CLATSOP COUNTY JAIL RELOCATION

Summary

Clatsop County seeks approval of a Type III Site Design and Large/Scale Development Review application to partially demolish and redevelop the former North Coast Youth Facility to improve security and meet the current needs of the Clatsop County Sheriff Department. Due to a more efficient and effective design, net impacts from the proposed redevelopment will decrease in terms of impervious surface area, inmate population, and employees.

Prepared by
Winterbrook
Planning

General Information

Owner:	Clatsop County 800 Exchange Street Astoria, OR 97103 (Contact: Monica Steele, Interim County Manager, 503-325-1000)
Representative:	Winterbrook Planning 610 SW Alder Street, Suite 810 Portland, Oregon 97205 (Contact: Jesse Winterowd, Principal, 503-827-4422)
Location:	1250 SE 19th Street Warrenton, OR 97146
Map & Tax Lot:	Township 8, Range 10, Section 27, Tax Lot 203
Zoning:	General Industrial (I-1)
Case Types:	Site Design Review - Large-Scale Development Review, Administrative Variance
Procedure:	Type III, & Type I
Pre-Application Mtg:	August 7, 2019
Proposal:	Site Design / Large-Scale Development Review to partially demolish and redevelop an existing, vacant jail facility. The improvements will modernize the facility, repair structural damage from weather and wear, and meet the current needs of the Clatsop County Sheriff Office. Impact from the County jail will decrease when compared with the previous juvenile detention use because: 1. The more efficient and compact design will decrease overall impervious surface area by approximately 18,000 square feet. 2. The total number of employees required to operate the proposed facility is 41 total, with a maximum of 10 per shift – significantly fewer than the 50 employees per shift when the facility was operated by the State. 3. The number of visitors to the facility will decrease due to the implementation of a remote internet video visitation system.

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Project Background

In 1998, the Oregon Youth Authority constructed a youth detention center in Warrenton and operated it until 2017 when state budget cuts led to the shuttering of the facility. Prior to 2017, Clatsop County had been looking into alternatives to expanding its existing jail facility and the closing of the Oregon Youth Authority facility presented an opportunity for the County to take over in an existing facility located adjacent to the County Sheriff Office in Warrenton. A bond measure passed by Clatsop County voters allowed the County to perform necessary maintenance and renovations to meet the County's needs.

Based on a structural survey, the County determined that the existing facility needs extensive repair, with many of the existing structural features at the end of their usable

service life due to wear and weathering from the coastal climate. The facility itself is outdated and does not meet current standards.

To address these substandard conditions, the County proposes to demolish approximately 34,000 square feet of building and central courtyard area, refurbish two existing buildings of approximately 20,375 square feet, and construct a new central structure of approximately 26,750 square feet. The new/refurbished facility will have a gross floor area of about 47,130 square feet. As a result of this more efficient design, there will be a net reduction of about 18,000 square feet of impervious surface area.

The center courtyard will be replaced by a more compact building footprint. No work is proposed outside of the existing facility footprint or beyond the existing access road surrounding the facility. On-site wetlands and vegetation will not be impacted. A new security fence will be installed around the facility to separate the parking lot into two areas, one for public visitors near the main entrance and a second area that is a secured employee parking area.

Figure 1. County Jail site outlined with a dashed yellow line.
Source: Google Maps 2019.

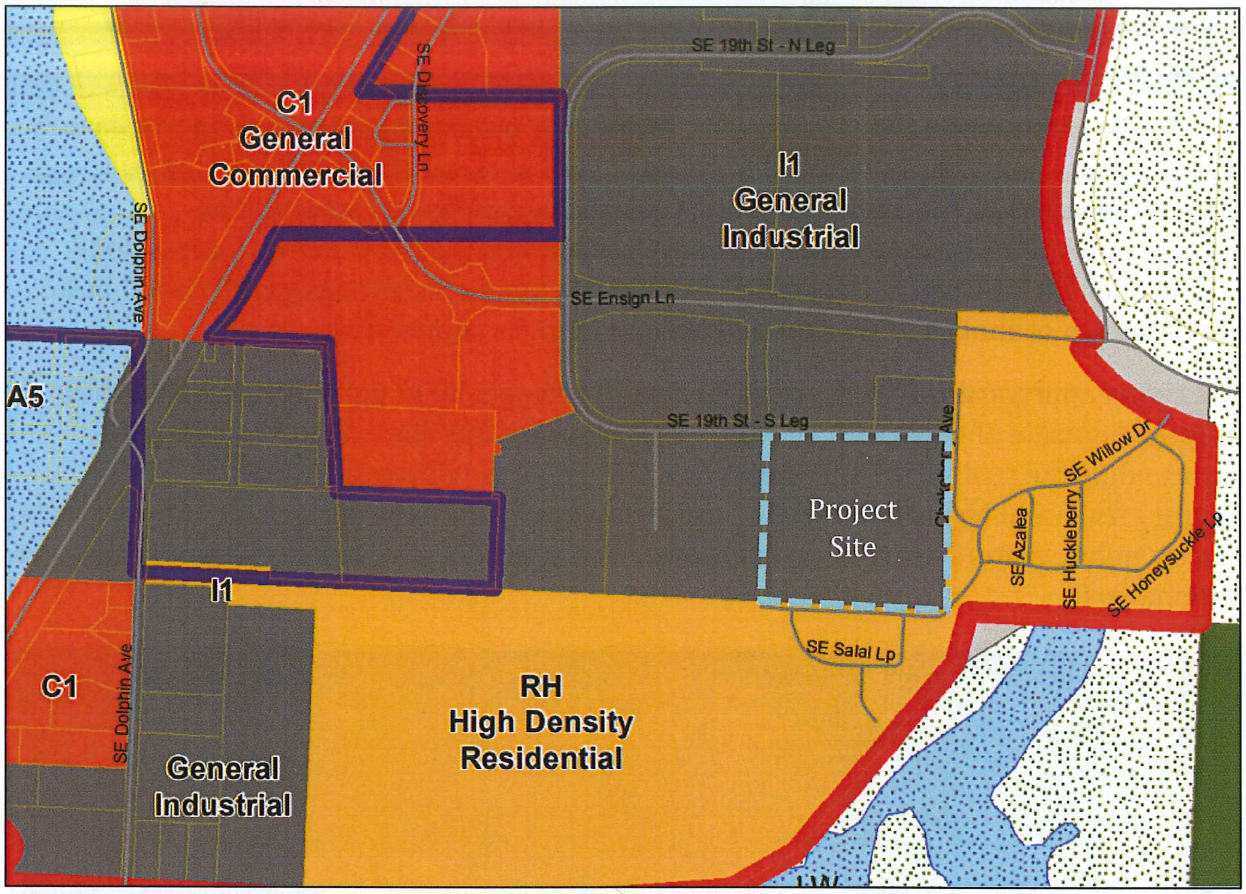


Figure 2. City of Warrenton Zoning Map. Project site outlined with a dashed light blue line.

Application Narrative Overview

The following narrative is a response to the relevant code criteria for the redevelopment of a government building (jail) use in the General Industrial (I-1) zone. A Type III review procedure is required when more than 10,000 square feet of gross floor area is being developed. The final decision is made by the Planning Commission based upon a staff report and recommendation from the Community Development Director. The outline of this narrative, as displayed in the table of contents, generally follows the structure of the Warrenton Development Code (Title 16 of the Warrenton Municipal Code). The following WDC Divisions are applicable:

- Division 2 Land Use Districts
- Division 3 Design Standards
- Division 4 Application and Review Procedures
- Division 5 Exceptions to Code Standards

The application narrative Development Code Review is divided into four sections:

- Section 1: Base Zone and Large-Scale Development Review

- Section 2: Design Review
- Section 3: Application and Review Procedures
- Section 4: Exceptions to Code Standards

The relevant code criteria are listed in italics, and the response to each code section is indicated with "**response**."

Section 1: Base Zone and Large-Scale Development Review

Chapter 16.60 General Industrial (I-1) District - Base Zone

16.60.020 Permitted Uses

The following uses and their accessory uses are permitted in the I-1 zone if the Community Development Director determines that the uses conform to the standards in Sections 16.36.040 through 16.60.040, applicable Development Code standards, and other City regulations:

[...]

N. Government buildings and uses.

Response: The existing and proposed use on the site is a jail, which is classified as a government building. Per 16.60.020(N), the existing and proposed use is permitted outright in the I-1 zone.

16.60.040 Development Standards

The following standards are applicable in the I-1 zone:

A. Air Quality. The air quality standards set by the Department of Environmental Quality shall be the guiding standards in this zone, except that open burning is prohibited in any case.

B. Noise. As may be permitted under all applicable laws and regulations.

Response: The redeveloped jail facility will not generate air pollution or noise in excess of what is permitted under applicable state laws and regulations.

C. Storage. All materials, including wastes, shall be stored and maintained in a manner that will not attract or aid the propagation of insects or rodents or other animals or birds, or otherwise create a health hazard or nuisance.

Response: No outdoor storage is proposed in this application. Garbage and recycling will be stored in metal, covered dumpsters and receptacles and emptied on a regular schedule.

D. Fencing. Will be allowed inside a boundary planting screen and where it is necessary to protect property of the use concerned or to protect the public from a dangerous condition. Proposed fence locations and design shall be subject to City review.

Response: As shown on the site plan, a high security fence will be constructed around the perimeter of the facility. The fence will be screened by existing vegetation on all sides.

E. Buffer. Where this zone adjoins another non-industrial zone there shall be a buffer area at least 10 feet wide to provide a dense evergreen landscape buffer which attains a mature height of eight feet, or such other screening measures as may be prescribed by the City in the event differences in elevation or other circumstances should defeat the purpose of this requirement.

Response: The jail sits towards the center of a property that is heavily forested on all sides. As shown in figure 1, the property to the south and east of the subject property is zoned High Density Residential (RH). As shown on the parcel plan included in Sheet C0.0 and landscape plan included in Sheet C2.0, there is greater than 300 feet of dense natural evergreen vegetation currently existing. This existing vegetation provides an effective buffer that far exceeds the height and width standards of this criterion.

F. Vibration. No vibration other than that caused by highway vehicles, trains and aircraft shall be permitted which is discernible without instruments at the property line of the use concerned.

Response: The jail facility will not create vibrations normally associated with an industrial use. No train or aircraft traffic will be associated with the facility. Vehicles accessing the site include typical passenger and emergency vehicles, as well as garbage trucks.

G. Airport Interference. No use shall create electrical or lighting interference with the operations of the Port of Astoria Airport.

Response: Winterbrook Planning reached out to the Port of Astoria Airport on August 14, 2019 to inform them of the proposed development. The response indicating no issues with electrical or lighting interference is included in **Appendix D** with this application.

H. Setbacks. The minimum front, side and rear yard setbacks shall be 10 feet. When across a street from a non-industrial zone, the setback from the property line shall be 10 feet. When a property abuts a non-industrial zone, the setback shall be as follows:

1. *50 feet for buildings and other structures more than 10 feet in height;*
2. *30 feet for buildings and structures more than six feet high but not more than 10 feet high; and*
3. *10 feet for structures no more than six feet high (except fences no more than six feet high may be on the property line).*

Response: As shown in Figure 1, the property to the west and north of the site are zoned General Industrial. Property to the east and south are zoned for residential use. Because the southwest buildings will be removed, the existing developed area will be smaller than currently exists. The current setbacks from the existing jail are approximately: 50 feet to the front property line, 70 feet to the west property line, 300 feet to the east, and 345 feet

to the south. These setbacks exceed minimum setback requirements. As such, the setback standards in this code criterion are met.

I. All development shall comply with the wetland and riparian area protection standards of Chapter 16.156.

Response: The proposed improvements will be internal to the existing developed area where no wetlands exist. No development is proposed outside of the existing developed area or within wetland boundaries. Wetland areas will be fenced off with orange construction fencing to ensure construction activity will not encroach into these areas.

J. Building Height. The maximum building height shall be 45 feet, except that it may be lower under either of the following circumstances:

1. *Within 100 feet of a non-industrial zone, where the maximum building height shall be the same as the maximum building height in that zone.*
2. *Within the Airport Hazard Overlay Zone, where the maximum building height is described by the Airport Hazard Overlay Zone.*

Response: The tallest section of the proposed facility is 34 feet 3 inches high. The proposed development is greater than 500-feet from any non-industrial zones, and not within the Airport Hazard Overlay Zone. The end of the nearest runway located at the Astoria Regional Airport is approximately 1.25 miles away from jail structure. As such, this criterion does not apply.

Gary Kobes, representing the Port of Astoria and Astoria Regional Airport provided comments to the applicant regarding the proposed development which are included in **Appendix D**. The comments included marking a long book crane, if used, for visibility both in the day and nighttime, and granting an avigation easement over the jail property. The County is willing to meet these requirements.

K. All other applicable Code requirements shall be satisfied.

Response: Compliance with other applicable code requirements are addressed in Sections 1-4 of this narrative.

L. All new sewer and water connections for a proposed development shall comply with all City regulations.

Response: Existing water and sewer connections will be inspected and brought into compliance with all city regulations. Details of the work being done are shown in the utility plan on Sheet C4.0.

M. Prior to undertaking disposal, the dredging project proponent shall consult with the Army Corps and Oregon DSL to determine if the disposal site contains wetlands that are regulated under permit programs administered by those agencies. If the site contains regulated wetlands, the dredging project proponent shall either alter the

disposal site boundaries to avoid the wetlands and leave an acceptable protective buffer, or obtain the necessary Corps and DSL permits to fill the wetlands.

Response: No dredging is proposed as part of this project. This standard is not applicable.

N. Recreational marijuana [...]

Response: No recreational marijuana production, manufacturing or wholesale is proposed. This standard is inapplicable.

Chapter 16.192 Large-Scale Developments

16.192.010 Approval Process.

A. Large-Scale Development. A development which is:

1. *A planned unit development, manufactured dwelling park, recreational vehicle park, or campground; or*
2. *A multifamily housing development or row house/townhouse (single-family attached) development which within two calendar years will have 10 or more dwelling units; or*
3. *A commercial, industrial, public or institutional development which within two calendar years will use two or more acres of land or will have buildings with 10,000 square feet or more of floor area; or*
4. *Dependent on the expansion of City utility system(s) to service the development, including, but not limited to, development (or improvement) of transportation facilities or water and/or sewer mainline extensions.*

Response: This application qualifies as a large-scale development as it will have buildings with greater than 10,000 square feet of floor area as described in Section 16.192.010.A.3. The criteria of chapter 16.192 is reviewed as follows.

B. Review Type.

1. *Type III: "1, 2, 3, or combined 1 and 4."*
2. *Type I: "4." (Ord. 1175-A § 17, 2013)*

Response: Since approximately 20,000 square feet of new development is taking place this application requires a Type III review. The Type III procedure criteria are reviewed in Section 3 of this narrative.

16.192.020 General Provisions

A. No permit shall be issued or conditional use application approved for a use defined as a large-scale development until the Community Development Director or hearings body (as applicable) determines that all applicable sections of this Code have been satisfied.

Response: No development is proposed prior to the approval of this Type III application. The applicant has worked closely with the Community Development Director to ensure the applicable code criteria is met.

B. The degree of protection from problems caused by hazardous soils or stormwater runoff which is required by this chapter is considered reasonable for regulatory purposes. This chapter shall not create liability on the part of the City of Warrenton or by any officer, employee or official thereof for any damages due to hazardous soils or stormwater runoff that results from reliance on this chapter or any administrative decision lawfully made thereunder.

Response: This criterion is informational pertaining to the liability of the City of Warrenton as it applies to the regulations regarding hazardous soils or stormwater runoff.

16.192.030 Soil Suitability

A. Unless the Community Development Director (Type I or Type II) or hearings body (Type III) determines that an adequate detailed soil survey has already been undertaken for the entire portion of the site proposed for development, the owner or developer shall have a new soil survey of the site prepared to determine if construction on the site would be hazardous to facilities on the parcel or to nearby property due to the load bearing capacity of the soils, the potential for wind or water erosion, or the wetness or slope characteristics of the soil.

B. The soil survey shall be performed by a registered geotechnical engineer that is licensed in the State of Oregon.

C. If the detailed soil survey indicates that significant amounts of hazardous soils are in locations desired for development, the developer or owner shall submit a report to the City of Warrenton prepared by a licensed geotechnical engineer which indicates suitable techniques to minimize potential soil hazards to facilities on the parcel or to nearby property.

D. The proposed use will only be approved if:

1. *The detailed soil survey indicates that there is not a significant amount of hazardous soils on the portion of the site proposed for development; or*
2. *A method of eliminating hazards which could result from soils on the site prepared by a licensed geotechnical engineer and submitted to the City of Warrenton Planning and Building Department for review by a City-appointed engineer who will be paid by the developer and/or property owner.*

E. If a detailed soil survey indicates that corrosive resistant materials are appropriate for pipes or foundations associated with the development, the City-appointed engineer may require that suitable materials be used for the pipes or foundations.

Response: Appendix C is the Geotechnical Report prepared by Ryan White, PE, GE who is a registered geotechnical engineer licensed in the State of Oregon. The report includes a soil survey dated July 11, 2019.

The Geotechnical Report determined that the site is suitable for the proposed development. The Report found no significant amounts of hazardous soils on the site and does not indicate that corrosive resistant materials are appropriate for pipes and foundations associated with the development. The Report includes design recommendations that must be followed during construction.

16.192.040 Stormwater Management

The applicant shall submit a stormwater management plan, which shall meet the criteria of Chapter 16.140 of this Code, to the City of Warrenton Planning and Building Department for review for the proposed development that is prepared by a registered engineer currently licensed in the State of Oregon.

Response: **Appendix B** is the Stormwater Report that addresses the criteria of WDC Section 16.140. The stormwater management plan was prepared by Paul Dedyo PE, a registered engineer licensed in the State of Oregon.

16.192.050 Utilities

A. *The applicant shall provide detailed information and analyses, as necessary, to the City of Warrenton to allow the City to assess the expected impacts of the development on the capacity of Warrenton's water, sewer, and transportation. The development will only be allowed if sufficient capacity exists or suitable evidence indicates it will exist prior to completion of the development construction. In deciding the sufficiency of capacity, consideration will be given to possible increases in flows resulting from activities of existing system users and from facilities which are likely to be built due to the proposed use, but are not part of the development.*

Response: The existing jail facility is currently served by City water and sewer systems. As discussed in the August 7, 2019 pre-application meeting, the existing water and sewer infrastructure on site will be inspected and tested to determine the integrity and suitability of the existing systems. Improvements will be made to bring the systems into compliance with current City standards for public utilities.

B. *On-site water supply, sewage disposal, access and circulation, shall be approved by the Warrenton Public Works Director. The development will not be allowed unless satisfactory provisions are made for these facilities. Satisfactory provisions, in part, mean that the size of any water lines, sewer lines, access roads, and drainage-ways will be sufficient to meet the needs of the development and, where desirable, accommodate growth in other areas. Suitable arrangement, including dedication of land or use of easements, shall be made so that the City will be able to maintain appropriate water, sewer, street, and drainage facilities. The construction of lengthy pressure-forced sewer lines to the site which by-pass undeveloped properties will be discouraged.*

Response: The property is currently served by City water and sewer and no on-site systems are proposed. As shown on the **Utility Plan on Sheet C4.0**, a utility easement will

be created to allow the City the access to maintain the water meter located in the front of the property from SE 19th street. The utility easement is located in the area where the watermain connects from the street to the site. The Public Works Director indicated no issues with the access or proposed drainage-ways/stormwater facilities at the preapplication meeting. No new utility lines or connections are proposed in this development, only upgrades and repairs to existing utility will be performed as necessary.

C. *Utility lines in the development (including electricity, communications, street lighting and cable television) shall be placed underground. Appurtenances and associated equipment such as surface mounted terminal boxes and meter cabinets may be placed above ground.*

Response: As shown in the **Utility Plan on Sheet C4.0**, the existing utility lines servicing the property are located underground, extending south from SE 19th Street. No new service lines are proposed in this application and all utility lines will remain in their existing locations.

D. *All utilities shall be installed in conformance with this Code and City construction standards.*

Response: As discussed in the preapplication meeting, all utilities will be inspected and brought into compliance as needed. A utility easement will be created to allow the City access to the water meter on SE 19th Street. The easement is shown on the **Site Plan and Utility on Sheet C1.0 and sheet C4.0.** The easement is located towards the northwest corner of the site directly adjacent to the right-of-way where the watermain enters the site.

16.192.060 Schools

Evidence indicating that local schools will be capable of accommodating the children from the development must be submitted in conjunction with proposals for large-scale residential development.

Response: The jail facility is not a "large-scale residential development" and will not increase enrolment in the local school district. This criterion is not applicable.

16.192.070 Landscape Suitability

The development shall comply with the provisions of a landscape plan which is consistent with Chapter 16.124 of this Code.

Response: A landscape plan is included with this application on **Sheet C2.0**. Landscaping requirements are addressed in Section 2 of this narrative.

16.192.080 Signs

All signs of any type within the development are subject to design review and approval by the Community Development Director or hearings body (Type III). The City shall consider each sign on its merits based on the aesthetic impact on the area, potential traffic hazards, and need for the sign. No sign shall violate provisions in Chapter 16.144.

Response: No signs are proposed with this development.

16.192.090 Additional Provisions

A. *The City of Warrenton may charge the applicant additional fees, as necessary, to cover the cost of reviewing surveys, reports, plans, or construction methods required to comply with the provisions of this Code.*

Response: This criterion is informational regarding city fees for additional review needs.

B. *The City of Warrenton may require the owner or developer to post a performance bond to assure that improvements required to comply with the provisions of this section are completed in accordance with the plans and specifications as approved by the Community Development Director, and/or hearings body.*

Response: All improvements necessary for this development are contained onsite. There are no roadway or offsite improvements necessary that would require a performance bond to ensure completion. This criterion is not applicable.

C. *Proposals for large-scale developments shall be reviewed for consistency with all applicable sections of this Code prior to issuance of a development permit, including grading, filling, or building permits.*

Response: This criterion is informational regarding the timing of land use review and development permits. No work requiring permit approval will be performed prior to issuance of land use and building permits.

D. *The standards of this section are required in addition to development review (Type I and II) and site design review (Type III) standards of Chapter 16.212.*

Response: The standards of this section have been reviewed above. Site design review standards of Chapter 16.212 are reviewed on page 51 of this narrative.

Section 2: Design Review

Chapter 16.120 Access and Circulation

16.120.020 Vehicular Access and Circulation

B. *Applicability. This chapter shall apply to all transportation facilities and improvements (e.g., public and private streets, driveways, multi-use paths, etc.) within the City and to all properties that abut these facilities. Additional standards can be found in Chapter 16.136, Public Facilities Standards.*

C. *Access Permit Required. Access to a street requires an access permit in accordance with the following procedures:*

1. *Permits for access to state highways shall be subject to review and approval by Oregon Department of Transportation (ODOT), except when ODOT has delegated this responsibility to the City or Clatsop County. In that case, the City or County shall determine whether access is granted based on its adopted standards.*
2. *Permits for access to county highways shall be subject to review and approval by Clatsop County, except where the County has delegated this responsibility to the City, in which case the City shall determine whether access is granted based on adopted City standards.*

Response: As noted in **Appendix E** (Transportation Memo), the subject property takes access from SE 19th Street, a County maintained roadway. Because inmate population and the number of employees will not increase, there is no reason to believe that redevelopment of the facility will increase traffic. As noted below, no problems have been identified with the existing access.

D. *Traffic Study Requirements. The City or other agency with access jurisdiction may require a traffic study prepared by a qualified professional to determine access, circulation and other transportation requirements. (See also Chapter 16.136, Public Facilities Standards, and Chapter 16.256, Traffic Impact Study.)*

Response: As discussed at the August 7, 2019 preapplication meeting, a full traffic impact analysis is not required because the jail is an existing facility and the proposed development constitutes a reduction in traffic from previous conditions. However, a Transportation Memo has been required to determine if any multi-modal traffic safety, TSP identified concerns, or geometry issues entering the site as well as intersections with public streets exist.

The Transportation Memo (**Appendix E**) found that there are no significant safety hazards at nearby transportation facilities, and no mitigation is necessary. Sight distances for vehicles exiting the site are adequate and exceed the minimum standards. The multi-modal path recently installed by the County creates an improved situation for bicyclists and pedestrians an no other mitigation is recommended. Additionally, the available transit services and facilities are sufficient and adequately server the site. As such, no mitigation for transit related purposes is necessary.

E. *Conditions of Approval. The City or other agency with access permit jurisdiction may require the closing or consolidation of existing curb cuts or other vehicle access points, recording of reciprocal access easements (i.e., for shared driveways), development of a frontage street, installation of traffic control devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and efficient operation of the street and highway system. Access to and from off-street parking areas (other than driveways that serve single-family, two-family, or three-family dwellings) shall not permit backing onto a public street.*

Response: The site is accessed from only one entry point on SE 19th Street and there are no additional access points that warrant consolidation or closing. SE 19th Street is a County maintained roadway that includes a recently constructed multi-use path. The multi-use path addresses bicycle and pedestrian safety concerns and ensures the efficient operation of the street system.

No additional traffic control devices were deemed necessary to accommodate the existing use of the jail facility as described in the Transportation Memo included in **Appendix E**. Access to and from the off-street parking area, as shown on the site plan included on **Sheet C1.0**, does not require backing onto a public street.

F. *Access Options. When vehicle access is required for development (i.e., for off-street parking, delivery, service, drive-through facilities, etc.), access shall be provided by one of the following methods (a minimum of 10 feet per lane is required). These methods are "options" to the developer/subdivider, unless one method is specifically required under Division 2, or through conditions required by the hearings body.*
[...]

Response: Criteria F through K are standards that pertain to the creation of new access points and driveways for new lots in subdivisions. There is no subdivision or creation of new lots proposed in this application and no new access points will be created. As explained in the previous finding, the single access point to the site currently exists and will remain unchanged by the development proposed in this application. As such, these standards are not applicable.

L. *Fire Access and Circulation. The City of Warrenton adopts the Uniform Fire Code, as amended, including administrative sections and all appendices and all the State of Oregon revisions. All development in the City of Warrenton is required to meet these minimum adopted standards.*

1. *Required Access. A fire equipment access drive that meets City construction standards shall be provided for any portion of an exterior wall of the first story of a building that is located more than 150 feet from an improved public street or approved fire equipment access drive. Plans for fire apparatus access roads shall be submitted to the Warrenton Fire Department and Warrenton City-appointed engineer for review and approval prior to issuance of building permits, grading permits, or start of construction. When fire apparatus access road(s) are required, the road(s) shall be installed and made serviceable prior to and during time of construction. Fire department access roads shall be provided and maintained in accordance with the fire department access requirements of the Uniform Fire Code, as amended.*
2. *Dimensions. Fire apparatus roads shall have an unobstructed width of not less than 20 feet and unobstructed vertical clearance of not less than 13 feet 6 inches. Fire apparatus roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be provided with a surface so as to provide all-weather driving capabilities.*

3. *Turnaround Required. Dead-end fire apparatus roads in excess of 150 feet shall be provided with approved provisions for the turning around of fire apparatus. See Table 16.136.010 for minimum standards.*

4. *Grade. The gradient for a fire apparatus access road shall not exceed 12% except that isolated segments no longer than 250 feet may have grades up to 15% upon approval by the Warrenton Fire Chief. Non-fire apparatus access roads (driveways and private streets) shall maintain a maximum grade of 15% unless otherwise approved by the Warrenton City-appointed engineer. See Table 16.136.010 for other applicable standards.*

Response: As shown on the site plan on **Sheet C1.0**, there is an existing paved fire access road that loops around the jail facility. The existing access road will remain, and an additional 26-foot wide fire access way will be constructed in the southwest corner of the building site to allow emergency vehicles closer access to the building but remaining outside of the security fence. Additionally, a 24-foot wide access way leading to a gate on the south side of the facility will allow entry into the courtyard from the south side of the jail facility. There are no landscaping, trees, or structures over the access road that create vertical clearance issues. There are no dead-end roads requiring a turnaround. The site is flat and nowhere on the property does the grade exceed 12 percent.

5. *Parking Areas. Parking areas shall provide adequate aisles or turn-around areas for service and delivery vehicles so that all vehicles may enter the street in a forward manner. See also Chapter 16.136, Public Facilities Standards.*

Response: Parking areas, as shown on the site plan, provide looping drive aisles with adequate space for vehicles to maneuver in and out of the site a continuous forward motion. A circulation plan on **Sheet C5.0** shows the fire access and visitor and staff vehicular routes provide adequate aisles to allow for service and delivery vehicles to enter the street in a forward manner.

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

N. *Vision Clearance. No signs, structures or vegetation in excess of three feet in height shall be placed in vision clearance areas, as shown in Figure 16.120.020.N. The minimum vision clearance area may be increased by the Community Development Director, City-appointed engineer, or Planning Commission upon finding that more sight distance is required (i.e., due to traffic speeds, roadway alignment, etc.). See also Chapter 16.132 for additional requirements.*

Response: As shown on the site plan and landscape plan, there are no structures or landscaping that will cause vertical clearance issues. Existing vegetation will be maintained as necessary to allow for proper vertical clearance. Vision clearance at the driveway currently meets the standards required by this section and will be maintained to allow for safe access to and from the site.

O. *Construction. The following development and maintenance standards shall apply to all driveways, parking areas, and private streets in the City of Warrenton:*

1. *Surface Options. All driveways, parking areas, aisles, and turn-a-rounds in the City of Warrenton shall be paved with asphalt, concrete, or other comparable surfacing. A durable non-paving material may be used for driveways and private streets that serve three or fewer residential dwelling units and in other instances where the need to reduce surface water runoff and protect water quality can be demonstrated through adequate findings of fact submitted by the applicant and/or property owner as part of the development proposal. All paving and non-paving surfaces shall meet City construction standards and shall be subject to review and approval by the Community Development Director, City-appointed engineer, and/or Planning Commission.*
2. *Surface Water Management. All driveways, parking areas, aisles and turn-a-rounds shall have on-site collection or infiltration of surface waters to eliminate sheet flow of such waters onto public rights-of-way and abutting property. Surface water facility plans shall be prepared by a qualified person and constructed in conformance with City standards. Such plans shall attempt to follow the principle that water falling on a given site should be absorbed or retained on-site to the extent that the quantity and rate of water leaving the site after the development would not be significantly different than if the site had remained undeveloped.*
3. *Driveway Aprons. When driveway approaches or "aprons" are required to connect driveways to the public right-of-way, they shall be paved with concrete surfacing and meet City construction standards.*

Response: The existing driveway, access road, and parking area are all paved with asphalt. Likewise, the driveway approach is also paved with asphalt and meets City construction standards. Existing asphalt will be repaired or replaced with a new overlay as needed once construction is complete.

The existing surface water management system will remain in place. Details can be found on the **Utility Plan on Sheet C4.0** with this application. The courtyard will be graded so that a new sub-drainage system installed throughout the lawn will collect all surface water within the courtyard and direct it to a storm drain that ties into the existing storm drain line. Roof drains from the newly constructed area will also connect to this portion of the stormwater system.

