOOR PLAN

SCALE: 1/8" = 1'-0" 0 8' 16' 24'

SYMBOL LEGEND

- HEARING IMPAIRED ROOM TYPE
- ACCESSIBLE ROOM TYPE
- PARTITION TYPE
- (D) DOOR TYPE
- (W) WINDOW TYPE

CRITERIA NOTES

CRITERIA NOTES ARE SHOWN CATEGORIZED BY DISCIPLINE AND COULD BE INTERPRETED TO APPLY TO MORE THAN ONE DISCIPLINE. FOR EFFICIENCY, NOTES ARE ONLY SHOWN UNDER ONE PREDOMINANT DISCIPLINE. CONSULTANTS SHOULD FAMILIARIZE THEMSELVES WITH ALL CRITERIA NOTES.

ARCHITECTURE:

- A1 COORDINATE BAY WIDTHS W/ ELEVATOR SHAFT. PROVIDE 4'-0" MIN. CLEAR AT VENDING ON FLOORS ABOVE (SEE TYP. FLOOR PLAN). COORDINATE CENTER TO CENTER ON BAY TO MAINTAIN REQ'D - 12' - 6" CLEAR @ GUESTROOMS.
- A2 ELEVATORS. SEE DESIGN STANDARDS FOR ALL ELEVATOR REQUIREMENTS AND SHAFT SIZE MINIMUMS.
- A3 TYPICAL GUESTROOM DOORS. STAGGER ENTRANCES TO CREATE RELIEF ALONG CORRIDOR.
- A4 CONNECTING DOOR REQUIRED AT ACCESSIBLE GUESTROOMS. (NOT REQUIRED AT ACCESSIBLE SUITES).
- A5 SELF CLOSING, RATED LINEN CHUTE DISCHARGE HATCH W/ FUSIBLE LINK TIED TO FIRE ALARM SYSTEM. PROVIDE CLEAR DOOR SPACE BELOW DISCHARGE AREA. SEE PROJECT MANNUAL MASTER FOR ADDITIONAL INFO.
- A6 ENSURE THAT NO GUESTROOM DOORS ARE LOCATED IMMEDIATELY ACROSS FROM ELEVATOR.
- A7 PROVIDE POCKET DOORS IN OPEN POSITION, WITH THE ELECTROMAGNETIC HOLD-OPEN TIED TO FIRE ALARM SYSTEM.
- A8 SIDE ENTRY CANOPY ABOVE.
- A9 INTERIOR GLAZED STOREFRONT. SEE FITNESS CENTER SHEET FOR DETAILS.
- A10 RECESSED WALK OFF MAT WITH FRAME. SEE SHEETS B120 AND B340 FOR DETAILS.
- A12 PROVIDE SMOKE DOORS TO PROTECT ELEVATOR OPENINGS WHERE REQUIRED BY CODE.
- A13 SELF CLOSING, RATED LINEN CHUTE INTAKE HATCH. SEE PROJECT MANNUAL MASTER FOR ADDITIONAL INFO.
- A14 (3) DECORATIVE STEEL COLUMNS, PAINT TO MATCH EXTERIOR WHITE METAL TRM TRHOUGHOUT.

ENGINEERING:

- E1 COORDINATE SIZE OF MECHANICAL ROOM WITH EQUIPMENT AND REQUIRED CLEARANCES. MECHANICAL ROOM TO SERVICE PUBLIC SPACES ON FIRST FLOOR AND OCCURS ON FIRST FLOOR ONLY. SEE ALSO B700 SHEETS.
- E2 COORDINATE SIZE OF ELECTRICAL ROOM WITH ELECTRICAL EQUIPMENT AND REQUIRED CLEARANCES. ALLOCATE ADDITIONAL SPACE IN ENGINEER'S OFFICE, STORAGE, MECHANICAL, AND / OR SYSTEMS ROOMS WHERE NEEDED.
- E3 EXTERIOR STORAGE/SERVICE ROOMS SHOULD HAVE SUPPLEMENTAL HEATERS WHERE CLIMATE CONDITIONS WOULD RESULT IN TEMPERATURES BELOW 40 DEGREES. MOUNT HEATERS HIGH TO PREVENT DAMAGE.
- E4 MECHANICAL, ELECTRICAL, SYSTEMS AND EQUIPMENT ROOMS ARE TO BE ADEQUATELY VENTED AND WHERE NECESSARY SHALL BE MECHANICALLY EXHAUSTED TO PREVENT HEAT BUILD UP.
- E5 SHAFTS FOR: OUTSIDE AIR; TO ROOFTOP UNITS; AND FOR EXHAUST. PROVIDE FIRE DAMPERS IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION.

STRUCTURAL:

- S1 PAINTED STEEL SUPPORT COLUMNS.

REGISTERED ARCHITECT MICHAEL S. ABBOTT SEATTLE, WA STATE OF OREGON
PRELIMINARY

ABBOTT ARCHITECTURE
BOTHELL, WA 98011
P 206.778.7008

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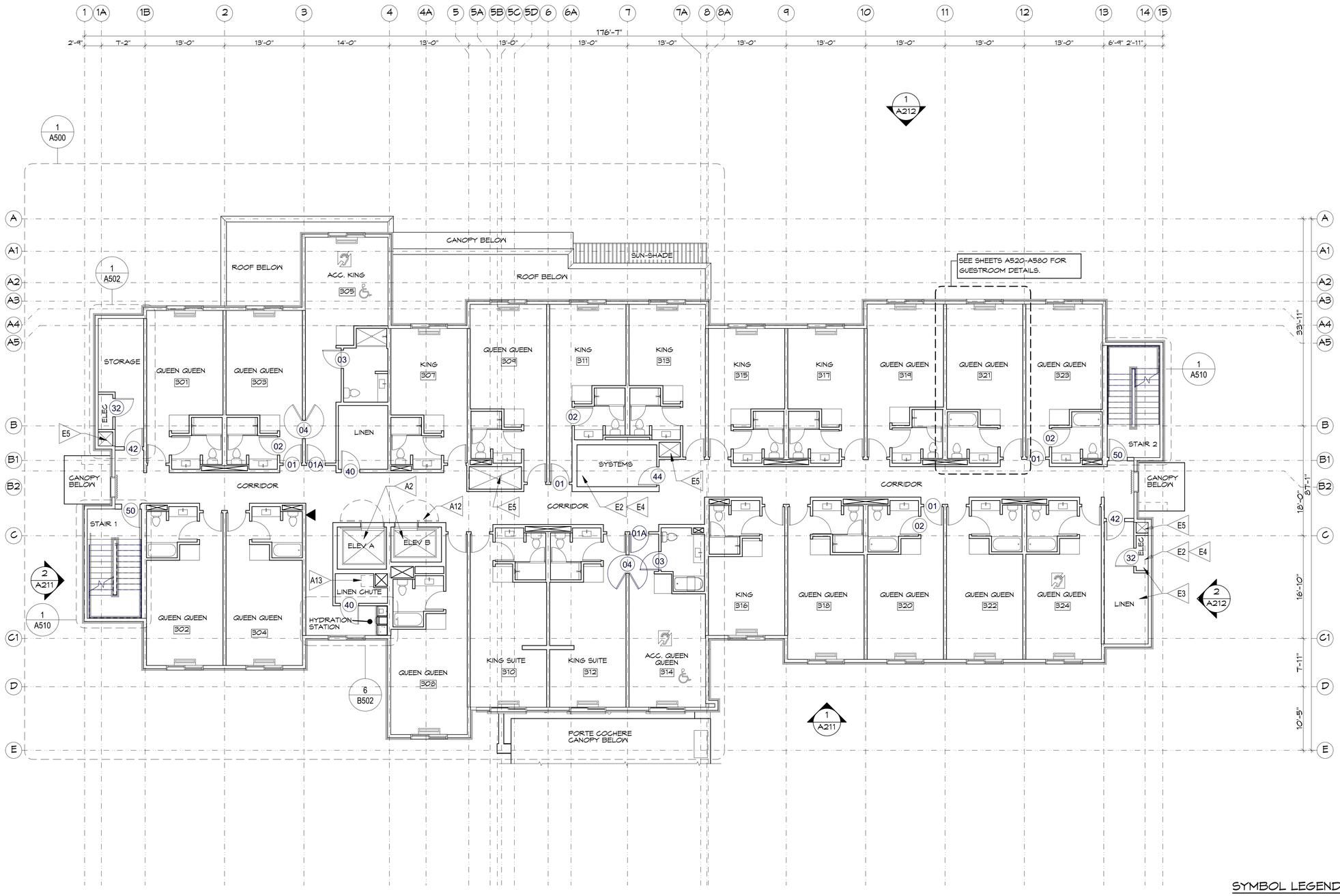
LAND USE REVIEW SET 3/3/2020
MARRIOTT 30% REVIEW 3/4/2020
DD SET - PRICING 4/1/2020

DATE: 4/1/2020
PROJECT: 1907
DRAWN BY: MV-MA
LAYOUT NAME: SECOND FLOOR PLAN

A202



THIRD FLOOR PLAN

SCALE: 1/8" = 1'-0" 0 8' 16' 24'

SYMBOL LEGEND

- HEARING IMPAIRED ROOM TYPE
- ACCESSIBLE ROOM TYPE
- PARTITION TYPE
- (D) DOOR TYPE
- (W) WINDOW TYPE

CRITERIA NOTES

CRITERIA NOTES ARE SHOWN CATEGORIZED BY DISCIPLINE AND COULD BE INTERPRETED TO APPLY TO MORE THAN ONE DISCIPLINE. FOR EFFICIENCY, NOTES ARE ONLY SHOWN UNDER ONE PREDOMINANT DISCIPLINE. CONSULTANTS SHOULD FAMILIARIZE THEMSELVES WITH ALL CRITERIA NOTES.

ARCHITECTURE:

- A1 COORDINATE BAY WIDTHS W/ ELEVATOR SHAFT. PROVIDE 4'-0" MIN. CLEAR AT VENDING ON FLOORS ABOVE (SEE TYP. FLOOR PLAN). COORDINATE CENTER TO CENTER ON BAY TO MAINTAIN REQ'D - 12' - 6" CLEAR @ GUESTROOMS.
- A2 ELEVATORS. SEE DESIGN STANDARDS FOR ALL ELEVATOR REQUIREMENTS AND SHAFT SIZE MINIMUMS.
- A3 TYPICAL GUESTROOM DOORS. STAGGER ENTRANCES TO CREATE RELIEF ALONG CORRIDOR.
- A4 CONNECTING DOOR REQUIRED AT ACCESSIBLE GUESTROOMS. (NOT REQUIRED AT ACCESSIBLE SUITES).
- A5 SELF CLOSING, RATED LINEN CHUTE DISCHARGE HATCH W/ FUSIBLE LINK TIED TO FIRE ALARM SYSTEM. PROVIDE CLEAR DOOR SPACE BELOW DISCHARGE AREA. SEE PROJECT MANNUAL MASTER FOR ADDITIONAL INFO.
- A6 ENSURE THAT NO GUESTROOM DOORS ARE LOCATED IMMEDIATELY ACROSS FROM ELEVATOR.
- A7 PROVIDE POCKET DOORS IN OPEN POSITION, WITH THE ELECTROMAGNETIC HOLD-OPEN TIED TO FIRE ALARM SYSTEM.
- A8 SIDE ENTRY CANOPY ABOVE.
- A9 INTERIOR GLAZED STOREFRONT. SEE FITNESS CENTER SHEET FOR DETAILS.
- A10 RECESSED WALK OFF MAT WITH FRAME. SEE SHEETS B120 AND B340 FOR DETAILS.
- A12 PROVIDE SMOKE DOORS TO PROTECT ELEVATOR OPENINGS WHERE REQUIRED BY CODE.
- A13 SELF CLOSING, RATED LINEN CHUTE INTAKE HATCH. SEE PROJECT MANNUAL MASTER FOR ADDITIONAL INFO.
- A14 (3) DECORATIVE STEEL COLUMNS, PAINT TO MATCH EXTERIOR WHITE METAL TRIM THROUGHOUT.

ENGINEERING:

- E1 COORDINATE SIZE OF MECHANICAL ROOM WITH EQUIPMENT AND REQUIRED CLEARANCES. MECHANICAL ROOM TO SERVICE PUBLIC SPACES ON FIRST FLOOR AND OCCURS ON FIRST FLOOR ONLY. SEE ALSO B700 SHEETS.
- E2 COORDINATE SIZE OF ELECTRICAL ROOM WITH ELECTRICAL EQUIPMENT AND REQUIRED CLEARANCES. ALLOCATE ADDITIONAL SPACE IN ENGINEER'S OFFICE, STORAGE, MECHANICAL, AND / OR SYSTEMS ROOMS WHERE NEEDED.
- E3 EXTERIOR STORAGE/SERVICE ROOMS SHOULD HAVE SUPPLEMENTAL HEATERS WHERE CLIMATE CONDITIONS WOULD RESULT IN TEMPERATURES BELOW 40 DEGREES. MOUNT HEATERS HIGH TO PREVENT DAMAGE.
- E4 MECHANICAL, ELECTRICAL, SYSTEMS AND EQUIPMENT ROOMS ARE TO BE ADEQUATELY VENTED AND WHERE NECESSARY SHALL BE MECHANICALLY EXHAUSTED TO PREVENT HEAT BUILD UP.
- E5 SHAFTS FOR: OUTSIDE AIR; TO ROOFTOP UNITS; AND FOR EXHAUST. PROVIDE FIRE DAMPERS IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION.

STRUCTURAL:

- S1 PAINTED STEEL SUPPORT COLUMNS.

PRELIMINARY
NOT FOR CONSTRUCTION - DD PRICING SET ONLY

REGISTERED ARCHITECT
MICHAEL S. ABBOTT
STATE OF OREGON
SEATTLE, WA

ABBOTT ARCHITECTURE
BOTHELL, WA 98011
P 206.778.7008

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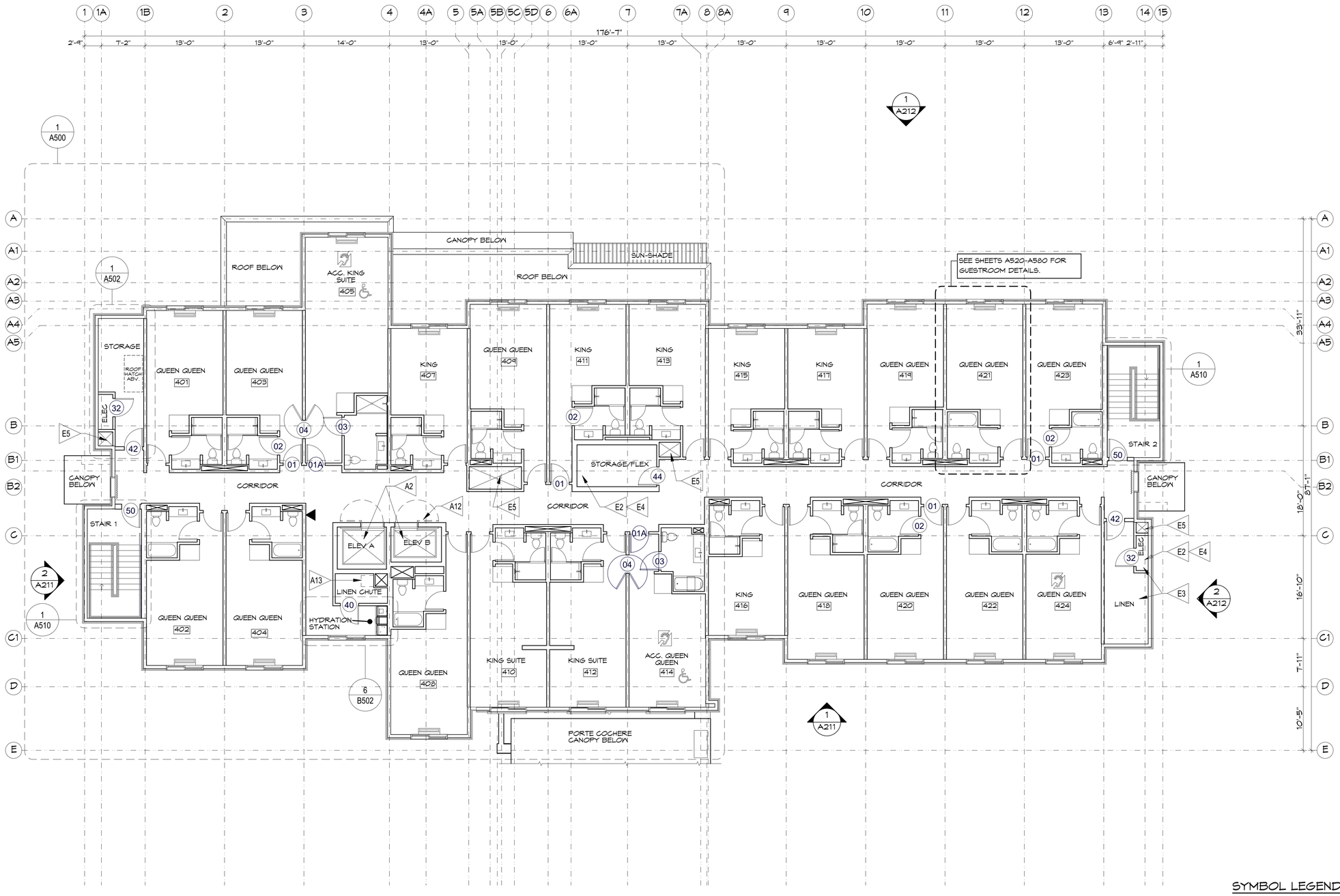
LAND USE REVIEW SET 3/3/2020
MARRIOTT 30% REVIEW 3/4/2020
DD SET - PRICING 4/1/2020

DATE: 4/1/2020
PROJECT: 1907
DRAWN BY: MV-MA
LAYOUT NAME: THIRD FLOOR PLAN

A203



FOURTH FLOOR PLAN

SCALE: 1/8" = 1'-0" 0 8' 16' 24'

CRITERIA NOTES

CRITERIA NOTES ARE SHOWN CATEGORIZED BY DISCIPLINE AND COULD BE INTERPRETED TO APPLY TO MORE THAN ONE DISCIPLINE. FOR EFFICIENCY, NOTES ARE ONLY SHOWN UNDER ONE PREDOMINANT DISCIPLINE. CONSULTANTS SHOULD FAMILIARIZE THEMSELVES WITH ALL CRITERIA NOTES.

ARCHITECTURE:

A1 COORDINATE BAY WIDTHS W/ ELEVATOR SHAFT. PROVIDE 4'-0" MIN. CLEAR AT VENDING ON FLOORS ABOVE (SEE TYP. FLOOR PLAN). COORDINATE CENTER TO CENTER ON BAY TO MAINTAIN REQ'D - 12' - 6" CLEAR @ GUESTROOMS.

A2 ELEVATORS. SEE DESIGN STANDARDS FOR ALL ELEVATOR REQUIREMENTS AND SHAFT SIZE MINIMUMS.

A3 TYPICAL GUESTROOM DOORS. STAGGER ENTRANCES TO CREATE RELIEF ALONG CORRIDOR.

A4 CONNECTING DOOR REQUIRED AT ACCESSIBLE GUESTROOMS. (NOT REQUIRED AT ACCESSIBLE SUITES).

A5 SELF CLOSING, RATED LINEN CHUTE DISCHARGE HATCH W/ FUSIBLE LINK TIED TO FIRE ALARM SYSTEM. PROVIDE CLEAR DOOR SPACE BELOW DISCHARGE AREA. SEE PROJECT MANNUAL MASTER FOR ADDITIONAL INFO.

A6 ENSURE THAT NO GUESTROOM DOORS ARE LOCATED IMMEDIATELY ACROSS FROM ELEVATOR.

A7 PROVIDE POCKET DOORS IN OPEN POSITION, WITH THE ELECTROMAGNETIC HOLD-OPEN TIED TO FIRE ALARM SYSTEM.

A8 SIDE ENTRY CANOPY ABOVE.

A9 INTERIOR GLAZED STOREFRONT. SEE FITNESS CENTER SHEET FOR DETAILS.

A10 RECESSED WALK OFF MAT WITH FRAME. SEE SHEETS B120 AND B340 FOR DETAILS.

A12 PROVIDE SMOKE DOORS TO PROTECT ELEVATOR OPENINGS WHERE REQUIRED BY CODE.

A13 SELF CLOSING, RATED LINEN CHUTE INTAKE HATCH. SEE PROJECT MANNUAL MASTER FOR ADDITIONAL INFO.

A14 (3) DECORATIVE STEEL COLUMNS, PAINT TO MATCH EXTERIOR WHITE METAL TRIM TRHOUGHOUT.

ENGINEERING:

E1 COORDINATE SIZE OF MECHANICAL ROOM WITH EQUIPMENT AND REQUIRED CLEARANCES. MECHANICAL ROOM TO SERVICE PUBLIC SPACES ON FIRST FLOOR AND OCCURS ON FIRST FLOOR ONLY. SEE ALSO B700 SHEETS.

E2 COORDINATE SIZE OF ELECTRICAL ROOM WITH ELECTRICAL EQUIPMENT AND REQUIRED CLEARANCES. ALLOCATE ADDITIONAL SPACE IN ENGINEER'S OFFICE, STORAGE, MECHANICAL, AND / OR SYSTEMS ROOMS WHERE NEEDED.

E3 EXTERIOR STORAGE/SERVICE ROOMS SHOULD HAVE SUPPLEMENTAL HEATERS WHERE CLIMATE CONDITIONS WOULD RESULT IN TEMPERATURES BELOW 40 DEGREES. MOUNT HEATERS HIGH TO PREVENT DAMAGE.

E4 MECHANICAL, ELECTRICAL, SYSTEMS AND EQUIPMENT ROOMS ARE TO BE ADEQUATELY VENTED AND WHERE NECESSARY SHALL BE MECHANICALLY EXHAUSTED TO PREVENT HEAT BUILD UP.

E5 SHAFTS FOR: OUTSIDE AIR; TO ROOFTOP UNITS; AND FOR EXHAUST. PROVIDE FIRE DAMPERS IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION.

STRUCTURAL:

S1 PAINTED STEEL SUPPORT COLUMNS.

SYMBOL LEGEND

- HEARING IMPAIRED ROOM TYPE
- ACCESSIBLE ROOM TYPE
- PARTITION TYPE
- (D) DOOR TYPE
- (W) WINDOW TYPE

REGISTERED ARCHITECT MICHAEL S. ABBOTT SEATTLE, WA STATE OF OREGON
PRELIMINARY

ABBOTT ARCHITECTURE
BOTHELL, WA 98011
P 206.778.7008

FAIRFIELD INN AND SUITES
BY MARRIOTT
Newberg • Oregon • USA

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Fairfield Inn and Suites Marriott
901 N. Brutscher Street
Newberg, OR

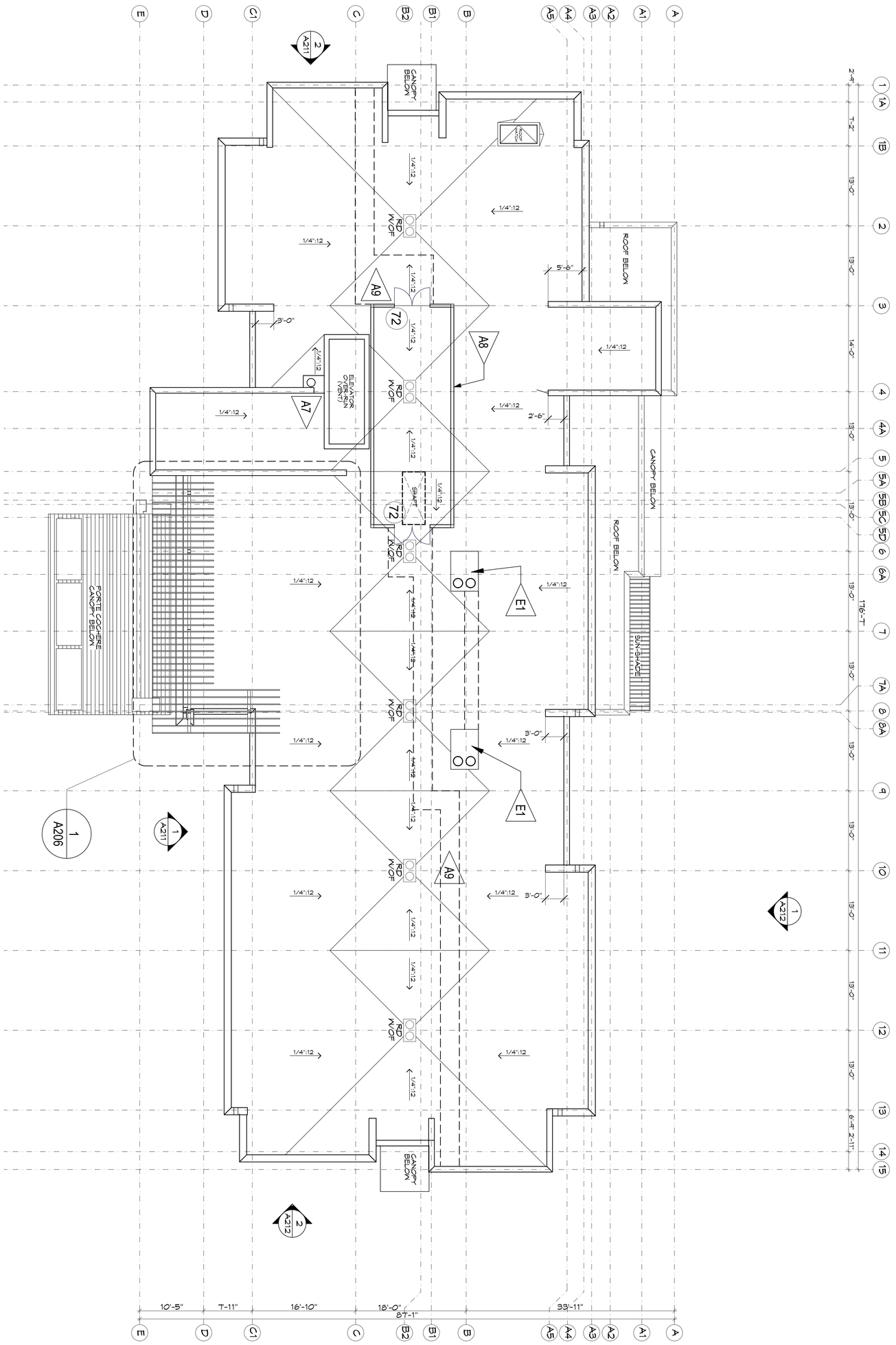
30% REVIEW SET PRICING 1/20/2020
LAND USE REVIEW SET 3/3/2020
MARRIOTT 30% REVIEW 3/4/2020
DD SET - PRICING 4/1/2020

DATE: 4/1/2020
PROJECT: 1907
DRAWN BY: MV-MA
LAYOUT NAME: FOURTH FLOOR PLAN

A204

ROOF PLAN

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



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DATE:	4/1/2020
PROJECT:	1907
DRAWN BY:	MV-MA
LAYOUT NAME:	ROOF PLAN

30% REVIEW SET/PRICING 1/20/2020
LAND USE REVIEW SET 3/3/2020
MARRIOTT 30% REVIEW 3/4/2020
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A205

FAIRFIELD INN AND SUITES

BY MARRIOTT

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ABBOTT ARCHITECTURE
MITCHELL, WA 98011
P 206.727.1795

PRELIMINARY
MICHAEL ABBOTT
REGISTERED ARCHITECT
STATE OF OREGON • SEATTLE, WA

EVENING VIEW @ ENTRY

1 **EXTERIOR PERSPECTIVE**
NO SCALE

REGISTERED ARCHITECT
MICHAEL S. ABBOTT
STATE OF OREGON
SEATTLE, WA

PRELIMINARY

ABBOTT ARCHITECTURE
BOTHELL, WA
98011
P 206.778.7008

FAIRFIELD INN AND SUITES

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Newberg, OR

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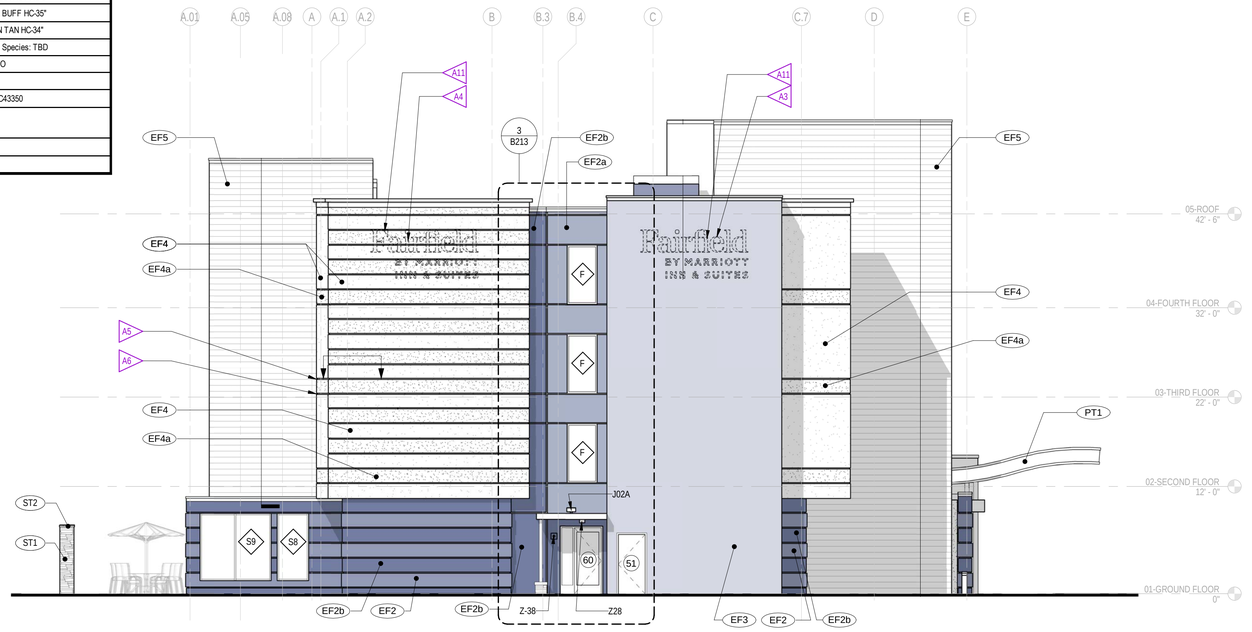
LAND USE REVIEW SET 3/3/2020
MARRIOTT 30% REVIEW 3/4/2020
DD SET - PRICING 4/1/2020

DATE: 4/1/2020
PROJECT: 1907
DRAWN BY: MV-MA
LAYOUT NAME: EXTERIOR PERSPECTIVES

A210

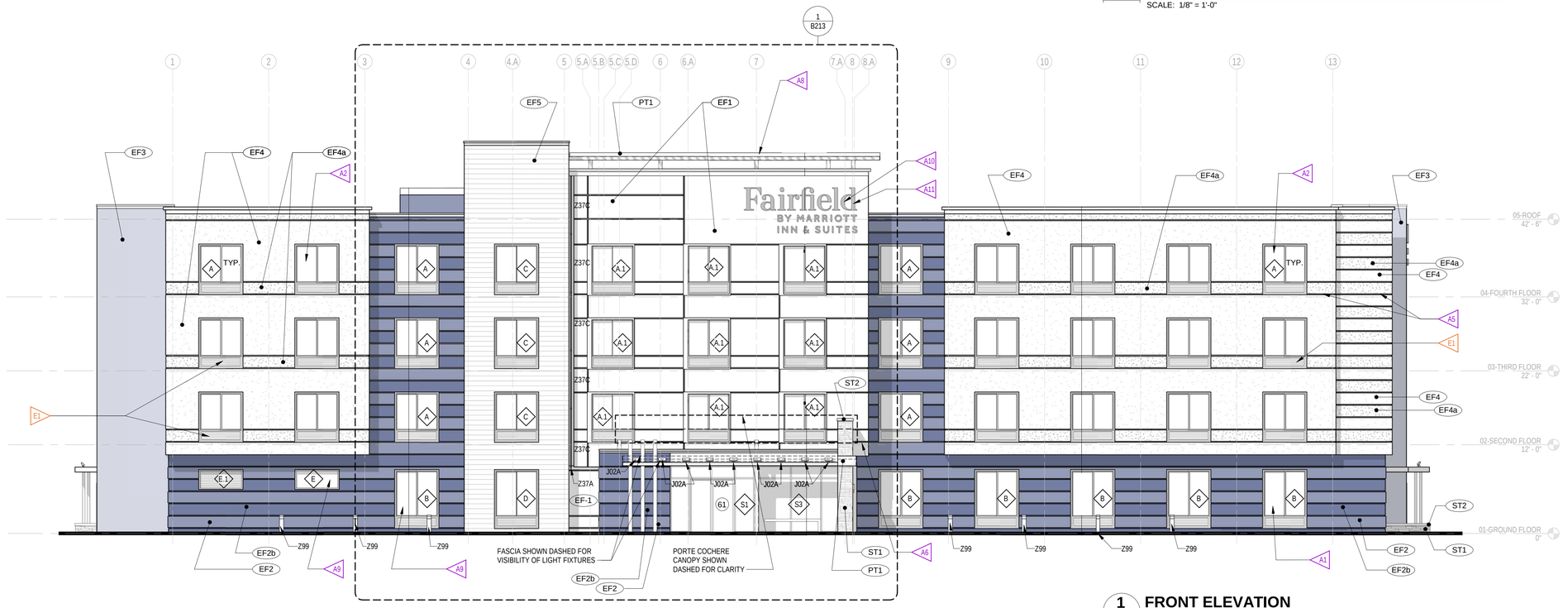
EXTERIOR FINISH SCHEDULE - FAIRFIELD INN & SUITES - NEWBERG, OREGON

MARK	TYPE	LOCATIONS	DESCRIPTION
EF1	FIBER CEMENT SIDING	PER BUILDING ELEVATIONS	Mfr: HARDI Product: 'REVEAL' PANEL SIDING Color: BENJAMIN MOORE "WHITE"
EF2	FIBER CEMENT SIDING	PER BUILDING ELEVATIONS	Mfr: HARDI Product: 'REVEAL' PANEL SIDING Color: BM "DEEP SPACE 2125-20"
EF2a	FIBER CEMENT SIDING	PER BUILDING ELEVATIONS	Mfr: HARDI Product: 'REVEAL' PANEL SIDING Color: BM "GRAY SHOWER 2125-30"
EF2b	FIBER CEMENT SIDING	PER BUILDING ELEVATIONS	Mfr: HARDI Product: 'REVEAL' PANEL SIDING Color: BM "DEEP SPACE 2125-20"
EF3	FIBER CEMENT SIDING	PER BUILDING ELEVATIONS	Mfr: HARDI Product: 'REVEAL' PANEL SIDING Color: BM "NEW CHESTNUT AC-6"
EF4	FIBER CEMENT SIDING	PER BUILDING ELEVATIONS	Mfr: HARDI Product: 'REVEAL' PANEL SIDING Color: BM "POWELL BUFF HC-35"
EF4a	FIBER CEMENT SIDING	PER BUILDING ELEVATIONS	Mfr: HARDI Product: PANEL HZ10 SIDING Color: BM "WILMINGTON TAN HC-34"
EF5	WOOD PLANK SIDING	PER BUILDING ELEVATIONS	Mfr: NOVA OR SIM Product: 1X6 HARDWOOD RAINSCREEN Wood Species: TBD
ST1	STONE VENEER	PER BUILDING ELEVATIONS	Mfr: ELDORADO STONE Product: CLIFFSTONE Color: MONTECITO
ST2	STONE COPING	PER BUILDING ELEVATIONS	Mfr: TBD Product: CUSTOM CAST STONE Color: TBD
PT1	METAL	STEEL CANOPY AND METAL FACIA	Color: PT-1 - AAMA 2605 - TO MATCH BONE WHITE (PVDF) - PPG #UC43350
	METAL	GUEST ROOM WINDOWS/PTAC GRILLE FIRST FLOOR WINDOWS, DOORS, PARAPET COPING	Color: SW-2604 SILVERSMITH (SIM TO CLEAR ANODIZED)



2 SIDE ELEVATION WEST

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



1 FRONT ELEVATION

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

0 8' 16' 24'

CRITERIA NOTES

CRITERIA NOTES ARE SHOWN CATEGORIZED BY DISCIPLINE AND COULD BE INTERPRETED TO APPLY TO MORE THAN ONE DISCIPLINE. FOR EFFICIENCY, NOTES ARE ONLY SHOWN UNDER ONE PREDOMINANT DISCIPLINE. CONSULTANTS SHOULD FAMILIARIZE THEMSELVES WITH ALL CRITERIA NOTES.

ARCHITECTURE:

- A1 TYPICAL GUESTROOM WINDOW @ GROUND FLOOR
- A2 TYPICAL GUESTROOM WINDOW FOR UPPER FLOOR
- A3 OPT 1 - PREFERRED LOCATION FOR OPTIONAL CHANNEL LETTER SIGNAGE ON SIDES OR ENDS OF BUILDING. LOCATE AS APPROPRIATE BASED ON BUILDING ORIENTATION. VERIFY PARAPET HEIGHT OR WALL CONSTRUCTION IN THE AREA SIGN TO BE INSTALLED WILL ALLOW FOR REAR ACCESS REQUIRED FOR CHANNEL LETTER INSTALLATION AND OPERATION.
- A4 OPT 2 - SECONDARY LOCATION FOR OPTIONAL SIGNAGE ON SIDES OR ENDS OF BUILDING. LOCATE AS APPROPRIATE AND SEE NOTE A3 ABOVE FOR WALL REQUIREMENTS FOR CHANNEL LETTER INSTALLATION.
- A5 ALIGN AND COORDINATE REVEALS ALONG FACADE OF BUILDING. SEE ENLARGED DETAILS FOR DIMENSIONS.
- A6 CONTINUE REVEALS ALONG EXTENDED EDGE OF BUILDING.
- A7 SIDE ENTRY CANOPY. SEE ENLARGED ELEVATIONS FOR DETAILS.
- A8 ROOF SHADE CANOPY,
- A9 WINDOW TO BE "FROSTED" TO CREATED VISUAL SCREEN TO LAUNDRY ROOM.
- A10 CHANNEL LETTER SIGNAGE AT FRONT OF BUILDING. SEE EXTERIOR SIGNAGE SPECIFICATIONS FOR REQUIREMENTS.
- A11 PROVIDE ADEQUATE BLOCKING BEHIND WALL FOR SIGNAGE. PROVIDE ACCESS FOR MOUNTING ELECTRICAL COMPONENTS AND MAKING FINAL ELECTRICAL CONNECTIONS. PROVIDE ADEQUATE DEDICATED CIRCUITRY BROUGHT TO SIGN LOCATION FROM ELECTRICAL PANEL.
- A12 SIGNAGE AT PORTE COCHERE. SEE EXTERIOR SIGNAGE SPECIFICATIONS FOR REQUIREMENTS.

ENGINEERING:

- E1 PTAC LOUVER INTEGRAL WITH WINDOW FRAME. FINISH TO MATCH WINDOW FRAME.

MICHAEL S. ABBOTT
REGISTERED ARCHITECT
SEATTLE, WA
STATE OF OREGON
PRELIMINARY

ABBOTT ARCHITECTURE
BOTHELL, WA 98011
P 206.778.7008

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LAND USE REVIEW SET	3/03/2020
MARRIOTT 30% REVIEW	3/4/2020
DD SET - PRICING	4/1/2020
DATE:	4/1/2020
PROJECT:	1907
DRAWN BY:	MV-MA
LAYOUT NAME:	EXTERIOR ELEVATIONS

A211

EXTERIOR FINISH SCHEDULE - FAIRFIELD INN & SUITES - NEWBERG, OREGON

MARK	TYPE	LOCATIONS	DESCRIPTION
EF1	FIBER CEMENT SIDING	PER BUILDING ELEVATIONS	Mfr: HARDI Product: 'REVEAL' PANEL SIDING Color: BENJAMIN MOORE "WHITE"
EF2	FIBER CEMENT SIDING	PER BUILDING ELEVATIONS	Mfr: HARDI Product: 'REVEAL' PANEL SIDING Color: BM "DEEP SPACE 2125-20"
EF2a	FIBER CEMENT SIDING	PER BUILDING ELEVATIONS	Mfr: HARDI Product: 'REVEAL' PANEL SIDING Color: BM "GRAY SHOWER 2125-30"
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EF4	FIBER CEMENT SIDING	PER BUILDING ELEVATIONS	Mfr: HARDI Product: 'REVEAL' PANEL SIDING Color: BM "POWELL BUFF HC-35"
EF4a	FIBER CEMENT SIDING	PER BUILDING ELEVATIONS	Mfr: HARDI Product: PANEL HZ10 SIDING Color: BM "WILMINGTON TAN HC-34"
EF5	WOOD PLANK SIDING	PER BUILDING ELEVATIONS	Mfr: NOVA OR SIM Product: 1X6 HARDWOOD RAINSCREEN Wood Species: TBD
ST1	STONE VENEER	PER BUILDING ELEVATIONS	Mfr: ELDORADO STONE Product: CLIFFSTONE Color: MONTECITO
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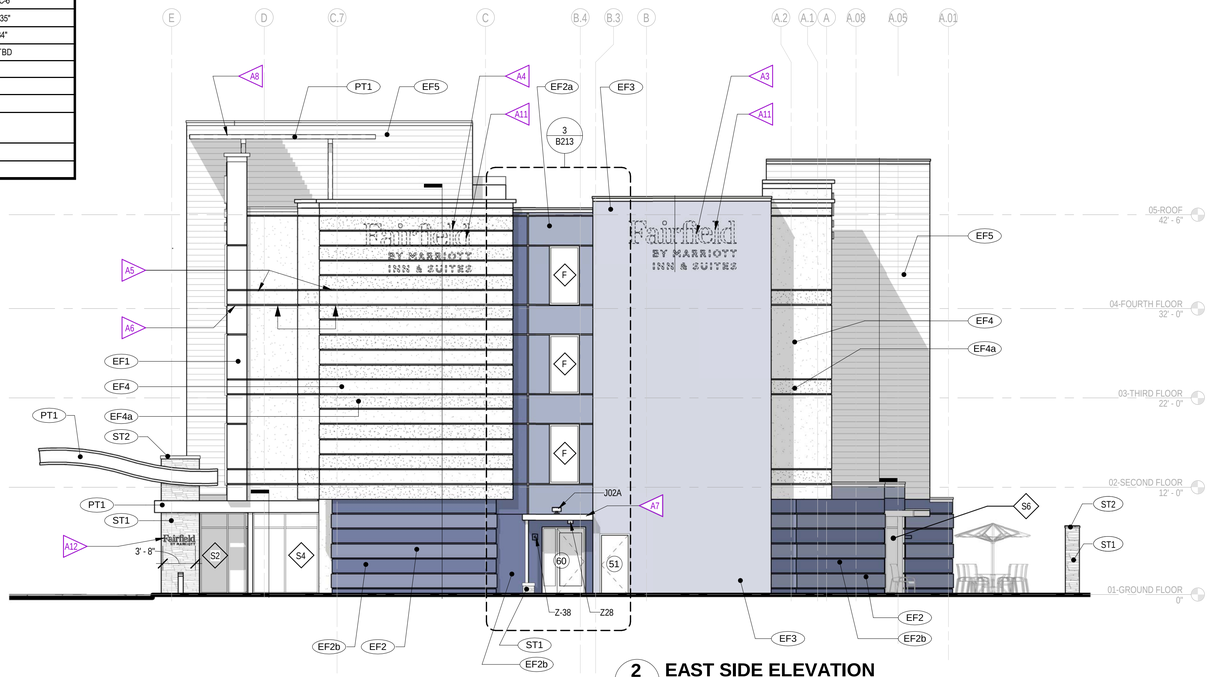
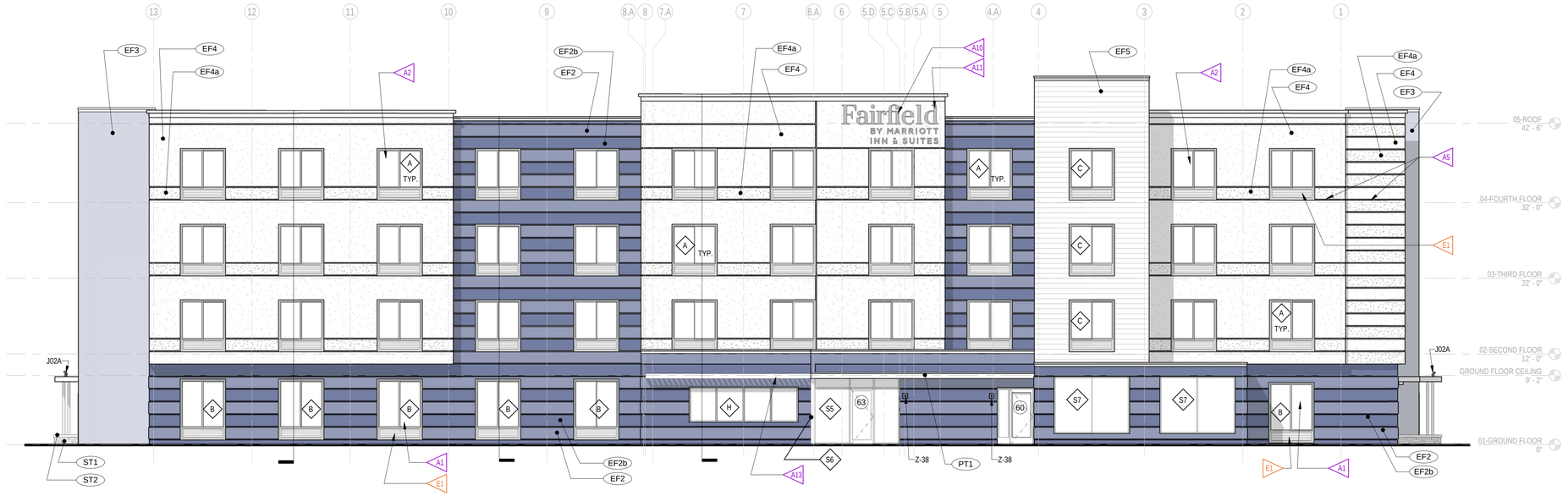
PT1	METAL	STEEL CANOPY AND METAL FACIA	Color: PT-1 - AAMA 2605 - TO MATCH BONE WHITE (PVDF) - PPG #UC43350
	METAL	GUEST ROOM WINDOWS/PTAC GRILLE FIRST FLOOR WINDOWS, DOORS, PARAPET COPING	Color: SW-2604 SILVERSMITH (SIM TO CLEAR ANODIZED)



2 EAST SIDE ELEVATION

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



1 REAR ELEVATION

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

CRITERIA NOTES

CRITERIA NOTES ARE SHOWN CATEGORIZED BY DISCIPLINE AND COULD BE INTERPRETED TO APPLY TO MORE THAN ONE DISCIPLINE. FOR EFFICIENCY, NOTES ARE ONLY SHOWN UNDER ONE PREDOMINANT DISCIPLINE. CONSULTANTS SHOULD FAMILIARIZE THEMSELVES WITH ALL CRITERIA NOTES.

ARCHITECTURE:

- A1 TYPICAL GUESTROOM WINDOW @ GROUND FLOOR
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- A6 CONTINUE REVEALS ALONG EXTENDED EDGE OF BUILDING.
- A7 SIDE ENTRY CANOPY. SEE ENLARGED ELEVATIONS FOR DETAILS.
- A8 ROOF SHADE CANOPY,
- A9 WINDOW TO BE "FROSTED" TO CREATED VISUAL SCREEN TO LAUNDRY ROOM.
- A10 CHANNEL LETTER SIGNAGE AT FRONT AND REAR OF BUILDING. SEE EXTERIOR SIGNAGE SPECIFICATIONS FOR REQUIREMENTS.
- A11 PROVIDE ADEQUATE BLOCKING BEHIND WALL FOR SIGNAGE. PROVIDE ACCESS FOR MOUNTING ELECTRICAL COMPONENTS AND MAKING FINAL ELECTRICAL CONNECTIONS. PROVIDE ADEQUATE DEDICATED CIRCUITRY BROUGHT TO SIGN LOCATION FROM ELECTRICAL PANEL.
- A12 SIGNAGE AT PORTE COCHERE. SEE EXTERIOR SIGNAGE SPECIFICATIONS FOR REQUIREMENTS.
- A13 LOUVERED SUNSHADE.

ENGINEERING:

- E1 PTAC LOUVER INTEGRAL WITH WINDOW FRAME. FINISH TO MATCH WINDOW FRAME.

MICHAEL S. ABBOTT
REGISTERED ARCHITECT
STATE OF OREGON
SEATTLE, WA

PRELIMINARY

ABBOTT ARCHITECTURE
BOTHELL, WA 98011
P 206.778.7008

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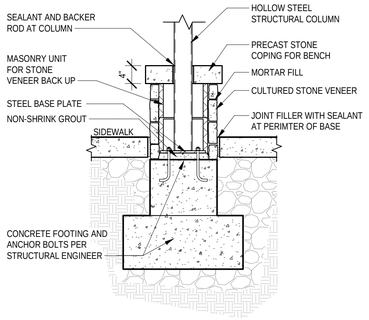
LAND USE REVIEW SET 3/3/2020
MARRIOTT 30% REVIEW 3/4/2020
DD SET - PRICING 4/1/2020

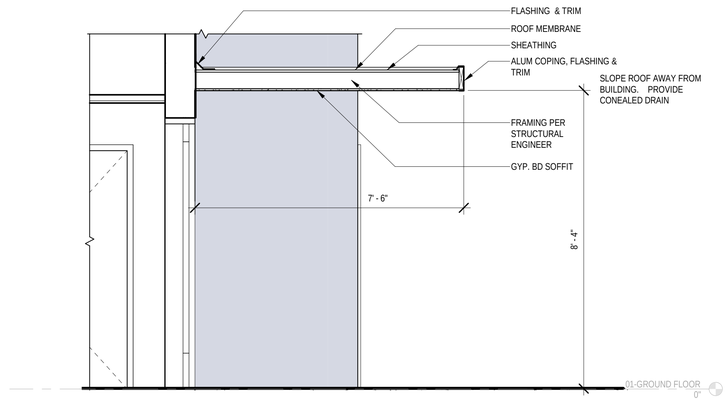
DATE: 4/1/2020
PROJECT: 1907
DRAWN BY: MV-MA
LAYOUT NAME: EXTERIOR ELEVATIONS

A212



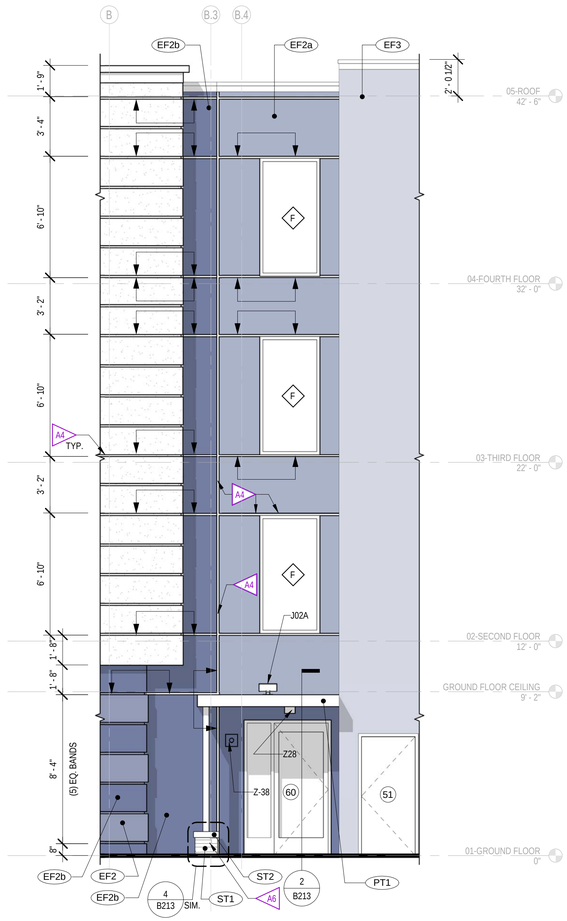
4 PRECAST & STONE BENCH @ SIDE ENTRY

SCALE: 3/4" = 1'-0" Referenced from B213



2 CANOPY OVER SIDE DOOR

SCALE: 1/2" = 1'-0" Referenced from B213



3 ENLARGED SIDE ELEVATION

SCALE: 1/4" = 1'-0" Referenced from B211

1 ENLARGED FRONT ELEVATION

SCALE: 1/4" = 1'-0" Referenced from B211

REFERENCE NOTES

A. REFER TO DESIGN STANDARDS "SITE & BUILDING EXTERIOR" CHAPTER FOR MAIN REQUIREMENTS RELATED TO THIS SHEET. ARCHITECT IS RESPONSIBLE FOR DESIGNING PROJECT IN ACCORDANCE WITH THE ENTIRE DESIGN STANDARDS.

B. REFER TO EXTERIOR FINISH INDEX FOR MATERIALS AND COLORS; AND ALSO FOR TYPICAL FINISHES FOR EXTERIOR ELEMENTS SUCH AS TYPICAL LOUVER COLOR, DOOR FRAMES, PORTE COCHERE AND CANOPY STRUCTURE FINISHES, ETC.

GENERAL NOTES

1. BUILDING ELEVATIONS ARE APPROXIMATE AND WILL VARY BASED ON STRUCTURAL SYSTEM.
2. PROVIDE CONTRACTOR WITH COLOR PRINTS OF ELEVATIONS FOR ADDITIONAL CLARITY.
3. CONTINUE FINISH TO INSIDE CORNER VERSUS FINISH TRANSITIONS AT OUTSIDE CORNER.
4. ALL DOWNSPOUTS MUST HAVE CLEANOUTS.
5. PROVIDE INTERNAL DOWNSPOUTS, GUTTERS, ROOF DRAINS AND OVERFLOWS AS REQUIRED FOR LOCAL RAINFALL. PROVIDE SECONDARY OVERFLOWS TO DAYLIGHT IN AREAS THAT WILL NOT DRAIN ACROSS WALKING SURFACES.
6. IF EQUIPMENT IS LOCATED ON THE ROOF, SCREEN EQUIPMENT SO THAT IT IS NOT VISIBLE TO THE GUEST AT GRADE LEVEL.

CRITERIA NOTES

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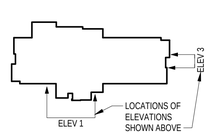
ARCHITECTURE:

- A1 ALIGN WINDOWS AT HEAD ACROSS BUILDING (TYP.)
- A2 ALUMINUM JAMB AND HEADER EXTENSION WITH FINISH ACCENT COLOR TO MATCH WINDOW. SEE WINDOW SCHEDULE FOR DETAILS.
- A3 EIFS VENEER FINISH SCORED AT 8" O.C. HORIZONTALLY, SEE DETAILS B222
- A4 1" EIFS REVEAL, SEE WALL PROFILES FOR DETAILS.
- A5 ALIGN RUSTICATION ACROSS BUILDING, MAINTAIN CONSISTENCY BETWEEN DARK AND LIGHT EIFS FINISHES.
- A6 CMU KNEE WALL WITH CULTURED STONE FINISH AND PRECAST TOP TO CREATE BENCH.
- A7 SEE GUESTROOM PLANS FOR TYPICAL WINDOW LOCATIONS
- A8 ALUMINUM CLADDING FINISH AT COVE TO MATCH STOREFRONT FINISH.
- A9 BLANK LOUVER TO MATCH GUESTROOM LOUVER.
- A10 ALUMINUM ROOF SHADE CANOPY, SEE SHEET B202 FOR DETAILS.



KEY PLAN

REGISTERED ARCHITECT
MICHAEL S. ABBOTT
SEATTLE, WA
STATE OF OREGON
PRELIMINARY

ABBOTT ARCHITECTURE
BOTHELL, WA 98011
P 206.778.7008

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Fairfield Inn and Suites Marriott

901 N. Brutscher Street

Newberg, OR

30% REVIEW SET/PRICING	12/5/2020
LAND USE REVIEW SET	3/3/2020
MARRIOTT 30% REVIEW	3/4/2020
DD SET - PRICING	4/1/2020

DATE: 4/1/2020
PROJECT: 1907
DRAWN BY: MV-MA
LAYOUT NAME: EXTERIOR ELEVATIONS DETAILS

A213

Community Development Department
P.O. Box 970 ▪ 414 E First Street ▪ Newberg, Oregon 97132
503-537-1240 ▪ Fax 503-537-1272 ▪ www.newbergoregon.gov

Pre-application meeting notes

Project: Fairfield Inn
Meeting Date: October 23, 2019

Applicant:
Hawkins Companies (for Escape Lodging Company)
Brandon Whallon
855 Broad Street, Suite 300
Boise, ID 83702
208-376-8522
BWhallon@HCOLLC.com

Site Information:
Address: No site address
Parcel: 3216 1900 and 2002
Zoning: C-2 (Community Commercial District)
Size: 1.95 acres

Proposal
Construct a four story, 79 room hotel with site improvements. The building will be approximately 42,885 square feet. Eighty (80) parking spaces are proposed.

General Comment: The pre-application notes provided are preliminary based on the information provided by the applicant and may not cover all of the development issues or requirements for the project. When a complete application is received and a full review is conducted, it may be determined that additional requirements to meet the Municipal Code or the Public Works Design and Construction Standards exist.

Planning Comments

Cheryl Caines, Senior Planner, 503-554-7744 or cheryl.caines@newbergoregon.gov

Zoning and allowed uses:
The site is in the C-2 (Community Commercial District). A hotel is a permitted uses in the C-2 zone - see the Use Table in 15. 305.020 for allowed uses.

The site is also within the Airport Overlay (AO) Subdistirct – Airport Inner Horizontal Surface (NMC 15.340), which has no practical effect as the height limit is 150 feet.

Process:
Type II Design Review. Decision made by the Community Development Director. Two week appeal period. If appealed then it would go to the Planning Commission.

- **Timing:** Typical review time is 4-6 weeks after the application is deemed complete.
- **Public notice requirements:** Applicant must mail notice to properties within 500 feet and post sign on site. There are examples in the application packet. The applicant provides draft notice for mailing and posting and is responsible for obtaining mailing labels and mailing/posting notice.
- Please submit **three (3) copies** for completeness review. Once deemed complete, staff will request additional copies to route for review (city departments/other agencies)
- A **detailed application submittal list** is found in the application packet and in code section 15.220.030.B. These include an application, plans, and narrative addressing the approval criteria and applicable standards. Additional materials or information may be requested during the review.

Development standards:

- **Setbacks (NMC 15.410)**: Front yard – 10 feet (along any street frontage). Interior yards 0 feet.
- **Height (NMC 15.415):** no height limit in C-2 zone.
- **Lot/Parking Coverage (NMC 15.405):** does not apply.
- **Landscaping (NMC 15.420)**: 15% minimum overall landscaping. Parking lot trees required every seven spaces (in a parking lot island). Landscape areas can do double duty as stormwater swales. If a drive aisle or parking area is near a property line then there is a landscape buffer requirement (10 feet interior width adjacent to street property line and 5 feet interior width adjacent to interior property lines). A parking or loading area providing 10 or more spaces shall be improved with defined landscaped areas totaling no less than 25 square feet per parking space. Please show the calculations in the application. Street trees are required. See 15.420.010(B) for all landscaping related standards.
- **Trash enclosure (NMC 15.220.030.B.12)**: Need a masonry/cement trash enclosure to contain dumpsters. Design and location need to be approved by Waste Management, including if inside the building. Local contact for Waste Management: Dave Huber, District Manager, Newberg Operation (503-462-0508 or dhuber@wm.com).
- **Exterior lighting**: light trespass limited to 0.5 foot-candles at the property line. Shielded exterior lights (see code section 15.425). Please provide a lighting plan.
- **Parking**: Vehicle and bike parking required. The number of spaces is based on use and square footage of proposed and existing uses. Hotels require one (1) space for every guest room. A hotel with 79 guest rooms requires at least 79 spaces. Bike parking required at one (1) space for every 10,000 gross square feet. At least four (4) spaces are required for a building that is 42,885 square feet. See additional comments below regarding parking. No more than 30% of the parking spaces can be compact.
- **Design compatibility:** Compatible with other buildings in the area. Provide elevations with materials called out.
- **Traffic study**: Will be required if the trip generation is higher than 40 trips in the PM peak hour (use ITE Trip Generation manual for estimates).
- **Vision Clearance**: At the intersection of private drive and street. (NMC 15.410.060).
- **Signage**: Sign permit and building permit are required. Sign standards are found in NMC 15.435. Vision clearance applies to freestanding signs near entrances. Proposed sign appears to be within the VC area.

Additional Planning Comments:

- Site is still made up of two tax lots (3216 1900 and a portion of 2002). A lot line adjustment was approved in October 2017 (ADJP17-0005). The survey was recorded but assessor's data still shows original configuration. Double check that deeds were files. Provide copy.
- Seventeen of the 18 spaces on tax lot 2022 are required for the office building at 901 N Brutscher Street per land use approval DR-124-99. Provide a joint use parking agreement or show that 901 N Brutscher does not need this parking based on uses through a modification.

Building Comments

Newberg utilizes the 2019 IBC.
Electrical permitting is done through Yamhill County. All other permits are issues by City of Newberg.

Contacts:

Brooks Bateman, Building Official, 503-537-1209, brooks.bateman@newbergoregon.gov
Corey Bingham, Plans Examiner, 503-537-1286, corey.bingham@newbergoregon.gov

Engineering Comments

Kristin Svicarovich, Engineering Associate, PE, 503-537-1282, Kristin.svicarovich@newbergoregon.gov

Street: N Brutscher Street is a classified as a Major Collector. Information regarding existing right-of-way and cross-section can be seen below.

Roadway	Functional Classification	Existing Right-of-way	Existing Pavement Width	Minimum Right-of-way	Minimum Pavement Width	Typical Cross-Section (per Transportation System Plan)
Brutscher Street	**Major Collector** (57-feet to 80-feet)	Approx. 60-feet	Approx. 46-feet	60-feet For typical section per TSP.	36-feet	• 1-foot from back of walk to right-of-way • 5-foot sidewalk • 5.5-foot planter* • 0.5-foot curb • 6-foot bike lane • 12-foot travel lane • 12-foot travel lane • 6-foot bike lane • 0.5-foot curb • 5.5-foot planter* • 5-foot sidewalk • 1-foot from back of walk to right-of-way

*5-foot minimum per NMC 15.505.030(G)(8)

If more than $30,000 of improvements are made to the property, street improvements can be required, see NMC 12.05.090.

The majority of frontage improvements have been completed along the property. The applicant will be responsible for repairs to any sidewalks that are not ADA compliant, installation of street trees, and verification of adequate street lighting along the property frontage. A lighting analysis will need to be

performed to verify that the City's street lighting standards are being met, and if they're not the applicant is required to upgrade street lighting to meet the City's standard. Street lighting standards can be found in the Public Works Design and Construction Standards in section "5.17 Street Lighting, Trees, Names and Signage"

https://www.newbergoregon.gov/engineering/page/2015-newbergs-public-works-design-construction-standardsn

The City is planning on paving Brutscher Street in the near future. We've put the paving on hold for now knowing that this project is on the horizon and we'd like to prevent having new pavement cut into due to the required utility extensions to serve this property. Please keep the City apprised of this project's schedule.

Wastewater: The City's GIS shows a there is a wastewater line near the north end of the applicant's property. West of the manhole in Brutscher Street there is an 8-inch line, which transitions to a 6-inch line as it continues to the east along north end of the project site.

There is also a 10-inch wastewater line south of the property in Brutscher Street which is available for connection. The line would need to be extended north to the applicant's property. A connection to this line will require a capacity analysis of the Fernwood pump station.

The City's preference would be to connect to the northern sewer line, however either way a service connection to the property will be required. Under both scenarios the applicant will be required to evaluate the capacity of the proposed sewer connection.

Water: There is a 12-inch ductile iron water line along Brutscher Street. There appears to be an existing 2-inch and ¾"-inch meters to the property. Water must be taken from Brutscher Street water line. The east-west line along the southern property boundary is not available for a water connection. The applicant will need to verify meter size requirements for their development. Fire flow testing will be required.

Coordination with TVF&R will be required to determine the number of hydrants needed for this project. Any onsite hydrants will need to be located in a public utility easement.

Stormwater: There is an existing 18-inch stormwater line north of the property in Brutscher Street that terminates in a manhole near the northern entrance driveway to Fred Meyer.

There is an existing 12-inch stormwater line south of the property in Brutscher Street that terminates in a manhole near the southern entrance driveway to Fred Meyer.

The City's preference would be to connect to the southern stormwater line, however an extension of the mainline in Brutscher Street would likely be required in order make a connection.

If more than 500 square feet of new impervious area is created on either partitioned property it will require stormwater treatment. Water quality and detention need to be provided per the Public Works Design and Construction Standards, Section 4. A Stormwater Report will need to include a downstream analysis.

Erosion and Sedimentation Control (ESC): The site is over 1-acre, a 1200-C permit will be required.

Other Utilities: Any new connection the property will need to be undergrounded (all existing utilities appear to be undergrounded). See NMC 15.430.010 for exception provisions.

Other Notes:

- Narrative will need to be provided that addresses whether or not the 40 trips per p.m. peak hour threshold is met. If the threshold is met than a traffic study will be required.

  Traffic Analysis. A traffic analysis shall be submitted for any project that generates in excess of 40 trips per p.m. peak hour. A traffic analysis may be required for projects below the 40 trips per p.m. peak hour threshold when the development's location or traffic characteristics could affect traffic safety, access management, street capacity or a known traffic problem or deficiency. The traffic analysis shall be scoped in conjunction with the city and any other applicable roadway authority.

  Using ITE Trip Code #310 for Hotel it appears that approximately 48 PM peak hour trips will be created. The consultant team will need to verify this and determine if they exceed the 40 PM peak hour trip threshold. Coordinate with the engineering department to identify study intersections to be included in the traffic analysis.

- The applicant will be required to verify adequate sight distance is achieved, see section 5.23 Intersection Sight Distance in the Public Works Design and Construction standards.
- In reviewing the fees put together by the applicant the following items were noted:
  - The "Transportation Utility Fee" should be using "Hotel" at $4.52 per room instead of "Motel" at $3.12 per room
  - The applicant can apply for credits for any existing water meters on site that are being removed/upgraded. Ex. If the site has an existing 2-inch meter, and the development determine it needs a 3-inch meter, the applicant only pays the SDC for the difference between the existing 2-inch and the requested 3-inch.

The Engineering Department also administers/assigns System Development Charges (SDCs) for the following utilities:

- Transportation System Development Charge
- Water System Development Charge
- Wastewater System Development Charge
- Stormwater System Development Charge
- Non-Potable System Development Charge

***ALL SDC FEES ARE APPROXIMATE (*rounded to the nearest $50*) AND SUBJECT TO CHANGE – See City's Current Fees for exact costs.** SDC fees can be financed - contact City Engineer, Kaaren Hofmann at 503-537-1223 or kaaren.hofmann@newbergoregon.gov with questions.

***Transportation SDC** – Transportation SDC are based on the land use and the associated trip rate.

- Transportation SDC = Unit x ITE Trip Rate x 1.68 x $3,750
- ITE Trip Rate is based on the PM Peak Hour using the "Trip Generation Manual, 10th Edition" published by the Institute of Transportation Engineers.

***Water SDC** – Water SDCs are based on the meter size.

- 5/8" – 3/4" Meter $5,450
- 1" Meter $9,250
- 1.25" Meter $13,600
- 2" Meter $17,800

***Wastewater SDC** – Wastewater SDCs are based on fixture units which are defined in the Uniform Plumbing Code.

- For the first 18 fixture units $6,750
- Per each fixture unit over 18 $400

***Stormwater SDC** – Stormwater SDCs are based on net new impervious surface areas on the property.

- Single Family 1 EDU (Equivalent Dwelling Unit) = $400
- Other Than Single Family Impervious Area/2877 = #EDU x $400

***Non-Potable SDC** – Water SDCs are based on the meter size.

- 3/4" Meter $3,600
- 1" Meter $6,100
- 1.25" Meter $8,950
- 1.5" Meter $11,800

Additional Fees:

- Planning: Type 2 design review application fee (0.6% of total project cost – does not include work within the public right-of-way), plus Engineering review fees ($397.28 for the first acre and $226.93 each additional acre), plus 5% technology fee.
- Public Improvement Permit: 5% of cost of public improvements.
- Engineering: erosion control permit fees
- Building permit fees: Based on valuation. Please see the fee handbook.

Tualatin Valley Fire & Rescue

October 31, 2019

Cheryl Caines
City of Newberg
414 E. First Street
Newberg, OR 97132

Re: Pre-Application Meeting, Newberg Fairfield Inn Project
Tax Lot I.D: R3216 01900

Dear Cheryl,

Thank you for the opportunity to review the proposed site plan surrounding the above-named development project. These notes are provided regarding the pre-application meeting held on **October 23, 2019** and are based on the current New Construction Guide version 4.2C. There may be more or less requirements needed based upon the final project design, however, Tualatin Valley Fire & Rescue will endorse this proposal predicated on the following criteria and conditions of approval.

FIRE APPARATUS ACCESS:

1. **FIRE APPARATUS ACCESS ROADS:** Access roads shall be provided for every facility, building, or portion of a building hereafter constructed or moved into or within the jurisdiction. Access roads are not required to be modified for commercial buildings that undergo a change in occupancy, change in use, or conversion from agricultural or equine exempt to non-exempt unless there is a change to the structure's square footage or building footprint. (OFC 503.1.1)

2. **FIRE ACCESS ROAD DISTANCE FROM BUILDINGS:** The access shall extend to within 150 feet of all portions of the exterior wall of the first story of the building as measured by an approved route around the exterior of the building or facility. (OFC 503.1.1)

3. **DEAD ENDS AND ROADS IN EXCESS OF 150 FEET (TURNAROUNDS):** Dead end fire apparatus access roads or roads in excess of 150 feet in length shall be provided with an approved turnaround. (OFC 503.2.5 & Figure D103.1)

4. **ADDITIONAL ACCESS ROADS – COMMERCIAL/INDUSTRIAL HEIGHT:** Buildings exceeding 30 feet in height or three stories in height shall have at least two separate means of fire apparatus access. (D104.1)

5. **ADDITIONAL ACCESS ROADS – COMMERCIAL/INDUSTRIAL SQUARE FOOTAGE:** Buildings or facilities having a gross building area of more than 62,000 square feet shall have at least two approved separate means of fire apparatus access. Exception: Projects having a gross building area of up to 124,000 square feet that have a single approved fire apparatus access road when all buildings are equipped throughout with approved automatic sprinkler systems. (OFC D104.2)

6. **AERIAL FIRE APPARATUS ROADS:** Buildings with a vertical distance between the grade plane and the highest roof surface that exceeds 30 feet in height shall be provided with a fire apparatus access road constructed for use by aerial apparatus with an unobstructed driving surface width of not less than 26 feet. For the purposes of this section, the highest roof surface shall be determined by measurement to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of the parapet walls, whichever is greater. Any portion of the building may be used for this measurement, provided that it is accessible to firefighters and is capable of supporting ground ladder placement. (OFC D105.1, D105.2)

7. **AERIAL APPARATUS OPERATIONS:** At least one of the required aerial access routes shall be located within a minimum of 15 feet and a maximum of 30 feet from the building, and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial access road is positioned shall be approved by the Fire Marshal. Overhead utility and power lines shall not be located over the aerial access road or between the aerial access road and the building. (D105.3, D105.4)

8. **MULTIPLE ACCESS ROADS SEPARATION:** Where two access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the area to be served (as identified by the Fire Marshal), measured in a straight line between accesses. (OFC D104.3)

9. **FIRE APPARATUS ACCESS ROAD WIDTH AND VERTICAL CLEARANCE:** Fire apparatus access roads shall have an unobstructed driving surface width of not less than 20 feet (26 feet adjacent to fire hydrants (OFC D103.1)) and an unobstructed vertical clearance of not less than 13 feet 6 inches. (OFC 503.2.1 & D103.1)

10. **NO PARKING SIGNS:** Where fire apparatus roadways are not of sufficient width to accommodate parked vehicles and 20 feet of unobstructed driving surface, "No Parking" signs shall be installed on one or both sides of the roadway and in turnarounds as needed. Signs shall read "NO PARKING - FIRE LANE" and shall be installed with a clear space above grade level of 7 feet. Signs shall be 12 inches wide by 18 inches high and shall have red letters on a white reflective background. (OFC D103.6)

11. **NO PARKING:** Parking on emergency access roads shall be as follows (OFC D103.6.1-2):
    1. 20-26 feet road width – no parking on either side of roadway
    2. 26-32 feet road width – parking is allowed on one side
    3. Greater than 32 feet road width – parking is not restricted

    Note: For specific widths and parking allowances, contact the local municipality.

12. **PAINTED CURBS:** Where required, fire apparatus access roadway curbs shall be painted red (or as approved) and marked "NO PARKING FIRE LANE" at 25 foot intervals. Lettering shall have a stroke of not less than one inch wide by six inches high. Lettering shall be white on red background (or as approved). (OFC 503.3)

13. **FIRE APPARATUS ACCESS ROADS WITH FIRE HYDRANTS:** Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet and shall extend 20 feet before and after the point of the hydrant. (OFC D103.1)

14. **SURFACE AND LOAD CAPACITIES:** Fire apparatus access roads shall be of an all-weather surface that is easily distinguishable from the surrounding area and is capable of supporting not less than 12,500 pounds point load (wheel load) and 75,000 pounds live load (gross vehicle weight). Documentation from a registered engineer that the final construction is in accordance with approved plans or the requirements of the Fire Code may be requested. (OFC 503.2.3)

15. **TURNING RADIUS:** The inside turning radius and outside turning radius shall not be less than 28 feet and 48 feet respectively, measured from the same center point. (OFC 503.2.4 & D103.3)

16. **ACCESS ROAD GRADE:** Fire apparatus access roadway grades shall not exceed 15%. Alternate methods and materials may be available at the discretion of the Fire Marshal (for grade exceeding 15%).

17. **ANGLE OF APPROACH/GRADE FOR TURNAROUNDS:** Turnarounds shall be as flat as possible and have a maximum of 5% grade with the exception of crowning for water run-off. (OFC 503.2.7 & D103.2)

18. **ANGLE OF APPROACH/GRADE FOR INTERSECTIONS:** Intersections shall be level (maximum 5%) with the exception of crowning for water run-off. (OFC 503.2.7 & D103.2)

19. **AERIAL APPARATUS OPERATING GRADES:** Portions of aerial apparatus roads that will be used for aerial operations shall be as flat as possible. Front to rear and side to side maximum slope shall not exceed 10%.

20. **GATES:** Gates securing fire apparatus roads shall comply with all of the following (OFC D103.5, and 503.6):
    1. Minimum unobstructed width shall be not less than 20 feet (or the required roadway surface width).
    2. Gates shall be set back at minimum of 30 feet from the intersecting roadway or as approved.
    3. Electric gates shall be equipped with a means for operation by fire department personnel
    4. Electric automatic gates shall comply with ASTM F 2200 and UL 325.

21. **ACCESS DURING CONSTRUCTION:** Approved fire apparatus access roadways shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. Temporary address signage shall also be provided during construction. (OFC 3309 and 3310.1)

22. **TRAFFIC CALMING DEVICES:** Shall be prohibited on fire access routes unless approved by the Fire Marshal. (OFC 503.4.1). Traffic calming measures linked here:

FIREFIGHTING WATER SUPPLIES:

23. **COMMERCIAL BUILDINGS – REQUIRED FIRE FLOW:** The minimum fire flow and flow duration shall be determined in accordance with OFC Table B105.2. The required fire flow for a building shall not exceed the available GPM in the water delivery system at 20 psi residual. (OFC B105.3)
    Note: OFC B106, Limiting Fire-Flow is also enforced, except for the following:
    - The maximum needed fire flow shall be 3,000 GPM, measured at 20 psi residual pressure.
    - Tualatin Valley Fire & Rescue does not adopt Occupancy Hazards Modifiers in section B105.4-B105.4.1

24. **FIRE FLOW WATER AVAILABILITY:** Applicants shall provide documentation of a fire hydrant flow test or flow test modeling of water availability from the local water purveyor if the project includes a new structure or increase in the floor area of an existing structure. Tests shall be conducted from a fire hydrant within 400 feet for commercial projects, or 600 feet for residential development. Flow tests will be accepted if they were performed within 5 years as long as no adverse modifications have been made to the supply system. Water availability information may not be required to be submitted for every project. (OFC Appendix B)

25. **WATER SUPPLY DURING CONSTRUCTION:** Approved firefighting water supplies shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. (OFC 3312.1)

FIRE HYDRANTS:

26. **FIRE HYDRANTS – COMMERCIAL BUILDINGS:** Where a portion of the building is more than 400 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the building, on-site fire hydrants and mains shall be provided. (OFC 507.5.1)
    - This distance may be increased to 600 feet for buildings equipped throughout with an approved automatic sprinkler system.
    - The number and distribution of fire hydrants required for commercial structure(s) is based on Table C105.1, following any fire-flow reductions allowed by section B105.3.1. Additional fire hydrants may be required due to spacing and/or section 507.5 of the Oregon Fire Code.

27. **FIRE HYDRANT(S) PLACEMENT:**
    - Existing hydrants in the area may be used to meet the required number of hydrants as approved. Hydrants that are up to 600 feet away from the nearest point of a subject building that is protected with fire sprinklers may contribute to the required number of hydrants. (OFC 507.5.1)
    - Hydrants that are separated from the subject building by railroad tracks shall not contribute to the required number of hydrants unless approved by the Fire Marshal.

- Hydrants that are separated from the subject building by divided highways or freeways shall not contribute to the required number of hydrants. Heavily traveled collector streets may be considered when approved by the Fire Marshal.
- Hydrants that are accessible only by a bridge shall be acceptable to contribute to the required number of hydrants only if approved by the Fire Marshal.

28. **PRIVATE FIRE HYDRANT IDENTIFICATION:** Private fire hydrants shall be painted red in color. Exception: Private fire hydrants within the City of Tualatin shall be yellow in color. (OFC 507)

29. **FIRE HYDRANT DISTANCE FROM AN ACCESS ROAD:** Fire hydrants shall be located not more than 15 feet from an approved fire apparatus access roadway unless approved by the Fire Marshal. (OFC C102.1)

30. **REFLECTIVE HYDRANT MARKERS:** Fire hydrant locations shall be identified by the installation of blue reflective markers. They shall be located adjacent and to the side of the center line of the access roadway that the fire hydrant is located on. In the case that there is no center line, then assume a center line and place the reflectors accordingly. (OFC 507)

31. **PHYSICAL PROTECTION:** Where fire hydrants are subject to impact by a motor vehicle, guard posts, bollards or other approved means of protection shall be provided. (OFC 507.5.6 & OFC 312)

32. **CLEAR SPACE AROUND FIRE HYDRANTS:** A 3-foot clear space shall be provided around the circumference of fire hydrants. (OFC 507.5.5)

33. **FIRE DEPARTMENT CONNECTION (FDC) LOCATIONS:** FDCs shall be located within 100 feet of a fire hydrant (or as approved). Hydrants and FDC's shall be located on the same side of the fire apparatus access roadway or drive aisle, fully visible, and recognizable from the street or nearest point of the fire department vehicle access or as otherwise approved. (OFC 912.2.1 & NFPA 13)
    - Fire department connections (FDCs) shall normally be located remotely and outside of the fall-line of the building when required. FDCs may be mounted on the building they serve, when approved.
    - FDCs shall be plumbed on the system side of the check valve when sprinklers are served by underground lines also serving private fire hydrants.

BUILDING ACCESS AND FIRE SERVICE FEATURES

34. **EMERGENCY RESPONDER RADIO COVERAGE:** In new buildings where the design reduces the level of radio coverage for public safety communications systems below minimum performance levels, a distributed antenna system, signal booster, or other method approved by TVF&R and Washington County Consolidated Communications Agency shall be provided. (OFC 510, Appendix F, and OSSC 915) http://www.tvfr.com/DocumentCenter/View/1296.
    - Emergency responder radio system testing and/or system installation is required for this building. Please contact me (using my contact info below) for further information including an alternate means of compliance that is available. If the alternate method is preferred, it must be requested from TVF&R prior to issuance of building permit.
    - Testing shall take place after the installation of all roofing systems; exterior walls, glazing and siding/cladding; and all permanent interior walls, partitions, ceilings, and glazing.

35. **KNOX BOX:** A Knox Box for building access may be required for structures and gates. See Appendix B for further information and detail on required installations. Order via www.tvfr.com or contact TVF&R for assistance and instructions regarding installation and placement. (OFC 506.1)

36. **FIRE PROTECTION EQUIPMENT IDENTIFICATION:** Rooms containing controls to fire suppression and detection equipment shall be identified as "Fire Control Room." Signage shall have letters with a minimum of 4 inches high with a minimum stroke width of 1/2 inch, and be plainly legible, and contrast with its background. (OFC 509.1)

37. **<u>PREMISES IDENTIFICATION</u>:** New and existing buildings shall have approved address numbers; building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property, including monument signs. These numbers shall contrast with their background. Numbers shall be a minimum of 4 inches high with a minimum stroke width of 1/2 inch. (OFC 505.1)

If you have questions or need further clarification, please feel free to contact me at **(503)259-1409.**

Sincerely,

Ty Darby

Ty Darby
Deputy Fire Marshal II

Cc: file

GLOBAL Transportation Engineering

MEMORANDUM

DATE: November 30, 2021

TO: City of Newberg
ODOT Region 2

FROM: Dana Beckwith, PE, PTOE
Richard Martin, EIT

SUBJECT: Newberg SEC of Brutscher and East Portland Transportation Impact Analysis P20-005

This memorandum summarizes the traffic impact analysis associated with the proposed development located at tax lots 1900 and 2002 in Newberg, Oregon. The purpose of this analysis is to identify potential impacts to the transportation network for the year of opening for the site, based on the standards established by the City of Newberg and the Oregon Department of Transportation (ODOT). Based on coordination with the City of Newberg and ODOT Region 2 and the previously submitted Methodology Memorandum, this traffic impact analysis considers the following elements:

- Introduction
- Existing Conditions
  - Existing Traffic Volumes
  - Existing Intersection Operations
  - Crash Data Analysis
- Planned Improvements
- Impacts Analysis
  - Trip Generation and Trip Distribution
  - Background Growth
  - In-Process Trips
  - 2023 No-Build Volumes
  - 2023 Buildout Volumes
  - Future Intersection Performance
- Queueing Analysis
- Sight Distance Evaluation
- Results and Recommendations
- Appendix

Based on coordination with the City of Newberg and ODOT, the following intersections and site accesses were evaluated:

- Brutscher Street at Pacific Highway West (OR 99W)
- Vittoria Way at OR 99W
- Providence Drive at OR 99W
- N Springbrook Road at OR 99W
- N Springbrook Road at Haworth Avenue

ODOT recommends studying all the state highway intersections that may be anticipated to see an increase in either 50 peak hour trips and/or 300 ADT. Based on the trip generation and distribution evaluation, it was determined that trips will exceed this threshold for the intersection of Brutscher Street at OR 99W. The other study intersections were requested for analysis by the City of Newberg due to their inclusion in the Newberg Transportation System Plan (TSP) for future improvements.

INTRODUCTION

The proposed development will be located at tax lots 1900 and 2002 on Brutscher Street south of OR 99W in Newberg, Oregon. The site will include construction of a new four-story, 79-room hotel. Figure 1 shows a vicinity map that identifies the project site and the study intersections. Figure 2 shows a preliminary site plan. The site currently hosts a parking lot that serves as overflow for the building at 901 N Brutscher Street on the west side of Brutscher Street, opposite the project site. The existing parking lot on tax lot 2002 will be retained. Two additional parking lots will be added, bringing the total number of parking stalls to 80. A new site access is proposed approximately 135 feet south of the existing driveway on Brutscher Street.

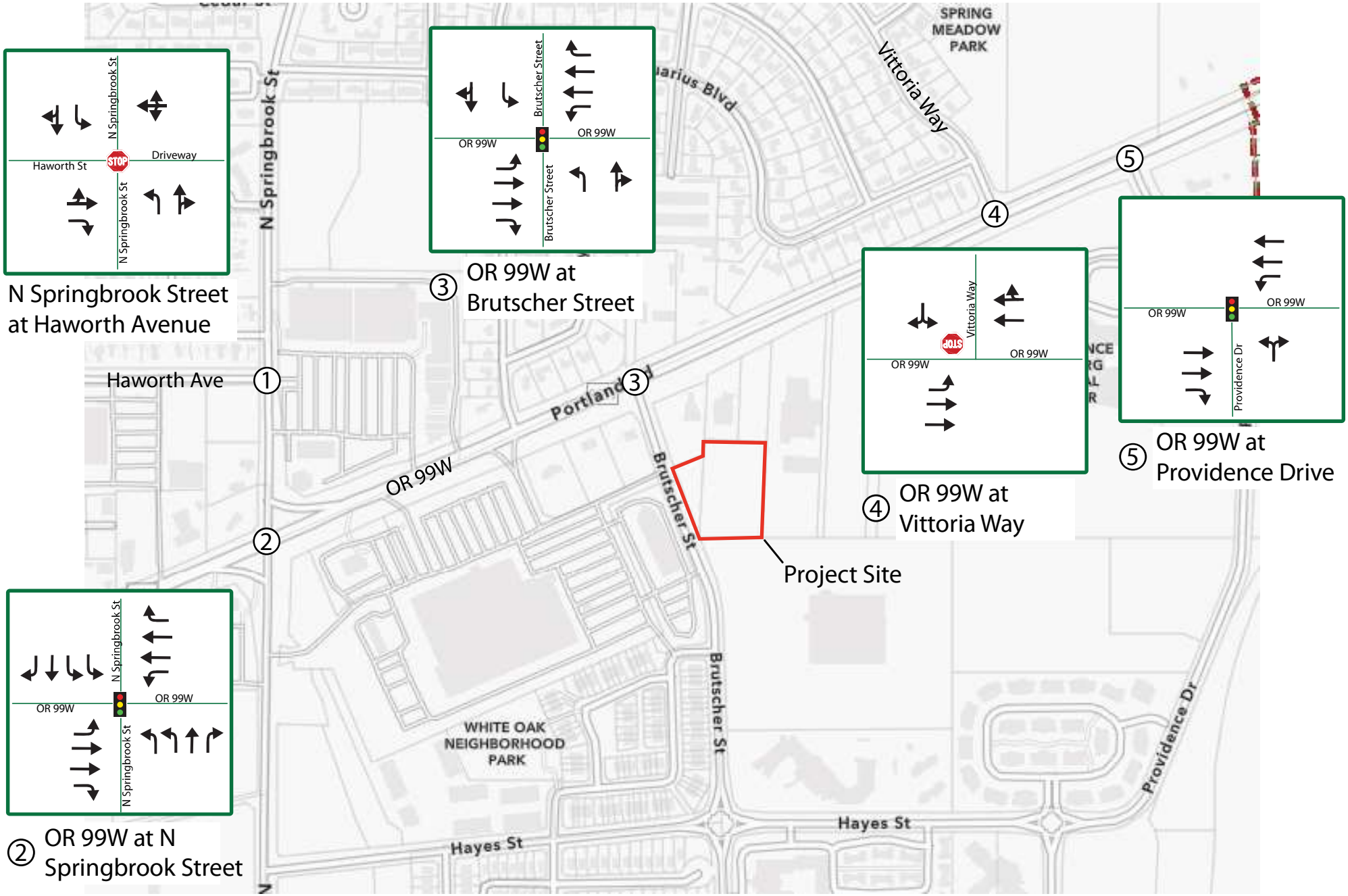
EXISTING CONDITIONS

Existing transportation conditions were evaluated at the study intersections. All modes of travel were evaluated, including pedestrians, bicycles, motor vehicles and transit. The existing transportation conditions are summarized in Table 1.

Table 1: Roadway Characteristics

Roadway	Functional Classification[1]	Posted Speed Limit	Sidewalks	Transit	Bike Lanes	Lane Geometry	On-Street Parking
OR 99W [2]	Major Arterial (City) / Urban Other Principal Arterial (ODOT)	35 mph	Partial – Sidewalks do not exist on the east side of OR 99W south of SE High School Way	NW Collector Line 3, YCTA Route 7	Both Sides	Two 12' lanes in each direction and a two-way left-turn lane	None
Brutscher Street	Major Collector	25 mph	Both Sides	None	None	One 11'-12' lane in each direction	None
Providence Drive	Major Collector	25 mph	Both sides	None	Both sides	One 10'-11' lane in each direction	None
N Springbrook Road	Minor Arterial	35 mph	Both sides	YCTA Routes 44, 46s	Both sides	One 10'-11' lane in each direction and a two-way left-turn lane	None
Haworth Avenue	Major Collector	25 mph	Both sides	None	None	One 10'-11' lane in each direction	Both sides
Vittoria Way	Minor Collector	25 mph	Both sides north of Aquarius Boulevard	None	None	One 10'-11' lane in each direction	Both sides

Notes: [1]Based on Figure 14 of the City of Newberg TSP and ODOT TransGIS.
[2] OR 99W is classified as a Statewide Highway, is part of the National Highway System (NHS), and is a designated freight route and a truck route.



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Traffic Signal Ⓧ = Study Intersection

STOP Stop Sign = Lane Configuration

Figure 1: Vicinity Map

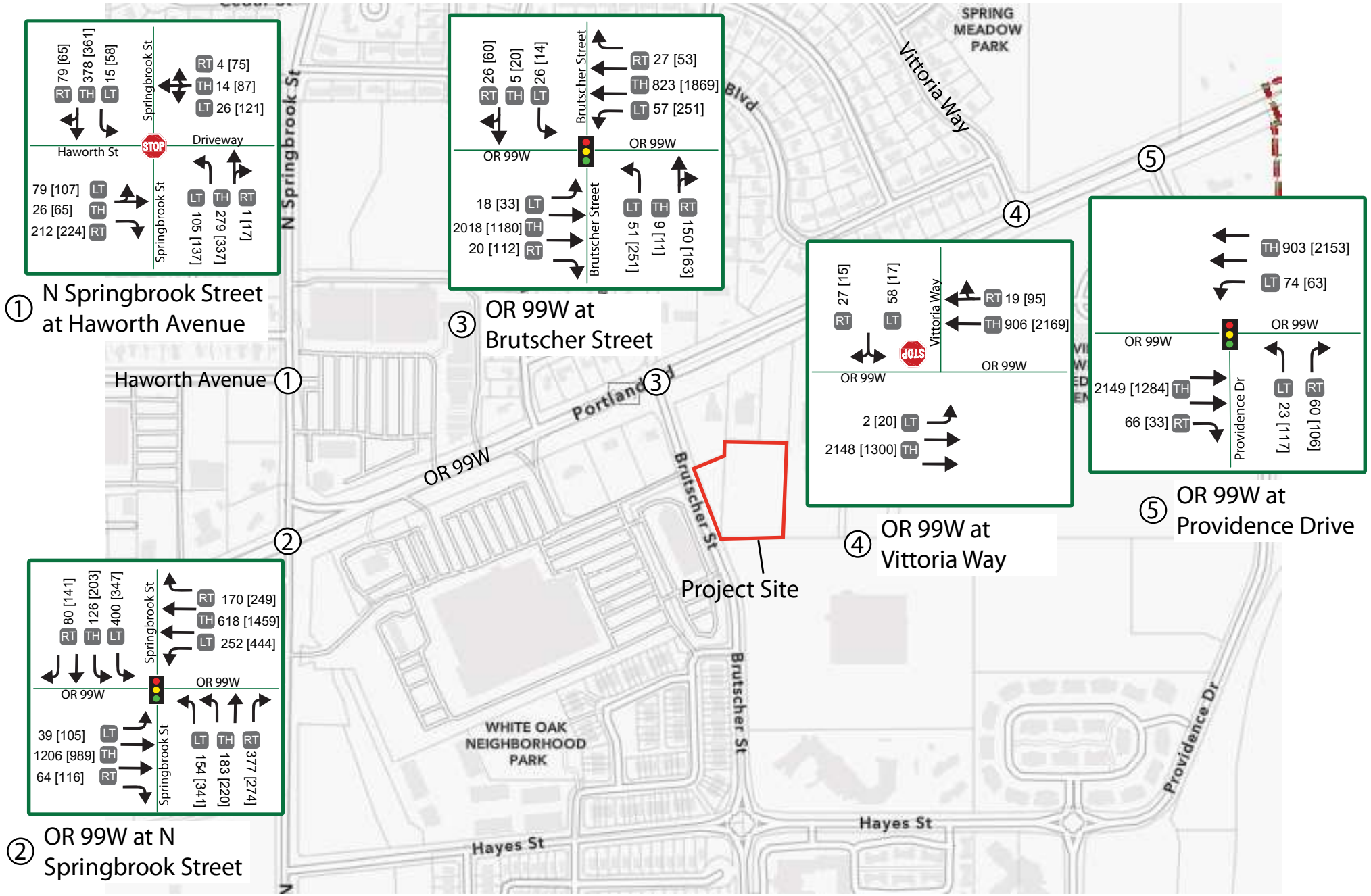
Figure 2: Preliminary Site Plan

Existing Traffic Volumes

Traffic count data was collected at the study intersections on March 5, 2020 during the AM peak period (6:00 AM to 9:00 AM) and the PM peak period (3:00 PM to 6:00 PM). The existing lane configurations are shown in Figure 1. The peak hour traffic count data has been included in Appendix A.

Based on the ODOT Analysis Procedures Manual, the collected traffic count data was adjusted to replicate the conditions when traffic volumes are typically the highest. A seasonal factor was applied to the traffic count data to develop 30th Highest Hour volumes. Figure 3 shows the 30th Highest Hour traffic volumes utilized in this analysis. This seasonal factor was determined to be 1.07744 based on an average of the following formula:

30HV = (March PHV) x (Peak Month Percent of ADT/Count Month Percent of ADT



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Traffic Signal | (X) = Study Intersection | LT TH RT = Left / Through / Right Turn

STOP Stop Sign | = Lane Configuration | AM [PM] = Peak Hour Site Trips

Figure 3: Seasonally Adjusted 2020 Existing Volumes

August was determined to be the peak month according to records for ATR 36-004. These records are available in the ODOT Seasonal Trend Table provided in Appendix B. This approach is consistent with the City of Newberg's TSP[1]. The seasonal adjustment factor was applied to both AM and PM peak hour volumes.

Existing Intersection Operations

An intersection performance analysis was conducted to document the existing operations for the study intersections and to develop a baseline for analyzing future intersection operational needs associated with the proposed development.

The level of service and volume-to-capacity (V/C) analyses presented in this report has been completed using the Synchro (Version 10) analysis software. Synchro is based on the Highway Capacity Manual 6th Edition (HCM 6) methodology for signalized intersections. The V/C ratios are calculated according to ODOT's Analysis Procedures Manual Version 2, Section 13.4.4. The analysis was performed for all study intersections.

The City of Newberg utilizes level of service D or better with a maximum recommended volume-to-capacity (v/c) ratio of 0.90 for signalized intersections, as stated in the 2015 Newberg Public Works Design Standards[2]. ODOT utilizes v/c mobility targets based on the functional classification and speeds of the crossing streets at the intersection. Based on the 1999 Oregon Highway Plan, a mobility target of 0.90 was utilized for OR 99W at Providence Drive, 0.80 for OR 99W at N Springbrook Street, and 0.85 for OR 99W at Brutscher Street[3]. Control delay is reported as the average delay for signalized intersections and that of the worst stop-controlled approach for unsignalized intersections. Table 2 summarizes the mobility targets and the existing traffic operations for the study intersections. The detailed analysis results have been included in Appendix C. According to the performance analysis, the only intersection to meet mobility targets under existing conditions is OR 99W at Providence Drive.

Table 2: Existing Intersection Performance Summary

Intersection	Peak Hour	Mobility Targets	2020 Existing Conditions		
			Control Delay (Sec)	Level of Service	V/C
N Springbrook Street at Haworth Avenue	AM	LOS D (City) v/c=0.90 (City)	88.3	**F**	**1.07**
	PM		93.8	**F**	**1.07**
OR 99W at N Springbrook Street	AM	LOS D (City) v/c=0.80 (ODOT)	61.9	**E**	**0.81**
	PM		52.4	D	**0.82**
OR 99W at Brutscher Street	AM	LOS D (City) v/c=0.85 (ODOT)	11.5	B	0.80
	PM		38.2	D	**0.89**
OR 99W at Vittoria Way	AM	LOS D (City) v/c=0.90 (City, ODOT)	36.0	**E**	0.44
	PM		95.8	**F**	0.47
OR 99W at Providence Drive	AM		12.6	B	0.82
	PM		11.0	B	0.55
Notes: **Bold** = does not meet mobility target					

[1] City of Newberg Transportation System Plan Update, Volume 2, Section TM4, Page 8, September 1, 2012.
[2] 2015 Newberg's Public Works Design & Construction Standards, Section 5.4.8 Offsite Traffic Evaluation, page 113.

[3] Based on the 1999 Oregon Highway Plan, Policy 1F, Table 6.

The Newberg TSP lists the intersection of N Springbrook Road at Haworth Avenue as exceeding mobility standards under existing conditions in 2016. The TSP analysis does not account for the installation of the Dundee-Newberg Bypass, the first phase of which was completed in 2018. Based on the 2020 existing conditions analysis, the intersection continues to operate at unacceptable levels of service during both peak hours.

Crash Data Analysis

The last five years of available complete crash data (January 2015 through December 2019) was obtained from the ODOT Crash Data System and was reviewed to identify traffic safety concerns at the study intersection. The crash rates presented in Table 3 are based on the number of crashes per million entering vehicles (MEV). Typically, an intersection is not considered unsafe unless its crash rate exceeds the threshold of 1.0 crashes per MEV. The crash rate was also compared to the statewide 90th percentile crash rates for the various intersection configurations. If the crash rate is higher than the statewide 90th percentile crash rate, the intersection is flagged for further analysis and needs to be reviewed in more depth[4]. Currently, the intersections of OR 99W at Brutscher Street is on the ODOT SPIS 10% list. The OR 99W at N Springbrook Road intersection is on the ODOT SPIS 5% list.

Table 3: Crash Data Summary

Intersection	Crash History (Years)	Number of Crashes	Crashes per year	Annual Traffic Entering (veh/yr)	Crash rate per M.E.V.	Statewide 90th Percentile Crash Rate[5]
Haworth Avenue at N Springbrook Road	5	23	4.6	5,602,750	**0.821**	0.293 (3ST)
OR 99W at N Springbrook Road		37	7.4	16,552,750	0.447	0.86 (4SG)
OR 99W at Brutscher Street		28	4.4	13,607,200	0.323	0.86 (4SG)
OR 99W at Vittoria Way		3	0.6	12,245,750	0.049	0.293 (3ST)
OR 99W at Providence Drive		10	2.0	12,716,600	0.157	0.509 (3SG)

Note: 4ST = four-leg stop control, 4SG = four-leg signalized, 3ST = three-leg stop control, 3SG = three-leg signalized
Bold = exceeds statewide 90th percentile crash rate.

Based on the crash data, only the intersection of Haworth Avenue at N Springbrook Road saw a crash rate that exceeds the statewide 90th percentile crash rate. This intersection is analyzed later in the report for traffic signal warrants. Signalizing the intersection would likely affect the nature of crashes occurring at the intersection. Rear-end collisions are more typical at signalized intersections. Signalizing the intersection may help in reducing the number of turning-movement collisions.

The intersection of OR 99W at N Springbrook Road showed a high percentage of rear-end collisions, the majority of which were caused by vehicles following too closely. Rear end crashes are typical of signalized intersections, state highways, and roadways with higher speeds, which apply to OR 99W.

[4] ODOT Analysis Procedure Manual, Section 4.2, Crash Data.
[5] Assessment of Statewide Intersection Safety Performance, FHWA-OR-RD-18, Portland State University and Oregon State University, June 2011, Table 4.1, p. 47.

Table 4 shows the crash types by year to determine any patterns. Detailed crash data is available in Appendix D.

Table 4: Crash Types

Crash Type	Intersection					
Haworth at N Springbrook Rd						
YEAR	**2015**	**2016**	**2017**	**2018**	**2019**	**Subtotal**
Entering at Angle		2(1)	1(0)	6(2)	3(1)	12(4)
Backing		1(0)				1(0)
Turning Movement		4(3)	4(3)	1(1)	1(0)	10(7)
Total	23(11)					
OR 99W at N Springbrook Road						
YEAR	**2015**	**2016**	**2017**	**2018**	**2019**	**Subtotal**
Entering at Angle		1(0)		2(1)		3(0)
Rear End	4(2)	3(0)	4(1)	6(6)	10(5)	27(14)
Backing	1(0)					1(0)
Turning Movement	2(0)		1(1)			3(1)
Pedestrian				1(1)	1(1)	2(2)
Sideswipe					1(0)	1(0)
Total	37(18)					
OR 99W at Brutscher Street						
YEAR	**2015**	**2016**	**2017**	**2018**	**2019**	**Subtotal**
Entering at Angle		1(1)	2(1)	3(0)	4(3)	10(5)
Fixed Object				1(1)		1(1)
Rear End	4(3)	1(1)			6(4)	11(8)
Turning Movement		1(0)		3(3)	2(0)	6(3)
Total	28(17)					
OR 99W at Vittoria Way						
YEAR	**2015**	**2016**	**2017**	**2018**	**2019**	**Subtotal**
Fixed Object				1(1)		1(1)
Turning Movement				1(1)		1(1)
Entering at Angle				1(1)		1(1)
Total	3(3)					
OR 99W at Providence Drive						
YEAR	**2015**	**2016**	**2017**	**2018**	**2019**	**Subtotal**
Rear End	4(0)	1(1)	1(0)		2(2)	8(3)
Entering at Angle					1(1)	1(1)
Turning Movement				1(1)		1(1)
Total	10(5)					

Note: X(X)= Total Crash (Injury crashes)

PLANNED IMPROVEMENTS

The Newberg TSP outlines several areas of improvements[6]. The main improvement that the document cites as resulting in safety and capacity improvements is Phase 2 of the Newberg-Dundee Bypass. Phase 1 completed construction and the Bypass was opened to the public in 2018, offering one lane in each direction. Phase 2 will offer two lanes in each direction, and is projected to finish the design acceptance phase in 2021.

[6] City of Newberg Transportation System Plan

IMPACTS ANALYSIS

A Future Conditions Analysis was conducted to determine the expected traffic operating conditions for the study intersection for the buildout year 2023[7]. Background growth and site-generated trips were added to existing 30th Highest Hour volumes to develop the following scenarios:

- 2023 No-Build – existing 30th highest hour volumes plus background growth
- 2023 Buildout – existing 30th highest hour volumes plus background growth and site-generated trips

Trip Generation and Trip Distribution

Trip rates presented in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 10th Edition*, were utilized to estimate the number of vehicle trips based on the number of proposed hotel rooms. The site's trip generation is based on ITE trip generation rates for weekdays during the peak hour of adjacent street traffic. Table 5 summarizes the estimated trip generation for the site.

As summarized in Table 5, the proposed hotel is expected to generate 37 AM peak hour trips, 47 PM peak hour trips, and 660 total daily trips. Trip distribution was based on turning movement percentages from the traffic count data collected. Trip distribution is shown in Figure 4.

Table 5: Trip Generation Summary

ITE Land Use Code	Rooms	Peak Hour Rate		AM Peak Hour			PM Peak Hour			Weekday Daily
		AM	PM	Total	In (59%)	Out (41%)	Total	In (51%)	Out (49%)	Total
310 - Hotel	79	0.47	0.60	37	22	15	47	24	23	660

Background Growth

A background growth rate was developed by comparing the 2014 and 2018 AADT records for ATR 36-004 in the ODOT Transportation Volume Tables for 2018. Based on this comparison, a growth rate of 1.3245 percent per year was determined for use in the analysis.

In-Process Trips

Per discussions with staff from the City of Newberg, no in-process developments are present within the study area. Therefore none were included in this analysis.[8]

[7] Proposed in the Methodology Memorandum, approved by ODOT and City of Newberg.
[8] Email from City of Newberg Engineer Kristen Svicarovich dated March 3, 2020.

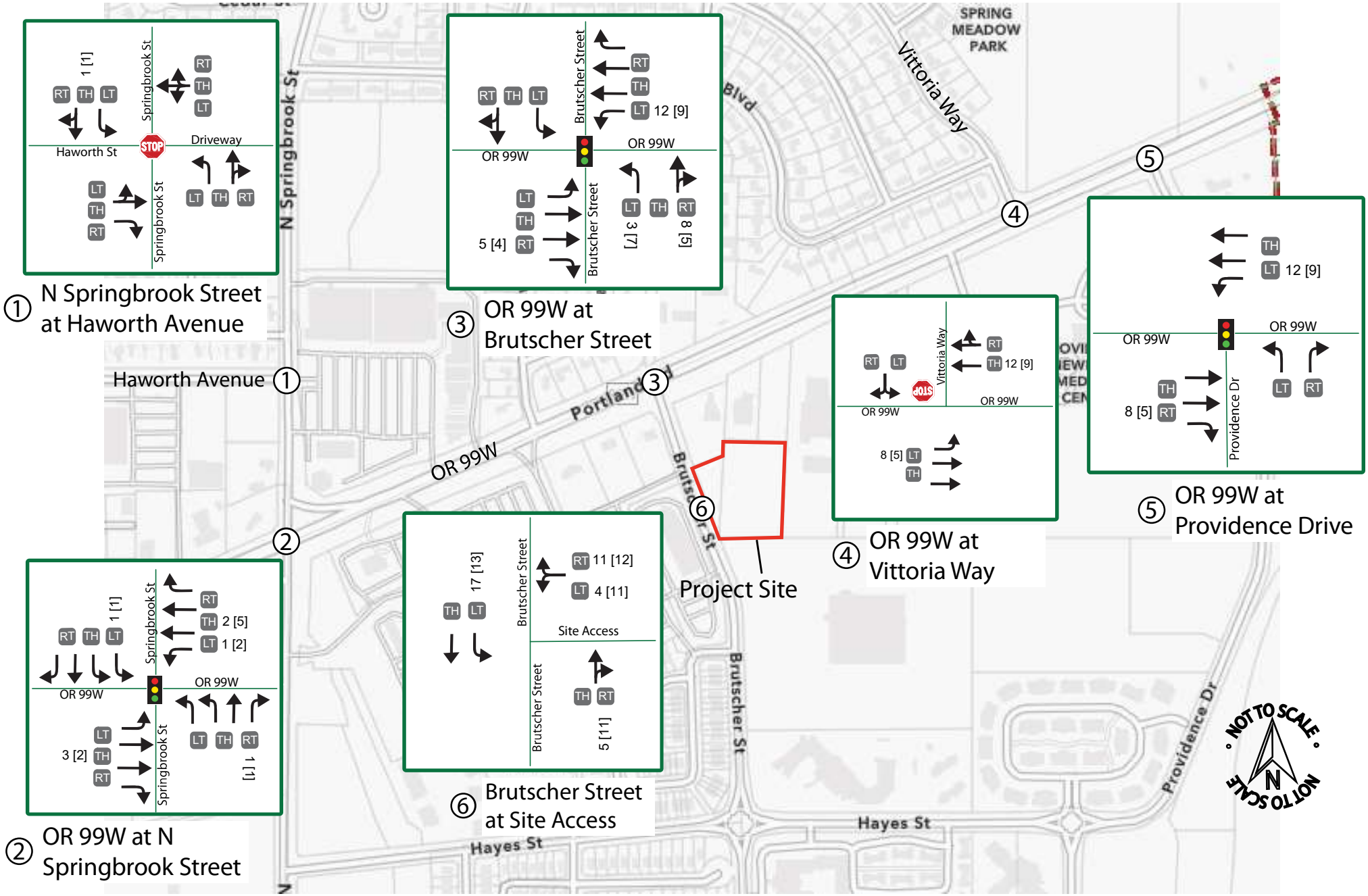


Figure 4: Trip Distribution

2023 No-Build Traffic Volumes

The background growth rates were applied to the seasonally adjusted existing volumes to develop the 2023 No-Build traffic volumes. This represents the projected traffic volumes along the transportation network without the proposed development. The 2023 No-Build traffic volumes are shown in Figure 5.

2023 Buildout Traffic Volumes

To develop the 2023 Buildout traffic volumes, project site generated trips were distributed and added to the 2023 No-Build volumes. Trips were distributed based on the existing traffic patterns in the study area. The 2023 Buildout traffic volumes are presented in Figure 6.

Future Intersection Performance

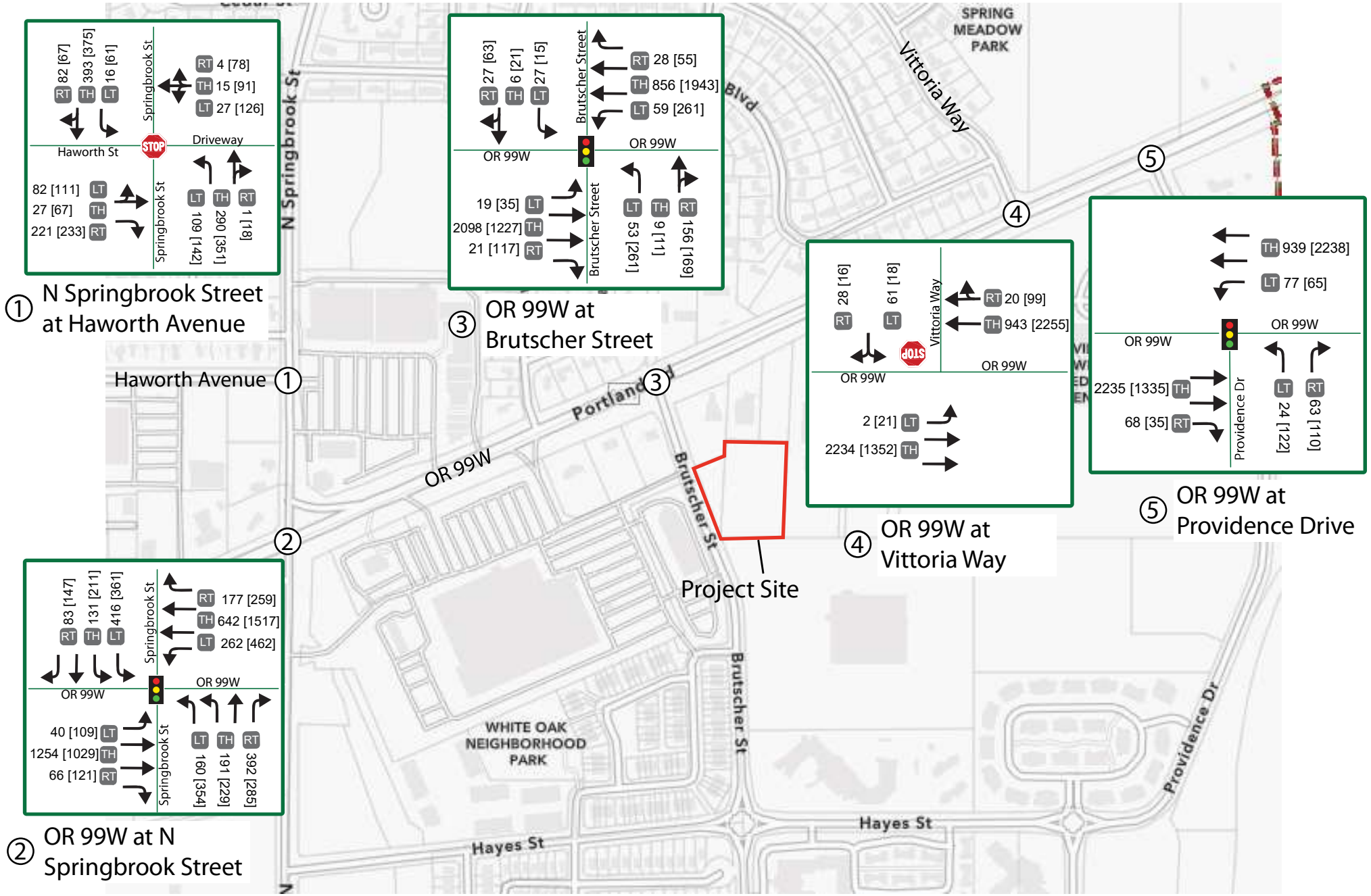
Table 6 summarizes the AM and PM peak hour analysis results for the 2023 Background and 2023 Buildout future scenarios. Intersection geometry was assumed to be the same as under the existing conditions for all study intersections. The detailed analysis results have been included in Appendix E.

Table 6: Future Intersection Performance Summary

Intersection	Peak Hour	Mobility Targets	2023 Background			2023 Buildout		
			Control Delay (Sec)	Level of Service	V/C	Control Delay (Sec)	Level of Service	V/C
N Springbrook Street at Haworth Avenue	AM	LOS D (City) v/c=0.90 (City)	54.1	**F**	**1.13**	54.5	**F**	**1.14**
	PM		59.4	**F**	**1.14**	59.6	**F**	**1.14**
OR 99W at N Springbrook Street	AM	LOS D (City) v/c=0.80 (ODOT)	70.5	**E**	**0.85**	71.1	**E**	**0.85**
	PM		57.4	E	**0.86**	57.9	E	**0.86**
OR 99W at Brutscher Street	AM	LOS D (City) v/c=0.85 (ODOT)	12.8	B	0.83	16.0	B	0.84
	PM		42.4	D	**0.92**	47.4	D	**0.93**
OR 99W at Vittoria Way	AM	LOS D (City) v/c=0.90 (City) v/c=0.90 (ODOT)	40.7	**E**	0.49	41.1	**E**	0.49
	PM		>100	F	0.56	>100	**F**	0.58
OR 99W at Providence Drive	AM		14.3	B	0.86	14.4	B	0.86
	PM		11.8	B	0.58	11.8	B	0.57
Brutscher Street at Site Access	AM	LOS D (City) v/c=0.90 (City)	-	-	-	10.0	B	0.02
	PM		-	-	-	15.1	C	0.07

Notes: **Bold** = does not meet mobility target

As shown in Table 6, intersections performing at acceptable levels under existing conditions were not shown to degrade to unacceptable performance levels during either the 2023 Background or 2023 Buildout conditions. The intersections that perform at acceptable levels are OR 99W at Providence Drive and Brutscher Street at the Site Access. No performance mitigations are recommended as part of this development.

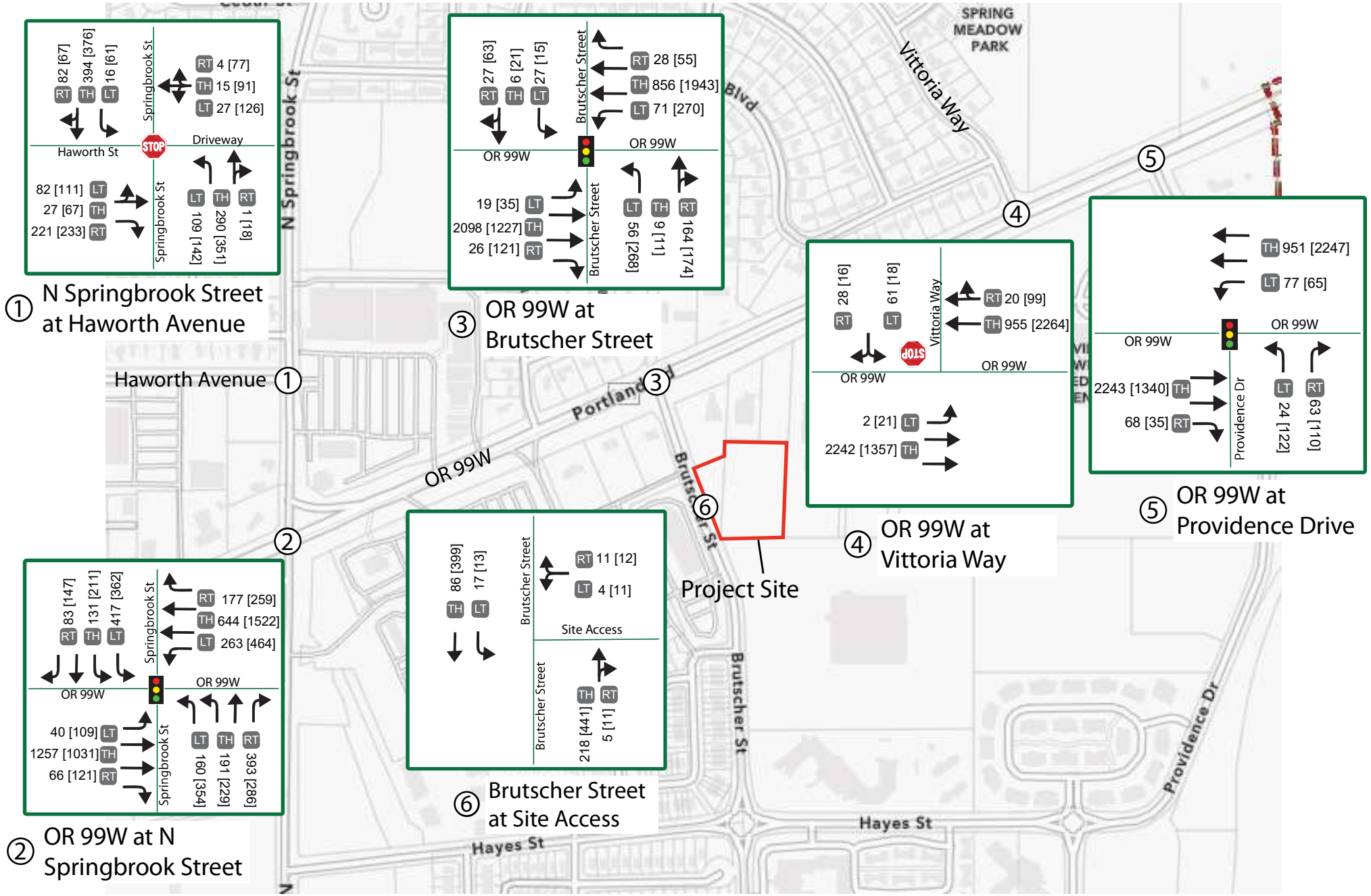


GLOBAL Transportation Engineering

Traffic Signal | Ⓧ = Study Intersection | LT TH RT = Left / Through / Right Turn

STOP Stop Sign | = Lane Configuration | AM [PM] = Peak Hour Site Trips

Figure 5: Traffic Volumes 2023 Background Conditions


① N Springbrook Street at Haworth Avenue
82 [67] RT
394 [376] TH
16 [61] LT
Springbrook St
RT 4 [77]
TH 15 [91]
LT 27 [126]
Haworth St
STOP
Driveway
82 [111] LT
27 [67] TH
221 [233] RT
Springbrook St
LT 109 [142]
TH 290 [351]
RT 1 [18]
N Springbrook St
Haworth Avenue ①
③ OR 99W at Brutscher Street
27 [63] RT
6 [21] TH
27 [15] LT
Brutscher Street
RT 28 [55]
TH 856 [1943]
LT 71 [270]
OR 99W
OR 99W
19 [35] LT
2098 [1227] TH
26 [121] RT
Brutscher Street
LT 56 [268]
TH 9 [11]
RT 164 [174]
Blvd
SPRING MEADOW PARK
Vittoria Way
④ OR 99W at Vittoria Way
28 [16] RT
61 [18] LT
STOP
Vittoria Way
RT 20 [99]
TH 955 [2264]
OR 99W
OR 99W
2 [21] LT
2242 [1357] TH
⑤ OR 99W at Providence Drive
TH 951 [2247]
LT 77 [65]
OR 99W
OR 99W
2243 [1340] TH
68 [35] RT
Providence Dr
LT 24 [122]
RT 63 [110]
Portland
OR 99W
Brutscher St
Project Site
⑥ Brutscher Street at Site Access
86 [399] TH
17 [13] LT
Brutscher Street
RT 11 [12]
LT 4 [11]
Site Access
Brutscher Street
TH 218 [441]
RT 5 [11]
Brutscher St
Providence Dr
Hayes St
Hayes St
② OR 99W at N Springbrook Street
83 [147] RT
131 [211] TH
417 [362] LT
Springbrook St
RT 177 [259]
TH 644 [1522]
LT 263 [464]
OR 99W
OR 99W
40 [109] LT
1257 [1031] TH
66 [121] RT
Springbrook St
LT 160 [354]
TH 191 [229]
RT 393 [286]
GLOBAL Transportation Engineering
Traffic Signal
Stop Sign
X = Study Intersection
= Lane Configuration
LT TH RT = Left / Through / Right Turn
AM [PM] = Peak Hour Site Trips
Figure 6: Traffic Volumes
2023 Buildout Conditions

QUEUEING ANALYSIS

A peak hour queueing analysis was conducted for the study intersections to determine vehicles storage needs.

Intersection Queueing Analysis

A queueing analysis was completed for the 2023 Background and Buildout scenarios based on the Synchro 9 operations analysis and SimTraffic. Queueing was rounded up to the nearest 25-foot increment to represent a standard vehicle length. Tables 7 through 10 summarize the queueing analysis and detailed queueing reports can be found in Appendix F.

According to the queueing analysis, the average queue is accommodated for almost all turn pockets during both future conditions. There are no instances where the addition of site trips causes queueing to exceed available storage according to the analysis. Any queueing issues should therefore be considered preexisting conditions and should not be considered for mitigations tied to this development.

Table 7: N Springbrook Road at Haworth Avenue Queueing Analysis Summary

AM Peak Hour			
Movement	**EB**	**NB**	**SB**
Directions Served	**R**	**L**	**L**
Average – 2023 Background	175	50	50
Average – 2023 Buildout	200	50	50
95th Percentile – 2023 Background	350	125	150
95th Percentile – 2023 Buildout	400	100	150
Storage Bay Distance	-	100	100
PM Peak Hour			
Movement	**EB**	**NB**	**SB**
Directions Served	**R**	**L**	**L**
Average – 2023 Background	150	100	100
Average – 2023 Buildout	275	75	100
95th Percentile – 2023 Background	350	250	200
95th Percentile – 2023 Buildout	625	150	200
Storage Bay Distance	-	100	100
Notes: XX=Queue exceeds available storage/link distance			

Table 8: N Springbrook Road at OR 99W Queueing Analysis Summary

AM Peak Hour											
Movement	**EB**	**EB**	**WB**	**WB**	**WB**	**NB**	**NB**	**NB**	**SB**	**SB**	**SB**
Directions Served	**L**	**R**	**L**	**L**	**R**	**L**	**L**	**R**	**L**	**L**	**R**
Average – 2023 Background	125	150	100	125	25	50	100	250	125	150	25
Average – 2023 Buildout	125	150	125	125	0	50	100	250	125	150	25
95th Percentile – 2023 Background	350	450	175	200	50	125	175	325	150	150	100
95th Percentile – 2023 Buildout	350	450	200	200	0	125	175	325	150	150	75
Storage Bay Distance	350	350	450	450	325	-	-	250	115	115	115
PM Peak Hour											
Movement	**EB**	**EB**	**WB**	**WB**	**WB**	**NB**	**NB**	**NB**	**SB**	**SB**	**SB**
Directions Served	**L**	**R**	**L**	**L**	**R**	**L**	**L**	**R**	**L**	**L**	**R**
Average – 2023 Background	150	100	200	350	225	150	200	200	125	150	75
Average – 2023 Buildout	125	100	200	275	175	175	200	200	125	150	75
95th Percentile – 2023 Background	325	375	350	575	500	250	300	325	150	150	150
95th Percentile – 2023 Buildout	300	350	300	475	450	250	300	325	150	150	150
Storage Bay Distance	350	350	450	450	325	-	-	250	115	115	115
Notes: XX=Queue exceeds available storage/link distance											

Table 9: Brutscher Street at OR 99W Queueing Analysis Summary

AM Peak Hour						
Movement	**EB**	**EB**	**WB**	**WB**	**NB**	**SB**
Directions Served	**L**	**R**	**L**	**R**	**L**	**L**
Average – 2023 Background	25	25	75	25	75	50
Average – 2023 Buildout	50	25	75	25	75	50
95th Percent – 2023 Background	100	100	125	50	150	75
95th Percent – 2023 Buildout	125	125	150	50	125	100
Storage Bay Distance	230	175	350	125	230	-
PM Peak Hour						
Movement	**EB**	**EB**	**WB**	**WB**	**NB**	**SB**
Directions Served	**L**	**R**	**L**	**R**	**L**	**L**
Average – 2023 Background	75	100	350	50	250	25
Average – 2023 Buildout	50	100	375	25	250	25
95th Percent – 2023 Background	175	250	450	125	275	50
95th Percent – 2023 Buildout	125	250	400	125	275	50
Storage Bay Distance	230	175	350	125	230	-
Notes: XX=Queue exceeds available storage/link distance						

Table 10: OR 99W at Providence Drive Queueing Analysis Summary

AM Peak Hour				
Movement	**EB**	**WB**	**NB**	**NB**
Directions Served	**R**	**L**	**L**	**R**
Average – 2023 Background	25	75	25	75
Average – 2023 Buildout	25	75	25	75
95th Percentile – 2023 Background	100	125	75	125
95th Percentile – 2023 Buildout	100	125	75	125
Storage Bay Distance	100	400	175	-
PM Peak Hour				
Movement	**EB**	**WB**	**NB**	**NB**
Directions Served	**R**	**L**	**L**	**R**
Average – 2023 Background	25	150	125	100
Average – 2023 Buildout	25	200	125	100
95th Percentile – 2023 Background	75	400	200	200
95th Percentile – 2023 Buildout	75	500	200	200
Storage Bay Distance	100	400	175	-
Notes: XX=Queue exceeds available storage/link distance				

TRAFFIC SIGNAL WARRANT ANALYSIS

A traffic signal warrants analysis was conducted for the only unsignalized intersection of Haworth Avenue at N Springbrook Road based on the 2009 Manual for Uniform Traffic Control Devices (MUTCD) Section 4C.04 Warrant 3, Peak Hour. N Springbrook Road is the major street and Haworth Avenue is the minor street in this analysis. Under 2020 existing conditions, N Springbrook Road showed 905 vehicles during the PM peak hour for both approaches and Haworth Avenue showed 317 for the higher volume approach. Figure 7 shows the MUTCD traffic signal warrant minimums. Under existing conditions, a traffic signal is warranted at the intersection.

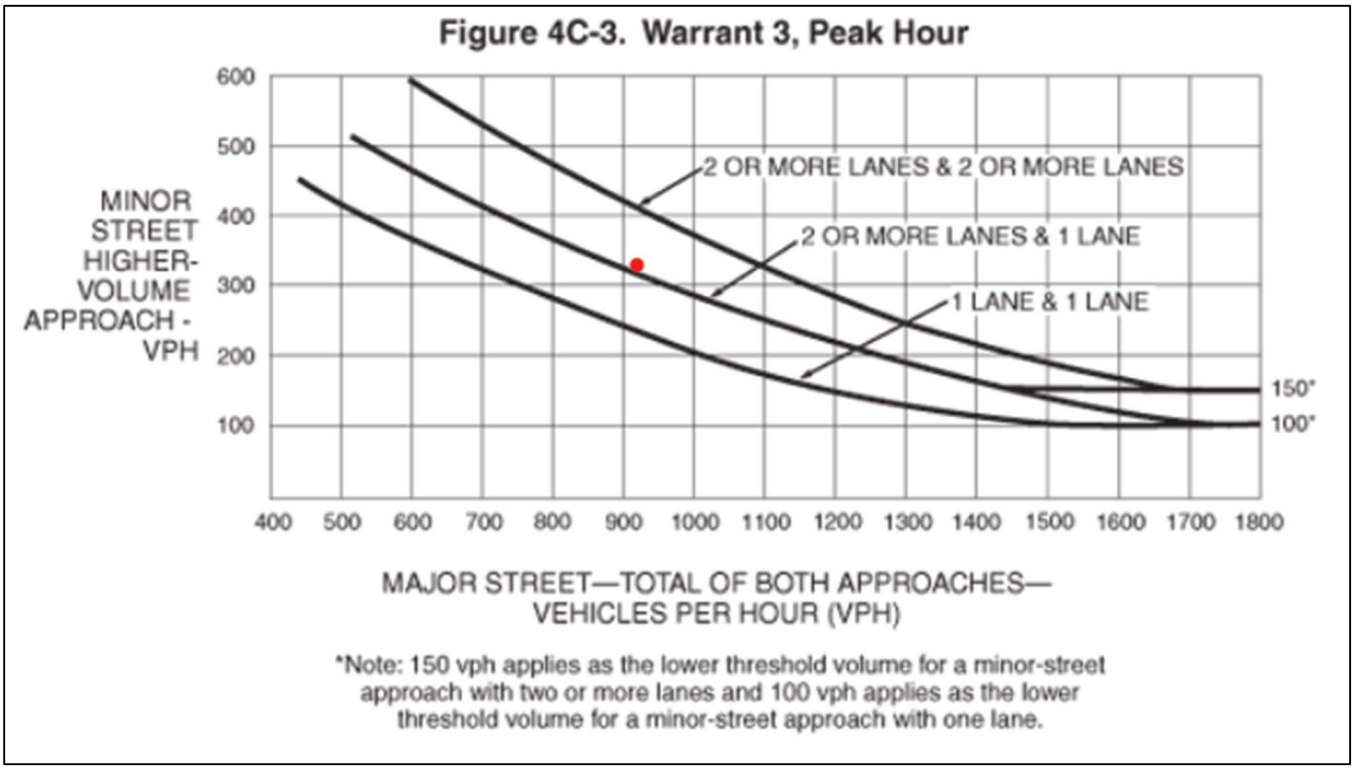


Figure 7: MUTCD Signal Warrants

SIGHT DISTANCE EVALUATION

Intersection and stopping sight distances were evaluated for the proposed site accesses along Walnut Street. The sight distance evaluation follows the guidance provided in the American Association of State Highway and Transportation Official's (AASHTO) Geometric Design of Highways and Streets, 2011. For a 25-mph roadway, AASHTO requires 155 feet of stopping sight distance and 280 feet of intersection sight distance. AASHTO also requires an assumed object height of 4.5 feet, a driver's eye height of 3.5 feet, and a driver's setback of 15 feet from the traveled way. Intersection sight distance was compared to the AASHTO design intersection sight distance for the following cases:

- Case B1, Left Turn from the Minor Road[9]
- Case B2, Right Turn from the Minor Road[10]

Table 11 shows a summary of the sight distance evaluation. Sight distance was found to be clear in both directions for over 280 feet at the proposed site access. As summarized in Table 6, intersection sight distance standards are met for all scenarios. No mitigations are recommended.

[9] AASHTO, Case B1 – Intersections with stop control on the minor road (AASHTO, Case B1, Table 9-6).
[10] AASHTO, Case B2 – Intersections with stop control on the minor road (AASHTO, Case B2, Table 9-8).

Table 11: Sight Distance Evaluation

Sight Distance Evaluated	Estimated Available Sightline (ft)	Sight Distance Standards (ft)	Meets Standard?
Proposed site access			
Case B1: Left-turn	To the north ≈ 450	280	Yes
	To the south ≈ 650	280	Yes
Case B2: Right-turn	≈ 650	240	Yes
SSD – NB on Brutscher Street	≈ 650	155	Yes
SSD – SB on Brutscher Street	≈ 450	155	Yes

RESULTS AND RECOMMENDATIONS

This memorandum summarizes the traffic impact analysis associated with the proposed development located at tax lots 1900 and 2002 in Newberg, Oregon. The purpose of this analysis is to identify potential impacts to the transportation network for the year of the opening of the site, based on the standards established by the City of Newberg and the Oregon Department of Transportation (ODOT).

A five-year crash analysis indicates no crash patterns or safety concerns at four of the five study intersections. The study intersection that saw a crash pattern and surpassed the threshold for average statewide crashes for its intersection type was Haworth Avenue at N Springbrook Road. No crash patterns were identified, but it should be noted that signalizing the intersection in accordance with the traffic signal warrants analysis would likely change the nature of crashes at the intersection. The intersection of OR 99W at N Springbrook Road saw a high number of rear-end collisions along OR 99W caused by vehicles following too closely. This is typical of signalized intersections with relatively higher speed limits, which is true of OR 99W at this location. No mitigations are recommended with regards to the crash analysis.

An intersection performance analysis was conducted to document the existing and future operations for the study intersections. According to the performance analysis, the only intersection to meet mobility targets under existing conditions is OR 99W at Providence Drive. The addition of site trips does not significantly degrade performance of any study intersections. Since standards are not met under existing conditions, performance issues should be considered preexisting conditions and specific mitigations are not identified in association with this development.

A queueing analysis was also conducted the for the study intersections of Haworth Avenue at N Springbrook Road, OR 99W at N Springbrook Road, OR 99W at Brutscher Street, and OR 99W at Providence Drive. According to the queueing analysis for future conditions, there are several left- and right-turn queues that exceed available turn pocket lengths at all study intersections under background conditions. The addition of site trips does not significantly impact these conditions.

A traffic signal warrants analysis was conducted for the intersection of N Springbrook Street at Haworth Avenue. Under existing conditions, a traffic signal is warranted at the intersection.

Sight distance was evaluated for the proposed roadway access onto Brutscher Street. Sight lines were found to be clear to the north for 450 feet to the intersection at OR 99W and to the south for over 650 feet. No mitigations are recommended with regards to sight distance.

Appendix

Appendix A: Traffic Count Data

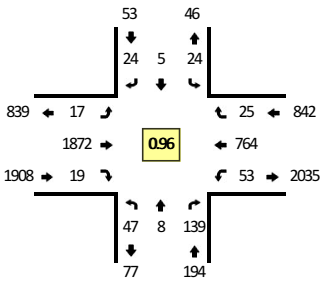
Type of peak hour being reported: Intersection Peak

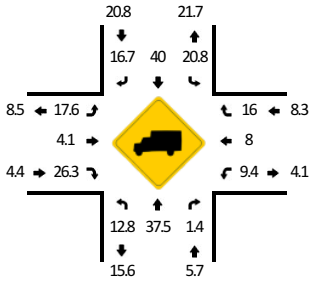
Method for determining peak hour: Total Entering Volume

LOCATION: Brutscher St -- OR-99W
CITY/STATE: Newberg, OR

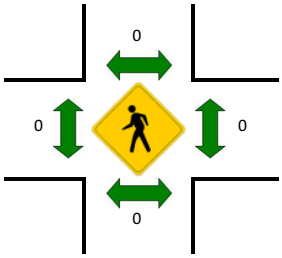
QC JOB #: 15205401
DATE: Thu, Mar 5 2020

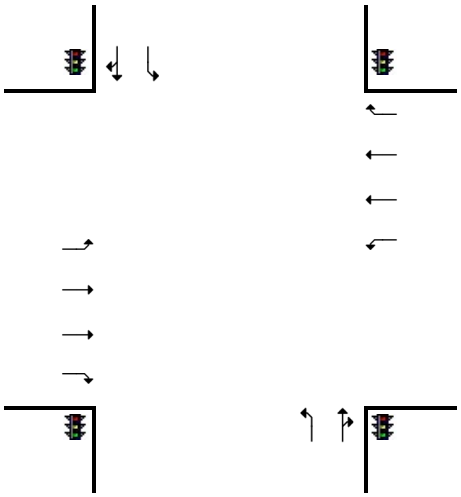
Peak-Hour: 6:35 AM -- 7:35 AM
Peak 15-Min: 7:20 AM -- 7:35 AM

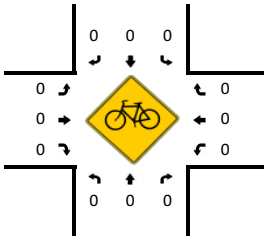


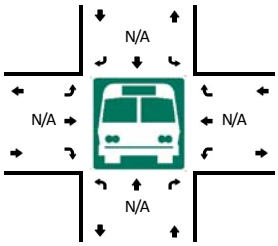


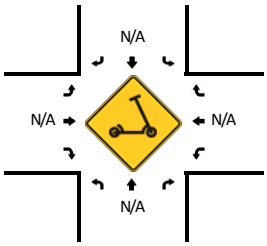
Quality Counts
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	Brutscher St (Northbound)				Brutscher St (Southbound)				OR-99W (Eastbound)				OR-99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	1	0	2	0	2	0	0	0	1	135	6	0	0	19	3	0	169	
6:05 AM	3	1	10	0	3	0	0	0	0	109	1	0	2	36	0	0	165	
6:10 AM	0	0	3	0	1	0	0	0	1	145	1	0	2	29	0	0	182	
6:15 AM	2	1	4	0	1	0	1	0	2	152	2	0	2	29	2	0	198	
6:20 AM	1	0	5	0	0	0	2	0	0	165	2	1	3	42	0	0	221	
6:25 AM	3	0	12	0	1	0	0	0	2	187	0	0	4	40	0	0	249	
6:30 AM	2	1	5	0	1	0	0	0	3	187	2	0	4	27	3	0	235	
6:35 AM	1	1	10	0	4	0	3	0	0	201	0	0	2	38	1	0	261	
6:40 AM	0	0	18	0	2	0	1	0	0	189	0	0	6	50	0	0	266	
6:45 AM	1	1	13	0	0	0	0	0	1	162	1	1	2	45	1	0	228	
6:50 AM	4	1	10	0	2	0	1	0	1	150	3	0	3	58	3	0	236	
6:55 AM	0	1	3	0	1	0	3	0	3	147	2	0	4	55	2	0	221	2631
7:00 AM	5	2	16	0	3	1	2	0	1	151	0	1	3	67	3	0	255	2717
7:05 AM	1	0	10	0	0	0	1	0	4	153	2	0	4	68	3	0	246	2798
7:10 AM	3	1	12	0	5	1	4	0	1	148	3	1	3	74	4	0	260	2876
7:15 AM	3	0	10	0	4	2	1	0	1	143	3	0	6	69	3	0	245	2923
7:20 AM	13	1	11	0	1	0	4	0	0	131	0	0	5	81	4	0	251	2953
7:25 AM	8	0	13	0	0	1	1	0	1	160	2	0	4	80	1	0	271	2975
7:30 AM	8	0	13	0	2	0	3	0	0	137	3	1	11	79	0	0	257	2997
7:35 AM	4	2	9	0	0	0	0	0	2	140	3	0	7	78	0	0	245	2981
7:40 AM	6	1	10	0	2	1	1	0	1	136	4	0	7	77	3	0	249	2964
7:45 AM	0	0	4	0	0	0	1	0	0	128	9	0	7	74	4	0	227	2963
7:50 AM	9	0	7	0	0	1	2	0	0	96	2	0	9	91	3	0	220	2947
7:55 AM	6	1	4	0	0	0	4	0	3	101	5	0	7	69	5	0	205	2931
8:00 AM	8	0	8	0	2	3	3	0	3	100	2	0	8	89	3	0	229	2905
8:05 AM	9	0	6	0	3	1	2	0	3	93	4	0	8	69	4	0	202	2861
8:10 AM	9	0	11	0	1	1	2	0	2	118	6	0	7	60	0	0	217	2818
8:15 AM	10	1	9	0	4	0	4	0	2	113	5	2	4	69	2	0	225	2798
8:20 AM	6	2	8	0	0	1	0	0	2	115	5	1	2	62	1	0	205	2752
8:25 AM	5	0	3	0	3	1	3	0	1	112	7	1	11	72	2	0	221	2702
8:30 AM	2	1	8	0	2	2	1	0	0	102	6	1	7	72	1	0	205	2650
8:35 AM	6	0	4	0	1	0	2	0	5	122	3	1	6	54	0	0	204	2609
8:40 AM	11	0	10	0	1	0	2	0	1	102	4	0	2	55	1	0	189	2549
8:45 AM	10	0	9	0	0	0	0	0	4	87	7	1	7	85	5	0	215	2537
8:50 AM	3	1	7	0	1	0	5	0	3	109	7	0	3	64	2	0	205	2522
8:55 AM	10	1	5	0	2	1	4	0	1	99	7	0	8	65	2	0	205	2522

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	116	4	148	0	12	4	32	0	4	1712	20	4	80	960	20	0	3116
Heavy Trucks	8	0	0		4	4	12		0	108	0		8	72	8		224
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 3/16/2020 3:10 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

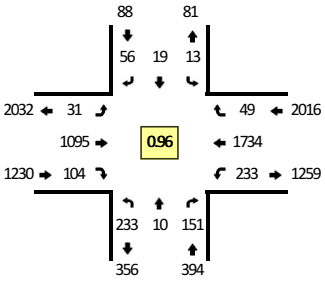
Type of peak hour being reported: Intersection Peak

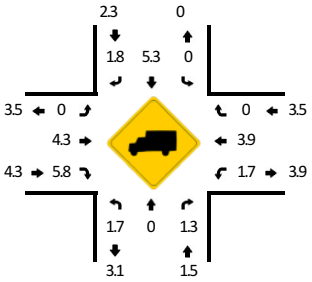
Method for determining peak hour: Total Entering Volume

LOCATION: Brutscher St -- OR-99W
CITY/STATE: Newberg, OR

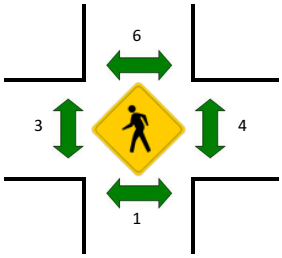
QC JOB #: 15205402
DATE: Thu, Mar 5 2020

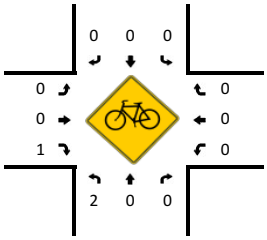
Peak-Hour: 4:05 PM -- 5:05 PM
Peak 15-Min: 4:50 PM -- 5:05 PM

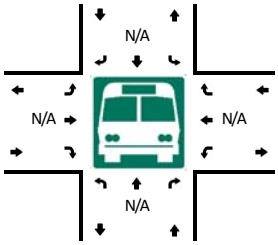


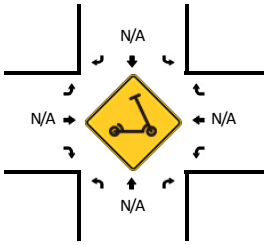


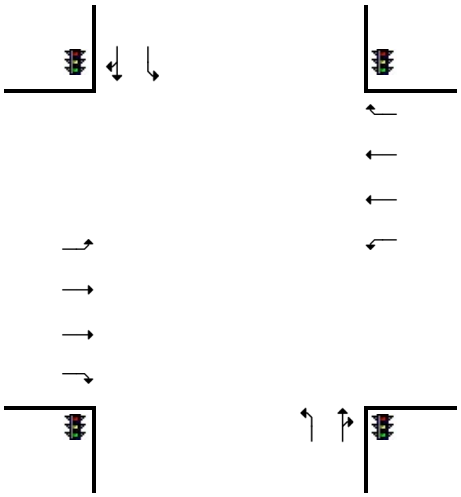
Quality Counts
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	Brutscher St (Northbound)				Brutscher St (Southbound)				OR-99W (Eastbound)				OR-99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	17	0	14	0	0	1	3	0	2	78	6	1	10	81	0	0	213	
3:05 PM	20	4	10	0	1	0	1	0	4	76	8	0	11	103	2	0	240	
3:10 PM	18	0	9	0	4	2	5	0	3	88	5	0	15	114	3	0	266	
3:15 PM	14	0	9	0	2	1	3	0	2	87	13	1	21	111	4	0	268	
3:20 PM	19	1	8	0	1	0	3	0	3	74	4	0	20	131	0	0	264	
3:25 PM	18	2	6	0	1	0	5	0	3	70	5	3	18	109	3	0	243	
3:30 PM	12	1	12	0	2	0	4	0	0	63	5	2	19	125	2	0	247	
3:35 PM	22	3	6	0	2	1	7	0	0	75	10	0	21	123	3	0	273	
3:40 PM	23	1	7	0	1	1	0	0	3	76	6	0	18	138	7	0	281	
3:45 PM	15	2	7	0	4	3	4	0	2	86	9	1	19	138	6	0	296	
3:50 PM	18	1	11	0	0	2	10	0	3	87	4	0	18	160	4	0	318	
3:55 PM	15	0	13	0	2	0	2	0	2	77	5	3	19	147	3	0	288	3197
4:00 PM	15	1	6	0	1	1	4	0	6	65	7	0	27	162	6	0	301	3285
4:05 PM	20	1	8	0	0	1	9	0	0	99	13	1	15	139	5	0	311	3356
4:10 PM	15	2	12	0	2	1	5	0	1	104	5	1	23	150	4	0	325	3415
4:15 PM	25	1	17	0	1	2	5	0	2	97	11	0	19	132	3	0	315	3462
4:20 PM	23	1	9	0	2	2	4	0	5	80	11	0	15	109	1	0	262	3460
4:25 PM	13	1	14	0	0	2	1	0	4	91	12	0	27	153	4	0	322	3539
4:30 PM	23	0	15	0	1	4	2	0	2	99	7	0	13	126	4	0	296	3588
4:35 PM	17	1	11	0	1	0	7	0	2	84	6	0	23	154	5	0	311	3626
4:40 PM	18	0	11	0	0	3	4	0	1	90	9	0	20	154	5	0	315	3660
4:45 PM	16	0	14	0	2	1	6	0	2	79	12	1	14	153	5	0	305	3669
4:50 PM	25	1	20	0	2	0	6	0	0	82	7	2	25	144	7	0	321	3672
4:55 PM	19	0	9	0	2	2	3	0	1	89	5	4	26	153	5	0	318	3702
5:00 PM	19	2	11	0	0	1	4	0	2	101	6	0	13	167	1	0	327	3728
5:05 PM	15	0	11	0	1	2	5	0	2	67	12	0	22	138	4	0	279	3696
5:10 PM	20	2	9	0	1	1	5	0	0	89	2	0	20	155	2	0	306	3677
5:15 PM	17	1	10	0	0	1	7	0	1	94	9	0	22	124	5	0	291	3653
5:20 PM	19	0	7	0	1	2	5	0	2	82	5	1	18	135	5	0	282	3673
5:25 PM	20	0	6	0	1	3	4	0	0	95	5	3	17	106	5	0	265	3616
5:30 PM	15	2	8	0	0	1	3	0	0	95	4	1	20	155	6	0	310	3630
5:35 PM	27	0	5	0	0	1	5	0	2	94	2	0	17	117	1	0	271	3590
5:40 PM	14	0	6	0	0	1	2	0	2	76	6	1	15	147	3	0	273	3548
5:45 PM	8	1	14	0	2	0	4	0	3	98	3	0	21	151	5	0	310	3553
5:50 PM	16	3	12	0	2	2	7	0	2	77	8	0	17	110	5	0	261	3493
5:55 PM	26	0	13	0	2	5	1	0	1	63	6	1	20	120	3	0	261	3436

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	252	12	160	0	16	12	52	0	12	1088	72	24	256	1856	52	0	3864
Heavy Trucks	8	0	0		0	4	0		0	32	4		0	48	0		96
Buses																	
Pedestrians		0				8				12				0			20
Bicycles	4	0	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 3/16/2020 3:10 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

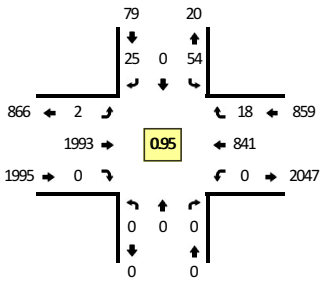
Type of peak hour being reported: Intersection Peak

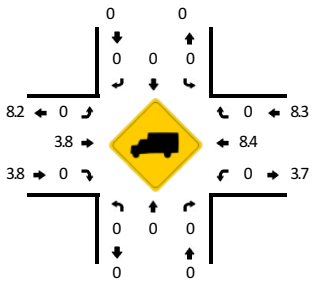
Method for determining peak hour: Total Entering Volume

LOCATION: Vittoria Way -- OR-99W
CITY/STATE: Newberg, OR

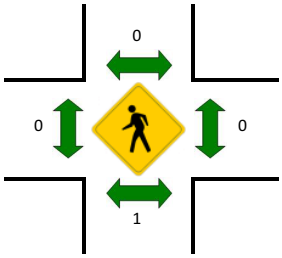
QC JOB #: 15205403
DATE: Thu, Mar 5 2020

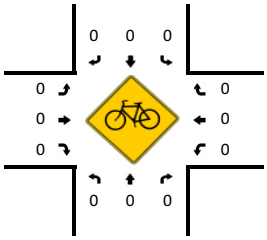
Peak-Hour: 6:35 AM -- 7:35 AM
Peak 15-Min: 6:35 AM -- 6:50 AM

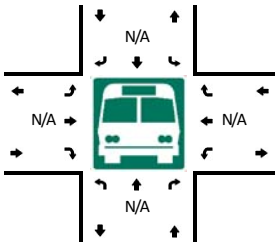


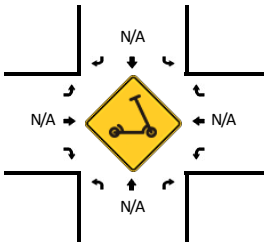


Quality Counts
DATA THAT DRIVES COMMUNITIES









5-Min Count Period Beginning At	Vittoria Way (Northbound)				Vittoria Way (Southbound)				OR-99W (Eastbound)				OR-99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	4	0	1	0	0	122	0	0	0	22	0	0	149	
6:05 AM	0	0	0	0	1	0	1	0	0	131	0	0	0	39	0	0	172	
6:10 AM	0	0	0	0	4	0	1	0	0	130	0	0	0	34	0	0	169	
6:15 AM	0	0	0	0	5	0	2	0	0	169	0	0	0	30	0	0	206	
6:20 AM	0	0	0	0	7	0	3	0	0	160	0	0	0	42	0	0	212	
6:25 AM	0	0	0	0	3	0	0	0	0	202	0	0	0	41	0	0	246	
6:30 AM	0	0	0	0	5	0	1	0	0	180	0	0	0	35	0	0	221	
6:35 AM	0	0	0	0	5	0	0	0	0	228	0	0	0	44	0	0	277	
6:40 AM	0	0	0	0	6	0	1	0	0	198	0	0	0	54	0	0	259	
6:45 AM	0	0	0	0	4	0	1	0	0	175	0	0	0	57	2	0	239	
6:50 AM	0	0	0	0	6	0	4	0	1	144	0	0	0	61	3	0	219	
6:55 AM	0	0	0	0	6	0	2	0	0	161	0	0	0	57	2	0	228	2597
7:00 AM	0	0	0	0	5	0	4	0	0	154	0	0	0	70	0	0	233	2681
7:05 AM	0	0	0	0	1	0	3	0	0	169	0	0	0	77	2	0	252	2761
7:10 AM	0	0	0	0	6	0	2	0	0	153	0	0	0	80	1	0	242	2834
7:15 AM	0	0	0	0	5	0	1	0	1	162	0	0	0	80	2	0	251	2879
7:20 AM	0	0	0	0	4	0	2	0	0	127	0	0	0	90	2	0	225	2892
7:25 AM	0	0	0	0	2	0	3	0	0	173	0	0	0	83	2	0	263	2909
7:30 AM	0	0	0	0	4	0	2	0	0	149	0	0	0	88	2	0	245	2933
7:35 AM	0	0	0	0	3	0	0	0	0	148	0	0	0	91	2	0	244	2900
7:40 AM	0	0	0	0	7	0	3	0	0	128	0	0	0	78	1	0	217	2858
7:45 AM	0	0	0	0	3	0	1	0	0	135	0	0	0	87	3	0	229	2848
7:50 AM	0	0	0	0	1	0	2	0	0	95	0	0	0	106	1	0	205	2834
7:55 AM	0	0	0	0	4	0	3	0	0	99	0	0	0	91	2	0	199	2805
8:00 AM	0	0	0	0	1	0	1	0	2	108	0	0	0	94	2	0	208	2780
8:05 AM	0	0	0	0	1	0	3	0	0	89	0	1	0	66	1	0	161	2689
8:10 AM	0	0	0	0	2	0	1	0	0	130	0	0	0	69	0	0	202	2649
8:15 AM	0	0	0	0	3	0	2	0	0	110	0	0	0	70	1	0	186	2584
8:20 AM	0	0	0	0	2	0	0	0	0	131	0	0	0	79	1	0	213	2572
8:25 AM	0	0	0	0	4	0	3	0	0	106	0	0	0	74	1	0	188	2497
8:30 AM	0	0	0	0	3	0	1	0	1	119	0	0	0	82	1	0	207	2459
8:35 AM	0	0	0	0	1	0	1	0	0	112	0	0	0	53	0	0	167	2382
8:40 AM	0	0	0	0	4	0	0	0	0	119	0	0	0	69	1	0	193	2358
8:45 AM	0	0	0	0	2	0	1	0	0	88	0	0	0	88	0	0	179	2308
8:50 AM	0	0	0	0	2	0	2	0	1	110	0	0	0	87	0	0	202	2305
8:55 AM	0	0	0	0	3	0	0	0	1	87	0	0	0	58	0	0	149	2255

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	60	0	8	0	0	2404	0	0	0	620	8	0	3100
Heavy Trucks	0	0	0		0	0	0		0	116	0		0	60	0		176
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 3/16/2020 3:10 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

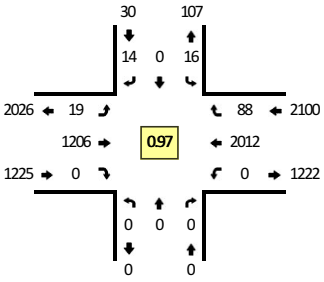
Type of peak hour being reported: Intersection Peak

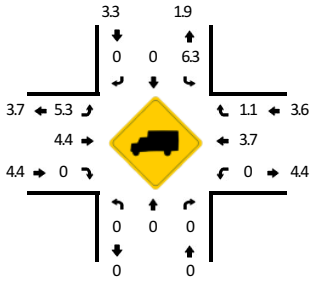
Method for determining peak hour: Total Entering Volume

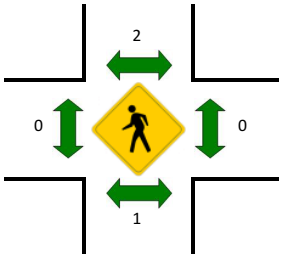
LOCATION: Vittoria Way -- OR-99W
CITY/STATE: Newberg, OR

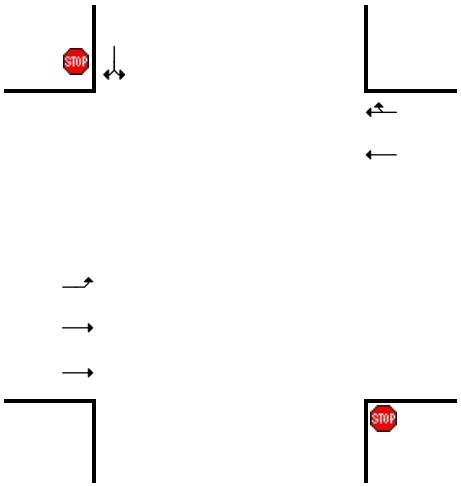
QC JOB #: 15205404
DATE: Thu, Mar 5 2020

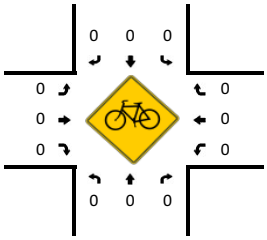
Peak-Hour: 4:05 PM -- 5:05 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

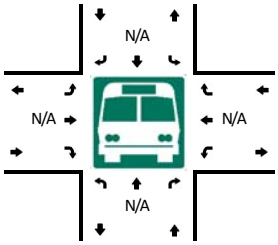


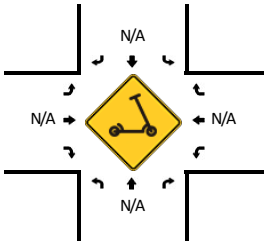












5-Min Count Period Beginning At	Vittoria Way (Northbound)				Vittoria Way (Southbound)				OR-99W (Eastbound)				OR-99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	0	0	1	0	2	0	2	87	0	0	0	92	5	0	189	
3:05 PM	0	0	0	0	5	0	1	0	1	79	0	0	0	123	4	0	213	
3:10 PM	0	0	0	0	1	0	1	0	0	90	0	0	0	143	3	0	238	
3:15 PM	0	0	0	0	2	0	1	0	0	98	0	0	0	128	4	0	233	
3:20 PM	0	0	0	0	2	0	0	0	1	81	0	0	0	153	5	0	242	
3:25 PM	0	0	0	0	1	0	3	0	3	79	0	0	0	129	6	0	221	
3:30 PM	0	0	0	0	2	0	3	0	0	76	0	1	0	127	4	0	213	
3:35 PM	0	0	0	0	6	0	2	0	1	76	0	0	0	149	5	0	239	
3:40 PM	0	0	0	0	4	0	5	0	2	77	0	0	0	167	5	0	260	
3:45 PM	0	0	0	0	4	0	4	0	0	84	0	0	0	167	2	0	261	
3:50 PM	0	0	0	0	3	0	4	0	1	84	0	0	0	192	7	0	291	
3:55 PM	0	0	0	0	0	0	2	0	2	102	0	0	0	173	11	0	290	2890
4:00 PM	0	0	0	0	2	0	1	0	1	79	0	1	0	161	8	0	253	2954
4:05 PM	0	0	0	0	1	0	1	0	0	105	0	0	0	153	6	0	266	3007
4:10 PM	0	0	0	0	1	0	0	0	1	112	0	0	0	183	5	0	302	3071
4:15 PM	0	0	0	0	1	0	1	0	4	110	0	0	0	147	7	0	270	3108
4:20 PM	0	0	0	0	2	0	3	0	2	80	0	0	0	151	13	0	251	3117
4:25 PM	0	0	0	0	4	0	3	0	0	99	0	0	0	159	6	0	271	3167
4:30 PM	0	0	0	0	2	0	3	0	1	115	0	0	0	148	10	0	279	3233
4:35 PM	0	0	0	0	1	0	0	0	3	100	0	0	0	176	12	0	292	3286
4:40 PM	0	0	0	0	2	0	0	0	1	107	0	0	0	176	6	0	292	3318
4:45 PM	0	0	0	0	0	0	1	0	1	87	0	0	0	183	5	0	277	3334
4:50 PM	0	0	0	0	0	0	1	0	1	100	0	0	0	177	8	0	287	3330
4:55 PM	0	0	0	0	0	0	1	0	2	84	0	0	0	190	6	0	283	3323
5:00 PM	0	0	0	0	2	0	0	0	3	107	0	0	0	169	4	0	285	3355
5:05 PM	0	0	0	0	2	0	3	0	4	84	0	0	0	152	9	0	254	3343
5:10 PM	0	0	0	0	0	0	2	0	0	107	0	0	0	172	11	0	292	3333
5:15 PM	0	0	0	0	1	0	4	0	3	106	0	0	0	140	11	0	265	3328
5:20 PM	0	0	0	0	2	0	0	0	0	88	0	0	0	159	8	0	257	3334
5:25 PM	0	0	0	0	0	0	3	0	2	97	0	0	0	132	9	0	243	3306
5:30 PM	0	0	0	0	1	0	0	0	3	98	0	0	0	167	5	0	274	3301
5:35 PM	0	0	0	0	2	0	0	0	1	86	0	0	0	144	6	0	239	3248
5:40 PM	0	0	0	0	2	0	3	0	1	83	0	0	0	169	5	0	263	3219
5:45 PM	0	0	0	0	2	0	2	0	1	135	0	0	0	154	9	0	303	3245
5:50 PM	0	0	0	0	2	0	1	0	1	85	0	0	0	137	11	0	237	3195
5:55 PM	0	0	0	0	0	0	1	0	1	78	0	0	0	158	6	0	244	3156

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	20	0	12	0	20	1288	0	0	0	2000	112	0	3452
Heavy Trucks	0	0	0		0	0	0		0	56	0		0	60	4		120
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/16/2020 3:10 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

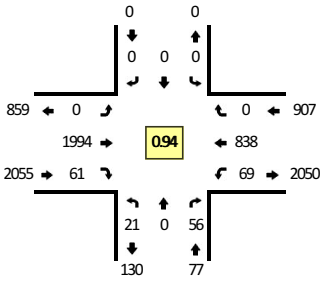
Type of peak hour being reported: Intersection Peak

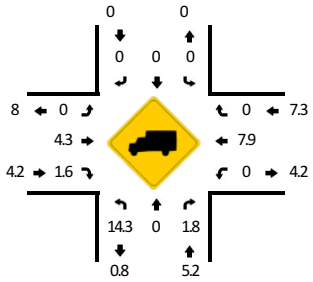
Method for determining peak hour: Total Entering Volume

LOCATION: Providence Dr -- OR-99W
CITY/STATE: Newberg, OR

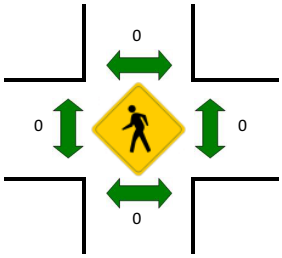
QC JOB #: 15205405
DATE: Thu, Mar 5 2020

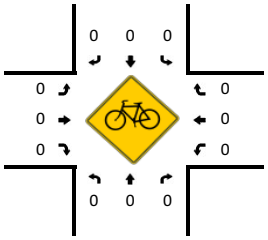
Peak-Hour: 6:35 AM -- 7:35 AM
Peak 15-Min: 6:35 AM -- 6:50 AM

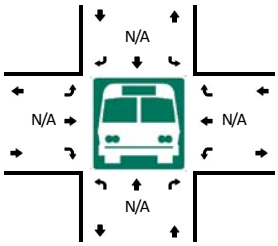


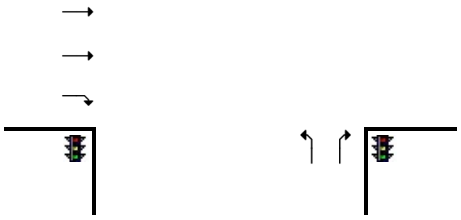


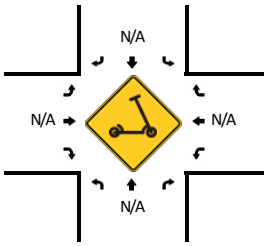
Quality Counts
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	Providence Dr (Northbound)				Providence Dr (Southbound)				OR-99W (Eastbound)				OR-99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	0	0	0	0	0	117	2	0	3	22	0	0	144	
6:05 AM	0	0	0	0	0	0	0	0	0	138	2	0	1	39	0	0	180	
6:10 AM	1	0	1	0	0	0	0	0	0	126	1	0	4	34	0	0	167	
6:15 AM	0	0	3	0	0	0	0	0	0	169	3	0	0	32	0	0	207	
6:20 AM	0	0	7	0	0	0	0	0	0	162	4	0	7	43	0	0	223	
6:25 AM	0	0	1	0	0	0	0	0	0	206	4	0	4	37	0	0	252	
6:30 AM	1	0	6	0	0	0	0	0	0	181	2	0	8	35	0	0	233	
6:35 AM	2	0	4	0	0	0	0	0	0	227	7	0	4	42	0	0	286	
6:40 AM	4	0	7	0	0	0	0	0	0	197	3	0	4	50	0	0	265	
6:45 AM	3	0	6	0	0	0	0	0	0	172	9	0	12	59	0	0	261	
6:50 AM	0	0	1	0	0	0	0	0	0	142	4	0	5	61	0	0	213	
6:55 AM	0	0	2	0	0	0	0	0	0	171	5	0	7	60	0	0	245	2676
7:00 AM	1	0	6	0	0	0	0	0	0	149	4	0	12	68	0	0	240	2772
7:05 AM	2	0	5	0	0	0	0	0	0	173	5	0	2	79	0	0	266	2858
7:10 AM	0	0	3	0	0	0	0	0	0	154	3	0	6	80	0	0	246	2937
7:15 AM	1	0	5	0	0	0	0	0	0	156	6	0	4	81	0	0	253	2983
7:20 AM	2	0	5	0	0	0	0	0	0	132	5	0	4	90	0	0	238	2998
7:25 AM	3	0	3	0	0	0	0	0	0	166	4	0	4	84	0	0	264	3010
7:30 AM	3	0	9	0	0	0	0	0	0	155	6	0	5	84	0	0	262	3039
7:35 AM	1	0	7	0	0	0	0	0	0	144	4	0	7	96	0	0	259	3012
7:40 AM	4	0	11	0	0	0	0	0	0	133	6	0	5	74	0	0	233	2980
7:45 AM	1	0	3	0	0	0	0	0	0	133	8	0	7	90	0	0	242	2961
7:50 AM	5	0	3	0	0	0	0	0	0	87	8	0	7	101	0	0	211	2959
7:55 AM	2	0	2	0	0	0	0	0	0	92	5	0	10	91	0	0	202	2916
8:00 AM	5	0	7	0	0	0	0	0	0	103	6	0	10	92	0	0	223	2899
8:05 AM	5	0	7	0	0	0	0	0	0	83	7	0	4	62	0	0	168	2801
8:10 AM	4	0	6	0	0	0	0	0	0	127	8	0	5	64	0	0	214	2769
8:15 AM	6	0	2	0	0	0	0	0	0	100	7	0	2	66	0	0	183	2699
8:20 AM	3	0	4	0	0	0	0	0	0	125	9	0	13	76	0	0	230	2691
8:25 AM	3	0	5	0	0	0	0	0	0	103	6	0	9	71	0	0	197	2624
8:30 AM	8	0	2	0	0	0	0	0	0	119	6	0	2	74	0	0	211	2573
8:35 AM	5	0	3	0	0	0	0	0	0	104	6	0	6	52	0	0	176	2490
8:40 AM	3	0	2	0	0	0	0	0	0	124	4	0	3	63	0	0	199	2456
8:45 AM	4	0	5	0	0	0	0	0	0	86	3	0	2	84	0	0	184	2398
8:50 AM	5	0	4	0	0	0	0	0	0	105	8	0	8	83	0	0	213	2400
8:55 AM	7	0	10	0	0	0	0	0	0	90	4	0	7	55	0	0	173	2371

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	36	0	68	0	0	0	0	0	0	2384	76	0	80	604	0	0	3248
Heavy Trucks	4	0	0		0	0	0		0	132	0		0	52	0		188
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 3/16/2020 3:10 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

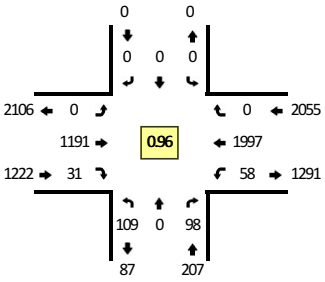
Type of peak hour being reported: Intersection Peak

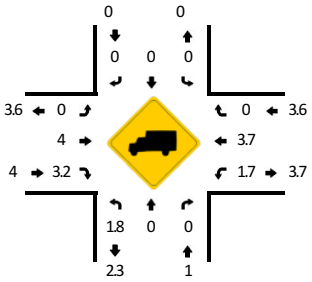
Method for determining peak hour: Total Entering Volume