16.120.030 Pedestrian Access and Circulation

A. *Pedestrian Access and Circulation. To ensure safe, direct and convenient pedestrian circulation, all developments, except single-family detached housing, duplexes, or triplexes on individual lots, shall provide a continuous pedestrian and/or multi-use pathway system. (Pathways only provide for pedestrian circulation. Multi-use pathways accommodate pedestrians and bicycles.) The system of pathways shall be designed based on the standards in paragraphs 1 through 3 of this subsection:*

   1. *Continuous Pathways. The pathway system shall extend throughout the development site, and connect to all future phases of development, adjacent trails, public parks and open space areas whenever possible. The developer may also be required to connect or stub pathway(s) to adjacent streets and private property, in*

accordance with the provisions of Section 16.120.020, Vehicular Access and Circulation, and Chapter 16.136, Public Facilities Standards.

2. *Safe, Direct, and Convenient Pathways. Pathways within developments shall provide safe, reasonably direct and convenient connections between primary building entrances and all adjacent streets and existing or planned transit stops, based on the following definitions:*
    a. *Reasonably Direct. 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 likely users.*
    b. *Safe and Convenient. Bicycle and pedestrian routes that are reasonably free from hazards and provide a reasonably direct route of travel between destinations.*
    c. *For commercial, industrial, mixed use, public, and institutional buildings, the "primary entrance" is the main public entrance to the building. In the case where no public entrance exists, street connections shall be provided to the main employee entrance.*
    d. *For residential buildings the "primary entrance" is the front door (i.e., facing the street). For multifamily buildings in which each unit does not have its own exterior entrance, the "primary entrance" may be a lobby, courtyard or breezeway which serves as a common entrance for more than one dwelling.*

Response: As a secure facility, pedestrian access and use throughout property is discouraged. The public entrance is located at the front of the structure near the driveway entrance. Direct pedestrian access from the multiuse path located on the street is provided by a walkway on the east side of the driveway that connects to the public parking area and main entrance. The public and employee pedestrian access ways from building entrances to the street and parking areas are shown on the **Circulation Plan on Sheet C5.0**.

3. *<u>Street Connectivity</u>. Pathways (for pedestrians and bicycles) shall be provided at or near mid-block where the block length exceeds the length required by Section 16.120.020. Pathways shall also be provided where cul-de-sacs or dead-end streets are planned, to connect the ends of the streets together, to other streets, and/or to other developments, as applicable. Pathways used to comply with these standards shall conform to all of the following criteria:*
    a. *Multi-use pathways (i.e., for pedestrians and bicyclists) are no less than six feet wide.*
    b. *If the streets within the subdivision or neighborhood are lighted, the pathways shall also be lighted.*
    c. *Stairs or switchback paths using a narrower right-of-way/easement may be required in lieu of a multi-use pathway where grades are steep.*
    d. *The City may require landscaping within the pathway easement/right-of-way for screening and the privacy of adjoining properties.*
    e. *The Planning Commission or Community Development Director may determine, based upon facts in the record, that a pathway is impracticable due to: physical or topographic conditions (e.g., freeways, railroads, extremely steep slopes, sensitive lands, and similar physical constraints); buildings or other existing*

development on adjacent properties that physically prevent a connection now or in the future, considering the potential for redevelopment; and sites where the provisions of recorded leases, easements, covenants, restrictions, or other agreements recorded as of the effective date of the ordinance codified in this chapter prohibit the pathway connection.

Response: This standard pertains primarily to providing pedestrian and bicycle connectivity between and through new subdivision and street development. As noted previously, this is a secure jail facility and access across or through the site will not be allowed. No cul-de-sacs or dead-end streets are planned. The pedestrian connection to the public street will be lit by facility lighting shown on the **Site plan on C2.0 and Electrical Site Plan on Sheet E0.1**. No stairs or switchbacks are proposed and there are no privacy concerns from adjoining properties that warrant landscaping or screening.

B. Design and Construction. Pathways shall conform to all of the standards in paragraphs 1 through 5 of this subsection:

1. *Vehicle/Pathway Separation. Where pathways are parallel and adjacent to a driveway or street (public or private), they shall be raised six inches and curbed, or separated from the driveway/street by a five-foot minimum strip with bollards, a landscape berm, or other physical barrier. If a raised path is used, the ends of the raised portions must be equipped with curb ramps.*

Response: The public entrance to the jail is located in the front of the building in the area closest to the driveway. A pedestrian connection to the multi-use path on 19th street is located adjacent to the driveway on the east side.

2. *Housing/Pathway Separation. Pedestrian pathways shall be separated a minimum of five feet from all residential living areas on the ground floor, except at building entrances. Separation is measured as measured from the pathway edge to the closest dwelling unit. The separation area shall be landscaped in conformance with the provisions of Chapter 16.128. No pathway/building separation is required for commercial, industrial, public, or institutional uses.*

Response: No residential living areas are proposed in this application. As stated in this criterion, no pathway/building separation is required as this project is for a public, institutional use.

3. *Crosswalks. Where pathways cross a parking area, driveway, or street ("crosswalk"), they shall be clearly marked with contrasting paving materials, humps/raised crossings, or painted striping. An example of contrasting paving material is the use of a concrete crosswalk through an asphalt driveway. If painted striping is used, it shall consist of thermo-plastic striping or similar type of durable application.*

Response: There are two crosswalks located between the parking area and entrance to the building. These crosswalks will be marked with thermo-plastic striping that contrasts with the asphalt driveway.

4. *Pathway Surface. Pathway surfaces shall be concrete, asphalt, brick/masonry pavers, or other durable surface, at least six feet wide, and shall conform to ADA requirements. Multi-use paths (i.e., for bicycles and pedestrians) shall be the same materials, at least six feet wide. (See also Chapter 16.136, Public Facilities Standards, for public multi-use pathway standards.)*

Response: All sidewalks onsite are made of concrete. There is no multi-use path onsite.

5. *Accessible Routes. Pathways shall comply with the Americans with Disabilities Act, which requires accessible routes of travel.*

Response: Existing sidewalks and pathways are currently ADA compliant with proper curb cuts and access features. The new pedestrian connection to the street will also be built to ADA standards.

16.124 Landscaping, Street Trees, Fences and Walls

16.124.050 Fences and Walls

Sets standards for new fences and walls, including maximum allowable height and materials, to promote security, personal safety, privacy, and aesthetics. The following standards shall apply to all fences and walls:

A. *General Requirements. All fences and walls shall comply with the standards of this section. The City may require installation of walls and/or fences as a condition of development approval, in accordance with Chapter 16.220, Conditional Use Permits, or Chapter 16.212, Development Review and Site Design Review. Walls built for required landscape buffers shall comply with Section 16.124.030.*

B. *Dimensions.*

1. *The maximum allowable height for fences and walls in the City of Warrenton is six feet, as measured from the lowest grade at the base of the wall or fence, except that retaining walls and terraced walls may exceed six feet when permitted as part of a site development approval, or as necessary to construct streets and sidewalks. Refer to paragraph 4 of this subsection for additional fence standards for residential uses.*
2. *Fences in the General Industrial (I-1) Zone may exceed six feet if necessary to protect the welfare of the general public (i.e., airport runway safety, military, coast guard, or homeland security defense facilities, etc.) but not for protection of private property (i.e., auto repair lots, equipment yards, woodworking shops, etc.). Barbed and razor wire fencing is prohibited in all zones except as necessary to enclose livestock or to protect the welfare of the general public (not private property).*
3. *A building permit is required for walls exceeding four feet in height and fences exceeding six feet in height, in conformance with the Uniform Building Code.*
4. *The height of fences and walls within a required front yard setback area for residential uses shall not exceed four feet (except decorative arbors, gates, etc.), as*

measured from the grade closest to the street right-of-way. Walls may exceed this height in accordance with paragraph 1 of this subsection. Chain-link fences and other open-style fences with at least 50% transparency or open space are allowed a maximum height of six feet within a required front yard setback area.

5. *Walls and fences to be built for required buffers shall comply with Section 16.124.030.*
6. *Fences and walls shall comply with the vision clearance standards of Section 16.120.020.*

Response: A 7-foot pedestrian control fence will be constructed around portions of the perimeter of the jail and through the parking area, as shown on **Sheet C1.0**, to provide separation between the public and non-public areas of the jail facility. The fence will exceed the general 6-foot height limit because it is necessary to protect the welfare of the general public, consistent with Subsection 2 above.

All necessary building permits for the fence will be obtained during the construction permitting phase of the project. The fence will be more than 100-feet from any property line and is not located within a within a vision clearance area. No walls are proposed as part of this application.

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

Response: As an important security element of the facility, the fence will be maintained in good condition by the property owner.

16.124.060 Landscape Conservation

A. *Applicability. All development sites containing significant vegetation, as defined below, shall comply with the standards of this section. The purpose of this section is to incorporate significant native vegetation into the landscapes of development. The use of mature, native vegetation within developments is a preferred alternative to removal of vegetation and re-planting. Mature landscaping provides summer shade and wind breaks, and allows for water conservation due to larger plants having established root systems.*

B. *Significant Vegetation.*
"Significant vegetation" means:

1. *Significant Trees and Shrubs. Individual trees located within a mapped wetland area as depicted on the 1" = 400' maps entitled City of Warrenton Wetland Conservation Plan Inventory dated October 17, 1997 with a trunk diameter of 18 inches or greater, as measured four feet above the ground (DBH), and all plants within the drip line of such trees and shrubs, shall be protected. Other trees may be deemed significant, when nominated by the property owner and designated by the City Commission as "Heritage Trees" (i.e., by virtue of site, rarity, historical significance, etc.).*

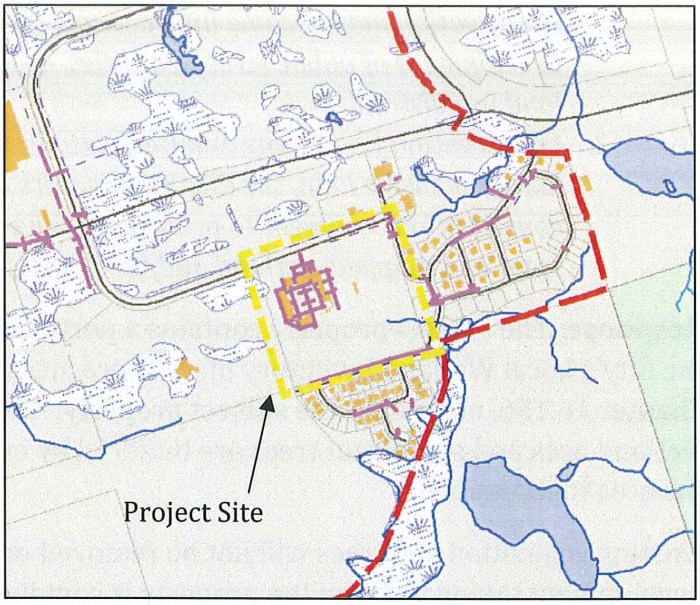


Figure 4. City of Warrenton Local Wetland Inventory.

2. *Exceptions. Protection shall not be required for (a) plants listed as non-native, invasive plants by the Oregon State University Extension Service in the applicable OSU bulletins for Clatsop County, or (b) as otherwise excepted by Chapter 16.156, Wetland and Riparian Corridor Development Standards.*

Response: Figure 3 shows a clip of the Warrenton Local Wetland Inventory in the location of the subject property. There is portion of a significant wetland located in the northwest corner of the lot which requires protection under this standard. However, the wetland area is buffered by approximately 30 feet of existing dense forested vegetation making it inaccessable without extensive tree and vegetation removal. No tree or vegetation removal is proposed in this application and the nearest proposed development is greater than 60 feet away in the existing developed area across the existing paved access loop.

There are no heritage trees identified on the site. All of the proposed work will be within the existing footprint of the jail facility. No impacts to wetlands are necessary or proposed for this project.

C. *Mapping and Protection Required. All mapped wetland and riparian areas shall be protected in accordance with Chapter 16.156 and other applicable sections of this Code.*

D. *Protection Standards. All of the following protection standards shall apply to significant vegetation areas:*

1. *Protection of Significant Trees. Significant trees identified as meeting the criteria in subsection (B)(1) of this section shall be retained whenever practicable.*

Preservation may become impracticable when it would prevent reasonable development of public streets, utilities, or land uses permitted by the applicable land use district.

2. *Conservation Easements and Dedications. When necessary to implement the Comprehensive Plan, the City may require dedication of land or recordation of a conservation easement to protect sensitive lands, including groves of significant trees and mapped wetland and/or riparian areas.*

Response: The subject property contains a portion of a significant wetland as identified on the City's Local Wetland Inventory map. There are no mapped riparian areas, as found in Chapter 16.156, on or near the subject property. As mentioned in the previous finding, the wetland area and significant trees are buffered by existing dense vegetation rendering it the area inaccessible.

Existing vegetation and trees will not be removed or impacted by construction. The development taking place on the property is contained within the existing facility footprint. All significant vegetation will remain undisturbed. The applicant sees no reason for a conservation easement or dedication on the subject property.

E. Construction. All areas of significant vegetation and mapped wetland and riparian areas shall be protected prior to, during, and after construction. Grading and operation of vehicles and heavy equipment is prohibited within significant vegetation areas, wetlands, and riparian areas, except as approved by the City for installation of utilities or streets, or in accordance with other approved plans.

F. Exemptions. The protection standards in this section shall not apply in the following situations:

1. *Dead, Diseased, and/or Hazardous Vegetation. Vegetation that is dead or diseased, or poses a hazard to personal safety, property or the health of other trees, may be removed. Prior to tree removal, the applicant shall provide a report from a certified arborist or other qualified professional (i.e., a certified member of the Oregon Loggers Association) to determine whether the subject tree is diseased or poses a hazard, and any possible treatment to avoid removal, except as provided by paragraph 2 of this section.*
2. *Emergencies. Significant vegetation may be removed in the event of an emergency when the vegetation poses an immediate threat to life or safety.*
3. *Licensed Timber Operations. Logging operations that have been permitted by the Oregon Department of Forestry as being consistent with the Oregon Forest Practices Rules and Statutes.*

Response: All significant vegetation and mapped wetlands on site will be avoided throughout the construction process. There is no proposal to remove any trees or vegetation in this application. If a dead, diseased, and/or hazardous tree is found in the development area, the applicant will provide an arborist report to the City prior to removal activity.

16.124.070 New Landscaping

A. *Applicability. This section shall apply to all developments within the City of Warrenton.*

B. *Landscaping Plan Required. For every new development in the City of Warrenton requiring a City permit, a landscape plan is required. All landscape plans shall include the following minimum required details (see Section 16.212.040 for additional landscape plan requirements for projects requiring site design review):*

1. *Legal description (e.g., assessor parcel number, copy of warranty deed, etc.) for the subject property;*
2. *Property lines with the location and general description (height and type of material) of existing and proposed fences and other buffering or screening materials;*
3. *The location of existing and proposed terraces or retaining walls;*
4. *The location of existing and proposed plant materials;*
5. *Wetland and/or riparian area boundaries on the property, if any;*
6. *Existing and proposed structures;*
7. *Driveway and adjoining roadway widths, descriptions, and locations; and*
8. *Prevailing drainage patterns for the property.*
9. *Other information as deemed appropriate by the Community Development Director. An arborist's report may be required for sites with mature trees that are protected under this chapter and/or Chapter 16.156 of this Code.*

Response: A landscape plan that meets the above requirements is included with this application on **Sheet C2.0**. The protected trees are not accessible due to an existing forested buffer and the Community Development Director has not indicated that an arborist's report is required for the proposed development.

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

1. *Residential districts: 20% of the site.*
2. *Commercial districts: 15% of the site shall be landscaped according to the requirements of this section.*
3. *General industrial districts: a minimum of 20% of the site shall be landscaped.*

The use of mature, native vegetation within developments is a preferred alternative to removal of vegetation and re-planting.

Response: The subject property is located in the General Industrial (G-I) district, therefore a minimum of 20% of the site is required to be landscaped. This landscape requirement was discussed at the preapplication conference where the Community Development Director confirmed that the 20% landscape requirement can be met through existing vegetation.

Native vegetation and landscaped areas are shown on the landscape plan included on **Sheet C2.0**. The site is approximately 18-acres in size with 12.7-acres of existing mature

native vegetation and forest which equates to 70% of the site. Therefore, the development proposed greatly exceeds the 20% landscape area standard as required by this section.

D. Landscape Materials. Landscape materials include trees, shrubs, groundcover plants, turf grasses (e.g. grass sod or seed), and outdoor hardscape features, as described below:

1. Natural Vegetation. Natural vegetation shall be preserved or planted where practicable.

[...]

Response: As stated in the previous finding, the property will retain the existing natural vegetation currently on site. The only new landscape materials are proposed to be added as part of this project are turf grass lawn on the southwest side of the building, within the fenced in area, and a new landscape island in the parking lot.

E. Landscape Design Standards. All yards, parking lots and required street tree planter strips shall be landscaped in accordance with the provisions of Sections 16.124.010 through 16.124.050. Landscaping shall be installed with development to provide erosion control, visual interest, buffering, privacy, open space and pathway identification, shading and wind buffering, and to help control surface water drainage and improvement of water quality, based on the following standards:

1. Yard Setback Landscaping. Landscaping shall satisfy the following criteria:

a. Provide visual screening and privacy within side and rear yards while leaving front yards and building entrances mostly visible for security purposes.

b. Use shrubs and trees as wind breaks, as appropriate.

c. Retain natural vegetation, as practicable.

d. Define pedestrian pathways and open space areas with landscape materials.

e. Provide focal points within a development, such as signature trees (i.e., large or unique trees), hedges and flowering plants.

f. Use trees to provide summer shading within common open space areas, and within front yards when street trees cannot be provided.

g. Use a combination of plants for year-long color and interest.

h. Use landscaping to screen outdoor storage and mechanical equipment areas, and to enhance graded areas such as berms, swales and detention/retention ponds.

Response: Landscaping was installed when the facility was first constructed and will be maintained to meet the landscaping requirements of the Warrenton Development Code. All yards are currently landscaped with existing natural vegetation that has enough density to provide visual screening on side and rear property lines.

Less vegetation exists in the front yard, leaving the building entrance mostly visible. The existing shrubs and trees provide wind breaks for the property. All existing natural vegetation will be retained. The vegetation near the main entrance utilizes a combination of plants for year-round color.

Existing pedestrian pathways are currently defined with landscaping materials that will be retained. The new pedestrian connection to SE 19th Street is also defined by existing landscaping and natural vegetation.

Existing trees surround the development on site, as well as in the landscaped area in the parking lot and near the main entrance.

No outdoor storage exists, and mechanical equipment and trash enclosure areas adequately screened from adjacent properties. There is a swale that exists between the parking area and access road on site that is currently landscaped with grass and trees.

2. *Parking Areas. A minimum of eight percent of the combined area of all parking areas, as measured around the perimeter of all parking spaces and maneuvering areas, shall be landscaped. Such landscaping shall consist of an evenly distributed mix of shade trees with shrubs and/or groundcover plants. "Evenly distributed" means that the trees and other plants are distributed around the parking lot perimeter and between parking bays to provide a partial canopy. At a minimum, one tree per five parking spaces total shall be planted to create a partial tree canopy over and around the parking area. All parking areas with more than 20 spaces shall include landscape islands with trees to break up the parking area into rows of not more than 12 contiguous parking spaces. All landscaped areas shall have minimum dimensions of four feet by four feet to ensure adequate soil, water, and space for healthy plant growth.*

Response: The existing parking area is approximately 32,256 square feet and will be divided into two sections by a pedestrian control fence to separate the visitor parking area from the employee parking area. The parking area is currently landscaped with trees and a 250-foot rock-lined drainage swale between the parking area and maneuvering area to the west. The **Landscape Plan** on **Sheet C2.0** show that between the existing trees and natural landscaping around the parking lot (not including the drainage swale), approximately 7,883 square feet of landscaping exists in the parking area which amounts to 24 percent, thus exceeding the required 8 percent (2,580 square feet) of landscaping required by this standard.

Based on the tree requirements in this standard, 14 trees are required to be planted in the parking area. The parking lot is surrounded by trees on three sides and an additional 13 trees are located throughout the parking and maneuvering areas providing a partial tree canopy over the parking area.

The existing parking area was developed with three areas that have 13 contiguous parking spaces – one greater than the current code standard of 12. An administrative variance is proposed to address this minor discrepancy from current code standards. The administrative variance is discussed in Section 4.

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

a. *Parking/Maneuvering Area Adjacent to Streets and Drives. Where a parking or maneuvering area is adjacent and parallel to a street or driveway, a decorative wall (masonry or similar quality material), arcade, trellis, evergreen hedge, or similar screen shall be established parallel to the street or driveway. The required wall or screening shall provide breaks, as necessary, to allow for access to the site and sidewalk by pedestrians via pathways. The design of the wall or screening shall also allow for visual surveillance of the site for security. Evergreen hedges used to comply with this standard shall be a minimum of 36 inches in height at maturity, and shall be of such species, number and spacing to provide the required screening within one year after planting. Any areas between the wall/hedge and the street/driveway line shall be landscaped with plants or other groundcover. All walls shall be maintained in good condition, or otherwise replaced by the owner.*

b. *Parking/Maneuvering Area Adjacent to Building. Where a parking or maneuvering area, or driveway, is adjacent to a building (other than a single-family, two-family, or three-family dwelling), the area shall be separated from the building by a raised pathway, plaza, or landscaped buffer not less than four feet in width. Raised curbs, bollards, wheel stops, or other design features shall be used to protect buildings from being damaged by vehicles. When parking areas are located adjacent to residential ground-floor living space (except for a single-family residence, duplex, and triplex), a landscape buffer is required to fulfill this requirement.*

c. *Screening of Mechanical Equipment, Outdoor Storage, Service and Delivery Areas, and Automobile-Oriented Uses. All mechanical equipment, outdoor storage and manufacturing, and service and delivery areas, shall be screened from view from all public streets and residential districts. Screening shall be provided by one or more the following: decorative wall (i.e., masonry or similar quality material), evergreen hedge, non-see-through fence, or a similar feature that provides a non-see-through barrier. Walls, fences, and hedges shall comply with the vision clearance requirements and provide for pedestrian circulation, in accordance with Chapter 16.120, Access and Circulation. (See Section 16.124.050 for standards related to fences and walls.)*

Response: The portion of the parking area that is adjacent to an internal roadway is buffered by a 10-foot wide vegetated drainage swale. The area of the driveway adjacent to the building is buffered by a raised sidewalk.

There is no outdoor storage proposed with this application. Mechanical equipment, service and delivery areas are adequately screened from residential districts by the existing 200+ foot buffer of forest to the south and west of the property.

Service and delivery areas are located on the east side of the building, behind a security-controlled gate. All screening and fencing will be located outside of the vision clearance areas, as shown on the landscape plan, on sheet C2.0.

F. *Maintenance and Irrigation. The use of drought-tolerant plant species is encouraged, and may be required when irrigation is not available. Irrigation shall be provided for plants that are not drought-tolerant. If the plantings fail to survive, the property owner shall replace them with healthy plantings of shrubs, flowering plants and/or trees. All other landscape features required by this Code shall be maintained in good condition, or otherwise replaced by the owner.*

G. *Additional Requirements. Additional buffering and screening may be required for specific land uses, as identified by Division 2, and the City may require additional landscaping through the conditional use permit process (Chapter 16.220).*

Response: The existing landscaping is mature, established, and does not require irrigation. The proposed new landscape island in the parking area will be planted with drought-tolerant, native species. The property owner acknowledges responsibility to maintain and replace all landscape features.

16.124.080 Street Trees

Street trees shall be planted for all developments that are subject to land division or site design review. Requirements for street tree planting strips are provided in Chapter 16.136, Public Facilities Standards. Planting of unimproved streets shall be deferred until the construction of curbs and sidewalks. Street trees shall conform to the following standards and guidelines: [...]

Response: Street trees are not required as part of this development. Street improvements are not required, nor are any new streets being created through this development. The existing roadway has a buffer of trees that will remain in place. This section does not apply.

16.128 Vehicle and Bicycle Parking

16.128.030 Vehicle Parking Standards

At the time a structure is erected or enlarged, or the use of a structure or parcel of land is changed within any zone in the City, off-street parking spaces shall be provided in accordance with requirements in this section, chapter, and Code, unless greater requirements are otherwise established. The minimum number of required off-street vehicle parking spaces (i.e., parking that is located in parking lots and garages and not in the street right-of-way) shall be determined based on the standards in Table 16.128.030.A.

A. *General Provisions.*
   1. *Groups of four or more off-street parking spaces shall be served by a driveway or aisle so that no backing movements or other maneuvering within a street or right-of-way, other than an alley, will be required. Section 16.120.020 contains driveway opening and width standards.*
   2. *Service drives or aisles to off-street parking areas shall be designed and constructed to facilitate the flow of traffic and to provide maximum safety to pedestrian, bicycle, and vehicular traffic on the site.*

3. *Service drives or aisles shall be clearly and permanently marked and defined through the use of bumper rails, fences, buildings, walls, painting, or other appropriate markers.*
4. *Fractional space requirements shall be counted as a whole space.*
5. *All parking lots shall be designed and constructed to meet the City standards of Section 16.120.020, this chapter, Chapter 16.136, and this Code.*
6. *Uses not specifically listed above shall furnish parking as required by the Community Development Director, who shall consider uses similar to those listed in Table 16.128.030.A and the Institute of Traffic Engineers Parking Generation as guides for determining requirements for other uses.*

Response: The parking area used for the redeveloped jail facility will be substantially the same as what currently exists on site. As shown of the site plan on **Sheet C1.0,** the parking area is accessed via a clearly marked drive aisle coming from the main entrance to the site. Drive aisles are defined through landscaping and curbing along sidewalks providing clear delineation of vehicle and pedestrian areas. Visitor parking is located closest to the main public entrance on the north side of the parking lot with a fence separating the existing parking area to allow for a secure employee parking area on the southern portion of the parking lot. Separate pedestrian access to the employee entrance and public entrance are shown on **Sheet C5.0**.

As the use is not specifically listed in tables determining the number of required parking spaces, an analysis of the facilities parking needs was conducted based on the number of employees and trips generated by the jail. The total number of employees required to operate the proposed facility is 41 with a maximum of 10 employees per day shift. This is a reduction from 50 employees per shift that were accommodated for onsite when the facility was operated by the State.

A comparison was requested by the Community Development Director to look at the parking needs of similar facilities in three different cities. The parking requirements for the cities of Astoria, Salem, Tillamook, and Eugene were analyzed and found to have slightly differing metrics for parking requirements. Tillamook and Eugene parking standards are based on the number of beds in the facility, while Astoria and Salem are based on the square footage of the facility. The requirements and number of spaces required are outlined in Table 1, below.

Table 1. Parking Space Requirements for similar facilities

Comparator City	Code Citation	Requirement	# Spaces Required
Astoria	7.100	1 space per 2,000 sq. ft. gross floor area	24
Salem	806.015	1 space per 2,000 sq. ft.	24
Tillamook	153.054.8.F	1 space per 5 beds for patients or inmates	35
Eugene	9.6410	1 space per 5.5 beds	32

The Clatsop County facility will be 47,129 square feet and contain 172 beds. The parking lot will provide 44 regular parking spaces for staff, and 25 regular and 4 ADA parking spaces for visitors. Based on the bed count and square footage requirements used by other cities, a minimum of between 24 and 35 spaces are required for the Clatsop County facility, as reflected above in Table 1. Based on these parameters, a total of 73 proposed parking spaces should remain adequate to serve the facility.

7. *Parking spaces and parking areas may be used for transit related uses such as transit stops and park-and-ride/rideshare areas, provided minimum parking space requirements can still be met.*
8. *Parking areas that have designated employee parking and more than 20 automobile parking spaces shall provide at least 10% of the employee parking spaces (minimum two spaces) as preferential carpool and vanpool parking spaces. Preferential carpool and vanpool parking spaces shall be closer to the employee entrance of the building than other parking spaces, with the exception of ADA accessible parking spaces.*

Response: Parking spaces are not proposed to be used for transit related uses. The parking area included 44 spaces for staff, which requires 5 spaces designated as preferential carpool and vanpool parking spaces. These spaces are shown on **Sheet C1.0**.

9. *Sites that are adjacent to existing or planned transit stops or are in the General Commercial (C-1) and Commercial Mixed Use (C-MU) districts are subject to maximum off-street vehicle parking requirements. The maximum number of off-street vehicle parking spaces allowed per site shall be equal to the minimum number of required spaces, pursuant to Table 16.128.030.A, multiplied by a factor of:*
    a. *1.2 spaces for uses fronting a street with adjacent on-street parking spaces; or*
    b. *1.5 spaces, for uses not fronting a street with adjacent on-street parking; or*
    c. *A factor determined according to a parking analysis prepared by a qualified professional/registered engineer and submitted by the applicant.*

Response: The site is adjacent to an existing transit stop; however, it is located over 700 feet away from the building entrance. The site is not within the C-1 or C-MU districts. The jail is not a use listed in Table 16.128.030.A and thus has no minimum parking requirement as defined by the code. An estimate of the amount of parking based on the requirements of other cities was recommended by the Community Development Director as discussed on the previous page. The existing parking area provides an adequate number of spaces and removing parking spaces does not meet the intent of this code criterion and will serve no purpose.

10. *The applicant may propose a parking space standard that is different than the standard in Table 16.128.030.A, for review and action by the Community Development Director through a variance procedure, pursuant to Chapter 16.272. The applicant's proposal shall consist of a written request and a parking analysis*

prepared by a qualified professional/registered engineer. The parking analysis, at a minimum, shall assess the average parking demand and available supply for existing and proposed uses on the subject site; opportunities for shared parking with other uses in the vicinity; existing public parking in the vicinity; transportation options existing or planned near the site, such as frequent transit service, carpools, or private shuttles; and other relevant factors.

The Community Development Director may reduce or waive the off-street parking standards for sites with one or more of the following features: [...]

Response: Table 16.128.030.A does not include a parking standard for a jail. As discussed at the pre-application conference, an alternative parking analysis is required to determine the necessary amount of parking needed for this proposal. As outlined in 16.128.030.A, the proposed 73 total parking spaces is adequate to meet the typical needs for a jail facility.

B. Parking Location and Shared Parking.

1. *Location. Vehicle parking is allowed only on approved parking shoulders (streets), within garages, carports and other structures, or on driveways or parking lots that have been developed in conformance with this Code. Parking and loading areas shall not be located in required yards adjacent to a street unless otherwise specifically permitted in this ordinance. Side and rear yards that are not adjacent to a street may be used for such areas when developed and maintained as required in this chapter. See also Chapter 16.120, Access and Circulation.*
2. *Off-Site Parking. Except for single-family, two-family, and three-family dwellings, the vehicle parking spaces required by this chapter may be located on another parcel of land, provided the parcel is within 200 feet or a reasonable walking distance of the use it serves. The distance from the parking area to the use shall be measured from the nearest parking space to a building entrance, following a sidewalk or other pedestrian route. The right to use the off-site parking must be evidenced by a recorded deed, lease, easement, or similar written instrument.*
3. *Mixed Uses. If more than one type of land use occupies a single structure or parcel of land, the total requirements for off-street automobile parking shall be the sum of the requirements for all uses, unless it can be shown that the peak parking demands are actually less (i.e., the uses operate on different days or at different times of the day). In that case, the total requirements shall be reduced accordingly.*
4. *Shared Parking. Required parking facilities for two or more uses, structures, or parcels of land may be satisfied by the same parking facilities used jointly, to the extent that the owners or operators show that the need for parking facilities does not materially overlap (e.g., uses primarily of a daytime versus nighttime nature), and provided that the right of joint use is evidenced by a recorded deed, lease, contract, or similar written instrument establishing the joint use.*
5. *Availability of Facilities. Owners of off-street parking facilities may post a sign indicating that all parking on the site is available only for residents, customers*

and/or employees, as applicable. Signs shall conform to the standards of Chapter 16.144.

Response: The only parking proposed is in the existing parking lot on site. The parking lot is not located on street or in a required yard setback. No off-site parking, mixed uses, or shared parking are proposed in this application.

C. *Parking Stall Standard Dimensions and Compact Car Parking. All off-street parking stalls shall be improved to conform to City standards for surfacing, stormwater management, and striping. See Section 16.120.020 for parking lot construction standards. Up to 40% of the required spaces may be sized to accommodate compact cars. Standard parking spaces shall conform to the dimensions in Figure 16.128.030.C. Disabled person parking spaces shall conform to the standards (and dimensions) in this section.*
Important Cross-References. See also Division 2, Land Use District standards; Chapter 16.120, Access and Circulation; Chapter 16.124, Landscaping, Street Trees, Fences, and Walls; and Chapter 16.140, Stormwater and Surface Water Management.

Response: The existing parking spaces are 9-feet by 18-feet with 24-foot wide drive aisles. The parking space dimensions required by this code section are 9-feet by 19-feet, however due to the width of the existing parking lot in order to maintain the existing configuration of parking spaces and drive aisles a stall depth of 18-feet is necessary. Thus, the applicant requests an administrative variance to the to the standard dimensions to retain the existing stall depth of 18-feet. The variance criteria are addressed in Section 4 of this narrative.

D. Disabled Person Parking Spaces. The following parking shall be provided for disabled persons, in conformance with the Americans With Disabilities Act. Disabled parking is included in the minimum number of required parking spaces in this subsection.

Response: Four parking stalls that meet ADA requirements are provided in the visitor section of the parking area. The minimum number of accessible spaces required in Figure 16.128.030.D is 3 spaces. Therefore, this criterion is met.

16.128.040 Bicycle Parking Requirements

A. All uses shall provide bicycle parking in conformance with the following standards which are evaluated during development review or site design review.

B. Number of Bicycle Parking Spaces. The minimum number of bicycle parking spaces required for uses is provided in Table 16.128.040.A.
Where an application is subject to Conditional Use Permit approval or the applicant has requested a reduction to the vehicle parking standard, pursuant to 16.128.030(A)(10), the City may require bicycle parking spaces in addition to those in Table 16.128.040.A.

C. Design and Location.
1. All bicycle parking shall be securely anchored to the ground or to a structure.

2. *All bicycle parking shall be lighted for theft protection, personal security and accident prevention.*
3. *All bicycle parking shall be designed so that bicycles may be secured to them without undue inconvenience, including being accessible without removing another bicycle. Bicycle parking spaces shall be at least six feet long and two-and-one-half feet wide, and overhead clearance in covered spaces should be a minimum of seven feet. A five foot aisle for bicycle maneuvering should be provided and maintained beside or between each row/rack of bicycle parking.*
4. *Bicycle parking racks shall accommodate locking the frame and both wheels using either a cable or U-shaped lock.*
5. *Direct access from the bicycle parking area to the public right-of-way shall be provided at-grade or by ramp access, and pedestrian access shall be provided from the bicycle parking area to the building entrance.*
6. *Bicycle parking shall not impede or create a hazard to pedestrians or vehicles and shall not conflict with the vision clearance standards of Chapter 16.132.*
7. *All bicycle parking should be integrated with other elements in the planter strip when in the public right-of-way.*
8. *Short-term bicycle parking.*
    a. *Short-term bicycle parking shall consist of a stationary rack or other approved structure to which the bicycle can be locked securely.*
    b. *If more than 10 short-term bicycle parking spaces are required, at least 50% of the spaces must be sheltered. Sheltered short-term parking consists of a minimum 7-foot overhead clearance and sufficient area to completely cover all bicycle parking and bicycles that are parked correctly.*
    c. *Short-term bicycle parking shall be located within 50 feet of the main building entrance or one of several main entrances, and no further from an entrance than the closest automobile parking space.*
9. *Long-term bicycle parking. Long-term bicycle parking shall consist of a lockable enclosure, a secure room in a building onsite, monitored parking, or another form of sheltered and secure parking.*

Response: A total of 73 vehicle parking spaces is proposed therefore, according to Table 16.128.040.A, 8 bicycle parking spaces are required, of which 4 must be long-term and 4 short-term. Bicycle parking for 8 bicycles, comprised of 4 bicycle racks is included in a sheltered area located near the public front entrance, as shown on **Sheet C1.0**. The location is covered buy the existing building awning/overhang and is in an area monitored 24/7 by jail security, meeting the requirements for both short- and long-term bicycle parking.

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

E. Hazards. Bicycle parking shall not impede or create a hazard to pedestrians or vehicles and shall be located so as to not conflict with the vision clearance standards of Chapter 16.132.

Response: The use is not exempt from bicycle parking requirements, nor does this application seek such an exemption. As shown on the site plan on **Sheet C1.0**, the bicycle parking area is not located in an area that creates a hazard to pedestrians or vehicles nor does it conflict with the vision clearance standards of Chapter 16.132.

16.132 Clear Vision Areas

16.132.010 Clear Vision Areas

See also Section 16.120.020 and Figure 16.120.020.N.

A. A clear vision area shall be maintained on the corner of property adjacent to the intersection of two streets, or adjacent to the intersection of a street and a railroad.

B. A clear-vision area shall consist of a triangular area. Two sides of the triangle are lot lines measured from the corner intersection of the street lot lines for a distance specified in this section or, where the lot lines have rounded corners, the lot lines extended in a straight line to a point of intersection and so measured. The triangle's third side is a line across the corner of the lot joining the non-intersecting ends of the other two sides.

C. A clear-vision area shall contain no planting, fence, wall, structure, or temporary or permanent obstruction exceeding 36 inches in height measured from the top of the curb or, where no curb exists, from the established street centerline grade, except:

1. *Trees exceeding this height may be located in this area provided all branches and foliage are removed to a height of eight feet above the grade;*
2. *Open-wire fencing that does not obscure sight more than 10% may be a maximum of 48 inches high.*

D. The following dimensional requirements govern clear vision areas:

1. *The minimum length of street sides of the clear vision triangle shall be 15 feet. See Figure 16.132.010.*
2. *The minimum vision clearance area may be increased by the Community Development Director, City-appointed engineer, or Planning Commission upon finding that more sight distance is required (i.e., due to traffic speeds, roadway alignment, etc.).*

Response: Clear vision areas are required at the entry way to the site, as well as the northeast corner of the property where SE 19th street turns to the south. As shown on the landscape plan, the clear vision areas at the site entrance are adequate to meet the requirements outlined in this section and there are no fences or landscaping that will obstruct view located within the vision clearance areas. SE 19th street is County-maintained roadway that also currently has adequate vision clearance. Road improvements to SE 19th Street that were approved separately from this application will include the construction of

a multi-use path, shoulder widening, and maintenance of vision clearance areas on the northeast corner of the subject property.

Chapter 16.136 Public Facilities Standards

16.136.020 Transportation Standards

A. *Development Standards. No development shall occur unless the lot or parcel abuts a public or private street, other than an alley, for at least 25 feet and is in conformance with the provisions of Chapter 16.120, Access and Circulation, and the following standards are met:*

1. *Streets within or adjacent to a development shall be improved in accordance with the Comprehensive Plan, Transportation System Plan, and the provisions of this chapter;*

[...]

Response: As addressed in previous sections, the subject property fronts and takes access from SE 19th Street which is a County maintained public roadway. The County is undertaking roadway improvements that were approved in a separate approval prior to this application. Those improvements include shoulder widening for the creation of a multi-use path in accordance with the Comprehensive Plan, Transportation System Plan, and the provisions of this chapter. This proposal for site improvements to the existing jail facility does not include the development of new streets, additional street width, or other roadway improvements. The remaining standards in this section apply to the development of new streets and do not apply to this proposal.

16.136.030 Public Use Areas

A. *Dedication Requirements.*

1. *Where a proposed park, playground or other public use shown in a plan adopted by the City is located in whole or in part in a subdivision, the City may require the dedication or reservation of this area on the final plat for the subdivision.*

[...]

Response: No public use areas are proposed with this development. This project is not a subdivision and does not require a provision for public open space. This section does not apply.

16.136.050 Sanitary Sewer and Water Service Improvements

A. *Sewers and Water Mains Required. Sanitary sewers and water mains shall be installed to serve each new development and to connect developments to existing mains in accordance with the City's construction specifications and the applicable Comprehensive Plan policies. Where City sanitary sewers are not physically or legally available to service the site, the applicant must demonstrate provisions for a suitable on-site disposal system permitted by DEQ prior to issuance of City permits. All development within a growth management (GM) zone, as identified on the official Warrenton Zoning Map, shall comply with the growth management zone standards of Chapter 16.112.*

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

Response: The existing sewer and water connections are included on the utility plan included on **Sheet C4.0**. No new connections are required or proposed. As discussed at the preapplication meeting on August 7, 2019, the existing water and sewer connections need to be inspected and maintained as necessary. No issues were raised regarding capacity or availability of service. The requirement for an access easement to the water meter was also discussed at the preapplication meeting and is shown on the utility plan.

16.136.050 Storm Drainage Improvements

A. *General Provisions. The City shall issue a development permit only where adequate provisions for stormwater and floodwater runoff have been made in conformance with Chapter 16.140, Stormwater and Surface Water Management.*

Response: A stormwater system currently exists and drains the entire developed area. The grading plan on **Sheet C4.0** and stormwater plan on **Sheet C5.0** show the location of existing and proposed storm drainage. Stormwater drains in various directions from the developed area into the areas of natural vegetation on the jail property. From there the overall flow of runoff heads east along SE 19th Street before continuing north towards Adams Slough and the Columbia River. A Stormwater Report included in **Appendix B** describes in detail the stormwater conveyance system on site. The report concludes that the proposed improvements will result in a net reduction of impervious area and no flow control or onsite retention is necessary.

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

Response: The proposed drainage improvements are contained on site and will tie into existing drainage facility. As documented in **Appendix B** Stormwater Report, the existing drainage outfalls will receive less runoff than under current conditions, and there is no need to change to the existing drainage facilities.

The effects on upstream drainage are also reviewed in **Appendix B.** The Stormwater Report states that existing drainage patterns will be preserved and all of the existing drainage outfalls will receive the same or less runoff than under current conditions.

C. *Effect on Downstream Drainage. Where it is anticipated by the City-appointed engineer that the additional runoff resulting from the development will overload an existing drainage facility, the City shall withhold approval of the development until provisions have been made for improvement of the potential condition or until*

provisions have been made for storage of additional runoff caused by the development in accordance with City standards.

Response: The effects on downstream drainage are reviewed in the stormwater report in **Appendix B**. The Stormwater Report finds that the proposed improvements will result in a net reduction of impervious area and no additional flow control or onsite retention is necessary.

D. *Easements. Where a development is traversed by a watercourse, wetland, drainage way, channel or stream, the City may require a dedication of a stormwater easement or drainage right-of-way conforming substantially with the lines of such watercourse and such further width as will be adequate for conveyance and maintenance.*

Response: There is no stormwater easement existing on site, nor has the City indicated a need for one.

16.136.060 Utilities

A. *Underground Utilities. All utility lines including, but not limited to, those required for electric, communication, lighting and cable television services and related facilities shall be placed underground, except for surface mounted transformers, surface mounted connection boxes and meter cabinets which may be placed above ground, temporary utility service facilities during construction, and high capacity electric lines operating at 50,000 volts or above. The following additional standards apply to all new land divisions, in order to facilitate underground placement of utilities:*
   1. *The developer shall make all necessary arrangements with the serving utility to provide the underground services. Care shall be taken to ensure that all above ground equipment does not obstruct circulation and access aisles or impede vision clearance areas for vehicular traffic (Chapters 16.120 and 16.132);*
   2. *The City reserves the right to approve the location of all surface mounted facilities;*
   3. *All underground utilities, including sanitary sewers and storm drains installed in streets by the developer, shall be constructed prior to the surfacing of the streets; and*
   4. *Stubs for service connections shall be long enough to avoid disturbing the street improvements when service connections are made.*

B. *Easements. Easements shall be provided for all underground utility facilities.*

C. *Exception to Undergrounding Requirement. The standard applies only to proposed land divisions and large-scale developments. An exception to the undergrounding requirement may be granted due to physical constraints, such as steep topography or existing development conditions.*

Response: No new utility connections are required for this development. The existing utilities are located underground. A utility easement for the city to access the water meter, is shown along with all of the existing utilities on the utility plan on **Sheet C4.0**.

16.136.070 Easements

Easements for sewers, storm drainage and water quality facilities, water mains, electric lines or other public utilities shall be dedicated on a final plat, or provided for in the deed restrictions. See also Chapter 16.212, Site Design Review, and Chapter 16.216, Land Divisions and Lot Line Adjustments. The developer or applicant shall make arrangements with the City, the applicable district, and each utility franchise for the provision and dedication of utility easements necessary to provide full services to the development. The City's standard width for public main line utility easements shall be 20 feet unless otherwise specified by the utility company, applicable district, or City-appointed engineer.

Response: There is no land division proposed in this development that will necessitate the recording of a final plat. The utility easement required by the City for access to the water meter will be recorded with the deed records for the property.

16.136.080 Construction Plan Approval and Assurances

No public improvements, including sanitary sewers, storm sewers, streets, sidewalks, curbs, lighting, parks, or other requirements shall be undertaken except after the plans have been approved by the City, permit fee paid, and permit issued. The permit fee is required to defray the cost and expenses incurred by the City for construction and other services in connection with the improvement. The permit fee shall be set by resolution of the City Commission. The City may require the developer or land divider to provide bonding or other performance guarantees to ensure completion of required public improvements. See also Section 16.212.040, Site Design Review, and Chapter 16.216, Land Divisions and Lot Line Adjustments.

Response: None of the proposed work will take place without the issuance of permits.

16.136.090 Installation

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

B. Adopted Installation Standards. The Oregon Standard Specifications for Construction (combined APWA/ODOT standards) shall be a part of the City's adopted installation standard(s); other standards may also be required upon recommendation of the City-appointed engineer.

C. Commencement. Work shall not begin until the City has been notified in advance and all required permits have been issued.

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

E. City Inspection. Improvements shall be constructed under the inspection and to the satisfaction of the City. The City may require minor changes in typical sections and details if unusual conditions arising during construction warrant such changes in the

public interest. Modifications requested by the developer shall be subject to land use review under Chapter 16.228, Modifications to Approved Plans and Conditions of Approval. Any monuments that are disturbed before all improvements are completed by the subdivider shall be replaced prior to final acceptance of the improvements.

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

Response: These criteria are informational regarding requirements and procedures pertaining to permitting and construction. All work will be conducted in accordance with applicable state and local regulations.

Chapter 16.140 Stormwater and Surface Water Management

16.140.010 Natural Drainage System Maintained to Extent Feasible

A. *To the extent practicable, all development must conform to the natural contours of the land and natural and pre-existing man-made drainage ways must remain undisturbed.*

B. *To the extent practicable, lot boundaries created by partition or subdivision must coincide with natural and pre-existing man-made drainage ways to avoid the creation of lots that can be built upon only by altering such drainage ways.*

Response: This application is for the redevelopment of a pre-existing site. As such, the natural and man-made drainage ways will remain undisturbed as evidenced by the utility plan shown on **Sheet C4.0**. No partition or subdivision is proposed in this application.

16.140.020 Developments Must Drain Properly

A. *All developments must provide an adequate drainage system to prevent the undue detention or retention of stormwater or surface water on the development site. Stormwater or surface water will not be regarded as unduly detained or retained if:*

1. *The detention or retention results from a technique, practice or device deliberately installed as part of an approved sedimentation or stormwater runoff control plan prepared by an engineer; or*
2. *The detention or retention is not substantially different in location or degree than that experienced by the development site in its predevelopment state, unless such detention or retention presents a danger to health or safety.*

Response: As shown on the utility plan on **Sheet C4.0** and described in the Stormwater Report in **Appendix B**, the site currently has adequate drainage and the modifications proposed will retain the existing adequate drainage.

B. *No stormwater may be channeled and directed into a sewer line.*

C. *Whenever practicable, the drainage system of a development must coordinate with and connect to the drainage systems or drainage ways on surrounding properties or streets.*

D. *All developments must be constructed and maintained so that adjacent properties are not unreasonably burdened with stormwater runoff as a result of the developments.*

Response: As shown on the utility plan on **Sheet C4.0**, the stormwater is drained to the south and east sides of the developed area onto the forested area of the site and not directed into a sewer line or in a manner that burdens adjacent properties.

16.140.030 Surface Water Management

All developments must be constructed and maintained so that impacts to natural and man-made drainage ways do not unreasonably burdened upstream or downstream properties with surface water flooding as a result of the developments. More specifically:

A. *No development may be constructed or maintained so that the development unreasonably impedes the natural flow of water from higher adjacent properties across the development, resulting in substantial damage to the higher adjacent properties; and*

B. *No development may be constructed or maintained so that stormwater from the development is collected and channeled into natural or man-made drainage ways, such that the volume and/or rate of flow is substantially greater than the pre-development volume and/or rate.*

C. *No development may be constructed such that the flow of water through natural or existing man-made drainage ways is obstructed. Bridges and culverts constructed to allow the flow of water through a development must be designed to pass flow during a 100-year storm event.*

Response: The development proposed in this application will have substantially the same impact on surface water as what currently exists on site. As shown on the Utility Plan on **Sheet C4.0** and detailed in the Stormwater Report in **Appendix B**, the method of conveyance does not impede any natural flow of water from higher adjacent properties and will not create in increase in flow greater than what currently exists. No bridges or culverts are proposed in this development.

16.140.040 Erosion and Sediment Control

A. *For projects that disturb over one acre, applicants must apply to Oregon Department of Environmental Quality (DEQ) for a National Pollutant Discharge Elimination Control System (NPDES) 1200(C) permit.*

B. *Erosion and sediment control plans are required by the City as a component of the site plan for all plats and all projects which require site plan review. Erosion control plans must be designed to the specifications as outlined in this chapter.*

C. *Development of the land may not begin (and no building permits may be issued) until the City-appointed engineer approves the erosion control plan.*

D. *For purposes of this section, "disturb" means any use of the land by any person in any development, and/or road construction and maintenance that results in a change in the natural cover or topography that may cause or contribute to sedimentation. Sedimentation occurs whenever solid particulate matter, mineral or organic, is transported by water, air, gravity or ice from the site of its origin.*

Response: Approval of a 1200(C) permit will be obtained by the applicant prior to any construction activity taking place. No development will take place prior to the approval of an erosion control plan from the City-appointed engineer.

16.140.050 Stormwater System Design

A. *Storm sewers constructed within the street will be sized by the developer's engineer and will consider all potential runoff requirements within the site and upstream of the site.*
   1. *The storm sewer will be sized for a 100-year design recurrence criteria for storm drainage facilities.*
   2. *The minimum size of storm sewers is eight inches in diameter.*
   3. *Spacing of catch basins along the street must conform to published engineering recommendations, which consider profile of the street and street width.*

Response: No new streets or storm sewers are proposed as part of this application. Existing stormwater infrastructure is adequate as demonstrated in the Stormwater Report included in **Appendix B**.

B. *On-site detention shall be required for new development where downstream deficiencies exist or are anticipated to exist. The square footage considers the total development of the property including the future potential impervious surface. Required design recurrence criteria for a commercial or residential storm drainage detention facility is a 10-year interval. Development that has less than 5,000 square feet of impervious surface is exempt from detention requirements.*

C. *Pervious pavement, and pavement and roofs that drain to an infiltration facility will not be counted when sizing a detention facility to handle the stormwater design.*

Response: Onsite detention of stormwater is not necessary as no downstream deficiencies exist or are anticipated to exist. Details of the stormwater management system are conveyed in **Appendix B** Stormwater Report.

16.140.060 Illegal Discharge of Materials into the Stormwater System

The discharge of any material other than stormwater into the stormwater system is prohibited. The placement of materials in a location where they are likely to be carried into the stormwater system by any means is also prohibited.

Response: No materials are proposed to be stored in an area where they could potentially be carried into the stormwater system. Only stormwater will be discharged into the stormwater system.

Chapter 16.144 Signs

16.144.020 General Requirements

The following general provisions shall govern all signs:

A. Signs shall not extend into, over or upon any public street or right-of-way. A sign may extend over a public sidewalk provided the bottom of the sign structure shall be at least eight feet above the grade of the sidewalk and the sign does not project more than three feet into the public right-of-way. A highway directional or informational sign maintained and owned by the Oregon Department of Transportation may extend over a street right-of-way.

[...]

Response: A sign is not proposed in this development application. If at a future time a sign is proposed, a separate permit will be obtained, and the requirements of this section will be met.

Chapter 16.152 Grading, Excavating, and Erosion Control Plans

16.152.060 Grading Permit Requirements

A. Permits Required. Except as exempted in Section 16.152.040, no person shall do any grading without first obtaining a grading permit from the building official. A separate permit shall be obtained for each site, and may cover both excavations and fills.

B. Application. To obtain a grading permit, the applicant shall file an application in writing to the City of Warrenton on a form furnished by the building official. Every such application shall contain:

1. *Identification and description of work to be covered by the permit for which the application is made, including estimated quantities of work involved.*
2. *Description of the land on which the proposed work is to be done by legal description, street address, assessor parcel number, or similar description that will readily identify and definitely locate the proposed building or work.*
3. *Indication of the use or occupancy for which the proposed work is intended.*
4. *Plans, diagrams, computations, and specifications, and other data as required by this chapter. Plans and specifications shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature, and extent of the work proposed, and show in detail that it will conform to all provisions of this Code and relevant laws, ordinances, rules, and regulations of the City.*
5. *Applicant's signature.*
6. *Other data as required by the building official.*

C. Grading Designation. Grading in excess of 5,000 cubic yards shall be permitted in accordance with the approved grading plan prepared by a civil engineer, and shall be designated as "engineered grading." Grading involving less than 5,000 cubic yards shall be designated as "regular grading" unless the permittee chooses to have the grading performed as engineered grading, or the building official determines that

special conditions or unusual hazards exist, in which case grading shall conform to the requirements of engineered grading.

D. *Engineered Grading Requirements. As required by 2010 Oregon Structural Specialty Code Appendix J, as may be amended.*

E. *Regular Grading Requirements. Each application for a grading permit shall be accompanied by a plan in sufficient clarity to indicate the nature and extent of the work. The plans shall give the location of the work, the name of the owner, and the name of the person who prepared the plan. The plan shall include the following information:*

1. *General vicinity of the proposed site.*
2. *Limiting dimensions and depth of cut and fill.*
3. *Location of any buildings or structures where work is to be performed, and the location of any buildings or structures within 15 feet of the proposed grading.*

F. *Issuance.*

1. *The application, plans, specifications, computations, and other data filed by an applicant for a grading permit shall be reviewed by the building official. Such plans may be reviewed by other City departments to verify compliance with any applicable laws of the City. The building official may require that grading operations and project designs be modified if delays occur which incur weather generated problems not considered at the time the permit was issued. The provisions of UBC Section 106.4 are applicable to grading permits.*
2. *The building official may require professional inspection and testing by the soils engineer. When the building official has cause to believe that geologic factors may be involved, the grading will be required to conform to engineered grading.*

Response: A grading plan prepared by Paul Dedyo, a registered civil engineer, is included with this application on **Sheet C3.0**. the Geotechnical Report outlining the site characteristic is also included in **Appendix C**. Prior to any grading activity, a grading permit will be obtained from the City. Throughout the process the property owner and contractor conducting the work will work closely with the City to ensure all requirements for site grading are met.

Chapter 16.201 Transit Access and Supportive Improvements

16.201.010 Transit Access and Supportive Improvements

Development that is proposed adjacent to an existing or planned transit stop, as designated in an adopted transportation or transit plan, shall provide the following transit access and supportive improvements in coordination with the transit service provider:

A. *Reasonably direct pedestrian connections between the transit stop and primary entrances of the buildings on 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.*

B. *The primary entrance of the building closest to the street where the transit stop is located that is oriented to that street.*
C. *A transit passenger landing pad that is ADA accessible.*
D. *An easement or dedication for a passenger shelter or bench if such an improvement is identified in an adopted plan.*
E. *Lighting at the transit stop.*
F. *Other improvements identified in an adopted plan.*

Response: A transit stop is located on SE 19th street at the northeast corner of the property. The County has recently improved SE 19th street to include a multi-use path that will provide pedestrian access to the transit stop. The primary entrance to the jail is located closes to the street and entrance from SE 19th Street. There are no identified transit stops located on any adopted plans and there is no proposal to construct a new transit stop on the subject property.

Section 3: Application and Review Procedures

16.208 Types of Applications and Review Procedures

16.208.050 Type III Procedure (Quasi-Judicial)

A. *Pre-application Conference. A pre-application conference is required for all Type III applications. The requirements and procedures for a pre-application conference are described in Section 16.208.070.*
B. *Application Requirements.*
   1. *Application Forms. Type III applications shall be made on forms provided by the City of Warrenton.*
   2. *Content. Type III applications shall:*
      a. *Include the information requested on the application form.*
      b. *Be filed with three copies of a narrative statement that explains how the application satisfies each and all of the relevant criteria in sufficient detail for review and action.*
      c. *Be accompanied by the required fee.*
      d. *Include one set of pre-stamped and pre-addressed envelopes for all property owners of record as specified in subsection C of this section. The records of the Clatsop County Department of Assessment and Taxation are the official records for determining ownership. The applicant shall demonstrate that the most current assessment records have been used to produce the notice list. Alternatively, the applicant may pay a fee for the City to prepare the public notice mailing.*

Response: This narrative has been included with the required application form and fees. Three copies of the narrative have been included, along with pre-stamped and pre-

addressed envelopes for the public notice mailing to property owners within 200 feet, as required by 16.208.050.C. An address list for property owners provided by the Clatsop County Tax Assessment Office is included in **Appendix F**.

> e. *Include an impact study for all Type III applications. The impact study shall quantify/assess the effect of the development on public facilities and services. The study shall address, at a minimum, the transportation system, including pedestrian ways and bikeways, the drainage system, the parks system, the water system, the sewer system, and the noise impacts of the development. For each public facility system and type of impact, the study shall propose improvements necessary to meet City standards and to minimize the impact of the development on the public at large, public facilities systems, and affected private property users. In situations where this Code requires the dedication of real property to the City, the applicant shall either specifically agree to the dedication requirement, or provide evidence that shows that the real property dedication requirement is not roughly proportional to the projected impacts of the development. [...]*

Response: The water, sewer, and drainage facilities utilized by the facility were established in when the jail was first constructed. Since that time there have been no identified issues with sewer, water, stormwater, or transportation facilities. As an isolated County jail facility there are no impacts to the parks system. Impacts to public facilities are addressed in detail in this narrative in section Chapter 16.136 Public Facilities Standards beginning on page 35 of this narrative.

The potential impacts not addressed in the public facilities section are addressed as follows:

- Transportation Impacts

  The Transportation Memo prepared by Lancaster Engineering is included as **Appendix E** to this study. The Memo looks at multi-modal traffic safety, TSP identified concerns, and potential issues caused by access to and from the site as well as intersections with public streets. The multi-modal path installed by Clatsop County along SE 19th street will create a safe and direct connection for pedestrians and cyclists. No access issues have been identified with the driveway and the majority of traffic is anticipated to utilize the intersection of SE 19th Street and SE Ensign Lane. The construction of Bugle Road from 19th street to Ensign Lane will allow for an additional connection to the local road network, dispersing the impacts away from a single intersection.

  Trips generated by the facility will be less than the previously existed at the site due to a decrease in the number of employees at the old facility will be decreased from approximately 50 to 41 employees when the new facility is operational.

Additionally, there will be fewer anticipated visitors due to the implementation of a remote internet video visitation system.

- Noise

  The noise that comes from the facility will be that of vehicles, workers, and visitors entering and exiting the facility. There will not be any machinery, generators, or other sources of noise used on a daily basis at the facility. The General Industrial zone allows for noise "as may be permitted under all applicable laws and regulations." The Warrenton Municipal Code regulates noise in Section 9.04.040 and sets standards concerning animals, engines, mechanical devices, construction, and amplified sound. None of these uses or situations are proposed at the facility.

  The source of noise associated with the jail is contained to the structures and parking lots associated with the facility. There is a 300-foot or greater buffer of dense, mature forest between the area of potential noise and the adjacent residential district to the east and south of the subject property. Furthermore, the reconfiguration of the facility to remove the center courtyard, will reduce the potential noise impacts associated with outdoor recreation previously associated with the space. A new, covered, outdoor recreation area will buffer the sound produced associated with the use of this area.

- Light

  Lighting, in general, is not regulated in the General Industrial (I-1) zone. The only standards pertaining to lighting are in relation to airport interference. The airport has been informed of the proposed development and an airport coordination letter is included in **Appendix D** which states that there are no perceived issues or concerns with the use of the facility as proposed. Since lighting is an important and necessary element for security of a jail facility, there will be external lights on the structure illuminating the perimeter of the facility.

  The reconfiguration of the facility will move the lights on the south and west side of the facility approximately 100 feet closer to the center of the property. Since the lights will be set farther back from their existing location, the light seen from the south and west property lines will be reduced. All light fixtures will be converted to LED bulbs and upward light pollution will be reduced by ensuring covers on the light fixtures direct light downwards.

  The 300-plus feet of dense forest between the adjacent residential district to the south and east will buffer the residential property from the light impacts. The property to the west, across Bugle Road is also zoned I-1 and contains the Clatsop County Sheriff's Office who is also the operator of the jail. The property on the north side of SE 19th Street is also owned by Clatsop County, is zoned I-1, and is mostly vacant except for the Clatsop County Animal Shelter.

- Pollution

  There are no hazardous materials stored or processed on site that could potentially cause harm to the facility itself or surround properties. The waste generated by the facility is typical of office, restaurant, residential, use and is non-toxic. Garbage and recycling will be stored in standard dumpsters and receptacles and will be emptied on a regular basis.

- Vibration, Odors, & Emissions

  Impacts from vibrations and odors and emissions are typically associated with industrial and manufacturing uses. The jail is not an industrial use, and as such there is no machinery or equipment used at the facility that will cause vibration detectible from adjacent properties. Likewise, there is no industrial processing, manufacturing uses taking place at the property that will create nuisance odors or emissions such as vapor, smoke, or other particulates.