LOCATION: Providence Dr -- OR-99W
CITY/STATE: Newberg, OR

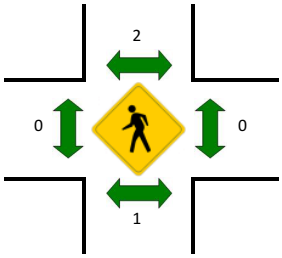
QC JOB #: 15205406
DATE: Thu, Mar 5 2020

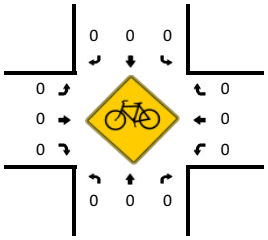
Peak-Hour: 4:05 PM -- 5:05 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

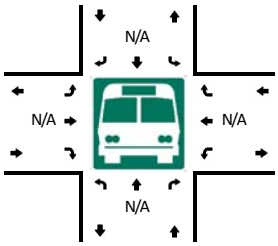


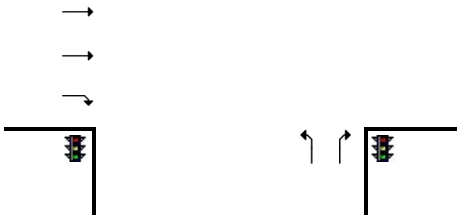


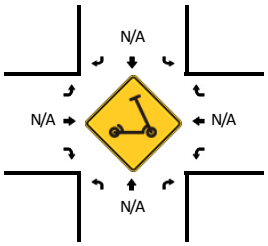
Quality Counts
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	Providence Dr (Northbound)				Providence Dr (Southbound)				OR-99W (Eastbound)				OR-99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	7	0	5	0	0	0	0	0	0	83	5	0	4	91	0	0	195	
3:05 PM	9	0	7	0	0	0	0	0	0	81	4	0	3	119	0	0	223	
3:10 PM	9	0	7	0	0	0	0	0	0	88	4	0	3	139	0	0	250	
3:15 PM	6	0	8	0	0	0	0	0	0	89	4	0	6	126	0	0	239	
3:20 PM	5	0	5	0	0	0	0	0	0	79	5	0	1	154	0	0	249	
3:25 PM	8	0	6	0	0	0	0	0	0	84	1	0	5	124	0	0	228	
3:30 PM	9	0	4	0	0	0	0	0	0	77	0	0	3	122	0	0	215	
3:35 PM	13	0	6	0	0	0	0	0	0	84	3	0	0	144	0	0	250	
3:40 PM	14	0	5	0	0	0	0	0	0	75	4	0	4	162	0	0	264	
3:45 PM	11	0	4	1	0	0	0	0	0	87	3	0	5	157	0	0	268	
3:50 PM	7	0	7	0	0	0	0	0	0	76	5	0	6	189	0	0	290	
3:55 PM	9	0	8	0	0	0	0	0	0	93	4	0	5	183	0	0	302	2973
4:00 PM	8	0	8	0	0	0	0	0	0	89	5	0	6	152	0	0	268	3046
4:05 PM	13	0	9	0	0	0	0	0	0	101	2	0	3	147	0	0	275	3098
4:10 PM	8	0	8	0	0	0	0	0	0	112	5	0	8	179	0	0	320	3168
4:15 PM	15	0	15	0	0	0	0	0	0	107	0	0	6	144	0	0	287	3216
4:20 PM	4	0	6	0	0	0	0	0	0	83	3	0	3	161	0	0	260	3227
4:25 PM	3	0	3	0	0	0	0	0	0	92	3	0	3	156	0	0	260	3259
4:30 PM	8	0	3	0	0	0	0	0	0	120	2	0	2	154	0	0	289	3333
4:35 PM	15	0	4	0	0	0	0	0	0	94	3	0	5	180	0	0	301	3384
4:40 PM	11	0	11	0	0	0	0	0	0	115	3	0	3	168	0	0	311	3431
4:45 PM	5	0	11	0	0	0	0	0	0	86	2	0	7	179	0	2	292	3455
4:50 PM	9	0	10	0	0	0	0	0	0	95	5	0	9	178	0	0	306	3471
4:55 PM	7	0	10	0	0	0	0	0	0	84	1	0	5	188	0	0	295	3464
5:00 PM	11	0	8	0	0	0	0	0	0	102	2	0	2	163	0	0	288	3484
5:05 PM	7	0	9	0	0	0	0	0	0	84	3	0	6	151	0	0	260	3469
5:10 PM	9	0	7	0	0	0	0	0	0	110	2	0	3	174	0	0	305	3454
5:15 PM	9	0	10	0	0	0	0	0	0	106	1	0	2	148	0	0	276	3443
5:20 PM	11	0	7	0	0	0	0	0	0	86	3	0	3	151	0	0	261	3444
5:25 PM	6	0	10	0	0	0	0	0	0	95	3	0	3	142	0	0	259	3443
5:30 PM	7	0	9	0	0	0	0	0	0	99	2	0	0	162	0	0	279	3433
5:35 PM	9	0	18	0	0	0	0	0	0	83	1	0	3	142	0	0	256	3388
5:40 PM	6	0	6	0	0	0	0	0	0	79	3	0	0	160	0	0	254	3331
5:45 PM	1	0	8	0	0	0	0	0	0	141	1	0	1	162	0	0	314	3353
5:50 PM	3	0	9	0	0	0	0	0	0	88	2	0	1	152	0	1	256	3303
5:55 PM	5	0	5	0	0	0	0	0	0	77	1	0	0	153	0	0	241	3249

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	100	0	128	0	0	0	0	0	0	1184	40	0	76	2100	0	8	3636
Heavy Trucks	4	0	0		0	0	0		0	44	0		0	84	0		132
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	
Comments:																	

Report generated on 3/16/2020 3:10 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

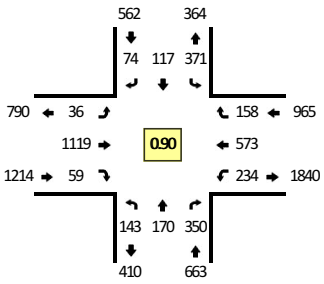
Type of peak hour being reported: Intersection Peak

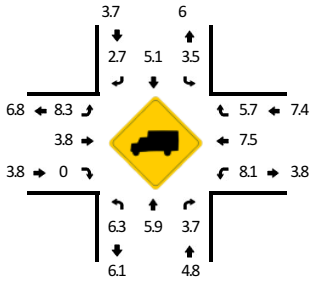
Method for determining peak hour: Total Entering Volume

LOCATION: N Springbrook Rd -- OR-99W
CITY/STATE: Newberg, OR

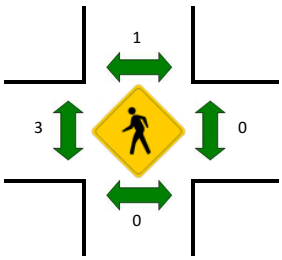
QC JOB #: 15205407
DATE: Thu, Mar 5 2020

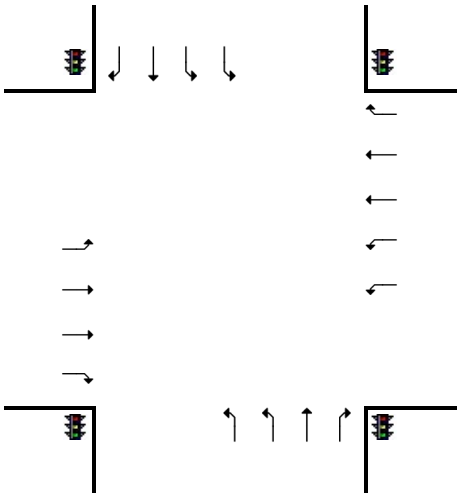
Peak-Hour: 6:55 AM -- 7:55 AM
Peak 15-Min: 7:20 AM -- 7:35 AM

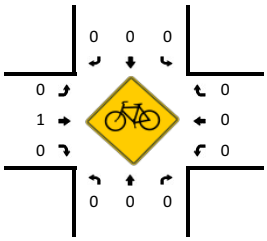


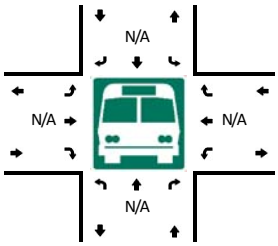


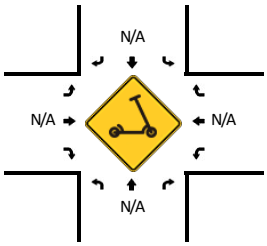
Quality Counts
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	N Springbrook Rd (Northbound)				N Springbrook Rd (Southbound)				OR-99W (Eastbound)				OR-99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	1	5	24	0	18	3	1	0	1	100	1	0	3	15	4	0	176	
6:05 AM	6	2	22	0	22	7	2	0	0	73	2	0	6	25	4	0	171	
6:10 AM	2	2	26	0	18	6	0	0	0	112	0	0	3	20	4	0	193	
6:15 AM	5	2	42	0	14	5	2	0	1	102	2	0	6	18	7	0	206	
6:20 AM	4	7	26	0	32	7	1	0	0	127	1	0	10	28	8	0	251	
6:25 AM	1	4	46	0	25	11	2	0	1	114	3	0	17	22	8	0	254	
6:30 AM	6	5	39	0	46	7	3	0	1	125	5	0	9	17	2	0	265	
6:35 AM	6	8	40	0	28	11	4	0	1	125	3	0	2	28	8	0	264	
6:40 AM	8	6	26	0	35	6	6	0	3	148	2	0	13	32	6	0	291	
6:45 AM	8	15	40	0	24	7	1	0	1	89	5	0	20	22	5	0	237	
6:50 AM	8	4	27	0	33	7	2	0	0	116	4	0	15	38	11	0	265	
6:55 AM	3	16	39	0	25	9	3	0	2	90	0	0	18	30	12	0	247	2820
7:00 AM	8	15	28	0	33	6	3	0	4	118	2	0	17	40	11	0	285	2929
7:05 AM	6	14	36	0	23	5	4	0	1	83	3	0	22	38	8	0	243	3001
7:10 AM	12	16	22	0	45	2	2	0	2	116	2	0	14	37	18	0	288	3096
7:15 AM	12	9	32	0	22	12	11	0	2	85	5	0	26	48	13	0	277	3167
7:20 AM	22	15	18	0	33	13	8	0	9	107	1	0	14	52	22	0	314	3230
7:25 AM	10	20	39	0	28	13	9	0	5	88	2	0	30	50	20	0	314	3290
7:30 AM	19	19	23	0	39	15	5	0	1	100	10	0	17	55	15	0	318	3343
7:35 AM	7	9	30	0	42	23	12	0	2	81	5	0	23	54	9	0	297	3376
7:40 AM	12	9	29	0	29	7	3	0	1	110	12	0	15	58	8	0	293	3378
7:45 AM	14	13	26	0	28	10	7	0	1	68	7	0	19	57	9	0	259	3400
7:50 AM	18	15	28	0	24	2	7	0	6	73	10	0	19	54	13	0	269	3404
7:55 AM	11	17	24	0	19	16	7	0	4	60	6	0	20	55	7	0	246	3403
8:00 AM	13	12	27	0	30	6	11	0	4	59	7	0	20	64	16	0	269	3387
8:05 AM	21	12	19	0	29	3	5	0	6	81	6	0	14	49	15	0	260	3404
8:10 AM	18	16	36	0	25	15	4	0	3	77	3	0	20	40	16	0	273	3389
8:15 AM	16	7	18	0	23	6	7	0	3	98	2	0	12	54	13	0	259	3371
8:20 AM	13	18	31	0	27	18	8	0	2	76	7	0	22	39	12	0	273	3330
8:25 AM	12	7	20	0	40	8	5	0	7	88	4	1	16	47	10	0	265	3281
8:30 AM	8	10	24	0	32	16	6	0	7	68	2	0	22	50	7	0	252	3215
8:35 AM	27	5	21	0	37	12	1	0	2	95	5	0	6	45	3	0	259	3177
8:40 AM	16	7	16	0	32	4	2	0	4	72	6	0	20	45	12	0	236	3120
8:45 AM	10	10	15	0	23	8	7	0	2	103	4	0	9	70	3	0	264	3125
8:50 AM	13	14	24	0	28	13	5	0	3	71	2	0	24	48	6	0	251	3107
8:55 AM	11	13	17	1	28	10	3	0	7	87	3	1	8	53	14	0	256	3117

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	204	216	320	0	400	164	88	0	60	1180	52	0	244	628	228	0	3784
Heavy Trucks	12	4	28		24	8	4		8	48	0		20	64	8		228
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4
Scooters																	

Comments:

Report generated on 3/16/2020 3:10 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

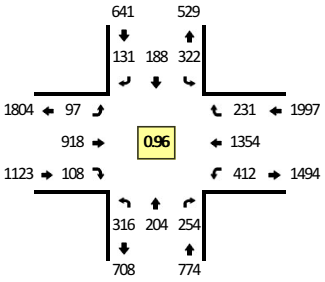
Type of peak hour being reported: Intersection Peak

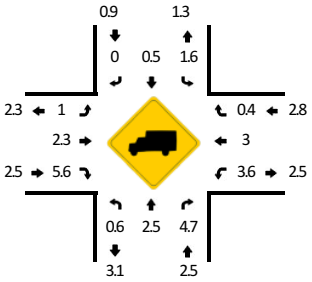
Method for determining peak hour: Total Entering Volume

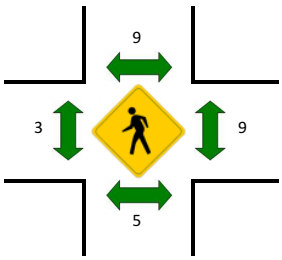
LOCATION: N Springbrook Rd -- OR-99W
CITY/STATE: Newberg, OR

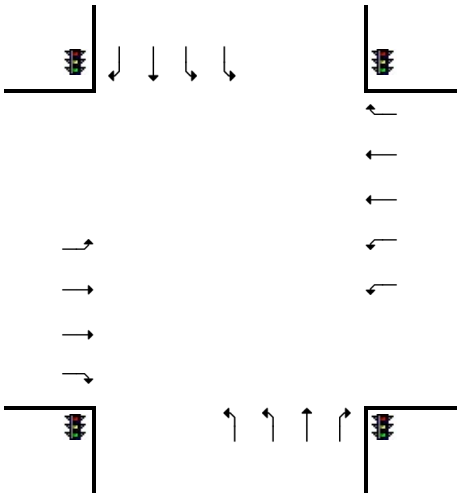
QC JOB #: 15205408
DATE: Thu, Mar 5 2020

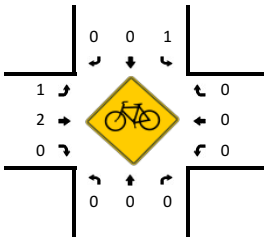
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

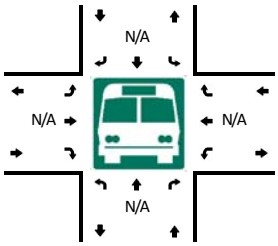


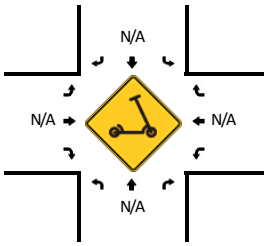












5-Min Count Period Beginning At	N Springbrook Rd (Northbound)				N Springbrook Rd (Southbound)				OR-99W (Eastbound)				OR-99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	20	16	16	0	25	18	14	0	8	76	11	0	25	70	13	0	312	
3:05 PM	24	19	18	0	25	11	11	0	9	74	12	0	26	80	17	0	326	
3:10 PM	18	12	18	0	19	9	12	0	5	65	6	0	24	94	18	0	300	
3:15 PM	13	18	26	0	32	15	7	0	10	62	10	0	30	67	15	0	305	
3:20 PM	32	13	23	0	26	19	7	0	9	66	6	0	32	92	14	0	339	
3:25 PM	18	15	13	0	22	15	5	0	12	74	11	0	28	71	19	0	303	
3:30 PM	26	14	19	0	19	16	4	0	15	76	9	0	32	101	13	0	344	
3:35 PM	24	12	12	0	27	12	5	0	7	71	5	0	31	113	15	0	334	
3:40 PM	29	10	15	0	17	14	10	0	12	85	10	0	31	114	19	0	366	
3:45 PM	23	9	17	0	30	18	3	0	6	73	12	0	41	94	16	0	342	
3:50 PM	27	21	17	0	27	26	13	0	8	61	11	0	37	111	14	0	373	
3:55 PM	38	14	13	0	38	18	7	0	9	63	8	0	41	97	14	0	360	4004
4:00 PM	22	22	12	0	18	14	8	0	10	69	6	0	43	103	21	0	348	4040
4:05 PM	30	11	28	0	38	16	9	0	10	69	9	0	45	109	15	0	389	4103
4:10 PM	15	17	21	0	27	17	10	0	7	94	10	0	37	120	21	0	396	4199
4:15 PM	23	16	25	0	31	15	12	0	6	81	10	0	40	113	19	0	391	4285
4:20 PM	32	12	23	0	24	11	13	0	5	79	11	0	32	90	18	0	350	4296
4:25 PM	20	22	17	0	34	15	9	0	5	65	4	0	25	83	25	0	324	4317
4:30 PM	34	13	22	0	28	11	10	0	11	84	6	0	33	83	15	0	350	4323
4:35 PM	30	16	24	0	23	10	18	0	12	79	8	1	39	111	16	0	387	4376
4:40 PM	27	20	18	0	27	17	8	0	9	89	6	0	33	126	22	0	402	4412
4:45 PM	18	15	24	0	34	14	6	0	8	88	6	0	41	123	17	0	394	4464
4:50 PM	22	10	21	0	24	13	8	0	5	84	11	1	27	132	29	0	387	4478
4:55 PM	26	24	23	0	20	19	12	0	9	68	7	0	31	125	15	0	379	4497
5:00 PM	26	23	21	0	24	22	11	0	10	70	5	0	30	119	18	0	379	4528
5:05 PM	41	13	16	0	40	17	14	0	11	61	13	0	45	95	13	0	379	4518
5:10 PM	27	24	23	0	27	16	8	0	8	65	10	0	32	116	23	0	379	4501
5:15 PM	26	16	23	0	31	17	11	0	6	87	15	1	37	107	22	0	399	4509
5:20 PM	29	14	14	0	24	15	14	0	10	73	12	0	34	101	16	0	356	4515
5:25 PM	18	19	26	0	22	19	8	0	4	81	5	0	31	94	16	0	343	4534
5:30 PM	26	10	21	0	26	9	13	0	2	73	10	0	32	105	24	0	351	4535
5:35 PM	28	27	21	0	24	17	13	0	8	68	7	1	28	86	21	0	349	4497
5:40 PM	23	16	24	0	21	15	11	0	10	70	8	0	27	108	23	0	356	4451
5:45 PM	22	13	22	0	32	7	8	0	13	67	6	0	47	96	19	0	352	4409
5:50 PM	25	6	19	0	18	10	7	0	5	69	5	0	16	106	29	0	315	4337
5:55 PM	23	21	17	0	18	8	9	0	9	67	11	0	30	100	7	0	320	4278

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	300	204	264	0	336	164	128	0	116	1024	80	4	452	1440	220	0	4732
Heavy Trucks	0	4	12		8	0	0		0	36	4		16	60	0		140
Buses																	
Pedestrians		8				8				0				4			20
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4
Scooters																	

Comments:

Report generated on 3/16/2020 3:10 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

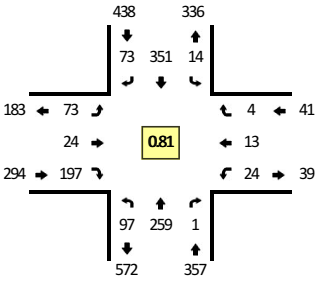
Type of peak hour being reported: Intersection Peak

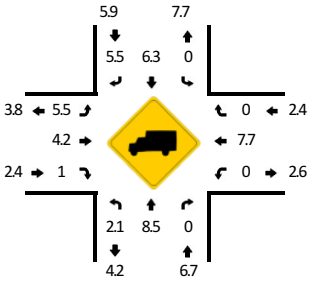
Method for determining peak hour: Total Entering Volume

LOCATION: N Springbrook Rd -- Haworth Ave
CITY/STATE: Newberg, OR

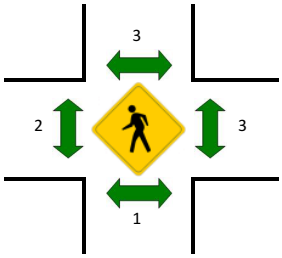
QC JOB #: 15205409
DATE: Thu, Mar 5 2020

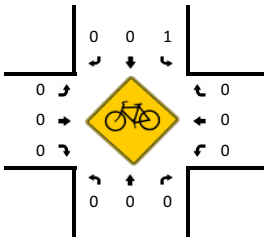
Peak-Hour: 7:20 AM -- 8:20 AM
Peak 15-Min: 7:20 AM -- 7:35 AM

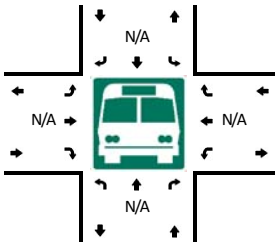


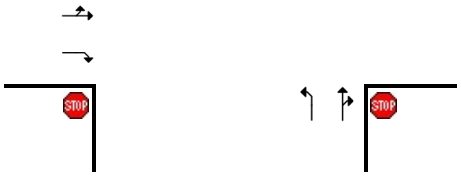


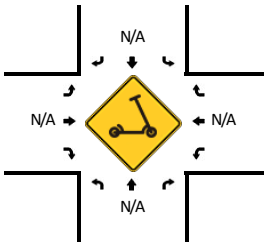
Quality Counts
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	N Springbrook Rd (Northbound)				N Springbrook Rd (Southbound)				Haworth Ave (Eastbound)				Haworth Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	1	10	0	0	1	19	1	0	1	0	12	0	1	0	0	0	46	
6:05 AM	2	5	0	0	0	18	4	0	0	1	8	0	0	0	0	0	38	
6:10 AM	0	4	0	0	0	20	1	0	2	0	7	0	0	1	0	0	35	
6:15 AM	0	9	0	0	1	15	4	0	1	0	6	0	2	1	1	0	40	
6:20 AM	5	9	0	0	0	26	1	0	3	0	16	0	0	0	3	0	63	
6:25 AM	2	10	0	0	2	27	2	0	2	0	11	0	3	1	0	0	60	
6:30 AM	2	6	2	0	1	29	3	0	4	0	19	0	3	0	0	0	69	
6:35 AM	4	11	0	0	0	27	4	0	5	0	17	0	4	1	1	0	74	
6:40 AM	5	11	0	0	1	26	4	0	1	1	14	0	0	0	2	0	65	
6:45 AM	2	15	1	0	2	25	0	0	3	2	7	0	3	1	0	0	61	
6:50 AM	1	12	0	0	1	23	4	0	6	1	12	0	5	0	1	0	66	
6:55 AM	3	18	2	0	2	26	3	0	1	1	14	0	4	1	0	0	75	692
7:00 AM	5	29	0	0	2	21	7	0	4	2	9	0	5	1	1	0	86	732
7:05 AM	4	13	0	0	0	27	4	0	6	3	17	0	3	1	1	0	79	773
7:10 AM	6	32	0	0	3	24	4	0	6	2	14	0	3	1	0	0	95	833
7:15 AM	5	17	0	0	3	31	6	0	4	1	15	0	2	1	2	0	87	880
7:20 AM	4	33	0	0	2	39	3	0	6	2	18	0	1	1	1	0	110	927
7:25 AM	10	41	0	0	1	34	5	0	6	1	19	0	2	0	0	0	119	986
7:30 AM	13	24	0	0	1	36	8	0	11	1	20	0	3	1	0	0	118	1035
7:35 AM	5	15	0	0	1	42	8	0	5	7	21	0	3	1	0	0	108	1069
7:40 AM	4	10	0	0	0	26	6	0	6	1	16	0	0	2	0	0	71	1075
7:45 AM	5	12	0	0	0	27	5	0	8	1	20	0	1	2	1	0	82	1096
7:50 AM	9	19	0	0	1	17	4	0	4	3	13	0	1	1	1	0	73	1103
7:55 AM	8	22	0	0	3	35	8	0	4	4	9	0	1	0	0	0	94	1122
8:00 AM	5	22	0	0	2	27	7	0	5	4	13	0	4	1	0	0	90	1126
8:05 AM	12	22	0	0	1	14	6	0	5	0	15	0	5	1	1	0	82	1129
8:10 AM	12	23	0	0	1	24	6	0	6	0	19	0	2	2	0	0	95	1129
8:15 AM	10	16	1	0	1	30	7	0	7	0	14	0	1	1	0	0	88	1130
8:20 AM	6	22	0	0	4	31	8	0	1	2	20	0	2	0	0	0	96	1116
8:25 AM	8	13	3	0	1	28	14	0	6	4	16	0	4	0	1	0	98	1095
8:30 AM	3	17	1	0	0	31	10	0	4	3	19	0	8	1	1	0	98	1075
8:35 AM	2	9	0	0	5	28	6	0	7	1	11	0	3	1	0	0	73	1040
8:40 AM	9	12	2	0	1	20	5	0	3	2	12	0	3	4	2	0	75	1044
8:45 AM	4	6	1	0	1	27	4	0	4	2	13	0	4	1	1	0	68	1030
8:50 AM	6	11	1	0	1	28	5	0	2	8	15	0	7	1	2	0	87	1044
8:55 AM	8	19	3	0	0	22	8	0	4	2	11	0	4	2	0	0	83	1033

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	108	392	0	0	16	436	64	0	92	16	228	0	24	8	4	0	1388
Heavy Trucks	0	20	0		0	32	0		12	0	0		0	0	0		64
Buses																	
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 3/16/2020 3:10 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

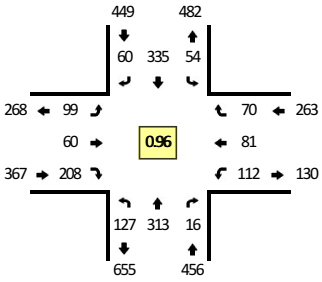
Type of peak hour being reported: Intersection Peak

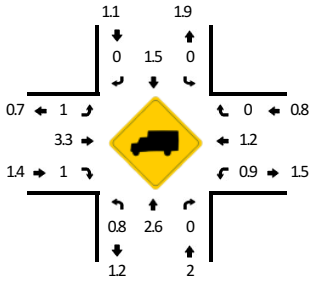
Method for determining peak hour: Total Entering Volume

LOCATION: N Springbrook Rd -- Haworth Ave
CITY/STATE: Newberg, OR

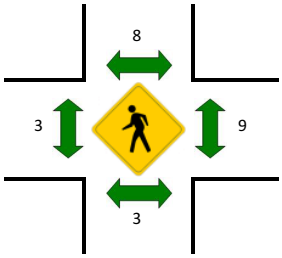
QC JOB #: 15205410
DATE: Thu, Mar 5 2020

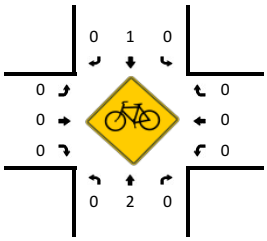
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

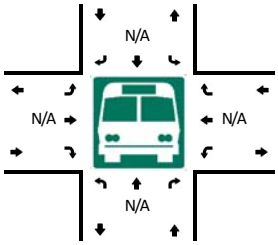


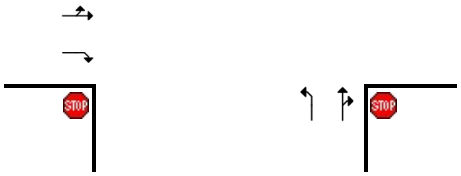


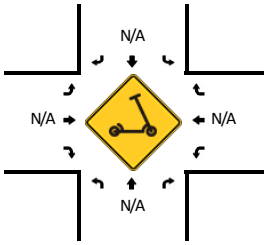
Quality Counts
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	N Springbrook Rd (Northbound)				N Springbrook Rd (Southbound)				Haworth Ave (Eastbound)				Haworth Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	9	20	2	0	0	32	6	0	8	8	12	0	11	3	4	0	115	
3:05 PM	10	29	2	0	1	21	2	0	6	3	16	0	8	6	3	0	107	
3:10 PM	9	20	0	0	4	24	4	0	1	4	9	0	9	5	3	0	92	
3:15 PM	11	23	1	0	4	26	3	0	4	0	21	0	8	5	6	0	112	
3:20 PM	13	19	1	0	5	20	1	0	9	10	17	0	8	3	3	0	109	
3:25 PM	12	29	1	0	2	30	6	0	6	1	17	0	7	6	2	0	119	
3:30 PM	10	22	1	0	5	15	3	0	6	3	23	0	5	8	5	0	106	
3:35 PM	12	22	2	0	4	32	7	0	8	2	13	0	5	7	4	0	118	
3:40 PM	8	24	2	0	1	22	6	0	8	9	18	0	8	7	5	0	118	
3:45 PM	11	17	0	0	4	22	8	0	4	6	22	0	5	11	4	0	114	
3:50 PM	9	23	1	0	1	40	5	0	8	4	10	0	9	2	5	0	117	
3:55 PM	10	28	1	0	9	33	2	0	7	4	16	0	4	4	4	0	122	1349
4:00 PM	11	29	1	0	3	24	3	0	6	3	16	0	7	6	6	0	115	1349
4:05 PM	9	30	1	0	7	26	8	0	5	6	20	0	12	3	4	0	131	1373
4:10 PM	12	23	0	0	3	31	3	0	5	4	19	0	13	8	6	0	127	1408
4:15 PM	11	32	1	0	3	34	2	0	4	5	13	0	7	6	9	0	127	1423
4:20 PM	10	19	0	0	3	29	4	0	4	7	12	0	11	9	6	0	114	1428
4:25 PM	11	32	1	0	5	25	5	0	5	4	17	0	6	5	5	0	121	1430
4:30 PM	12	21	3	0	2	21	3	0	10	3	9	0	13	1	4	0	102	1426
4:35 PM	7	26	3	0	5	28	8	0	7	8	20	0	11	6	7	0	136	1444
4:40 PM	8	24	3	0	6	25	5	0	7	2	25	0	4	9	4	0	122	1448
4:45 PM	9	28	1	0	3	30	6	0	10	1	22	0	7	7	5	0	129	1463
4:50 PM	12	27	0	0	0	26	5	0	12	4	11	0	12	6	5	0	120	1466
4:55 PM	14	27	0	0	3	28	6	0	13	9	18	0	6	5	7	0	136	1480
5:00 PM	13	27	2	0	8	31	4	0	6	2	14	0	8	6	2	0	123	1488
5:05 PM	10	26	2	0	4	29	3	0	9	7	20	0	11	6	4	0	131	1488
5:10 PM	16	25	4	0	5	29	4	0	3	5	19	0	10	5	7	0	132	1493
5:15 PM	12	31	0	0	4	32	4	0	6	8	17	0	8	9	5	0	136	1502
5:20 PM	11	21	0	0	8	29	6	0	11	5	15	0	9	8	9	0	132	1520
5:25 PM	10	18	1	0	5	23	3	0	11	6	17	0	11	7	6	0	118	1517
5:30 PM	5	33	0	0	3	25	6	0	4	3	10	0	15	7	9	0	120	1535
5:35 PM	13	27	2	0	2	20	1	0	5	7	8	0	13	4	5	0	107	1506
5:40 PM	13	29	0	0	5	17	2	0	3	2	19	0	12	4	6	0	112	1496
5:45 PM	13	28	1	0	5	18	10	0	4	6	22	0	7	10	2	0	126	1493
5:50 PM	17	17	3	0	3	22	5	0	9	8	13	0	5	2	2	0	106	1479
5:55 PM	12	19	4	0	1	20	3	0	8	7	13	0	9	2	9	0	107	1450

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	156	308	16	0	68	360	56	0	80	72	204	0	108	88	84	0	1600
Heavy Trucks	4	0	0		0	4	0		0	0	0		0	0	0		8
Buses																	
Pedestrians		8				8				0				16			32
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	
Comments:																	

Report generated on 3/16/2020 3:10 PM

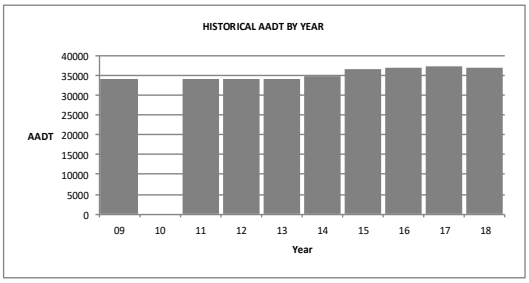
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix B: Seasonal Adjustment Factor and ATR Data

Location:	OR99W; MP 21.81; PACIFIC HWYWAY WEST NO. 91; 0.01 mile west of Brutscher Street	Site Name:	Newberg (36-004)
		Installed:	July, 1952

HISTORICAL TRAFFIC DATA

Year	AADT	Percent of AADT				
		Max Day	Max Hour	10TH Hour	20TH Hour	30TH Hour
2009	34060	***	***	***	***	***
2010	***	***	***	***	***	***
2011	34083	120	9.6	9.0	8.9	8.8
2012	33969	122	9.0	8.8	8.7	8.7
2013	34174	113	10.9	8.6	8.4	8.3
2014	34791	122	9.6	8.8	8.7	8.6
2015	36559	***	***	***	***	***
2016	37027	119	9.3	8.3	8.3	8.2
2017	37244	120	10.2	8.6	8.3	8.3
2018	37095	120	9.1	8.7	8.6	8.5



2018 TRAFFIC DATA

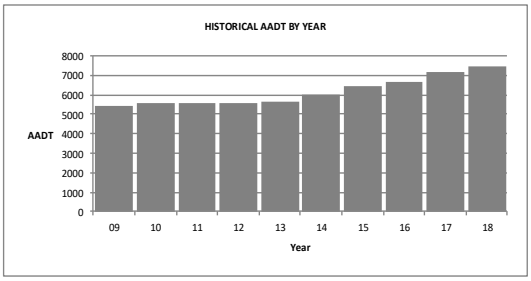
	Average Weekday Traffic	Percent of AADT	Average Daily Traffic	Percent of AADT
January	35790	96	34510	93
February	36291	98	35293	95
March	37978	102	36876	99
April	38627	104	37620	101
May	38138	103	37758	102
June	39663	107	38924	105
July	39537	107	38886	105
August	39941	108	38997	105
September	38655	104	37926	102
October	38204	103	37227	100
November	37451	101	36247	98
December	35928	97	34874	94

For Vehicle Classification data near your project, please go to the following web page: https://www.oregon.gov/ODOT/Data/Documents/TVT_2018.xlsx

Location:	OR99W; MP 47.45; PACIFIC HIGHWAY WEST NO. 91; 0.07 mile north of Yamhill-Polk County Line	Site Name:	Amity (36-005)
		Installed:	September, 1956

HISTORICAL TRAFFIC DATA

Year	AADT	Percent of AADT				
		Max Day	Max Hour	10TH Hour	20TH Hour	30TH Hour
2009	5453	132	15.0	11.5	11.0	10.7
2010	5594	135	14.7	11.8	11.2	11.0
2011	5553	135	14.5	11.8	11.3	11.1
2012	5556	133	14.6	11.8	11.6	11.4
2013	5644	143	14.5	12.1	11.5	11.2
2014	5970	134	14.0	11.8	11.7	11.5
2015	6431	136	12.5	11.5	11.2	11.0
2016	6632	134	13.2	11.7	11.4	11.2
2017	7159	156	12.5	11.7	11.6	11.3
2018	7464	129	12.8	11.5	11.2	11.1



2018 TRAFFIC DATA

	Average Weekday Traffic	Percent of AADT	Average Daily Traffic	Percent of AADT
January	6998	94	6649	89
February	7485	100	7069	95
March	7627	102	7194	96
April	7895	106	7509	101
May	8037	108	7874	105
June	8127	109	7943	106
July	7969	107	7708	103
August	8177	110	7896	106
September	8091	108	7862	105
October	8144	109	7828	105
November	7796	104	7402	99
December	7044	94	6632	89

For Vehicle Classification data near your project, please go to the following web page: https://www.oregon.gov/ODOT/Data/Documents/TVT_2018.xlsx

SEASONAL TREND TABLE (Updated: 6/26/19)																									
TREND	1-Jan	15-Jan	1-Feb	15-Feb	1-Mar	15-Mar	1-Apr	15-Apr	1-May	15-May	1-Jun	15-Jun	1-Jul	15-Jul	1-Aug	15-Aug	1-Sep	15-Sep	1-Oct	15-Oct	1-Nov	15-Nov	1-Dec	15-Dec	Seasonal Trend Peak Period Factor
INTERSTATE URBANIZED	1.0419	1.0728	1.0640	1.0552	1.0259	0.9966	0.9896	0.9825	0.9768	0.9711	0.9558	0.9404	0.9561	0.9718	0.9804	0.9890	0.9860	0.9830	0.9864	0.9897	1.0055	1.0213	1.0436	1.0659	0.9404
INTERSTATE NONURBANIZED	1.2583	1.3379	1.2962	1.2545	1.1572	1.0600	1.0383	1.0166	0.9863	0.9561	0.9075	0.8588	0.8422	0.8256	0.8325	0.8394	0.8806	0.9218	0.9559	0.9900	1.0158	1.0416	1.1192	1.1969	0.8256
COMMUTER	1.0577	1.1050	1.0844	1.0638	1.0406	1.0173	0.9975	0.9777	0.9711	0.9645	0.9542	0.9438	0.9544	0.9649	0.9592	0.9535	0.9637	0.9738	0.9737	0.9737	0.9976	1.0215	1.0520	1.0825	0.9438
COASTAL DESTINATION	1.2069	1.2238	1.1889	1.1540	1.1006	1.0472	1.0504	1.0536	1.0125	0.9714	0.9394	0.9074	0.8574	0.8074	0.8100	0.8126	0.8635	0.9145	0.9648	1.0152	1.0683	1.1214	1.1636	1.2058	0.8074
COASTAL DESTINATION ROUTE	1.3738	1.4039	1.3653	1.3267	1.2268	1.1268	1.1203	1.1138	1.0308	0.9478	0.9031	0.8584	0.7781	0.6978	0.7080	0.7182	0.7932	0.8682	0.9574	1.0466	1.1248	1.2030	1.2836	1.3642	0.6978
AGRICULTURE	1.4390	1.5042	1.4606	1.4171	1.3208	1.2246	1.1445	1.0643	0.9843	0.9043	0.8736	0.8429	0.8259	0.8089	0.8114	0.8140	0.7847	0.7554	0.8267	0.8980	0.9879	1.0778	1.2559	1.4339	0.7554
RECREATIONAL SUMMER	1.6714	1.6739	1.6571	1.6403	1.4889	1.3375	1.2642	1.1909	1.0325	0.8742	0.8177	0.7611	0.7119	0.6626	0.6933	0.7239	0.7598	0.7957	0.8898	0.9838	1.1028	1.2218	1.3720	1.5221	0.6626
RECREATIONAL SUMMER WINTER	1.0752	0.9963	1.0200	1.0437	1.0500	1.0563	1.1766	1.2970	1.1496	1.0021	0.9514	0.9006	0.8005	0.7005	0.7590	0.8176	0.9133	1.0091	1.1812	1.3532	1.4605	1.5677	1.2312	0.8948	0.7005
RECREATIONAL WINTER	0.8178	0.6528	0.7315	0.8102	0.8326	0.8549	1.0558	1.2566	1.1918	1.1270	1.1295	1.1321	1.0004	0.8687	0.9344	1.0001	1.0823	1.1646	1.2984	1.4323	1.7685	2.1047	1.4326	0.7605	0.6528
SUMMER	1.2007	1.2609	1.2367	1.2125	1.1528	1.0932	1.0592	1.0252	0.9810	0.9368	0.9061	0.8753	0.8535	0.8317	0.8437	0.8557	0.8872	0.9188	0.9502	0.9816	1.0276	1.0737	1.1341	1.1945	0.8317
SUMMER < 2500	1.2437	1.3130	1.2858	1.2586	1.1886	1.1186	1.0667	1.0147	0.9592	0.9036	0.8816	0.8595	0.8489	0.8382	0.8564	0.8746	0.8721	0.8696	0.9094	0.9491	1.0234	1.0977	1.1930	1.2883	0.8382

***Seasonal Trend Table factors are based on previous year ATR data. The table is updated yearly.**
***Grey shading indicates months were seasonal factor is greater than or less than 30%**

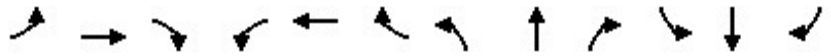
Appendix C: Existing HCM Results

Intersection	
Intersection Delay, s/veh	44.7
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	79	26	212	26	14	4	105	279	1	15	378	79
Future Vol, veh/h	79	26	212	26	14	4	105	279	1	15	378	79
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	6	4	1	0	8	0	2	9	0	0	6	5
Mvmt Flow	98	32	262	32	17	5	130	344	1	19	467	98
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	16.1	13.6	21.5	85.8
HCM LOS	C	B	C	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	75%	0%	59%	100%	0%
Vol Thru, %	0%	100%	25%	0%	32%	0%	83%
Vol Right, %	0%	0%	0%	100%	9%	0%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	105	280	105	212	44	15	457
LT Vol	105	0	79	0	26	15	0
Through Vol	0	279	26	0	14	0	378
RT Vol	0	1	0	212	4	0	79
Lane Flow Rate	130	346	130	262	54	19	564
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.27	0.684	0.289	0.504	0.132	0.038	1.079
Departure Headway (Hd)	7.787	7.392	8.346	7.203	9.205	7.418	6.886
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	464	491	433	503	392	479	525
Service Time	5.487	5.092	6.046	4.903	7.205	5.214	4.683
HCM Lane V/C Ratio	0.28	0.705	0.3	0.521	0.138	0.04	1.074
HCM Control Delay	13.3	24.6	14.4	17	13.6	10.5	88.3
HCM Lane LOS	B	C	B	C	B	B	F
HCM 95th-tile Q	1.1	5.1	1.2	2.8	0.5	0.1	17.2



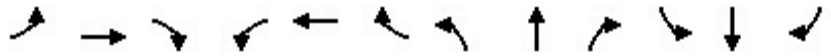
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	1206	64	252	618	170	154	183	377	400	126	80
Future Volume (veh/h)	39	1206	64	252	618	170	154	183	377	400	126	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1841	1900	1781	1781	1811	1811	1811	1841	1856	1826	1856
Adj Flow Rate, veh/h	43	1340	0	280	687	0	171	203	419	444	140	89
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	8	4	0	8	8	6	6	6	4	3	5	3
Cap, veh/h	54	1346		330	1533		225	442	380	496	588	505
Arrive On Green	0.03	0.38	0.00	0.10	0.45	0.00	0.07	0.24	0.24	0.14	0.32	0.32
Sat Flow, veh/h	1697	3497	1610	3291	3385	1535	3346	1811	1554	3428	1826	1568
Grp Volume(v), veh/h	43	1340	0	280	687	0	171	203	419	444	140	89
Grp Sat Flow(s),veh/h/ln	1697	1749	1610	1646	1692	1535	1673	1811	1554	1714	1826	1568
Q Serve(g_s), s	3.3	50.0	0.0	11.0	18.2	0.0	6.6	12.5	32.0	16.7	7.4	5.3
Cycle Q Clear(g_c), s	3.3	50.0	0.0	11.0	18.2	0.0	6.6	12.5	32.0	16.7	7.4	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	54	1346		330	1533		225	442	380	496	588	505
V/C Ratio(X)	0.79	1.00		0.85	0.45		0.76	0.46	1.10	0.90	0.24	0.18
Avail Cap(c_a), veh/h	207	1346		402	1533		536	442	380	550	588	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.95	0.95	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.0	40.2	0.0	58.0	24.6	0.0	60.1	42.1	49.5	55.1	32.6	31.9
Incr Delay (d2), s/veh	9.1	23.5	0.0	11.0	0.9	0.0	2.0	0.3	77.2	15.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	25.3	0.0	5.0	7.4	0.0	2.8	5.6	20.4	8.3	3.3	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.0	63.6	0.0	69.0	25.5	0.0	62.1	42.4	126.7	70.3	32.7	32.0
LnGrp LOS	E	E		E	C		E	D	F	E	C	C
Approach Vol, veh/h		1383	A		967	A		793			673	
Approach Delay, s/veh		63.9			38.1			91.2			57.4	
Approach LOS		E			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.1	54.9	12.8	46.2	8.2	63.8	22.9	36.0
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	45.5	21.0	30.0	16.0	45.5	21.0	32.0
Max Q Clear Time (g_c+I1), s	13.0	52.0	8.6	9.4	5.3	20.2	18.7	34.0
Green Ext Time (p_c), s	0.2	0.0	0.2	0.6	0.0	3.2	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	61.9
HCM 6th LOS	E

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	2018	20	57	823	27	51	9	150	26	5	26
Future Volume (veh/h)	18	2018	20	57	823	27	51	9	150	26	5	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1633	1841	1515	1767	1781	1663	1707	1352	1352	1589	1307	1307
Adj Flow Rate, veh/h	19	2102	21	59	857	28	53	9	156	27	5	27
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	18	4	26	9	8	16	13	37	37	21	40	40
Cap, veh/h	24	2272	834	75	2297	956	66	10	174	31	25	133
Arrive On Green	0.03	1.00	1.00	0.04	0.68	0.68	0.04	0.16	0.16	0.02	0.14	0.14
Sat Flow, veh/h	1555	3497	1284	1682	3385	1409	1626	63	1092	1513	177	958
Grp Volume(v), veh/h	19	2102	21	59	857	28	53	0	165	27	0	32
Grp Sat Flow(s),veh/h/ln	1555	1749	1284	1682	1692	1409	1626	0	1155	1513	0	1135
Q Serve(g_s), s	1.6	0.0	0.0	4.5	14.3	0.9	4.2	0.0	18.4	2.3	0.0	3.3
Cycle Q Clear(g_c), s	1.6	0.0	0.0	4.5	14.3	0.9	4.2	0.0	18.4	2.3	0.0	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.95	1.00		0.84
Lane Grp Cap(c), veh/h	24	2272	834	75	2297	956	66	0	184	31	0	158
V/C Ratio(X)	0.80	0.93	0.03	0.79	0.37	0.03	0.80	0.00	0.90	0.86	0.00	0.20
Avail Cap(c_a), veh/h	131	2272	834	205	2297	956	199	0	282	185	0	260
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.33	0.33	0.33	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.3	0.0	0.0	62.0	9.1	6.9	62.3	0.0	54.0	64.0	0.0	49.9
Incr Delay (d2), s/veh	7.5	3.0	0.0	6.8	0.0	0.0	7.9	0.0	15.1	21.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.9	0.0	2.0	4.7	0.3	1.9	0.0	6.1	1.1	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.8	3.0	0.0	68.8	9.1	6.9	70.2	0.0	69.1	85.2	0.0	50.2
LnGrp LOS	E	A	A	E	A	A	E	A	E	F	A	D
Approach Vol, veh/h		2142			944			218			59	
Approach Delay, s/veh		3.5			12.8			69.4			66.2	
Approach LOS		A			B			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	89.6	9.4	22.2	6.0	93.4	6.7	24.9
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	50.5	16.0	30.0	11.0	55.5	16.0	32.0
Max Q Clear Time (g_c+I1), s	6.3	2.0	6.2	5.3	3.6	16.3	4.3	20.4
Green Ext Time (p_c), s	0.0	19.6	0.0	0.1	0.0	3.9	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	2148	906	19	58	27
Future Vol, veh/h	2	2148	906	19	58	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	4	8	0	0	0
Mvmt Flow	2	2261	954	20	61	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	974	0	-	0	2099	487
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	1135	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	716	-	-	-	~ 46	532
Stage 1	-	-	-	-	335	-
Stage 2	-	-	-	-	273	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	716	-	-	-	~ 46	532
Mov Cap-2 Maneuver	-	-	-	-	158	-
Stage 1	-	-	-	-	334	-
Stage 2	-	-	-	-	273	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	36
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	716	-	-	-	203
HCM Lane V/C Ratio	0.003	-	-	-	0.441
HCM Control Delay (s)	10	-	-	-	36
HCM Lane LOS	B	-	-	-	E
HCM 95th %tile Q(veh)	0	-	-	-	2.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	2149	66	74	903	23	60
Future Volume (veh/h)	2149	66	74	903	23	60
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1870	1900	1781	1693	1870
Adj Flow Rate, veh/h	2286	70	79	961	24	64
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	2	0	8	14	2
Cap, veh/h	2670	1210	102	2902	89	87
Arrive On Green	0.76	0.76	0.06	0.86	0.06	0.06
Sat Flow, veh/h	3589	1585	1810	3474	1612	1585
Grp Volume(v), veh/h	2286	70	79	961	24	64
Grp Sat Flow(s),veh/h/ln	1749	1585	1810	1692	1612	1585
Q Serve(g_s), s	53.6	1.3	5.2	6.8	1.7	4.8
Cycle Q Clear(g_c), s	53.6	1.3	5.2	6.8	1.7	4.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2670	1210	102	2902	89	87
V/C Ratio(X)	0.86	0.06	0.77	0.33	0.27	0.73
Avail Cap(c_a), veh/h	2670	1210	300	2902	404	398
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.7	3.5	55.9	1.7	54.4	55.8
Incr Delay (d2), s/veh	3.8	0.1	11.8	0.1	1.6	11.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.7	0.3	2.6	0.8	0.7	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.5	3.6	67.6	1.8	56.0	66.9
LnGrp LOS	B	A	E	A	E	E
Approach Vol, veh/h	2356			1040	88	
Approach Delay, s/veh	13.2			6.8	63.9	
Approach LOS	B			A	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	11.3	97.6				108.9	11.1
Change Period (Y+Rc), s	4.5	6.0				6.0	4.5
Max Green Setting (Gmax), s	19.9	55.0				79.4	30.1
Max Q Clear Time (g_c+I1), s	7.2	55.6				8.8	6.8
Green Ext Time (p_c), s	0.1	0.0				7.8	0.2

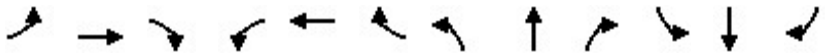
Intersection Summary			
HCM 6th Ctrl Delay		12.6	
HCM 6th LOS		B	

Intersection	
Intersection Delay, s/veh	48.6
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	107	65	224	121	87	75	137	337	17	58	361	65
Future Vol, veh/h	107	65	224	121	87	75	137	337	17	58	361	65
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	1	3	1	1	1	0	1	3	0	0	2	0
Mvmt Flow	111	68	233	126	91	78	143	351	18	60	376	68
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	21.1	37.4	42.3	84.2
HCM LOS	C	E	E	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	62%	0%	43%	100%	0%
Vol Thru, %	0%	95%	38%	0%	31%	0%	85%
Vol Right, %	0%	5%	0%	100%	27%	0%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	137	354	172	224	283	58	426
LT Vol	137	0	107	0	121	58	0
Through Vol	0	337	65	0	87	0	361
RT Vol	0	17	0	224	75	0	65
Lane Flow Rate	143	369	179	233	295	60	444
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.364	0.889	0.467	0.544	0.758	0.156	1.069
Departure Headway (Hd)	9.561	9.038	9.774	8.751	9.688	9.272	8.674
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	378	406	371	415	377	385	417
Service Time	7.261	6.738	7.474	6.451	7.688	7.064	6.465
HCM Lane V/C Ratio	0.378	0.909	0.482	0.561	0.782	0.156	1.065
HCM Control Delay	17.6	51.9	20.8	21.4	37.4	13.8	93.8
HCM Lane LOS	C	F	C	C	E	B	F
HCM 95th-tile Q	1.6	9.1	2.4	3.2	6.1	0.5	14.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	989	116	444	1459	249	341	220	274	347	203	141
Future Volume (veh/h)	105	989	116	444	1459	249	341	220	274	347	203	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1870	1811	1841	1856	1900	1885	1870	1826	1870	1885	1900
Adj Flow Rate, veh/h	109	1030	0	462	1520	0	355	229	285	361	211	147
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	2	6	4	3	0	1	2	5	2	1	0
Cap, veh/h	133	1483		415	1640		412	400	327	418	408	344
Arrive On Green	0.07	0.42	0.00	0.12	0.47	0.00	0.12	0.21	0.21	0.12	0.22	0.22
Sat Flow, veh/h	1795	3554	1535	3401	3526	1610	3483	1870	1528	3456	1885	1590
Grp Volume(v), veh/h	109	1030	0	462	1520	0	355	229	285	361	211	147
Grp Sat Flow(s),veh/h/ln	1795	1777	1535	1700	1763	1610	1742	1870	1528	1728	1885	1590
Q Serve(g_s), s	7.8	31.2	0.0	16.0	53.1	0.0	13.1	14.4	23.6	13.4	12.9	10.5
Cycle Q Clear(g_c), s	7.8	31.2	0.0	16.0	53.1	0.0	13.1	14.4	23.6	13.4	12.9	10.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	133	1483		415	1640		412	400	327	418	408	344
V/C Ratio(X)	0.82	0.69		1.11	0.93		0.86	0.57	0.87	0.86	0.52	0.43
Avail Cap(c_a), veh/h	219	1483		415	1640		558	457	373	554	432	364
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.36	0.36	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.8	31.3	0.0	57.5	32.9	0.0	56.7	46.1	49.8	56.5	45.3	44.3
Incr Delay (d2), s/veh	4.6	2.7	0.0	62.9	4.4	0.0	8.0	0.5	16.5	8.6	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	13.7	0.0	10.4	22.9	0.0	6.2	6.7	10.4	6.4	6.2	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	34.0	0.0	120.4	37.3	0.0	64.7	46.6	66.3	65.2	45.7	44.6
LnGrp LOS	E	C		F	D		E	D	E	E	D	D
Approach Vol, veh/h		1139	A		1982	A		869			719	
Approach Delay, s/veh		36.9			56.7			60.5			55.2	
Approach LOS		D			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	59.2	19.5	32.4	13.7	65.4	19.8	32.0
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	45.5	21.0	30.0	16.0	45.5	21.0	32.0
Max Q Clear Time (g_c+I1), s	18.0	33.2	15.1	14.9	9.8	55.1	15.4	25.6
Green Ext Time (p_c), s	0.0	4.0	0.4	1.0	0.1	0.0	0.4	0.8

Intersection Summary	
HCM 6th Ctrl Delay	52.4
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	1180	112	251	1869	53	251	11	163	14	20	60
Future Volume (veh/h)	33	1180	112	251	1869	53	251	11	163	14	20	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1841	1900	1870	1841	1900	1870	1900	1900	1900	1826	1826
Adj Flow Rate, veh/h	34	1229	117	261	1947	55	261	11	170	15	21	62
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	6	4	0	2	4	0	2	0	0	0	5	5
Cap, veh/h	43	1889	865	218	2230	1022	218	20	302	23	36	107
Arrive On Green	0.05	1.00	1.00	0.12	0.64	0.64	0.12	0.20	0.20	0.01	0.09	0.09
Sat Flow, veh/h	1725	3497	1601	1781	3497	1603	1781	98	1518	1810	403	1190
Grp Volume(v), veh/h	34	1229	117	261	1947	55	261	0	181	15	0	83
Grp Sat Flow(s),veh/h/ln	1725	1749	1601	1781	1749	1603	1781	0	1616	1810	0	1593
Q Serve(g_s), s	2.6	0.0	0.0	16.0	59.6	1.7	16.0	0.0	13.2	1.1	0.0	6.6
Cycle Q Clear(g_c), s	2.6	0.0	0.0	16.0	59.6	1.7	16.0	0.0	13.2	1.1	0.0	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.94	1.00		0.75
Lane Grp Cap(c), veh/h	43	1889	865	218	2230	1022	218	0	322	23	0	143
V/C Ratio(X)	0.80	0.65	0.14	1.20	0.87	0.05	1.20	0.00	0.56	0.65	0.00	0.58
Avail Cap(c_a), veh/h	145	1889	865	218	2230	1022	218	0	395	221	0	365
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	61.9	0.0	0.0	57.5	19.4	8.9	57.5	0.0	47.3	64.4	0.0	57.3
Incr Delay (d2), s/veh	7.3	1.0	0.2	125.4	4.0	0.0	125.4	0.0	0.6	10.6	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.3	0.0	14.6	22.4	0.6	14.8	0.0	5.5	0.6	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.2	1.0	0.2	182.9	23.4	8.9	182.9	0.0	47.9	75.0	0.0	58.7
LnGrp LOS	E	A	A	F	C	A	F	A	D	E	A	E
Approach Vol, veh/h		1380			2263			442			98	
Approach Delay, s/veh		2.6			41.5			127.6			61.2	
Approach LOS		A			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	75.3	20.0	15.7	7.2	88.0	5.7	30.1
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	50.5	16.0	30.0	11.0	55.5	16.0	32.0
Max Q Clear Time (g_c+I1), s	18.0	2.0	18.0	8.6	4.6	61.6	3.1	15.2
Green Ext Time (p_c), s	0.0	7.5	0.0	0.3	0.0	0.0	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	38.2
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	1300	2169	95	17	15
Future Vol, veh/h	20	1300	2169	95	17	15
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	5	4	4	1	6	0
Mvmt Flow	21	1340	2236	98	18	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2336	0	-	0	2999	1169
Stage 1	-	-	-	-	2287	-
Stage 2	-	-	-	-	712	-
Critical Hdwy	4.2	-	-	-	6.92	6.9
Critical Hdwy Stg 1	-	-	-	-	5.92	-
Critical Hdwy Stg 2	-	-	-	-	5.92	-
Follow-up Hdwy	2.25	-	-	-	3.56	3.3
Pot Cap-1 Maneuver	199	-	-	-	~ 10	189
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	437	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	199	-	-	-	~ 9	189
Mov Cap-2 Maneuver	-	-	-	-	45	-
Stage 1	-	-	-	-	53	-
Stage 2	-	-	-	-	436	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	95.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	199	-	-	-	70
HCM Lane V/C Ratio	0.104	-	-	-	0.471
HCM Control Delay (s)	25.2	-	-	-	95.8
HCM Lane LOS	D	-	-	-	F
HCM 95th %tile Q(veh)	0.3	-	-	-	1.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1284	33	63	2153	117	106
Future Volume (veh/h)	1284	33	63	2153	117	106
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1856	1841	1870	1870	1900
Adj Flow Rate, veh/h	1338	34	66	2243	122	110
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	3	4	2	2	0
Cap, veh/h	2579	1159	85	2926	159	144
Arrive On Green	0.74	0.74	0.05	0.82	0.09	0.09
Sat Flow, veh/h	3589	1571	1753	3647	1781	1610
Grp Volume(v), veh/h	1338	34	66	2243	122	110
Grp Sat Flow(s),veh/h/ln	1749	1571	1753	1777	1781	1610
Q Serve(g_s), s	19.5	0.7	4.5	36.3	8.0	8.0
Cycle Q Clear(g_c), s	19.5	0.7	4.5	36.3	8.0	8.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2579	1159	85	2926	159	144
V/C Ratio(X)	0.52	0.03	0.77	0.77	0.77	0.77
Avail Cap(c_a), veh/h	2579	1159	291	2926	447	404
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.7	4.2	56.4	5.1	53.4	53.4
Incr Delay (d2), s/veh	0.8	0.0	13.8	1.3	7.6	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.2	2.3	7.6	4.0	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.5	4.3	70.3	6.3	61.0	61.7
LnGrp LOS	A	A	E	A	E	E
Approach Vol, veh/h	1372			2309	232	
Approach Delay, s/veh	7.4			8.2	61.3	
Approach LOS	A			A	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	10.3	94.5				104.8	15.2
Change Period (Y+Rc), s	4.5	6.0				6.0	4.5
Max Green Setting (Gmax), s	19.9	55.0				79.4	30.1
Max Q Clear Time (g_c+I1), s	6.5	21.5				38.3	10.0
Green Ext Time (p_c), s	0.1	11.8				27.9	0.7

Intersection Summary							
HCM 6th Ctrl Delay			11.0				
HCM 6th LOS			B				

Appendix D: Crash Data

CITY OF NEWBERG, YAMHILL COUNTY

PACIFIC HY 99W at BRUTSCHER ST, City of Newberg, Yamhill County, 01/01/2015 to 12/31/2019

1 - 4 of 28 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J N V	I H L	C O R K	W	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
00441	N	N	N					05/08/2015	14	BRUTSCHER ST	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE								FR		PACIFIC HY 99W	NE		TRF SIGNAL	N	DRY	REAR		UNKN	NE-SW									000	00
N								UNK			06	0		N	DAY	PDO		UNKNOWN		01	DRVR	NONE	00	Unk	UNK		026	000	29
N								45 18 28.53	-122 56 31.38	009100100S00															UNK				
																	02	NONE 0	STOP										
																		PRVTE	NE-SW									011	00
																		PSNGR CAR		01	DRVR	NONE	78	M	OR-Y		000	000	00
																									OR<25				
01494	N	N	N					12/08/2016	14	BRUTSCHER ST	INTER	CROSS	N	N	SNOW	S-1STOP	01	NONE 9	STRGHT											29
NONE								TH		PACIFIC HY 99W	NE		TRF SIGNAL	N	ICE	REAR		N/A	NE-SW									000	00
N								11A			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N								45 18 28.53	-122 56 31.38	009100100S00															UNK				
																	02	NONE 9	STOP										
																		N/A	NE-SW									011	00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																									UNK				
00016	N	N	N		N	N		01/06/2017	14	BRUTSCHER ST	INTER	CROSS	N	N	CLD	ANGL-OTH	01	NONE 0	TURN-R											02
CITY								FR		PACIFIC HY 99W	NE		TRF SIGNAL	N	DRY	TURN		PRVTE	SE-NE									000	00
N								6A			05	0		N	DARK	INJ		PSNGR CAR		01	DRVR	NONE	22	M	OR-Y		028	000	02
N								45 18 28.53	-122 56 31.38	009100100S00															OR>25				
																	02	NONE 0	STRGHT										
																		PRVTE	SW-NE									000	00
																		PSNGR CAR		01	DRVR	NONE	64	M	OR-Y		000	000	00
																									OR<25				
																	02	NONE 0	STRGHT										
																		PRVTE	SW-NE									000	00
																		PSNGR CAR		02	PSNG	INJC	74	F			000	000	00
00522	N	N	N					05/29/2019	14	BRUTSCHER ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	STRGHT											29,07
NONE								WE		PACIFIC HY 99W	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									000	00
N								6P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	33	M	OR-Y		026	000	29,07
N								45 18 28.53	-122 56 31.38	009100100S00															OR<25				
																	02	NONE	STOP										
																		PRVTE	NE-SW									012	00
																		PSNGR CAR		01	DRVR	INJC	30	F	OR-Y		000	000	00
																									OR<25				
00024	N	N	N					01/09/2019	14	BRUTSCHER ST	INTER	CROSS	N	N	UNK	S-1STOP	01	NONE	STRGHT											29
NO RPT								WE		PACIFIC HY 99W	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N									088	00
N								6P			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	67	M	OR-Y		026	088	29
N								45 18 28.53	-122 56 31.38	009100100S00															OR<25				

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R J U G S	S	W H V	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
															02	NONE	STOP											
																PRVTE	S -N									012		00
																PSNGR CAR		01	DRVR	INJC	54	F	OR-Y		000	000		00
																							OR<25					
00562	N	N	N		N	06/13/2019	17	BRUTSCHER ST	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 9	STRGHT										004	07
NONE						TH	0	PACIFIC HY 99W	S		TRF SIGNAL	N	DRY	REAR		N/A	S -N									000		00
N						12P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N						45 18 27.92	-122 56 31.13																UNK					
															02	NONE 9	STOP											
																N/A	S -N									012		00
																PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																							UNK					
00296	N	N	N			03/27/2015	14	BRUTSCHER ST	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 1	STRGHT										013	07
NONE						FR		PACIFIC HY 99W	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW-NE									000		00
N						12P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	46	M	OR-Y		043,026	000		07
N						45 18 28.53	-122 56 31.38	009100100S00															OR<25					
															02	NONE 0	STOP											
																PRVTE	SW-NE									011	013	00
																PSNGR CAR		01	DRVR	INJC	73	F	OR-Y		000	000		00
																							OR<25					
															03	NONE 0	STOP											
																PRVTE	SW-NE									011		00
																PSNGR CAR		01	DRVR	NONE	00	M	UNK		000	000		00
																							UNK					
00806	N	N	N			08/13/2015	14	BRUTSCHER ST	INTER	CROSS	N	N	CLR	S-STRGHT	01	NONE 0	STRGHT										092	29
NONE						TH		PACIFIC HY 99W	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW-NE									000		00
N						5P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	29	M	OR-Y		042	000		29
N						45 18 28.53	-122 56 31.38	009100100S00															OR>25					
															02	NONE 0	STRGHT											
																PRVTE	SW-NE									007	092	00
																PSNGR CAR		01	DRVR	INJC	19	F	OR-Y		000	000		00
																							OR<25					
00875	N	N	N			09/01/2015	14	BRUTSCHER ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	29
NONE						TU		PACIFIC HY 99W	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW-NE									000		00
N						6P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	26	M	OR-Y		026	000		29
N						45 18 28.53	-122 56 31.38	009100100S00															OR<25					
															02	NONE 0	STOP											
																PRVTE	SW-NE									011	013	00
																PSNGR CAR		01	DRVR	INJC	53	F	OR-Y		000	000		00
																							OR<25					

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	M R J U G S	S N H V	W O R L	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / TYPE / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
															03	NONE 0	STOP										
																PRVTE	SW-NE								012		00
																PSNGR CAR		01	DRVR	NONE	39	F	OR-Y		000	000		00
																							OR<25					
00741	N	N	N	N	N	07/24/2018	14	BRUTSCHER ST	INTER	CROSS	N	Y	CLR	FIX OBJ	01	NONE	STRGHT									054,091	17
CITY						TU		PACIFIC HY 99W	SW		TRF SIGNAL	N	DRY	FIX		PRVTE	SE-NW								088	054,091	00
N						6P			05	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	28	M	OR-Y		080,081	028		17
N						45 18 28.53	-122 56 31.38	009100100S00															OR<25					
00574	N	N	N			05/24/2019	14	BRUTSCHER ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	STRGHT										29,07
NO RPT						FR		PACIFIC HY 99W	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW-NE								000		00
N						9A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	19	F	OR-Y		026	000		29,07
N						45 18 28.55	-122 56 31.4	009100100S00															OR<25					
															02	NONE	STOP										
																PRVTE	SW-NE								011		00
																PSNGR CAR		01	DRVR	INJC	22	F	OTH-Y		000	000		00
																							N-RES					
00689	N	N	N		N	07/28/2019	14	BRUTSCHER ST	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 9	STRGHT										40,07
CITY						SU		PACIFIC HY 99W	SW		TRF SIGNAL	N	DRY	REAR		N/A	SW-NE								088		00
N						6A			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N						45 18 28.31	-122 56 32.21	009100100S00															UNK					
															02	NONE 9	STOP										
																N/A	SW-NE								011		00
																PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																							UNK					
01221	N	N	N			12/06/2019	14	BRUTSCHER ST	INTER	3-LEG	N	N	CLD	S-1STOP	01	NONE	STRGHT									013	32,29,16
CITY						FR		PACIFIC HY 99W	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W -E								000		00
N						6A			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	23	M	OR-Y		026,052	025		32,29,16
N						45 18 28.29	-122 56 32.21	009100100S00															OR>25					
															02	NONE	STOP										
																PRVTE	W -E								012	013	00
																PSNGR CAR		01	DRVR	INJB	32	M	OR-Y		000	000		00
																							OR<25					
															02	NONE	STOP										
																PRVTE	W -E								012	013	00
																PSNGR CAR		02	PSNG	INJB	30	M			000	000		00
															03	NONE	STOP										
																PRVTE	W -E								012	013	00
																PSNGR CAR		01	DRVR	INJC	37	M	OR-Y		000	000		00
																							OR>25					

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																04	NONE PRVTE PSNGR CAR	STOP W -E									012 000	00 00
88054	N	N	N				11/24/2016 NONE N N	14 TH 9P 45 18 28.53 -122 56 31.38	BRUTSCHER ST PACIFIC HY 99W 009100100S00	INTER CN 04	3-LEG 0	N TRF SIGNAL	N N	RAIN WET DARK	ANGL-OTH TURN INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-R SE-NE	01	DRVR	NONE	18	F	OR-Y OR<25		028	000	02
																02	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	INJC	39	M	OR-Y OR<25		000	000	00 00
00764	N	N	N				07/06/2016 CITY N N	14 WE 10P 45 18 28.53 -122 56 31.38	BRUTSCHER ST PACIFIC HY 99W 009100100S00	INTER CN 04	3-LEG 0	N TRF SIGNAL	N N	CLD DRY DLIT	O-1 L-TURN TURN PDO	01	NONE 9 N/A PSNGR CAR	TURN-L NE-SE	01	DRVR	NONE	00	Unk	UNK UNK		000	000	02,08 00 00
																02	NONE 9 N/A PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	00	Unk	UNK UNK		000	000	00 00
00479	N	N	N	N	N		05/19/2017 CITY N N	14 FR 6A 45 18 28.53 -122 56 31.38	BRUTSCHER ST PACIFIC HY 99W 009100100S00	INTER CN 01	3-LEG 0	N TRF SIGNAL	N Y	CLR DRY DAWN	ANGL-OTH ANGL PDO	01	NONE 9 N/A PSNGR CAR	STRGHT SE-NW	01	DRVR	NONE	00	Unk	UNK UNK		000	000	04 00 00
																02	NONE 9 N/A PSNGR CAR	STRGHT NE-SW	01	DRVR	NONE	00	Unk	UNK UNK		000	000	00 00
00012	N	N	N				01/05/2018 CITY N N	14 FR 11A 45 18 28.53 -122 56 31.38	BRUTSCHER ST PACIFIC HY 99W 009100100S00	INTER CN 03	3-LEG 0	N TRF SIGNAL	N Y	CLD WET DAY	O-1 L-TURN TURN INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-L SE-SW	01	DRVR	INJC	17	M	OR-Y OR<25		028,004	000	02,08 00 02,08
																02	NONE 0 PRVTE PSNGR CAR	STRGHT NW-SE	01	DRVR	INJC	47	F	OR-Y OR>25		000	018 000	00 00
00485	N	N	N	N	N		05/13/2018 CITY N N	14 SU 5P 45 18 28.53 -122 56 31.38	BRUTSCHER ST PACIFIC HY 99W 009100100S00	INTER CN 03	3-LEG 0	N TRF SIGNAL	N N	CLR DRY DAY	O-1 L-TURN TURN INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT NW-SE	01	DRVR	INJB	59	M	OR-Y OR<25		000	000 000	02,08 00 00

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
																02	NONE 0	TURN-L										
																	PRVTE	SE-SW									000	00
																	PSNGR CAR		01	DRVR	INJC	18	F	OR-Y		028,004	000	02,08
																								OR<25				
																02	NONE 0	TURN-L										
																	PRVTE	SE-SW									000	00
																	PSNGR CAR		02	PSNG	INJB	17	F			000	000	00
01140	N	N	N				11/07/2018	14	BRUTSCHER ST	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE	TURN-L										02,08
NONE							WE		PACIFIC HY 99W	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW-NW									019	00
N							4P			01	0		Y	DUSK	INJ		PSNGR CAR		01	DRVR	NONE	33	M	OR-Y		004,028	000	02,08
N							45 18 28.53	-122 56 31.4	009100100S00															OR<25				
																02	NONE	STRGHT										
																	PRVTE	NE-SW									000	00
																	PSNGR CAR		01	DRVR	INJC	57	F	OR-Y		000	000	00
																								OR<25				
00293	N	N	N				03/14/2018	14	BRUTSCHER ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT										04
CITY							WE		PACIFIC HY 99W	CN		TRF SIGNAL	N	WET	ANGL		N/A	W -E									000	00
N							11P			04	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 18 28.53	-122 56 31.38	009100100S00		(04)													UNK				
																02	NONE 9	TURN-L										
																	N/A	S -W									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
00450	N	N	N				05/01/2018	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLD	ANGL-OTH	01	NONE 9	STRGHT										04
CITY							TU		BRUTSCHER ST	CN		TRF SIGNAL	N	DRY	ANGL		N/A	E -W									000	00
N							8A			01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 18 28.55	-122 56 31.41	009100100S00		(04)													UNK				
																02	NONE 9	TURN-L										
																	N/A	SW-W									015	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
00934	N	N	N				09/11/2018	14	BRUTSCHER ST	INTER	CROSS	N	N	UNK	ANGL-OTH	01	NONE 9	STRGHT										04
NONE							TU		PACIFIC HY 99W	CN		TRF SIGNAL	N	UNK	TURN		N/A	NW-SE									000	00
N							1P			03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 18 28.53	-122 56 31.38	009100100S00		(04)													UNK				
																02	NONE 9	TURN-L										
																	N/A	SW-NW									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G	J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01083	N	N	N		N	N	11/02/2019	14	BRUTSCHER ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											27,04
CITY			SA						PACIFIC HY 99W	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	NE-SW									000		00
N			2P							03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJA	57	F	OR-Y		016,020	038		27,04
N			45 18 28.53		-122 56 31.38				009100100S00															OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	NW-SE									000		00
																	PSNGR CAR		01	DRVR	INJC	55	F	OR-Y		000	000		00
																								OR<25					
00296	N	N	N				04/02/2019	14	BRUTSCHER ST	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE	TURN-L											08,10
CITY			TU						PACIFIC HY 99W	CN		STOP SIGN	N	DRY	TURN		PRVTE	W -N									018		00
N			6P							01	0		Y	DAY	INJ		PSNGR CAR		01	DRVR	NONE	18	F	OR-Y		002,007	000		08,10
N			45 18 28.54		-122 56 31.39				009100100S00															OR>25					
																02	NONE	STOP											
																	PRVTE	N -S									011		00
																	PSNGR CAR		01	DRVR	INJC	35	F	OR-Y		000	000		00
																								OR<25					
01226	N	N	N				12/09/2019	14	BRUTSCHER ST	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 9	TURN-L											02
NO RPT			MO						PACIFIC HY 99W	CN		TRF SIGNAL	N	DRY	TURN		N/A	N -NE									000		00
N			6P							04	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 18 28.53		-122 56 31.39				009100100S00															UNK					
																02	NONE 9	STRGHT											
																	N/A	S -N									000		00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																								UNK					
01182	N	N	N				11/25/2019	14	BRUTSCHER ST	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 9	STRGHT											04
CITY			MO						PACIFIC HY 99W	CN		TRF SIGNAL	N	DRY	TURN		N/A	SW-NE									000		00
N			11P							03	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 18 28.54		-122 56 31.4				009100100S00															UNK					
																02	NONE 9	TURN-L											
																	N/A	NE-S									000		00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																								UNK					
01283	N	N	N				12/20/2019	17	BRUTSCHER ST	INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE	TURN-L											02
CITY			FR	0					PACIFIC HY 99W	CN		STOP SIGN	N	WET	ANGL		PRVTE	W -N									018		00
N			4P							04	0		Y	DUSK	INJ		PSNGR CAR		01	DRVR	NONE	18	F	OR-Y		004,028	000		02
N			45 18 25.48		-122 56 30																			OR<25					
																02	NONE	STRGHT											
																	PRVTE	N -S									000		00
																	PSNGR CAR		01	DRVR	INJB	69	F	OR-Y		000	000		00
																								OR<25					

CITY OF NEWBERG, YAMHILL COUNTY

PACIFIC HY 99W at BRUTSCHER ST, City of Newberg, Yamhill County, 01/01/2015 to 12/31/2019

28 - 28 of 28 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C O H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
01158	N	N	N		N		11/19/2019	17	BRUTSCHER ST	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT										02
NONE							TU	0	PACIFIC HY 99W	CN		STOP SIGN	N	WET	TURN		N/A	N -S									000	00
N							5P			03	0		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 18 25.5	-122 56 30.01																UNK				
																02	NONE 9	TURN-L										
																	N/A	W -N									015	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				

CITY OF NEWBERG, YAMHILL COUNTY

PACIFIC HY 99W at PROVIDENCE DR, City of Newberg, Yamhill County, 01/01/2015 to 12/31/2019

1 - 4 of 10 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	M R J U G S	S I N V	W C H L	O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00144	N	N	N				02/12/2015	14	PROVIDENCE DR	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE							TH		PACIFIC HY 99W	NE		UNKNOWN	N	DRY	REAR		UNKN	NE-SW									000		00
N							4P			06	0		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	00	M	UNK		026	000		29
N							45 18 36.29	-122 56 7.21	009100100S00															UNK					
																02	NONE 0	STOP											
																	PRVTE	NE-SW									011		00
																	PSNGR CAR		01	DRVR	NONE	24	F	OR-Y		000	000		00
																								OR<25					
00565	N	N	N				06/12/2015	14	PROVIDENCE DR	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE							FR		PACIFIC HY 99W	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									000		00
N							5P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	18	F	OR-Y		026	000		29
N							45 18 36.11	-122 56 7.77	009100100S00															OR<25					
																02	NONE 0	STOP											
																	PRVTE	NE-SW									011		00
																	PSNGR CAR		01	DRVR	NONE	27	F	OR-Y		000	000		00
																								OR>25					
00493	N	N	N		N	N	04/29/2016	14	PROVIDENCE DR	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
CITY							FR		PACIFIC HY 99W	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									006		00
N							7P			06	0		N	DUSK	INJ		PSNGR CAR		01	DRVR	NONE	19	M	OR-Y		043	000		07
N							45 18 36.11	-122 56 7.77	009100100S00															OR<25					
																02	NONE 0	STOP											
																	PRVTE	NE-SW									011		00
																	PSNGR CAR		01	DRVR	INJC	25	F	OR-Y		000	000		00
																								OR<25					
01078	N	N	N				10/31/2019	14	PROVIDENCE DR	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE	STRGHT										013	40,29
CITY							TH		PACIFIC HY 99W	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E -W									000		00
N							5P			06	0		N	DUSK	INJ		PSNGR CAR		01	DRVR	INJB	69	F	OR-Y		026	026		40,29
N							45 18 36.5	-122 56 6.66	009100100S00															OR<25					
																02	NONE	STOP											
																	PRVTE	E -W									012	013	00
																	PSNGR CAR		01	DRVR	NONE	70	M	OR-Y		000	000		00
																								OR<25					
																03	NONE	STOP											
																	PRVTE	E -W									012		00
																	PSNGR CAR		01	DRVR	INJC	38	F	OR-Y		000	000		00
																								OR<25					
00658	N	N	N				07/03/2015	14	PROVIDENCE DR	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
CITY							FR		PACIFIC HY 99W	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW-NE									000		00
N							2P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	19	F	OR-Y		026	000		29
N							45 18 36.11	-122 56 7.77	009100100S00															OR<25					

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J N V	S I H L	C O R K	W DAY / TIME / LAT / LONG	CLASS / DIST FROM / SECOND STREET / DIRECT / LRS	CITY STREET / FIRST STREET / RD CHAR / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD RNDBT DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
															02	NONE 0	STOP										
																PRVTE	SW-NE									011	00
																PSNGR CAR		01	DRVR	NONE	66	M	OR-Y		000	000	00
																							OR<25				
01343	N	N	N				12/21/2015	14	PROVIDENCE DR	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE							MO		PACIFIC HY 99W	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW-NE								000		00
N							12P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	UNK		026	000		29
N							45 18 36.11	-122 56 7.77	009100100S00															OR<25				
															02	NONE 0	STOP										
																PRVTE	SW-NE									011	00
																PSNGR CAR		01	DRVR	NONE	32	F	OR-Y		000	000	00
																							OR<25				
01096	N	N	N				10/10/2017	14	PROVIDENCE DR	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 9	STRGHT										29
NO RPT							TU		PACIFIC HY 99W	SW		TRF SIGNAL	N	WET	REAR		N/A	SW-NE								000		00
N							7P			06	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 18 36.11	-122 56 7.77	009100100S00															UNK				
															02	NONE 9	STOP										
																N/A	SW-NE									011	00
																PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																							UNK				
01050	N	N	N	N	N		10/11/2018	14	PROVIDENCE DR	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE	TURN-L										04
CITY							TH		PACIFIC HY 99W	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	S -SW								000		00
N							5P			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	37	F	OR-Y		000	000		00
N							45 18 36.11	-122 56 7.77	009100100S00															OR<25				
															02	NONE	STRGHT										
																PRVTE	SW-NE									000	00
																PSNGR CAR		01	DRVR	NONE	30	F	OR-Y		020	000	04
																							OR<25				
00699	N	N	N				07/25/2019	14	PROVIDENCE DR	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE	STRGHT										04
CITY							TH		PACIFIC HY 99W	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	W -E								000		00
N							8A			02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	16	M	OR-Y		020	000		04
N							45 18 36.11	-122 56 7.77	009100100S00															OR>25				
															02	NONE	TURN-L										
																PRVTE	S -W									000	00
																PSNGR CAR		01	DRVR	INJB	48	F	OR-Y		000	000	00
																							OR<25				
00938	N	N	N				09/25/2019	14	PROVIDENCE DR	INTER	3-LEG	N	N	CLR	S-1TURN	01	NONE	STRGHT										07
CITY							WE		PACIFIC HY 99W	CN		TRF SIGNAL	N	DRY	REAR		PRVTE	W -E								000		00
N							8P			03	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	34	F	OR-Y		019,042	000		07
N							45 18 35.85	-122 56 8.56	009100100S00															OR<25				

CITY OF NEWBERG, YAMHILL COUNTY

PACIFIC HY 99W at PROVIDENCE DR, City of Newberg, Yamhill County, 01/01/2015 to 12/31/2019

10 - 10 of 10 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R G S	U N H V	J I C L	S C O R	W O D K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED / LOC	ERROR	ACT	EVENT	CAUSE
																	02	NONE	TURN-R										
																		PRVTE	W -S									006		00
																		PSNGR CAR		01	DRVR	INJC	31	F	OR-Y		000	000		00
																									OR<25					
																	02	NONE	TURN-R										
																		PRVTE	W -S									006		00
																		PSNGR CAR		02	PSNG	INJC	32	M			000	000		00

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD at PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2015 to 12/31/2019

1 - 4 of 37 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R G S	J N V	S H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
85544	N	N	N				10/22/2019	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 9	TURN-R										08
NONE							TU		SPRINGBROOK RD	N		TRF SIGNAL	N	DRY	SS-O		N/A	N -SW									000	00
N							7A			06	2		N	DAY	PDO		SEMI TOW		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 18 23.12	-122 56 48.94	009100100S00															UNK				
																02	NONE 9	STOP										
																	N/A	N -S									011	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
01319	N	N	N				11/02/2016	16	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1TURN	01	NONE 9	STRGHT										29
NONE							WE	0	SPRINGBROOK RD	N		TRF SIGNAL	N	DRY	REAR		N/A	N -S									000	00
N							8A			06	2		N	DAWN	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 18 23.12	-122 56 48.94																UNK				
																02	NONE 9	TURN-R										
																	N/A	N -SW									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
00541	N	N	N				06/08/2015	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE							MO		SPRINGBROOK RD	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									000	00
N							4P			06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	36	F	OR-Y		026	000	29
N							45 18 23.12	-122 56 48.94	009100100S00															OR<25				
																02	NONE 0	STOP										
																	PRVTE	NE-SW									011	00
																	PSNGR CAR		01	DRVR	INJC	51	F	OR-Y		000	000	00
																								OR<25				
00858	N	N	N				08/24/2015	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
CITY							MO		SPRINGBROOK RD	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									000	00
N							7P			06	2		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y		026	026	29
N							45 18 23.12	-122 56 48.94	009100100S00															OR<25				
																02	NONE 0	STOP										
																	PRVTE	NE-SW									011	00
																	PSNGR CAR		01	DRVR	NONE	34	M	OR-Y		000	000	00
																								OR<25				
01434	N	N	N				12/31/2017	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NO RPT							SU		SPRINGBROOK RD	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW									000	00
N							4P			06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	45	F	OR-Y		026	000	29
N							45 18 23.12	-122 56 48.94	009100100S00															OR<25				
																02	NONE 0	STOP										
																	PRVTE	NE-SW									011	00
																	PSNGR CAR		01	DRVR	NONE	38	M	OR-Y		000	000	00
																								OR<25				

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD at PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2015 to 12/31/2019

5 - 9 of 37 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	M R U G S	J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES / LICNS LOC	PED ERROR	ACT EVENT	CAUSE
																02	NONE 0 PRVTE PSNGR CAR	STOP NE-SW	02	PSNG	INJC	41	F		000	011 000	00 00
																02	NONE 0 PRVTE PSNGR CAR	STOP NE-SW	03	PSNG	INJC	05	F		000	011 000	00 00
00010	N	N	N	Y			01/04/2017	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 9	TURN-R									29
NONE							WE		SPRINGBROOK RD	NE		TRF SIGNAL	N	DRY	REAR		N/A	NE-N								000	00
N N							5P 45 18 23.12 -122 56 48.94		009100100S00	09	2		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK UNK	000	000	00
																02	NONE 9 N/A PSNGR CAR	STOP NE-N	01	DRVR	NONE	00	Unk	UNK UNK	000	011 000	00 00
01203	N	N	N				10/21/2017	14	PACIFIC HY 99W	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 9	STRGHT									29
NONE							SA		SPRINGBROOK RD	NE		TRF SIGNAL	N	WET	REAR		N/A	NE-SW								000	00
N N							1P 45 18 23.12 -122 56 48.94		009100100S00	06	2		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK UNK	000	000	00
																02	NONE 9 N/A PSNGR CAR	STOP NE-SW	01	DRVR	NONE	00	Unk	UNK UNK	000	011 000	00 00
00198	N	N	N				02/16/2018	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT									29
NONE							FR		SPRINGBROOK RD	NE		TRF SIGNAL	N	WET	REAR		PRVTE	NE-SW								000	00
N N							6A 45 18 23.12 -122 56 48.94		009100100S00	06	2		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	39	M	OTH-Y N-RES	026	000	29
																02	NONE 0 PRVTE PSNGR CAR	STOP NE-SW	01	DRVR	INJC	34	F	OR-Y OR<25	000	011 000	00 00
00772	N	N	N	N	N		08/04/2018	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	STRGHT									07,29
CITY							SA		SPRINGBROOK RD	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW								000	00
N N							9P 45 18 23.12 -122 56 48.94		009100100S00	06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	28	M	OR-Y OR<25	043	000	07,29
																02	NONE PRVTE PSNGR CAR	STOP NE-SW	01	DRVR	INJC	25	F	OR-Y OR<25	000	011 000	00 00

CITY OF NEWBERG, YAMHILL COUNTY

SPRINGBROOK RD at PACIFIC HY 99W, City of Newberg, Yamhill County, 01/01/2015 to 12/31/2019

10 - 12 of 37 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J N V	S H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00802	N	N	N		N	N	08/09/2018	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	STRGHT										013	32,27,29
CITY							TH		SPRINGBROOK RD	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW								000		00
N							6P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y		052,026	038		32,27,29
N							45 18 23.12	-122 56 48.94	009100100S00															OR<25					
																02	NONE	STOP										
																	PRVTE	NE-SW								011	013	00
																	PSNGR CAR		01	DRVR	INJB	56	M	OR-Y		000	000		00
																								OR<25					
																03	NONE	STOP										
																	PRVTE	NE-SW								011		00
																	PSNGR CAR		01	DRVR	NONE	28	M	OTH-Y		000	000		00
																								N-RES					
00941	N	N	N				09/12/2018	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	STRGHT											29
NONE							WE		SPRINGBROOK RD	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW								000		00
N							10A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	56	F	OR-Y		026	000		29
N							45 18 23.12	-122 56 48.94	009100100S00															OR>25					
																02	NONE	STOP										
																	PRVTE	NE-SW								011		00
																	PSNGR CAR		01	DRVR	INJC	42	F	OR-Y		000	000		00
																								OR>25					
01136	N	N	N				11/05/2018	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	PED	01	NONE	TURN-R											02
CITY							MO		SPRINGBROOK RD	NE		TRF SIGNAL	N	DRY	PED		PRVTE	S -NE								000		00
N							5P			05	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	25	F	OR-Y		029	000		02
N							45 18 23.13	-122 56 48.94	009100100S00															OR<25					
																		-											
																		STRGHT		01	CONV	INJB	16	M		I XWLK	000	035		00
																		S N											
00028	N	N	N				01/10/2019	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	STRGHT										013	07,29
CITY							TH		SPRINGBROOK RD	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE-SW								088		00
N							6P			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJB	45	F	OR-Y		043,026	088		07,29
N							45 18 23.14	-122 56 48.95	009100100S00															OR<25					
																02	NONE	STOP										
																	PRVTE	NE-SW								012	013	00
																	PSNGR CAR		01	DRVR	INJC	47	F	OR-Y		000	000		00
																								OR<25					
																03	NONE	STOP										
																	PRVTE	NE-SW								012	013	00
																	PSNGR CAR		01	DRVR	INJC	34	F	OR-Y		000	000		00
																								OR>25					

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R J U G S	S W I N V	C O H L	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
															04	NONE PRVTE PSNGR CAR	STOP NE-SW									012 000	00 00
01167	N	N	N			11/21/2019	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	STRGHT										29,27
CITY						TH		SPRINGBROOK RD	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E -W								000	00
N N						1P 45 18 23.72	-122 56 47.2	009100100S00	06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	78	F	OR-Y OR<25		026	000	29,27
															02	NONE PRVTE PSNGR CAR	STOP E -W	01	DRVR	NONE	71	M	OR-Y OR<25		000	012 000	00 00
															02	NONE PRVTE PSNGR CAR	STOP E -W	02	PSNG	INJC	67	F			000	012 000	00 00
00050	N	N	N	N	N	01/12/2017	16	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 9	STRGHT										07
CITY						TH		SPRINGBROOK RD	S		TRF SIGNAL	N	DRY	REAR		N/A	S -N								000	00
N N						1P 45 18 23.12	-122 56 48.94	003900100S00	06	2		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK UNK		000	000	00
															02	NONE 9 N/A PSNGR CAR	STOP S -N	01	DRVR	NONE	00	Unk	UNK UNK		000	011 000	00 00
00877	N	N	N			08/29/2018	16	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	STRGHT										27,29
CITY						WE		SPRINGBROOK RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N								000	00
N N						8P 45 18 23.13	-122 56 48.94	003900100S00	06	0		N	DUSK	INJ		PSNGR CAR		01	DRVR	NONE	33	M	SUSP OR<25		026	038	27,29
															02	NONE PRVTE PSNGR CAR	STOP S -N	01	DRVR	NONE	39	M	NONE OR<25		000	011 000	00 00
															02	NONE PRVTE PSNGR CAR	STOP S -N	02	PSNG	INJC	38	F			000	011 000	00 00
00748	N	N	N			08/02/2019	16	PACIFIC HY 99W	INTER	2-LEG	N	N	CLR	S-1STOP	01	NONE 9	STRGHT										07
NONE						FR		SPRINGBROOK RD	S		TRF SIGNAL	N	DRY	REAR		N/A	S -N								000	00
N N						7A 45 18 22.09	-122 56 49.06	003900100S00	06	2		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK UNK		000	000	00

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J N V	S I H L	C O R K	W DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																02	NONE 9 N/A PSNGR CAR	STOP S -N						UNK			012 000		00 00
00877	Y	N	N	N			09/09/2019 11A 45 18 22.1	16 -122 56 49.06	PACIFIC HY 99W SPRINGBROOK RD 003900100S00	INTER S 06	CROSS 2	N TRF SIGNAL	N N	RAIN WET DAY	S-1STOP REAR PDO	01	NONE 9 N/A TRUCK	STRGHT S -N	01	DRVR DRVR	NONE NONE	00 00	Unk	UNK UNK UNK		000 000	000 000		01,07 00 00
																02	NONE 9 N/A PSNGR CAR	STOP S -N	01	DRVR	NONE	00	Unk	UNK UNK		000	012 000		00 00
00753	N	N	N				08/08/2019 UNK 45 18 23.12	16 -122 56 48.94	PACIFIC HY 99W SPRINGBROOK RD 003900100S00	INTER S 06	CROSS 2	N TRF SIGNAL	N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 9 N/A PSNGR CAR	STRGHT S -N	01	DRVR	NONE	00	Unk	UNK UNK UNK		000	000 000		29 00 00
																02	NONE 9 N/A PSNGR CAR	STOP S -N	01	DRVR	NONE	00	Unk	UNK UNK		000	011 000		00 00
01229	N	N	N				11/26/2015 1P 45 18 23.15	14 0 -122 56 48.95	PACIFIC HY 99W SPRINGBROOK RD	INTER S 06	CROSS 2	N TRF SIGNAL	N N	CLR DRY DAY	O-1STOP BACK PDO	01	NONE 0 PRVTE PSNGR CAR	BACK N -S	01	DRVR	NONE	00	M	UNK OR<25		011	000 000		10 00 10
																02	NONE 0 PRVTE PSNGR CAR	STOP S -N	01	DRVR	NONE	48	F	OR-Y OR<25		000	011 000		00 00
00085	N	N	N	N	N		01/19/2016 CITY 2P 45 18 23.12	16 TU 0 -122 56 48.94	PACIFIC HY 99W SPRINGBROOK RD 003900100S00	INTER S 06	CROSS 2	N TRF SIGNAL	N N	RAIN WET DAY	S-1STOP REAR PDO	01	NONE 9 N/A SCHL BUS	STRGHT S -N	01	DRVR	NONE	00	Unk	UNK UNK		000	000 000		29,17 00 00
																02	NONE 9 N/A PSNGR CAR	STOP S -N	01	DRVR	NONE	00	Unk	UNK UNK		000	011 000		00 00
01558	N	N	N				12/21/2016 NO RPT UNK 45 18 23.12	14 WE 0 -122 56 48.94	PACIFIC HY 99W SPRINGBROOK RD 003900100S00	INTER S 06	CROSS 2	N TRF SIGNAL	N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 9 N/A PSNGR CAR	STRGHT S -N	01	DRVR	NONE	00	Unk	UNK UNK		000	000 000		29 00 00

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J N V	S H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR / OWNER	QTY	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																02	NONE	9	STOP											
																	N/A		S -N										011		00
																	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK UNK		000	000		00
00214	N	N	N	N	N		02/28/2015	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-STRGHT	01	NONE	0	STRGHT											07
CITY			SA						SPRINGBROOK RD	SW		TRF SIGNAL	N	DRY	REAR		PRVTE		SW-NE									000		00
N			5P							06	2		N	DAY	INJ		PSNGR CAR			01	DRVR	NONE	52	M	OR-Y		043	000		07
N			45 18 23.12		-122 56 48.94				009100100S00																OR<25					
																02	NONE	0	STRGHT											
																	PRVTE		SW-NE									006		00
																	PSNGR CAR			01	DRVR	INJC	32	M	OR-Y OR<25		000	000		00
00379	N	N	N	N	N		04/23/2015	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE	0	STRGHT											32,29
CITY			TH						SPRINGBROOK RD	SW		TRF SIGNAL	N	DRY	REAR		PRVTE		SW-NE									000		00
N			11A							06	2		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	22	F	OR-Y		052,026	000		32,29
N			45 18 23.12		-122 56 48.94				009100100S00																OR<25					
																02	NONE	0	STOP											
																	PRVTE		SW-NE									011		00
																	PSNGR CAR			01	DRVR	NONE	66	M	OR-Y OR<25		000	000		00
00907	N	N	N				09/05/2018	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE		STRGHT											07,29
NONE			WE						SPRINGBROOK RD	SW		TRF SIGNAL	N	DRY	REAR		PRVTE		SW-NE									000		00
N			12P							06	0		N	DAY	INJ		PSNGR CAR			01	DRVR	NONE	24	M	OR-Y		026,014	000		07,29
N			45 18 23.12		-122 56 48.94				009100100S00																OR<25					
																02	NONE		STOP											
																	PRVTE		SW-NE									011		00
																	PSNGR CAR			01	DRVR	INJC	57	F	OR-Y OR<25		000	000		00
00007	N	N	N	N			01/03/2019	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	9	STRGHT											07
NONE			TH						SPRINGBROOK RD	SW		TRF SIGNAL	N	DRY	REAR		N/A		SW-NE									000		00
N			10P							06	2		N	DLIT	PDO		PSNGR CAR			01	DRVR	NONE	00	Unk	UNK UNK		000	000		00
N			45 18 22.8		-122 56 50.21				009100100S00																					
																02	NONE	9	STOP											
																	N/A		SW-NE									011		00
																	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK UNK		000	000		00
00926	N	N	N				09/23/2019	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE		STRGHT											07
NONE			MO						SPRINGBROOK RD	W		TRF SIGNAL	N	DRY	REAR		PRVTE		W -E									000		00
N			1P							06	0		N	DAY	INJ		PSNGR CAR			01	DRVR	NONE	26	F	OR-Y		026	000		07
N			45 18 22.71		-122 56 50.36				009100100S00																OR>25					

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	M D R U G S	J N S	S I H V	W C O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																02	NONE PRVTE PSNGR CAR	STOP W -E									012		00
																			01	DRVR	INJC	37	M	OR-Y OR<25		000	000		00
00073	N	N	N	N	N		01/21/2015 WE 6A 45 18 23.12	14 -122 56 48.94	PACIFIC HY 99W SPRINGBROOK RD 009100100S00	INTER CN 04	CROSS 2	N TRF SIGNAL	N N	CLR DRY DLIT	O-1 L-TURN TURN PDO	01	NONE 0 PRVTE PSNGR CAR	TURN-L N -NE	01	DRVR	NONE	45	F	OR-Y OR<25		020,004,016	015 000		04,27 00 04,27
																02	NONE 0 PRVTE PSNGR CAR	STRGHT S -N	01	DRVR	NONE	74	F	OR-Y OR<25		000	000 000		00 00
00683	N	N	N	N	N		07/10/2015 CITY 11P 45 18 23.12	14 -122 56 48.94	PACIFIC HY 99W SPRINGBROOK RD 009100100S00	INTER CN 03	CROSS 2	N TRF SIGNAL	N N	CLR DRY DLIT	O-1 L-TURN TURN PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	23	M	OR-Y OR<25		020	000 000		04 00 04
																02	NONE 0 PRVTE PSNGR CAR	TURN-L NE-S	01	DRVR	NONE	23	M	OR-Y OR<25		000	015 000		00 00
00673	N	N	N	N	N		06/19/2016 CITY 5P 45 18 23.12	14 -122 56 48.94	PACIFIC HY 99W SPRINGBROOK RD 009100100S00	INTER CN 03	CROSS 2	N TRF SIGNAL	N N	CLR DRY DAY	ANGL-OTH ANGL PDO	01	NONE 9 N/A PSNGR CAR	STRGHT SW-NE	01	DRVR	NONE	00	Unk	UNK UNK		000	000 000		04,40 00 00
																02	NONE 9 N/A PSNGR CAR	STRGHT N -S	01	DRVR	NONE	00	Unk	UNK UNK		000	000 000		00 00
00140	N	N	N	Y	N		02/15/2017 CITY 5A 45 18 23.12	14 -122 56 48.94	PACIFIC HY 99W SPRINGBROOK RD 009100100S00	INTER CN 01	CROSS 2	N TRF SIGNAL	N N	CLD SNO DLIT	ANGL-OTH TURN INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	01	DRVR	NONE	46	M	OR-Y OR<25		020	000 000		04 00 04
																02	NONE 0 PRVTE PSNGR CAR	TURN-L N -NE	01	DRVR	INJC	63	F	OR-Y OR<25		000	000 000		00 00
00608	N	N	N				06/17/2018 NO RPT 6A 45 18 23.12	14 -122 56 48.94	PACIFIC HY 99W SPRINGBROOK RD 009100100S00	INTER CN 01	CROSS 2	N TRF SIGNAL	N N	CLR DRY DAWN	ANGL-OTH ANGL INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT N -S	01	DRVR	INJC	49	M	OR-Y OR<25		000	000 000		04 00 00

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED / LOC	ERROR	ACT	EVENT	CAUSE
																01	NONE 0 PRVTE PSNGR CAR	STRGHT N -S	02	PSNG	INJC	41	F			000	000		00 00
																01	NONE 0 PRVTE PSNGR CAR	STRGHT N -S	03	PSNG	INJC	15	F			000	000		00 00
																01	NONE 0 PRVTE PSNGR CAR	STRGHT N -S	04	PSNG	INJC	18	F			000	000		00 00
																02	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	01	DRVR	NONE	57	M	OR-Y OR>25		020	000		00 04
																02	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	02	PSNG	INJA	45	F			000	000		00 00
																02	NONE 0 PRVTE PSNGR CAR	STRGHT NE-SW	03	PSNG	INJC	91	F			000	000		00 00
00499	N	N	N				05/17/2018 14 CITY N N	PACIFIC HY 99W TH 2P 45 18 23.14 -122 56 48.95	SPRINGBROOK RD 009100100S00	INTER CN 03	CROSS 2	N TRF SIGNAL	N N	CLR DRY DAY	ANGL-STP TURN PDO	01	NONE 1 N/A TRUCK	TURN-L SW-N	01	DRVR	NONE	00	Unk	UNK UNK		000	000		08 00 00
																02	NONE 9 N/A PSNGR CAR	STOP N -NE	01	DRVR	NONE	00	Unk	UNK UNK		000	013 000		00 00
00299	N	N	N				04/04/2019 14 CITY N N	PACIFIC HY 99W TH 1P 45 18 23.15 -122 56 48.94	SPRINGBROOK RD 009100100S00	INTER CN 04	CROSS 2	N TRF SIGNAL	N N	CLD DRY DAY	S-1STOP REAR INJ	01	NONE PRVTE PSNGR CAR	TURN-R S -NE	01	DRVR	NONE	63	M	OR-Y OR>25		043,026	013 000		07,29 00 07,29
																02	NONE PRVTE PSNGR CAR	TURN-R S -NE	01	DRVR	INJC	63	F	OTH-Y N-RES		000	000 000		00 00
00303	N	N	N				04/05/2019 14 CITY N N	PACIFIC HY 99W FR 10P 45 18 23.12 -122 56 48.94	SPRINGBROOK RD 009100100S00	INTER CN 01	CROSS 2	N TRF SIGNAL	N N	RAIN WET DLIT	PED PED INJ	01	NONE PRVTE PSNGR CAR	TURN-L S -SW	01	DRVR	NONE	19	M	OR-Y OR<25		029,052	000		02,32 00 02,32

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R J U G S	I N V	S H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																		- STRGHT S N	01	PED	INJC	34	M		I XWLK	000	000		00
00687	N	N	N				07/21/2019	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	STRGHT											07,29
NO RPT							SU		SPRINGBROOK RD	CN		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
N							12P			06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	70	M	OR-Y		026	000		07,29
N							45 18 23.12	-122 56 48.94	009100100S00															OR>25					
																02	NONE	0 STOP											
																	PRVTE	S -N									011		00
																	PSNGR CAR		01	DRVR	INJC	29	F	OR-Y		000	000		00
																								OR>25					
00396	N	N	N	N	N		05/01/2019	14	PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	9 TURN-L											07
CITY							WE		SPRINGBROOK RD	CN		TRF SIGNAL	N	DRY	REAR		N/A	NE-S									000		00
N							9P			04	2		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 18 23.35	-122 56 48.31	009100100S00															UNK					
																02	NONE	9 TURN-L											
																	N/A	NE-S									013		00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																								UNK					

CITY OF NEWBERG, YAMHILL COUNTY

PACIFIC HY 99W at VITTORIA WAY, City of Newberg, Yamhill County, 01/01/2015 to 12/31/2019

1 - 3 of 3 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J N V	S I H L	C O R K	W	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01068	Y	N	N		N	N		10/16/2018	14	PACIFIC HY 99W	INTER	3-LEG	N	Y	CLR	FIX OBJ	01	NONE	TURN-R										053,058	33,08,01
CITY								TU		VITTORIA WAY	NW		NONE	N	DRY	FIX		PRVTE	NE-NW									000	053,058	00
N								12P			05	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	41	M	OR-Y		047,051,081	017		33,08,01
N								45 18 34.08	-122 56 14.07	009100100S00															OR<25					
00397	N	N	N		N	N		04/18/2018	14	PACIFIC HY 99W	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	TURN-L											02,08
CITY								WE		VITTORIA WAY	CN		STOP SIGN	N	DRY	TURN		PRVTE	SW-NW									000		00
N								4P			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	27	F	OR-Y		028,004	000		02,08
N								45 18 34.08	-122 56 14.07	009100100S00															OR<25					
																	02	NONE 0	STRGHT											
																		PRVTE	NE-SW									000		00
																		PSNGR CAR		01	DRVR	INJC	59	M	OR-Y		000	000		00
																									OR<25					
00511	N	N	N					05/18/2018	14	PACIFIC HY 99W	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
NO RPT								FR		VITTORIA WAY	CN		STOP SIGN	N	DRY	TURN		PRVTE	NE-SW									000		00
N								3P			03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	16	M	OR-Y		000	000		00
N								45 18 34.08	-122 56 14.07	009100100S00															OR<25					
																	01	NONE 0	STRGHT											
																		PRVTE	NE-SW									000		00
																		PSNGR CAR		02	PSNG	INJC	16	M			000	000		00
																	02	NONE 0	TURN-L											
																		PRVTE	NW-NE									000		00
																		PSNGR CAR		01	DRVR	INJC	19	M	OR-Y		028	000		02
																									OR<25					

CITY OF NEWBERG, YAMHILL COUNTY

HAWORTH AVE at SPRINGBROOK RD, City of Newberg, Yamhill County, 01/01/2015 to 12/31/2019

1 - 5 of 23 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G S	J N H V	I	S	C	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01443	N	N	N						11/28/2016	16	HAWORTH AVE	INTER	3-LEG	N	Y	CLR	ANGL-OTH	01	NONE 0	TURN-L										08
NONE									MO	0	SPRINGBROOK RD	N		STOP SIGN	N	DRY	TURN		PRVTE	W -N								000		00
N									6P			05	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	17	F	OR-Y		001,080,024	000		08
N									45 18 28.73	-122 56 48.98										OR<25										
																		02	NONE 0	STRGHT										
																			PRVTE	S -N								006		00
																			PSNGR CAR		01	DRVR	NONE	64	F	OR-Y		000	000		00
																				OR<25										
00708	N	N	N		N	N			06/27/2016	16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	BIKE	01	NONE 0	STRGHT										02
CITY									MO	0	SPRINGBROOK RD	S		STOP SIGN	N	DRY	ANGL		PRVTE	N -S								015		00
N									10A			05	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	30	M	OR-Y		000	000		00
N									45 18 28.73	-122 56 48.98										OR<25										
																				- STRGHT	01	BIKE	INJB	00	M		I XWLK	055,028	035		02
																				E W										
00608	N	N	N						06/01/2016	16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	O-1STOP	01	NONE 9	BACK										10
NONE									WE	0	SPRINGBROOK RD	S		STOP SIGN	N	DRY	BACK		N/A	N -S								000		00
N									8A			06	0		N	DAY	PDO		UNKNOWN		01	DRVR	NONE	00	Unk	UNK		000	000		00
N									45 18 28.73	-122 56 48.98										UNK										
																		02	NONE 9	STOP										
																			N/A	S -N								011		00
																			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																				UNK										
00165	N	N	N		N	N			02/11/2016	16	HAWORTH AVE	INTER	3-LEG	N	N	CLD	ANGL-OTH	01	NONE 0	TURN-L										08
CITY									TH	0	SPRINGBROOK RD	W		STOP SIGN	N	WET	TURN		PRVTE	S -W								000		00
N									7P			06	0		N	DARK	INJ		PSNGR CAR		01	DRVR	NONE	44	F	OR-Y		007,002	000		08
N									45 18 28.73	-122 56 48.98										OR<25										
																		02	NONE 0	STOP										
																			PRVTE	W -E								011		00
																			PSNGR CAR		01	DRVR	INJB	29	F	OR-Y		000	000		00
																				OR<25										
00469	N	N	N		N	N			04/24/2016	16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 9	TURN-L										03
CITY									SU	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	TURN		N/A	W -N								000		00
N									7P			03	0		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N									45 18 28.73	-122 56 48.98										UNK										
																		02	NONE 9	STRGHT										
																			N/A	N -S								000		00
																			PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																				UNK										

CITY OF NEWBERG, YAMHILL COUNTY

HAWORTH AVE at SPRINGBROOK RD, City of Newberg, Yamhill County, 01/01/2015 to 12/31/2019

6 - 9 of 23 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R G S	J N V	S H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00563	N	N	N		N	N	05/21/2016	17	HAWORTH AVE	INTER	3-LEG	N	N	CLD	O-1 L-TURN	01	NONE 9	STRGHT											02
CITY			SA					0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	TURN		N/A	N -S									000		00
N			12P							01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 18 28.73					-122 56 48.98																UNK				
																02	NONE 9	TURN-L										
																	N/A	S -W									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
01381	N	N	N				11/14/2016	16	HAWORTH AVE	INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE 9	STRGHT											03
CITY			MO					0	SPRINGBROOK RD	CN		UNKNOWN	N	WET	ANGL		N/A	S -N									000		00
N			5P							04	0		Y	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N			45 18 28.73					-122 56 48.98																UNK				
																02	NONE 9	STRGHT										
																	N/A	W -E									015	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				
00866	N	N	N				08/15/2017	16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											03
NO RPT			TU					0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	TURN		PRVTE	N -S									000		00
N			4P							03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	55	M	OR-Y		021	000		03
N			45 18 28.73					-122 56 48.98																OR>25				
																02	NONE 0	TURN-L										
																	PRVTE	W -N									000	00
																	PSNGR CAR		01	DRVR	INJC	67	F	OR-Y		000	000		00
																								OR<25				
00889	N	N	N				08/20/2017	16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-R										013	03
CITY			SU					0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	TURN		PRVTE	E -N									018		00
N			8P							02	0		Y	DUSK	INJ		PSNGR CAR		01	DRVR	NONE	25	F	OTH-Y		000	000		00
N			45 18 28.73					-122 56 48.98																N-RES				
																02	NONE 0	STRGHT										
																	PRVTE	S -N									000	013 00
																	PSNGR CAR		01	DRVR	INJB	23	F	NONE		021	000		03
																								OR>25				
																02	NONE 0	STRGHT										
																	PRVTE	S -N									000	013 00
																	PSNGR CAR		02	PSNG	INJA	26	F			000	000		00
																03	NONE 0	STOP										
																	PRVTE	W -E									022	00
																	PSNGR CAR		01	DRVR	NONE	46	F	OR-Y		000	000		00
																								OR<25				

CITY OF NEWBERG, YAMHILL COUNTY

HAWORTH AVE at SPRINGBROOK RD, City of Newberg, Yamhill County, 01/01/2015 to 12/31/2019

10 - 12 of 23 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R G S	J N V	I H L	C O R K	W	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00983	Y	N	Y		N	N		09/12/2017	16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02,30
CITY								TU	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	TURN		PRVTE	N -S								000		00
N								6P			01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	34	M	OR-Y		028,050	000		02,30
N								45 18 28.73	-122 56 48.98																OR>25					
																	02	NONE 0	TURN-L											
																		PRVTE	S -W									000		00
																		PSNGR CAR		01	DRVR	INJB	58	M	OR-Y		000	000		00
																									OR<25					
00188	N	N	N					02/24/2017	16	HAWORTH AVE	INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE 9	STRGHT											03
NONE								FR	0	SPRINGBROOK RD	CN		STOP SIGN	N	WET	TURN		N/A	N -S								000		00
N								12P			03	0		N	DAY	PDO		UNKNOWN		01	DRVR	NONE	00	Unk	UNK		000	000		00
N								45 18 28.73	-122 56 48.98																UNK					
																	02	NONE 9	TURN-R											
																		N/A	W -S									015		00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					
00599	N	N	N					06/16/2017	16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT											02
NONE								FR	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	ANGL		N/A	S -N								000		00
N								10A			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N								45 18 28.73	-122 56 48.98																UNK					
																	02	NONE 9	STRGHT											
																		N/A	W -E									000		00
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																									UNK					
00098	N	N	N		N	N		01/19/2018	16	HAWORTH AVE	INTER	3-LEG	N	N	CLD	O-1 L-TURN	01	NONE 0	STRGHT											33,03,27
CITY								FR	0	SPRINGBROOK RD	CN		STOP SIGN	N	WET	TURN		PRVTE	S -N								000		00
N								7P			02	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	17	M	OTH-Y		051,021,016	038		33,03,27
N								45 18 28.73	-122 56 48.98																N-RES					
																	01	NONE 0	STRGHT											
																		PRVTE	S -N									000		00
																		PSNGR CAR		02	PSNG	INJB	16	F			000	000		00
																	01	NONE 0	STRGHT											
																		PRVTE	S -N									000		00
																		PSNGR CAR		03	PSNG	INJB	16	F			000	000		00
																	01	NONE 0	STRGHT											
																		PRVTE	S -N									000		00
																		PSNGR CAR		04	PSNG	INJB	18	M			000	000		00

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R U G J N V	S H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
															02	NONE 0 PRVTE PSNGR CAR	TURN-L N -E	01	DRVR	INJB	21	F	OR-Y OR<25		000	015 000		00 00
00146	N	N	N	N	N	02/03/2018 CITY N N	16 SA 10P 45 18 28.73	HAWORTH AVE SPRINGBROOK RD	INTER CN 01	3-LEG 0	N STOP SIGN	N	N DRY DLIT	CLR ANGL INJ	ANGL-OTH	01	NONE 0 PRVTE PSNGR CAR	STRGHT N -S	01	DRVR	INJC	51	F	OR-Y OR<25		028	015 000		02 00 02
							-122 56 48.98								02	NONE 0 PRVTE PSNGR CAR	STRGHT E -W	01	DRVR	NONE	33	F	OTH-Y OR<25		000	015 000		00 00
00538	N	N	N			05/30/2018 NONE N N	16 WE 3P 45 18 28.73	HAWORTH AVE SPRINGBROOK RD	INTER CN 01	3-LEG 0	N STOP SIGN	N	N DRY Y	CLR ANGL DAY	ANGL-OTH INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT N -S	01	DRVR	NONE	30	M	OR-Y OR<25		000	000 000		02 00 00
							-122 56 48.98								02	NONE 0 PRVTE PSNGR CAR	STRGHT E -W	01	DRVR	INJC	60	M	OTH-Y N-RES		028	018 000		00 02
															02	NONE 0 PRVTE PSNGR CAR	STRGHT E -W	02	PSNG	INJC	53	F			000	018 000		00 00
00838	N	N	N			08/17/2018 NONE N N	16 FR 10A 45 18 28.8	SPRINGBROOK RD HAWORTH AVE	INTER CN 01	3-LEG 0	N STOP SIGN	N	N DRY Y	CLR ANGL DAY	ANGL-OTH PDO	01	NONE 9 N/A PSNGR CAR	STRGHT E -W	01	DRVR	NONE	00	Unk	UNK UNK		000	000 000		02 00 00
							-122 56 49								02	NONE 9 N/A PSNGR CAR	STRGHT S -N	01	DRVR	NONE	00	Unk	UNK UNK		000	000 000		00 00
01194	N	N	N			11/20/2018 NONE N N	16 TU 7P 45 18 28.77	HAWORTH AVE SPRINGBROOK RD	INTER CN 03	CROSS 0	N STOP SIGN	N	N DRY DLIT	CLR ANGL PDO	ANGL-OTH PDO	01	NONE 9 N/A PSNGR CAR	STRGHT N -S	01	DRVR	NONE	00	Unk	UNK UNK		000	000 000		03 00 00
							-122 56 49								02	NONE 9 N/A PSNGR CAR	TURN-L W -N	01	DRVR	NONE	00	Unk	UNK UNK		000	015 000		00 00

CITY OF NEWBERG, YAMHILL COUNTY

HAWORTH AVE at SPRINGBROOK RD, City of Newberg, Yamhill County, 01/01/2015 to 12/31/2019

18 - 22 of 23 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D M R G S	J N V	S H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
01259	N	N	N				12/06/2018	17	HAWORTH AVE	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT											02
NO RPT							TH	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	ANGL		N/A	S -N									000		00
N							6P			04	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 18 28.76	-122 56 48.96																UNK					
																02	NONE 9	STRGHT											
																	N/A	W -E									015		00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																								UNK					
01330	N	N	N				12/25/2018	16	HAWORTH AVE	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 9	STRGHT											02
NONE							TU	0	SPRINGBROOK RD	CN		STOP SIGN	N	WET	ANGL		N/A	E -W									015		00
N							5P			01	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 18 28.73	-122 56 48.98																UNK					
																02	NONE 9	STRGHT											
																	N/A	N -S									015		00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																								UNK					
00401	N	N	N				05/02/2019	16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE	STRGHT											02
NONE							TH	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	ANGL		PRVTE	S -N									015		00
N							2P			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	79	M	OR-Y		028	000		02
N							45 18 28.73	-122 56 48.98																OR<25					
																02	NONE	STRGHT											
																	PRVTE	W -E									000		00
																	PSNGR CAR		01	DRVR	INJC	55	F	OR-Y		000	000		00
																								OR<25					
90218	N	N	N	N			04/05/2019	16	HAWORTH AVE	INTER	3-LEG	N	N	RAIN	O-1 L-TURN	01	NONE 9	STRGHT											02
CITY							FR	0	SPRINGBROOK RD	CN		STOP SIGN	N	WET	TURN		N/A	N -S									015		00
N							11A			01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 18 28.74	-122 56 49																UNK					
																02	NONE 9	TURN-L											
																	N/A	S -W									000		00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																								UNK					
00750	N	N	N	N	N		08/07/2019	16	HAWORTH AVE	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT											03
CITY							WE	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	ANGL		N/A	W -E									000		00
N							10A			03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 18 28.73	-122 56 49																UNK					
																02	NONE 9	STRGHT											
																	N/A	N -S									000		00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																								UNK					

CITY OF NEWBERG, YAMHILL COUNTY

HAWORTH AVE at SPRINGBROOK RD, City of Newberg, Yamhill County, 01/01/2015 to 12/31/2019

23 - 23 of 23 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
00775	N	N	N		N		08/13/2019	16	HAWORTH AVE	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 9	TURN-R										02
CITY							TU	0	SPRINGBROOK RD	CN		STOP SIGN	N	DRY	TURN		N/A	N -W									000	00
N							10A			01	0		N	DAY	PDO		SEMI TOW		01	DRVR	NONE	00	Unk	UNK		000	000	00
N							45 18 28.73 -122 56 49																	UNK				
																02	NONE 9	STRGHT										
																	N/A	E -W									000	00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00
																								UNK				

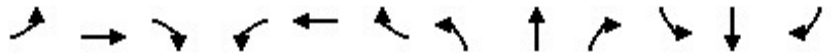
Appendix E: Future HCM Reports

Intersection	
Intersection Delay, s/veh	54.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	27	221	27	15	4	109	290	1	16	393	82
Future Vol, veh/h	82	27	221	27	15	4	109	290	1	16	393	82
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	6	4	1	0	8	0	2	9	0	0	6	5
Mvmt Flow	101	33	273	33	19	5	135	358	1	20	485	101
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	17	14	23.7	107.5
HCM LOS	C	B	C	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	75%	0%	59%	100%	0%
Vol Thru, %	0%	100%	25%	0%	33%	0%	83%
Vol Right, %	0%	0%	0%	100%	9%	0%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	109	291	109	221	46	16	475
LT Vol	109	0	82	0	27	16	0
Through Vol	0	290	27	0	15	0	393
RT Vol	0	1	0	221	4	0	82
Lane Flow Rate	135	359	135	273	57	20	586
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.284	0.72	0.303	0.53	0.14	0.041	1.144
Departure Headway (Hd)	7.947	7.552	8.501	7.355	9.476	7.557	7.026
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	455	481	425	494	380	472	516
Service Time	5.647	5.252	6.201	5.055	7.476	5.341	4.809
HCM Lane V/C Ratio	0.297	0.746	0.318	0.553	0.15	0.042	1.136
HCM Control Delay	13.8	27.4	14.9	18	14	10.7	110.8
HCM Lane LOS	B	D	B	C	B	B	F
HCM 95th-tile Q	1.2	5.7	1.3	3.1	0.5	0.1	20



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1254	66	262	642	177	160	191	392	416	131	83
Future Volume (veh/h)	40	1254	66	262	642	177	160	191	392	416	131	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1841	1900	1781	1781	1811	1811	1811	1841	1856	1826	1856
Adj Flow Rate, veh/h	44	1393	0	291	713	0	178	212	436	462	146	92
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	8	4	0	8	8	6	6	6	4	3	5	3
Cap, veh/h	56	1318		340	1515		232	442	380	512	592	509
Arrive On Green	0.03	0.38	0.00	0.10	0.45	0.00	0.07	0.24	0.24	0.15	0.32	0.32
Sat Flow, veh/h	1697	3497	1610	3291	3385	1535	3346	1811	1554	3428	1826	1568
Grp Volume(v), veh/h	44	1393	0	291	713	0	178	212	436	462	146	92
Grp Sat Flow(s),veh/h/ln	1697	1749	1610	1646	1692	1535	1673	1811	1554	1714	1826	1568
Q Serve(g_s), s	3.4	49.4	0.0	11.4	19.3	0.0	6.9	13.1	32.0	17.4	7.7	5.5
Cycle Q Clear(g_c), s	3.4	49.4	0.0	11.4	19.3	0.0	6.9	13.1	32.0	17.4	7.7	5.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	56	1318		340	1515		232	442	380	512	592	509
V/C Ratio(X)	0.79	1.06		0.85	0.47		0.77	0.48	1.15	0.90	0.25	0.18
Avail Cap(c_a), veh/h	207	1318		402	1515		536	442	380	550	592	509
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.94	0.94	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.9	40.8	0.0	57.8	25.3	0.0	59.9	42.4	49.5	54.8	32.5	31.8
Incr Delay (d2), s/veh	8.8	41.2	0.0	12.1	1.0	0.0	2.0	0.3	93.1	16.6	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	28.3	0.0	5.3	7.9	0.0	3.0	5.9	22.1	8.7	3.5	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.7	82.1	0.0	69.9	26.3	0.0	62.0	42.7	142.6	71.4	32.6	31.8
LnGrp LOS	E	F		E	C		E	D	F	E	C	C
Approach Vol, veh/h		1437	A		1004	A		826			700	
Approach Delay, s/veh		81.7			38.9			99.6			58.1	
Approach LOS		F			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.6	53.9	13.1	46.5	8.3	63.1	23.6	36.0
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	45.5	21.0	30.0	16.0	45.5	21.0	32.0
Max Q Clear Time (g_c+I1), s	13.4	51.4	8.9	9.7	5.4	21.3	19.4	34.0
Green Ext Time (p_c), s	0.2	0.0	0.2	0.7	0.0	3.3	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	70.5
HCM 6th LOS	E

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	2098	21	59	856	28	53	9	156	27	6	27
Future Volume (veh/h)	19	2098	21	59	856	28	53	9	156	27	6	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1633	1841	1515	1767	1781	1663	1707	1352	1885	1589	1307	1648
Adj Flow Rate, veh/h	20	2185	22	61	892	29	55	9	162	28	6	28
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	18	4	26	9	8	16	13	37	1	21	40	17
Cap, veh/h	25	2246	824	77	2275	947	69	10	180	33	29	135
Arrive On Green	0.03	1.00	1.00	0.05	0.67	0.67	0.04	0.16	0.16	0.02	0.14	0.14
Sat Flow, veh/h	1555	3497	1284	1682	3385	1409	1626	61	1094	1513	201	938
Grp Volume(v), veh/h	20	2185	22	61	892	29	55	0	171	28	0	34
Grp Sat Flow(s),veh/h/ln	1555	1749	1284	1682	1692	1409	1626	0	1155	1513	0	1138
Q Serve(g_s), s	1.7	0.0	0.0	4.7	15.4	0.9	4.4	0.0	19.0	2.4	0.0	3.5
Cycle Q Clear(g_c), s	1.7	0.0	0.0	4.7	15.4	0.9	4.4	0.0	19.0	2.4	0.0	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.95	1.00		0.82
Lane Grp Cap(c), veh/h	25	2246	824	77	2275	947	69	0	190	33	0	164
V/C Ratio(X)	0.81	0.97	0.03	0.79	0.39	0.03	0.80	0.00	0.90	0.86	0.00	0.21
Avail Cap(c_a), veh/h	131	2246	824	205	2275	947	199	0	282	185	0	261
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.23	0.23	0.23	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.2	0.0	0.0	61.9	9.6	7.2	62.2	0.0	53.7	63.9	0.0	49.5
Incr Delay (d2), s/veh	5.6	4.8	0.0	6.6	0.0	0.0	7.6	0.0	17.1	20.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.5	0.0	2.1	5.1	0.3	2.0	0.0	6.5	1.1	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.8	4.8	0.0	68.5	9.6	7.2	69.8	0.0	70.7	84.0	0.0	49.7
LnGrp LOS	E	A	A	E	A	A	E	A	E	F	A	D
Approach Vol, veh/h		2227			982			226			62	
Approach Delay, s/veh		5.3			13.2			70.5			65.2	
Approach LOS		A			B			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	88.6	9.6	22.8	6.1	92.6	6.8	25.5
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	6.0	50.5	16.0	30.0	11.0	55.5	16.0	32.0
Max Q Clear Time (g_c+I1), s	6.7	2.0	6.4	5.5	3.7	17.4	4.4	21.0
Green Ext Time (p_c), s	0.0	21.2	0.0	0.1	0.0	4.1	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	2234	943	20	61	28
Future Vol, veh/h	2	2234	943	20	61	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	4	8	0	0	0
Mvmt Flow	2	2352	993	21	64	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1014	0	-	0	2184	507
Stage 1	-	-	-	-	1004	-
Stage 2	-	-	-	-	1180	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	692	-	-	-	~ 40	516
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	258	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	692	-	-	-	~ 40	516
Mov Cap-2 Maneuver	-	-	-	-	148	-
Stage 1	-	-	-	-	319	-
Stage 2	-	-	-	-	258	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	40.7
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	692	-	-	-	191
HCM Lane V/C Ratio	0.003	-	-	-	0.49
HCM Control Delay (s)	10.2	-	-	-	40.7
HCM Lane LOS	B	-	-	-	E
HCM 95th %tile Q(veh)	0	-	-	-	2.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	2235	68	77	939	24	63
Future Volume (veh/h)	2235	68	77	939	24	63
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1870	1900	1781	1693	1870
Adj Flow Rate, veh/h	2378	72	82	999	26	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	2	0	8	14	2
Cap, veh/h	2655	1203	106	2894	93	91
Arrive On Green	0.76	0.76	0.06	0.85	0.06	0.06
Sat Flow, veh/h	3589	1585	1810	3474	1612	1585
Grp Volume(v), veh/h	2378	72	82	999	26	67
Grp Sat Flow(s),veh/h/ln	1749	1585	1810	1692	1612	1585
Q Serve(g_s), s	61.4	1.4	5.4	7.3	1.9	5.0
Cycle Q Clear(g_c), s	61.4	1.4	5.4	7.3	1.9	5.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2655	1203	106	2894	93	91
V/C Ratio(X)	0.90	0.06	0.78	0.35	0.28	0.73
Avail Cap(c_a), veh/h	2655	1203	300	2894	404	398
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.9	3.6	55.7	1.8	54.2	55.6
Incr Delay (d2), s/veh	5.2	0.1	11.5	0.1	1.6	10.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.6	0.4	2.7	0.9	0.8	2.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.1	3.7	67.3	1.9	55.8	66.5
LnGrp LOS	B	A	E	A	E	E
Approach Vol, veh/h	2450			1081	93	
Approach Delay, s/veh	15.7			6.8	63.5	
Approach LOS	B			A	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	11.5	97.1				108.6	11.4
Change Period (Y+Rc), s	4.5	6.0				6.0	4.5
Max Green Setting (Gmax), s	19.9	55.0				79.4	30.1
Max Q Clear Time (g_c+I1), s	7.4	63.4				9.3	7.0
Green Ext Time (p_c), s	0.1	0.0				8.2	0.2

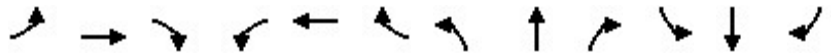
Intersection Summary		
HCM 6th Ctrl Delay	14.3	
HCM 6th LOS	B	

Intersection	
Intersection Delay, s/veh	59.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	111	67	233	126	91	78	142	351	18	61	375	67
Future Vol, veh/h	111	67	233	126	91	78	142	351	18	61	375	67
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	1	3	1	1	1	0	1	3	0	0	2	0
Mvmt Flow	116	70	243	131	95	81	148	366	19	64	391	70
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	22.9	43.8	51.6	107.1
HCM LOS	C	E	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	62%	0%	43%	100%	0%
Vol Thru, %	0%	95%	38%	0%	31%	0%	85%
Vol Right, %	0%	5%	0%	100%	26%	0%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	142	369	178	233	295	61	442
LT Vol	142	0	111	0	126	61	0
Through Vol	0	351	67	0	91	0	375
RT Vol	0	18	0	233	78	0	67
Lane Flow Rate	148	384	185	243	307	64	460
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.385	0.947	0.493	0.579	0.806	0.169	1.145
Departure Headway (Hd)	9.858	9.333	10.08	9.054	10.01	9.548	8.95
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	367	392	360	400	366	376	405
Service Time	7.558	7.033	7.78	6.754	8.01	7.309	6.71
HCM Lane V/C Ratio	0.403	0.98	0.514	0.608	0.839	0.17	1.136
HCM Control Delay	18.6	64.3	22.2	23.5	43.8	14.3	119.9
HCM Lane LOS	C	F	C	C	E	B	F
HCM 95th-tile Q	1.8	10.5	2.6	3.5	6.9	0.6	17.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	1029	121	462	1517	259	354	229	285	361	211	147
Future Volume (veh/h)	109	1029	121	462	1517	259	354	229	285	361	211	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1870	1811	1841	1856	1900	1885	1870	1826	1870	1885	1900
Adj Flow Rate, veh/h	114	1072	0	481	1580	0	369	239	297	376	220	153
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	2	6	4	3	0	1	2	5	2	1	0
Cap, veh/h	138	1448		415	1596		426	410	335	432	419	353
Arrive On Green	0.08	0.41	0.00	0.12	0.45	0.00	0.12	0.22	0.22	0.13	0.22	0.22
Sat Flow, veh/h	1795	3554	1535	3401	3526	1610	3483	1870	1528	3456	1885	1591
Grp Volume(v), veh/h	114	1072	0	481	1580	0	369	239	297	376	220	153
Grp Sat Flow(s),veh/h/ln	1795	1777	1535	1700	1763	1610	1742	1870	1528	1728	1885	1591
Q Serve(g_s), s	8.2	33.5	0.0	16.0	58.2	0.0	13.6	15.0	24.7	14.0	13.5	10.8
Cycle Q Clear(g_c), s	8.2	33.5	0.0	16.0	58.2	0.0	13.6	15.0	24.7	14.0	13.5	10.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	1448		415	1596		426	410	335	432	419	353
V/C Ratio(X)	0.82	0.74		1.16	0.99		0.87	0.58	0.89	0.87	0.53	0.43
Avail Cap(c_a), veh/h	219	1448		415	1596		558	457	373	554	432	364
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.28	0.28	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.6	32.9	0.0	57.5	35.6	0.0	56.5	45.8	49.5	56.3	44.9	43.8
Incr Delay (d2), s/veh	6.6	3.4	0.0	79.1	9.9	0.0	9.0	0.7	19.0	9.8	0.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	14.9	0.0	11.4	26.3	0.0	6.5	7.0	11.1	6.7	6.4	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.1	36.4	0.0	136.6	45.4	0.0	65.5	46.5	68.5	66.0	45.3	44.2
LnGrp LOS	E	D		F	D		E	D	E	E	D	D
Approach Vol, veh/h		1186	A		2061	A		905			749	
Approach Delay, s/veh		39.2			66.7			61.5			55.5	
Approach LOS		D			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	57.9	20.0	33.1	14.1	63.8	20.4	32.7
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	45.5	21.0	30.0	16.0	45.5	21.0	32.0
Max Q Clear Time (g_c+I1), s	18.0	35.5	15.6	15.5	10.2	60.2	16.0	26.7
Green Ext Time (p_c), s	0.0	3.8	0.4	1.0	0.1	0.0	0.4	0.8

Intersection Summary	
HCM 6th Ctrl Delay	57.4
HCM 6th LOS	E

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1227	117	261	1943	55	261	11	169	15	21	63
Future Volume (veh/h)	35	1227	117	261	1943	55	261	11	169	15	21	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1841	1900	1870	1841	1900	1870	1900	1885	1900	1826	1870
Adj Flow Rate, veh/h	36	1278	122	272	2024	57	272	11	176	16	22	66
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	6	4	0	2	4	0	2	0	1	0	5	2
Cap, veh/h	45	1879	860	218	2215	1015	218	19	306	24	37	110
Arrive On Green	0.05	1.00	1.00	0.12	0.63	0.63	0.12	0.20	0.20	0.01	0.09	0.09
Sat Flow, veh/h	1725	3497	1601	1781	3497	1603	1781	95	1521	1810	398	1194
Grp Volume(v), veh/h	36	1278	122	272	2024	57	272	0	187	16	0	88
Grp Sat Flow(s),veh/h/ln	1725	1749	1601	1781	1749	1603	1781	0	1616	1810	0	1592
Q Serve(g_s), s	2.7	0.0	0.0	16.0	66.0	1.8	16.0	0.0	13.7	1.2	0.0	7.0
Cycle Q Clear(g_c), s	2.7	0.0	0.0	16.0	66.0	1.8	16.0	0.0	13.7	1.2	0.0	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.94	1.00		0.75
Lane Grp Cap(c), veh/h	45	1879	860	218	2215	1015	218	0	325	24	0	147
V/C Ratio(X)	0.79	0.68	0.14	1.25	0.91	0.06	1.25	0.00	0.58	0.66	0.00	0.60
Avail Cap(c_a), veh/h	145	1879	860	218	2215	1015	218	0	395	221	0	365
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.52	0.52	0.52	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	61.7	0.0	0.0	57.5	20.9	9.1	57.5	0.0	47.3	64.3	0.0	57.1
Incr Delay (d2), s/veh	6.0	1.1	0.2	144.8	6.3	0.0	144.8	0.0	0.6	10.6	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.3	0.0	15.8	25.4	0.6	16.0	0.0	5.6	0.6	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.7	1.1	0.2	202.3	27.2	9.1	202.3	0.0	47.9	74.9	0.0	58.6
LnGrp LOS	E	A	A	F	C	A	F	A	D	E	A	E
Approach Vol, veh/h		1436			2353			459			104	
Approach Delay, s/veh		2.6			47.0			139.4			61.1	
Approach LOS		A			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	74.9	20.0	16.1	7.4	87.4	5.8	30.3
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	50.5	16.0	30.0	11.0	55.5	16.0	32.0
Max Q Clear Time (g_c+I1), s	18.0	2.0	18.0	9.0	4.7	68.0	3.2	15.7
Green Ext Time (p_c), s	0.0	8.0	0.0	0.3	0.0	0.0	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	42.4
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	1352	2255	99	18	16
Future Vol, veh/h	21	1352	2255	99	18	16
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	5	4	4	1	6	0
Mvmt Flow	22	1394	2325	102	19	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2429	0	-	0	3119	1216
Stage 1	-	-	-	-	2378	-
Stage 2	-	-	-	-	741	-
Critical Hdwy	4.2	-	-	-	6.92	6.9
Critical Hdwy Stg 1	-	-	-	-	5.92	-
Critical Hdwy Stg 2	-	-	-	-	5.92	-
Follow-up Hdwy	2.25	-	-	-	3.56	3.3
Pot Cap-1 Maneuver	183	-	-	-	~ 8	176
Stage 1	-	-	-	-	53	-
Stage 2	-	-	-	-	422	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	183	-	-	-	~ 7	176
Mov Cap-2 Maneuver	-	-	-	-	40	-
Stage 1	-	-	-	-	47	-
Stage 2	-	-	-	-	421	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	118.1
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	183	-	-	-	63
HCM Lane V/C Ratio	0.118	-	-	-	0.556
HCM Control Delay (s)	27.3	-	-	-	118.1
HCM Lane LOS	D	-	-	-	F
HCM 95th %tile Q(veh)	0.4	-	-	-	2.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1355	35	65	2238	122	110
Future Volume (veh/h)	1355	35	65	2238	122	110
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1856	1841	1870	1870	1900
Adj Flow Rate, veh/h	1411	36	68	2331	127	115
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	3	4	2	2	0
Cap, veh/h	2563	1151	88	2915	164	149
Arrive On Green	0.73	0.73	0.05	0.82	0.09	0.09
Sat Flow, veh/h	3589	1571	1753	3647	1781	1610
Grp Volume(v), veh/h	1411	36	68	2331	127	115
Grp Sat Flow(s),veh/h/ln	1749	1571	1753	1777	1781	1610
Q Serve(g_s), s	21.7	0.8	4.6	41.1	8.4	8.4
Cycle Q Clear(g_c), s	21.7	0.8	4.6	41.1	8.4	8.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2563	1151	88	2915	164	149
V/C Ratio(X)	0.55	0.03	0.78	0.80	0.77	0.77
Avail Cap(c_a), veh/h	2563	1151	291	2915	447	404
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.2	4.4	56.3	5.6	53.2	53.2
Incr Delay (d2), s/veh	0.9	0.1	13.5	1.7	7.5	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.2	2.3	8.9	4.1	3.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.0	4.4	69.9	7.3	60.7	61.6
LnGrp LOS	A	A	E	A	E	E
Approach Vol, veh/h	1447			2399	242	
Approach Delay, s/veh	8.0			9.1	61.1	
Approach LOS	A			A	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	10.5	93.9				104.4	15.6
Change Period (Y+Rc), s	4.5	6.0				6.0	4.5
Max Green Setting (Gmax), s	19.9	55.0				79.4	30.1
Max Q Clear Time (g_c+I1), s	6.6	23.7				43.1	10.4
Green Ext Time (p_c), s	0.1	12.4				26.8	0.7

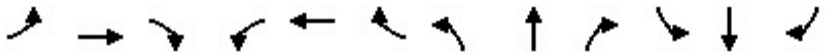
Intersection Summary							
HCM 6th Ctrl Delay			11.8				
HCM 6th LOS			B				

Intersection	
Intersection Delay, s/veh	54.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	27	221	27	15	4	109	290	1	16	394	82
Future Vol, veh/h	82	27	221	27	15	4	109	290	1	16	394	82
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	6	4	1	0	8	0	2	9	0	0	6	5
Mvmt Flow	101	33	273	33	19	5	135	358	1	20	486	101
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	17	14	23.7	108.6
HCM LOS	C	B	C	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	75%	0%	59%	100%	0%
Vol Thru, %	0%	100%	25%	0%	33%	0%	83%
Vol Right, %	0%	0%	0%	100%	9%	0%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	109	291	109	221	46	16	476
LT Vol	109	0	82	0	27	16	0
Through Vol	0	290	27	0	15	0	394
RT Vol	0	1	0	221	4	0	82
Lane Flow Rate	135	359	135	273	57	20	588
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.284	0.72	0.303	0.53	0.14	0.041	1.147
Departure Headway (Hd)	7.951	7.555	8.505	7.359	9.483	7.557	7.026
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	455	481	425	494	380	472	517
Service Time	5.651	5.255	6.205	5.059	7.483	5.341	4.809
HCM Lane V/C Ratio	0.297	0.746	0.318	0.553	0.15	0.042	1.137
HCM Control Delay	13.8	27.4	14.9	18.1	14	10.7	111.9
HCM Lane LOS	B	D	B	C	B	B	F
HCM 95th-tile Q	1.2	5.7	1.3	3.1	0.5	0.1	20.1



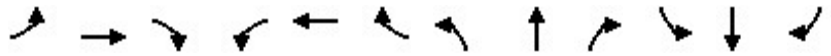
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1257	66	263	644	177	160	191	393	417	131	83
Future Volume (veh/h)	40	1257	66	263	644	177	160	191	393	417	131	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1841	1900	1781	1781	1811	1811	1811	1841	1856	1826	1856
Adj Flow Rate, veh/h	44	1397	0	292	716	0	178	212	437	463	146	92
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	8	4	0	8	8	6	6	6	4	3	5	3
Cap, veh/h	56	1316		341	1514		232	442	380	513	593	509
Arrive On Green	0.03	0.38	0.00	0.10	0.45	0.00	0.07	0.24	0.24	0.15	0.32	0.32
Sat Flow, veh/h	1697	3497	1610	3291	3385	1535	3346	1811	1554	3428	1826	1568
Grp Volume(v), veh/h	44	1397	0	292	716	0	178	212	437	463	146	92
Grp Sat Flow(s),veh/h/ln	1697	1749	1610	1646	1692	1535	1673	1811	1554	1714	1826	1568
Q Serve(g_s), s	3.4	49.3	0.0	11.4	19.4	0.0	6.9	13.1	32.0	17.4	7.7	5.5
Cycle Q Clear(g_c), s	3.4	49.3	0.0	11.4	19.4	0.0	6.9	13.1	32.0	17.4	7.7	5.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	56	1316		341	1514		232	442	380	513	593	509
V/C Ratio(X)	0.79	1.06		0.86	0.47		0.77	0.48	1.15	0.90	0.25	0.18
Avail Cap(c_a), veh/h	207	1316		402	1514		536	442	380	550	593	509
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.94	0.94	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.9	40.8	0.0	57.7	25.4	0.0	59.9	42.4	49.5	54.8	32.5	31.7
Incr Delay (d2), s/veh	8.8	42.8	0.0	12.2	1.0	0.0	2.0	0.3	94.1	16.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	28.5	0.0	5.3	7.9	0.0	3.0	5.9	22.2	8.8	3.5	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.7	83.7	0.0	70.0	26.4	0.0	62.0	42.7	143.6	71.5	32.5	31.8
LnGrp LOS	E	F		E	C		E	D	F	E	C	C
Approach Vol, veh/h		1441	A		1008	A		827			701	
Approach Delay, s/veh		83.3			39.0			100.1			58.1	
Approach LOS		F			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.6	53.8	13.1	46.5	8.3	63.1	23.6	36.0
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.6	45.5	21.0	30.0	16.0	45.5	21.0	32.0
Max Q Clear Time (g_c+I1), s	13.4	51.3	8.9	9.7	5.4	21.4	19.4	34.0
Green Ext Time (p_c), s	0.2	0.0	0.2	0.7	0.0	3.3	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	71.1
HCM 6th LOS	E

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	2098	26	71	856	28	56	9	164	27	6	27
Future Volume (veh/h)	19	2098	26	71	856	28	56	9	164	27	6	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1633	1841	1515	1767	1781	1663	1707	1352	1885	1589	1307	1648
Adj Flow Rate, veh/h	20	2185	27	74	892	29	58	9	171	28	6	28
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	18	4	26	9	8	16	13	37	1	21	40	17
Cap, veh/h	25	2186	802	93	2249	936	73	10	189	33	30	140
Arrive On Green	0.03	1.00	1.00	0.06	0.66	0.66	0.04	0.17	0.17	0.02	0.15	0.15
Sat Flow, veh/h	1555	3497	1284	1682	3385	1409	1626	58	1097	1513	201	938
Grp Volume(v), veh/h	20	2185	27	74	892	29	58	0	180	28	0	34
Grp Sat Flow(s),veh/h/ln	1555	1749	1284	1682	1692	1409	1626	0	1154	1513	0	1138
Q Serve(g_s), s	1.7	0.0	0.0	5.7	15.7	0.9	4.6	0.0	20.0	2.4	0.0	3.4
Cycle Q Clear(g_c), s	1.7	0.0	0.0	5.7	15.7	0.9	4.6	0.0	20.0	2.4	0.0	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.95	1.00		0.82
Lane Grp Cap(c), veh/h	25	2186	802	93	2249	936	73	0	199	33	0	170
V/C Ratio(X)	0.81	1.00	0.03	0.80	0.40	0.03	0.80	0.00	0.91	0.86	0.00	0.20
Avail Cap(c_a), veh/h	131	2186	802	205	2249	936	199	0	282	185	0	261
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.23	0.23	0.23	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.2	0.0	0.0	61.2	10.0	7.5	62.0	0.0	53.2	63.9	0.0	48.9
Incr Delay (d2), s/veh	5.6	9.1	0.0	5.8	0.0	0.0	7.3	0.0	19.8	20.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.8	0.0	2.5	5.3	0.3	2.1	0.0	6.9	1.1	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.8	9.1	0.0	67.0	10.1	7.5	69.3	0.0	73.0	84.0	0.0	49.1
LnGrp LOS	E	A	A	E	B	A	E	A	E	F	A	D
Approach Vol, veh/h		2232			995			238			62	
Approach Delay, s/veh		9.5			14.2			72.1			64.9	
Approach LOS		A			B			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	86.4	9.9	23.5	6.1	91.5	6.8	26.6
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	50.5	16.0	30.0	11.0	55.5	16.0	32.0
Max Q Clear Time (g_c+I1), s	7.7	2.0	6.6	5.4	3.7	17.7	4.4	22.0
Green Ext Time (p_c), s	0.0	21.3	0.0	0.1	0.0	4.1	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	2242	955	20	61	28
Future Vol, veh/h	2	2242	955	20	61	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	4	8	0	0	0
Mvmt Flow	2	2360	1005	21	64	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1026	0	-	0	2200	513
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	1184	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	685	-	-	-	~ 39	512
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	257	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	685	-	-	-	~ 39	512
Mov Cap-2 Maneuver	-	-	-	-	147	-
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	257	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	41.1
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	685	-	-	-	190
HCM Lane V/C Ratio	0.003	-	-	-	0.493
HCM Control Delay (s)	10.3	-	-	-	41.1
HCM Lane LOS	B	-	-	-	E
HCM 95th %tile Q(veh)	0	-	-	-	2.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	2243	68	77	951	24	63
Future Volume (veh/h)	2243	68	77	951	24	63
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1870	1900	1781	1693	1870
Adj Flow Rate, veh/h	2386	72	82	1012	26	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	2	0	8	14	2
Cap, veh/h	2655	1203	106	2894	93	91
Arrive On Green	0.76	0.76	0.06	0.85	0.06	0.06
Sat Flow, veh/h	3589	1585	1810	3474	1612	1585
Grp Volume(v), veh/h	2386	72	82	1012	26	67
Grp Sat Flow(s),veh/h/ln	1749	1585	1810	1692	1612	1585
Q Serve(g_s), s	62.0	1.4	5.4	7.4	1.9	5.0
Cycle Q Clear(g_c), s	62.0	1.4	5.4	7.4	1.9	5.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2655	1203	106	2894	93	91
V/C Ratio(X)	0.90	0.06	0.78	0.35	0.28	0.73
Avail Cap(c_a), veh/h	2655	1203	300	2894	404	398
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.0	3.6	55.7	1.8	54.2	55.6
Incr Delay (d2), s/veh	5.4	0.1	11.5	0.1	1.6	10.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.8	0.4	2.7	1.0	0.8	2.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.3	3.7	67.3	1.9	55.8	66.5
LnGrp LOS	B	A	E	A	E	E
Approach Vol, veh/h	2458			1094	93	
Approach Delay, s/veh	16.0			6.8	63.5	
Approach LOS	B			A	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	11.5	97.1				108.6	11.4
Change Period (Y+Rc), s	4.5	6.0				6.0	4.5
Max Green Setting (Gmax), s	19.9	55.0				79.4	30.1
Max Q Clear Time (g_c+I1), s	7.4	64.0				9.4	7.0
Green Ext Time (p_c), s	0.1	0.0				8.4	0.2

Intersection Summary							
HCM 6th Ctrl Delay			14.4				
HCM 6th LOS			B				

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	11	218	5	17	86
Future Vol, veh/h	4	11	218	5	17	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	12	237	5	18	93

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	369	240	0	0	242	0
Stage 1	240	-	-	-	-	-
Stage 2	129	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	631	799	-	-	1324	-
Stage 1	800	-	-	-	-	-
Stage 2	897	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	622	799	-	-	1324	-
Mov Cap-2 Maneuver	622	-	-	-	-	-
Stage 1	800	-	-	-	-	-
Stage 2	884	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	1.3
HCM LOS	B		

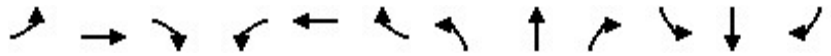
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	743	1324	-
HCM Lane V/C Ratio	-	-	0.022	0.014	-
HCM Control Delay (s)	-	-	10	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Intersection Delay, s/veh	59.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	111	67	233	126	91	78	142	351	18	61	376	67
Future Vol, veh/h	111	67	233	126	91	78	142	351	18	61	376	67
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	1	3	1	1	1	0	1	3	0	0	2	0
Mvmt Flow	116	70	243	131	95	81	148	366	19	64	392	70
Number of Lanes	0	1	1	0	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	22.9	43.8	51.7	107.7
HCM LOS	C	E	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	62%	0%	43%	100%	0%
Vol Thru, %	0%	95%	38%	0%	31%	0%	85%
Vol Right, %	0%	5%	0%	100%	26%	0%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	142	369	178	233	295	61	443
LT Vol	142	0	111	0	126	61	0
Through Vol	0	351	67	0	91	0	376
RT Vol	0	18	0	233	78	0	67
Lane Flow Rate	148	384	185	243	307	64	461
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.385	0.948	0.493	0.579	0.806	0.169	1.147
Departure Headway (Hd)	9.861	9.336	10.085	9.059	10.015	9.551	8.952
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	367	392	360	400	363	376	406
Service Time	7.561	7.036	7.785	6.759	8.015	7.31	6.711
HCM Lane V/C Ratio	0.403	0.98	0.514	0.608	0.846	0.17	1.135
HCM Control Delay	18.6	64.5	22.2	23.5	43.8	14.3	120.6
HCM Lane LOS	C	F	C	C	E	B	F
HCM 95th-tile Q	1.8	10.5	2.6	3.5	6.9	0.6	17.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	1031	121	464	1522	259	354	229	286	362	211	147
Future Volume (veh/h)	109	1031	121	464	1522	259	354	229	286	362	211	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1870	1811	1841	1856	1900	1885	1870	1826	1870	1885	1900
Adj Flow Rate, veh/h	114	1074	0	483	1585	0	369	239	298	377	220	153
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	2	6	4	3	0	1	2	5	2	1	0
Cap, veh/h	138	1446		415	1593		426	411	336	433	420	355
Arrive On Green	0.08	0.41	0.00	0.12	0.45	0.00	0.12	0.22	0.22	0.13	0.22	0.22
Sat Flow, veh/h	1795	3554	1535	3401	3526	1610	3483	1870	1528	3456	1885	1591
Grp Volume(v), veh/h	114	1074	0	483	1585	0	369	239	298	377	220	153
Grp Sat Flow(s),veh/h/ln	1795	1777	1535	1700	1763	1610	1742	1870	1528	1728	1885	1591
Q Serve(g_s), s	8.2	33.7	0.0	16.0	58.7	0.0	13.6	15.0	24.8	14.0	13.4	10.8
Cycle Q Clear(g_c), s	8.2	33.7	0.0	16.0	58.7	0.0	13.6	15.0	24.8	14.0	13.4	10.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	1446		415	1593		426	411	336	433	420	355
V/C Ratio(X)	0.82	0.74		1.16	0.99		0.87	0.58	0.89	0.87	0.52	0.43
Avail Cap(c_a), veh/h	219	1446		415	1593		558	457	373	554	432	364
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.27	0.27	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.6	33.0	0.0	57.5	35.8	0.0	56.5	45.7	49.5	56.2	44.8	43.8
Incr Delay (d2), s/veh	6.6	3.5	0.0	80.8	10.6	0.0	9.0	0.7	19.2	9.8	0.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	14.9	0.0	11.5	26.6	0.0	6.5	7.0	11.1	6.8	6.4	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.1	36.5	0.0	138.3	46.4	0.0	65.5	46.5	68.8	66.1	45.2	44.1
LnGrp LOS	E	D		F	D		E	D	E	E	D	D
Approach Vol, veh/h		1188	A		2068	A		906			750	
Approach Delay, s/veh		39.4			67.8			61.5			55.5	
Approach LOS		D			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	57.8	20.0	33.2	14.1	63.7	20.4	32.8
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	45.5	21.0	30.0	16.0	45.5	21.0	32.0
Max Q Clear Time (g_c+I1), s	18.0	35.7	15.6	15.4	10.2	60.7	16.0	26.8
Green Ext Time (p_c), s	0.0	3.7	0.4	1.0	0.1	0.0	0.4	0.8

Intersection Summary	
HCM 6th Ctrl Delay	57.9
HCM 6th LOS	E

Notes

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1227	121	270	1943	55	268	11	174	15	21	63
Future Volume (veh/h)	35	1227	121	270	1943	55	268	11	174	15	21	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1841	1900	1870	1841	1900	1870	1900	1885	1900	1826	1870
Adj Flow Rate, veh/h	36	1278	126	281	2024	57	279	11	181	16	22	66
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	6	4	0	2	4	0	2	0	1	0	5	2
Cap, veh/h	45	1879	860	218	2215	1015	218	19	306	24	37	110
Arrive On Green	0.05	1.00	1.00	0.12	0.63	0.63	0.12	0.20	0.20	0.01	0.09	0.09
Sat Flow, veh/h	1725	3497	1601	1781	3497	1603	1781	93	1523	1810	398	1194
Grp Volume(v), veh/h	36	1278	126	281	2024	57	279	0	192	16	0	88
Grp Sat Flow(s),veh/h/ln	1725	1749	1601	1781	1749	1603	1781	0	1615	1810	0	1592
Q Serve(g_s), s	2.7	0.0	0.0	16.0	66.0	1.8	16.0	0.0	14.1	1.2	0.0	7.0
Cycle Q Clear(g_c), s	2.7	0.0	0.0	16.0	66.0	1.8	16.0	0.0	14.1	1.2	0.0	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.94	1.00		0.75
Lane Grp Cap(c), veh/h	45	1879	860	218	2215	1015	218	0	325	24	0	147
V/C Ratio(X)	0.79	0.68	0.15	1.29	0.91	0.06	1.28	0.00	0.59	0.66	0.00	0.60
Avail Cap(c_a), veh/h	145	1879	860	218	2215	1015	218	0	395	221	0	365
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.51	0.51	0.51	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	61.7	0.0	0.0	57.5	20.9	9.1	57.5	0.0	47.4	64.3	0.0	57.1
Incr Delay (d2), s/veh	5.9	1.0	0.2	161.1	6.3	0.0	157.4	0.0	0.6	10.6	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.3	0.0	16.8	25.4	0.6	16.8	0.0	5.8	0.6	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.6	1.0	0.2	218.6	27.2	9.1	214.9	0.0	48.1	74.9	0.0	58.6
LnGrp LOS	E	A	A	F	C	A	F	A	D	E	A	E
Approach Vol, veh/h		1440			2362			471			104	
Approach Delay, s/veh		2.6			49.5			146.9			61.1	
Approach LOS		A			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	74.9	20.0	16.1	7.4	87.4	5.8	30.3
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	50.5	16.0	30.0	11.0	55.5	16.0	32.0
Max Q Clear Time (g_c+I1), s	18.0	2.0	18.0	9.0	4.7	68.0	3.2	16.1
Green Ext Time (p_c), s	0.0	8.0	0.0	0.3	0.0	0.0	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	44.8
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	1357	2264	99	18	16
Future Vol, veh/h	21	1357	2264	99	18	16
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	5	4	4	1	6	0
Mvmt Flow	22	1399	2334	102	19	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2438	0	-	0	3131	1220
Stage 1	-	-	-	-	2387	-
Stage 2	-	-	-	-	744	-
Critical Hdwy	4.2	-	-	-	6.92	6.9
Critical Hdwy Stg 1	-	-	-	-	5.92	-
Critical Hdwy Stg 2	-	-	-	-	5.92	-
Follow-up Hdwy	2.25	-	-	-	3.56	3.3
Pot Cap-1 Maneuver	181	-	-	-	~ 8	175
Stage 1	-	-	-	-	52	-
Stage 2	-	-	-	-	420	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	181	-	-	-	~ 7	175
Mov Cap-2 Maneuver	-	-	-	-	39	-
Stage 1	-	-	-	-	46	-
Stage 2	-	-	-	-	419	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	124.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	181	-	-	-	61
HCM Lane V/C Ratio	0.12	-	-	-	0.575
HCM Control Delay (s)	27.6	-	-	-	124.6
HCM Lane LOS	D	-	-	-	F
HCM 95th %tile Q(veh)	0.4	-	-	-	2.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1340	35	65	2247	122	110
Future Volume (veh/h)	1340	35	65	2247	122	110
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1856	1841	1870	1870	1900
Adj Flow Rate, veh/h	1396	36	68	2341	127	115
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	3	4	2	2	0
Cap, veh/h	2563	1151	88	2915	164	149
Arrive On Green	0.73	0.73	0.05	0.82	0.09	0.09
Sat Flow, veh/h	3589	1571	1753	3647	1781	1610
Grp Volume(v), veh/h	1396	36	68	2341	127	115
Grp Sat Flow(s),veh/h/ln	1749	1571	1753	1777	1781	1610
Q Serve(g_s), s	21.3	0.8	4.6	41.6	8.4	8.4
Cycle Q Clear(g_c), s	21.3	0.8	4.6	41.6	8.4	8.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2563	1151	88	2915	164	149
V/C Ratio(X)	0.54	0.03	0.78	0.80	0.77	0.77
Avail Cap(c_a), veh/h	2563	1151	291	2915	447	404
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.1	4.4	56.3	5.7	53.2	53.2
Incr Delay (d2), s/veh	0.8	0.1	13.5	1.7	7.5	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	0.2	2.3	9.0	4.1	3.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.0	4.4	69.9	7.4	60.7	61.6
LnGrp LOS	A	A	E	A	E	E
Approach Vol, veh/h	1432			2409	242	
Approach Delay, s/veh	7.9			9.2	61.1	
Approach LOS	A			A	E	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	10.5	93.9				104.4	15.6
Change Period (Y+Rc), s	4.5	6.0				6.0	4.5
Max Green Setting (Gmax), s	19.9	55.0				79.4	30.1
Max Q Clear Time (g_c+I1), s	6.6	23.3				43.6	10.4
Green Ext Time (p_c), s	0.1	12.3				26.6	0.7

Intersection Summary			
HCM 6th Ctrl Delay		11.8	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	12	441	11	13	399
Future Vol, veh/h	11	12	441	11	13	399
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	13	479	12	14	434

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	947	485	0	0	491	0
Stage 1	485	-	-	-	-	-
Stage 2	462	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	290	582	-	-	1072	-
Stage 1	619	-	-	-	-	-
Stage 2	634	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	285	582	-	-	1072	-
Mov Cap-2 Maneuver	285	-	-	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	623	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.9	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	388	1072	-
HCM Lane V/C Ratio	-	-	0.064	0.013	-
HCM Control Delay (s)	-	-	14.9	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

2020 AM Peak Hour

Critical flow ratio = Adjusted flow rate / saturated flow rate calculations:

OR 99W at N Springbrook Street

	Adj flow rate	sat flow rate	crit flow ratio
EBT	1340	3497	0.3832
WBL	280	3291	0.0851
NBT	203	1811	0.1121
SBL	444	3428	0.1295

Sum = 0.70988046

Total lost time = L =	16.5
Cycle length = C =	131

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.812178**

OR 99W at Brutscher Street

	Adj flow rate	sat flow rate	crit flow ratio
EBT	2102	3497	0.6011
WBL	59	1682	0.0351
NBL	53	1626	0.0326
SBT	5	177	0.0282

Sum = 0.69700785

Total lost time = L =	16.5
Cycle length = C =	131

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.79745**

OR 99W at Providence Drive

	Adj flow rate	sat flow rate	crit flow ratio
EBT	2286	3589	0.6369
WBL	79	1810	0.0436
NBR	64	1585	0.0404

Sum = 0.72097118

Total lost time = L =	15
Cycle length = C =	120

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.823967**

2020 PM Peak Hour

Critical flow ratio = Adjusted flow rate / saturated flow rate calculations:

OR 99W at N Springbrook Street

	Adj flow rate	sat flow rate	crit flow ratio
EBL	109	1795	0.0607
WBT	1520	3526	0.4311
NBT	229	1870	0.1225
SBL	361	3456	0.1045

Sum = 0.71872353

Total lost time = L =	16.5
Cycle length = C =	131

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.822295**

OR 99W at Brutscher Street

	Adj flow rate	sat flow rate	crit flow ratio
EBL	34	1725	0.0197
WBT	1947	3497	0.5568
NBL	261	1781	0.1465
SBT	21	403	0.0521

Sum = 0.77512915

Total lost time = L =	16.5
Cycle length = C =	131

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.886829**

OR 99W at Providence Drive

	Adj flow rate	sat flow rate	crit flow ratio
EBT	1338	3589	0.3728
WBL	66	1753	0.0376
NBL	122	1781	0.0685

Sum = 0.47895638

Total lost time = L =	15
Cycle length = C =	120

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.547379**

2023 Background AM

Critical flow ratio = Adjusted flow rate / saturated flow rate calculations:

OR 99W at N Springbrook Street

	Adj flow rate	sat flow rate	crit flow ratio
EBT	1393	3497	0.3983
WBL	291	3291	0.0884
NBT	212	1811	0.1171
SBL	462	3428	0.1348

Sum = 0.73859927

Total lost time = L =	16.5
Cycle length = C =	131

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.845035**

OR 99W at Brutscher Street

	Adj flow rate	sat flow rate	crit flow ratio
EBT	2185	3497	0.6248
WBL	61	1682	0.0363
NBL	55	1626	0.0338
SBT	6	201	0.0299

Sum = 0.72476371

Total lost time = L =	16.5
Cycle length = C =	131

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.829206**

OR 99W at Providence Drive

	Adj flow rate	sat flow rate	crit flow ratio
EBT	2378	3589	0.6626
WBL	82	1810	0.0453
NBR	67	1585	0.0423

Sum = 0.75015527

Total lost time = L =	15
Cycle length = C =	120

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.85732**

2023 Background PM

Critical flow ratio = Adjusted flow rate / saturated flow rate calculations:

OR 99W at N Springbrook Street

	Adj flow rate	sat flow rate	crit flow ratio
EBL	114	1795	0.0635
WBT	1580	3526	0.4481
NBT	239	1870	0.1278
SBL	376	3456	0.1088

Sum = 0.74821336

Total lost time = L =	16.5
Cycle length = C =	131

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.856035**

OR 99W at Brutscher Street

	Adj flow rate	sat flow rate	crit flow ratio
EBL	36	1725	0.0209
WBT	2024	3497	0.5788
NBL	272	1781	0.1527
SBT	22	398	0.0553

Sum = 0.80765095

Total lost time = L =	16.5
Cycle length = C =	131

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.924037**

OR 99W at Providence Drive

	Adj flow rate	sat flow rate	crit flow ratio
EBT	1411	3589	0.3931
WBL	68	1753	0.0388
NBL	127	1781	0.0713

Sum = 0.50324462

Total lost time = L =	15
Cycle length = C =	120

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.575137**

2023 Buildout AM

Critical flow ratio = Adjusted flow rate / saturated flow rate calculations:

OR 99W at N Springbrook Street

	Adj flow rate	sat flow rate	crit flow ratio
EBT	1397	3497	0.3995
WBL	292	3291	0.0887
NBT	212	1811	0.1171
SBL	463	3428	0.1351

Sum = 0.74033868

Total lost time = L =	16.5
Cycle length = C =	131

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.847025**

OR 99W at Brutscher Street

	Adj flow rate	sat flow rate	crit flow ratio
EBT	2186	3497	0.6251
WBL	74	1682	0.0440
NBL	58	1626	0.0357
SBT	6	201	0.0299

Sum = 0.73462358

Total lost time = L =	16.5
Cycle length = C =	131

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.840486**

OR 99W at Providence Drive

	Adj flow rate	sat flow rate	crit flow ratio
EBT	2386	3589	0.6648
WBL	82	1810	0.0453
NBR	67	1585	0.0423

Sum = 0.7523843

Total lost time = L =	15
Cycle length = C =	120

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.859868**

2023 Buildout PM

Critical flow ratio = Adjusted flow rate / saturated flow rate calculations:

OR 99W at N Springbrook Street

	Adj flow rate	sat flow rate	crit flow ratio
EBL	114	1795	0.0635
WBT	1585	3526	0.4495
NBT	239	1870	0.1278
SBL	377	3456	0.1091

Sum = 0.74992075

Total lost time = L =	16.5
Cycle length = C =	131

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.857988**

OR 99W at Brutscher Street

	Adj flow rate	sat flow rate	crit flow ratio
EBL	36	1725	0.0209
WBT	2024	3497	0.5788
NBL	279	1781	0.1567
SBT	22	398	0.0553

Sum = 0.81158133

Total lost time = L =	16.5
Cycle length = C =	131

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.928534**

OR 99W at Providence Drive

	Adj flow rate	sat flow rate	crit flow ratio
EBT	1396	3589	0.3890
WBL	68	1753	0.0388
NBL	127	1781	0.0713

Sum = 0.49906518

Total lost time = L =	15
Cycle length = C =	120

Xc = Critical V/C Ratio = Sum of critical flow ratios * C/(C-L) = **0.57036**

Appendix F: Queueing Analysis

Intersection: 1: N Springbrook Road & Haworth Avenue/Driveway

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	126	353	83	207	281	125	1474
Average Queue (ft)	49	177	35	48	103	37	1421
95th Queue (ft)	91	334	72	109	203	129	1539
Link Distance (ft)	865	865	433	445	445		1402
Upstream Blk Time (%)							95
Queuing Penalty (veh)							0
Storage Bay Dist (ft)						100	
Storage Blk Time (%)						0	99
Queuing Penalty (veh)						0	16

Intersection: 2: N Springbrook Road & OR 99W

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	L	T
Maximum Queue (ft)	374	2932	2906	375	194	216	291	309	75	130	214	1125
Average Queue (ft)	105	2240	2240	153	101	126	146	159	3	48	85	441
95th Queue (ft)	342	3580	3552	456	176	197	255	266	48	109	159	1006
Link Distance (ft)		3769	3769				1248	1248				1661
Upstream Blk Time (%)		7	7									0
Queuing Penalty (veh)		0	0									0
Storage Bay Dist (ft)	350			350	450	450			325	250	250	
Storage Blk Time (%)	0	60	64	0				0				1
Queuing Penalty (veh)	0	24	42	1				0				7

Intersection: 2: N Springbrook Road & OR 99W

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	L	T	R
Maximum Queue (ft)	275	127	140	463	137
Average Queue (ft)	250	120	135	447	23
95th Queue (ft)	320	140	148	493	85
Link Distance (ft)				445	
Upstream Blk Time (%)				33	
Queuing Penalty (veh)				207	
Storage Bay Dist (ft)	250	115	115		115
Storage Blk Time (%)	25	17	62	13	0
Queuing Penalty (veh)	90	37	133	64	0

Intersection: 3: Brutscher Street & OR 99W

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	190	844	890	198	158	198	196	102	202	247	100	76
Average Queue (ft)	22	509	596	19	61	67	69	7	59	89	31	26
95th Queue (ft)	88	789	876	105	127	156	163	45	132	183	77	62
Link Distance (ft)		1248	1248			1312	1312			1394	541	541
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	230			175	350			125	230			
Storage Blk Time (%)	0	11	23	0			2	0	0	1		
Queuing Penalty (veh)	0	2	5	0			1	0	0	0		

Intersection: 4: OR 99W & Vittoria Way

Movement	EB	EB	EB	SB
Directions Served	L	T	T	LR
Maximum Queue (ft)	25	172	188	715
Average Queue (ft)	1	12	19	394
95th Queue (ft)	11	84	100	751
Link Distance (ft)	1312	1312	1312	1160
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Providence Drive & OR 99W

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	423	427	115	131	148	127	82	132
Average Queue (ft)	230	254	21	67	49	43	27	58
95th Queue (ft)	420	448	86	120	113	102	66	115
Link Distance (ft)	420	420			2426	2426		1466
Upstream Blk Time (%)	0	1						
Queuing Penalty (veh)	3	8						
Storage Bay Dist (ft)			100	400			175	
Storage Blk Time (%)		16	0					0
Queuing Penalty (veh)		11	0					0

Network Summary

Network wide Queuing Penalty: 654

Intersection: 1: N Springbrook Road & Haworth Avenue/Driveway

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	190	389	448	308	423	125	1442
Average Queue (ft)	71	154	302	87	219	90	1368
95th Queue (ft)	137	330	534	236	411	181	1657
Link Distance (ft)	865	865	433	445	445		1402
Upstream Blk Time (%)			28		4		85
Queuing Penalty (veh)			0		10		0
Storage Bay Dist (ft)						100	
Storage Blk Time (%)						0	99
Queuing Penalty (veh)						1	61

Intersection: 2: N Springbrook Road & OR 99W

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	L	T
Maximum Queue (ft)	374	556	609	375	359	475	1220	1267	350	259	275	1214
Average Queue (ft)	138	340	371	94	204	342	702	739	207	150	189	504
95th Queue (ft)	323	516	552	362	340	571	1252	1304	488	252	294	1374
Link Distance (ft)		3769	3769				1248	1248				1661
Upstream Blk Time (%)							0	1				4
Queuing Penalty (veh)							5	8				0
Storage Bay Dist (ft)	350			350	450	450			325	250	250	
Storage Blk Time (%)	0	8	12	0	0	1	20	34	0	1	2	11
Queuing Penalty (veh)	0	8	14	1	1	5	93	87	3	3	11	72

Intersection: 2: N Springbrook Road & OR 99W

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	L	T	R
Maximum Queue (ft)	275	127	140	462	140
Average Queue (ft)	190	117	135	406	70
95th Queue (ft)	319	146	150	534	154
Link Distance (ft)				445	
Upstream Blk Time (%)				13	
Queuing Penalty (veh)				94	
Storage Bay Dist (ft)	250	115	115		115
Storage Blk Time (%)	5	12	46	20	2
Queuing Penalty (veh)	32	45	164	102	9

Intersection: 3: Brutscher Street & OR 99W

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	234	567	675	200	375	1342	1349	137	255	1441	68	173
Average Queue (ft)	60	379	469	95	345	1148	1144	32	253	1304	16	66
95th Queue (ft)	177	555	646	237	441	1589	1586	122	262	1733	49	137
Link Distance (ft)		1248	1248			1312	1312			1394	541	541
Upstream Blk Time (%)						5	5			69		
Queuing Penalty (veh)						60	51			0		
Storage Bay Dist (ft)	230			175	350			125	230			
Storage Blk Time (%)	0	18	39	0	28	19	32	0	83	0		
Queuing Penalty (veh)	0	6	45	1	276	50	17	0	149	1		

Intersection: 4: OR 99W & Vittoria Way

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (ft)	70	77	98	440	442	331
Average Queue (ft)	21	4	8	225	220	169
95th Queue (ft)	55	40	56	520	521	378
Link Distance (ft)	1312	1312	1312	420	420	1160
Upstream Blk Time (%)				3	3	
Queuing Penalty (veh)				31	31	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: Providence Drive & OR 99W

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	425	427	124	424	2071	2075	190	208
Average Queue (ft)	169	181	14	143	1130	1119	114	99
95th Queue (ft)	379	395	67	394	2648	2617	187	186
Link Distance (ft)	420	420			2426	2426		1466
Upstream Blk Time (%)	0	0			13	10		
Queuing Penalty (veh)	2	2			0	0		
Storage Bay Dist (ft)			100	400			175	
Storage Blk Time (%)		13	0	0	23		2	1
Queuing Penalty (veh)		4	0	0	15		2	1

Network Summary

Network wide Queuing Penalty: 1574

Intersection: 1: N Springbrook Road & Haworth Avenue/Driveway

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	137	459	81	118	242	125	1471
Average Queue (ft)	51	186	34	47	97	36	1405
95th Queue (ft)	115	401	64	90	185	129	1587
Link Distance (ft)	865	865	433	445	445		1402
Upstream Blk Time (%)							93
Queuing Penalty (veh)							0
Storage Bay Dist (ft)						100	
Storage Blk Time (%)						0	100
Queuing Penalty (veh)						0	16

Intersection: 2: N Springbrook Road & OR 99W

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	L	L	T	R
Maximum Queue (ft)	375	2818	2808	375	210	240	300	310	145	217	873	275
Average Queue (ft)	111	2182	2185	151	105	127	136	151	52	86	346	237
95th Queue (ft)	356	3512	3491	454	185	203	240	255	118	169	756	325
Link Distance (ft)		3769	3769				1248	1248			1661	
Upstream Blk Time (%)		7	6									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (ft)	350			350	450	450			250	250		250
Storage Blk Time (%)	0	60	63	0				0			1	20
Queuing Penalty (veh)	0	24	42	1				0			6	73

Intersection: 2: N Springbrook Road & OR 99W

Movement	SB	SB	SB	SB
Directions Served	L	L	T	R
Maximum Queue (ft)	127	140	464	122
Average Queue (ft)	121	136	448	20
95th Queue (ft)	138	148	488	68
Link Distance (ft)			445	
Upstream Blk Time (%)			32	
Queuing Penalty (veh)			203	
Storage Bay Dist (ft)	115	115		115
Storage Blk Time (%)	21	65	8	0
Queuing Penalty (veh)	45	139	41	0

Intersection: 3: Brutscher Street & OR 99W

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	200	831	949	200	166	203	214	89	129	246	122	98
Average Queue (ft)	31	545	632	22	74	63	75	9	58	93	34	26
95th Queue (ft)	114	844	918	113	140	150	165	50	118	182	90	66
Link Distance (ft)		1248	1248			1312	1312			578	541	541
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	230			175	350			125	230			
Storage Blk Time (%)	0	13	24	0			2	0		1		
Queuing Penalty (veh)	0	3	6	1			0	0		0		

Intersection: 4: OR 99W & Vittoria Way

Movement	EB	EB	EB	SB
Directions Served	L	T	T	LR
Maximum Queue (ft)	26	90	125	808
Average Queue (ft)	1	7	11	463
95th Queue (ft)	12	54	72	1003
Link Distance (ft)	1312	1312	1312	1160
Upstream Blk Time (%)				3
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Providence Drive & OR 99W

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	398	408	125	164	141	138	104	140
Average Queue (ft)	201	227	24	64	52	46	26	57
95th Queue (ft)	378	410	93	127	117	107	73	118
Link Distance (ft)	420	420			2426	2426		1466
Upstream Blk Time (%)	0	0						
Queuing Penalty (veh)	2	3						
Storage Bay Dist (ft)			100	400			175	
Storage Blk Time (%)		14	0				0	0
Queuing Penalty (veh)		9	0				0	0

Intersection: 6: Brutscher Street & Site Access

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	46	64
Average Queue (ft)	13	5
95th Queue (ft)	41	31
Link Distance (ft)	663	578
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 616

Intersection: 1: N Springbrook Road & Haworth Avenue/Driveway

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	R	LTR	L	TR	L	TR
Maximum Queue (ft)	282	464	436	177	363	125	1458
Average Queue (ft)	87	273	321	65	186	79	1411
95th Queue (ft)	240	609	534	134	326	177	1543
Link Distance (ft)	865	865	433	445	445		1402
Upstream Blk Time (%)	0	1	29		0		96
Queuing Penalty (veh)	0	0	0		0		0
Storage Bay Dist (ft)						100	
Storage Blk Time (%)						0	100
Queuing Penalty (veh)						1	61

Intersection: 2: N Springbrook Road & OR 99W

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	L	T
Maximum Queue (ft)	346	585	618	375	336	475	995	1028	350	253	273	1224
Average Queue (ft)	122	338	369	83	191	255	429	455	156	153	190	423
95th Queue (ft)	294	520	556	338	299	465	802	844	440	250	291	1176
Link Distance (ft)		3769	3769				1249	1249				1661
Upstream Blk Time (%)							0	0				3
Queuing Penalty (veh)							0	0				0
Storage Bay Dist (ft)	350			350	450	450			325	250	250	
Storage Blk Time (%)	0	7	11	0		0	7	19	0	0	2	11
Queuing Penalty (veh)	0	8	13	1		0	33	51	2	2	8	68

Intersection: 2: N Springbrook Road & OR 99W

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	L	T	R
Maximum Queue (ft)	275	127	140	464	140
Average Queue (ft)	184	115	134	435	65
95th Queue (ft)	309	149	155	513	152
Link Distance (ft)				445	
Upstream Blk Time (%)				19	
Queuing Penalty (veh)				141	
Storage Bay Dist (ft)	250	115	115		115
Storage Blk Time (%)	4	8	48	21	2
Queuing Penalty (veh)	22	28	173	108	11

Intersection: 3: Brutscher Street & OR 99W

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	213	693	750	200	375	1344	1353	150	255	673	60	145
Average Queue (ft)	42	366	464	100	370	1240	1235	22	250	590	16	61
95th Queue (ft)	120	581	677	244	395	1544	1536	95	277	878	44	119
Link Distance (ft)		1249	1249			1312	1312			660	541	541
Upstream Blk Time (%)						11	10			50		
Queuing Penalty (veh)						121	108			227		
Storage Bay Dist (ft)	230			175	350			125	230			
Storage Blk Time (%)		17	39	0	56	7	21	0	74	2		
Queuing Penalty (veh)		6	47	1	539	19	11	0	138	4		

Intersection: 4: OR 99W & Vittoria Way

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (ft)	76	68	116	459	456	436
Average Queue (ft)	25	3	7	299	301	240
95th Queue (ft)	64	32	51	571	571	501
Link Distance (ft)	1312	1312	1312	420	420	1160
Upstream Blk Time (%)				7	6	
Queuing Penalty (veh)				78	74	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: Providence Drive & OR 99W

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	422	425	125	425	2305	2297	197	252
Average Queue (ft)	175	194	15	195	1674	1673	109	101
95th Queue (ft)	366	395	72	490	3108	3100	187	190
Link Distance (ft)	420	420			2426	2426		1466
Upstream Blk Time (%)	0	0			32	27		
Queuing Penalty (veh)	1	2			0	0		
Storage Bay Dist (ft)			100	400			175	
Storage Blk Time (%)		13	0	0	38		3	1
Queuing Penalty (veh)		5	0	0	25		3	1

Intersection: 6: Brutscher Street & Site Access

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	234	667	117
Average Queue (ft)	92	521	7
95th Queue (ft)	246	998	53
Link Distance (ft)	630	679	660
Upstream Blk Time (%)		59	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 2142

Oregon
Kate Brown, Governor

Department of Transportation
Region 2 Tech Center
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Telephone (503) 986-2990
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DATE: January 5, 2022

TO: Casey Knecht, PE
Development Review Coordinator

FROM: Arielle Ferber, PE
Traffic Analysis Engineer

SUBJECT: Newberg SEC of Brutscher and East Portland (Newberg, OR) – Outright Use
TIA Review Comments

ODOT Region 2 Traffic has completed our review of the submitted traffic impact analysis (dated November 30, 2021) to address traffic impacts due to development southeast of the Pacific Highway No 91 (OR 99W) at Brutscher Street intersection in the city of Newberg, with respect to consistency and compliance with ODOT's Analysis Procedures Manual, Version 2 (APM). The APM was most recently updated in October 2020. The current version is published online at: http://www.oregon.gov/ODOT/TD/TP/Pages/APM.aspx. As a result, we submit the following comments for the City's consideration:

Recommended analysis items to be addressed:

1. The *Oregon Highway Plan* (*OHP*) v/c mobility target for OR 99W (statewide highway, freight route, within UGB, non-MPO, 35 MPH) at the Springbrook intersection is 0.85 rather than 0.80 as cited (*OHP* Table 6 was revised on 12/21/2011). The OHP v/c mobility target for OR 99W (statewide highway, freight route, within UGB, non-MPO, 45 MPH) at the Vittoria Way and Providence Drive intersections is 0.80 rather than 0.90 as cited. The study should be updated to compare operations to the accurate mobility standards. This will have an effect on the operational analysis results.
2. ODOT has determined the Synchro default ideal (unadjusted) saturation flow rate of 1900 pcphgl is not appropriate outside of the Portland, Salem, and Eugene MPO urban areas (*APM* Version 2, Section 3.5.3). For this study, the ideal saturation flow rate should be 1750 pcphgl.
3. This area of Newberg is covered by an urban travel demand model. Therefore, it is recommended that model data be utilized and link data post-processed per *NCHRP 765* to determine the appropriate method, either growth or difference (incremental), to determine future design hour volumes (*APM* Version 2, Section 6.12).
4. The analysis does not take into account the Crestview Crossing development located just north of the OR 99W at Providence Drive intersection. While the Crestview Crossing development used a 2020 Build year, the project is still currently under construction and it would be reasonable to assume the

development will be completed by 2023. The Crestview Crossing development's mitigations at the OR 99W at Providence Drive intersection includes the addition of a fourth leg. It is recommended the study be updated to include the Crestview Crossing development traffic volumes as well as associated approved mitigations.