16.212 Site Design Review

16.212.040 Site Design Review Procedure

A. Application Review Procedure.

1. Site Design Review—Determination of Type II and Type III Applications. Applications for site design review shall be subject to Type II or Type III review, based on the following criteria:

a. Residential developments with between five and nine dwelling units shall be reviewed as a Type II application, except when development review is allowed under Section 16.212.020. Residential developments with greater than nine units shall be reviewed as a Type III application.

b. Commercial, industrial, public/semi-public, and institutional buildings (including building additions) with:

i. Up to 10,000 square feet of gross floor area and developing less than two acres of land shall be reviewed as a Type II application.

ii. More than 10,000 square feet of gross floor area or developing two or more acres of land shall be reviewed as a Type III application.

c. Developments involving the clearing and/or grading of two acres or more shall be reviewed as Type III applications.

Response: This proposal will demolish and rebuild approximately 20,000 square feet of floor area, therefore exceeding the limit of 10,000 square feet of gross floor area and requiring a Type III review process.

B. Application Submission Requirements. All of the following information (subsections (B)(1) through (7) of this section) is required for site design review application submittal:

1. Proposed Site Plan. The site plan shall contain the following information:

a. *The proposed development site, including boundaries, dimensions, and gross area.*
b. *Natural land features identified which are proposed to be removed or modified by the development, including modifications to existing drainage patterns.*
c. *The location and dimensions of all proposed public and private streets, drives, rights-of-way, and easements.*
d. *The location and dimensions of all existing and proposed structures, utilities, pavement and other improvements on the site. Setback dimensions for all existing and proposed buildings shall be provided on the site plan.*
e. *The location and dimensions of entrances and exits to the site for vehicular, pedestrian, and bicycle access.*
f. *The location and dimensions of all parking and vehicle circulation areas (show striping for parking stalls and wheel stops, as applicable), and proposed paving materials.*
g. *Pedestrian and bicycle circulation areas, including sidewalks, internal pathways, pathway connections to adjacent properties, and any bicycle lanes or trails.*
h. *Loading and service areas for waste disposal, loading and delivery.*
i. *Outdoor recreation spaces, common areas, plazas, outdoor seating, street furniture, and similar improvements.*
j. *Location, type, and height of outdoor lighting.*
k. *Location of mail boxes, if known.*
l. *Locations, sizes, and types of signs (shall comply with Chapter 16.144).*
m. *The Community Development Director may require studies or exhibits prepared by qualified professionals to address specific site features (e.g., traffic, noise, environmental features, site drainage, natural hazards, etc.).*
n. *The applicant's entire tax lot and the surrounding property to a distance sufficient to determine the location of the development in the City, and the relationship between the proposed development site and adjacent property and development. The property boundaries, dimensions and gross area shall be identified.*
o. *Identification of slopes greater than 10%.*
p. *The location, condition (paved, gravel unimproved, etc.) and width of all public and private streets, drives, sidewalks, pathways, rights-of-way, and easements on the site and adjoining the site.*
q. *Any areas identified as located in a designated floodplain and/or floodway.*
r. *Depict any wetland and riparian areas, streams and/or wildlife habitat areas.*
s. *Site features such as pavement, areas having unique views, and drainage ways, canals and ditches.*
t. *Any designated historic and cultural resources areas on the site and/or adjacent parcels or lots.*
u. *The location, size and type of trees and other vegetation on the property.*

v. *North arrow, scale, names and addresses of all property owners.*
w. *Name and address of applicant, project designer, engineer, architect, surveyor, and/or planner, if applicable.*

Response: The above criteria is depicted on the site plan included on **Sheet C1.0**.

2. *Architectural Drawings. Architectural drawings shall be submitted showing the following information from subparagraphs a through c of this paragraph 2, and shall comply with Division 3:*
   a. *Building elevations with building height and width dimensions.*
   b. *Building materials, color and type.*
   c. *The name of the architect or designer.*

Response: The architectural drawings for the proposed development were created by Kent Larson from DLR Group. The building elevations with height and width dimensions, and materials, colors, and types are shown on **Sheet 5.1 and 5.11**. The building materials consist of a mix of existing metal siding, precast concrete panels with wood impressions, board and batten fiber cement panels, and cedar paneling. The color theme includes off-white, dark brown, light brown and green. More details can be found on the architectural elevation sheets identified in this paragraph, above.

3. *Preliminary Grading Plan. A preliminary grading plan prepared by a registered engineer shall be required for developments which would result in the grading (cut or fill) of 1,000 cubic yards or greater. The preliminary grading plan shall show the location and extent to which grading will take place, indicating general changes to contour lines, slope ratios, slope stabilization proposals, and location and height of retaining walls, if proposed. Surface water detention and treatment plans may also be required, in accordance with Chapter 16.140.*

Response: A Grading Plan is included on **Sheet C3.0**. The grading activity necessary for this development is limited to only what is necessary for foundation preparations. No major cuts or fill is necessary for this project.

4. *Landscape Plan. A landscape plan is required and shall comply with Chapter 16.124.*
5. *Proposed sign(s) shall be required in conformance with the City's Sign Code (Chapter 16.144).*
6. *Copies of all existing and proposed restrictions or covenants.*
7. *Letter or narrative report documenting compliance with the applicable approval criteria contained in subsection C of this section.*

Response: A Landscape Plan is included on **Sheet C2.0**. No signs are proposed with this application, nor are there any existing or proposed restrictions or covenants. This narrative documents compliance with the applicable approval criteria contained in subsection C, below.

C. *Review Criteria. The Community Development Director shall make written findings with respect to all of the following criteria when approving, approving with conditions, or denying an application:*

1. *The application is complete, as determined in accordance with Chapter 16.208 and subsection B of this section.*

Response: This criterion is procedural in nature relating to the review process conducted by the City. This application has been submitted in accordance with requirements for a Type III procedure as outlined in Section 16.208.050.

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

Response: The underlying land use district of the subject property is General Industrial. Compliance with the standards of the General Industrial zone is discussed starting on page 5 of this narrative.

3. *The applicant shall be required to upgrade any existing development that does not comply with the applicable land use district standards, in conformance with Chapter 16.276, Nonconforming Uses and Development.*

Response: This proposal falls into the category of "government buildings and uses" as listed in Section 16.60.020 Permitted uses. The use is allowed outright in the General Industrial district. Compliance with all of the applicable standards of the General Industrial district and pertinent design standards has been demonstrated in the previous pages of this narrative. None of the existing development was found to be nonconforming. Therefore, this standard is met.

4. *The application complies with the applicable design standards contained in Division 3.*

Response: As demonstrated in the previous section of this narrative, this application fully complies with all of the applicable design standards in Division 3.

16.256 Traffic Impact Study

16.256.020 Typical Average Daily Trips

Average daily vehicle trips shall be calculated using the rates and methodology in the most recent addition of the Institute of Transportation Engineers Trip Generation Manual.

16.256.030 When Required

A traffic impact study will be required to be submitted to the City with a land use application, when the following conditions apply:

A. *The development application involves a change in zoning or a plan amendment designation; or,*

B. *The development shall cause one or more of the following effects, which can be determined by field counts, site observation, traffic impact analysis or study, field measurements, crash history, Institute of Transportation Engineers Trip Generation Manual; and information and studies provided by the local reviewing jurisdiction and/or ODOT:*
   1. *An increase in site traffic volume generation by 300 average daily trips (ADT) or more; or*
   2. *An increase in ADT hour volume of a particular movement to and from the state highway by 20% or more; or*
   3. *An increase in use of adjacent streets by vehicles exceeding the 20,000 pound gross vehicle weights by 10 vehicles or more per day; or*

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

D. *A change in internal traffic patterns that may cause safety problems, such as back up onto the highway or traffic crashes in the approach area.*

Response: This application does not involve a change in zoning or a plan amendment designation. The proposed redevelopment reduces building area, employees, and beds from the existing facility, and therefore does not generate additional trips. Consistent with this reduction in transportation impacts, the pre-application notes indicate that a full Traffic Impact Study is not required. A traffic engineer report addressing multi-modal traffic safety, TSP, and access geometry entering the site as well as intersections with public streets is included in **Appendix E**.

The location of the driveway meets sight distance requirements, as shown on the landscape plan, and does not create a safety hazard, nor does it create a situation where vehicles queue, hesitate, or are subject to other hazards on a state highway. The geometry of the entrance and roadway is detailed further in transportation impact analysis included in **Appendix E**.

16.256.040 Traffic Impact Study Requirements

A. *Preparation. A traffic impact study shall be prepared by a professional engineer registered in the State of Oregon. The study scope and content shall be determined in coordination with the City Public Works Director or designee. Traffic impact analyses required by Clatsop County or ODOT shall be prepared in accordance with the requirements of those road authorities. Preparation of the study report is the responsibility of the land owner or applicant.*

B. *Transportation Planning Rule compliance, Section 16.232.060.*

Response: As stated in the previous response, the proposed development does not trigger a traffic impact study. These criteria are not applicable.

Section 4: Exceptions to Code Standards

At the pre-application conference the project team discussed the existing parking lot configuration with the Community Development Director. The existing parking area has two minor inconsistencies with the current development code.

1) There are three areas that include 13 contiguous parking spaces rather than the current code standard of 12;
2) The parking spaces constructed in 1998 are each 9' x 18' – rather than the 9' x 19' required by code and there is insufficient parking area width to meet the required dimensions for 4 rows of parking spaces and 2 24-foot drive aisles.

The primary reason for this variance request is to focus bond dollars on facilities improvements and avoid the expense of additional paving and repainting the existing parking lot to remove three parking spaces and add an additional foot to each parking space.

Chapter 16.272 Variances

16.272.020 Criteria

Variances to a quantitative requirement of this Code may be granted only if, on the basis of the written application, investigation, and evidence submitted by the applicant, findings of fact are made by the zoning administrator (for Class 1 applications) or Planning Commission (for Class 2 applications) that satisfy the criteria of subsections A through F of this section. Prior variances allowed in the neighborhood shall not be considered by the granting authority in reaching its decision. A determination of whether the standards set forth in this section are satisfied necessarily involves the balancing of competing and conflicting interests. Each request shall be considered on its own merits.

A. The hardship was not created by the person requesting the variance;

B. The request is necessary to make reasonable use of the property. There will be an unreasonable economic impact upon the person requesting the variance if the request is denied;

C. The request will not substantially be injurious to the neighborhood in which the property is located. The variance will not result in physical impacts, such as visual, noise, traffic or increased potential for drainage, erosion and landslide hazards, beyond those impacts that would typically occur with development in the subject zone;

D. The request is not in conflict with the Comprehensive Plan;

E. The request is not in conflict with the Development Code. No variance may be granted which will result in a use not permitted in the applicable zone or which will increase the allowable residential density in any zone with the exception of individual lot size reduction; and

F. Physical circumstance(s) related to the property involved preclude conformance with the standard to be varied.

Response: The applicant proposes a variance to the contiguous spaces standard of WDC 16.124.070(E)(2) and the Parking Stall Dimensions outlined in Figure 16.128.030.C to allow for retention of the existing parking lot configuration.

A. The hardship was created when the parking lot for the state juvenile detention center was approved in 1998.
B. The costs for additional paving, installation of wheel stops, and re-striping the entire parking lot would be substantial. The parking lot has functioned well for the last 20 years and unnecessary improvements would have an unreasonable economic impact on the Bond-mandated improvements and County.
C. Retaining the existing parking lot design would have no impact to the neighborhood. The parking lot is not visible to neighboring properties due to dense vegetation.
D. There are no Comprehensive Plan policies related to the variance request.
E. Parking is permitted for uses allowed in the base Industrial zone. The parking "use" would not change – just the configuration of existing parking spaces that have functioned well for 20 years.
F. Although the site is large enough to accommodate minor expansion of the parking lot, expanding the paved parking area could adversely affect existing trees and vegetation on the site.

Approval of this variance request will:

- Maintain the current parking lot dimensions that has been used by the existing jail facility.
- Not have any impact to the surrounding neighborhood as the parking lot is completely contained on site and buffered by dense vegetation.
- Have no impact on the neighborhood or adjacent properties.
- Not conflict with any comprehensive plan policies.
- Not result in a use that is not permitted by the Development Code.

16.272.030 Classification of Variances

A. Class 1 variances include minor variances that are small changes from the applicable Code requirements and which will have little or no effect on adjacent property or users. Administrative approval by the zoning administrator for Class 1 variances may be granted using a Type II procedure. Class 1 variances are limited to:

1. Location of structures in relation to required yards.
2. Variances from minimum lot width and depth.

3. *Variances from other quantitative standards by 20% or less. [...]*

Response: The variance requested is a reduction of the quantitative standards related to:

1) Contiguous parking spaces – from 12 to 13; and
2) Parking stall length – from 19 to 18 feet.

These changes equate to an approximately 5-8 percent variance from current standards. As such, the request is considered a minor variance by this code standard.

Conclusion

As demonstrated in the narrative above, the redevelopment of the Clatsop County Jail meets the applicable requirements for a Type III Site Design review and Type I Administrative Variance. Drainage and traffic impacts from the proposed redeveloped facility will be considerably less than the previous youth detention facility that occupied this site.

August 15, 2019

To: Kent Larson, DLR Group | Jesse Winterowd, Winterbrook Planning
Cc: Monica Steele, Assistant County Manager, Clatsop County
From: Kevin A. Cronin, AICP, Assistant City Manager/Community Development Director
Re: Clatsop County Jail Relocation/Expansion | Pre-Application Notes

A pre-application conference was held on August 7, 2019 at Warrenton City Hall. The purpose of this memo is to document requirements and concerns raised at the conference. The proposal includes demolition of existing buildings and the construction of a 20,000 SF building. There is existing off street parking from the former Oregon Youth Authority facility. Access is from SE 19th St. The subject property is located at 1250 SE 19th Street.

This project will require site design review pursuant to WMC Chapter 16.212 and will be reviewed via a Type III public hearing process before the Planning Commission with public notice described in WMC 16.208.040. The performance review time for a Type 3 application from completeness to notice of decision is 6-8 weeks. Application requirements are listed in WMC 16.220, including self-addressed, stamped, envelopes to affected property owners. A packed of information, including the permit checklist, was furnished at the meeting.

A site plan shall have calculations and illustrations for building area, landscaped area, and parking to streamline the review process. It is assumed that the project is new construction and all new codes are applicable.

The subject property is zoned I-1 General Industrial and the use "government building" is permitted outright. Specific development standards are included Development Code. The required narrative should address these standards.

Architectural design review is not required for industrial zoned areas.

Applicable site design standards include:

- *WMC 16.120 Vehicular Access & Circulation*. Address pedestrian circulation with direct access from all public roads. A planned multi-use path along SE 19th St should suffice. Access, drive aisle, and traffic safety concerns with a clearly designated crosswalk using color, contrasting materials, thermoplastic, raised, or a combination thereof to distinguish from asphalt from parking areas to the building entrances is required.

Directional arrows on pavement for internal circulation is required. No additional access was requested or required.

- *WMC 16.124 Landscaping, Street Trees, Fences and Walls* – For industrial projects, 20% of the site shall be landscaped. Hardscape features open to the public can count towards up to 50% of the required landscaping. Parking overhang is not prohibited. However, separation between parking and the building is required with the use of wheel stops, bollards, or similar installments. Landscaping standards do not specify species but requires 1 deciduous tree per 5 parking spaces. Native landscaping is required and as well as invasive removal. Flowering species of shrubs and other plant materials is strongly encouraged as well as conservation of existing native landscaping features can count towards the required amount.
- *Vehicle & Bicycle Parking*: Research three other cities/counties that have recently completed jails/renovations to determine a reasonable amount of off-street parking. To reduce off street demand, apply the new parking code. Up to 40% can be compact spaces. Short-term (visitors) bicycle parking should be located near the front entrance and long term (employees) inside the building. Parking space dimensions are 9-feet by 20-feet. The drive aisle must be 24 feet wide.
- *WMC 16.56 Traffic Impact Study*. A full TIS is not required. However, a traffic engineer report (TIA) is required to address multi-modal traffic safety, TSP identified concerns, and geometry issues entering the site as well as intersections with public streets.
- *WMC 16.192 LARGE-SCALE DEVELOPMENT*; Address criteria for large scale project, including impact to stormwater and utilities.
- Engineering and Public Works issues are identified in a separate memo and herein referenced. An impact study is also required to demonstrate availability of public facilities. In such cases there are deficiencies, the applicant shall recommend solutions to correct the deficiency.
- Fire Department comments, if any, are separate referenced herein.
- The use of a construction trailer requires a temporary use permit but can be reviewed concurrently with site design review.

Permit Fees & SDCs

Grading permits are reviewed by a third-party consultant and requires a deposit and direct charge for services. A form was included in the packet. A deposit of $2,000 is required.

Land use fees:

Type 3 Site Plan Review	$1000 (15K – 20K S)
Temporary Use (if any)	$300

Total **$1,300**

The city will also collect systems development charges when building permits are issued. Based on the preliminary drawings, the estimate for SDCs is as follows:

Water: (based on a 1-inch meter)	TBD
Sewer:	TBD
Stormwater: ($131/2,000 SF impervious surface est: 20,000 SF)	$1310
Transportation: $517 PHPT X 20,000 GFA $436	$TBD
(Based on "XX" category)	
Estimated Total:	**$1,310**

Parks SDCs are not required for commercial development. Final SDCs will be calculated per approved plans at building permit issuance.

Please use this letter as a checklist for your land use submittal.

If you have any questions about the requirements or any City related issues, please let me know.

111 SW Fifth Avenue, Suite 2600 Portland, OR 97204 503.542.3860 kpff.com

Clatsop County Jail Relocation

Preliminary Storm Report
October 16, 2019

Project Overview

The purpose of this report is to provide an overview of the project and storm improvements, and to illustrate compliance with the City of Warrenton stormwater management standards. The project site is located at 1250 SE 19th St. Refer to Exhibit 1 - Vicinity Map. The project will repurpose the former Oregon Youth Authority facility to serve as a new Clatsop County Jail facility.

A majority of the exterior site improvements will remain intact, preserving the vehicular circulation and parking lot paving. The primary infrastructure for water, sewer and storm will also remain, with only minor adjustments being made as needed to conform to the new improvements. However, two of the existing buildings will be demolished on the west and south sides of the site, and a new structure will be constructed in the former courtyard. The new building will house the holding units and the remaining existing buildings will be remodeled for the administrative and support services. See Exhibit 2 - Site Plan for an illustration of the proposed site improvements.

The currently developed portion of the existing property was built on imported fill. The perimeter loop road and parking lot form the boundary of the developed site and are surrounded by lower lying terrain with dense vegetation. Standing water is prevalent in the lower lying areas during the wet season. All of the improvements will occur within the previously developed area and avoid these sensitive areas.

Codes and Standards

All stormwater runoff from new impervious surfaces will have to be managed in accordance with City of Warrenton requirements outlined in Municipal Code Section 16.140. There are no water quality treatment requirements, but runoff must be managed to ensure that upstream or downstream properties are not unreasonably burdened with surface water flooding as a result of the development.

Onsite detention shall be required for new development where downstream deficiencies exist or are anticipated to exist. The square footage considers the total development of the property, including the future potential impervious surface. Required design recurrence criteria for a commercial or residential storm drainage detention facility is a 10-year interval. Development that has less than 5,000 square feet of impervious surface is exempt from detention requirements.

Onsite drainage systems are to be designed to convey the 10-year modeled storm flows under developed conditions.

Existing Conditions

The current site was essentially built on a raised plinth of fill to establish a building pad above the lowlands and sporadic regulated wetlands that surround the site. There are four existing buildings arranged in a square, forming an interior courtyard area with lawn and a paved basketball court. Gaps between the individual buildings are fenced to create a secure enclosure. There is an asphalt road that loops the entire building with a parking lot along the east side. The road is wider on the east and north sides, but narrows to 12 feet as it wraps around the west and south side of the building.

Based on our field observations, the drainage and conveyance systems onsite appear to be consistent with the record drawings for the Juvenile Detention Facility. The site is very flat with onsite conveyance systems that discharge to the shallow outfalls. Roof drainage from the northernmost building is collected and conveyed north to an existing ditch along SE 19th St, flowing east. Runoff from the west and south buildings is collected and conveyed south to a shallow ditch, flowing east outside the loop drive. The area drains and subdrainage system within the courtyard outfall to the same location. Runoff from the east building is collected and conveyed south to a different shallow ditch flowing east.

The drive that loops the building appears to shed runoff to the outside toward the surrounding vegetation. The exception to this is the drive along the east side of the building that sheds east toward a shallow rock-lined ditch that drains south to an outfall. And the parking lot was graded into four catchments with catch basins and pipe flowing east to two outfalls.

A City drainage map suggests runoff from the project site flows east along SE 19th St before continuing north toward Adams Slough and the Columbia River. See Exhibit 3 - Drainage Map.

Developed Conditions

As noted previously, the project will repurpose and remodel the existing facility, and demolish some of the existing structures. The demolition work will remove two buildings with a total area of 18,000 square feet, and the existing concrete paving throughout the courtyard with a total area of 16,000 square feet. The combined impervious area reduction is 34,000 square feet.

The proposed improvements will renovate two of the existing buildings, with a total area of 20,000 square feet and maintain the existing 5,000 square feet gymnasium. The new building addition is 25,000 square feet. See Exhibit 4 - Basin Map for an illustration of the existing and proposed impervious areas and the direction of runoff flows.

New fencing will allow better control of vehicular circulation, but the existing site vehicular and parking lot paving will largely be preserved. Some allowances are being made in the design for seal-coating the parking lot as preventative maintenance and for pavement repair after construction; but the intent is to maintain the same footprint. The exception to this will be the construction of an additional fire lane at the southwest corner of the site to improve emergency response access and provide a maintenance

access road into the lawn area enclosed by fencing. These new paved areas will be graded to direct surface runoff to the perimeter road and sheet flow out to the surrounding terrain.

The new fenced lawn area will be regraded with imported fill after the buildings and associated foundations are removed. Area drains and new storm lines will collect and convey runoff to the existing outfalls. And a new array of subdrainage lines will be laid throughout the lawn to mitigate wet soil conditions. See Exhibit 5 - Storm Plan for an illustration of the proposed drainage system.

Existing drainage patterns will be preserved and all of the existing drainage outfalls will receive the same or less runoff than under current conditions.

Conclusions and Recommendations

The proposed improvements will result in a net reduction of impervious area and no flow control or onsite retention is necessary. Existing piped collection and conveyance systems will be maintained or replaced where affected by demolition or new construction. New pipes will be sized for developed conditions and tie into existing pipes prior to the outfall to avoid work in potentially sensitive areas.

The storm drainage systems associated with this redevelopment are compliant with the City of Warrenton Stormwater and Surface Water Management Standards.

Attachments: *Exhibit 1 - Vicinity Map*
Exhibit 2 - Site Plan
Exhibit 3 - Drainage Map
Exhibit 4 - Basin Map
Exhibit 5 - Storm Plan

10101900111-JS

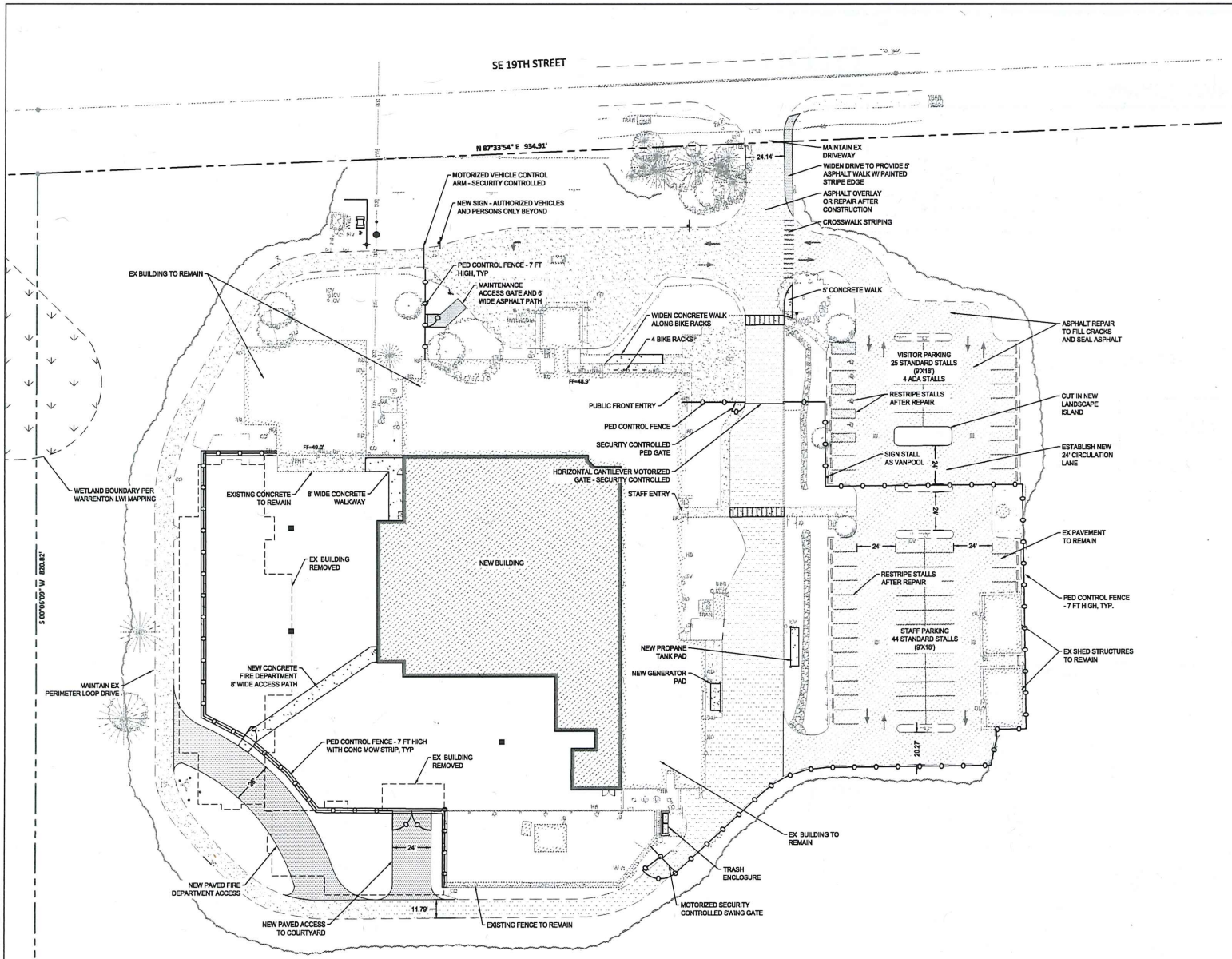
VICINITY MAP

EXH-1

#1900111

10/16/2019

Appendix B



SCALE 1 INCH = 30 FEET
30 0 30 60

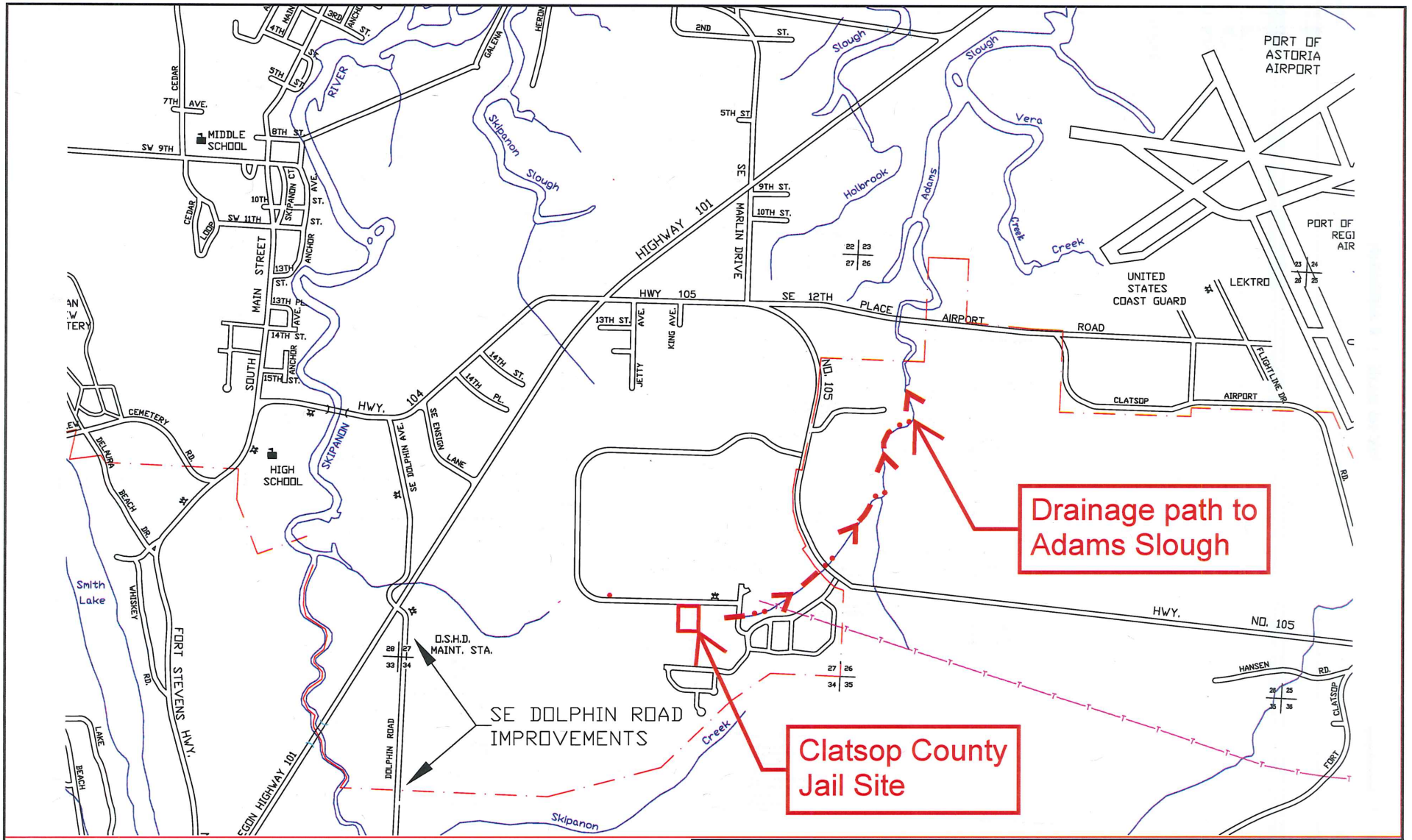
1220 SE 19TH STREET
WARRENTON, OR 97146

kpff

SITE PLAN
CLATSOP COUNTY JAIL REPLACEMENT

EXHIBIT 2
74-19124-00
10/18/19
REVISIONS

File: N:\cp\2019\1900111-Clatsop-Co-Jail\CAD\PLOT\Land Use\1911-LU-SITE.dwg TABC1.0
Plotted: 10/21/19 at 10:59am By: JCollinson



kpff	DRAINAGE MAP	EXH-3
#1900111		10/16/2019

Appendix B

LAND USE

kpff
1250 SE 19TH STREET
WARRENTON OR. 97146

BASIN MAP
CLATSOP COUNTY JAIL REPLACEMENT

EXHIBIT 4

74-19124-00
07/29/19
REVISIONS

DLR Group
Architecture Engineering Planning Interiors

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SHEET LEGEND

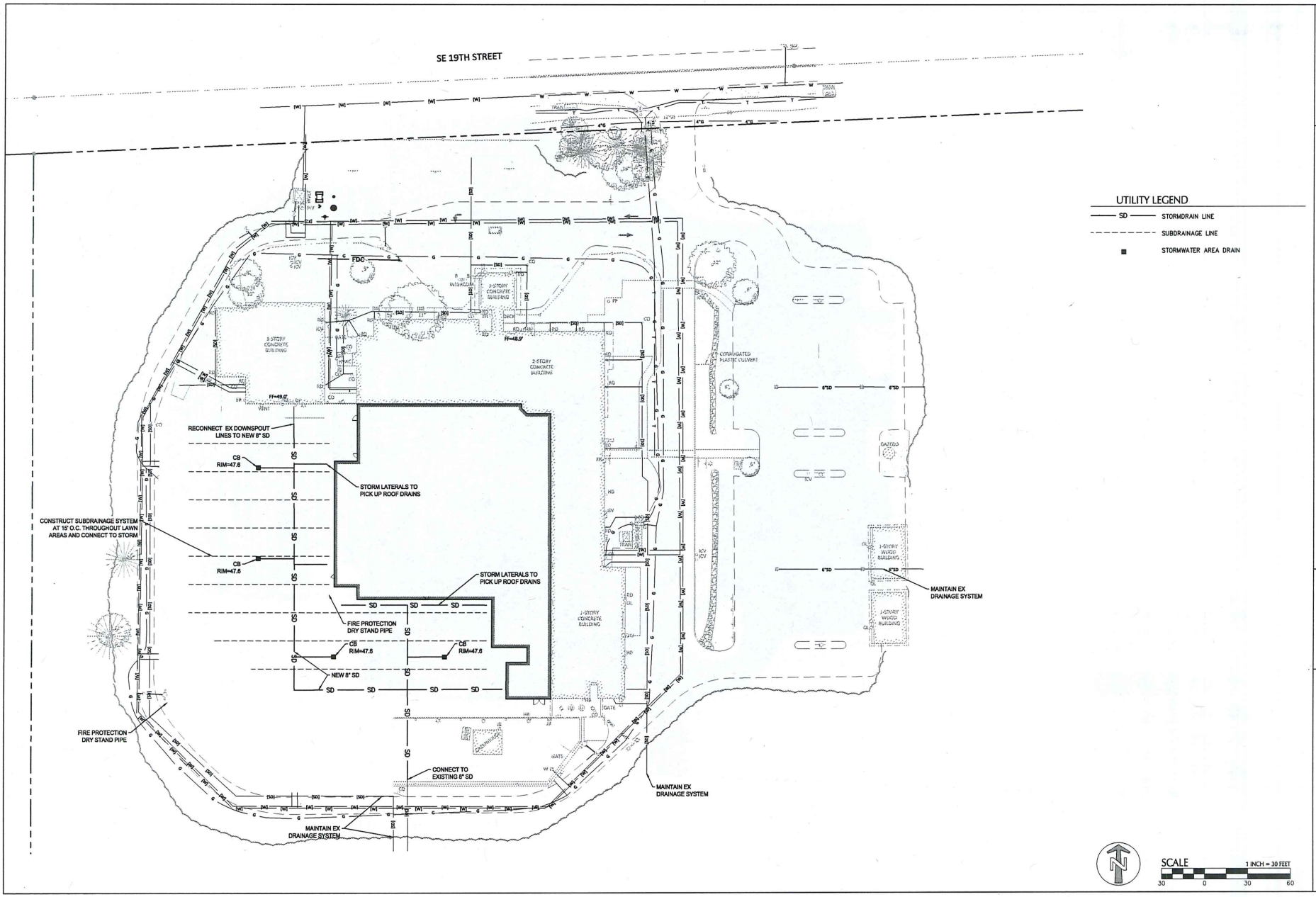
- DRIVES AND WALKWAYS AREA=47,919 SF
- NATURAL AREA=553,211 SF
- LAWN AND LANDSCAPE AREA=132248 SF
- BUILDINGS AREA=49,453 SF