5. The Haworth Avenue at Springbrook Road intersection traffic signal warrant analysis only reviewed for Warrant 3 (Peak Hour), however, Warrant 3 (Peak Hour) is typically reserved for unusual cases such as office complexes, manufacturing plants, or industrial complexes which attract or discharge large numbers of vehicles over a short time. ODOT preliminary traffic signal warrants (see APM Section 12.4.1) may be a more appropriate analysis to determine if the intersection is a good candidate for signalization.
6. It appears for the signalized intersections incorrect critical movements were used in several of the v/c calculations, primarily during the PM peak hour. For example, OR 99W at Providence in the PM peak hours should utilize WBT+NBL movements to calculate v/c rather than EBT+WBL+NBL during the 2023 Background and Buildout PM peak hour conditions. It is recommended that the v/c calculations be reviewed and updated as appropriate.
7. Analysis of the Brutscher Street at Site Access intersection assumes a three-leg intersection, however, per the site plan the Site Access will be located directly across from an access point to a significant development and will add a fourth leg to an existing intersection. It is recommended that a count be collected at the existing intersection and the analysis updated as appropriate.
8. Figure 1 should display dual westbound lefts, rather than a singular left, at the OR 99W at Springbrook Road intersection and exclusive northbound left- and right-turn lanes, rather than a shared left-right lane, at the OR 99W at Providence Drive intersection The analysis analyzed the correct laneage, therefore, this will not have an effect on the operational results or conclusions of the study.
9. When reporting the 95th percentile queues, study shall ensure all estimated queue lengths are consistently rounded up to the next 25 feet.
10. The Simulation Summary should be provided along with the SimTraffic reports to confirm that queueing analysis was conducted in accordance with Chapter 15 of the APM.

Proposed mitigation comments:

11. ODOT maintains jurisdiction of the Pacific Highway No 91 (OR 99W) and ODOT approval shall be required for all proposed mitigation measures to this facility.
12. No mitigation measures to OR 99W have been proposed. This conclusion appears reasonable for the proposed development. While comments #2 - #7 will have an effect on the operational analysis results, it is unlikely they will be significant enough to have an effect on the conclusions of the study due to the relatively low volume of site related trips traveling through the study area intersections.

Thank you for the opportunity to review this traffic impact analysis. As the analysis software files were not provided, Region 2 Traffic has only reviewed the submitted report.

<u>While comments #2- #7 will have an effect on the operational analysis results, it is unlikely they will be significant enough to have an effect on the conclusions of the study due to the relatively low volume of site related trips traveling through the study area intersections. If the City determines any of the above comments merit the need for reanalysis, we would be willing and able to assist with a second round of review.</u>

If there are any questions regarding these comments, please contact me at (503) 986-2857 or Arielle.Ferber@ODOT.state.or.us

FIRE FLOW TEST REPORT

HBH CONSULTING ENGINEERS
501 E First Street
Newberg, Oregon 97132
phone 503-554-9553
fax 503-537-9554

HYDRANT # & LOCATION: 901 Brutscher St DATE: 2/21/2020

TEST BY: ARC, ARB, MDM Day or Week: Friday TIME OF DAY: 9:15 AM

WATER SUPPLIED BY: City of Newberg

PURPOSE OF TEST: Fire Flow Test

DATA

FLOW HYDRANT A1

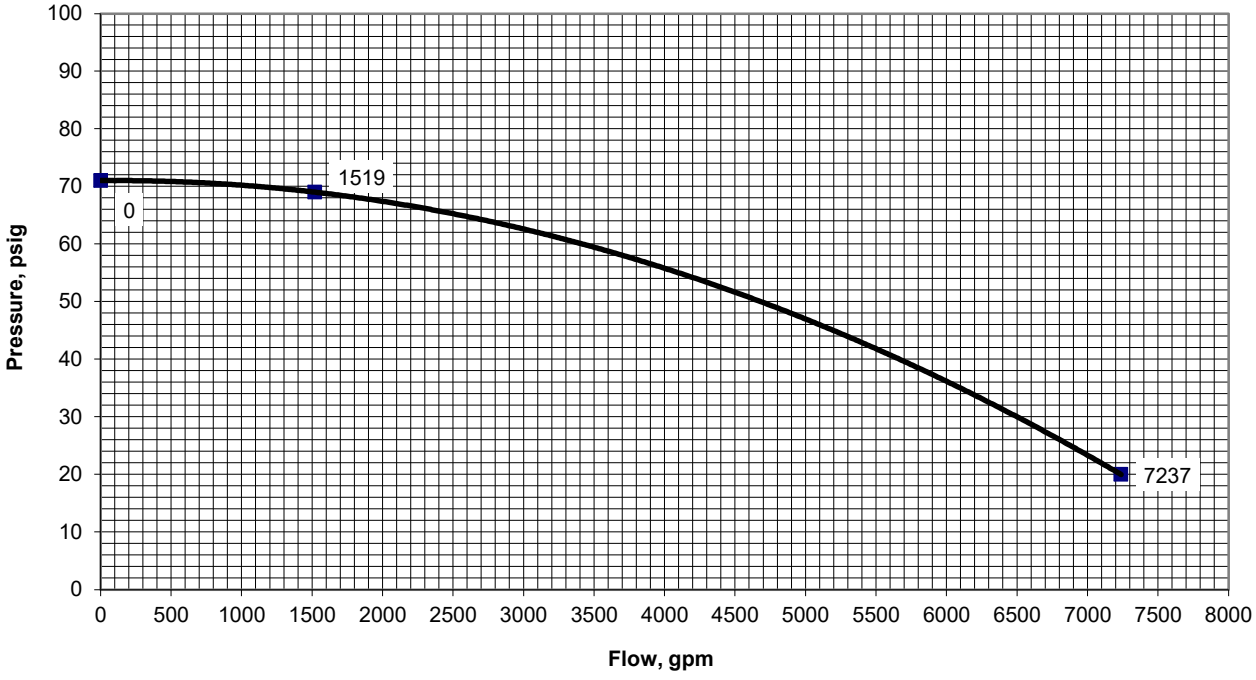
SIZE OPENING:	2.5
COEFFICIENT:	0.9
PITOT READING:	58
GPM:	**1,278**

TOTAL FLOW DURING TEST: **1,278** GPM

STATIC READING: 71 PSI RESIDUAL: 69 PSI

RESULTS: AT 20 PSI RESIDUAL **7,346** GPM

REMARKS:



H B H
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STORMWATER MEMORANDUM

Date: **March 2, 2020** Project Number: **2020-006**
To: **To Whom It May Concern**
From: **Andrey Chernishov, PE**
RE: **Preliminary Design Stormwater Report**

Overview

The proposed project is a hotel located on parcels 1900 & 2002 on Brutscher Street in Newberg, OR which covers an area of 1.92 acres. The existing site consists of a parking lot and a large field. The parking lot is collected by a catch basin that drains to a public main. The large grassy field slopes gently to the east and drains offsite to the neighboring properties. The proposed project turns the existing field into a hotel with associated infrastructure. This project increases the amount of impervious area onsite which triggers the need for onsite water quality and detention treatment. Two detention/treatment facilities will be installed onsite to offset the increase in impervious area: a 164 SF water quality/detention planter in the existing parking lot and a 2,212 SF extended dry basin incorporated with the hotel.

Under the proposed conditions, peak runoff is reduced as a result of the detention provided. Treatment will consist of plants and planter media incorporated with the detention facilities.

Design Methodology & Applicable Standards

The Santa Barbara Urban Hydrograph (SBUH) Method was used to analyze stormwater runoff for the site. This method utilizes the SCS Type 1A 24-hour design storm. HydroCAD 10 computer software was used in the analysis.

City of Newberg requires onsite stormwater detention facilities to be designed to capture runoff so the post-development runoff rates from the site do not exceed the pre-development runoff rates from the site, based on 24-hour storm events ranging from the ½ of the 2-year return storm to the 25-year return storm. City of Newberg also requires developments that create a net impervious area greater than 2,877 SF to treat all new net impervious area created.

The HydroCAD model utilized the 24-hour storm rainfall intensities listed in the City of Newberg Design Standards, shown in Table 1 below:

Table 1 – Storm Event Rainfall Intensities

Recurrence Interval (years)	Total Precipitation Depth (inches)
½ of 2	1.25
2	2.5
10	3.5
25	4.0

Existing Conditions

Per USDA NRCS WSS records, the soil underlying the project site is 100% woodburn silt loam (HSG C). Based on survey and site visits, the existing site consists of a parking lot and a large grass field with several trees. These are modeled as two separate catchments: 1S for the parking lot and 2S for the field (See Attachment B). The area around the development for the downstream analysis was modeled as catchments 5S & 6S (7S & 8S for post-developed model), which represent the areas on the West & East of Brutscher Street and along Highway 99 which drain into the public storm system. These areas were interpreted as Urban Commercial with 85% impervious area (HSG C) (See Attachment C). The conditions for these catchments are summarized in Table 2-5 below.

Table 2 – Catchment 1S

Surface	CN	Area (SF)	% of Total Area
Impervious	98	7,660	92%
Landscaping	74	638	8%
Total	96	8,298	100%

Table 3 – Catchment 2S

Surface	CN	Area (SF)	% of Total Area
Grass	79	75,367	100%
Total	79	75,367	100%

Table 4 – Catchment 5S

Surface	CN	Area (SF)	% of Total Area
Urban Com.	94	153,361	100%
Total	94	153,361	100%

Table 5 – Catchment 6S

Surface	CN	Area (SF)	% of Total Area
Urban Com.	94	484,823	100%
Total	94	484,823	100%

These conditions corresponding to weighted CN's of 96 and 79 for Catchments 1S & 2S respectively and 94 for catchments 5S & 6S.

Proposed Conditions

The improvements will increase impervious area by approximately 59%. Runoff from the hotel development will drain via surface and pipe flow to a 2,212 SF detention facility. Runoff from the existing parking lot will drain into a new stormwater detention/infiltration facility located in the planter on the northwest corner of the lot. For all design storms, orifices and overflows control the runoff such that the peak flowrate for the post developed condition does not exceed the peak runoff rate from the pre-developed conditions ½ of the 2, 2, 10 & 25-year storm events. The existing parking lot area and the hotel area are modeled as catchments 3S and 4S respectively (See Attachment D). Tables 6 & 7 below summarize the conditions for these catchments.

Table 6 – Catchment 3S

Surface	CN	Area (SF)	% of Total Area
Impervious	98	8,428	75%
Landscaping	74	2,835	25%
Total	92	11,263	100%

Table 7 – Catchment 4S

Surface	CN	Area (SF)	% of Total Area
Building	98	10,847	15%
Asphalt	98	29,742	41%
Concrete	98	8,202	11%
Landscaping	74	23,611	33%
Total	90	72,402	100%

These conditions correspond to weighted CN's of 92 and 90 for Catchments 3S & 4S respectively.

Hydrology

Analyses were performed using the HydroCAD software (inputs and outputs attached). Flows leaving the site are summarized in Table 8 below.

Table 8 – Runoff Summary (excluding area in the Public ROW)

Development Condition	½ of 2 Year Storm (cfs)	2 Year Storm (cfs)	10 Year Storm (cfs)	25 Year Storm (cfs)
Pre-Development (1S+2S)	0.064	0.351	0.705	0.901
Post-Development (1P+2P)	0.044	0.133	0.247	0.366

There will be a decrease in flows offsite for the post-developed condition when compared to the pre-developed condition.

Water Quantity

Stormwater quantity treatment for the development is provided by an extended dry basin & flow through planter which are approved by the City of Newberg for water quality and quantity treatment. The extended dry basin & planter were selected because LIDA facilities/Regional facilities are the highest option in the City of Newberg water quality/quantity facility selection hierarchy (Newberg Design Standards section 4.6.8). Analyses were performed using HydroCAD software (See Attachment D) to show the capacity and conveyance of the proposed facilities at each of the storm events. As shown in Table 8 above, post-development stormwater runoff rates in all storm events is less than pre-development rates, as per code requirements.

Water Quality Treatment

The City of Newberg requires that owners of new developments that create new impervious surfaces or increase the amount of stormwater runoff or pollution leaving the site to construct permanent water quality facilities to reduce contaminants entering the storm and surface water system.

The stormwater facilities selected, an extended dry basin and flow through planter, are approved by the City of Newberg to treat water quality as well as quantity. The facility collects and holds stormwater runoff, allowing pollutants to filter out and settle into the vegetated bottom of the basin.

Downstream Analyses

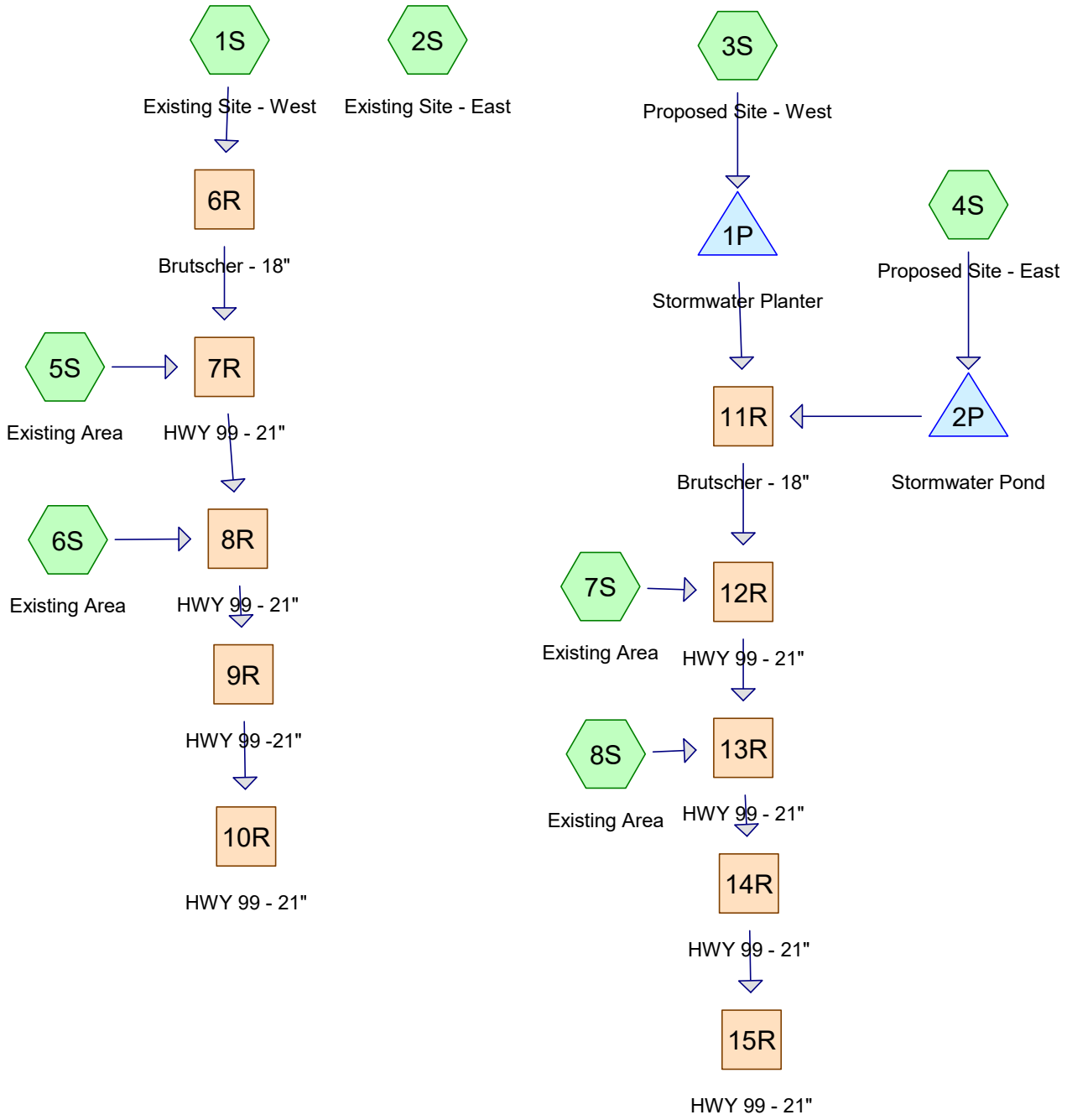
The pre-developed analyses (Catchments 1S, 5S, & 6S and Reach 6R-10R) shows that the system currently has sufficient capacity to convey the 25-year design storm event. The flows attributed to the downstream system from the proposed development reduce the peak flow at the ¼ mile downstream point by 0.030

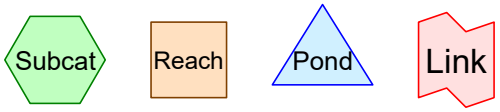
cfs. This means that development is improving the downstream systems functionality and not contributing adverse effects.

Conclusion

The proposed development complies with the City of Newberg requirements for stormwater quality and quantity treatment. An extended dry basin & private planter are proposed to provide stormwater quality and quantity treatment. Post-development peak stormwater runoff is reduced from pre-development, despite a 59% increase in impervious site area.

ATTACHMENT A





Routing Diagram for Faifield Inn 2020-006
Prepared by HBH Consulting Engineers, Printed 3/2/2020

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Site - West Runoff Area=8,298 sf 92.31% Impervious Runoff Depth=0.96"
Flow Length=110' Slope=0.0315 '/' Tc=10.0 min CN=74/98 Runoff=0.045 cfs 664 cf

Subcatchment 2S: Existing Site - East Runoff Area=75,367 sf 0.00% Impervious Runoff Depth=0.15"
Flow Length=270' Slope=0.0200 '/' Tc=10.0 min CN=79/0 Runoff=0.019 cfs 960 cf

Subcatchment 3S: Proposed Site - West Runoff Area=11,263 sf 74.83% Impervious Runoff Depth=0.79"
Flow Length=110' Slope=0.0315 '/' Tc=10.0 min CN=74/98 Runoff=0.049 cfs 744 cf

Subcatchment 4S: Proposed Site - East Runoff Area=72,402 sf 67.39% Impervious Runoff Depth=0.72"
Flow Length=216' Slope=0.0200 '/' Tc=10.0 min CN=74/98 Runoff=0.285 cfs 4,352 cf

Subcatchment 5S: Existing Area Runoff Area=3.520 ac 85.00% Impervious Runoff Depth=0.89"
Flow Length=1,468' Tc=10.0 min CN=71/98 Runoff=0.762 cfs 11,316 cf

Subcatchment 6S: Existing Area Runoff Area=11.130 ac 85.00% Impervious Runoff Depth=0.89"
Flow Length=1,468' Tc=10.0 min CN=71/98 Runoff=2.409 cfs 35,781 cf

Subcatchment 7S: Existing Area Runoff Area=3.520 ac 85.00% Impervious Runoff Depth=0.89"
Flow Length=1,468' Tc=10.0 min CN=71/98 Runoff=0.762 cfs 11,316 cf

Subcatchment 8S: Existing Area Runoff Area=11.130 ac 85.00% Impervious Runoff Depth=0.89"
Flow Length=1,468' Tc=10.0 min CN=71/98 Runoff=2.409 cfs 35,781 cf

Reach 6R: Brutscher - 18" Avg. Flow Depth=0.06' Max Vel=1.71 fps Inflow=0.045 cfs 664 cf
18.0" Round Pipe n=0.015 L=300.0' S=0.0203 '/' Capacity=12.960 cfs Outflow=0.044 cfs 664 cf

Reach 7R: HWY 99 - 21" Avg. Flow Depth=0.29' Max Vel=3.12 fps Inflow=0.806 cfs 11,980 cf
21.0" Round Pipe n=0.015 L=199.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=0.804 cfs 11,980 cf

Reach 8R: HWY 99 - 21" Avg. Flow Depth=0.58' Max Vel=4.65 fps Inflow=3.213 cfs 47,761 cf
21.0" Round Pipe n=0.015 L=235.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=3.205 cfs 47,761 cf

Reach 9R: HWY 99 -21" Avg. Flow Depth=0.58' Max Vel=4.65 fps Inflow=3.205 cfs 47,761 cf
21.0" Round Pipe n=0.015 L=74.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=3.204 cfs 47,761 cf

Reach 10R: HWY 99 - 21" Avg. Flow Depth=0.59' Max Vel=4.53 fps Inflow=3.204 cfs 47,761 cf
21.0" Round Pipe n=0.015 L=325.0' S=0.0093 '/' Capacity=13.216 cfs Outflow=3.195 cfs 47,761 cf

Reach 11R: Brutscher - 18" Avg. Flow Depth=0.05' Max Vel=1.45 fps Inflow=0.026 cfs 1,922 cf
18.0" Round Pipe n=0.015 L=300.0' S=0.0203 '/' Capacity=12.960 cfs Outflow=0.026 cfs 1,918 cf

Reach 12R: HWY 99 - 21" Avg. Flow Depth=0.28' Max Vel=3.09 fps Inflow=0.783 cfs 13,234 cf
21.0" Round Pipe n=0.015 L=199.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=0.781 cfs 13,232 cf

Reach 13R: HWY 99 - 21" Avg. Flow Depth=0.57' Max Vel=4.65 fps Inflow=3.190 cfs 49,012 cf
21.0" Round Pipe n=0.015 L=235.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=3.182 cfs 49,009 cf

Reach 14R: HWY 99 - 21" Avg. Flow Depth=0.57' Max Vel=4.65 fps Inflow=3.182 cfs 49,009 cf
21.0" Round Pipe n=0.015 L=74.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=3.180 cfs 49,008 cf

Reach 15R: HWY 99 - 21" Avg. Flow Depth=0.58' Max Vel=4.52 fps Inflow=3.180 cfs 49,008 cf
21.0" Round Pipe n=0.015 L=325.0' S=0.0093 '/' Capacity=13.216 cfs Outflow=3.172 cfs 49,003 cf

Pond 1P: Stormwater Planter Peak Elev=222.47' Storage=155 cf Inflow=0.049 cfs 744 cf
Outflow=0.026 cfs 664 cf

Pond 2P: Stormwater Pond Peak Elev=223.19' Storage=3,728 cf Inflow=0.285 cfs 4,352 cf
Outflow=0.018 cfs 1,258 cf

Summary for Subcatchment 1S: Existing Site - West

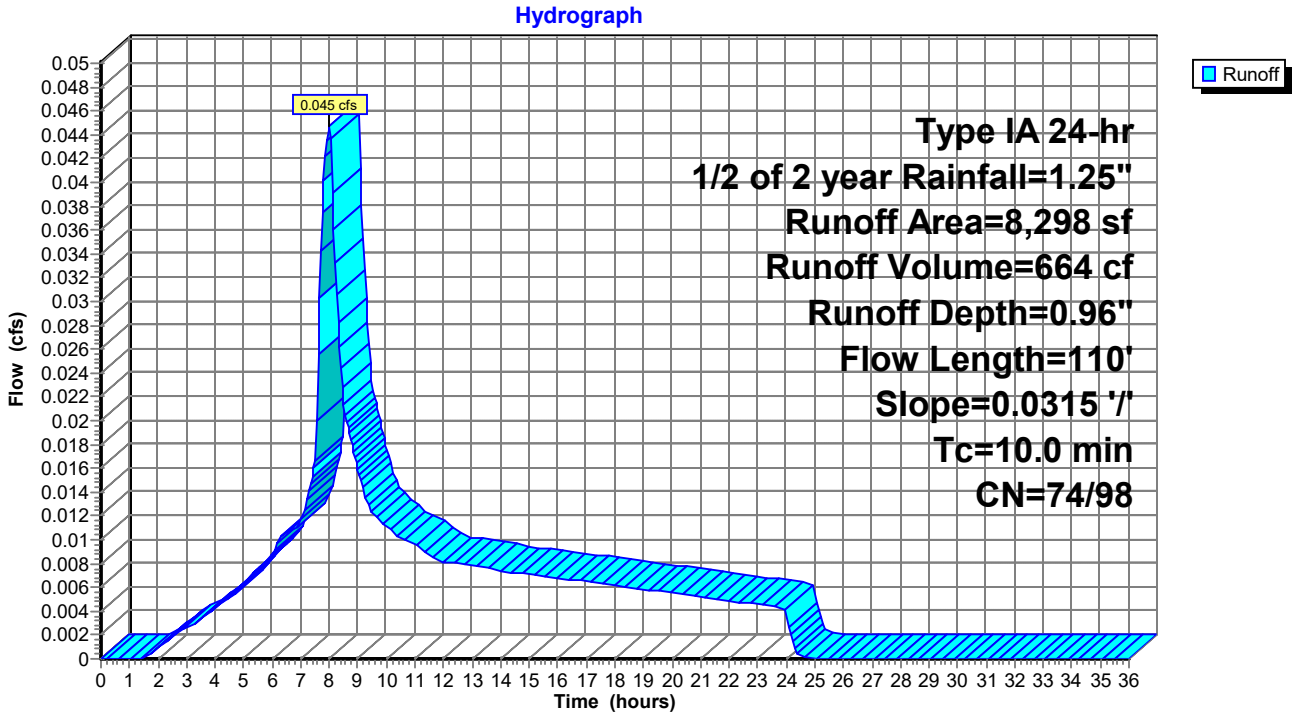
Runoff = 0.045 cfs @ 7.98 hrs, Volume= 664 cf, Depth= 0.96"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 of 2 year Rainfall=1.25"

	Area (sf)	CN	Description
*	7,660	98	Impervious Surfaces
*	638	74	Landscaping
	8,298	96	Weighted Average
	638	74	7.69% Pervious Area
	7,660	98	92.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0315	1.08		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
0.4	90	0.0315	3.60		**Shallow Concentrated Flow, Parking Lot** Paved Kv= 20.3 fps
0.7	110	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 1S: Existing Site - West



Summary for Subcatchment 2S: Existing Site - East

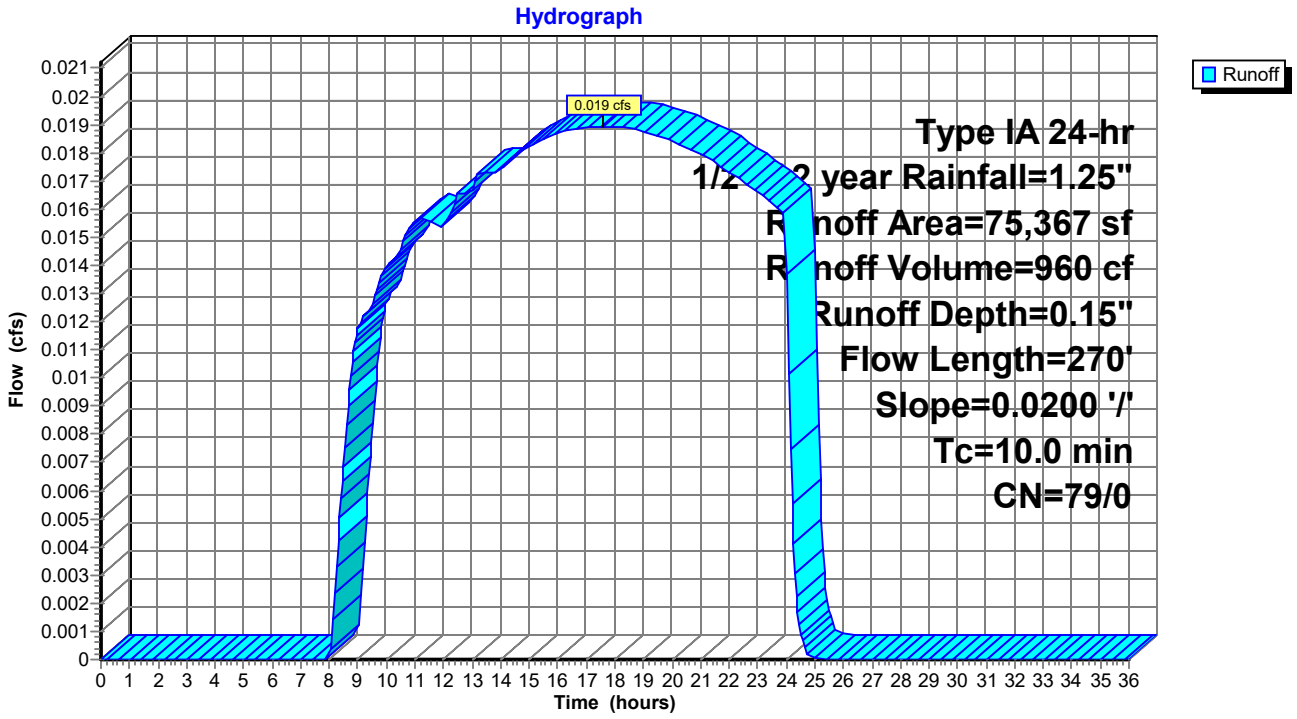
Runoff = 0.019 cfs @ 17.58 hrs, Volume= 960 cf, Depth= 0.15"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 of 2 year Rainfall=1.25"

Area (sf)	CN	Description
75,367	79	50-75% Grass cover, Fair, HSG C
75,367	79	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	20	0.0200	0.08		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 2.60"
4.2	250	0.0200	0.99		**Shallow Concentrated Flow, SCF** Short Grass Pasture Kv= 7.0 fps
8.6	270	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 2S: Existing Site - East



Summary for Subcatchment 3S: Proposed Site - West

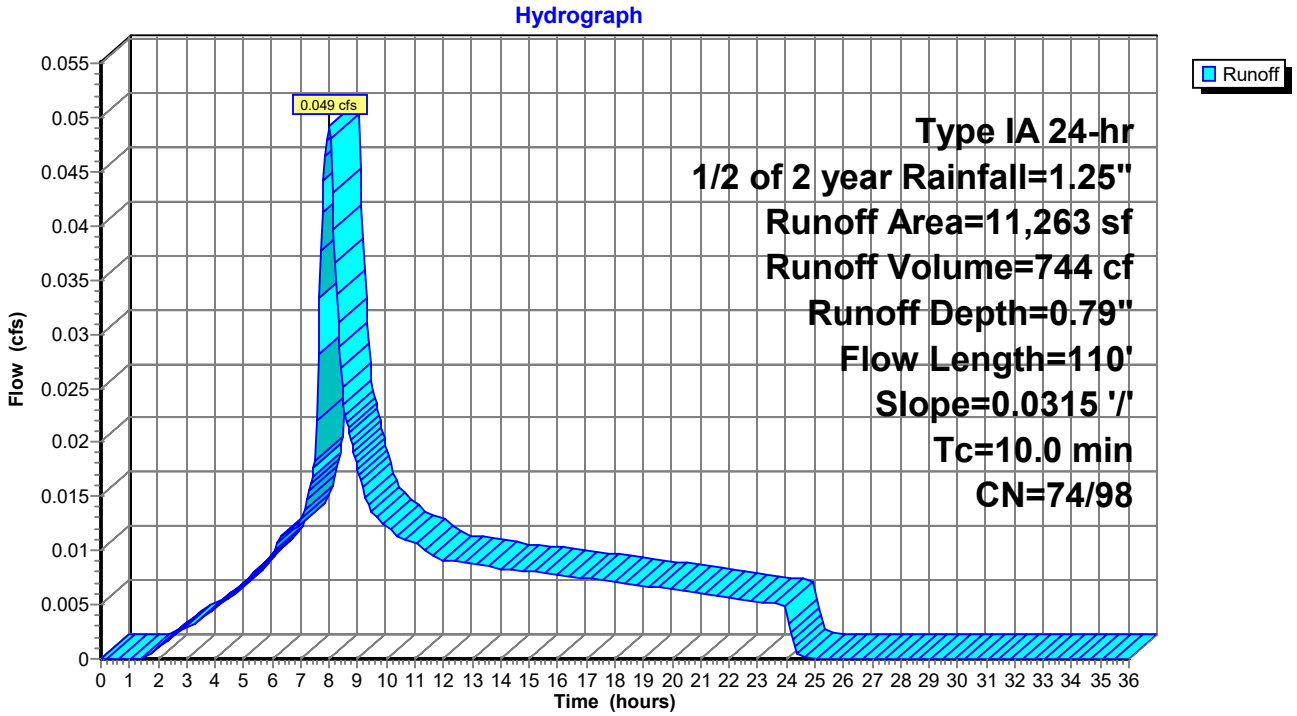
Runoff = 0.049 cfs @ 7.98 hrs, Volume= 744 cf, Depth= 0.79"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 of 2 year Rainfall=1.25"

	Area (sf)	CN	Description
*	8,428	98	Parking Lot
*	2,835	74	Landscaping
	11,263	92	Weighted Average
	2,835	74	25.17% Pervious Area
	8,428	98	74.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0315	1.08		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
0.4	90	0.0315	3.60		**Shallow Concentrated Flow, Parking Lot** Paved Kv= 20.3 fps
0.7	110	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 3S: Proposed Site - West



Summary for Subcatchment 4S: Proposed Site - East

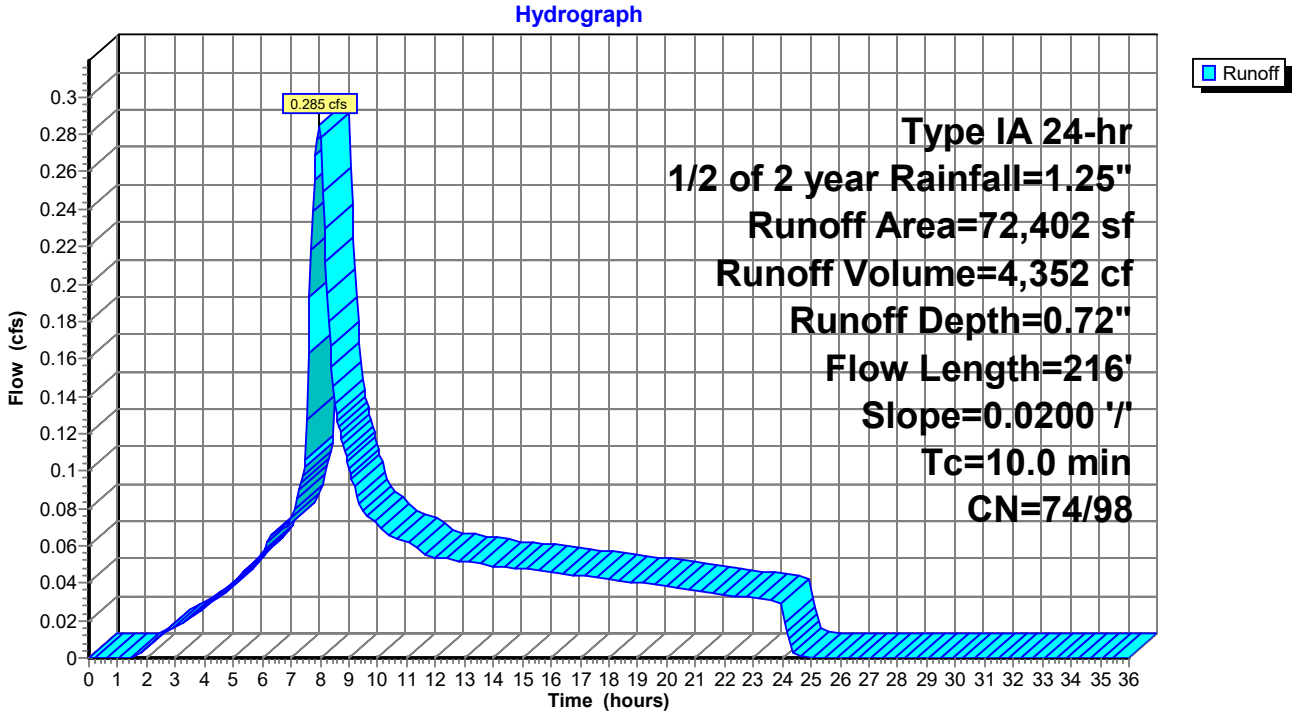
Runoff = 0.285 cfs @ 7.98 hrs, Volume= 4,352 cf, Depth= 0.72"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 of 2 year Rainfall=1.25"

	Area (sf)	CN	Description
*	10,847	98	Building
*	29,742	98	Asphalt
*	8,202	98	Concrete
*	23,611	74	Landscaping
	72,402	90	Weighted Average
	23,611	74	32.61% Pervious Area
	48,791	98	67.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	20	0.0200	0.90		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
1.1	196	0.0200	2.87		**Shallow Concentrated Flow, Parking Lot to CB** Paved Kv= 20.3 fps
1.5	216	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 4S: Proposed Site - East



Summary for Subcatchment 5S: Existing Area

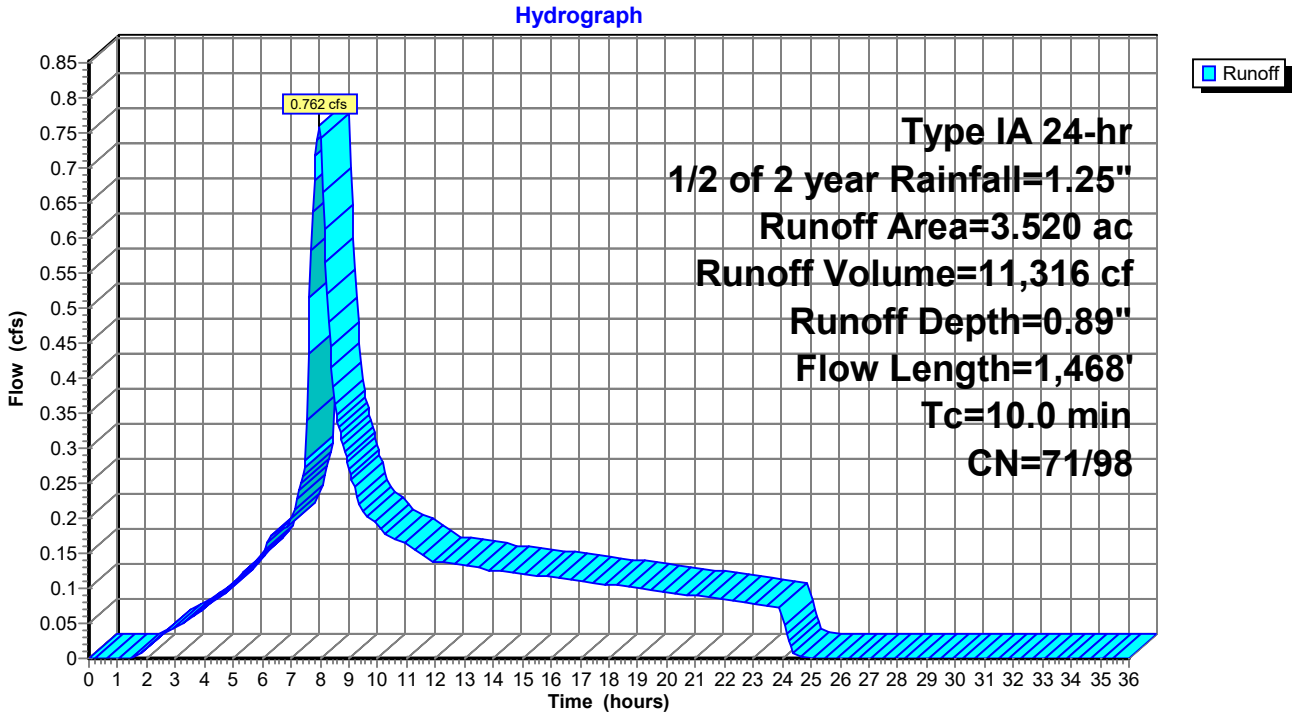
Runoff = 0.762 cfs @ 7.98 hrs, Volume= 11,316 cf, Depth= 0.89"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 of 2 year Rainfall=1.25"

Area (ac)	CN	Description
3.520	94	Urban commercial, 85% imp, HSG C
0.528	71	15.00% Pervious Area
2.992	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0210	1.26		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
2.1	368	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	1,000	0.0130	2.60	3.192	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.030 Corrugated metal
9.8	1,468	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 5S: Existing Area



Summary for Subcatchment 6S: Existing Area

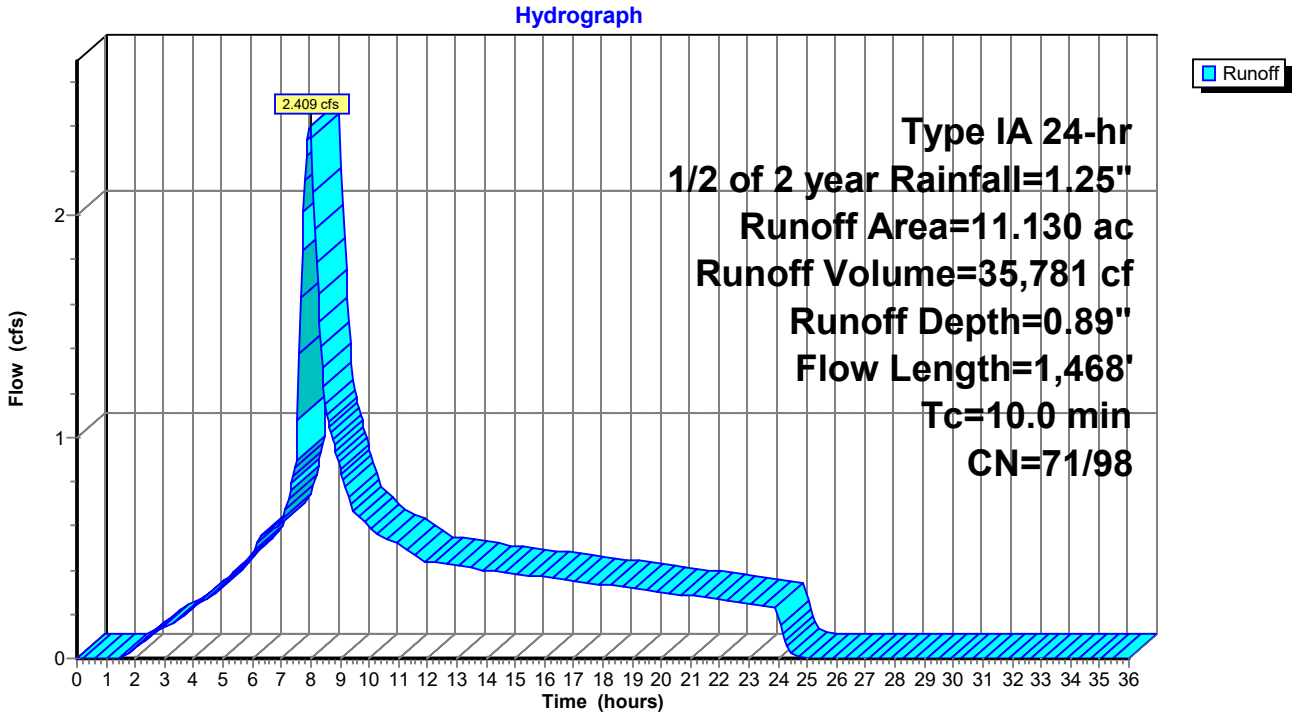
Runoff = 2.409 cfs @ 7.98 hrs, Volume= 35,781 cf, Depth= 0.89"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 of 2 year Rainfall=1.25"

Area (ac)	CN	Description
11.130	94	Urban commercial, 85% imp, HSG C
1.670	71	15.00% Pervious Area
9.460	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0210	1.26		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
2.1	368	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	1,000	0.0130	2.60	3.192	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.030 Corrugated metal
9.8	1,468	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 6S: Existing Area



Summary for Subcatchment 7S: Existing Area

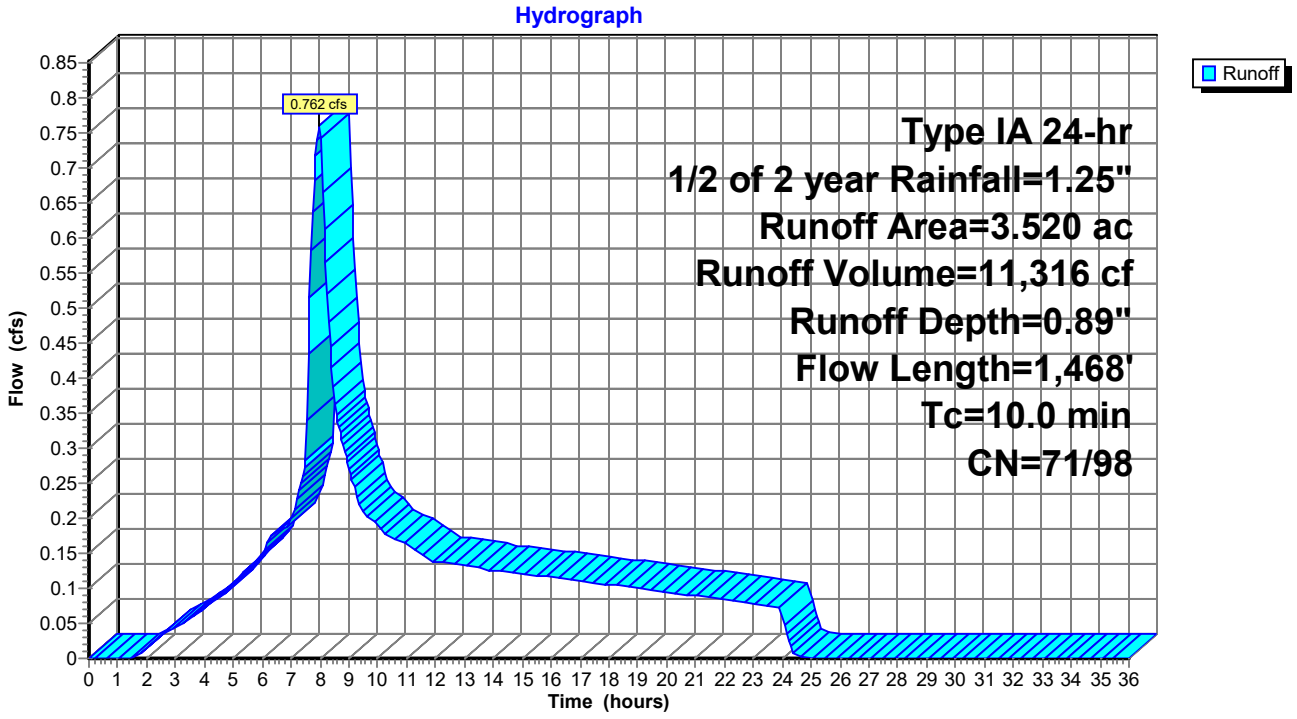
Runoff = 0.762 cfs @ 7.98 hrs, Volume= 11,316 cf, Depth= 0.89"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 of 2 year Rainfall=1.25"

Area (ac)	CN	Description
3.520	94	Urban commercial, 85% imp, HSG C
0.528	71	15.00% Pervious Area
2.992	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0210	1.26		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
2.1	368	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	1,000	0.0130	2.60	3.192	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.030 Corrugated metal
9.8	1,468	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 7S: Existing Area



Summary for Subcatchment 8S: Existing Area

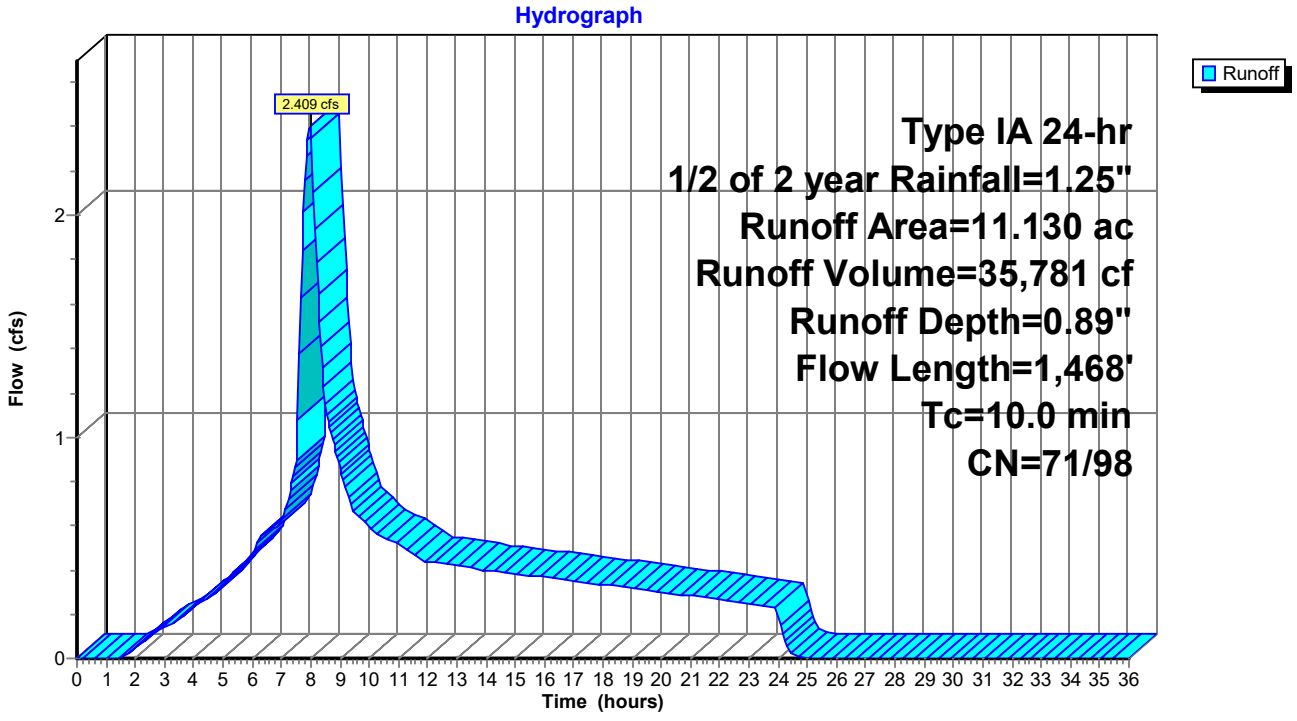
Runoff = 2.409 cfs @ 7.98 hrs, Volume= 35,781 cf, Depth= 0.89"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 of 2 year Rainfall=1.25"

Area (ac)	CN	Description
11.130	94	Urban commercial, 85% imp, HSG C
1.670	71	15.00% Pervious Area
9.460	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0210	1.26		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
2.1	368	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	1,000	0.0130	2.60	3.192	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.030 Corrugated metal
9.8	1,468	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 8S: Existing Area



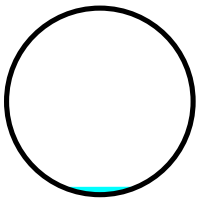
Summary for Reach 6R: Brutscher - 18"

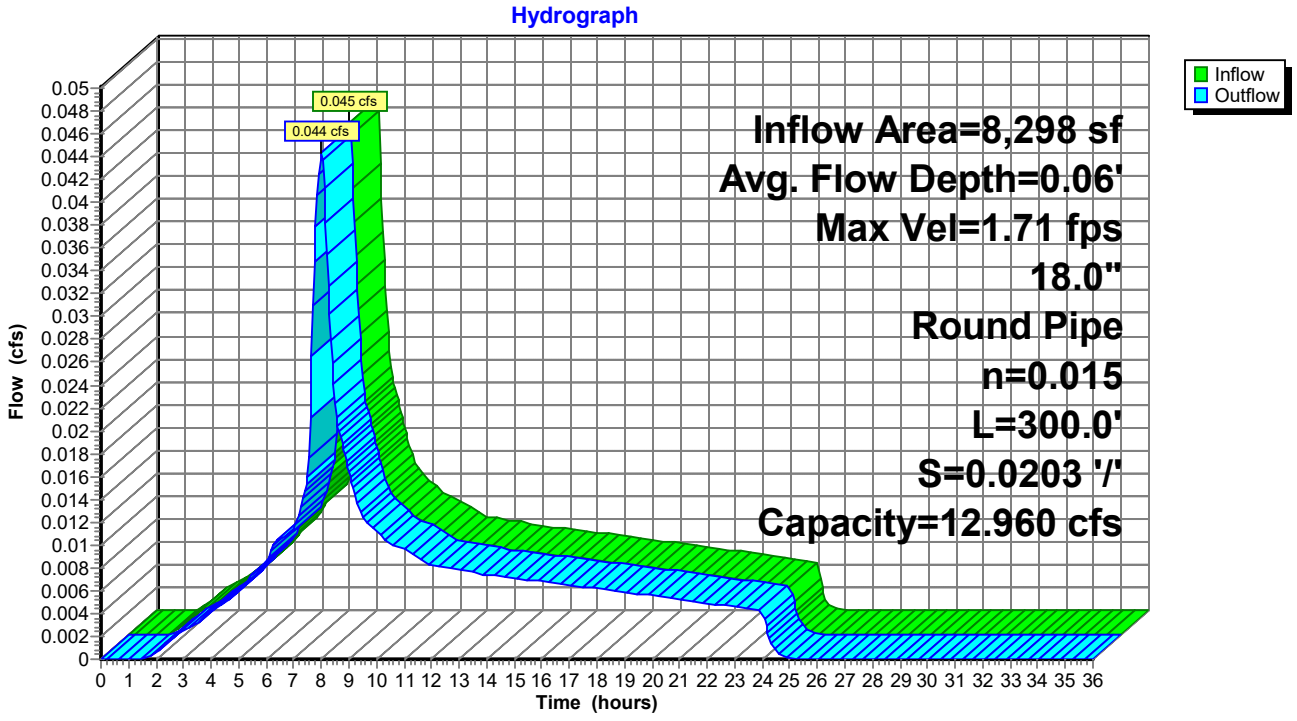
Inflow Area = 8,298 sf, 92.31% Impervious, Inflow Depth = 0.96" for 1/2 of 2 year event
Inflow = 0.045 cfs @ 7.98 hrs, Volume= 664 cf
Outflow = 0.044 cfs @ 8.00 hrs, Volume= 664 cf, Atten= 1%, Lag= 1.2 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.71 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 0.99 fps, Avg. Travel Time= 5.1 min

Peak Storage= 8 cf @ 8.00 hrs
Average Depth at Peak Storage= 0.06'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.960 cfs

18.0" Round Pipe
n= 0.015
Length= 300.0' Slope= 0.0203 '/'
Inlet Invert= 212.78', Outlet Invert= 206.70'





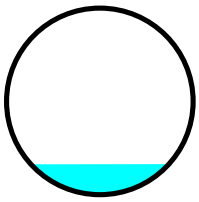
Summary for Reach 7R: HWY 99 - 21"

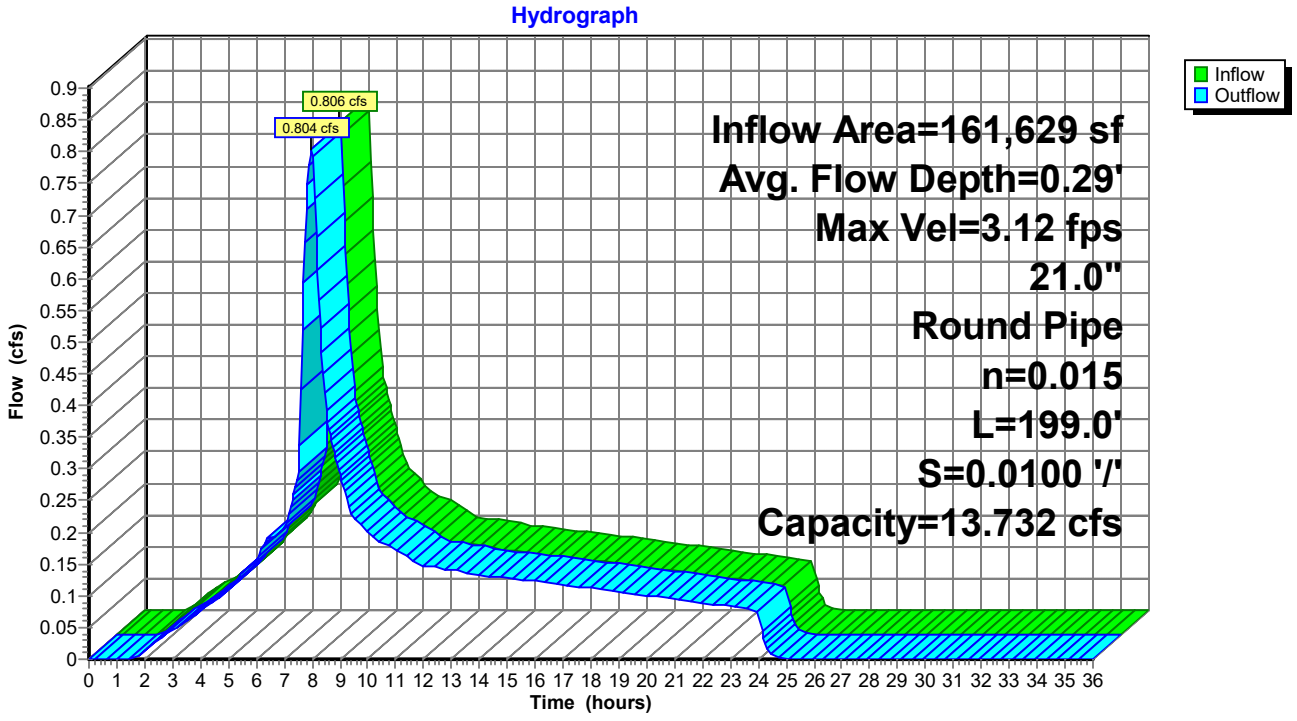
Inflow Area = 161,629 sf, 85.38% Impervious, Inflow Depth = 0.89" for 1/2 of 2 year event
Inflow = 0.806 cfs @ 7.98 hrs, Volume= 11,980 cf
Outflow = 0.804 cfs @ 7.99 hrs, Volume= 11,980 cf, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.12 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.72 fps, Avg. Travel Time= 1.9 min

Peak Storage= 51 cf @ 7.99 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 199.0' Slope= 0.0100 '/'
Inlet Invert= 206.61', Outlet Invert= 204.62'





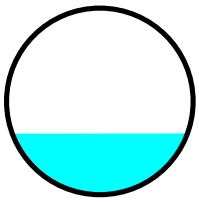
Summary for Reach 8R: HWY 99 - 21"

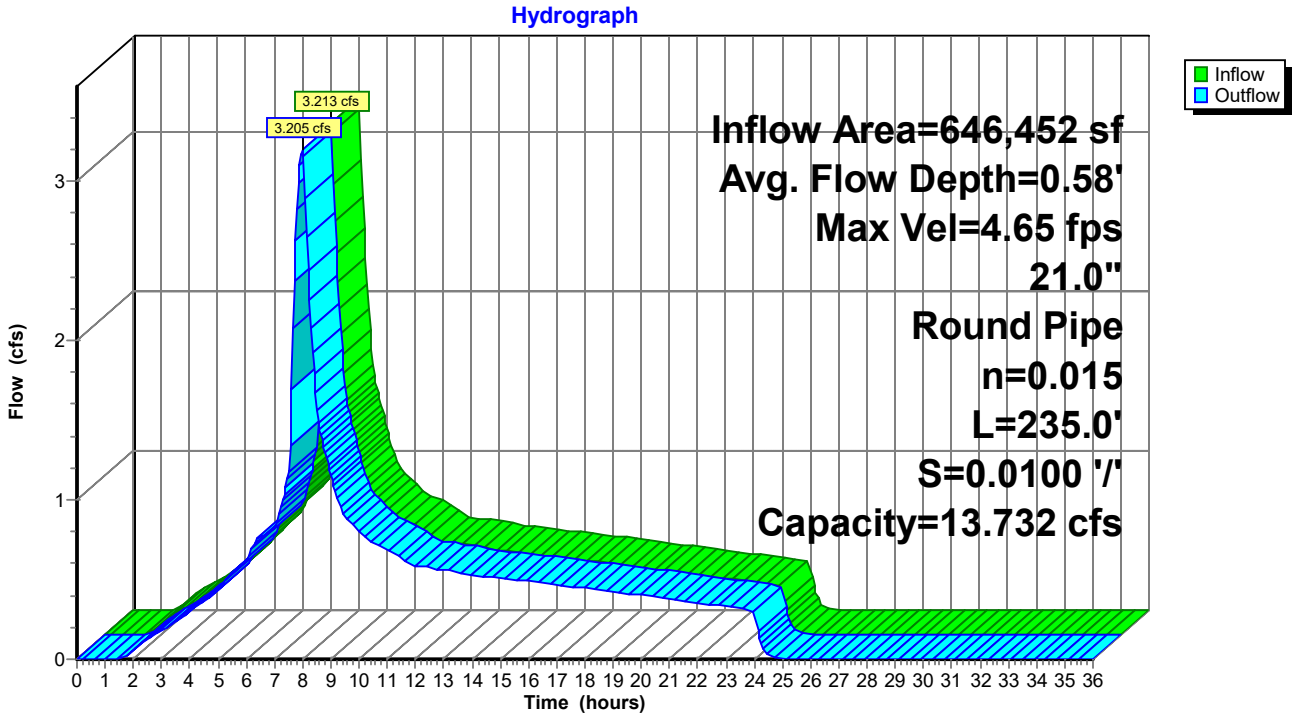
Inflow Area = 646,452 sf, 85.09% Impervious, Inflow Depth = 0.89" for 1/2 of 2 year event
Inflow = 3.213 cfs @ 7.98 hrs, Volume= 47,761 cf
Outflow = 3.205 cfs @ 7.99 hrs, Volume= 47,761 cf, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.65 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.57 fps, Avg. Travel Time= 1.5 min

Peak Storage= 162 cf @ 7.99 hrs
Average Depth at Peak Storage= 0.58'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 235.0' Slope= 0.0100 '/'
Inlet Invert= 204.62', Outlet Invert= 202.27'





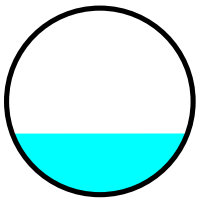
Summary for Reach 9R: HWY 99 -21"

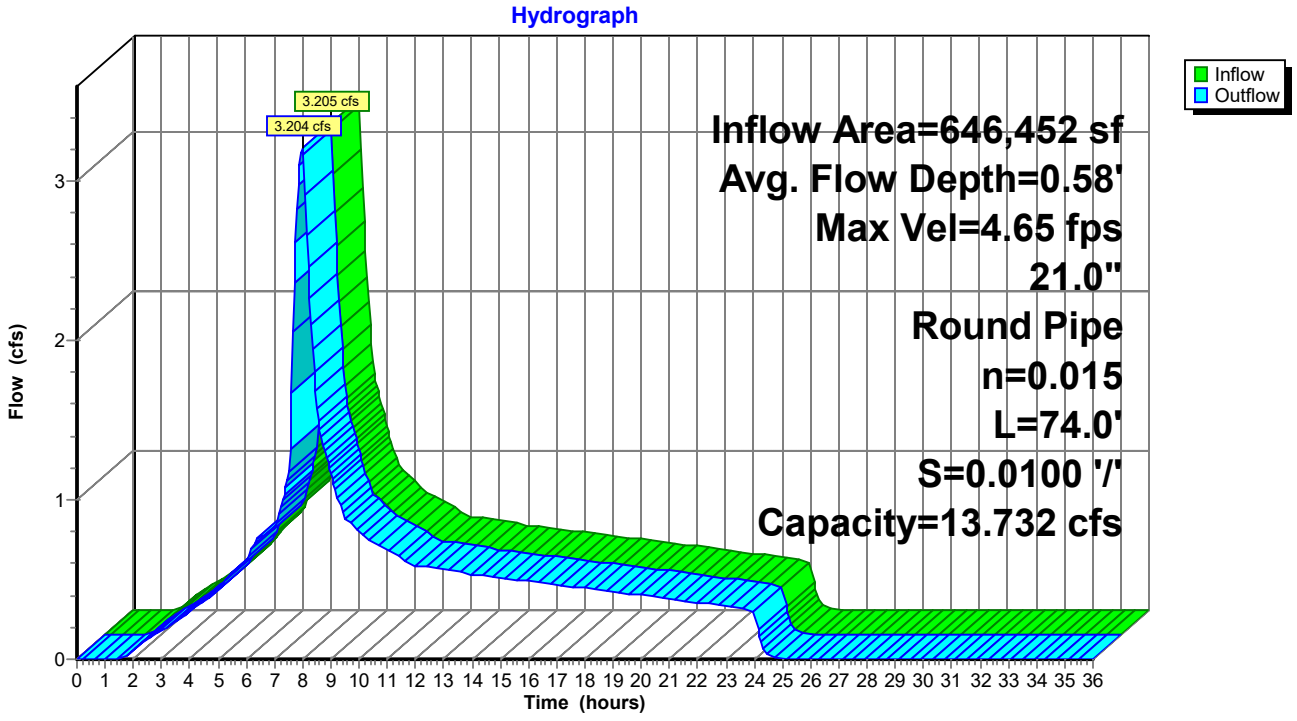
Inflow Area = 646,452 sf, 85.09% Impervious, Inflow Depth = 0.89" for 1/2 of 2 year event
Inflow = 3.205 cfs @ 7.99 hrs, Volume= 47,761 cf
Outflow = 3.204 cfs @ 7.99 hrs, Volume= 47,761 cf, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.65 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.57 fps, Avg. Travel Time= 0.5 min

Peak Storage= 51 cf @ 7.99 hrs
Average Depth at Peak Storage= 0.58'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 74.0' Slope= 0.0100 '/'
Inlet Invert= 202.27', Outlet Invert= 201.53'





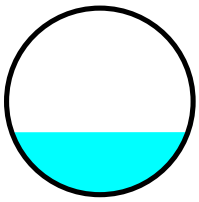
Summary for Reach 10R: HWY 99 - 21"

Inflow Area = 646,452 sf, 85.09% Impervious, Inflow Depth = 0.89" for 1/2 of 2 year event
Inflow = 3.204 cfs @ 7.99 hrs, Volume= 47,761 cf
Outflow = 3.195 cfs @ 8.00 hrs, Volume= 47,761 cf, Atten= 0%, Lag= 0.7 min

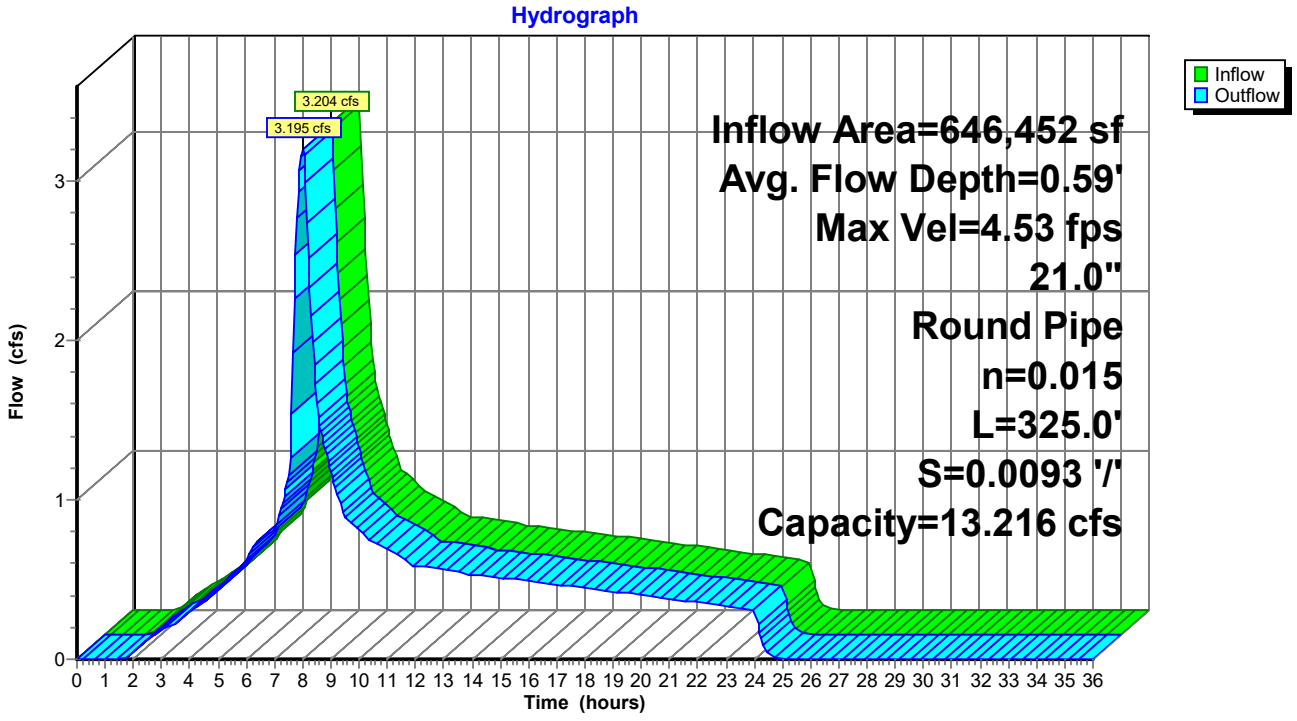
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.53 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 2.48 fps, Avg. Travel Time= 2.2 min

Peak Storage= 229 cf @ 8.00 hrs
Average Depth at Peak Storage= 0.59'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.216 cfs

21.0" Round Pipe
n= 0.015 Concrete sewer w/manholes & inlets
Length= 325.0' Slope= 0.0093 '/'
Inlet Invert= 201.43', Outlet Invert= 198.42'



Reach 10R: HWY 99 - 21"



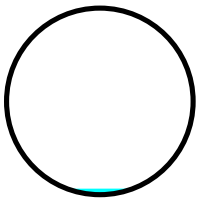
Summary for Reach 11R: Brutscher - 18"

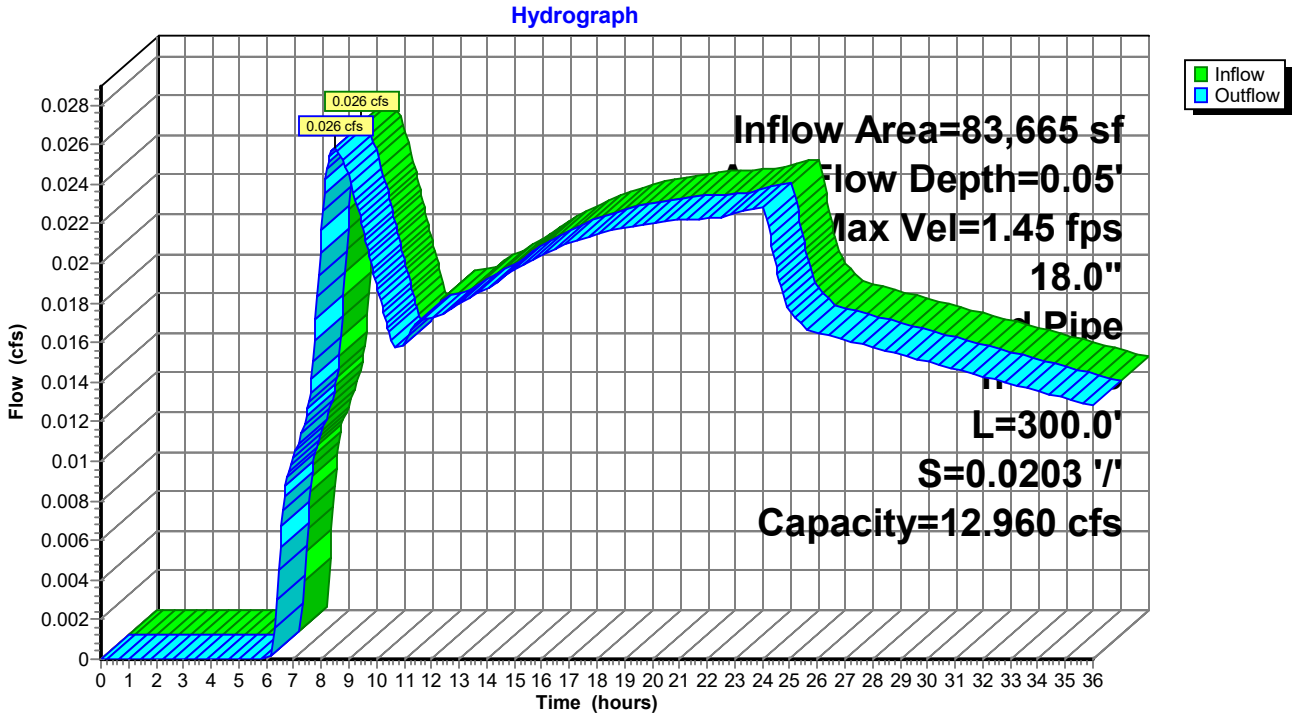
Inflow Area = 83,665 sf, 68.39% Impervious, Inflow Depth > 0.28" for 1/2 of 2 year event
Inflow = 0.026 cfs @ 8.43 hrs, Volume= 1,922 cf
Outflow = 0.026 cfs @ 8.47 hrs, Volume= 1,918 cf, Atten= 0%, Lag= 2.5 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.45 fps, Min. Travel Time= 3.4 min
Avg. Velocity = 1.29 fps, Avg. Travel Time= 3.9 min

Peak Storage= 5 cf @ 8.47 hrs
Average Depth at Peak Storage= 0.05'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.960 cfs

18.0" Round Pipe
n= 0.015
Length= 300.0' Slope= 0.0203 '/'
Inlet Invert= 212.78', Outlet Invert= 206.70'





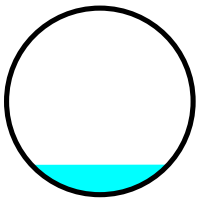
Summary for Reach 12R: HWY 99 - 21"

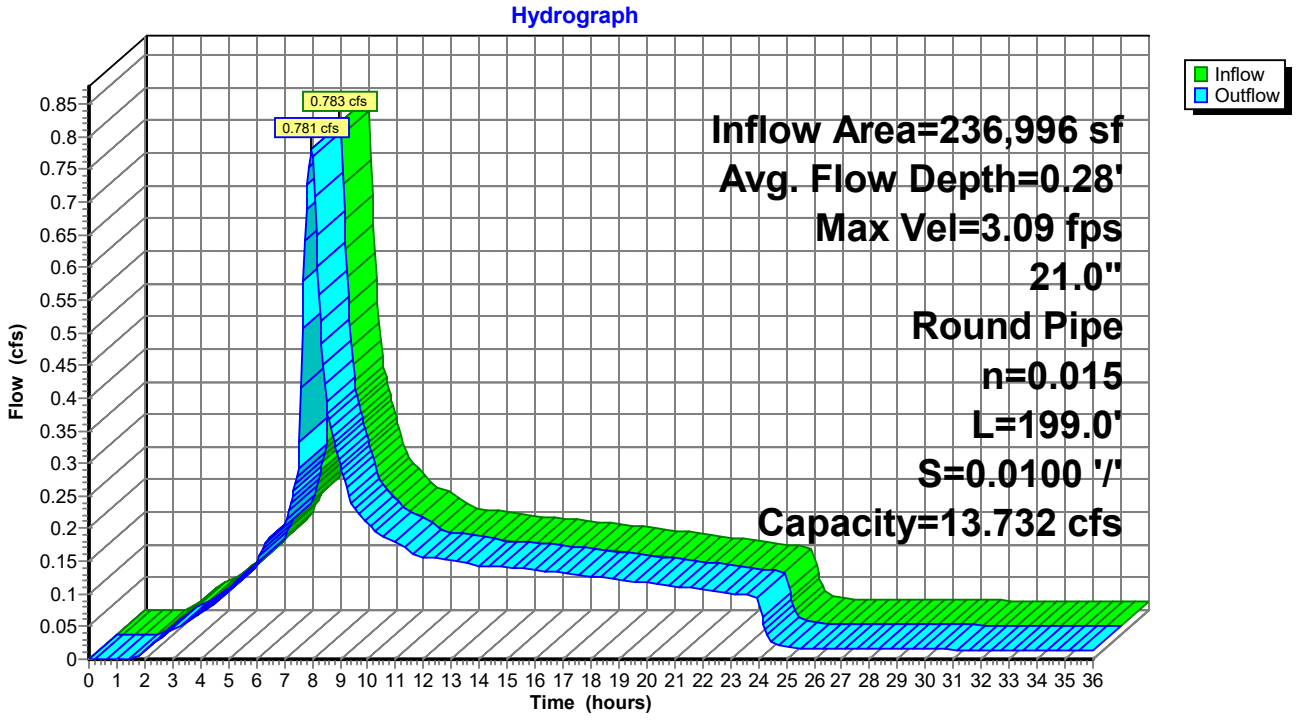
Inflow Area = 236,996 sf, 79.14% Impervious, Inflow Depth > 0.67" for 1/2 of 2 year event
Inflow = 0.783 cfs @ 7.98 hrs, Volume= 13,234 cf
Outflow = 0.781 cfs @ 7.99 hrs, Volume= 13,232 cf, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.09 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.52 fps, Avg. Travel Time= 2.2 min

Peak Storage= 50 cf @ 7.99 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 199.0' Slope= 0.0100 '/'
Inlet Invert= 206.61', Outlet Invert= 204.62'





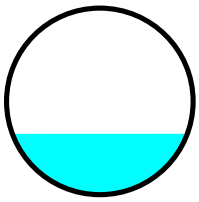
Summary for Reach 13R: HWY 99 - 21"

Inflow Area = 721,819 sf, 83.07% Impervious, Inflow Depth > 0.81" for 1/2 of 2 year event
Inflow = 3.190 cfs @ 7.98 hrs, Volume= 49,012 cf
Outflow = 3.182 cfs @ 7.99 hrs, Volume= 49,009 cf, Atten= 0%, Lag= 0.3 min

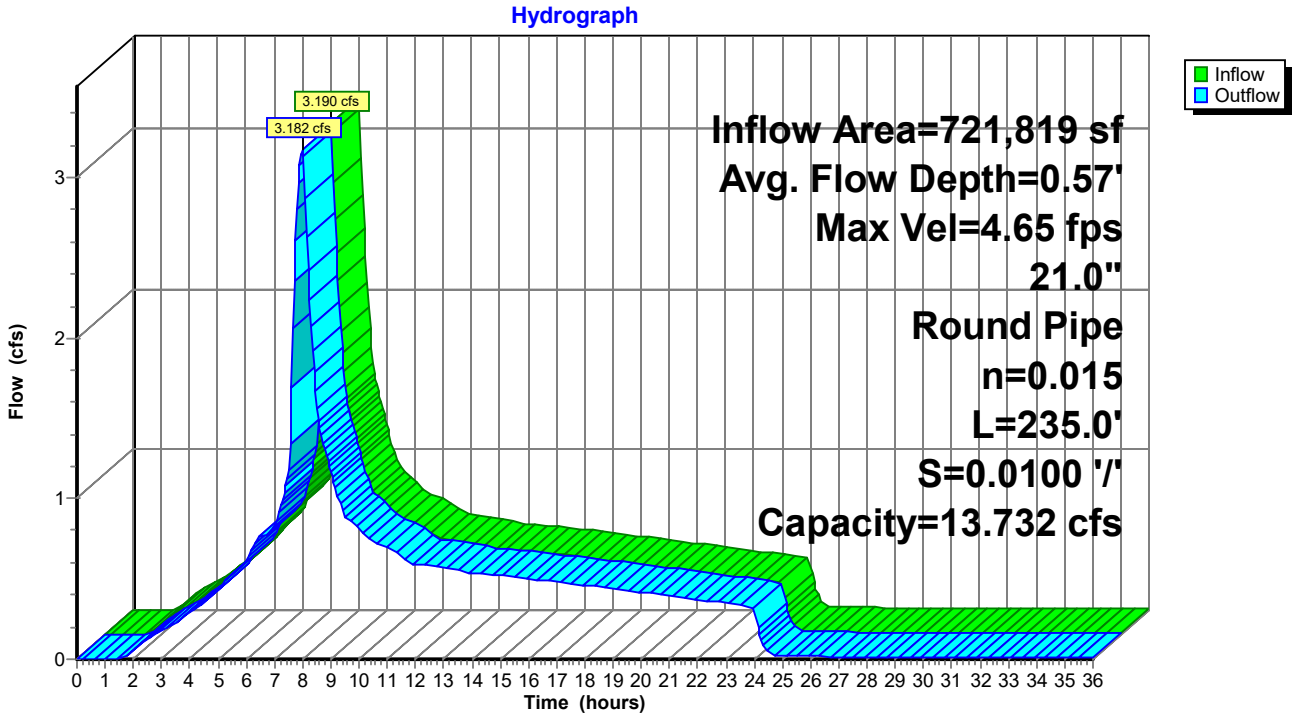
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.65 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.12 fps, Avg. Travel Time= 1.9 min

Peak Storage= 161 cf @ 7.99 hrs
Average Depth at Peak Storage= 0.57'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 235.0' Slope= 0.0100 '/'
Inlet Invert= 204.62', Outlet Invert= 202.27'



Reach 13R: HWY 99 - 21"



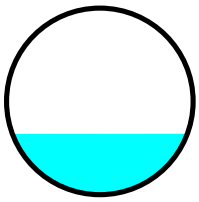
Summary for Reach 14R: HWY 99 - 21"

Inflow Area = 721,819 sf, 83.07% Impervious, Inflow Depth > 0.81" for 1/2 of 2 year event
Inflow = 3.182 cfs @ 7.99 hrs, Volume= 49,009 cf
Outflow = 3.180 cfs @ 7.99 hrs, Volume= 49,008 cf, Atten= 0%, Lag= 0.1 min

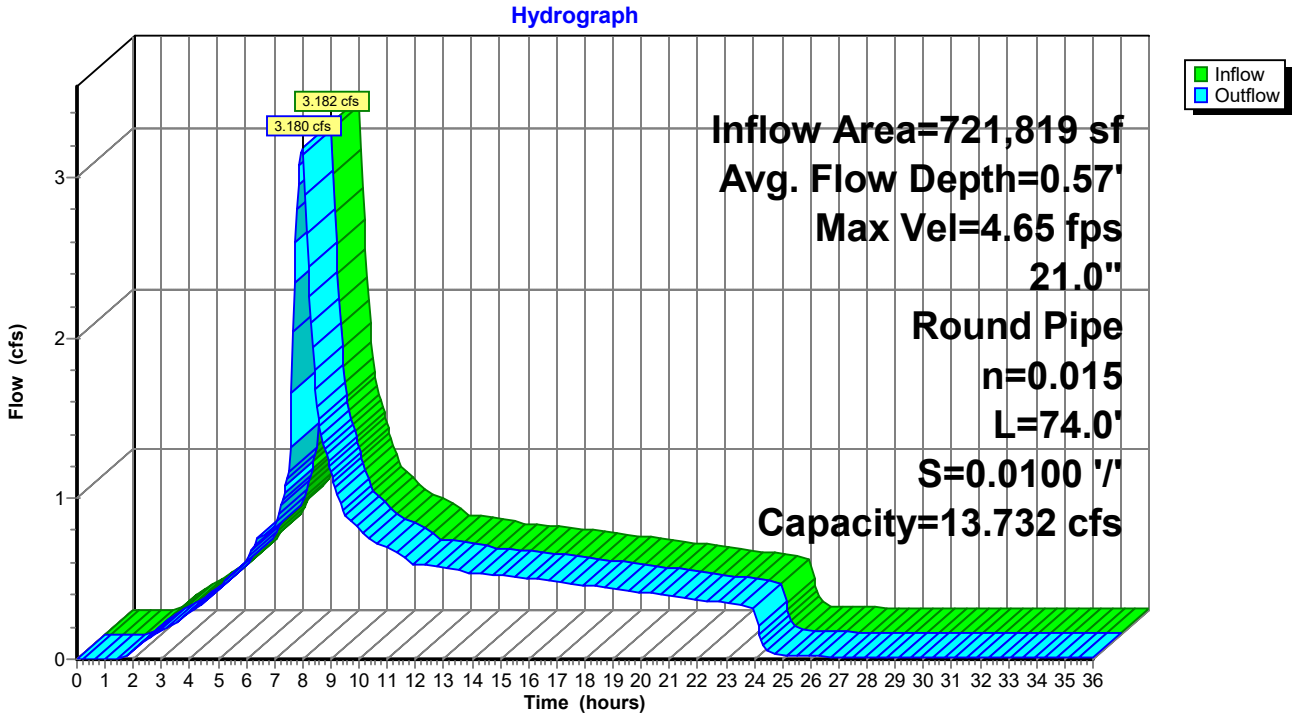
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.65 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.12 fps, Avg. Travel Time= 0.6 min

Peak Storage= 51 cf @ 7.99 hrs
Average Depth at Peak Storage= 0.57'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 74.0' Slope= 0.0100 '/'
Inlet Invert= 202.27', Outlet Invert= 201.53'



Reach 14R: HWY 99 - 21"



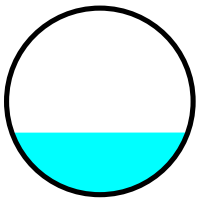
Summary for Reach 15R: HWY 99 - 21"

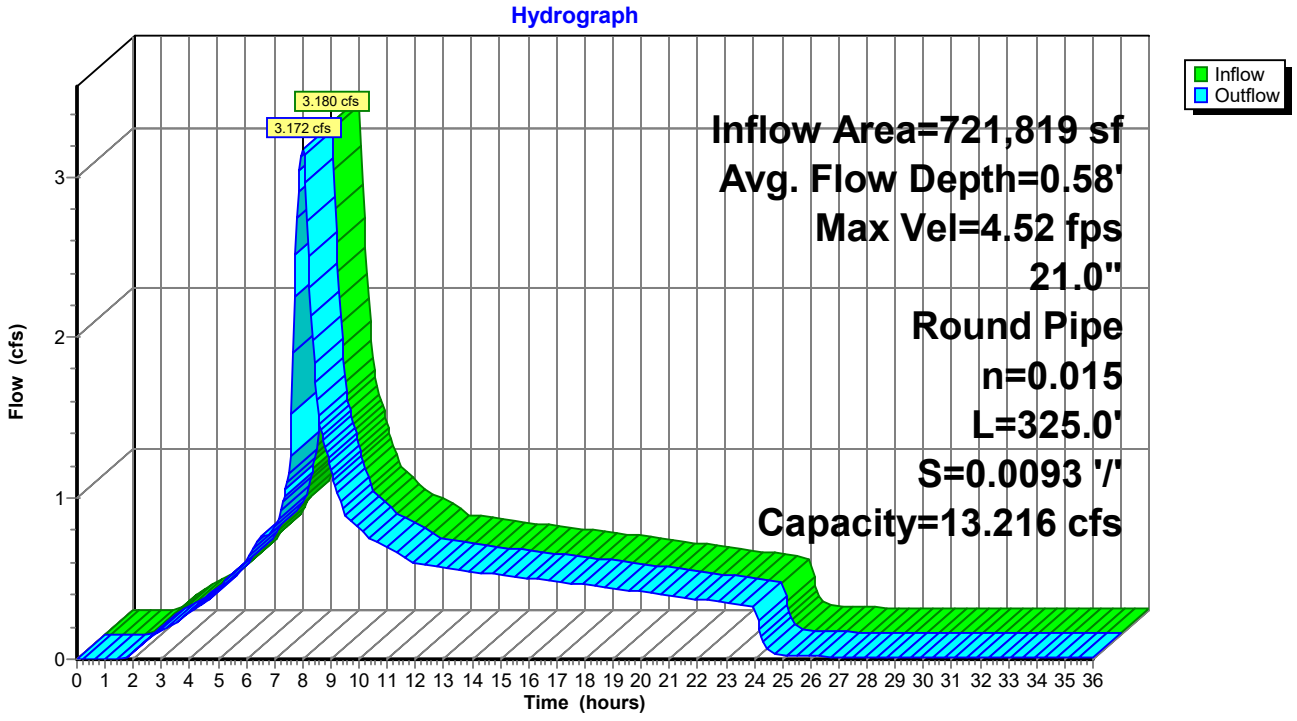
Inflow Area = 721,819 sf, 83.07% Impervious, Inflow Depth > 0.81" for 1/2 of 2 year event
Inflow = 3.180 cfs @ 7.99 hrs, Volume= 49,008 cf
Outflow = 3.172 cfs @ 8.00 hrs, Volume= 49,003 cf, Atten= 0%, Lag= 0.7 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.52 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 2.06 fps, Avg. Travel Time= 2.6 min

Peak Storage= 228 cf @ 8.00 hrs
Average Depth at Peak Storage= 0.58'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.216 cfs

21.0" Round Pipe
n= 0.015 Concrete sewer w/manholes & inlets
Length= 325.0' Slope= 0.0093 '/'
Inlet Invert= 201.43', Outlet Invert= 198.42'





Summary for Pond 1P: Stormwater Planter

Inflow Area = 11,263 sf, 74.83% Impervious, Inflow Depth = 0.79" for 1/2 of 2 year event
Inflow = 0.049 cfs @ 7.98 hrs, Volume= 744 cf
Outflow = 0.026 cfs @ 8.43 hrs, Volume= 664 cf, Atten= 48%, Lag= 26.8 min
Primary = 0.026 cfs @ 8.43 hrs, Volume= 664 cf

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 222.47' @ 8.43 hrs Surf.Area= 160 sf Storage= 155 cf

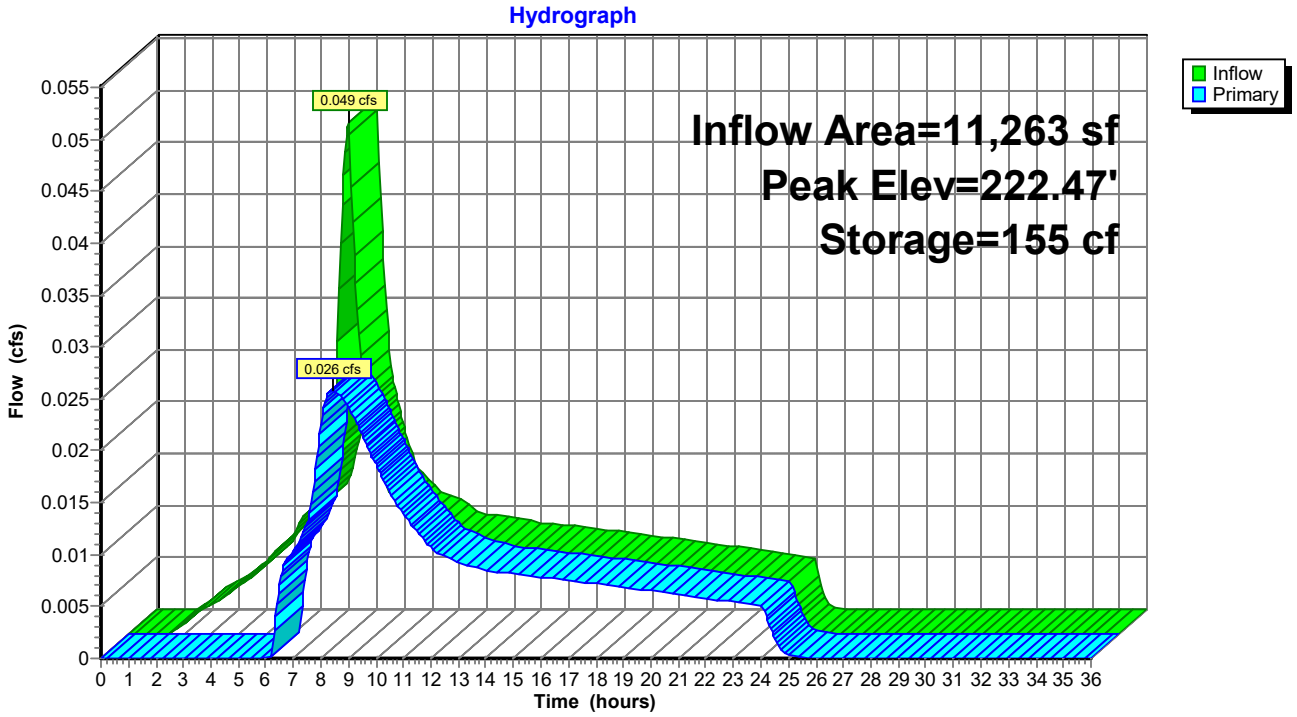
Plug-Flow detention time= 152.6 min calculated for 664 cf (89% of inflow)
Center-of-Mass det. time= 78.7 min (794.7 - 716.0)

Volume	Invert	Avail.Storage	Storage Description
#1	221.50'	560 cf	**16.00'W x 10.00'L x 3.50'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	222.00'	**1.2" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	223.51'	**0.8" Vert. Orifice/Grate** C= 0.600
#3	Primary	224.40'	**1.0" Vert. Orifice/Grate** C= 0.600
#4	Primary	224.50'	**6.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.026 cfs @ 8.43 hrs HW=222.47' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.026 cfs @ 3.29 fps)
- **2=Orifice/Grate** (Controls 0.000 cfs)
- **3=Orifice/Grate** (Controls 0.000 cfs)
- **4=Orifice/Grate** (Controls 0.000 cfs)

Pond 1P: Stormwater Planter



Summary for Pond 2P: Stormwater Pond

Inflow Area = 72,402 sf, 67.39% Impervious, Inflow Depth = 0.72" for 1/2 of 2 year event
Inflow = 0.285 cfs @ 7.98 hrs, Volume= 4,352 cf
Outflow = 0.018 cfs @ 24.11 hrs, Volume= 1,258 cf, Atten= 94%, Lag= 968.0 min
Primary = 0.018 cfs @ 24.11 hrs, Volume= 1,258 cf

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 223.19' @ 24.11 hrs Surf.Area= 2,212 sf Storage= 3,728 cf

Plug-Flow detention time= 1,072.2 min calculated for 1,256 cf (29% of inflow)
Center-of-Mass det. time= 738.5 min (1,458.3 - 719.8)

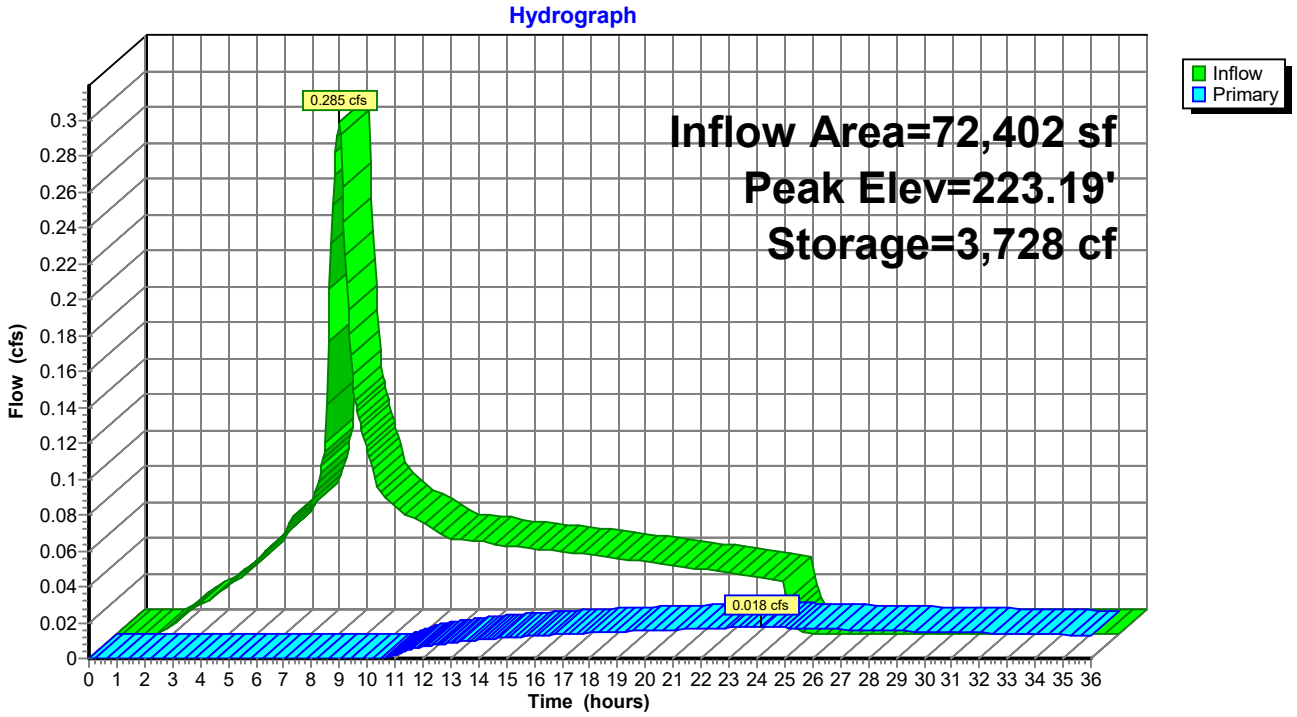
Volume	Invert	Avail.Storage	Storage Description
#1	221.50'	8,848 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
221.50	2,212	0	0
225.50	2,212	8,848	8,848

Device	Routing	Invert	Outlet Devices
#1	Primary	222.50'	**0.9" Vert. Orifice/Grate** C= 0.600
#2	Primary	223.15'	**0.5" Vert. Orifice/Grate** C= 0.600
#3	Primary	223.50'	**1.5" Vert. Orifice/Grate** C= 0.600
#4	Primary	224.35'	**1.9" Vert. Orifice/Grate** C= 0.600
#5	Primary	225.25'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.018 cfs @ 24.11 hrs HW=223.19' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.017 cfs @ 3.88 fps)
- **2=Orifice/Grate** (Orifice Controls 0.001 cfs @ 0.64 fps)
- **3=Orifice/Grate** (Controls 0.000 cfs)
- **4=Orifice/Grate** (Controls 0.000 cfs)
- **5=Orifice/Grate** (Controls 0.000 cfs)

Pond 2P: Stormwater Pond



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Site - West Runoff Area=8,298 sf 92.31% Impervious Runoff Depth=2.14"
Flow Length=110' Slope=0.0315 '/' Tc=10.0 min CN=74/98 Runoff=0.098 cfs 1,482 cf

Subcatchment 2S: Existing Site - East Runoff Area=75,367 sf 0.00% Impervious Runoff Depth=0.84"
Flow Length=270' Slope=0.0200 '/' Tc=10.0 min CN=79/0 Runoff=0.253 cfs 5,260 cf

Subcatchment 3S: Proposed Site - West Runoff Area=11,263 sf 74.83% Impervious Runoff Depth=1.85"
Flow Length=110' Slope=0.0315 '/' Tc=10.0 min CN=74/98 Runoff=0.111 cfs 1,739 cf

Subcatchment 4S: Proposed Site - East Runoff Area=72,402 sf 67.39% Impervious Runoff Depth=1.73"
Flow Length=216' Slope=0.0200 '/' Tc=10.0 min CN=74/98 Runoff=0.654 cfs 10,429 cf

Subcatchment 5S: Existing Area Runoff Area=3.520 ac 85.00% Impervious Runoff Depth=2.00"
Flow Length=1,468' Tc=10.0 min CN=71/98 Runoff=1.660 cfs 25,604 cf

Subcatchment 6S: Existing Area Runoff Area=11.130 ac 85.00% Impervious Runoff Depth=2.00"
Flow Length=1,468' Tc=10.0 min CN=71/98 Runoff=5.249 cfs 80,957 cf

Subcatchment 7S: Existing Area Runoff Area=3.520 ac 85.00% Impervious Runoff Depth=2.00"
Flow Length=1,468' Tc=10.0 min CN=71/98 Runoff=1.660 cfs 25,604 cf

Subcatchment 8S: Existing Area Runoff Area=11.130 ac 85.00% Impervious Runoff Depth=2.00"
Flow Length=1,468' Tc=10.0 min CN=71/98 Runoff=5.249 cfs 80,957 cf

Reach 6R: Brutscher - 18" Avg. Flow Depth=0.09' Max Vel=2.16 fps Inflow=0.098 cfs 1,482 cf
18.0" Round Pipe n=0.015 L=300.0' S=0.0203 '/' Capacity=12.960 cfs Outflow=0.097 cfs 1,482 cf

Reach 7R: HWY 99 - 21" Avg. Flow Depth=0.42' Max Vel=3.92 fps Inflow=1.757 cfs 27,086 cf
21.0" Round Pipe n=0.015 L=199.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=1.753 cfs 27,086 cf

Reach 8R: HWY 99 - 21" Avg. Flow Depth=0.88' Max Vel=5.73 fps Inflow=7.002 cfs 108,043 cf
21.0" Round Pipe n=0.015 L=235.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=6.989 cfs 108,043 cf

Reach 9R: HWY 99 -21" Avg. Flow Depth=0.88' Max Vel=5.73 fps Inflow=6.989 cfs 108,043 cf
21.0" Round Pipe n=0.015 L=74.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=6.986 cfs 108,043 cf

Reach 10R: HWY 99 - 21" Avg. Flow Depth=0.90' Max Vel=5.57 fps Inflow=6.986 cfs 108,043 cf
21.0" Round Pipe n=0.015 L=325.0' S=0.0093 '/' Capacity=13.216 cfs Outflow=6.970 cfs 108,043 cf

Reach 11R: Brutscher - 18" Avg. Flow Depth=0.09' Max Vel=2.20 fps Inflow=0.103 cfs 7,935 cf
18.0" Round Pipe n=0.015 L=300.0' S=0.0203 '/' Capacity=12.960 cfs Outflow=0.103 cfs 7,930 cf

Reach 12R: HWY 99 - 21" Avg. Flow Depth=0.42' Max Vel=3.89 fps Inflow=1.709 cfs 33,534 cf
21.0" Round Pipe n=0.015 L=199.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=1.706 cfs 33,530 cf

Reach 13R: HWY 99 - 21" Avg. Flow Depth=0.88' Max Vel=5.72 fps Inflow=6.954 cfs 114,487 cf
21.0" Round Pipe n=0.015 L=235.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=6.941 cfs 114,482 cf

Reach 14R: HWY 99 - 21" Avg. Flow Depth=0.88' Max Vel=5.72 fps Inflow=6.941 cfs 114,482 cf
21.0" Round Pipe n=0.015 L=74.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=6.938 cfs 114,480 cf

Reach 15R: HWY 99 - 21" Avg. Flow Depth=0.90' Max Vel=5.56 fps Inflow=6.938 cfs 114,480 cf
21.0" Round Pipe n=0.015 L=325.0' S=0.0093 '/' Capacity=13.216 cfs Outflow=6.922 cfs 114,473 cf

Pond 1P: Stormwater Planter Peak Elev=223.50' Storage=319 cf Inflow=0.111 cfs 1,739 cf
Outflow=0.046 cfs 1,659 cf

Pond 2P: Stormwater Pond Peak Elev=224.32' Storage=6,239 cf Inflow=0.654 cfs 10,429 cf
Outflow=0.087 cfs 6,276 cf

Summary for Subcatchment 1S: Existing Site - West

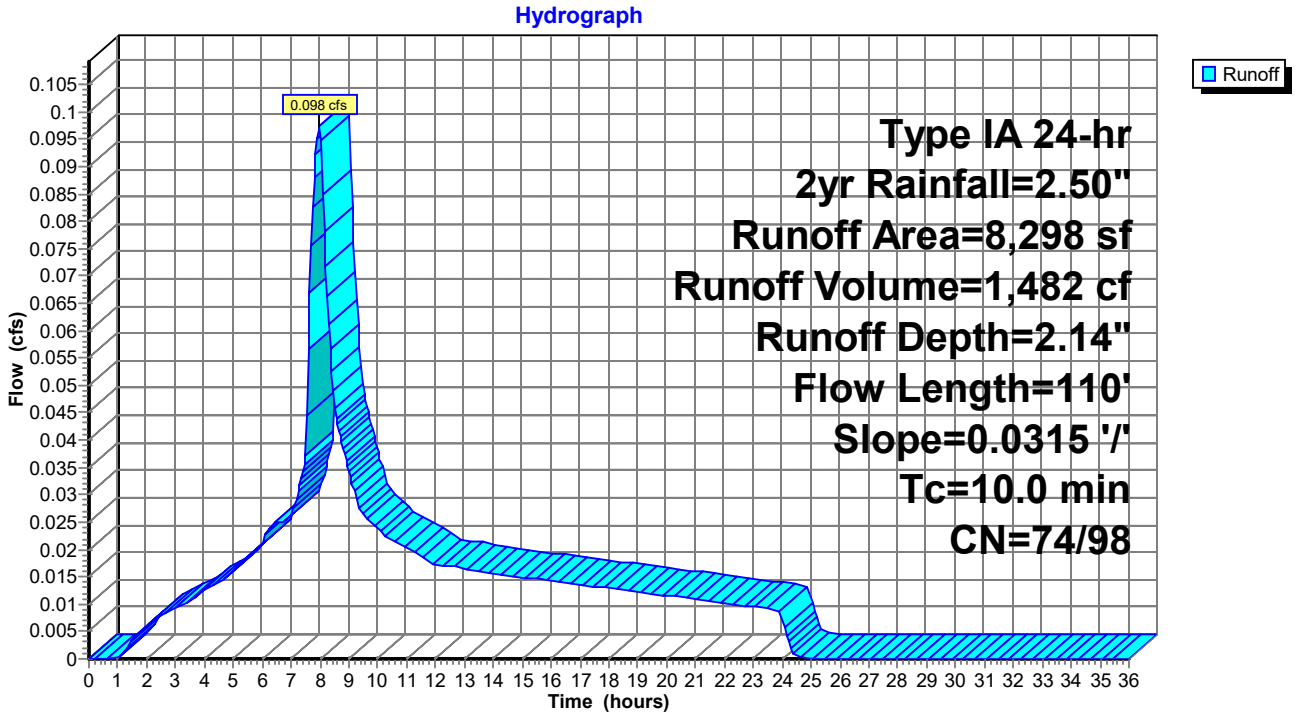
Runoff = 0.098 cfs @ 7.98 hrs, Volume= 1,482 cf, Depth= 2.14"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2yr Rainfall=2.50"

	Area (sf)	CN	Description
*	7,660	98	Impervious Surfaces
*	638	74	Landscaping
	8,298	96	Weighted Average
	638	74	7.69% Pervious Area
	7,660	98	92.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0315	1.08		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
0.4	90	0.0315	3.60		**Shallow Concentrated Flow, Parking Lot** Paved Kv= 20.3 fps
0.7	110	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 1S: Existing Site - West



Summary for Subcatchment 2S: Existing Site - East

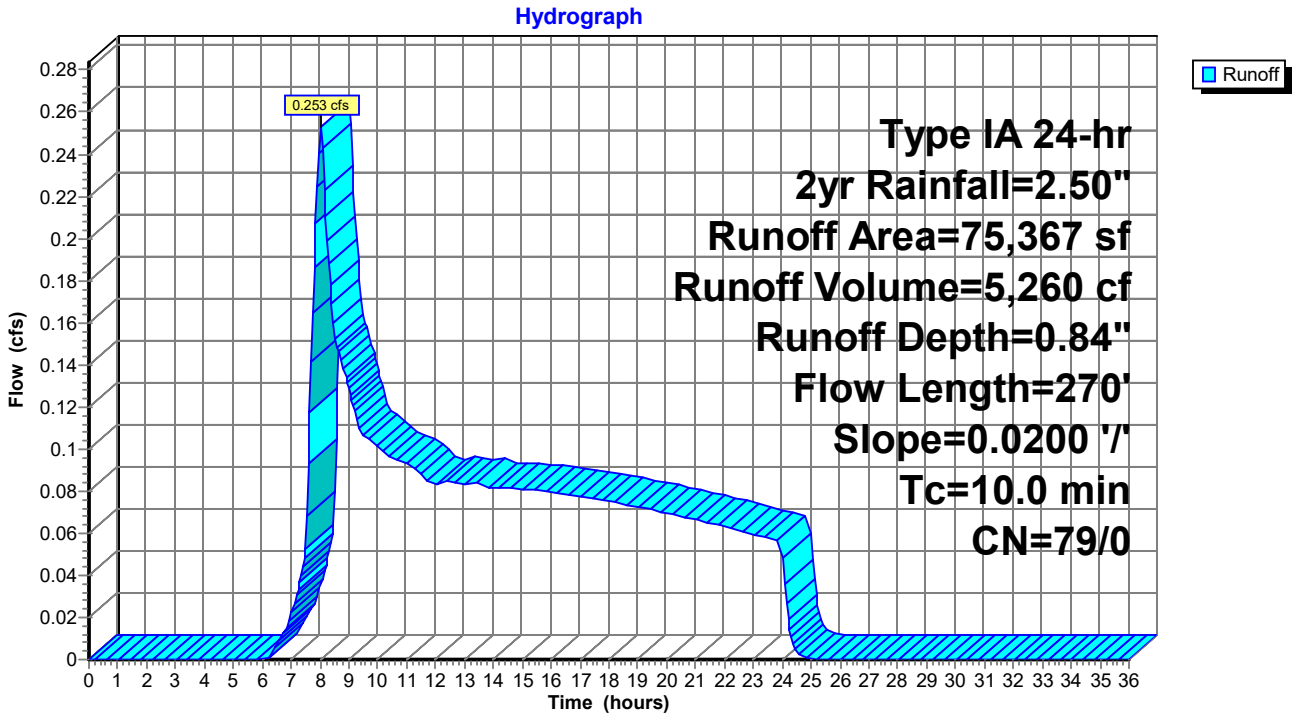
Runoff = 0.253 cfs @ 8.02 hrs, Volume= 5,260 cf, Depth= 0.84"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2yr Rainfall=2.50"

Area (sf)	CN	Description
75,367	79	50-75% Grass cover, Fair, HSG C
75,367	79	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	20	0.0200	0.08		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 2.60"
4.2	250	0.0200	0.99		**Shallow Concentrated Flow, SCF** Short Grass Pasture Kv= 7.0 fps
8.6	270	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 2S: Existing Site - East



Summary for Subcatchment 3S: Proposed Site - West

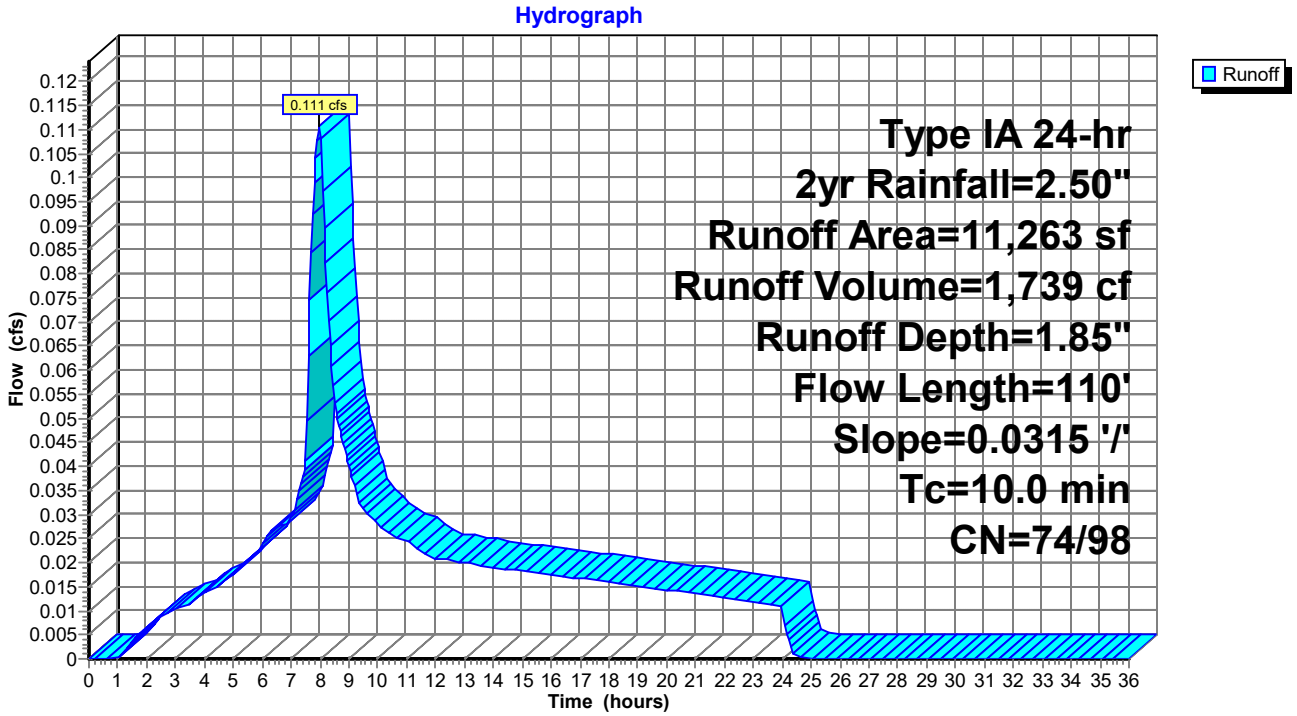
Runoff = 0.111 cfs @ 7.98 hrs, Volume= 1,739 cf, Depth= 1.85"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2yr Rainfall=2.50"

	Area (sf)	CN	Description
*	8,428	98	Parking Lot
*	2,835	74	Landscaping
	11,263	92	Weighted Average
	2,835	74	25.17% Pervious Area
	8,428	98	74.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0315	1.08		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
0.4	90	0.0315	3.60		**Shallow Concentrated Flow, Parking Lot** Paved Kv= 20.3 fps
0.7	110	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 3S: Proposed Site - West



Summary for Subcatchment 4S: Proposed Site - East

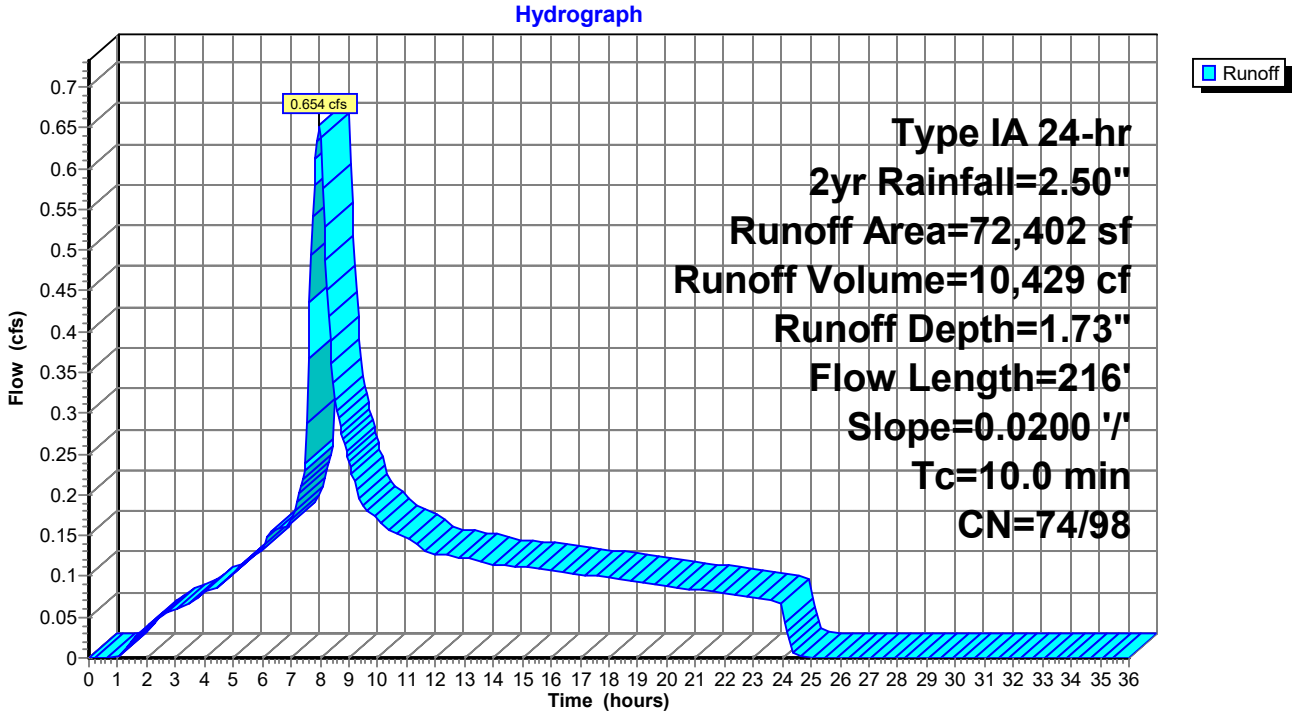
Runoff = 0.654 cfs @ 7.98 hrs, Volume= 10,429 cf, Depth= 1.73"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2yr Rainfall=2.50"

	Area (sf)	CN	Description
*	10,847	98	Building
*	29,742	98	Asphalt
*	8,202	98	Concrete
*	23,611	74	Landscaping
	72,402	90	Weighted Average
	23,611	74	32.61% Pervious Area
	48,791	98	67.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	20	0.0200	0.90		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
1.1	196	0.0200	2.87		**Shallow Concentrated Flow, Parking Lot to CB** Paved Kv= 20.3 fps
1.5	216	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 4S: Proposed Site - East



Summary for Subcatchment 5S: Existing Area

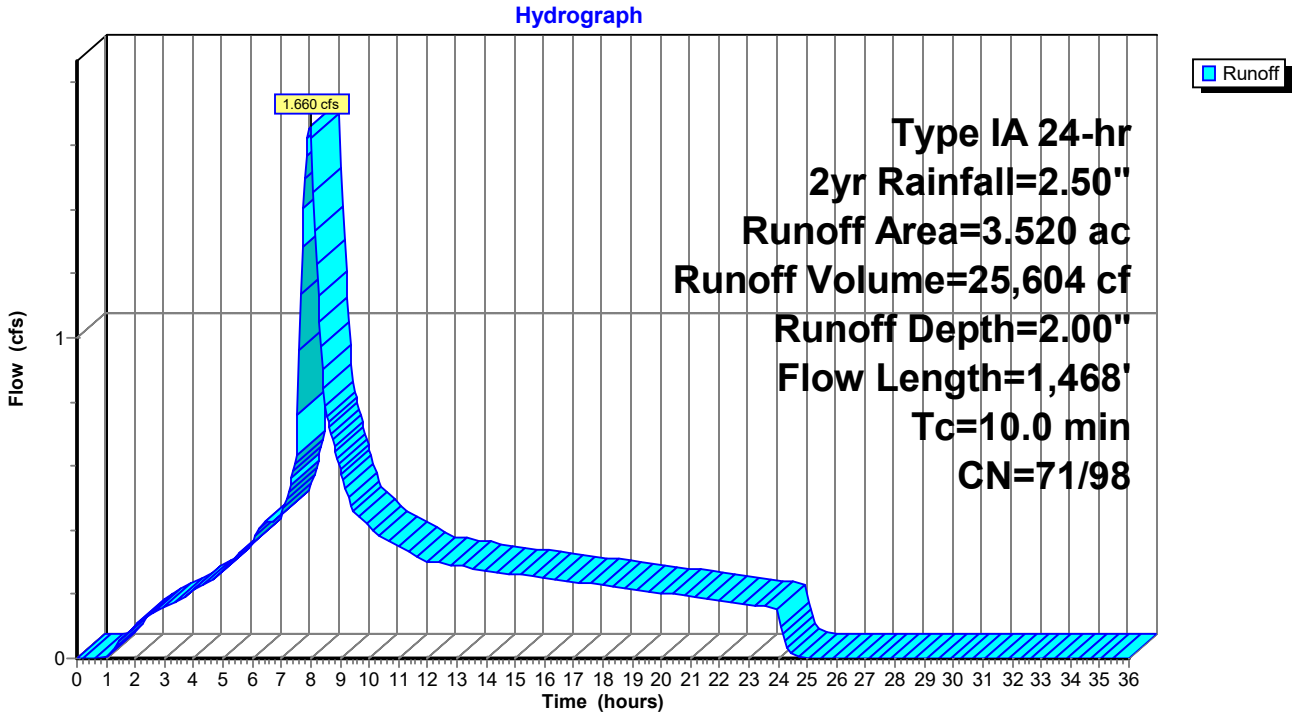
Runoff = 1.660 cfs @ 7.98 hrs, Volume= 25,604 cf, Depth= 2.00"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2yr Rainfall=2.50"

Area (ac)	CN	Description
3.520	94	Urban commercial, 85% imp, HSG C
0.528	71	15.00% Pervious Area
2.992	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0210	1.26		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
2.1	368	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	1,000	0.0130	2.60	3.192	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.030 Corrugated metal
9.8	1,468	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 5S: Existing Area



Summary for Subcatchment 6S: Existing Area

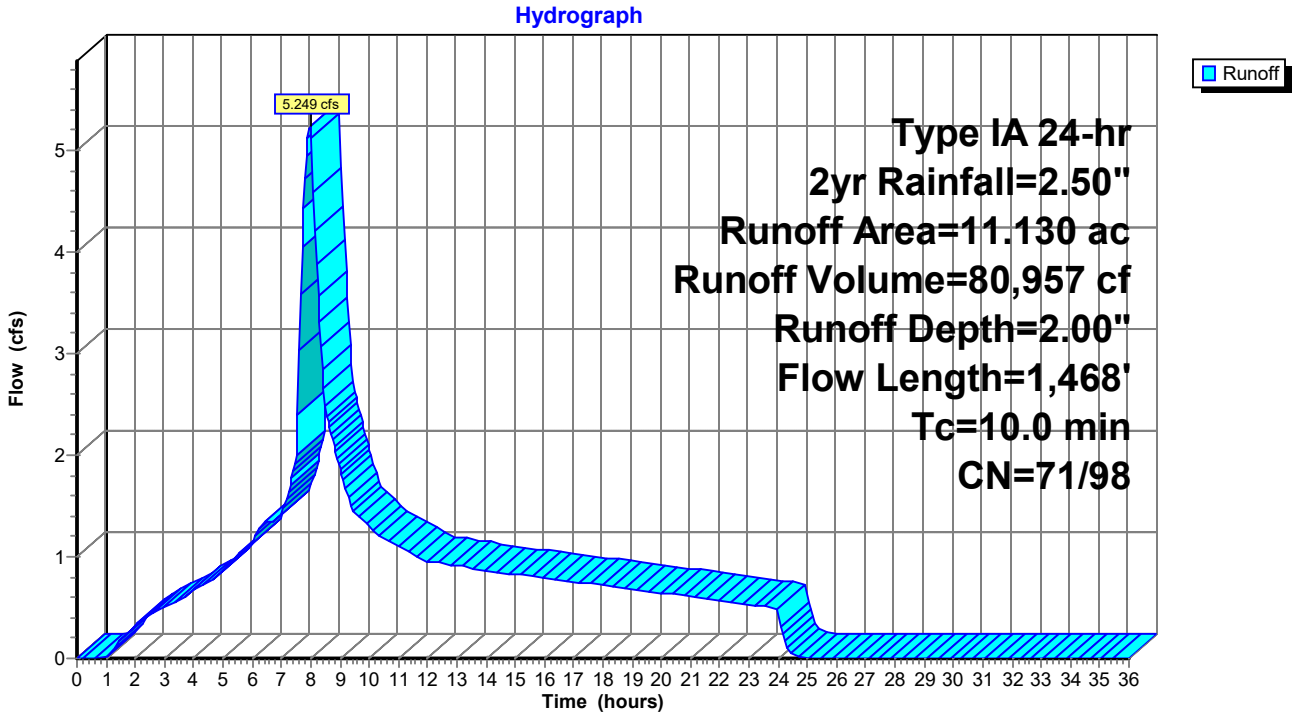
Runoff = 5.249 cfs @ 7.98 hrs, Volume= 80,957 cf, Depth= 2.00"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2yr Rainfall=2.50"

Area (ac)	CN	Description
11.130	94	Urban commercial, 85% imp, HSG C
1.670	71	15.00% Pervious Area
9.460	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0210	1.26		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
2.1	368	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	1,000	0.0130	2.60	3.192	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.030 Corrugated metal
9.8	1,468	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 6S: Existing Area



Summary for Subcatchment 7S: Existing Area

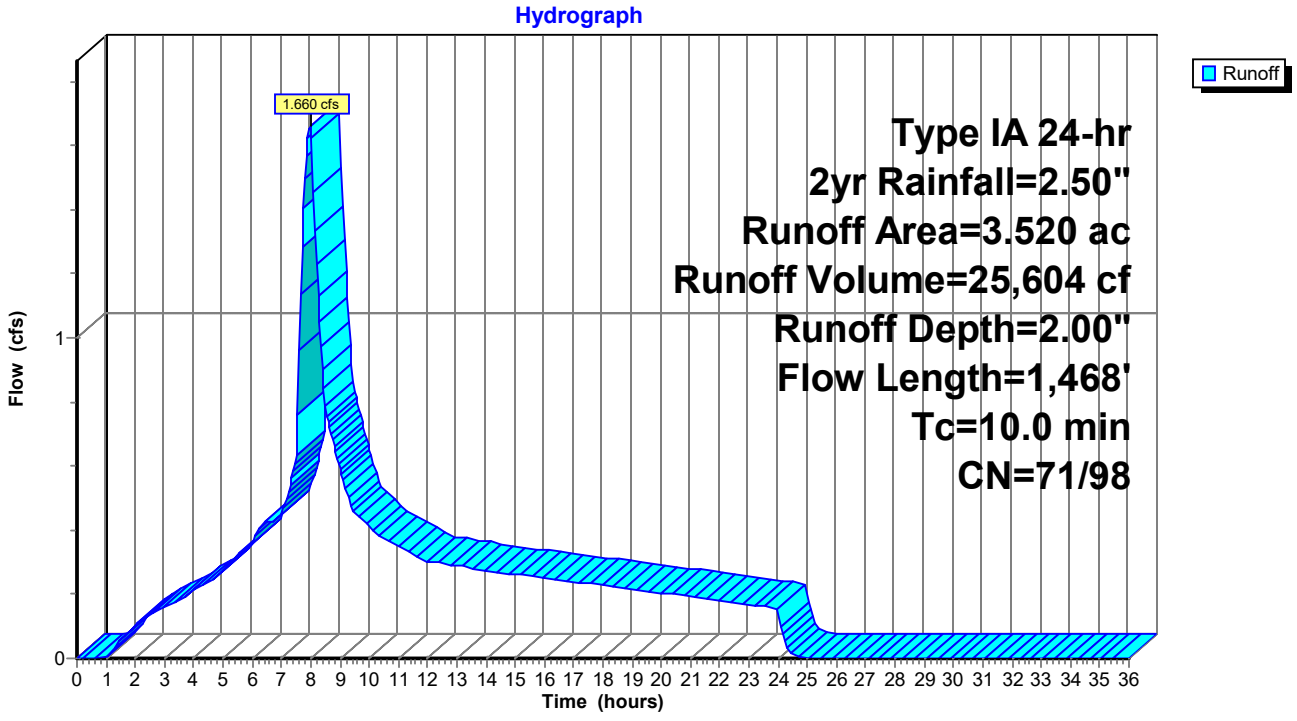
Runoff = 1.660 cfs @ 7.98 hrs, Volume= 25,604 cf, Depth= 2.00"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2yr Rainfall=2.50"

Area (ac)	CN	Description
3.520	94	Urban commercial, 85% imp, HSG C
0.528	71	15.00% Pervious Area
2.992	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0210	1.26		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
2.1	368	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	1,000	0.0130	2.60	3.192	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.030 Corrugated metal
9.8	1,468	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 7S: Existing Area



Summary for Subcatchment 8S: Existing Area

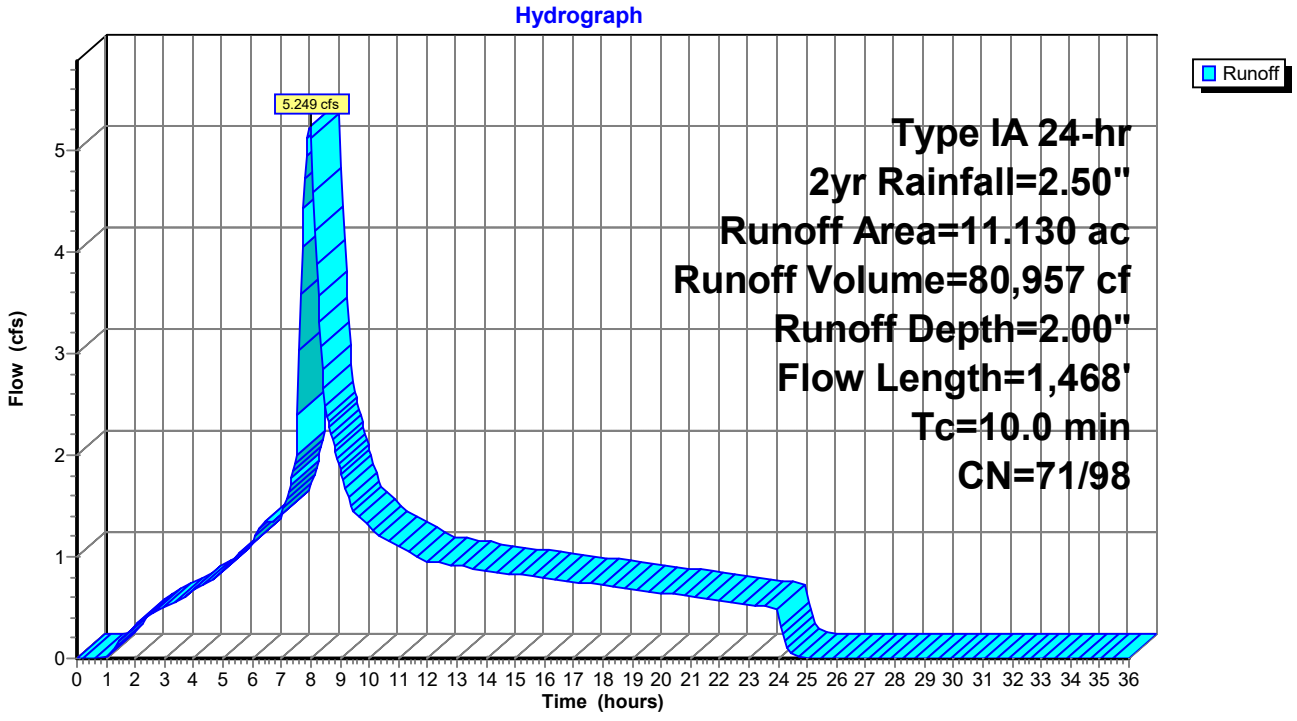
Runoff = 5.249 cfs @ 7.98 hrs, Volume= 80,957 cf, Depth= 2.00"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2yr Rainfall=2.50"

Area (ac)	CN	Description
11.130	94	Urban commercial, 85% imp, HSG C
1.670	71	15.00% Pervious Area
9.460	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0210	1.26		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
2.1	368	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	1,000	0.0130	2.60	3.192	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.030 Corrugated metal
9.8	1,468	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 8S: Existing Area



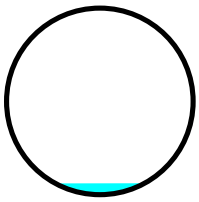
Summary for Reach 6R: Brutscher - 18"

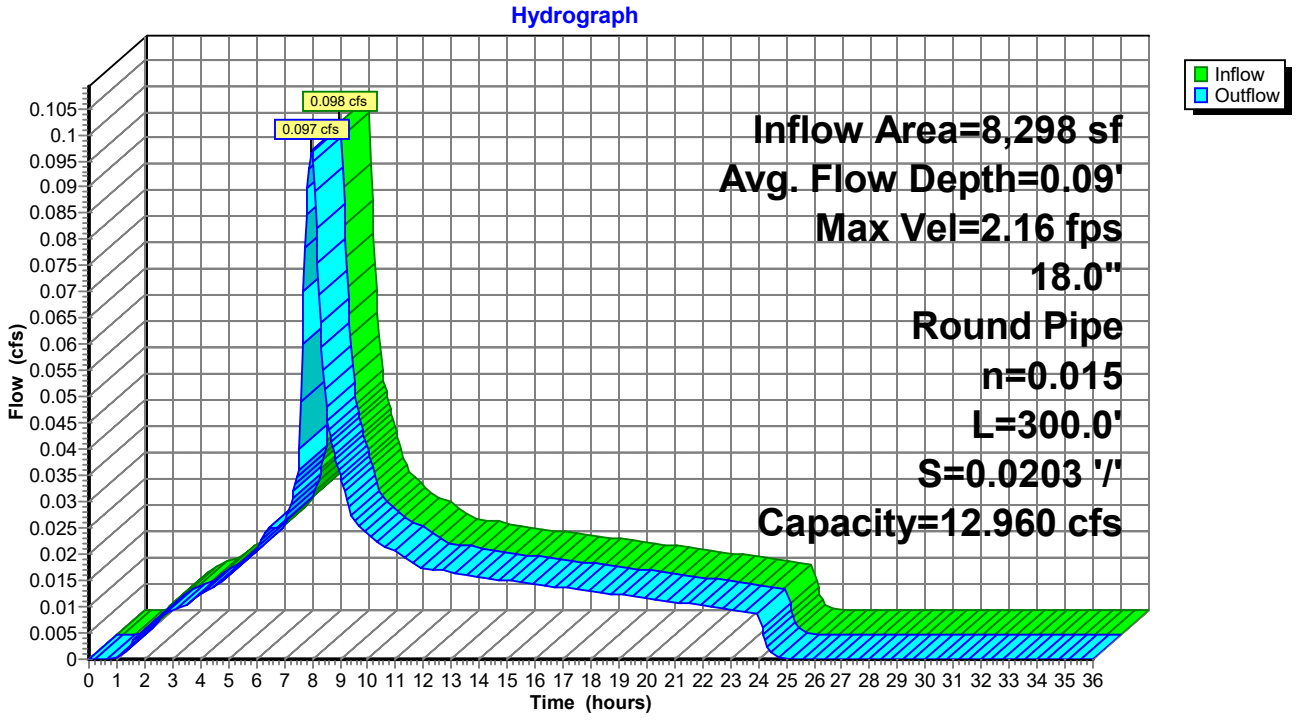
Inflow Area = 8,298 sf, 92.31% Impervious, Inflow Depth = 2.14" for 2yr event
Inflow = 0.098 cfs @ 7.98 hrs, Volume= 1,482 cf
Outflow = 0.097 cfs @ 7.99 hrs, Volume= 1,482 cf, Atten= 1%, Lag= 0.8 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.16 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 1.23 fps, Avg. Travel Time= 4.1 min

Peak Storage= 13 cf @ 7.99 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.960 cfs

18.0" Round Pipe
n= 0.015
Length= 300.0' Slope= 0.0203 '/'
Inlet Invert= 212.78', Outlet Invert= 206.70'





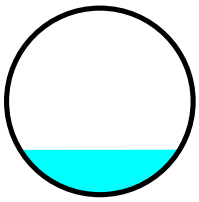
Summary for Reach 7R: HWY 99 - 21"

Inflow Area = 161,629 sf, 85.38% Impervious, Inflow Depth = 2.01" for 2yr event
Inflow = 1.757 cfs @ 7.98 hrs, Volume= 27,086 cf
Outflow = 1.753 cfs @ 7.98 hrs, Volume= 27,086 cf, Atten= 0%, Lag= 0.3 min

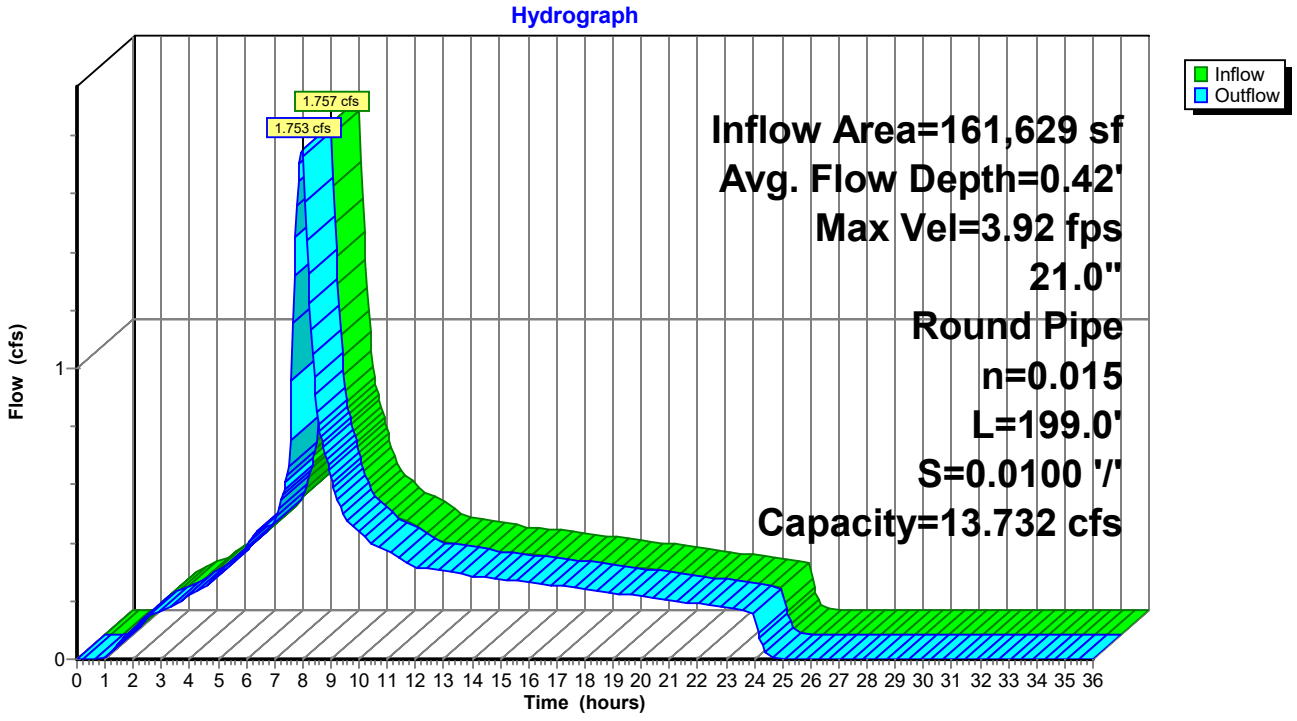
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.92 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.18 fps, Avg. Travel Time= 1.5 min

Peak Storage= 89 cf @ 7.98 hrs
Average Depth at Peak Storage= 0.42'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 199.0' Slope= 0.0100 '/'
Inlet Invert= 206.61', Outlet Invert= 204.62'



Reach 7R: HWY 99 - 21"



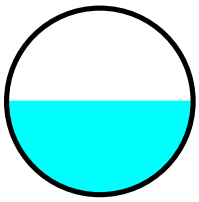
Summary for Reach 8R: HWY 99 - 21"

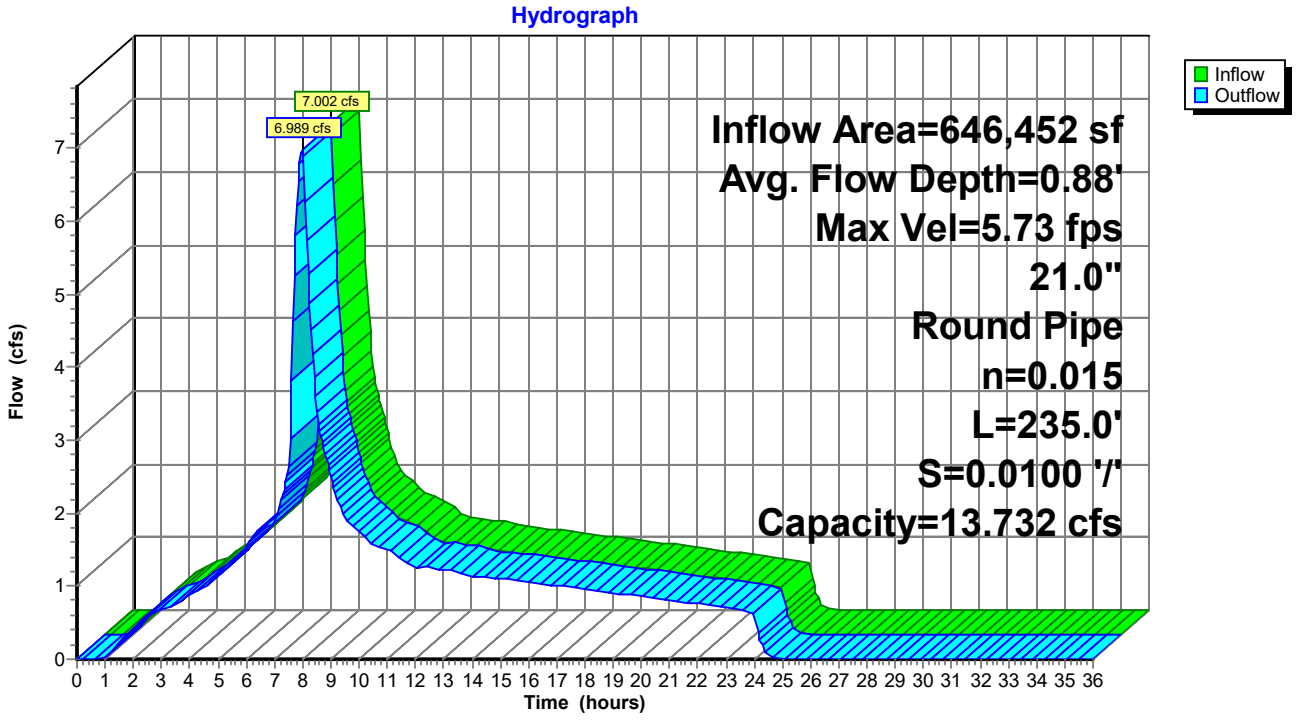
Inflow Area = 646,452 sf, 85.09% Impervious, Inflow Depth = 2.01" for 2yr event
Inflow = 7.002 cfs @ 7.98 hrs, Volume= 108,043 cf
Outflow = 6.989 cfs @ 7.98 hrs, Volume= 108,043 cf, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.73 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 3.25 fps, Avg. Travel Time= 1.2 min

Peak Storage= 286 cf @ 7.98 hrs
Average Depth at Peak Storage= 0.88'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 235.0' Slope= 0.0100 '/'
Inlet Invert= 204.62', Outlet Invert= 202.27'





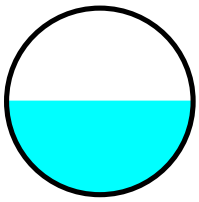
Summary for Reach 9R: HWY 99 -21"

Inflow Area = 646,452 sf, 85.09% Impervious, Inflow Depth = 2.01" for 2yr event
Inflow = 6.989 cfs @ 7.98 hrs, Volume= 108,043 cf
Outflow = 6.986 cfs @ 7.99 hrs, Volume= 108,043 cf, Atten= 0%, Lag= 0.1 min

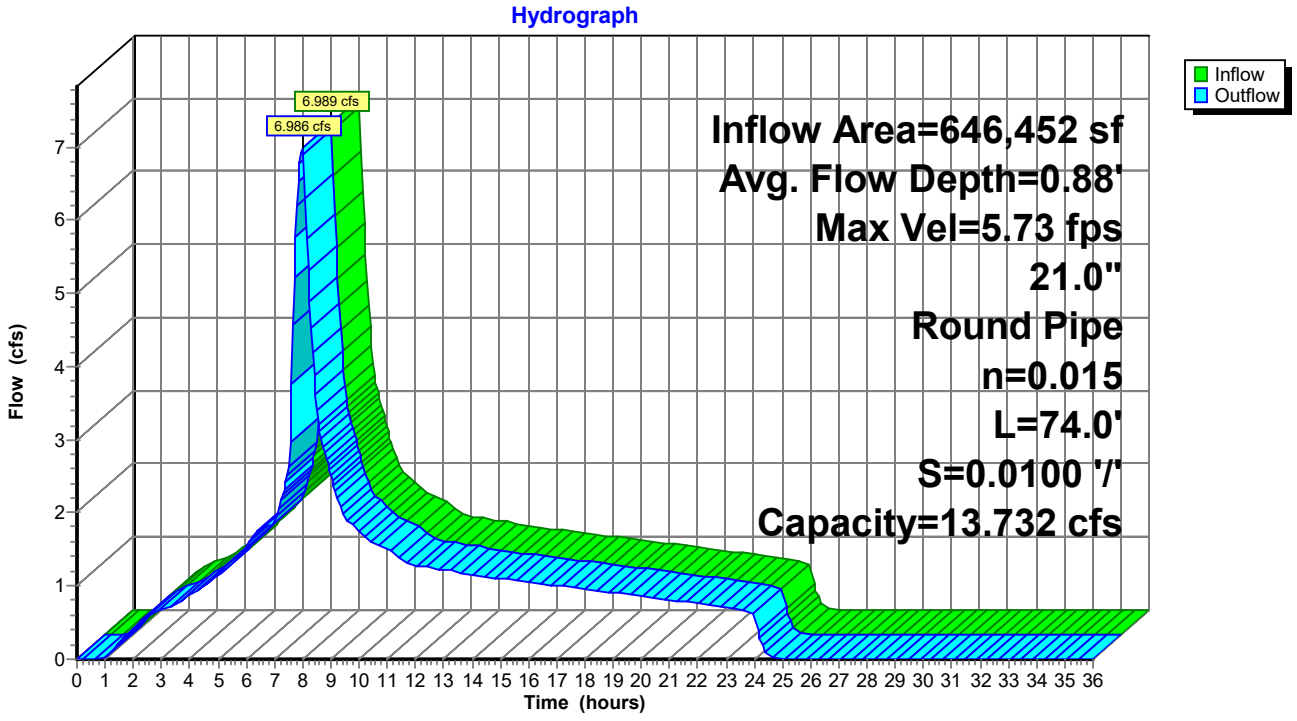
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.73 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.24 fps, Avg. Travel Time= 0.4 min

Peak Storage= 90 cf @ 7.99 hrs
Average Depth at Peak Storage= 0.88'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 74.0' Slope= 0.0100 '/'
Inlet Invert= 202.27', Outlet Invert= 201.53'



Reach 9R: HWY 99 -21"



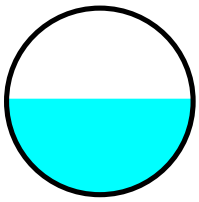
Summary for Reach 10R: HWY 99 - 21"

Inflow Area = 646,452 sf, 85.09% Impervious, Inflow Depth = 2.01" for 2yr event
Inflow = 6.986 cfs @ 7.99 hrs, Volume= 108,043 cf
Outflow = 6.970 cfs @ 8.00 hrs, Volume= 108,043 cf, Atten= 0%, Lag= 0.5 min

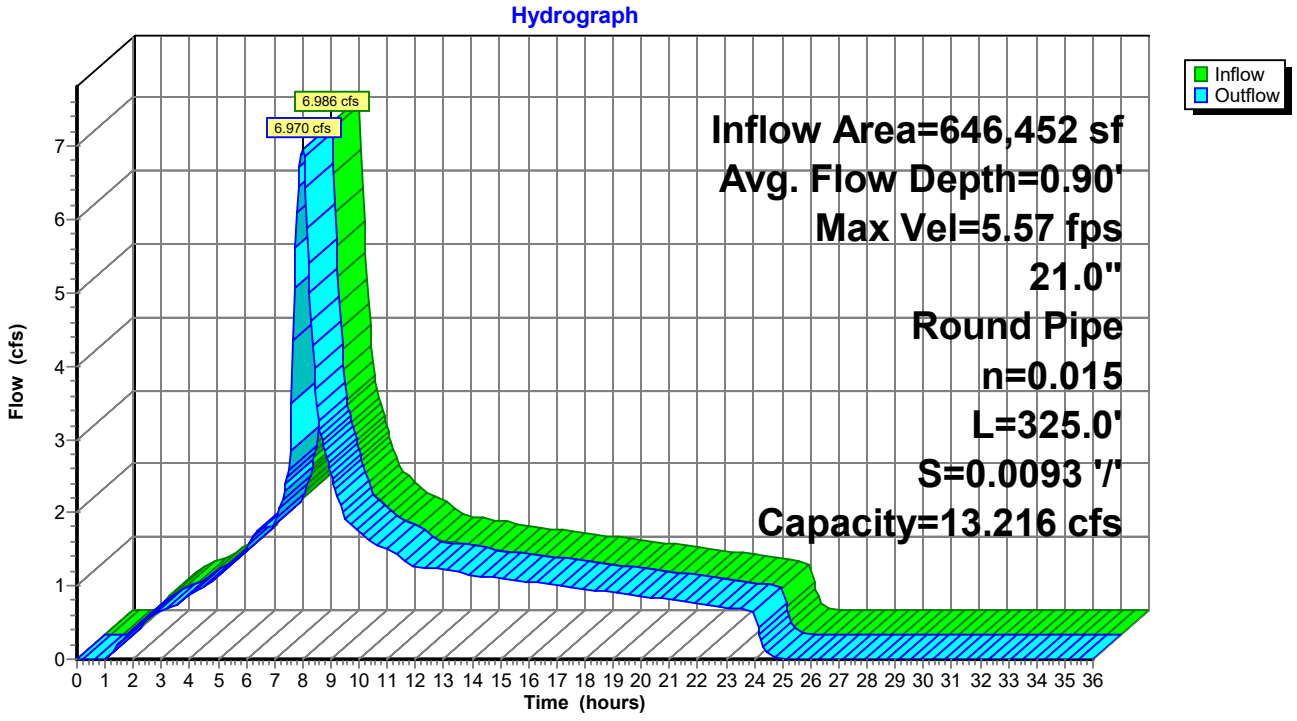
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.57 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 3.13 fps, Avg. Travel Time= 1.7 min

Peak Storage= 407 cf @ 8.00 hrs
Average Depth at Peak Storage= 0.90'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.216 cfs

21.0" Round Pipe
n= 0.015 Concrete sewer w/manholes & inlets
Length= 325.0' Slope= 0.0093 '/'
Inlet Invert= 201.43', Outlet Invert= 198.42'



Reach 10R: HWY 99 - 21"



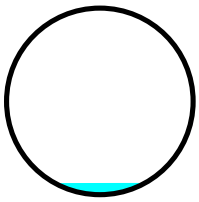
Summary for Reach 11R: Brutscher - 18"

Inflow Area = 83,665 sf, 68.39% Impervious, Inflow Depth > 1.14" for 2yr event
Inflow = 0.103 cfs @ 18.00 hrs, Volume= 7,935 cf
Outflow = 0.103 cfs @ 18.02 hrs, Volume= 7,930 cf, Atten= 0%, Lag= 1.4 min

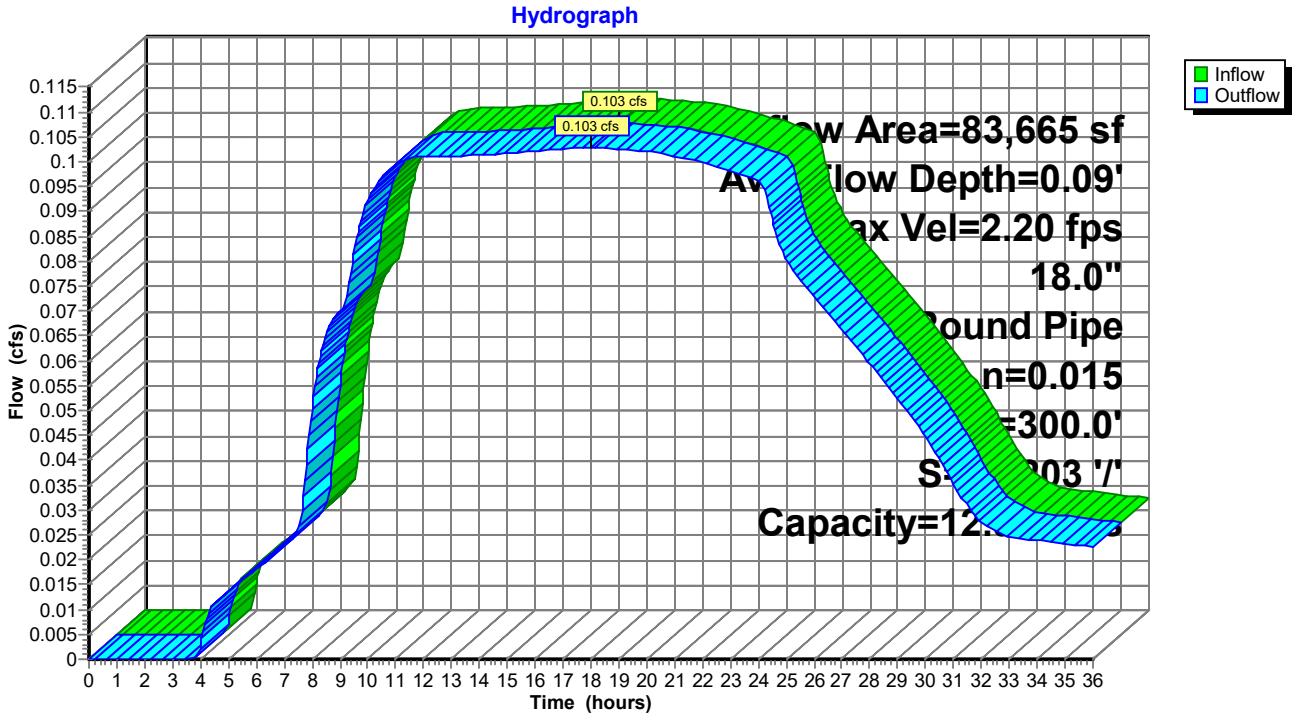
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.20 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 1.88 fps, Avg. Travel Time= 2.7 min

Peak Storage= 14 cf @ 18.02 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.960 cfs

18.0" Round Pipe
n= 0.015
Length= 300.0' Slope= 0.0203 '/'
Inlet Invert= 212.78', Outlet Invert= 206.70'



Reach 11R: Brutscher - 18"



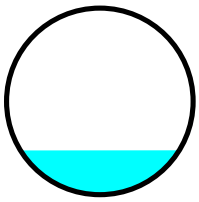
Summary for Reach 12R: HWY 99 - 21"