TOTAL SITE AREA : 786011 SF
NATURAL : 70% OF TOTAL SITE AREA
LAWN AND LANDSCAPE : 17% OF TOTAL SITE AREA

SCALE
1 INCH = 30 FEET
30 0 30 60

SE 19TH STREET

Appendix B



1250 SE 187TH STREET
WARRENTON OR, 97146

kpff

EXHIBIT 5
74-19124-00
07/29/19
REVISIONS

STORM PLAN
CLATSOP COUNTY JAIL
REPLACEMENT

File: N:\clp\2019\19001\11-Clatsop-Co-Jail\CAD\PLOTS\STORM REPORT\UTIL.dwg TABC4.0
Plotted: 10/16/19 at 5:32pm By: JCollinson

Appendix C

Geotechnical Engineering Report

Geotechnical Engineering Report

Clatsop County Jail Relocation
1250 SE 19th Street
Warrenton, Oregon

Prepared for:
Clatsop County
800 Exchange Street, Suite 310
Astoria, Oregon 97103

July 11, 2019
PBS Project 73442.000

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Geotechnical Engineering Report

Clatsop County Jail Relocation
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July 11, 2019
PBS Project 73442.000

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Appendix B: Laboratory Testing

Appendix C: Previous Field Explorations by Others

1 INTRODUCTION

1.1 General

This report presents results of PBS Engineering and Environmental Inc. (PBS) geotechnical engineering services for the proposed Clatsop County jail relocation project located at 1250 SE 19th Street in Warrenton, Oregon (site). The general site location is shown on the Vicinity Map, Figure 1. The locations of PBS' explorations in relation to existing site features are shown on the Site Plan, Figure 2.

1.2 Purpose and Scope

The purpose of PBS' services was to develop geotechnical design and construction recommendations in support of the planned jail addition. This was accomplished by performing the following scope of services.

1.2.1 Literature and Records Review

PBS reviewed various published geologic maps of the area for information regarding geologic conditions and hazards at or near the site. PBS also reviewed previously completed reports for the project site and vicinity.

1.2.2 Subsurface Explorations

Three borings were advanced to depths ranging from approximately 11.5 to 91.5 feet below the existing ground surface (bgs) within the development footprint. The borings were logged and representative soil samples collected by a member of the PBS geotechnical engineering staff. The approximate boring locations are shown on the Site Plan, Figure 2. The interpreted boring logs are presented as Figures A1 through A3 in Appendix A, Field Explorations.

1.2.3 Soils Testing

Soil samples were returned to our laboratory and classified in general accordance with the Unified Soil Classification System (ASTM D2487) and/or the Visual-Manual Procedure (ASTM D2488). Laboratory tests included natural moisture contents, grain-size analyses, one-dimensional consolidation, and Atterberg limits. Laboratory test results are included in the exploration logs in Appendix A, Field Explorations; and in Appendix B, Laboratory Testing.

1.2.4 Geotechnical Engineering Analysis

Data collected during the subsurface exploration, literature research, and testing were used to develop site-specific geotechnical design parameters and construction recommendations.

1.2.5 Report Preparation

This Geotechnical Engineering Report summarizes the results of our explorations, testing, and analyses, including information relating to the following:

- Field exploration logs and site plan showing approximate exploration locations
- Laboratory test results
- Groundwater considerations
- Liquefaction potential
- Deep foundation recommendations:
    - Minimum depth of embedment
    - Axial compression and uplift capacity
    - Construction considerations
- Earthwork and grading, cut, and fill recommendations:
    - Structural fill materials and preparation, and reuse of on-site soils

  - Wet weather considerations
  - Utility trench excavation and backfill requirements
  - Temporary and permanent slope inclinations
- Seismic design criteria in accordance with the 2014 Oregon Structural Specialty Code (OSSC)
- Slab and pavement subgrade preparation recommendations
- Recommended asphalt concrete (AC) pavement sections

1.3 Project Understanding

PBS understands that Clatsop County intends to add additional housing within the northeast corner of the central courtyard of the Clatsop County jail relocation site. We assume construction will consist of one- to two-story structures constructed out of concrete and steel or materials similar to the existing structures.

2 SITE CONDITIONS

2.1 Surface Description

The site is located on a roughly rectangular, heavily vegetated parcel bordered to the north by SE 19th Street and woodlands; to the south by SE Willow Street and residential parcels; to the east by SE 19th Street, SE Willow Drive, and residential properties; and to the west by the Clatsop County Sheriff's Office. The site is currently occupied by the Clatsop County Youth Authority facilities, parking areas, and associated outbuildings. Based on available topographic data, the northwest quarter of the property, where the current facility is located, is generally flat, with a ground surface elevation of approximately 48 feet above mean sea level (amsl) (NAVD88; DOGAMI 2019a). Vegetated areas, constituting the remainder of the property, range in elevation from a maximum of 66 feet amsl in the southwest corner of the property to 44 feet amsl at the northeast corner of the property. Outside of the site, the ground surface falls gently to the northwest and rises to the southeast as hills.

The site is located on an uplifted coastal terrace that is elevated approximately 30 feet above the surrounding lowlands based on Oregon Department of Geology and Mineral Industries (DOGAMI) LiDAR digital elevation models (DOGAMI, 2019a). Meandering streams of the Skipanon River cut this terrace and shallow creeks of Adair Slough flow from wetlands northeast from the site. West of the site, across the Skipanon River Valley, expansive north-south oriented dune complexes run parallel to the Pacific Ocean. Southeast of the site, gentle unnamed rolling hills rise from the low-lying terrace that the site occupies.

2.2 Geologic Setting

2.2.1 Regional Geology

The project area is located at the northwestern extent of the Oregon Coast Range physiographic province, a mountainous region along the Pacific Ocean that extends south from the Columbia River and Washington state border to the Klamath Mountains, and east to the Willamette Valley and Puget-Willamette lowlands. The Oregon Coast Range is situated along the Cascadia Subduction Zone (CSZ) where oceanic rocks of the Juan de Fuca Plate are subducting beneath the North American Plate, resulting in deformation and uplift of the Coast Range and volcanism in the Cascade Range (Yeats et al., 1996).

Uplift of the Coast Range is expressed as a north-south oriented, north plunging anticlinorium, formed by east-west compression due to subduction (Yeats et al., 1996). This compression also results in numerous north-south oriented off-shore faults. Younger northwest-trending faults accommodate the clockwise rotation of the North American Plate across the Coast Range (Brocher et al., 2017; USGS, 2019).

Basement rocks are typically Paleocene to Eocene accreted island arcs and plate fragments described as submarine tholeiitic basalt, pillow basalts, and submarine and subaerial alkali basalts (Yeats et al., 1996). Along much of coastal Oregon, these older accreted mafic rocks are overlain by younger marine sequences of sandstone and siltstone ranging in age from middle to late Eocene. Predominant accumulations of the middle Eocene Tyee Formation are mapped in the Oregon Coast Range (Walker et al., 1991). This thick sequence of rhythmically bedded fine- to medium-grained arkose sandstone and carbonaceous siltstone cover a vast majority of the Oregon Coast Range that was later intruded by Oligocene mafic intrusions.

Along much of costal Oregon, these older accreted rocks are overlain by a sequence of younger Pleistocene age coastal terraces (McClaughry et al., 2013). These sediments were deposited by beach, dune, or estuarine processes and subsequently uplifted by regional tectonic activity associated with the CSZ.

2.2.2 Local Geology

The site is underlain by Quaternary terrace sediments described as clay, silt, sand, and gravel forming terraces up to 100 feet amsl (Walsh, 1987). These deposits were deposited in estuarine, beach, or dune environments that were later overlain by younger alluvium. The hills southeast of the site are Oligocene to lower Miocene marine sedimentary rocks composed primarily of tuffaceous claystone and siltstone of the Smugglers Cove formation. These rocks are described as thick- to thinly-bedded, bioturbated siltstone with minor sandstone beds.

2.3 Subsurface Conditions

The site was explored by drilling three borings, designated B-1 through B-3, to depths of 11.5 to 91.5 feet bgs. The drilling was performed by Holt Services, Inc., of Vancouver, Washington, using a truck-mounted CME-75 drill rig and mud rotary drilling techniques.

PBS has summarized the subsurface units as follows:

CLAY (CH/CL): Fat and lean clays were encountered in all borings from the ground surface to 87 feet bgs. The materials were very soft to very stiff (at depth), with corresponding SPT N-values of 0 to 21 blows per foot, were tan, orange, gray, and blue-gray in color, moist to wet, exhibited medium to high plasticity, and contained various amounts of fine-grained sand. In general, the material was very soft to soft from the ground surface to approximately 50 feet bgs and medium stiff to very stiff from approximately 50 feet bgs to 87 feet bgs.

SILT (ML/OL): Silt and organic silts were encountered in all borings intermittently between the fine-grained clay deposits. The material was very soft to soft, with SPT N-values from 2 to 3, was gray to dark brown, moist to wet, low plasticity, and contained fine-grained sand. Very soft organic soils were encountered with greater abundance between approximately 5 to 11 feet bgs in borings B-1 and B-2. These soils were dark brown, produced an organic odor, and contained decomposed organics.

SILTSTONE (RX): Siltstone was encountered below the fine-grained deposits at approximately 87 feet bgs. This material is described as soft (R2), gray, moderately weathered siltstone with some fine-grained sand interbedding. These marine deposits are interpreted as belonging to the Smugglers Cove formation, as described by Timothy Walsh (1987).

2.4 Groundwater

Static groundwater was not directly measured during our explorations due to the mud rotary drilling techniques used. Based on a review of previously completed geotechnical engineering reports for the site, we anticipate the static groundwater level is present at a depth of approximately 4 feet bgs (Kleinfelder, 1996). Please note that groundwater levels can fluctuate during the year depending on climate, irrigation season, extended periods of precipitation, drought, and other factors.

3 GEOLOGIC HAZARDS

Geologic and seismic hazards are defined as conditions associated with the geologic and seismic environment that could influence existing and/or proposed improvements. Geologic and seismic hazards that could affect the site's development are identified below and should be considered during the planning process.

3.1 Liquefaction and Lateral Spreading

Liquefaction is defined as a decrease in the shear resistance of loose, saturated, cohesionless soil (e.g., sand) or low plasticity silt soils, due to the buildup of excess pore pressures generated during an earthquake. This results in a temporary transformation of the soil deposit into a viscous fluid. Liquefaction can result in ground settlement, foundation bearing capacity failure, and lateral spreading of ground.

Based on a review of the Oregon Statewide Geohazard Viewer (HazVu), the site is shown as having a high liquefaction hazard; however, based on the type and plasticity of site soils encountered in our explorations, our current opinion is that the risk of structurally damaging liquefaction settlement at the site is low. Subsequently, the risk of structurally damaging lateral spreading is also low.

3.2 Tsunamis

Tsunamis are generated by displacement of the ocean and generally associated with offshore earthquakes or submarine landslides. The displacement of the ocean generates a series of waves that are capable of being tens of feet high and travelling thousands of miles. The magnitude of ocean displacement, distance from the source, local bathymetry, and local topography dictate the degree of inundation by a tsunami. Along the Pacific coast, two tsunami hazards exist: (1) distant tsunamis generated from ocean displacement associated with faults along the margins of the Pacific Ocean, and (2) local tsunamis generated by the CSZ and its associated faults. Historically, coastal communities along the west coast have suffered damage from both sources. A local tsunami is more likely to result in devastating inundation than a distant tsunami.

Review of the DOGAMI Tsunami Inundation Map indicates that the site is located outside the inundation area for a distant earthquake or local CSZ earthquake up to approximately magnitude of 9.1 (DOGAMI, 2013).

3.3 Seismicity and Faulting

3.3.1 Historical Seismicity

Regional historical seismicity information was acquired from the Advanced National Seismic System (ANSS) Comprehensive Catalog, hosted by the Northern California Earthquake Data Center (NCEDC), and is presented on Figure 7. These data include earthquakes with magnitudes exceeding M 2.5, within a 150-km radius of the city of Warrenton, Oregon, and recorded between 1963 and 2017 (NCEDC, 2017). Magnitudes within the ANSS dataset are recorded as local magnitude, surface-wave magnitude, body-wave magnitude, moment magnitude, and magnitude of completeness.

3.3.2 Seismic Sources

Several types of seismic sources exist in the Pacific Northwest, which are outlined below. Volcanic sources beneath the Cascade Range are not considered further in this study due to the distant proximity.

3.3.2.1 Cascadia Subduction Zone (CSZ) – Interface Earthquakes

The CSZ represents the boundary between the subducting Juan de Fuca tectonic plate and the overriding North American tectonic plate (Figure 3). Recurrence intervals for subduction zone earthquakes are based on studies of the geologic record, with studies estimating a recurrence interval between 500 to 530 years (Goldfinger et al., 2012). Geologic evidence and written records from Japan suggest the most recent earthquake occurred in January 1700. The 1700 earthquake probably ruptured much of the approximate 620-mile (1,000 km) length of the CSZ and was estimated at moment magnitudes of M_W 9.0. The horizontal distance from the edge of the CSZ megathrust is located approximately 80 miles (130 km) from Warrenton, Oregon. The current US Geological Survey risk-based maximum credible earthquake for CSZ megathrust is M_W 9.0±0.2 (USGS, 2008).

3.3.2.2 Intraslab Earthquakes

Intraslab earthquakes occur within the subducting slab. They are problematic in the sense that they do not have a surface expression or rupture the ground surface and their seismicity generates deformation along many faults within the slab (Kirby et al., 2002). The estimated depth to the subducting Juan de Fuca plate under Warrenton, Oregon, is less than 30 km (Hayes, 2018; Blair et al., 2013). Therefore, intraslab earthquakes are a seismic hazard that must be considered.

3.3.2.3 Crustal Earthquakes and Faults

At least 20 faults, faults zones, or tectonic features are present in the northern Oregon Coast Range and offshore accretionary wedge (USGS, 2019). Studies of small earthquakes in the region indicate most crustal earthquake activity is occurring at depths of 10 to 30 km (NCEDC, 2017). Review of the USGS Quaternary Fault Database indicates the site is located within close proximity (less than 25 km) to one unnamed offshore fault in the accretionary wedge (Figure 6; USGS, 2019).

3.3.3 Seismic Hazards

Other site-specific seismic hazards considered include earthquake-induced landslides, fault rupture, lateral spreading, and earthquake shaking. Based on the flat surface topography and geology of the area surrounding the facility, the risk from landslides and earthquake-induced landslides is absent. Due to the proximity of the site away from any mapped Quaternary faults, the risk of fault rupture is low. Based on the site topography and location of the site to any free faces and low risk of liquefaction, the risk of lateral spreading is low. Strong earthquake ground shaking will occur during a code-based seismic event on the CSZ as well as from local faults. Based on our current project understanding, our opinion is that effects of earthquake ground motions can be accounted for by using code-based design procedures and the code-based design response spectrum.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 Geotechnical Design Considerations

The project site is underlain by zones of soft, highly compressible and organic soils. As a result, support on shallow spread footings is not feasible and PBS recommends new foundations be supported on piles that derive their capacity from the siltstone encountered on the order of 80 to 100 feet bgs. Slab-on-grade floors may be founded at or below the existing ground surface elevation to avoid inducing downdrag on existing or new pile foundations. Slabs-on-grade could require long-term maintenance due to degradation of the underlying organic soils. Alternatively, the new slab could be structurally supported on piles or underlain by aggregate piers to reduce the risk of long-term settlement.

Our current opinion is that pre-load/surcharging site soils to reduce settlement in slab-on-grade areas is not feasible due to the risk of inducing downdrag loads on existing or new pile foundations.

The presence of soft soils will require careful planning/staging of construction activities to reduce disturbance by construction traffic.

4.2 Deep Foundations

Due to the presence of soft, highly compressible soils at the site, deep foundations will be necessary to support new building foundation loads. PBS analyzed 10.75- and 12.75-inch outside diameter (⅜ inch wall thickness), closed-end steel pipe piles. The piles will derive the majority of their compressive capacity from end-bearing in the underlying siltstone present at depths of 80 to 100 feet bgs.

4.2.1 Vertical Compressive Pile Capacity

The following Table 1 presents the allowable axial compressive capacity for the piles analyzed. The allowable vertical compressive capacities provided in Table 1 are based on a factor of safety of 3 and assume a minimum pile center-to-center spacing of 3 pile diameters.

Table 1. Vertical Compressive Pile Capacity and Minimum Embedment

Pile Size	Minimum Embedment in Siltstone (feet)	Allowable Axial Compressive Capacity (kips)
10.75-inch diameter closed-end steel pipe pile	8	130
12.75-inch diameter closed-end steel pipe pile	8	150

Calculated capacities are based on soil support capacities and do not consider the ultimate structural capacity of the pile; therefore, we recommend that the structural engineer check the allowable stress capacity of the piles. Based on our current understanding that no fill will be placed over the proposed new building area, the pile capacities presented above do not consider downdrag. If fill is required, it may be necessary to modify allowable pile capacities for the project.

4.2.2 Vertical Uplift Pile Capacity

Uplift capacity is derived from skin friction on the surface area of the pile over the depth of penetration with the minimum embedment into siltstone described above. The following Table 2 presents the allowable axial uplift capacity for each pile analyzed.

Table 2. Vertical Uplift Pile Capacity

Pile Size	Allowable Axial Uplift Capacity (kips)
10.75-inch diameter closed-end steel pipe pile	60
12.75-inch diameter closed-end steel pipe pile	80

The capacities in Table 2 are allowable capacities based on a factor of safety of 1.5.

4.2.3 Factors of Safety

The allowable capacities computed for static conditions include a factor of safety of 3. In addition, we recommend that a pile driving analyzer (PDA) be used during an early indicator pile driving program. Table 3 includes the appropriate factors of safety for use in design based on the construction control and pile verification method used.

Table 3. Factors of Safety for Different Construction Control Methods

Construction Control Method	Factor of Safety
Static load test with wave equation analysis	2.0
Dynamic testing (PDA) with wave equation analysis	2.25
Penetration resistance based on wave equation analysis	2.75

4.2.4 Lateral Pile Capacity

Lateral pile analyses were completed using the computer program LPILE. Lateral loads were calculated for free-head conditions with ½ inch and 1 inch of deflection for both pile types. Table 4 presents the calculated lateral loads of individual piles. This analysis assumes that the piles penetrate up to 8 feet into the underlying siltstone. The structural engineer should confirm that the induced total stress does not exceed the capacity of the pile.

Table 4. Lateral-Load Deflection Estimates for Isolated Piles

Pile	Lateral Load (kips)		Maximum Moment (inch-kips)	
	½ inch	1 inch	½ inch	1 inch
10.75-inch diameter closed-end steel pipe pile	4.1	5.9	199.7	316.6
12.75-inch diameter closed-end steel pipe pile	5.0	7.3	267.7	432.4

The loads given in Table 4 are for isolated or individual piles; group action should be considered when the pile spacing in the direction of loading is less than 8 pile diameters on-center. The lateral forces should be reduced in accordance with the values provided in Table 5. We recommend the minimum spacing be 3 pile diameters.

Table 5. Lateral Group Action Reduction Factors

Pile Spacing (pile diameters)	Load-Reduction Factor		
	Row 1	Row 2	Row 3 or Higher
3	0.7	0.5	0.35
5	1.0	0.85	0.70

4.2.5 Pile Drivability

The thickness and consistency of site soils are highly variable, and should be considered in the design of the piles and in determining the methods and equipment to be used during pile installation.

We estimate the 12-inch diameter, closed-end pipe piles can be driven to the necessary ultimate capacity using an impact hammer having a rated energy of about 40,000 to 60,000 foot-pounds. Driving stresses should not exceed 0.9 F_y for steel piles to reduce the risk of pile damage during installation. The contractor is responsible for selecting a hammer that can produce the required energy to achieve the allowable pile capacities in this report. The proposed hammer should be evaluated by the design team considering a drivability analysis. The actual pile driving criteria should be established by using dynamic wave equation analysis, such as WEAP, or on the results of PDA testing.

If an open-end diesel hammer is used to drive the piles, PBS recommends that the pile driving contractor supply a Saximeter during production piling to measure the actual stroke height and pile driving energy. These criteria should be established based on the hammer, helmet, and cushion-pile characteristics provided by the contractor. This includes hammer penetration resistances and pile capacity and/or pile stress relationships useful to the piling observer in evaluating procedural and equipment variations adopted by the contractor during the course of pile driving.

We recommend a continuous record of pile driving resistance (blows per foot), as well as other pertinent information, be maintained for the full depth of each pile driven. We recommend that the geotechnical engineer, or their representative, observe pile driving to evaluate suitability of each pile driven as work progresses.

4.3 Floor Slabs

Due to the presence of highly compressible and organic soils at the site, there may be a risk of reduced, long-term performance of slab-on-grade floors. These risks can be reduced by designing the slab to be at or below the existing ground surface elevation or by structurally supporting the slab on piles or providing support with aggregate piers. Supporting the slab on piles or aggregate piers will reduce the risk of cracking due to long-term degradation of organic soils.

Considering the performance expectations above, slabs can be supported on subgrades prepared in accordance with our recommendations presented in the Site Preparation, Wet/Freezing Weather and Wet Soil Conditions, and Select Granular Fill sections of this report. A minimum 12-inch-thick layer of imported granular material should be placed and compacted over the prepared subgrade. Thicker aggregate sections may be necessary where undocumented fill is present, soft/loose soils are present at subgrade elevation, and/or during wet conditions. Imported granular material should be composed of crushed rock or crushed gravel that is relatively well graded between coarse and fine, contains no deleterious materials, has a maximum particle size of 1 inch, and has less than 5 percent by dry weight passing the US Standard No. 200 Sieve.

Floor slabs supported on a subgrade and base course prepared in accordance with the preceding recommendations may be designed using a modulus of subgrade reaction (k) of 50 pounds per cubic inch (pci).

4.4 Seismic Design Considerations

4.4.1 Code-Based Seismic Design Parameters

The current seismic design criteria for this project are based on the 2014 Oregon Structural Specialty Code (OSSC). Utilizing standard penetration test (SPT) N-values (standard penetration resistance) results, Site Class E is appropriate for use in design. The seismic design criteria, in accordance with the 2014 OSSC, are summarized in Table 6.

Table 6. 2014 OSSC Seismic Design Parameters

Parameter	Short Period	1 Second
Maximum Credible Earthquake Spectral Acceleration	S_s = 1.33 g	S_1 = 0.68 g
Site Class	E	
Site Coefficient	F_a = 1.0	F_v = 1.5
Adjusted Spectral Acceleration	S_{MS} = 1.33 g	S_{M1} = 1.02 g
Design Spectral Response Acceleration Parameters	S_{DS} = 0.89 g	S_{D1} = 0.68 g
Site Modified Peak Ground Acceleration	PGA_M = 0.6 g	

g= Acceleration due to gravity

4.5 Ground Moisture

4.5.1 General

The perimeter ground surface and hardscape should be sloped to drain away from all structures and away from adjacent slopes. Gutters should be tight-lined to a suitable discharge and maintained as free-flowing. All crawl spaces should be adequately ventilated and sloped to drain to a suitable, exterior discharge.

4.5.2 Perimeter Footing Drains

Due to the relatively low permeability of site soils and shallow groundwater at the site, we recommend perimeter foundation drains be installed around all proposed structures.

The foundation subdrainage system should include a minimum 4-inch diameter perforated pipe in a drain rock envelope. A non-woven geotextile filter fabric, such as Mirafi 140N or equivalent, should be used to completely wrap the drain rock envelope, separating it from the native soil and footing backfill materials. The invert of the perimeter drain lines should be placed approximately at the bottom of footing elevation. Also, the subdrainage system should be sealed at the ground surface. The perforated subdrainage pipe should be laid to drain by gravity into a non-perforated solid pipe and finally connected to the site drainage stem at a suitable location. Water from downspouts and surface water should be independently collected and routed to a storm sewer or other positive outlet. This water must not be allowed to enter the bearing soils.

4.5.3 Vapor Flow Retarder

PBS recommends a continuous, impervious barrier be installed over the ground surface in crawl spaces and under slabs of all structures. Barriers should be installed per the manufacturer's recommendations.

4.6 Pavement Design

The provided pavement recommendations were developed based on our experience with similar developments and references the associated Oregon Department of Transportation (ODOT) specifications for construction. If site-specific traffic data are available, the recommended pavement sections can be updated.

The minimum recommended pavement section thicknesses are provided in Table 7. Depending on weather conditions at the time of construction, a thicker aggregate base course section could be required to support construction traffic during preparation and placement of the pavement section.

The existing pavement section at the site includes 5 inches of AC over approximately 24 inches of crushed aggregate base course. The thicker aggregate base course was likely required to support construction traffic and design traffic volumes at the site.

Table 7. Minimum AC Pavement Sections

Traffic Loading	AC (inches)	Base Course (inches)	Subgrade
Pull-in Car Parking Only	3	12	Firm subgrade as verified by PBS personnel*
Drive Lanes and Access Roads	5	12	

* Subgrade must pass proofroll

Settlement and cracking of new pavements could occur as a result of the degradation of organic soils underlying the site. This could require ongoing maintenance and could reduce the pavement life.

The asphalt cement binder should be selected following ODOT SS 00744.11 – Asphalt Cement and Additives. The AC should consist of ½-inch hot mix asphalt concrete (HMAC) with a maximum lift thickness of 3 inches. The AC should conform to ODOT SS 00744.13 and 00744.14 and be compacted to 91 percent of the maximum theoretical density (Rice value) of the mix, as determined in accordance with ASTM D2041.

Heavy construction traffic on new pavements or partial pavement sections (such as base course over the prepared subgrade) will likely exceed the design loads and could potentially damage or shorten the pavement life; therefore, we recommend construction traffic not be allowed on new pavements, or that the contractor take appropriate precautions to protect the subgrade and pavement during construction.

If construction traffic is to be allowed on newly constructed road sections, an allowance for this additional traffic will need to be made in the design pavement section.

5 CONSTRUCTION RECOMMENDATIONS

5.1 Site Preparation

Construction of the proposed structure will involve clearing and grubbing of the existing vegetation or demolition of possible existing structures. Demolition should include removal of existing pavement, utilities, etc., throughout the proposed new development. Underground utility lines or other abandoned structural elements should also be removed. The voids resulting from removal of foundations or loose soil in utility lines should be backfilled with compacted structural fill. The base of these excavations should be excavated to firm native subgrade before filling, with sides sloped at a minimum of 1H:1V (horizontal to vertical) to allow for uniform compaction. Materials generated during demolition should be transported off site or stockpiled in areas designated by the owner's representative.