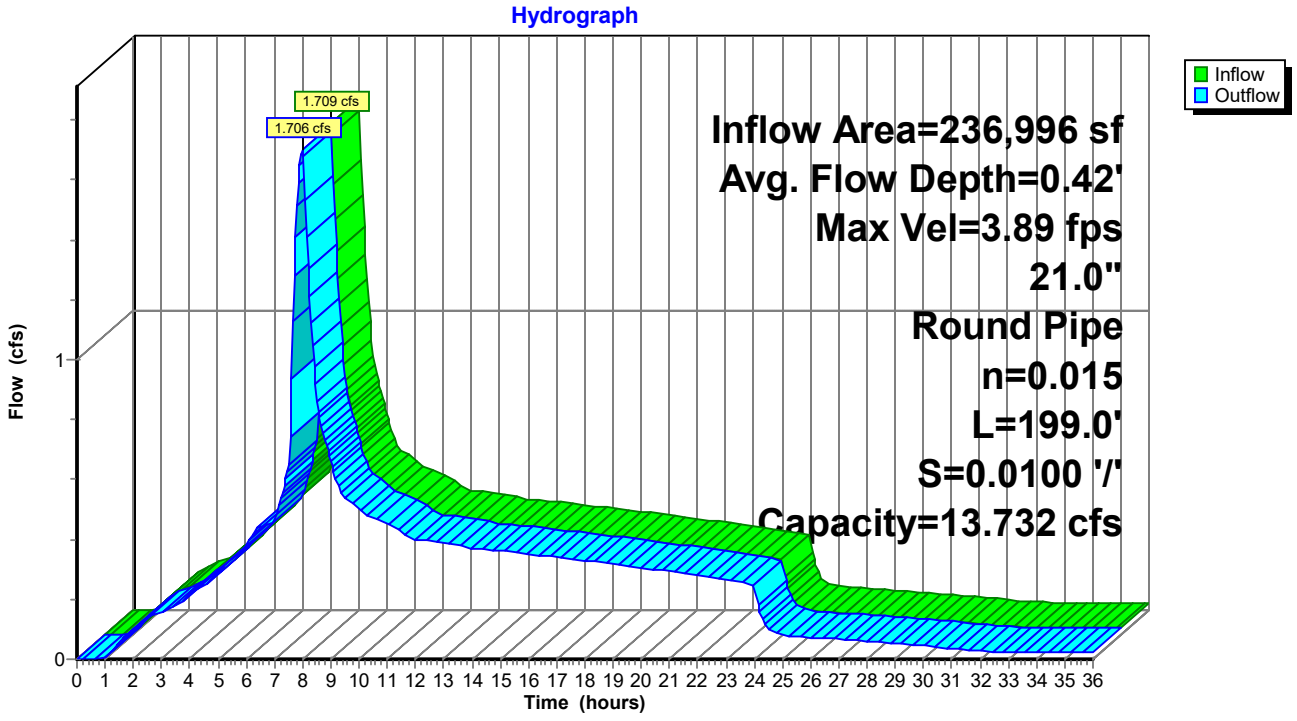
Inflow Area = 236,996 sf, 79.14% Impervious, Inflow Depth > 1.70" for 2yr event
Inflow = 1.709 cfs @ 7.98 hrs, Volume= 33,534 cf
Outflow = 1.706 cfs @ 7.99 hrs, Volume= 33,530 cf, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.89 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 2.03 fps, Avg. Travel Time= 1.6 min

Peak Storage= 87 cf @ 7.99 hrs
Average Depth at Peak Storage= 0.42'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 199.0' Slope= 0.0100 '/'
Inlet Invert= 206.61', Outlet Invert= 204.62'





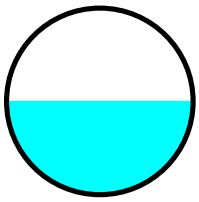
Summary for Reach 13R: HWY 99 - 21"

Inflow Area = 721,819 sf, 83.07% Impervious, Inflow Depth > 1.90" for 2yr event
Inflow = 6.954 cfs @ 7.98 hrs, Volume= 114,487 cf
Outflow = 6.941 cfs @ 7.99 hrs, Volume= 114,482 cf, Atten= 0%, Lag= 0.3 min

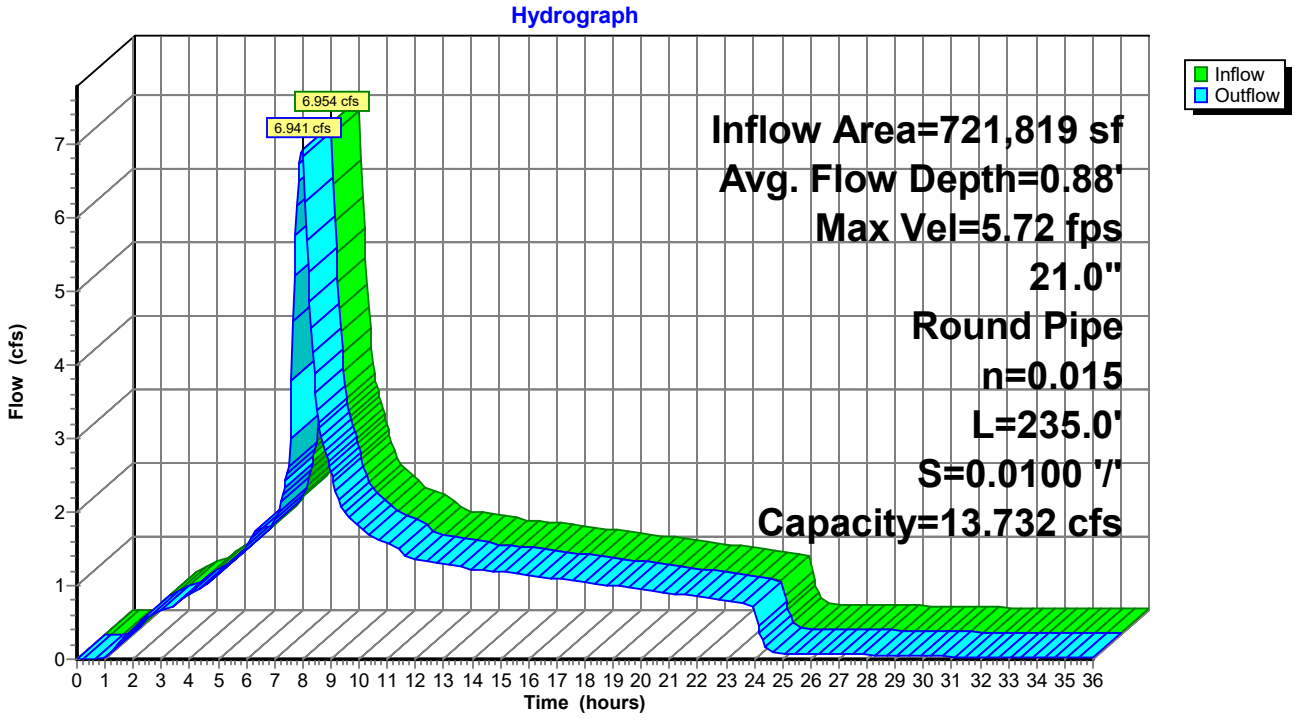
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.72 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 2.74 fps, Avg. Travel Time= 1.4 min

Peak Storage= 285 cf @ 7.99 hrs
Average Depth at Peak Storage= 0.88'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 235.0' Slope= 0.0100 '/'
Inlet Invert= 204.62', Outlet Invert= 202.27'



Reach 13R: HWY 99 - 21"



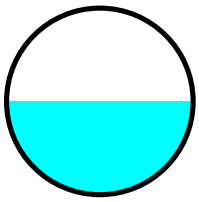
Summary for Reach 14R: HWY 99 - 21"

Inflow Area = 721,819 sf, 83.07% Impervious, Inflow Depth > 1.90" for 2yr event
Inflow = 6.941 cfs @ 7.99 hrs, Volume= 114,482 cf
Outflow = 6.938 cfs @ 7.99 hrs, Volume= 114,480 cf, Atten= 0%, Lag= 0.1 min

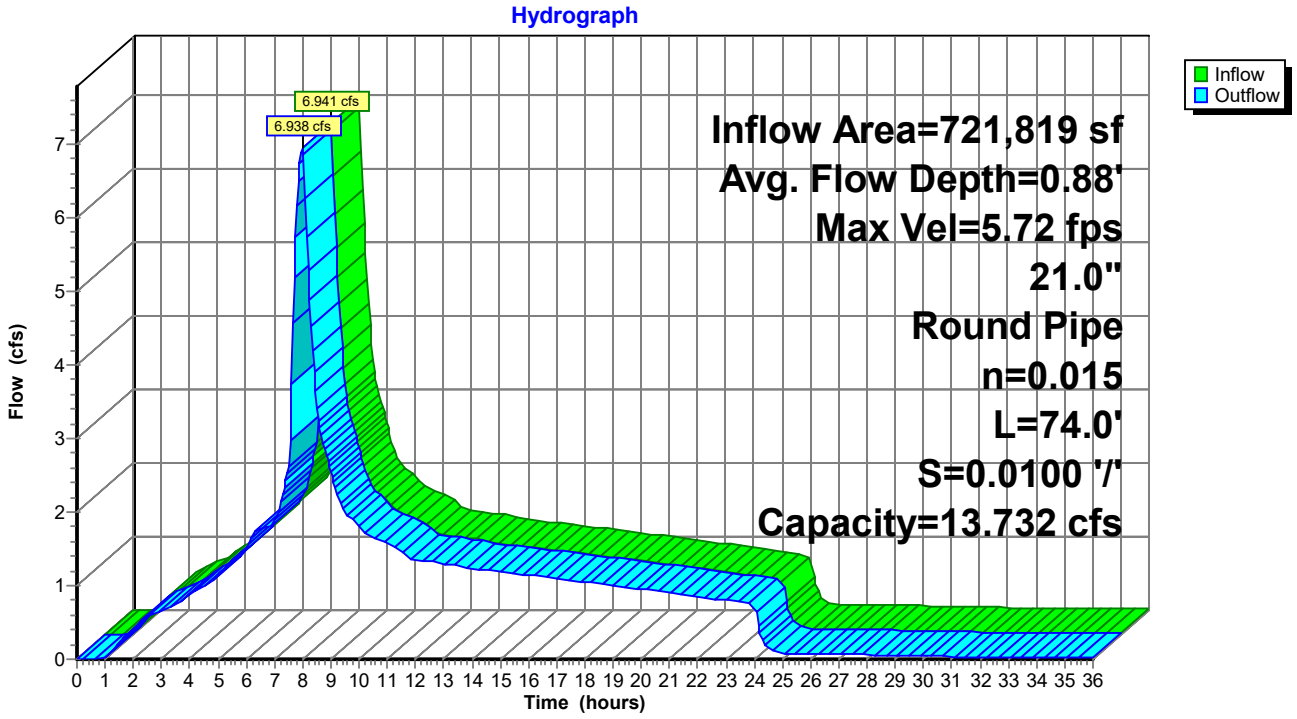
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.72 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.74 fps, Avg. Travel Time= 0.4 min

Peak Storage= 90 cf @ 7.99 hrs
Average Depth at Peak Storage= 0.88'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 74.0' Slope= 0.0100 '/'
Inlet Invert= 202.27', Outlet Invert= 201.53'



Reach 14R: HWY 99 - 21"



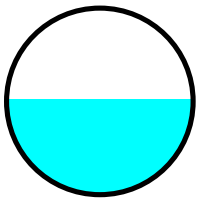
Summary for Reach 15R: HWY 99 - 21"

Inflow Area = 721,819 sf, 83.07% Impervious, Inflow Depth > 1.90" for 2yr event
Inflow = 6.938 cfs @ 7.99 hrs, Volume= 114,480 cf
Outflow = 6.922 cfs @ 8.00 hrs, Volume= 114,473 cf, Atten= 0%, Lag= 0.5 min

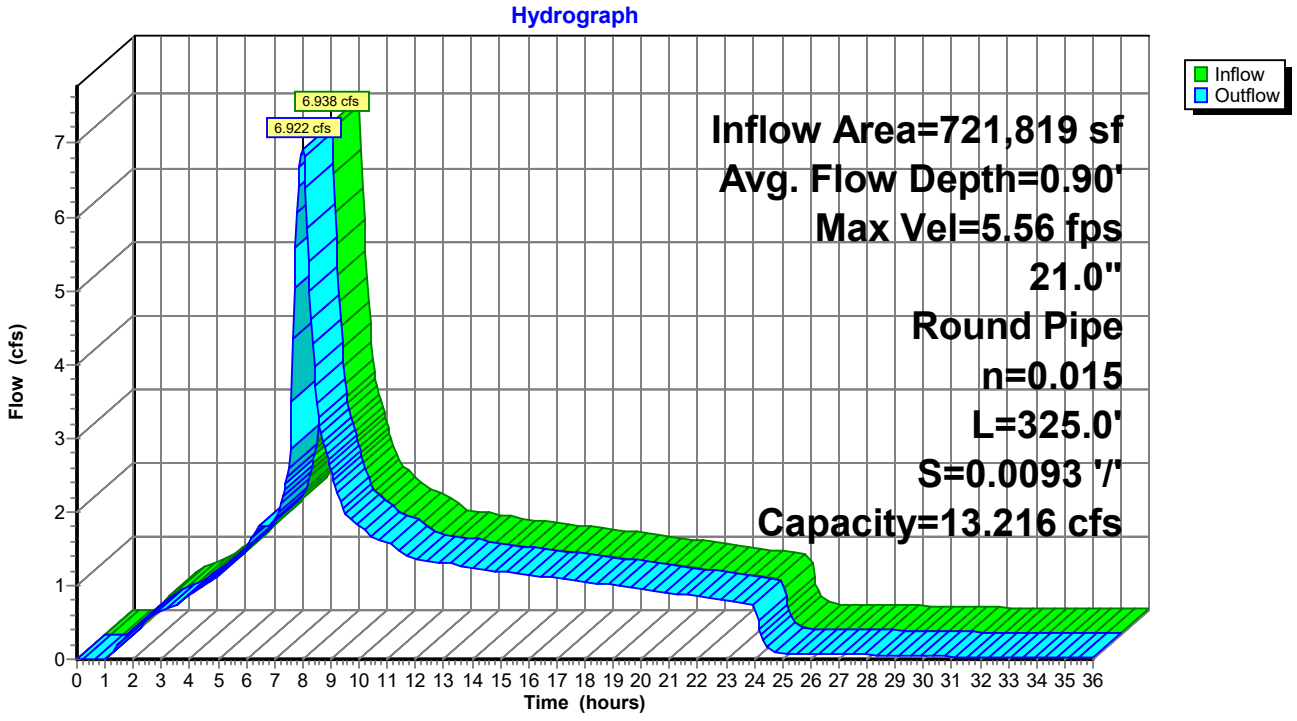
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.56 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 2.67 fps, Avg. Travel Time= 2.0 min

Peak Storage= 405 cf @ 8.00 hrs
Average Depth at Peak Storage= 0.90'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.216 cfs

21.0" Round Pipe
n= 0.015 Concrete sewer w/manholes & inlets
Length= 325.0' Slope= 0.0093 '/'
Inlet Invert= 201.43', Outlet Invert= 198.42'



Reach 15R: HWY 99 - 21"



Summary for Pond 1P: Stormwater Planter

Inflow Area = 11,263 sf, 74.83% Impervious, Inflow Depth = 1.85" for 2yr event
Inflow = 0.111 cfs @ 7.98 hrs, Volume= 1,739 cf
Outflow = 0.046 cfs @ 8.74 hrs, Volume= 1,659 cf, Atten= 58%, Lag= 45.8 min
Primary = 0.046 cfs @ 8.74 hrs, Volume= 1,659 cf

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 223.50' @ 8.74 hrs Surf.Area= 160 sf Storage= 319 cf

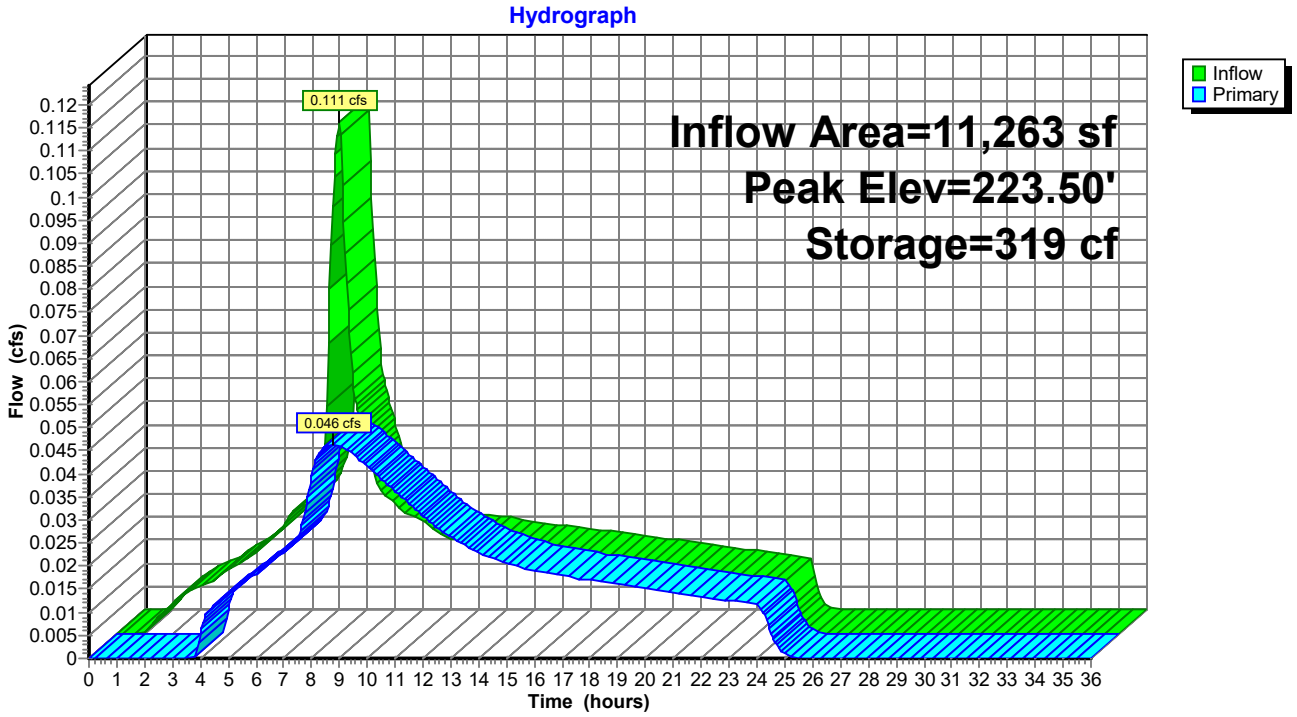
Plug-Flow detention time= 110.0 min calculated for 1,659 cf (95% of inflow)
Center-of-Mass det. time= 76.2 min (773.9 - 697.7)

Volume	Invert	Avail.Storage	Storage Description
#1	221.50'	560 cf	**16.00'W x 10.00'L x 3.50'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	222.00'	**1.2" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	223.51'	**0.8" Vert. Orifice/Grate** C= 0.600
#3	Primary	224.40'	**1.0" Vert. Orifice/Grate** C= 0.600
#4	Primary	224.50'	**6.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.046 cfs @ 8.74 hrs HW=223.50' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.046 cfs @ 5.89 fps)
- **2=Orifice/Grate** (Controls 0.000 cfs)
- **3=Orifice/Grate** (Controls 0.000 cfs)
- **4=Orifice/Grate** (Controls 0.000 cfs)

Pond 1P: Stormwater Planter



Summary for Pond 2P: Stormwater Pond

Inflow Area = 72,402 sf, 67.39% Impervious, Inflow Depth = 1.73" for 2yr event
Inflow = 0.654 cfs @ 7.98 hrs, Volume= 10,429 cf
Outflow = 0.087 cfs @ 20.33 hrs, Volume= 6,276 cf, Atten= 87%, Lag= 740.8 min
Primary = 0.087 cfs @ 20.33 hrs, Volume= 6,276 cf

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 224.32' @ 20.33 hrs Surf.Area= 2,212 sf Storage= 6,239 cf

Plug-Flow detention time= 768.0 min calculated for 6,276 cf (60% of inflow)
Center-of-Mass det. time= 534.7 min (1,239.8 - 705.1)

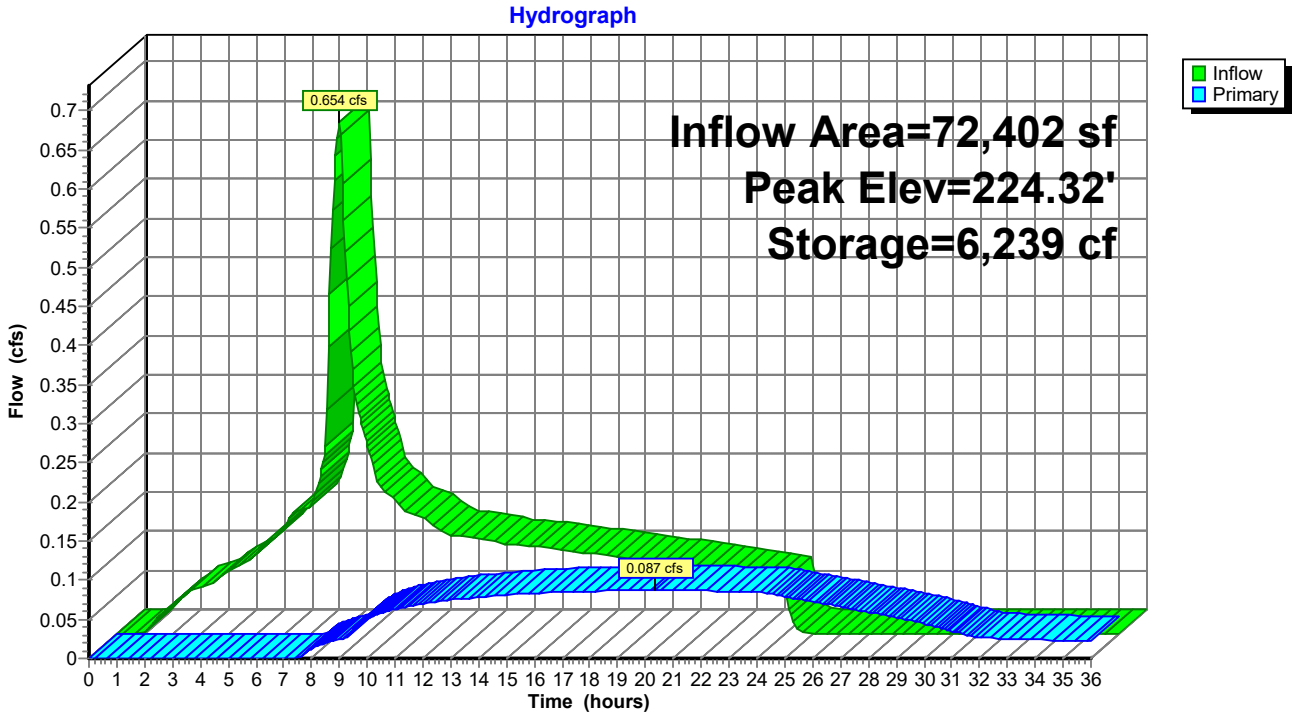
Volume	Invert	Avail.Storage	Storage Description
#1	221.50'	8,848 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
221.50	2,212	0	0
225.50	2,212	8,848	8,848

Device	Routing	Invert	Outlet Devices
#1	Primary	222.50'	**0.9" Vert. Orifice/Grate** C= 0.600
#2	Primary	223.15'	**0.5" Vert. Orifice/Grate** C= 0.600
#3	Primary	223.50'	**1.5" Vert. Orifice/Grate** C= 0.600
#4	Primary	224.35'	**1.9" Vert. Orifice/Grate** C= 0.600
#5	Primary	225.25'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.087 cfs @ 20.33 hrs HW=224.32' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.028 cfs @ 6.43 fps)
- **2=Orifice/Grate** (Orifice Controls 0.007 cfs @ 5.16 fps)
- **3=Orifice/Grate** (Orifice Controls 0.051 cfs @ 4.19 fps)
- **4=Orifice/Grate** (Controls 0.000 cfs)
- **5=Orifice/Grate** (Controls 0.000 cfs)

Pond 2P: Stormwater Pond



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Site - West Runoff Area=8,298 sf 92.31% Impervious Runoff Depth=3.11"
Flow Length=110' Slope=0.0315 '/' Tc=10.0 min CN=74/98 Runoff=0.140 cfs 2,151 cf

Subcatchment 2S: Existing Site - East Runoff Area=75,367 sf 0.00% Impervious Runoff Depth=1.57"
Flow Length=270' Slope=0.0200 '/' Tc=10.0 min CN=79/0 Runoff=0.565 cfs 9,835 cf

Subcatchment 3S: Proposed Site - West Runoff Area=11,263 sf 74.83% Impervious Runoff Depth=2.76"
Flow Length=110' Slope=0.0315 '/' Tc=10.0 min CN=74/98 Runoff=0.165 cfs 2,587 cf

Subcatchment 4S: Proposed Site - East Runoff Area=72,402 sf 67.39% Impervious Runoff Depth=2.61"
Flow Length=216' Slope=0.0200 '/' Tc=10.0 min CN=74/98 Runoff=0.994 cfs 15,721 cf

Subcatchment 5S: Existing Area Runoff Area=3.520 ac 85.00% Impervious Runoff Depth=2.94"
Flow Length=1,468' Tc=10.0 min CN=71/98 Runoff=2.422 cfs 37,516 cf

Subcatchment 6S: Existing Area Runoff Area=11.130 ac 85.00% Impervious Runoff Depth=2.94"
Flow Length=1,468' Tc=10.0 min CN=71/98 Runoff=7.657 cfs 118,623 cf

Subcatchment 7S: Existing Area Runoff Area=3.520 ac 85.00% Impervious Runoff Depth=2.94"
Flow Length=1,468' Tc=10.0 min CN=71/98 Runoff=2.422 cfs 37,516 cf

Subcatchment 8S: Existing Area Runoff Area=11.130 ac 85.00% Impervious Runoff Depth=2.94"
Flow Length=1,468' Tc=10.0 min CN=71/98 Runoff=7.657 cfs 118,623 cf

Reach 6R: Brutscher - 18" Avg. Flow Depth=0.11' Max Vel=2.41 fps Inflow=0.140 cfs 2,151 cf
18.0" Round Pipe n=0.015 L=300.0' S=0.0203 '/' Capacity=12.960 cfs Outflow=0.140 cfs 2,151 cf

Reach 7R: HWY 99 - 21" Avg. Flow Depth=0.51' Max Vel=4.37 fps Inflow=2.561 cfs 39,667 cf
21.0" Round Pipe n=0.015 L=199.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=2.556 cfs 39,667 cf

Reach 8R: HWY 99 - 21" Avg. Flow Depth=1.12' Max Vel=6.25 fps Inflow=10.213 cfs 158,289 cf
21.0" Round Pipe n=0.015 L=235.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=10.195 cfs 158,289 cf

Reach 9R: HWY 99 -21" Avg. Flow Depth=1.12' Max Vel=6.25 fps Inflow=10.195 cfs 158,289 cf
21.0" Round Pipe n=0.015 L=74.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=10.190 cfs 158,289 cf

Reach 10R: HWY 99 - 21" Avg. Flow Depth=1.15' Max Vel=6.06 fps Inflow=10.190 cfs 158,289 cf
21.0" Round Pipe n=0.015 L=325.0' S=0.0093 '/' Capacity=13.216 cfs Outflow=10.168 cfs 158,289 cf

Reach 11R: Brutscher - 18" Avg. Flow Depth=0.13' Max Vel=2.74 fps Inflow=0.213 cfs 13,931 cf
18.0" Round Pipe n=0.015 L=300.0' S=0.0203 '/' Capacity=12.960 cfs Outflow=0.213 cfs 13,926 cf

Reach 12R: HWY 99 - 21" Avg. Flow Depth=0.51' Max Vel=4.34 fps Inflow=2.509 cfs 51,442 cf
21.0" Round Pipe n=0.015 L=199.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=2.503 cfs 51,437 cf

Reach 13R: HWY 99 - 21" Avg. Flow Depth=1.12' Max Vel=6.24 fps Inflow=10.158 cfs 170,060 cf
21.0" Round Pipe n=0.015 L=235.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=10.140 cfs 170,055 cf

Reach 14R: HWY 99 - 21" Avg. Flow Depth=1.12' Max Vel=6.24 fps Inflow=10.140 cfs 170,055 cf
21.0" Round Pipe n=0.015 L=74.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=10.135 cfs 170,053 cf

Reach 15R: HWY 99 - 21" Avg. Flow Depth=1.15' Max Vel=6.05 fps Inflow=10.135 cfs 170,053 cf
21.0" Round Pipe n=0.015 L=325.0' S=0.0093 '/' Capacity=13.216 cfs Outflow=10.112 cfs 170,046 cf

Pond 1P: Stormwater Planter Peak Elev=224.39' Storage=462 cf Inflow=0.165 cfs 2,587 cf
Outflow=0.074 cfs 2,507 cf

Pond 2P: Stormwater Pond Peak Elev=224.89' Storage=7,489 cf Inflow=0.994 cfs 15,721 cf
Outflow=0.173 cfs 11,424 cf

Summary for Subcatchment 1S: Existing Site - West

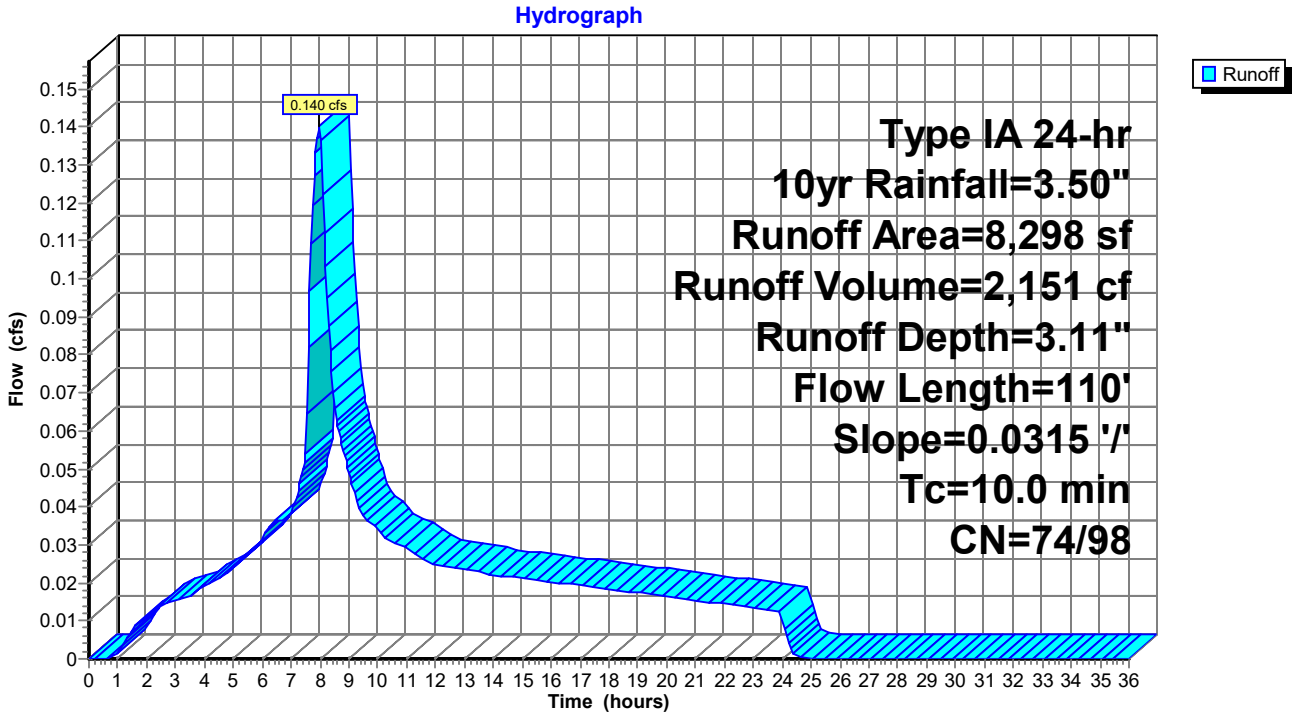
Runoff = 0.140 cfs @ 7.98 hrs, Volume= 2,151 cf, Depth= 3.11"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10yr Rainfall=3.50"

	Area (sf)	CN	Description
*	7,660	98	Impervious Surfaces
*	638	74	Landscaping
	8,298	96	Weighted Average
	638	74	7.69% Pervious Area
	7,660	98	92.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0315	1.08		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
0.4	90	0.0315	3.60		**Shallow Concentrated Flow, Parking Lot** Paved Kv= 20.3 fps
0.7	110	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 1S: Existing Site - West



Summary for Subcatchment 2S: Existing Site - East

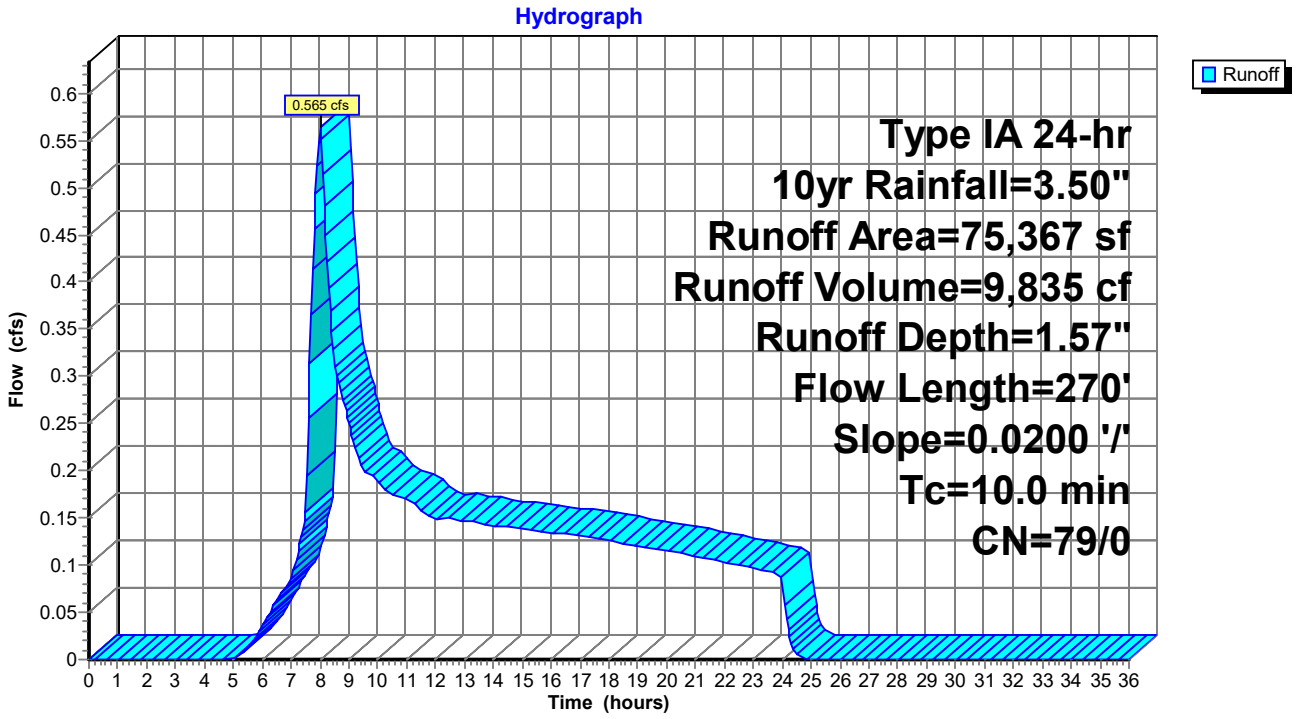
Runoff = 0.565 cfs @ 8.00 hrs, Volume= 9,835 cf, Depth= 1.57"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10yr Rainfall=3.50"

Area (sf)	CN	Description
75,367	79	50-75% Grass cover, Fair, HSG C
75,367	79	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	20	0.0200	0.08		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 2.60"
4.2	250	0.0200	0.99		**Shallow Concentrated Flow, SCF** Short Grass Pasture Kv= 7.0 fps
8.6	270	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 2S: Existing Site - East



Summary for Subcatchment 3S: Proposed Site - West

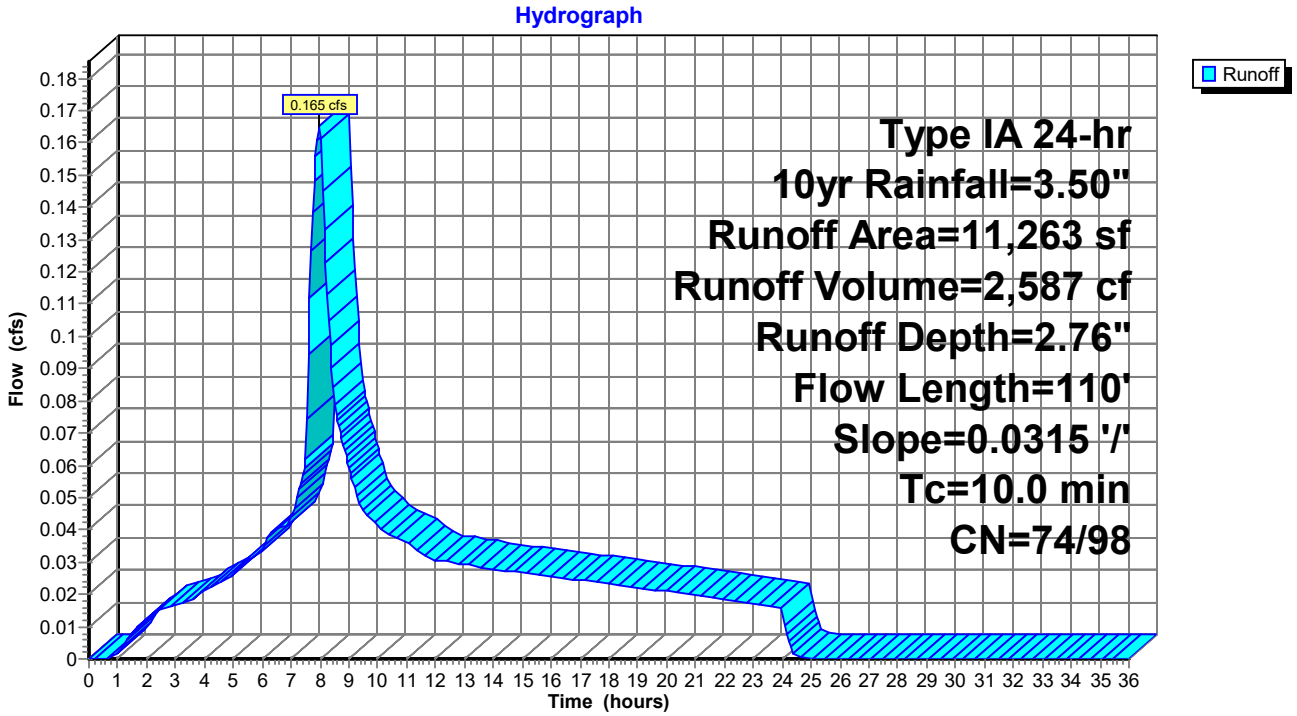
Runoff = 0.165 cfs @ 7.98 hrs, Volume= 2,587 cf, Depth= 2.76"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10yr Rainfall=3.50"

	Area (sf)	CN	Description
*	8,428	98	Parking Lot
*	2,835	74	Landscaping
	11,263	92	Weighted Average
	2,835	74	25.17% Pervious Area
	8,428	98	74.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0315	1.08		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
0.4	90	0.0315	3.60		**Shallow Concentrated Flow, Parking Lot** Paved Kv= 20.3 fps
0.7	110	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 3S: Proposed Site - West



Summary for Subcatchment 4S: Proposed Site - East

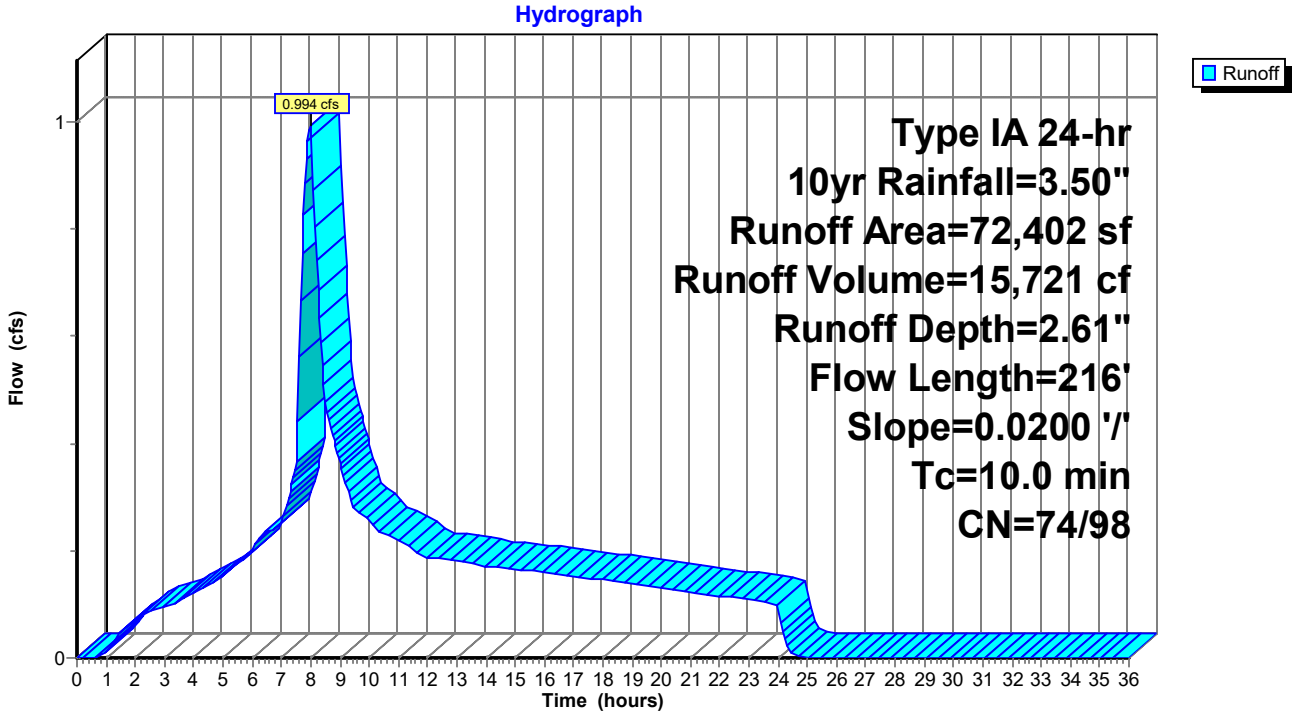
Runoff = 0.994 cfs @ 7.98 hrs, Volume= 15,721 cf, Depth= 2.61"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10yr Rainfall=3.50"

	Area (sf)	CN	Description
*	10,847	98	Building
*	29,742	98	Asphalt
*	8,202	98	Concrete
*	23,611	74	Landscaping
	72,402	90	Weighted Average
	23,611	74	32.61% Pervious Area
	48,791	98	67.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	20	0.0200	0.90		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
1.1	196	0.0200	2.87		**Shallow Concentrated Flow, Parking Lot to CB** Paved Kv= 20.3 fps
1.5	216	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 4S: Proposed Site - East



Summary for Subcatchment 5S: Existing Area

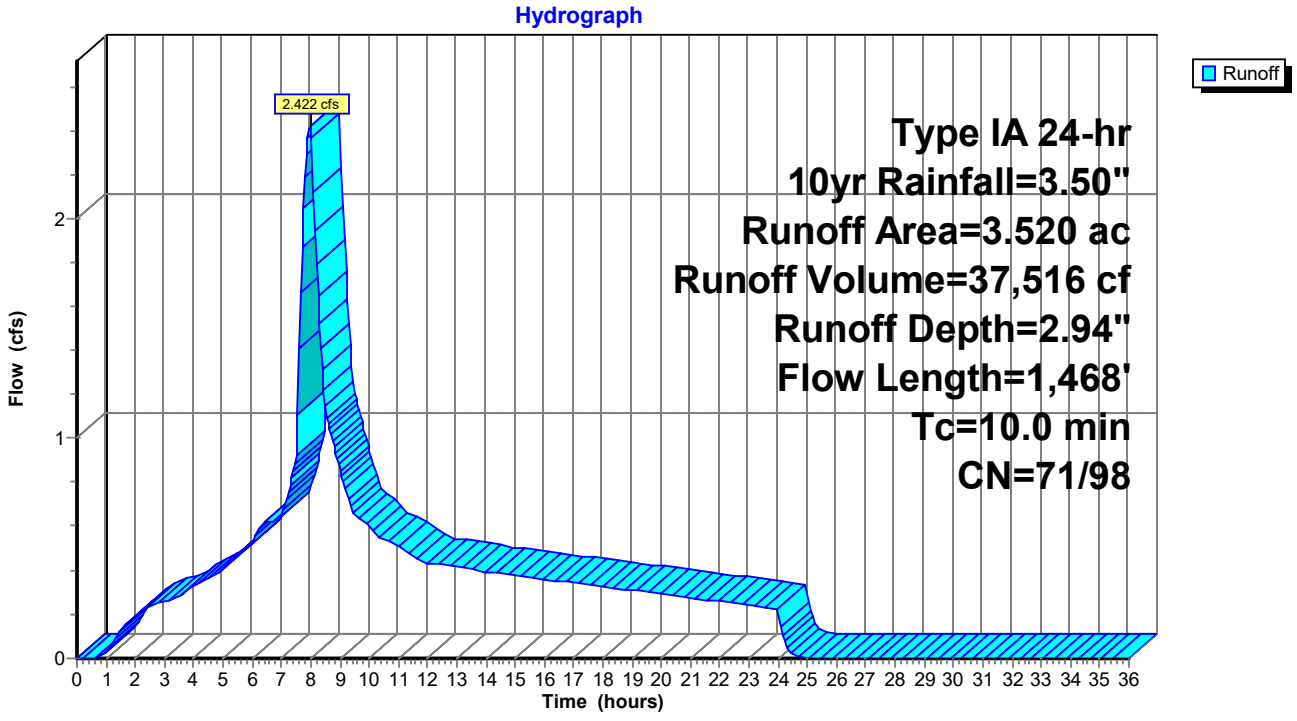
Runoff = 2.422 cfs @ 7.98 hrs, Volume= 37,516 cf, Depth= 2.94"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10yr Rainfall=3.50"

Area (ac)	CN	Description
3.520	94	Urban commercial, 85% imp, HSG C
0.528	71	15.00% Pervious Area
2.992	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0210	1.26		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
2.1	368	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	1,000	0.0130	2.60	3.192	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.030 Corrugated metal
9.8	1,468	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 5S: Existing Area



Summary for Subcatchment 6S: Existing Area

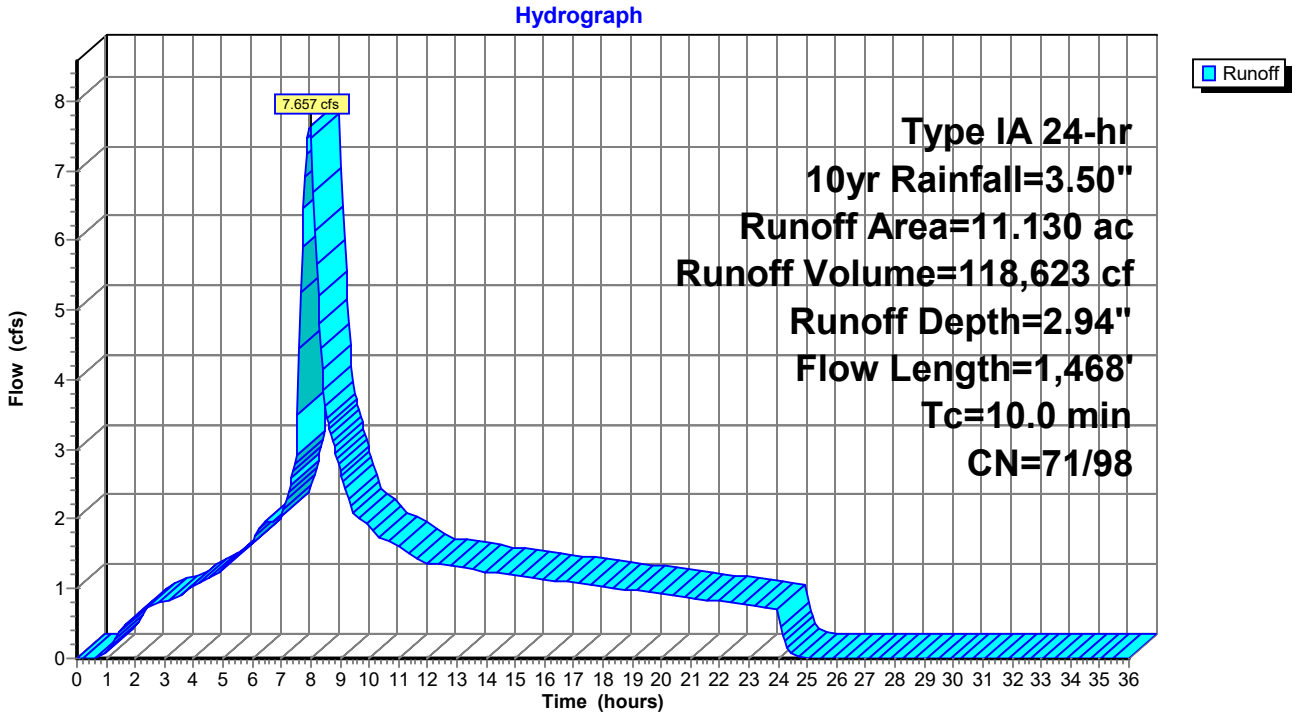
Runoff = 7.657 cfs @ 7.98 hrs, Volume= 118,623 cf, Depth= 2.94"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10yr Rainfall=3.50"

Area (ac)	CN	Description
11.130	94	Urban commercial, 85% imp, HSG C
1.670	71	15.00% Pervious Area
9.460	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0210	1.26		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
2.1	368	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	1,000	0.0130	2.60	3.192	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.030 Corrugated metal
9.8	1,468	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 6S: Existing Area



Summary for Subcatchment 7S: Existing Area

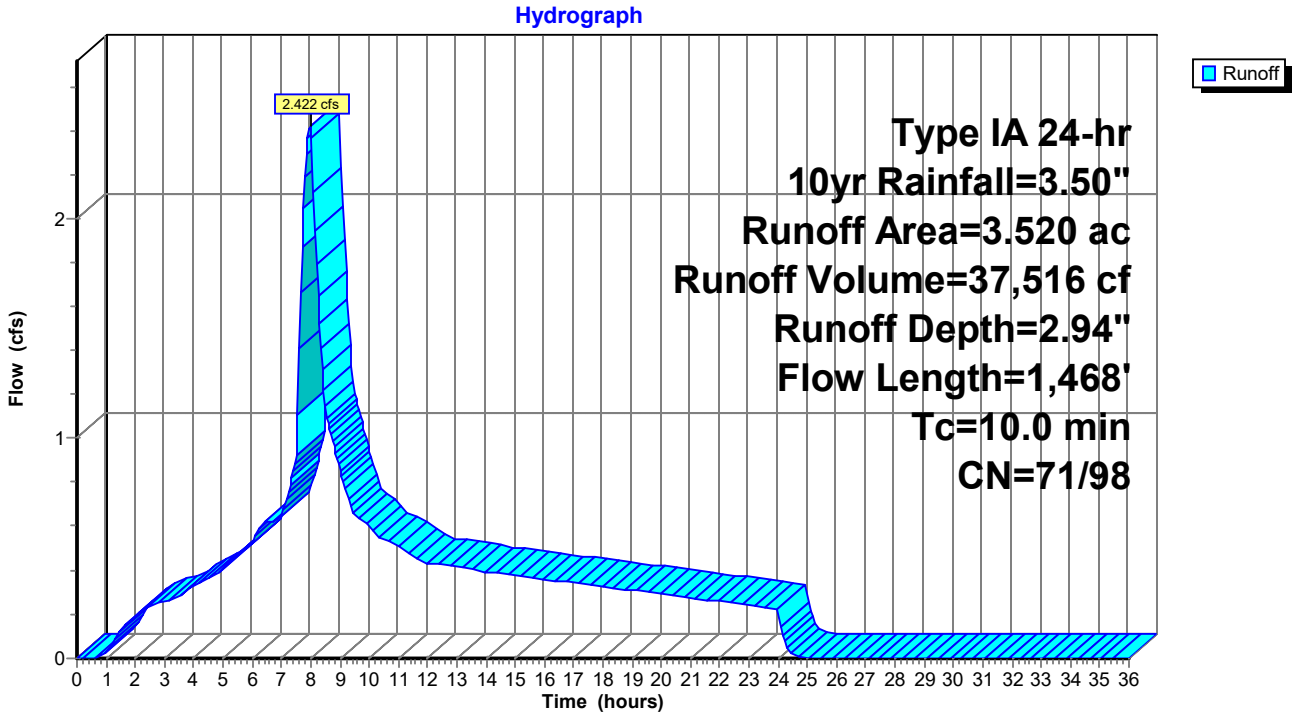
Runoff = 2.422 cfs @ 7.98 hrs, Volume= 37,516 cf, Depth= 2.94"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10yr Rainfall=3.50"

Area (ac)	CN	Description
3.520	94	Urban commercial, 85% imp, HSG C
0.528	71	15.00% Pervious Area
2.992	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0210	1.26		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
2.1	368	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	1,000	0.0130	2.60	3.192	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.030 Corrugated metal
9.8	1,468	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 7S: Existing Area



Summary for Subcatchment 8S: Existing Area

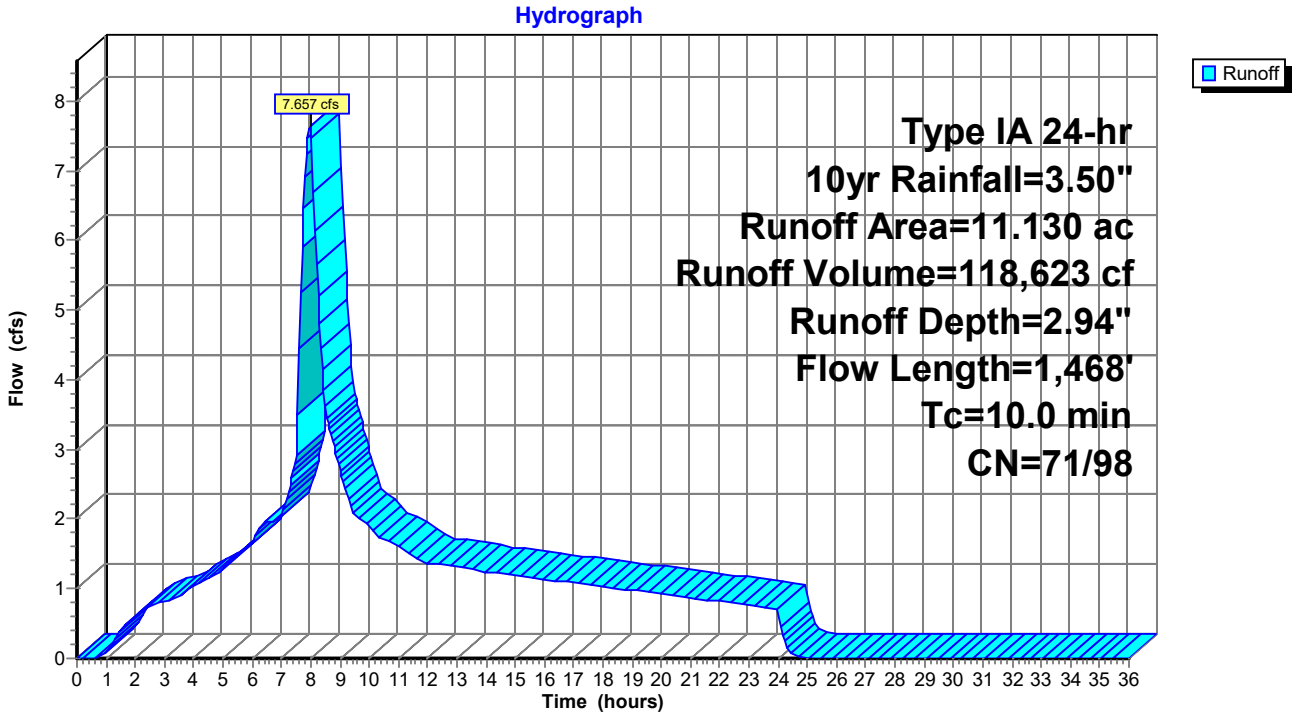
Runoff = 7.657 cfs @ 7.98 hrs, Volume= 118,623 cf, Depth= 2.94"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10yr Rainfall=3.50"

Area (ac)	CN	Description
11.130	94	Urban commercial, 85% imp, HSG C
1.670	71	15.00% Pervious Area
9.460	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0210	1.26		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
2.1	368	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	1,000	0.0130	2.60	3.192	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.030 Corrugated metal
9.8	1,468	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 8S: Existing Area



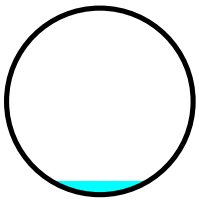
Summary for Reach 6R: Brutscher - 18"

Inflow Area = 8,298 sf, 92.31% Impervious, Inflow Depth = 3.11" for 10yr event
Inflow = 0.140 cfs @ 7.98 hrs, Volume= 2,151 cf
Outflow = 0.140 cfs @ 7.99 hrs, Volume= 2,151 cf, Atten= 1%, Lag= 0.7 min

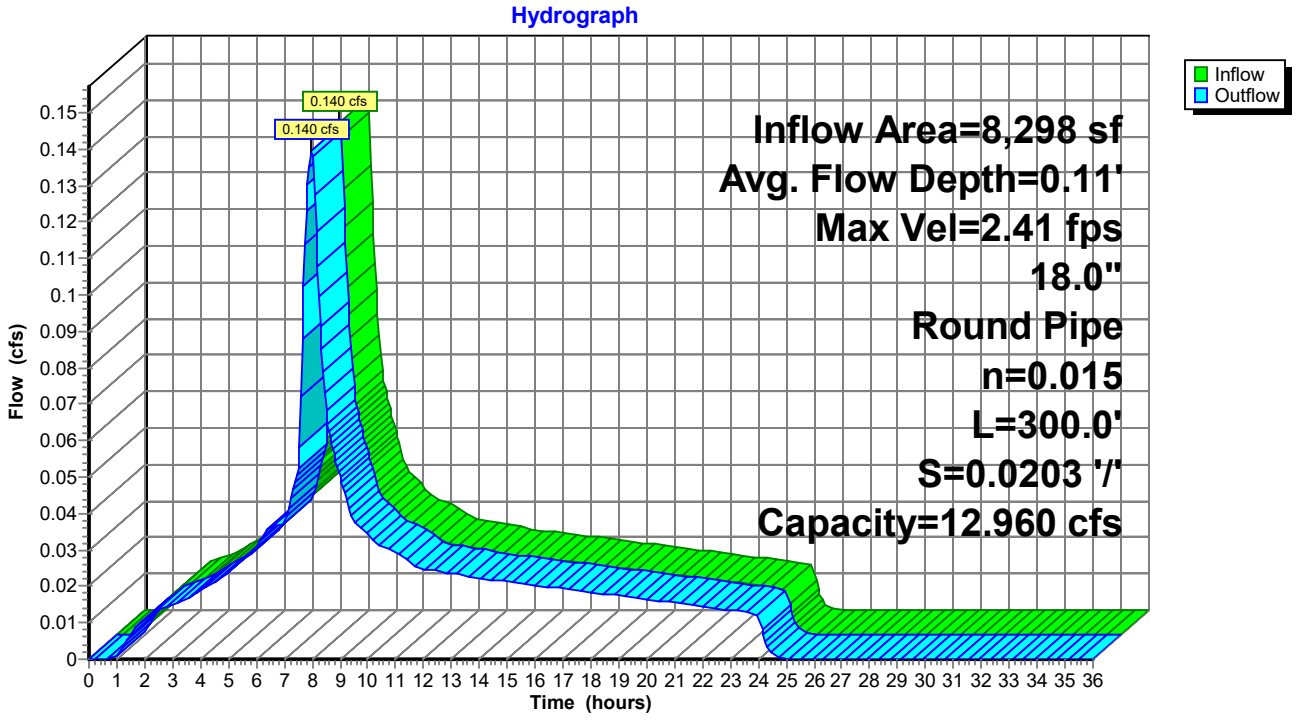
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.41 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 1.36 fps, Avg. Travel Time= 3.7 min

Peak Storage= 17 cf @ 7.99 hrs
Average Depth at Peak Storage= 0.11'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.960 cfs

18.0" Round Pipe
n= 0.015
Length= 300.0' Slope= 0.0203 '/'
Inlet Invert= 212.78', Outlet Invert= 206.70'



Reach 6R: Brutscher - 18"



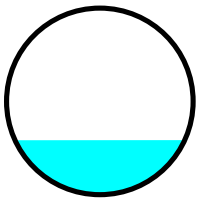
Summary for Reach 7R: HWY 99 - 21"

Inflow Area = 161,629 sf, 85.38% Impervious, Inflow Depth = 2.95" for 10yr event
Inflow = 2.561 cfs @ 7.98 hrs, Volume= 39,667 cf
Outflow = 2.556 cfs @ 7.98 hrs, Volume= 39,667 cf, Atten= 0%, Lag= 0.3 min

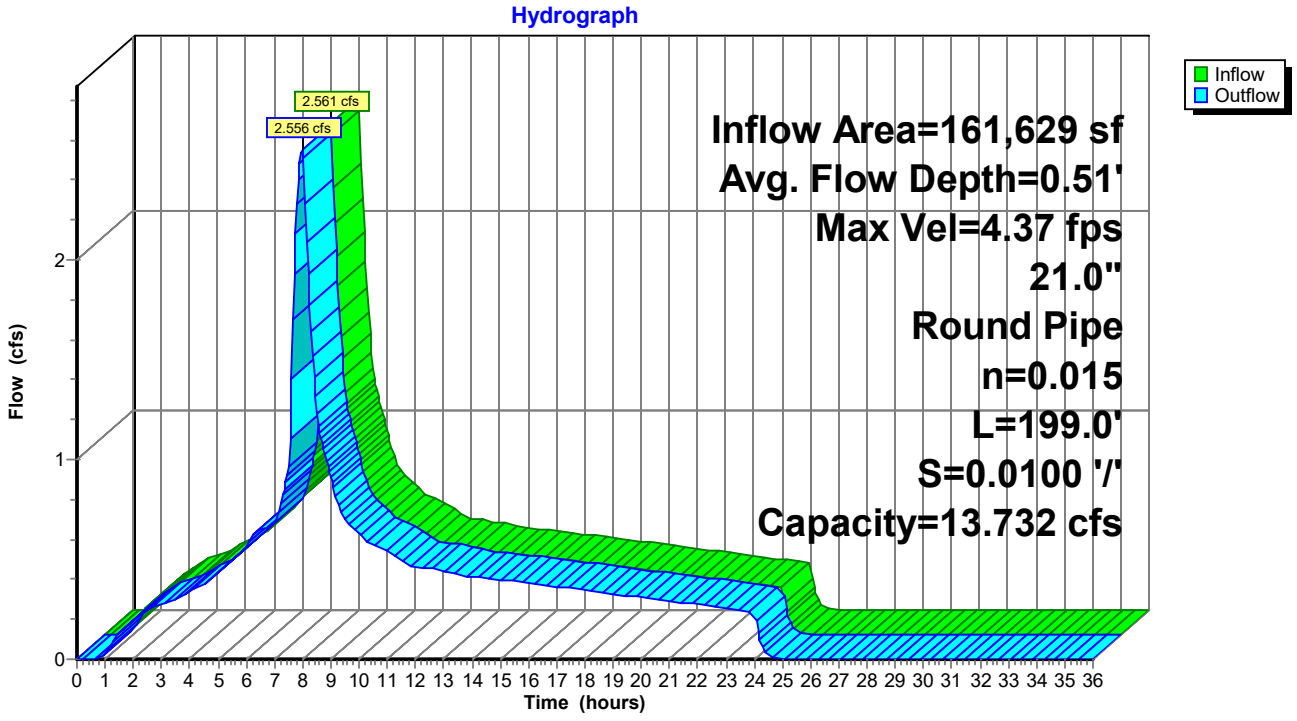
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.37 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.43 fps, Avg. Travel Time= 1.4 min

Peak Storage= 116 cf @ 7.98 hrs
Average Depth at Peak Storage= 0.51'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 199.0' Slope= 0.0100 '/'
Inlet Invert= 206.61', Outlet Invert= 204.62'



Reach 7R: HWY 99 - 21"



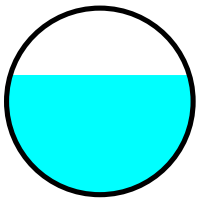
Summary for Reach 8R: HWY 99 - 21"

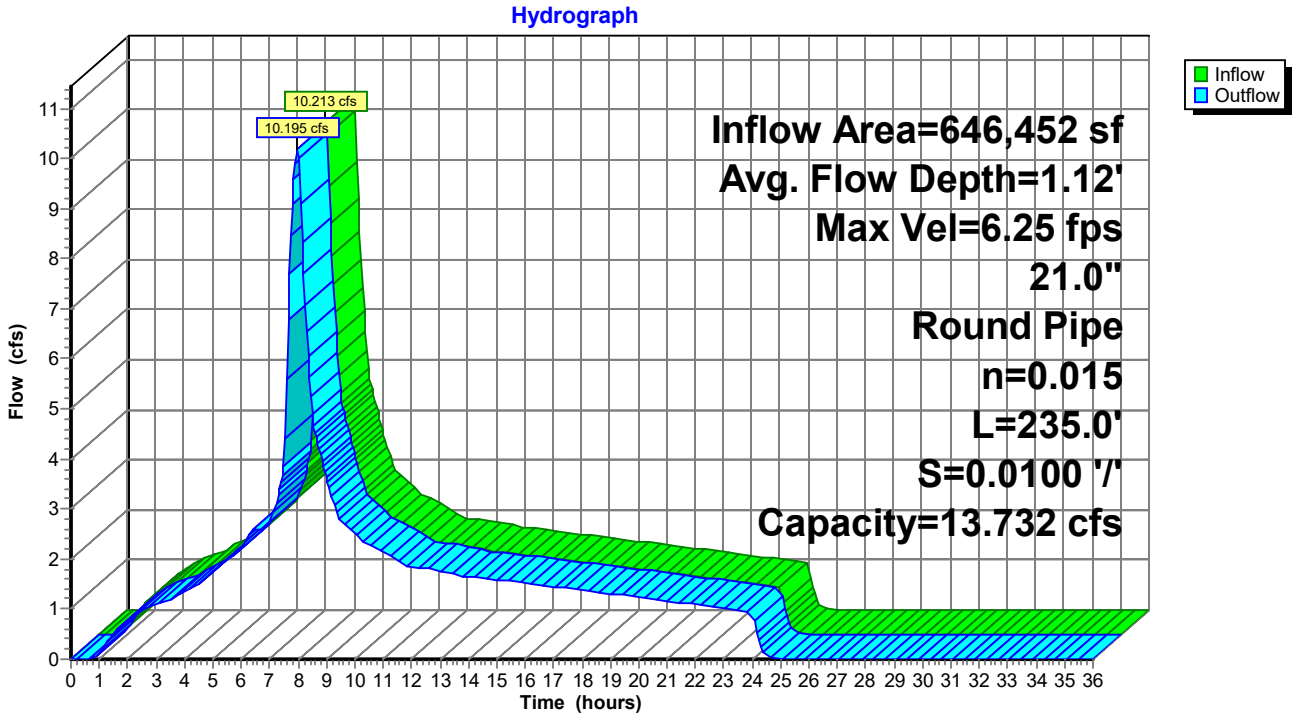
Inflow Area = 646,452 sf, 85.09% Impervious, Inflow Depth = 2.94" for 10yr event
Inflow = 10.213 cfs @ 7.98 hrs, Volume= 158,289 cf
Outflow = 10.195 cfs @ 7.98 hrs, Volume= 158,289 cf, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.25 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 3.61 fps, Avg. Travel Time= 1.1 min

Peak Storage= 383 cf @ 7.98 hrs
Average Depth at Peak Storage= 1.12'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 235.0' Slope= 0.0100 '/'
Inlet Invert= 204.62', Outlet Invert= 202.27'





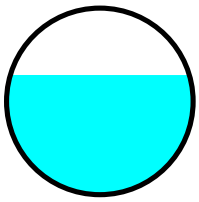
Summary for Reach 9R: HWY 99 -21"

Inflow Area = 646,452 sf, 85.09% Impervious, Inflow Depth = 2.94" for 10yr event
Inflow = 10.195 cfs @ 7.98 hrs, Volume= 158,289 cf
Outflow = 10.190 cfs @ 7.99 hrs, Volume= 158,289 cf, Atten= 0%, Lag= 0.1 min

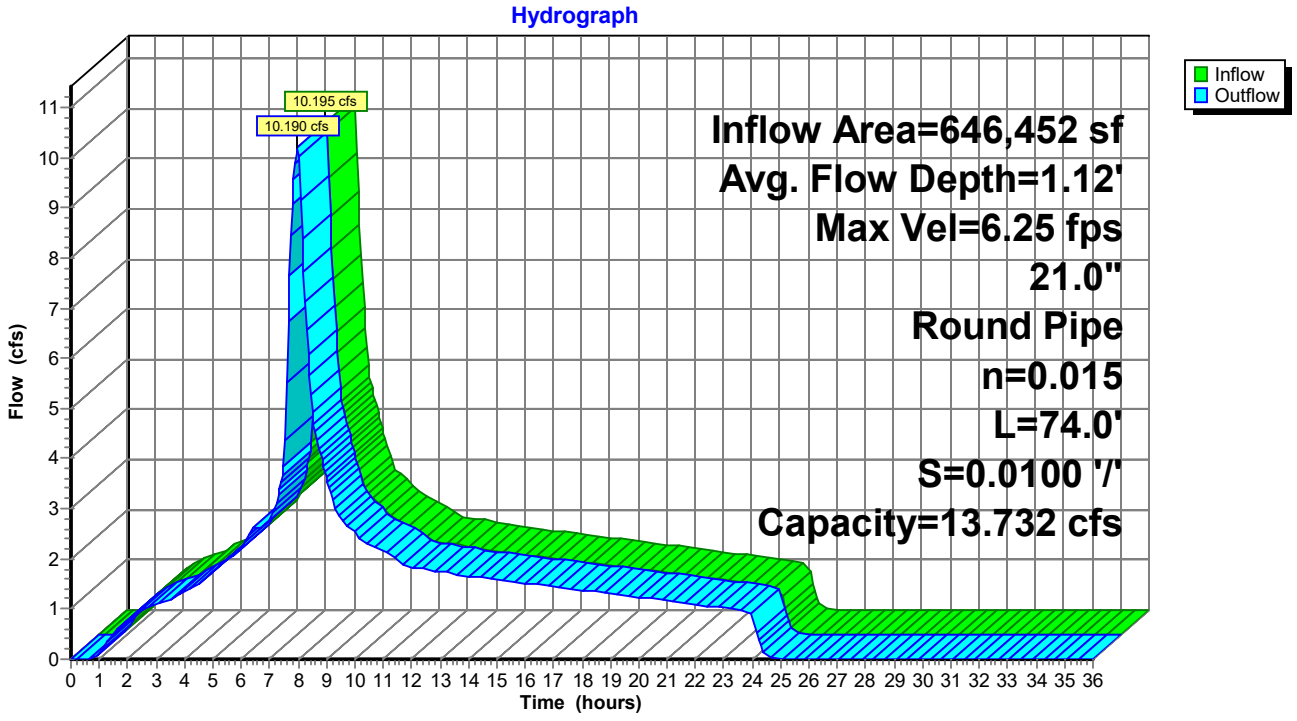
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.25 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.61 fps, Avg. Travel Time= 0.3 min

Peak Storage= 121 cf @ 7.99 hrs
Average Depth at Peak Storage= 1.12'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 74.0' Slope= 0.0100 '/'
Inlet Invert= 202.27', Outlet Invert= 201.53'



Reach 9R: HWY 99 -21"



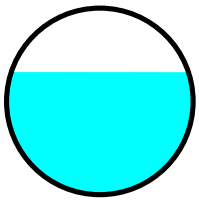
Summary for Reach 10R: HWY 99 - 21"

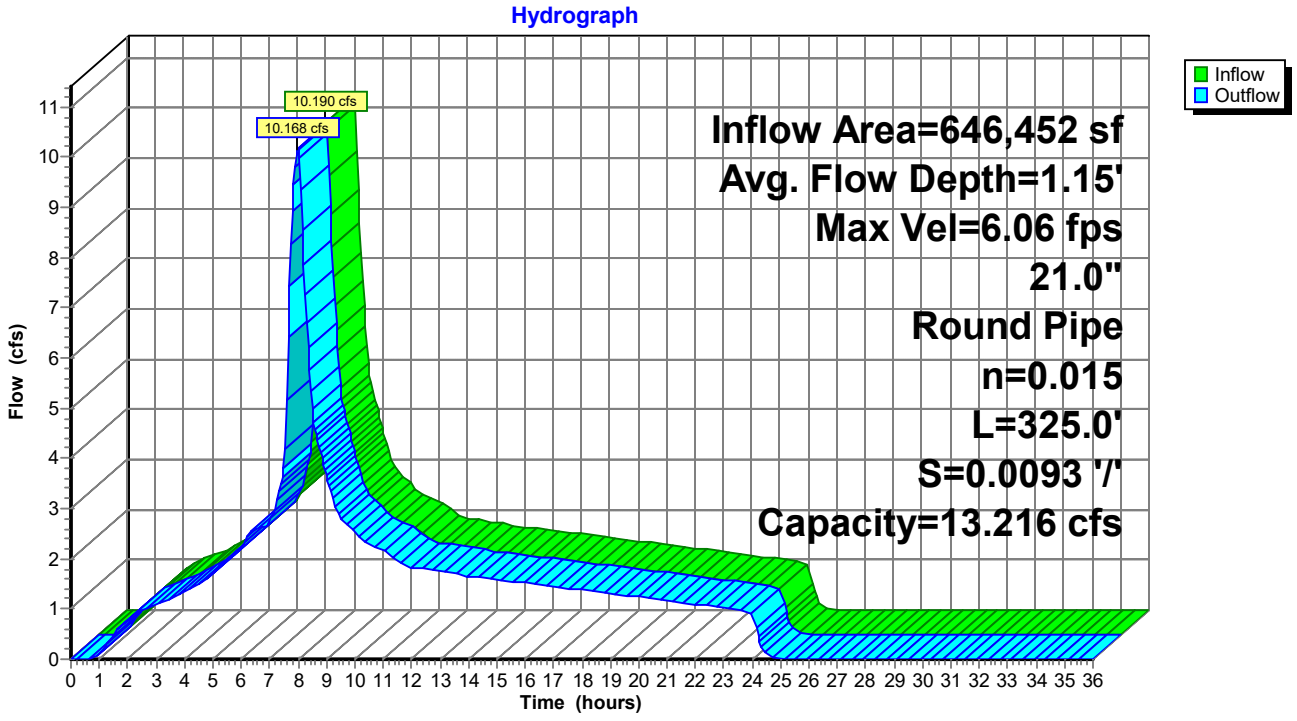
Inflow Area = 646,452 sf, 85.09% Impervious, Inflow Depth = 2.94" for 10yr event
Inflow = 10.190 cfs @ 7.99 hrs, Volume= 158,289 cf
Outflow = 10.168 cfs @ 7.99 hrs, Volume= 158,289 cf, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.06 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 3.47 fps, Avg. Travel Time= 1.6 min

Peak Storage= 545 cf @ 7.99 hrs
Average Depth at Peak Storage= 1.15'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.216 cfs

21.0" Round Pipe
n= 0.015 Concrete sewer w/manholes & inlets
Length= 325.0' Slope= 0.0093 '/'
Inlet Invert= 201.43', Outlet Invert= 198.42'





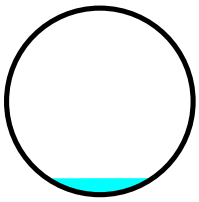
Summary for Reach 11R: Brutscher - 18"

Inflow Area = 83,665 sf, 68.39% Impervious, Inflow Depth > 2.00" for 10yr event
Inflow = 0.213 cfs @ 11.71 hrs, Volume= 13,931 cf
Outflow = 0.213 cfs @ 11.73 hrs, Volume= 13,926 cf, Atten= 0%, Lag= 1.3 min

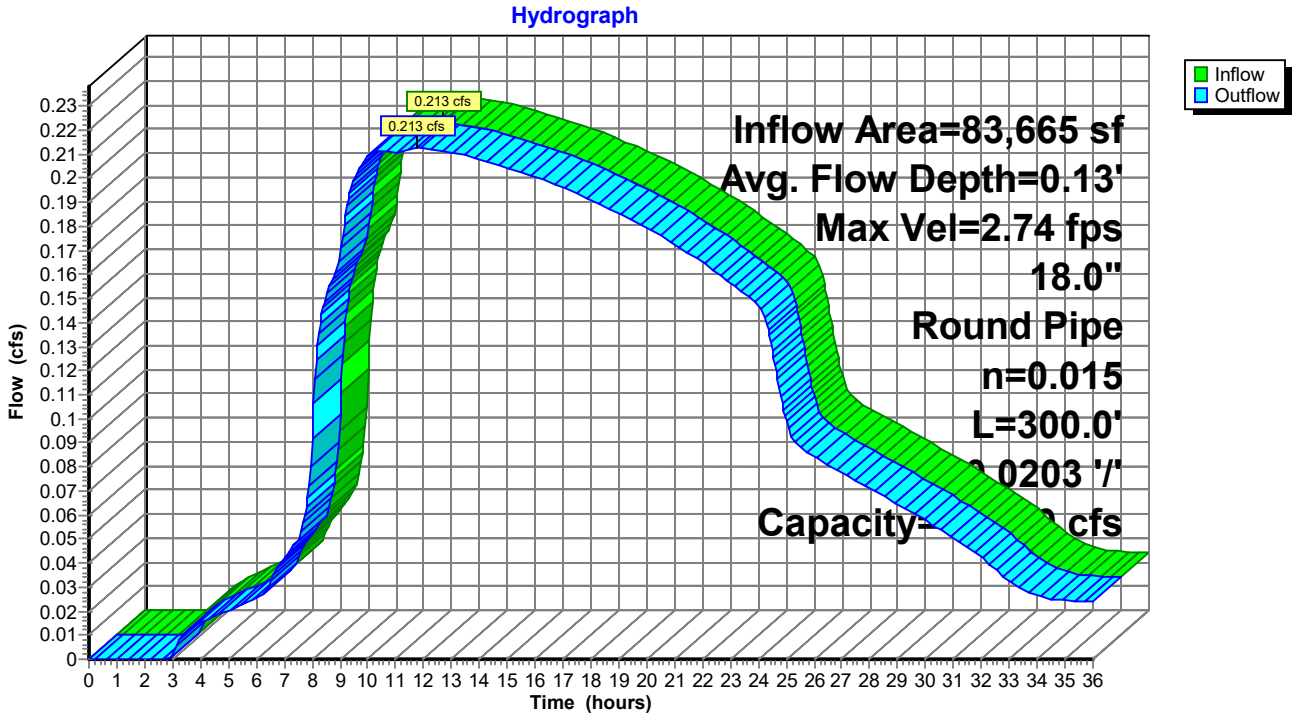
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.74 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 2.15 fps, Avg. Travel Time= 2.3 min

Peak Storage= 23 cf @ 11.73 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.960 cfs

18.0" Round Pipe
n= 0.015
Length= 300.0' Slope= 0.0203 '/'
Inlet Invert= 212.78', Outlet Invert= 206.70'



Reach 11R: Brutscher - 18"



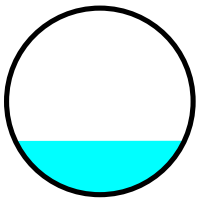
Summary for Reach 12R: HWY 99 - 21"

Inflow Area = 236,996 sf, 79.14% Impervious, Inflow Depth > 2.60" for 10yr event
Inflow = 2.509 cfs @ 7.98 hrs, Volume= 51,442 cf
Outflow = 2.503 cfs @ 7.99 hrs, Volume= 51,437 cf, Atten= 0%, Lag= 0.3 min

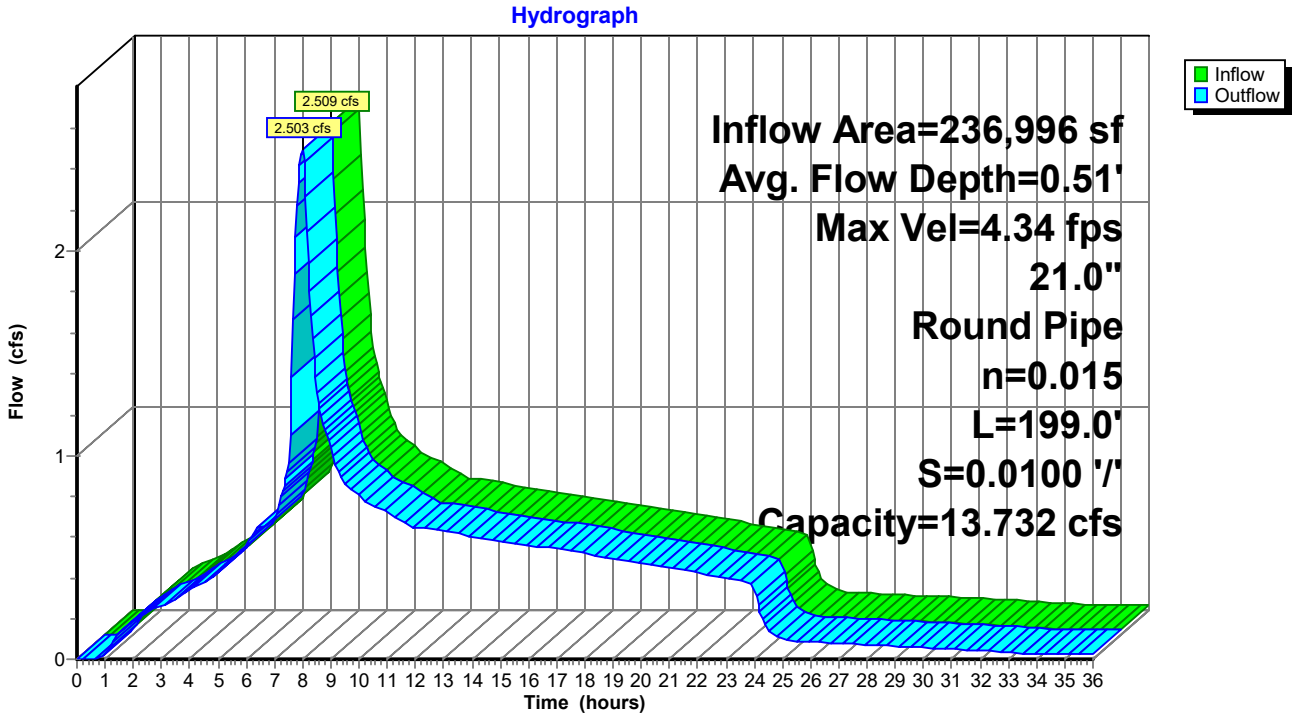
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.34 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.28 fps, Avg. Travel Time= 1.5 min

Peak Storage= 115 cf @ 7.99 hrs
Average Depth at Peak Storage= 0.51'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 199.0' Slope= 0.0100 '/'
Inlet Invert= 206.61', Outlet Invert= 204.62'



Reach 12R: HWY 99 - 21"



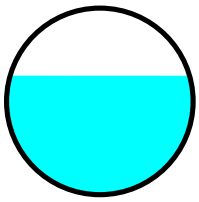
Summary for Reach 13R: HWY 99 - 21"

Inflow Area = 721,819 sf, 83.07% Impervious, Inflow Depth > 2.83" for 10yr event
Inflow = 10.158 cfs @ 7.98 hrs, Volume= 170,060 cf
Outflow = 10.140 cfs @ 7.99 hrs, Volume= 170,055 cf, Atten= 0%, Lag= 0.3 min

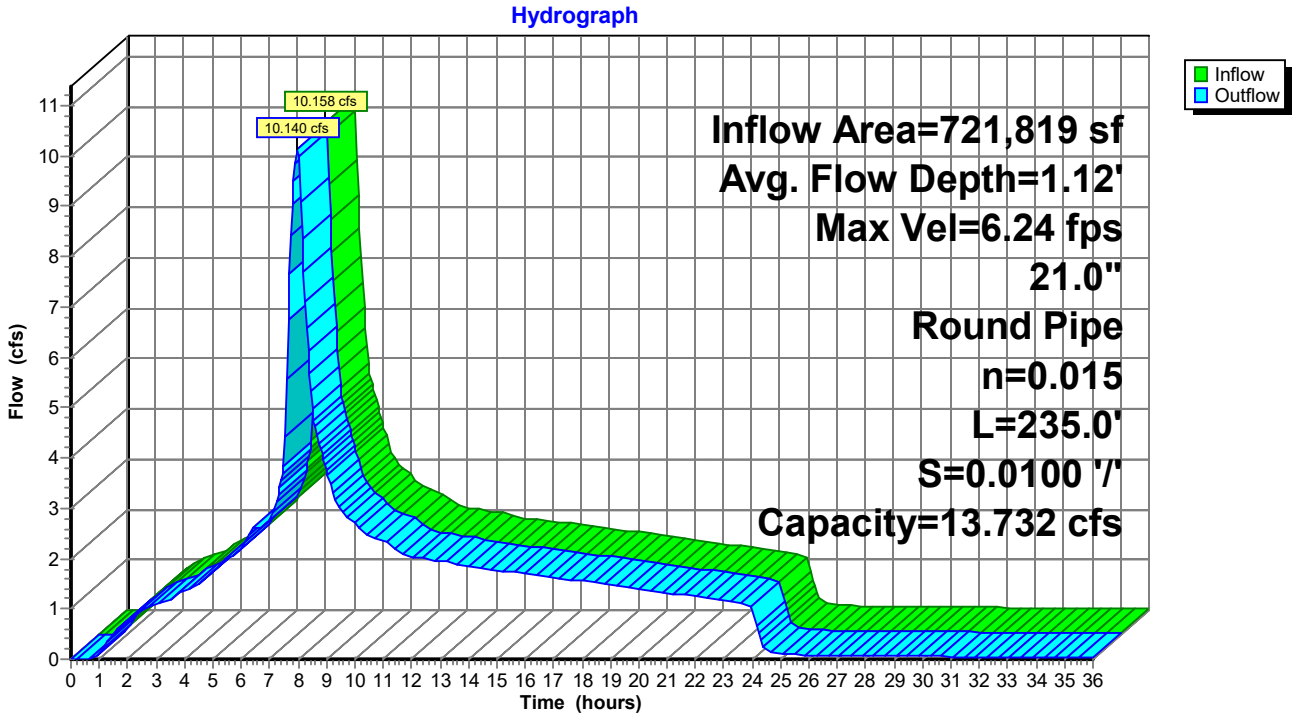
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.24 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 3.06 fps, Avg. Travel Time= 1.3 min

Peak Storage= 381 cf @ 7.99 hrs
Average Depth at Peak Storage= 1.12'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 235.0' Slope= 0.0100 '/'
Inlet Invert= 204.62', Outlet Invert= 202.27'



Reach 13R: HWY 99 - 21"



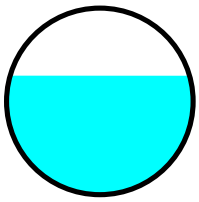
Summary for Reach 14R: HWY 99 - 21"

Inflow Area = 721,819 sf, 83.07% Impervious, Inflow Depth > 2.83" for 10yr event
Inflow = 10.140 cfs @ 7.99 hrs, Volume= 170,055 cf
Outflow = 10.135 cfs @ 7.99 hrs, Volume= 170,053 cf, Atten= 0%, Lag= 0.1 min

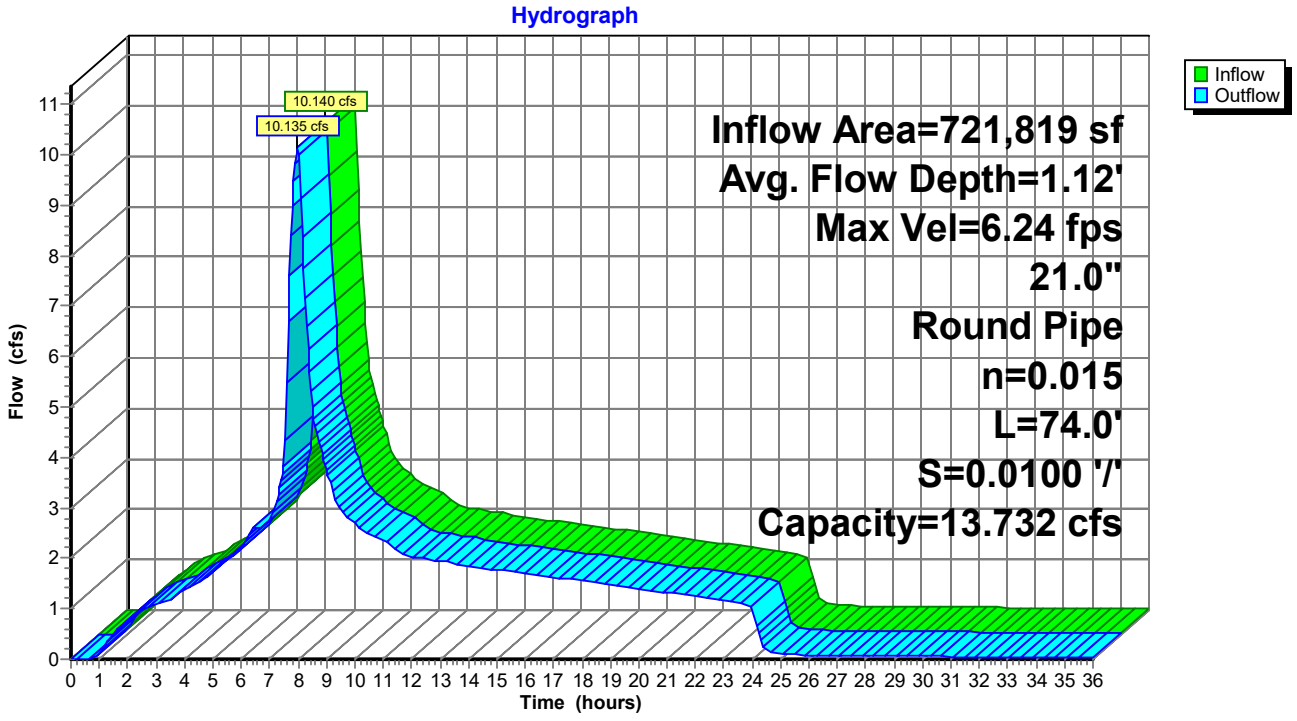
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.24 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.06 fps, Avg. Travel Time= 0.4 min

Peak Storage= 120 cf @ 7.99 hrs
Average Depth at Peak Storage= 1.12'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 74.0' Slope= 0.0100 '/'
Inlet Invert= 202.27', Outlet Invert= 201.53'



Reach 14R: HWY 99 - 21"



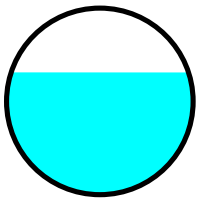
Summary for Reach 15R: HWY 99 - 21"

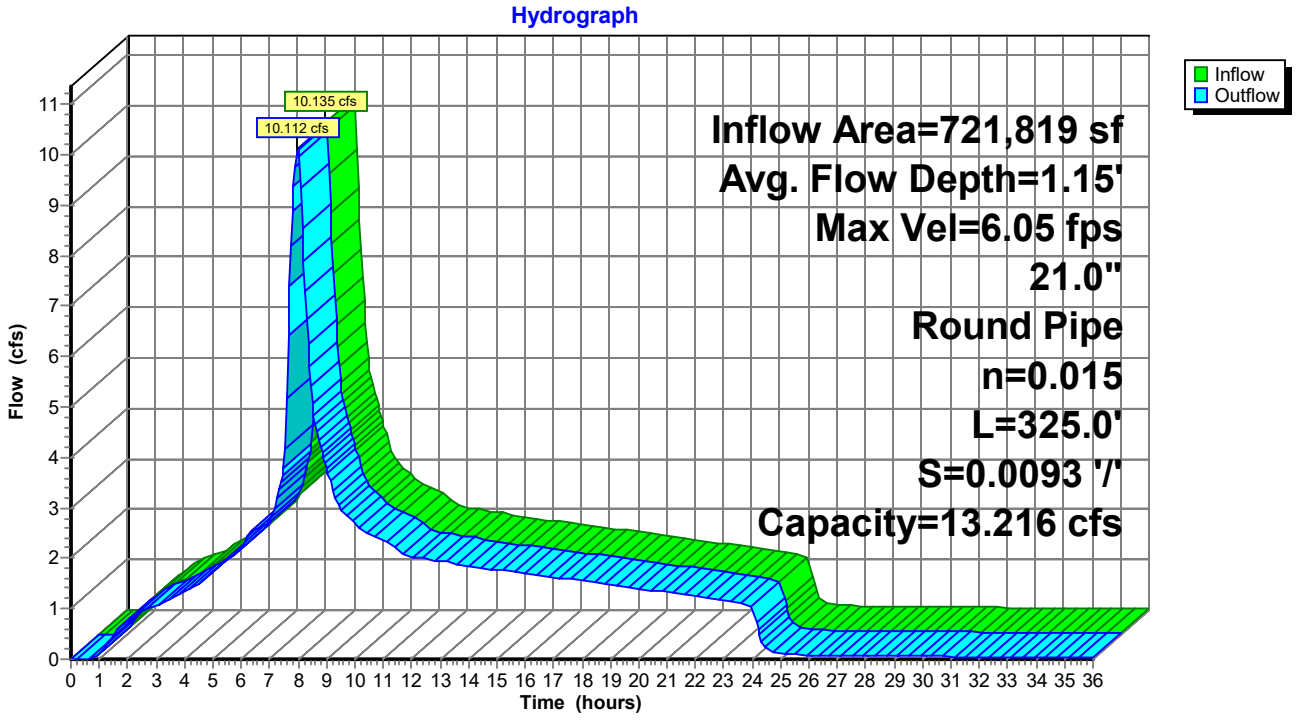
Inflow Area = 721,819 sf, 83.07% Impervious, Inflow Depth > 2.83" for 10yr event
Inflow = 10.135 cfs @ 7.99 hrs, Volume= 170,053 cf
Outflow = 10.112 cfs @ 8.00 hrs, Volume= 170,046 cf, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.05 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 2.98 fps, Avg. Travel Time= 1.8 min

Peak Storage= 543 cf @ 8.00 hrs
Average Depth at Peak Storage= 1.15'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.216 cfs

21.0" Round Pipe
n= 0.015 Concrete sewer w/manholes & inlets
Length= 325.0' Slope= 0.0093 '/'
Inlet Invert= 201.43', Outlet Invert= 198.42'





Summary for Pond 1P: Stormwater Planter

Inflow Area = 11,263 sf, 74.83% Impervious, Inflow Depth = 2.76" for 10yr event
Inflow = 0.165 cfs @ 7.98 hrs, Volume= 2,587 cf
Outflow = 0.074 cfs @ 8.60 hrs, Volume= 2,507 cf, Atten= 55%, Lag= 37.1 min
Primary = 0.074 cfs @ 8.60 hrs, Volume= 2,507 cf

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 224.39' @ 8.60 hrs Surf.Area= 160 sf Storage= 462 cf

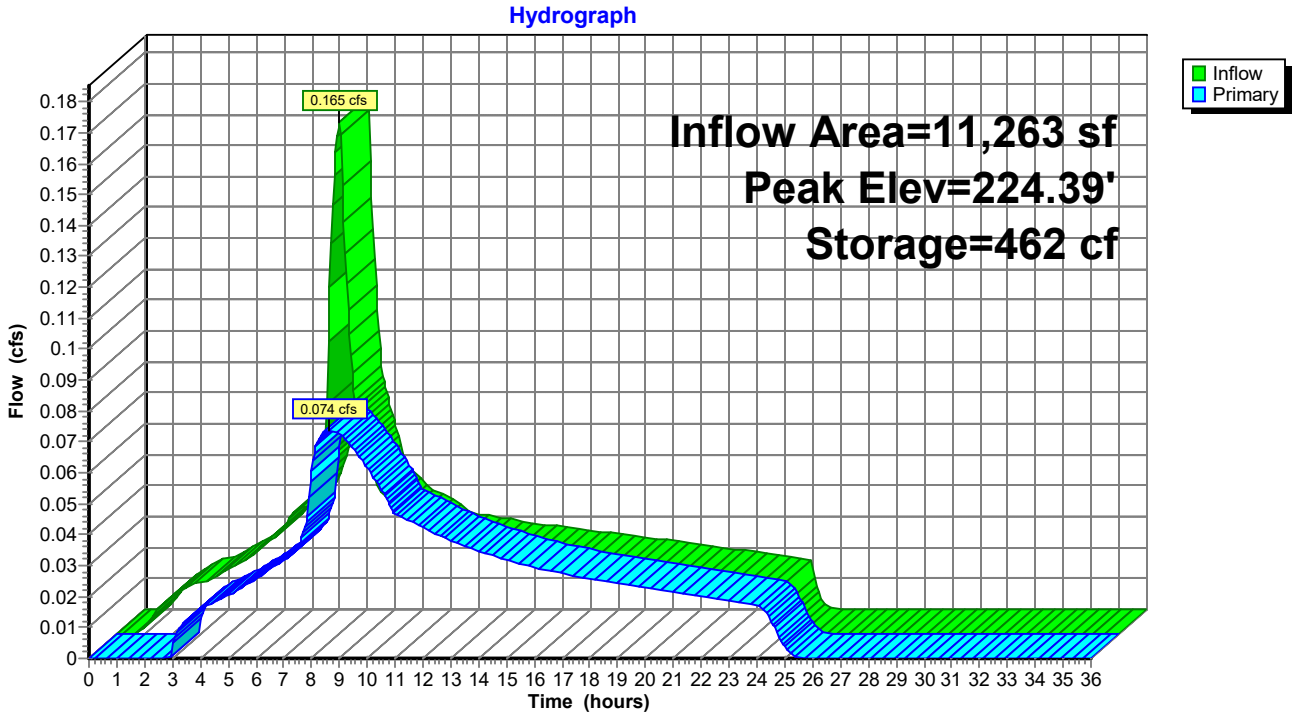
Plug-Flow detention time= 104.1 min calculated for 2,507 cf (97% of inflow)
Center-of-Mass det. time= 80.9 min (771.2 - 690.3)

Volume	Invert	Avail.Storage	Storage Description
#1	221.50'	560 cf	**16.00'W x 10.00'L x 3.50'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	222.00'	**1.2" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	223.51'	**0.8" Vert. Orifice/Grate** C= 0.600
#3	Primary	224.40'	**1.0" Vert. Orifice/Grate** C= 0.600
#4	Primary	224.50'	**6.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.074 cfs @ 8.60 hrs HW=224.39' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.058 cfs @ 7.44 fps)
- **2=Orifice/Grate** (Orifice Controls 0.015 cfs @ 4.42 fps)
- **3=Orifice/Grate** (Controls 0.000 cfs)
- **4=Orifice/Grate** (Controls 0.000 cfs)

Pond 1P: Stormwater Planter



Summary for Pond 2P: Stormwater Pond

Inflow Area = 72,402 sf, 67.39% Impervious, Inflow Depth = 2.61" for 10yr event
Inflow = 0.994 cfs @ 7.98 hrs, Volume= 15,721 cf
Outflow = 0.173 cfs @ 13.74 hrs, Volume= 11,424 cf, Atten= 83%, Lag= 345.4 min
Primary = 0.173 cfs @ 13.74 hrs, Volume= 11,424 cf

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 224.89' @ 13.74 hrs Surf.Area= 2,212 sf Storage= 7,489 cf

Plug-Flow detention time= 601.8 min calculated for 11,408 cf (73% of inflow)
Center-of-Mass det. time= 429.5 min (1,127.8 - 698.2)

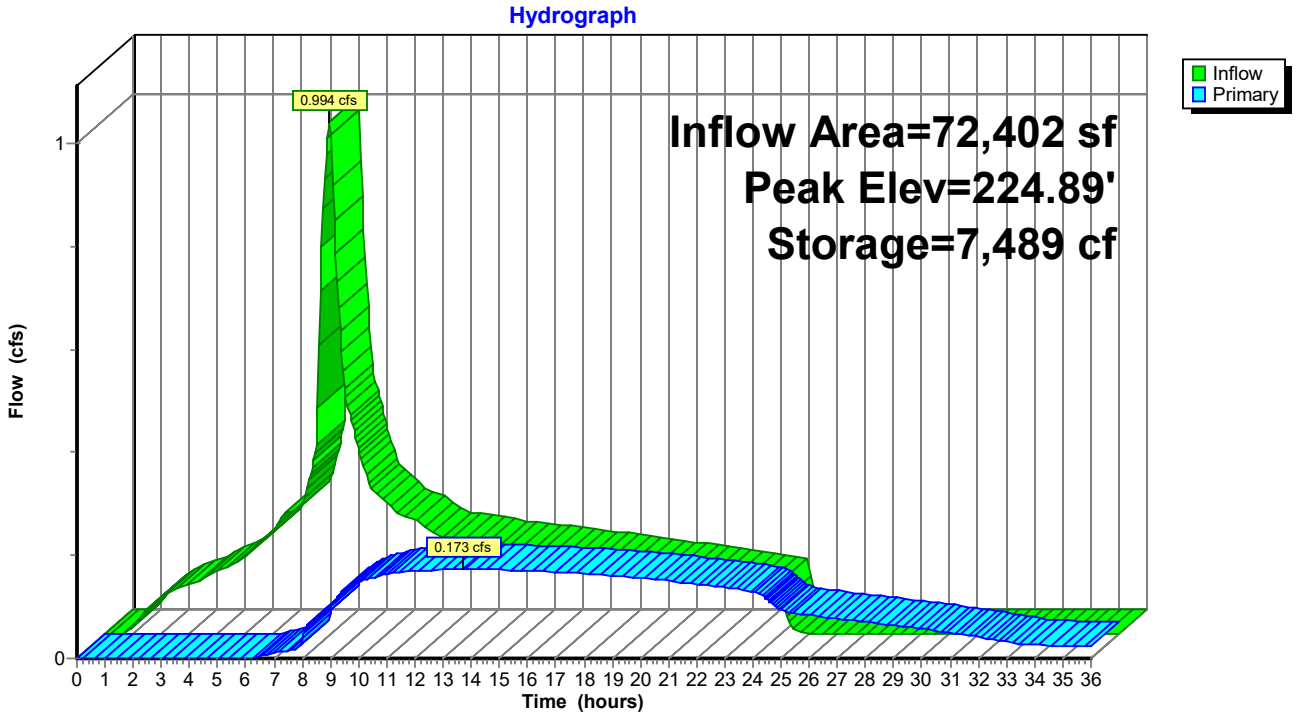
Volume	Invert	Avail.Storage	Storage Description
#1	221.50'	8,848 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
221.50	2,212	0	0
225.50	2,212	8,848	8,848

Device	Routing	Invert	Outlet Devices
#1	Primary	222.50'	**0.9" Vert. Orifice/Grate** C= 0.600
#2	Primary	223.15'	**0.5" Vert. Orifice/Grate** C= 0.600
#3	Primary	223.50'	**1.5" Vert. Orifice/Grate** C= 0.600
#4	Primary	224.35'	**1.9" Vert. Orifice/Grate** C= 0.600
#5	Primary	225.25'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.173 cfs @ 13.74 hrs HW=224.89' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.033 cfs @ 7.38 fps)
- **2=Orifice/Grate** (Orifice Controls 0.009 cfs @ 6.31 fps)
- **3=Orifice/Grate** (Orifice Controls 0.068 cfs @ 5.54 fps)
- **4=Orifice/Grate** (Orifice Controls 0.064 cfs @ 3.25 fps)
- **5=Orifice/Grate** (Controls 0.000 cfs)

Pond 2P: Stormwater Pond



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing Site - West Runoff Area=8,298 sf 92.31% Impervious Runoff Depth=3.60"
Flow Length=110' Slope=0.0315 '/' Tc=10.0 min CN=74/98 Runoff=0.162 cfs 2,488 cf

Subcatchment 2S: Existing Site - East Runoff Area=75,367 sf 0.00% Impervious Runoff Depth=1.96"
Flow Length=270' Slope=0.0200 '/' Tc=10.0 min CN=79/0 Runoff=0.739 cfs 12,332 cf

Subcatchment 3S: Proposed Site - West Runoff Area=11,263 sf 74.83% Impervious Runoff Depth=3.22"
Flow Length=110' Slope=0.0315 '/' Tc=10.0 min CN=74/98 Runoff=0.193 cfs 3,021 cf

Subcatchment 4S: Proposed Site - East Runoff Area=72,402 sf 67.39% Impervious Runoff Depth=3.06"
Flow Length=216' Slope=0.0200 '/' Tc=10.0 min CN=74/98 Runoff=1.171 cfs 18,449 cf

Subcatchment 5S: Existing Area Runoff Area=3.520 ac 85.00% Impervious Runoff Depth=3.41"
Flow Length=1,468' Tc=10.0 min CN=71/98 Runoff=2.808 cfs 43,565 cf

Subcatchment 6S: Existing Area Runoff Area=11.130 ac 85.00% Impervious Runoff Depth=3.41"
Flow Length=1,468' Tc=10.0 min CN=71/98 Runoff=8.878 cfs 137,749 cf

Subcatchment 7S: Existing Area Runoff Area=3.520 ac 85.00% Impervious Runoff Depth=3.41"
Flow Length=1,468' Tc=10.0 min CN=71/98 Runoff=2.808 cfs 43,565 cf

Subcatchment 8S: Existing Area Runoff Area=11.130 ac 85.00% Impervious Runoff Depth=3.41"
Flow Length=1,468' Tc=10.0 min CN=71/98 Runoff=8.878 cfs 137,749 cf

Reach 6R: Brutscher - 18" Avg. Flow Depth=0.12' Max Vel=2.52 fps Inflow=0.162 cfs 2,488 cf
18.0" Round Pipe n=0.015 L=300.0' S=0.0203 '/' Capacity=12.960 cfs Outflow=0.161 cfs 2,488 cf

Reach 7R: HWY 99 - 21" Avg. Flow Depth=0.55' Max Vel=4.55 fps Inflow=2.969 cfs 46,053 cf
21.0" Round Pipe n=0.015 L=199.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=2.963 cfs 46,053 cf

Reach 8R: HWY 99 - 21" Avg. Flow Depth=1.25' Max Vel=6.42 fps Inflow=11.841 cfs 183,802 cf
21.0" Round Pipe n=0.015 L=235.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=11.820 cfs 183,802 cf

Reach 9R: HWY 99 -21" Avg. Flow Depth=1.25' Max Vel=6.42 fps Inflow=11.820 cfs 183,802 cf
21.0" Round Pipe n=0.015 L=74.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=11.814 cfs 183,802 cf

Reach 10R: HWY 99 - 21" Avg. Flow Depth=1.29' Max Vel=6.21 fps Inflow=11.814 cfs 183,802 cf
21.0" Round Pipe n=0.015 L=325.0' S=0.0093 '/' Capacity=13.216 cfs Outflow=11.787 cfs 183,802 cf

Reach 11R: Brutscher - 18" Avg. Flow Depth=0.15' Max Vel=2.98 fps Inflow=0.281 cfs 17,016 cf
18.0" Round Pipe n=0.015 L=300.0' S=0.0203 '/' Capacity=12.960 cfs Outflow=0.281 cfs 17,011 cf

Reach 12R: HWY 99 - 21" Avg. Flow Depth=0.55' Max Vel=4.54 fps Inflow=2.941 cfs 60,576 cf
21.0" Round Pipe n=0.015 L=199.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=2.935 cfs 60,571 cf

Reach 13R: HWY 99 - 21" Avg. Flow Depth=1.25' Max Vel=6.42 fps Inflow=11.812 cfs 198,320 cf
21.0" Round Pipe n=0.015 L=235.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=11.790 cfs 198,315 cf

Reach 14R: HWY 99 - 21" Avg. Flow Depth=1.25' Max Vel=6.42 fps Inflow=11.790 cfs 198,315 cf
21.0" Round Pipe n=0.015 L=74.0' S=0.0100 '/' Capacity=13.732 cfs Outflow=11.785 cfs 198,313 cf

Reach 15R: HWY 99 - 21" Avg. Flow Depth=1.29' Max Vel=6.21 fps Inflow=11.785 cfs 198,313 cf
21.0" Round Pipe n=0.015 L=325.0' S=0.0093 '/' Capacity=13.216 cfs Outflow=11.757 cfs 198,306 cf

Pond 1P: Stormwater Planter Peak Elev=224.62' Storage=499 cf Inflow=0.193 cfs 3,021 cf
Outflow=0.133 cfs 2,941 cf

Pond 2P: Stormwater Pond Peak Elev=225.26' Storage=8,316 cf Inflow=1.171 cfs 18,449 cf
Outflow=0.233 cfs 14,075 cf

Summary for Subcatchment 1S: Existing Site - West

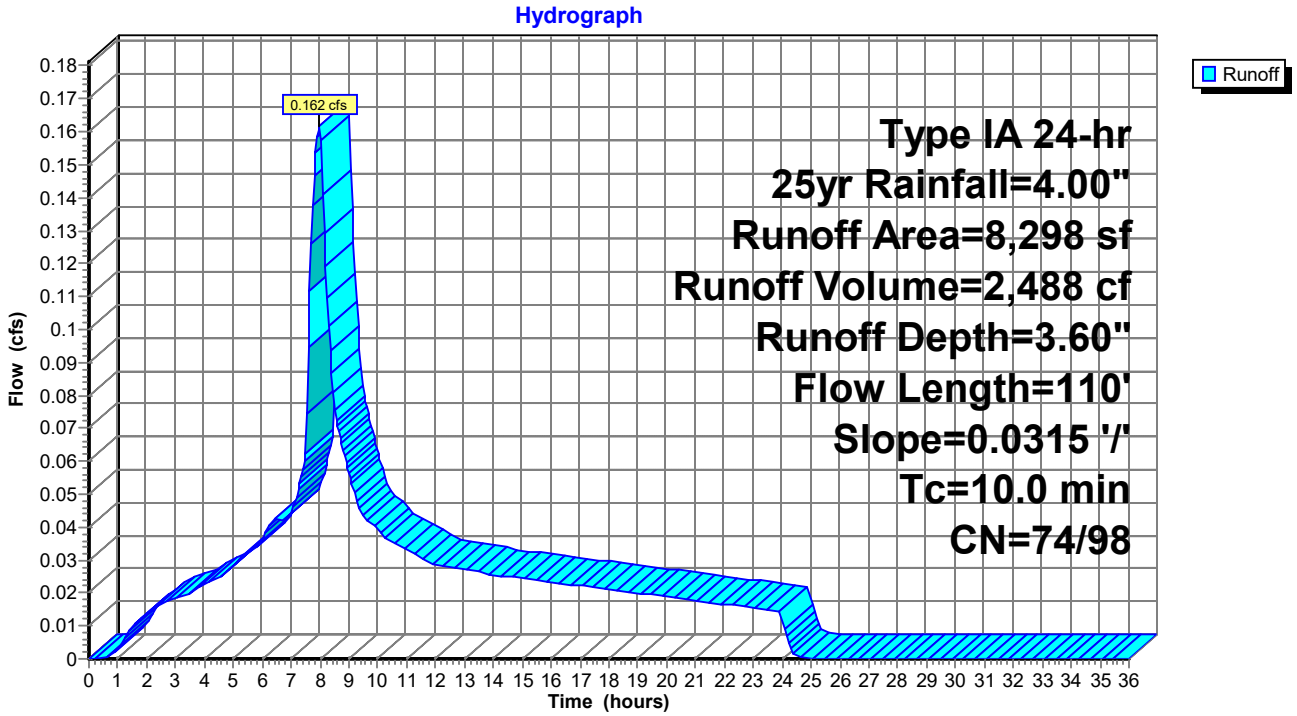
Runoff = 0.162 cfs @ 7.98 hrs, Volume= 2,488 cf, Depth= 3.60"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25yr Rainfall=4.00"

	Area (sf)	CN	Description
*	7,660	98	Impervious Surfaces
*	638	74	Landscaping
	8,298	96	Weighted Average
	638	74	7.69% Pervious Area
	7,660	98	92.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0315	1.08		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
0.4	90	0.0315	3.60		**Shallow Concentrated Flow, Parking Lot** Paved Kv= 20.3 fps
0.7	110	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 1S: Existing Site - West



Summary for Subcatchment 2S: Existing Site - East

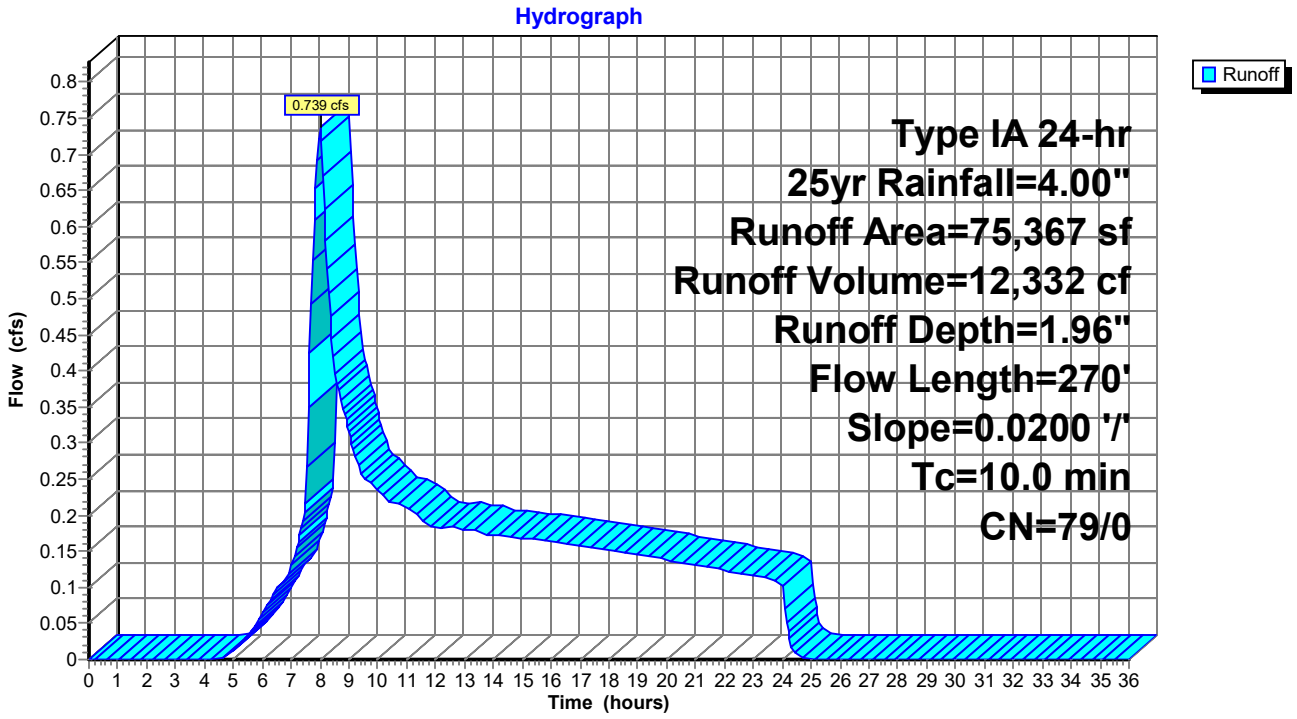
Runoff = 0.739 cfs @ 8.00 hrs, Volume= 12,332 cf, Depth= 1.96"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25yr Rainfall=4.00"

Area (sf)	CN	Description
75,367	79	50-75% Grass cover, Fair, HSG C
75,367	79	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	20	0.0200	0.08		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 2.60"
4.2	250	0.0200	0.99		**Shallow Concentrated Flow, SCF** Short Grass Pasture Kv= 7.0 fps
8.6	270	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 2S: Existing Site - East



Summary for Subcatchment 3S: Proposed Site - West

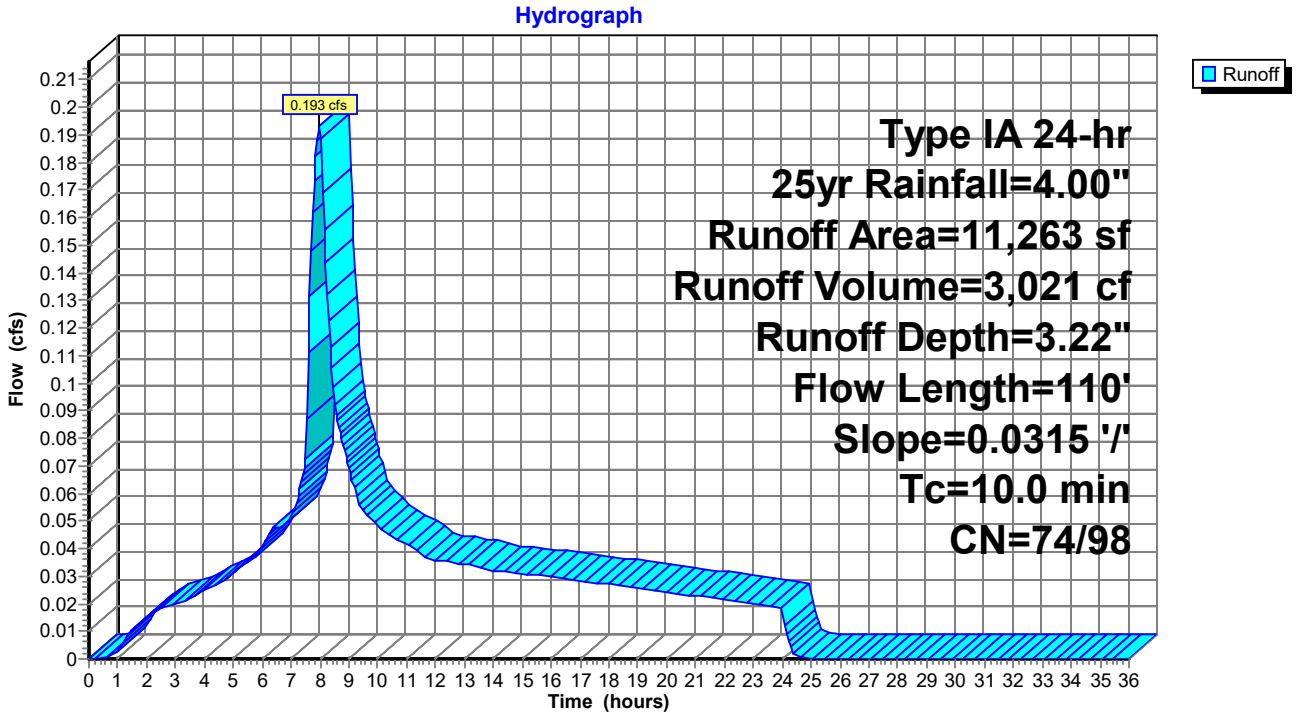
Runoff = 0.193 cfs @ 7.98 hrs, Volume= 3,021 cf, Depth= 3.22"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25yr Rainfall=4.00"

	Area (sf)	CN	Description
*	8,428	98	Parking Lot
*	2,835	74	Landscaping
	11,263	92	Weighted Average
	2,835	74	25.17% Pervious Area
	8,428	98	74.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	20	0.0315	1.08		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
0.4	90	0.0315	3.60		**Shallow Concentrated Flow, Parking Lot** Paved Kv= 20.3 fps
0.7	110	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 3S: Proposed Site - West



Summary for Subcatchment 4S: Proposed Site - East

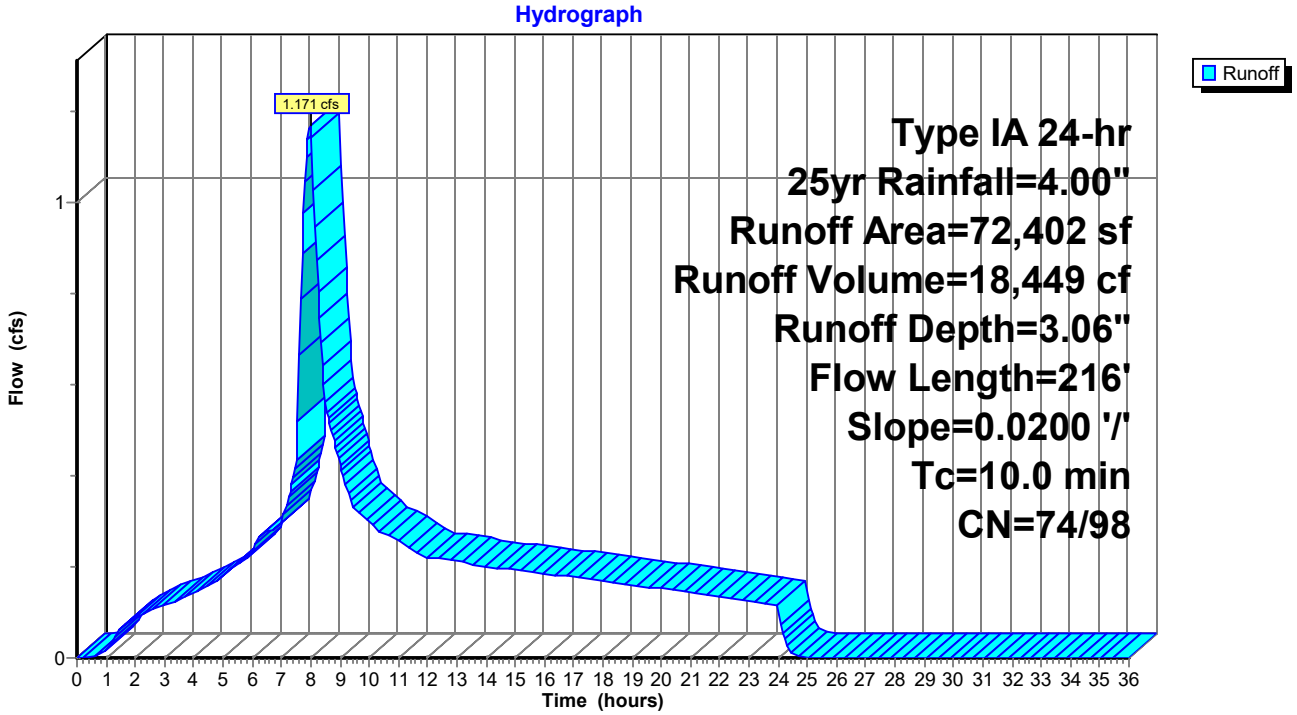
Runoff = 1.171 cfs @ 7.98 hrs, Volume= 18,449 cf, Depth= 3.06"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25yr Rainfall=4.00"

	Area (sf)	CN	Description
*	10,847	98	Building
*	29,742	98	Asphalt
*	8,202	98	Concrete
*	23,611	74	Landscaping
	72,402	90	Weighted Average
	23,611	74	32.61% Pervious Area
	48,791	98	67.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	20	0.0200	0.90		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
1.1	196	0.0200	2.87		**Shallow Concentrated Flow, Parking Lot to CB** Paved Kv= 20.3 fps
1.5	216	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 4S: Proposed Site - East



Summary for Subcatchment 5S: Existing Area

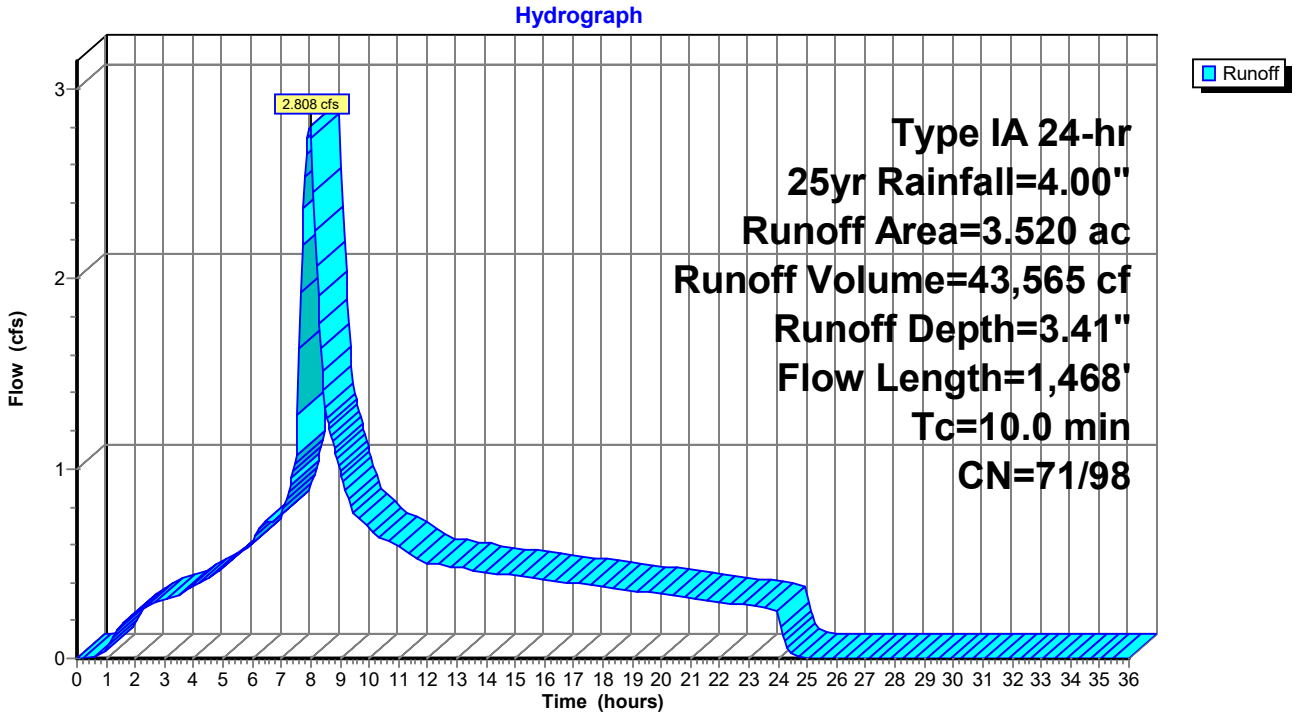
Runoff = 2.808 cfs @ 7.98 hrs, Volume= 43,565 cf, Depth= 3.41"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25yr Rainfall=4.00"

Area (ac)	CN	Description
3.520	94	Urban commercial, 85% imp, HSG C
0.528	71	15.00% Pervious Area
2.992	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0210	1.26		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
2.1	368	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	1,000	0.0130	2.60	3.192	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.030 Corrugated metal
9.8	1,468	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 5S: Existing Area



Summary for Subcatchment 6S: Existing Area

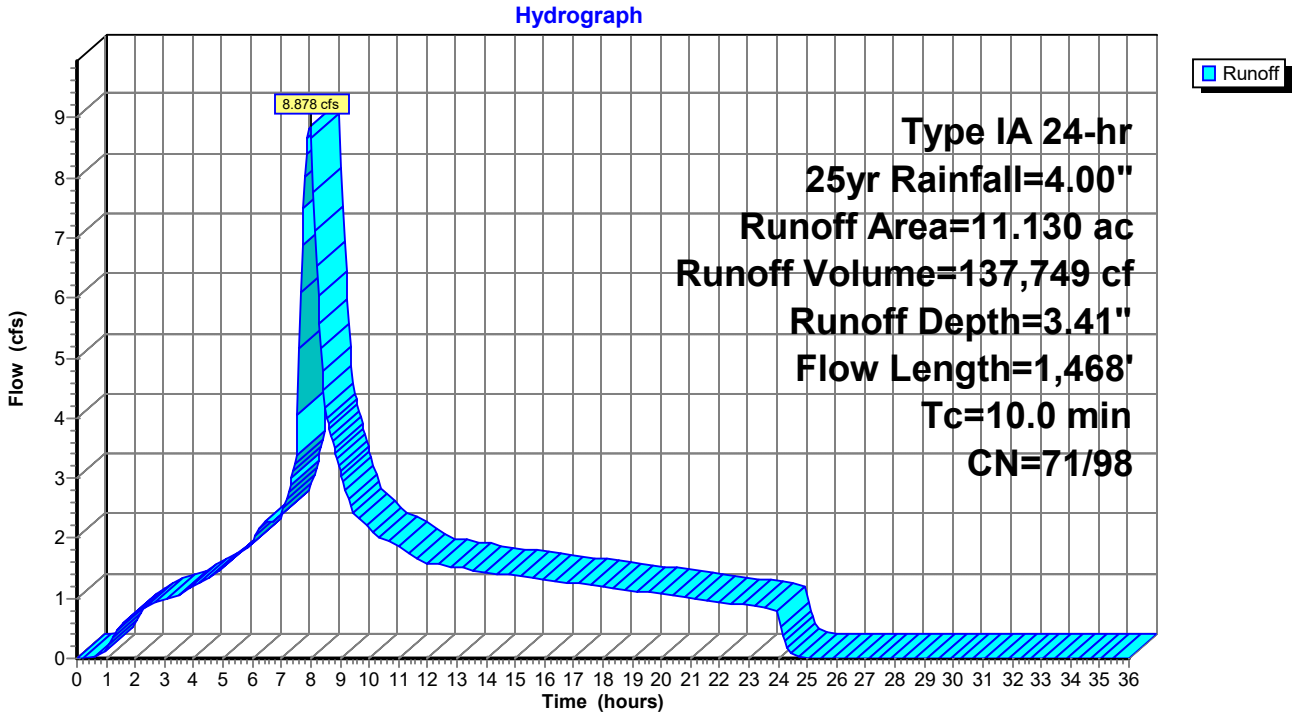
Runoff = 8.878 cfs @ 7.98 hrs, Volume= 137,749 cf, Depth= 3.41"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25yr Rainfall=4.00"

Area (ac)	CN	Description
11.130	94	Urban commercial, 85% imp, HSG C
1.670	71	15.00% Pervious Area
9.460	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0210	1.26		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
2.1	368	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	1,000	0.0130	2.60	3.192	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.030 Corrugated metal
9.8	1,468	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 6S: Existing Area



Summary for Subcatchment 7S: Existing Area

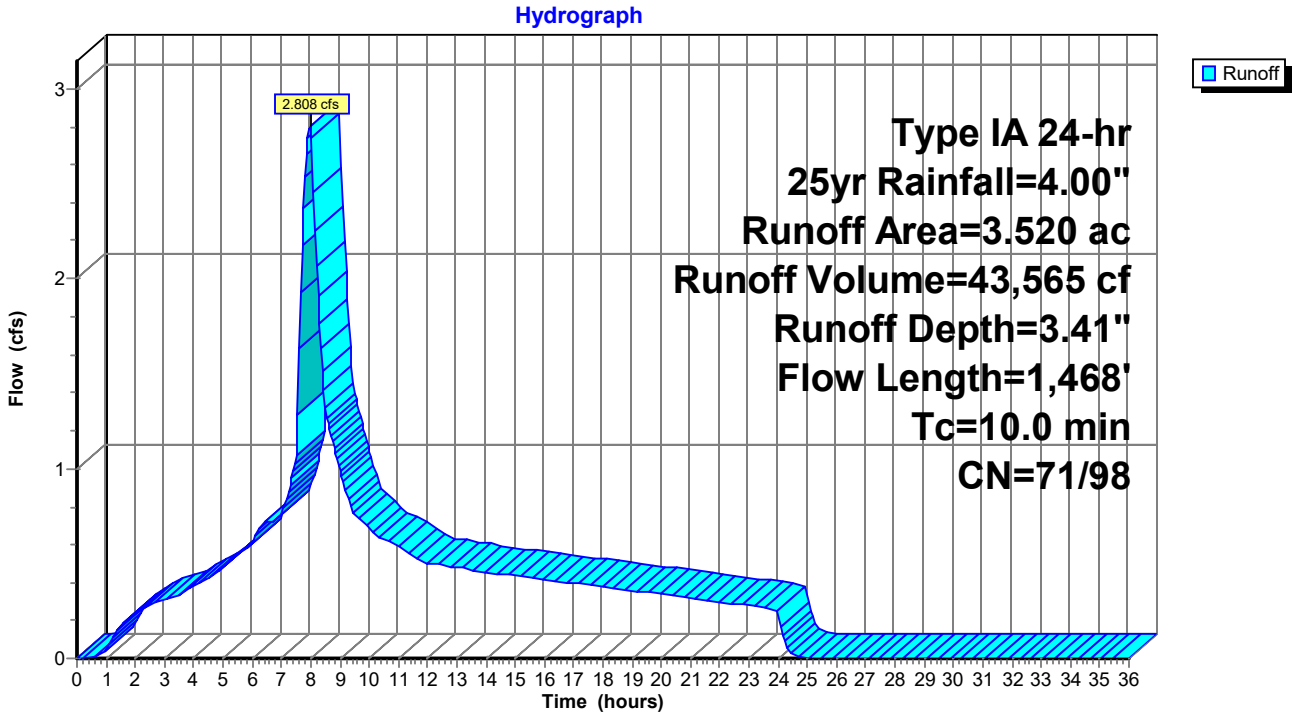
Runoff = 2.808 cfs @ 7.98 hrs, Volume= 43,565 cf, Depth= 3.41"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25yr Rainfall=4.00"

Area (ac)	CN	Description
3.520	94	Urban commercial, 85% imp, HSG C
0.528	71	15.00% Pervious Area
2.992	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0210	1.26		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
2.1	368	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	1,000	0.0130	2.60	3.192	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.030 Corrugated metal
9.8	1,468	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 7S: Existing Area



Summary for Subcatchment 8S: Existing Area

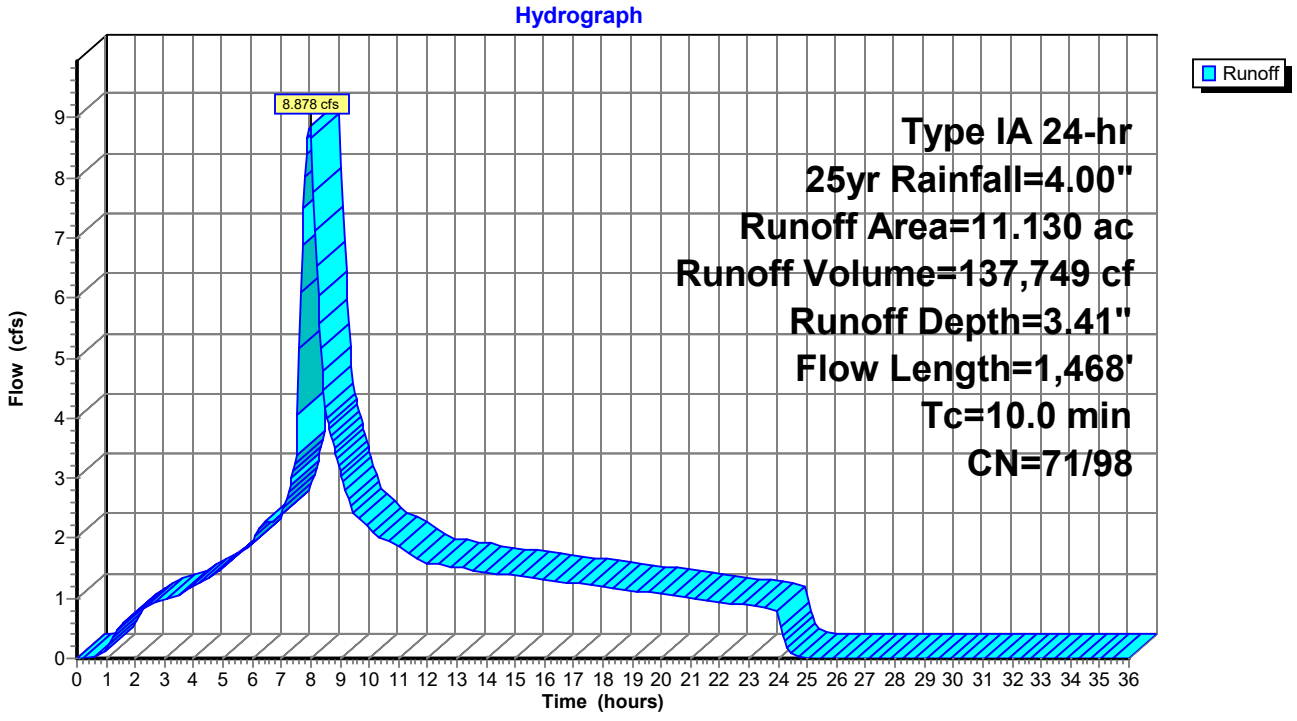
Runoff = 8.878 cfs @ 7.98 hrs, Volume= 137,749 cf, Depth= 3.41"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25yr Rainfall=4.00"

Area (ac)	CN	Description
11.130	94	Urban commercial, 85% imp, HSG C
1.670	71	15.00% Pervious Area
9.460	98	85.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0210	1.26		**Sheet Flow, Sheet** Smooth surfaces n= 0.011 P2= 2.60"
2.1	368	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.4	1,000	0.0130	2.60	3.192	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.030 Corrugated metal
9.8	1,468	Total, Increased to minimum Tc = 10.0 min			

Subcatchment 8S: Existing Area



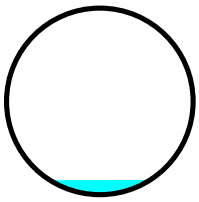
Summary for Reach 6R: Brutscher - 18"

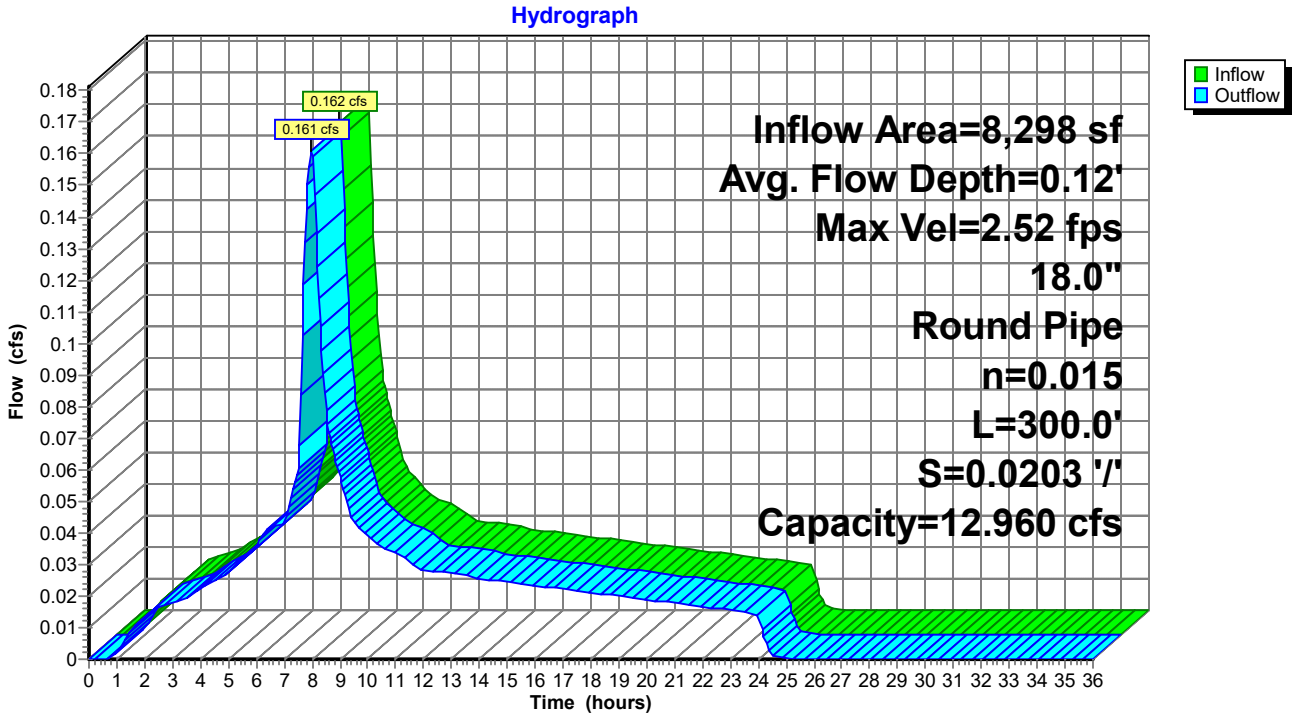
Inflow Area = 8,298 sf, 92.31% Impervious, Inflow Depth = 3.60" for 25yr event
Inflow = 0.162 cfs @ 7.98 hrs, Volume= 2,488 cf
Outflow = 0.161 cfs @ 7.99 hrs, Volume= 2,488 cf, Atten= 1%, Lag= 0.7 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.52 fps, Min. Travel Time= 2.0 min
Avg. Velocity = 1.42 fps, Avg. Travel Time= 3.5 min

Peak Storage= 19 cf @ 7.99 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.960 cfs

18.0" Round Pipe
n= 0.015
Length= 300.0' Slope= 0.0203 '/'
Inlet Invert= 212.78', Outlet Invert= 206.70'





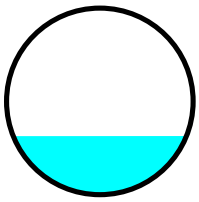
Summary for Reach 7R: HWY 99 - 21"

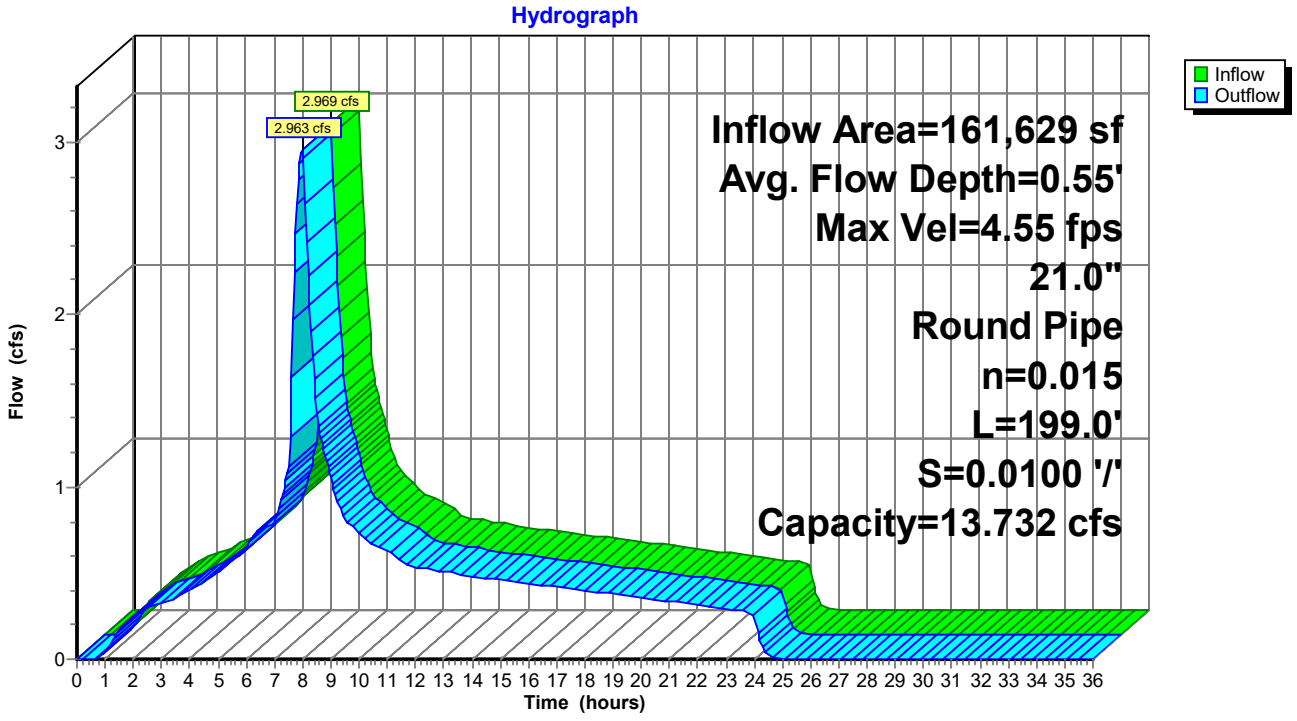
Inflow Area = 161,629 sf, 85.38% Impervious, Inflow Depth = 3.42" for 25yr event
Inflow = 2.969 cfs @ 7.98 hrs, Volume= 46,053 cf
Outflow = 2.963 cfs @ 7.98 hrs, Volume= 46,053 cf, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.55 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 2.54 fps, Avg. Travel Time= 1.3 min

Peak Storage= 129 cf @ 7.98 hrs
Average Depth at Peak Storage= 0.55'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 199.0' Slope= 0.0100 '/'
Inlet Invert= 206.61', Outlet Invert= 204.62'





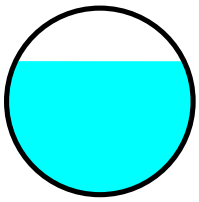
Summary for Reach 8R: HWY 99 - 21"

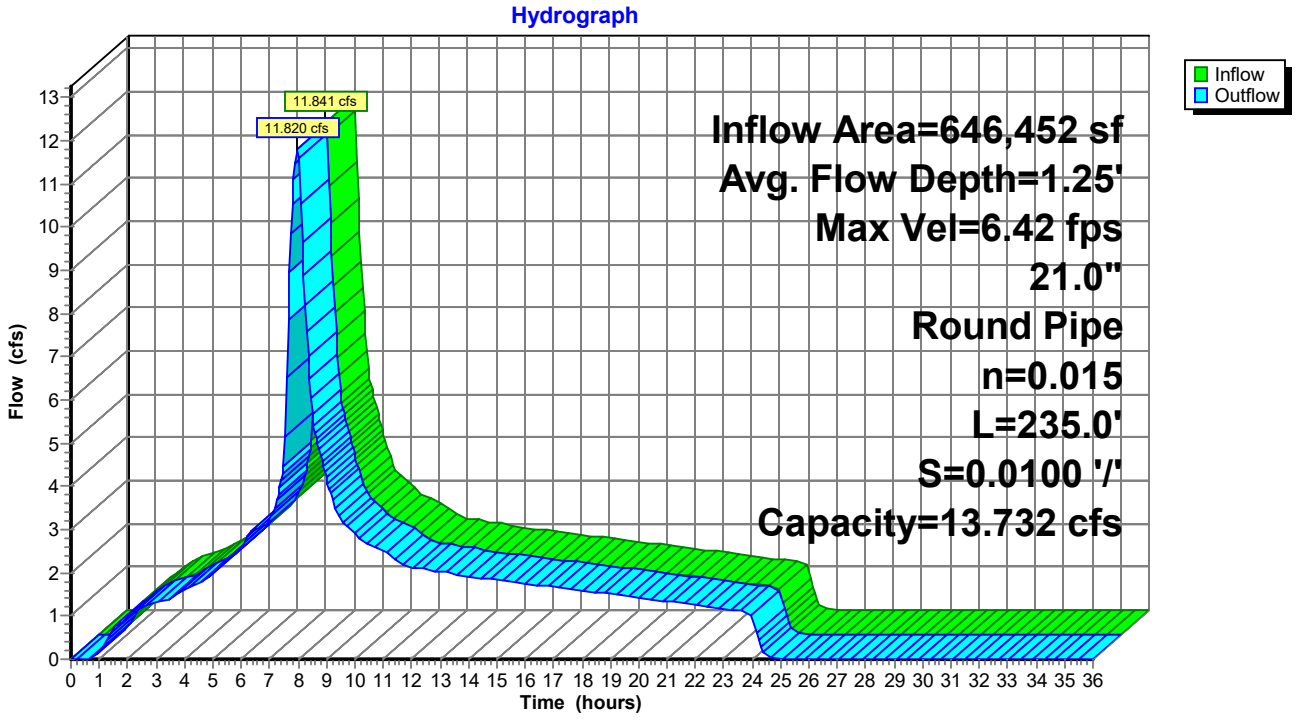
Inflow Area = 646,452 sf, 85.09% Impervious, Inflow Depth = 3.41" for 25yr event
Inflow = 11.841 cfs @ 7.98 hrs, Volume= 183,802 cf
Outflow = 11.820 cfs @ 7.98 hrs, Volume= 183,802 cf, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.42 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 3.76 fps, Avg. Travel Time= 1.0 min

Peak Storage= 433 cf @ 7.98 hrs
Average Depth at Peak Storage= 1.25'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 235.0' Slope= 0.0100 '/'
Inlet Invert= 204.62', Outlet Invert= 202.27'





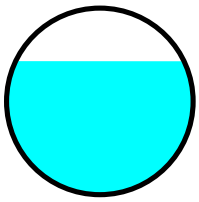
Summary for Reach 9R: HWY 99 -21"

Inflow Area = 646,452 sf, 85.09% Impervious, Inflow Depth = 3.41" for 25yr event
Inflow = 11.820 cfs @ 7.98 hrs, Volume= 183,802 cf
Outflow = 11.814 cfs @ 7.99 hrs, Volume= 183,802 cf, Atten= 0%, Lag= 0.1 min

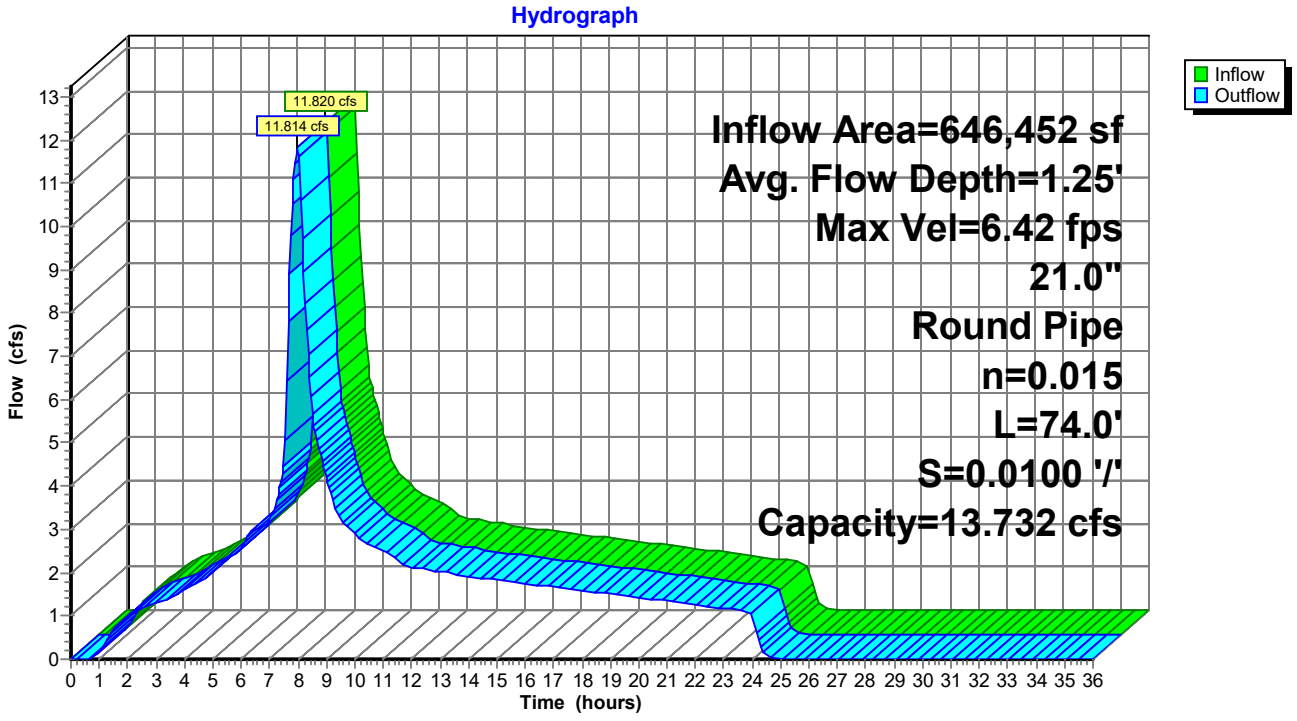
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.42 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.75 fps, Avg. Travel Time= 0.3 min

Peak Storage= 136 cf @ 7.99 hrs
Average Depth at Peak Storage= 1.25'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 74.0' Slope= 0.0100 '/'
Inlet Invert= 202.27', Outlet Invert= 201.53'



Reach 9R: HWY 99 -21"



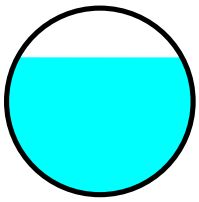
Summary for Reach 10R: HWY 99 - 21"

Inflow Area = 646,452 sf, 85.09% Impervious, Inflow Depth = 3.41" for 25yr event
Inflow = 11.814 cfs @ 7.99 hrs, Volume= 183,802 cf
Outflow = 11.787 cfs @ 7.99 hrs, Volume= 183,802 cf, Atten= 0%, Lag= 0.5 min

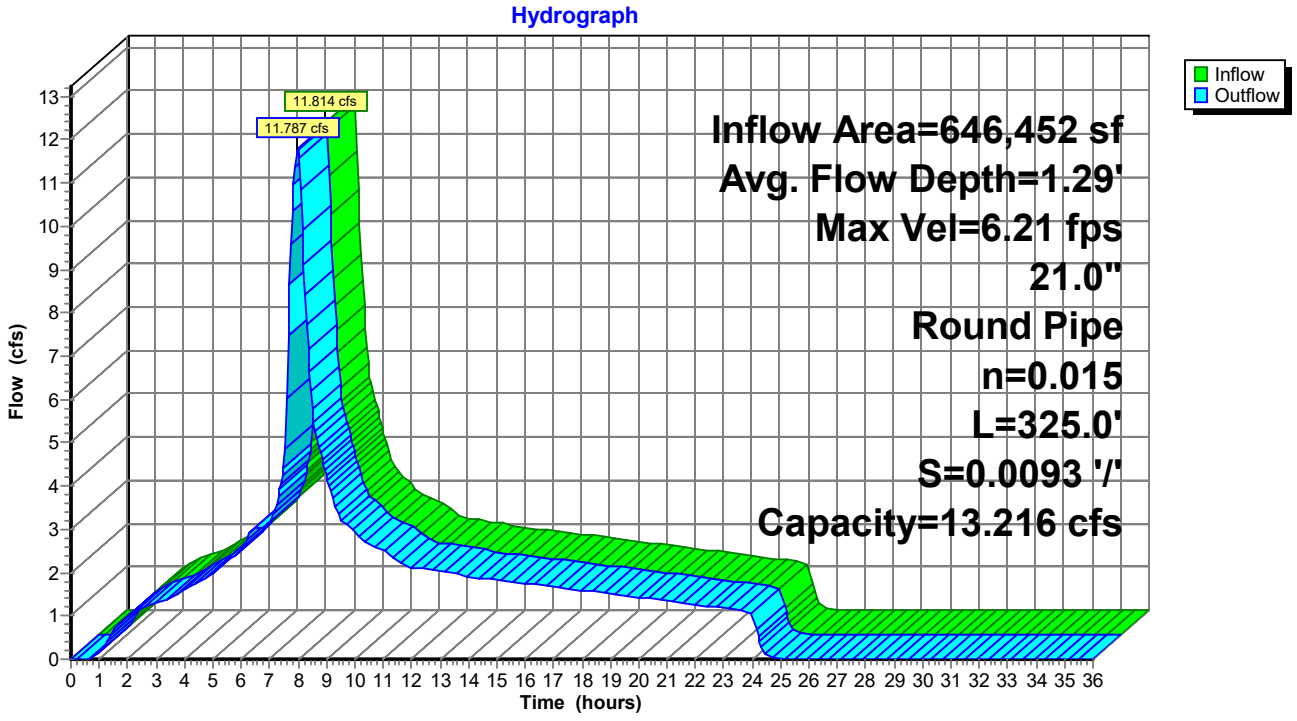
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.21 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 3.61 fps, Avg. Travel Time= 1.5 min

Peak Storage= 617 cf @ 7.99 hrs
Average Depth at Peak Storage= 1.29'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.216 cfs

21.0" Round Pipe
n= 0.015 Concrete sewer w/manholes & inlets
Length= 325.0' Slope= 0.0093 '/'
Inlet Invert= 201.43', Outlet Invert= 198.42'



Reach 10R: HWY 99 - 21"



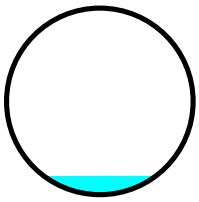
Summary for Reach 11R: Brutscher - 18"

Inflow Area = 83,665 sf, 68.39% Impervious, Inflow Depth > 2.44" for 25yr event
Inflow = 0.281 cfs @ 11.54 hrs, Volume= 17,016 cf
Outflow = 0.281 cfs @ 11.56 hrs, Volume= 17,011 cf, Atten= 0%, Lag= 1.2 min

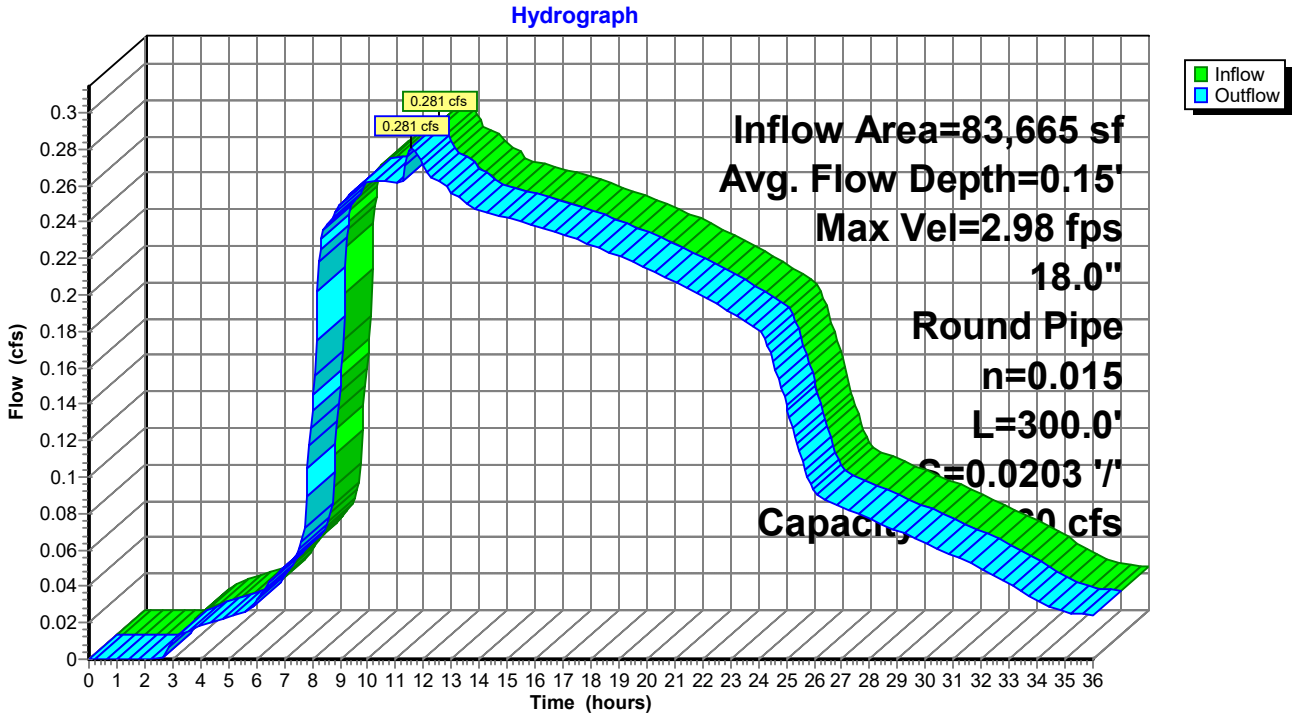
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.98 fps, Min. Travel Time= 1.7 min
Avg. Velocity = 2.27 fps, Avg. Travel Time= 2.2 min

Peak Storage= 28 cf @ 11.56 hrs
Average Depth at Peak Storage= 0.15'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.960 cfs

18.0" Round Pipe
n= 0.015
Length= 300.0' Slope= 0.0203 '/'
Inlet Invert= 212.78', Outlet Invert= 206.70'



Reach 11R: Brutscher - 18"



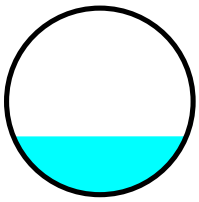
Summary for Reach 12R: HWY 99 - 21"

Inflow Area = 236,996 sf, 79.14% Impervious, Inflow Depth > 3.07" for 25yr event
Inflow = 2.941 cfs @ 7.98 hrs, Volume= 60,576 cf
Outflow = 2.935 cfs @ 7.99 hrs, Volume= 60,571 cf, Atten= 0%, Lag= 0.3 min

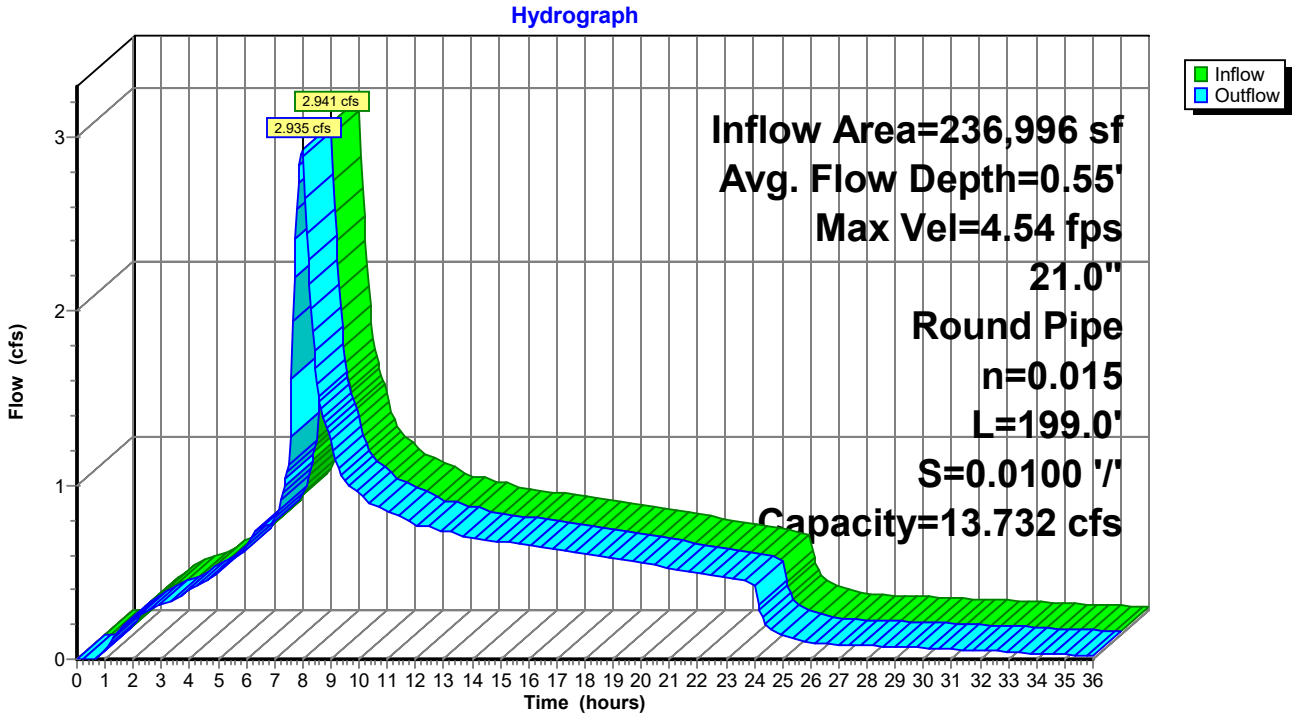
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.54 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 2.39 fps, Avg. Travel Time= 1.4 min

Peak Storage= 129 cf @ 7.99 hrs
Average Depth at Peak Storage= 0.55'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 199.0' Slope= 0.0100 '/'
Inlet Invert= 206.61', Outlet Invert= 204.62'



Reach 12R: HWY 99 - 21"



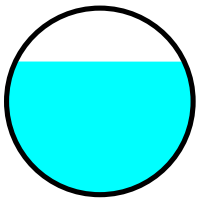
Summary for Reach 13R: HWY 99 - 21"

Inflow Area = 721,819 sf, 83.07% Impervious, Inflow Depth > 3.30" for 25yr event
Inflow = 11.812 cfs @ 7.98 hrs, Volume= 198,320 cf
Outflow = 11.790 cfs @ 7.98 hrs, Volume= 198,315 cf, Atten= 0%, Lag= 0.3 min

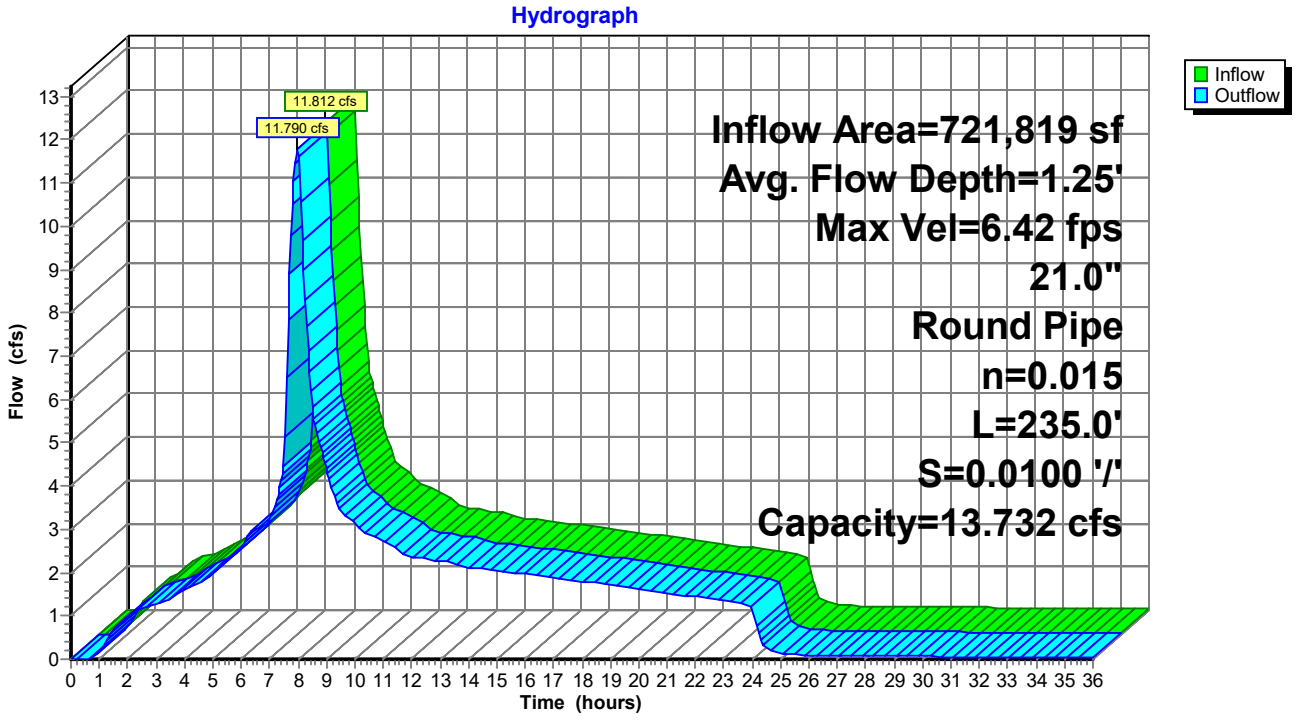
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.42 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 3.19 fps, Avg. Travel Time= 1.2 min

Peak Storage= 432 cf @ 7.98 hrs
Average Depth at Peak Storage= 1.25'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 235.0' Slope= 0.0100 '/'
Inlet Invert= 204.62', Outlet Invert= 202.27'



Reach 13R: HWY 99 - 21"



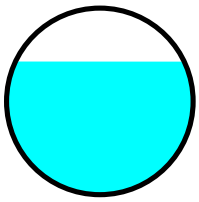
Summary for Reach 14R: HWY 99 - 21"

Inflow Area = 721,819 sf, 83.07% Impervious, Inflow Depth > 3.30" for 25yr event
Inflow = 11.790 cfs @ 7.98 hrs, Volume= 198,315 cf
Outflow = 11.785 cfs @ 7.99 hrs, Volume= 198,313 cf, Atten= 0%, Lag= 0.1 min

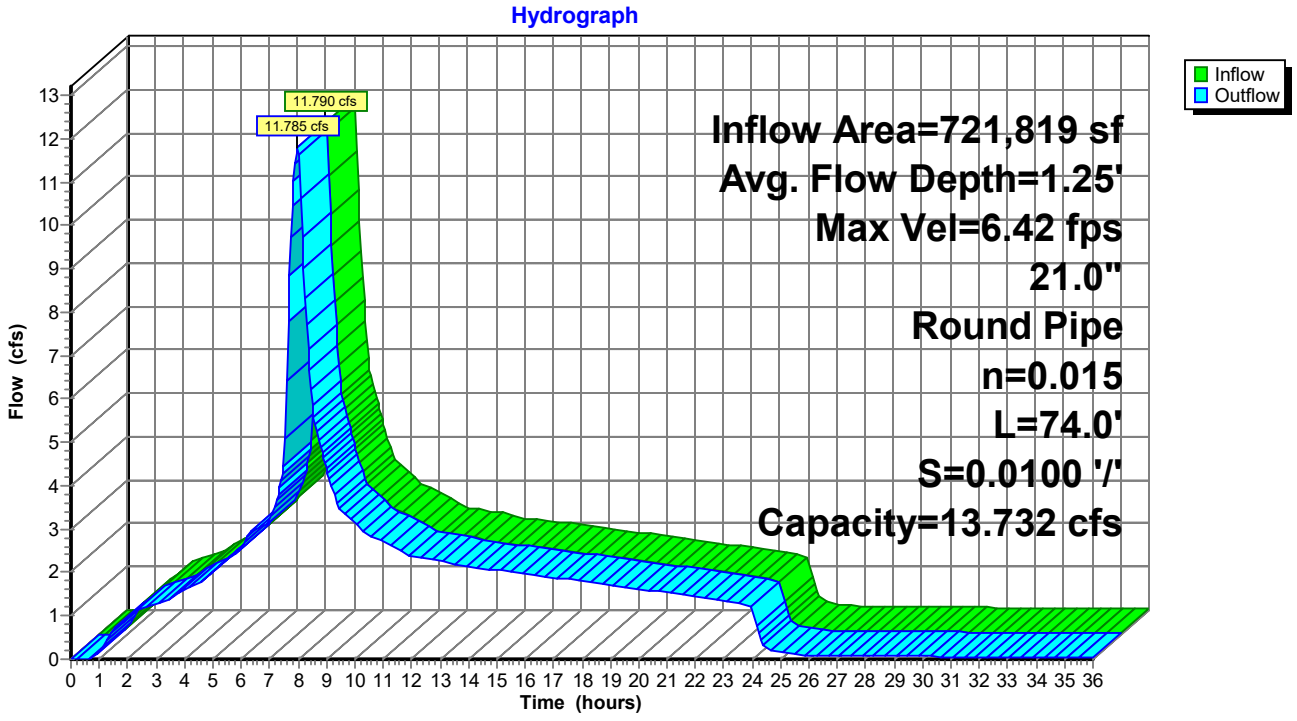
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.42 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.19 fps, Avg. Travel Time= 0.4 min

Peak Storage= 136 cf @ 7.99 hrs
Average Depth at Peak Storage= 1.25'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.732 cfs

21.0" Round Pipe
n= 0.015
Length= 74.0' Slope= 0.0100 '/'
Inlet Invert= 202.27', Outlet Invert= 201.53'



Reach 14R: HWY 99 - 21"



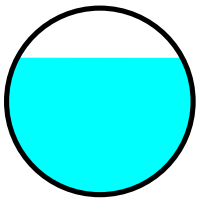
Summary for Reach 15R: HWY 99 - 21"

Inflow Area = 721,819 sf, 83.07% Impervious, Inflow Depth > 3.30" for 25yr event
Inflow = 11.785 cfs @ 7.99 hrs, Volume= 198,313 cf
Outflow = 11.757 cfs @ 8.00 hrs, Volume= 198,306 cf, Atten= 0%, Lag= 0.5 min

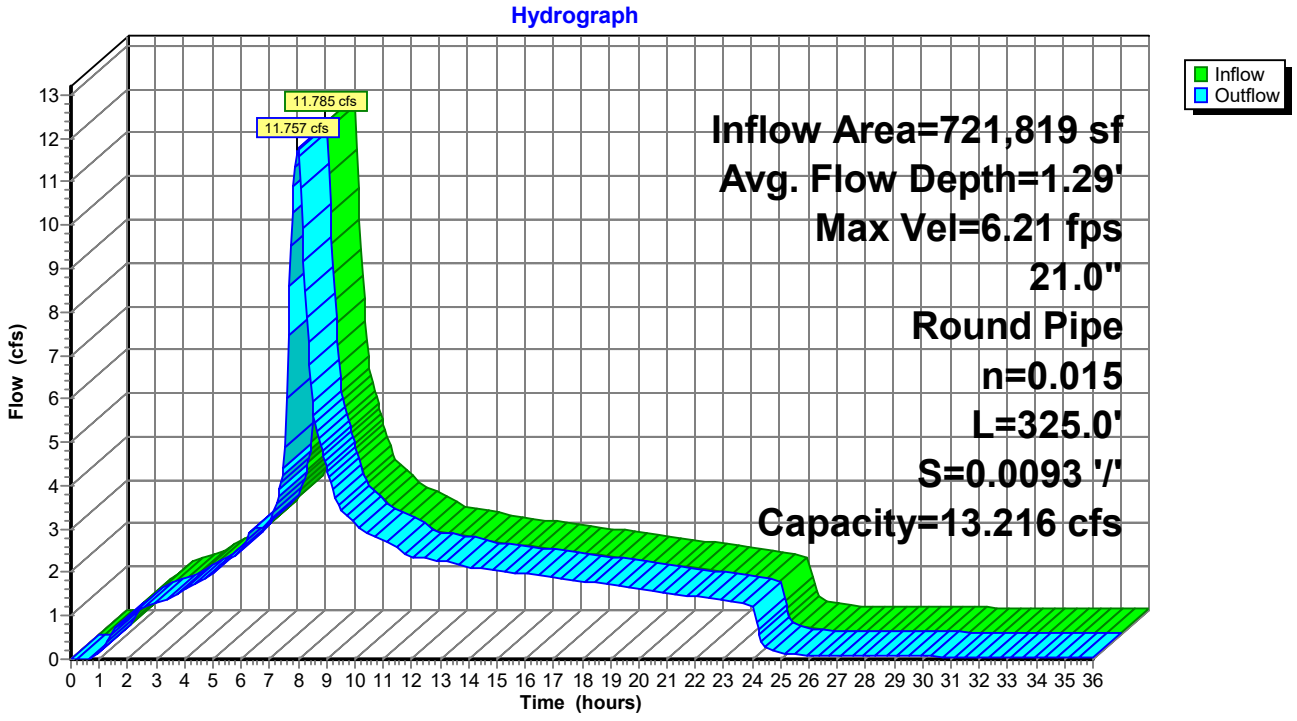
Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.21 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 3.11 fps, Avg. Travel Time= 1.7 min

Peak Storage= 615 cf @ 8.00 hrs
Average Depth at Peak Storage= 1.29'
Bank-Full Depth= 1.75' Flow Area= 2.4 sf, Capacity= 13.216 cfs

21.0" Round Pipe
n= 0.015 Concrete sewer w/manholes & inlets
Length= 325.0' Slope= 0.0093 '/'
Inlet Invert= 201.43', Outlet Invert= 198.42'



Reach 15R: HWY 99 - 21"



Summary for Pond 1P: Stormwater Planter

Inflow Area = 11,263 sf, 74.83% Impervious, Inflow Depth = 3.22" for 25yr event
Inflow = 0.193 cfs @ 7.98 hrs, Volume= 3,021 cf
Outflow = 0.133 cfs @ 8.26 hrs, Volume= 2,941 cf, Atten= 31%, Lag= 16.5 min
Primary = 0.133 cfs @ 8.26 hrs, Volume= 2,941 cf

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 224.62' @ 8.26 hrs Surf.Area= 160 sf Storage= 499 cf

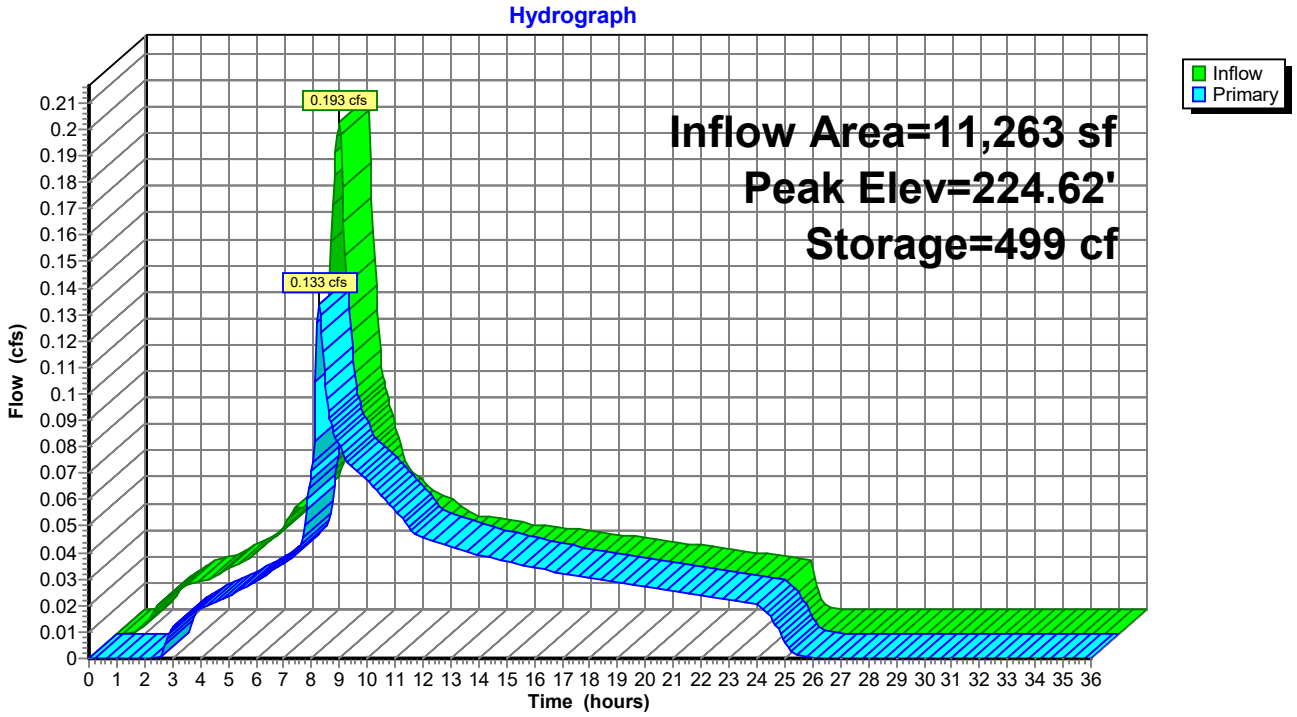
Plug-Flow detention time= 100.8 min calculated for 2,937 cf (97% of inflow)
Center-of-Mass det. time= 81.1 min (768.6 - 687.6)

Volume	Invert	Avail.Storage	Storage Description
#1	221.50'	560 cf	**16.00'W x 10.00'L x 3.50'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	222.00'	**1.2" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	223.51'	**0.8" Vert. Orifice/Grate** C= 0.600
#3	Primary	224.40'	**1.0" Vert. Orifice/Grate** C= 0.600
#4	Primary	224.50'	**6.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.133 cfs @ 8.26 hrs HW=224.62' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.061 cfs @ 7.79 fps)
- **2=Orifice/Grate** (Orifice Controls 0.017 cfs @ 5.00 fps)
- **3=Orifice/Grate** (Orifice Controls 0.011 cfs @ 2.03 fps)
- **4=Orifice/Grate** (Orifice Controls 0.043 cfs @ 1.18 fps)

Pond 1P: Stormwater Planter



Summary for Pond 2P: Stormwater Pond

Inflow Area = 72,402 sf, 67.39% Impervious, Inflow Depth = 3.06" for 25yr event
Inflow = 1.171 cfs @ 7.98 hrs, Volume= 18,449 cf
Outflow = 0.233 cfs @ 11.60 hrs, Volume= 14,075 cf, Atten= 80%, Lag= 217.4 min
Primary = 0.233 cfs @ 11.60 hrs, Volume= 14,075 cf

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 225.26' @ 11.60 hrs Surf.Area= 2,212 sf Storage= 8,316 cf

Plug-Flow detention time= 563.7 min calculated for 14,075 cf (76% of inflow)
Center-of-Mass det. time= 410.0 min (1,105.5 - 695.5)

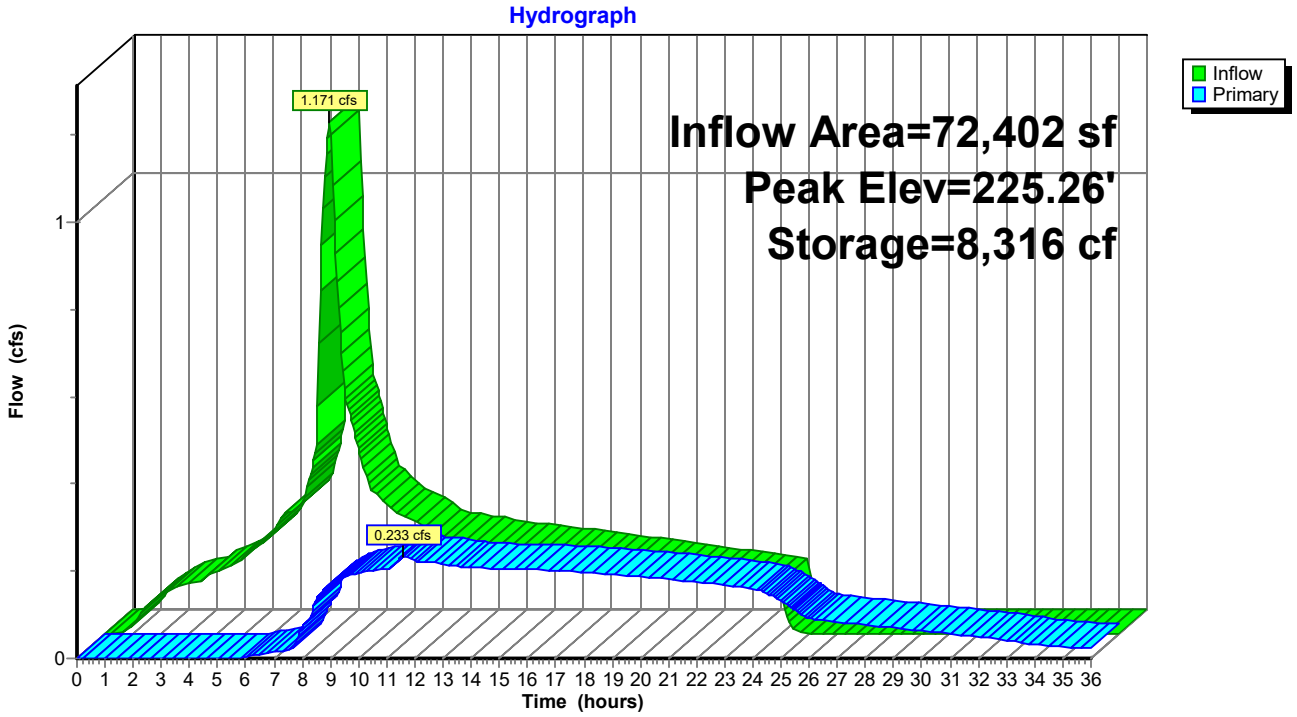
Volume	Invert	Avail.Storage	Storage Description
#1	221.50'	8,848 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
221.50	2,212	0	0
225.50	2,212	8,848	8,848

Device	Routing	Invert	Outlet Devices
#1	Primary	222.50'	**0.9" Vert. Orifice/Grate** C= 0.600
#2	Primary	223.15'	**0.5" Vert. Orifice/Grate** C= 0.600
#3	Primary	223.50'	**1.5" Vert. Orifice/Grate** C= 0.600
#4	Primary	224.35'	**1.9" Vert. Orifice/Grate** C= 0.600
#5	Primary	225.25'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.232 cfs @ 11.60 hrs HW=225.26' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.035 cfs @ 7.94 fps)
- **2=Orifice/Grate** (Orifice Controls 0.009 cfs @ 6.96 fps)
- **3=Orifice/Grate** (Orifice Controls 0.077 cfs @ 6.27 fps)
- **4=Orifice/Grate** (Orifice Controls 0.086 cfs @ 4.39 fps)
- **5=Orifice/Grate** (Weir Controls 0.024 cfs @ 0.32 fps)

Pond 2P: Stormwater Pond



ATTACHMENT B

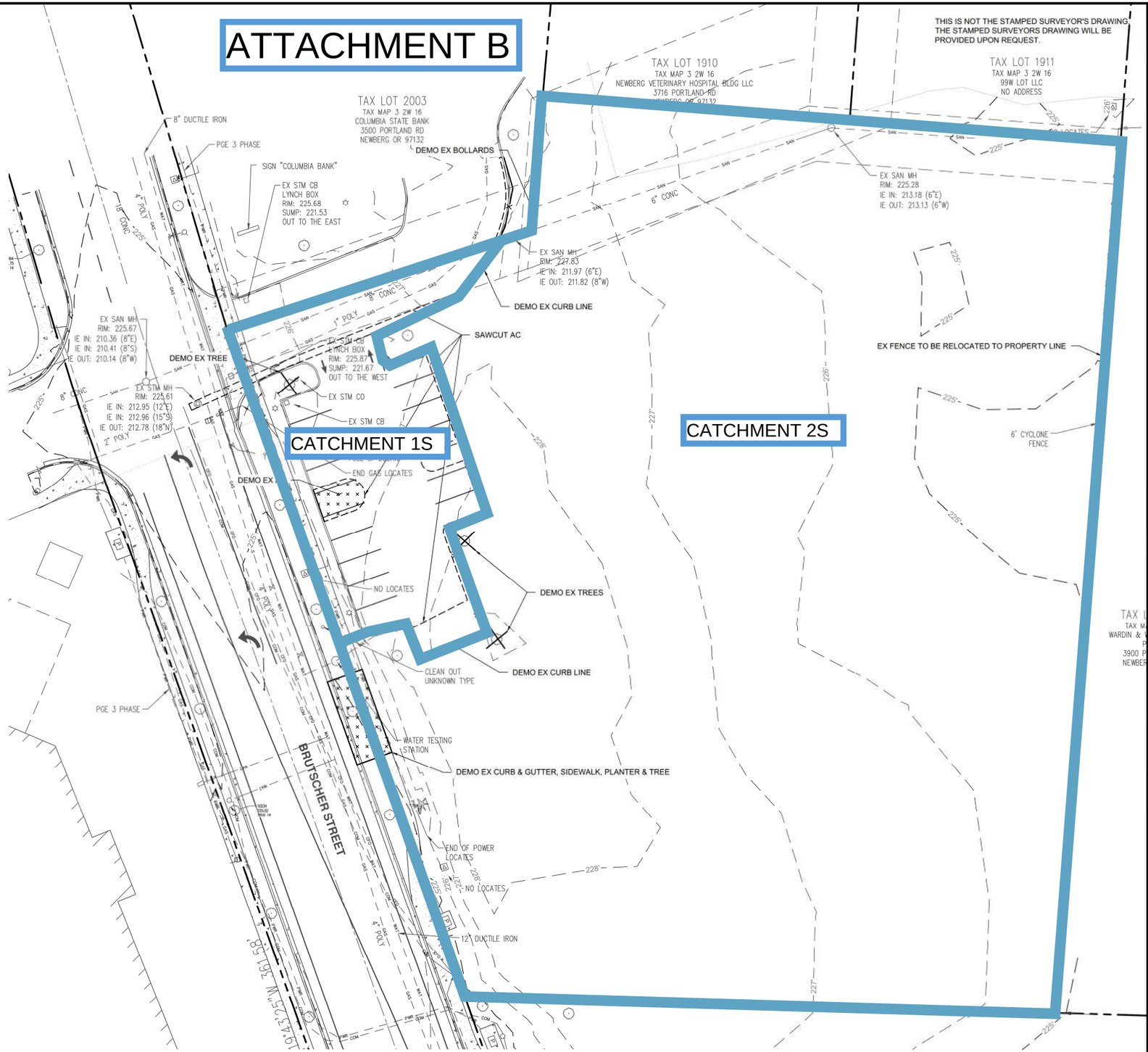
NOTES:

1. UTILITIES SHOWN ARE BASED ON UNDERGROUND UTILITY LOCATE MARKINGS AS PROVIDED BY OTHERS, PROVIDED PER UTILITY LOCATE TICKET NUMBER 17176043. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND LOCATES REPRESENT THE ONLY UTILITIES IN THE AREA. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.
2. FIELD WORK WAS CONDUCTED JULY 25–26, 2017 AND FEBRUARY 07, 2020.
3. VERTICAL DATUM: ELEVATIONS ARE BASED ON NAVD88 DERIVED FROM THE TRIMBLE NOW VRS.
4. HORIZONTAL DATUM: A LOCAL DATUM PLANE DERIVED FROM OREGON STATE PLANE NORTH 3601 NAD83 (2011) EPOCH 2010.0000 PROJECT MEAN COMBINED GROUND SCALE FACTOR 1.000109534 AT A CALCULATED CENTRAL PROJECT POINT WITH INTERNATIONAL FOOT GRID VALUES OF A NORTHING OF 607,562.07, AND A EASTING OF 7,573,991.16, AND MERIDIAN CONVERGENCE ANGLE OF −1°43'53" AT THE CENTRAL POINT. OREGON STATE PLANE DATUM IS DERIVED BY TRIMBLE VRS NOW NETWORK.
5. CONTOUR INTERVAL IS 1 FOOT.
6. TREES WITH DIAMETER OF 6" AND GREATER ARE SHOWN. TREE DIAMETERS WERE MEASURED UTILIZING A DIAMETER TAPE AT BREAST HEIGHT. TREE INFORMATION IS SUBJECT TO CHANGE UPON ARBORIST INSPECTION.

LEGEND

	EXISTING		EXISTING
DECIDUOUS TREE	○	STORM SEWER CLEAN OUT	○
CONIFEROUS TREE	✳	STORM SEWER CATCH BASIN	□
FIRE HYDRANT		STORM SEWER AREA DRAIN	□
WATER BLOWOFF		STORM SEWER MANHOLE	◎
WATER METER	▭	GAS METER	⊠
WATER VALVE	⋈	GAS VALVE	◫
DOUBLE CHECK VALVE	⊠	GUY WIRE ANCHOR	←
AIR RELEASE VALVE		UTILITY POLE	○–
SANITARY SEWER CLEAN OUT	○	POWER VAULT	P
SANITARY SEWER MANHOLE	◯	POWER JUNCTION BOX	△
SIGN	⊣○	POWER PEDESTAL	▫
STREET LIGHT	☼	COMMUNICATIONS VAULT	C
MAILBOX	MB	COMMUNICATIONS JUNCTION BOX	△
		COMMUNICATIONS RISER	⬠

	EXISTING
RIGHT-OF-WAY LINE	
BOUNDARY LINE	
PROPERTY LINE	
CENTERLINE	
DITCH	
CURB	
EDGE OF PAVEMENT	
EASEMENT	
FENCE LINE	
GRAVEL EDGE	
POWER LINE	PWR
OVERHEAD WIRE	OHW
COMMUNICATIONS LINE	COM
FIBER OPTIC LINE	CFO
GAS LINE	GAS
STORM SEWER LINE	
SANITARY SEWER LINE	SAN
WATER LINE	WAT



EXISTING CONDITIONS + DEMO

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20 40 60

(IN FEET)

1 inch = 20 ft.

SEE SURVEYOR'S STAMPED DRAWING

H B H
501 E First Street
Newberg, Oregon 97132
CONSULTING 503/554-9553 ■ fax 503/537-9554
ENGINEERS email: mail@hbh-consulting.com

Designed By: ARB | Drawn By: ARB | Checked By: ARC | Submittal No: PRELIMINARY

File: L:\2020-006\4-Design\DWG\1 - Cover, Notes, Existing & Demo.dwg

REV.	DATE	DESCRIPTION	BY

0" 1" IF THIS LINE IS NOT 1 INCH SCALE IS NOT AS SHOWN

HAWKINS COMPANIES, LLC
855 BROAD ST. SUITE 300, BOISE ID 83702

NEWBERG FAIRFIELD INN
PARCELS 3216, 1900, + 2002, NEWBERG OR 97132

EXISTING CONDITIONS + DEMO

Sheet No. G3 | 3 of 11

Date: 3/2/2020

2020-006

ATTACHMENT C

CATCHMENT 5S (7S)
3.52 ACRES

7R (12R)

8R (13R)

9R (14R)

6R (11R)

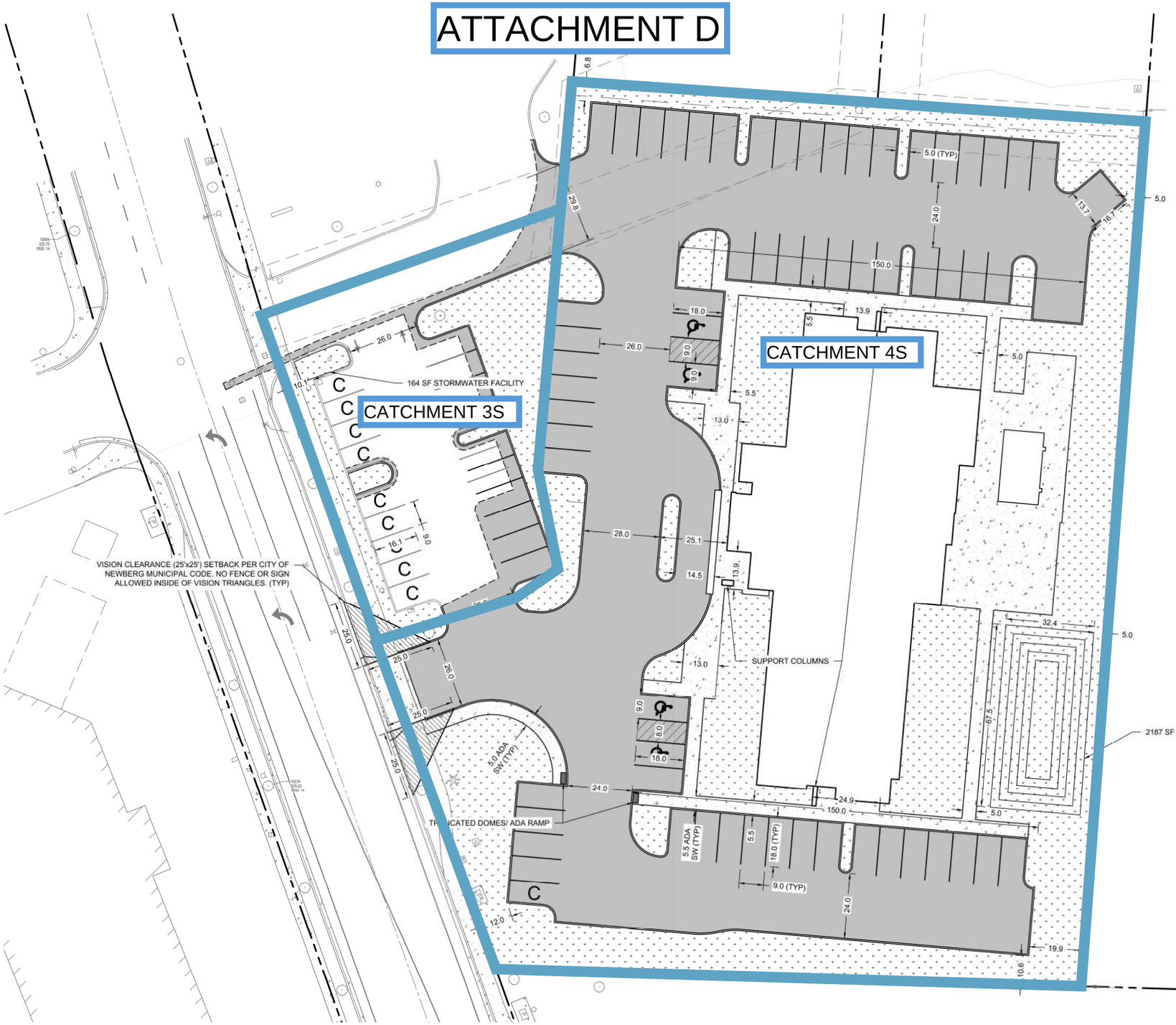
10R (15R)

CATCHMENT 6S (8S)
11.13 ACRES

PROJECT SITE
CATCHMENTS 1S-4S

Google Earth

ATTACHMENT D



SITE PLAN

SCALE: 1" = 20'

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

REGISTERED PROFESSIONAL ENGINEER
76347PE
OREGON
ANDREW R. CHERNISHOV
EXPIRES: 12/31/2019
PRELIMINARY

H B H CONSULTING ENGINEERS
501 E First Street
Newberg, Oregon 97132
503/554-9553 ■ fax 503/537-9554
email: mail@hbh-consulting.com

Designed By: ARB | Drawn By: ARB | Checked By: ARC | Submittal No: PRELIMINARY
File: L:\2020-0064-Design\DWG\2 - Site Plan.dwg

REV	DATE	DESCRIPTION	BY

0" 1"
IF THIS LINE IS NOT 1 INCH SCALE IS NOT AS SHOWN

HAWKINS COMPANIES, LLC
855 BROAD ST. SUITE 300, BOISE ID 83702

NEWBERG FAIRFIELD INN
PARCELS 3216, 1900, + 2002, NEWBERG OR 97132

SITE PLAN

Sheet No. C1 | 4 of 11
Date 3/2/2020
2020-006

First American Title Insurance Company

775 NE Evans Street
McMinnville, OR 97128
Phn - (503)376-7363
Fax - (866)800-7294

Order No.: 1032-3323376
December 17, 2021

FOR QUESTIONS REGARDING YOUR CLOSING, PLEASE CONTACT:

KEELEY DRISCOLL, Escrow Officer/Closer
Phone: (503)538-7361 - Fax: (866)800-7290 - Email:kdriscoll@firstam.com
First American Title Insurance Company
515 E Hancock, Newberg, OR 97132

FOR ALL QUESTIONS REGARDING THIS PRELIMINARY REPORT, PLEASE CONTACT:

Clayton Carter, Title Officer
Phone: (503)376-7363 - Fax: (866)800-7294 - Email: ctcarter@firstam.com

Supplemental Preliminary Title Report

County Tax Roll Situs Address: 0 E Portland Road, and 901 Brutscher Street E, Newberg, OR 97132

2006 ALTA Owners Standard Coverage	Liability	$	850,600.00	Premium	$	1,220.00 **BR**
2006 ALTA Owners Extended Coverage	Liability	$		Premium	$	
2006 ALTA Lenders Standard Coverage	Liability	$		Premium	$	
2006 ALTA Lenders Extended Coverage	Liability	$	TBD	Premium	$	TBD
Endorsement 9.10, 22				Premium	$	100.00
Govt Service Charge				Cost	$	40.00
Other				Cost	$	

Proposed Insured Lender: Lender To Be Determined

Proposed Borrower: Escape Lodging Company LLC

We are prepared to issue Title Insurance Policy or Policies of First American Title Insurance Company, a Nebraska Corporation in the form and amount shown above, insuring title to the following described land:

The land referred to in this report is described in Exhibit A attached hereto.

and as of December 15, 2021 at 8:00 a.m., title to the fee simple estate is vested in:

Werth Family LLC, an Oregon limited liability company, as to Parcel I; and Werth Investment I, LLC, an Oregon limited liability company, as to Parcel II

Subject to the exceptions, exclusions, and stipulations which are ordinarily part of such Policy form and the following:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.

2. Facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of the land or by making inquiry of persons in possession thereof.

3. Easements, or claims of easement, not shown by the public records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.

4. Any encroachment (of existing improvements located on the subject land onto adjoining land or of existing improvements located on adjoining land onto the subject land), encumbrance, violation, variation, or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the subject land.

5. Any lien, or right to a lien, for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the public records.

The exceptions to coverage 1-5 inclusive as set forth above will remain on any subsequently issued Standard Coverage Title Insurance Policy.

In order to remove these exceptions to coverage in the issuance of an Extended Coverage Policy the following items are required to be furnished to the Company; additional exceptions to coverage may be added upon review of such information:

A. Survey or alternative acceptable to the company
B. Affidavit regarding possession
C. Proof that there is no new construction or remodeling of any improvement located on the premises. In the event of new construction or remodeling the following is required:
   i. Satisfactory evidence that no construction liens will be filed; or
   ii. Adequate security to protect against actual or potential construction liens;
   iii. Payment of additional premiums as required by the Industry Rate Filing approved by the Insurance Division of the State of Oregon

6. Water rights, claims to water or title to water, whether or not such rights are a matter of public record.

7. Potential taxes due to disqualification for Farm Land use, in the amount of $9,730.81. (Affects Parcel I)

8. City liens, if any, of the City of Newberg.

   Note: There are no liens as of September 25, 2019. All outstanding utility and user fees are not liens and therefore are excluded from coverage.

9. The rights of the public in and to that portion of the premises herein described lying within the limits of streets, roads and highways.

10. Easement, including terms and provisions contained therein:
Recording Information: July 30, 1952, Book 166, Page 472, Deed Records
In Favor of: Portland General Electric Company, a corporation of Oregon, its successors and assigns
For: Easement and/or right-of-way

11. Declaration of Restrictions and Easements Agreement, including terms and provisions thereof.
Recorded: August 22, 1991, Film 258, Page 1185, Deed and Mortgage Records
(Affects Parcel II)

12. Mutual Roadway Development and Access and Sanitary Sewer Pipeline Easement Agreement and the terms and conditions thereof:
Between: The Commercial Bank, an Oregon banking corporation
And: Dean E. Werth, Elmer M. Werth, and The werth joint venture, an Oregon general partnership
Recording Information: January 05, 1996, Instrument No. 199600254, Deed and Mortgage Records
(Affects Parcel II)

13. Easement, including terms and provisions contained therein:
Recording Information: January 05, 1996, Instrument No. 199600255, Deed and Mortgage Records
In Favor of: The City of Newberg, a municipal corporation
For: Sanitary Sewer Pipeline
Affects: Parcel II

14. Declaration of Partial Access Easement Subject to Conditions Agreement and the terms and conditions thereof:
By: The Commercial Bank, an Oregon banking corporation
Recording Information: January 05, 1996, Instrument No. 199600256, Deed and Mortgage Records

(Affects Parcel II)

15. Easement, including terms and provisions contained therein:
Recording Information: November , 1996, Instrument No. 199618265, Deed and Mortgage Records
Granted to: City of Newberg, a municipal corporation
For: Utility
Affects: Parcel I

16. Easement Agreement and the terms and conditions thereof:
Between: Marion E. Wardin and Ila J. Wardin
And: Newberg Veterinary Clinic, an Oregon partnership composed of Randall J. Matthiesen and Mark Weber and Randall J. Mattheisen and Marsha A. Matthiesen as to an undivided one-half interest, Dallas J. Hymans, as to an undivided one-fourth interest, and Betty J. Heckman, as to an undivided one-fourth interest
Recording Information: November 05, 1996, Instrument No. 199618268, Deed and Mortgage Records

(Affects Parcel I)

17. Easement, including terms and provisions contained therein:
Recording Information: November 09, 2015, Instrument No. 201517653, Deed and Mortgage Records
In Favor of: City of Newberg, a municipal corporation
For: Public Utilities Easement
Affects: Parcel II

18. Any conveyance or encumbrance by Werth Family LLC and Werth Investment I, LLC should be executed pursuant to their Operating Agreement , a copy of which should be submitted to this office for inspection.

19. Unrecorded leases or periodic tenancies, if any.

20. The legal description contained in this preliminary title report covers more property than is intended for the transaction. We will require a surveyor's legal description covering the specific property. A sale or conveyance of said parcel may be in violation of the partition statutes as set out under O.R.S. 92.010.92.190.

- END OF EXCEPTIONS -

NOTE: Supplemental to bring current; reflect 2021-22 taxes; release of TD 2015/17025

NOTE: According to the public record, the following deed(s) affecting the property herein described have been recorded within 24 months of the effective date of this report: NONE

NOTE: We find no matters of public record against Escape Lodging Company LLC that will take priority over any trust deed, mortgage or other security instrument given to purchase the subject real property as established by ORS 18.165.

NOTE: Any conveyance or encumbrance by Escape Lodging Company LLC should be executed pursuant to their Operating Agreement, a copy of which should be submitted to this office for inspection.

NOTE: Taxes for the year 2021-2022 PAID IN FULL
Tax Amount: $11,933.33
Map No.: R3216 01900
Property ID: 29132
Tax Code No.: 29.0
(Affects Parcel I)

NOTE: Taxes for the year 2021-2022 PAID IN FULL
Tax Amount: $68,237.11
Map No.: R3216 02002
Property ID: 483649
Tax Code No.: 29.0
(Affects Parcel II)

NOTE: The following reflect personal property taxes that affect some of the herein described property

NOTE: Taxes for the year 2021-2022 INACTIVE
Tax Amount: $
Map No.: P0255
Property ID: 534982

Tax Code No.: 29.0
(Affects Personal Property Parcel II)

NOTE: UNPAID Taxes for the year 2021-2022
Tax Amount: $3,032.59
Map No.: P3574
Property ID: 388191
Tax Code No.: 29.0

(Affects Personal Property Parcel II)

NOTE: Taxes for the year 2018-2019 PAID IN FULL
Tax Amount: $520.85
Map No.: R3216 02002
Property ID: 521617
Tax Code No.: 29.0
(Affects Personal Property Parcel II)

NOTE: Taxes for the year 2021-2022 PAID IN FULL
Tax Amount: $348.02
Map No.: P13486
Property ID: 521620
Tax Code No.: 29.0
(Affects Personal Property Parcel II)

NOTE: Taxes for the year 2021-2022 PAID IN FULL
Tax Amount: $2,313.55
Map No.: P3881
Property ID: 521632
Tax Code No.: 29.0
(Affects Personal Property Parcel II)

NOTE: UNPAID Taxes for the year 2021-2022
Tax Amount: $314.65
Map No.: R3216 02002
Property ID: 533722
Tax Code No.: 29.0

(Affects Personal Property Parcel II)

NOTE: Taxes for the year 2021-2022 PAID IN FULL
Tax Amount: $2,463.31
Map No.: P16703
Property ID: 558745
Tax Code No.: 29.0
(Affects Personal Property Parcel II)

NOTE: This Preliminary Title Report does not include a search for Financing Statements filed in the Office of the Secretary of State, or in a county other than the county wherein the premises are situated, and no liability is assumed if a Financing Statement is filed in the Office of the County Clerk covering Fixtures on the premises wherein the lands are described other than by metes and bounds or under the rectangular survey system or by recorded lot and block.

Situs Address as disclosed on Yamhill County Tax Roll:

0 E Portland Road, and 901 Brutscher Street E, Newberg, OR 97132

THANK YOU FOR CHOOSING FIRST AMERICAN TITLE!
WE KNOW YOU HAVE A CHOICE!

RECORDING INFORMATION	
Filing Address:	**Yamhill County** 777 Commercial Street SE, Suite 100 Salem, OR 97301
Recording Fees:	$ **81.00** for the first page $ **5.00** for each additional page

cc: Escape Lodging Company LLC
cc: Werth Family LLC
cc: Lender To Be Determined
,

First American Title Insurance Company

SCHEDULE OF EXCLUSIONS FROM COVERAGE

ALTA LOAN POLICY (06/17/06)

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

ALTA OWNER'S POLICY (06/17/06)

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is
   (a) a fraudulent conveyance or fraudulent transfer; or
   (b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.
5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

SCHEDULE OF STANDARD EXCEPTIONS

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of the land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the public records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
4. Any encroachment (of existing improvements located on the subject land onto adjoining land or of existing improvements located on adjoining land onto the subject land), encumbrance, violation, variation, or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the subject land.
5. Any lien" or right to a lien, for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the public records.

NOTE: A SPECIMEN COPY OF THE POLICY FORM (OR FORMS) WILL BE FURNISHED UPON REQUEST TI 149 Rev. 7-22-08

First American Title

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.
In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.
There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.
FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.
Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.
Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.
Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.
Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.
Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

Exhibit "A"

Real property in the County of Yamhill, State of Oregon, described as follows:

Parcel I:
A tract of land in Section 16, Township 3 South, Range 2 West of the Willamette Meridian, Yamhill County, Oregon, described as follows:

Beginning at an iron rod in the West line of that certain tract of land described in deed to Newberg Veterinary Clinic recorded in Film Volume 152, Page 997, Yamhill County deed records that is South 02°34'57" West, 219.36 feet from the Northwest corner of said Clinic tract; thence South 87°21'16" East, 215.25 feet (passing an iron rod at 116.39 feet) to an iron rod in the East line of said Clinic tract; thence South 02°53'30" West, 319.96 feet to an iron rod at the Southeast corner of said Clinic tract; thence South 89°51' West 215.38 feet to an iron rod at the Southwest corner of said Clinic tract; thence North 02°34'57" East, 331.59 feet to the point of beginning Together with easement for ingress and egress, as reserved in deed recorded November 5, 1996 as Instrument No. 199618267, Deed and Mortgage Records.

Parcel II:
A parcel of property located in the Sebastian Brutscher Donation Land Claim No. 51, Township 3 South, Range 2 West of the Willamette Meridian, Yamhill County, Oregon, described as follows:

Commencing at the Southeast corner of said Brutscher Donation Land Claim; thence North 00°50'10" East along the East line of said Donation Land Claim, a distance of 2536.79 feet to the Northeast corner of the South half of said Donation Land Claim; thence North 89°13'14" West along the North line of the South half of said Donation Land Claim, a distance of 4005.30 feet to a point on the East line of Lot 2 of Minor Partition No. 1990-61, Yamhill County Surveys and true point of beginning; thence South 04°03'33" West along said East line, a distance of 143.50 feet to a point on the West right-of-way line of Brutscher Street, being 30.00 feet from, when measured at right angles to the centerline of said Brutscher Street; thence South 20°39'45" East along said right-of-way line a distance of 10.86 feet to a point on a 365.00 foot radius curve to the right; thence continuing along the right-of-way line around said 365.00 foot radius curve to the right (the long chord of which bears South 10°49'52" East a distance of 124.64 feet) a distance of 125.26 feet; thence South 01°00'00" East along said right-of-way line a distance of 135.17 feet; thence South 89°00'00" West a distance of 52.13 feet; thence North 79°55'22" West a distance of 118.95 feet; thence North 22°55'22" West a distance of 46.29 feet to a point on the South line of the aforementioned Lot 2 of Minor Partition No. 1990-61; thence North 67°04'37" East along said South line a distance of 40.00 feet to the Southeast corner of Lot 1 of Minor Partition No.. 1991-81, Yamhill County Surveys; thence North 22°55'22" West along the East line of said Lot 1, a distance of 453.02 feet to an angle point; thence North 01°40'12" West continuing along the East line of said Lot 1, a distance of 26.82 feet to a point on the South line of a 44.00 foot private road easement as shown on Minor Partition No. 1991-81, Yamhill County Surveys; thence North 67°04'37" East along the South line of said private road easement and the Easterly extension thereof, a distance of 249.29 feet to a point on the East line of Brutscher Street; thence North 20°11'09" West along said East line of Brutscher Street a distance of 19.40 feet to a point on a 570.00 foot radius curve to the right; thence around said 570.00 foot radius curve to the right(the long chord of which bears North 19°29'34" West a distance of 13.79 feet) a distance of 13.79 feet to the Southwest corner of that parcel of property conveyed to Commercial Bank by document recorded as Fee No. 199600253, Yamhill County Deed Records; thence North 69°48'59" East along the South line of said Commercial Bank parcel a distance of 116.94 feet to the East line of aforementioned Lot 2 of Minor Partition No. 1990-61; thence South 04°03'33" West along said East line a distance of 280.67 feet to the true point of beginning.

Except the following described parcel:

A parcel of property in the Sebastian Brutscher Donation Land Claim in Section 16, Township 3 South, Range 2 West of the Willamette Meridian in Yamhill County, Oregon described as follows: Commencing at

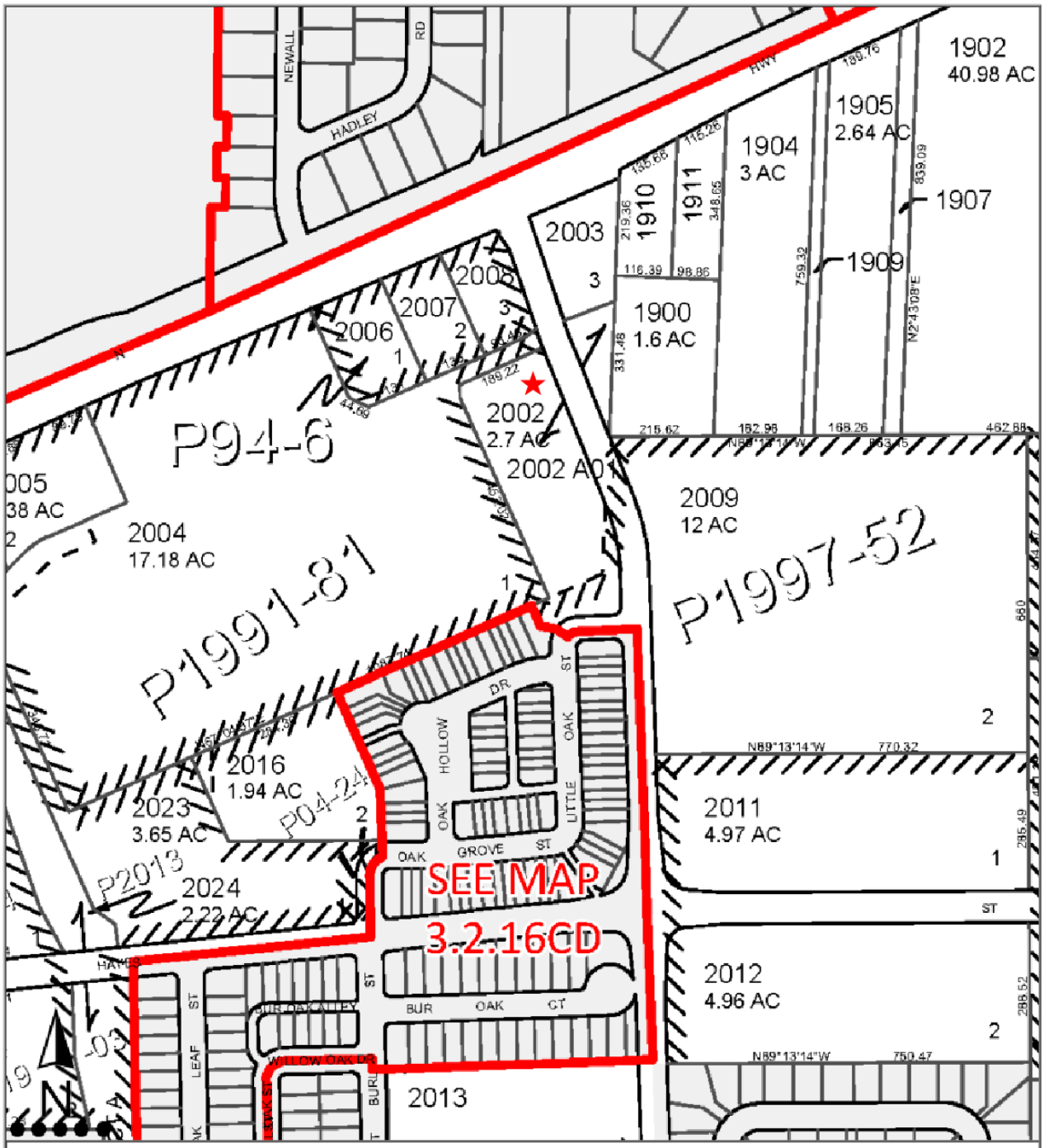
the Northwest corner of said Brutscher Donation Land Claim; thence South 00°43'22" West along the West line of said Brutscher Donation Land Claim, 276.55 feet to the Northeast corner of the Everest Donation Land Claim; thence South 00°55'25" West, along said West line, 2749.19 feet; thence South 89°04'35" East, 46.42 feet to the East line of Springbrook Road as conveyed to the State of Oregon by deed recorded in Volume 23, at Page 400 of Yamhill County Records; thence South 89°04'35" East, 181.58 feet; thence South 22°55'23" East, 346.71 feet; thence North 67°04'37" East, 1087.74 feet; thence North 22°55'22" West, 453.02 feet; thence North 01°40'12" West, 26.82 feet; thence North 67°04'37" East, 189.22 feet to the true point of beginning; thence North 67°04'37" East, along the South edge of Brutscher Road, 60.07 feet; thence South 20°39'45" East 222.74 feet to the East line of Lot 2 as shown on that Minor Partition recorded as No. 1990-61 of Yamhill County records; thence South 04°03'33" West along said, East line 143.52 feet to a point which bears South 20°39'45" East from the true point of beginning; thence North 20°39'45" West 350.74 feet to the true point of beginning.

And except the following described parcel

A portion of that tract of land as described in Instrument No. 199919459, Yamhill County Deed Records, said property being located in the Sebastian Brutscher D.L.C. No. 51 and the Southwest one-quarter of Section 16, Township 3 South, Range 2 West, Willamette Meridian, City of Newberg, Yamhill County, Oregon, being more particularly described as follows:

Beginning at the most northerly corner of Parcel 1, Partition Plat 2004-24, Yamhill County Plat Records, thence along the northerly line of said Parcel 1, South 22°55'22" East a distance of 46.29 feet; thence South 79°55'22" East a distance of 32.00 feet to a point of non-tangential curvature, said point being the true point of beginning; thence leaving said northerly line, along the arc of a 60.00 foot radius curve to the right, an arc distance of 54.75 feet, through a central angle of 52°16'55" (the long chord of which bears North 62°51'32" East a distance of 52.87 feet) to a point of tangency; thence North 89°00'00" East a distance of 71.00 feet to a point of curvature; thence along the arc of a 19.00 foot radius curve to the left, an arc distance of 29.85 feet, through a central angle of 90°00'00" (the long chord of which bears North 44°00'00" East a distance of 26.87 feet) to the West right-of-way line of Brutscher Street, 30.00 feet Westerly of, when measured at right angles to, the centerline of said street; thence along said west right-of-way line South 01°00'00" East a distance of 59.00 feet to the most Easterly Northeast corner of said Parcel 1; thence along the North line of said Parcel 1, South 89°00'00" West a distance of 52.13 feet; thence continuing along said North line, North 79°55'22" West a distance of 86.95 feet to the true point of beginning.

NOTE: This legal description was created prior to January 1, 2008.



First American Title™

ParcelID: 483649
901 Brutscher St
Newberg, OR 97132

This map/plat is being furnished as an aid in locating the herein described land in relation to adjoining streets, natural boundaries and other land, and is not a survey of the land depicted. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the company does not insure dimensions, distances, location of easements, acreage or other matters shown thereon.

GeoPacific Engineering, Inc.

Real-World Geotechnical Solutions
Investigation • Design • Construction Support

Preliminary Geotechnical Engineering Report

Fairfield Marriott
901 N Brutscher Street
Newberg, Oregon 97132
Yamhill County Tax Lot 1900, Tax Map 32W16

GeoPacific Engineering, Inc. Job No. 19-5391
January 3, 2019

14835 SW 72nd Avenue
Portland, Oregon 97224

Tel (503) 598-8445
Fax (503) 941-9281

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Real-World Geotechnical Solutions
Investigation • Design • Construction Support

January 3, 2020
Project No. 19-5391

Mr. Ken Tucker
Hawkins Companies, LLC
850 Broad Street, Suite 300
Boise, ID 83709
Phone: (208) 376-8522
Email: ktucker@hcollc.com

SUBJECT: **PRELIMINARY GEOTECHNICAL ENGINEERING REPORT**
FAIRFIELD MARRIOTT
901 N BRUTSCHER STREET
NEWBERG, OREGON 97132
YAMHILL COUNTY TAX LOT 1900, TAX MAP 32W16

1.0 PROJECT INFORMATION

This report presents the results of a geotechnical engineering study conducted by GeoPacific Engineering, Inc. (GeoPacific) for the above-referenced project. The purpose of our investigation was to evaluate subsurface conditions at the site, and to provide geotechnical recommendations for site development. This geotechnical study was performed in accordance with GeoPacific Proposal No. P-7174, dated December 3, 2019, and your subsequent authorization of our proposal and *General Conditions for Geotechnical Services*.

Site Location:	901 N Brutscher Street Newberg, Oregon 97132 Yamhill County Tax Lot 1900, Tax Map 32W16 (see Figures 1 and 2)
Developer:	Hawkins Companies, LLC 850 Broad Street, Suite 300 Boise, ID 83709
Civil Engineer:	AKS Engineering 12965 SW Herman Rd, Ste 100 Tualatin, Oregon 97062
Jurisdictional Agency:	City of Newberg, Oregon
Geotechnical Engineer:	GeoPacific Engineering, Inc 14835 SW 72nd Avenue Portland, Oregon 97224 Phone: (503) 598-8445 Fax: (503) 941-9281

2.0 SITE AND PROJECT DESCRIPTION

As indicated on Figures 1 and 2, the subject site consists of Yamhill County Tax Lot 1900 on Tax Map 32W16, located across the street to the east from 901 N Brutscher Street in Newberg, Oregon. The property is rectangular in shape and totals approximately 1.6-acres in size. The site latitude and longitude are 45.306950, -122.940748, and the legal description is the SW ¼ of Section 16, T3S, R2W, Willamette Meridian. The site is bordered by Brutscher Street and an existing parking lot to the west, by the Newberg Veterinary Hospital to the north, by the Newberg Ford dealership to the east, and by the Argyle Winery distribution to the south. The site is undeveloped and is currently vegetated with grasses and sparse weeds. Historically the site was farmed. Topography at the site is relatively flat to gently sloping to the east with site elevations ranging from approximately 225 to 228 feet above mean sea level (amsl).

Site planning is currently preliminary. GeoPacific has not reviewed a grading plan or foundation plans. Based upon communication with the client and the structural engineer, and review of a conceptual site plan, GeoPacific understands that a four-story Fairfield Marriott hotel will be built in the central portion of the site. We anticipate that the building will consist of a wood-framed structure supported on a typical spread footing foundation including square column footings, and continuous perimeter footings. Based on communication with the structural engineer we expect maximum structural loading on column and continuous strip footings on the order of 10 to 80 kips; and 2 to 8 kips respectively; and a maximum applied bearing pressure on the order of 2,500 psf. We understand that development of the site will also include construction of flexible and rigid paved areas, and installation of associated new underground utilities. Based upon existing site grades we anticipate that grading will include cuts and fills of five feet or less.

3.0 REGIONAL GEOLOGIC SETTING

Regionally, the subject site lies within the Willamette Valley/Puget Sound lowland, a broad structural depression situated between the Coast Range on the west and the Cascade Range on the east. A series of discontinuous faults subdivide the Willamette Valley into a mosaic of fault-bounded, structural blocks (Yeats et al., 1996). Uplifted structural blocks form bedrock highlands, while down-warped structural blocks form sedimentary basins.

The *Generalized Geologic Map of the Willamette Lowland, Marshall W. Gannett and Rodney R. Caldwell, (U.S. Department of the Interior, U.S. Geological Survey, 1998)*, indicates that the site is underlain by Pleistocene-aged (approximately 2.6 million to 11,000 years ago) silt, sand, and gravel deposited primarily by late Pleistocene glacial outburst flooding commonly referred to as the Missoula Flood Events, but also including glaciofluvial sediments derived from weathering of the Cascade Range located to the east, and the Chehalem Mountains to the north (Qs).

The *Web Soil Survey (United States Department of Agriculture, Natural Resource Conservation Service (USDA NRCS 2019 Website)*, indicates that near-surface soils consist of the Woodburn silt load soil series. Woodburn series soils generally consist of very deep, moderately well drained soils that formed in silty, stratified, glaciolacustrine deposits. The Web Soil Survey soil map for the subject site is presented as an attachment to this report.

4.0 REGIONAL SEISMIC SETTING

At least three major fault zones capable of generating damaging earthquakes are thought to exist in the vicinity of the subject site. These include the Portland Hills Fault Zone, the Gales Creek-Newberg-Mt. Angel Structural Zone, and the Cascadia Subduction Zone.

4.1 Portland Hills Fault Zone

The Portland Hills Fault Zone is a series of NW-trending faults that include the central Portland Hills Fault, the western Oatfield Fault, and the eastern East Bank Fault. These faults occur in a northwest-trending zone that varies in width between 3.5 and 5.0 miles. The combined three faults reportedly vertically displace the Columbia River Basalt by 1,130 feet and appear to control thickness changes in late Pleistocene (approx. 780,000 years) sediment (Madin, 1990). The Portland Hills Fault occurs along the Willamette River at the base of the Portland Hills and is located approximately 18 miles northeast of the site. The Oatfield Fault occurs along the western side of the Portland Hills and is located approximately 16 miles northeast of the site. The East Bank Fault occurs along the eastern margin of the Willamette River, and is located approximately 21 miles northeast of the site. The accuracy of the fault mapping is stated to be within 500 meters (Wong, et al., 2000).

According to the USGS Earthquake Hazards Program, the fault was originally mapped as a down-to-the-northeast normal fault but has also been mapped as part of a regional-scale zone of right-lateral, oblique slip faults, and as a steep escarpment caused by asymmetrical folding above a south-west dipping, blind thrust fault. The Portland Hills fault offsets Miocene Columbia River Basalts, and Miocene to Pliocene sedimentary rocks of the Troutdale Formation. No fault scarps on surficial Quaternary deposits have been described along the fault trace, and the fault is mapped as buried by the Pleistocene aged Missoula flood deposits. No historical seismicity is correlated with the mapped portion of the Portland Hills Fault Zone, but in 1991 a M3.5 earthquake occurred on a NW-trending shear plane located 1.3 miles east of the fault (Yelin, 1992). Although there is no definitive evidence of recent activity, the Portland Hills Fault Zone is assumed to be potentially active (Geomatrix Consultants, 1995).

4.2 Gales Creek-Newberg-Mt. Angel Structural Zone

The Gales Creek-Newberg-Mt. Angel Structural Zone is a 50-mile-long zone of discontinuous, NW-trending faults that lies about 1.5 miles southwest of the subject site. These faults are recognized in the subsurface by vertical separation of the Columbia River Basalt and offset seismic reflectors in the overlying basin sediment (Yeats et al., 1996; Werner et al., 1992). A geologic reconnaissance and photogeologic analysis study conducted for the Scoggins Dam site in the Tualatin Basin revealed no evidence of deformed geomorphic surfaces along the structural zone (Unruh et al., 1994). No seismicity has been recorded on the Gales Creek Fault or Newberg Fault (the fault closest to the subject site); however, these faults are considered to be potentially active because they may connect with the seismically active Mount Angel Fault and the rupture plane of the 1993 M5.6 Scotts Mills earthquake (Werner et al. 1992; Geomatrix Consultants, 1995).

According to the USGS Earthquake Hazards Program, the Mount Angel fault is mapped as a high-angle, reverse-oblique fault, which offsets Miocene rocks of the Columbia River Basalts, and Miocene and Pliocene sedimentary rocks. The fault appears to have controlled emplacement of

the Frenchman Spring Member of the Wanapum Basalts, and thus must have a history that predates the Miocene age of these rocks. No unequivocal evidence of deformation of Quaternary deposits has been described, but a thick sequence of sediments deposited by the Missoula floods covers much of the southern part of the fault trace.

4.3 Cascadia Subduction Zone

The Cascadia Subduction Zone is a 680-mile-long zone of active tectonic convergence where oceanic crust of the Juan de Fuca Plate is subducting beneath the North American continent at a rate of 4 cm per year (Goldfinger et al., 1996). A growing body of geologic evidence suggests that prehistoric subduction zone earthquakes have occurred (Atwater, 1992; Carver, 1992; Peterson et al., 1993; Geomatrix Consultants, 1995). This evidence includes: (1) buried tidal marshes recording episodic, sudden subsidence along the coast of northern California, Oregon, and Washington, (2) burial of subsided tidal marshes by tsunami wave deposits, (3) paleoliquefaction features, and (4) geodetic uplift patterns on the Oregon coast. Radiocarbon dates on buried tidal marshes indicate a recurrence interval for major subduction zone earthquakes of 250 to 650 years with the last event occurring 300 years ago (Atwater, 1992; Carver, 1992; Peterson et al., 1993; Geomatrix Consultants, 1995). The inferred seismogenic portion of the plate interface lies approximately along the Oregon Coast at depths of between 20 and 40 kilometers below the surface.

5.0 FIELD EXPLORATION AND SUBSURFACE CONDITIONS

Our subsurface explorations for this report were conducted on December 13, and December 16, 2019. A total of four exploratory test pits (TP-1 through TP-4) were excavated at the site using a Hitachi 40U rubber-tracked excavator subcontracted by GeoPacific to a maximum depth of approximately 10 feet bgs. In addition, one cone penetrometer test was conducted at the site using Oregon Geotechnical Explorations, Inc., truck-mounted electric cone penetrometer to a maximum depth of 60 feet bgs. Seismic shear wave velocity tests, and porewater pressure measurements were conducted during advancement of the cone.

Explorations were conducted under the full-time observation of a GeoPacific geologist. During the explorations pertinent information, including soil sample depths, stratigraphy, soil engineering characteristics, and groundwater occurrence was recorded. Soils were classified in accordance with the Unified Soil Classification System (USCS). Soil samples obtained from the explorations were placed in relatively air-tight plastic bags. At the completion of each test, the test pits were loosely backfilled with onsite soils. The approximate locations of the explorations are indicated on Figures 2 and 3. It should be noted that exploration locations were located in the field by pacing or taping distances from apparent property corners and other site features shown on the plans provided. As such, the locations of the explorations should be considered approximate. Summary exploration logs are attached. The stratigraphic contacts shown on the individual test pit logs represent the approximate boundaries between soil types. The actual transitions may be more gradual. The soil and groundwater conditions depicted are only for the specific dates and locations reported, and therefore, are not necessarily representative of other locations and times. Soil and groundwater conditions encountered in the explorations are summarized below.

5.1 Soil Descriptions

Topsoil/Remnant Till Zone: At the locations of our test pits the topsoil horizon was typically observed to consist of grass covered, soft to medium stiff, very moist, moderately organic Lean CLAY (OL-CL), containing fine roots, and extending to depths ranging from 4 to 8 inches. It appears that due to historic plowing and tilling of the site during agriculture use, a remnant farm till zone is present across much of the site with disturbed soil conditions observed extending up to 18 inches bgs.

Undocumented Fill: At the location of test pit TP-3 we encountered undocumented fill soils which appeared to have been historically placed to level the site, or during development of adjacent parcels. The fill soils extended to a depth of approximately 36 inches at the test pit location, and based upon visual observation of the surrounding area, appeared to extend to the approximate limits indicated on Figure 2. The fill soils were observed to consist of relatively clean, light brown, soft, moist, Lean CLAY (CL), containing very sparse plastic debris fragments. It appeared that the soil type will be suitable for re-use as engineered fill provided it is thoroughly removed and replaced as described below in Section 6.2, *Engineered Fill*.

Lean CLAY: Underlying the topsoil within our subsurface explorations, soils were observed to consist of brown, medium stiff to very stiff, very moist, low to moderately plastic, Lean CLAY (CL), displaying pinhole structure. The soil type was observed to extend to depths ranging from approximately 6 to 7 feet bgs. Soils laboratory testing conducted on representative samples collected from test pit TP-1 indicated that the soil type classified as Lean CLAY (CL) according to the USCS soil classification system, and as A-7-6(25), and A-7-6(26) according to AASHTO standards. Sieve analysis indicated 97 percent by weight passing the U.S. No. 200 sieve, and moisture content of 21 to 25 percent. Atterberg Limit testing indicated a liquid limit of 47 to 49, and a plasticity index of 22 to 23. Pocket penetrometer measurements conducted within the upper four feet of the ground surface ranged from approximately 2.5 to 4.0 tons/ft^2. CPT tip resistances ranged from 11 to 40 tons/ft^2.

SILT: Underlying the Lean CLAY within our subsurface explorations, soils were observed to consist of brown, stiff, moist to wet, low-plasticity, SILT (ML), displaying pinhole structure. The soil type was observed to extend to the maximum depth of exploration within our test pits (10 feet) and was inferred to extend up to approximately 18 feet bgs within the CPT exploration. Soils laboratory testing conducted on a representative sample collected from test pit TP-1 indicated that the soil type classified as SILT (ML) according to the USCS soil classification system, and as A-6(16) according to AASHTO standards. Sieve analysis indicated 99 percent by weight passing the U.S. No. 200 sieve, and moisture content of 27 percent. Atterberg Limit testing indicated a liquid limit of 40, and a plasticity index of 14. CPT tip resistances ranged from 13 to 44 tons/ft^2.

Sandy SILT/Clayey SILT: CPT exploration data inferred that below the SILT soil type at an approximate depth of 18 feet bgs, soils become sandy and ranged from interlayered Sandy SILT to Clayey SILT to the maximum depth of exploration (approximately 60 feet bgs). CPT tip resistances ranged from 29 to 136 tons/ft^2, averaging in a range of 40 to 50 tons/ft^2.

5.2 Shrink-Swell Potential

Medium stiff to very stiff, fine-grained soils were encountered in the upper 10 feet of the site. Atterberg Limit testing indicated the soil types displayed plasticity indexes ranging from 14 to 23. Based upon the results of our soils laboratory testing and our local experience with the soil layers in the vicinity of the subject site, the plasticity of the soils is considered to be low to moderate, and the shrink-swell potential of the soil types is considered to be low. Special design measures are not considered necessary to minimize the risk of uncontrolled damage of foundations as a result of potential soil expansion at this site.

5.3 Groundwater and Soil Moisture

On December 13, and December 16, 2019, observed soil moisture conditions were generally very moist to wet. Groundwater seepage was observed within test pit TP-3 at an approximate depth of 9 feet bgs. Groundwater seepage was not observed in the other test pits. Porewater pressure measurements were conducted at depths of 30 and 50 feet bgs within the cone penetrometer exploration which indicated that groundwater is present at a depth of 3.43 feet bgs. Based on our observations of soil conditions within the test pits we believe that the porewater test measured pressures within confined soil layers and misinterpreted depth to groundwater at the site. Groundwater monitoring piezometers may be installed if the client wishes to monitor future seasonal fluctuations of the static groundwater table at the site. Based on our review of available well logs from the vicinity of the subject site we expect that static groundwater may be encountered at depths ranging from approximately 10 to 20 feet bgs, depending on ground surface elevation. Perched groundwater may be encountered in localized areas. Seeps and springs may exist in areas not explored and may become evident during site grading.

6.0 PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

Our site investigation indicates that the proposed construction appears to be geotechnically feasible, provided that the recommendations of this report are incorporated into the design and construction phases of the project. The primary geotechnical concerns associated with development at the site are:

- The site contains a remnant agricultural till zone from past farming use that consists of soft to medium stiff, disturbed clayey soils extending to a depth of approximately 18 inches on average across the site.
- Up to 36 inches of undocumented fill soil was encountered within Test Pit TP-3 in the northeastern portion of the site which contained soft soil conditions. The fill material was relatively clean and is anticipated to be suitable for re-use as engineered fill.
- Static settlement calculations indicated that due to soft to medium stiff soil conditions encountered within the upper three feet of the ground surface, up to 2 inches of static settlement may be anticipated for assumed applied bearing pressures up to 2,500 psf. Recommendations are provided for mitigation of static settlement which include removal and replacement with compacted crushed aggregate underneath the footings.
- Soil liquefaction assessment conducted using the Robertson 2009 CPT-based method of analysis indicated the potential for up to approximately 4 inches of dynamic settlement during a peak Cascadia Subduction zone earthquake with a moment magnitude of 9.1, and a peak ground acceleration of 0.47g.

6.1 Site Preparation Recommendations

Areas proposed for construction and areas to receive fill should be cleared of vegetation, and any organic and inorganic debris. Inorganic debris and organic materials from clearing should be removed from the areas proposed for grading. Organic-rich soils and root zones should then be stripped from construction areas of the site or where engineered fill is to be placed. Depth of stripping of organic soils is estimated to be approximately 6 to 18 inches across the majority of the site. The heavy concentrated grass root mats associated with the topsoil layers were observed to have maximum depths of approximately 8 inches, however a disturbed agricultural till zone is present at the site due to past farming which extended to depths of approximately 18 inches bgs. Soft soil conditions should be expected within this disturbed zone, particularly during periods of wet weather. The final depth of soil removal will be determined on the basis of a site inspection after the stripping/excavation has been performed. Stripped topsoil should be removed from areas proposed for placement of engineered fill. Any remaining topsoil should be stockpiled only in designated areas and stripping operations should be observed and documented by the geotechnical engineer or his representative.

At the location of test pit TP-3 we encountered undocumented fill soils which appeared to have been historically placed to level the site, or during development of adjacent parcels. The fill soils extended to a depth of approximately 36 inches at the test pit location, and based upon visual observation of the surrounding area, appeared to extend to the approximate limits indicated on Figure 2. The fill soils were observed to consist of relatively clean, light brown, soft, moist, Lean CLAY (CL), containing very sparse plastic debris fragments. It appeared that the soil type will be suitable for re-use as engineered fill provided it is thoroughly removed and replaced as described below in Section 6.2, *Engineered Fill*. Based on our review of the conceptual site layout plan (Figure 3), it appears that the soil is located outside of the proposed hotel building envelope and will primarily affect construction of parking areas and drive lanes in the northeastern portion of the site.

If site development and grading are conducted during the dry summer months, we recommend that the agricultural till zone be recompacted as opposed to over-excavated and removed from the site. Following site stripping the existing ground surface may be scarified and recompacted prior to placement of structural fill or structures. The areas should be prepared by removing highly organic soil layers which contain abundant root concentration, or organic content in excess of approximately 4 to 5 percent by weight. The underlying soils then be ripped, and moisture conditioned to within two percent of optimum moisture content, and recompacted to project specifications for engineered fill as determined by the Standard Proctor (ASTM D698).

6.2 Engineered Fill

At this time site planning is preliminary and GeoPacific has not reviewed a grading plan. Based on existing site gradients and communication with the client we anticipate that engineered cuts and fills will be conducted on the order of 5 feet or less. Where incorporated into the project, all grading for the proposed construction should be performed as engineered grading in accordance with the applicable building code at the time of construction with the exceptions and additions noted herein. Site grading should be conducted in accordance with the requirements outlined in the 2018 International Building Code (IBC), and 2019 Oregon Structural Specialty Code (OSSC), Chapter 18 and Appendix J. Areas proposed for fill placement should be prepared as described in Section 6.1,

Site Preparation Recommendations. Surface soils should then be scarified and recompacted prior to placement of structural fill. Site preparation, soil stripping, and grading activities should be observed and documented by a geotechnical engineer or his representative. Proper test frequency and earthwork documentation usually requires daily observation and testing during stripping, rough grading, and placement of engineered fill.

Onsite native soils appear to be suitable for use as engineered fill. Soils containing greater than 5 percent organic content should not be used as structural fill. Imported fill material must be approved by the geotechnical engineer prior to being imported to the site. Oversize material greater than 6 inches in size should not be used within 3 feet of foundation footings, and material greater than 12 inches in diameter should not be used in engineered fill.

Engineered fill should be compacted in horizontal lifts not exceeding 12 inches using standard compaction equipment. We recommend that engineered fill be compacted to at least 95 percent of the maximum dry density determined by ASTM D698 (Standard Proctor) or equivalent. Soils should be moisture conditioned to within two percent of optimum moisture. Field density testing should conform to ASTM D2922 and D3017, or D1556. All engineered fill should be observed and tested by the project geotechnical engineer or his representative. Typically, one density test is performed for at least every 2 vertical feet of fill placed or every 500 yd^3, whichever requires more testing. Because testing is performed on an on-call basis, we recommend that the earthwork contractor be held contractually responsible for test scheduling and frequency.

Site earthwork may be impacted by shallow groundwater, soil moisture and wet weather conditions. Earthwork in wet weather would likely require extensive use of additional crushed aggregate, cement or lime treatment, or other special measures, at considerable additional cost compared to earthwork performed under dry-weather conditions.

6.3 Excavating Conditions and Utility Trench Backfill

We anticipate that onsite soils can generally be excavated using conventional heavy equipment. Bedrock was not encountered within our subsurface explorations which extended to a maximum depth of 60 feet bgs. Maintenance of safe working conditions, including temporary excavation stability, is the responsibility of the contractor. Actual slope inclinations at the time of construction should be determined based on safety requirements and actual soil and groundwater conditions. All temporary cuts in excess of 4 feet in height should be sloped in accordance with U.S. Occupational Safety and Health Administration (OSHA) regulations (29 CFR Part 1926) or be shored. The existing native soils classify as Type B Soil and temporary excavation side slope inclinations as steep as 1H:1V may be assumed for planning purposes. These cut slope inclinations are applicable to excavations above the water table only.

Shallow, perched groundwater may be encountered at the site and should be anticipated in excavations and utility trenches. Vibrations created by traffic and construction equipment may cause some caving and raveling of excavation walls. In such an event, lateral support for the excavation walls should be provided by the contractor to prevent loss of ground support and possible distress to existing or previously constructed structural improvements.

Underground utility pipes should be installed in accordance with the procedures specified in ASTM D2321 and City of Newberg standards. We recommend that structural trench backfill be

compacted to at least 95 percent of the maximum dry density obtained by the Standard Proctor (ASTM D698) or equivalent. Initial backfill lift thicknesses for a ¾"-0 crushed aggregate base may need to be as great as 4 feet to reduce the risk of flattening underlying flexible pipe. Subsequent lift thickness should not exceed 1 foot. If imported granular fill material is used, then the lifts for large vibrating plate-compaction equipment (e.g. hoe compactor attachments) may be up to 2 feet, provided that proper compaction is being achieved and each lift is tested. Use of large vibrating compaction equipment should be carefully monitored near existing structures and improvements due to the potential for vibration-induced damage.

Adequate density testing should be performed during construction to verify that the recommended relative compaction is achieved. Typically, at least one density test is taken for every 4 vertical feet of backfill on each 100-lineal-foot section of trench.

6.4 Erosion Control Considerations

During our field exploration program, we did not observe soil conditions which are considered highly susceptible to erosion. In our opinion, the primary concern regarding erosion potential will occur during construction in areas that have been stripped of vegetation. Erosion at the site during construction can be minimized by implementing the project erosion control plan, which should include judicious use of straw waddles, fiber rolls, and silt fences. If used, these erosion control devices should remain in place throughout site preparation and construction.

Erosion and sedimentation of exposed soils can also be minimized by quickly re-vegetating exposed areas of soil, and by staging construction such that large areas of the project site are not denuded and exposed at the same time. Areas of exposed soil requiring immediate and/or temporary protection against exposure should be covered with either mulch or erosion control netting/blankets. Areas of exposed soil requiring permanent stabilization should be seeded with an approved grass seed mixture, or hydroseeded with an approved seed-mulch-fertilizer mixture.

6.5 Wet Weather Earthwork

Soils underlying the site are likely to be moisture sensitive and will be difficult to handle or traverse with construction equipment during periods of wet weather. Earthwork is typically most economical when performed under dry weather conditions. Earthwork performed during the wet-weather season will require expensive measures such as cement treatment or imported granular material to compact areas where fill may be proposed to the recommended engineering specifications. If earthwork is to be performed or fill is to be placed in wet weather or under wet conditions when soil moisture content is difficult to control, the following recommendations should be incorporated into the contract specifications.

- Earthwork should be performed in small areas to minimize exposure to wet weather. Excavation or the removal of unsuitable soils should be followed promptly by the placement and compaction of clean engineered fill. The size and type of construction equipment used may have to be limited to prevent soil disturbance. Under some circumstances, it may be necessary to excavate soils with a backhoe to minimize subgrade disturbance caused by equipment traffic;

- The ground surface within the construction area should be graded to promote run-off of surface water and to prevent the ponding of water;
- Material used as engineered fill should consist of clean, granular soil containing less than 5 percent passing the No. 200 sieve. The fines should be non-plastic. Alternatively, cement treatment of on-site soils may be performed to facilitate wet weather placement;
- The ground surface within the construction area should be sealed by a smooth drum vibratory roller, or equivalent, and under no circumstances should be left uncompacted and exposed to moisture. Soils which become too wet for compaction should be removed and replaced with clean granular materials;
- Excavation and placement of fill should be observed by the geotechnical engineer to verify that all unsuitable materials are removed, and suitable compaction and site drainage is achieved; and
- Geotextile silt fences, straw waddles, and fiber rolls should be strategically located to control erosion.

If cement or lime treatment is used to facilitate wet weather construction, GeoPacific should be contacted to provide additional recommendations and field monitoring.

6.6 Spread Foundations and Static Settlement Analysis

Based upon communication with the client and review of a conceptual site plan (Figure 3), GeoPacific understands that the proposed development at the site will consist of constructing a Marriott Hotel in the central portion of the site. The building will be a four-story, wood-framed structure, supported by a typical spread footing foundation including square column footings, and continuous perimeter footings. Based on communication with the structural engineer we expect maximum structural loading on column and continuous strip footings on the order of 10 to 80 kips, and 2 to 8 kips respectively, and maximum applied bearing pressures on the order of 2,500 psf. Square column footings may range in size from 4'x'4 to 6'x6' and may be embedded 12 to 18 inches below existing ground surface.

Based upon soil conditions encountered within our subsurface explorations at this site, the anticipated allowable soil bearing pressure for in situ soil conditions is 1,500 lbs/ft^2. Heavier loads may result in static settlement of the structure beyond tolerable limits without additional ground improvement. As stated above, we understand that up to 2,500 psf allowable bearing pressure is needed at this site for design of the proposed four-story structure. We conducted a static settlement analysis for the soil profile encountered within cone penetrometer test CPT-1 based upon the structural loading information provided for the proposed structure using the Modified Schmertmann's Method (1978) to calculate vertical displacement. Calculations were conducted using the Soil Structure Settlement Analysis v2.0.2 software. Calculations for long-term static settlement are based upon our understanding of proposed structural building loads, which will increase the vertical effective stress in subsurface soils and may potentially induce soil settlement. Due to natural variations in soil conditions across the site the calculated settlement values below should be considered to be estimates. Actual induced settlement during construction may vary greatly over short distances.

Our static settlement calculations indicated potential static settlement totals of up to 2 inches for existing conditions over a period of approximately 4 to 5 years. We typically understand anticipated settlements greater than 1 inch to be beyond tolerable limits of similar structures. We assessed the soil profile to determine if static settlement estimates could be reduced to less than one inch with over-excavation and re-placement of in situ soils with two feet of compacted crushed aggregate beneath the footings.

Based upon the results of our calculations, it appears that anticipated static settlement totals relative to a maximum applied bearing pressure of 2,500 psf can be reduced to 1 inch or less by constructing footings on crushed aggregate mats consisting of a minimum of 24-inches of 1.5"-0 crushed aggregate, compacted to at least 95 percent of the maximum dry density determined by ASTM D1557 (Modified Proctor) or equivalent. The crushed aggregate mats should extend at least 24 inches beyond the edges of the footings on all sides, and should be underlain by woven geotextile fabric consisting of Mirafi 500X or equivalent.

The recommended maximum allowable bearing pressure may be increased by 1/3 for short-term transient conditions such as wind and seismic loading. For applied bearing pressures in excess of 2,500 psf the geotechnical engineer should be consulted. If heavier loads than described above are proposed, it may be feasible to increase the thickness of the crushed aggregate mats, or to rammed aggregate piers (GeoPiers) may be considered. The coefficient of friction between on-site soil and poured-in-place concrete may be taken as 0.42, which includes no factor of safety. Assuming the crushed aggregate pads are constructed as described, our static settlement calculations indicate that the maximum anticipated total and differential footing movements (generally from soil expansion and/or settlement) are in the range of 1 inch and ¾ inch over a span of 20 feet, respectively. We anticipate that the majority of the estimated settlement will occur during construction, as loads are applied.

Foundation design, construction, and setback requirements should conform to the applicable building code at the time of construction. For maximization of bearing strength and protection against frost heave, spread footings should be embedded at a minimum depth of 12 inches below exterior grade. Excavations near structural footings should not extend within a 1H:1V plane projected downward from the bottom edge of footings.

Footing excavations should penetrate through topsoil and any disturbed soil to competent subgrade that is suitable for bearing support. All footing excavations should be trimmed neat, and all loose or softened soil should be removed from the excavation bottom prior to placing reinforcing steel bars. Due to the moisture sensitivity of on-site native soils, foundations constructed during the wet weather season may require over-excavation of footings and backfill with compacted, additional crushed aggregate.

Our recommendations are for commercial construction incorporating conventional shallow spread and continuous footing foundations.

6.7 Concrete Slabs-on-Grade

Preparation of areas beneath concrete slab-on-grade floors should be performed as described in Section 6.1, *Site Preparation Recommendations* and Section 6.6, *Spread Foundations*. Care should be taken during excavation for foundations and floor slabs, to avoid disturbing subgrade soils. If subgrade soils have been adversely impacted by wet weather or otherwise disturbed, the surficial soils should be scarified to a minimum depth of 8 inches, moisture conditioned to within about 3 percent of optimum moisture content and compacted to engineered fill specifications. Alternatively, disturbed soils may be removed, and the removal zone backfilled with additional crushed rock.

For evaluation of the concrete slab-on-grade floors using the beam on elastic foundation method, a modulus of subgrade reaction of 150 kcf (87 pci) should be assumed for the medium dense, fine to coarse-grained soils anticipated to be present at foundation subgrade elevation following adequate site preparation as described above. This value assumes the concrete slab system is designed and constructed as recommended herein, with a minimum thickness of 8 inches of 1½"-0 crushed aggregate beneath the slab. The total thickness of crushed aggregate will be dependent on the subgrade conditions at the time of construction and should be verified visually by proof-rolling. Under-slab aggregate should be compacted to at least 95 percent of its maximum dry density as determined by ASTM D1557 (Modified Proctor) or equivalent.

In areas where moisture will be detrimental to floor coverings or equipment inside the proposed structure, appropriate vapor barrier and damp-proofing measures should be implemented. A commonly applied vapor barrier system consists of a 10-mil polyethylene vapor barrier placed directly over the capillary break material. Other damp/vapor barrier systems may also be feasible. Appropriate design professionals should be consulted regarding vapor barrier and damp proofing systems, ventilation, building material selection and mold prevention issues, which are outside GeoPacific's area of expertise.

6.8 Footing and Roof Drains

Construction should include typical measures for controlling subsurface water beneath the structures, including positive crawlspace drainage to an adequate low-point drain exiting the foundation, visqueen covering the exposed ground in the crawlspace, and crawlspace ventilation (foundation vents). The client should be informed and educated that some slow flowing water in the crawlspaces is considered normal and not necessarily detrimental to the structures given these other design elements incorporated into construction. Appropriate design professionals should be consulted regarding crawlspace ventilation, building material selection and mold prevention issues, which are outside GeoPacific's area of expertise.

Down spouts and roof drains should collect roof water in a system separate from the footing drains to reduce the potential for clogging. Roof drain water should be directed to an appropriate discharge point and storm system well away from structural foundations. Grades should be sloped downward and away from buildings to reduce the potential for ponded water near structures.

Perimeter footing drains may be eliminated at the discretion of the geotechnical engineer based on soil conditions encountered at the site and experience with standard local construction practices.

Where it is desired to reduce the potential for moist crawl spaces, footing drains may be installed. If concrete slab-on-grade floors are used, perimeter footing drains should be installed as recommended below.

Where deemed necessary, perimeter footing drains should consist of 3 or 4-inch diameter, perforated plastic pipe embedded in a minimum of 1 ft^3 per lineal foot of clean, free-draining drain rock. The drain-pipe and surrounding drain rock should be wrapped in non-woven geotextile (Mirafi 140N, or approved equivalent) to minimize the potential for clogging and/or ground loss due to piping. A minimum 0.5 percent fall should be maintained throughout the drain and non-perforated pipe outlet. Figure 4 presents a typical perimeter footing drain detail. In our opinion, footing drains may outlet at the curb, or on the back sides of lots where sufficient fall is not available to allow drainage to meet the street.

6.9 Permanent Below-Grade Walls

Lateral earth pressures against below-grade retaining walls will depend upon the inclination of any adjacent slopes, type of backfill, degree of wall restraint, method of backfill placement, degree of backfill compaction, drainage provisions, and magnitude and location of any adjacent surcharge loads. At-rest soil pressure is exerted on a retaining wall when it is restrained against rotation. In contrast, active soil pressure will be exerted on a wall if its top is allowed to rotate or yield a distance of roughly 0.001 times its height or greater.

If the subject retaining walls will be free to rotate at the top, they should be designed for an active earth pressure equivalent to that generated by a fluid weighing 35 pcf for level backfill against the wall. For restrained wall, an at-rest equivalent fluid pressure of 55 pcf should be used in design, again assuming level backfill against the wall. These values assume that the recommended drainage provisions are incorporated, and hydrostatic pressures are not allowed to develop against the wall.

During a seismic event, lateral earth pressures acting on below-grade structural walls will increase by an incremental amount that corresponds to the earthquake loading. Based on the Mononobe-Okabe equation and peak horizontal accelerations appropriate for the site location, seismic loading should be modeled using the active or at-rest earth pressures recommended above, plus an incremental rectangular-shaped seismic load of magnitude 6.5H, where H is the total height of the wall.

We assume relatively level ground surface below the base of the walls. As such, we recommend a passive earth pressure of 320 pcf for use in design, assuming wall footings are cast against competent native soils or engineered fill. If the ground surface slopes down and away from the base of any of the walls, a lower passive earth pressure should be used and GeoPacific should be contacted for additional recommendations.

A coefficient of friction of 0.42 may be assumed along the interface between the base of the wall footing and subgrade soils. The recommended coefficient of friction and passive earth pressure values do not include a safety factor, and an appropriate safety factor should be included in design. The upper 12 inches of soil should be neglected in passive pressure computations unless it is protected by pavement or slabs on grade.

The above recommendations for lateral earth pressures assume that the backfill behind the subsurface walls will consist of properly compacted structural fill, and no adjacent surcharge loading. If the walls will be subjected to the influence of surcharge loading within a horizontal distance equal to or less than the height of the wall, the walls should be designed for the additional horizontal pressure. For uniform surcharge pressures, a uniformly distributed lateral pressure of 0.3 times the surcharge pressure should be added. Traffic surcharges may be estimated using an additional vertical load of 250 psf (2 feet of additional fill), in accordance with local practice.

The recommended equivalent fluid densities assume a free-draining condition behind the walls so that hydrostatic pressures do not build-up. This can be accomplished by placing a 12 to 18-inch wide zone of sand and gravel containing less than 5 percent passing the No. 200 sieve against the walls. A 3-inch minimum diameter perforated, plastic drain-pipe should be installed at the base of the walls and connected to a suitable discharge point to remove water in this zone of sand and gravel. The drain-pipe should be wrapped in filter fabric (Mirafi 140N or other as approved by the geotechnical engineer) to minimize clogging.

Wall drains are recommended to prevent detrimental effects of surface water runoff on foundations – not to dewater groundwater. Drains should not be expected to eliminate all potential sources of water entering a basement or beneath a slab-on-grade. An adequate grade to a low point outlet drain in the crawlspace is required by code. Underslab drains are sometimes added beneath the slab when placed over soils of low permeability and shallow, perched groundwater.

Water collected from the wall drains should be directed into the local storm drain system or other suitable outlet. A minimum 0.5 percent fall should be maintained throughout the drain and non-perforated pipe outlet. Down spouts and roof drains should not be connected to the wall drains in order to reduce the potential for clogging. The drains should include clean-outs to allow periodic maintenance and inspection. Grades around the proposed structure should be sloped such that surface water drains away from the building.

GeoPacific should be contacted during construction to verify subgrade strength in wall keyway excavations, to verify that backslope soils are in accordance with our assumptions, and to take density tests on the wall backfill materials.

Structures should be located a horizontal distance of at least 1.5H away from the back of the retaining wall, where H is the total height of the wall. GeoPacific should be contacted for additional foundation recommendations where structures are located closer than 1.5H to the top of any wall.

6.10 Flexible Pavement Design: Private Parking and Drive Areas

As indicated on Figure 3, we understand that development at the site will include construction of private asphaltic concrete private parking and drive areas. For the flexible pavement section, we conservatively assume that the subgrade will exhibit a resilient modulus of at least 6,000, which correlates to a CBR value of 4. Based upon our understanding of the anticipated traffic which includes light-duty passenger vehicles, weekly trash pickups, and occasional fire trucks weighing up to 75,000 lbs, we calculated an anticipated 18-kip ESAL count of approximately 75,000 over 20 years. Table 1 presents our flexible pavement design input parameters. Table 2 presents our

recommended minimum dry-weather pavement section for the proposed pavement section, supporting 20 years of vehicle traffic. Pavement design calculations are attached to this report.

Table 1: Flexible Pavement Section Design Input Parameters for Private Parking and Drive Areas

Input Parameter	Design Value
18-kip ESAL Initial Performance Period (20 Years)	75,000
Initial Serviceability	4.2
Terminal Serviceability	2.2
Reliability Level	85 Percent
Overall Standard Deviation	0.5
Roadbed Soil Resilient Modulus (PSI)	6,000
Structural Number	**2.38**

Table 2: Recommended Minimum Dry-Weather Pavement Section: Private Parking and Drive Areas

Material Layer	Section Thickness (in.)	Structural Coefficient	Compaction Standard
Asphaltic Concrete (AC)	3.5 in.	.42	91%/ 92% of Rice Density AASHTO T-209
Crushed Aggregate Base ¾"-0 (leveling course)	2 in.	.10	95% of Modified Proctor AASHTO T-180
Crushed Aggregate Base 1½"-0	8 in.	.10	95% of Modified Proctor AASHTO T-180
Subgrade	12 in.	6,000 PSI	95% of Standard Proctor AASHTO T-99 or equivalent
Total Calculated Structural Number		**2.47**	

6.11 Rigid Pavement Design: Private Drive Lanes

The private drive lanes the site may be constructed with Portland cement concrete (PCC) pavement in some areas. We assume that the proposed private drive lanes will be subjected to vehicle traffic primarily consisting of passenger vehicles, weekly trash trucks, occasional fire trucks weighing up to 75,000 lbs, and wheel loads up to HS-20 loading (up to three axles, maximum 32,000 lbs per axle). For the new private rigid pavement section, we conservatively assume that the subgrade will exhibit a resilient modulus of at least 6,000, which correlates to a CBR value of 4. Based upon the anticipated traffic, we calculated an anticipated 18-kip ESAL count of approximately 75,000 over 20 years.

Under these assumptions and based upon our calculations, our recommended pavement design for private rigid pavement areas consists of a steel reinforced PCC slab with a thickness of 6 inches, and a 4,000 psi minimum compressive strength concrete, placed over 8 inches of crushed aggregate compacted to a minimum of 95% relative to ASTM D1557. A single mat of No.4 reinforcing bars should be placed centrally, with a minimum spacing of 12-inches each way. The steel reinforcing should be placed to maintain at least 3 inches clearance from bottom, and 3 inches of clearance from the edges. Lap lengths should be a minimum of 40 bar diameters (db), or 20 inches. A minimum joint spacing of 10 feet should be maintained for the PCC concrete.

Tolerances of spacing, ties, and clearances, should be constructed in accordance with ACI 318, and the requirements of Chapter 19 of the 2015 IBC. Table 3 presents our rigid pavement design input parameters. Table 4 presents the recommended minimum section for the proposed rigid pavement. Pavement design calculations are attached to this report.

Table 3: Design Input Parameters: Rigid Pavement Areas-Private Drive Lanes

Input Parameter	Design Value
18-kip ESAL Initial Performance Period (20 Years)	75,000
Initial Serviceability	4.2
Terminal Serviceability	2.2
28-Day Flexural Strength (PSI)	650
28-Day Mean Elastic Modulus of Elasticity of Concrete (PSI)	3,500,000
Mean Effective K-Value (PSI)	33.03
Reliability Level	85 Percent
Overall Standard Deviation	0.39
Load Transfer Coefficient	3
Overall Drainage Coefficient	1
Roadbed Soil Resilient Modulus (PSI) Concrete Road 6 inches thick	6,000
Rigid Transverse Joint Spacing	10 Feet

Table 4: Rigid Pavement Section: Rigid Pavement Areas-Private Drive Lanes

Material Layer	Section Thickness	Standard
Portland Cement Concrete Pavement 4,000 psi (PCC)	6 inches	• Use class 4000-3/4 paving concrete • Concrete should be sampled and tested per the requirements of ACI 318 • 4,000 psi compressive strength at 28 days • Maximum air content 4 percent • Maximum slump 6 inches • Maximum lateral joint spacing = 10 feet • Reinforcing Steel: Single Mat No. 4 Longitudinal Bars, Spaced 12 inches each way, minimum 3-inch clearance on bottom and sides.
Crushed Aggregate Base (¾"-0 leveling underlain by 1.5"-0)	2 inches ¾"-0 6 inches 1.5"-0	• Use ¾"-0, or 1"-0 dense graded base aggregate meeting the requirements of ODOT 00641. Thickness may need to be increased to 12 inches or more for constructability in areas of soft or wet subgrade. Geotextile fabric consisting of Mirafi 500X to be utilized during wet weather. • 95% of Modified Proctor ASTM D1557
Competent Subgrade	12 inches	• Recompacted or cement treated • Visual inspection (Proofroll)

6.12 Roadway Subgrade Preparation

Roadway subgrade soils should be compacted and inspected by GeoPacific prior to the placement of crushed aggregate base for pavement. Typically, a proofroll with a fully loaded water or haul truck is conducted by travelling slowly across the grade and observing the subgrade for rutting, deflection, or movement. Any pockets of organic debris or loose fill encountered during ripping or tilling should be removed and replaced with engineered fill (see Section 6.1, *Site Preparation Recommendations*). In order to verify subgrade strength, we recommend proof-rolling directly on subgrade with a loaded dump truck during dry weather and on top of base course in wet weather. Soft areas that pump, rut, or weave should be stabilized prior to paving.

If pavement areas are to be constructed during wet weather, the subgrade and construction plan should be reviewed by the project geotechnical engineer at the time of construction so that condition specific recommendations can be provided. The moisture sensitive subgrade soils make the site a difficult wet weather construction project. General recommendations for wet weather pavement sections are provided below.

During placement of pavement section materials, density testing should be performed to verify compliance with project specifications. Generally, one subgrade, one base course, and one asphalt compaction test is performed for every 100 to 200 linear feet of paving.

6.13 Wet Weather Construction Pavement Section

This section presents our recommendations for wet weather pavement sections and construction for new pavement sections at the project. These wet weather pavement section recommendations are intended for use in situations where it is not feasible to compact the subgrade soils to project requirements, due to wet subgrade soil conditions, and/or construction during wet weather. Based on our site review, we recommend a wet weather section with a minimum subgrade deepening of 6 to 12 inches to accommodate a working subbase of additional 1½”-0 crushed rock. Geotextile fabric, Mirafi 500x or equivalent, should be placed on subgrade soils prior to placement of base rock.

In some instances, it may be preferable to use a subbase material in combination with over-excavation and increasing the thickness of the rock section. GeoPacific should be consulted for additional recommendations regarding use of additional subbase in wet weather pavement sections if it is desired to pursue this alternative. Cement treatment of the subgrade may also be considered instead of over-excavation. For planning purposes, we anticipate that treatment of the onsite soils would involve mixing cement powder to approximately 6 percent cement content and a mixing depth on the order of 12 to 18 inches.

With implementation of the above recommendations, it is our opinion that the resulting pavement section will provide equivalent or greater structural strength than the dry weather pavement section currently planned. However, it should be noted that construction in wet weather is risky and the performance of pavement subgrades depend on a number of factors including the weather conditions, the contractor’s methods, and the amount of traffic the road is subjected to. There is a potential that soft spots may develop even with implementation of the wet weather provisions recommended in this letter. If soft spots in the subgrade are identified during roadway excavation,

or develop prior to paving, the soft spots should be over-excavated and backfilled with additional crushed rock.

During subgrade excavation, care should be taken to avoid disturbing the subgrade soils. Removals should be performed using an excavator with a smooth-bladed bucket. Truck traffic should be limited until an adequate working surface has been established. We suggest that the crushed rock be spread using bulldozer equipment rather than dump trucks, to reduce the amount of traffic and potential disturbance of subgrade soils. Care should be taken to avoid over-compaction of the base course materials, which could create pumping, unstable subgrade soil conditions. Heavy and/or vibratory compaction efforts should be applied with caution. Following placement and compaction of the crushed rock to project specifications (95 percent of Modified Proctor), a finish proof-roll should be performed before paving.

The above recommendations are subject to field verification. GeoPacific should be on-site during construction to verify subgrade strength and to take density tests on the engineered fill, base rock and asphaltic pavement materials.

6.14 Cement Amending Procedures

This section provides recommendations for conducting cement amending should the method of subgrade stabilization be incorporated into project design for subgrade stabilization. The moisture sensitive subgrade soils make the site a difficult wet weather construction project. The client and contractor should be prepared that wet weather construction may be risky and costly.

We anticipate that cement treated soils would primarily consist of Lean CLAY. For planning purposes, the amount of cement used during treatment should be based on an assumed soil dry unit weight of 100 pounds per cubic foot for fine-grained soils. We anticipate that treatment of the onsite soils would involve mixing cement powder to approximately 5 to 6 percent cement content and a mixing depth on the order of 12 to 16 inches. Actual percentages of cement required to achieve design strength will ultimately be determined by the lab testing results prior to construction and the soil moisture content at the time of placement. GeoPacific should evaluate the moisture content of the roadway subgrade before cement amendment. The amount of cement used may need to be increased or adjusted depending on the soil moisture content, particularly if soils are in excess of 10 percent over optimum moisture content. Portland cement content should not exceed 8 percent without prior approval.

Cement amendment should be conducted with a maximum lift thickness of 16 inches. Cement amending operations should not be conducted during periods of heavy rainfall, or when the outside temperature is less than 40 degrees Fahrenheit. Following adequate placement and tilling of cement amended subgrade soils, a static, sheep's-foot compactor should immediately be utilized to thoroughly compact the cement amended fill to at least 95 percent of the maximum dry density determined by ASTM D558 (Standard Test Method for Moisture-Density Unit Weight Relations of Soil-Cement Mixtures). A vibratory compactor is not recommended because it may further disturb the existing subgrade soils. During placement of cement amended fill soils, density testing should be performed to verify compliance with project specifications. Generally, one compaction test is performed for each vertical foot of cement amended engineered fill placed, and for every 100 to 200 linear feet within the alignment. Field density testing should conform to ASTM D6938, D2922,

and D3017. Soil-cement compression test specimens of cement amended soils may be obtained and tested in the soils laboratory in accordance with ASTM D558-04. A compressive strength in the range of 200 to 400 psi as determined by ASTM D 1633 Method A should ideally be achieved. If the soil moisture content is approximately 5 percent over optimum moisture content, as recommended, we anticipate that placement of 6 percent cement by weight of dry soil will be sufficient to achieve the required compressive strength. However, minimum cement percentage will be determined based upon the results of laboratory testing.

The contractor should avoid impacting the treated soils for a minimum period of 4 to 5 days to allow the cement to cure prior to subjecting the subgrade to construction traffic. After the initial cure period, a proof-roll should be observed prior to routing construction traffic over cement treated areas. Impacting the treated base with heavy equipment prior to final cure of the treated soils could reduce final cure strengths and soft areas may develop.

The primary risk associated with cement treatment of roadway subgrade soils is that there is a potential for soft areas to develop following treatment if there in inadequate cement content added to the soil, blending of cement, or compaction of treated soils. Also, soft areas may develop where soils which may have been disturbed underlying the area of treatment are not adequately removed or treated. It is possible that even after careful treatment with recommended percentages, soft areas may still be present which would require additional over-excavation.

7.0 SEISMIC DESIGN

The Oregon Department of Geology and Mineral Industries (DOGAMI), Oregon HazVu: 2020 Statewide GeoHazards Viewer indicates that the site is in an area where *very strong* ground shaking is anticipated during an earthquake. Structures should be designed to resist earthquake loading in accordance with the methodology described in the 2018 International Building Code (IBC) with applicable Oregon Structural Specialty Code (OSSC) revisions (current 2019). We recommend Site Class D be used for design as defined in ASCE 7-16, Chapter 20, and Table 20.3-1. Design values determined for the site using the ATC Hazards by Location 2019 Seismic Design Maps Summary Report are summarized in Table 5 and are based upon observed existing soil conditions.

Table 5: Recommended Earthquake Ground Motion Parameters (ASCE-7-16)

Parameter	Value
Location (Lat, Long), degrees	45.307, -122.938
Probabilistic Ground Motion Values, 2% Probability of Exceedance in 50 yrs	
Peak Ground Acceleration PGA_M	0.472 g
Short Period, S_s	0.848 g
1.0 Sec Period, S_1	0.409 g
Soil Factors for Site Class D:	
F_a	1.161
* F_v	1.891
$SD_s = 2/3 \times F_a \times S_s$	0.656 g
$*SD_1 = 2/3 \times F_v \times S_1$	0.515 g
Seismic Design Category	D

* F_v value reported in the above table is a straight-line interpolation of mapped spectral response acceleration at 1-second period, S_1 per Table 1613.2.3(2) with the assumption that Exception 2 of ASCE 7-16 Chapter 11.4.8 is met per the Structural Engineer. If Exception 2 is not met, and the long-period site coefficient (F_v) is required for design, GeoPacific Engineering can be consulted to provide a site-specific procedure as per ASCE 7-16, Chapter 21.

7.1 Soil Liquefaction

The Oregon Department of Geology and Mineral Industries (DOGAMI), Oregon HazVu: 2020 Statewide GeoHazards Viewer indicates that the site contains areas considered to be at *low* risk for soil liquefaction during an earthquake. Soil liquefaction is a phenomenon wherein saturated soil deposits temporarily lose strength and behave as a liquid in response to ground shaking caused by strong earthquakes. Soil liquefaction typically occurs in loose sands, and granular soils located below the water table, and fine-grained soils with a plasticity index less than 10, and SPT N-Values lower than 15. The subsurface profile observed within our subsurface explorations, which extended to a maximum depth of 60 feet bgs, indicated that the site is underlain by medium stiff to stiff, low to moderately plastic, Lean CLAY, SILT and interlayered Clayey SILT, and Sandy SILT. On December 13, and December 16, 2019, observed soil moisture conditions were generally very moist to wet. Groundwater seepage was observed within test pit TP-3 at an approximate depth of 9 feet bgs.

The liquefaction potential at the subject site was analyzed for the soil profile encountered within cone penetrometer CPT-1 using CLiq version 3.0.2.4, by Geologismiki, and the Robertson clay-like behavior (2009) method of analysis. The depth of analysis was 60 feet bgs. The groundwater table during an earthquake was estimated to be 8 feet bgs during an earthquake. Using a peak horizontal ground acceleration of 0.47g, and an earthquake moment magnitude of 9.10 based upon data obtained from the U.Ss. Geological Survey (USGS) 2019 Earthquake Hazards Program, the factor of safety was less than 1 for some soil layers, indicating the potential for liquefaction during an earthquake. Based upon our analysis of the existing soil profile, potentially liquefiable layers are most prevalent underlying the subject site at depths ranging from 12 to 18 feet bgs, 30 to 40 feet bgs, and 50 to 60 feet bgs. Soils meeting the criteria for potentially liquefiable soil layers during an earthquake at this site include low plasticity SILT, and sandy SILT soils located below the static groundwater table. Our analysis indicates that total dynamic settlement due to soil liquefaction at the location of CPT-1 is anticipated to be approximately 3.9 inches. We anticipate that differential settlement would be approximately one-half of the total estimated settlement, measured between two adjacent building foundation components, or over a span of approximately 20 feet. Based on the relatively level topography at the site, and the lack of free slope faces in the vicinity of the subject site, it is our opinion that the risk of damage to the proposed structure due to lateral spreading is very low.

The design team and structural engineer should work together to determine the maximum allowable settlement that is considered to be tolerable to the structure during a strong seismic event. If determined necessary, soil liquefaction and lateral spreading may potentially be reduced to within tolerable limits with deep ground improvements. Methods such as installation of rammed aggregate piers (GeoPiers), stone columns, or deep soil mixing columns (DSM), may be feasible options. The geotechnical engineer should work closely with the design team to develop appropriate recommendations for the site.

8.0 UNCERTAINTIES AND LIMITATIONS

We have prepared this report for the owner and their consultants for use in design of this project only. This report should be provided in its entirety to prospective contractors for bidding and estimating purposes; however, the conclusions and interpretations presented in this report should not be construed as a warranty of the subsurface conditions. Experience has shown that soil and groundwater conditions can vary significantly over small distances. Inconsistent conditions can occur between explorations that may not be detected by a geotechnical study. If, during future site operations, subsurface conditions are encountered which vary appreciably from those described herein, GeoPacific should be notified for review of the recommendations of this report, and revision of such if necessary.

Sufficient geotechnical monitoring, testing and consultation should be provided during construction to confirm that the conditions encountered are consistent with those indicated by explorations. The checklist attached to this report outlines recommended geotechnical observations and testing for the project. Recommendations for design changes will be provided should conditions revealed during construction differ from those anticipated, and to verify that the geotechnical aspects of construction comply with the contract plans and specifications.

Within the limitations of scope, schedule and budget, GeoPacific attempted to execute these services in accordance with generally accepted professional principles and practices in the fields of geotechnical engineering and engineering geology at the time the report was prepared. No warranty, expressed or implied, is made. The scope of our work did not include environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous or toxic substances in the soil, surface water, or groundwater at this site.

We appreciate this opportunity to be of service.

Sincerely,

GEOPACIFIC ENGINEERING, INC.

EXPIRES: 06/30/2021

Benjamin L. Cook, C.E.G.
Senior Engineering Geologist

James D. Imbrie, G.E., C.E.G.
Principal Geotechnical Engineer

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CHECKLIST OF RECOMMENDED GEOTECHNICAL TESTING AND OBSERVATION

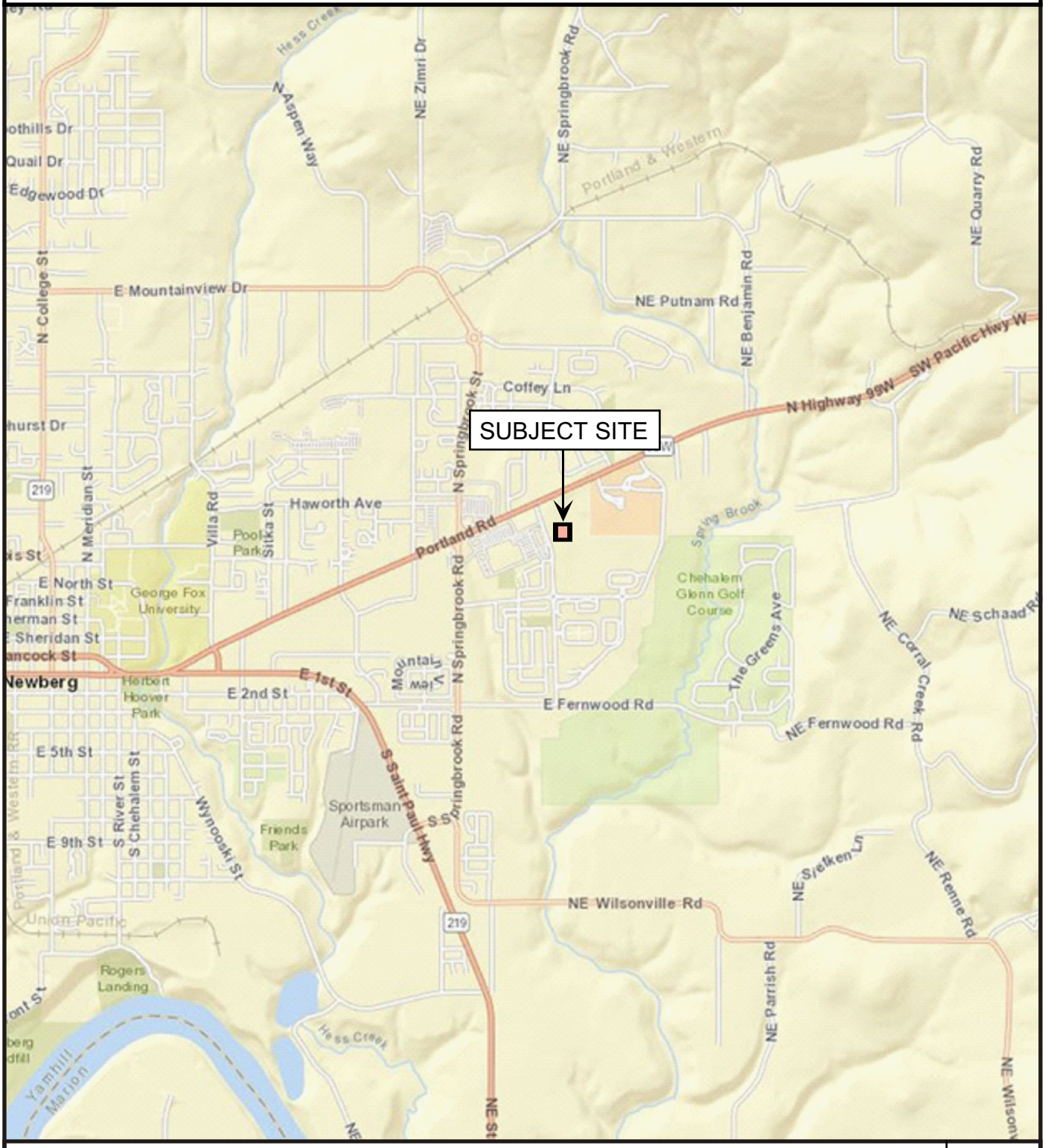
Item No.	Procedure	Timing	By Whom	Done
1	Preconstruction meeting	Prior to beginning site work	Contractor, Developer, Civil and Geotechnical Engineers	
2	Fill removal from site or sorting and stockpiling	Prior to mass stripping	Soil Technician/ Geotechnical Engineer	
3	Stripping, aeration, and root-picking operations	During stripping	Soil Technician	
4	Compaction testing of engineered fill (95% of Standard Proctor)	During filling, tested every 2 vertical feet	Soil Technician	
5	Foundation Subgrade Compaction (95% of Modified Proctor)	During Foundation Preparation, Prior to Placement of Reinforcing Steel	Soil Technician/ Geotechnical Engineer	
6	Compaction testing of trench backfill (95% of Modified Proctor)	During backfilling, tested every 4 vertical feet for every 200 linear feet	Soil Technician	
7	Street Subgrade Inspection (95% of Standard Proctor)	Prior to placing base course	Soil Technician	
8	Base course compaction (95% of Modified Proctor)	Prior to paving, tested every 200 linear feet	Soil Technician	
9	Asphalt Compaction (92% Rice Value)	During paving, tested every 100 linear feet	Soil Technician	
10	Final Geotechnical Engineer's Report	Completion of project	Geotechnical Engineer	

FIGURES

14835 SW 72nd Avenue
Portland, Oregon 97224
Tel (503) 598-8445
Fax (503) 941-9281

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, Oregon 97224
Tel: (503) 598-8445 Fax: (503) 941-9281

SITE VICINITY MAP



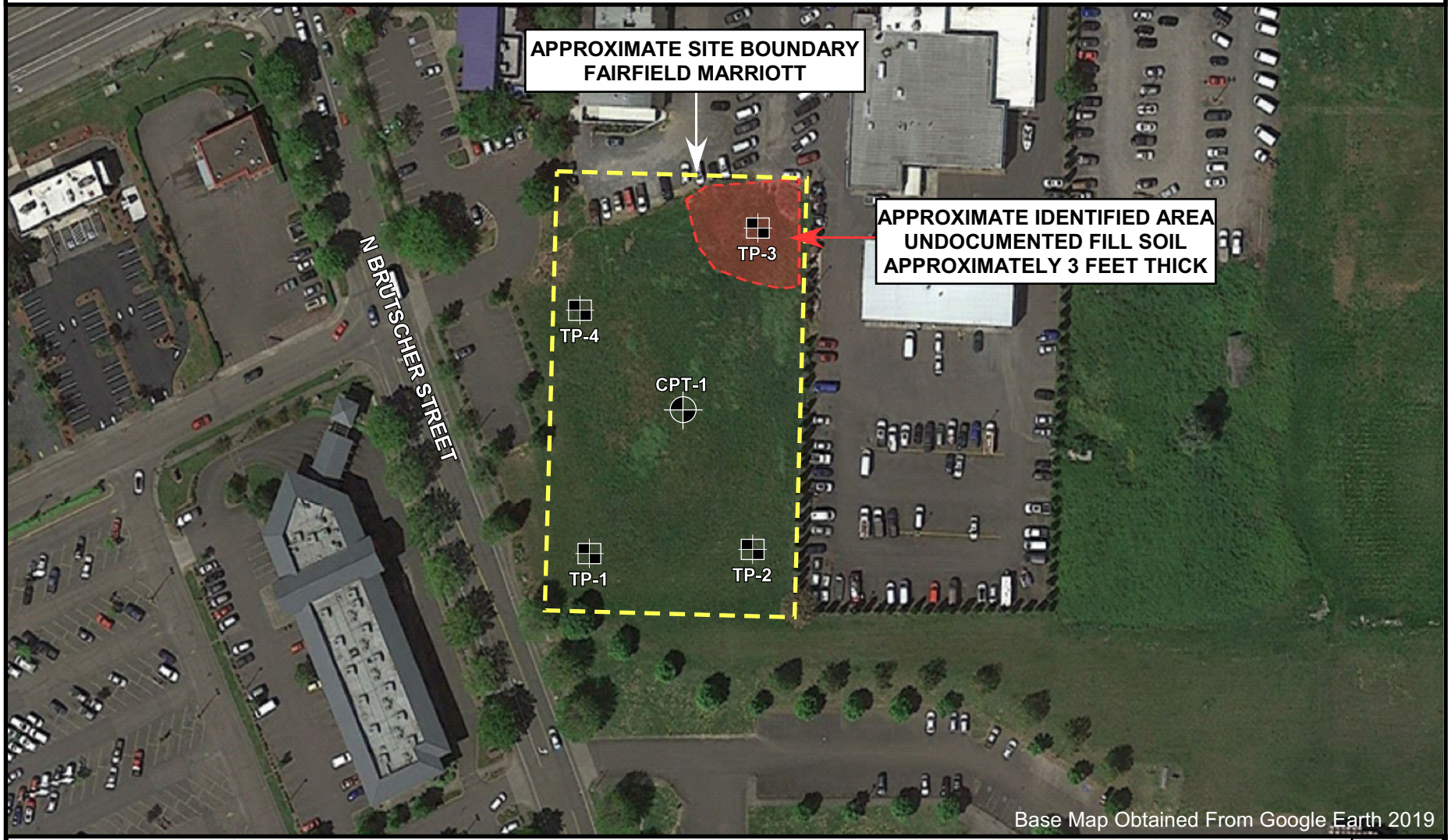
Base Map: Street View, 2019
Date: 12/27/2019
Drawn by: BLC

North

Project: Fairfield Marriott Tax Lot 01900, R3216 Newberg, Oregon 97132	Project No. 19-5391	FIGURE 1

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, Oregon 97224
Tel: (503) 598-8445 Fax: (503) 941-9281

SITE AERIAL AND EXPLORATION LOCATIONS



Legend:

- Test Pit Exploration Designation and Approximate Location
- Cone Penetrometer Test Designation and Approximate Location

APPROXIMATE SCALE (FEET)

60 0 60 120

Drawn By: BLC
Date:12/27/2019

North

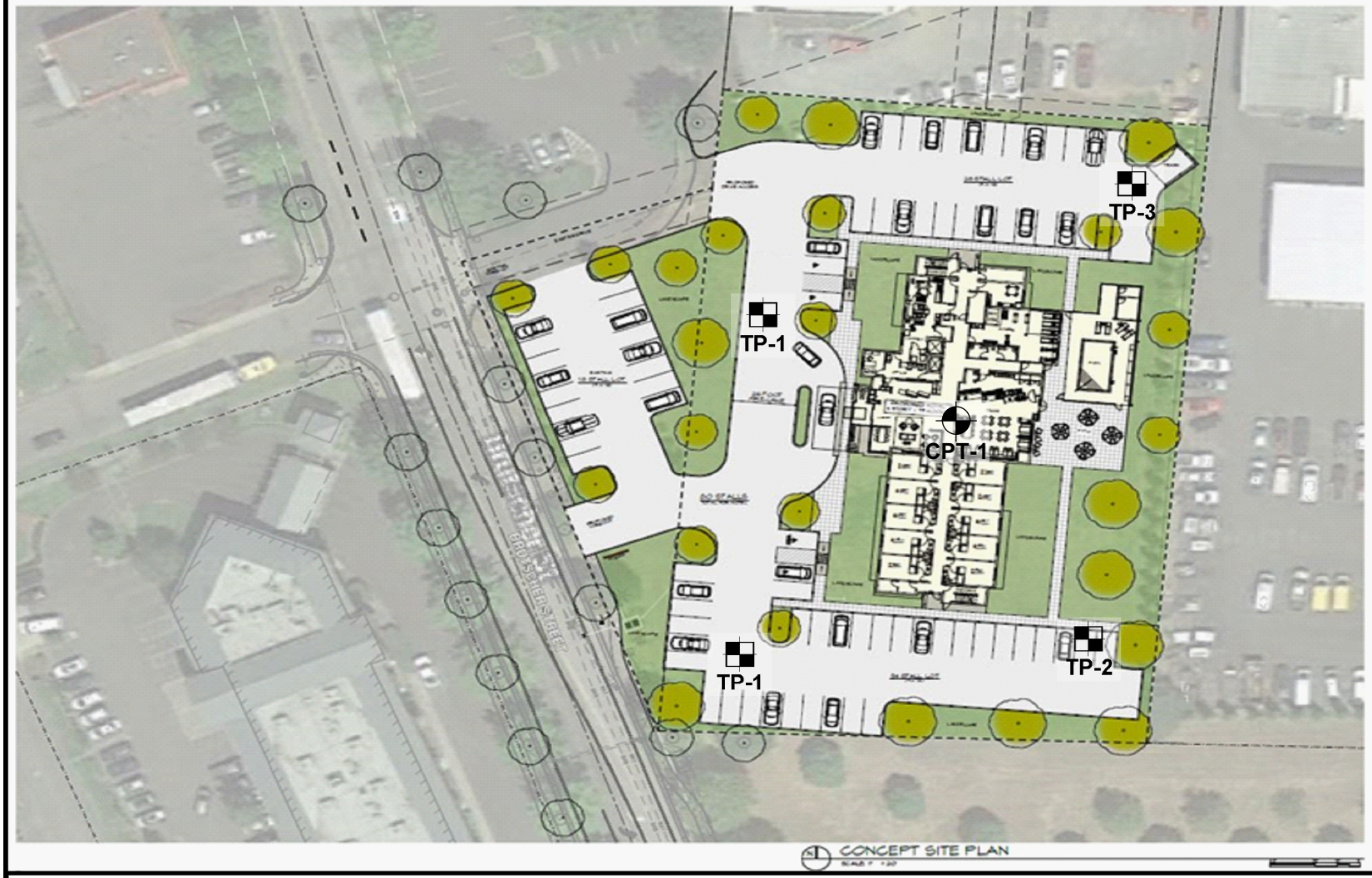
Project: Fairfield Marriott
Tax Lot 01900, R3216, Newberg, Oregon 97132

Project No. 19-5391

FIGURE 2

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, Oregon 97224
Tel: (503) 598-8445 Fax: (503) 941-9281

SITE PLAN AND EXPLORATION LOCATIONS



Legend:

- Test Pit Exploration Designation and Approximate Location
- Cone Penetrometer Test Designation and Approximate Location

APPROXIMATE SCALE (AS NOTED)

Drawn By: BLC

Date:12/30/2019

North

Project: Fairfield Marriott
Tax Lot 01900, R3216, Newberg, Oregon 97132

Project No. 19-5391

FIGURE 3

GeoPacific Engineering, Inc.
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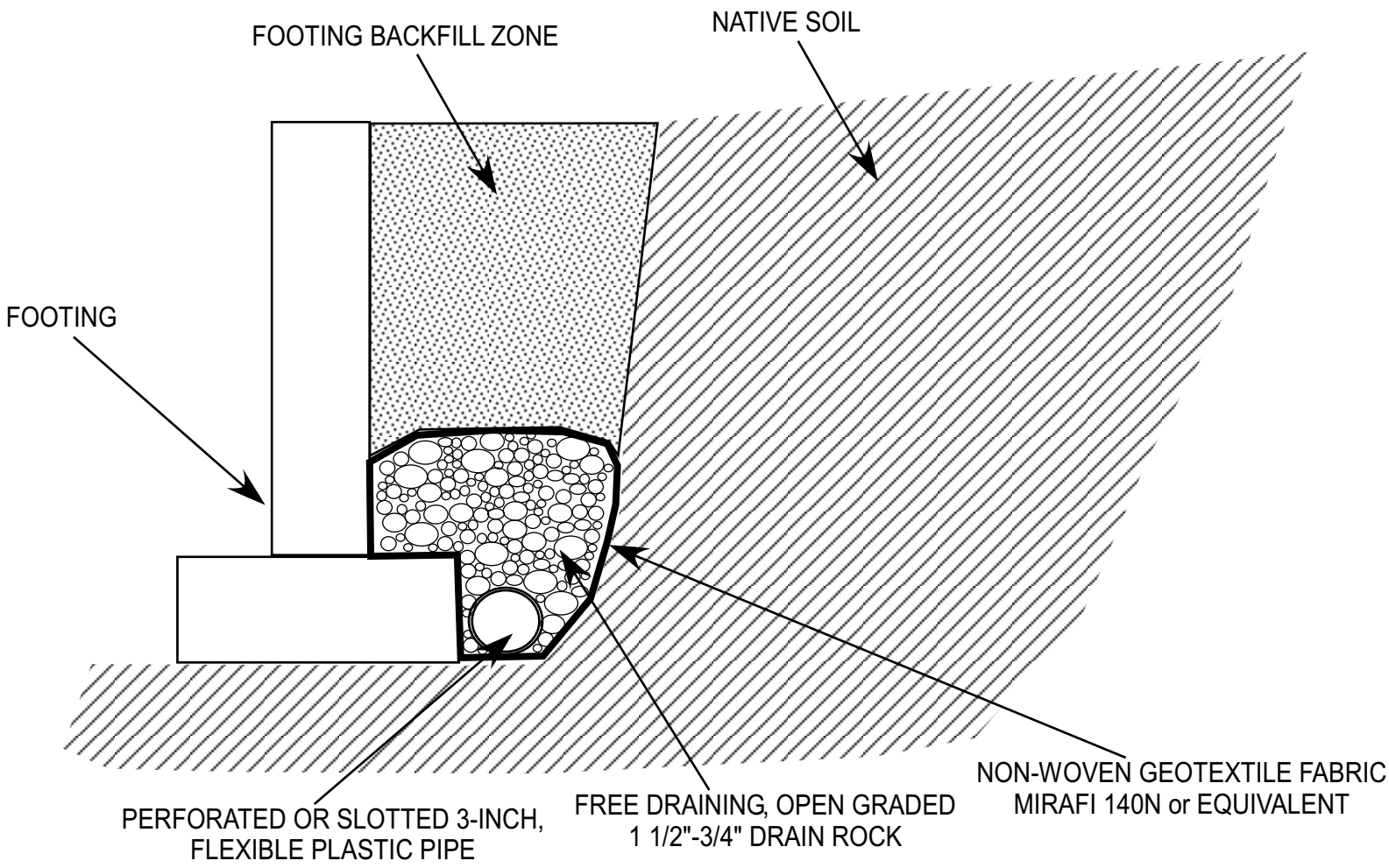
TYPICAL PERIMETER FOOTING DRAIN DETAIL



Notes:
1) Drain rock should contain no more than 5 percent fines passing the U.S. No. 200 Sieve.
2) Trench bottom and drain pipe should be sloped to drain to approved discharge location.

Date: 12/30/2019
Drawn by: BLC

Project: Fairfield Marriott Tax Lot 01900, R3216, Newberg, Oregon 97132	Project No. 19-5391	FIGURE 4

GeoPacific Engineering, Inc.
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EXPLORATION LOGS

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TEST PIT LOG

Project: Fairfield Marriott
Newberg, Oregon

Project No.19-5391

Test Pit No. **TP-1**

Depth (ft)	Pocket Penetrometer (tons/ft²)	Torvane Shear (tons/ft²)	Sample Type	% Passing No. 200 Sieve	Moisture Content (%)	Water Bearing Zone	Material Description
1	2.5						TOPSOIL. Organic Lean CLAY (OL-CL), brown, damp to moist, fine roots, extends to approximately 6 inches bgs.
2	3.0						Lean CLAY (CL), light brown, medium stiff to very stiff, moist, pinhole structure, low to moderate plasticity.
3	4.0		100 to 1,000 g	97.3	21.6		AASHTO Classification= A-7-6(26); LL=47; PI=23
4	4.0						
5							Lean CLAY (CL), brown, very stiff, very moist, pinhole structure, low to moderate plasticity.
6			100 to 1,000 g	97.2	24.9		AASHTO Classification= A-7-6(25); LL=49; PI=22
7							
8							SILT (ML), brown, stiff, moist, pinhole structure, low plasticity.
9			100 to 1,000 g	99.4	27.0		AASHTO Classification= A-6(16); LL=40; PI=14
10							Test pit terminated at 10 feet bgs. No groundwater observed
11							
12							
13							
14							
15							
16							
17							

LEGEND

100 to 1,000 g — Bag Sample
5 Gal. Bucket — Bucket Sample
Shelby Tube Sample
Seepage
Water Bearing Zone
Water Level at Abandonment

Date Excavated: 12/13/2019
Logged By: B. Cook
Surface Elevation: 228 Feet

GeoPacific Engineering, Inc.
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TEST PIT LOG

Project: Fairfield Marriott
Newberg, Oregon

Project No.19-5391

Test Pit No. **TP-2**

Depth (ft)	Pocket Penetrometer (tons/ft²)	Torvane Shear (tons/ft²)	Sample Type	% Passing No. 200 Sieve	Moisture Content (%)	Water Bearing Zone	Material Description
1	1.5						TOPSOIL. Organic Lean CLAY (OL-CL), brown, damp to moist, fine roots, extends to approximately 18 inches bgs. Old farm till zone.
2	2.5						Lean CLAY (CL), light brown, medium stiff to stiff, moist, pinhole structure, low to moderate plasticity.
3	4.0						
4	4.0						Lean CLAY (CL), brown, stiff to very stiff, very moist, pinhole structure, low to moderate plasticity.
5							
6							
7							
8							SILT (ML), brown, stiff, moist, pinhole structure, low plasticity.
9							
10							Test pit terminated at 10 feet bgs. No groundwater observed
11							
12							
13							
14							
15							
16							
17							

LEGEND

Bag Sample

Bucket Sample


Shelby Tube Sample


Seepage


Water Bearing Zone


Water Level at Abandonment

Date Excavated: 12/13/2019
Logged By: B. Cook
Surface Elevation: 226 Feet

GeoPacific Engineering, Inc.
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TEST PIT LOG

Project: Fairfield Marriott
Newberg, Oregon

Project No.19-5391

Test Pit No. **TP-3**

Depth (ft)	Pocket Penetrometer (tons/ft²)	Torvane Shear (tons/ft²)	Sample Type	% Passing No. 200 Sieve	Moisture Content (%)	Water Bearing Zone	Material Description
1	0.5						TOPSOIL. Organic Lean CLAY (OL-CL), dark brown, damp to moist, fine roots, extends to approximately 18 inches bgs. Old farm till zone.
2	0.5						FILL. Lean CLAY (CL), light brown, soft, moist, contains minor plastic debris fragments.
3	3.0						
4	3.5						Lean CLAY (CL), brown, stiff to very stiff, very moist, pinhole structure, low to moderate plasticity.
5							
6							
7							SILT (ML), brown, stiff becoming medium stiff at -9 feet, very moist to wet, low plasticity.
8							
9							
10							Test pit terminated at 10 feet bgs. Groundwater seepage observed at 9 feet bgs.
11							
12							
13							
14							
15							
16							
17							

LEGEND

Bag Sample

Bucket Sample


Shelby Tube Sample


Seepage


Water Bearing Zone


Water Level at Abandonment

Date Excavated: 12/13/2019
Logged By: B. Cook
Surface Elevation: 225 Feet

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, Oregon 97224
Tel: (503) 598-8445 Fax: (503) 941-9281

TEST PIT LOG

Project: Fairfield Marriott
Newberg, Oregon

Project No.19-5391

Test Pit No. **TP-4**

Depth (ft)	Pocket Penetrometer (tons/ft²)	Torvane Shear (tons/ft²)	Sample Type	% Passing No. 200 Sieve	Moisture Content (%)	Water Bearing Zone	Material Description
1	2.5						TOPSOIL. Organic Lean CLAY (OL-CL), dark brown, damp to moist, fine roots, extends to approximately 18 inches bgs. Old farm till zone. Plastic perforated drain pipe encountered.
2	2.5						Lean CLAY (CL), brown, medium stiff to very stiff, very moist, pinhole structure, low to moderate plasticity.
3	4.0						
4	4.0						
5							
6							
7							SILT (ML), brown, stiff to very stiff, moist, pinhole structure, low plasticity.
8							
9							
10							Test pit terminated at 10 feet bgs. No groundwater observed
11							
12							
13							
14							
15							
16							
17							

LEGEND

Bag Sample

Bucket Sample


Shelby Tube Sample


Seepage

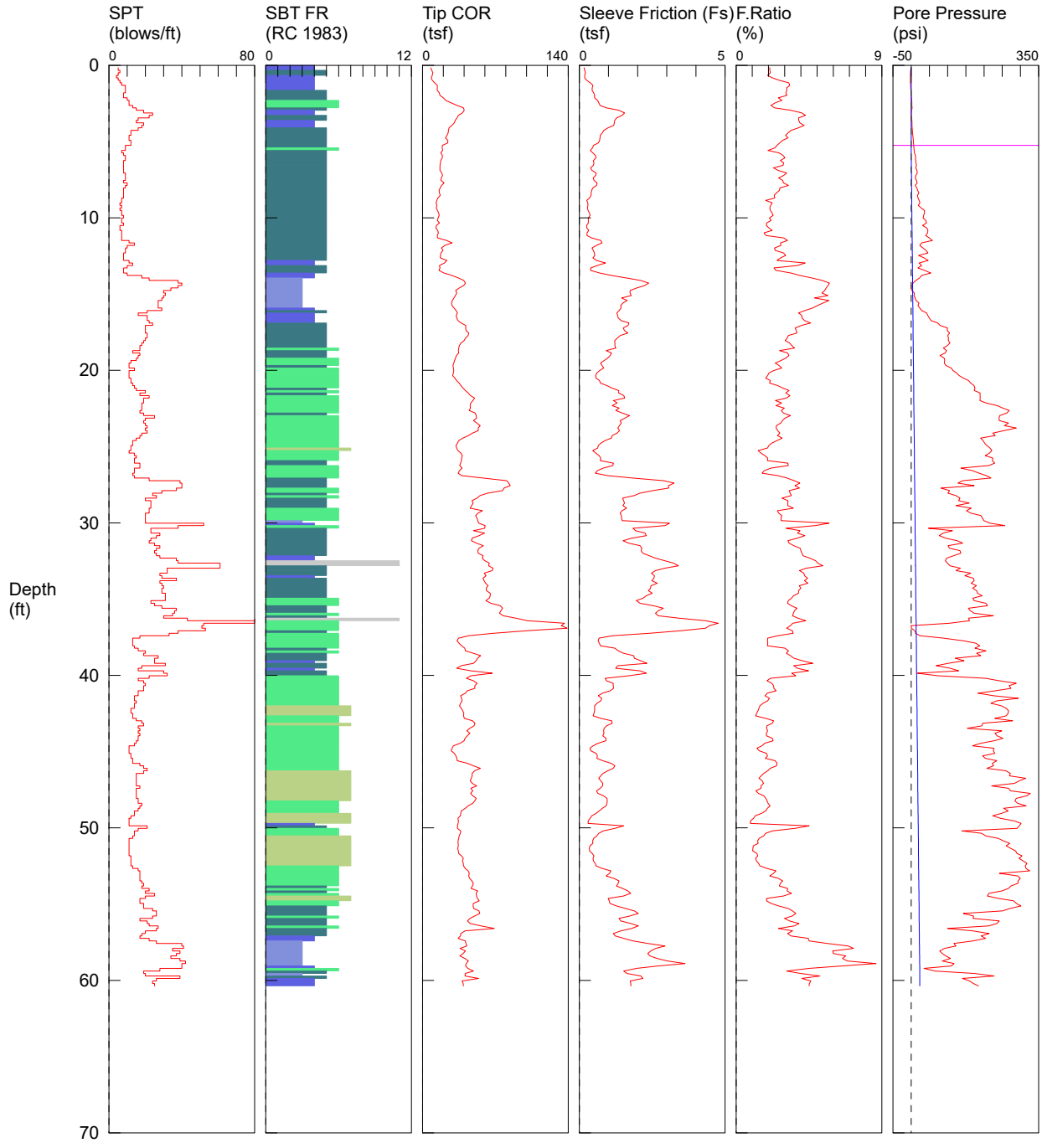

Water Bearing Zone


Water Level at Abandonment

Date Excavated: 12/13/2019
Logged By: B. Cook
Surface Elevation: 227 Feet

GeoPacific / CPT-1 / N Brutscher St Newberg

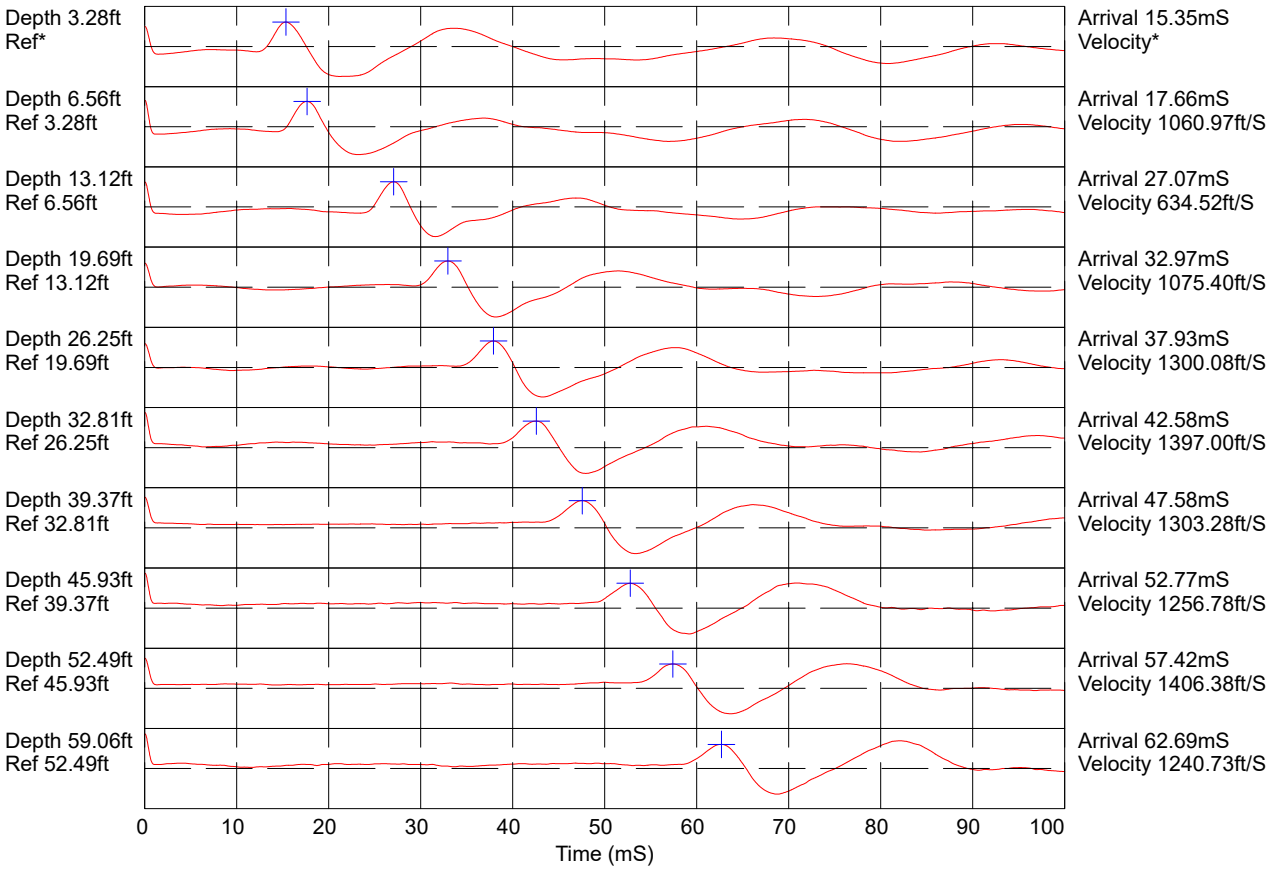
OPERATOR: OGE BAK
CONE ID: DPG1211
HOLE NUMBER: CPT-1
TEST DATE: 12/16/2019 9:15:53 AM
TOTAL DEPTH: 60.367 ft



1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

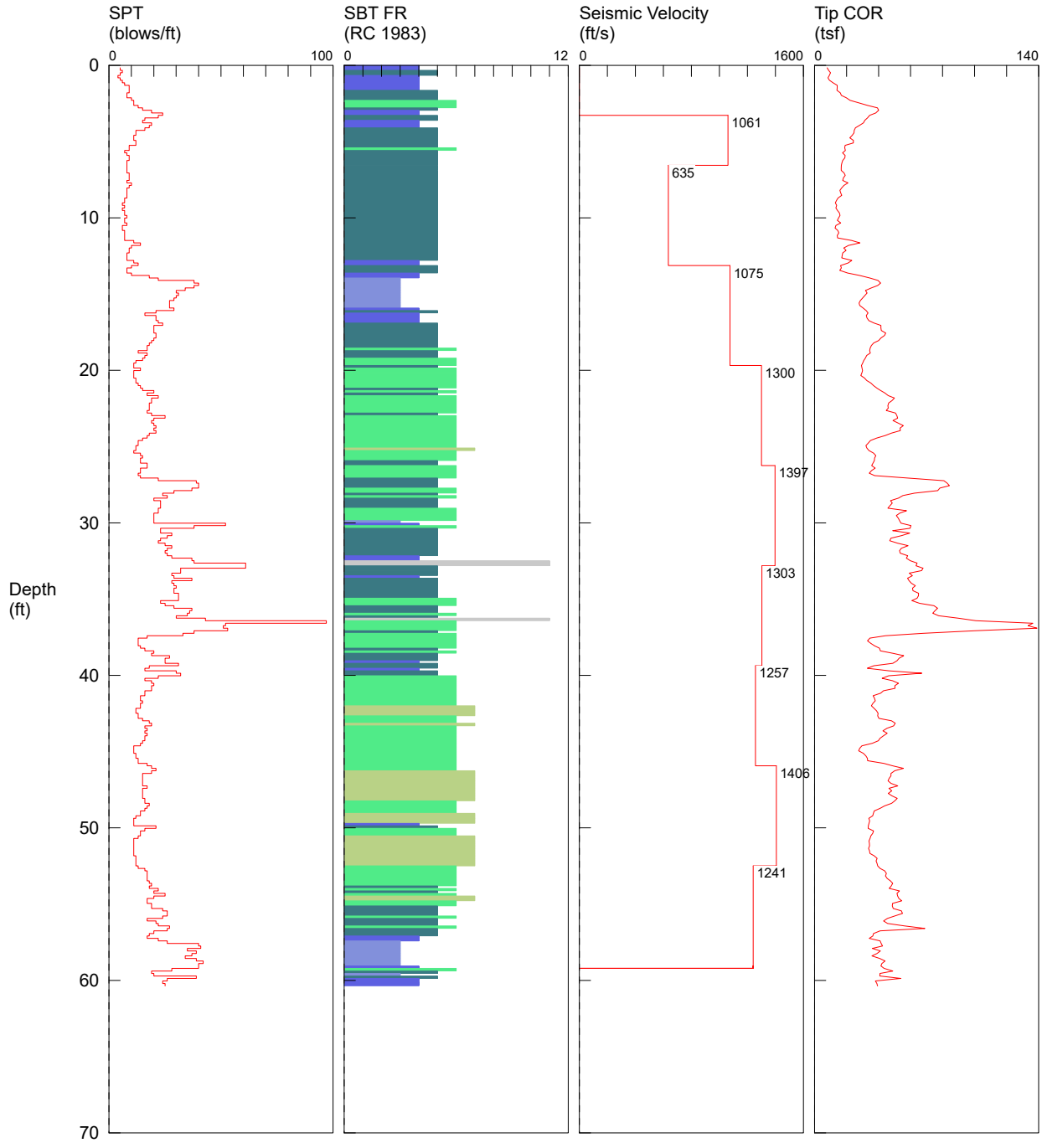
COMMENT: GeoPacific / CPT-1 / 901 N Brutscher St Newberg



Hammer to Rod String Distance (ft): 4.27
* = Not Determined

GeoPacific / CPT-1 / N Brutscher St Newberg

OPERATOR: OGE BAK
CONE ID: DPG1211
HOLE NUMBER: CPT-1
TEST DATE: 12/16/2019 9:15:53 AM
TOTAL DEPTH: 60.367 ft

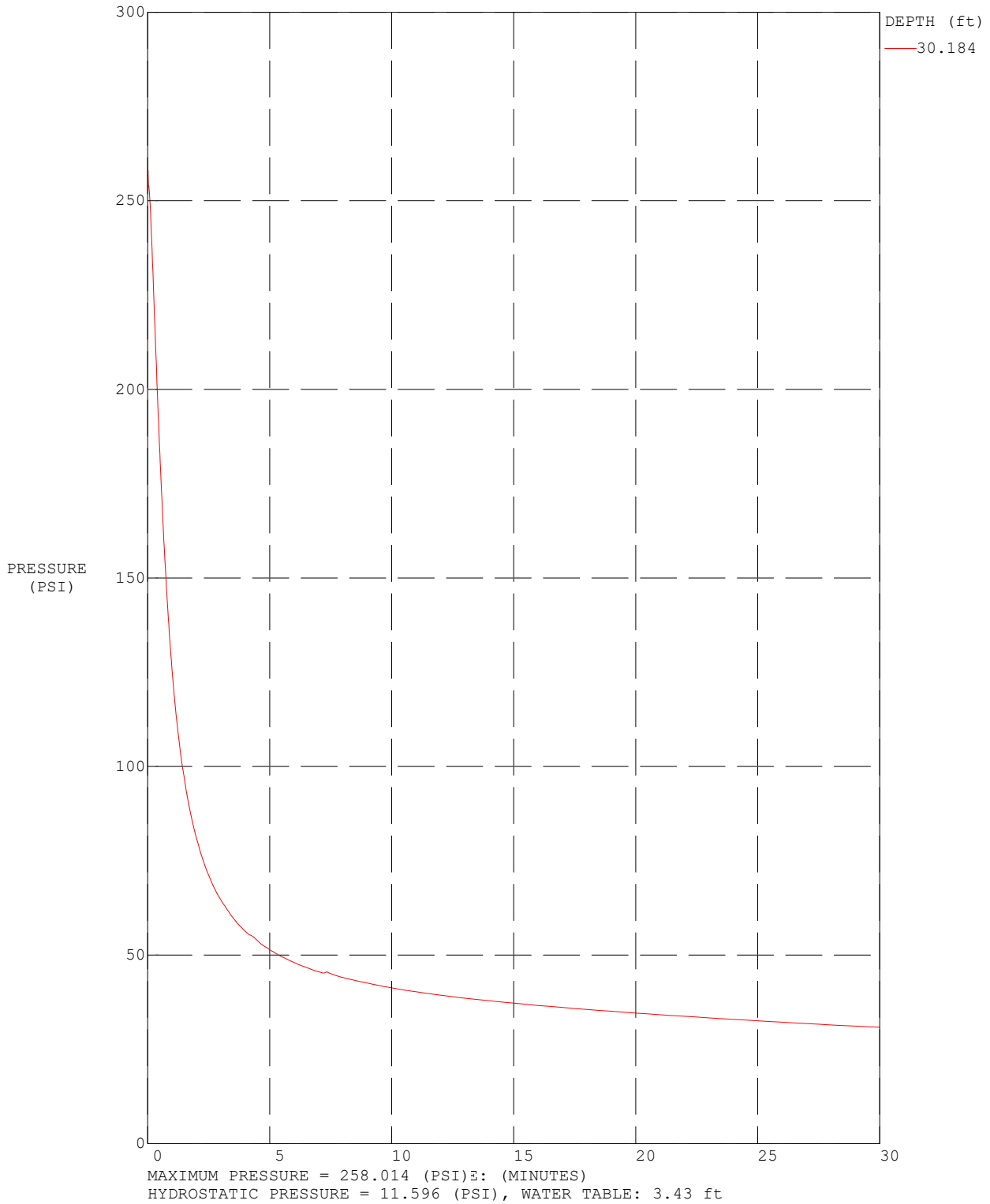


1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

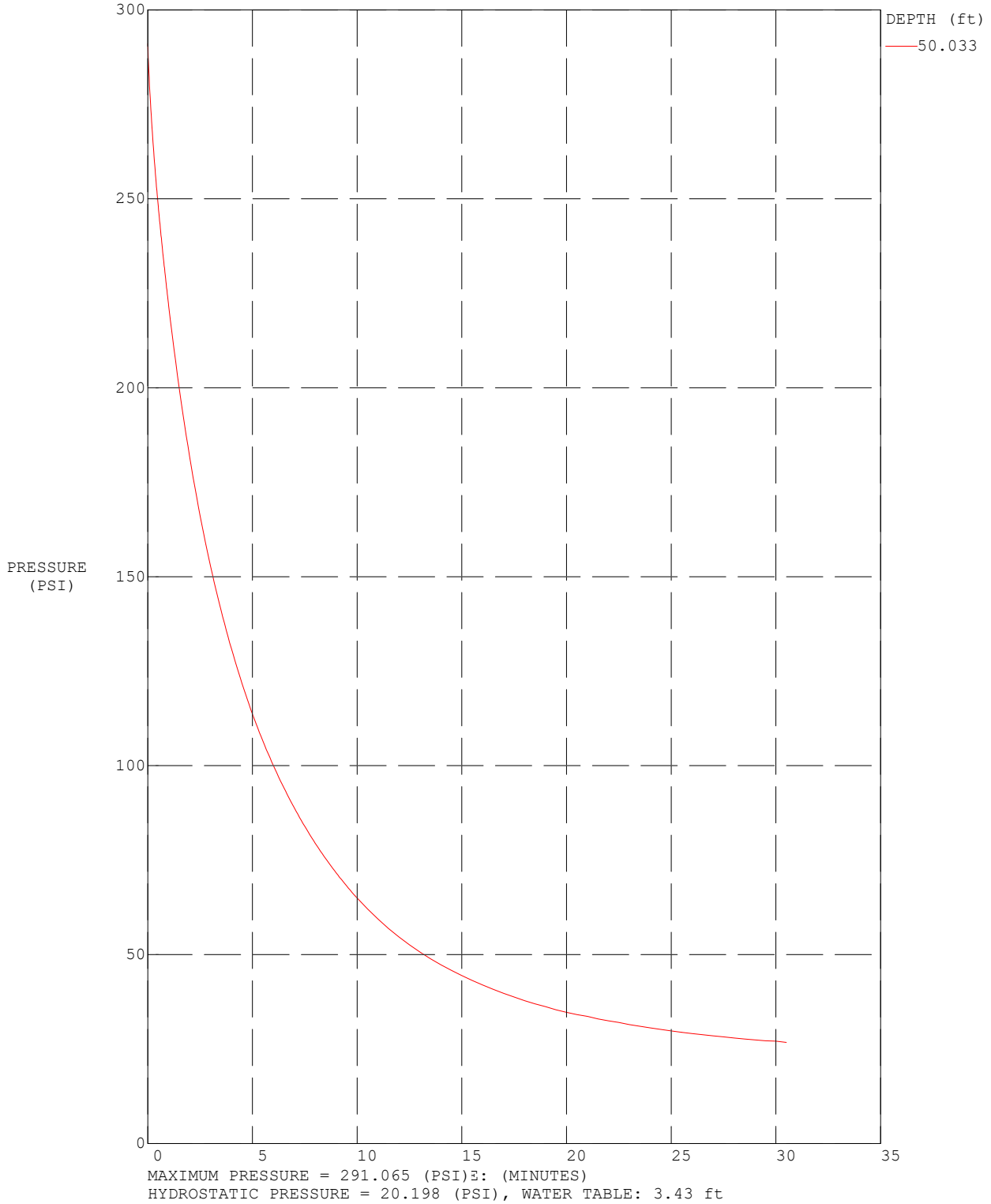
COMMENT: GeoPacific / CPT-1 / 901 N Brutscher St Newberg

TEST DATE: 12/16/2019 9:15:53 AM



COMMENT: GeoPacific / CPT-1 / 901 N Brutscher St Newberg

TEST DATE: 12/16/2019 9:15:53 AM



GeoPacific Engineering, Inc.

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LABORATORY TEST RESULTS

14835 SW 72nd Avenue
Portland, Oregon 97224

Tel (503) 598-8445
Fax (503) 941-9281

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

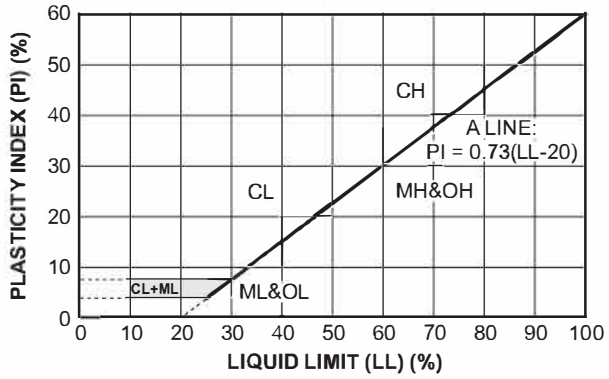
LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for GW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent ..... GW, GP, SW, SP
More than 12 percent ..... GM, GC, SM, SC
5 to 12 percent ..... Borderline cases requiring dual symbols

PLASTICITY CHART



SOIL DESCRIPTION AND CLASSIFICATION GUIDELINES

Particle-Size Classification

COMPONENT	ASTM/USCS		AASHTO	
	size range	sieve size range	size range	sieve size range
Cobbles	> 75 mm	greater than 3 inches	> 75 mm	greater than 3 inches
Gravel	75 mm – 4.75 mm	3 inches to No. 4 sieve	75 mm – 2.00 mm	3 inches to No. 10 sieve
Coarse	75 mm – 19.0 mm	3 inches to 3/4-inch sieve	-	-
Fine	19.0 mm – 4.75 mm	3/4-inch to No. 4 sieve	-	-
Sand	4.75 mm – 0.075 mm	No. 4 to No. 200 sieve	2.00 mm – 0.075 mm	No. 10 to No. 200 sieve
Coarse	4.75 mm – 2.00 mm	No. 4 to No. 10 sieve	2.00 mm – 0.425 mm	No. 10 to No. 40 sieve
Medium	2.00 mm – 0.425 mm	No. 10 to No. 40 sieve	-	-
Fine	0.425 mm – 0.075 mm	No. 40 to No. 200 sieve	0.425 mm – 0.075 mm	No. 40 to No. 200 sieve
Fines (Silt and Clay)	< 0.075 mm	Passing No. 200 sieve	< 0.075 mm	Passing No. 200 sieve

Consistency for Cohesive Soil

CONSISTENCY	SPT N-VALUE (BLOWS PER FOOT)	POCKET PENETROMETER (UNCONFINED COMPRESSIVE STRENGTH, tsf)
Very Soft	2	less than 0.25
Soft	2 to 4	0.25 to 0.50
Medium Stiff	4 to 8	0.50 to 1.0
Stiff	8 to 15	1.0 to 2.0
Very Stiff	15 to 30	2.0 to 4.0
Hard	30 to 60	greater than 4.0
Very Hard	greater than 60	-

Relative Density for Granular Soil

RELATIVE DENSITY	SPT N-VALUE (BLOWS PER FOOT)
Very Loose	0 to 4
Loose	4 to 10
Medium Dense	10 to 30
Dense	30 to 50
Very Dense	more than 50

Moisture Designations

TERM	FIELD IDENTIFICATION
Dry	No moisture. Dusty or dry.
Damp	Some moisture. Cohesive soils are usually below plastic limit and are moldable.
Moist	Grains appear darkened, but no visible water is present. Cohesive soils will clump. Sand will bulk. Soils are often at or near plastic limit.
Wet	Visible water on larger grains. Sand and silt exhibit dilatancy. Cohesive soil can be readily remolded. Soil leaves wetness on the hand when squeezed. Soil is much wetter than optimum moisture content and is above plastic limit.

AASHTO SOIL CLASSIFICATION SYSTEM

TABLE 1. Classification of Soils and Soil-Aggregate Mixtures

General Classification	Granular Materials (35 Percent or Less Passing .075 mm)				Silt-Clay Materials (More than 35 Percent Passing 0.075)		
Group Classification	A-1	A-3	A-2	A-4	A-5	A-6	A-7
Sieve analysis, percent passing:							
2.00 mm (No. 10)	-	-	-				
0.425 mm (No. 40)	50 max	51 min	-	-	-	-	-
0.075 mm (No. 200)	25 max	10 max	35 max	36 min	36 min	36 min	36 min
Characteristics of fraction passing 0.425 mm (No. 40)							
Liquid limit				40 max	41 min	40 max	41 min
Plasticity index	6 max	N.P.		10 max	10 max	11 min	11 min
General rating as subgrade	Excellent to good				Fair to poor		

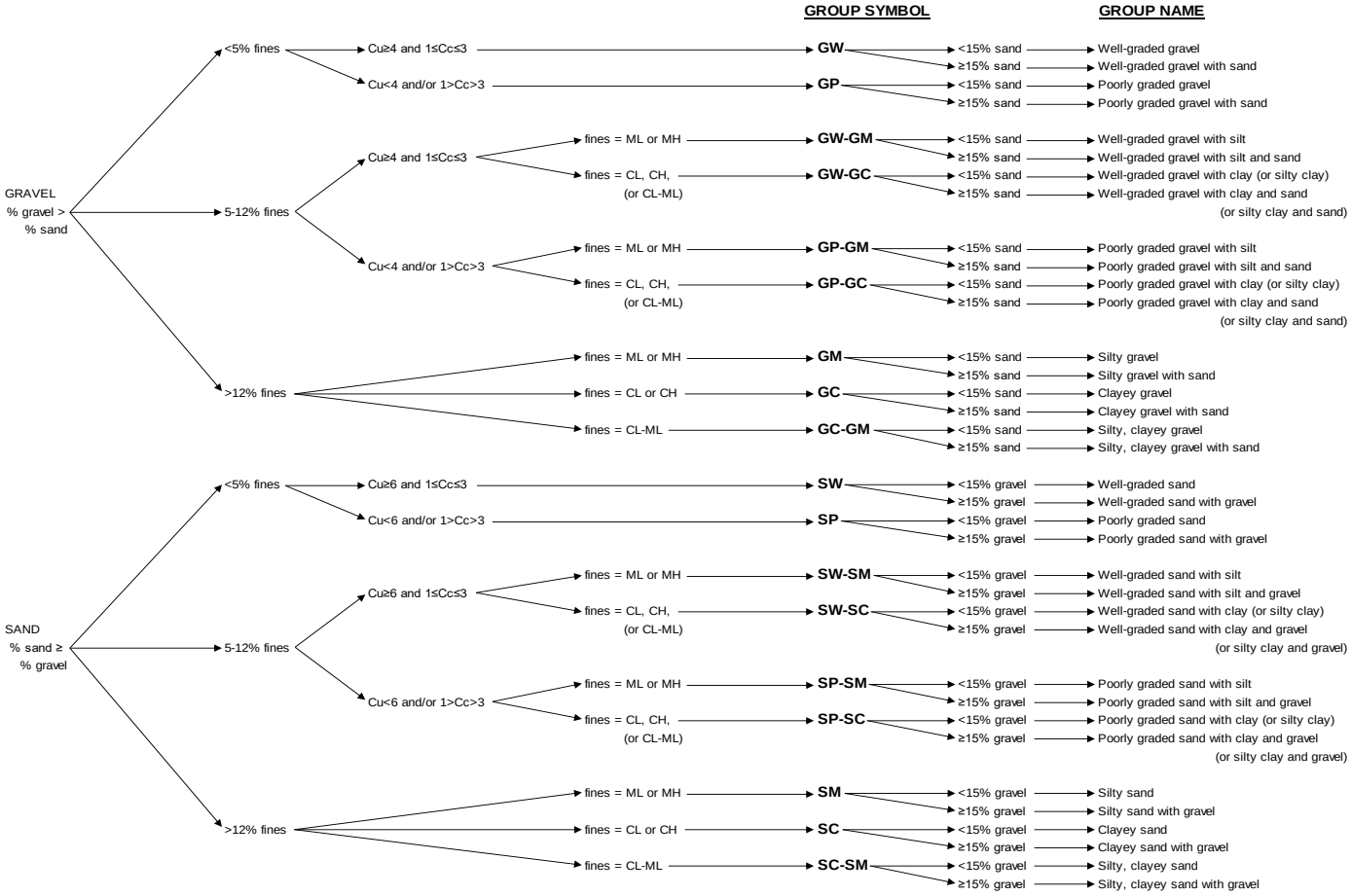
Note: The placing of A-3 before A-2 is necessary in the "left to right elimination process" and does not indicate superiority of A-3 over A-2.

TABLE 2. Classification of Soils and Soil-Aggregate Mixtures

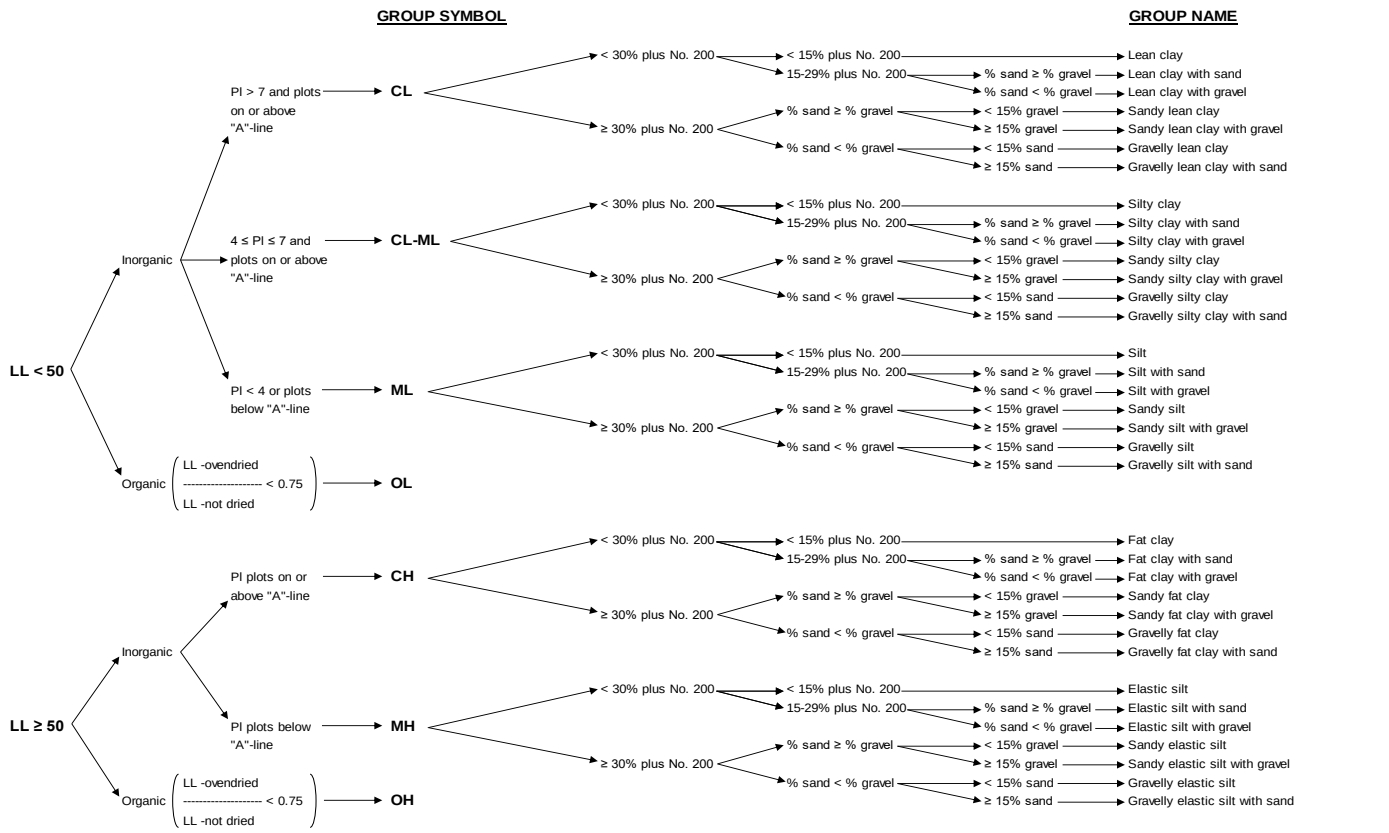
General Classification	Granular Materials (35 Percent or Less Passing 0.075 mm)							Silt-Clay Materials (More than 35 Percent Passing 0.075 mm)			
	A-1			A-2							A-7
Group Classification	A-1-a	A-1-b	A-3	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7-5, A-7-6
Sieve analysis, percent passing:											
2.00 mm (No. 10)	50 max	-	-	-	-	-	-	-	-	-	-
0.425 mm (No. 40)	30 max	50 max	51 min	-	-	-	-	-	-	-	-
0.075 mm (No. 200)	15 max	25 max	10 max	35 max	35 max	35 max	35 max	36 min	36 min	36 min	36 min
Characteristics of fraction passing 0.425 mm (No. 40)											
Liquid limit				40 max	41 min	40 max	41 min	40 max	41 min	40 max	41 min
Plasticity index	6 max		N.P.	10 max	10 max	11 min	11 min	10 max	10 max	11 min	11min
Usual types of significant constituent materials	Stone fragments, gravel and sand		Fine sand	Silty or clayey gravel and sand				Silty soils		Clayey soils	
General ratings as subgrade	Excellent to Good							Fair to poor			

Note: Plasticity index of A-7-5 subgroup is equal to or less than LL minus 30. Plasticity index of A-7-6 subgroup is greater than LL minus 30 (see Figure 2).