5.1.1 Proofrolling/Subgrade Verification

Following site preparation and prior to placing aggregate base over foundation, floor slab, and pavement subgrades, the exposed subgrade should be evaluated either by proofrolling or another method of subgrade verification. The subgrade should be proofrolled with a fully loaded dump truck or similar heavy, rubber-tire construction equipment to identify unsuitable areas. If evaluation of the subgrades occurs during wet conditions, or if proofrolling the subgrades will result in disturbance, they should be evaluated by PBS using a steel foundation probe. We recommend that PBS be retained to observe the proofrolling and perform the subgrade verifications. Unsuitable areas identified during the field evaluation should be compacted to a firm condition or be excavated and replaced with structural fill.

5.1.2 Wet/Freezing Weather and Wet Soil Conditions

Due to the presence of fine-grained silt and clay in the near-surface materials at the site, construction equipment may have difficulty operating on the near-surface soils when the moisture content of the surface soil is more than a few percentage points above the optimum moisture required for compaction. Soils disturbed during site preparation activities, or unsuitable areas identified during proofrolling or probing, should be removed and replaced with compacted structural fill.

Site earthwork and subgrade preparation should not be completed during freezing conditions, except for mass excavation to the subgrade design elevations.

Protection of the subgrade is the responsibility of the contractor. Construction of granular haul roads to the project site entrance may help reduce further damage to the pavement and disturbance of site soils. The actual thickness of haul roads and staging areas should be based on the contractors' approach to site development, and the amount and type of construction traffic. The imported granular material should be placed in one lift over the prepared undisturbed subgrade and compacted using a smooth-drum, non-vibratory roller. A geotextile fabric should be used to separate the subgrade from the imported granular material in areas of repeated construction traffic. The geotextile should meet the specifications of ODOT SS Section 02320.10 and SS 02320.20, Table 02320-1 for soil separation. The geotextile should be installed in conformance with ODOT SS 00350.00 – Geosynthetic Installation.

5.1.3 Dry Weather Conditions

Clay soils should be covered within 4 hours of exposure by a minimum of 4 inches of crushed rock or plastic sheeting during the dry season. Exposure of these materials should be coordinated with the geotechnical engineer so that the subgrade suitability can be evaluated prior to being covered.

5.2 Excavation

The near-surface soils at the site can be excavated with conventional earthwork equipment. Sloughing and caving should be anticipated. All excavations should be made in accordance with applicable Occupational Safety and Health Administration (OSHA) and state regulations. The contractor is solely responsible for adherence to the OSHA requirements. Trench cuts should stand relatively vertical to a depth of approximately 4 feet bgs, provided no groundwater seepage is present in the trench walls. Open excavation techniques may be used provided the excavation is configured in accordance with the OSHA requirements, groundwater seepage is not present, and with the understanding that some sloughing may occur. Trenches/excavations should be flattened if sloughing occurs or seepage is present. Use of a trench shield or other approved temporary shoring is recommended if vertical walls are desired for cuts deeper than 4 feet bgs. If dewatering is used, we recommend that the type and design of the dewatering system be the responsibility of the contractor, who is in the best position to choose systems that fit the overall plan of operation.

5.3 Structural Fill

The extent of site grading is currently unknown; however, PBS estimates grading will be limited to cuts of less than 5 feet to accommodate new foundations and utilities and fill limited to less than 12 inches for rock under slabs and pavements. Structural fill should be placed over subgrade that has been prepared in conformance with the Site Preparation and Wet/Freezing Weather and Wet Soil Conditions sections of this report. Structural fill material should consist of relatively well-graded soil, or an approved rock product that is free of organic material and debris, and contains particles not greater than 4 inches nominal dimension.

The suitability of soil for use as compacted structural fill will depend on the gradation and moisture content of the soil when it is placed. As the amount of fines (material finer than the US Standard No. 200 Sieve) increases,

soil becomes increasingly sensitive to small changes in moisture content and compaction becomes more difficult to achieve. Soils containing more than about 5 percent fines cannot consistently be compacted to a dense, non-yielding condition when the water content is significantly greater (or significantly less) than optimum.

5.3.1 On-Site Soil

Due to the presence of medium to high plasticity clay soils at the site, the on-site soils are not suitable for reuse as structural fill.

5.3.2 Borrow Material

Borrow material for general structural fill construction should meet the requirements set forth in ODOT SS 00330.12 – Borrow Material. When used as structural fill, borrow material should be placed in lifts with a maximum uncompacted thickness of approximately 8 inches and compacted to not less than 92 percent of the maximum dry density, as determined by ASTM D1557.

5.3.3 Select Granular Fill

Selected granular backfill used during periods of wet weather for structural fill construction should meet the specifications provided in ODOT SS 00330.14 – Selected Granular Backfill. The imported granular material should be uniformly moisture conditioned to within about 2 percent of the optimum moisture content and compacted in relatively thin lifts using suitable mechanical compaction equipment. Selected granular backfill should be placed in lifts with a maximum uncompacted thickness of 8 to 12 inches and be compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D1557.

5.3.4 Crushed Aggregate Base

Crushed aggregate base course below floor slabs, spread footings, and asphalt concrete pavements should be clean crushed rock or crushed gravel that contains no deleterious materials and meets the specifications provided in ODOT SS 02630.10 – Dense-Graded Aggregate, and has less than 5 percent by dry weight passing the US Standard No. 200 Sieve. The crushed aggregate base course should be placed in lifts with a maximum uncompacted thickness of 8 to 12 inches and be compacted to at least 95 percent of the maximum dry density, as determined by ASTM D1557.

5.3.5 Utility Trench Backfill

Pipe bedding placed to uniformly support the barrel of pipe should meet specifications provided in ODOT SS 00405.12 – Pipe Zone Bedding. The pipe zone that extends from the top of the bedding to at least 8 inches above utility lines should consist of material prescribed by ODOT SS 00405.13 – Pipe Zone Material. The pipe zone material should be compacted to at least 90 percent of the maximum dry density, as determined by ASTM D1557, or as required by the pipe manufacturer.

Under pavements, paths, slabs, or beneath building pads, the remainder of the trench backfill should consist of well-graded granular material with less than 10 percent by dry weight passing the US Standard No. 200 Sieve, and should meet standards prescribed by ODOT SS 00405.14 – Trench Backfill, Class B or D. This material should be compacted to at least 92 percent of the maximum dry density, as determined by ASTM D1557 or as required by the pipe manufacturer. The upper 2 feet of the trench backfill should be compacted to at least 95 percent of the maximum dry density, as determined by ASTM D1557. Controlled low-strength material (CLSM), ODOT SS 00405.14 – Trench Backfill, Class E, can be used as an alternative.

Outside of structural improvement areas (e.g., pavements, sidewalks, or building pads), trench material placed above the pipe zone may consist of general structural fill materials that are free of organics and meet ODOT SS

00405.14 – Trench Backfill, Class A. This general trench backfill should be compacted to at least 90 percent of the maximum dry density, as determined by ASTM D1557, or as required by the pipe manufacturer or local jurisdictions.

5.3.6 Stabilization Material

Stabilization rock should consist of pit or quarry run rock that is well-graded, angular, crushed rock consisting of 4- or 6-inch-minus material with less than 5 percent passing the US Standard No. 4 Sieve. The material should be free of organic matter and other deleterious material. ODOT SS 00330.16 – Stone Embankment Material can be used as a general specification for this material with the stipulation of limiting the maximum size to 6 inches.

6 ADDITIONAL SERVICES AND CONSTRUCTION OBSERVATIONS

In most cases, other services beyond completion of a final geotechnical engineering report are necessary or desirable to complete the project. Occasionally, conditions or circumstances arise that require additional work that was not anticipated when the geotechnical report was written. PBS offers a range of environmental, geological, geotechnical, and construction services to suit the varying needs of our clients.

PBS should be retained to review the plans and specifications for this project before they are finalized. Such a review allows us to verify that our recommendations and concerns have been adequately addressed in the design.

Satisfactory earthwork performance depends on the quality of construction. Sufficient observation of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. We recommend that PBS be retained to observe general excavation, stripping, fill placement, footing subgrades, and/or pile installation. Subsurface conditions observed during construction should be compared with those encountered during the subsurface explorations. Recognition of changed conditions requires experience; therefore, qualified personnel should visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those anticipated.

7 LIMITATIONS

This report has been prepared for the exclusive use of the addressee, and their architects and engineers, for aiding in the design and construction of the proposed development and is not to be relied upon by other parties. It is not to be photographed, photocopied, or similarly reproduced, in total or in part, without express written consent of the client and PBS. It is the addressee's responsibility to provide this report to the appropriate design professionals, building officials, and contractors to ensure correct implementation of the recommendations.

The opinions, comments, and conclusions presented in this report are based upon information derived from our literature review, field explorations, laboratory testing, and engineering analyses. It is possible that soil, rock, or groundwater conditions could vary between or beyond the points explored. If soil, rock, or groundwater conditions are encountered during construction that differ from those described herein, the client is responsible for ensuring that PBS is notified immediately so that we may reevaluate the recommendations of this report.

Unanticipated fill, soil and rock conditions, and seasonal soil moisture and groundwater variations are commonly encountered and cannot be fully determined by merely taking soil samples or completing explorations such as soil borings. Such variations may result in changes to our recommendations and may

require additional funds for expenses to attain a properly constructed project; therefore, we recommend a contingency fund to accommodate such potential extra costs.

The scope of work for this subsurface exploration and geotechnical report did not include environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous substances in the soil, surface water, or groundwater at this site.

If there is a substantial lapse of time between the submission of this report and the start of work at the site, if conditions have changed due to natural causes or construction operations at or adjacent to the site, or if the basic project scheme is significantly modified from that assumed, this report should be reviewed to determine the applicability of the conclusions and recommendations presented herein. Land use, site conditions (both on and off site), or other factors may change over time and could materially affect our findings; therefore, this report should not be relied upon after three years from its issue, or in the event that the site conditions change.

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Figures

VICINITY MAP

CLATSOP COUNTY JAIL RELOCATION WARRENTON, OREGON

DATE: JULY 2019 · PROJECT: 73442.000

PBS

FIGURE 1

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EXPLANATION

- B-1 - Boring name and approximate location
- KSB01 - Boring name and approximate location (Kleinfelder, 1996)
- CPT-1 - CPT name and approximate location (Kleinfelder, 1996)
- Approximate location of proposed building

SOURCES: Google Earth 2018

1 inch = 75 feet

0 37.5 75 150 Feet

SITE PLAN

CLATSOP COUNTY
JAIL RELOCATION
WARRENTON, OREGON

DATE: JULY 2019 · PROJECT: 73442.000

PBS

FIGURE
2

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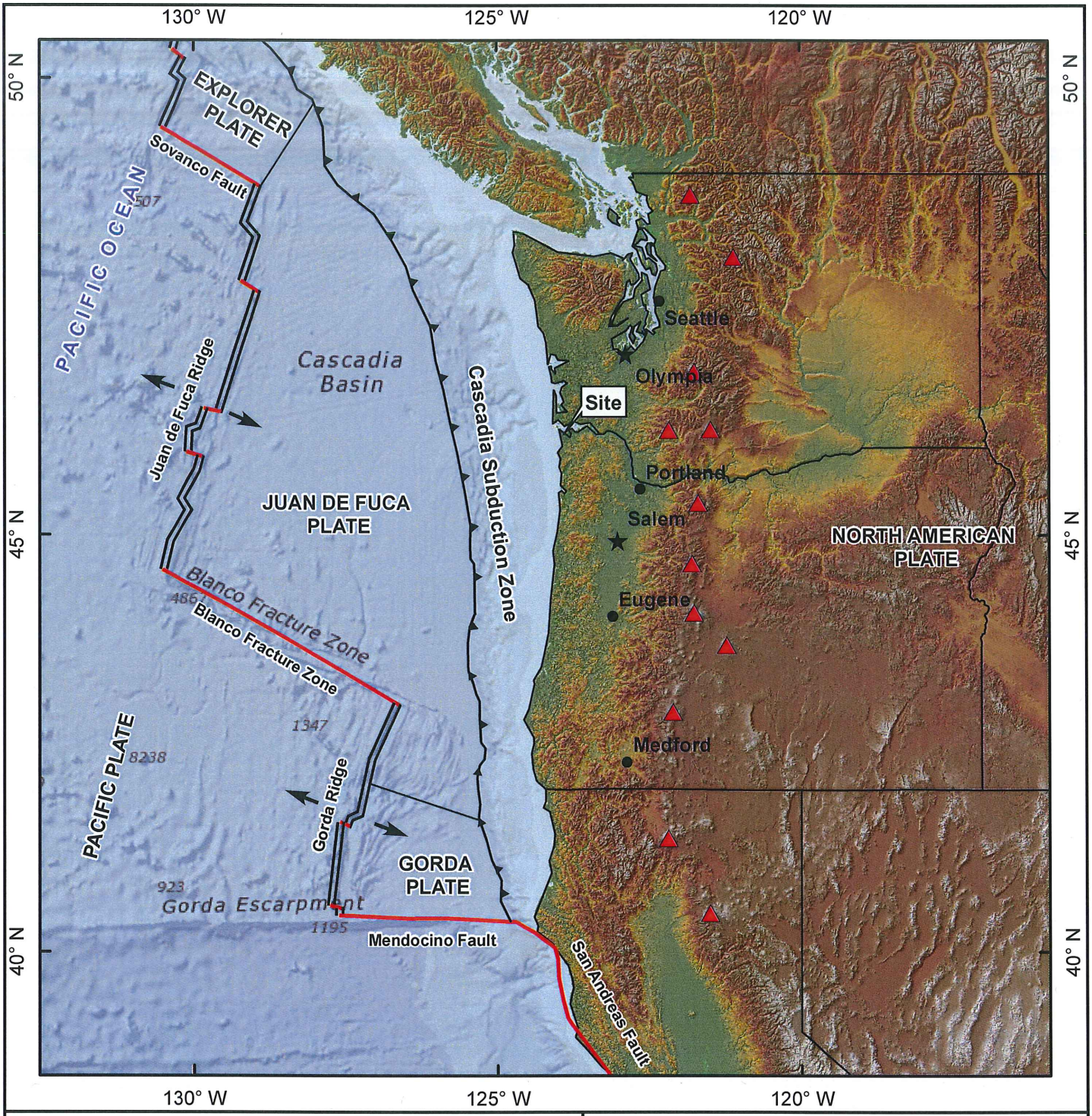

EXPLANATION

- Volcano
- Transform boundary
- Spreading ridge
- Thrust fault

Sources:
1) SRTM 30-meter DEM
2) ESRI World Oceans Basemap
3) USGS Tectonic Plate Boundaries

TECTONIC SETTING OF THE PACIFIC NORTHWEST

CLATSOP COUNTY
JAIL RELOCATION
WARRENTON, OREGON

DATE: JULY 2019 · PROJECT: 73442.000

PBS

FIGURE
3

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EXPLANATION

☆ Site location

GEOLOGIC UNITS

HOLOCENE
- Qal - Alluvium
- Qb - Beach sand

PLEISTOCENE
- Qd - Dune sand
- Qt - Terraced sediments

MIOCENE
- Tasy - Youngs Bay member, Astoria formation
- Tasc - Cannon Beach member, Astoria Formation

OLIGOCENE
- Tsmc - Smugglers Cove formation

——— Geologic contact

—··· Fault; solid where known, dotted where concealed

Sources: Walsh, T. J., 1987, Geologic map of the Astoria and Ilwaco quadrangles, Washington and Oregon: Washington Division of Geology and Earth Resources, Open File Report 87-2, scale 1:100,000

1 inch = 4,000 feet

0 2,000 4,000 8,000 Feet

GEOLOGIC MAP

CLATSOP COUNTY
JAIL RELOCATION
WARRENTON, OREGON

DATE: JULY 2019 · PROJECT: 73442.000

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FIGURE
4

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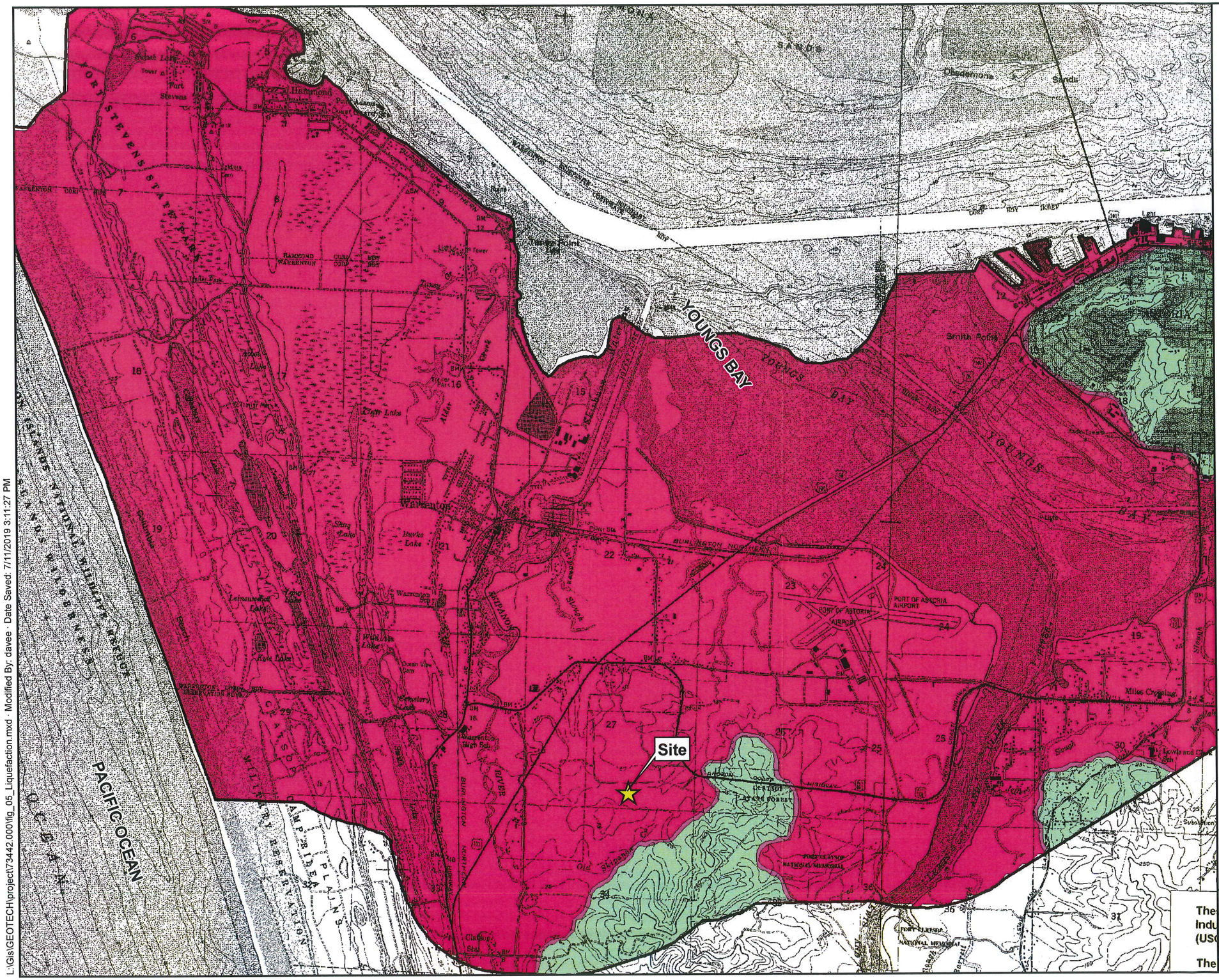

EXPLANATION

- Site location
- Highest liquefaction hazard
- Medium liquefaction hazard
- Low liquefaction hazard
- No liquefaction hazard

Sources: Madin, I. P. and Wang, Z. (1999). Relative earthquake hazard maps for selected coastal communities in Oregon: Astoria, Warrenton, Brookings, Coquille, Florence-Dunes City, Lincoln City, Newport, Reedsport-Winchester Bay, Seaside-Gearhart-Cannon Beach, Tillamook. Oregon Department of Geology and Mineral Industries. IMS-010.

1 inch = 3,000 feet

0 1,500 3,000 6,000 Feet

LIQUEFACTION HAZARD MAP

CLATSOP COUNTY
JAIL RELOCATION
WARRENTON, OREGON

DATE: JULY 2019 · PROJECT: 73442.000

PBS

FIGURE 5

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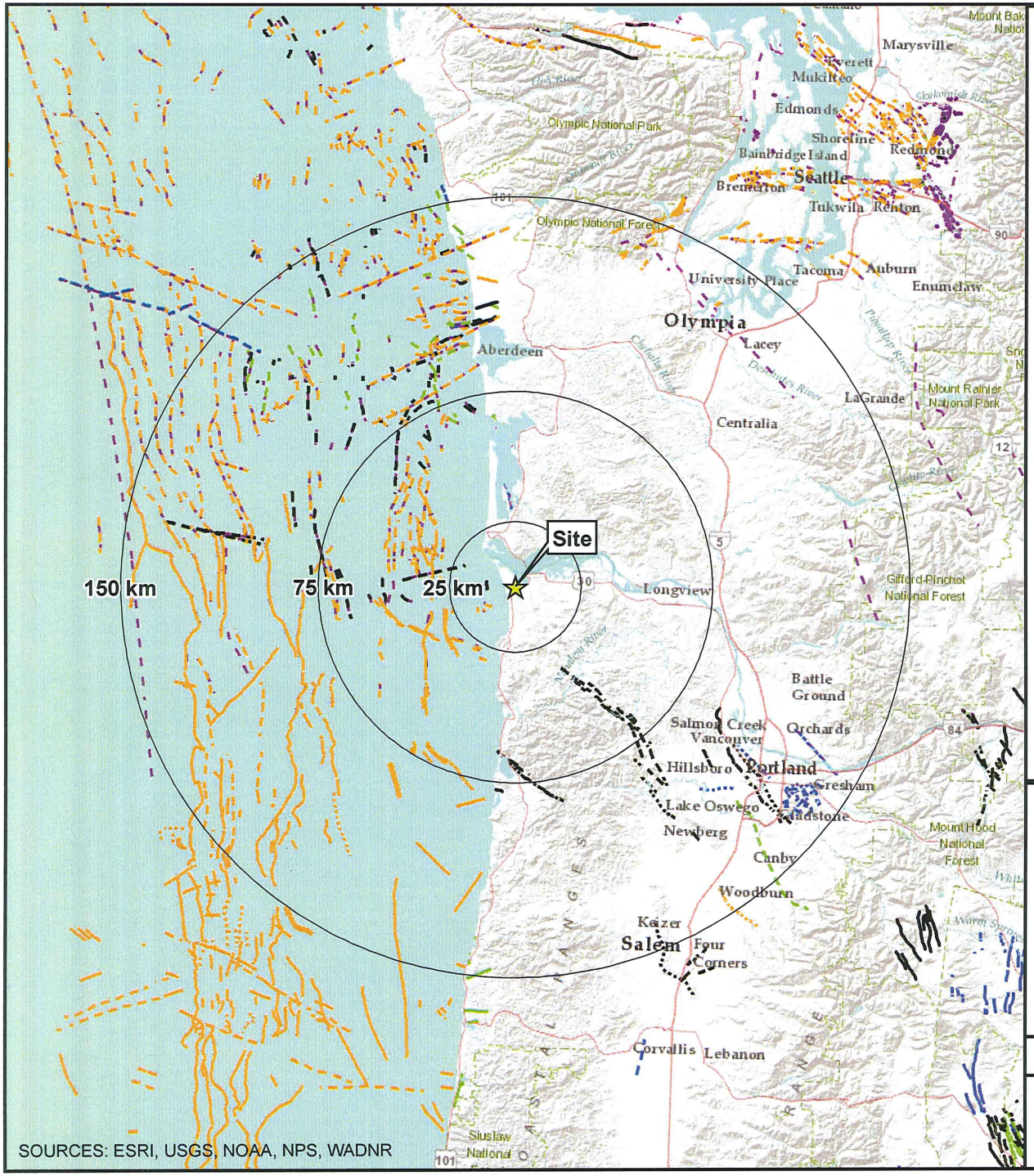

EXPLANATION

☆ Site location

USGS (2006) Quaternary fault traces

- < 15,000 years - latest Quaternary
- < 130,000 years - late Quaternary
- < 750,000 years - middle and late Quaternary
- < 1.6 million years - undifferentiated Quaternary

WADNR (2019) Seismogenic features

- Age unconstrained

Notes: Faults traces; solid where well constrained, dashed where moderately constrained, and dotted where concealed of inferred

1 inch = 60 kilometers

0 15 30 60km

REGIONAL FAULT MAP

CLATSOP COUNTY
JAIL RELOCATION
WARRENTON, OREGON

DATE: JULY 2019 · PROJECT: 73442.000

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FIGURE
6

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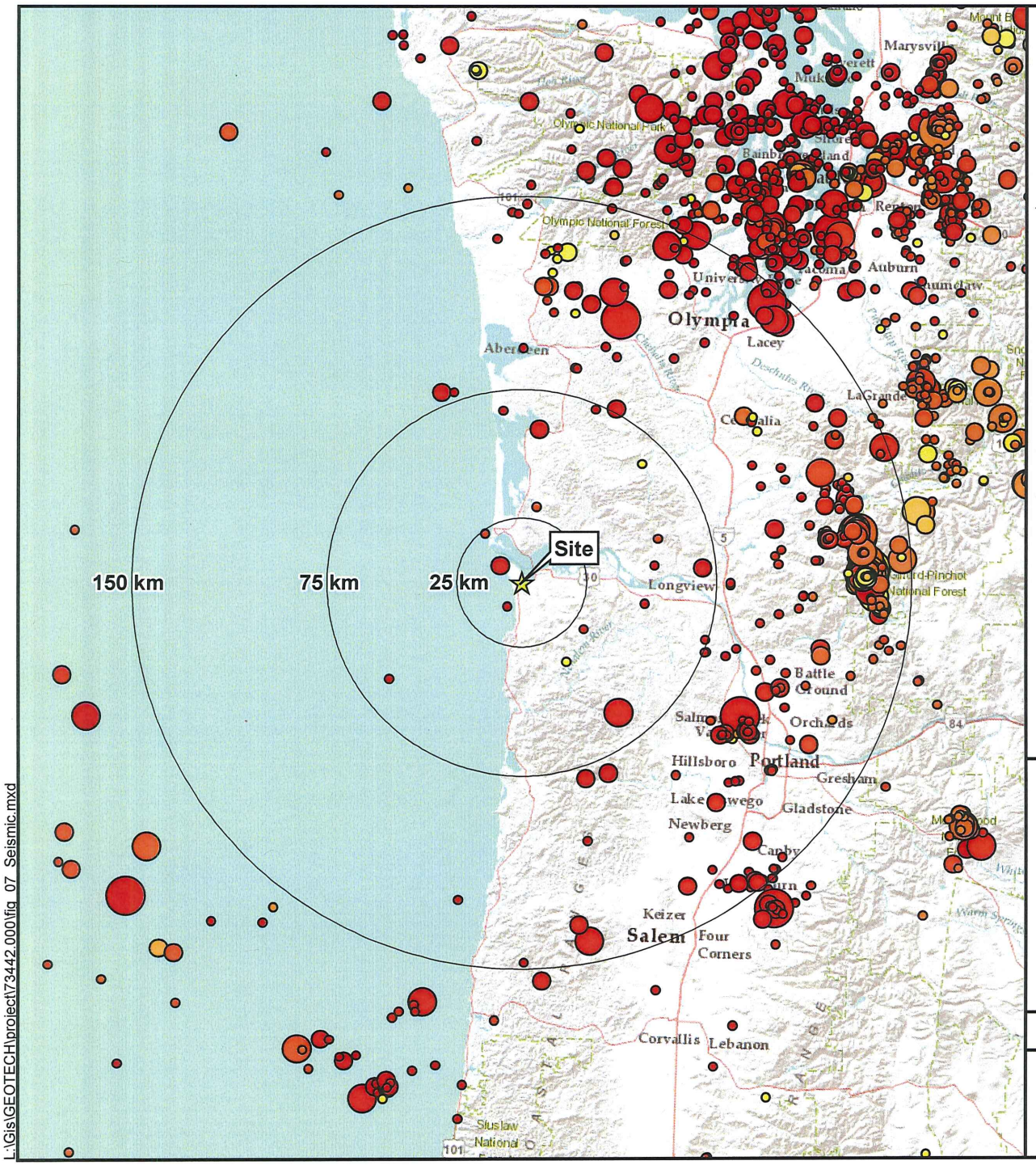

EXPLANATION

★ Site location

Independent Seismicity (1963-2017)

- M 2.5 - 3.0
- M 3.1 - 4.0
- M 4.1 - 5.0
- M >5.1

Depth in kilometers (km)

Low : 0 km

High: 100 km

1 inch = 60 kilometers

0 15 30 60km

HISTORICAL SEISMICITY

CLATSOP COUNTY JAIL RELOCATION WARRENTON, OREGON

DATE: JULY 2019 · PROJECT: 73442.000

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FIGURE 7

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Appendix A
Field Explorations

Appendix A: Field Explorations

A1 GENERAL

PBS explored subsurface conditions at the project site by advancing three borings to depths of up to approximately 91.5 feet bgs on May 23 and 24, 2019. The approximate locations of the explorations are shown on Figure 2, Site Plan. The procedures used to advance the borings, collect samples, and other field techniques are described in detail in the following paragraphs. Unless otherwise noted, all soil sampling and classification procedures followed engineering practices in general accordance with relevant ASTM procedures. "General accordance" means that certain local drilling/excavation and descriptive practices and methodologies have been followed.

A2 BORINGS

A2.1 Drilling

Borings were advanced using a truck-mounted CME-75 drill rig provided and operated by Holt Services, Inc., of Vancouver, Washington, using mud rotary drilling techniques. The borings were observed by a member of the PBS geotechnical staff, who maintained a detailed log of the subsurface conditions and materials encountered during the course of the work.

A2.2 Sampling

Disturbed soil samples were taken in the borings at selected depth intervals. The samples were obtained using a standard 2-inch outside, split-spoon sampler following procedures prescribed for the standard penetration test (SPT). Using the SPT, the sampler is driven 18 inches into the soil using a 140-pound hammer dropped 30 inches. The number of blows required to drive the sampler the last 12 inches is defined as the standard penetration resistance (N-value). The N-value provides a measure of the relative density of granular soils such as sands and gravels, and the consistency of cohesive soils such as clays and plastic silts. The disturbed soil samples were examined by a member of the PBS geotechnical staff and then sealed in plastic bags for further examination and physical testing in our laboratory.

A2.3 Boring Logs

The boring logs show the various types of materials that were encountered in the borings and the depths where the materials and/or characteristics of these materials changed, although the changes may be gradual. Where material types and descriptions changed between samples, the contacts were interpreted. The types of samples taken during drilling, along with their sample identification number, are shown to the right of the classification of materials. The N-values and natural water (moisture) contents are shown farther to the right.

A3 MATERIAL DESCRIPTION

Initially, samples were classified visually in the field. Consistency, color, relative moisture, degree of plasticity, and other distinguishing characteristics of the soil samples were noted. Afterward, the samples were reexamined in the PBS laboratory, various standard classification tests were conducted, and the field classifications were modified where necessary. The terminology used in the soil classifications and other modifiers are defined in Table A-1, Terminology Used to Describe Soil.