AASHTO = American Association of State Highway and Transportation Officials

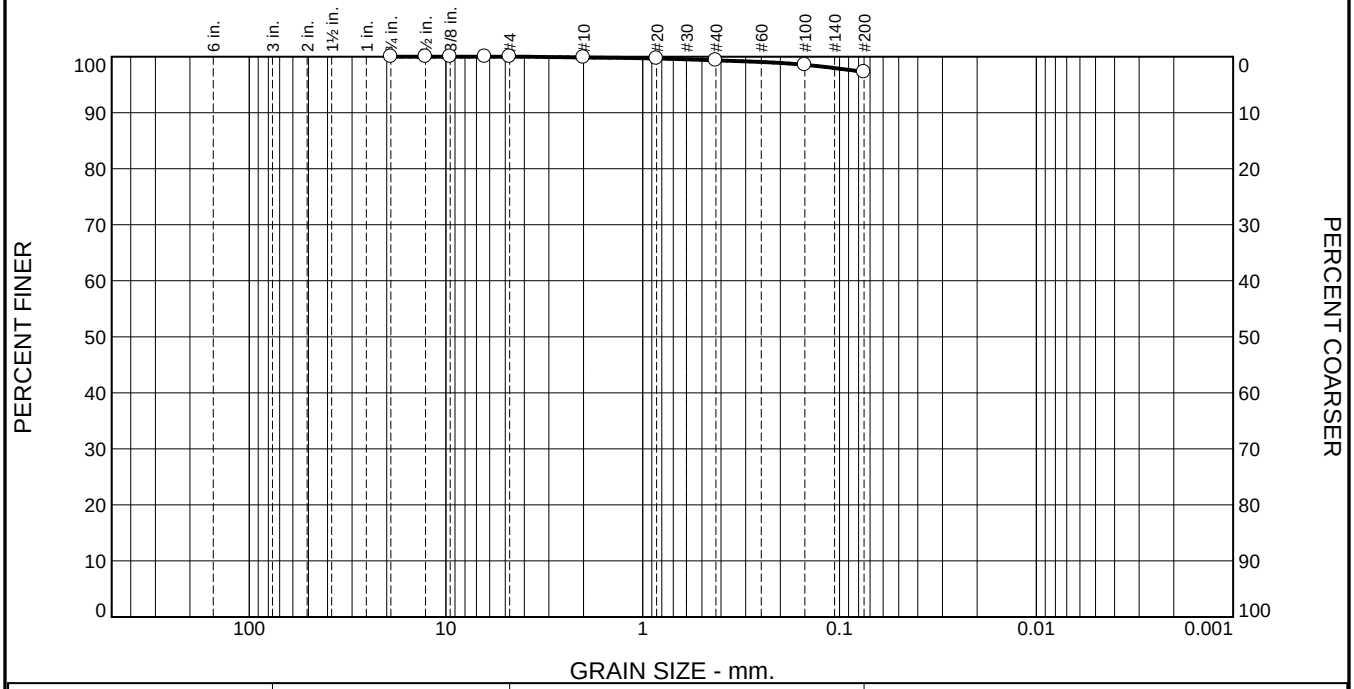


Flow Chart for Classifying Coarse-Grained Soils (More Than 50% Retained on No. 200 Sieve)



Flow Chart for Classifying Fine-Grained Soil (50% or More Passes No. 200 Sieve)

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.6	2.0	97.3	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
.75	100.0		
.5	100.0		
.375	100.0		
.25	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	99.3		
#100	98.5		
#200	97.3		

* (no specification provided)

Material Description

Lean Clay

Atterberg Limits (ASTM D 4318)

PL= 24.8 **LL=** 47.8 **PI=** 23.0

Classification

USCS (D 2487)= CL **AASHTO (M 145)=** A-7-6(26)

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Moisture 21.6%

Date Received: _____ **Date Tested:** 12/16/2019

Tested By: SJC

Checked By: _____

Title: _____

Location: TP-1
Sample Number: S19-307 Redo **Depth:** 3'

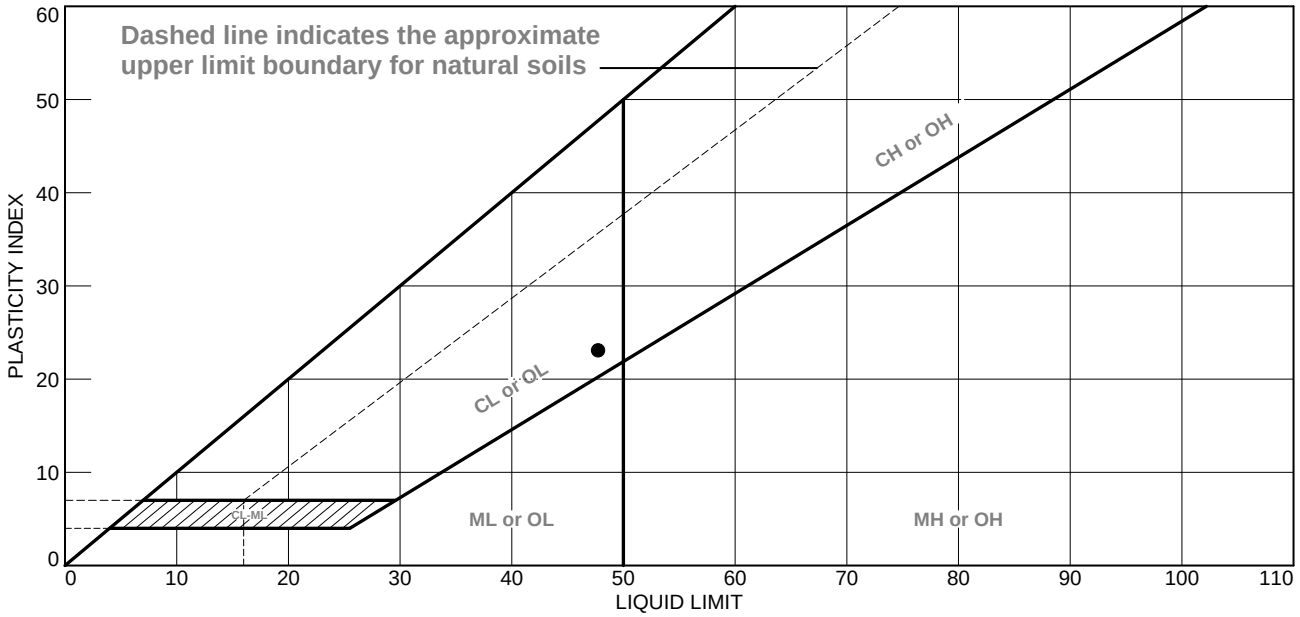
Date Sampled: 12/13/2019

GEOPACIFIC ENGINEERING, INC.

Client: Hawkins Companies, LLC
Project: Fairfield Marriott Newberg

Project No: 19-5391 **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Lean Clay	47.8	24.8	23.0	99.3	97.3	CL

Project No. 19-5391 **Client:** Hawkins Companies, LLC

Project: Fairfield Marriott Newberg

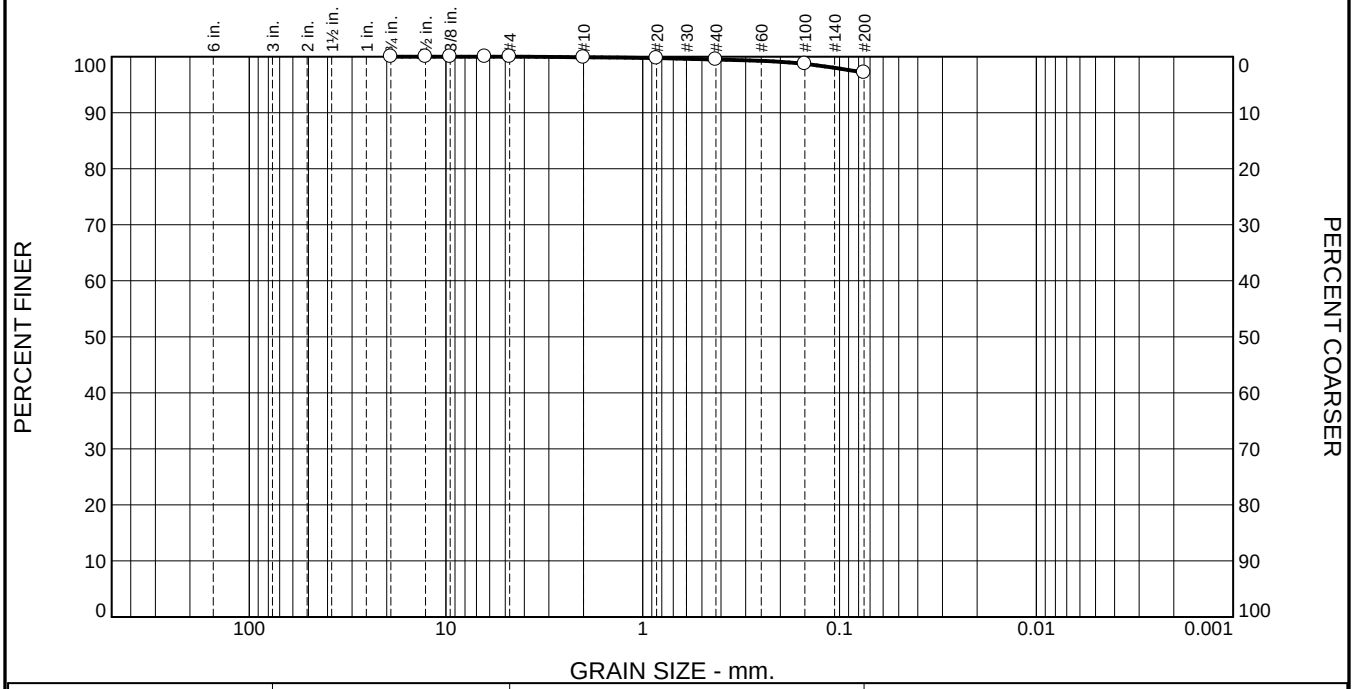
Location: TP-1
Sample Number: S19-307 Redo **Depth:** 3'

Remarks:

GEOPACIFIC ENGINEERING, INC.

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.4	2.3	97.2	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
.75	100.0		
.5	100.0		
.375	100.0		
.25	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	99.5		
#100	98.7		
#200	97.2		

* (no specification provided)

Material Description

Lean Clay

Atterberg Limits (ASTM D 4318)

PL= 27.0 **LL=** 49.1 **PI=** 22.1

Classification

USCS (D 2487)= CL **AASHTO (M 145)=** A-7-6(25)

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Moisture 24.9%

Date Received: _____ **Date Tested:** 12/16/2019

Tested By: SJC

Checked By: _____

Title: _____

Location: TP-1
Sample Number: S19-308 **Depth:** 6'

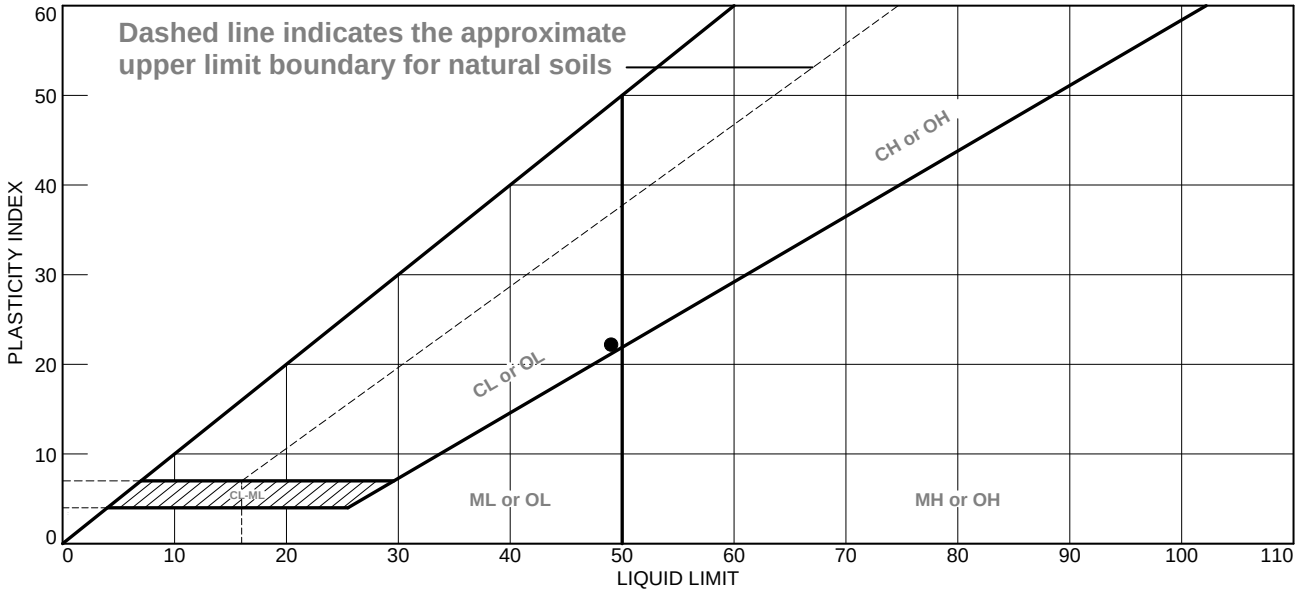
Date Sampled: 12/13/2019

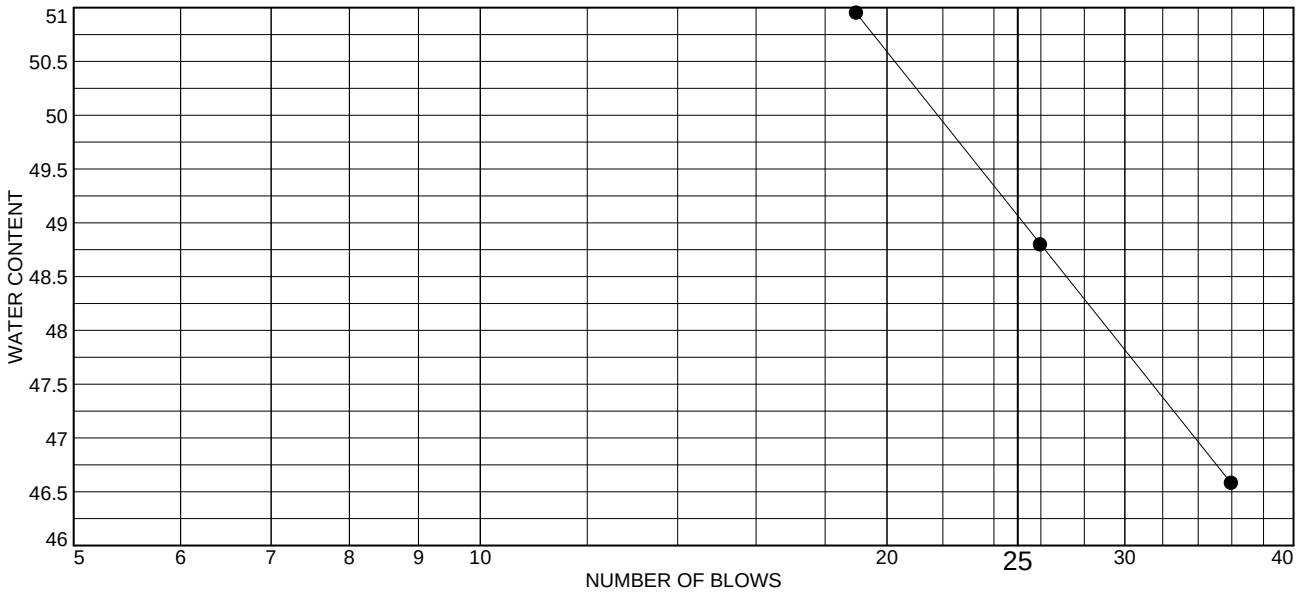
GEOPACIFIC ENGINEERING, INC.

Client: Hawkins Companies, LLC
Project: Fairfield Marriott Newberg

Project No: 19-5391 **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Lean Clay	49.1	27.0	22.1	99.5	97.2	CL

Project No. 19-5391 **Client:** Hawkins Companies, LLC

Project: Fairfield Marriott Newberg

Location: TP-1
Sample Number: S19-308 **Depth:** 6'

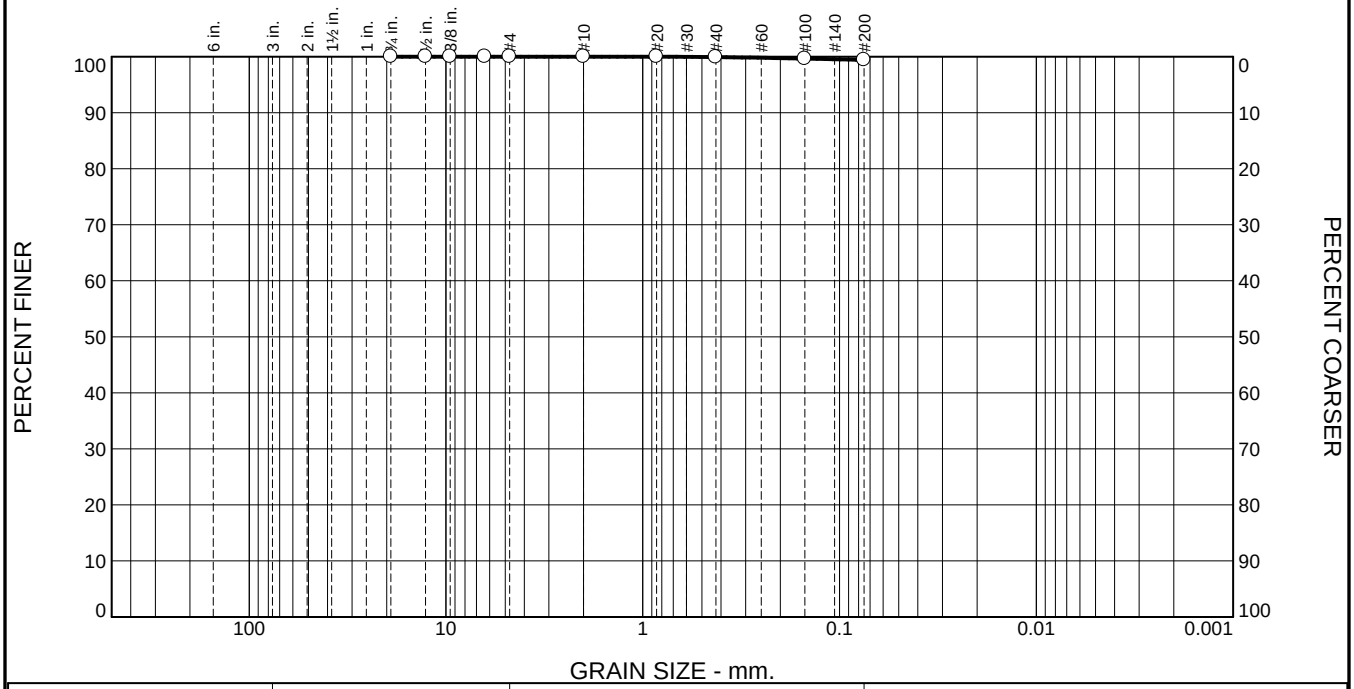
Remarks:

GEOPACIFIC ENGINEERING, INC.

Figure

Tested By: SJC

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	0.5	99.4	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
.75	100.0		
.5	100.0		
.375	100.0		
.25	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.9		
#100	99.7		
#200	99.4		

* (no specification provided)

Material Description

Silt

Atterberg Limits (ASTM D 4318)

PL= 26.3 **LL=** 40.3 **PI=** 14.0

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-6(16)

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Moisture 27.0%

Date Received: _____ **Date Tested:** 12/16/2019

Tested By: SJC

Checked By: _____

Title: _____

Location: TP-1
Sample Number: S19-309 **Depth:** 9'

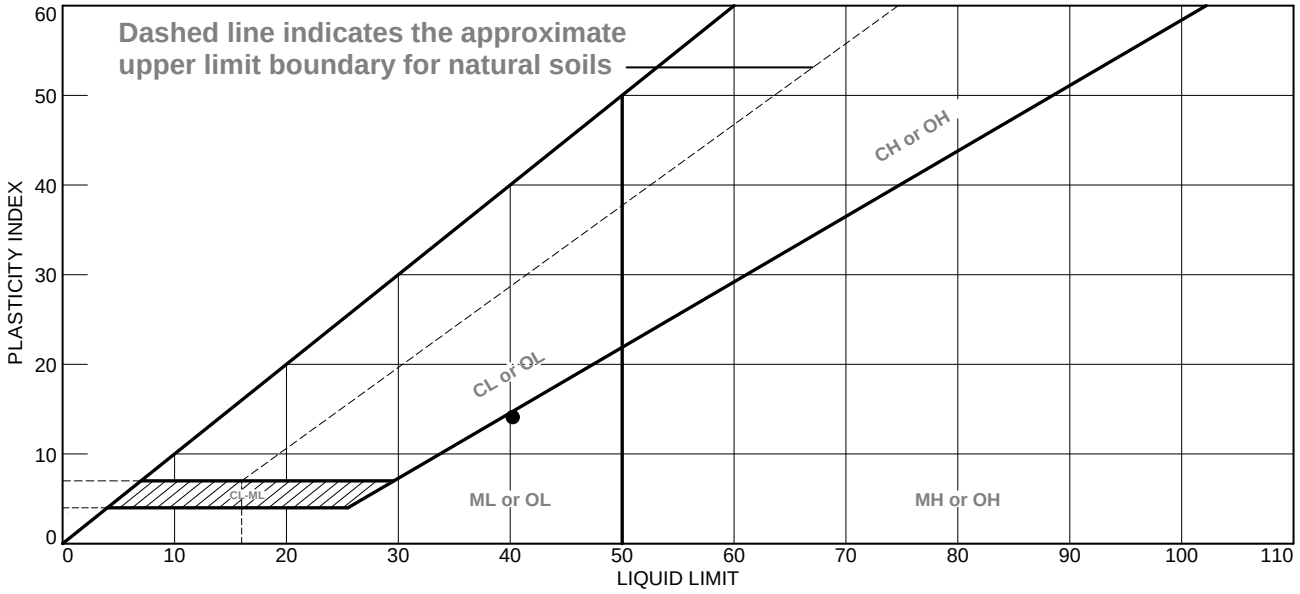
Date Sampled: 12/13/2019

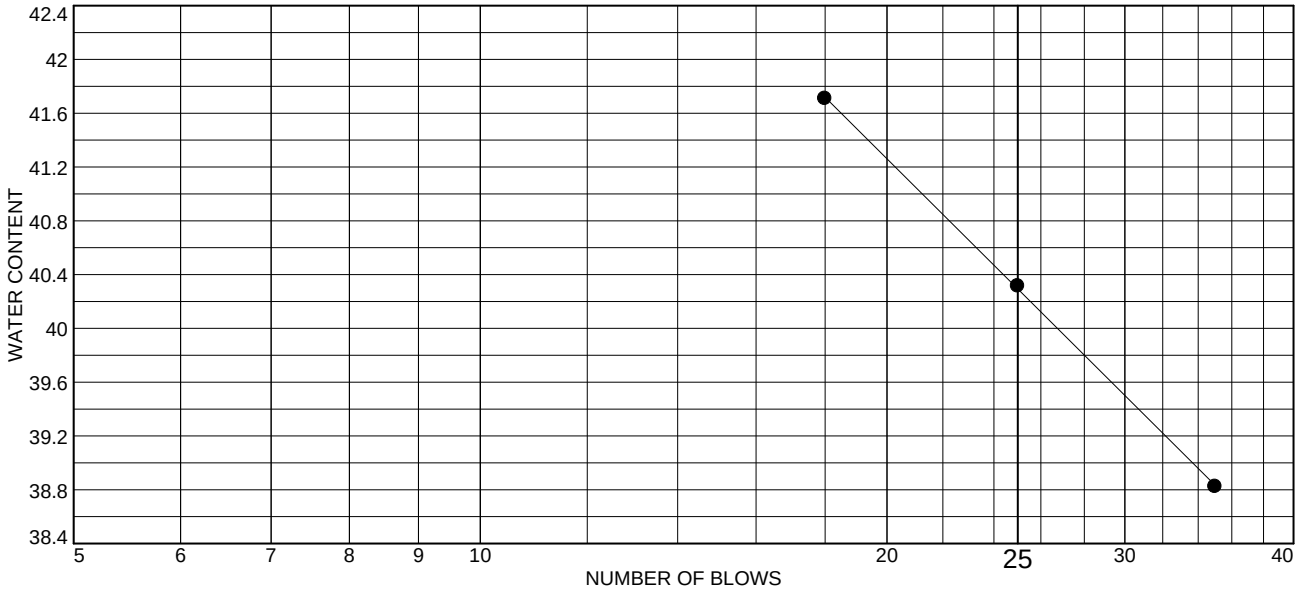
GEOPACIFIC ENGINEERING, INC.

Client: Hawkins Companies, LLC
Project: Fairfield Marriott Newberg

Project No: 19-5391 **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Silt	40.3	26.3	14.0	99.9	99.4	ML

Project No. 19-5391 **Client:** Hawkins Companies, LLC

Project: Fairfield Marriott Newberg

Location: TP-1
Sample Number: S19-309 **Depth:** 9'

Remarks:

GEOPACIFIC ENGINEERING, INC.

Figure

Tested By: SJC

GeoPacific Engineering, Inc.
Real-World Geotechnical Solutions
Investigation • Design • Construction Support

STATIC SETTLEMENT ANALYSIS

14835 SW 72nd Avenue
Portland, Oregon 97224
Tel (503) 598-8445
Fax (503) 941-9281

Settlement Analysis

Organization: **GeoPacific Engineering, Inc.**
Project Name: **19-5391, Fairfield Marriott, Ne**
Job #:
Design by: **BLC**
Date: **12/23/2019**

Foundation Geometry, GWT & Loading

Units: **English**
Footing Shape: **Square**
Method: **Schmertmann et al**

Variable	Value	Variable	Value
Footing Width	6.00 ft	Ground Water Depth	10.00 ft
Footing Thickness	3.00 ft	Soil Unit Weight	120.0 lb/ft^3
Footing Length	6.00 ft	Max. Depth	60.00 ft
Embedment Depth	1.00 ft	Time	20.00 years
Axial Load	80.00 k		

Time Rate Inputs

Thickness of Clay	10.00 ft	Drainage Condition	Single Drainage
Coef. of Consolidation	0.100 ft^2/day		

Geotechnical Properties

#	Material Type	USCS	Layer Thick, ft	Consistency	Soil Modulus Es lb/ft^2
1	User Defined		3.00 0 - 3		60000.000
2	User Defined		10.00 3 - 13		150000.000
3	User Defined		5.00 13 - 18		300000.000
4	User Defined		12.00 18 - 30		350000.000
5	User Defined		10.00 30 - 40		450000.000
6	User Defined		17.00 40 - 57		200000.000
7	User Defined		3.00 57 - 60		300000.000

Results

Applied Pressure, q:	2672.2 lb/ft^2	Drainage Height:	10.00 ft
Total Settlement, S:	1.81 in	Time for 99% Consol.:	4.88 years

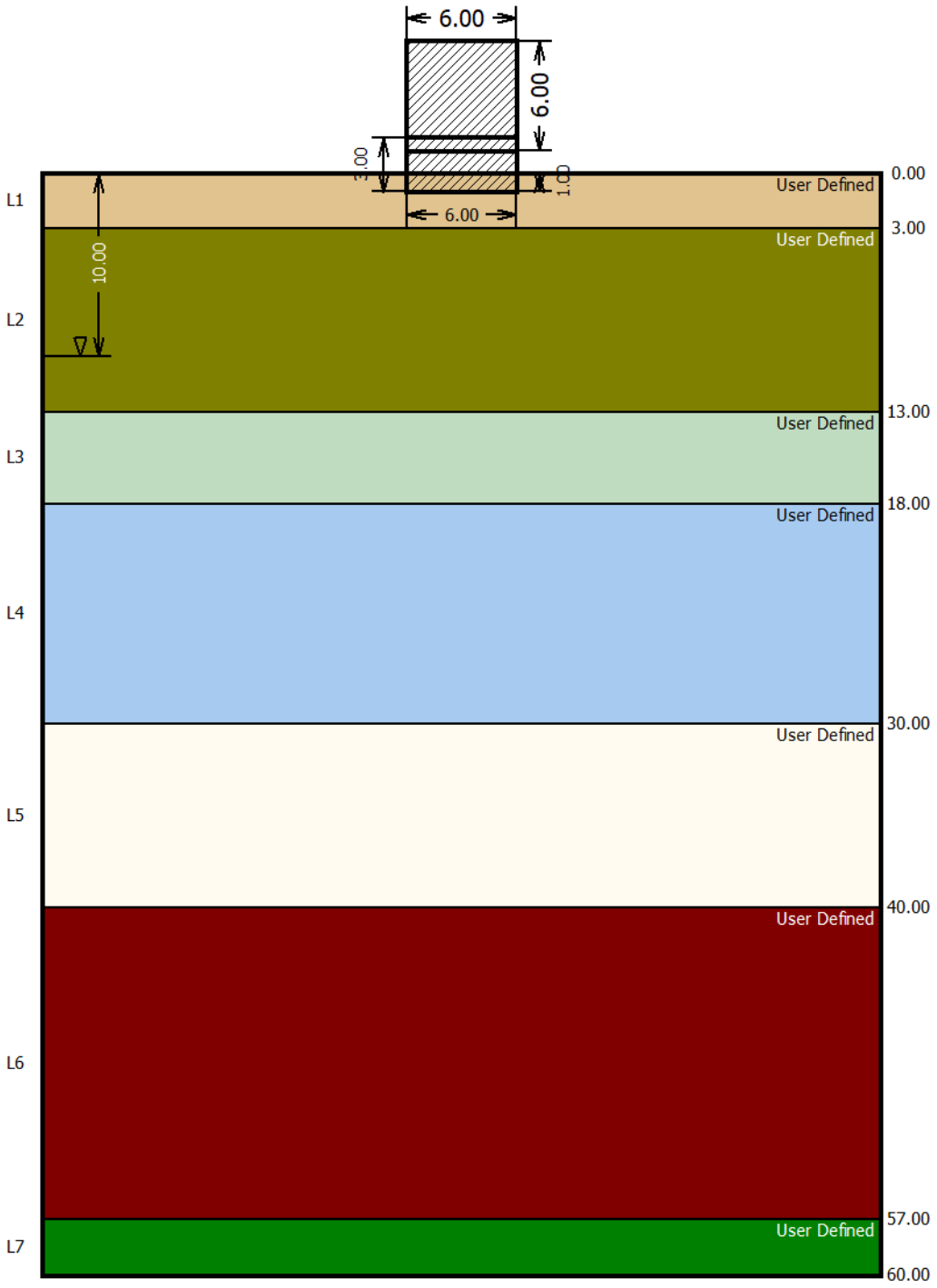


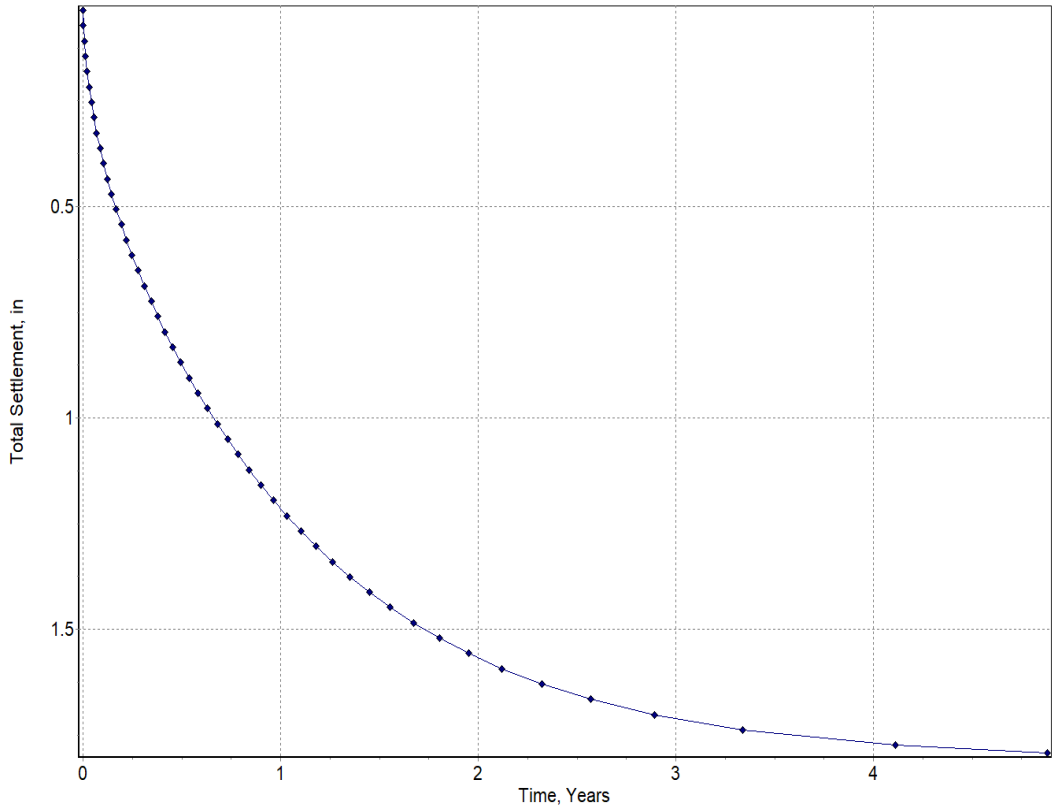
Fig. 1: Plan and Cross Section

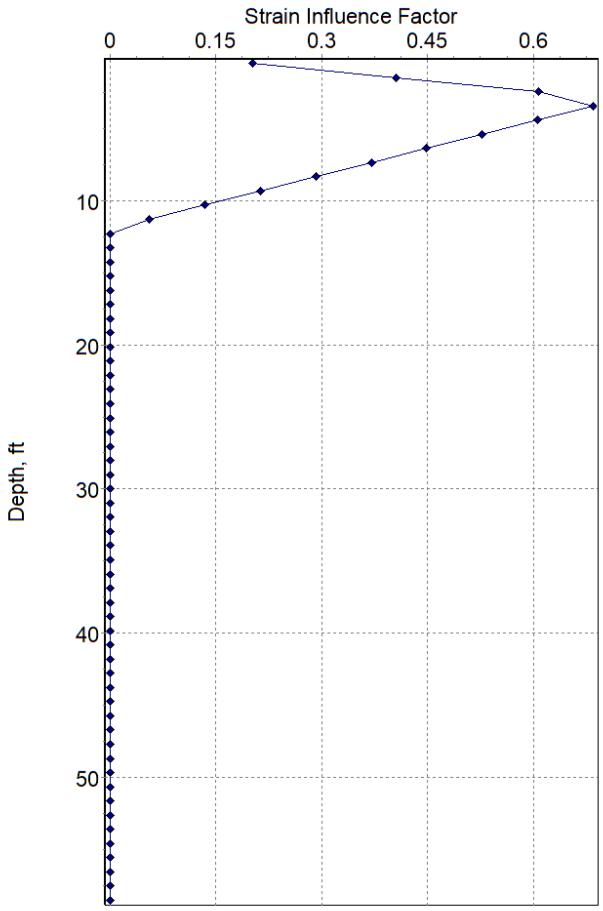
Table of Test Results

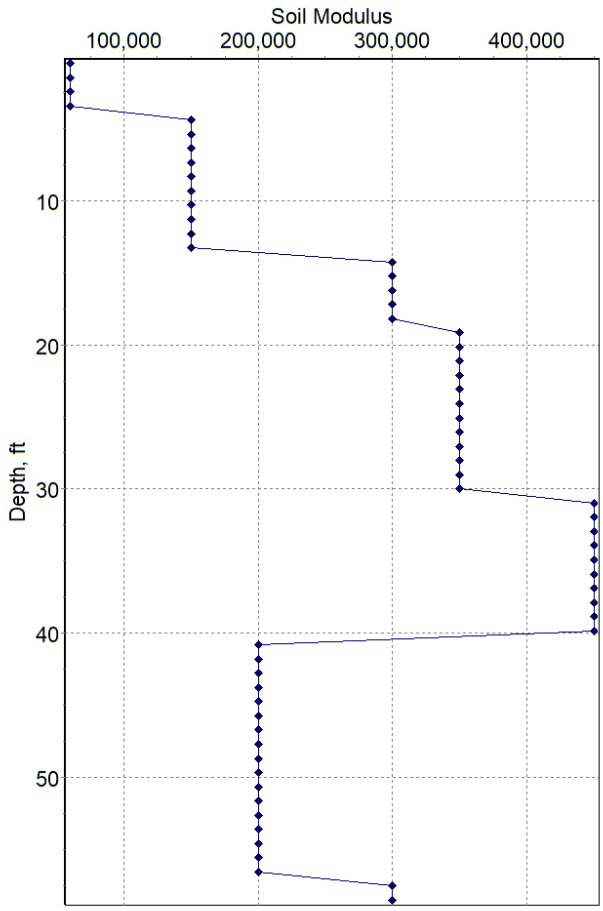
Node #	Depth (ft)	I epsilon	Strain (%)	Indiv. Sett. (in)	Tot. Sett. (in)
1	0.49	0.20	1.046	0.123	0.123
2	1.48	0.40	2.099	0.248	0.371
3	2.46	0.61	3.153	0.372	0.743
4	3.44	0.68	3.552	0.419	1.162
5	4.43	0.61	1.258	0.148	1.311
6	5.41	0.53	1.094	0.129	1.440
7	6.39	0.45	0.931	0.110	1.550
8	7.38	0.37	0.768	0.091	1.640
9	8.36	0.29	0.605	0.071	1.712
10	9.34	0.21	0.441	0.052	1.764
11	10.33	0.13	0.278	0.033	1.797
12	11.31	0.06	0.115	0.014	1.810
13	12.29	0.00	0.000	0.000	1.810
14	13.28	0.00	0.000	0.000	1.810
15	14.26	0.00	0.000	0.000	1.810
16	15.24	0.00	0.000	0.000	1.810
17	16.23	0.00	0.000	0.000	1.810
18	17.21	0.00	0.000	0.000	1.810
19	18.19	0.00	0.000	0.000	1.810
20	19.18	0.00	0.000	0.000	1.810
21	20.16	0.00	0.000	0.000	1.810
22	21.14	0.00	0.000	0.000	1.810
23	22.13	0.00	0.000	0.000	1.810
24	23.11	0.00	0.000	0.000	1.810
25	24.09	0.00	0.000	0.000	1.810
26	25.08	0.00	0.000	0.000	1.810
27	26.06	0.00	0.000	0.000	1.810
28	27.04	0.00	0.000	0.000	1.810
29	28.03	0.00	0.000	0.000	1.810
30	29.01	0.00	0.000	0.000	1.810
31	29.99	0.00	0.000	0.000	1.810
32	30.98	0.00	0.000	0.000	1.810
33	31.96	0.00	0.000	0.000	1.810
34	32.94	0.00	0.000	0.000	1.810
35	33.93	0.00	0.000	0.000	1.810
36	34.91	0.00	0.000	0.000	1.810
37	35.89	0.00	0.000	0.000	1.810
38	36.88	0.00	0.000	0.000	1.810
39	37.86	0.00	0.000	0.000	1.810
40	38.84	0.00	0.000	0.000	1.810
41	39.83	0.00	0.000	0.000	1.810
42	40.81	0.00	0.000	0.000	1.810
43	41.79	0.00	0.000	0.000	1.810
44	42.78	0.00	0.000	0.000	1.810
45	43.76	0.00	0.000	0.000	1.810
46	44.74	0.00	0.000	0.000	1.810
47	45.73	0.00	0.000	0.000	1.810
48	46.71	0.00	0.000	0.000	1.810
49	47.69	0.00	0.000	0.000	1.810
50	48.68	0.00	0.000	0.000	1.810
51	49.66	0.00	0.000	0.000	1.810
52	50.64	0.00	0.000	0.000	1.810
53	51.63	0.00	0.000	0.000	1.810
54	52.61	0.00	0.000	0.000	1.810
55	53.59	0.00	0.000	0.000	1.810
56	54.58	0.00	0.000	0.000	1.810
57	55.56	0.00	0.000	0.000	1.810
58	56.54	0.00	0.000	0.000	1.810
59	57.53	0.00	0.000	0.000	1.810
60	58.51	0.00	0.000	0.000	1.810

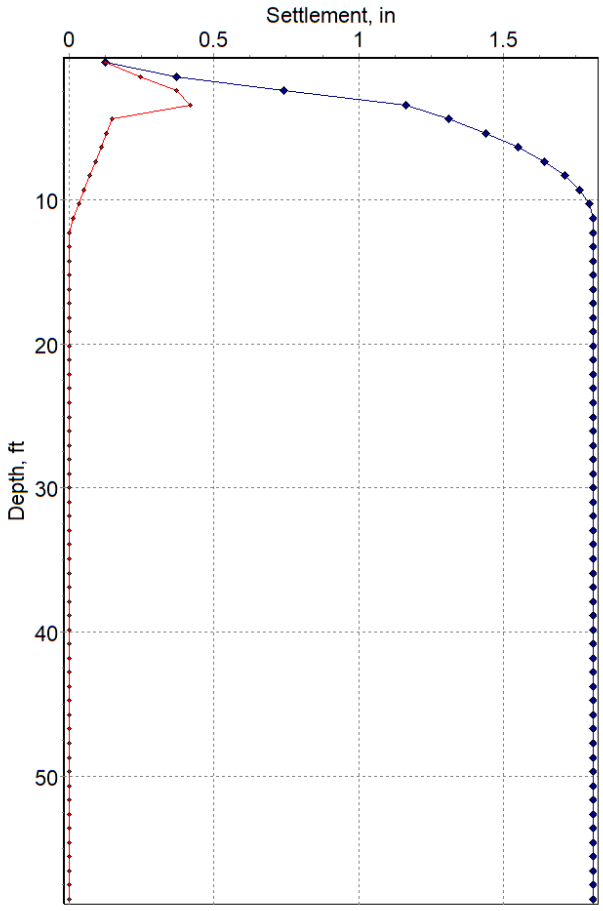
Table of Time Rate Results

Node #	Tot. Sett. (in)	Time Factor (Tv)	Time (years)	Node #	Tot. Sett. (in)	Time Factor (Tv)	Time (years)
1	0.04	0.00030	0.00	26	0.94	0.21200	0.58
2	0.07	0.00013	0.00	27	0.98	0.23000	0.63
3	0.11	0.00283	0.01	28	1.01	0.24800	0.68
4	0.14	0.00502	0.01	29	1.05	0.26700	0.73
5	0.18	0.00785	0.02	30	1.09	0.28600	0.78
6	0.22	0.01130	0.03	31	1.12	0.30700	0.84
7	0.25	0.01540	0.04	32	1.16	0.32900	0.90
8	0.29	0.02010	0.06	33	1.19	0.35200	0.96
9	0.33	0.02540	0.07	34	1.23	0.37700	1.03
10	0.36	0.03140	0.09	35	1.27	0.40300	1.10
11	0.40	0.03800	0.10	36	1.30	0.43100	1.18
12	0.43	0.04520	0.12	37	1.34	0.46100	1.26
13	0.47	0.05310	0.15	38	1.38	0.49300	1.35
14	0.51	0.06150	0.17	39	1.41	0.52900	1.45
15	0.54	0.07070	0.19	40	1.45	0.56700	1.55
16	0.58	0.08030	0.22	41	1.48	0.61000	1.67
17	0.62	0.09070	0.25	42	1.52	0.65800	1.80
18	0.65	0.10200	0.28	43	1.56	0.71200	1.95
19	0.69	0.11300	0.31	44	1.59	0.77400	2.12
20	0.72	0.12600	0.35	45	1.63	0.84800	2.32
21	0.76	0.13800	0.38	46	1.67	0.93800	2.57
22	0.80	0.15200	0.42	47	1.70	1.05500	2.89
23	0.83	0.16600	0.45	48	1.74	1.21900	3.34
24	0.87	0.18100	0.50	49	1.77	1.50000	4.11
25	0.91	0.19700	0.54	50	1.79	1.78100	4.88









References:

1. Foundation Design: Principles & Practices, 3rd edition, Coduto, Kitch & Yeung, 2015
2. Geotechnical Engineering: Principles & Practices, 2nd edition, Coduto, Yeung & Kitch, 2010
3. Theories of Consolidation, R. L. Schiffman, 2001
4. Geotechnical Engineering & Soil Testing, Al-Khafaji & Andersland, 1995
5. Soil Mechanics, A.R. Jumikis, 1984
6. Settlement Analysis v2.0.2, SoilStructure Software, 2019

Settlement Analysis

Organization: **GeoPacific Engineering, Inc.**
Project Name: **19-5391, Fairfield Marriott, Ne**
Job #:
Design by: **BLC**
Date: **12/23/2019**

Foundation Geometry, GWT & Loading

Units: **English**
Footing Shape: **Square**
Method: **Schmertmann et al**

Variable	Value	Variable	Value
Footing Width	6.00 ft	Ground Water Depth	10.00 ft
Footing Thickness	3.00 ft	Soil Unit Weight	120.0 lb/ft^3
Footing Length	6.00 ft	Max. Depth	60.00 ft
Embedment Depth	1.00 ft	Time	20.00 years
Axial Load	80.00 k		

Time Rate Inputs

Thickness of Clay	10.00 ft	Drainage Condition	Single Drainage
Coef. of Consolidation	0.100 ft^2/day		

Geotechnical Properties

#	Material Type	USCS	Layer Thick, ft	Consistency	Soil Modulus Es lb/ft^2
1	Granular Soil		3.00 0 - 3		500000.000
2	User Defined		10.00 3 - 13		150000.000
3	User Defined		5.00 13 - 18		300000.000
4	User Defined		12.00 18 - 30		350000.000
5	User Defined		10.00 30 - 40		450000.000
6	User Defined		17.00 40 - 57		200000.000
7	User Defined		3.00 57 - 60		300000.000

Results

Applied Pressure, q:	2672.2 lb/ft^2	Drainage Height:	10.00 ft
Total Settlement, S:	0.79 in	Time for 99% Consol.:	4.88 years

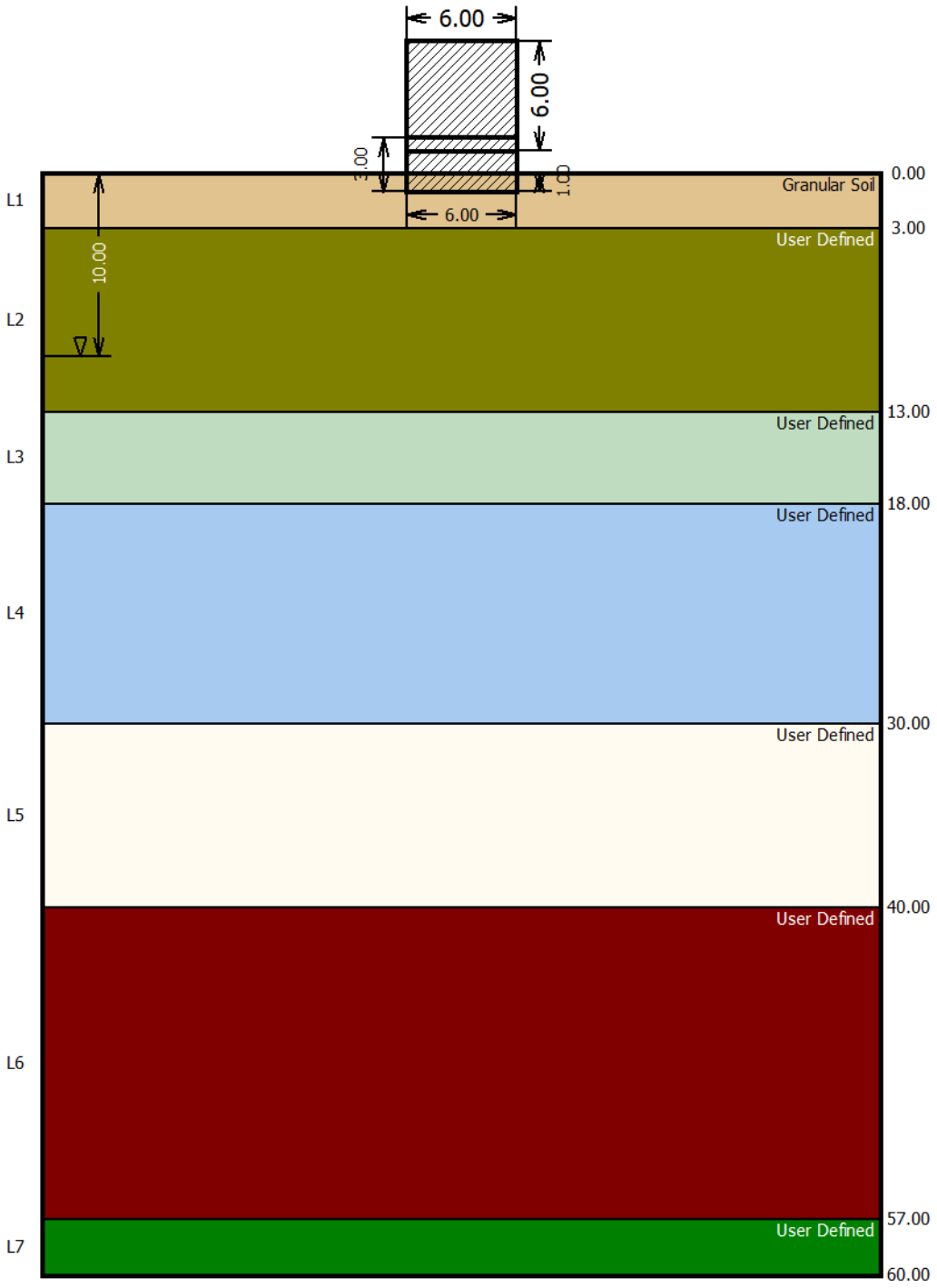


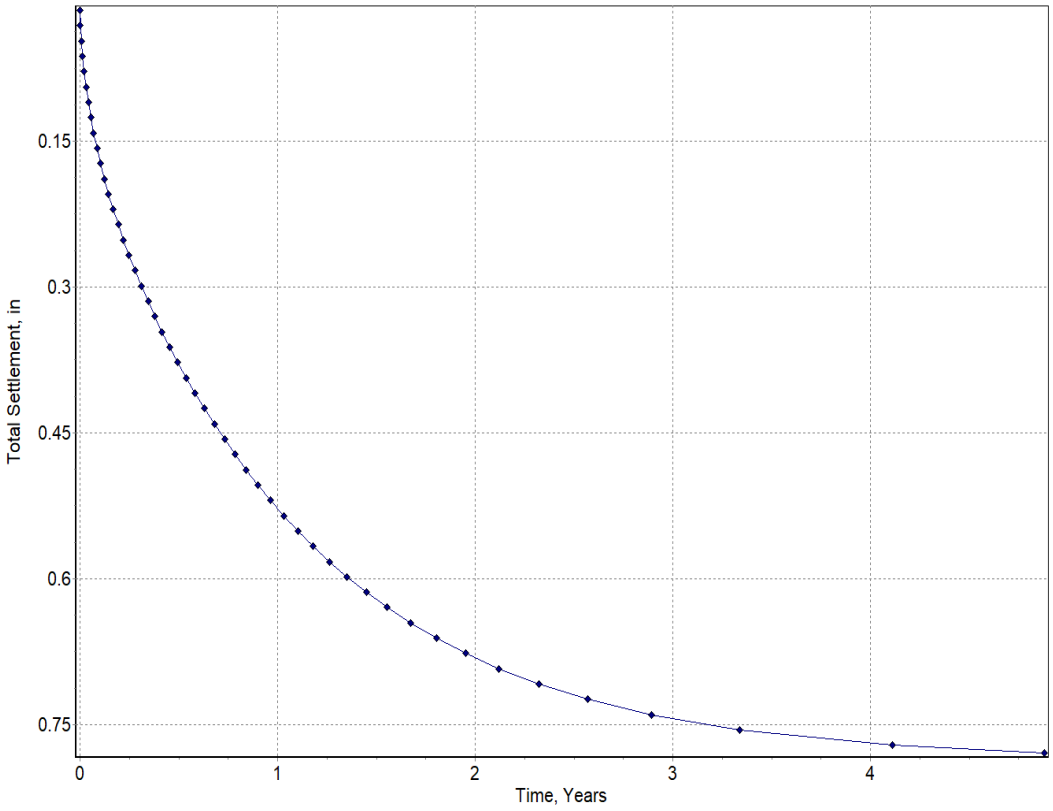
Fig. 1: Plan and Cross Section

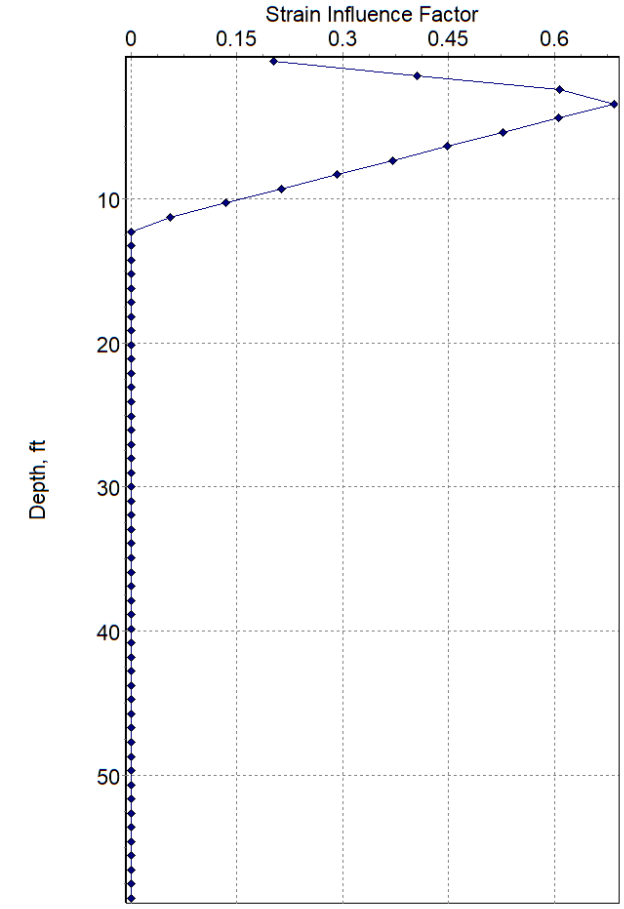
Table of Test Results

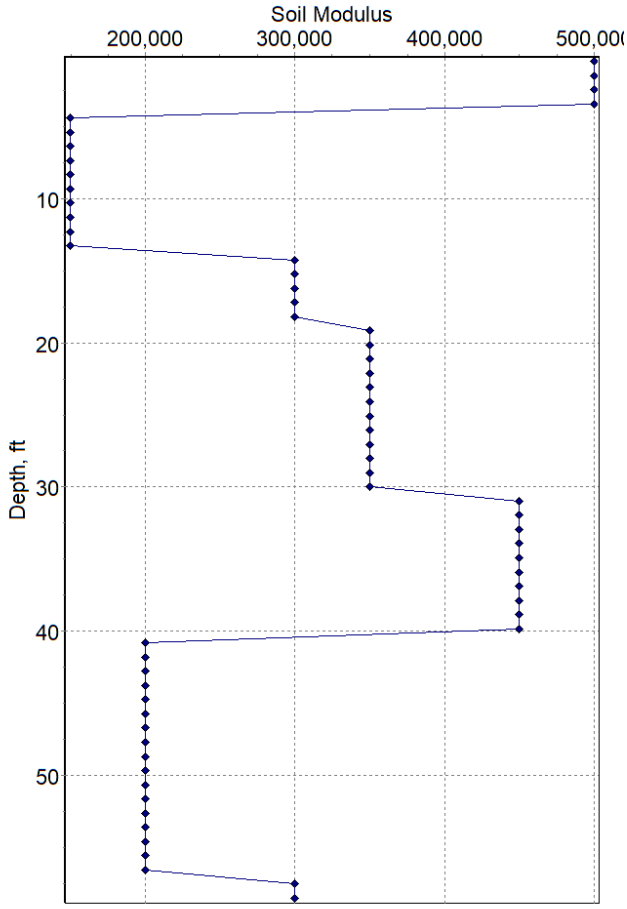
Node #	Depth (ft)	I epsilon	Strain (%)	Indiv. Sett. (in)	Tot. Sett. (in)
1	0.49	0.20	0.125	0.015	0.015
2	1.48	0.40	0.252	0.030	0.045
3	2.46	0.61	0.378	0.045	0.089
4	3.44	0.68	0.426	0.050	0.139
5	4.43	0.61	1.258	0.148	0.288
6	5.41	0.53	1.094	0.129	0.417
7	6.39	0.45	0.931	0.110	0.527
8	7.38	0.37	0.768	0.091	0.617
9	8.36	0.29	0.605	0.071	0.689
10	9.34	0.21	0.441	0.052	0.741
11	10.33	0.13	0.278	0.033	0.774
12	11.31	0.06	0.115	0.014	0.787
13	12.29	0.00	0.000	0.000	0.787
14	13.28	0.00	0.000	0.000	0.787
15	14.26	0.00	0.000	0.000	0.787
16	15.24	0.00	0.000	0.000	0.787
17	16.23	0.00	0.000	0.000	0.787
18	17.21	0.00	0.000	0.000	0.787
19	18.19	0.00	0.000	0.000	0.787
20	19.18	0.00	0.000	0.000	0.787
21	20.16	0.00	0.000	0.000	0.787
22	21.14	0.00	0.000	0.000	0.787
23	22.13	0.00	0.000	0.000	0.787
24	23.11	0.00	0.000	0.000	0.787
25	24.09	0.00	0.000	0.000	0.787
26	25.08	0.00	0.000	0.000	0.787
27	26.06	0.00	0.000	0.000	0.787
28	27.04	0.00	0.000	0.000	0.787
29	28.03	0.00	0.000	0.000	0.787
30	29.01	0.00	0.000	0.000	0.787
31	29.99	0.00	0.000	0.000	0.787
32	30.98	0.00	0.000	0.000	0.787
33	31.96	0.00	0.000	0.000	0.787
34	32.94	0.00	0.000	0.000	0.787
35	33.93	0.00	0.000	0.000	0.787
36	34.91	0.00	0.000	0.000	0.787
37	35.89	0.00	0.000	0.000	0.787
38	36.88	0.00	0.000	0.000	0.787
39	37.86	0.00	0.000	0.000	0.787
40	38.84	0.00	0.000	0.000	0.787
41	39.83	0.00	0.000	0.000	0.787
42	40.81	0.00	0.000	0.000	0.787
43	41.79	0.00	0.000	0.000	0.787
44	42.78	0.00	0.000	0.000	0.787
45	43.76	0.00	0.000	0.000	0.787
46	44.74	0.00	0.000	0.000	0.787
47	45.73	0.00	0.000	0.000	0.787
48	46.71	0.00	0.000	0.000	0.787
49	47.69	0.00	0.000	0.000	0.787
50	48.68	0.00	0.000	0.000	0.787
51	49.66	0.00	0.000	0.000	0.787
52	50.64	0.00	0.000	0.000	0.787
53	51.63	0.00	0.000	0.000	0.787
54	52.61	0.00	0.000	0.000	0.787
55	53.59	0.00	0.000	0.000	0.787
56	54.58	0.00	0.000	0.000	0.787
57	55.56	0.00	0.000	0.000	0.787
58	56.54	0.00	0.000	0.000	0.787
59	57.53	0.00	0.000	0.000	0.787
60	58.51	0.00	0.000	0.000	0.787

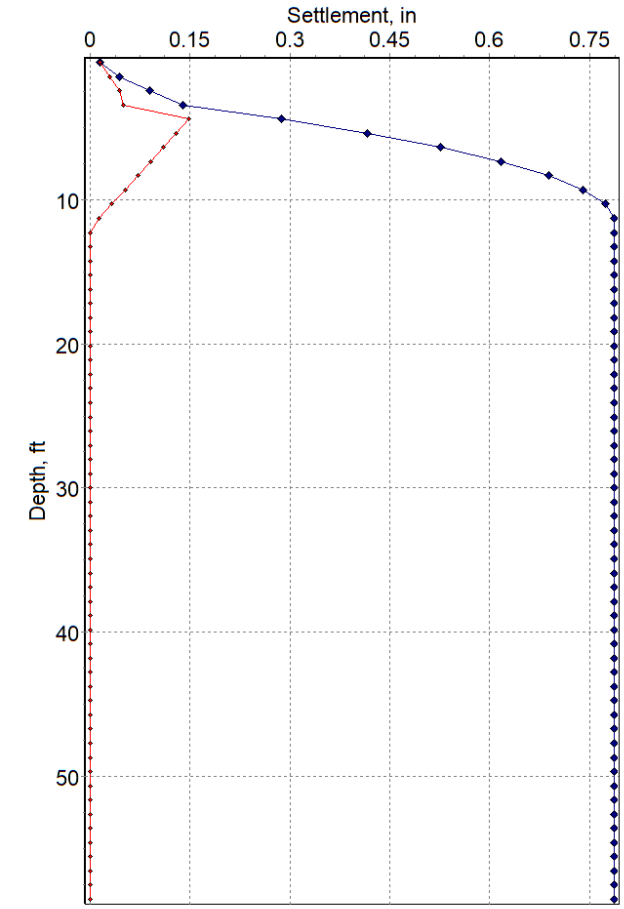
Table of Time Rate Results

Node #	Tot. Sett. (in)	Time Factor (Tv)	Time (years)	Node #	Tot. Sett. (in)	Time Factor (Tv)	Time (years)
1	0.02	0.00030	0.00	26	0.41	0.21200	0.58
2	0.03	0.00013	0.00	27	0.43	0.23000	0.63
3	0.05	0.00283	0.01	28	0.44	0.24800	0.68
4	0.06	0.00502	0.01	29	0.46	0.26700	0.73
5	0.08	0.00785	0.02	30	0.47	0.28600	0.78
6	0.09	0.01130	0.03	31	0.49	0.30700	0.84
7	0.11	0.01540	0.04	32	0.50	0.32900	0.90
8	0.13	0.02010	0.06	33	0.52	0.35200	0.96
9	0.14	0.02540	0.07	34	0.54	0.37700	1.03
10	0.16	0.03140	0.09	35	0.55	0.40300	1.10
11	0.17	0.03800	0.10	36	0.57	0.43100	1.18
12	0.19	0.04520	0.12	37	0.58	0.46100	1.26
13	0.20	0.05310	0.15	38	0.60	0.49300	1.35
14	0.22	0.06150	0.17	39	0.61	0.52900	1.45
15	0.24	0.07070	0.19	40	0.63	0.56700	1.55
16	0.25	0.08030	0.22	41	0.65	0.61000	1.67
17	0.27	0.09070	0.25	42	0.66	0.65800	1.80
18	0.28	0.10200	0.28	43	0.68	0.71200	1.95
19	0.30	0.11300	0.31	44	0.69	0.77400	2.12
20	0.31	0.12600	0.35	45	0.71	0.84800	2.32
21	0.33	0.13800	0.38	46	0.72	0.93800	2.57
22	0.35	0.15200	0.42	47	0.74	1.05500	2.89
23	0.36	0.16600	0.45	48	0.76	1.21900	3.34
24	0.38	0.18100	0.50	49	0.77	1.50000	4.11
25	0.39	0.19700	0.54	50	0.78	1.78100	4.88









References:

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2. Geotechnical Engineering: Principles & Practices, 2nd edition, Coduto, Yeung & Kitch, 2010
3. Theories of Consolidation, R. L. Schiffman, 2001
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5. Soil Mechanics, A.R. Jumikis, 1984
6. Settlement Analysis v2.0.2, SoilStructure Software, 2019

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RIGID AND FLEXIBLE PAVEMENT DESIGN

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==========

DARWin(tm) - Pavement Design

A Proprietary AASHTOWARE(tm)
Computer Software Product

Flexible Structural Design Module

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, OR 97224

Project Description
19-5391, Fairfield Marriott, Newberg, Oregon, Flexible Pavement Design, Private Parking and Drive Areas, 20-Year Design Life

Flexible Structural Design Module Data

18-kip ESALs Over Initial Performance Period	75,000
Initial Serviceability	4.2
Terminal Serviceability	2.2
Reliability Level (%)	85
Overall Standard Deviation	.5
Roadbed Soil Resilient Modulus (PSI)	6,000
Stage Construction	1
Calculated Structural Number	2.38

Specified Layer Design

Layer	1
Material Description	Asphaltic Concrete (A/C)
Structural Coefficient (Ai)	.42
Drainage Coefficient (Mi)	1
Layer Thickness (Di) (in)	3.50
Calculated Layer SN	1.47

Layer	2
Material Description	3/4"-0 Crushed Aggregate
Structural Coefficient (Ai)	.1
Drainage Coefficient (Mi)	1
Layer Thickness (Di) (in)	2.00
Calculated Layer SN	.20

Layer	3
Material Description	1.5"-0 Crushed Aggregate
Structural Coefficient (Ai)	.1
Drainage Coefficient (Mi)	1
Layer Thickness (Di) (in)	8.00
Calculated Layer SN	.80

Total Thickness (in)	13.50
Total Calculated SN	2.47

==========

DARWin(tm) - Pavement Design

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Computer Software Product

Rigid Structural Design Module

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, OR 97224

Project Description
19-5391, Fairfield Marriott, Newberg, Oregon, Rigid Pavement Design, Private Parking/Drive Lanes

Rigid Structural Design Module Data

Pavement type:	JPCP
18-kip ESALs for initial performance period:	75,000
Initial Serviceability:	4.2
Terminal Serviceability:	2.2
28-day mean PCC Modulus of Rupture (psi):	650
28-day mean Elastic Modulus of Slab (psi):	3,500,000
Mean Effective k-value (pci):	33.03
Reliability Level (%):	85
Overall Standard Deviation:	.39
Load Transfer Coefficient:	3
Overall Drainage Coefficient:	1
Stage Construction:	3
Calculated Design Thickness (in):	4.90

Rigid Structural Design Joint Spacing

Joint Spacing (ft):	10.00

Additional Pavement Layers

Layer Number:	2
Material Type:	3/4"-0 Crushed Aggr
Description:	Leveling Course
Thickness (in):	2.00
Layer Number:	3
Material Type:	1.5"-0 Crushed Aggr
Description:	Base Course
Thickness (in):	6.00

Effective Modulus of Subgrade Reaction (k)

Base Type:	Crushed Aggregate
Base Thickness (in):	8
Depth to Bedrock (ft):	100
Projected Slab Thickness (in):	6
Loss of Support:	2
Period:	1
Roadbed Soil Resilient Modulus (PSI):	6,000
Base Elastic Modulus (PSI):	6,000
Effective Modulus of subgrade reaction (PCI):	33.03

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SOIL LIQUEFACTION ANALYSIS

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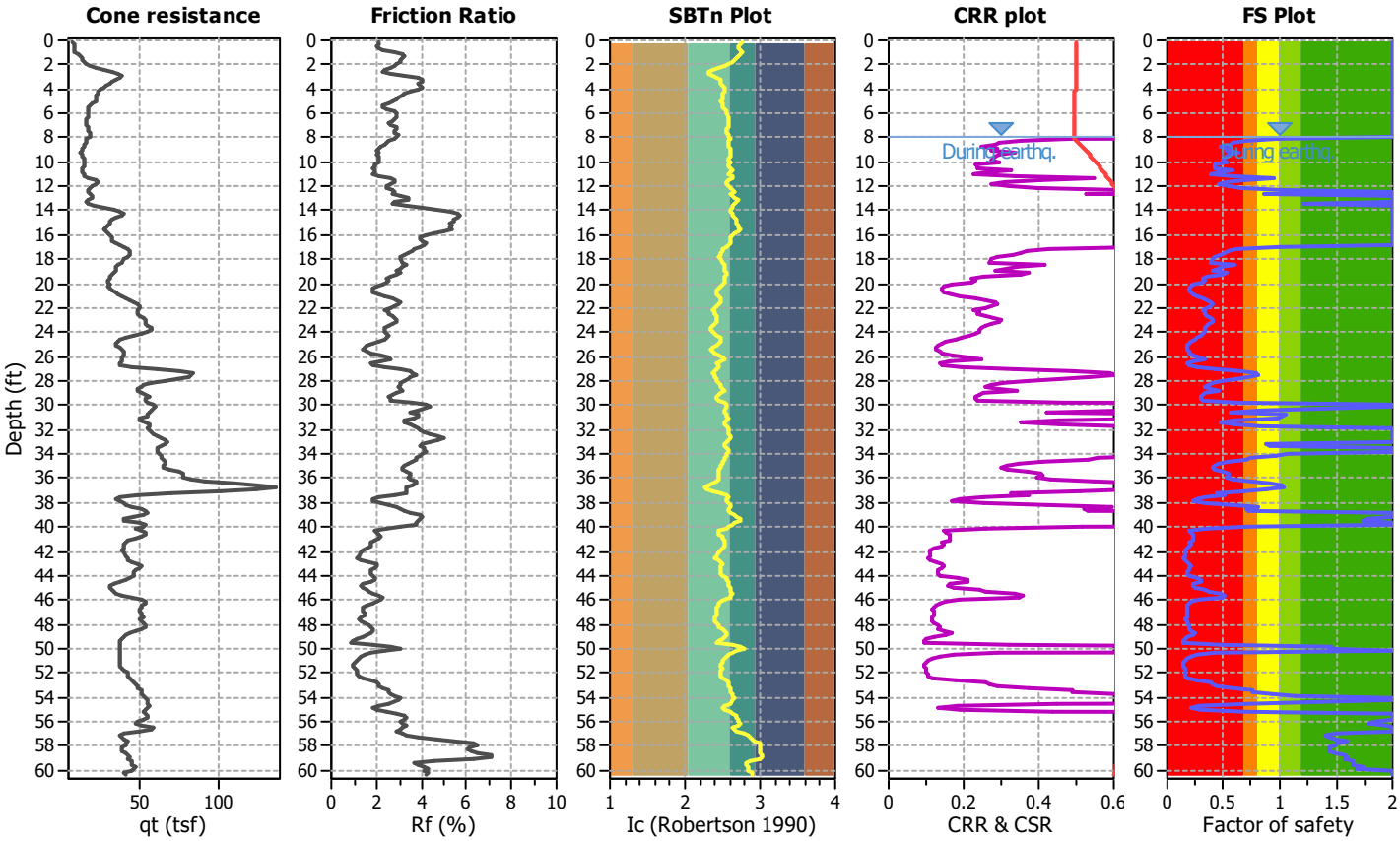
LIQUEFACTION ANALYSIS REPORT

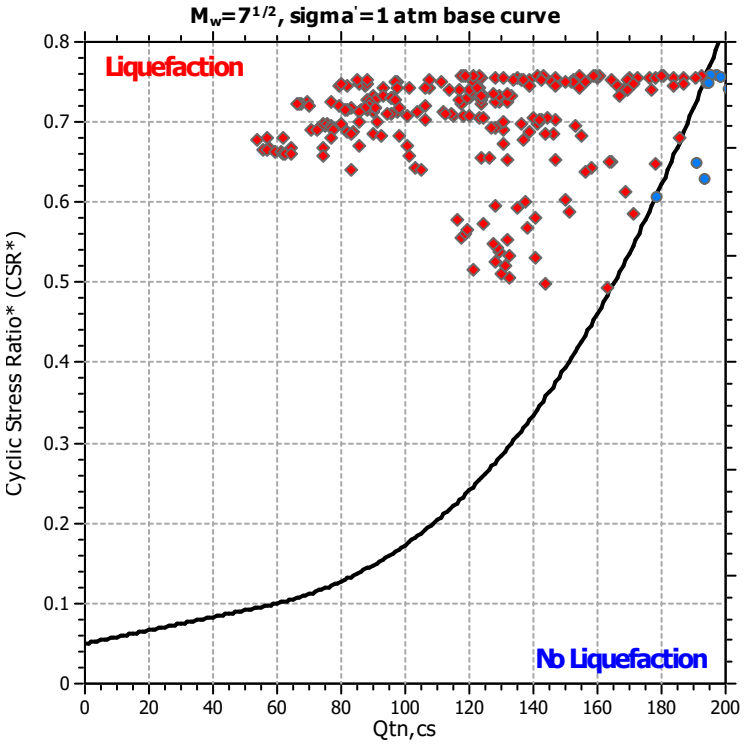
Project title : 19-5391, Fairfield Marriott **Location : 45.306859, -122.940625, Newberg, Oregon**

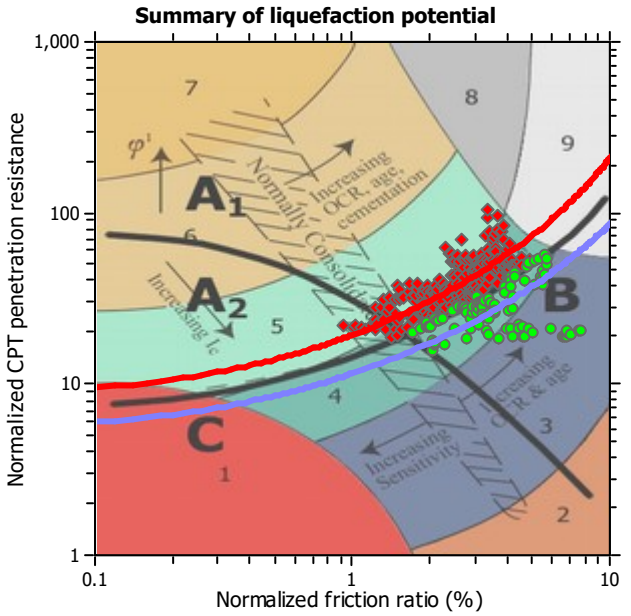
CPT file : CPT-1

Input parameters and analysis data

Analysis method:	Robertson (2009)	G.W.T. (in-situ):	10.00 ft	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	8.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	60.00 ft
Earthquake magnitude M_w:	9.10	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.47	Unit weight calculation:	Based on SBT	K_σ applied:	No		

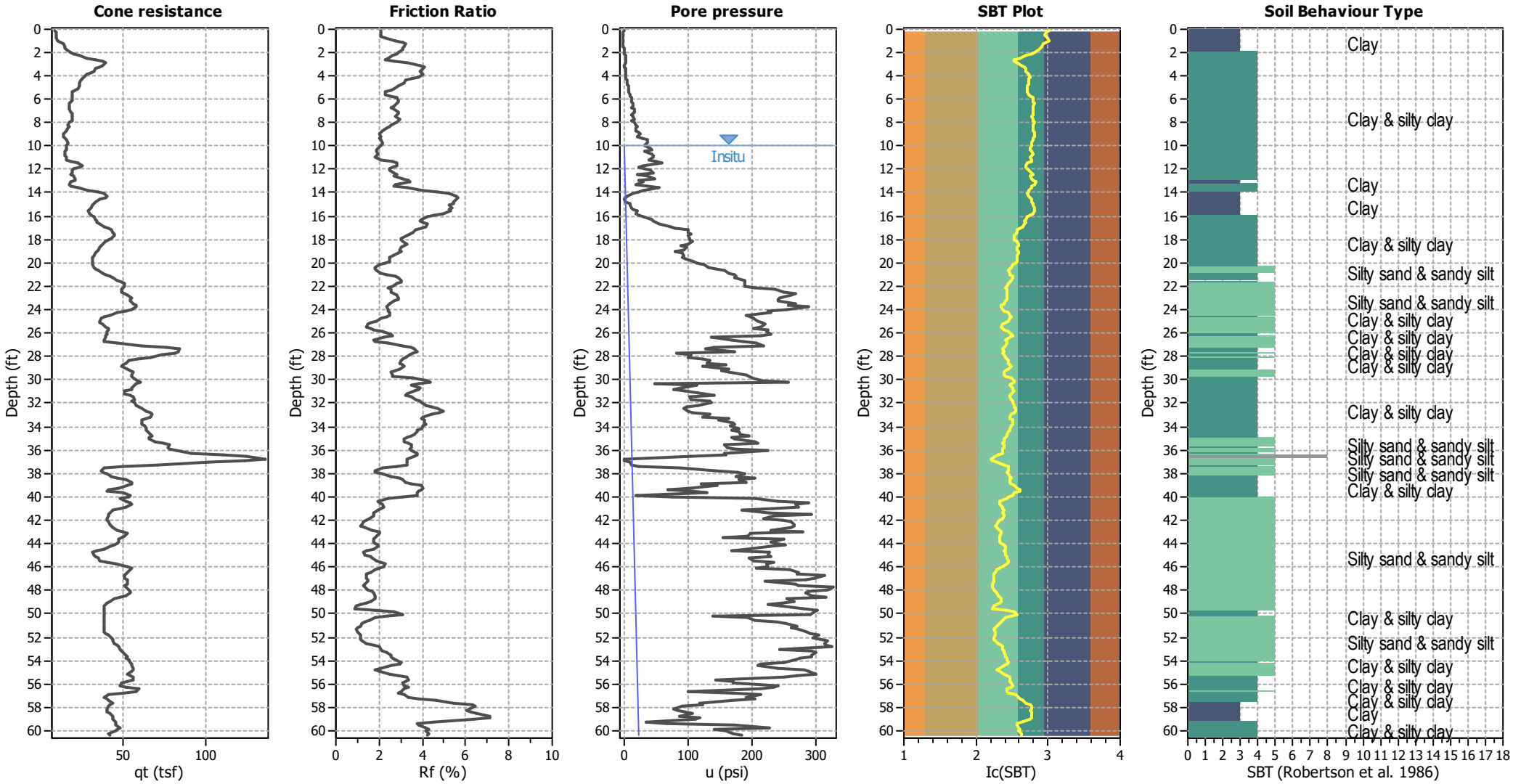






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



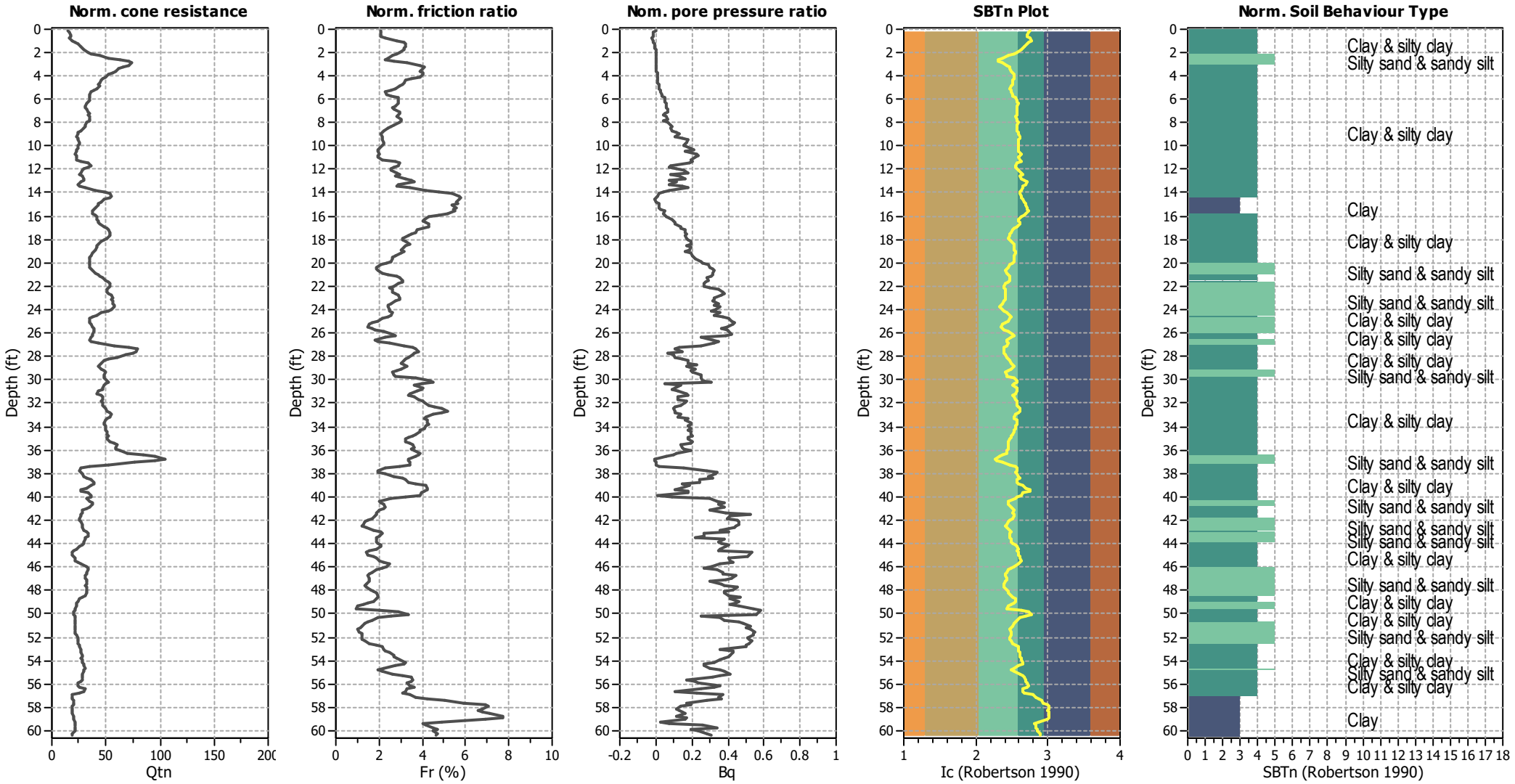
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	9.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.47	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

CPT basic interpretation plots (normalized)



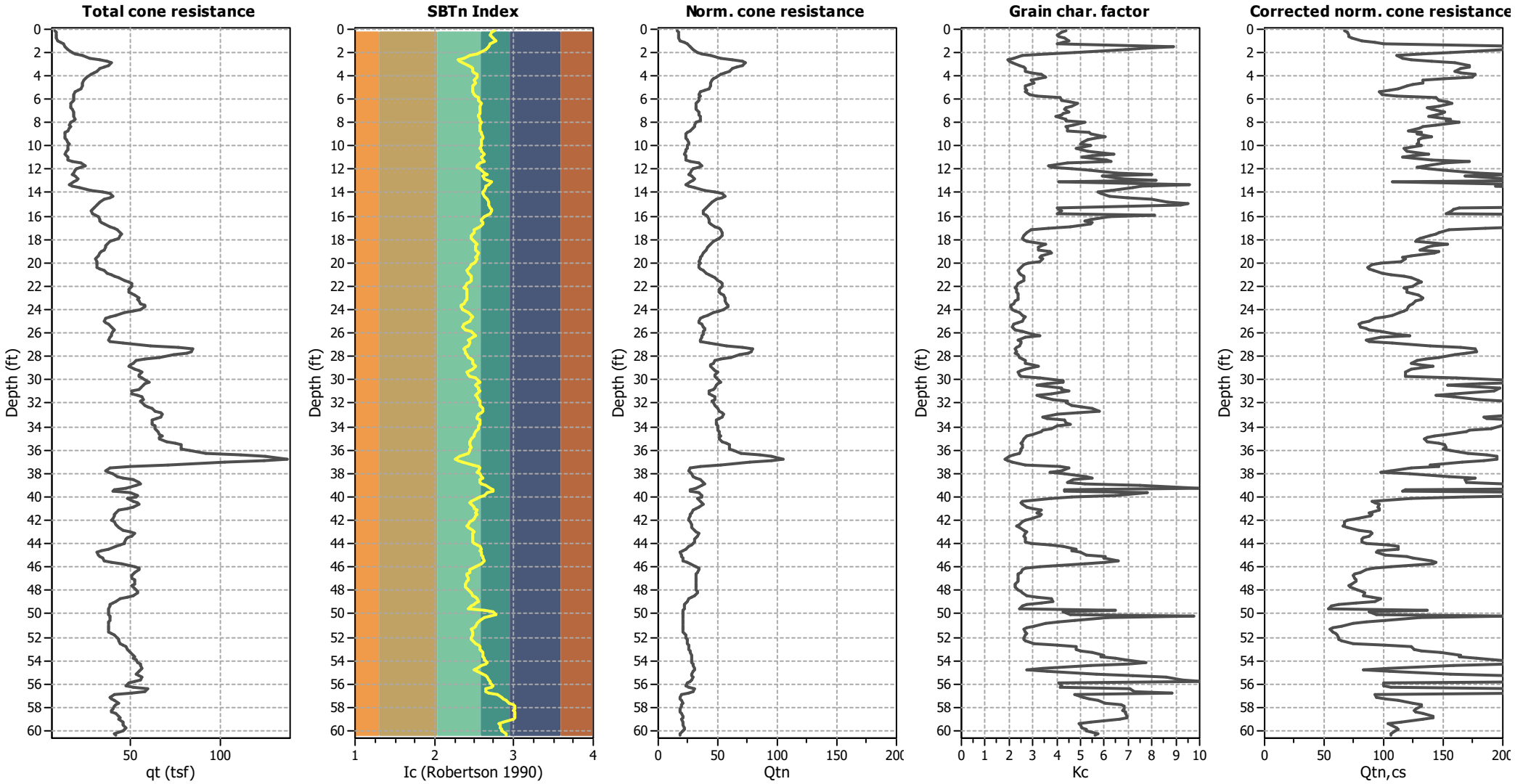
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	9.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.47	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

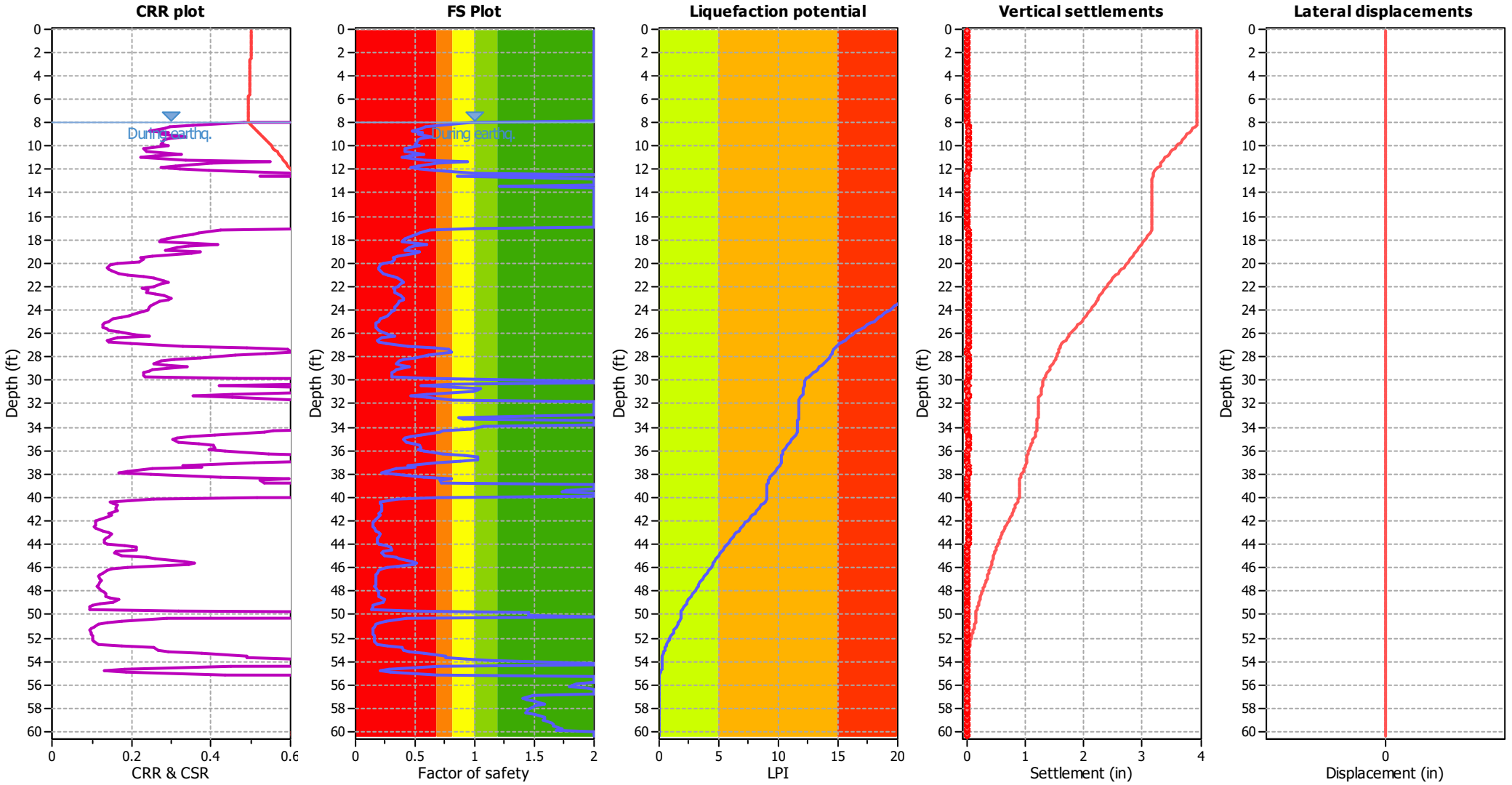
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	9.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.47	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	9.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.47	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

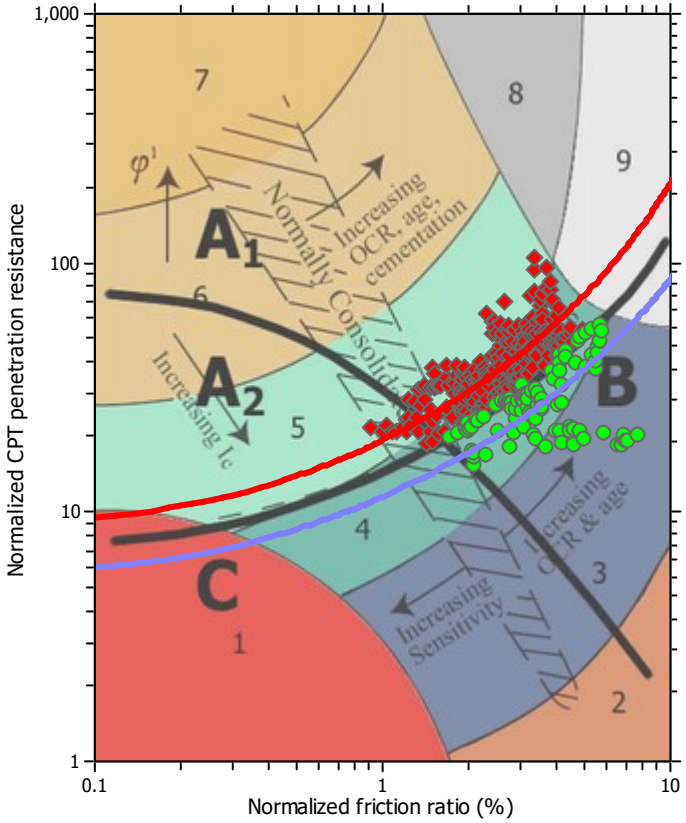
F.S. color scheme

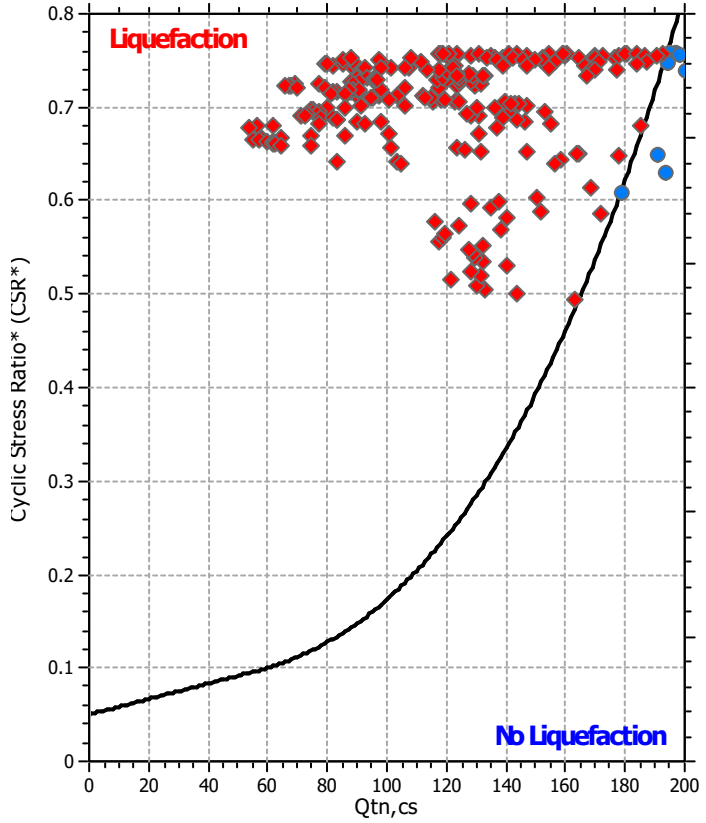
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

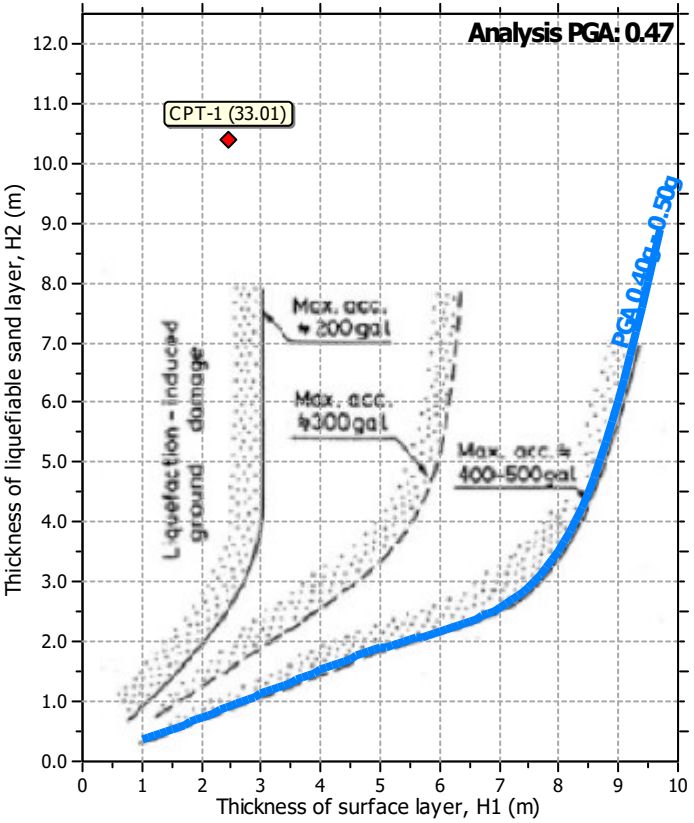
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



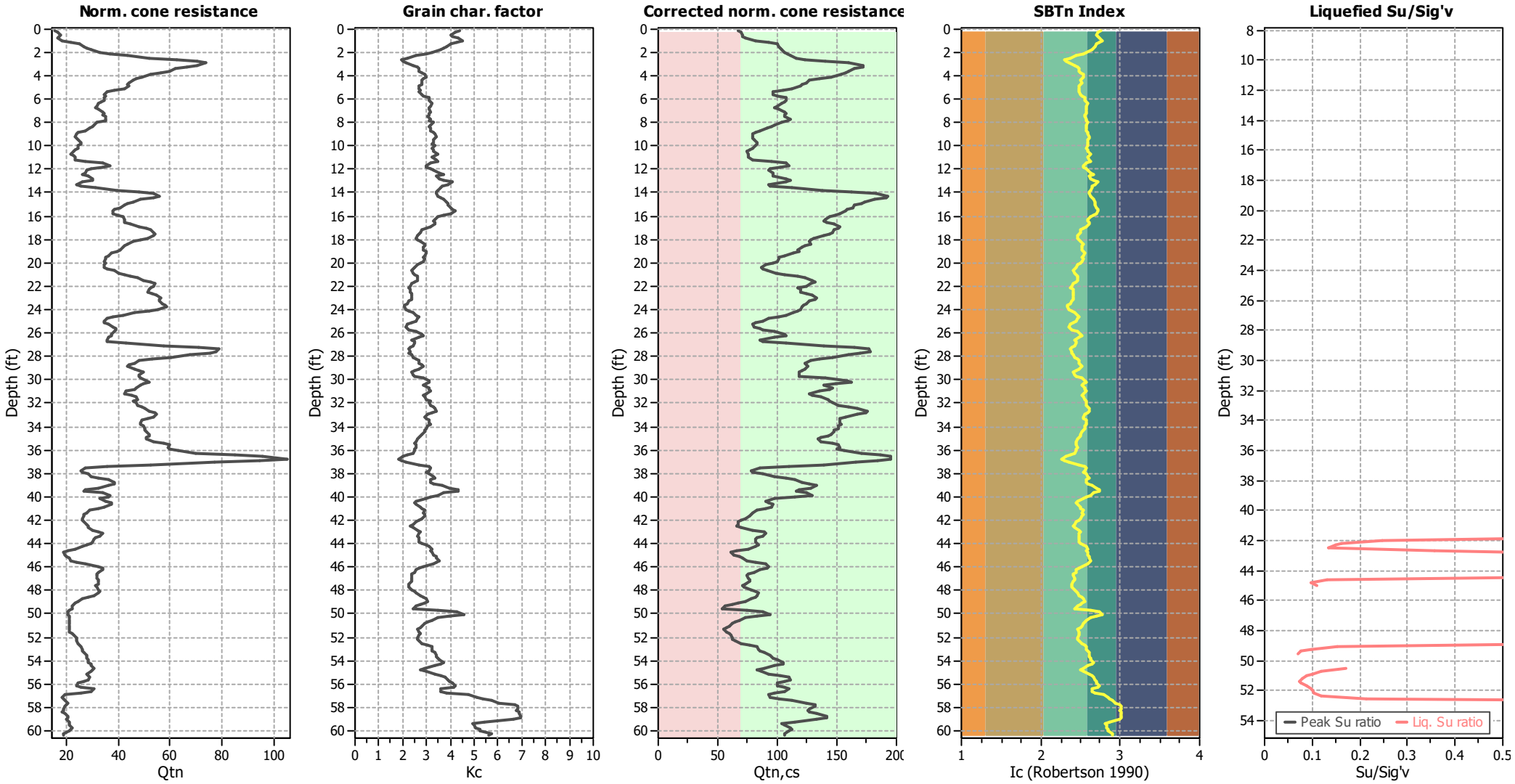




Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	9.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.47	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

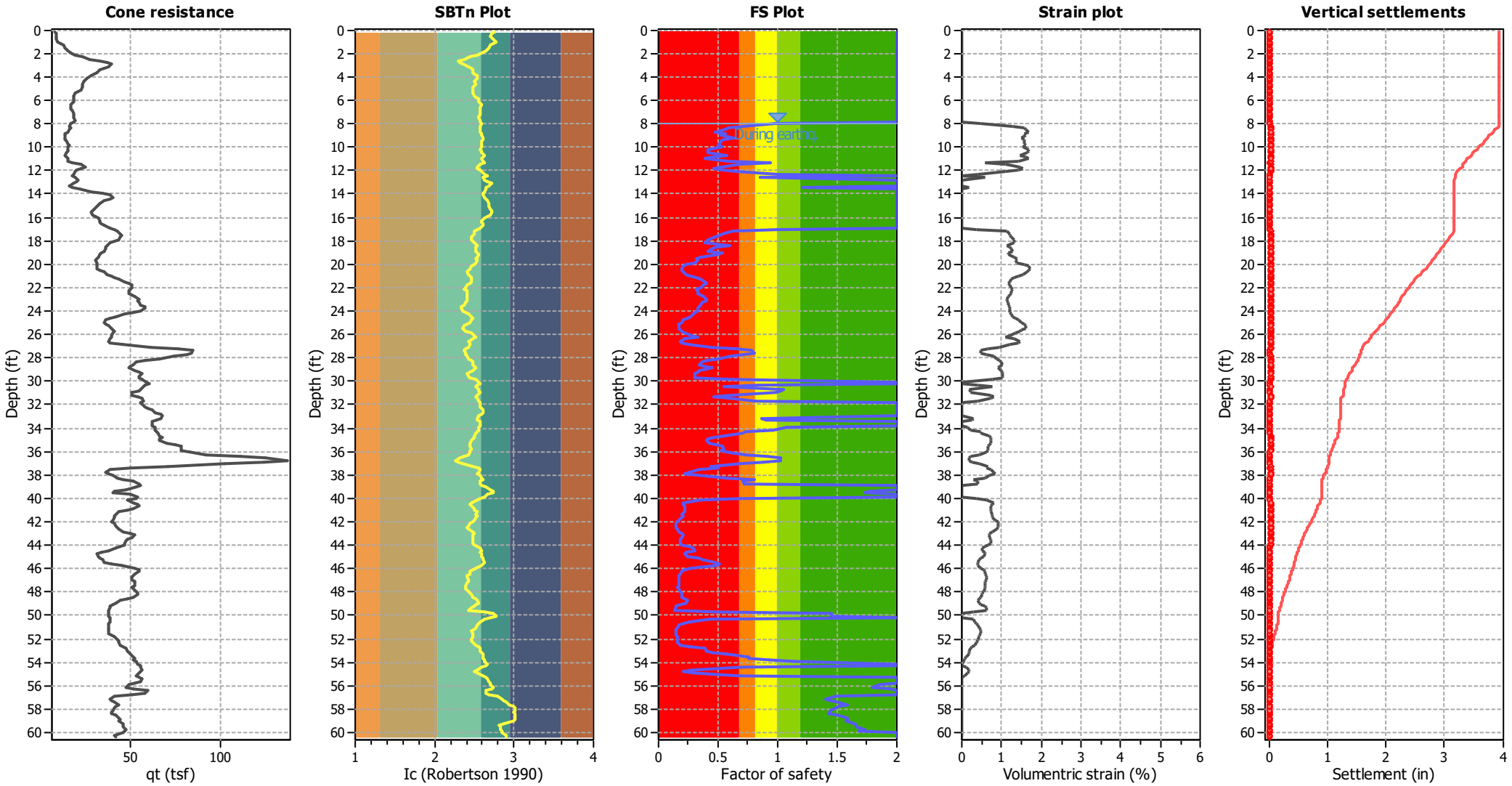
Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	9.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.47	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Estimation of post-earthquake settlements



Abbreviations

q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

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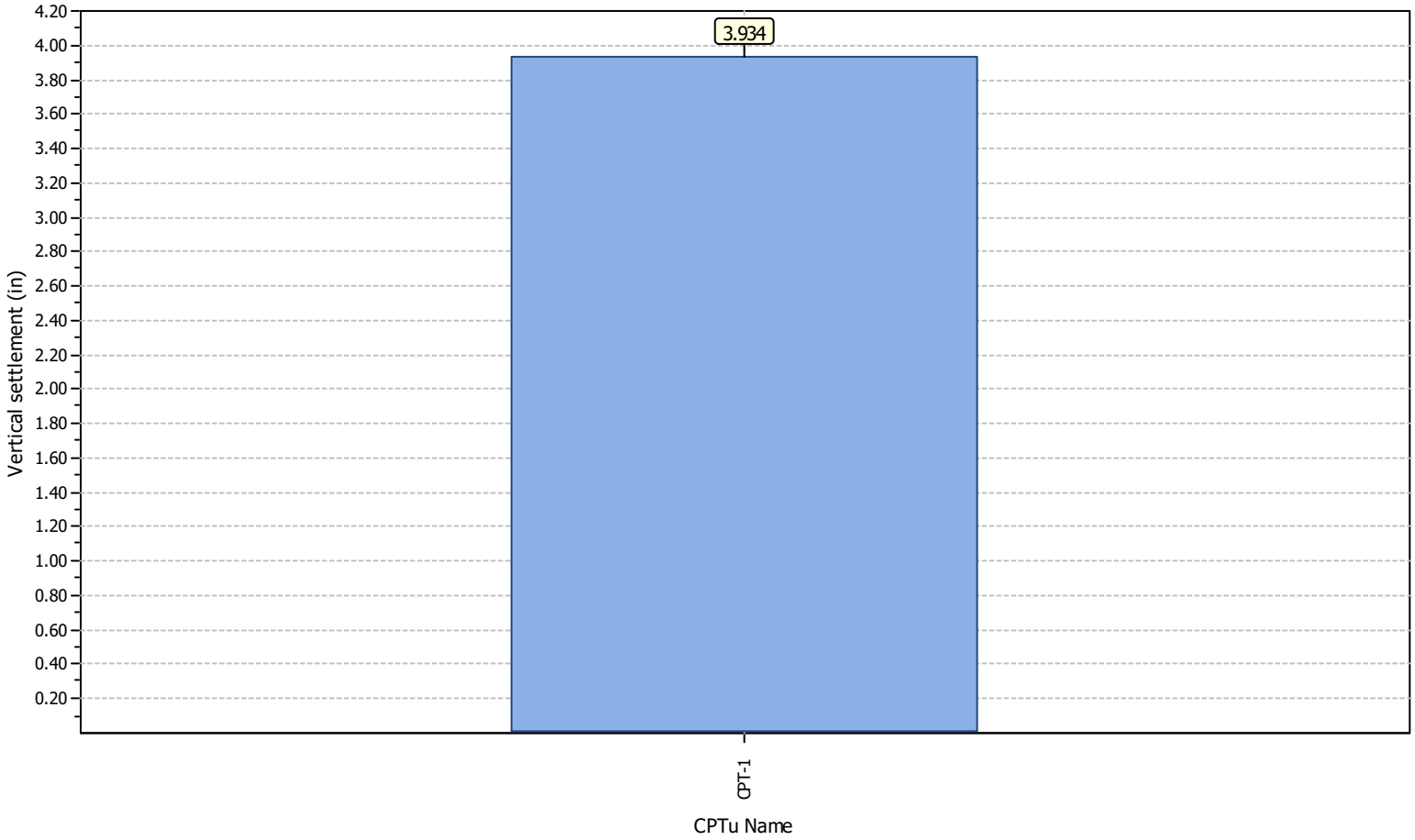
Project title : 19-5391, Fairfield Marriott

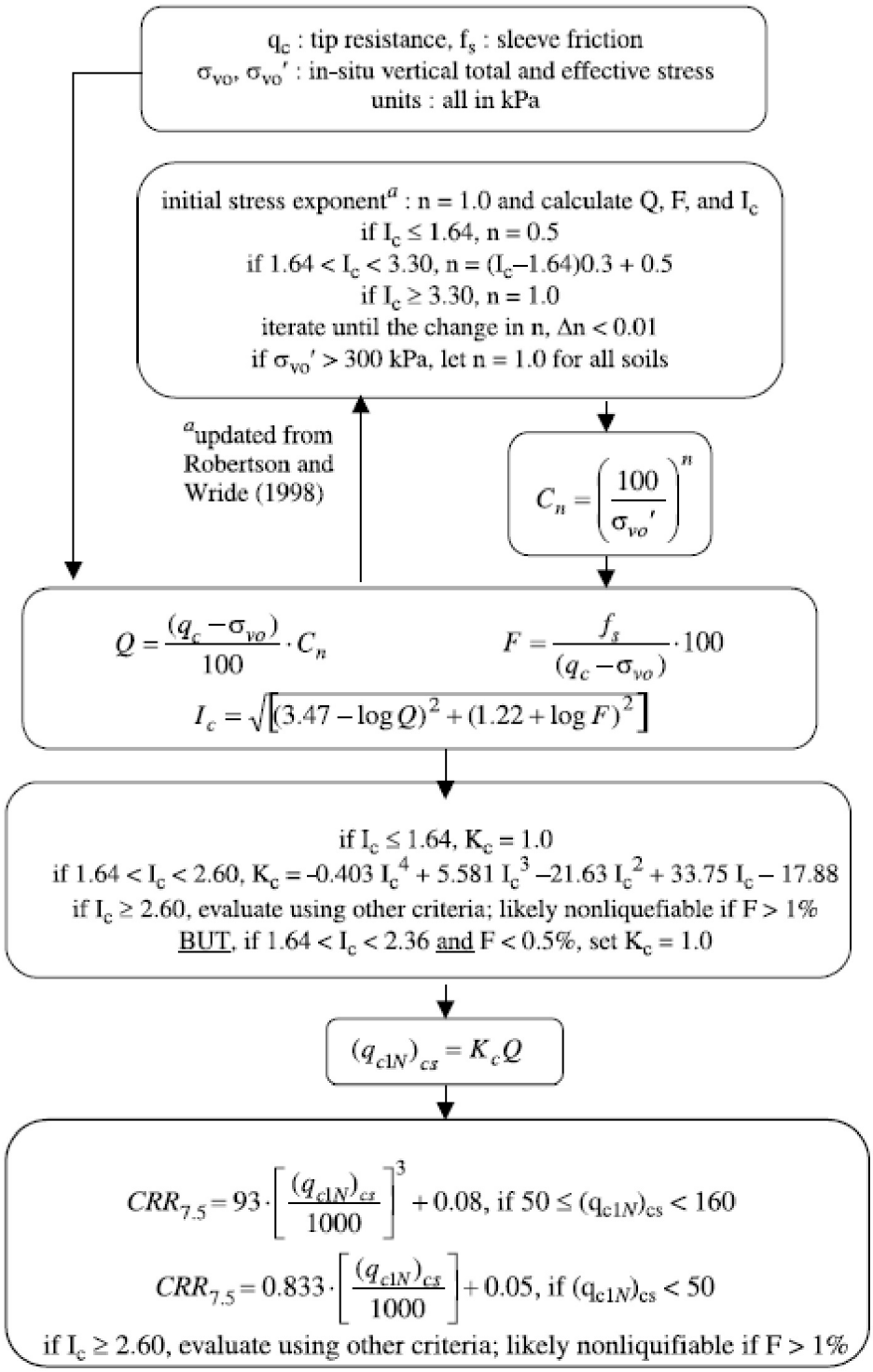
Location : 45.306859, -122.940625, Newberg, Oregon

Overall vertical settlements report



Procedure for the evaluation of soil liquefaction resistance, NCEER (1998)

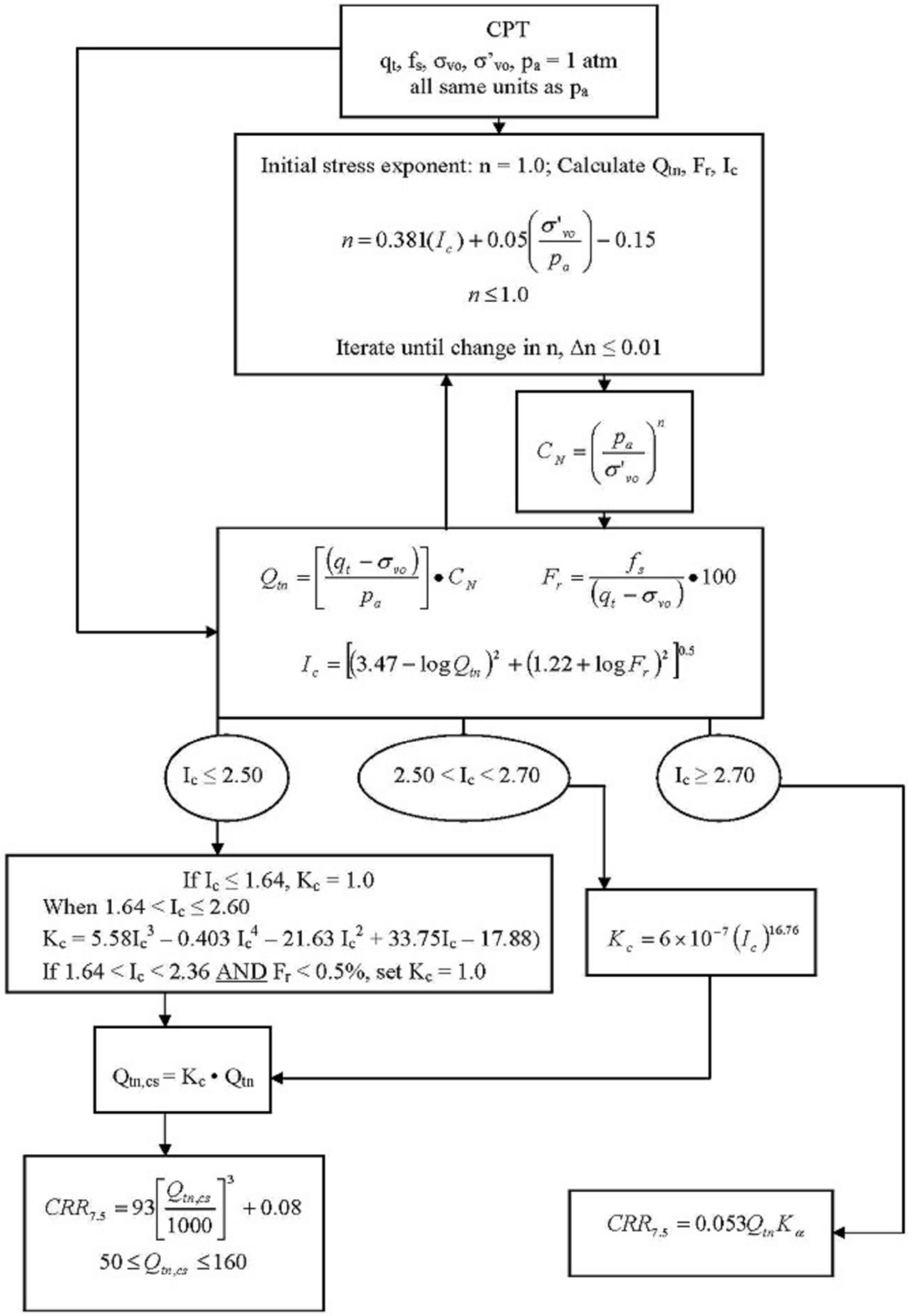
Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. The procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:



[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

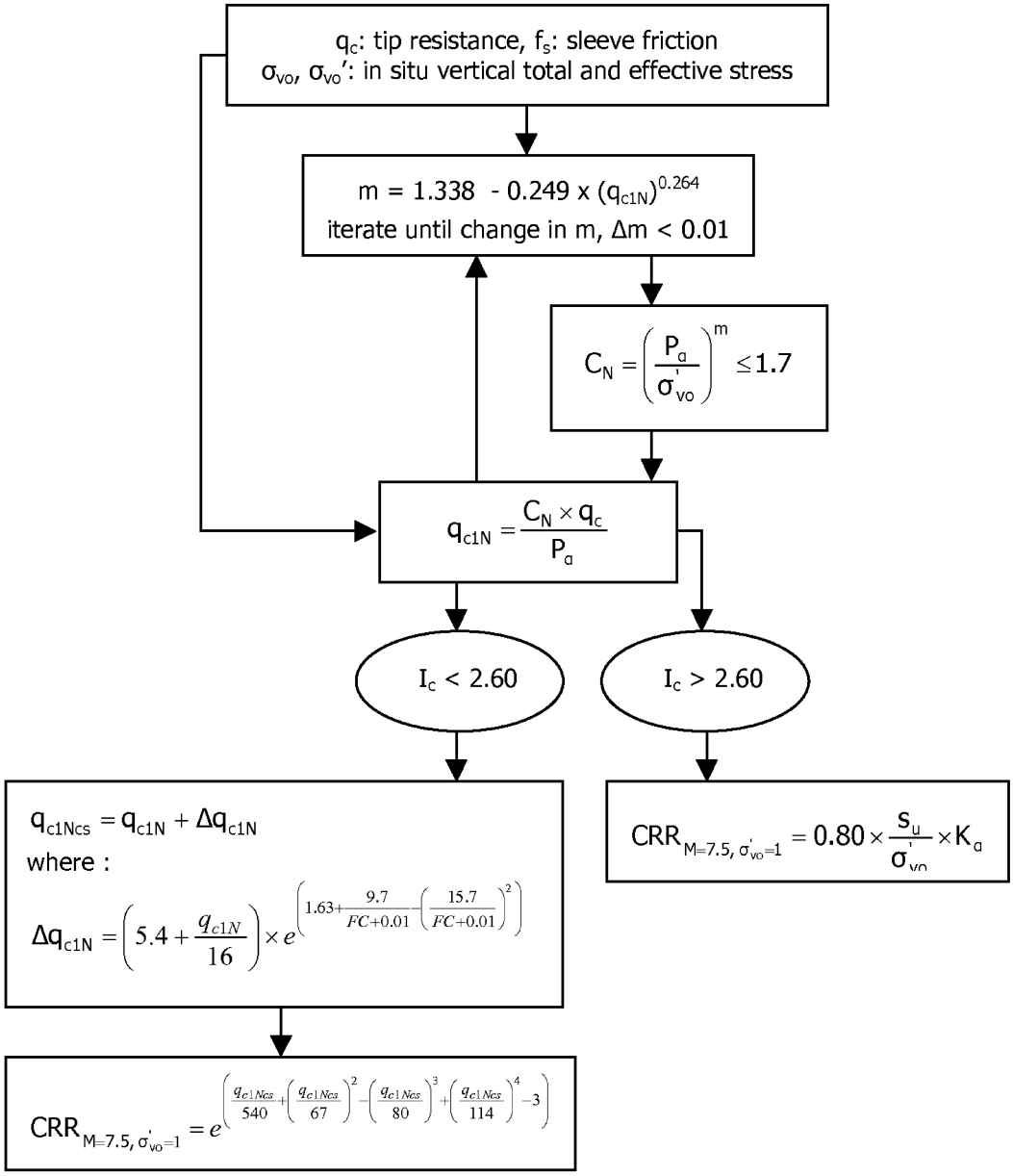
Procedure for the evaluation of soil liquefaction resistance (all soils), Robertson (2010)

Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. This procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:

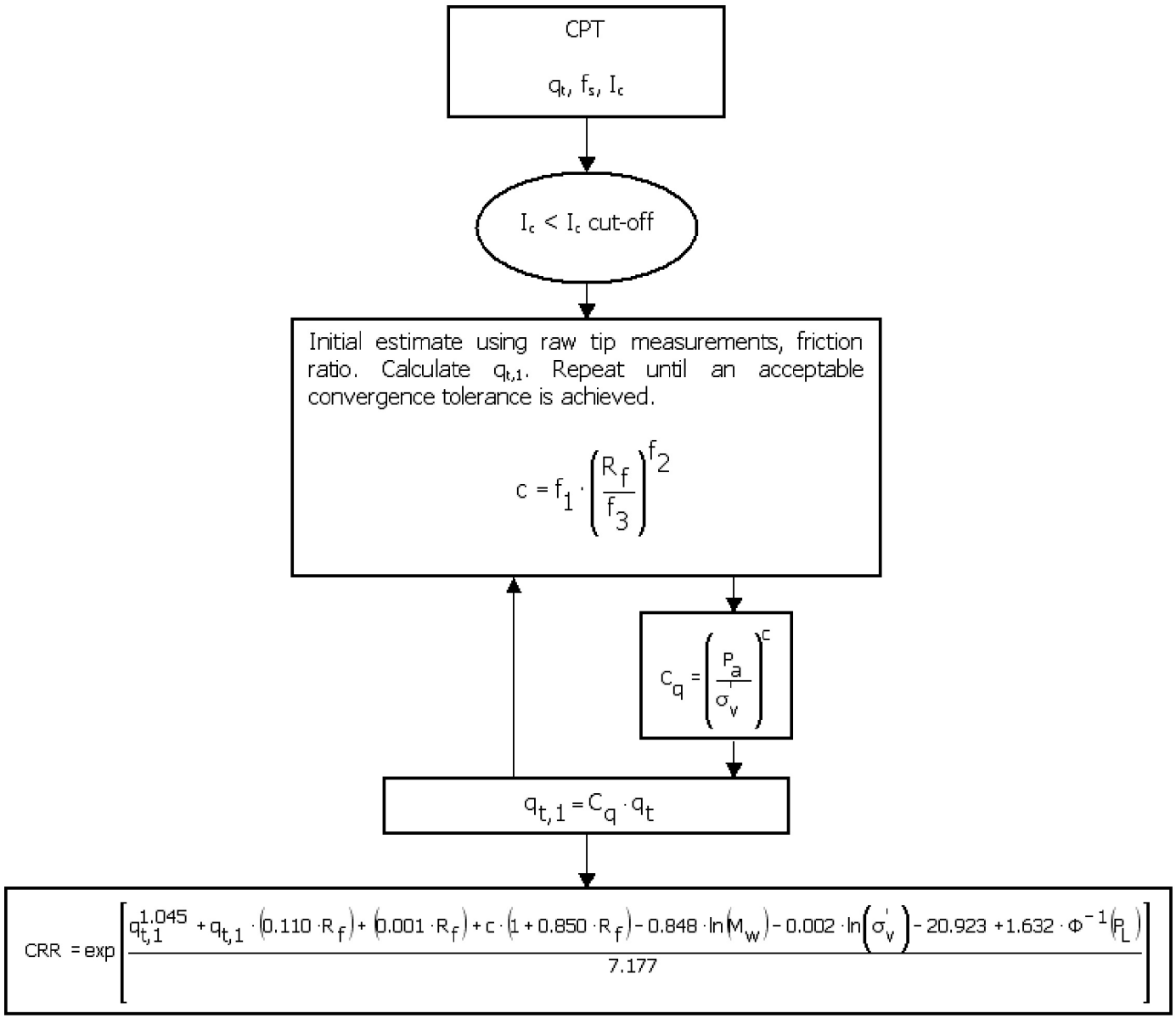


[1] P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009

Procedure for the evaluation of soil liquefaction resistance, Idriss & Boulanger (2008)



Procedure for the evaluation of soil liquefaction resistance (sandy soils), Moss et al. (2006)



Procedure for the evaluation of soil liquefaction resistance, Boulanger & Idriss(2014)

$$FS_{liq} = \frac{CRR_{M=7.5,\sigma'_v=1atm}}{CSR_{M=7.5,\sigma'_v=1atm}}$$

$$CSR_{M=7.5,\sigma'_v=1atm} = 0.65 \frac{\sigma_v}{\sigma'_v} \frac{a_{max}}{g} r_d \frac{1}{MSF} \frac{1}{K_\sigma}$$

$$r_d = \exp\left[\alpha(z) + \beta(z) \cdot M\right]$$

$$\alpha(z) = -1.012 - 1.126 \sin\left(\frac{z}{11.73} + 5.133\right)$$

$$\beta(z) = 0.106 + 0.118 \sin\left(\frac{z}{11.28} + 5.142\right)$$

$$K_\sigma = 1 - C_\sigma \ln\left(\frac{\sigma'_v}{P_a}\right) \le 1.1$$

$$C_\sigma = \frac{1}{37.3 - 8.27\left(q_{c1Ncs}\right)^{0.264}} \le 0.3$$

$$MSF = 1 + \left(MSF_{max} - 1\right)\left(8.64 \exp\left(\frac{-M}{4}\right) - 1.325\right)$$

$$MSF_{max} = 1.09 + \left(\frac{q_{c1Ncs}}{180}\right)^3 \le 2.2$$

σ'_v *and* σ_v *at start of earthquake shaking*

$$CRR_{M=7.5,\sigma'_v=1atm} = \exp\left(\frac{q_{c1Ncs}}{113} + \left(\frac{q_{c1Ncs}}{1000}\right)^2 - \left(\frac{q_{c1Ncs}}{140}\right)^3 + \left(\frac{q_{c1Ncs}}{137}\right)^4 - 2.80\right)$$

$$q_{c1Ncs} = q_{c1N} + \Delta q_{c1N}$$

$$\Delta q_{c1N} = \left(11.9 + \frac{q_{c1N}}{14.6}\right) \exp\left(1.63 - \frac{9.7}{FC+2} - \left(\frac{15.7}{FC+2}\right)^2\right)$$

$$q_{c1N} = C_{Ne} \frac{q_c}{P_a}$$

$$C_{Ne} = \left(\frac{P_a}{\sigma'_v}\right)^m \le 1.7$$

$$m = 1.338 - 0.249\left(q_{c1Ncs}\right)^{0.264} \quad with \quad 0.264 \le m \le 0.782$$

$$FC = 80\left(I_C + C_{FC}\right) - 137 \quad with \quad 0\% \le FC \le 100\%$$

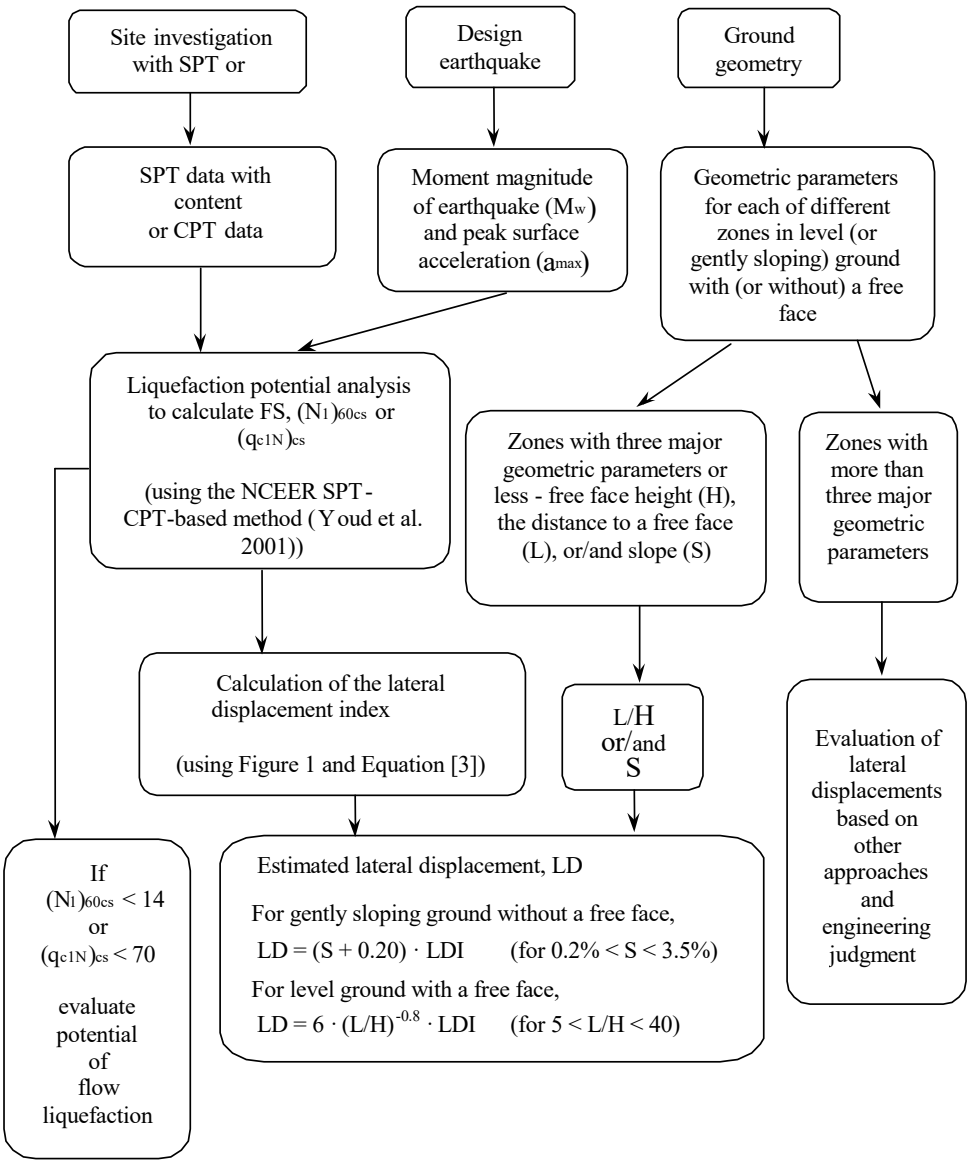
$$I_c = \left[\left(3.47 - \log\left(Q\right)\right)^2 + \left(1.22 + \log\left(F\right)\right)^2\right]^{0.5}$$

$$Q = \left(\frac{q_c - \sigma_{vc}}{P_a}\right)\left(\frac{P_a}{\sigma'_{vc}}\right)^n \; with \; 0.5 \le n \le 1.0 \; per \; Robertson \; \& \; Wride \; (1998)$$

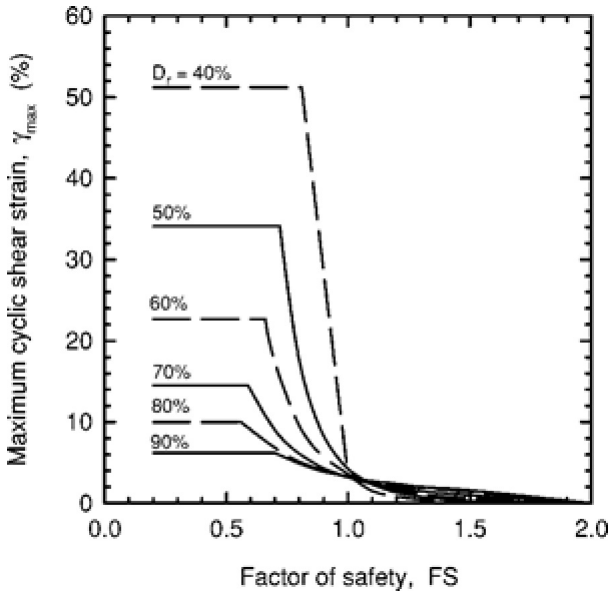
$$F = \left(\frac{f_s}{q_c - \sigma_{vc}}\right) \cdot 100\%$$

σ'_v *at time of CPT sounding*

Procedure for the evaluation of liquefaction-induced lateral spreading displacements



[1] Flow chart illustrating major steps in estimating liquefaction-induced lateral spreading displacements using the proposed approach



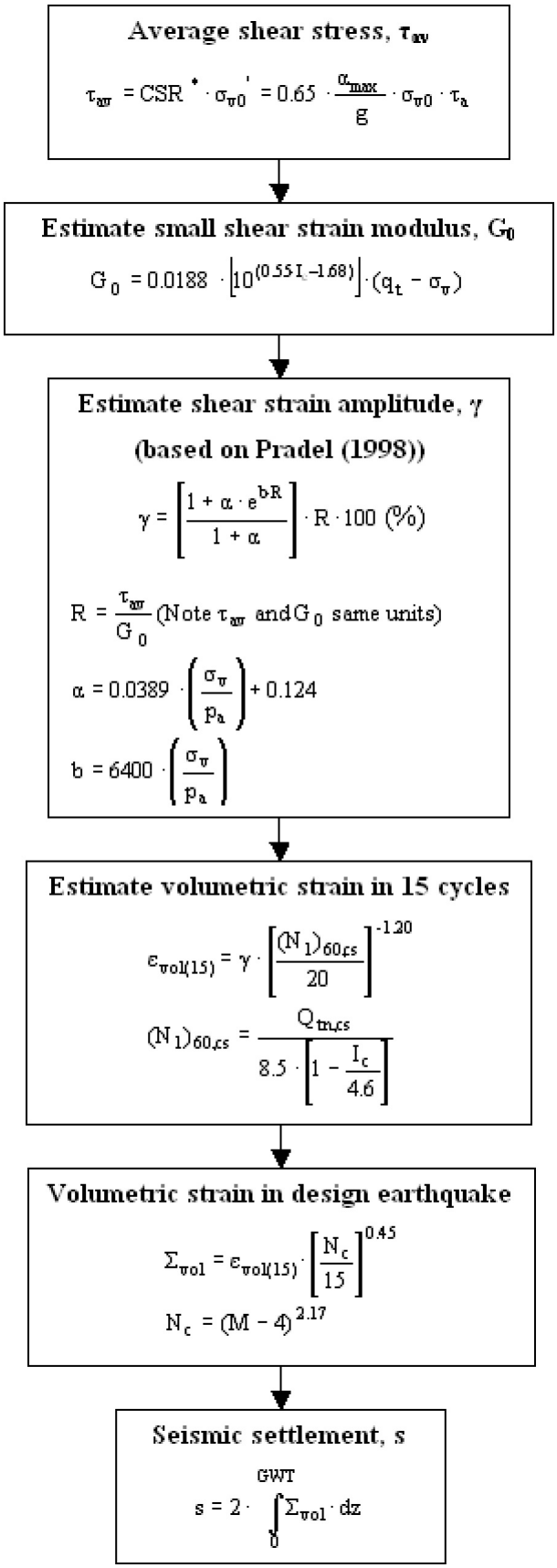
[1] Figure 1

$$LDI = \int_0^{z_{max}} \gamma_{max} dz$$

[1] Equation [3]

[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

Procedure for the estimation of seismic induced settlements in dry sands



Robertson, P.K. and Lisheng, S., 2010, "Estimation of seismic compression in dry soils using the CPT" FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, Symposium in honor of professor I. M. Idriss, San Diego, CA

Liquefaction Potential Index (LPI) calculation procedure

Calculation of the Liquefaction Potential Index (LPI) is used to interpret the liquefaction assessment calculations in terms of severity over depth. The calculation procedure is based on the methology developed by Iwasaki (1982) and is adopted by AFPS.

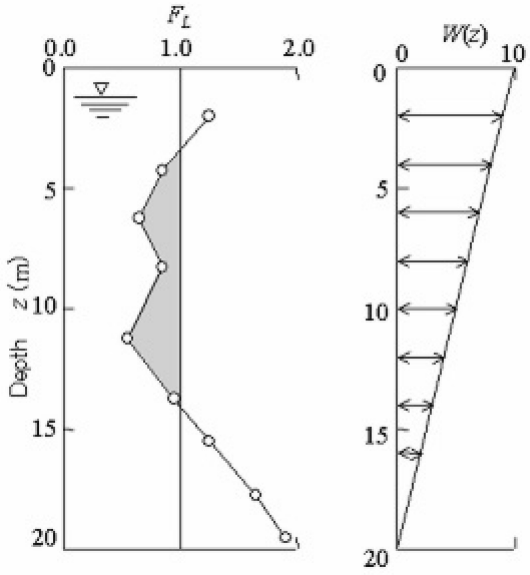
To estimate the severity of liquefaction extent at a given site, LPI is calculated based on the following equation:

$$\mathbf{LPI} = \int_0^{20} (10 - 0{,}5z) \times F_L \times dz$$

where:
F_L = 1 - F.S. when F.S. less than 1
F_L = 0 when F.S. greater than 1
z depth of measurment in meters

Values of LPI range between zero (0) when no test point is characterized as liquefiable and 100 when all points are characterized as susceptible to liquefaction. Iwasaki proposed four (4) discrete categories based on the numeric value of LPI:

- LPI = 0 : Liquefaction risk is very low
- 0 < LPI <= 5 : Liquefaction risk is low
- 5 < LPI <= 15 : Liquefaction risk is high
- LPI > 15 : Liquefaction risk is very high



Graphical presentation of the LPI calculation procedure

Shear-Induced Building Settlement (Ds) calculation procedure

The shear-induced building settlement (Ds) due to liquefaction below the building can be estimated using the relationship developed by Bray and Macedo (2017):

$$Ln(Ds) = c1 + c2 * LBS + 0.58 * Ln\left(Tanh\left(\frac{HL}{6}\right)\right) + 4.59 * Ln(Q) - 0.42 * Ln(Q)^2 - 0.02 * B + 0.84 * Ln(CAVdp) + 0.41 * Ln(Sa1) + \varepsilon$$

where Ds is in the units of mm, c1= -8.35 and c2= 0.072 for LBS ≤ 16, and c1= -7.48 and c2= 0.014 otherwise. Q is the building contact pressure in units of kPa, HL is the cumulative thickness of the liquefiable layers in the units of m, B is the building width in the units of m, CAVdp is a standardized version of the cumulative absolute velocity in the units of g-s, Sa1 is 5%-damped pseudo-acceleration response spectral value at a period of 1 s in the units of g, and ε is a normal random variable with zero mean and 0.50 standard deviation in Ln units. The liquefaction-induced building settlement index (LBS) is:

$$LBS = \sum W * \frac{\varepsilon_{shear}}{z} dz$$

where z (m) is the depth measured from the ground surface > 0, W is a foundation-weighting factor wherein W = 0.0 for z less than Df, which is the embedment depth of the foundation, and W = 1.0 otherwise. The shear strain parameter (ε_shear) is the liquefaction-induced free-field shear strain (in %) estimated using Zhang et al. (2004). It is calculated based on the estimated Dr of the liquefied soil layer and the calculated safety factor against liquefaction triggering (FSL).

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GeoPacific Engineering, Inc.
Real-World Geotechnical Solutions
Investigation • Design • Construction Support

SITE RESEARCH

14835 SW 72nd Avenue
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Tel (503) 598-8445
Fax (503) 941-9281

Hazards by Location

Search Information

Coordinates:	45.307545, -122.938352
Elevation:	225 ft
Timestamp:	2019-12-23T19:13:52.346Z
Hazard Type:	Seismic
Reference Document:	NEHRP-2015
Risk Category:	II
Site Class:	D

Basic Parameters

Name	Value	Description
S_S	0.848	MCE_R ground motion (period=0.2s)
S_1	0.409	MCE_R ground motion (period=1.0s)
S_{MS}	0.984	Site-modified spectral acceleration value
S_{M1}	* 0.773	Site-modified spectral acceleration value
S_{DS}	0.656	Numeric seismic design value at 0.2s SA
S_{D1}	* 0.515	Numeric seismic design value at 1.0s SA

* See Section 11.4.7

Additional Information

Name	Value	Description
SDC	* D	Seismic design category
F_a	1.161	Site amplification factor at 0.2s
F_v	* 1.891	Site amplification factor at 1.0s
CR_S	0.883	Coefficient of risk (0.2s)
CR_1	0.867	Coefficient of risk (1.0s)
PGA	0.39	MCE_G peak ground acceleration
F_{PGA}	1.21	Site amplification factor at PGA
PGA_M	0.472	Site modified peak ground acceleration
T_L	16	Long-period transition period (s)

SsRT	0.848	Probabilistic risk-targeted ground motion (0.2s)
SsUH	0.96	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	1.5	Factored deterministic acceleration value (0.2s)
S1RT	0.409	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.471	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.647	Factored deterministic acceleration value (1.0s)
PGAd	0.53	Factored deterministic acceleration value (PGA)

* See Section 11.4.7

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

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U.S. Geological Survey - Earthquake Hazards Program

Unified Hazard Tool

Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the U.S. Seismic Design Maps web tools (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

Input

Edition

Dynamic: Conterminous U.S. 2014 (upd

Spectral Period

Peak Ground Acceleration

Latitude

Decimal degrees

45.306859

Time Horizon

Return period in years

2475

Longitude

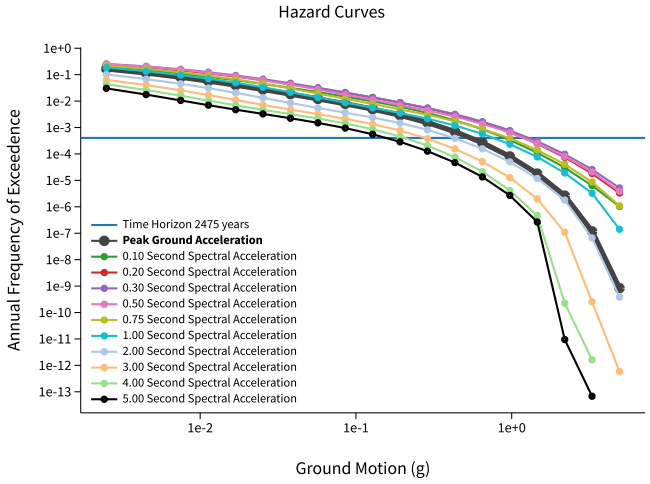
Decimal degrees, negative values for western longitudes

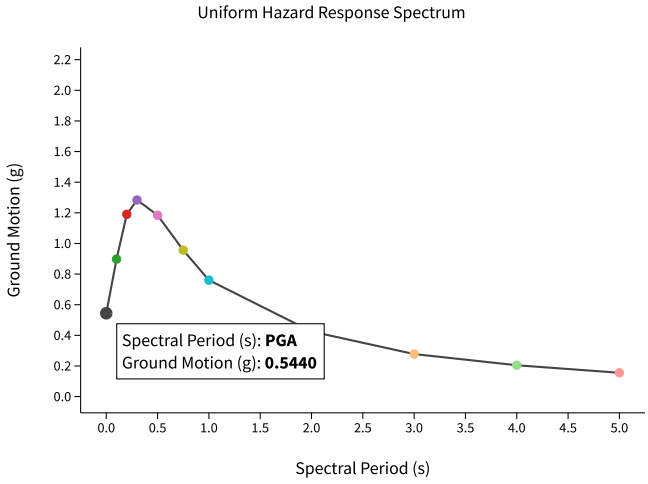
-122.940625

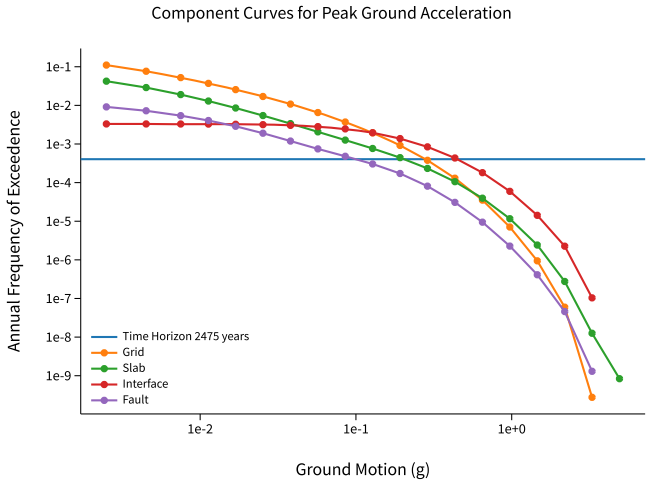
Site Class

259 m/s (Site class D)

Hazard Curve





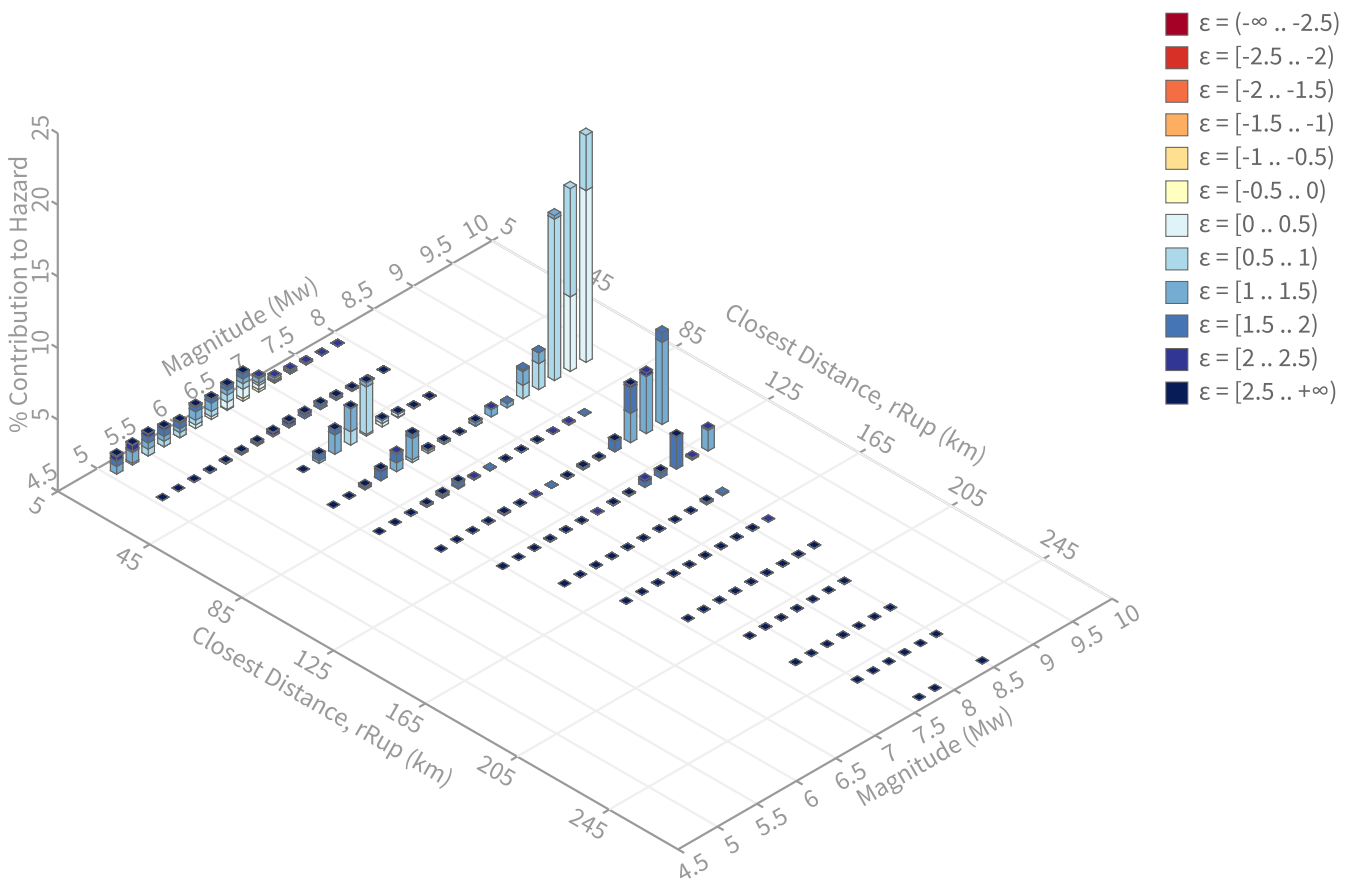


View Raw Data

Deaggregation

Component

Total



Summary statistics for, Deaggregation: Total

Deaggregation targets

Return period: 2475 yrs
Exceedance rate: 0.0004040404 yr^{-1}
PGA ground motion: 0.54401823 g

Recovered targets

Return period: 2466.6527 yrs
Exceedance rate: 0.00040540771 yr^{-1}

Totals

Binned: 100 %
Residual: 0 %
Trace: 0.51 %

Mean (over all sources)

m: 8.17
r: 65.91 km
ε_0: 1.02 σ

Mode (largest m-r bin)

m: 9.34
r: 63.87 km
ε_0: 0.39 σ
Contribution: 15.85 %

Mode (largest m-r-ε_0 bin)

m: 9.34
r: 63.87 km
ε_0: 0.29 σ
Contribution: 11.99 %

Discretization

r: min = 0.0, max = 1000.0, Δ = 20.0 km
m: min = 4.4, max = 9.4, Δ = 0.2
ε: min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

ε0: [-∞ .. -2.5)
ε1: [-2.5 .. -2.0)
ε2: [-2.0 .. -1.5)
ε3: [-1.5 .. -1.0)
ε4: [-1.0 .. -0.5)
ε5: [-0.5 .. 0.0)
ε6: [0.0 .. 0.5)
ε7: [0.5 .. 1.0)
ε8: [1.0 .. 1.5)
ε9: [1.5 .. 2.0)
ε10: [2.0 .. 2.5)
ε11: [2.5 .. +∞]

Deaggregation Contributors

Source Set ↳ Source	Type	r	m	ε_0	lon	lat	az	%
sub0_ch_bot.in	Interface							38.40
Cascadia Megathrust - whole CSZ Characteristic		63.87	9.10	0.56	123.599°W	45.501°N	293.06	38.40
sub0_ch_mid.in	Interface							14.09
Cascadia Megathrust - whole CSZ Characteristic		112.69	8.92	1.41	124.330°W	45.489°N	281.09	14.09
coastalOR_deep.in	Slab							8.17
coastalOR_deep.in	Slab							5.09
sub0_ch_top.in	Interface							3.26
Cascadia Megathrust - whole CSZ Characteristic		127.44	8.83	1.63	124.549°W	45.485°N	279.52	3.26
WUSmap_2014_fixSm.ch.in (opt)	Grid							2.63
noPuget_2014_fixSm.ch.in (opt)	Grid							2.63
sub2_ch_bot.in	Interface							2.44
Cascadia Megathrust - Goldfinger Case C Characteristic		74.96	8.73	1.02	123.702°W	45.000°N	240.53	2.44
WUSmap_2014_fixSm.gr.in (opt)	Grid							2.34
noPuget_2014_fixSm.gr.in (opt)	Grid							2.34
sub1_ch_bot.in	Interface							1.74
Cascadia Megathrust - Goldfinger Case B Characteristic		63.29	8.86	0.72	123.599°W	45.501°N	293.06	1.74
Geologic Model Partial Rupture	Fault							1.48
sub1_GRb0_bot.in	Interface							1.33
Cascadia floater over southern zone - Goldfinger Case B		68.55	8.48	1.05	123.599°W	45.501°N	293.06	1.33
Geologic Model Full Rupture	Fault							1.05

Map Scale: 1:2,190 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

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 Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

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 1:24,000.

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: Yamhill County, Oregon
Survey Area Data: Version 7, Sep 10, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 19, 2015—Sep 13, 2016

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2301A	Amity silt loam, 0 to 3 percent slopes	0.1	0.2%
2310A	Woodburn silt loam, 0 to 3 percent slopes	24.5	99.8%
Totals for Area of Interest		**24.5**	**100.0%**

GeoPacific Engineering, Inc.

Real-World Geotechnical Solutions
Investigation • Design • Construction Support

Preliminary Geotechnical Engineering Report

Fairfield Marriott
901 N Brutscher Street
Newberg, Oregon 97132
Yamhill County Tax Lot 1900, Tax Map 32W16

GeoPacific Engineering, Inc. Job No. 19-5391
January 3, 2019

14835 SW 72nd Avenue
Portland, Oregon 97224

Tel (503) 598-8445
Fax (503) 941-9281

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Soil Liquefaction Analysis
Site Research
Photographic Log

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January 3, 2020
Project No. 19-5391

Mr. Ken Tucker
Hawkins Companies, LLC
850 Broad Street, Suite 300
Boise, ID 83709
Phone: (208) 376-8522
Email: ktucker@hcollc.com

SUBJECT: **PRELIMINARY GEOTECHNICAL ENGINEERING REPORT**
FAIRFIELD MARRIOTT
901 N BRUTSCHER STREET
NEWBERG, OREGON 97132
YAMHILL COUNTY TAX LOT 1900, TAX MAP 32W16

1.0 PROJECT INFORMATION

This report presents the results of a geotechnical engineering study conducted by GeoPacific Engineering, Inc. (GeoPacific) for the above-referenced project. The purpose of our investigation was to evaluate subsurface conditions at the site, and to provide geotechnical recommendations for site development. This geotechnical study was performed in accordance with GeoPacific Proposal No. P-7174, dated December 3, 2019, and your subsequent authorization of our proposal and *General Conditions for Geotechnical Services*.

Site Location:	901 N Brutscher Street Newberg, Oregon 97132 Yamhill County Tax Lot 1900, Tax Map 32W16 (see Figures 1 and 2)
Developer:	Hawkins Companies, LLC 850 Broad Street, Suite 300 Boise, ID 83709
Civil Engineer:	AKS Engineering 12965 SW Herman Rd, Ste 100 Tualatin, Oregon 97062
Jurisdictional Agency:	City of Newberg, Oregon
Geotechnical Engineer:	GeoPacific Engineering, Inc 14835 SW 72nd Avenue Portland, Oregon 97224 Phone: (503) 598-8445 Fax: (503) 941-9281

2.0 SITE AND PROJECT DESCRIPTION

As indicated on Figures 1 and 2, the subject site consists of Yamhill County Tax Lot 1900 on Tax Map 32W16, located across the street to the east from 901 N Brutscher Street in Newberg, Oregon. The property is rectangular in shape and totals approximately 1.6-acres in size. The site latitude and longitude are 45.306950, -122.940748, and the legal description is the SW ¼ of Section 16, T3S, R2W, Willamette Meridian. The site is bordered by Brutscher Street and an existing parking lot to the west, by the Newberg Veterinary Hospital to the north, by the Newberg Ford dealership to the east, and by the Argyle Winery distribution to the south. The site is undeveloped and is currently vegetated with grasses and sparse weeds. Historically the site was farmed. Topography at the site is relatively flat to gently sloping to the east with site elevations ranging from approximately 225 to 228 feet above mean sea level (amsl).

Site planning is currently preliminary. GeoPacific has not reviewed a grading plan or foundation plans. Based upon communication with the client and the structural engineer, and review of a conceptual site plan, GeoPacific understands that a four-story Fairfield Marriott hotel will be built in the central portion of the site. We anticipate that the building will consist of a wood-framed structure supported on a typical spread footing foundation including square column footings, and continuous perimeter footings. Based on communication with the structural engineer we expect maximum structural loading on column and continuous strip footings on the order of 10 to 80 kips; and 2 to 8 kips respectively; and a maximum applied bearing pressure on the order of 2,500 psf. We understand that development of the site will also include construction of flexible and rigid paved areas, and installation of associated new underground utilities. Based upon existing site grades we anticipate that grading will include cuts and fills of five feet or less.

3.0 REGIONAL GEOLOGIC SETTING

Regionally, the subject site lies within the Willamette Valley/Puget Sound lowland, a broad structural depression situated between the Coast Range on the west and the Cascade Range on the east. A series of discontinuous faults subdivide the Willamette Valley into a mosaic of fault-bounded, structural blocks (Yeats et al., 1996). Uplifted structural blocks form bedrock highlands, while down-warped structural blocks form sedimentary basins.

The *Generalized Geologic Map of the Willamette Lowland, Marshall W. Gannett and Rodney R. Caldwell, (U.S. Department of the Interior, U.S. Geological Survey, 1998)*, indicates that the site is underlain by Pleistocene-aged (approximately 2.6 million to 11,000 years ago) silt, sand, and gravel deposited primarily by late Pleistocene glacial outburst flooding commonly referred to as the Missoula Flood Events, but also including glaciofluvial sediments derived from weathering of the Cascade Range located to the east, and the Chehalem Mountains to the north (Qs).

The *Web Soil Survey (United States Department of Agriculture, Natural Resource Conservation Service (USDA NRCS 2019 Website)*, indicates that near-surface soils consist of the Woodburn silt load soil series. Woodburn series soils generally consist of very deep, moderately well drained soils that formed in silty, stratified, glaciolacustrine deposits. The Web Soil Survey soil map for the subject site is presented as an attachment to this report.

4.0 REGIONAL SEISMIC SETTING

At least three major fault zones capable of generating damaging earthquakes are thought to exist in the vicinity of the subject site. These include the Portland Hills Fault Zone, the Gales Creek-Newberg-Mt. Angel Structural Zone, and the Cascadia Subduction Zone.

4.1 Portland Hills Fault Zone

The Portland Hills Fault Zone is a series of NW-trending faults that include the central Portland Hills Fault, the western Oatfield Fault, and the eastern East Bank Fault. These faults occur in a northwest-trending zone that varies in width between 3.5 and 5.0 miles. The combined three faults reportedly vertically displace the Columbia River Basalt by 1,130 feet and appear to control thickness changes in late Pleistocene (approx. 780,000 years) sediment (Madin, 1990). The Portland Hills Fault occurs along the Willamette River at the base of the Portland Hills and is located approximately 18 miles northeast of the site. The Oatfield Fault occurs along the western side of the Portland Hills and is located approximately 16 miles northeast of the site. The East Bank Fault occurs along the eastern margin of the Willamette River, and is located approximately 21 miles northeast of the site. The accuracy of the fault mapping is stated to be within 500 meters (Wong, et al., 2000).

According to the USGS Earthquake Hazards Program, the fault was originally mapped as a down-to-the-northeast normal fault but has also been mapped as part of a regional-scale zone of right-lateral, oblique slip faults, and as a steep escarpment caused by asymmetrical folding above a south-west dipping, blind thrust fault. The Portland Hills fault offsets Miocene Columbia River Basalts, and Miocene to Pliocene sedimentary rocks of the Troutdale Formation. No fault scarps on surficial Quaternary deposits have been described along the fault trace, and the fault is mapped as buried by the Pleistocene aged Missoula flood deposits. No historical seismicity is correlated with the mapped portion of the Portland Hills Fault Zone, but in 1991 a M3.5 earthquake occurred on a NW-trending shear plane located 1.3 miles east of the fault (Yelin, 1992). Although there is no definitive evidence of recent activity, the Portland Hills Fault Zone is assumed to be potentially active (Geomatrix Consultants, 1995).

4.2 Gales Creek-Newberg-Mt. Angel Structural Zone

The Gales Creek-Newberg-Mt. Angel Structural Zone is a 50-mile-long zone of discontinuous, NW-trending faults that lies about 1.5 miles southwest of the subject site. These faults are recognized in the subsurface by vertical separation of the Columbia River Basalt and offset seismic reflectors in the overlying basin sediment (Yeats et al., 1996; Werner et al., 1992). A geologic reconnaissance and photogeologic analysis study conducted for the Scoggins Dam site in the Tualatin Basin revealed no evidence of deformed geomorphic surfaces along the structural zone (Unruh et al., 1994). No seismicity has been recorded on the Gales Creek Fault or Newberg Fault (the fault closest to the subject site); however, these faults are considered to be potentially active because they may connect with the seismically active Mount Angel Fault and the rupture plane of the 1993 M5.6 Scotts Mills earthquake (Werner et al. 1992; Geomatrix Consultants, 1995).

According to the USGS Earthquake Hazards Program, the Mount Angel fault is mapped as a high-angle, reverse-oblique fault, which offsets Miocene rocks of the Columbia River Basalts, and Miocene and Pliocene sedimentary rocks. The fault appears to have controlled emplacement of

the Frenchman Spring Member of the Wanapum Basalts, and thus must have a history that predates the Miocene age of these rocks. No unequivocal evidence of deformation of Quaternary deposits has been described, but a thick sequence of sediments deposited by the Missoula floods covers much of the southern part of the fault trace.

4.3 Cascadia Subduction Zone

The Cascadia Subduction Zone is a 680-mile-long zone of active tectonic convergence where oceanic crust of the Juan de Fuca Plate is subducting beneath the North American continent at a rate of 4 cm per year (Goldfinger et al., 1996). A growing body of geologic evidence suggests that prehistoric subduction zone earthquakes have occurred (Atwater, 1992; Carver, 1992; Peterson et al., 1993; Geomatrix Consultants, 1995). This evidence includes: (1) buried tidal marshes recording episodic, sudden subsidence along the coast of northern California, Oregon, and Washington, (2) burial of subsided tidal marshes by tsunami wave deposits, (3) paleoliquefaction features, and (4) geodetic uplift patterns on the Oregon coast. Radiocarbon dates on buried tidal marshes indicate a recurrence interval for major subduction zone earthquakes of 250 to 650 years with the last event occurring 300 years ago (Atwater, 1992; Carver, 1992; Peterson et al., 1993; Geomatrix Consultants, 1995). The inferred seismogenic portion of the plate interface lies approximately along the Oregon Coast at depths of between 20 and 40 kilometers below the surface.

5.0 FIELD EXPLORATION AND SUBSURFACE CONDITIONS

Our subsurface explorations for this report were conducted on December 13, and December 16, 2019. A total of four exploratory test pits (TP-1 through TP-4) were excavated at the site using a Hitachi 40U rubber-tracked excavator subcontracted by GeoPacific to a maximum depth of approximately 10 feet bgs. In addition, one cone penetrometer test was conducted at the site using Oregon Geotechnical Explorations, Inc., truck-mounted electric cone penetrometer to a maximum depth of 60 feet bgs. Seismic shear wave velocity tests, and porewater pressure measurements were conducted during advancement of the cone.

Explorations were conducted under the full-time observation of a GeoPacific geologist. During the explorations pertinent information, including soil sample depths, stratigraphy, soil engineering characteristics, and groundwater occurrence was recorded. Soils were classified in accordance with the Unified Soil Classification System (USCS). Soil samples obtained from the explorations were placed in relatively air-tight plastic bags. At the completion of each test, the test pits were loosely backfilled with onsite soils. The approximate locations of the explorations are indicated on Figures 2 and 3. It should be noted that exploration locations were located in the field by pacing or taping distances from apparent property corners and other site features shown on the plans provided. As such, the locations of the explorations should be considered approximate. Summary exploration logs are attached. The stratigraphic contacts shown on the individual test pit logs represent the approximate boundaries between soil types. The actual transitions may be more gradual. The soil and groundwater conditions depicted are only for the specific dates and locations reported, and therefore, are not necessarily representative of other locations and times. Soil and groundwater conditions encountered in the explorations are summarized below.

5.1 Soil Descriptions

Topsoil/Remnant Till Zone: At the locations of our test pits the topsoil horizon was typically observed to consist of grass covered, soft to medium stiff, very moist, moderately organic Lean CLAY (OL-CL), containing fine roots, and extending to depths ranging from 4 to 8 inches. It appears that due to historic plowing and tilling of the site during agriculture use, a remnant farm till zone is present across much of the site with disturbed soil conditions observed extending up to 18 inches bgs.

Undocumented Fill: At the location of test pit TP-3 we encountered undocumented fill soils which appeared to have been historically placed to level the site, or during development of adjacent parcels. The fill soils extended to a depth of approximately 36 inches at the test pit location, and based upon visual observation of the surrounding area, appeared to extend to the approximate limits indicated on Figure 2. The fill soils were observed to consist of relatively clean, light brown, soft, moist, Lean CLAY (CL), containing very sparse plastic debris fragments. It appeared that the soil type will be suitable for re-use as engineered fill provided it is thoroughly removed and replaced as described below in Section 6.2, *Engineered Fill*.

Lean CLAY: Underlying the topsoil within our subsurface explorations, soils were observed to consist of brown, medium stiff to very stiff, very moist, low to moderately plastic, Lean CLAY (CL), displaying pinhole structure. The soil type was observed to extend to depths ranging from approximately 6 to 7 feet bgs. Soils laboratory testing conducted on representative samples collected from test pit TP-1 indicated that the soil type classified as Lean CLAY (CL) according to the USCS soil classification system, and as A-7-6(25), and A-7-6(26) according to AASHTO standards. Sieve analysis indicated 97 percent by weight passing the U.S. No. 200 sieve, and moisture content of 21 to 25 percent. Atterberg Limit testing indicated a liquid limit of 47 to 49, and a plasticity index of 22 to 23. Pocket penetrometer measurements conducted within the upper four feet of the ground surface ranged from approximately 2.5 to 4.0 tons/ft^2. CPT tip resistances ranged from 11 to 40 tons/ft^2.

SILT: Underlying the Lean CLAY within our subsurface explorations, soils were observed to consist of brown, stiff, moist to wet, low-plasticity, SILT (ML), displaying pinhole structure. The soil type was observed to extend to the maximum depth of exploration within our test pits (10 feet) and was inferred to extend up to approximately 18 feet bgs within the CPT exploration. Soils laboratory testing conducted on a representative sample collected from test pit TP-1 indicated that the soil type classified as SILT (ML) according to the USCS soil classification system, and as A-6(16) according to AASHTO standards. Sieve analysis indicated 99 percent by weight passing the U.S. No. 200 sieve, and moisture content of 27 percent. Atterberg Limit testing indicated a liquid limit of 40, and a plasticity index of 14. CPT tip resistances ranged from 13 to 44 tons/ft^2.

Sandy SILT/Clayey SILT: CPT exploration data inferred that below the SILT soil type at an approximate depth of 18 feet bgs, soils become sandy and ranged from interlayered Sandy SILT to Clayey SILT to the maximum depth of exploration (approximately 60 feet bgs). CPT tip resistances ranged from 29 to 136 tons/ft^2, averaging in a range of 40 to 50 tons/ft^2.

5.2 Shrink-Swell Potential

Medium stiff to very stiff, fine-grained soils were encountered in the upper 10 feet of the site. Atterberg Limit testing indicated the soil types displayed plasticity indexes ranging from 14 to 23. Based upon the results of our soils laboratory testing and our local experience with the soil layers in the vicinity of the subject site, the plasticity of the soils is considered to be low to moderate, and the shrink-swell potential of the soil types is considered to be low. Special design measures are not considered necessary to minimize the risk of uncontrolled damage of foundations as a result of potential soil expansion at this site.

5.3 Groundwater and Soil Moisture

On December 13, and December 16, 2019, observed soil moisture conditions were generally very moist to wet. Groundwater seepage was observed within test pit TP-3 at an approximate depth of 9 feet bgs. Groundwater seepage was not observed in the other test pits. Porewater pressure measurements were conducted at depths of 30 and 50 feet bgs within the cone penetrometer exploration which indicated that groundwater is present at a depth of 3.43 feet bgs. Based on our observations of soil conditions within the test pits we believe that the porewater test measured pressures within confined soil layers and misinterpreted depth to groundwater at the site. Groundwater monitoring piezometers may be installed if the client wishes to monitor future seasonal fluctuations of the static groundwater table at the site. Based on our review of available well logs from the vicinity of the subject site we expect that static groundwater may be encountered at depths ranging from approximately 10 to 20 feet bgs, depending on ground surface elevation. Perched groundwater may be encountered in localized areas. Seeps and springs may exist in areas not explored and may become evident during site grading.

6.0 PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

Our site investigation indicates that the proposed construction appears to be geotechnically feasible, provided that the recommendations of this report are incorporated into the design and construction phases of the project. The primary geotechnical concerns associated with development at the site are:

- The site contains a remnant agricultural till zone from past farming use that consists of soft to medium stiff, disturbed clayey soils extending to a depth of approximately 18 inches on average across the site.
- Up to 36 inches of undocumented fill soil was encountered within Test Pit TP-3 in the northeastern portion of the site which contained soft soil conditions. The fill material was relatively clean and is anticipated to be suitable for re-use as engineered fill.
- Static settlement calculations indicated that due to soft to medium stiff soil conditions encountered within the upper three feet of the ground surface, up to 2 inches of static settlement may be anticipated for assumed applied bearing pressures up to 2,500 psf. Recommendations are provided for mitigation of static settlement which include removal and replacement with compacted crushed aggregate underneath the footings.
- Soil liquefaction assessment conducted using the Robertson 2009 CPT-based method of analysis indicated the potential for up to approximately 4 inches of dynamic settlement during a peak Cascadia Subduction zone earthquake with a moment magnitude of 9.1, and a peak ground acceleration of 0.47g.

6.1 Site Preparation Recommendations

Areas proposed for construction and areas to receive fill should be cleared of vegetation, and any organic and inorganic debris. Inorganic debris and organic materials from clearing should be removed from the areas proposed for grading. Organic-rich soils and root zones should then be stripped from construction areas of the site or where engineered fill is to be placed. Depth of stripping of organic soils is estimated to be approximately 6 to 18 inches across the majority of the site. The heavy concentrated grass root mats associated with the topsoil layers were observed to have maximum depths of approximately 8 inches, however a disturbed agricultural till zone is present at the site due to past farming which extended to depths of approximately 18 inches bgs. Soft soil conditions should be expected within this disturbed zone, particularly during periods of wet weather. The final depth of soil removal will be determined on the basis of a site inspection after the stripping/excavation has been performed. Stripped topsoil should be removed from areas proposed for placement of engineered fill. Any remaining topsoil should be stockpiled only in designated areas and stripping operations should be observed and documented by the geotechnical engineer or his representative.

At the location of test pit TP-3 we encountered undocumented fill soils which appeared to have been historically placed to level the site, or during development of adjacent parcels. The fill soils extended to a depth of approximately 36 inches at the test pit location, and based upon visual observation of the surrounding area, appeared to extend to the approximate limits indicated on Figure 2. The fill soils were observed to consist of relatively clean, light brown, soft, moist, Lean CLAY (CL), containing very sparse plastic debris fragments. It appeared that the soil type will be suitable for re-use as engineered fill provided it is thoroughly removed and replaced as described below in Section 6.2, *Engineered Fill*. Based on our review of the conceptual site layout plan (Figure 3), it appears that the soil is located outside of the proposed hotel building envelope and will primarily affect construction of parking areas and drive lanes in the northeastern portion of the site.

If site development and grading are conducted during the dry summer months, we recommend that the agricultural till zone be recompacted as opposed to over-excavated and removed from the site. Following site stripping the existing ground surface may be scarified and recompacted prior to placement of structural fill or structures. The areas should be prepared by removing highly organic soil layers which contain abundant root concentration, or organic content in excess of approximately 4 to 5 percent by weight. The underlying soils then be ripped, and moisture conditioned to within two percent of optimum moisture content, and recompacted to project specifications for engineered fill as determined by the Standard Proctor (ASTM D698).

6.2 Engineered Fill

At this time site planning is preliminary and GeoPacific has not reviewed a grading plan. Based on existing site gradients and communication with the client we anticipate that engineered cuts and fills will be conducted on the order of 5 feet or less. Where incorporated into the project, all grading for the proposed construction should be performed as engineered grading in accordance with the applicable building code at the time of construction with the exceptions and additions noted herein. Site grading should be conducted in accordance with the requirements outlined in the 2018 International Building Code (IBC), and 2019 Oregon Structural Specialty Code (OSSC), Chapter 18 and Appendix J. Areas proposed for fill placement should be prepared as described in Section 6.1,

Site Preparation Recommendations. Surface soils should then be scarified and recompacted prior to placement of structural fill. Site preparation, soil stripping, and grading activities should be observed and documented by a geotechnical engineer or his representative. Proper test frequency and earthwork documentation usually requires daily observation and testing during stripping, rough grading, and placement of engineered fill.

Onsite native soils appear to be suitable for use as engineered fill. Soils containing greater than 5 percent organic content should not be used as structural fill. Imported fill material must be approved by the geotechnical engineer prior to being imported to the site. Oversize material greater than 6 inches in size should not be used within 3 feet of foundation footings, and material greater than 12 inches in diameter should not be used in engineered fill.

Engineered fill should be compacted in horizontal lifts not exceeding 12 inches using standard compaction equipment. We recommend that engineered fill be compacted to at least 95 percent of the maximum dry density determined by ASTM D698 (Standard Proctor) or equivalent. Soils should be moisture conditioned to within two percent of optimum moisture. Field density testing should conform to ASTM D2922 and D3017, or D1556. All engineered fill should be observed and tested by the project geotechnical engineer or his representative. Typically, one density test is performed for at least every 2 vertical feet of fill placed or every 500 yd^3, whichever requires more testing. Because testing is performed on an on-call basis, we recommend that the earthwork contractor be held contractually responsible for test scheduling and frequency.

Site earthwork may be impacted by shallow groundwater, soil moisture and wet weather conditions. Earthwork in wet weather would likely require extensive use of additional crushed aggregate, cement or lime treatment, or other special measures, at considerable additional cost compared to earthwork performed under dry-weather conditions.

6.3 Excavating Conditions and Utility Trench Backfill

We anticipate that onsite soils can generally be excavated using conventional heavy equipment. Bedrock was not encountered within our subsurface explorations which extended to a maximum depth of 60 feet bgs. Maintenance of safe working conditions, including temporary excavation stability, is the responsibility of the contractor. Actual slope inclinations at the time of construction should be determined based on safety requirements and actual soil and groundwater conditions. All temporary cuts in excess of 4 feet in height should be sloped in accordance with U.S. Occupational Safety and Health Administration (OSHA) regulations (29 CFR Part 1926) or be shored. The existing native soils classify as Type B Soil and temporary excavation side slope inclinations as steep as 1H:1V may be assumed for planning purposes. These cut slope inclinations are applicable to excavations above the water table only.

Shallow, perched groundwater may be encountered at the site and should be anticipated in excavations and utility trenches. Vibrations created by traffic and construction equipment may cause some caving and raveling of excavation walls. In such an event, lateral support for the excavation walls should be provided by the contractor to prevent loss of ground support and possible distress to existing or previously constructed structural improvements.

Underground utility pipes should be installed in accordance with the procedures specified in ASTM D2321 and City of Newberg standards. We recommend that structural trench backfill be

compacted to at least 95 percent of the maximum dry density obtained by the Standard Proctor (ASTM D698) or equivalent. Initial backfill lift thicknesses for a ¾"-0 crushed aggregate base may need to be as great as 4 feet to reduce the risk of flattening underlying flexible pipe. Subsequent lift thickness should not exceed 1 foot. If imported granular fill material is used, then the lifts for large vibrating plate-compaction equipment (e.g. hoe compactor attachments) may be up to 2 feet, provided that proper compaction is being achieved and each lift is tested. Use of large vibrating compaction equipment should be carefully monitored near existing structures and improvements due to the potential for vibration-induced damage.

Adequate density testing should be performed during construction to verify that the recommended relative compaction is achieved. Typically, at least one density test is taken for every 4 vertical feet of backfill on each 100-lineal-foot section of trench.

6.4 Erosion Control Considerations

During our field exploration program, we did not observe soil conditions which are considered highly susceptible to erosion. In our opinion, the primary concern regarding erosion potential will occur during construction in areas that have been stripped of vegetation. Erosion at the site during construction can be minimized by implementing the project erosion control plan, which should include judicious use of straw waddles, fiber rolls, and silt fences. If used, these erosion control devices should remain in place throughout site preparation and construction.

Erosion and sedimentation of exposed soils can also be minimized by quickly re-vegetating exposed areas of soil, and by staging construction such that large areas of the project site are not denuded and exposed at the same time. Areas of exposed soil requiring immediate and/or temporary protection against exposure should be covered with either mulch or erosion control netting/blankets. Areas of exposed soil requiring permanent stabilization should be seeded with an approved grass seed mixture, or hydroseeded with an approved seed-mulch-fertilizer mixture.

6.5 Wet Weather Earthwork

Soils underlying the site are likely to be moisture sensitive and will be difficult to handle or traverse with construction equipment during periods of wet weather. Earthwork is typically most economical when performed under dry weather conditions. Earthwork performed during the wet-weather season will require expensive measures such as cement treatment or imported granular material to compact areas where fill may be proposed to the recommended engineering specifications. If earthwork is to be performed or fill is to be placed in wet weather or under wet conditions when soil moisture content is difficult to control, the following recommendations should be incorporated into the contract specifications.

- Earthwork should be performed in small areas to minimize exposure to wet weather. Excavation or the removal of unsuitable soils should be followed promptly by the placement and compaction of clean engineered fill. The size and type of construction equipment used may have to be limited to prevent soil disturbance. Under some circumstances, it may be necessary to excavate soils with a backhoe to minimize subgrade disturbance caused by equipment traffic;

- The ground surface within the construction area should be graded to promote run-off of surface water and to prevent the ponding of water;
- Material used as engineered fill should consist of clean, granular soil containing less than 5 percent passing the No. 200 sieve. The fines should be non-plastic. Alternatively, cement treatment of on-site soils may be performed to facilitate wet weather placement;
- The ground surface within the construction area should be sealed by a smooth drum vibratory roller, or equivalent, and under no circumstances should be left uncompacted and exposed to moisture. Soils which become too wet for compaction should be removed and replaced with clean granular materials;
- Excavation and placement of fill should be observed by the geotechnical engineer to verify that all unsuitable materials are removed, and suitable compaction and site drainage is achieved; and
- Geotextile silt fences, straw waddles, and fiber rolls should be strategically located to control erosion.

If cement or lime treatment is used to facilitate wet weather construction, GeoPacific should be contacted to provide additional recommendations and field monitoring.

6.6 Spread Foundations and Static Settlement Analysis

Based upon communication with the client and review of a conceptual site plan (Figure 3), GeoPacific understands that the proposed development at the site will consist of constructing a Marriott Hotel in the central portion of the site. The building will be a four-story, wood-framed structure, supported by a typical spread footing foundation including square column footings, and continuous perimeter footings. Based on communication with the structural engineer we expect maximum structural loading on column and continuous strip footings on the order of 10 to 80 kips, and 2 to 8 kips respectively, and maximum applied bearing pressures on the order of 2,500 psf. Square column footings may range in size from 4'x'4 to 6'x6' and may be embedded 12 to 18 inches below existing ground surface.

Based upon soil conditions encountered within our subsurface explorations at this site, the anticipated allowable soil bearing pressure for in situ soil conditions is 1,500 lbs/ft^2. Heavier loads may result in static settlement of the structure beyond tolerable limits without additional ground improvement. As stated above, we understand that up to 2,500 psf allowable bearing pressure is needed at this site for design of the proposed four-story structure. We conducted a static settlement analysis for the soil profile encountered within cone penetrometer test CPT-1 based upon the structural loading information provided for the proposed structure using the Modified Schmertmann's Method (1978) to calculate vertical displacement. Calculations were conducted using the Soil Structure Settlement Analysis v2.0.2 software. Calculations for long-term static settlement are based upon our understanding of proposed structural building loads, which will increase the vertical effective stress in subsurface soils and may potentially induce soil settlement. Due to natural variations in soil conditions across the site the calculated settlement values below should be considered to be estimates. Actual induced settlement during construction may vary greatly over short distances.

Our static settlement calculations indicated potential static settlement totals of up to 2 inches for existing conditions over a period of approximately 4 to 5 years. We typically understand anticipated settlements greater than 1 inch to be beyond tolerable limits of similar structures. We assessed the soil profile to determine if static settlement estimates could be reduced to less than one inch with over-excavation and re-placement of in situ soils with two feet of compacted crushed aggregate beneath the footings.

Based upon the results of our calculations, it appears that anticipated static settlement totals relative to a maximum applied bearing pressure of 2,500 psf can be reduced to 1 inch or less by constructing footings on crushed aggregate mats consisting of a minimum of 24-inches of 1.5"-0 crushed aggregate, compacted to at least 95 percent of the maximum dry density determined by ASTM D1557 (Modified Proctor) or equivalent. The crushed aggregate mats should extend at least 24 inches beyond the edges of the footings on all sides, and should be underlain by woven geotextile fabric consisting of Mirafi 500X or equivalent.

The recommended maximum allowable bearing pressure may be increased by 1/3 for short-term transient conditions such as wind and seismic loading. For applied bearing pressures in excess of 2,500 psf the geotechnical engineer should be consulted. If heavier loads than described above are proposed, it may be feasible to increase the thickness of the crushed aggregate mats, or to rammed aggregate piers (GeoPiers) may be considered. The coefficient of friction between on-site soil and poured-in-place concrete may be taken as 0.42, which includes no factor of safety. Assuming the crushed aggregate pads are constructed as described, our static settlement calculations indicate that the maximum anticipated total and differential footing movements (generally from soil expansion and/or settlement) are in the range of 1 inch and ¾ inch over a span of 20 feet, respectively. We anticipate that the majority of the estimated settlement will occur during construction, as loads are applied.

Foundation design, construction, and setback requirements should conform to the applicable building code at the time of construction. For maximization of bearing strength and protection against frost heave, spread footings should be embedded at a minimum depth of 12 inches below exterior grade. Excavations near structural footings should not extend within a 1H:1V plane projected downward from the bottom edge of footings.

Footing excavations should penetrate through topsoil and any disturbed soil to competent subgrade that is suitable for bearing support. All footing excavations should be trimmed neat, and all loose or softened soil should be removed from the excavation bottom prior to placing reinforcing steel bars. Due to the moisture sensitivity of on-site native soils, foundations constructed during the wet weather season may require over-excavation of footings and backfill with compacted, additional crushed aggregate.

Our recommendations are for commercial construction incorporating conventional shallow spread and continuous footing foundations.

6.7 Concrete Slabs-on-Grade

Preparation of areas beneath concrete slab-on-grade floors should be performed as described in Section 6.1, *Site Preparation Recommendations* and Section 6.6, *Spread Foundations*. Care should be taken during excavation for foundations and floor slabs, to avoid disturbing subgrade soils. If subgrade soils have been adversely impacted by wet weather or otherwise disturbed, the surficial soils should be scarified to a minimum depth of 8 inches, moisture conditioned to within about 3 percent of optimum moisture content and compacted to engineered fill specifications. Alternatively, disturbed soils may be removed, and the removal zone backfilled with additional crushed rock.

For evaluation of the concrete slab-on-grade floors using the beam on elastic foundation method, a modulus of subgrade reaction of 150 kcf (87 pci) should be assumed for the medium dense, fine to coarse-grained soils anticipated to be present at foundation subgrade elevation following adequate site preparation as described above. This value assumes the concrete slab system is designed and constructed as recommended herein, with a minimum thickness of 8 inches of 1½"-0 crushed aggregate beneath the slab. The total thickness of crushed aggregate will be dependent on the subgrade conditions at the time of construction and should be verified visually by proof-rolling. Under-slab aggregate should be compacted to at least 95 percent of its maximum dry density as determined by ASTM D1557 (Modified Proctor) or equivalent.

In areas where moisture will be detrimental to floor coverings or equipment inside the proposed structure, appropriate vapor barrier and damp-proofing measures should be implemented. A commonly applied vapor barrier system consists of a 10-mil polyethylene vapor barrier placed directly over the capillary break material. Other damp/vapor barrier systems may also be feasible. Appropriate design professionals should be consulted regarding vapor barrier and damp proofing systems, ventilation, building material selection and mold prevention issues, which are outside GeoPacific's area of expertise.

6.8 Footing and Roof Drains

Construction should include typical measures for controlling subsurface water beneath the structures, including positive crawlspace drainage to an adequate low-point drain exiting the foundation, visqueen covering the exposed ground in the crawlspace, and crawlspace ventilation (foundation vents). The client should be informed and educated that some slow flowing water in the crawlspaces is considered normal and not necessarily detrimental to the structures given these other design elements incorporated into construction. Appropriate design professionals should be consulted regarding crawlspace ventilation, building material selection and mold prevention issues, which are outside GeoPacific's area of expertise.

Down spouts and roof drains should collect roof water in a system separate from the footing drains to reduce the potential for clogging. Roof drain water should be directed to an appropriate discharge point and storm system well away from structural foundations. Grades should be sloped downward and away from buildings to reduce the potential for ponded water near structures.

Perimeter footing drains may be eliminated at the discretion of the geotechnical engineer based on soil conditions encountered at the site and experience with standard local construction practices.

Where it is desired to reduce the potential for moist crawl spaces, footing drains may be installed. If concrete slab-on-grade floors are used, perimeter footing drains should be installed as recommended below.

Where deemed necessary, perimeter footing drains should consist of 3 or 4-inch diameter, perforated plastic pipe embedded in a minimum of 1 ft^3 per lineal foot of clean, free-draining drain rock. The drain-pipe and surrounding drain rock should be wrapped in non-woven geotextile (Mirafi 140N, or approved equivalent) to minimize the potential for clogging and/or ground loss due to piping. A minimum 0.5 percent fall should be maintained throughout the drain and non-perforated pipe outlet. Figure 4 presents a typical perimeter footing drain detail. In our opinion, footing drains may outlet at the curb, or on the back sides of lots where sufficient fall is not available to allow drainage to meet the street.

6.9 Permanent Below-Grade Walls

Lateral earth pressures against below-grade retaining walls will depend upon the inclination of any adjacent slopes, type of backfill, degree of wall restraint, method of backfill placement, degree of backfill compaction, drainage provisions, and magnitude and location of any adjacent surcharge loads. At-rest soil pressure is exerted on a retaining wall when it is restrained against rotation. In contrast, active soil pressure will be exerted on a wall if its top is allowed to rotate or yield a distance of roughly 0.001 times its height or greater.

If the subject retaining walls will be free to rotate at the top, they should be designed for an active earth pressure equivalent to that generated by a fluid weighing 35 pcf for level backfill against the wall. For restrained wall, an at-rest equivalent fluid pressure of 55 pcf should be used in design, again assuming level backfill against the wall. These values assume that the recommended drainage provisions are incorporated, and hydrostatic pressures are not allowed to develop against the wall.

During a seismic event, lateral earth pressures acting on below-grade structural walls will increase by an incremental amount that corresponds to the earthquake loading. Based on the Mononobe-Okabe equation and peak horizontal accelerations appropriate for the site location, seismic loading should be modeled using the active or at-rest earth pressures recommended above, plus an incremental rectangular-shaped seismic load of magnitude 6.5H, where H is the total height of the wall.

We assume relatively level ground surface below the base of the walls. As such, we recommend a passive earth pressure of 320 pcf for use in design, assuming wall footings are cast against competent native soils or engineered fill. If the ground surface slopes down and away from the base of any of the walls, a lower passive earth pressure should be used and GeoPacific should be contacted for additional recommendations.

A coefficient of friction of 0.42 may be assumed along the interface between the base of the wall footing and subgrade soils. The recommended coefficient of friction and passive earth pressure values do not include a safety factor, and an appropriate safety factor should be included in design. The upper 12 inches of soil should be neglected in passive pressure computations unless it is protected by pavement or slabs on grade.

The above recommendations for lateral earth pressures assume that the backfill behind the subsurface walls will consist of properly compacted structural fill, and no adjacent surcharge loading. If the walls will be subjected to the influence of surcharge loading within a horizontal distance equal to or less than the height of the wall, the walls should be designed for the additional horizontal pressure. For uniform surcharge pressures, a uniformly distributed lateral pressure of 0.3 times the surcharge pressure should be added. Traffic surcharges may be estimated using an additional vertical load of 250 psf (2 feet of additional fill), in accordance with local practice.

The recommended equivalent fluid densities assume a free-draining condition behind the walls so that hydrostatic pressures do not build-up. This can be accomplished by placing a 12 to 18-inch wide zone of sand and gravel containing less than 5 percent passing the No. 200 sieve against the walls. A 3-inch minimum diameter perforated, plastic drain-pipe should be installed at the base of the walls and connected to a suitable discharge point to remove water in this zone of sand and gravel. The drain-pipe should be wrapped in filter fabric (Mirafi 140N or other as approved by the geotechnical engineer) to minimize clogging.

Wall drains are recommended to prevent detrimental effects of surface water runoff on foundations – not to dewater groundwater. Drains should not be expected to eliminate all potential sources of water entering a basement or beneath a slab-on-grade. An adequate grade to a low point outlet drain in the crawlspace is required by code. Underslab drains are sometimes added beneath the slab when placed over soils of low permeability and shallow, perched groundwater.

Water collected from the wall drains should be directed into the local storm drain system or other suitable outlet. A minimum 0.5 percent fall should be maintained throughout the drain and non-perforated pipe outlet. Down spouts and roof drains should not be connected to the wall drains in order to reduce the potential for clogging. The drains should include clean-outs to allow periodic maintenance and inspection. Grades around the proposed structure should be sloped such that surface water drains away from the building.

GeoPacific should be contacted during construction to verify subgrade strength in wall keyway excavations, to verify that backslope soils are in accordance with our assumptions, and to take density tests on the wall backfill materials.

Structures should be located a horizontal distance of at least 1.5H away from the back of the retaining wall, where H is the total height of the wall. GeoPacific should be contacted for additional foundation recommendations where structures are located closer than 1.5H to the top of any wall.

6.10 Flexible Pavement Design: Private Parking and Drive Areas

As indicated on Figure 3, we understand that development at the site will include construction of private asphaltic concrete private parking and drive areas. For the flexible pavement section, we conservatively assume that the subgrade will exhibit a resilient modulus of at least 6,000, which correlates to a CBR value of 4. Based upon our understanding of the anticipated traffic which includes light-duty passenger vehicles, weekly trash pickups, and occasional fire trucks weighing up to 75,000 lbs, we calculated an anticipated 18-kip ESAL count of approximately 75,000 over 20 years. Table 1 presents our flexible pavement design input parameters. Table 2 presents our

recommended minimum dry-weather pavement section for the proposed pavement section, supporting 20 years of vehicle traffic. Pavement design calculations are attached to this report.

Table 1: Flexible Pavement Section Design Input Parameters for Private Parking and Drive Areas

Input Parameter	Design Value
18-kip ESAL Initial Performance Period (20 Years)	75,000
Initial Serviceability	4.2
Terminal Serviceability	2.2
Reliability Level	85 Percent
Overall Standard Deviation	0.5
Roadbed Soil Resilient Modulus (PSI)	6,000
Structural Number	**2.38**

Table 2: Recommended Minimum Dry-Weather Pavement Section: Private Parking and Drive Areas

Material Layer	Section Thickness (in.)	Structural Coefficient	Compaction Standard
Asphaltic Concrete (AC)	3.5 in.	.42	91%/ 92% of Rice Density AASHTO T-209
Crushed Aggregate Base ¾"-0 (leveling course)	2 in.	.10	95% of Modified Proctor AASHTO T-180
Crushed Aggregate Base 1½"-0	8 in.	.10	95% of Modified Proctor AASHTO T-180
Subgrade	12 in.	6,000 PSI	95% of Standard Proctor AASHTO T-99 or equivalent
Total Calculated Structural Number		**2.47**	

6.11 Rigid Pavement Design: Private Drive Lanes

The private drive lanes the site may be constructed with Portland cement concrete (PCC) pavement in some areas. We assume that the proposed private drive lanes will be subjected to vehicle traffic primarily consisting of passenger vehicles, weekly trash trucks, occasional fire trucks weighing up to 75,000 lbs, and wheel loads up to HS-20 loading (up to three axles, maximum 32,000 lbs per axle). For the new private rigid pavement section, we conservatively assume that the subgrade will exhibit a resilient modulus of at least 6,000, which correlates to a CBR value of 4. Based upon the anticipated traffic, we calculated an anticipated 18-kip ESAL count of approximately 75,000 over 20 years.

Under these assumptions and based upon our calculations, our recommended pavement design for private rigid pavement areas consists of a steel reinforced PCC slab with a thickness of 6 inches, and a 4,000 psi minimum compressive strength concrete, placed over 8 inches of crushed aggregate compacted to a minimum of 95% relative to ASTM D1557. A single mat of No.4 reinforcing bars should be placed centrally, with a minimum spacing of 12-inches each way. The steel reinforcing should be placed to maintain at least 3 inches clearance from bottom, and 3 inches of clearance from the edges. Lap lengths should be a minimum of 40 bar diameters (db), or 20 inches. A minimum joint spacing of 10 feet should be maintained for the PCC concrete.

Tolerances of spacing, ties, and clearances, should be constructed in accordance with ACI 318, and the requirements of Chapter 19 of the 2015 IBC. Table 3 presents our rigid pavement design input parameters. Table 4 presents the recommended minimum section for the proposed rigid pavement. Pavement design calculations are attached to this report.

Table 3: Design Input Parameters: Rigid Pavement Areas-Private Drive Lanes

Input Parameter	Design Value
18-kip ESAL Initial Performance Period (20 Years)	75,000
Initial Serviceability	4.2
Terminal Serviceability	2.2
28-Day Flexural Strength (PSI)	650
28-Day Mean Elastic Modulus of Elasticity of Concrete (PSI)	3,500,000
Mean Effective K-Value (PSI)	33.03
Reliability Level	85 Percent
Overall Standard Deviation	0.39
Load Transfer Coefficient	3
Overall Drainage Coefficient	1
Roadbed Soil Resilient Modulus (PSI) Concrete Road 6 inches thick	6,000
Rigid Transverse Joint Spacing	10 Feet

Table 4: Rigid Pavement Section: Rigid Pavement Areas-Private Drive Lanes

Material Layer	Section Thickness	Standard
Portland Cement Concrete Pavement 4,000 psi (PCC)	6 inches	• Use class 4000-3/4 paving concrete • Concrete should be sampled and tested per the requirements of ACI 318 • 4,000 psi compressive strength at 28 days • Maximum air content 4 percent • Maximum slump 6 inches • Maximum lateral joint spacing = 10 feet • Reinforcing Steel: Single Mat No. 4 Longitudinal Bars, Spaced 12 inches each way, minimum 3-inch clearance on bottom and sides.
Crushed Aggregate Base (¾"-0 leveling underlain by 1.5"-0)	2 inches ¾"-0 6 inches 1.5"-0	• Use ¾"-0, or 1"-0 dense graded base aggregate meeting the requirements of ODOT 00641. Thickness may need to be increased to 12 inches or more for constructability in areas of soft or wet subgrade. Geotextile fabric consisting of Mirafi 500X to be utilized during wet weather. • 95% of Modified Proctor ASTM D1557
Competent Subgrade	12 inches	• Recompacted or cement treated • Visual inspection (Proofroll)

6.12 Roadway Subgrade Preparation

Roadway subgrade soils should be compacted and inspected by GeoPacific prior to the placement of crushed aggregate base for pavement. Typically, a proofroll with a fully loaded water or haul truck is conducted by travelling slowly across the grade and observing the subgrade for rutting, deflection, or movement. Any pockets of organic debris or loose fill encountered during ripping or tilling should be removed and replaced with engineered fill (see Section 6.1, *Site Preparation Recommendations*). In order to verify subgrade strength, we recommend proof-rolling directly on subgrade with a loaded dump truck during dry weather and on top of base course in wet weather. Soft areas that pump, rut, or weave should be stabilized prior to paving.

If pavement areas are to be constructed during wet weather, the subgrade and construction plan should be reviewed by the project geotechnical engineer at the time of construction so that condition specific recommendations can be provided. The moisture sensitive subgrade soils make the site a difficult wet weather construction project. General recommendations for wet weather pavement sections are provided below.

During placement of pavement section materials, density testing should be performed to verify compliance with project specifications. Generally, one subgrade, one base course, and one asphalt compaction test is performed for every 100 to 200 linear feet of paving.

6.13 Wet Weather Construction Pavement Section

This section presents our recommendations for wet weather pavement sections and construction for new pavement sections at the project. These wet weather pavement section recommendations are intended for use in situations where it is not feasible to compact the subgrade soils to project requirements, due to wet subgrade soil conditions, and/or construction during wet weather. Based on our site review, we recommend a wet weather section with a minimum subgrade deepening of 6 to 12 inches to accommodate a working subbase of additional 1½”-0 crushed rock. Geotextile fabric, Mirafi 500x or equivalent, should be placed on subgrade soils prior to placement of base rock.

In some instances, it may be preferable to use a subbase material in combination with over-excavation and increasing the thickness of the rock section. GeoPacific should be consulted for additional recommendations regarding use of additional subbase in wet weather pavement sections if it is desired to pursue this alternative. Cement treatment of the subgrade may also be considered instead of over-excavation. For planning purposes, we anticipate that treatment of the onsite soils would involve mixing cement powder to approximately 6 percent cement content and a mixing depth on the order of 12 to 18 inches.

With implementation of the above recommendations, it is our opinion that the resulting pavement section will provide equivalent or greater structural strength than the dry weather pavement section currently planned. However, it should be noted that construction in wet weather is risky and the performance of pavement subgrades depend on a number of factors including the weather conditions, the contractor’s methods, and the amount of traffic the road is subjected to. There is a potential that soft spots may develop even with implementation of the wet weather provisions recommended in this letter. If soft spots in the subgrade are identified during roadway excavation,

or develop prior to paving, the soft spots should be over-excavated and backfilled with additional crushed rock.

During subgrade excavation, care should be taken to avoid disturbing the subgrade soils. Removals should be performed using an excavator with a smooth-bladed bucket. Truck traffic should be limited until an adequate working surface has been established. We suggest that the crushed rock be spread using bulldozer equipment rather than dump trucks, to reduce the amount of traffic and potential disturbance of subgrade soils. Care should be taken to avoid over-compaction of the base course materials, which could create pumping, unstable subgrade soil conditions. Heavy and/or vibratory compaction efforts should be applied with caution. Following placement and compaction of the crushed rock to project specifications (95 percent of Modified Proctor), a finish proof-roll should be performed before paving.

The above recommendations are subject to field verification. GeoPacific should be on-site during construction to verify subgrade strength and to take density tests on the engineered fill, base rock and asphaltic pavement materials.

6.14 Cement Amending Procedures

This section provides recommendations for conducting cement amending should the method of subgrade stabilization be incorporated into project design for subgrade stabilization. The moisture sensitive subgrade soils make the site a difficult wet weather construction project. The client and contractor should be prepared that wet weather construction may be risky and costly.

We anticipate that cement treated soils would primarily consist of Lean CLAY. For planning purposes, the amount of cement used during treatment should be based on an assumed soil dry unit weight of 100 pounds per cubic foot for fine-grained soils. We anticipate that treatment of the onsite soils would involve mixing cement powder to approximately 5 to 6 percent cement content and a mixing depth on the order of 12 to 16 inches. Actual percentages of cement required to achieve design strength will ultimately be determined by the lab testing results prior to construction and the soil moisture content at the time of placement. GeoPacific should evaluate the moisture content of the roadway subgrade before cement amendment. The amount of cement used may need to be increased or adjusted depending on the soil moisture content, particularly if soils are in excess of 10 percent over optimum moisture content. Portland cement content should not exceed 8 percent without prior approval.

Cement amendment should be conducted with a maximum lift thickness of 16 inches. Cement amending operations should not be conducted during periods of heavy rainfall, or when the outside temperature is less than 40 degrees Fahrenheit. Following adequate placement and tilling of cement amended subgrade soils, a static, sheep's-foot compactor should immediately be utilized to thoroughly compact the cement amended fill to at least 95 percent of the maximum dry density determined by ASTM D558 (Standard Test Method for Moisture-Density Unit Weight Relations of Soil-Cement Mixtures). A vibratory compactor is not recommended because it may further disturb the existing subgrade soils. During placement of cement amended fill soils, density testing should be performed to verify compliance with project specifications. Generally, one compaction test is performed for each vertical foot of cement amended engineered fill placed, and for every 100 to 200 linear feet within the alignment. Field density testing should conform to ASTM D6938, D2922,

and D3017. Soil-cement compression test specimens of cement amended soils may be obtained and tested in the soils laboratory in accordance with ASTM D558-04. A compressive strength in the range of 200 to 400 psi as determined by ASTM D 1633 Method A should ideally be achieved. If the soil moisture content is approximately 5 percent over optimum moisture content, as recommended, we anticipate that placement of 6 percent cement by weight of dry soil will be sufficient to achieve the required compressive strength. However, minimum cement percentage will be determined based upon the results of laboratory testing.

The contractor should avoid impacting the treated soils for a minimum period of 4 to 5 days to allow the cement to cure prior to subjecting the subgrade to construction traffic. After the initial cure period, a proof-roll should be observed prior to routing construction traffic over cement treated areas. Impacting the treated base with heavy equipment prior to final cure of the treated soils could reduce final cure strengths and soft areas may develop.

The primary risk associated with cement treatment of roadway subgrade soils is that there is a potential for soft areas to develop following treatment if there in inadequate cement content added to the soil, blending of cement, or compaction of treated soils. Also, soft areas may develop where soils which may have been disturbed underlying the area of treatment are not adequately removed or treated. It is possible that even after careful treatment with recommended percentages, soft areas may still be present which would require additional over-excavation.

7.0 SEISMIC DESIGN

The Oregon Department of Geology and Mineral Industries (DOGAMI), Oregon HazVu: 2020 Statewide GeoHazards Viewer indicates that the site is in an area where *very strong* ground shaking is anticipated during an earthquake. Structures should be designed to resist earthquake loading in accordance with the methodology described in the 2018 International Building Code (IBC) with applicable Oregon Structural Specialty Code (OSSC) revisions (current 2019). We recommend Site Class D be used for design as defined in ASCE 7-16, Chapter 20, and Table 20.3-1. Design values determined for the site using the ATC Hazards by Location 2019 Seismic Design Maps Summary Report are summarized in Table 5 and are based upon observed existing soil conditions.

Table 5: Recommended Earthquake Ground Motion Parameters (ASCE-7-16)

Parameter	Value
Location (Lat, Long), degrees	45.307, -122.938
Probabilistic Ground Motion Values, 2% Probability of Exceedance in 50 yrs	
Peak Ground Acceleration PGA_M	0.472 g
Short Period, S_s	0.848 g
1.0 Sec Period, S_1	0.409 g
Soil Factors for Site Class D:	
F_a	1.161
* F_v	1.891
$SD_s = 2/3 \times F_a \times S_s$	0.656 g
$*SD_1 = 2/3 \times F_v \times S_1$	0.515 g
Seismic Design Category	D

* F_v value reported in the above table is a straight-line interpolation of mapped spectral response acceleration at 1-second period, S_1 per Table 1613.2.3(2) with the assumption that Exception 2 of ASCE 7-16 Chapter 11.4.8 is met per the Structural Engineer. If Exception 2 is not met, and the long-period site coefficient (F_v) is required for design, GeoPacific Engineering can be consulted to provide a site-specific procedure as per ASCE 7-16, Chapter 21.

7.1 Soil Liquefaction

The Oregon Department of Geology and Mineral Industries (DOGAMI), Oregon HazVu: 2020 Statewide GeoHazards Viewer indicates that the site contains areas considered to be at *low* risk for soil liquefaction during an earthquake. Soil liquefaction is a phenomenon wherein saturated soil deposits temporarily lose strength and behave as a liquid in response to ground shaking caused by strong earthquakes. Soil liquefaction typically occurs in loose sands, and granular soils located below the water table, and fine-grained soils with a plasticity index less than 10, and SPT N-Values lower than 15. The subsurface profile observed within our subsurface explorations, which extended to a maximum depth of 60 feet bgs, indicated that the site is underlain by medium stiff to stiff, low to moderately plastic, Lean CLAY, SILT and interlayered Clayey SILT, and Sandy SILT. On December 13, and December 16, 2019, observed soil moisture conditions were generally very moist to wet. Groundwater seepage was observed within test pit TP-3 at an approximate depth of 9 feet bgs.

The liquefaction potential at the subject site was analyzed for the soil profile encountered within cone penetrometer CPT-1 using CLiq version 3.0.2.4, by Geologismiki, and the Robertson clay-like behavior (2009) method of analysis. The depth of analysis was 60 feet bgs. The groundwater table during an earthquake was estimated to be 8 feet bgs during an earthquake. Using a peak horizontal ground acceleration of 0.47g, and an earthquake moment magnitude of 9.10 based upon data obtained from the U.Ss. Geological Survey (USGS) 2019 Earthquake Hazards Program, the factor of safety was less than 1 for some soil layers, indicating the potential for liquefaction during an earthquake. Based upon our analysis of the existing soil profile, potentially liquefiable layers are most prevalent underlying the subject site at depths ranging from 12 to 18 feet bgs, 30 to 40 feet bgs, and 50 to 60 feet bgs. Soils meeting the criteria for potentially liquefiable soil layers during an earthquake at this site include low plasticity SILT, and sandy SILT soils located below the static groundwater table. Our analysis indicates that total dynamic settlement due to soil liquefaction at the location of CPT-1 is anticipated to be approximately 3.9 inches. We anticipate that differential settlement would be approximately one-half of the total estimated settlement, measured between two adjacent building foundation components, or over a span of approximately 20 feet. Based on the relatively level topography at the site, and the lack of free slope faces in the vicinity of the subject site, it is our opinion that the risk of damage to the proposed structure due to lateral spreading is very low.

The design team and structural engineer should work together to determine the maximum allowable settlement that is considered to be tolerable to the structure during a strong seismic event. If determined necessary, soil liquefaction and lateral spreading may potentially be reduced to within tolerable limits with deep ground improvements. Methods such as installation of rammed aggregate piers (GeoPiers), stone columns, or deep soil mixing columns (DSM), may be feasible options. The geotechnical engineer should work closely with the design team to develop appropriate recommendations for the site.

8.0 UNCERTAINTIES AND LIMITATIONS

We have prepared this report for the owner and their consultants for use in design of this project only. This report should be provided in its entirety to prospective contractors for bidding and estimating purposes; however, the conclusions and interpretations presented in this report should not be construed as a warranty of the subsurface conditions. Experience has shown that soil and groundwater conditions can vary significantly over small distances. Inconsistent conditions can occur between explorations that may not be detected by a geotechnical study. If, during future site operations, subsurface conditions are encountered which vary appreciably from those described herein, GeoPacific should be notified for review of the recommendations of this report, and revision of such if necessary.

Sufficient geotechnical monitoring, testing and consultation should be provided during construction to confirm that the conditions encountered are consistent with those indicated by explorations. The checklist attached to this report outlines recommended geotechnical observations and testing for the project. Recommendations for design changes will be provided should conditions revealed during construction differ from those anticipated, and to verify that the geotechnical aspects of construction comply with the contract plans and specifications.

Within the limitations of scope, schedule and budget, GeoPacific attempted to execute these services in accordance with generally accepted professional principles and practices in the fields of geotechnical engineering and engineering geology at the time the report was prepared. No warranty, expressed or implied, is made. The scope of our work did not include environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous or toxic substances in the soil, surface water, or groundwater at this site.

We appreciate this opportunity to be of service.

Sincerely,

GEOPACIFIC ENGINEERING, INC.

EXPIRES: 06/30/2021

Benjamin L. Cook, C.E.G.
Senior Engineering Geologist

James D. Imbrie, G.E., C.E.G.
Principal Geotechnical Engineer

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CHECKLIST OF RECOMMENDED GEOTECHNICAL TESTING AND OBSERVATION

Item No.	Procedure	Timing	By Whom	Done
1	Preconstruction meeting	Prior to beginning site work	Contractor, Developer, Civil and Geotechnical Engineers	
2	Fill removal from site or sorting and stockpiling	Prior to mass stripping	Soil Technician/ Geotechnical Engineer	
3	Stripping, aeration, and root-picking operations	During stripping	Soil Technician	
4	Compaction testing of engineered fill (95% of Standard Proctor)	During filling, tested every 2 vertical feet	Soil Technician	
5	Foundation Subgrade Compaction (95% of Modified Proctor)	During Foundation Preparation, Prior to Placement of Reinforcing Steel	Soil Technician/ Geotechnical Engineer	
6	Compaction testing of trench backfill (95% of Modified Proctor)	During backfilling, tested every 4 vertical feet for every 200 linear feet	Soil Technician	
7	Street Subgrade Inspection (95% of Standard Proctor)	Prior to placing base course	Soil Technician	
8	Base course compaction (95% of Modified Proctor)	Prior to paving, tested every 200 linear feet	Soil Technician	
9	Asphalt Compaction (92% Rice Value)	During paving, tested every 100 linear feet	Soil Technician	
10	Final Geotechnical Engineer's Report	Completion of project	Geotechnical Engineer	

FIGURES

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Portland, Oregon 97224
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Fax (503) 941-9281

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, Oregon 97224
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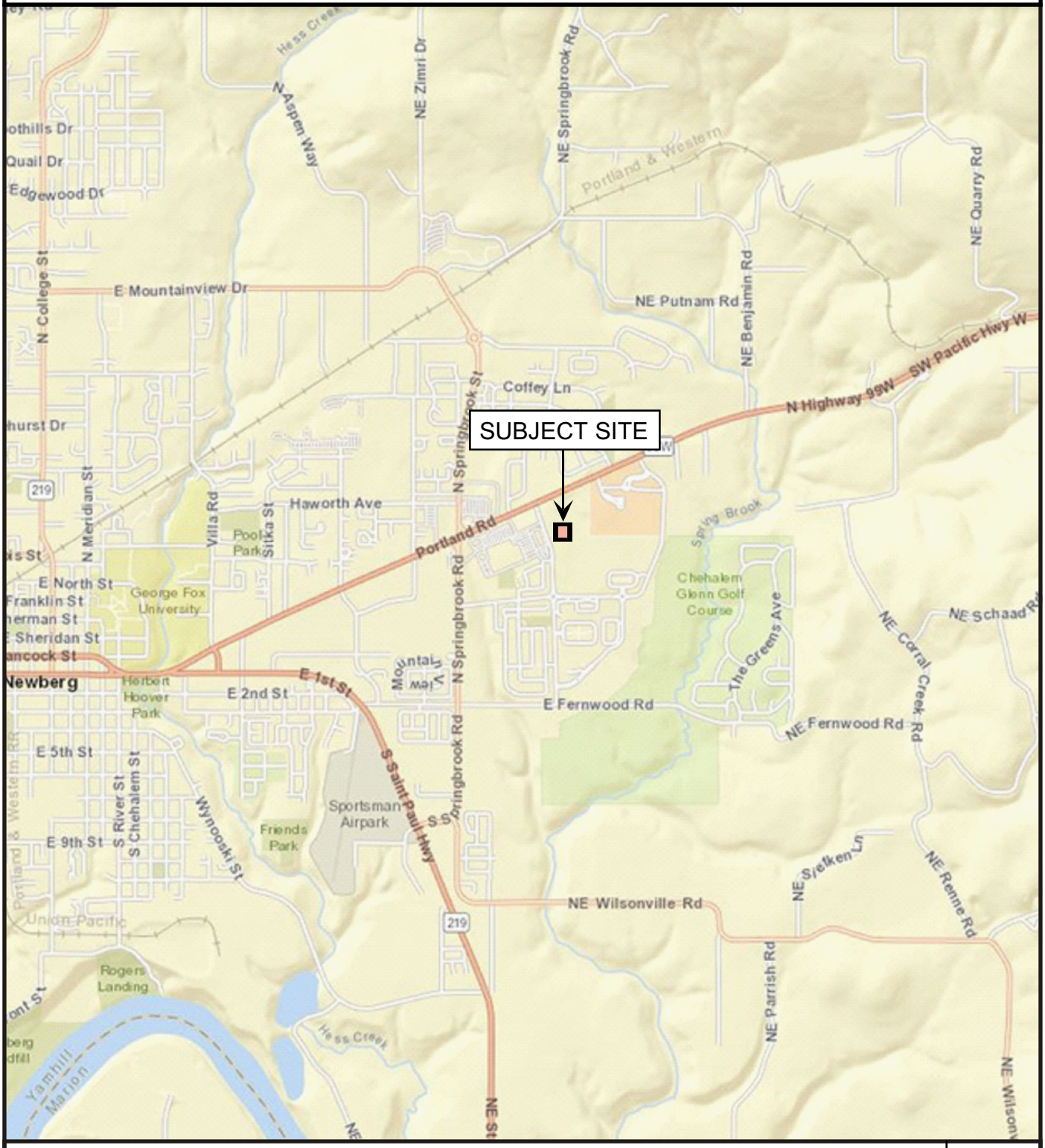
SITE VICINITY MAP



Base Map: Street View, 2019
Date: 12/27/2019
Drawn by: BLC

North

Project: Fairfield Marriott Tax Lot 01900, R3216 Newberg, Oregon 97132	Project No. 19-5391	FIGURE 1

GeoPacific Engineering, Inc.
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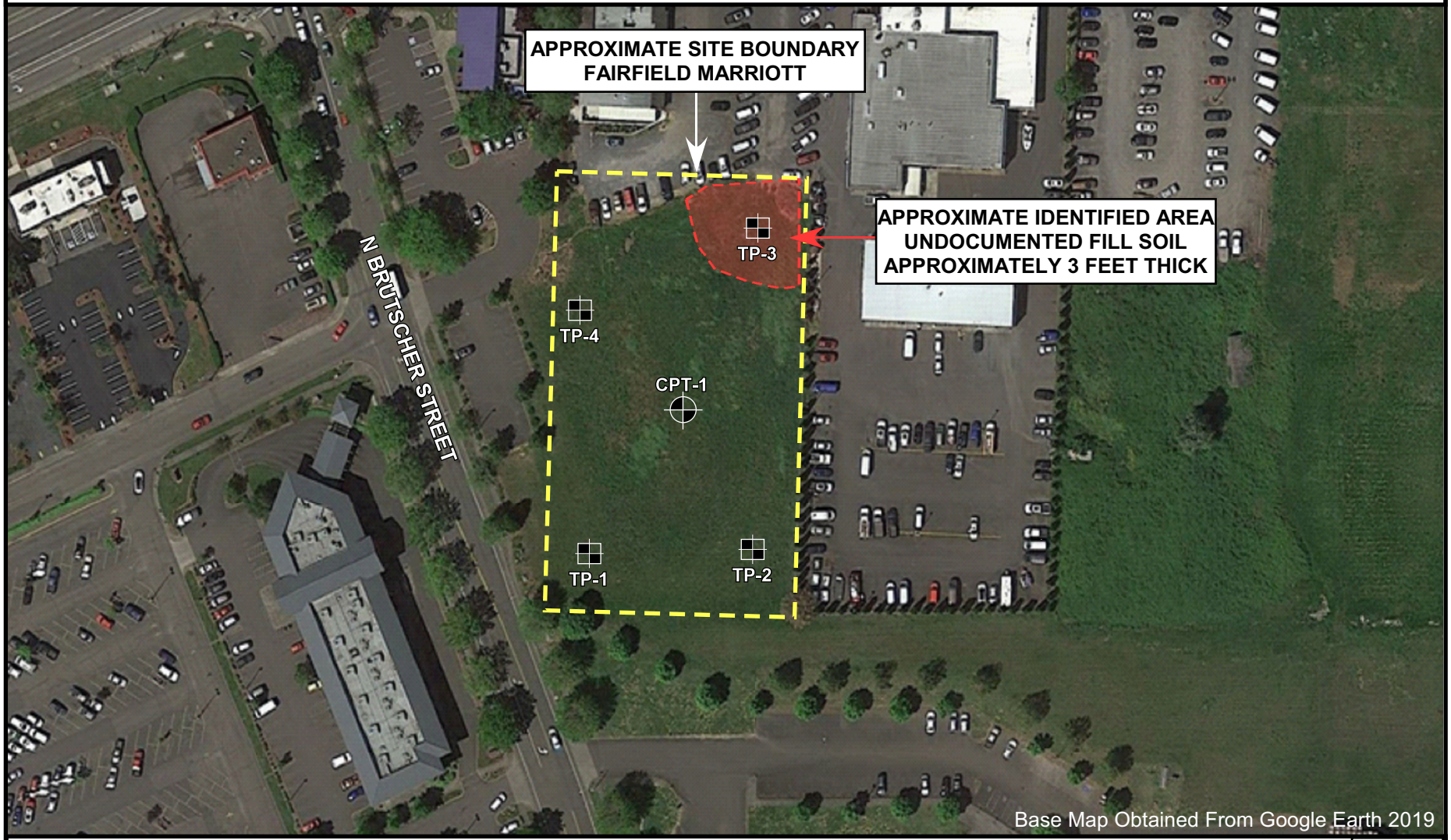
SITE AERIAL AND EXPLORATION LOCATIONS



Legend:

- Test Pit Exploration Designation and Approximate Location
- Cone Penetrometer Test Designation and Approximate Location

APPROXIMATE SCALE (FEET)

60 0 60 120

Drawn By: BLC
Date:12/27/2019

North

Project: Fairfield Marriott
Tax Lot 01900, R3216, Newberg, Oregon 97132

Project No. 19-5391

FIGURE 2

GeoPacific Engineering, Inc.
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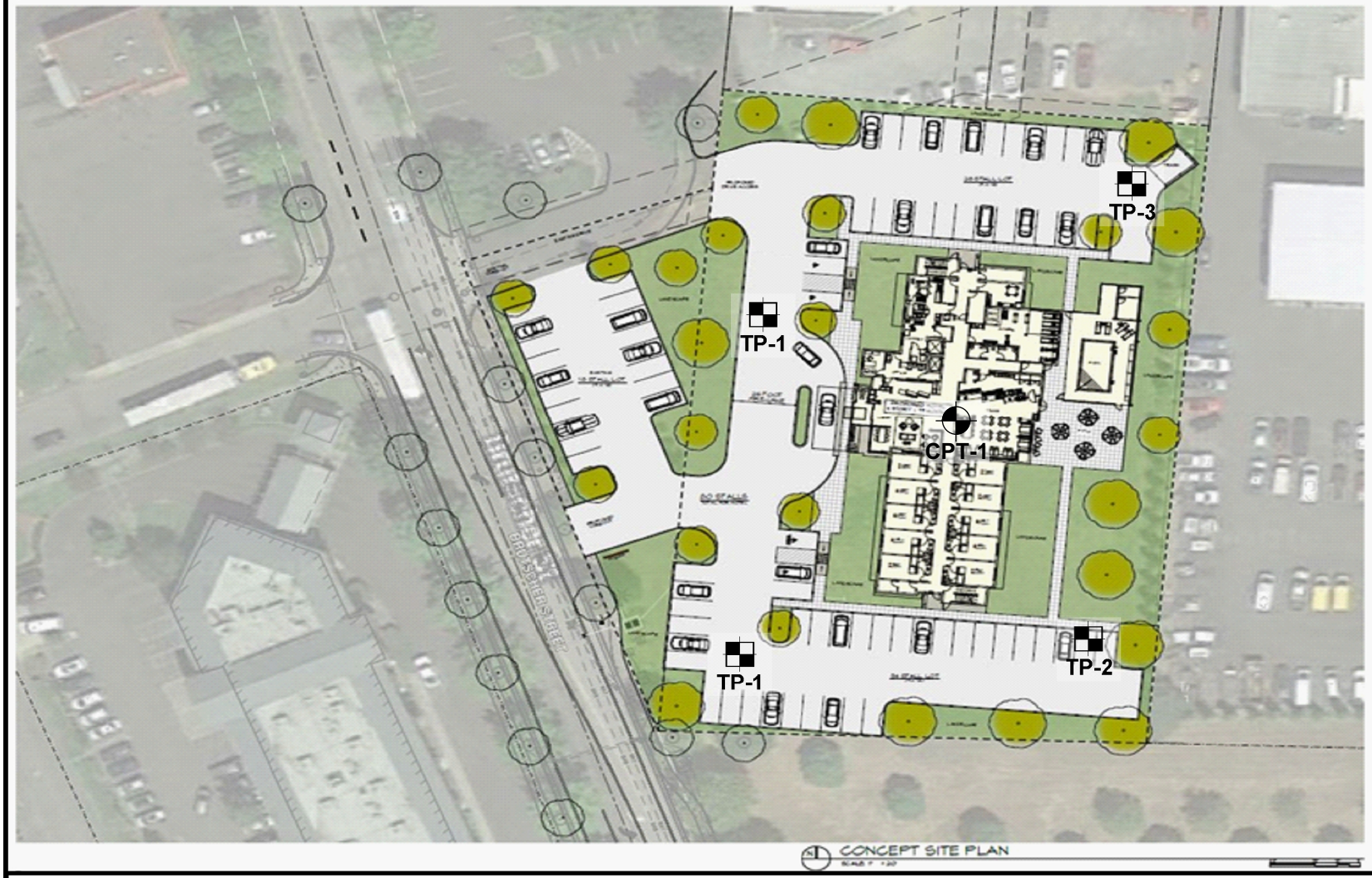
SITE PLAN AND EXPLORATION LOCATIONS



Legend:

- Test Pit Exploration Designation and Approximate Location
- Cone Penetrometer Test Designation and Approximate Location

APPROXIMATE SCALE (AS NOTED)

Drawn By: BLC

Date:12/30/2019

North

Project: Fairfield Marriott
Tax Lot 01900, R3216, Newberg, Oregon 97132

Project No. 19-5391

FIGURE 3

GeoPacific Engineering, Inc.
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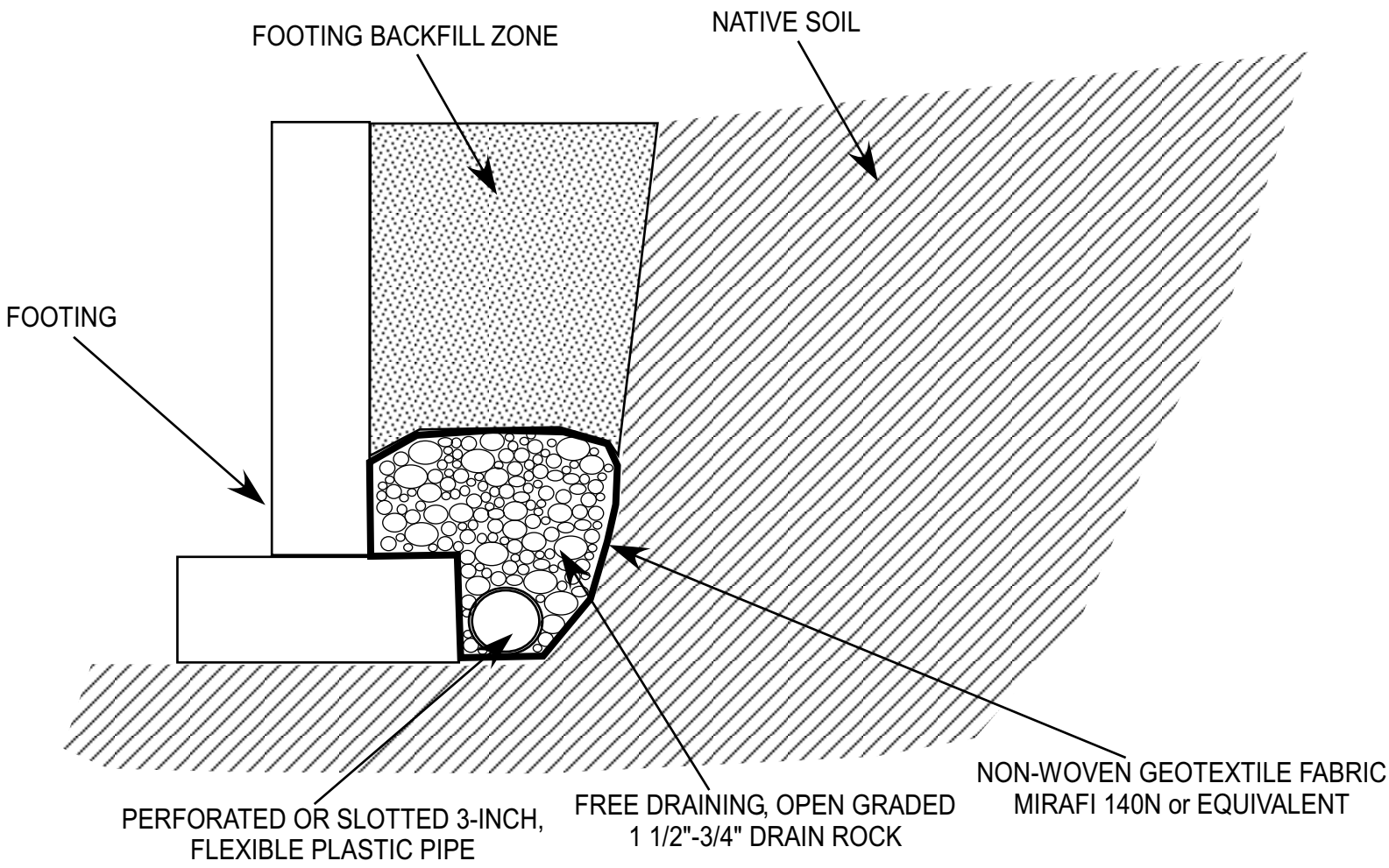
TYPICAL PERIMETER FOOTING DRAIN DETAIL



Notes:
1) Drain rock should contain no more than 5 percent fines passing the U.S. No. 200 Sieve.
2) Trench bottom and drain pipe should be sloped to drain to approved discharge location.

Date: 12/30/2019
Drawn by: BLC

Project: Fairfield Marriott Tax Lot 01900, R3216, Newberg, Oregon 97132	Project No. 19-5391	FIGURE 4

GeoPacific Engineering, Inc.
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EXPLORATION LOGS

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TEST PIT LOG

Project: Fairfield Marriott
Newberg, Oregon

Project No.19-5391

Test Pit No. **TP-1**

Depth (ft)	Pocket Penetrometer (tons/ft²)	Torvane Shear (tons/ft²)	Sample Type	% Passing No. 200 Sieve	Moisture Content (%)	Water Bearing Zone	Material Description
1	2.5						TOPSOIL. Organic Lean CLAY (OL-CL), brown, damp to moist, fine roots, extends to approximately 6 inches bgs.
2	3.0						Lean CLAY (CL), light brown, medium stiff to very stiff, moist, pinhole structure, low to moderate plasticity.
3	4.0		100 to 1,000 g	97.3	21.6		AASHTO Classification= A-7-6(26); LL=47; PI=23
4	4.0						
5							Lean CLAY (CL), brown, very stiff, very moist, pinhole structure, low to moderate plasticity.
6			100 to 1,000 g	97.2	24.9		AASHTO Classification= A-7-6(25); LL=49; PI=22
7							
8							SILT (ML), brown, stiff, moist, pinhole structure, low plasticity.
9			100 to 1,000 g	99.4	27.0		AASHTO Classification= A-6(16); LL=40; PI=14
10							Test pit terminated at 10 feet bgs. No groundwater observed
11							
12							
13							
14							
15							
16							
17							

LEGEND

100 to 1,000 g — Bag Sample
5 Gal. Bucket — Bucket Sample
Shelby Tube Sample
Seepage
Water Bearing Zone
Water Level at Abandonment

Date Excavated: 12/13/2019
Logged By: B. Cook
Surface Elevation: 228 Feet

GeoPacific Engineering, Inc.
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TEST PIT LOG

Project: Fairfield Marriott
Newberg, Oregon

Project No.19-5391

Test Pit No. **TP-2**

Depth (ft)	Pocket Penetrometer (tons/ft²)	Torvane Shear (tons/ft²)	Sample Type	% Passing No. 200 Sieve	Moisture Content (%)	Water Bearing Zone	Material Description
1	1.5						TOPSOIL. Organic Lean CLAY (OL-CL), brown, damp to moist, fine roots, extends to approximately 18 inches bgs. Old farm till zone.
2	2.5						Lean CLAY (CL), light brown, medium stiff to stiff, moist, pinhole structure, low to moderate plasticity.
3	4.0						
4	4.0						Lean CLAY (CL), brown, stiff to very stiff, very moist, pinhole structure, low to moderate plasticity.
5							
6							
7							
8							SILT (ML), brown, stiff, moist, pinhole structure, low plasticity.
9							
10							Test pit terminated at 10 feet bgs. No groundwater observed
11							
12							
13							
14							
15							
16							
17							

LEGEND

Bag Sample

Bucket Sample


Shelby Tube Sample


Seepage


Water Bearing Zone


Water Level at Abandonment

Date Excavated: 12/13/2019
Logged By: B. Cook
Surface Elevation: 226 Feet

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TEST PIT LOG

Project: Fairfield Marriott
Newberg, Oregon

Project No.19-5391

Test Pit No. **TP-3**

Depth (ft)	Pocket Penetrometer (tons/ft²)	Torvane Shear (tons/ft²)	Sample Type	% Passing No. 200 Sieve	Moisture Content (%)	Water Bearing Zone	Material Description
1	0.5						TOPSOIL. Organic Lean CLAY (OL-CL), dark brown, damp to moist, fine roots, extends to approximately 18 inches bgs. Old farm till zone.
2	0.5						FILL. Lean CLAY (CL), light brown, soft, moist, contains minor plastic debris fragments.
3	3.0						
4	3.5						Lean CLAY (CL), brown, stiff to very stiff, very moist, pinhole structure, low to moderate plasticity.
5							
6							
7							SILT (ML), brown, stiff becoming medium stiff at -9 feet, very moist to wet, low plasticity.
8							
9							
10							Test pit terminated at 10 feet bgs. Groundwater seepage observed at 9 feet bgs.
11							
12							
13							
14							
15							
16							
17							

LEGEND

Bag Sample

Bucket Sample


Shelby Tube Sample


Seepage


Water Bearing Zone


Water Level at Abandonment

Date Excavated: 12/13/2019
Logged By: B. Cook
Surface Elevation: 225 Feet

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, Oregon 97224
Tel: (503) 598-8445 Fax: (503) 941-9281

TEST PIT LOG

Project: Fairfield Marriott
Newberg, Oregon

Project No.19-5391

Test Pit No. **TP-4**

Depth (ft)	Pocket Penetrometer (tons/ft²)	Torvane Shear (tons/ft²)	Sample Type	% Passing No. 200 Sieve	Moisture Content (%)	Water Bearing Zone	Material Description
1	2.5						TOPSOIL. Organic Lean CLAY (OL-CL), dark brown, damp to moist, fine roots, extends to approximately 18 inches bgs. Old farm till zone. Plastic perforated drain pipe encountered.
2	2.5						Lean CLAY (CL), brown, medium stiff to very stiff, very moist, pinhole structure, low to moderate plasticity.
3	4.0						
4	4.0						
5							
6							
7							SILT (ML), brown, stiff to very stiff, moist, pinhole structure, low plasticity.
8							
9							
10							Test pit terminated at 10 feet bgs. No groundwater observed
11							
12							
13							
14							
15							
16							
17							

LEGEND

Bag Sample

Bucket Sample


Shelby Tube Sample


Seepage

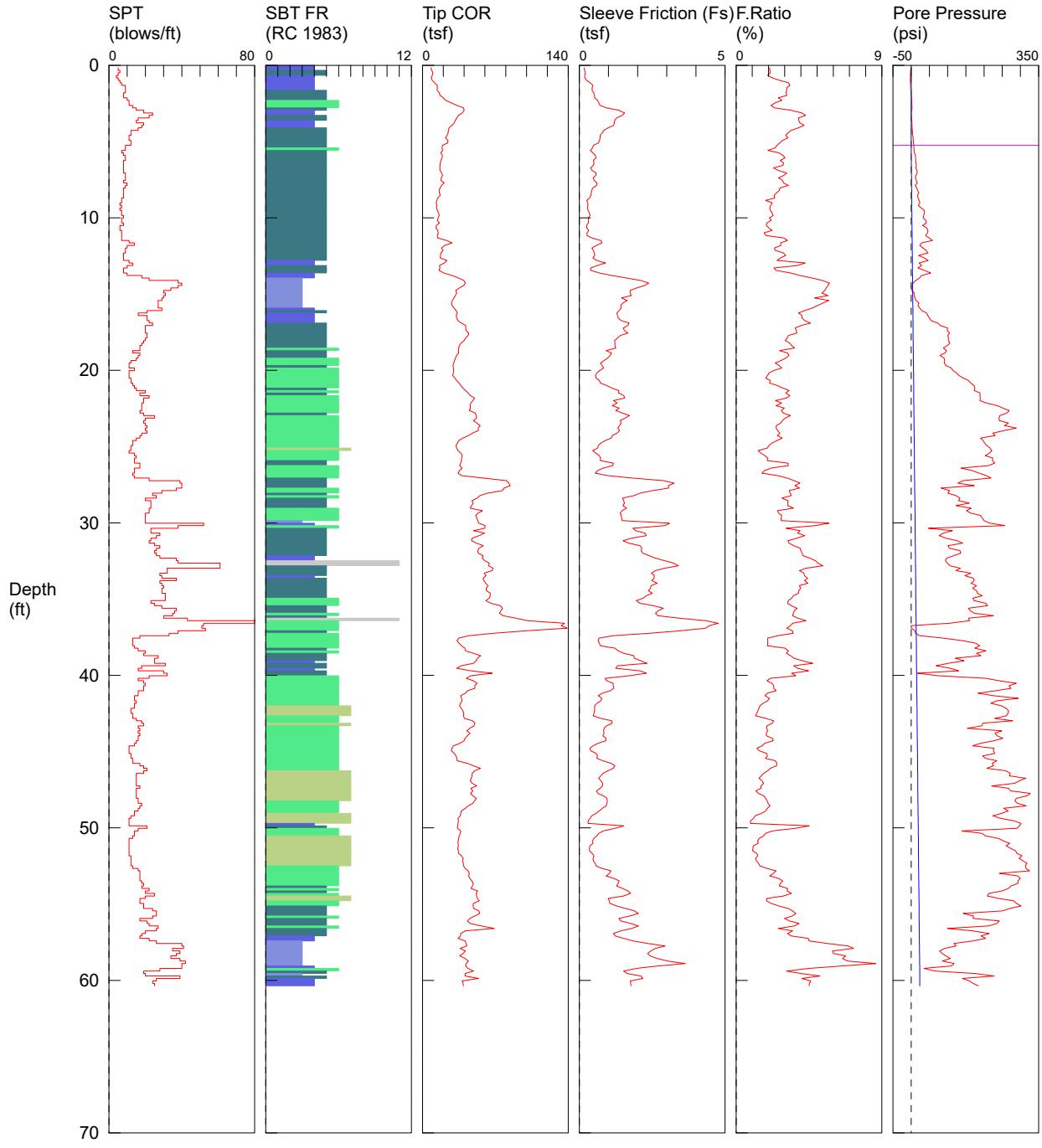

Water Bearing Zone


Water Level at Abandonment

Date Excavated: 12/13/2019
Logged By: B. Cook
Surface Elevation: 227 Feet

GeoPacific / CPT-1 / N Brutscher St Newberg

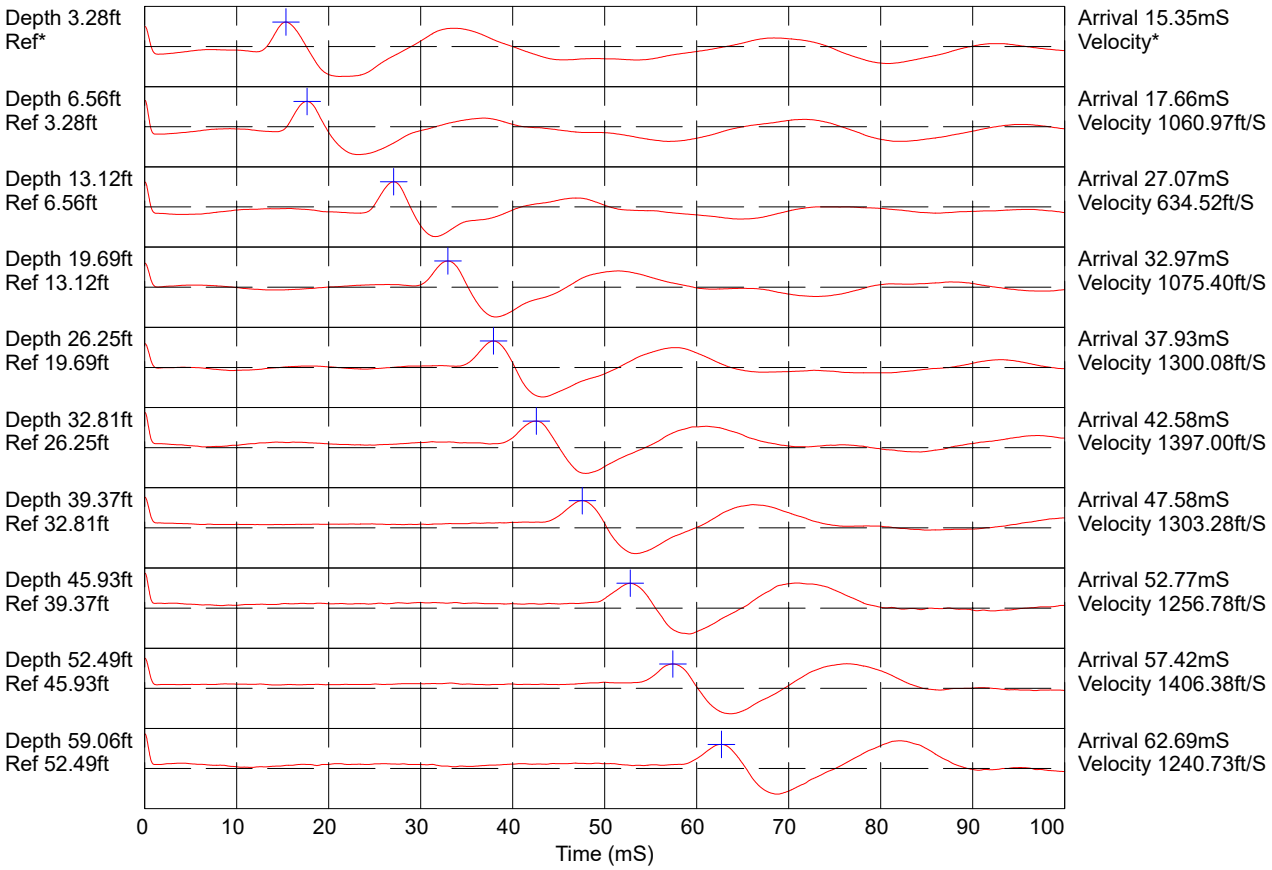
OPERATOR: OGE BAK
CONE ID: DPG1211
HOLE NUMBER: CPT-1
TEST DATE: 12/16/2019 9:15:53 AM
TOTAL DEPTH: 60.367 ft



1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

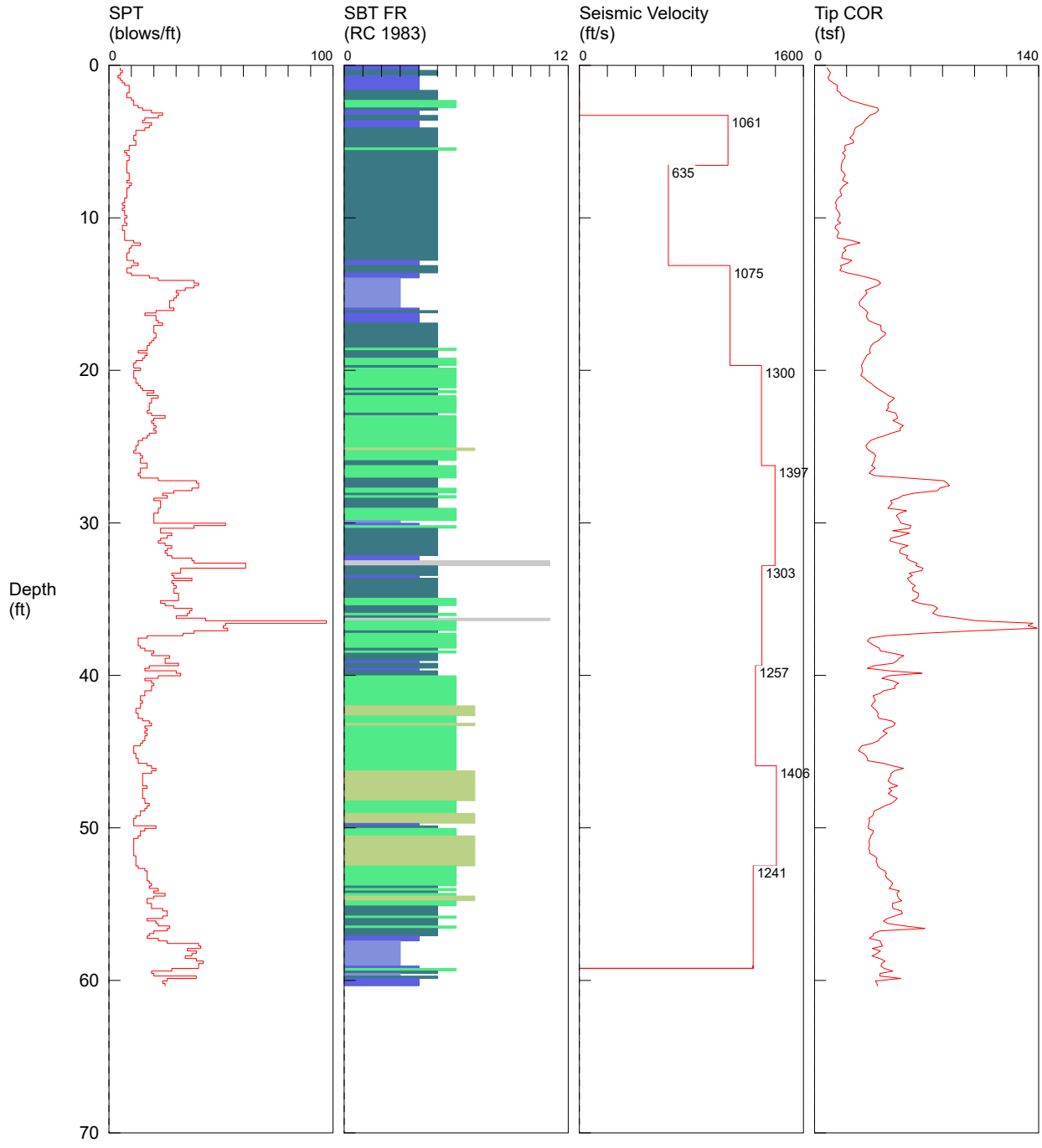
COMMENT: GeoPacific / CPT-1 / 901 N Brutscher St Newberg



Hammer to Rod String Distance (ft): 4.27
* = Not Determined

GeoPacific / CPT-1 / N Brutscher St Newberg

OPERATOR: OGE BAK
CONE ID: DPG1211
HOLE NUMBER: CPT-1
TEST DATE: 12/16/2019 9:15:53 AM
TOTAL DEPTH: 60.367 ft

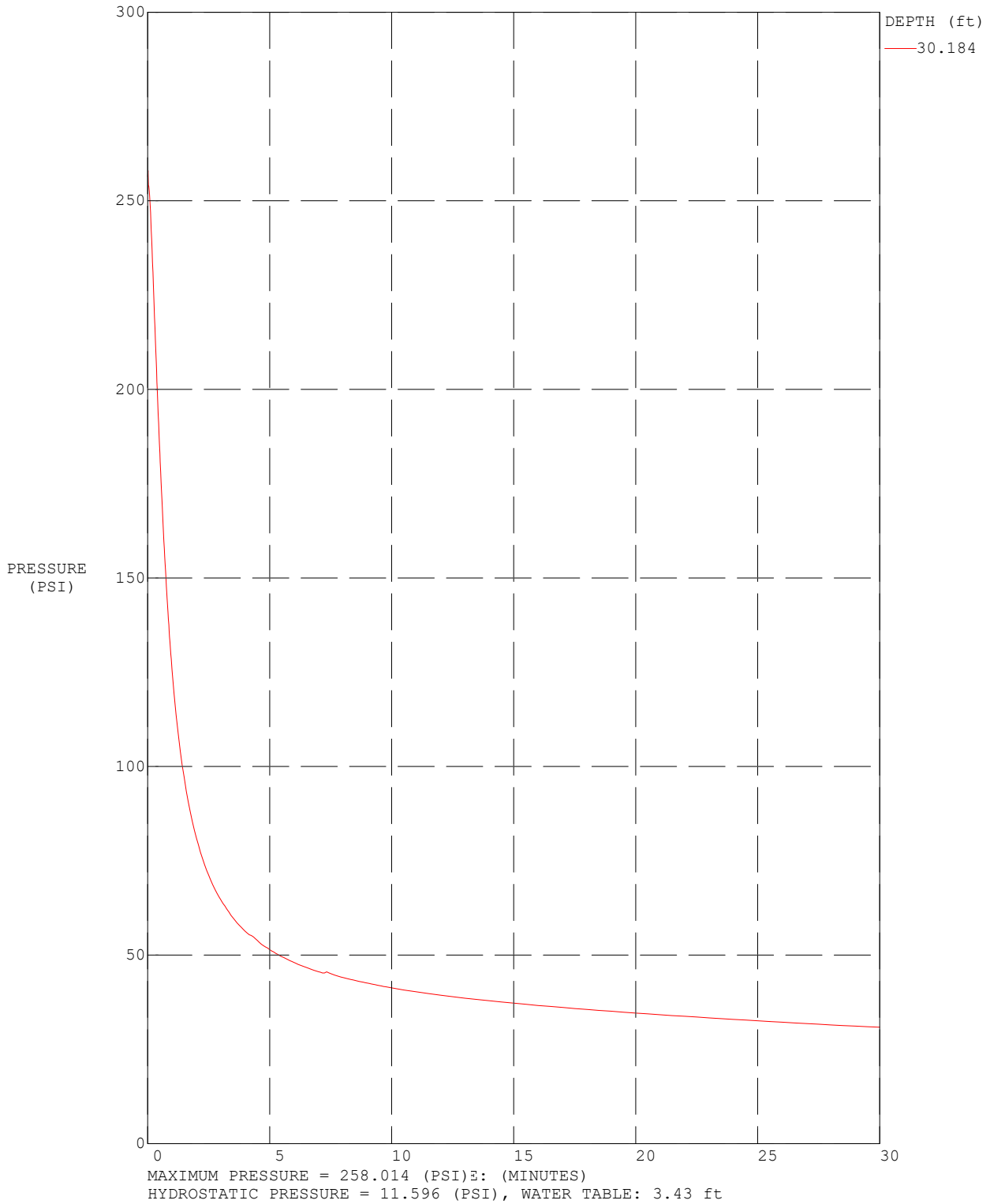


1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

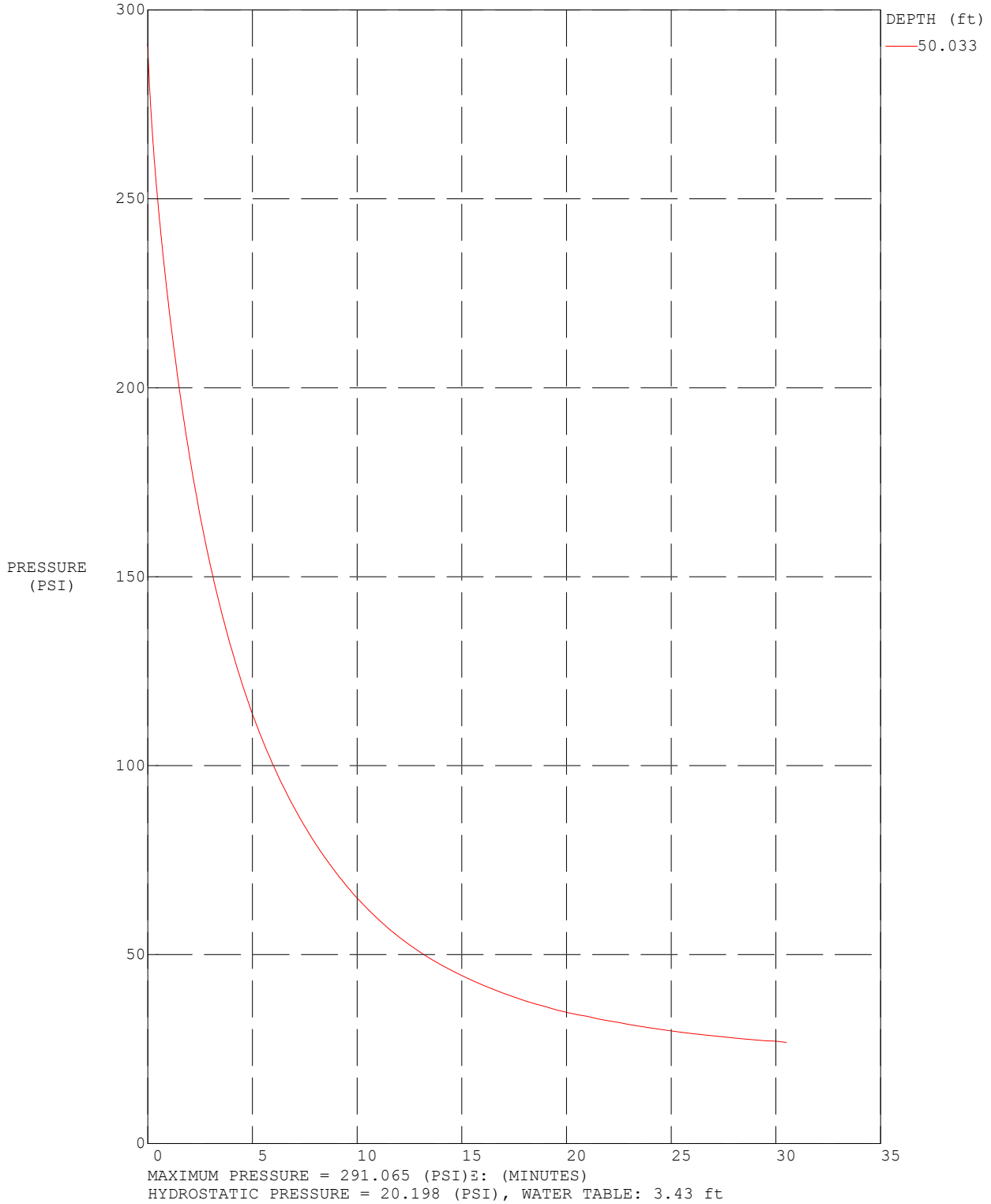
COMMENT: GeoPacific / CPT-1 / 901 N Brutscher St Newberg

TEST DATE: 12/16/2019 9:15:53 AM



COMMENT: GeoPacific / CPT-1 / 901 N Brutscher St Newberg

TEST DATE: 12/16/2019 9:15:53 AM



GeoPacific Engineering, Inc.

Real-World Geotechnical Solutions
Investigation • Design • Construction Support

LABORATORY TEST RESULTS

14835 SW 72nd Avenue
Portland, Oregon 97224

Tel (503) 598-8445
Fax (503) 941-9281

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

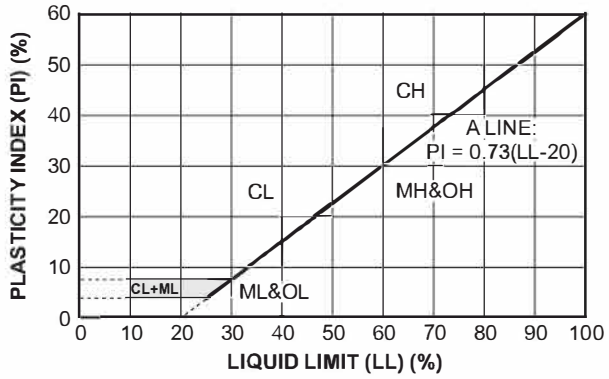
LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for GW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent ..... GW, GP, SW, SP
More than 12 percent ..... GM, GC, SM, SC
5 to 12 percent ..... Borderline cases requiring dual symbols

PLASTICITY CHART



SOIL DESCRIPTION AND CLASSIFICATION GUIDELINES

Particle-Size Classification

COMPONENT	ASTM/USCS		AASHTO	
	size range	sieve size range	size range	sieve size range
Cobbles	> 75 mm	greater than 3 inches	> 75 mm	greater than 3 inches
Gravel	75 mm – 4.75 mm	3 inches to No. 4 sieve	75 mm – 2.00 mm	3 inches to No. 10 sieve
Coarse	75 mm – 19.0 mm	3 inches to 3/4-inch sieve	-	-
Fine	19.0 mm – 4.75 mm	3/4-inch to No. 4 sieve	-	-
Sand	4.75 mm – 0.075 mm	No. 4 to No. 200 sieve	2.00 mm – 0.075 mm	No. 10 to No. 200 sieve
Coarse	4.75 mm – 2.00 mm	No. 4 to No. 10 sieve	2.00 mm – 0.425 mm	No. 10 to No. 40 sieve
Medium	2.00 mm – 0.425 mm	No. 10 to No. 40 sieve	-	-
Fine	0.425 mm – 0.075 mm	No. 40 to No. 200 sieve	0.425 mm – 0.075 mm	No. 40 to No. 200 sieve
Fines (Silt and Clay)	< 0.075 mm	Passing No. 200 sieve	< 0.075 mm	Passing No. 200 sieve

Consistency for Cohesive Soil

CONSISTENCY	SPT N-VALUE (BLOWS PER FOOT)	POCKET PENETROMETER (UNCONFINED COMPRESSIVE STRENGTH, tsf)
Very Soft	2	less than 0.25
Soft	2 to 4	0.25 to 0.50
Medium Stiff	4 to 8	0.50 to 1.0
Stiff	8 to 15	1.0 to 2.0
Very Stiff	15 to 30	2.0 to 4.0
Hard	30 to 60	greater than 4.0
Very Hard	greater than 60	-

Relative Density for Granular Soil

RELATIVE DENSITY	SPT N-VALUE (BLOWS PER FOOT)
Very Loose	0 to 4
Loose	4 to 10
Medium Dense	10 to 30
Dense	30 to 50
Very Dense	more than 50

Moisture Designations

TERM	FIELD IDENTIFICATION
Dry	No moisture. Dusty or dry.
Damp	Some moisture. Cohesive soils are usually below plastic limit and are moldable.
Moist	Grains appear darkened, but no visible water is present. Cohesive soils will clump. Sand will bulk. Soils are often at or near plastic limit.
Wet	Visible water on larger grains. Sand and silt exhibit dilatancy. Cohesive soil can be readily remolded. Soil leaves wetness on the hand when squeezed. Soil is much wetter than optimum moisture content and is above plastic limit.

AASHTO SOIL CLASSIFICATION SYSTEM

TABLE 1. Classification of Soils and Soil-Aggregate Mixtures

General Classification	Granular Materials (35 Percent or Less Passing .075 mm)				Silt-Clay Materials (More than 35 Percent Passing 0.075)		
Group Classification	A-1	A-3	A-2	A-4	A-5	A-6	A-7
Sieve analysis, percent passing:							
2.00 mm (No. 10)	-	-	-				
0.425 mm (No. 40)	50 max	51 min	-	-	-	-	-
0.075 mm (No. 200)	25 max	10 max	35 max	36 min	36 min	36 min	36 min
Characteristics of fraction passing 0.425 mm (No. 40)							
Liquid limit				40 max	41 min	40 max	41 min
Plasticity index	6 max	N.P.		10 max	10 max	11 min	11 min
General rating as subgrade	Excellent to good				Fair to poor		

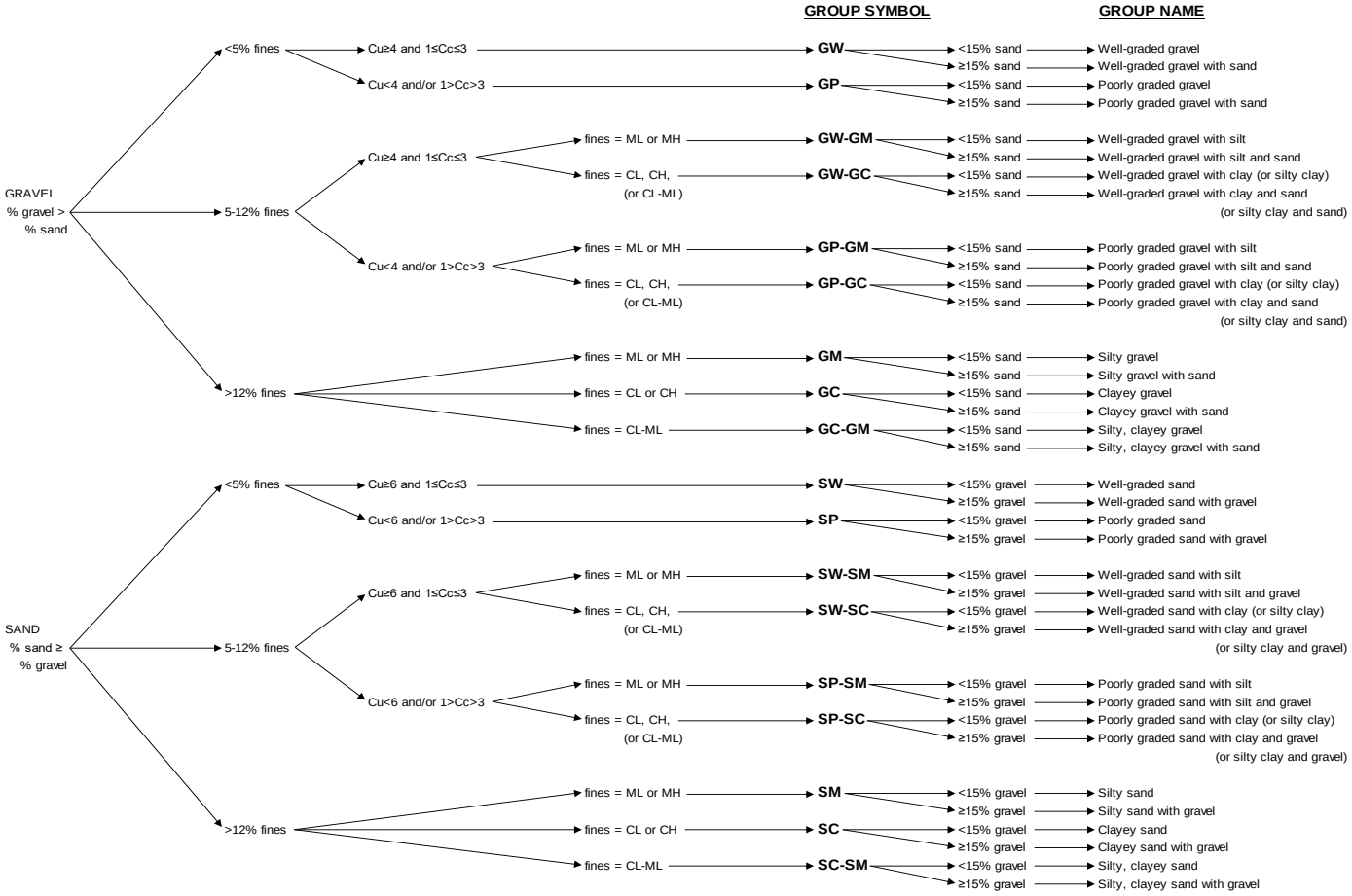
Note: The placing of A-3 before A-2 is necessary in the "left to right elimination process" and does not indicate superiority of A-3 over A-2.

TABLE 2. Classification of Soils and Soil-Aggregate Mixtures

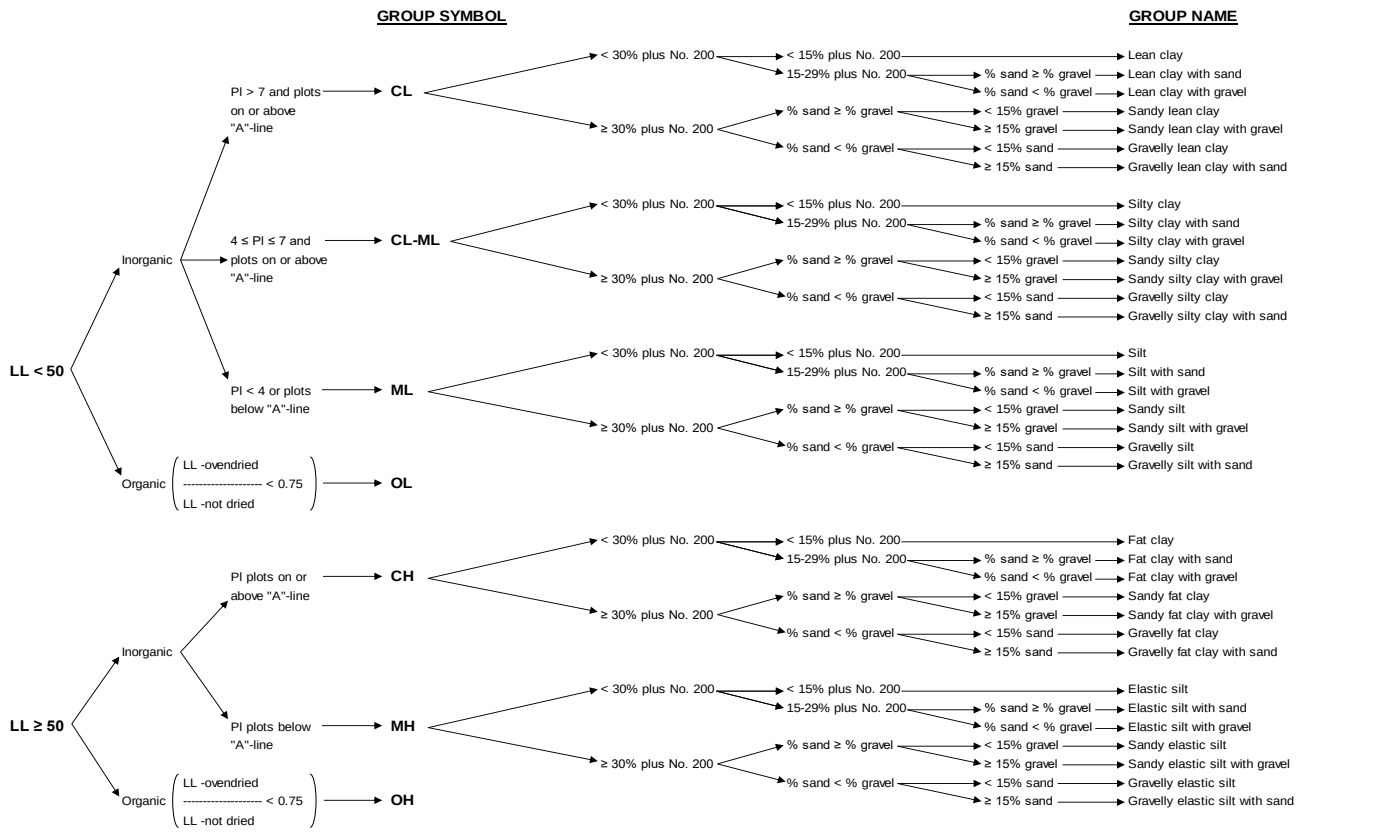
General Classification	Granular Materials (35 Percent or Less Passing 0.075 mm)							Silt-Clay Materials (More than 35 Percent Passing 0.075 mm)			
	A-1			A-2							A-7
Group Classification	A-1-a	A-1-b	A-3	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7-5, A-7-6
Sieve analysis, percent passing:											
2.00 mm (No. 10)	50 max	-	-	-	-	-	-	-	-	-	-
0.425 mm (No. 40)	30 max	50 max	51 min	-	-	-	-	-	-	-	-
0.075 mm (No. 200)	15 max	25 max	10 max	35 max	35 max	35 max	35 max	36 min	36 min	36 min	36 min
Characteristics of fraction passing 0.425 mm (No. 40)											
Liquid limit				40 max	41 min	40 max	41 min	40 max	41 min	40 max	41 min
Plasticity index	6 max		N.P.	10 max	10 max	11 min	11 min	10 max	10 max	11 min	11min
Usual types of significant constituent materials	Stone fragments, gravel and sand		Fine sand	Silty or clayey gravel and sand				Silty soils		Clayey soils	
General ratings as subgrade	Excellent to Good							Fair to poor			

Note: Plasticity index of A-7-5 subgroup is equal to or less than LL minus 30. Plasticity index of A-7-6 subgroup is greater than LL minus 30 (see Figure 2).

AASHTO = American Association of State Highway and Transportation Officials

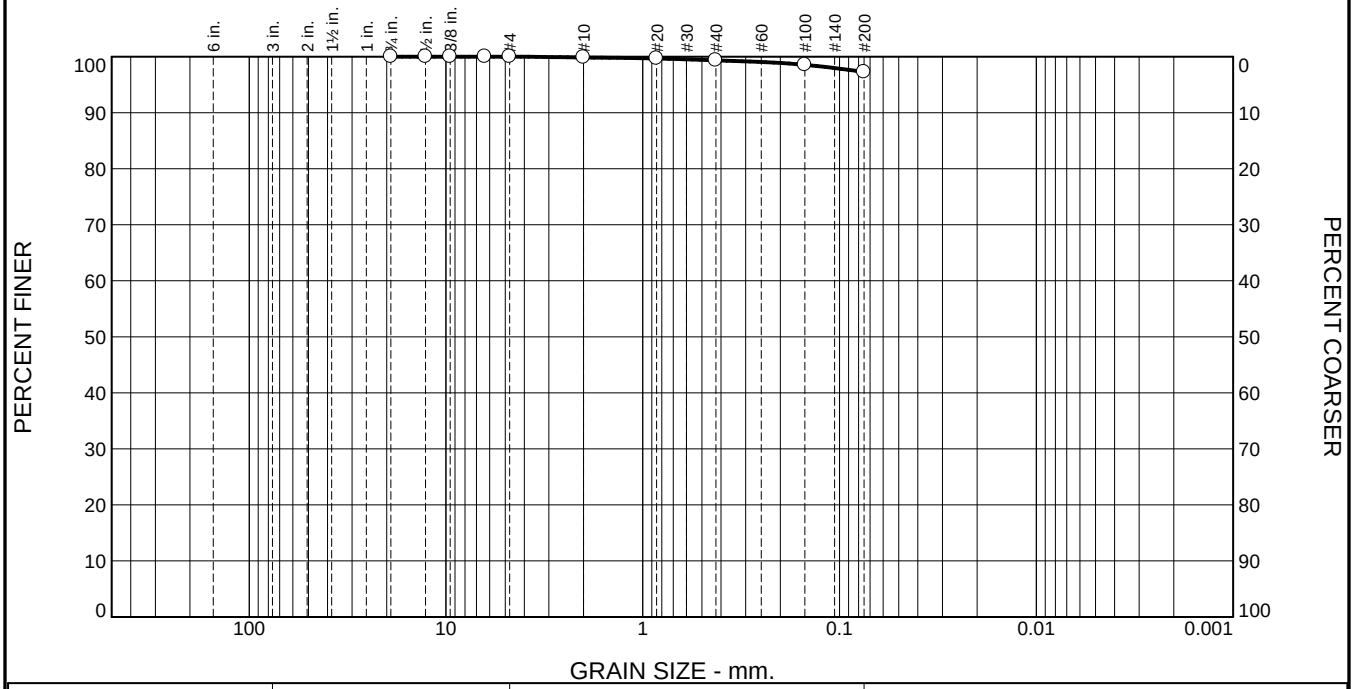


Flow Chart for Classifying Coarse-Grained Soils (More Than 50% Retained on No. 200 Sieve)



Flow Chart for Classifying Fine-Grained Soil (50% or More Passes No. 200 Sieve)

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.6	2.0	97.3	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
.75	100.0		
.5	100.0		
.375	100.0		
.25	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	99.3		
#100	98.5		
#200	97.3		

* (no specification provided)

Material Description

Lean Clay

Atterberg Limits (ASTM D 4318)

PL= 24.8 **LL=** 47.8 **PI=** 23.0

Classification

USCS (D 2487)= CL **AASHTO (M 145)=** A-7-6(26)

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Moisture 21.6%

Date Received: _____ **Date Tested:** 12/16/2019

Tested By: SJC

Checked By: _____

Title: _____

Location: TP-1
Sample Number: S19-307 Redo **Depth:** 3'

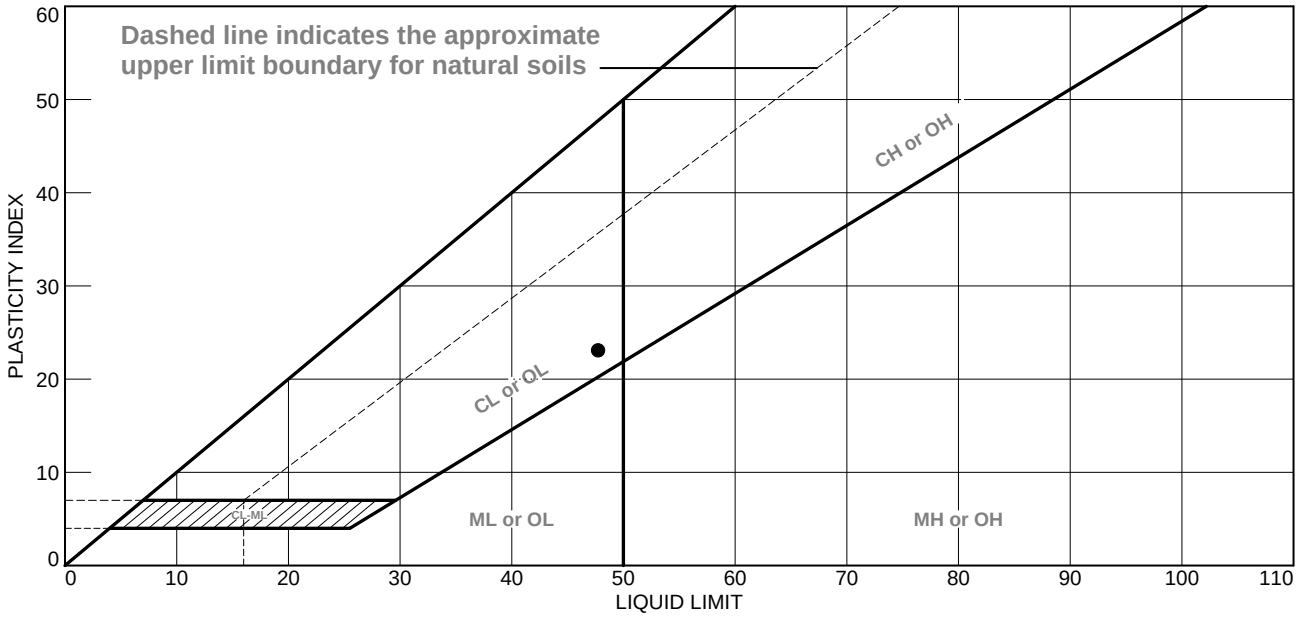
Date Sampled: 12/13/2019

GEOPACIFIC ENGINEERING, INC.

Client: Hawkins Companies, LLC
Project: Fairfield Marriott Newberg

Project No: 19-5391 **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Lean Clay	47.8	24.8	23.0	99.3	97.3	CL

Project No. 19-5391 **Client:** Hawkins Companies, LLC

Project: Fairfield Marriott Newberg

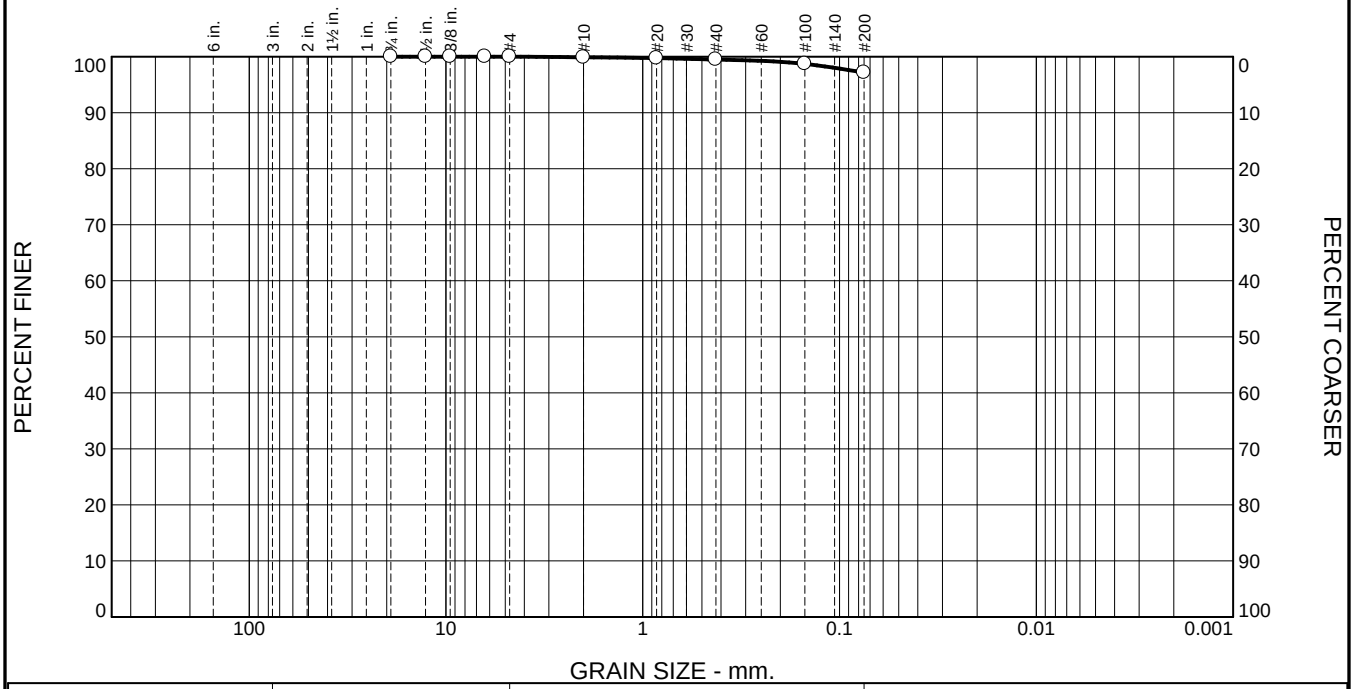
Location: TP-1
Sample Number: S19-307 Redo **Depth:** 3'

Remarks:

GEOPACIFIC ENGINEERING, INC.

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	0.4	2.3	97.2	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
.75	100.0		
.5	100.0		
.375	100.0		
.25	100.0		
#4	100.0		
#10	99.9		
#20	99.7		
#40	99.5		
#100	98.7		
#200	97.2		

* (no specification provided)

Material Description

Lean Clay

Atterberg Limits (ASTM D 4318)

PL= 27.0 **LL=** 49.1 **PI=** 22.1

Classification

USCS (D 2487)= CL **AASHTO (M 145)=** A-7-6(25)

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Moisture 24.9%

Date Received: _____ **Date Tested:** 12/16/2019

Tested By: SJC

Checked By: _____

Title: _____

Location: TP-1
Sample Number: S19-308 **Depth:** 6'

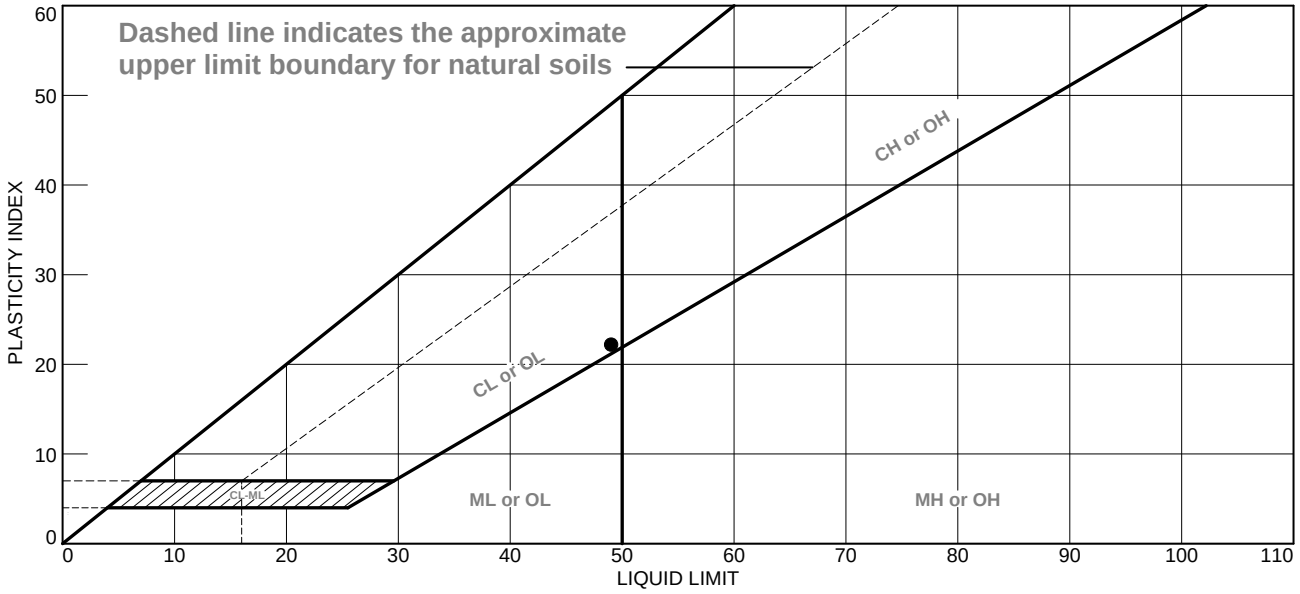
Date Sampled: 12/13/2019

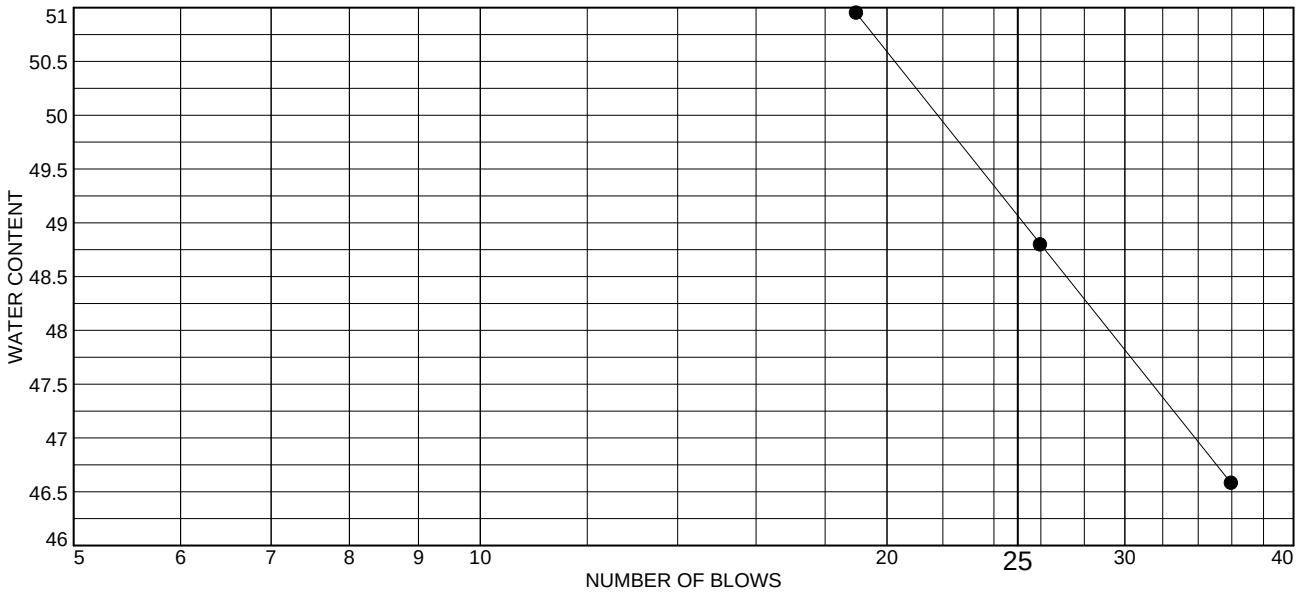
GEOPACIFIC ENGINEERING, INC.

Client: Hawkins Companies, LLC
Project: Fairfield Marriott Newberg

Project No: 19-5391 **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Lean Clay	49.1	27.0	22.1	99.5	97.2	CL

Project No. 19-5391 **Client:** Hawkins Companies, LLC

Project: Fairfield Marriott Newberg

Location: TP-1
Sample Number: S19-308 **Depth:** 6'

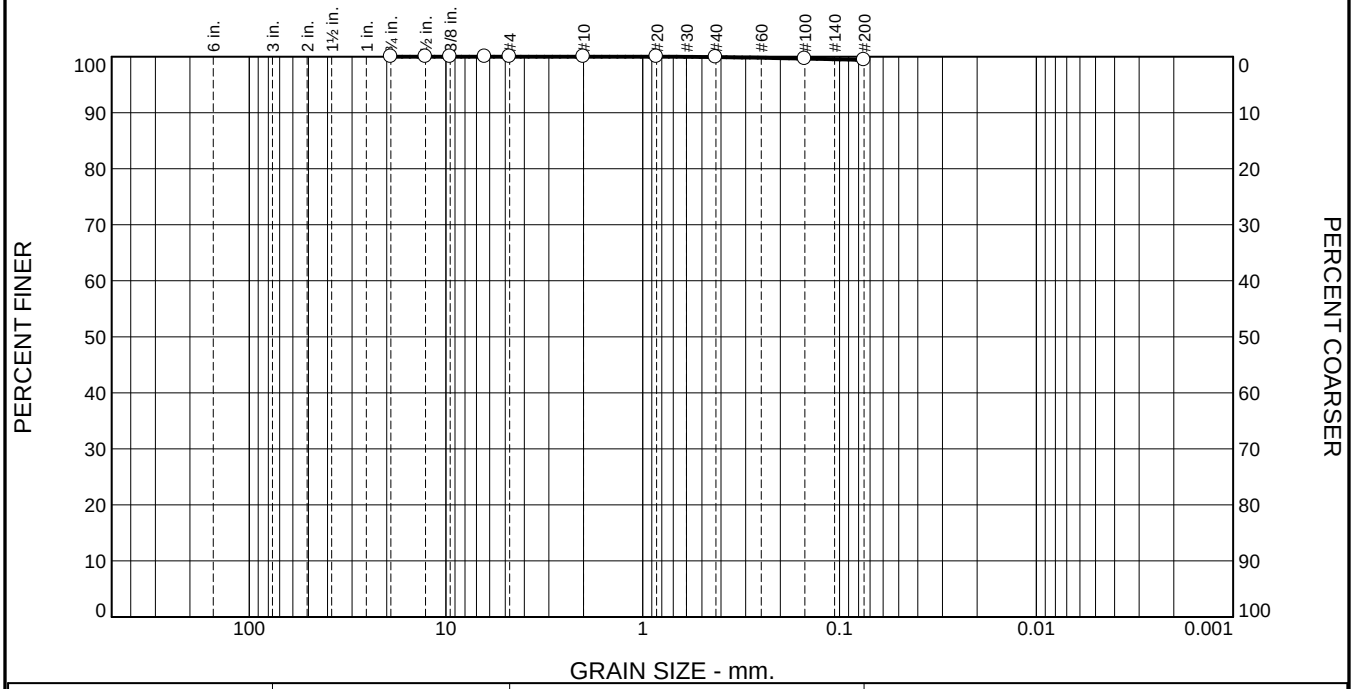
Remarks:

GEOPACIFIC ENGINEERING, INC.

Figure

Tested By: SJC

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	0.5	99.4	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
.75	100.0		
.5	100.0		
.375	100.0		
.25	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.9		
#100	99.7		
#200	99.4		

* (no specification provided)

Material Description

Silt

Atterberg Limits (ASTM D 4318)

PL= 26.3 **LL=** 40.3 **PI=** 14.0

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-6(16)

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Moisture 27.0%

Date Received: _____ **Date Tested:** 12/16/2019

Tested By: SJC

Checked By: _____

Title: _____

Location: TP-1
Sample Number: S19-309 **Depth:** 9'

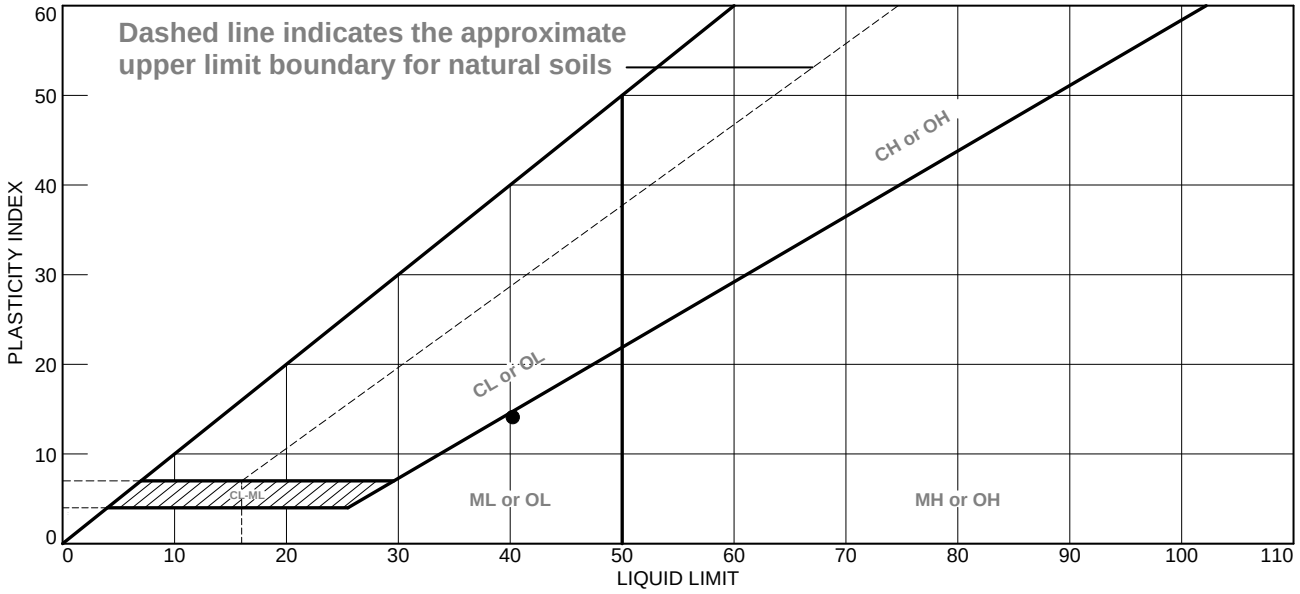
Date Sampled: 12/13/2019

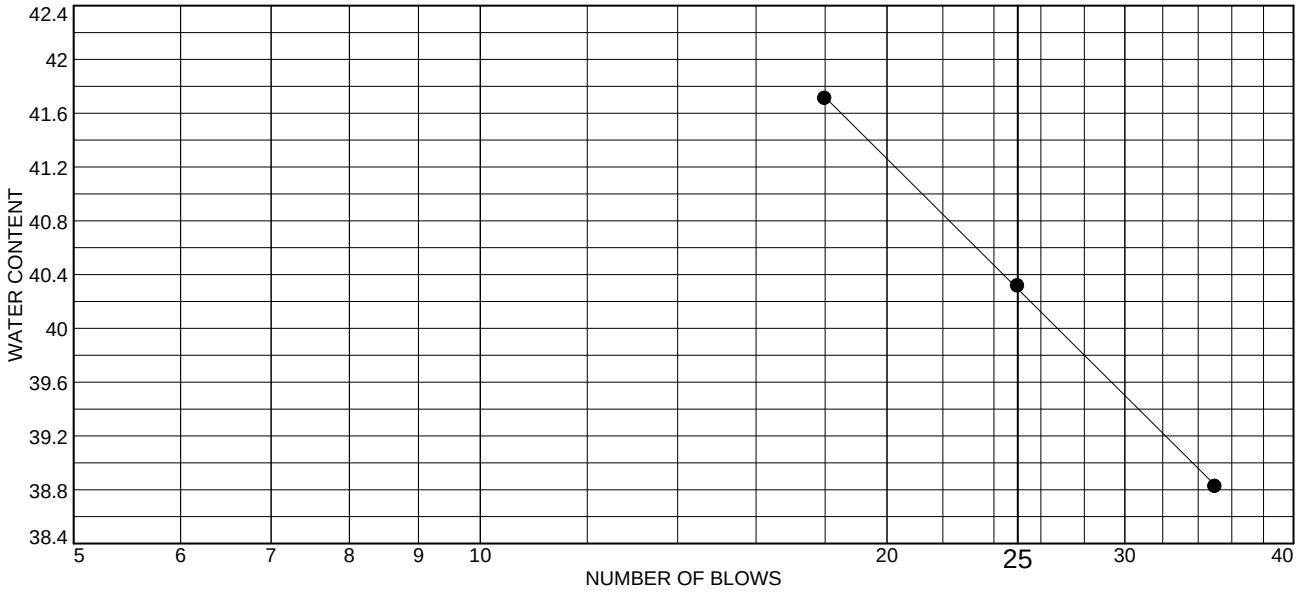
GEOPACIFIC ENGINEERING, INC.

Client: Hawkins Companies, LLC
Project: Fairfield Marriott Newberg

Project No: 19-5391 **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Silt	40.3	26.3	14.0	99.9	99.4	ML

Project No. 19-5391 **Client:** Hawkins Companies, LLC

Project: Fairfield Marriott Newberg

Location: TP-1
Sample Number: S19-309 **Depth:** 9'

Remarks:

GEOPACIFIC ENGINEERING, INC.

Figure

Tested By: SJC

GeoPacific Engineering, Inc.
Real-World Geotechnical Solutions
Investigation • Design • Construction Support

STATIC SETTLEMENT ANALYSIS

14835 SW 72nd Avenue
Portland, Oregon 97224
Tel (503) 598-8445
Fax (503) 941-9281

Settlement Analysis

Organization: **GeoPacific Engineering, Inc.**
Project Name: **19-5391, Fairfield Marriott, Ne**
Job #:
Design by: **BLC**
Date: **12/23/2019**

Foundation Geometry, GWT & Loading

Units: **English**
Footing Shape: **Square**
Method: **Schmertmann et al**

Variable	Value	Variable	Value
Footing Width	6.00 ft	Ground Water Depth	10.00 ft
Footing Thickness	3.00 ft	Soil Unit Weight	120.0 lb/ft^3
Footing Length	6.00 ft	Max. Depth	60.00 ft
Embedment Depth	1.00 ft	Time	20.00 years
Axial Load	80.00 k		

Time Rate Inputs

Thickness of Clay	10.00 ft	Drainage Condition	Single Drainage
Coef. of Consolidation	0.100 ft^2/day		

Geotechnical Properties

#	Material Type	USCS	Layer Thick, ft	Consistency	Soil Modulus Es lb/ft^2
1	User Defined		3.00 0 - 3		60000.000
2	User Defined		10.00 3 - 13		150000.000
3	User Defined		5.00 13 - 18		300000.000
4	User Defined		12.00 18 - 30		350000.000
5	User Defined		10.00 30 - 40		450000.000
6	User Defined		17.00 40 - 57		200000.000
7	User Defined		3.00 57 - 60		300000.000

Results

Applied Pressure, q:	2672.2 lb/ft^2	Drainage Height:	10.00 ft
Total Settlement, S:	1.81 in	Time for 99% Consol.:	4.88 years

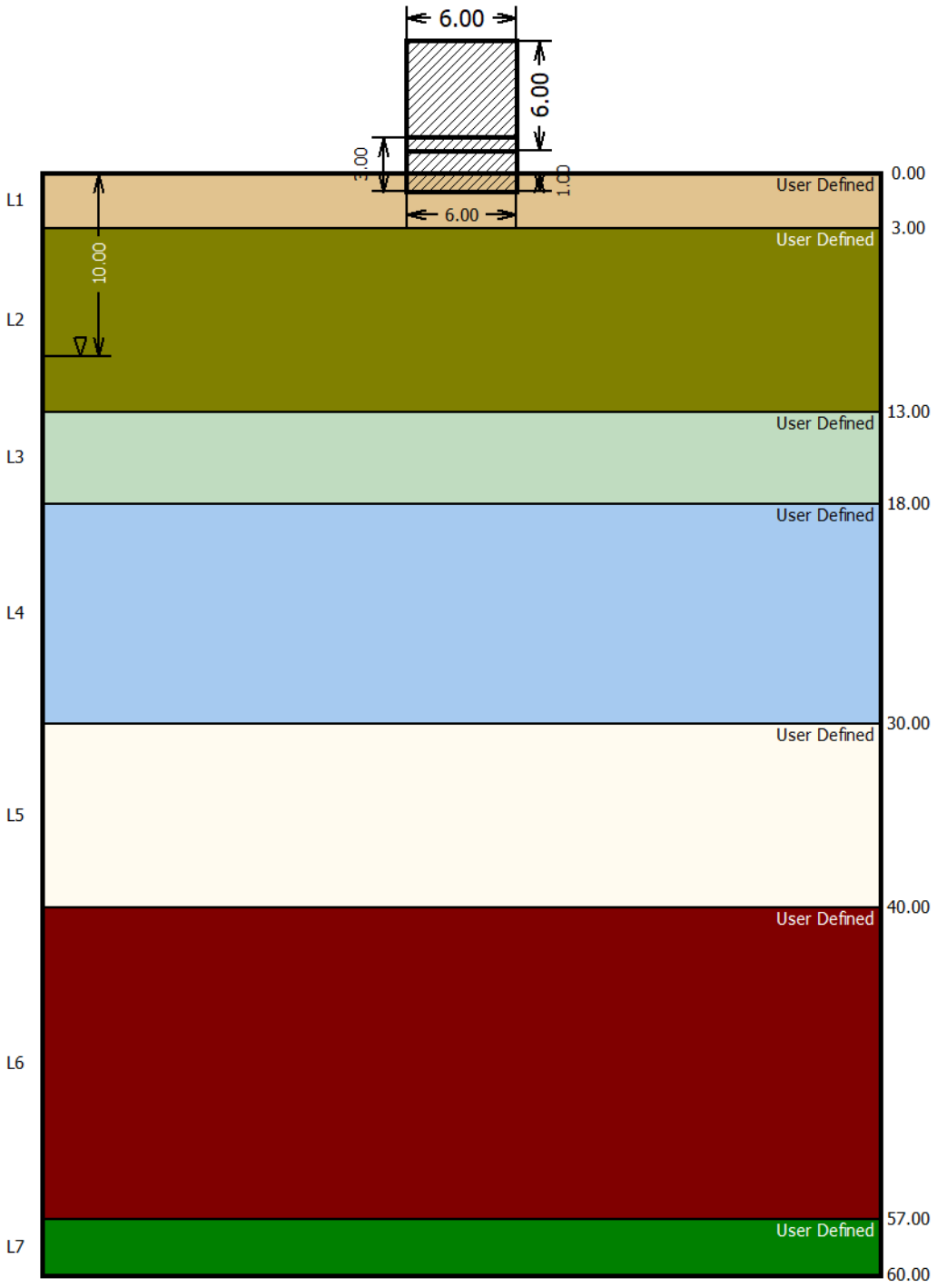


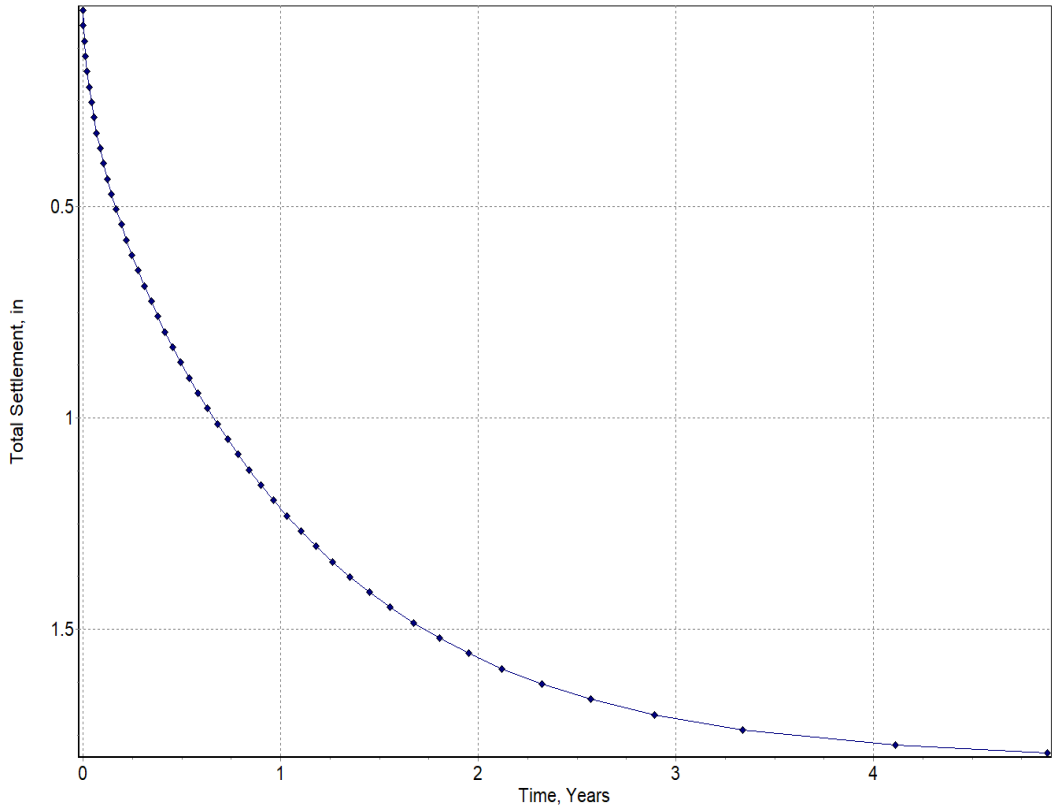
Fig. 1: Plan and Cross Section

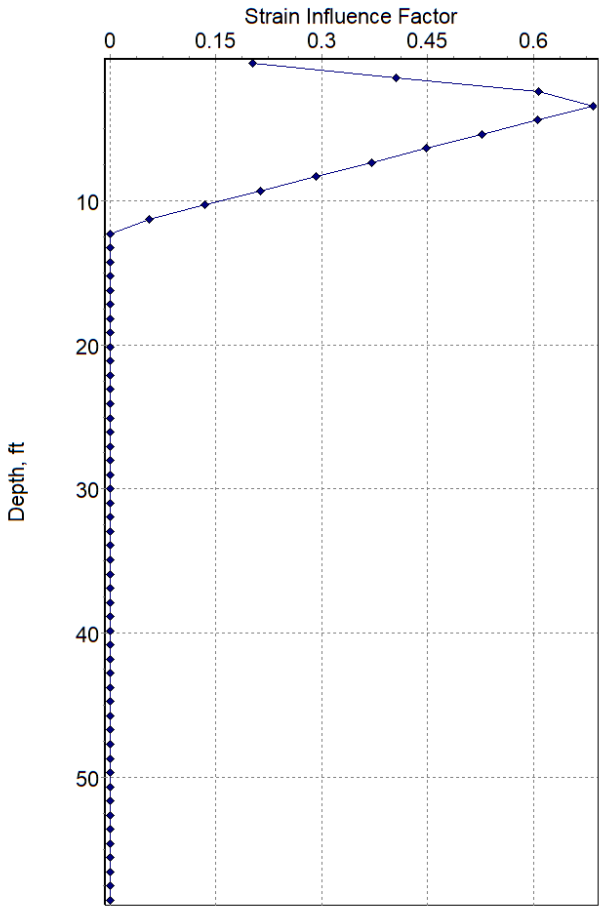
Table of Test Results

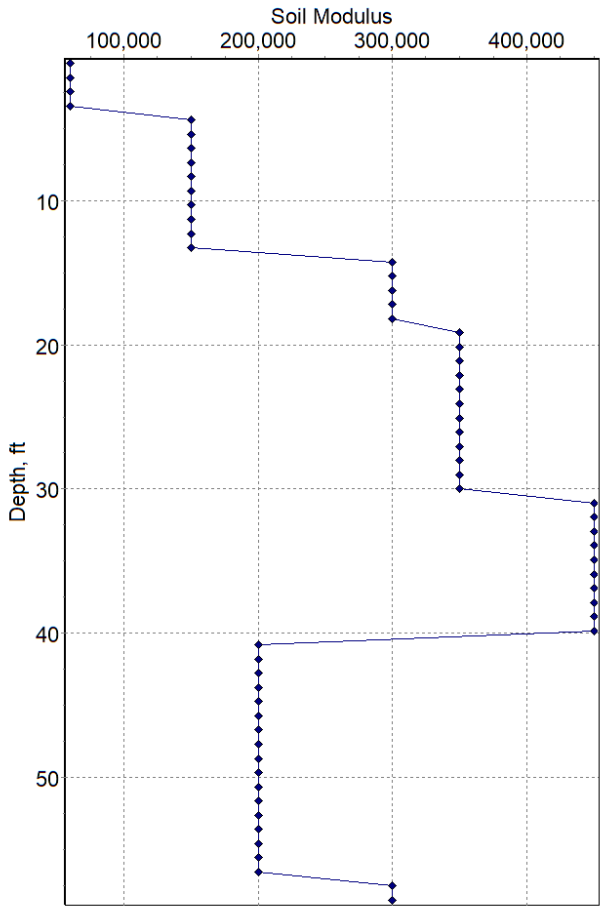
Node #	Depth (ft)	I epsilon	Strain (%)	Indiv. Sett. (in)	Tot. Sett. (in)
1	0.49	0.20	1.046	0.123	0.123
2	1.48	0.40	2.099	0.248	0.371
3	2.46	0.61	3.153	0.372	0.743
4	3.44	0.68	3.552	0.419	1.162
5	4.43	0.61	1.258	0.148	1.311
6	5.41	0.53	1.094	0.129	1.440
7	6.39	0.45	0.931	0.110	1.550
8	7.38	0.37	0.768	0.091	1.640
9	8.36	0.29	0.605	0.071	1.712
10	9.34	0.21	0.441	0.052	1.764
11	10.33	0.13	0.278	0.033	1.797
12	11.31	0.06	0.115	0.014	1.810
13	12.29	0.00	0.000	0.000	1.810
14	13.28	0.00	0.000	0.000	1.810
15	14.26	0.00	0.000	0.000	1.810
16	15.24	0.00	0.000	0.000	1.810
17	16.23	0.00	0.000	0.000	1.810
18	17.21	0.00	0.000	0.000	1.810
19	18.19	0.00	0.000	0.000	1.810
20	19.18	0.00	0.000	0.000	1.810
21	20.16	0.00	0.000	0.000	1.810
22	21.14	0.00	0.000	0.000	1.810
23	22.13	0.00	0.000	0.000	1.810
24	23.11	0.00	0.000	0.000	1.810
25	24.09	0.00	0.000	0.000	1.810
26	25.08	0.00	0.000	0.000	1.810
27	26.06	0.00	0.000	0.000	1.810
28	27.04	0.00	0.000	0.000	1.810
29	28.03	0.00	0.000	0.000	1.810
30	29.01	0.00	0.000	0.000	1.810
31	29.99	0.00	0.000	0.000	1.810
32	30.98	0.00	0.000	0.000	1.810
33	31.96	0.00	0.000	0.000	1.810
34	32.94	0.00	0.000	0.000	1.810
35	33.93	0.00	0.000	0.000	1.810
36	34.91	0.00	0.000	0.000	1.810
37	35.89	0.00	0.000	0.000	1.810
38	36.88	0.00	0.000	0.000	1.810
39	37.86	0.00	0.000	0.000	1.810
40	38.84	0.00	0.000	0.000	1.810
41	39.83	0.00	0.000	0.000	1.810
42	40.81	0.00	0.000	0.000	1.810
43	41.79	0.00	0.000	0.000	1.810
44	42.78	0.00	0.000	0.000	1.810
45	43.76	0.00	0.000	0.000	1.810
46	44.74	0.00	0.000	0.000	1.810
47	45.73	0.00	0.000	0.000	1.810
48	46.71	0.00	0.000	0.000	1.810
49	47.69	0.00	0.000	0.000	1.810
50	48.68	0.00	0.000	0.000	1.810
51	49.66	0.00	0.000	0.000	1.810
52	50.64	0.00	0.000	0.000	1.810
53	51.63	0.00	0.000	0.000	1.810
54	52.61	0.00	0.000	0.000	1.810
55	53.59	0.00	0.000	0.000	1.810
56	54.58	0.00	0.000	0.000	1.810
57	55.56	0.00	0.000	0.000	1.810
58	56.54	0.00	0.000	0.000	1.810
59	57.53	0.00	0.000	0.000	1.810
60	58.51	0.00	0.000	0.000	1.810

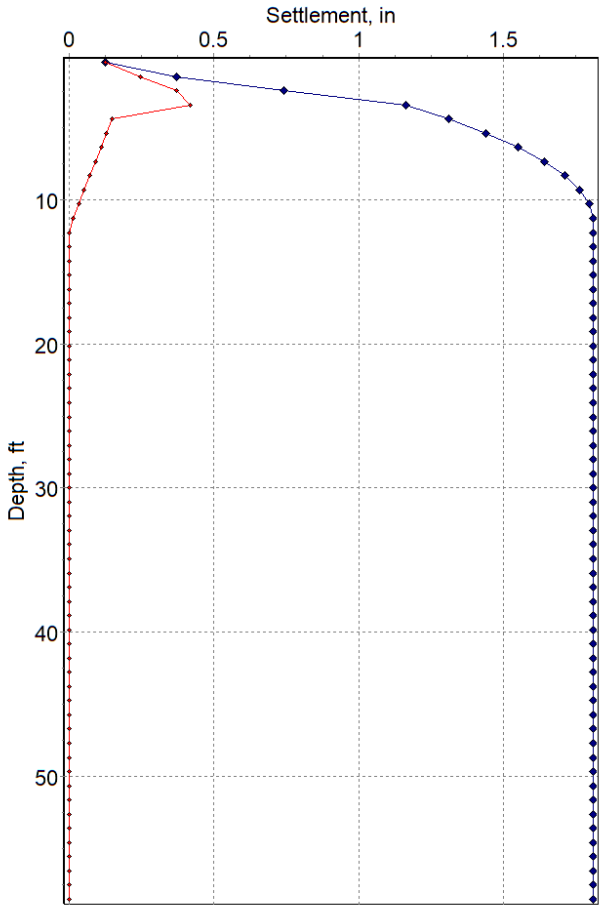
Table of Time Rate Results

Node #	Tot. Sett. (in)	Time Factor (Tv)	Time (years)	Node #	Tot. Sett. (in)	Time Factor (Tv)	Time (years)
1	0.04	0.00030	0.00	26	0.94	0.21200	0.58
2	0.07	0.00013	0.00	27	0.98	0.23000	0.63
3	0.11	0.00283	0.01	28	1.01	0.24800	0.68
4	0.14	0.00502	0.01	29	1.05	0.26700	0.73
5	0.18	0.00785	0.02	30	1.09	0.28600	0.78
6	0.22	0.01130	0.03	31	1.12	0.30700	0.84
7	0.25	0.01540	0.04	32	1.16	0.32900	0.90
8	0.29	0.02010	0.06	33	1.19	0.35200	0.96
9	0.33	0.02540	0.07	34	1.23	0.37700	1.03
10	0.36	0.03140	0.09	35	1.27	0.40300	1.10
11	0.40	0.03800	0.10	36	1.30	0.43100	1.18
12	0.43	0.04520	0.12	37	1.34	0.46100	1.26
13	0.47	0.05310	0.15	38	1.38	0.49300	1.35
14	0.51	0.06150	0.17	39	1.41	0.52900	1.45
15	0.54	0.07070	0.19	40	1.45	0.56700	1.55
16	0.58	0.08030	0.22	41	1.48	0.61000	1.67
17	0.62	0.09070	0.25	42	1.52	0.65800	1.80
18	0.65	0.10200	0.28	43	1.56	0.71200	1.95
19	0.69	0.11300	0.31	44	1.59	0.77400	2.12
20	0.72	0.12600	0.35	45	1.63	0.84800	2.32
21	0.76	0.13800	0.38	46	1.67	0.93800	2.57
22	0.80	0.15200	0.42	47	1.70	1.05500	2.89
23	0.83	0.16600	0.45	48	1.74	1.21900	3.34
24	0.87	0.18100	0.50	49	1.77	1.50000	4.11
25	0.91	0.19700	0.54	50	1.79	1.78100	4.88









References:

1. Foundation Design: Principles & Practices, 3rd edition, Coduto, Kitch & Yeung, 2015
2. Geotechnical Engineering: Principles & Practices, 2nd edition, Coduto, Yeung & Kitch, 2010
3. Theories of Consolidation, R. L. Schiffman, 2001
4. Geotechnical Engineering & Soil Testing, Al-Khafaji & Andersland, 1995
5. Soil Mechanics, A.R. Jumikis, 1984
6. Settlement Analysis v2.0.2, SoilStructure Software, 2019

Settlement Analysis

Organization: **GeoPacific Engineering, Inc.**
Project Name: **19-5391, Fairfield Marriott, Ne**
Job #:
Design by: **BLC**
Date: **12/23/2019**

Foundation Geometry, GWT & Loading

Units: **English**
Footing Shape: **Square**
Method: **Schmertmann et al**

Variable	Value	Variable	Value
Footing Width	6.00 ft	Ground Water Depth	10.00 ft
Footing Thickness	3.00 ft	Soil Unit Weight	120.0 lb/ft^3
Footing Length	6.00 ft	Max. Depth	60.00 ft
Embedment Depth	1.00 ft	Time	20.00 years
Axial Load	80.00 k		

Time Rate Inputs

Thickness of Clay	10.00 ft	Drainage Condition	Single Drainage
Coef. of Consolidation	0.100 ft^2/day		

Geotechnical Properties

#	Material Type	USCS	Layer Thick, ft	Consistency	Soil Modulus Es lb/ft^2
1	Granular Soil		3.00 0 - 3		500000.000
2	User Defined		10.00 3 - 13		150000.000
3	User Defined		5.00 13 - 18		300000.000
4	User Defined		12.00 18 - 30		350000.000
5	User Defined		10.00 30 - 40		450000.000
6	User Defined		17.00 40 - 57		200000.000
7	User Defined		3.00 57 - 60		300000.000

Results

Applied Pressure, q:	2672.2 lb/ft^2	Drainage Height:	10.00 ft
Total Settlement, S:	0.79 in	Time for 99% Consol.:	4.88 years

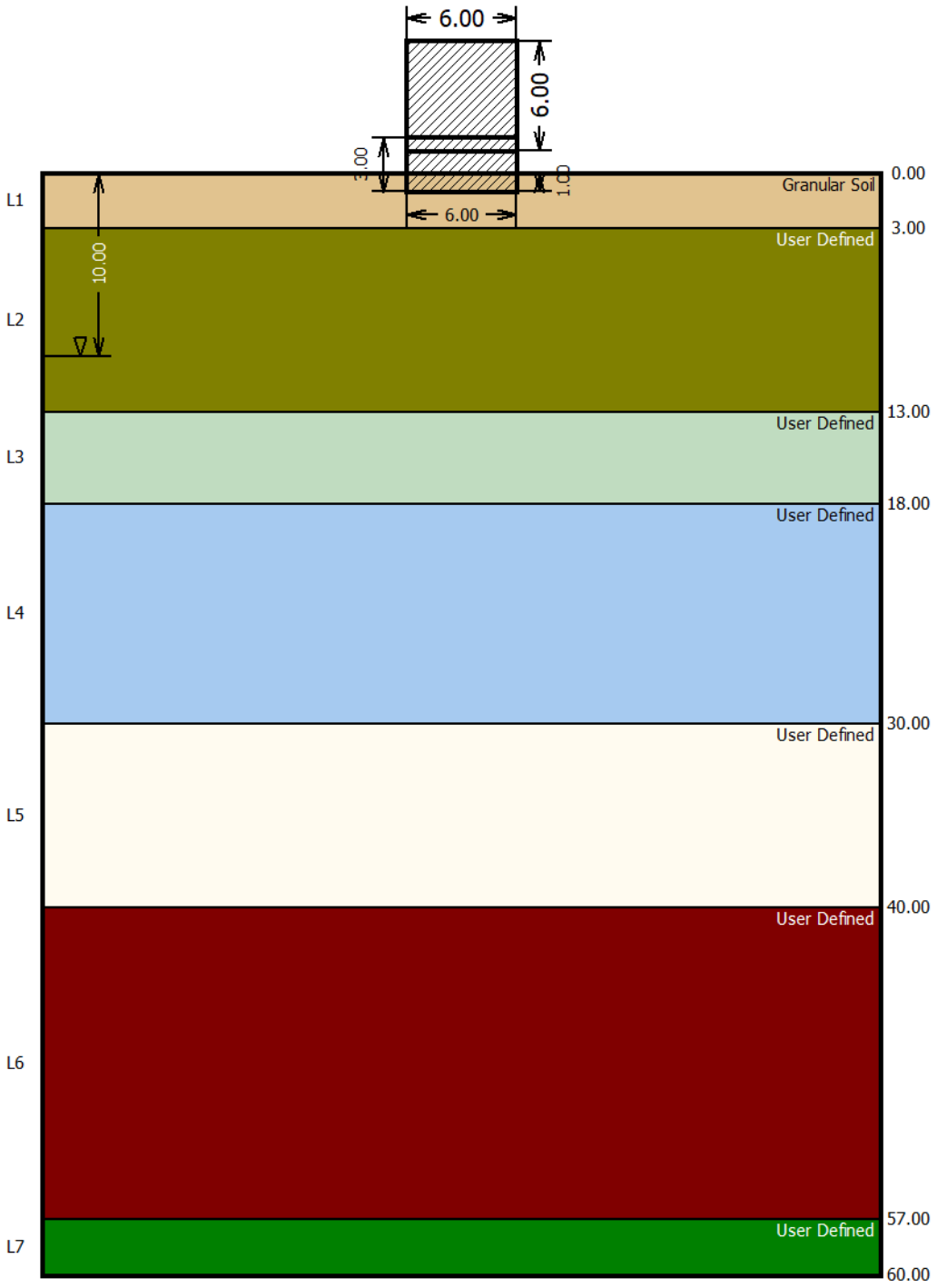


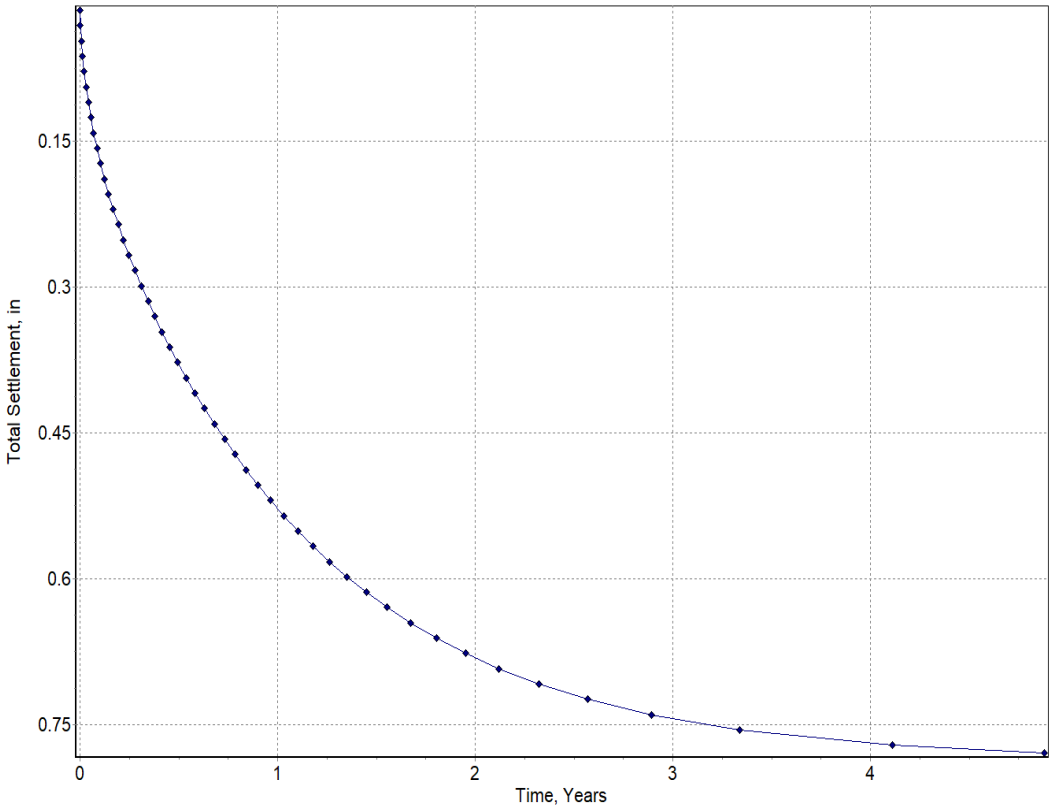
Fig. 1: Plan and Cross Section

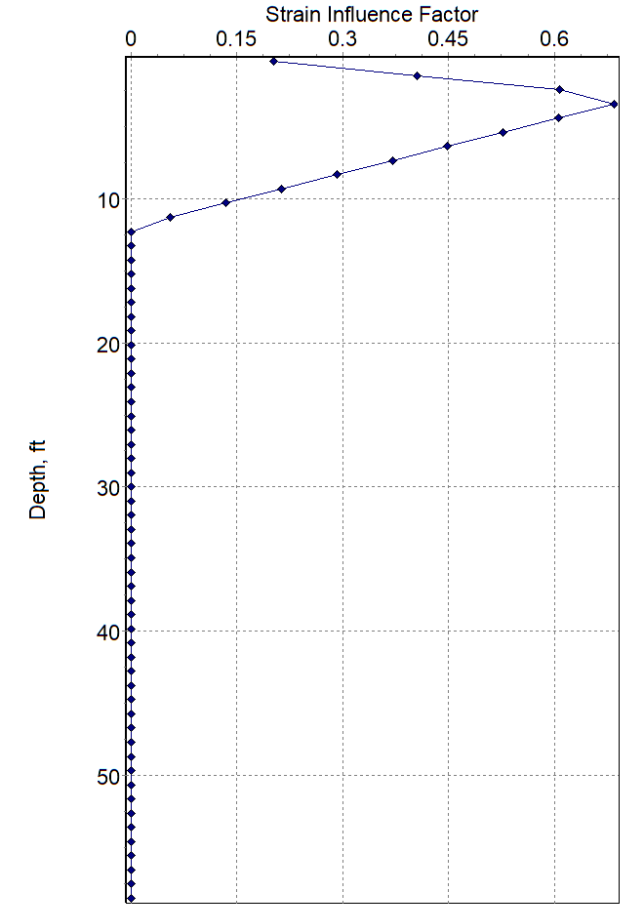
Table of Test Results

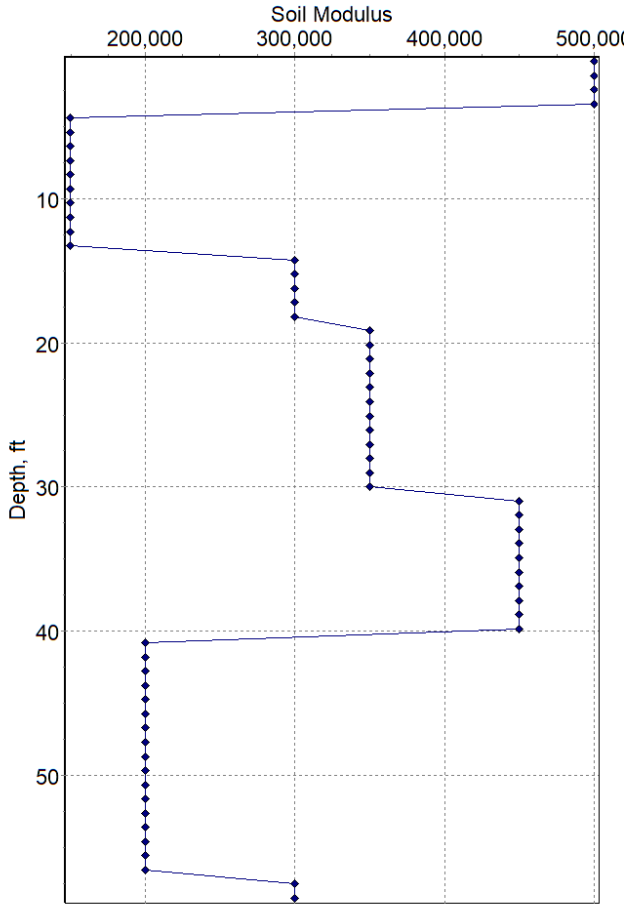
Node #	Depth (ft)	I epsilon	Strain (%)	Indiv. Sett. (in)	Tot. Sett. (in)
1	0.49	0.20	0.125	0.015	0.015
2	1.48	0.40	0.252	0.030	0.045
3	2.46	0.61	0.378	0.045	0.089
4	3.44	0.68	0.426	0.050	0.139
5	4.43	0.61	1.258	0.148	0.288
6	5.41	0.53	1.094	0.129	0.417
7	6.39	0.45	0.931	0.110	0.527
8	7.38	0.37	0.768	0.091	0.617
9	8.36	0.29	0.605	0.071	0.689
10	9.34	0.21	0.441	0.052	0.741
11	10.33	0.13	0.278	0.033	0.774
12	11.31	0.06	0.115	0.014	0.787
13	12.29	0.00	0.000	0.000	0.787
14	13.28	0.00	0.000	0.000	0.787
15	14.26	0.00	0.000	0.000	0.787
16	15.24	0.00	0.000	0.000	0.787
17	16.23	0.00	0.000	0.000	0.787
18	17.21	0.00	0.000	0.000	0.787
19	18.19	0.00	0.000	0.000	0.787
20	19.18	0.00	0.000	0.000	0.787
21	20.16	0.00	0.000	0.000	0.787
22	21.14	0.00	0.000	0.000	0.787
23	22.13	0.00	0.000	0.000	0.787
24	23.11	0.00	0.000	0.000	0.787
25	24.09	0.00	0.000	0.000	0.787
26	25.08	0.00	0.000	0.000	0.787
27	26.06	0.00	0.000	0.000	0.787
28	27.04	0.00	0.000	0.000	0.787
29	28.03	0.00	0.000	0.000	0.787
30	29.01	0.00	0.000	0.000	0.787
31	29.99	0.00	0.000	0.000	0.787
32	30.98	0.00	0.000	0.000	0.787
33	31.96	0.00	0.000	0.000	0.787
34	32.94	0.00	0.000	0.000	0.787
35	33.93	0.00	0.000	0.000	0.787
36	34.91	0.00	0.000	0.000	0.787
37	35.89	0.00	0.000	0.000	0.787
38	36.88	0.00	0.000	0.000	0.787
39	37.86	0.00	0.000	0.000	0.787
40	38.84	0.00	0.000	0.000	0.787
41	39.83	0.00	0.000	0.000	0.787
42	40.81	0.00	0.000	0.000	0.787
43	41.79	0.00	0.000	0.000	0.787
44	42.78	0.00	0.000	0.000	0.787
45	43.76	0.00	0.000	0.000	0.787
46	44.74	0.00	0.000	0.000	0.787
47	45.73	0.00	0.000	0.000	0.787
48	46.71	0.00	0.000	0.000	0.787
49	47.69	0.00	0.000	0.000	0.787
50	48.68	0.00	0.000	0.000	0.787
51	49.66	0.00	0.000	0.000	0.787
52	50.64	0.00	0.000	0.000	0.787
53	51.63	0.00	0.000	0.000	0.787
54	52.61	0.00	0.000	0.000	0.787
55	53.59	0.00	0.000	0.000	0.787
56	54.58	0.00	0.000	0.000	0.787
57	55.56	0.00	0.000	0.000	0.787
58	56.54	0.00	0.000	0.000	0.787
59	57.53	0.00	0.000	0.000	0.787
60	58.51	0.00	0.000	0.000	0.787

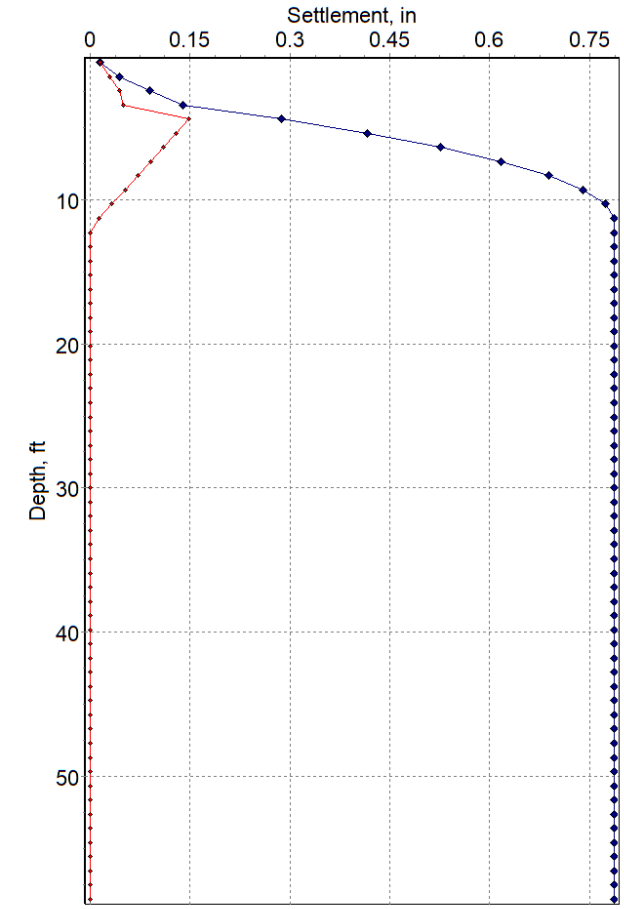
Table of Time Rate Results

Node #	Tot. Sett. (in)	Time Factor (Tv)	Time (years)	Node #	Tot. Sett. (in)	Time Factor (Tv)	Time (years)
1	0.02	0.00030	0.00	26	0.41	0.21200	0.58
2	0.03	0.00013	0.00	27	0.43	0.23000	0.63
3	0.05	0.00283	0.01	28	0.44	0.24800	0.68
4	0.06	0.00502	0.01	29	0.46	0.26700	0.73
5	0.08	0.00785	0.02	30	0.47	0.28600	0.78
6	0.09	0.01130	0.03	31	0.49	0.30700	0.84
7	0.11	0.01540	0.04	32	0.50	0.32900	0.90
8	0.13	0.02010	0.06	33	0.52	0.35200	0.96
9	0.14	0.02540	0.07	34	0.54	0.37700	1.03
10	0.16	0.03140	0.09	35	0.55	0.40300	1.10
11	0.17	0.03800	0.10	36	0.57	0.43100	1.18
12	0.19	0.04520	0.12	37	0.58	0.46100	1.26
13	0.20	0.05310	0.15	38	0.60	0.49300	1.35
14	0.22	0.06150	0.17	39	0.61	0.52900	1.45
15	0.24	0.07070	0.19	40	0.63	0.56700	1.55
16	0.25	0.08030	0.22	41	0.65	0.61000	1.67
17	0.27	0.09070	0.25	42	0.66	0.65800	1.80
18	0.28	0.10200	0.28	43	0.68	0.71200	1.95
19	0.30	0.11300	0.31	44	0.69	0.77400	2.12
20	0.31	0.12600	0.35	45	0.71	0.84800	2.32
21	0.33	0.13800	0.38	46	0.72	0.93800	2.57
22	0.35	0.15200	0.42	47	0.74	1.05500	2.89
23	0.36	0.16600	0.45	48	0.76	1.21900	3.34
24	0.38	0.18100	0.50	49	0.77	1.50000	4.11
25	0.39	0.19700	0.54	50	0.78	1.78100	4.88









References:

1. Foundation Design: Principles & Practices, 3rd edition, Coduto, Kitch & Yeung, 2015
2. Geotechnical Engineering: Principles & Practices, 2nd edition, Coduto, Yeung & Kitch, 2010
3. Theories of Consolidation, R. L. Schiffman, 2001
4. Geotechnical Engineering & Soil Testing, Al-Khafaji & Andersland, 1995
5. Soil Mechanics, A.R. Jumikis, 1984
6. Settlement Analysis v2.0.2, SoilStructure Software, 2019

GeoPacific Engineering, Inc.
Real-World Geotechnical Solutions
Investigation • Design • Construction Support

RIGID AND FLEXIBLE PAVEMENT DESIGN

14835 SW 72nd Avenue
Portland, Oregon 97224
Tel (503) 598-8445
Fax (503) 941-9281

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DARWin(tm) - Pavement Design

A Proprietary AASHTOWARE(tm)
Computer Software Product

Flexible Structural Design Module

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, OR 97224

Project Description
19-5391, Fairfield Marriott, Newberg, Oregon, Flexible Pavement Design, Private Parking and Drive Areas, 20-Year Design Life

Flexible Structural Design Module Data

18-kip ESALs Over Initial Performance Period	75,000
Initial Serviceability	4.2
Terminal Serviceability	2.2
Reliability Level (%)	85
Overall Standard Deviation	.5
Roadbed Soil Resilient Modulus (PSI)	6,000
Stage Construction	1
Calculated Structural Number	2.38

Specified Layer Design

Layer	1
Material Description	Asphaltic Concrete (A/C)
Structural Coefficient (Ai)	.42
Drainage Coefficient (Mi)	1
Layer Thickness (Di) (in)	3.50
Calculated Layer SN	1.47

Layer	2
Material Description	3/4"-0 Crushed Aggregate
Structural Coefficient (Ai)	.1
Drainage Coefficient (Mi)	1
Layer Thickness (Di) (in)	2.00
Calculated Layer SN	.20

Layer	3
Material Description	1.5"-0 Crushed Aggregate
Structural Coefficient (Ai)	.1
Drainage Coefficient (Mi)	1
Layer Thickness (Di) (in)	8.00
Calculated Layer SN	.80

Total Thickness (in)	13.50
Total Calculated SN	2.47

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DARWin(tm) - Pavement Design

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Computer Software Product

Rigid Structural Design Module

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, OR 97224

Project Description
19-5391, Fairfield Marriott, Newberg, Oregon, Rigid Pavement Design, Private Parking/Drive Lanes

Rigid Structural Design Module Data

Pavement type:	JPCP
18-kip ESALs for initial performance period:	75,000
Initial Serviceability:	4.2
Terminal Serviceability:	2.2
28-day mean PCC Modulus of Rupture (psi):	650
28-day mean Elastic Modulus of Slab (psi):	3,500,000
Mean Effective k-value (pci):	33.03
Reliability Level (%):	85
Overall Standard Deviation:	.39
Load Transfer Coefficient:	3
Overall Drainage Coefficient:	1
Stage Construction:	3
Calculated Design Thickness (in):	4.90

Rigid Structural Design Joint Spacing

Joint Spacing (ft):	10.00

Additional Pavement Layers

Layer Number:	2
Material Type:	3/4"-0 Crushed Aggr
Description:	Leveling Course
Thickness (in):	2.00
Layer Number:	3
Material Type:	1.5"-0 Crushed Aggr
Description:	Base Course
Thickness (in):	6.00

Effective Modulus of Subgrade Reaction (k)

Base Type:	Crushed Aggregate
Base Thickness (in):	8
Depth to Bedrock (ft):	100
Projected Slab Thickness (in):	6
Loss of Support:	2
Period:	1
Roadbed Soil Resilient Modulus (PSI):	6,000
Base Elastic Modulus (PSI):	6,000
Effective Modulus of subgrade reaction (PCI):	33.03

GeoPacific Engineering, Inc.
Real-World Geotechnical Solutions
Investigation • Design • Construction Support

SOIL LIQUEFACTION ANALYSIS

14835 SW 72nd Avenue
Portland, Oregon 97224
Tel (503) 598-8445
Fax (503) 941-9281

TABLE OF CONTENTS

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, Oregon 97224
http://www.geopacificeng.com/

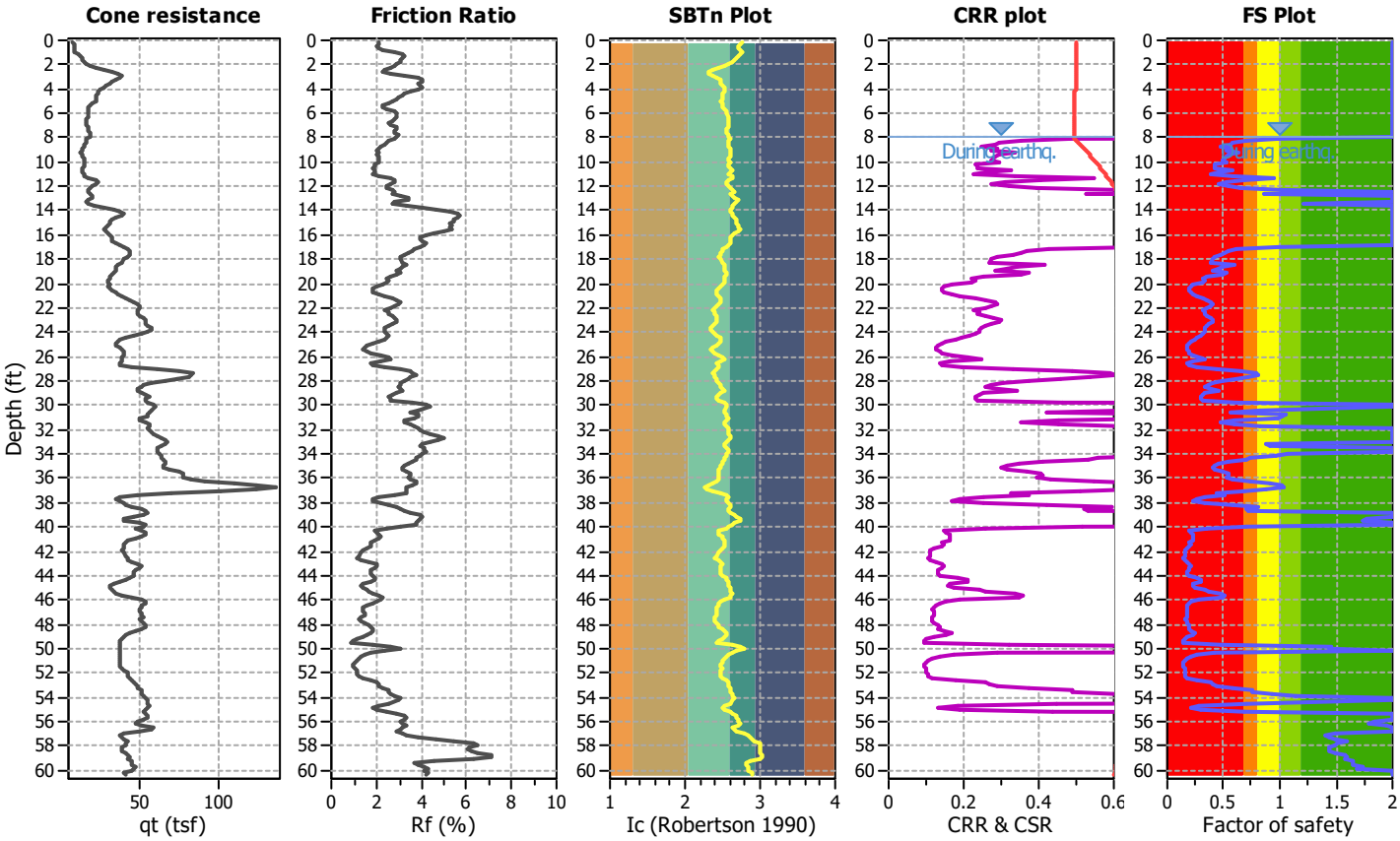
LIQUEFACTION ANALYSIS REPORT

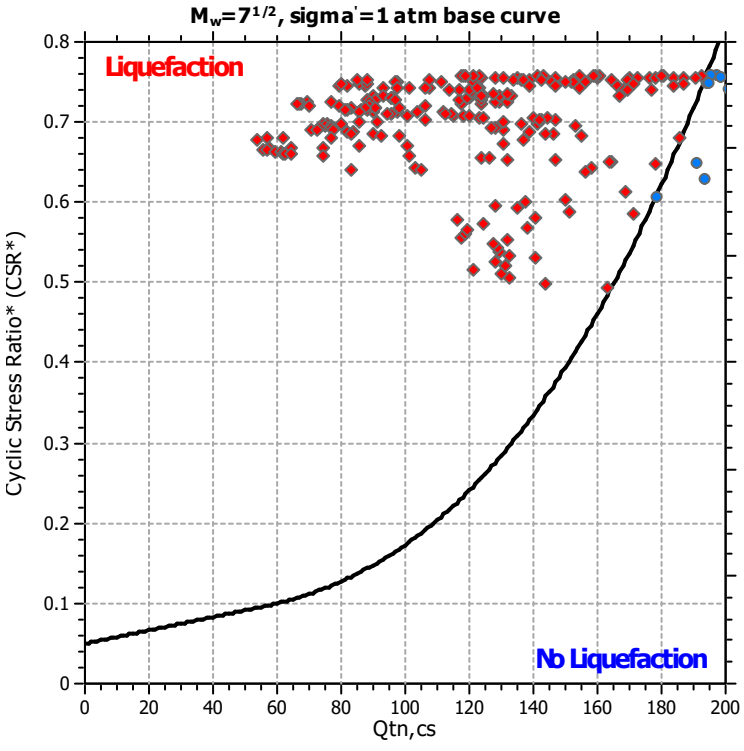
Project title : 19-5391, Fairfield Marriott **Location : 45.306859, -122.940625, Newberg, Oregon**

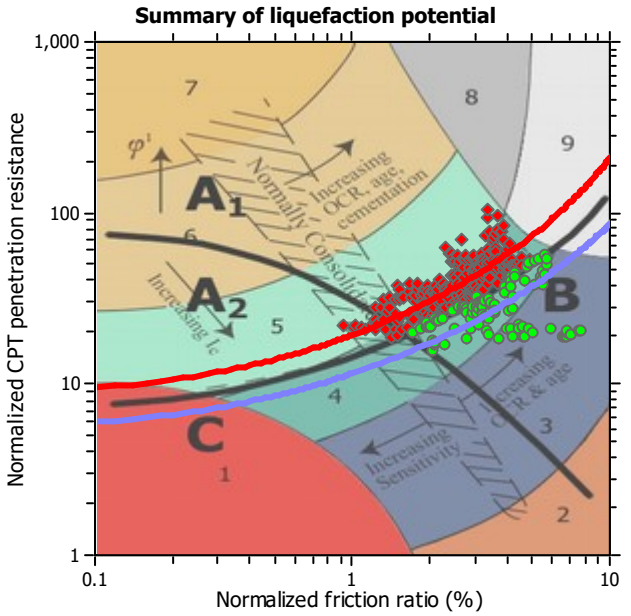
CPT file : CPT-1

Input parameters and analysis data

Analysis method:	Robertson (2009)	G.W.T. (in-situ):	10.00 ft	Use fill:	No	Clay like behavior applied:	All soils
Fines correction method:	Robertson (2009)	G.W.T. (earthq.):	8.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	60.00 ft
Earthquake magnitude M_w:	9.10	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.47	Unit weight calculation:	Based on SBT	K_σ applied:	No		