PBS

Table A-1
Terminology Used to Describe Soil

Soil Descriptions

Soils exist in mixtures with varying proportions of components. The predominant soil, i.e., greater than 50 percent based on total dry weight, is the primary soil type and is capitalized in our log descriptions (SAND, GRAVEL, SILT, or CLAY). Smaller percentages of other constituents in the soil mixture are indicated by use of modifier words in general accordance with the ASTM D2488-06 Visual-Manual Procedure. "General Accordance" means that certain local and common descriptive practices may have been followed. In accordance with ASTM D2488-06, group symbols (such as GP or CH) are applied on the portion of soil passing the 3-inch (75mm) sieve based on visual examination. The following describes the use of soil names and modifying terms used to describe fine- and coarse-grained soils.

Fine-Grained Soils (50% or greater fines passing 0.075 mm, No. 200 sieve)
The primary soil type, i.e., SILT or CLAY is designated through visual-manual procedures to evaluate soil toughness, dilatency, dry strength, and plasticity. The following outlines the terminology used to describe fine-grained soils, and varies from ASTM D2488 terminology in the use of some common terms.

Primary soil NAME, Symbols, and Adjectives			Plasticity Description	Plasticity Index (PI)
SILT (ML & MH)	**CLAY (CL & CH)**	**ORGANIC SOIL (OL & OH)**		
SILT		Organic SILT	Non-plastic	0 – 3
SILT		Organic SILT	Low plasticity	4 – 10
SILT/Elastic SILT	Lean CLAY	Organic SILT/ Organic CLAY	Medium Plasticity	10 – 20
Elastic SILT	Lean/Fat CLAY	Organic CLAY	High Plasticity	20 – 40
Elastic SILT	Fat CLAY	Organic CLAY	Very Plastic	>40

Modifying terms describing secondary constituents, estimated to 5 percent increments, are applied as follows:

Description	% Composition	
With Sand	% Sand ≥ % Gravel	15% to 25% plus No. 200
With Gravel	% Sand < % Gravel	
Sandy	% Sand ≥ % Gravel	≤30% to 50% plus No. 200
Gravelly	% Sand < % Gravel	

Borderline Symbols, for example CH/MH, are used when soils are not distinctly in one category or when variable soil units contain more than one soil type. **Dual Symbols,** for example CL-ML, are used when two symbols are required in accordance with ASTM D2488.

Soil Consistency terms are applied to fine-grained, plastic soils (i.e., PI ≥ 7). Descriptive terms are based on direct measure or correlation to the Standard Penetration Test N-value as determined by ASTM D1586-84, as follows. SILT soils with low to non-plastic behavior (i.e., PI < 7) may be classified using relative density.

Consistency Term	SPT N-value	Unconfined Compressive Strength	
		tsf	kPa
Very soft	Less than 2	Less than 0.25	Less than 24
Soft	2 – 4	0.25 – 0.5	24 – 48
Medium stiff	5 – 8	0.5 – 1.0	48 – 96
Stiff	9 – 15	1.0 – 2.0	96 – 192
Very stiff	16 – 30	2.0 – 4.0	192 – 383
Hard	Over 30	Over 4.0	Over 383

Soil Descriptions

Coarse - Grained Soils (less than 50% fines)

Coarse-grained soil descriptions, i.e., SAND or GRAVEL, are based on the portion of materials passing a 3-inch (75mm) sieve. Coarse-grained soil group symbols are applied in accordance with ASTM D2488-06 based on the degree of grading, or distribution of grain sizes of the soil. For example, well-graded sand containing a wide range of grain sizes is designated SW; poorly graded gravel, GP, contains high percentages of only certain grain sizes. Terms applied to grain sizes follow.

Material NAME	Particle Diameter	
	Inches	Millimeters
SAND (SW or SP)	0.003 – 0.19	0.075 – 4.8
GRAVEL (GW or GP)	0.19 – 3	4.8 – 75
Additional Constituents:		
Cobble	3 – 12	75 – 300
Boulder	12 – 120	300 – 3050

The primary soil type is capitalized, and the fines content in the soil are described as indicated by the following examples. Percentages are based on estimating amounts of fines, sand, and gravel to the nearest 5 percent. Other soil mixtures will have similar descriptive names.

Example: Coarse-Grained Soil Descriptions with Fines

>5% to < 15% fines (Dual Symbols)	≥15% to < 50% fines
Well graded GRAVEL with silt: GW-GM	Silty GRAVEL: GM
Poorly graded SAND with clay: SP-SC	Silty SAND: SM

Additional descriptive terminology applied to coarse-grained soils follow.

Example: Coarse-Grained Soil Descriptions with Other Coarse-Grained Constituents

Coarse-Grained Soil Containing Secondary Constituents	
With sand or with gravel	≥ 15% sand or gravel
With cobbles; with boulders	Any amount of cobbles or boulders.

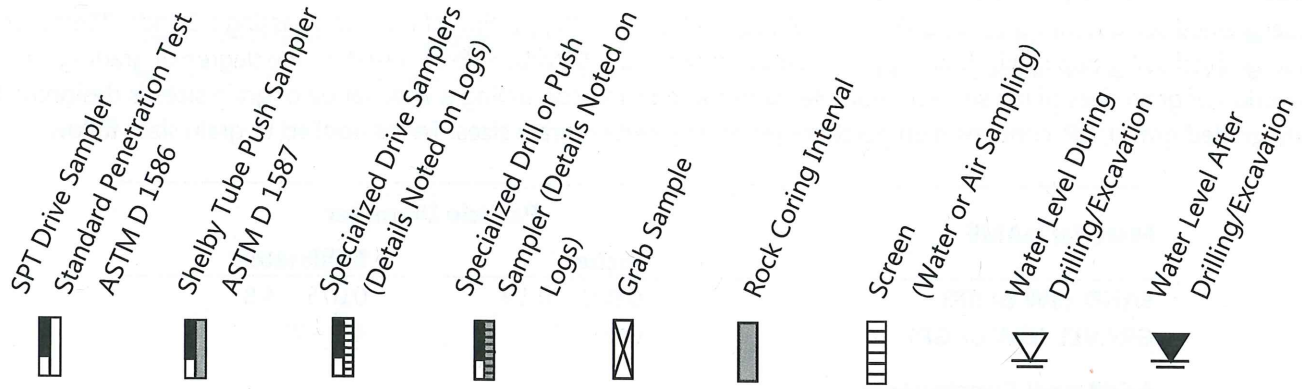
Cobble and boulder deposits may include a description of the matrix soils, as defined above.

Relative Density terms are applied to granular, non-plastic soils based on direct measure or correlation to the Standard Penetration Test N-value as determined by ASTM D1586-84.

Relative Density Term	SPT N-value
Very loose	0 – 4
Loose	5 – 10
Medium dense	11 – 30
Dense	31 – 50
Very dense	> 50

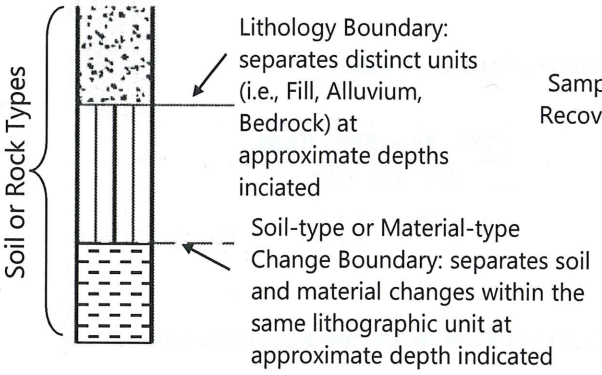
Table A-2
Key To Test Pit and Boring Log Symbols

SAMPLING DESCRIPTIONS

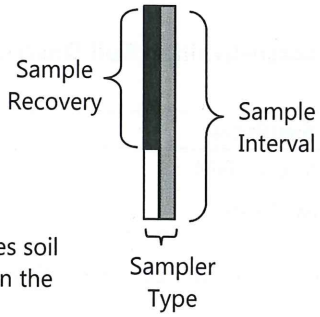


LOG GRAPHICS

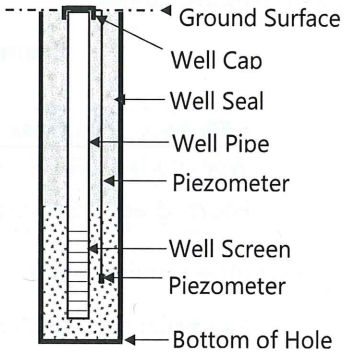
Soil and Rock



Sampling Symbols



Instrumentation Detail



Geotechnical Testing Acronym Explanations

PP	Pocket Penetrometer	HYD	Hydrometer Gradation
TOR	Torvane	SIEV	Sieve Gradation
DCP	Dynamic Cone Penetrometer	DS	Direct Shear
ATT	Atterberg Limits	DD	Dry Density
PL	Plasticity Limit	CBR	California Bearing Ratio
LL	Liquid Limit	RES	Resilient Modulus
PI	Plasticity Index	VS	Vane Shear
P200	Percent Passing US Standard No. 200 Sieve	bgs	Below ground surface
OC	Organic Content	MSL	Mean Sea Level
CON	Consolidation	HCL	Hydrochloric Acid
UC	Unconfined Compressive Strength		

Details of soil and rock classification systems are available on request.

CLATSOP COUNTY JAIL RELOCATION
WARRENTON, OREGON

BORING B-1

PBS PROJECT NUMBER:
73442.000

APPROX. BORING B-1 LOCATION:
(See Site Plan)

DEPTH FEET	MATERIAL DESCRIPTION	DEPTH	TESTING	SAMPLE TYPE / SAMPLE ID	INSTALLATION AND COMMENTS
0.0	Medium stiff, light brown and orange, fat CLAY (CH) with sand; high plasticity; fine sand; moist	0.0		S-1	
4.0	Very soft, dark gray and light brown with orange mottling, elastic SILT (MH); medium plasticity; moist to wet	4.5	P200 ATT	S-2	P200 = 92% LL = 58 PL = 39 PI = 19
8.0	Soft, dark brown, ORGANIC SOIL (OL); low plasticity; moist	7.5		S-3	
10.0				S-4	409.4
12.0	Very soft, gray to brown, fat CLAY (CH); high plasticity; moist fine, vertical organics from 11.5 to 12.5 feet becomes gray with blue-gray mottling; wet	10.8	ATT	S-5	LL = 85 PL = 31 PI = 54
14.0	Very soft, gray lean CLAY (CL); medium plasticity; moist	14.0		S-6	
20.0				S-7	
22.0	Very soft, gray, lean CLAY (CL) with sand; medium plasticity; fine sand; moist	22.0		S-8	
24.0	Very soft, dark brown, ORGANIC SOIL (OL); non-plastic to low plasticity; moist	23.0			

NOTE: Lines representing the interface between soil/rock units of differing description are approximate only, inferred where between samples, and may indicate gradual transition.

▲ UNCORRECTED N-VALUE
◈ DYNAMIC CONE PENETROMETER
● MOISTURE CONTENT %
RQD% CORE REC%
0 50 100

Surface Conditions: Grass

DRILLING METHOD: Mud Rotary - Tricone
DRILLED BY: Holt Services, Inc.
LOGGED BY: D. Eibert

BIT DIAMETER: 4 7/8 inches
HAMMER EFFICIENCY PERCENT: 86.5
LOGGING COMPLETED: 5/24/19

FIGURE A1
Page 1 of 2

BORING LOG 73442.000 B1-3 20190612.GPJ PBS_DATATMPL_GEO.GDT PRINT DATE: 6/28/19:RPG

CLATSOP COUNTY JAIL RELOCATION
WARRENTON, OREGON

BORING B-1
(continued)

PBS PROJECT NUMBER:
73442.000

APPROX. BORING B-1 LOCATION:
(See Site Plan)

DEPTH FEET	MATERIAL DESCRIPTION	DEPTH	SAMPLE TYPE / SAMPLE ID	UNCORRECTED N-VALUE / DYNAMIC CONE PENETROMETER / MOISTURE CONTENT % / RQD% / CORE REC%	INSTALLATION AND COMMENTS
	NOTE: Lines representing the interface between soil/rock units of differing description are approximate only, inferred where between samples, and may indicate gradual transition.			0 50 100	Surface Conditions: Grass
26.0	Soft, gray, lean CLAY (CL) with sand; low to medium plasticity; moist	25.0	S-9	3	
	trace, vertical organics; interbedded SILT (ML) with sand				
28.0		28.5			
30.0	Very soft, gray, fat CLAY (CH) with decomposed organics; medium to high plasticity; moist		S-10	0	
32.0					
34.0	Very soft, gray, lean CLAY (CL) with sand and trace decomposed organics; medium plasticity; fine sand; moist	33.3			
36.0			S-11	0	
38.0					
40.0	becomes gray to dark gray, sandy		S-12	2	
42.0	Final depth 41.5 feet bgs; boring backfilled with grout. Groundwater not measured at time of exploration due to mud rotary drilling	41.5			
44.0					
46.0					
48.0					
50.0				0 50 100	

DRILLING METHOD: Mud Rotary - Tricone
DRILLED BY: Holt Services, Inc.
LOGGED BY: D. Eibert

BIT DIAMETER: 4 7/8 inches
HAMMER EFFICIENCY PERCENT: 86.5
LOGGING COMPLETED: 5/24/19

FIGURE A1
Page 2 of 2

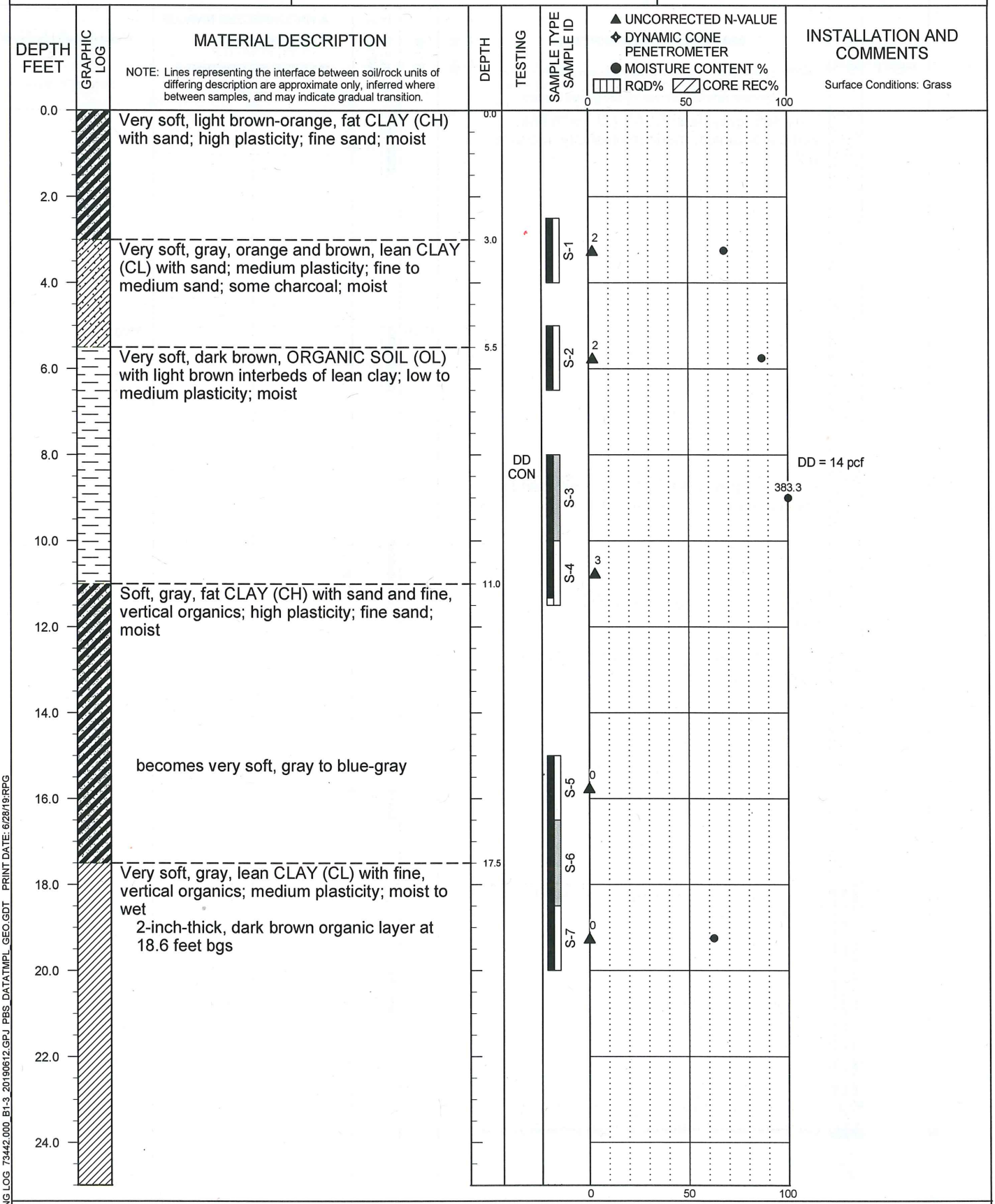
BORING LOG 73442.000 B1-3 20190612.GPJ PBS DATATMPL GEO.GDT PRINT DATE: 6/28/19:RPG

CLATSOP COUNTY JAIL RELOCATION
WARRENTON, OREGON

BORING B-2

PBS PROJECT NUMBER:
73442.000

APPROX. BORING B-2 LOCATION:
(See Site Plan)



BORING LOG 73442.000 B1-3 20190612.GPJ PBS_DATATMPL_GEO.GDT PRINT DATE: 6/28/19:RPG

DRILLING METHOD: Mud Rotary - Tricone
DRILLED BY: Holt Services, Inc.
LOGGED BY: D. Eibert

BIT DIAMETER: 4 7/8 inches
HAMMER EFFICIENCY PERCENT: 86.5
LOGGING COMPLETED: 5/23/19

FIGURE A2

CLATSOP COUNTY JAIL RELOCATION
WARRENTON, OREGON

BORING B-2
(continued)

PBS PROJECT NUMBER:
73442.000

APPROX. BORING B-2 LOCATION:
(See Site Plan)

DEPTH FEET	MATERIAL DESCRIPTION	DEPTH	TESTING	SAMPLE TYPE / SAMPLE ID	UNCORRECTED N-VALUE / DYNAMIC CONE PENETROMETER / MOISTURE CONTENT % / RQD% / CORE REC%	INSTALLATION AND COMMENTS
	NOTE: Lines representing the interface between soil/rock units of differing description are approximate only, inferred where between samples, and may indicate gradual transition.				0 50 100	Surface Conditions: Grass
26.0	Very soft, gray, lean CLAY (CL) with fine, vertical organics; medium plasticity; moist to wet	25.0		S-8	0	
28.0						
30.0			P200	S-9	2	P200 = 98%
32.0						
34.0	Very soft, gray, lean CLAY (CL) with sand; medium plasticity; fine sand; wet	33.5		S-10	2	
36.0	Very soft, dark brown, ORGANIC SOIL (OL); wet	36.3				
38.0	Very soft, gray, sandy lean CLAY (CL); low to medium plasticity; fine sand; wet	37.5				
40.0				S-11	0	
42.0						
44.0	Soft, gray, elastic SILT (MH) with sand; high plasticity; fine sand; wet	43.0				
46.0	~1-inch-thick silty sand lens decomposed organics from 46 to 46.5 feet		ATT	S-12	3	LL = 57 PL = 32 PI = 25
48.0	Very soft, gray to light blue-gray, fat CLAY (CH) with sand; medium to high plasticity; fine sand; wet	48.0				
50.0						

BORING LOG 73442.000_B1-3_20190612.GPJ PBS_DATATMPL_GEO.GDT PRINT DATE: 6/28/19;RPG

DRILLING METHOD: Mud Rotary - Tricone
DRILLED BY: Holt Services, Inc.
LOGGED BY: D. Eibert

BIT DIAMETER: 4 7/8 inches
HAMMER EFFICIENCY PERCENT: 86.5
LOGGING COMPLETED: 5/23/19

FIGURE A2

CLATSOP COUNTY JAIL RELOCATION
WARRENTON, OREGON

PBS PROJECT NUMBER:
73442.000

BORING B-2
(continued)

APPROX. BORING B-2 LOCATION:
(See Site Plan)

▲ UNCORRECTED N-VALUE
◈ DYNAMIC CONE PENETROMETER
● MOISTURE CONTENT %
RQD% CORE REC%

DEPTH FEET	MATERIAL DESCRIPTION	DEPTH	TESTING	SAMPLE TYPE SAMPLE ID	INSTALLATION AND COMMENTS
	NOTE: Lines representing the interface between soil/rock units of differing description are approximate only, inferred where between samples, and may indicate gradual transition.				Surface Conditions: Grass
50.0	Very soft, gray to light blue-gray, lean CLAY (CL) with sand; medium plasticity; fine sand; wet	50.0	ATT	S-13	LL = 31 PL = 21 PI = 10
52.0					
	Medium stiff, gray-green, lean CLAY (CL); medium plasticity; moist to wet	53.0			
54.0			P200	S-14	P200 = 99%
56.0					
58.0					
60.0	becomes gray			S-15	
62.0					
	Medium stiff, gray, lean CLAY (CL) with sand and fine, vertical organics; medium to high plasticity; fine sand; moist	63.0			
64.0					
66.0				S-16	
68.0	Medium stiff, gray and brown, fat CLAY (CH) with sand and fine, horizontal organics; high plasticity; fine sand; moist	68.0			
70.0				S-17	
72.0					
74.0					

DRILLING METHOD: Mud Rotary - Tricone
DRILLED BY: Holt Services, Inc.
LOGGED BY: D. Eibert

BIT DIAMETER: 4 7/8 inches
HAMMER EFFICIENCY PERCENT: 86.5
LOGGING COMPLETED: 5/23/19

FIGURE A2
Page 3 of 4

BORING LOG 73442.000 B1-3 20190612.GPJ PBS_DATATMPL_GEO.GDT PRINT DATE: 6/28/19:RPG

CLATSOP COUNTY JAIL RELOCATION
WARRENTON, OREGON

BORING B-2
(continued)

PBS PROJECT NUMBER:
73442.000

APPROX. BORING B-2 LOCATION:
(See Site Plan)

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH	TESTING	SAMPLE TYPE / SAMPLE ID	UNCORRECTED N-VALUE / DYNAMIC CONE PENETROMETER / MOISTURE CONTENT % / RQD% / CORE REC%	INSTALLATION AND COMMENTS
		NOTE: Lines representing the interface between soil/rock units of differing description are approximate only, inferred where between samples, and may indicate gradual transition.				0 50 100	Surface Conditions: Grass
76.0		Medium stiff, gray, fat CLAY (CH) with sand; high plasticity; fine sand; moist	75.0		S-18	7	
78.0							
80.0		becomes stiff, with trace white and brown nodules			S-19	13	
82.0							
84.0							
86.0		becomes very stiff; decomposed wood at 85.5 to 86 feet			S-20	21	
88.0		Weak (R2), gray SILTSTONE with sand lenses; non-plastic; fine sand; moderate weathering; moist	87.0				
90.0		**Smugglers Cove Formation (Tsmc)**			S-21	89	
92.0		Final depth 91.5 feet bgs; boring backfilled with grout. Groundwater not measured at time of exploration due to mud rotary drilling.	91.5				
94.0							
96.0							
98.0							
100.0						0 50 100	

DRILLING METHOD: Mud Rotary - Tricone
DRILLED BY: Holt Services, Inc.
LOGGED BY: D. Eibert

BIT DIAMETER: 4 7/8 inches
HAMMER EFFICIENCY PERCENT: 86.5
LOGGING COMPLETED: 5/23/19

FIGURE A2
Page 4 of 4

BORING LOG 73442.000_B1-3_20190612.GPJ PBS_DATATMPL_GEO.GDT PRINT DATE: 6/28/19:RPG

CLATSOP COUNTY JAIL RELOCATION
WARRENTON, OREGON

BORING B-3

PBS PROJECT NUMBER:
73442.000

APPROX. BORING B-3 LOCATION:
(See Site Plan)

DEPTH FEET	MATERIAL DESCRIPTION	DEPTH	SAMPLE TYPE / SAMPLE ID	UNCORRECTED N-VALUE / DYNAMIC CONE PENETROMETER / MOISTURE CONTENT % / RQD% / CORE REC%	INSTALLATION AND COMMENTS
0.0	ASPHALT (5 inches)	0.0			Surface Conditions: Asphalt
	BASE ROCK (25 inches)	0.4			
2.0	Medium stiff, gray, light brown, and orange, fat CLAY (CH); high plasticity; moist	2.5	S-1	7	
4.0	Medium stiff, light brown and orange, sandy fat CLAY (CH); high plasticity; fine sand; moist	5.0	S-2	8	
6.0					
8.0			S-3	2	
	Very soft, gray to dark gray, lean CLAY (CL) with sand; medium plasticity; fine sand; moist	8.5			
	Very soft, dark brown ORGANIC SOIL (OL); medium plasticity; moist	9.0			
10.0	Very soft, brown to gray, lean CLAY (CL) with sand; medium plasticity, fine sand; moist	9.5	S-4	2	
	Final depth 11.5 feet bgs; boring backfilled with bentonite. Groundwater not measured at time of exploration due to mud rotary drilling.	11.5			
12.0					
14.0					
16.0					
18.0					
20.0					
22.0					
24.0					

NOTE: Lines representing the interface between soil/rock units of differing description are approximate only, inferred where between samples, and may indicate gradual transition.

RQD% CORE REC%: 0 50 100

DRILLING METHOD: Mud Rotary - Tricone
DRILLED BY: Holt Services, Inc.
LOGGED BY: D. Eibert

BIT DIAMETER: 4 7/8 inches
HAMMER EFFICIENCY PERCENT: 86.5
LOGGING COMPLETED: 5/23/19

FIGURE A3
Page 1 of 1

BORING LOG 73442.000 B1-3 20190612.GPJ PBS_DATATMPL_GEO.GDT PRINT DATE: 6/28/19:RPG

Appendix B
Laboratory Testing

Appendix B: Laboratory Testing

B1 GENERAL

Samples obtained during the field explorations were examined in the PBS laboratory. The physical characteristics of the samples were noted and field classifications were modified where necessary. During the course of examination, representative samples were selected for further testing. The testing program for the soil samples included standard classification tests, which yield certain index properties of the soils important to an evaluation of soil behavior. The testing procedures are described in the following paragraphs. Unless noted otherwise, all test procedures are in general accordance with applicable ASTM standards. "General accordance" means that certain local and common descriptive practices and methodologies have been followed.

B2 CLASSIFICATION TESTS

B2.1 Visual Classification

The soils were classified in accordance with the Unified Soil Classification System with certain other terminology, such as the relative density or consistency of the soil deposits, in general accordance with engineering practice. In determining the soil type (that is, gravel, sand, silt, or clay) the term that best described the major portion of the sample is used. Modifying terminology to further describe the samples is defined in Table A-1, Terminology Used to Describe Soil, in Appendix A.

B2.2 Moisture (Water) Contents

Natural moisture content determinations were made on samples of the fine-grained soils (that is, silts, clays, and silty sands). The natural moisture content is defined as the ratio of the weight of water to dry weight of soil, expressed as a percentage. The results of the moisture content determinations are presented on the logs of the borings in Appendix A and on Figure B3, Summary of Laboratory Data, in Appendix B.

B2.3 Atterberg Limits

Atterberg limits were determined on select samples for the purpose of classifying soils into various groups for correlation. The results of the Atterberg limits test, which included liquid and plastic limits, are plotted on Figure B1, Atterberg Limits Test Results, and on the exploration logs in Appendix A where applicable.

B2.4 Grain-Size Analyses (P200 Wash)

Washed sieve analyses (P200) were completed on samples to determine the portion of soil samples passing the No. 200 Sieve (i.e., silt and clay). The results of the P200 test results are presented on the exploration logs in Appendix A and on Figure B3, Summary of Laboratory Data, in Appendix B.

B3 ONE-DIMENSIONAL CONSOLIDATION

One-dimensional consolidation testing was conducted on a relatively undisturbed sample collected from boring B-2 at a depth of 8 feet to obtain quantitative data for use in evaluating potential settlement resulting from loads imposed from structures at the site. The test specimen was placed in a one-dimensional, fixed-ring consolidometer and loads were applied to the specimen. The resulting change in thickness of the soil sample was monitored with time. Upon completion of primary consolidation, the next load increment was applied. The specimen was kept moist until the first load increment was applied, at which point the specimen was inundated with water. The consolidation test results are presented on Figure B2. The curve of the plot shows the percent strain that occurred in the test specimen under various magnitudes of applied constant load.