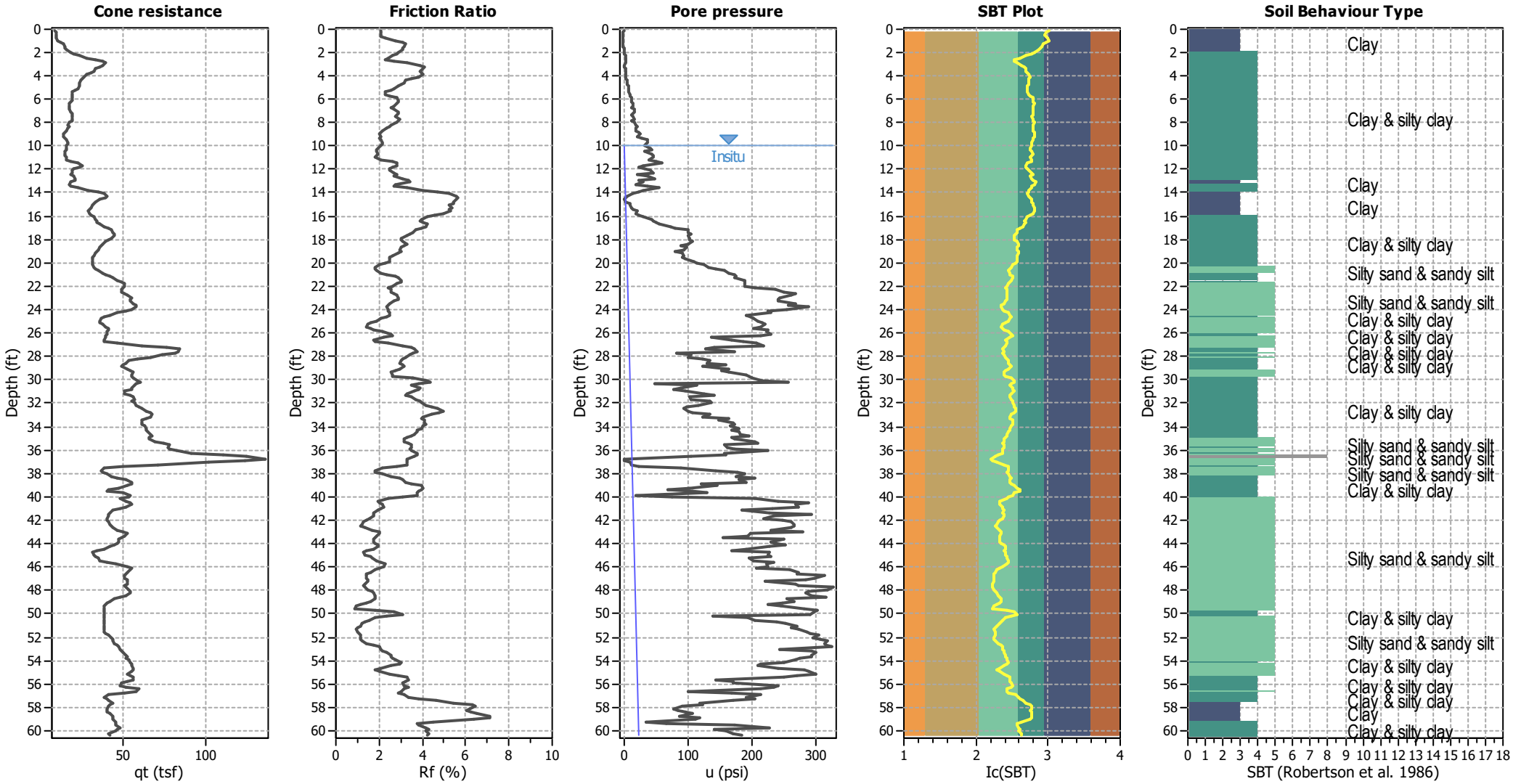






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



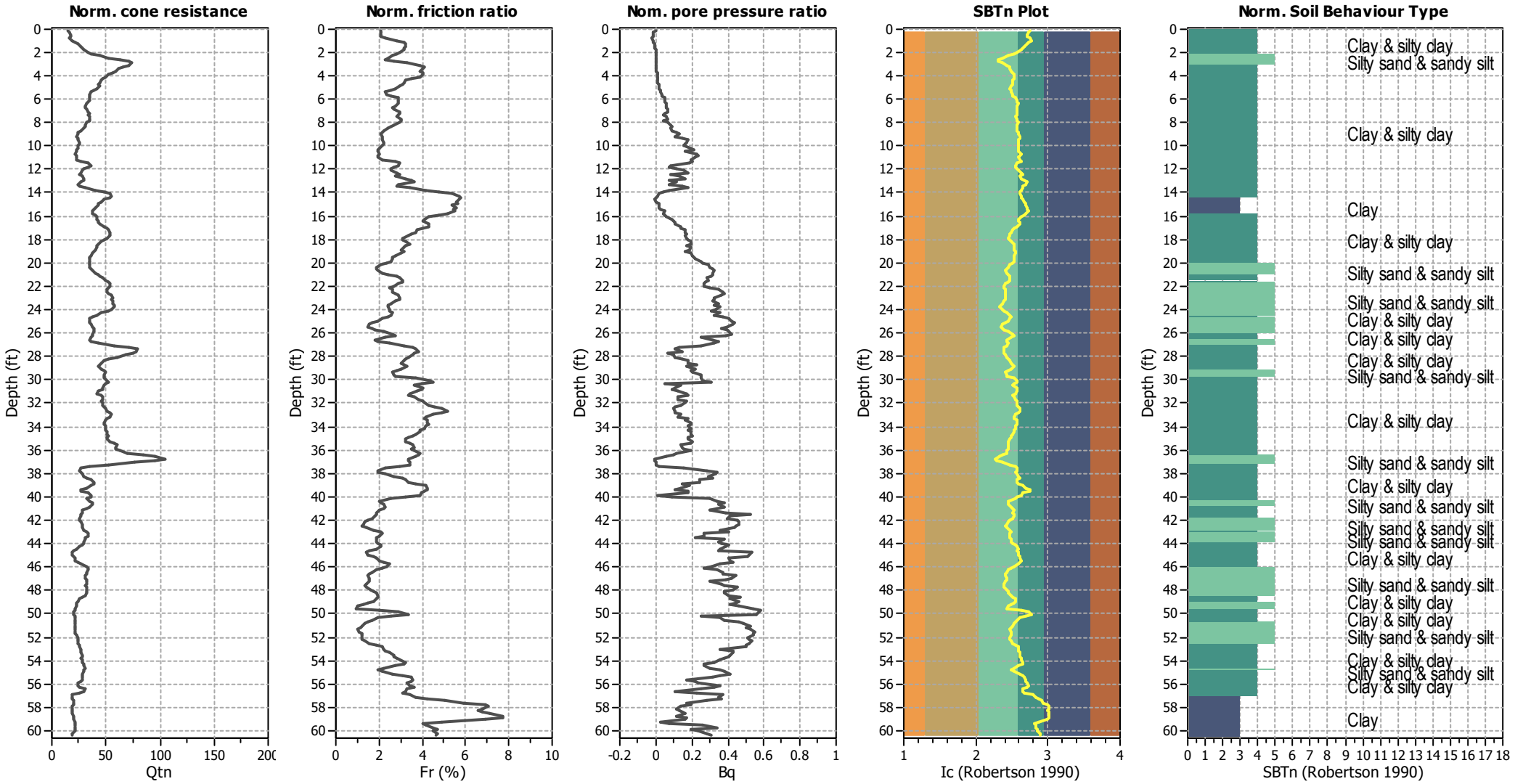
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	9.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.47	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

CPT basic interpretation plots (normalized)



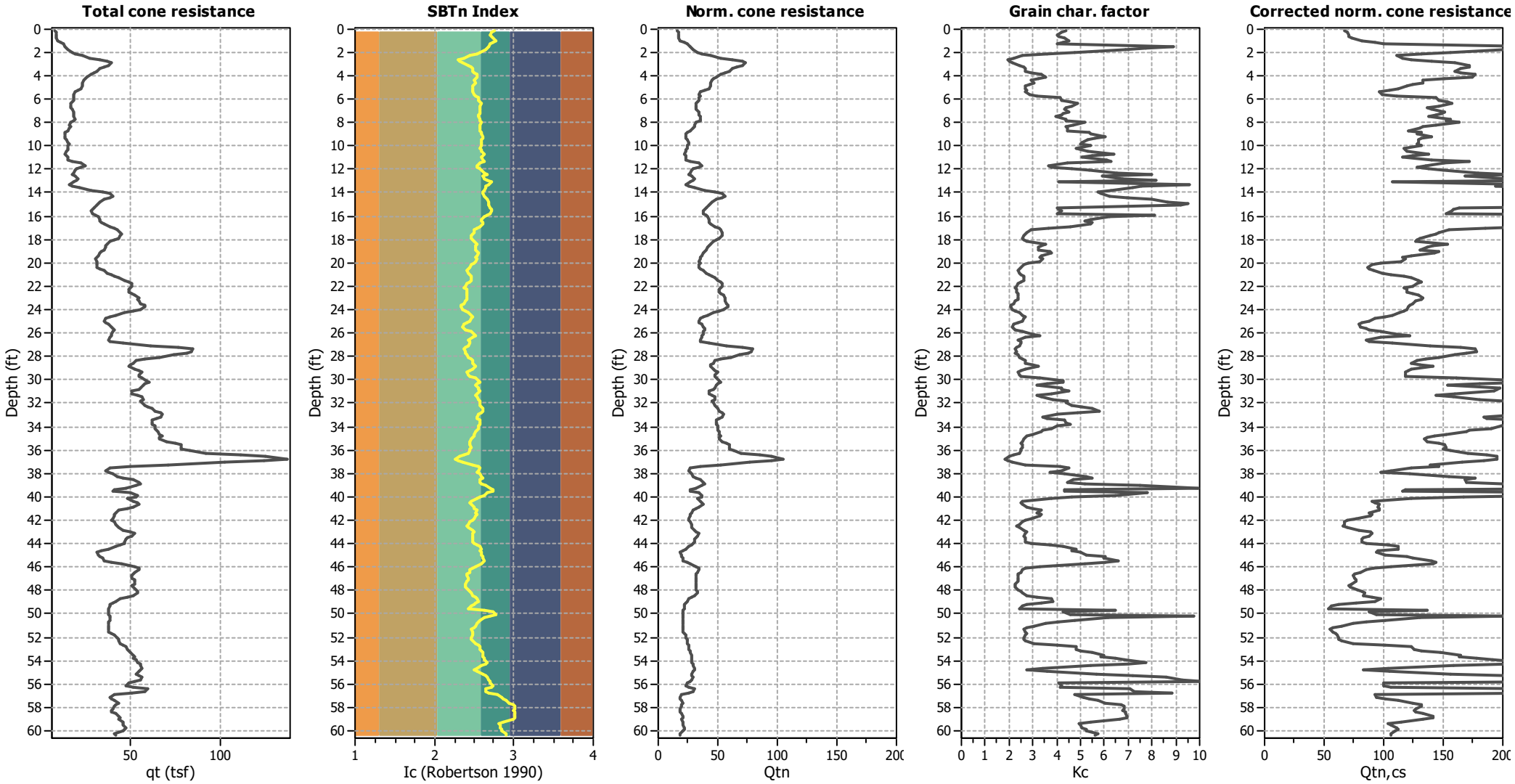
Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	9.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.47	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

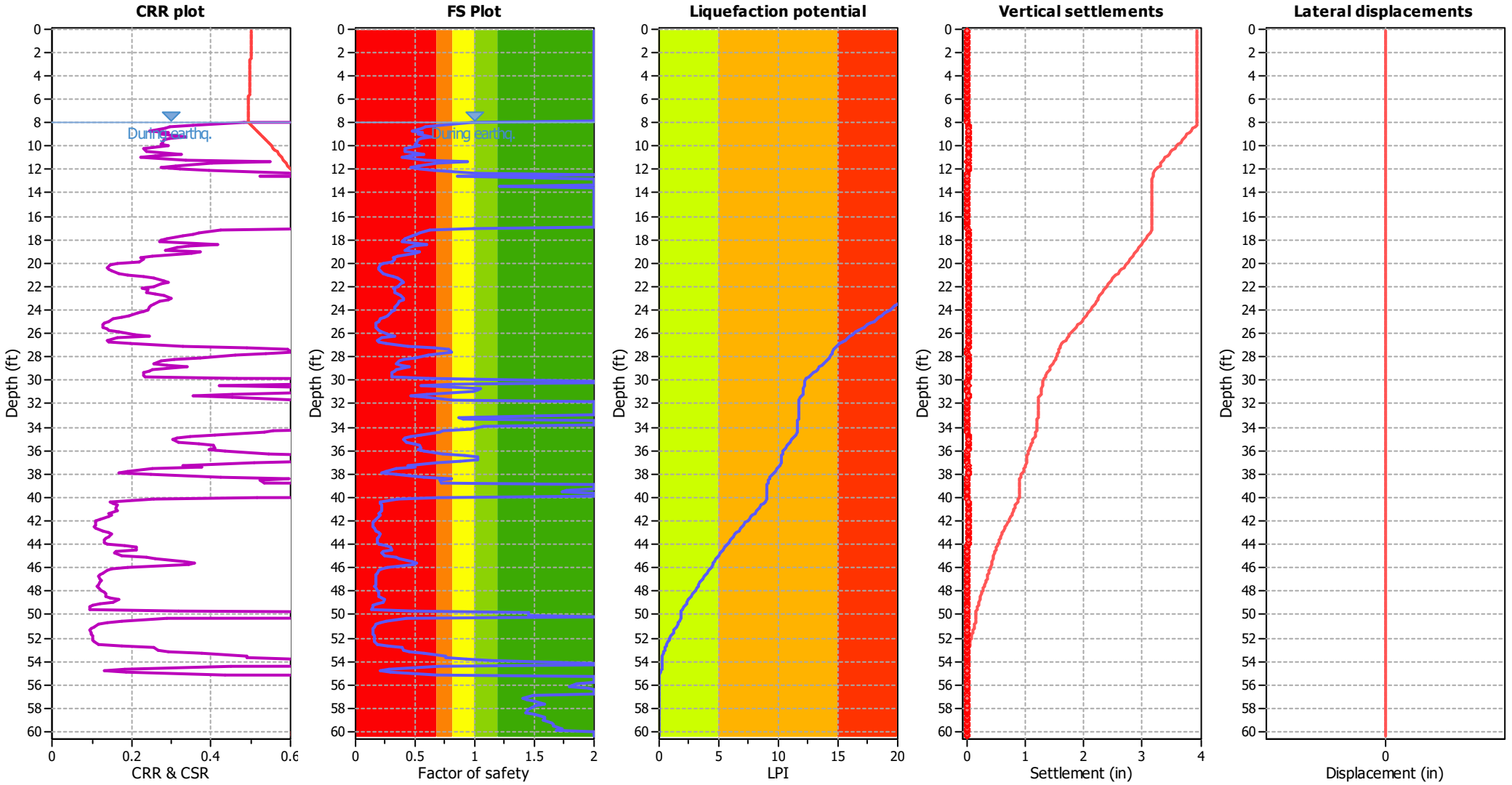
Liquefaction analysis overall plots (intermediate results)



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	9.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.47	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	9.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.47	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

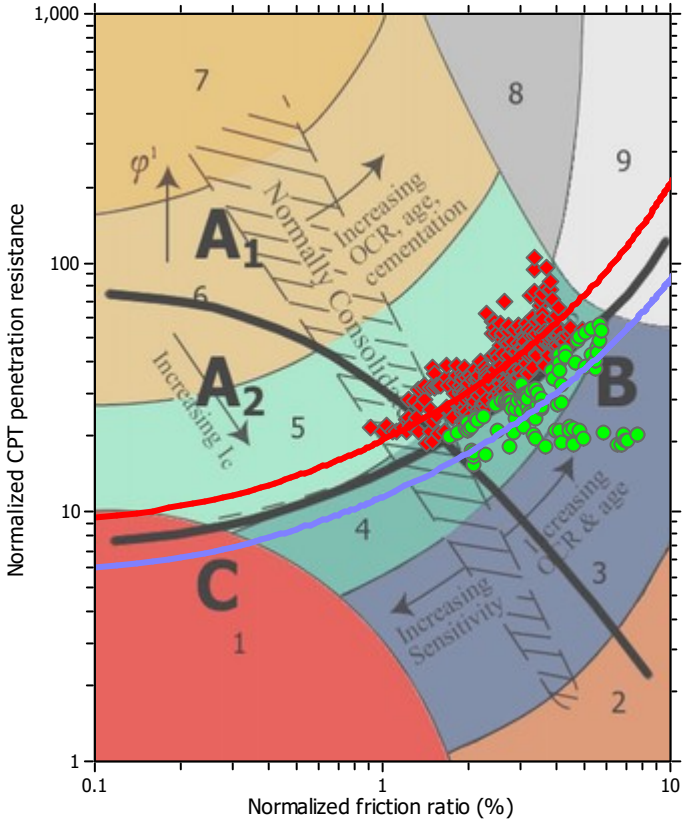
F.S. color scheme

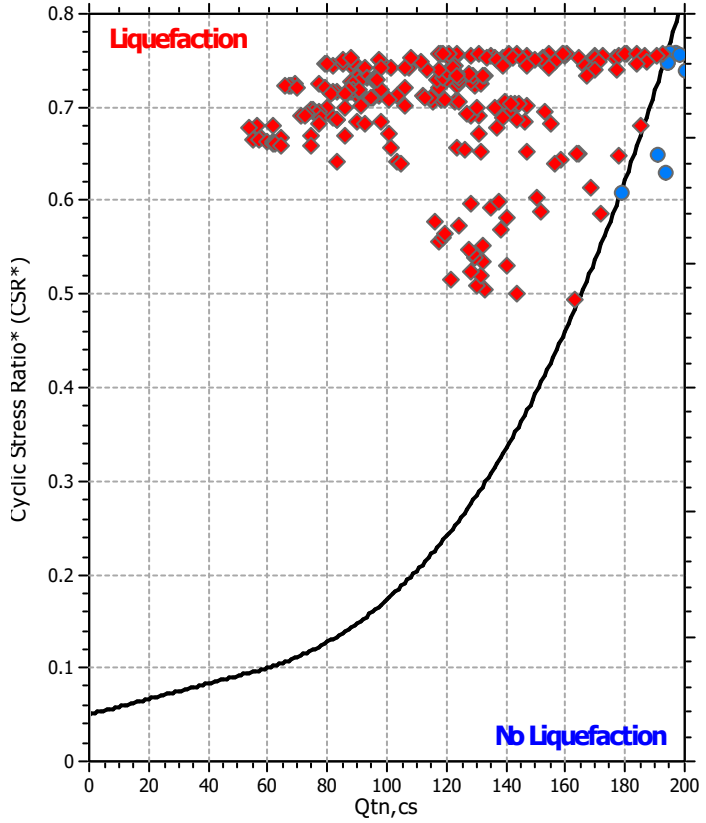
- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

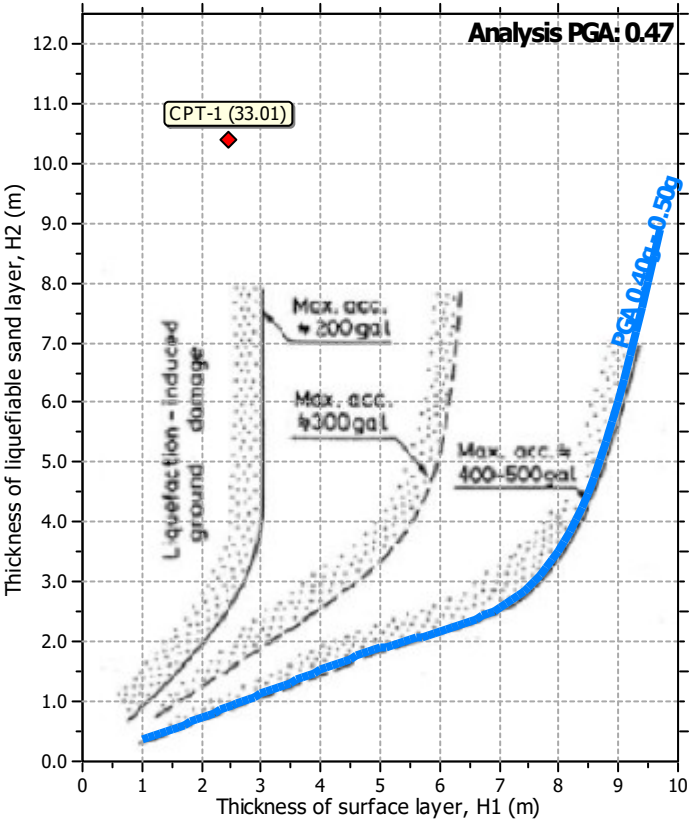
LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis summary plots



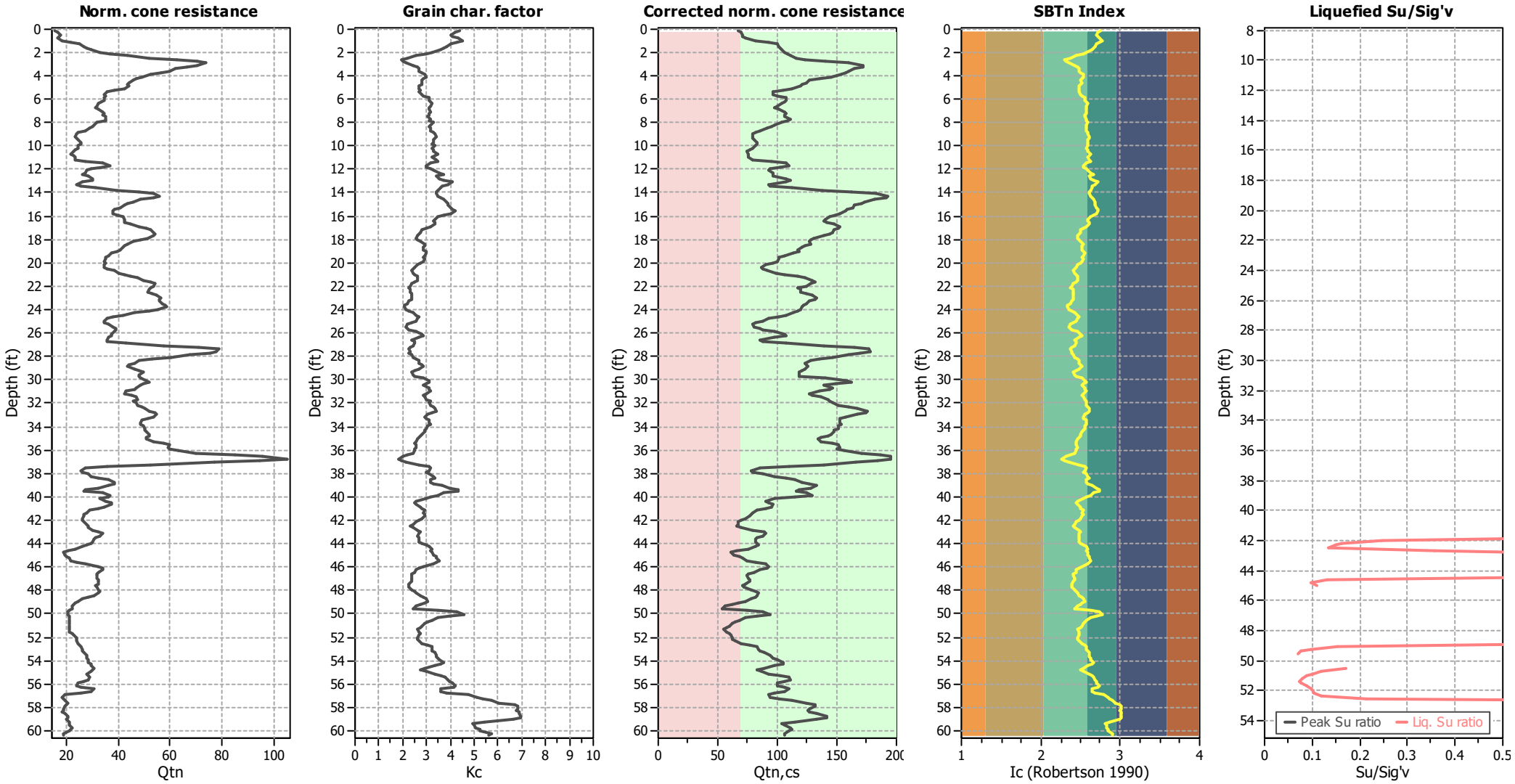




Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	9.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.47	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

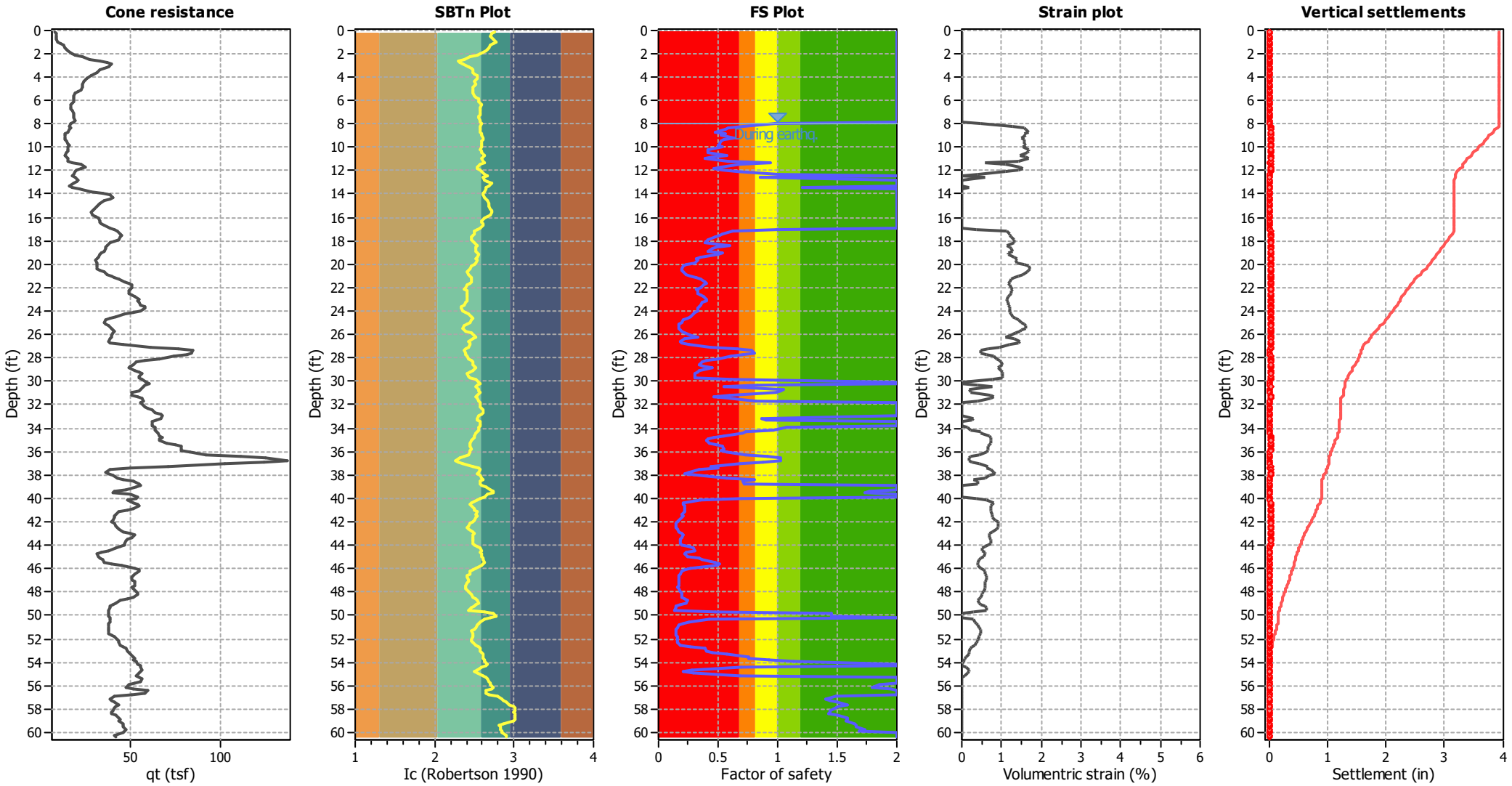
Check for strength loss plots (Robertson (2010))



Input parameters and analysis data

Analysis method:	Robertson (2009)	Depth to water table (erthq.):	8.00 ft	Fill weight:	N/A
Fines correction method:	Robertson (2009)	Average results interval:	3	Transition detect. applied:	No
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	No
Earthquake magnitude M_w:	9.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	All soils
Peak ground acceleration:	0.47	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	10.00 ft	Fill height:	N/A	Limit depth:	60.00 ft

Estimation of post-earthquake settlements



Abbreviations

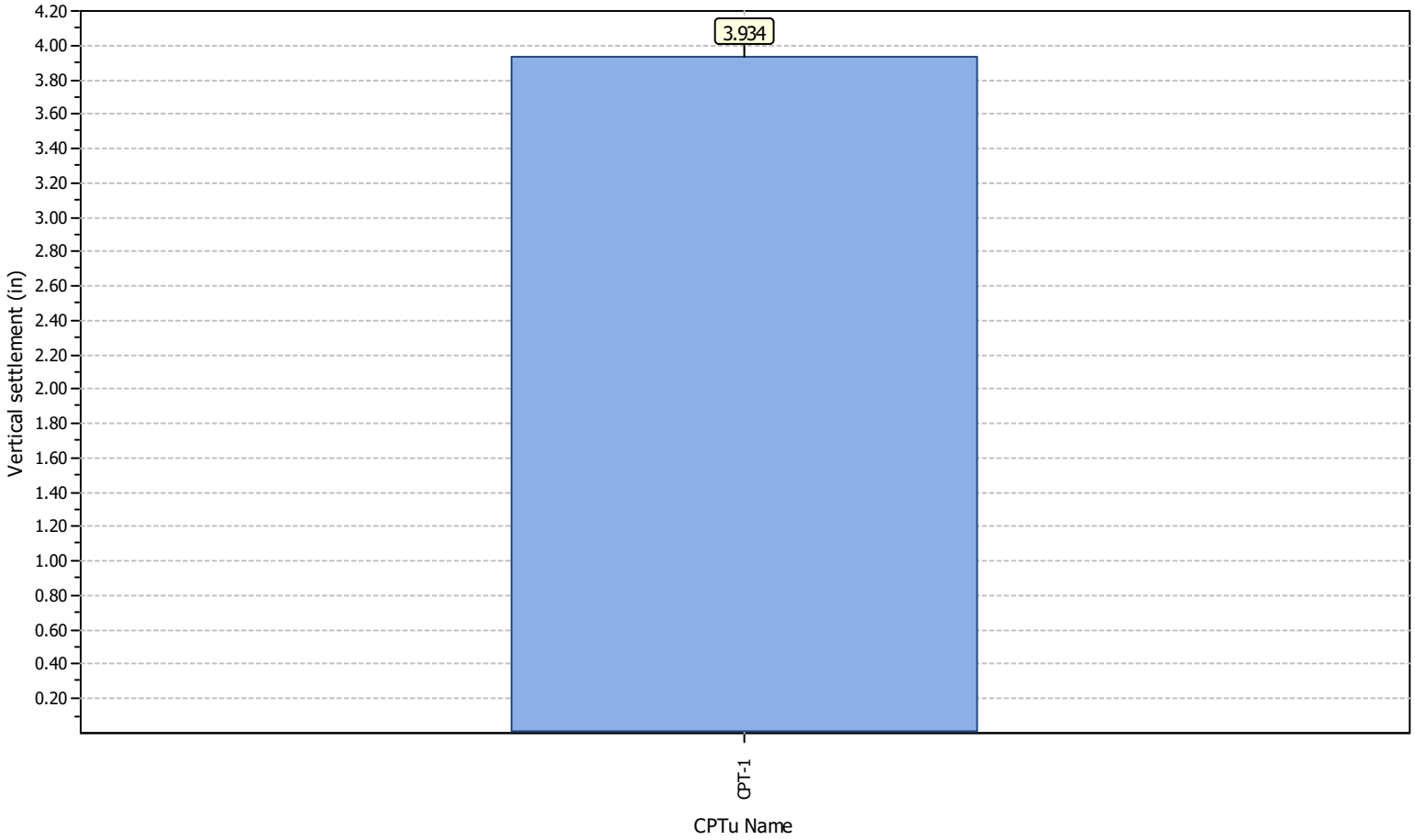
q_t:	Total cone resistance (cone resistance q_c corrected for pore water effects)
I_c:	Soil Behaviour Type Index
FS:	Calculated Factor of Safety against liquefaction
Volumentric strain:	Post-liquefaction volumentric strain

GeoPacific Engineering, Inc.
14835 SW 72nd Avenue
Portland, Oregon 97224
http://www.geopacificeng.com/

Project title : 19-5391, Fairfield Marriott

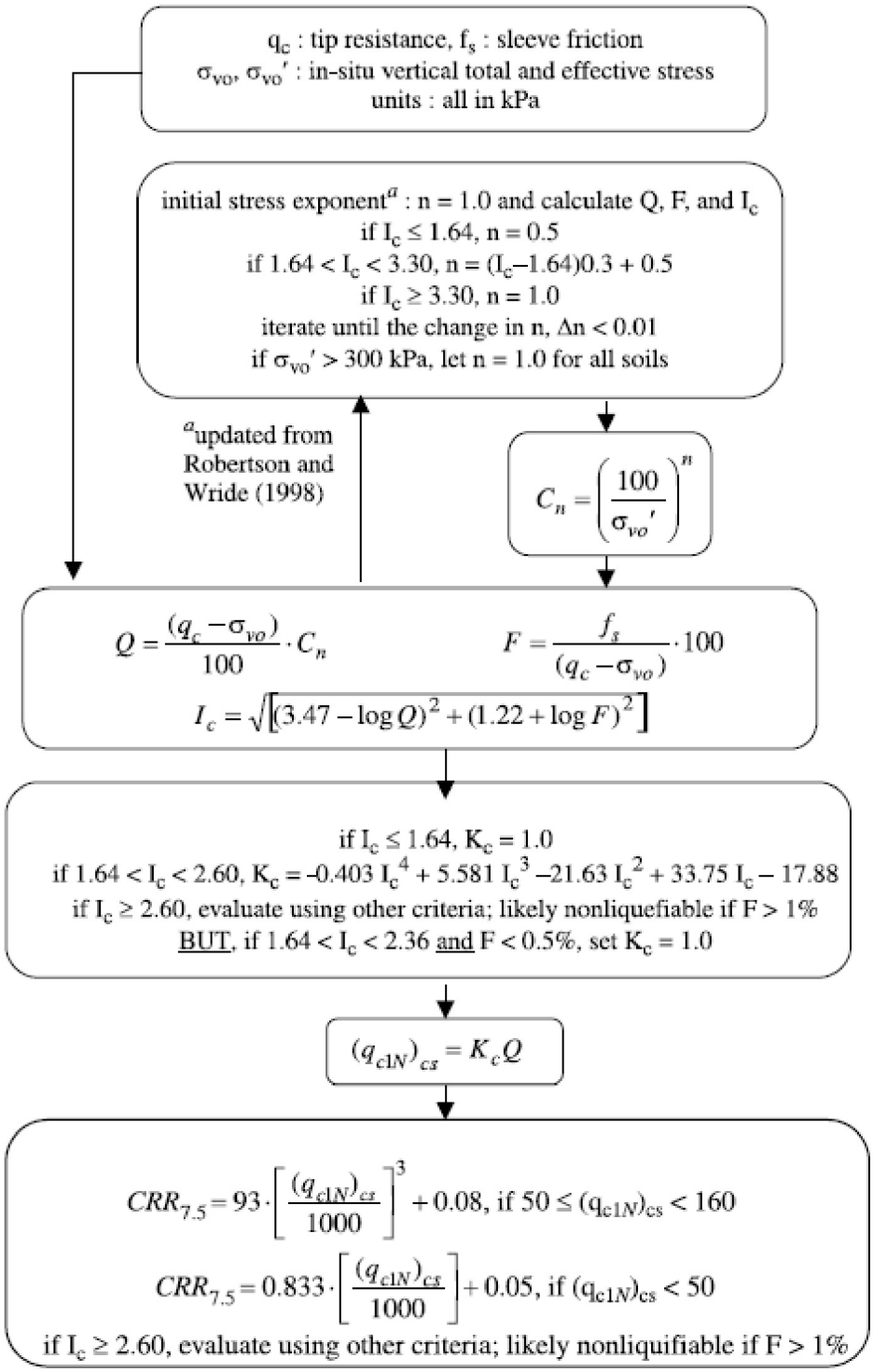
Location : 45.306859, -122.940625, Newberg, Oregon

Overall vertical settlements report



Procedure for the evaluation of soil liquefaction resistance, NCEER (1998)

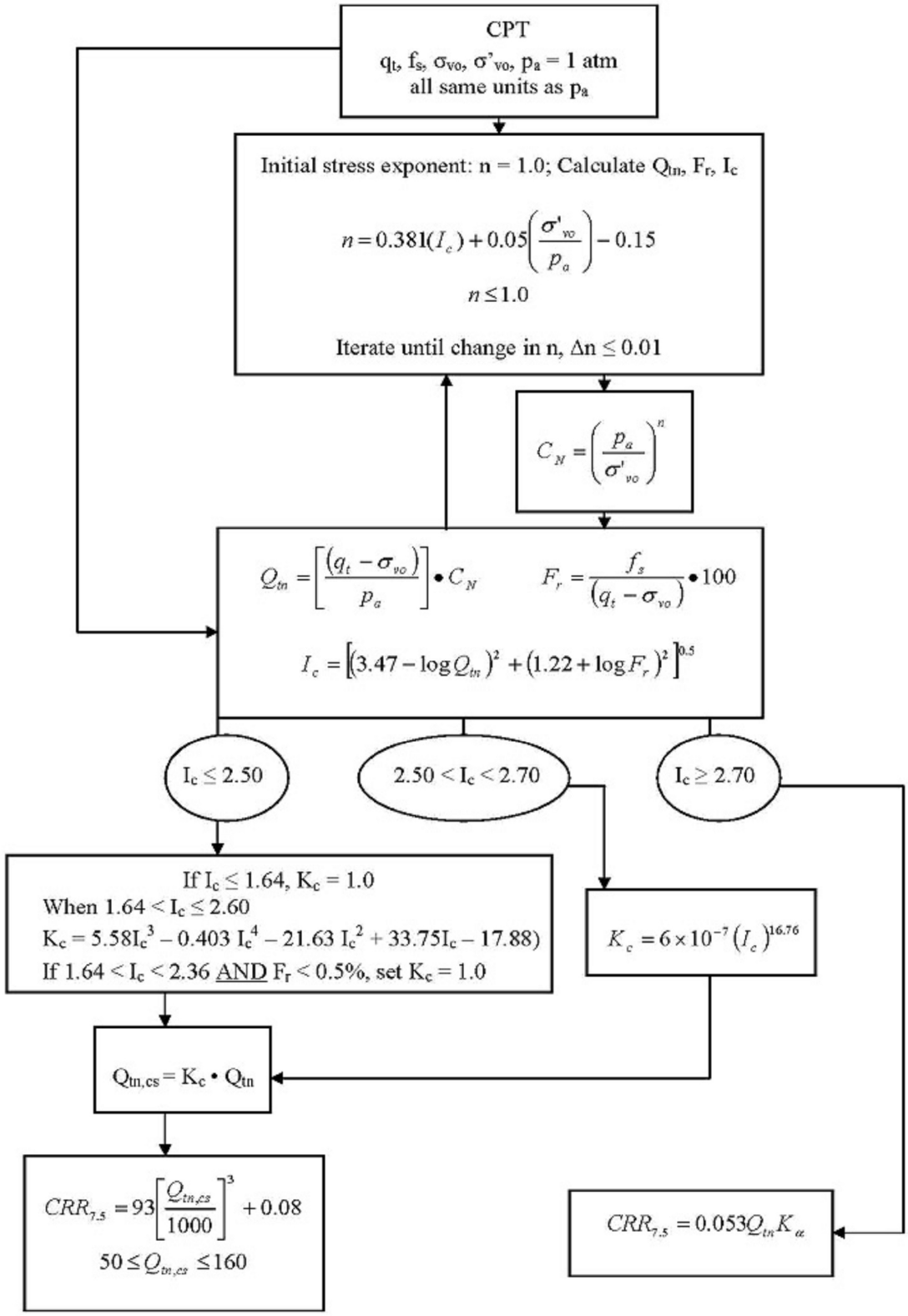
Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. The procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:



[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

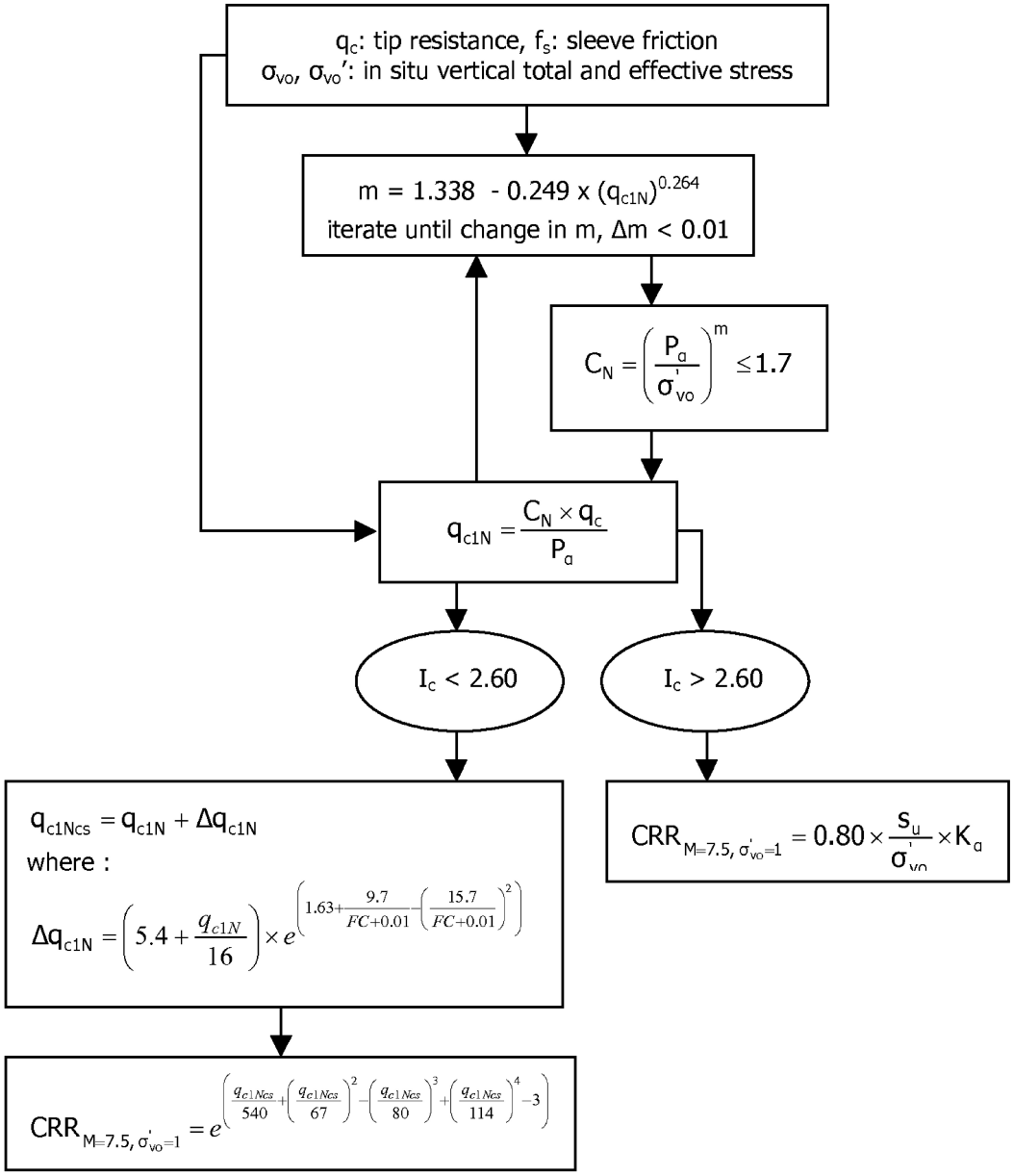
Procedure for the evaluation of soil liquefaction resistance (all soils), Robertson (2010)

Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. This procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:

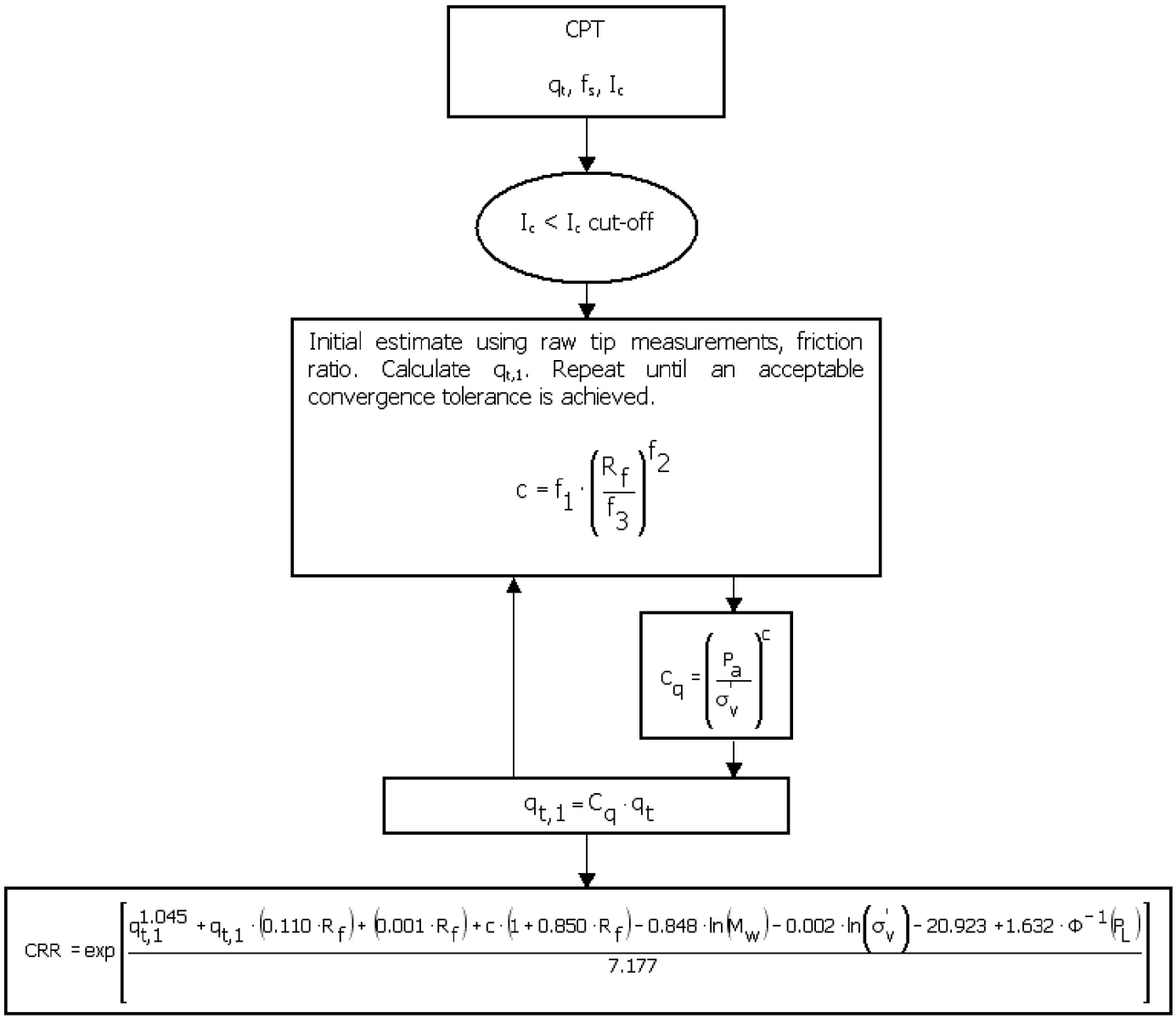


[1] P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009

Procedure for the evaluation of soil liquefaction resistance, Idriss & Boulanger (2008)



Procedure for the evaluation of soil liquefaction resistance (sandy soils), Moss et al. (2006)



Procedure for the evaluation of soil liquefaction resistance, Boulanger & Idriss(2014)

$$FS_{liq} = \frac{CRR_{M=7.5,\sigma'_v=1atm}}{CSR_{M=7.5,\sigma'_v=1atm}}$$

$$CSR_{M=7.5,\sigma'_v=1atm} = 0.65 \frac{\sigma_v}{\sigma'_v} \frac{a_{max}}{g} r_d \frac{1}{MSF} \frac{1}{K_\sigma}$$

$$r_d = \exp\left[\alpha(z) + \beta(z) \cdot M\right]$$

$$\alpha(z) = -1.012 - 1.126 \sin\left(\frac{z}{11.73} + 5.133\right)$$

$$\beta(z) = 0.106 + 0.118 \sin\left(\frac{z}{11.28} + 5.142\right)$$

$$K_\sigma = 1 - C_\sigma \ln\left(\frac{\sigma'_v}{P_a}\right) \le 1.1$$

$$C_\sigma = \frac{1}{37.3 - 8.27\left(q_{c1Ncs}\right)^{0.264}} \le 0.3$$

$$MSF = 1 + \left(MSF_{max} - 1\right)\left(8.64 \exp\left(\frac{-M}{4}\right) - 1.325\right)$$

$$MSF_{max} = 1.09 + \left(\frac{q_{c1Ncs}}{180}\right)^3 \le 2.2$$

σ'_v *and* σ_v *at start of earthquake shaking*

$$CRR_{M=7.5,\sigma'_v=1atm} = \exp\left(\frac{q_{c1Ncs}}{113} + \left(\frac{q_{c1Ncs}}{1000}\right)^2 - \left(\frac{q_{c1Ncs}}{140}\right)^3 + \left(\frac{q_{c1Ncs}}{137}\right)^4 - 2.80\right)$$

$$q_{c1Ncs} = q_{c1N} + \Delta q_{c1N}$$

$$\Delta q_{c1N} = \left(11.9 + \frac{q_{c1N}}{14.6}\right) \exp\left(1.63 - \frac{9.7}{FC+2} - \left(\frac{15.7}{FC+2}\right)^2\right)$$

$$q_{c1N} = C_{Ne} \frac{q_c}{P_a}$$

$$C_{Ne} = \left(\frac{P_a}{\sigma'_v}\right)^m \le 1.7$$

$$m = 1.338 - 0.249\left(q_{c1Ncs}\right)^{0.264} \quad with \quad 0.264 \le m \le 0.782$$

$$FC = 80\left(I_C + C_{FC}\right) - 137 \quad with \quad 0\% \le FC \le 100\%$$

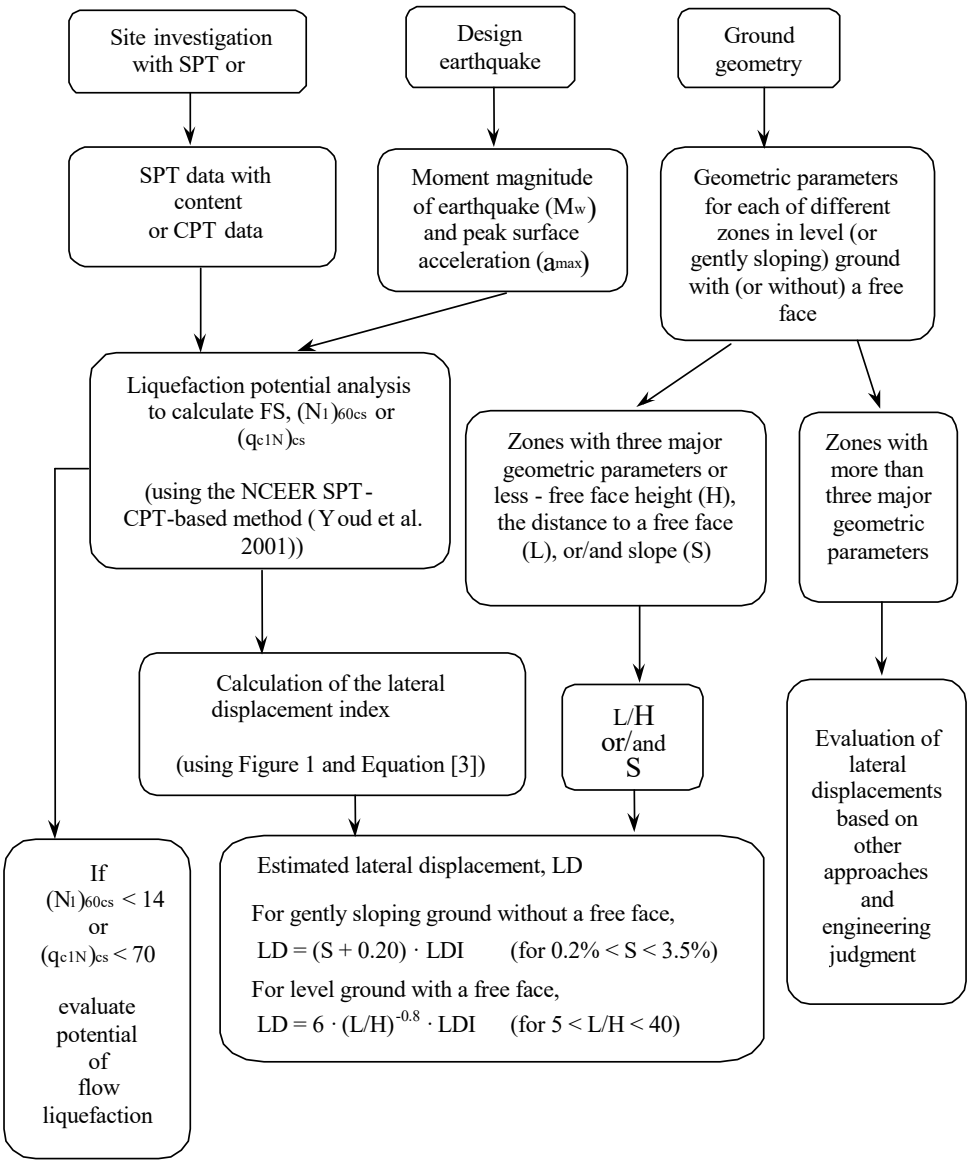
$$I_c = \left[\left(3.47 - \log\left(Q\right)\right)^2 + \left(1.22 + \log\left(F\right)\right)^2\right]^{0.5}$$

$$Q = \left(\frac{q_c - \sigma_{vc}}{P_a}\right)\left(\frac{P_a}{\sigma'_{vc}}\right)^n \; with \; 0.5 \le n \le 1.0 \; per \; Robertson \; \& \; Wride \; (1998)$$

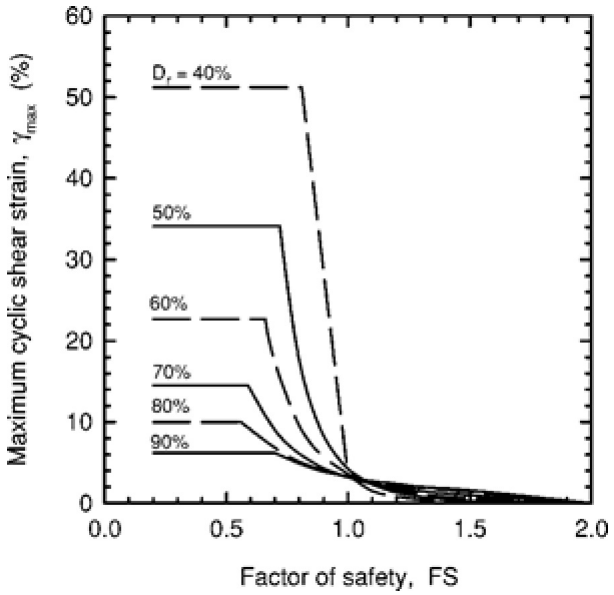
$$F = \left(\frac{f_s}{q_c - \sigma_{vc}}\right) \cdot 100\%$$

σ'_v *at time of CPT sounding*

Procedure for the evaluation of liquefaction-induced lateral spreading displacements



[1] Flow chart illustrating major steps in estimating liquefaction-induced lateral spreading displacements using the proposed approach



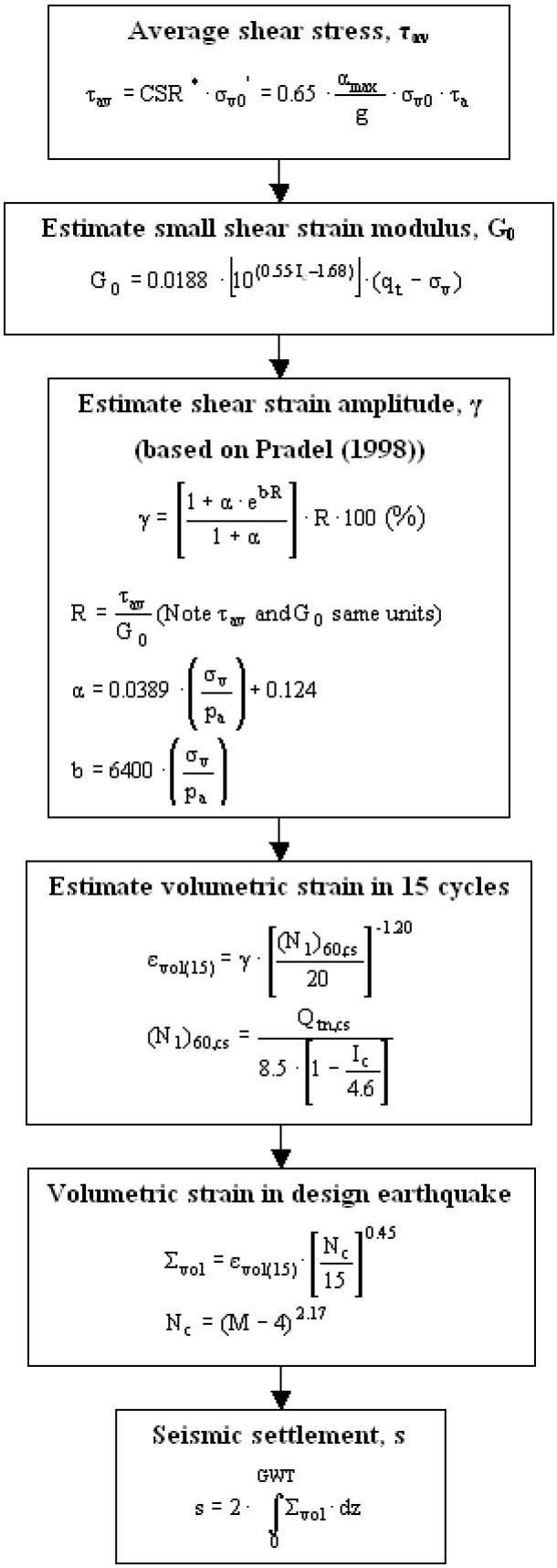
[1] Figure 1

$$LDI = \int_0^{z_{max}} \gamma_{max} dz$$

[1] Equation [3]

[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

Procedure for the estimation of seismic induced settlements in dry sands



Robertson, P.K. and Lisheng, S., 2010, "Estimation of seismic compression in dry soils using the CPT" FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, Symposium in honor of professor I. M. Idriss, San Diego, CA

Liquefaction Potential Index (LPI) calculation procedure

Calculation of the Liquefaction Potential Index (LPI) is used to interpret the liquefaction assessment calculations in terms of severity over depth. The calculation procedure is based on the methology developed by Iwasaki (1982) and is adopted by AFPS.

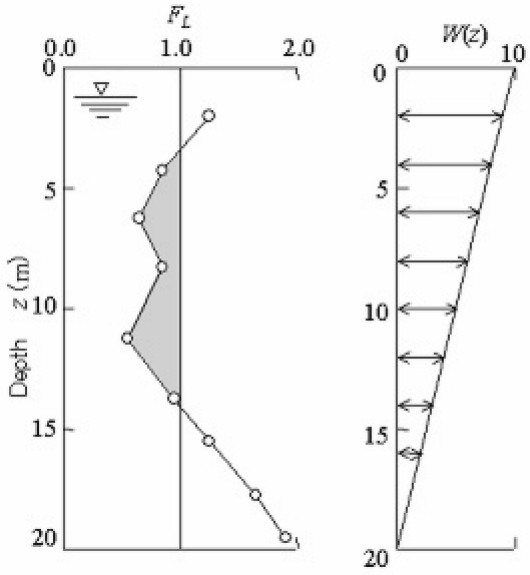
To estimate the severity of liquefaction extent at a given site, LPI is calculated based on the following equation:

$$\mathbf{LPI} = \int_0^{20} (10 - 0{,}5z) \times F_L \times dz$$

where:
F_L = 1 - F.S. when F.S. less than 1
F_L = 0 when F.S. greater than 1
z depth of measurment in meters

Values of LPI range between zero (0) when no test point is characterized as liquefiable and 100 when all points are characterized as susceptible to liquefaction. Iwasaki proposed four (4) discrete categories based on the numeric value of LPI:

- LPI = 0 : Liquefaction risk is very low
- 0 < LPI <= 5 : Liquefaction risk is low
- 5 < LPI <= 15 : Liquefaction risk is high
- LPI > 15 : Liquefaction risk is very high



Graphical presentation of the LPI calculation procedure

Shear-Induced Building Settlement (Ds) calculation procedure

The shear-induced building settlement (Ds) due to liquefaction below the building can be estimated using the relationship developed by Bray and Macedo (2017):

$$Ln(Ds) = c1 + c2 * LBS + 0.58 * Ln\left(Tanh\left(\frac{HL}{6}\right)\right) + 4.59 * Ln(Q) - 0.42 * Ln(Q)^2 - 0.02 * B + 0.84 * Ln(CAVdp) + 0.41 * Ln(Sa1) + \varepsilon$$

where Ds is in the units of mm, c1= -8.35 and c2= 0.072 for LBS ≤ 16, and c1= -7.48 and c2= 0.014 otherwise. Q is the building contact pressure in units of kPa, HL is the cumulative thickness of the liquefiable layers in the units of m, B is the building width in the units of m, CAVdp is a standardized version of the cumulative absolute velocity in the units of g-s, Sa1 is 5%-damped pseudo-acceleration response spectral value at a period of 1 s in the units of g, and ε is a normal random variable with zero mean and 0.50 standard deviation in Ln units. The liquefaction-induced building settlement index (LBS) is:

$$LBS = \sum W * \frac{\varepsilon_{shear}}{z} dz$$

where z (m) is the depth measured from the ground surface > 0, W is a foundation-weighting factor wherein W = 0.0 for z less than Df, which is the embedment depth of the foundation, and W = 1.0 otherwise. The shear strain parameter (ε_shear) is the liquefaction-induced free-field shear strain (in %) estimated using Zhang et al. (2004). It is calculated based on the estimated Dr of the liquefied soil layer and the calculated safety factor against liquefaction triggering (FSL).

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Real-World Geotechnical Solutions
Investigation • Design • Construction Support

SITE RESEARCH

14835 SW 72nd Avenue
Portland, Oregon 97224
Tel (503) 598-8445
Fax (503) 941-9281

Hazards by Location

Search Information

Coordinates:	45.307545, -122.938352
Elevation:	225 ft
Timestamp:	2019-12-23T19:13:52.346Z
Hazard Type:	Seismic
Reference Document:	NEHRP-2015
Risk Category:	II
Site Class:	D

Basic Parameters

Name	Value	Description
S_S	0.848	MCE_R ground motion (period=0.2s)
S_1	0.409	MCE_R ground motion (period=1.0s)
S_{MS}	0.984	Site-modified spectral acceleration value
S_{M1}	* 0.773	Site-modified spectral acceleration value
S_{DS}	0.656	Numeric seismic design value at 0.2s SA
S_{D1}	* 0.515	Numeric seismic design value at 1.0s SA

* See Section 11.4.7

Additional Information

Name	Value	Description
SDC	* D	Seismic design category
F_a	1.161	Site amplification factor at 0.2s
F_v	* 1.891	Site amplification factor at 1.0s
CR_S	0.883	Coefficient of risk (0.2s)
CR_1	0.867	Coefficient of risk (1.0s)
PGA	0.39	MCE_G peak ground acceleration
F_{PGA}	1.21	Site amplification factor at PGA
PGA_M	0.472	Site modified peak ground acceleration
T_L	16	Long-period transition period (s)

SsRT	0.848	Probabilistic risk-targeted ground motion (0.2s)
SsUH	0.96	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	1.5	Factored deterministic acceleration value (0.2s)
S1RT	0.409	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.471	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.647	Factored deterministic acceleration value (1.0s)
PGAd	0.53	Factored deterministic acceleration value (PGA)

* See Section 11.4.7

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

While the information presented on this website is believed to be correct, ATC and its sponsors and contributors assume no responsibility or liability for its accuracy. The material presented in the report should not be used or relied upon for any specific application without competent examination and verification of its accuracy, suitability and applicability by engineers or other licensed professionals. ATC does not intend that the use of this information replace the sound judgment of such competent professionals, having experience and knowledge in the field of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the results of the report provided by this website. Users of the information from this website assume all liability arising from such use. Use of the output of this website does not imply approval by the governing building code bodies responsible for building code approval and interpretation for the building site described by latitude/longitude location in the report.

U.S. Geological Survey - Earthquake Hazards Program

Unified Hazard Tool

Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the U.S. Seismic Design Maps web tools (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

Input

Edition

Dynamic: Conterminous U.S. 2014 (upd

Spectral Period

Peak Ground Acceleration

Latitude

Decimal degrees

45.306859

Time Horizon

Return period in years

2475

Longitude

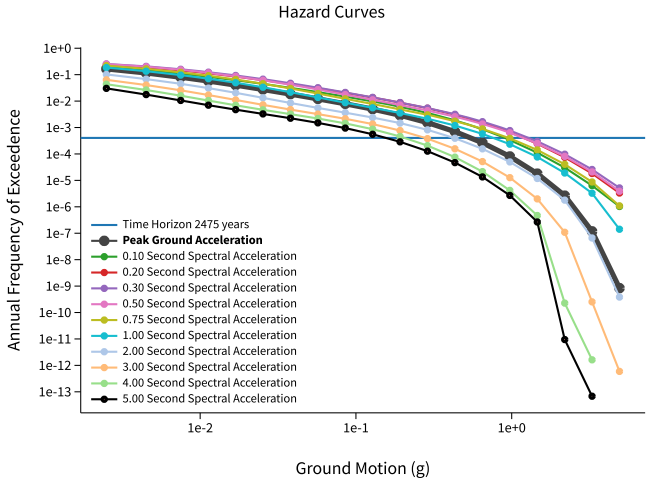
Decimal degrees, negative values for western longitudes

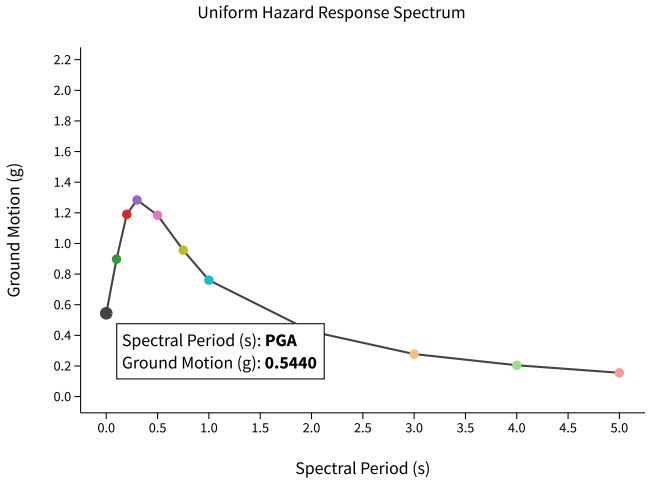
-122.940625

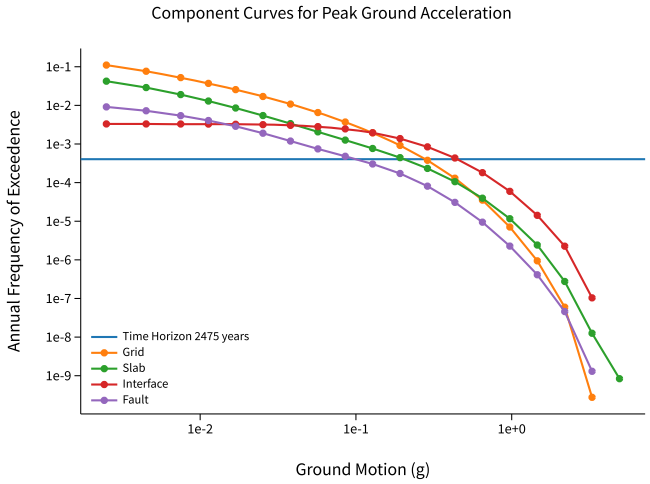
Site Class

259 m/s (Site class D)

Hazard Curve





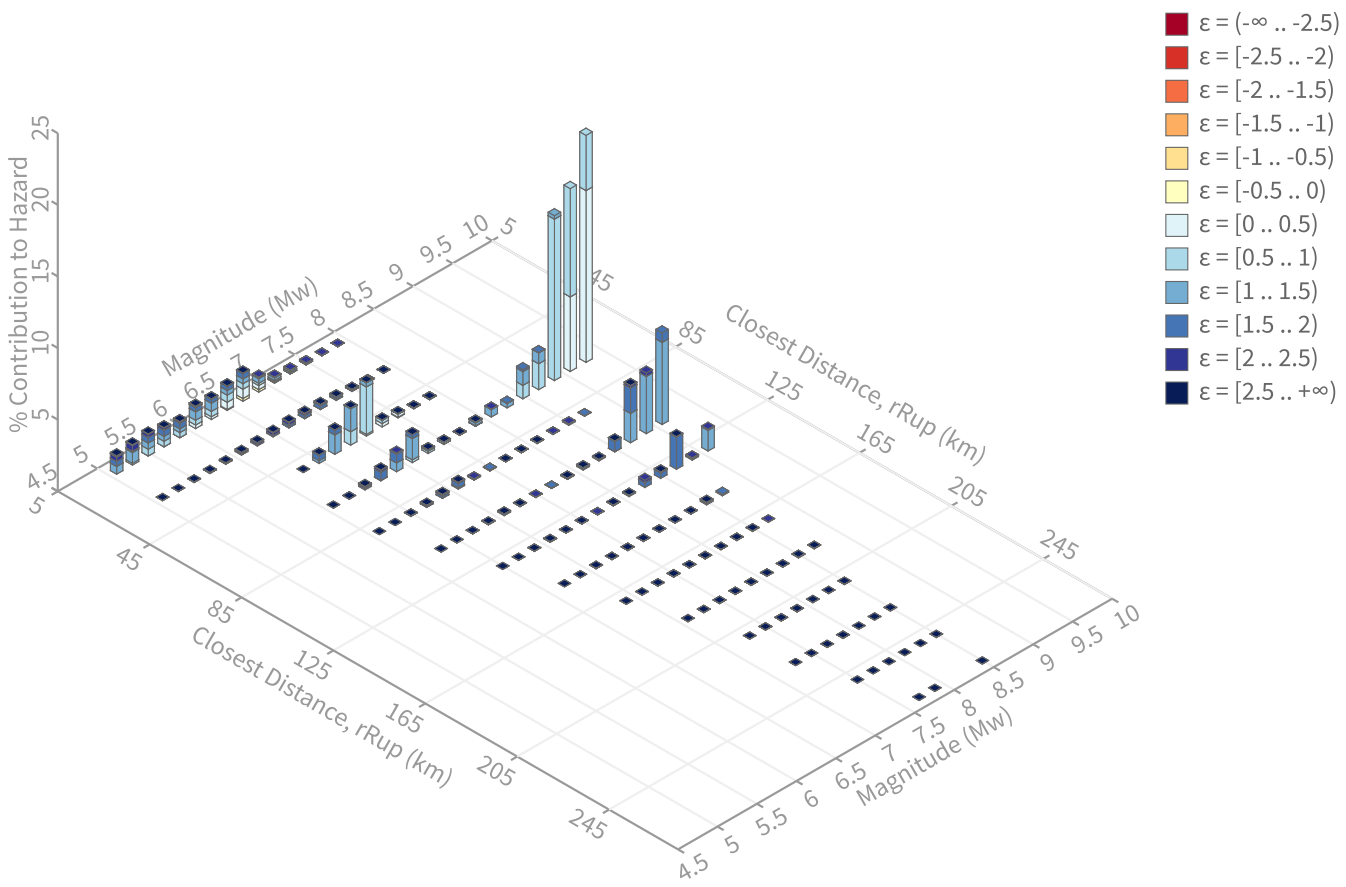


View Raw Data

Deaggregation

Component

Total



Summary statistics for, Deaggregation: Total

Deaggregation targets

Return period: 2475 yrs
Exceedance rate: 0.0004040404 yr^{-1}
PGA ground motion: 0.54401823 g

Recovered targets

Return period: 2466.6527 yrs
Exceedance rate: 0.00040540771 yr^{-1}

Totals

Binned: 100 %
Residual: 0 %
Trace: 0.51 %

Mean (over all sources)

m: 8.17
r: 65.91 km
ε_0: 1.02 σ

Mode (largest m-r bin)

m: 9.34
r: 63.87 km
ε_0: 0.39 σ
Contribution: 15.85 %

Mode (largest m-r-ε_0 bin)

m: 9.34
r: 63.87 km
ε_0: 0.29 σ
Contribution: 11.99 %

Discretization

r: min = 0.0, max = 1000.0, Δ = 20.0 km
m: min = 4.4, max = 9.4, Δ = 0.2
ε: min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

ε0: [-∞ .. -2.5)
ε1: [-2.5 .. -2.0)
ε2: [-2.0 .. -1.5)
ε3: [-1.5 .. -1.0)
ε4: [-1.0 .. -0.5)
ε5: [-0.5 .. 0.0)
ε6: [0.0 .. 0.5)
ε7: [0.5 .. 1.0)
ε8: [1.0 .. 1.5)
ε9: [1.5 .. 2.0)
ε10: [2.0 .. 2.5)
ε11: [2.5 .. +∞]

Deaggregation Contributors

Source Set ↳ Source	Type	r	m	ε_0	lon	lat	az	%
sub0_ch_bot.in	Interface							38.40
Cascadia Megathrust - whole CSZ Characteristic		63.87	9.10	0.56	123.599°W	45.501°N	293.06	38.40
sub0_ch_mid.in	Interface							14.09
Cascadia Megathrust - whole CSZ Characteristic		112.69	8.92	1.41	124.330°W	45.489°N	281.09	14.09
coastalOR_deep.in	Slab							8.17
coastalOR_deep.in	Slab							5.09
sub0_ch_top.in	Interface							3.26
Cascadia Megathrust - whole CSZ Characteristic		127.44	8.83	1.63	124.549°W	45.485°N	279.52	3.26
WUSmap_2014_fixSm.ch.in (opt)	Grid							2.63
noPuget_2014_fixSm.ch.in (opt)	Grid							2.63
sub2_ch_bot.in	Interface							2.44
Cascadia Megathrust - Goldfinger Case C Characteristic		74.96	8.73	1.02	123.702°W	45.000°N	240.53	2.44
WUSmap_2014_fixSm.gr.in (opt)	Grid							2.34
noPuget_2014_fixSm.gr.in (opt)	Grid							2.34
sub1_ch_bot.in	Interface							1.74
Cascadia Megathrust - Goldfinger Case B Characteristic		63.29	8.86	0.72	123.599°W	45.501°N	293.06	1.74
Geologic Model Partial Rupture	Fault							1.48
sub1_GRb0_bot.in	Interface							1.33
Cascadia floater over southern zone - Goldfinger Case B		68.55	8.48	1.05	123.599°W	45.501°N	293.06	1.33
Geologic Model Full Rupture	Fault							1.05

Map Scale: 1:2,190 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

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 Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

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 1:24,000.

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: Yamhill County, Oregon
Survey Area Data: Version 7, Sep 10, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 19, 2015—Sep 13, 2016

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2301A	Amity silt loam, 0 to 3 percent slopes	0.1	0.2%
2310A	Woodburn silt loam, 0 to 3 percent slopes	24.5	99.8%
Totals for Area of Interest		**24.5**	**100.0%**

GeoPacific Engineering, Inc.
Real-World Geotechnical Solutions
Investigation • Design • Construction Support

PHOTOGRAPHIC LOG

14835 SW 72nd Avenue
Portland, Oregon 97224
Tel (503) 598-8445
Fax (503) 941-9281

FAIRFIELD MARRIOTT, NEWBERG, OREGON
GEOTECHNICAL SITE INVESTIGATION
PHOTOGRAPHIC LOG

Cone Penetrometer Testing

Cone Penetrometer Testing

FAIRFIELD MARRIOTT, NEWBERG, OREGON
GEOTECHNICAL SITE INVESTIGATION
PHOTOGRAPHIC LOG

Test Pit TP-1

Test Pit TP-1

FAIRFIELD MARRIOTT, NEWBERG, OREGON
GEOTECHNICAL SITE INVESTIGATION
PHOTOGRAPHIC LOG

Test Pit TP-2

Test Pit TP-2

FAIRFIELD MARRIOTT, NEWBERG, OREGON
GEOTECHNICAL SITE INVESTIGATION
PHOTOGRAPHIC LOG

Test Pit TP-3

Test Pit TP-3

FAIRFIELD MARRIOTT, NEWBERG, OREGON
GEOTECHNICAL SITE INVESTIGATION
PHOTOGRAPHIC LOG

Test Pit TP-4

Test Pit TP-4

FAIRFIELD MARRIOTT, NEWBERG, OREGON
GEOTECHNICAL SITE INVESTIGATION
PHOTOGRAPHIC LOG

Cone Penetrometer Testing

Cone Penetrometer Testing

FAIRFIELD MARRIOTT, NEWBERG, OREGON
GEOTECHNICAL SITE INVESTIGATION
PHOTOGRAPHIC LOG

Test Pit TP-1

Test Pit TP-1

FAIRFIELD MARRIOTT, NEWBERG, OREGON
GEOTECHNICAL SITE INVESTIGATION
PHOTOGRAPHIC LOG

Test Pit TP-2

Test Pit TP-2

FAIRFIELD MARRIOTT, NEWBERG, OREGON
GEOTECHNICAL SITE INVESTIGATION
PHOTOGRAPHIC LOG

Test Pit TP-3

Test Pit TP-3

CITY OF NEWBERG TYPE II
SAMPLE MAILED NOTICE

Community Development Department

P.O. Box 970 ▪ 414 E First Street ▪ Newberg, Oregon 97132
503-537-1240. Fax 503-537-1272 www.newbergoregon.gov

WE WANT YOUR COMMENTS ON A PROPOSED NEW DEVELOPMENT IN YOUR NEIGHBORHOOD

A property owner in your neighborhood submitted an application to the City of Newberg for a Type II Design Review Application. You are invited to take part in the City's review of this project by sending in your written comments. You also may request that the Planning Commission hold a hearing on the application. The applicable criteria used to make a decision on this application for preliminary subdivision plan approval are found in Newberg Development Code 15.235.050(A).
For more details about giving comments, please see the back of this sheet.

The development would include ***(briefly describe what the project number of lots, size of lots, new streets created, etc.)***

APPLICANT: ***Hawkins Companies (Represented by Brittnee Elliott)***
TELEPHONE: ***208.908.5637***

PROPERTY OWNER: ***Werth Family, LLC***

LOCATION: ***South East Corner of Brutscher and Pacific Highway West***

TAX LOT NUMBER: ***Yamhill County Assessor's Map 3216 Tax Lot 1900 & 2002***

Insert site map with the project location highlighted as shown on the adjacent sample map.

We are mailing you information about this project because you own land within 500 feet of the proposed new project. We invite you to send any written comments for or against the proposal within 14 days from the date this notice is mailed. You also may request that the Newberg Planning Commission hold a hearing on the application by sending a written request during this 14-day period and identifying the issues you would like the Planning Commission to address.

If you mail your comments to the City, please put the following information on the outside of the envelope:

Written Comments: File No.XX
City of Newberg
Community Development
PO Box 970
Newberg, OR 97132

(City staff will give you the file number for your project at the time of application)

All written comments must be turned in by 4:30 p.m. on ***enter date two weeks from date you mailed notice*****.** Any issue which might be raised in an appeal of this case to the Land Use Board of Appeals (LUBA) must be submitted to the City in writing before this date. You must include enough detail to enable the decision maker an opportunity to respond. The applicable criteria used to make a decision on this application for preliminary subdivision plan approval are found in Newberg Development Code 15.235.050(A).

You can look over all the information about this project or drop comments off at Newberg City Hall, 414 E. First Street. You can also buy copies of the information for a cost of 25 cents a page. If you have any questions about the project, you can call the Newberg Planning Division at 503-537-1240.

The Community Development Director will make a decision at the end of a 14-day comment period. If you send in written comments about this project, you will be sent information about any decision made by the City relating to this project.

Date Mailed: ***Date notice is mailed***

Community Development Department
P.O. Box 970 ▪ 414 E First Street ▪ Newberg, Oregon 97132
503-537-1240. Fax 503-537-1272 www.newbergoregon.gov

WE WANT YOUR COMMENTS ON A PROPOSED NEW DEVELOPMENT IN YOUR NEIGHBORHOOD

A property owner in your neighborhood submitted an application to the City of Newberg for a Type II Design Review Application. You are invited to take part in the City's review of this project by sending in your written comments. The applicable criteria used to make a decision on this application design review are found in Newberg Development Code 15.235.050(B).
For more details about giving comments, please see the back of this sheet.

The development would include ***a ground up 80 room hotel.***

APPLICANT: ***Hawkins Companies (Represented by Brittnee Elliott)***
TELEPHONE: ***208.908.5637***

PROPERTY OWNER: ***Werth Family, LLC***

LOCATION: ***South East Corner of Brutscher and Pacific Highway West***

TAX LOT NUMBER: ***Yamhill County Assessor's Map 3216 Tax Lot 1900 & 2002***

We are mailing you information about this project because you own land within 500 feet of the proposed new project. We invite you to send any written comments for or against the proposal within 14 days from the date this notice is mailed.

If you mail your comments to the City, please put the following information on the outside of the envelope:

Written Comments: File No.
DR222-0001

City of Newberg
Community Development
PO Box 970
Newberg, OR 97132

All written comments must be turned in by 4:30 p.m. on ***enter date two weeks from date you mailed notice***. Any issue which might be raised in an appeal of this case to the Land Use Board of Appeals (LUBA) must be submitted to the City in writing before this date. You must include enough detail to enable the decision maker an opportunity to respond. The applicable criteria used to make a decision on this application for preliminary subdivision plan approval are found in Newberg Development Code 15.235.050(B).

You can look over all the information about this project or drop comments off at Newberg City Hall, 414 E. First Street. You can also buy copies of the information for a cost of 25 cents a page. Information can also be found at https://www.newbergoregon.gov/cd/page/dr222-0001-fairfield-inn. If you have any questions about the project, you can call the Newberg Planning Division at 503-537-1240.

The Community Development Director will make a decision at the end of a 14-day comment period. If you send in written comments about this project, you will be sent information about any decision made by the City relating to this project.

Date Mailed: ***Date notice is mailed***


Land Use Notice
FILE # DR222-0001
PROPOSAL: New 80 Room Hotel
FOR FURTHER INFORMATION, CONTACT:
City of Newberg
Community Development Department
414 E First Street
Phone: 503-537-1240
2′
3′

Attachment 2: Agency Comments

COMMUNITY DEVELOPMENT
LAND USE APPLICATION REFERRAL

The enclosed material has been referred to you for your information and comment. Any comments you wish to make should be returned to the Community Development Department prior to: April 7, 2022. Please refer questions and comments to Doug Rux.

NOTE: Full size plans are available at the Community Development Department Office.

APPLICANT: Hawkins Companies

REQUEST: Fairfield Inn Proposes a 79-Room, 4-Story Hotel

SITE ADDRESS: N/A

LOCATION: N. Brutscher St. (South of intersection of N. Brutscher St. & E. Portland Rd.**)**

TAX LOT: R3216 01900 & R3216 02002

FILE NO: DR222-0001

ZONE: C-2 (General Commercial)

HEARING DATE: N/A

RECEIVED
3/29/2022
Batesf

A Copy of the Fairfield Inn Design Review can be found online at:
https://www.newbergoregon.gov/planning/page/dr222-0001-fairfield-inn

---

__X__ Reviewed, no conflict.

_____ Reviewed; recommend denial for the following reasons:

_____ Require additional information to review. (Please list information required)

_____ Meeting requested.

__X__ Comments. (Attach additional pages as needed)

Should Developer want Ziply Fiber Services, a minimum 1.5" duct will need to be provided to ROW.

Reviewed By: Scott Albert - Network Engineer
Ziply Fiber

Date: 3/25/22

COMMUNITY DEVELOPMENT
LAND USE APPLICATION REFERRAL

REFERRAL TO: Building Official Brooks Bateman

The enclosed material has been referred to you for your information and comment. Any comments you wish to make should be returned to the Community Development Department prior to: April 7, 2022. Please refer questions and comments to Doug Rux.

NOTE: Full size plans are available at the Community Development Department Office.

APPLICANT: Hawkins Companies

REQUEST: Fairfield Inn Proposes a 79-Room, 4-Story Hotel

SITE ADDRESS: N/A

LOCATION: N. Brutscher St. (South of intersection of N. Brutscher St. and E Portland Rd.)

TAX LOT: R3216 01900 & R3216 02002

FILE NO: DR222-0001

ZONE: C-2 (General Commercial)

HEARING DATE: N/A

RECEIVED
MAR 30 REC'D
By

A Copy of the Fairfield Inn Design Review can be found at: DR222-0001 Fairfield Inn | Newberg Oregon

---

X Reviewed, no conflict.

_____ Reviewed; recommend denial for the following reasons:

_____ Require additional information to review. (Please list information required)

_____ Meeting requested.

_____ Comments. (Attach additional pages as needed)

Reviewed By: _____ Date: 3.30.22

COMMUNITY DEVELOPMENT
LAND USE APPLICATION REFERRAL

REFERRAL TO: City Manager ~~Dan Weinheimer~~

The enclosed material has been referred to you for your information and comment. Any comments you wish to make should be returned to the Community Development Department prior to: April 7, 2022. Please refer questions and comments to Doug Rux.

NOTE: Full size plans are available at the Community Development Department Office.

APPLICANT: Hawkins Companies

REQUEST: Fairfield Inn Proposes a 79-Room, 4-Story Hotel

SITE ADDRESS: N/A

LOCATION: N. Brutscher St. (South of intersection of N. Brutscher St. and E Portland Rd.)

TAX LOT: R3216 01900 & R3216 02002

FILE NO: DR222-0001

ZONE: C-2 (General Commercial)

HEARING DATE: N/A

RECEIVED
MAR 28 REC'D
By_____

A Copy of the Fairfield Inn Design Review can be found at: DR222-0001 Fairfield Inn | Newberg Oregon

✓ Reviewed, no conflict.

_____ Reviewed; recommend denial for the following reasons:

_____ Require additional information to review. (Please list information required)

_____ Meeting requested.

_____ Comments. (Attach additional pages as needed)

Will monitoring CA P/T
W E Mey

Reviewed By:

3/26/22

Date:

COMMUNITY DEVELOPMENT
LAND USE APPLICATION REFERRAL

REFERRAL TO: Finance Barbara Davis

The enclosed material has been referred to you for your information and comment. Any comments you wish to make should be returned to the Community Development Department prior to: April 7, 2022. Please refer questions and comments to Doug Rux.

NOTE: Full size plans are available at the Community Development Department Office.

APPLICANT: Hawkins Companies

REQUEST: Fairfield Inn Proposes a 79-Room, 4-Story Hotel

SITE ADDRESS: N/A

LOCATION: N. Brutscher St. (South of intersection of N. Brutscher St. and E Portland Rd.)

TAX LOT: R3216 01900 & R3216 02002 ← unable to locate ← no City Liens

FILE NO: DR222-0001

ZONE: C-2 (General Commercial)

HEARING DATE: N/A

RECEIVED
MAR 28 REC'D
By

A Copy of the Fairfield Inn Design Review can be found at: DR222-0001 Fairfield Inn | Newberg Oregon

---

✓ Reviewed, no conflict.

_____ Reviewed; recommend denial for the following reasons:

_____ Require additional information to review. (Please list information required)

_____ Meeting requested.

_____ Comments. (Attach additional pages as needed)

Barbara Davis _____ 3/28/2022

Reviewed By: Date:

City of Newberg
Interest In Real Property

Internal Municipality Use Only,
Not Valid for Commercial Title Search

This document serves as constructive notice of the
City of Newberg's interest in the real property identified below.

Property Address 901 N BRUTSCHER ST #B

Zone C-2

Maptaxlot Number 03S02W16 02002

Search performed by **Barbara Davis** of **City of Newberg** on Mar 28, 2022 at 08:42:29 A.M. PDT

Tracking Number: 2088274

Access PIN: 72353

No items found for this property

COMMUNITY DEVELOPMENT
LAND USE APPLICATION REFERRAL

REFERRAL TO: Police Deparment Chief Jeff Kosmicki

The enclosed material has been referred to you for your information and comment. Any comments you wish to make should be returned to the Community Development Department prior to: April 7, 2022. Please refer questions and comments to Doug Rux.

NOTE: Full size plans are available at the Community Development Department Office.

APPLICANT: Hawkins Companies

REQUEST: Fairfield Inn Proposes a 79-Room, 4-Story Hotel

SITE ADDRESS: N/A

LOCATION: N. Brutscher St. (South of intersection of N. Brutscher St. and E Portland Rd.)

TAX LOT: R3216 01900 & R3216 02002

FILE NO: DR222-0001

ZONE: C-2 (General Commercial)

HEARING DATE: N/A

RECEIVED
MAR 30 REC'D
By

A Copy of the Fairfield Inn Design Review can be found at: DR222-0001 Fairfield Inn | Newberg Oregon

✓ Reviewed, no conflict.

_____ Reviewed; recommend denial for the following reasons:

_____ Require additional information to review. (Please list information required)

_____ Meeting requested.

_____ Comments. (Attach additional pages as needed)

Reviewed By: _____ Date: 3/30/22

COMMUNITY DEVELOPMENT
LAND USE APPLICATION REFERRAL

REFERRAL TO: Director of Public Works Russ Thomas

The enclosed material has been referred to you for your information and comment. Any comments you wish to make should be returned to the Community Development Department prior to: April 7, 2022. Please refer questions and comments to Doug Rux.

NOTE: Full size plans are available at the Community Development Department Office.

APPLICANT: Hawkins Companies

REQUEST: Fairfield Inn Proposes a 79-Room, 4-Story Hotel

SITE ADDRESS: N/A

LOCATION: N. Brutscher St. (South of intersection of N. Brutscher St. and E. Portland Rd.)

RECEIVED
APR 5 REC'D
By

TAX LOT: R3216 01900 & R3216 02002

FILE NO: DR222-0001

ZONE: C-2 (General Commercial)

HEARING DATE: N/A

A Copy of the Fairfield Inn Design Review can be found at: DR222-0001 Fairfield Inn | Newberg Oregon

---

✓ Reviewed, no conflict.

_____ Reviewed; recommend denial for the following reasons:

_____ Require additional information to review. (Please list information required)

_____ Meeting requested.

_____ Comments. (Attach additional pages as needed)

_____ 4/5/2022

Reviewed By: Date:

COMMUNITY DEVELOPMENT
LAND USE APPLICATION REFERRAL

REFERRAL TO: Public Works: Maintenance Superintendent Craig Pack

The enclosed material has been referred to you for your information and comment. Any comments you wish to make should be returned to the Community Development Department prior to: April 7, 2022. Please refer questions and comments to Doug Rux.

NOTE: Full size plans are available at the Community Development Department Office.

RECEIVED
APR 4 REC'D
By

APPLICANT: Hawkins Companies

REQUEST: Fairfield Inn Proposes a 79-Room, 4-Story Hotel

SITE ADDRESS: N/A

LOCATION: N. Brutscher St. (South of intersection of N. Brutscher St. and E Portland Rd.)

TAX LOT: R3216 01900 & R3216 02002

FILE NO: DR222-0001

ZONE: C-2 (General Commercial)

HEARING DATE: N/A

A Copy of the Fairfield Inn Design Review can be found at: DR222-0001 Fairfield Inn | Newberg Oregon

---

_____ Reviewed, no conflict.

_____ Reviewed; recommend denial for the following reasons:

_____ Require additional information to review. (Please list information required)

_____ Meeting requested.

X Comments. (Attach additional pages as needed)

- Must have Grease interceptor
- Pool must be shown attached to Sanitary sewer

Reviewed By: _____ Date: 4/4/22

COMMUNITY DEVELOPMENT
LAND USE APPLICATION REFERRAL

REFERRAL TO: Public Works: Maintenance Vance Barton

The enclosed material has been referred to you for your information and comment. Any comments you wish to make should be returned to the Community Development Department prior to: April 7, 2022. Please refer questions and comments to Doug Rux.

NOTE: Full size plans are available at the Community Development Department Office.

APPLICANT: Hawkins Companies

REQUEST: Fairfield Inn Proposes a 79-Room, 4-Story Hotel

SITE ADDRESS: N/A

LOCATION: N. Brutscher St. (South of intersection of N. Brutscher St. and E Portland Rd.)

TAX LOT: R3216 01900 & R3216 02002

FILE NO: DR222-0001

ZONE: C-2 (General Commercial)

HEARING DATE: N/A

RECEIVED APR 4 BY

A Copy of the Fairfield Inn Design Review can be found at: DR222-0001 Fairfield Inn | Newberg Oregon

_____ Reviewed, no conflict.

_____ Reviewed; recommend denial for the following reasons:

_____ Require additional information to review. (Please list information required)

_____ Meeting requested.

__X__ Comments. (Attach additional pages as needed)

Grease interceptor was not indicated in the food preparation area.

Vance Barton — Reviewed By:

4/1/2022 — Date:

COMMUNITY DEVELOPMENT
LAND USE APPLICATION REFERRAL

REFERRAL TO: Public Works: Waste Water Plant April Catan

The enclosed material has been referred to you for your information and comment. Any comments you wish to make should be returned to the Community Development Department prior to: April 7, 2022. Please refer questions and comments to Doug Rux.

NOTE: Full size plans are available at the Community Development Department Office.

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REQUEST: Fairfield Inn Proposes a 79-Room, 4-Story Hotel

SITE ADDRESS: N/A

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ZONE: C-2 (General Commercial)

HEARING DATE: N/A

RECEIVED MAR 31 RECD By

A Copy of the Fairfield Inn Design Review can be found at: DR222-0001 Fairfield Inn | Newberg Oregon

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X Reviewed, no conflict.

_____ Reviewed; recommend denial for the following reasons:

_____ Require additional information to review. (Please list information required)

_____ Meeting requested.

X Comments. (Attach additional pages as needed) Food prep. will need a grease removal device. Oregon Plumbing Specialty Code 1014.0 & Newberg Municipal Code 13.10.080 B3, B17 & E.

AJ Lutz

Reviewed By:

3/31/22

Date:

COMMUNITY DEVELOPMENT
LAND USE APPLICATION REFERRAL

REFERRAL TO: PWM Supervisor Carl Ramseyer

The enclosed material has been referred to you for your information and comment. Any comments you wish to make should be returned to the Community Development Department prior to: April 7, 2022. Please refer questions and comments to Doug Rux.

NOTE: Full size plans are available at the Community Development Department Office.

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SITE ADDRESS: N/A

LOCATION: N. Brutscher St. (South of intersection of N. Brutscher St. and E Portland Rd.)

TAX LOT: R3216 01900 & R3216 02002

FILE NO: DR222-0001

ZONE: C-2 (General Commercial)

HEARING DATE: N/A

A Copy of the Fairfield Inn Design Review can be found at: DR222-0001 Fairfield Inn | Newberg Oregon

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CR Reviewed, no conflict. Need oil separator on drain

_____ Reviewed; recommend denial for the following reasons:

_____ Require additional information to review. (Please list information required)

_____ Meeting requested.

X Comments. (Attach additional pages as needed) grease interceptor

Carl Ramseyer 4/5/22

Reviewed By: Date:

COMMUNITY DEVELOPMENT
LAND USE APPLICATION REFERRAL

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REQUEST:	Fairfield Inn Proposes a 79-Room, 4-Story Hotel
SITE ADDRESS:	N/A
LOCATION:	N. Brutscher St. (South of intersection of N. Brutscher St. & E. Portland Rd.)
TAX LOT:	R3216 01900 & R3216 02002
FILE NO:	DR222-0001
ZONE:	C-2 (General Commercial)
HEARING DATE:	N/A

A Copy of the Fairfield Inn Design Review can be found online at:
https://www.newbergoregon.gov/planning/page/dr222-0001-fairfield-inn

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_____ Reviewed, no conflict.

_____ Reviewed; recommend denial for the following reasons:

_____ Require additional information to review. (Please list information required)

_____ Meeting requested.

✓ Comments. (Attach additional pages as needed)

0806

Reviewed By:

4/8/22

Date:

April 8, 2022

Doug Rux
City of Newberg
414 E. First St.
Newberg, OR 97132

Re: DR222-0001, N. Brutscher St., Newberg, OR 97132
Tax Lot I.D: R3216 01900 & R3216 02002

Dear Doug,

Thank you for the opportunity to review the proposed site plan surrounding the above-named development project. There may be more or less requirements needed based upon the final project design, however, Tualatin Valley Fire & Rescue will endorse this proposal predicated on the following criteria and conditions of approval.

FIRE APPARATUS ACCESS:

1. **FIRE APPARATUS ACCESS ROADS:** Access roads shall be provided for every facility, building, or portion of a building hereafter constructed or moved into or within the jurisdiction. Access roads are not required to be modified for commercial buildings that undergo a change in occupancy, change in use, or conversion from agricultural or equine exempt to non-exempt unless there is a change to the structure's square footage or building footprint. (OFC 503.1.1)

2. **FIRE ACCESS ROADS FOR NON-BUILDING FACILITIES:** Fire apparatus access is required for uses at fixed locations that are deemed as being a "facility" by the Fire Marshal. A "facility" includes exterior storage, processing or filling areas for flammable and combustible substances and hazardous materials; piers and wharves; recreational vehicle, mobile home and manufactured housing parks, sales and storage lots; permanent outdoor assembly venues for gatherings exceeding 1,000 persons; and similar uses. Access to facilities may be modified by the Fire Marshal in accordance with OFC 104.8 based on the specific use, frequency, location and other site conditions. (OFC 503.1.1)

3. **FIRE ACCESS ROAD DISTANCE FROM BUILDINGS:** The access shall extend to within 150 feet of all portions of the exterior wall of the first story of the building as measured by an approved route around the exterior of the building or facility. (OFC 503.1.1)

4. **DEAD ENDS AND ROADS IN EXCESS OF 150 FEET (TURNAROUNDS):** Dead end fire apparatus access roads or roads in excess of 150 feet in length shall be provided with an approved turnaround. (OFC 503.2.5 & Figure D103.1)

5. **ADDITIONAL ACCESS ROADS – COMMERCIAL/INDUSTRIAL HEIGHT:** Buildings exceeding 30 feet in height or three stories in height shall have at least two separate means of fire apparatus access. (D104.1)

6. **ADDITIONAL ACCESS ROADS – COMMERCIAL/INDUSTRIAL SQUARE FOOTAGE:** Buildings or facilities having a gross building area of more than 62,000 square feet shall have at least two approved separate means of fire apparatus access. Exception: Projects having a gross building area of up to 124,000 square feet that have a single approved fire apparatus access road when all buildings are equipped throughout with approved automatic sprinkler systems. (OFC D104.2)

7. **ADDITIONAL ACCESS ROADS – MULTI-FAMILY RESIDENTIAL DEVELOPMENTS:** Projects having more than 100 dwelling units shall be provided with two separate and approved fire apparatus access roads. Exception: Projects having up to 200 dwelling units may have a single approved fire apparatus access road when all buildings, including nonresidential occupancies, are equipped throughout with an approved automatic sprinkler system in accordance with section 903.3.1.1, 903.3.1.2. Projects having more than 200 dwelling units shall be provided with two separate and approved fire apparatus roads regardless of whether they are equipped with an approved automatic sprinkler system. (OFC D106)

8. **AERIAL FIRE APPARATUS ROADS:** Buildings with a vertical distance between the grade plane and the highest roof surface that exceeds 30 feet in height shall be provided with a fire apparatus access road constructed for use by aerial apparatus with an unobstructed driving surface width of not less than 26 feet. For the purposes of this section, the highest roof surface shall be determined by measurement to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of the parapet walls, whichever is greater. Any portion of the building may be used for this measurement, provided that it is accessible to firefighters and is capable of supporting ground ladder placement. (OFC D105.1, D105.2)

9. **AERIAL APPARATUS OPERATIONS:** At least one of the required aerial access routes shall be located within a minimum of 15 feet and a maximum of 30 feet from the building, and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial access road is positioned shall be approved by the Fire Marshal. Overhead utility and power lines shall not be located over the aerial access road or between the aerial access road and the building. (D105.3, D105.4)

10. **MULTIPLE ACCESS ROADS SEPARATION:** Where two access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the area to be served (as identified by the Fire Marshal), measured in a straight line between accesses. (OFC D104.3)

11. **FIRE APPARATUS ACCESS ROAD WIDTH AND VERTICAL CLEARANCE:** Fire apparatus access roads shall have an unobstructed driving surface width of not less than 20 feet (26 feet adjacent to fire hydrants (OFC D103.1)) and an unobstructed vertical clearance of not less than 13 feet 6 inches. (OFC 503.2.1 & D103.1)

12. **NO PARKING SIGNS:** Where fire apparatus roadways are not of sufficient width to accommodate parked vehicles and 20 feet of unobstructed driving surface, “No Parking” signs shall be installed on one or both sides of the roadway and in turnarounds as needed. Signs shall read “NO PARKING - FIRE LANE” and shall be installed with a clear space above grade level of 7 feet. Signs shall be 12 inches wide by 18 inches high and shall have red letters on a white reflective background. (OFC D103.6)

13. **NO PARKING:** Parking on emergency access roads shall be as follows (OFC D103.6.1-2):
    1. 20-26 feet road width – no parking on either side of roadway
    2. 26-32 feet road width – parking is allowed on one side
    3. Greater than 32 feet road width – parking is not restricted

    Note: For specific widths and parking allowances, contact the local municipality.

14. **PAINTED CURBS:** Where required, fire apparatus access roadway curbs shall be painted red (or as approved) and marked “NO PARKING FIRE LANE” at 25 foot intervals. Lettering shall have a stroke of not less than one inch wide by six inches high. Lettering shall be white on red background (or as approved). (OFC 503.3)

15. **FIRE APPARATUS ACCESS ROADS WITH FIRE HYDRANTS:** Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet and shall extend 20 feet before and after the point of the hydrant. (OFC D103.1)

16. **TURNOUTS:** Where access roads are less than 20 feet and exceed 400 feet in length, turnouts 10 feet wide and 30 feet long may be required and will be determined on a case by case basis. (OFC 503.2.2)

17. **SURFACE AND LOAD CAPACITIES:** Fire apparatus access roads shall be of an all-weather surface that is easily distinguishable from the surrounding area and is capable of supporting not less than 12,500 pounds point load (wheel load) and 75,000 pounds live load (gross vehicle weight). Documentation from a registered engineer that the final construction is in accordance with approved plans or the requirements of the Fire Code may be requested. (OFC 503.2.3)

18. **TURNING RADIUS:** The inside turning radius and outside turning radius shall not be less than 28 feet and 48 feet respectively, measured from the same center point. (OFC 503.2.4 & D103.3)

19. **ACCESS ROAD GRADE:** Fire apparatus access roadway grades shall not exceed 15%. Alternate methods and materials may be available at the discretion of the Fire Marshal (for grade exceeding 15%).

20. **ANGLE OF APPROACH/GRADE FOR TURNAROUNDS:** Turnarounds shall be as flat as possible and have a maximum of 5% grade with the exception of crowning for water run-off. (OFC 503.2.7 & D103.2)

21. **ANGLE OF APPROACH/GRADE FOR INTERSECTIONS:** Intersections shall be level (maximum 5%) with the exception of crowning for water run-off. (OFC 503.2.7 & D103.2)

22. **AERIAL APPARATUS OPERATING GRADES:** Portions of aerial apparatus roads that will be used for aerial operations shall be as flat as possible. Front to rear and side to side maximum slope shall not exceed 10%.

23. **GATES:** Gates securing fire apparatus roads shall comply with all of the following (OFC D103.5, and 503.6):
    1. Minimum unobstructed width shall be not less than 20 feet (or the required roadway surface width).
    2. Gates shall be set back at minimum of 30 feet from the intersecting roadway or as approved.
    3. Electric gates shall be equipped with a means for operation by fire department personnel
    4. Electric automatic gates shall comply with ASTM F 2200 and UL 325.

24. **ACCESS DURING CONSTRUCTION:** Approved fire apparatus access roadways shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. Temporary address signage shall also be provided during construction. (OFC 3309 and 3310.1)

25. **TRAFFIC CALMING DEVICES:** Shall be prohibited on fire access routes unless approved by the Fire Marshal. (OFC 503.4.1). Traffic calming measures linked here: http://www.tvfr.com/DocumentCenter/View/1578

FIREFIGHTING WATER SUPPLIES:

26. **COMMERCIAL BUILDINGS – REQUIRED FIRE FLOW:** The minimum fire flow and flow duration shall be determined in accordance with OFC Table B105.2. The required fire flow for a building shall not exceed the available GPM in the water delivery system at 20 psi residual. (OFC B105.3)
    Note: OFC B106, Limiting Fire-Flow is also enforced, except for the following:
    - The maximum needed fire flow shall be 3,000 GPM, measured at 20 psi residual pressure.
    - Tualatin Valley Fire & Rescue does not adopt Occupancy Hazards Modifiers in section B105.4-B105.4.1

27. **FIRE FLOW WATER AVAILABILITY:** Applicants shall provide documentation of a fire hydrant flow test or flow test modeling of water availability from the local water purveyor if the project includes a new structure or increase in the floor area of an existing structure. Tests shall be conducted from a fire hydrant within 400 feet for commercial projects, or 600 feet for residential development. Flow tests will be accepted if they were performed within 5 years as long as no adverse modifications have been made to the supply system. Water availability information may not be required to be submitted for every project. (OFC Appendix B)

28. **WATER SUPPLY DURING CONSTRUCTION:** Approved firefighting water supplies shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. (OFC 3312.1)

FIRE HYDRANTS:

29. **FIRE HYDRANTS – COMMERCIAL BUILDINGS:** Where a portion of the building is more than 400 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the building, on-site fire hydrants and mains shall be provided. (OFC 507.5.1)
    - This distance may be increased to 600 feet for buildings equipped throughout with an approved automatic sprinkler system.
    - The number and distribution of fire hydrants required for commercial structure(s) is based on Table C105.1, following any fire-flow reductions allowed by section B105.3.1. Additional fire hydrants may be required due to spacing and/or section 507.5 of the Oregon Fire Code.

30. **FIRE HYDRANT(S) PLACEMENT:** (OFC C104)
    - Existing hydrants in the area may be used to meet the required number of hydrants as approved. Hydrants that are up to 600 feet away from the nearest point of a subject building that is protected with fire sprinklers may contribute to the required number of hydrants. (OFC 507.5.1)
    - Hydrants that are separated from the subject building by railroad tracks shall not contribute to the required number of hydrants unless approved by the Fire Marshal.
    - Hydrants that are separated from the subject building by divided highways or freeways shall not contribute to the required number of hydrants. Heavily traveled collector streets may be considered when approved by the Fire Marshal.
    - Hydrants that are accessible only by a bridge shall be acceptable to contribute to the required number of hydrants only if approved by the Fire Marshal.

31. **PRIVATE FIRE HYDRANT IDENTIFICATION:** Private fire hydrants shall be painted red in color. Exception: Private fire hydrants within the City of Tualatin shall be yellow in color. (OFC 507)

32. **FIRE HYDRANT DISTANCE FROM AN ACCESS ROAD:** Fire hydrants shall be located not more than 15 feet from an approved fire apparatus access roadway unless approved by the Fire Marshal. (OFC C102.1)

33. **REFLECTIVE HYDRANT MARKERS:** Fire hydrant locations shall be identified by the installation of blue reflective markers. They shall be located adjacent and to the side of the center line of the access roadway that the fire hydrant is located on. In the case that there is no center line, then assume a center line and place the reflectors accordingly. (OFC 507)

34. **PHYSICAL PROTECTION:** Where fire hydrants are subject to impact by a motor vehicle, guard posts, bollards or other approved means of protection shall be provided. (OFC 507.5.6 & OFC 312)

35. **CLEAR SPACE AROUND FIRE HYDRANTS:** A 3-foot clear space shall be provided around the circumference of fire hydrants. (OFC 507.5.5)

36. **FIRE DEPARTMENT CONNECTION (FDC) LOCATIONS:** FDCs shall be located within 100 feet of a fire hydrant (or as approved). Hydrants and FDC's shall be located on the same side of the fire apparatus access roadway or drive aisle, fully visible, and recognizable from the street or nearest point of the fire department vehicle access or as otherwise approved. (OFC 912.2.1 & NFPA 13)
    - Fire department connections (FDCs) shall normally be located remotely and outside of the fall-line of the building when required. FDCs may be mounted on the building they serve, when approved.
    - FDCs shall be plumbed on the system side of the check valve when sprinklers are served by underground lines also serving private fire hydrants.

BUILDING ACCESS AND FIRE SERVICE FEATURES

37. **EMERGENCY RESPONDER RADIO COVERAGE:** In new buildings where the design reduces the level of radio coverage for public safety communications systems below minimum performance levels, a distributed antenna system, signal booster, or other method approved by TVF&R and Washington County Consolidated Communications Agency shall be provided. (OFC 510, Appendix F, and OSSC 915) http://www.tvfr.com/DocumentCenter/View/1296.
    - Emergency responder radio system testing and/or system installation is required for this building. Please contact me (using my contact info below) for further information including an alternate means of compliance that is available. If the alternate method is preferred, it must be requested from TVF&R prior to issuance of building permit.
    - Testing shall take place after the installation of all roofing systems; exterior walls, glazing and siding/cladding; and all permanent interior walls, partitions, ceilings, and glazing.

38. **KNOX BOX:** A Knox Box for building access may be required for structures and gates. See Appendix B for further information and detail on required installations. Order via www.tvfr.com or contact TVF&R for assistance and instructions regarding installation and placement. (OFC 506.1)

39. **FIRE PROTECTION EQUIPMENT IDENTIFICATION:** Rooms containing controls to fire suppression and detection equipment shall be identified as "Fire Control Room." Signage shall have letters with a minimum of 4 inches high with a minimum stroke width of 1/2 inch, and be plainly legible, and contrast with its background. (OFC 509.1)

40. **PREMISES IDENTIFICATION:** New and existing buildings shall have approved address numbers; building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property, including monument signs. These numbers shall contrast with their background. Numbers shall be a minimum of 4 inches high with a minimum stroke width of 1/2 inch. (OFC 505.1)

If you have questions or need further clarification, please feel free to contact me at **(503)849-7516.**

Sincerely,

Ty Darby

Ty Darby
Deputy Fire Marshal II

Cc: file

Attachment 3: Revised Site Plan Concept

Attachment 3

SITE PLAN

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

REGISTERED PROFESSIONAL ENGINEER
ANDREW R. CHERNISHOV
OREGON JULY 09, 2010
PRELIMINARY
EXPIRES 12/31/2021

H B H CONSULTING ENGINEERS
501 E First Street
Newberg, Oregon 97132
503/554-9553 ■ fax 503/537-9554
email: mail@hbh-consulting.com

Designed By: ARB | Drawn By: ARB | Checked By: ARC | Submittal No: PRELIMINARY
File: L:\2020-00614-Design\DWG\2 - Site Plan.dwg

REV.	DATE	DESCRIPTION	BY

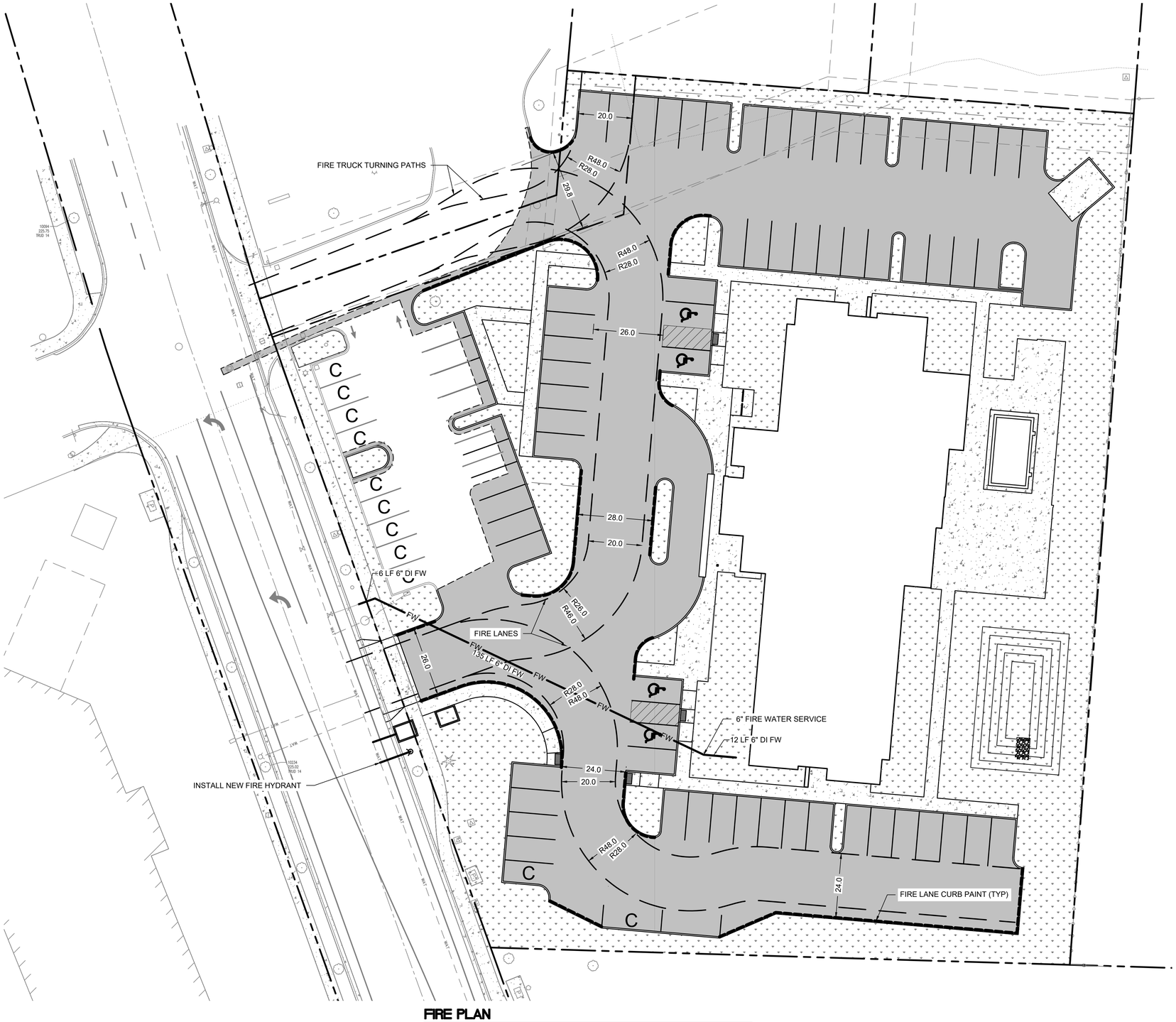
0" 1"
IF THIS LINE IS NOT 1 INCH SCALE IS NOT AS SHOWN

HAWKINS COMPANIES LLC
855 BROAD ST. SUITE 300, BOISE ID 83702

NEWBERG FAIRFIELD INN
PARCELS 1900 + 2002, NEWBERG OR 97132

SITE PLAN

Sheet No: C1 | 4 of 11
Date: 8/18/2022
2020-006



FIRE PLAN

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

REGISTERED PROFESSIONAL ENGINEER
78347PE
OREGON
JANUARY 29, 2010
ANDREW R. CHERNISHOV
EXPIRES 12/31/2021

PRELIMINARY

H B H CONSULTING ENGINEERS
501 E First Street
Newberg, Oregon 97132
503/554-9553 ■ fax 503/537-9554
email: mail@hbh-consulting.com

Designed By: ARB | Drawn By: ARB | Checked By: ARC | Submittal No: PRELIMINARY
File: L:\2020-00604-Design\DWG\6 - Fire Plan.dwg

REV.	DATE	DESCRIPTION	BY

0" 1" IF THIS LINE IS NOT 1 INCH SCALE IS NOT AS SHOWN

HAWKINS COMPANIES LLC
855 BROAD ST., SUITE 300, BOISE ID 83702

NEWBERG FAIRFIELD INN
PARCELS 1900 + 2002, NEWBERG OR 97132

FIRE PLAN

Sheet No. F1
Date 8/18/2022
12 of 11

2020-006

Attachment 4: Ingress/Egress Easement Document

RECORDING REQUESTED BY,
AND WHEN RECORDED RETURN TO:

Newberg Veterinary Hospital Bldg LLC
3716 E. Portland Road
Newberg, OR 97132

OFFICIAL YAMHILL COUNTY RECORDS
KERI HINTON, COUNTY CLERK

202211731

00643069202200117310110113

$131.00

08/25/2022 11:48:55 AM

DMR-EDMR Cnt=1 Stn=3 SUTTONS
$55.00 $5.00 $11.00 $60.00

EASEMENT AGREEMENT

This EASEMENT AGREEMENT (this "**Agreement**") dated August 25, 2022 is made by Werth Family LLC ("**Grantor**") and Newberg Veterinary Hospital Bldg LLC ("**Grantee**"), with respect to the following facts:

RECITALS

A. Grantor owns certain real property located in Yamhill County, Oregon, which is more particularly described on Exhibit A attached hereto ("**Burdened Property**").

B. Grantee owns certain real property located in Yamhill County, Oregon, adjacent to the Burdened Property and which is more particularly described on Exhibit B attached hereto ("**Benefited Property**").

C. Grantor and Grantee mutually desire that Grantor grant to Grantee an easement across the Burdened Property for the benefit of the Benefited Property on the terms and conditions of this Agreement.

AGREEMENT

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Grantor and Grantee agree as follows:

1. ***Grant of Easement.*** Grantor hereby grants a non-exclusive easement (the "**Easement**") to the portion of the Burdened Property described and depicted in Exhibit C attached hereto (the "**Easement Area**"), appurtenant to and for the benefit of the Benefited Property. A portion of the Easement Area is currently improved with the southern half of an access road (the "**Road**") and the remainder of the Easement Area is currently unimproved (the "**Extension**"). The Benefited Property already is benefited by an easement to the northern half of the Road pursuant to that certain instrument recorded January 5, 1996 as Instrument No. 1996-00256, Deed and Mortgage Records of Yamhill County.

2. ***Termination of Prior Easement.*** Grantee hereby terminates and quitclaims to Grantor any and all right, title and interest of Grantee and the Benefited

RECORDING REQUESTED BY,
AND WHEN RECORDED RETURN TO:

Newberg Veterinary Hospital Bldg LLC
3716 E. Portland Road
Newberg, OR 97132

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2. ***Termination of Prior Easement.*** Grantee hereby terminates and quitclaims to Grantor any and all right, title and interest of Grantee and the Benefited

Property in and to Easement #4 as set forth in that certain Easement Agreement recorded November 5, 1996 as Instrument No. 1996-18268, Deed and Mortgage Records of Yamhill County. Any and all interest of Grantee in the foregoing Easement Agreement, other than Easement #4, is not affected hereby.

3. ***Condition Precedent; Purpose.*** Grantee shall make no use of the Easement, nor construct any improvements on the Extension, unless and until vehicular access to the Benefited Property from E. Portland Road is terminated, materially restricted or rendered impractical for commercial use of the Benefited Property, through no intent or contributory fault of Grantee or its agents. A "material restriction" includes, without limitation, condemnation affecting any existing vehicular access to the Benefited Property or a conveyance thereof upon threat of termination. Thereafter, Grantee may: (a) use the Easement Area for vehicular ingress and egress to and from a single commercial business on the Benefited Property between Brutscher Street and the Benefited Property; and (b) at its sole expense construct a driveway or access road on the Extension to connect the Road to the Benefited Property.

4. ***Term.*** The Easement shall be perpetual. If the Easement terminates for any reason, Grantee shall: (a) remove all improvements from the Extension constructed by Grantee and restore the Extension to its prior condition within thirty (30) days unless otherwise requested by Grantor; and (b) execute and record a quit claim deed conveying Grantee's interest in the Easement Area to Grantor.

5. ***Use by Grantor.*** Grantor, for themselves, their successors and assigns, reserves the right at all times and for any purpose to go upon or use the Easement Area in a manner that will not interfere with the rights granted to Grantee hereunder.

6. ***Maintenance and Repair.*** Prior to satisfaction of the condition precedent and construction by Grantee of the improvements described in paragraph 2, repair and maintenance of the Easement Area shall be solely the responsibility of Grantor and any other third parties with rights to use the Easement Area. Upon satisfaction of the condition precedent and construction of Grantee's improvements on the Extension, Grantee shall be responsible for: (a) a proportionate share of the cost to maintain the Road in proportion to the relative use of the Road by Grantee and its agents and invitees; and (b) all maintenance of the Extension and the improvements thereon, in an attractive and well-kept manner and in compliance with all applicable laws, rules and regulations.

7. ***Taxes.*** Grantor shall timely pay all property taxes and assessments associated with the Easement Area before delinquency. In the event that Grantor does not do so, then Grantee may do so and Grantor shall reimburse Grantee within thirty (30) days after receipt of proof of payment.

8. ***Indemnity.*** Grantee shall, jointly and severally, indemnify, defend and hold Grantor harmless from and against any and all claims, losses, liabilities, damages, costs and expenses (including reasonable attorney fees) arising out of the entry onto the Easement Area by Grantee or persons on the Easement Area with the permission of Grantee, but excluding Grantor or Grantor's agents or invitees. Grantee shall name

Grantor as additional insureds or loss payees on its liability insurance coverage and shall provide proof of the same to Grantor upon request.

9. ***Liens***. Grantee shall pay when due all claims for labor or material furnished to the Easement Area on behalf of Grantee, and shall not permit any mechanic's, materialman's or similar liens to attach to the Easement Area or the Burdened Property arising out of work performed on behalf of Grantee. Grantee shall give Grantor at least twenty (20) days' prior written notice of the commencement of any work on the Easement Area that could result in such a lien, so that Grantor may post notice of non-responsibility.

10. ***Default***. Upon any default of this Agreement by Grantee that is not cured within thirty (30) days after written notice thereof from Grantor to Grantee, or such longer period as shall be reasonable if the cure is commenced within such thirty (30) day period but not to exceed ninety (90) days, Grantor shall have the right to pursue any and all available remedies, including without limitation a claim for specific performance.

11. ***Notice***. Notice to Grantor hereunder may be delivered at the Burdened Property and notice to Grantee hereunder may be delivered at the Benefited Property, by personal delivery, overnight courier or first class mail. Notice is deemed delivered upon personal delivery, one day after shipment by overnight courier, or three business days after deposit in the mail.

12. ***Binding Effect***. The Easement runs with the land, burdening the Burdened Property and benefiting the Benefited Property, and the rights and obligations hereunder shall inure to the benefit of and be binding upon the personal representatives, successors and assigns of the parties.

13. ***No Adverse Possession***. Grantee, for itself and its successors and assigns, hereby irrevocably waives or disclaims any claim to adverse possession of the Easement Area or any portion thereof, by virtue of the existence of the Easement or this Agreement or the entry onto or use of the Easement Area by or on behalf of Grantee.

14. ***Merger; Modifications***. This Agreement contains all agreements of the parties with respect to any matter mentioned herein. No prior agreement or understanding pertaining to any such matter shall be effective. This Agreement may be modified or amended only by a writing signed by the parties in interest.

15. ***Choice of Law***. This Agreement shall be governed by the laws of the State of Oregon, and any dispute arising hereunder shall be resolved in the courts of Yamhill County, Oregon.

16. ***Attorney Fees***. If any action is brought to enforce the terms of this Agreement or to declare rights under this Agreement, including any action in bankruptcy court, the prevailing party at any such action, on trial or appeal, shall be entitled to its reasonable attorney fees to be paid by the losing party as fixed by the court.

17. ***No Public Dedication***. Nothing contained in this Agreement shall be deemed a gift or dedication of any portion of the Easement Area to the general public or

for any public purpose whatsoever, and Yamhill County shall have no responsibility to maintain or otherwise service the Easement herein described.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

Grantor:

Werth Family LLC

By: Dean C Werth
Name: DEAN E WERTH
Title: MEMBER

Grantee:

Newberg Veterinary Hospital Bldg LLC

By:
Gregory D. Fisher
Title: Authorized Member

STATE OF OREGON)
) SS.
COUNTY OF Yamhill)

The foregoing instrument was acknowledged before me this 25th day of August, 2022, by DEAN WERTH the MEMBER of Werth Family LLC, on behalf of the company.

Notary Public for Oregon
My commission expires 08/02/2026

OFFICIAL STAMP
GYPSY DENISE PROCTOR
NOTARY PUBLIC - OREGON
COMMISSION NO. 1026856
MY COMMISSION EXPIRES AUGUST 02, 2026

STATE OF OREGON)

) SS.

COUNTY OF YAMHILL)

The foregoing instrument was acknowledged before me this 24th day of August, 2022, by Gregory D. Fisher, the authorized Member of Newberg Veterinary Hospital Bldg LLC, on behalf of the company.

OFFICIAL STAMP
LEONOR SAMANIEGO
NOTARY PUBLIC - OREGON
COMMISSION NO. 1012089
MY COMMISSION EXPIRES MAY 02, 2025

Notary Public for Oregon
My commission expires May 2, 2025

STATE OF OREGON)

) SS.

COUNTY OF Yamhill)

The foregoing instrument was acknowledged before me this 24 day of August, 2022, by Gregory D. Fisher, the Authorized Member of Newberg Veterinary Hospital Bldg LLC, on behalf of the company.

OFFICIAL STAMP
LEONOR SAMANIEGO
NOTARY PUBLIC - OREGON
COMMISSION NO. 1012089
MY COMMISSION EXPIRES MAY 02, 2025

Notary Public for Oregon
My commission expires May 2, 2025

EXHIBIT A
BURDENED PROPERTY

Real property in the County of Yamhill, State of Oregon, described as follows:

Parcel I:
A tract of land in Section 16, Township 3 South, Range 2 West of the Willamette Meridian, Yamhill County, Oregon, described as follows:

Beginning at an iron rod in the West line of that certain tract of land described in deed to Newberg Veterinary Clinic recorded in Film Volume 152, Page 997, Yamhill County deed records that is South 02°34'57" West, 219.36 feet from the Northwest corner of said Clinic tract; thence South 87°21'16" East, 215.25 feet (passing an iron rod at 116.39 feet) to an iron rod in the East line of said Clinic tract; thence South 02°53'30" West, 319.96 feet to an iron rod at the Southeast corner of said Clinic tract; thence South 89°51' West 215.38 feet to an iron rod at the Southwest corner of said Clinic tract; thence North 02°34'57" East, 331.59 feet to the point of beginning Together with easement for ingress and egress, as reserved in deed recorded November 5, 1996 as Instrument No. 199618267, Deed and Mortgage Records.

Parcel II:
A parcel of property located in the Sebastian Brutscher Donation Land Claim No. 51, Township 3 South, Range 2 West of the Willamette Meridian, Yamhill County, Oregon, described as follows:

Commencing at the Southeast corner of said Brutscher Donation Land Claim; thence North 00°50'10" East along the East line of said Donation Land Claim, a distance of 2536.79 feet to the Northeast corner of the South half of said Donation Land Claim; thence North 89°13'14" West along the North line of the South half of said Donation Land Claim, a distance of 4005.30 feet to a point on the East line of Lot 2 of Minor Partition No. 1990-61, Yamhill County Surveys and true point of beginning; thence South 04°03'33" West along said East line, a distance of 143.50 feet to a point on the West right-of-way line of Brutscher Street, being 30.00 feet from, when measured at right angles to the centerline of said Brutscher Street; thence South 20°39'45" East along said right-of-way line a distance of 10.86 feet to a point on a 365.00 foot radius curve to the right; thence continuing along the right-of-way line around said 365.00 foot radius curve to the right (the long chord of which bears South 10°49'52" East a distance of 124.64 feet) a distance of 125.26 feet; thence South 01°00'00" East along said right-of-way line a distance of 135.17 feet; thence South 89°00'00" West a distance of 52.13 feet; thence North 79°55'22" West a distance of 118.95 feet; thence North 22°55'22" West a distance of 46.29 feet to a point on the South line of the aforementioned Lot 2 of Minor Partition No. 1990-61; thence North 67°04'37" East along said South line a distance of 40.00 feet to the Southeast corner of Lot 1 of Minor Partition No.. 1991-81, Yamhill County Surveys; thence North 22°55'22" West along the East line of said Lot 1, a distance of 453.02 feet to an angle point; thence North 01°40'12" West continuing along the East line of said Lot 1, a distance of 26.82 feet to a point on the South line of a 44.00 foot private road easement as shown on Minor Partition No. 1991-81, Yamhill County Surveys; thence North 67°04'37" East along the South line of said private road easement and the Easterly extension thereof, a distance of 249.29 feet to a point on the East line of Brutscher Street; thence North 20°11'09" West along said East line of Brutscher Street a distance of 19.40 feet to a point on a 570.00 foot radius curve to the right; thence around said 570.00 foot radius curve to the right(the long chord of which bears North 19°29'34" West a distance of 13.79 feet) a distance of 13.79 feet to the Southwest corner of that parcel of property conveyed to Commercial Bank by document recorded as Fee No. 199600253, Yamhill County Deed Records; thence North 69°48'59" East along the South line of said Commercial Bank parcel a distance of 116.94 feet to the East line of aforementioned Lot 2 of Minor Partition No. 1990-61; thence South 04°03'33" West along said East line a distance of 280.67 feet to the true point of beginning.

Except the following described parcel:

A parcel of property in the Sebastian Brutscher Donation Land Claim in Section 16, Township 3 South, Range 2 West of the Willamette Meridian in Yamhill County, Oregon described as follows: Commencing at

the Northwest corner of said Brutscher Donation Land Claim; thence South 00°43'22" West along the West line of said Brutscher Donation Land Claim, 276.55 feet to the Northeast corner of the Everest Donation Land Claim; thence South 00°55'25" West, along said West line, 2749.19 feet; thence South 89°04'35" East, 46.42 feet to the East line of Springbrook Road as conveyed to the State of Oregon by deed recorded in Volume 23, at Page 400 of Yamhill County Records; thence South 89°04'35" East, 181.58 feet; thence South 22°55'23" East, 346.71 feet; thence North 67°04'37" East, 1087.74 feet; thence North 22°55'22" West, 453.02 feet; thence North 01°40'12" West, 26.82 feet; thence North 67°04'37" East, 189.22 feet to the true point of beginning; thence North 67°04'37" East, along the South edge of Brutscher Road, 60.07 feet; thence South 20°39'45" East 222.74 feet to the East line of Lot 2 as shown on that Minor Partition recorded as No. 1990-61 of Yamhill County records; thence South 04°03'33" West along said, East line 143.52 feet to a point which bears South 20°39'45" East from the true point of beginning; thence North 20°39'45" West 350.74 feet to the true point of beginning.

And except the following described parcel

A portion of that tract of land as described in Instrument No. 199919459, Yamhill County Deed Records, said property being located in the Sebastian Brutscher D.L.C. No. 51 and the Southwest one-quarter of Section 16, Township 3 South, Range 2 West, Willamette Meridian, City of Newberg, Yamhill County, Oregon, being more particularly described as follows:

Beginning at the most northerly corner of Parcel 1, Partition Plat 2004-24, Yamhill County Plat Records, thence along the northerly line of said Parcel 1, South 22°55'22" East a distance of 46.29 feet; thence South 79°55'22" East a distance of 32.00 feet to a point of non-tangential curvature, said point being the true point of beginning; thence leaving said northerly line, along the arc of a 60.00 foot radius curve to the right, an arc distance of 54.75 feet, through a central angle of 52°16'55" (the long chord of which bears North 62°51'32" East a distance of 52.87 feet) to a point of tangency; thence North 89°00'00" East a distance of 71.00 feet to a point of curvature; thence along the arc of a 19.00 foot radius curve to the left, an arc distance of 29.85 feet, through a central angle of 90°00'00" (the long chord of which bears North 44°00'00" East a distance of 26.87 feet) to the West right-of-way line of Brutscher Street, 30.00 feet Westerly of, when measured at right angles to, the centerline of said street; thence along said west right-of-way line South 01°00'00" East a distance of 59.00 feet to the most Easterly Northeast corner of said Parcel 1; thence along the North line of said Parcel 1, South 89°00'00" West a distance of 52.13 feet; thence continuing along said North line, North 79°55'22" West a distance of 86.95 feet to the true point of beginning.

NOTE: This legal description was created prior to January 1, 2008.

EXHIBIT B
BENEFITED PROPERTY

A tract of land in Section 16, Township 3 South, Range 2 West of the Willamette Meridian, Yamhill County, Oregon, described as follows:

BEGINNING at an iron rod in the Southerly line of Pacific Highway 99W at the Northwest corner of that certain tract of land described in deed to the Newberg Veterinary Clinic recorded in Film Volume 152, Page 997, Yamhill County Deed Records; thence South 02°54'50" West, 219.47 feet along the West line of said Clinic tract; thence South 87°05'10" East, 116.30 feet; thence North 02°54'50" East, 289.31 feet to the South line of Pacific Highway 99W; thence South 61°55'40" West, 135.66 feet to the point of beginning.

Subject to and including an easement for road and utilities purposes 30 feet in width, being 15 feet each side of the following described centerline:

BEGINNING at a point in the South line of Pacific Highway 99W that is North 61°55'40" East, 135.66 feet from an iron rod at the Northwest corner of said Clinic tract; thence South 02°54'50" West, 289.31 feet.

Including an easement for road and utilities purposes described as follows:

BEGINNING at a point in the South line of Pacific Highway 99W that is North 61°55'40" East, 135.66 feet from an iron rod at the Northwest corner of said Clinic tract; thence North 61°55'40" East, 115.16 feet along the South line of said Pacific Highway 99W to an iron rod at the Northeast corner of said Clinic tract; thence South 02°53'30" West, 79.98 feet along the East line of said Clinic tract; thence South 61°55'40" West, 115.20 feet; thence North 02°54'50" East, 80.00 feet to the point of beginning.

AKS ENGINEERING & FORESTRY, LLC
12965 SW Herman Road, Suite 100, Tualatin, OR 97062
P: (503) 563-6151 | www.aks-eng.com
AKS Job #6113-01
OFFICES IN: BEND, OR - KEIZER, OR - TUALATIN, OR - VANCOUVER, WA

EXHIBIT C

Access Easement Description

A tract of land located in the Southwest One-Quarter of Section 16, Township 3 South, Range 2 West, Willamette Meridian, City of Newberg, Yamhill County, Oregon, and being more particularly described as follows:

Commencing at the northwesterly corner of Parcel 2 of Partition Plat 97-52, Yamhill County Plat Records, also being on the easterly right-of-way line of Brutscher Street (30.00 feet from centerline); thence along said easterly right-of-way line, North 19°43'19" West 222.74 feet; thence continuing along said easterly right-of-way line, North 19°14'54" West 18.19 feet to the Point of Beginning; thence continuing along said easterly right-of-way line, North 19°14'54" West 1.21 feet; thence continuing along said easterly right-of-way line on a curve to the right with a Radius of 570.00 feet, a Delta of 01°23'10", a Length of 13.79 feet, and a Chord of North 18°33'19" West 13.79 feet the southwesterly corner of Instrument Number 200623743, Records of Yamhill County; thence along the southerly line of said deed, North 70°45'23" East 116.94 feet to the southeasterly corner of said deed; thence along the easterly line of said deed, North 04°59'58" East 50.81 feet to the southeasterly corner of Instrument Number 201309921, Records of Yamhill County; thence along the southerly line of said deed, South 85°03'04" East 25.50 feet to a line which is parallel with and 25.50 feet easterly of, when measured at right angles to, the easterly line of said Instrument Number 200623743; thence along said parallel line, South 04°59'58" West 55.80 feet to a line which is parallel with and 15.00 feet southerly of, when measured at right angles to, the southerly line of said Instrument Number 200623743; thence along said parallel line, South 70°45'23" West 138.32 feet to the Point of Beginning.

The above described tract of land contains 3,274 square feet, more or less.

Bearings for this description are based on State Plane Grid bearing, Oregon State Plane, North Zone 3601, NAD83(2011) Epoch: 2010.0000. Distances shown are International Foot ground values.

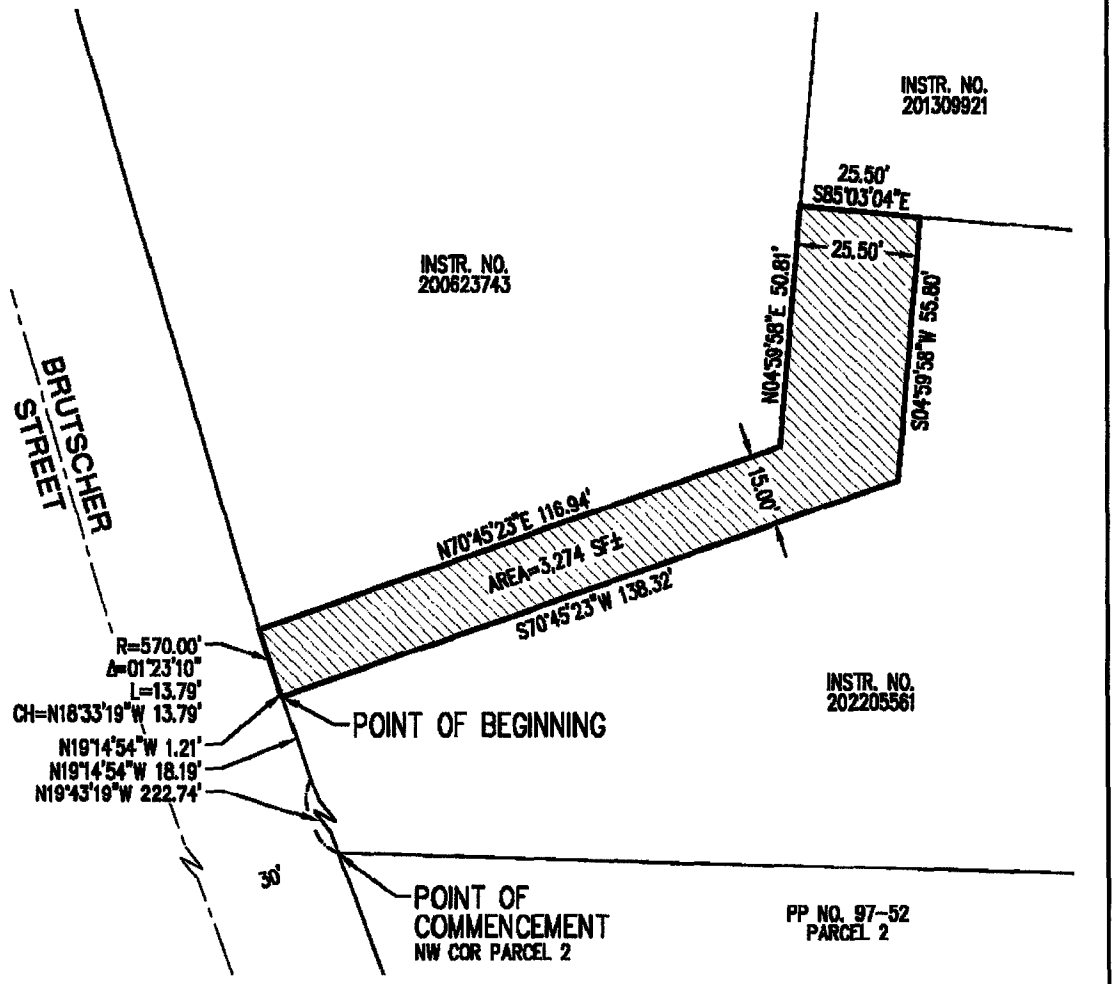
8/22/2022

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JANUARY 9, 2007
NICK WHITE
70652LS
RENEWS: 6/30/24

EXHIBIT C

A TRACT OF LAND LOCATED IN THE SOUTHWEST 1/4 OF SECTION 16, TOWNSHIP 3 SOUTH, RANGE 2 WEST, WILLAMETTE MERIDIAN, CITY OF NEWBERG, YAMHILL COUNTY, OREGON



8/22/2022

REGISTERED PROFESSIONAL LAND SURVEYOR

OREGON
JANUARY 9, 2007
NICK WHITE
70652LS
RENEWS: 6/30/24

PREPARED FOR
ESCAPE LODGING LLC
P. O. BOX 1037
CANNON BEACH, OR 97110

SCALE: 1"=30 FEET

30 0 6 15 30

N

ACCESS EASEMENT MAP

EXHIBIT C

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: WCB
CHKD: NSW
AKS JOB: 6113-01

DWG: 6113-01 20220822 EXB | EXB1

042883\00002\13714293v5

Attachment 5: Termination of Easement Document

After recording, return to:
Campbell & Popkin, LLC
1580 N. Roosevelt Drive
Seaside, OR 97138

Send future tax statements to:
As to Parcel 1:
Werth Family LLC
3330 SW 70th Ave.
Portland, OR 97225

As to Parcel 2:
Newberg Veterinary Hospital Building, LLC
3716 E. Portland Road
Newberg, OR 97132

As to Parcel 3:
Marion E. Wardin, Trustee
Marion E. Wardin Survivors Trust
21510 SW Johnson Road
West Linn, OR 97068

OFFICIAL YAMHILL COUNTY RECORDS
KERI HINTON, COUNTY CLERK

202211730

$91.00

00643068202200117300030033

08/25/2022 11:48:55 AM

DMR-EDMR Cnt=1 Stn=3 SUTTONS
$15.00 $5.00 $11.00 $60.00

TERMINATION OF EASEMENT

Werth Family Investment, LLC, are the owners of PARCEL 1, **Newberg Veterinary Hospital Building, LLC** are the owners of PARCEL 2, and **Marion E. Wardin, Trustee of the Marion E. Wardin Survivors Trust** is the owner of PARCEL 3, (collectively "Parties"). The properties owned by the Parties are described below. Said Parcels are burdened and benefitted by multiple easements described in Instrument No. 199618268 ("Multiple Easements"). The Parties hereby terminate and release ONLY Easement #4 contained in the Multiple Easements ("E4"), so that the burdened properties are no longer subject to E4 and the benefitted properties no longer have the easement rights granted in E4. The remaining easements contained the Multiple Easements remain in full force and effect.

PARCEL 1: As legally described in Instrument No.: 202205561 in the deed records of Yamhill County, Oregon.

Situs Address: Vacant Land, Adj to 3716 E. Portland Road, Newberg, OR 97132
Parcel: 29132 Account: R321601910

PARCEL 2: As legally described in Instrument No.: 201309921 in the deed records of Yamhill County, Oregon.

Situs Address: 3716 E. Portland Road, Newberg, OR 97132
Parcel: 493006 Account: R321601910

PARCEL 3: As legally described in Instrument No.: 202017329 in the deed records of Yamhill County, Oregon.

Situs Address: Vacant Land, Adj to 3716 E. Portland Road, Newberg, OR 97132
Parcel: 506734 Account: R321601911

Visual description of the easement being terminated is attached as Exhibit A.

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

Dollar consideration for this transfer: $0.00. Transfer is for other valuable consideration

After recording, return to:
Campbell & Popkin, LLC
1580 N. Roosevelt Drive
Seaside, OR 97138

Send future tax statements to:
As to Parcel 1:
Werth Family LLC
3330 SW 70th Ave.
Portland, OR 97225

As to Parcel 2:
Newberg Veterinary Hospital Building, LLC
3716 E. Portland Road
Newberg, OR 97132

As to Parcel 3:
Marion E. Wardin, Trustee
Marion E. Wardin Survivors Trust
21510 SW Johnson Road
West Linn, OR 97068

TERMINATION OF EASEMENT

Werth Family Investment, LLC, are the owners of PARCEL 1, **Newberg Veterinary Hospital Building, LLC** are the owners of PARCEL 2, and **Marion E. Wardin, Trustee of the Marion E. Wardin Survivors Trust** is the owner of PARCEL 3, (collectively "Parties"). The properties owned by the Parties are described below. Said Parcels are burdened and benefitted by multiple easements described in Instrument No. 199618268 ("Multiple Easements"). The Parties hereby terminate and release ONLY Easement #4 contained in the Multiple Easements ("E4"), so that the burdened properties are no longer subject to E4 and the benefitted properties no longer have the easement rights granted in E4. The remaining easements contained the Multiple Easements remain in full force and effect.

PARCEL 1: As legally described in Instrument No.: 202205561 in the deed records of Yamhill County, Oregon.

Situs Address: Vacant Land, Adj to 3716 E. Portland Road, Newberg, OR 97132
Parcel: 29132 Account: R321601910

PARCEL 2: As legally described in Instrument No.: 201309921 in the deed records of Yamhill County, Oregon.

Situs Address: 3716 E. Portland Road, Newberg, OR 97132
Parcel: 493006 Account: R321601910

PARCEL 3: As legally described in Instrument No.: 202017329 in the deed records of Yamhill County, Oregon.

Situs Address: Vacant Land, Adj to 3716 E. Portland Road, Newberg, OR 97132
Parcel: 506734 Account: R321601911

Visual description of the easement being terminated is attached as Exhibit A.

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

Dollar consideration for this transfer: $0.00. Transfer is for other valuable consideration

of benefit to all Parties.

DATED this 24 day of August 2022.

PARCEL 1:

Dean E. Werth, Authorized Member
Werth Family Investment, LLC

PARCEL 2:

Gregory D. Fisher, Authorized Member
Newberg Veterinary Hospital Building, LLC

PARCEL 3:

Marion E. Wardin, Trustee
Marion E. Wardin Survivors Trust

STATE OF OREGON)
) ss.
County of Yamhill)

Personally appeared the above-named **Dean W. Werth in his capacity as the duly authorized Member of Werth Investment I, LLC** and acknowledged the foregoing instrument to be his voluntary act on the 25th day of August, 2022. Before me:

Notary Public for Oregon

OFFICIAL STAMP
DENISE PROCTOR
NOTARY PUBLIC - OREGON
COMMISSION NO. 1026856
MY COMMISSION EXPIRES AUGUST 02, 2026

OFFICIAL STAMP
GYPSY DENISE PROCTOR
NOTARY PUBLIC - OREGON
COMMISSION NO. 1026856
MY COMMISSION EXPIRES AUGUST 02, 2026

STATE OF OREGON)
) ss.
County of Yamhill)

Personally appeared the above-named **Gregory D. Fisher in his capacity as the duly authorized Member of Newberg Veterinary Hospital Building, LLC** and acknowledged the foregoing instrument to be his voluntary act on the 24 day of August, 2022. Before me:

Notary Public for Oregon

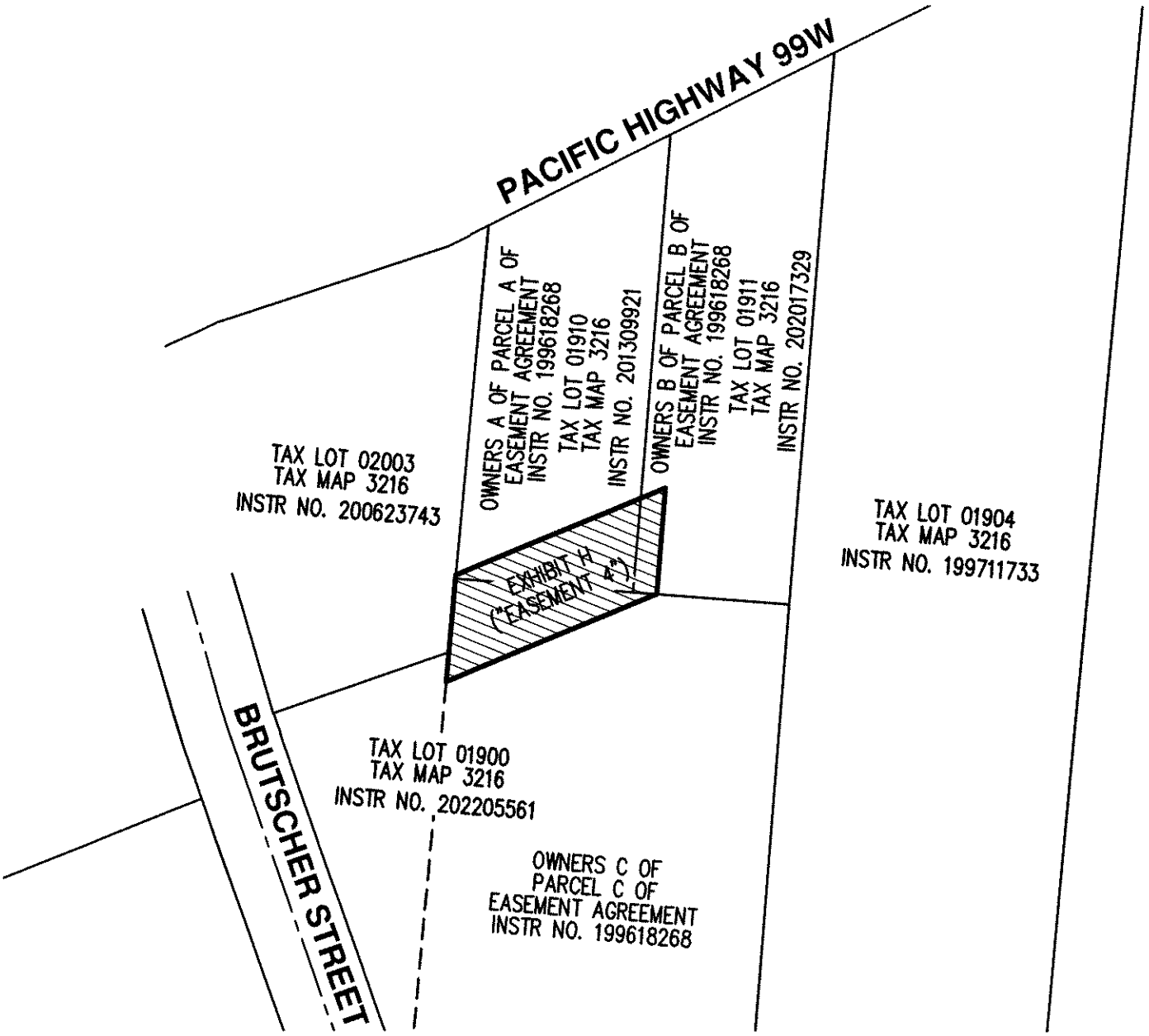
OFFICIAL STAMP
LEONOR SAMANIEGO
NOTARY PUBLIC - OREGON
COMMISSION NO. 1012089
MY COMMISSION EXPIRES MAY 02, 2025

STATE OF OREGON)
) ss.
County of _____)

Personally appeared the above-named **Marion E. Wardin in her capacity as Trustee of the Marion E. Wardin Survivors Trust** and acknowledged the foregoing instrument to be her voluntary act on the _____ day of _____, 2022. Before me:

Notary Public for Oregon

EXHIBIT A



NO. 8 OF EASEMENT AGREEMENT, INSTRUMENT NUMBER 199618268, YAMHILL COUNTY RECORDS

EACH OF OWNERS A, OWNERS B AND OWNERS C HEREBY CONVEY TO THE OTHER OWNER, THEIR HEIRS, SUCCESSORS AND ASSIGNS, FOR THE BENEFIT OF PARCEL A, PARCEL B AND PARCEL C, AS APPROPRIATE, A NON-EXCLUSIVE EASEMENT FOR INGRESS AND EGRESS FROM THEIR RESPECTIVE PARCELS, OVER AND ACROSS THAT PORTION OF THEIR RESPECTIVE PARCELS (THAT IS, PARCEL A, PARCEL B AND PARCEL C) LYING WITHIN THE PROPERTY WHICH IS MORE PARTICULARY DESCRIBED ON EXHIBIT H ("EASEMENT 4").

SCALE: 1"=100 FEET

100 0 20 50 100

N

PREPARED FOR

ESCAPE LODGING LLC
1315 S HEMLOCK STREET, SUITE 3
CANNON BEACH, OR 97110

5/23/2022

NO. 8 OF EASEMENT AGREEMENT INSTRUMENT NUMBER 199618268	EXHIBIT
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: WCB CHKD: NSW AKS JOB: 6113-01

DWG 6113-01 20220523 EXHIBIT L FX

After recording, return to:
Campbell & Popkin, LLC
1580 N. Roosevelt Drive
Seaside, OR 97138

Send future tax statements to:
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Portland, OR 97225

As to Parcel 2:
Newberg Veterinary Hospital Building, LLC
3716 E. Portland Road
Newberg, OR 97132

As to Parcel 3:
Marion E. Wardin, Trustee
Marion E. Wardin Survivors Trust
21510 SW Johnson Road
West Linn, OR 97068

TERMINATION OF EASEMENT

Werth Family Investment, LLC, are the owners of PARCEL 1, **Newberg Veterinary Hospital Building, LLC** are the owners of PARCEL 2, and **Marion E. Wardin, Trustee of the Marion E. Wardin Survivors Trust** is the owner of PARCEL 3, (collectively "Parties"). The properties owned by the Parties are described below. Said Parcels are burdened and benefitted by multiple easements described in Instrument No. 199618268 ("Multiple Easements"). The Parties hereby terminate and release ONLY Easement #4 contained in the Multiple Easements ("E4"), so that the burdened properties are no longer subject to E4 and the benefitted properties no longer have the easement rights granted in E4. The remaining easements contained the Multiple Easements remain in full force and effect.

PARCEL 1: As legally described in Instrument No.: 202205561 in the deed records of Yamhill County, Oregon.

Situs Address: Vacant Land, Adj to 3716 E. Portland Road, Newberg, OR 97132
Parcel: 29132 Account: R321601910

PARCEL 2: As legally described in Instrument No.: 201309921 in the deed records of Yamhill County, Oregon.

Situs Address: 3716 E. Portland Road, Newberg, OR 97132
Parcel: 493006 Account: R321601910

PARCEL 3: As legally described in Instrument No.: 202017329 in the deed records of Yamhill County, Oregon.

Situs Address: Vacant Land, Adj to 3716 E. Portland Road, Newberg, OR 97132
Parcel: 506734 Account: R321601911

Visual description of the easement being terminated is attached as Exhibit A.

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

Dollar consideration for this transfer: $0.00. Transfer is for other valuable consideration

of benefit to all Parties.

DATED this 26 day of May 2022.

PARCEL 1:

Dean E. Werth, Authorized Member
Werth Family Investment, LLC

PARCEL 2:

Gregory D. Fisher, Authorized Member
Newberg Veterinary Hospital Building, LLC

PARCEL 3:

Marion E. Wardin

Marion E. Wardin, Trustee
Marion E. Wardin Survivors Trust

STATE OF OREGON)
) ss.
County of _____)

Personally appeared the above-named **Dean W. Werth in his capacity as the duly authorized Member of Werth Investment I, LLC** and acknowledged the foregoing instrument to be his voluntary act on the _____ day of _____, 2022. Before me:

_____
Notary Public for Oregon

STATE OF OREGON)
) ss.
County of _____)

Personally appeared the above-named **Gregory D. Fisher in his capacity as the duly authorized Member of Newberg Veterinary Hospital Building, LLC** and acknowledged the foregoing instrument to be his voluntary act on the _____ day of _____, 2022. Before me:

_____
Notary Public for Oregon

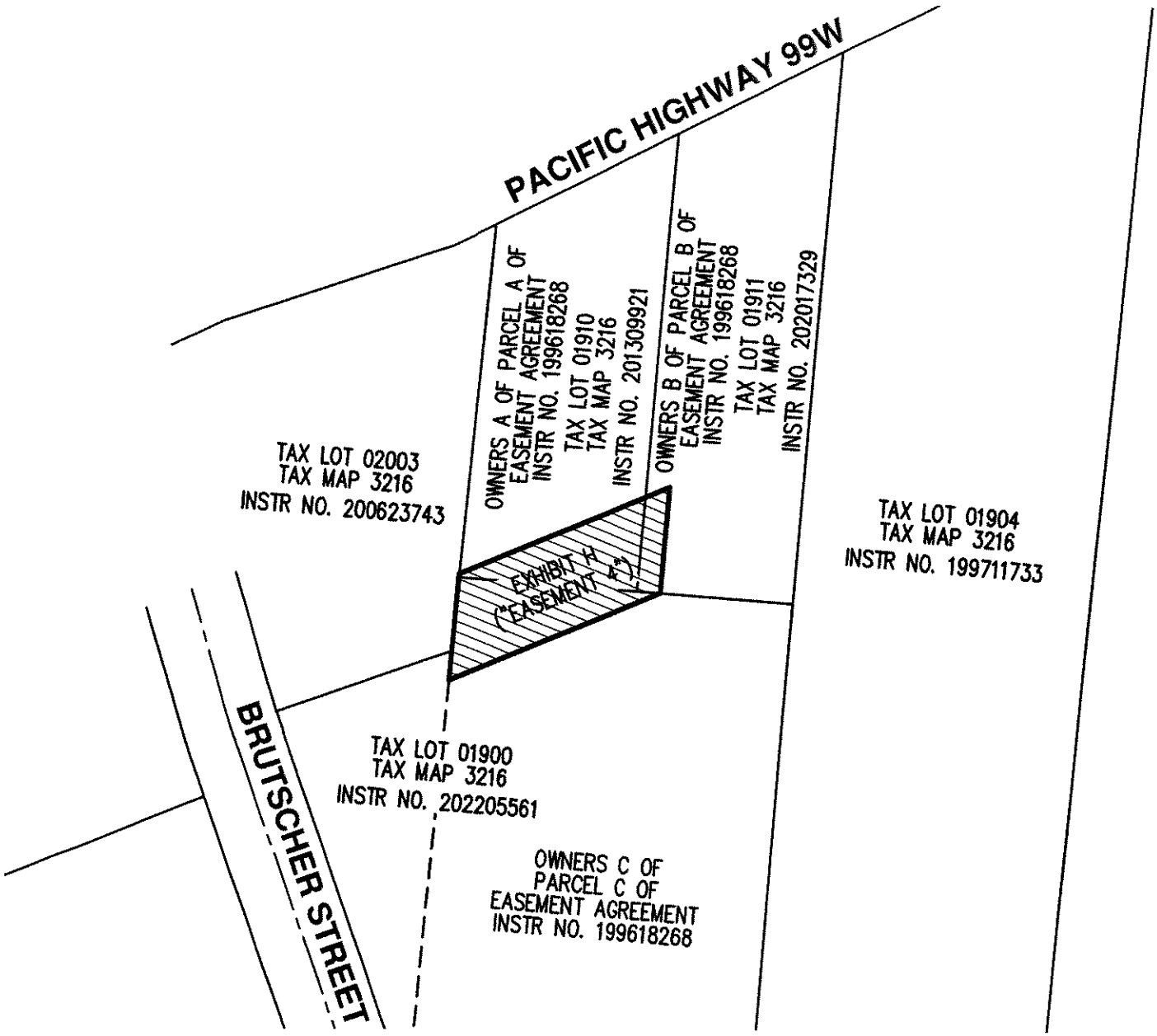
STATE OF OREGON)
) ss.
County of Washington)

Personally appeared the above-named **Marion E. Wardin in her capacity as Trustee of the Marion E. Wardin Survivors Trust** and acknowledged the foregoing instrument to be her voluntary act on the 26 day of MAY, 2022. Before me:

OFFICIAL STAMP
JAMES L GRIFFITH
NOTARY PUBLIC - OREGON
COMMISSION NO. 1019345
MY COMMISSION EXPIRES DECEMBER 15, 2025

_____
Notary Public for Oregon

EXHIBIT A



NO. 8 OF EASEMENT AGREEMENT, INSTRUMENT NUMBER 199618268, YAMHILL COUNTY RECORDS

EACH OF OWNERS A, OWNERS B AND OWNERS C HEREBY CONVEY TO THE OTHER OWNER, THEIR HEIRS, SUCCESSORS AND ASSIGNS, FOR THE BENEFIT OF PARCEL A, PARCEL B AND PARCEL C, AS APPROPRIATE, A NON-EXCLUSIVE EASEMENT FOR INGRESS AND EGRESS FROM THEIR RESPECTIVE PARCELS, OVER AND ACROSS THAT PORTION OF THEIR RESPECTIVE PARCELS (THAT IS, PARCEL A, PARCEL B AND PARCEL C) LYING WITHIN THE PROPERTY WHICH IS MORE PARTICULARY DESCRIBED ON EXHIBIT H ("EASEMENT 4").

SCALE: 1"=100 FEET

100 0 20 50 100

N

PREPARED FOR

ESCAPE LODGING LLC
1315 S HEMLOCK STREET, SUITE 3
CANNON BEACH, OR 97110

5/23/2022

NO. 8 OF EASEMENT AGREEMENT INSTRUMENT NUMBER 199618268	EXHIBIT
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: WCB CHKD: NSW AKS JOB: 6113-01

DWG: 6113-01 20220523 EXHIBIT I EX

After recording, return to:
Campbell & Popkin, LLC
1580 N. Roosevelt Drive
Seaside, OR 97138

Send future tax statements to:
As to Parcel 1:
Werth Family LLC
3330 SW 70th Ave.
Portland, OR 97225

As to Parcel 2:
Newberg Veterinary Hospital Building, LLC
3716 E. Portland Road
Newberg, OR 97132

As to Parcel 3:
Marion E. Wardin, Trustee
Marion E. Wardin Survivors Trust
21510 SW Johnson Road
West Linn, OR 97068

TERMINATION OF EASEMENT

Werth Family Investment, LLC, are the owners of PARCEL 1, **Newberg Veterinary Hospital Building, LLC** are the owners of PARCEL 2, and **Marion E. Wardin, Trustee of the Marion E. Wardin Survivors Trust** is the owner of PARCEL 3, (collectively "Parties"). The properties owned by the Parties are described below. Said Parcels are burdened and benefitted by multiple easements described in Instrument No. 199618268 ("Multiple Easements"). The Parties hereby terminate and release ONLY Easement #4 contained in the Multiple Easements ("E4"), so that the burdened properties are no longer subject to E4 and the benefitted properties no longer have the easement rights granted in E4. The remaining easements contained the Multiple Easements remain in full force and effect.

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Situs Address: 3716 E. Portland Road, Newberg, OR 97132
Parcel: 493006 Account: R321601910

PARCEL 3: As legally described in Instrument No.: 202017329 in the deed records of Yamhill County, Oregon.

Situs Address: Vacant Land, Adj to 3716 E. Portland Road, Newberg, OR 97132
Parcel: 506734 Account: R321601911

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Dollar consideration for this transfer: $0.00. Transfer is for other valuable consideration

of benefit to all Parties.

DATED this 24th day of May 2022.

PARCEL 1:

Dean E. Werth, Authorized Member
Werth Family Investment, LLC

PARCEL 2:

Gregory D. Fisher, Authorized Member
Newberg Veterinary Hospital Building, LLC

PARCEL 3:

Marion E. Wardin, Trustee
Marion E. Wardin Survivors Trust

STATE OF OREGON)
) ss.
County of Yamhill)

Personally appeared the above-named **Dean W. Werth in his capacity as the duly authorized Member of Werth Investment I, LLC** and acknowledged the foregoing instrument to be his voluntary act on the 24th day of May, 2022. Before me:

Notary Public for Oregon

OFFICIAL STAMP
JANET LEE GREGSTON
NOTARY PUBLIC - OREGON
COMMISSION NO. 1013761
MY COMMISSION EXPIRES JUNE 28, 2025

STATE OF OREGON)
) ss.
County of _____)

Personally appeared the above-named **Gregory D. Fisher in his capacity as the duly authorized Member of Newberg Veterinary Hospital Building, LLC** and acknowledged the foregoing instrument to be his voluntary act on the _____ day of _____, 2022. Before me:

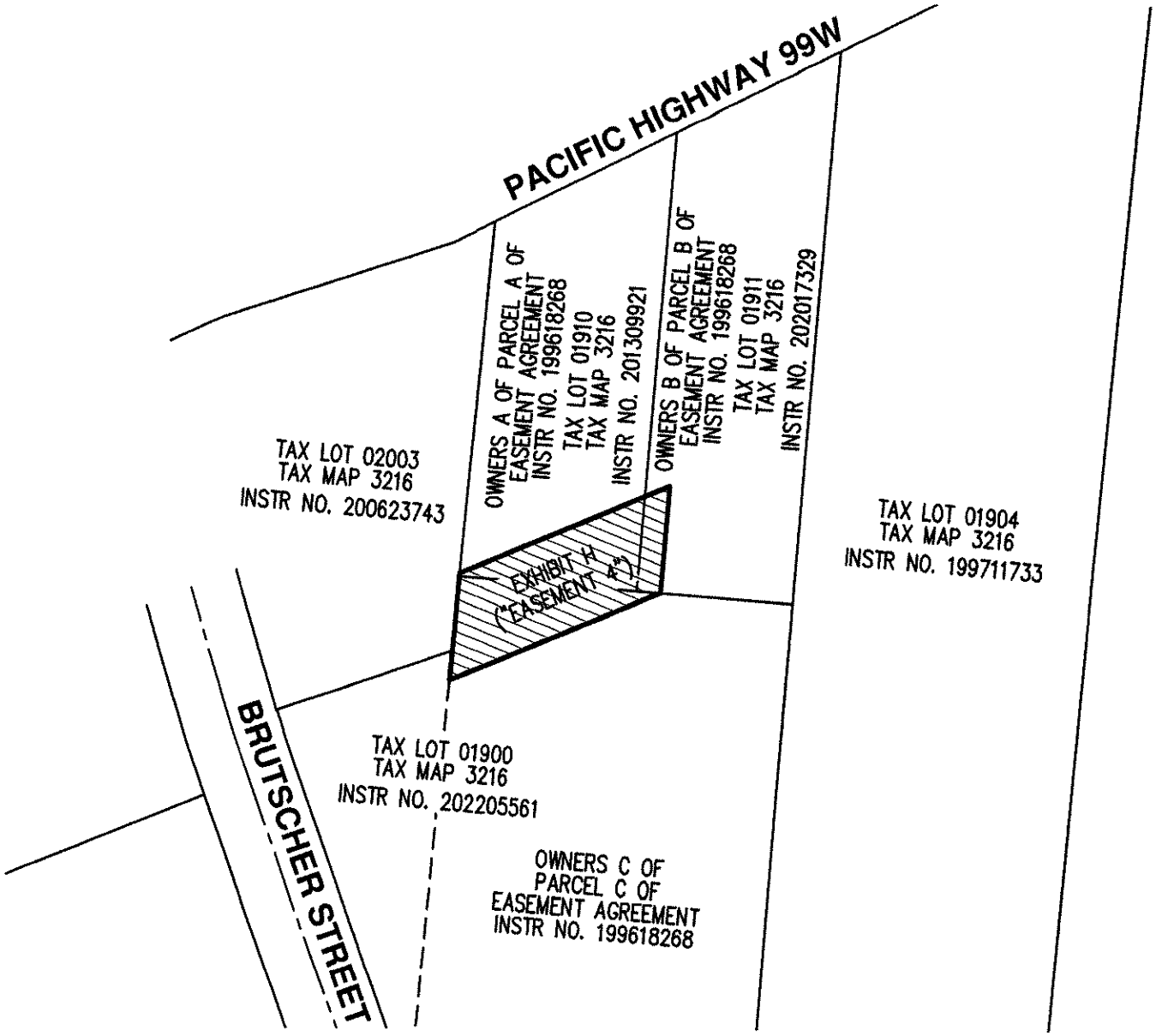
Notary Public for Oregon

STATE OF OREGON)
) ss.
County of _____)

Personally appeared the above-named **Marion E. Wardin in her capacity as Trustee of the Marion E. Wardin Survivors Trust** and acknowledged the foregoing instrument to be her voluntary act on the _____ day of _____, 2022. Before me:

Notary Public for Oregon

EXHIBIT A



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EACH OF OWNERS A, OWNERS B AND OWNERS C HEREBY CONVEY TO THE OTHER OWNER, THEIR HEIRS, SUCCESSORS AND ASSIGNS, FOR THE BENEFIT OF PARCEL A, PARCEL B AND PARCEL C, AS APPROPRIATE, A NON-EXCLUSIVE EASEMENT FOR INGRESS AND EGRESS FROM THEIR RESPECTIVE PARCELS, OVER AND ACROSS THAT PORTION OF THEIR RESPECTIVE PARCELS (THAT IS, PARCEL A, PARCEL B AND PARCEL C) LYING WITHIN THE PROPERTY WHICH IS MORE PARTICULARY DESCRIBED ON EXHIBIT H ("EASEMENT 4").

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DWG: 6113-01 20220523 EXHIBIT | EX