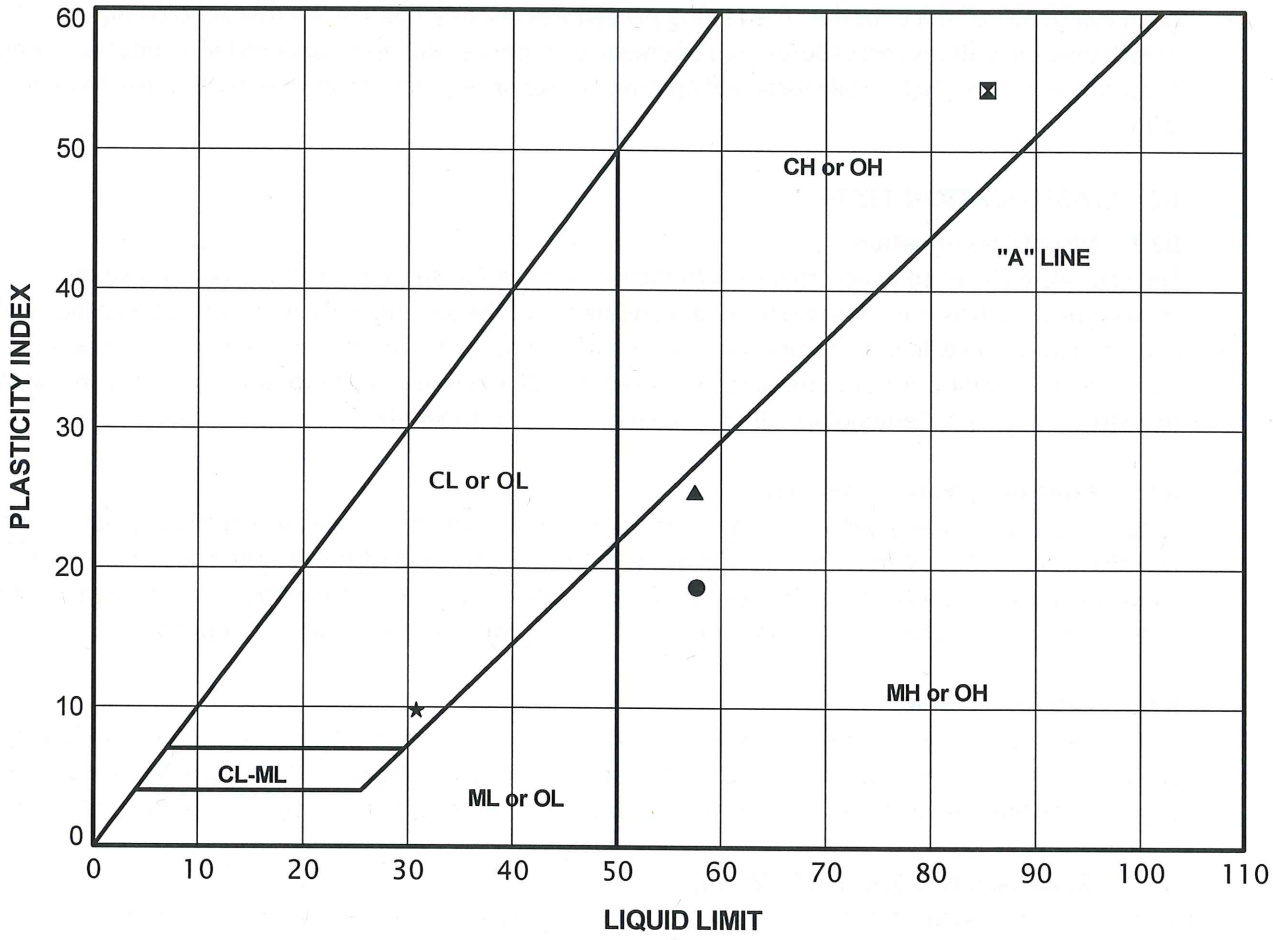
PBS

ATTERBERG LIMITS TEST RESULTS

CLATSOP COUNTY JAIL RELOCATION
WARRENTON, OREGON

PBS PROJECT NUMBER:
73442.000

TEST METHOD: ASTM D4318



KEY	EXPLORATION NUMBER	SAMPLE NUMBER	SAMPLE DEPTH (FEET)	NATURAL MOISTURE CONTENT (PERCENT)	PERCENT PASSING NO. 40 SIEVE (PERCENT)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
●	B-1	S-2	5.0	62.3	NA	58	39	19
⊠	B-1	S-5	11.5	67.5	NA	85	31	54
▲	B-2	S-12	45.0	62.0	NA	57	32	25
★	B-2	S-13	50.0	32.7	NA	31	21	10

FIGURE B1

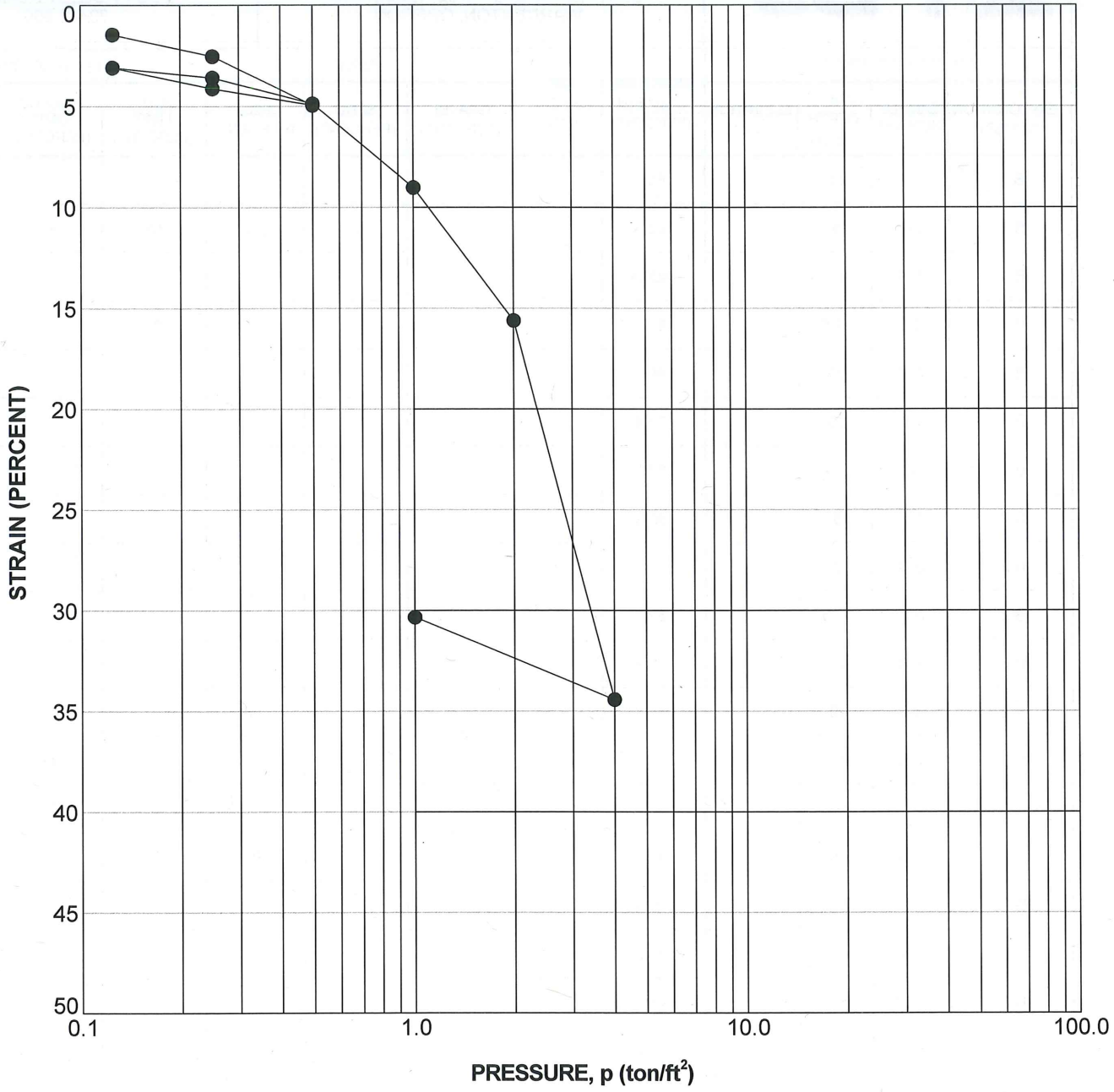
ATTERBERG LIMITS 73442.000_B1-3_20190612.GPJ PBS_DATATMPL_GEO.GDT PRINT DATE: 6/28/19:RPG

PBS

CONSOLIDATION TEST RESULTS

CLATSOP COUNTY JAIL RELOCATION
WARRENTON, OREGON

PBS PROJECT NUMBER:
73442.000



KEY	EXPLORATION NUMBER	SAMPLE NUMBER	SAMPLE DEPTH (FEET)	INITIAL MOISTURE CONTENT (PERCENT)	FINAL MOISTURE CONTENT (PERCENT)	INITIAL DRY DENSITY (PCF)
●	B-2	S-3	8.0	383.3	218.5	14.0

FIGURE B2

_CONSOLIDATION 73442.000_B1-3_20190612.GPJ PBS_DATATMPL_GEO.GDT PRINT DATE: 6/18/19:RPG

PBS

SUMMARY OF LABORATORY DATA

CLATSOP COUNTY JAIL RELOCATION
WARRENTON, OREGON

PBS PROJECT NUMBER:
73442.000

SAMPLE INFORMATION				MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	SIEVE			ATTERBERG LIMITS		
EXPLORATION NUMBER	SAMPLE NUMBER	SAMPLE DEPTH (FEET)	ELEVATION (FEET)			GRAVEL (PERCENT)	SAND (PERCENT)	P200 (PERCENT)	LIQUID LIMIT (PERCENT)	PLASTIC LIMIT (PERCENT)	PLASTICITY INDEX (PERCENT)
B-1	S-1	2.5		60.5							
B-1	S-2	5		62.3				92	58	39	19
B-1	S-4	8.5		409.4							
B-1	S-5	11.5		67.5					85	31	54
B-1	S-9	25		45.3							
B-1	S-11	35		57.4							
B-2	S-1	2.5		67.9							
B-2	S-2	5		86.9							
B-2	S-3	8		383.3	14						
B-2	S-7	18.5		62.2							
B-2	S-8	25		58.2							
B-2	S-9	30		58.7				98			
B-2	S-12	45		62.0					57	32	25
B-2	S-13	50		32.7					31	21	10
B-2	S-14	55		45.7				99			
B-2	S-16	65		49.9							
B-2	S-18	75		49.5							
B-2	S-20	85		46.2							
B-3	S-1	2.5		58.2							
B-3	S-2	5		58.6							
B-3	S-4	10		92.7							

FIGURE B3

LAB SUMMARY 73442.000_B1-3_20190612.GPJ PBS_DATATMPL_GEO.GDT PRINT DATE: 6/28/19:RPG

Appendix C

Previous Field Explorations by Others

LOG LEGEND

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

MAJOR DIVISIONS		LTR	DESCRIPTION
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW	Well graded gravels or gravel sand mixtures, little or no fines
		GP	Poorly graded gravels or gravel sand mixtures, little or no fines
		GM	Silty gravels, gravel sand silt mixtures
		GC	Clayey gravels, gravel sand clay mixtures
	SAND AND SANDY SOILS	SW	Well graded sands or gravelly sands, little or no fines
		SP	Poorly graded sands or gravelly sands, little or no fines
		SM	Silty sands, poorly graded sand silt mixtures
		SC	Clayey sands, poorly graded sand clay mixtures

MAJOR DIVISIONS		LTR	DESCRIPTION
FINE GRAINED SOILS	SILTS AND CLAYS LL	ML	Inorganic silts and very fine sands, rock flour, silty or 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 silt-clays of low plasticity
	SILTS AND CLAYS LL > 50	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
HIGHLY ORGANIC SOILS		Pt	Peat and other highly organic soils

SOIL SAMPLES

- Geoprobe
- Standard penetration split spoon sample
- No recovery.
- Shelby Tube sample

FIELD MEASUREMENTS

- Water level observed during drilling
- Water level observed after drilling
- OVA — Organic Vapor Analyzer
- PID — Photoionization Detector
- ppmv — Parts Per Million by Volume

WELL CONSTRUCTION

- Blank casing
- Screened casing
- Cement grout
- Bentonite
- Sand pack or gravel pack
- Native material mixed with bentonite
- Native backfill or cavings
- Bentonite-cement grout

ANALYTICAL RESULTS

ND ( )	Not Detected (Detection Limit)
NA	Not Analyzed
TPH	Total Petroleum Hydrocarbons
BTEX	Benzene, Toluene, Ethylbenzene, & Xylenes
Herb.	Herbicides, EPA Method 8150
Pest.	Pesticides, EPA Method 8080

Note: Blows per foot is the number of blows used to drive a sampler through the last 12 inches of an 18-inch sampling attempt. One blow is a 30-inch fall of a 140-pound hammer.

Note: The line separating strata on the logs represents approximate boundaries only. The actual transition may be gradual. No warranty is provided as to the continuity of the strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

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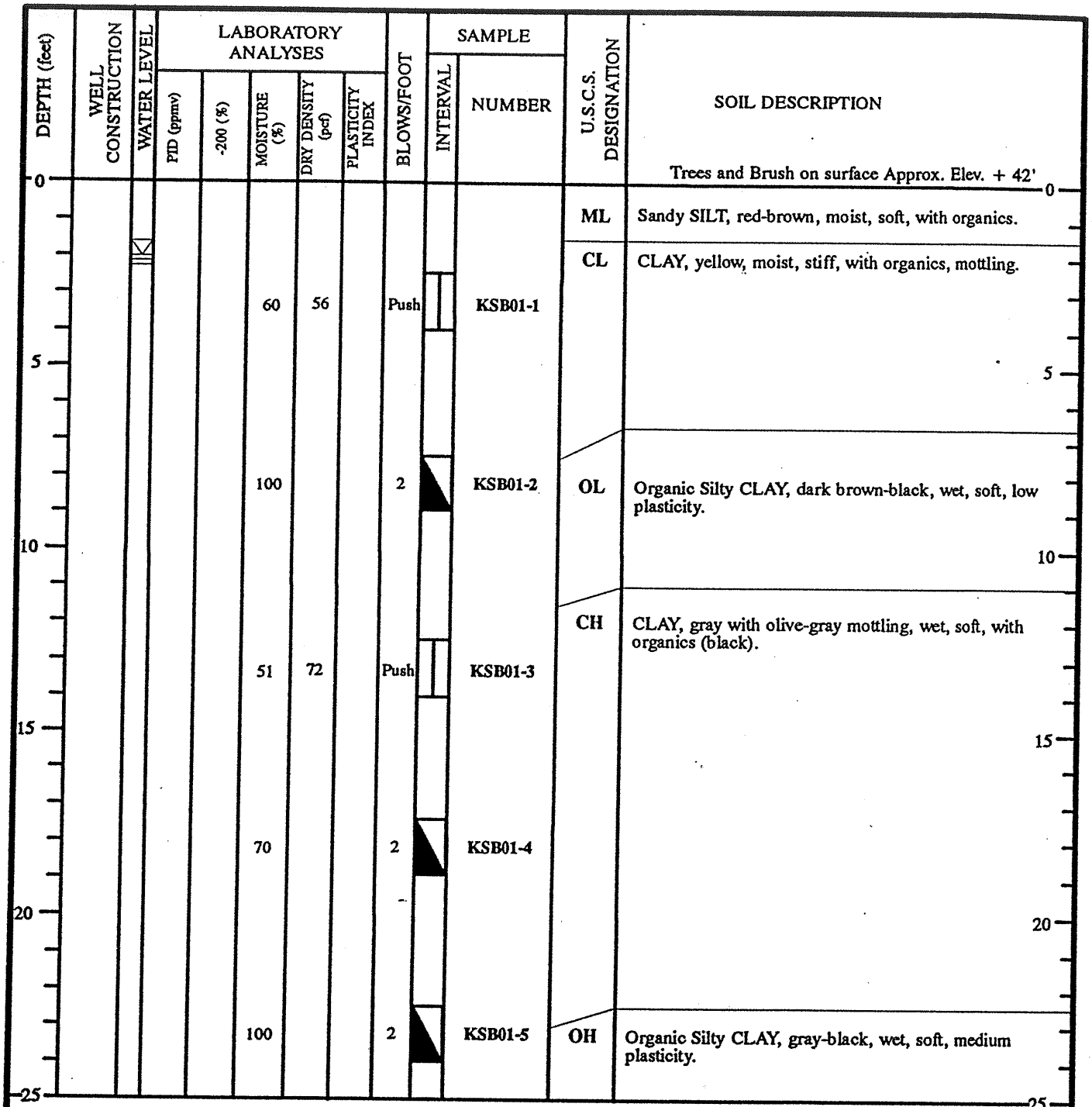
LEGEND2.PRE

Boring Log Legend

FIGURE 3



LOGGED BY: RR
DATE DRILLED: 5-23/24-96
CASING TYPE:
Comments:

TOTAL DEPTH (feet): 39'
DIAMETER OF BORING: 6"

DRILLING METHOD: Hollow Stem Auger
SCREEN SIZE: NA
CASING SIZE: NA

KLEINFELDER

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8065.PRE

LOG OF SOIL BORING - KSB01

YOUTH CORRECTION FACILITY
WARRENTON, OREGON

Project # 60-8065-01

FIGURE 4

NOTE: Logs are to be used only for the designated purposes and in context with the attached report.

DEPTH (feet)	WELL CONSTRUCTION	WATER LEVEL	LABORATORY ANALYSES: PID (ppmv)	LABORATORY ANALYSES: -200 (%)	LABORATORY ANALYSES: MOISTURE (%)	LABORATORY ANALYSES: DRY DENSITY (pcf)	LABORATORY ANALYSES: PLASTICITY INDEX	BLOWS/FOOT	SAMPLE: INTERVAL	SAMPLE: NUMBER	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
												Trees and Brush on surface Approx. Elev. + 42'
25											OH	Organic Silty CLAY, gray-black, wet, soft, medium plasticity.
					50			2		KSB01-6	CL	Silty CLAY, gray, wet, soft, medium plasticity, with organics (black).
30												
					52			2		KSB01-7		
35												
					100			2		KSB01-8	OH	Organic Silty CLAY, dark brown-black, wet, soft, medium plasticity.
40												Boring terminated at 39' on 5/24/96. FreeWater encountered at 2' during time of drilling.
45												
50												

LOGGED BY: RR
DATE DRILLED: 5-23/24-96
CASING TYPE:
Comments:

TOTAL DEPTH (feet): 39'
DIAMETER OF BORING: 6"

DRILLING METHOD: Hollow Stem Auger
SCREEN SIZE: NA
CASING SIZE: NA

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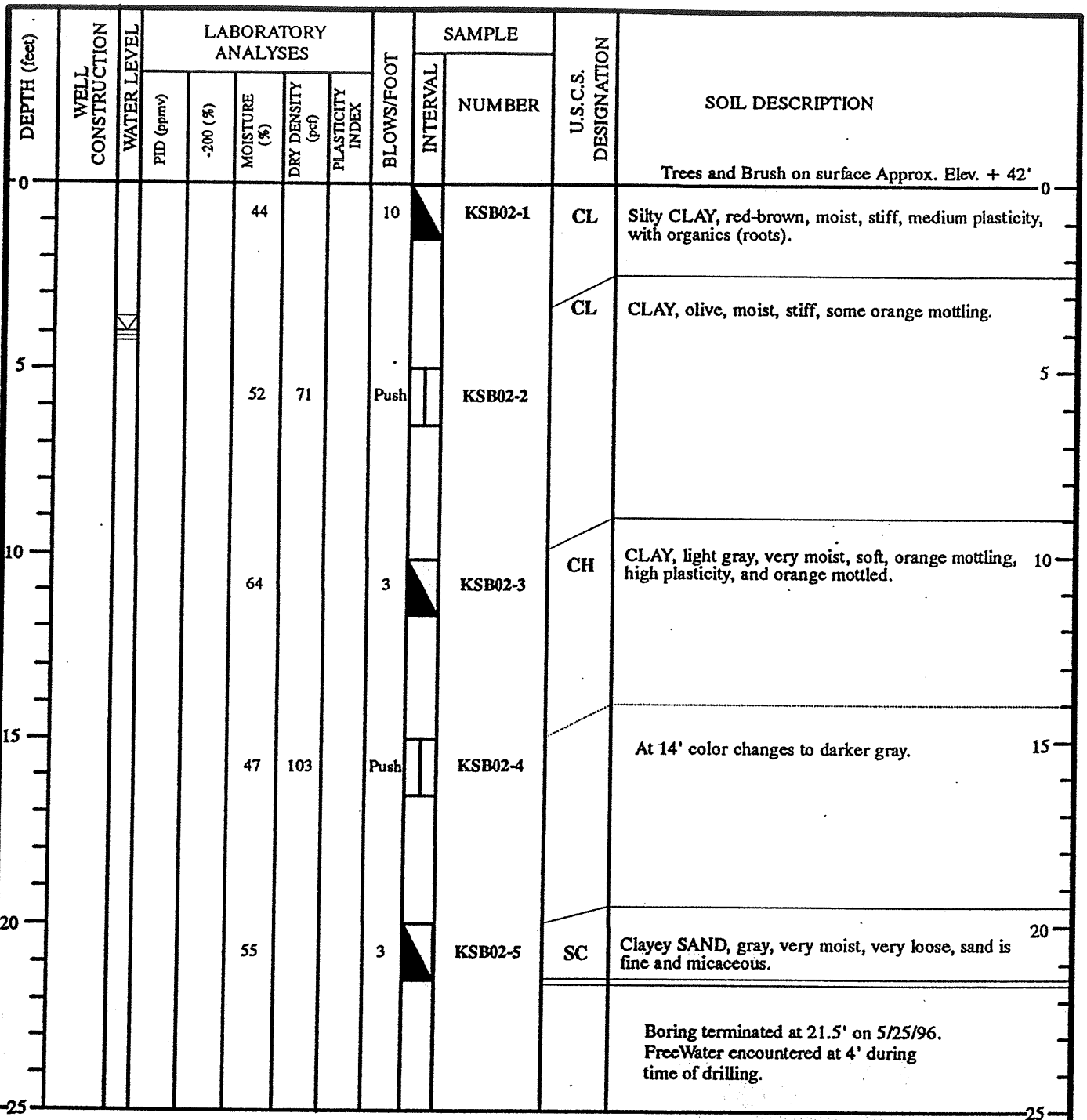
LOG OF SOIL BORING - KSB01

YOUTH CORRECTION FACILITY
WARRENTON, OREGON

Project # 60-8065-01

FIGURE 4

NOTE: Logs are to be used only for the designated purposes and in context with the attached report.



LOGGED BY: RR
DATE DRILLED: 5-24-96
CASING TYPE:
Comments:

TOTAL DEPTH (feet): 21.5'
DIAMETER OF BORING: 6"

DRILLING METHOD: Hollow Stem Auger
SCREEN SIZE: NA
CASING SIZE: NA

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LOG OF SOIL BORING - KSB02

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WARRENTON, OREGON

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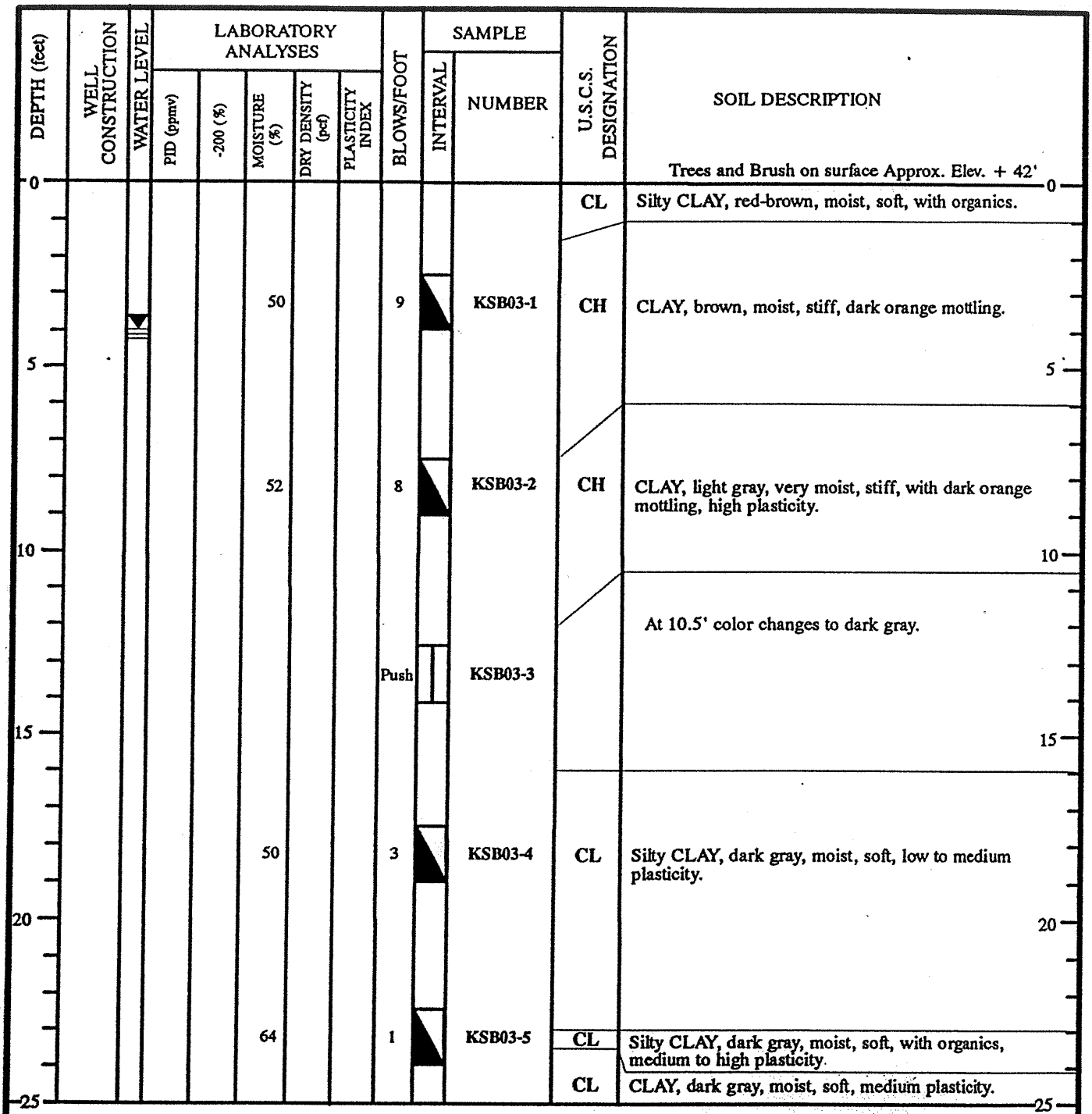
FIGURE 5

NOTE: Logs are to be used only for the designated purposes and in context with the attached report.



LOGGED BY: RR
DATE DRILLED: 5-24/25-96
CASING TYPE:
Comments:

TOTAL DEPTH (feet): 44'
DIAMETER OF BORING: 6"

DRILLING METHOD: Hollow Stem Auger
SCREEN SIZE: NA
CASING SIZE: NA

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LOG OF SOIL BORING - KSB03

YOUTH CORRECTION FACILITY
WARRENTON, OREGON

Project # 60-8065-01

FIGURE 6

NOTE: Logs are to be used only for the designated purposes and in context with the attached report.

DEPTH (feet)	WELL CONSTRUCTION	WATER LEVEL	LABORATORY ANALYSES: PID (ppmv)	LABORATORY ANALYSES: -200 (%)	LABORATORY ANALYSES: MOISTURE (%)	LABORATORY ANALYSES: DRY DENSITY (pcf)	LABORATORY ANALYSES: PLASTICITY INDEX	BLOWS/FOOT	SAMPLE: INTERVAL	SAMPLE: NUMBER	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
25												Trees and Brush on surface Approx. Elev. + 42'
											CL	CLAY, dark gray, moist, soft, medium plasticity.
					41			3		KSB03-6	CL	Silty CLAY, gray, moist, soft, trace mica, medium plasticity.
30												
					62			3		KSB03-7	OH	Organic Silty CLAY, gray-black, very moist, medium plasticity, wood fragments.
35												
					39			5		KSB03-8	CH	CLAY, gray, moist, medium stiff, high plasticity.
40												
											CH	CLAY, gray, moist, stiff, high plasticity, minor light brown mottling.
					49			10		KSB03-9		
45												Boring terminated at 44' on 5/24/96. FreeWater encountered at 4' on 5/25/96.
50												

LOGGED BY: RR
DATE DRILLED: 5-23/24-96
CASING TYPE:
Comments:

TOTAL DEPTH (feet): 44'
DIAMETER OF BORING: 6"

DRILLING METHOD: Hollow Stem Auger
SCREEN SIZE: NA
CASING SIZE: NA

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LOG OF SOIL BORING - KSB03
YOUTH CORRECTION FACILITY
WARRENTON, OREGON

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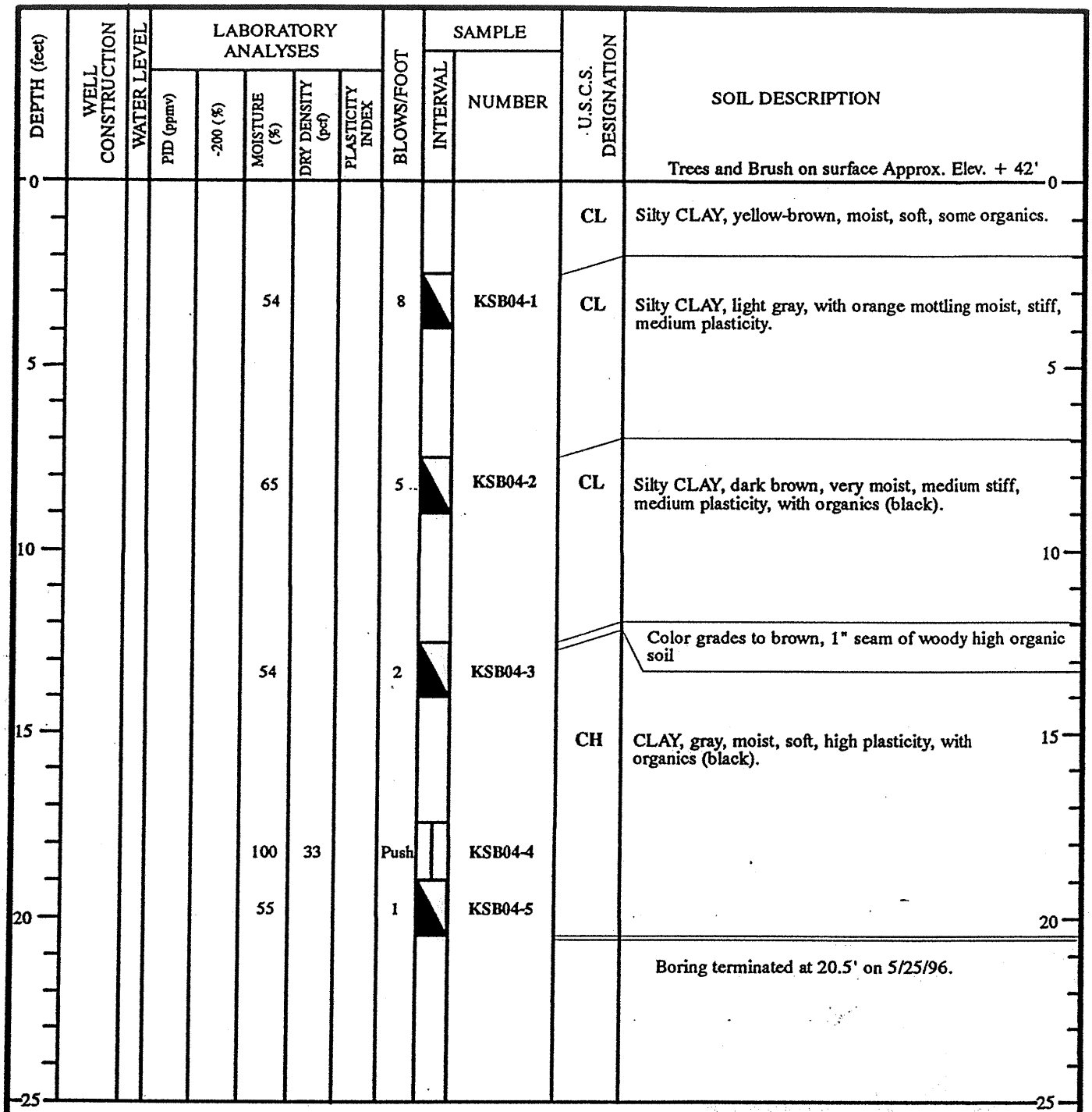
Project # 60-8065-01

FIGURE 6

NOTE: Logs are to be used only for the designated purposes and in context with the attached report.



LOGGED BY: RR
DATE DRILLED: 5-25-96
CASING TYPE:
Comments:

TOTAL DEPTH (feet): 20.5'
DIAMETER OF BORING: 6"

DRILLING METHOD: Hollow Stem Auger
SCREEN SIZE: NA
CASING SIZE: NA

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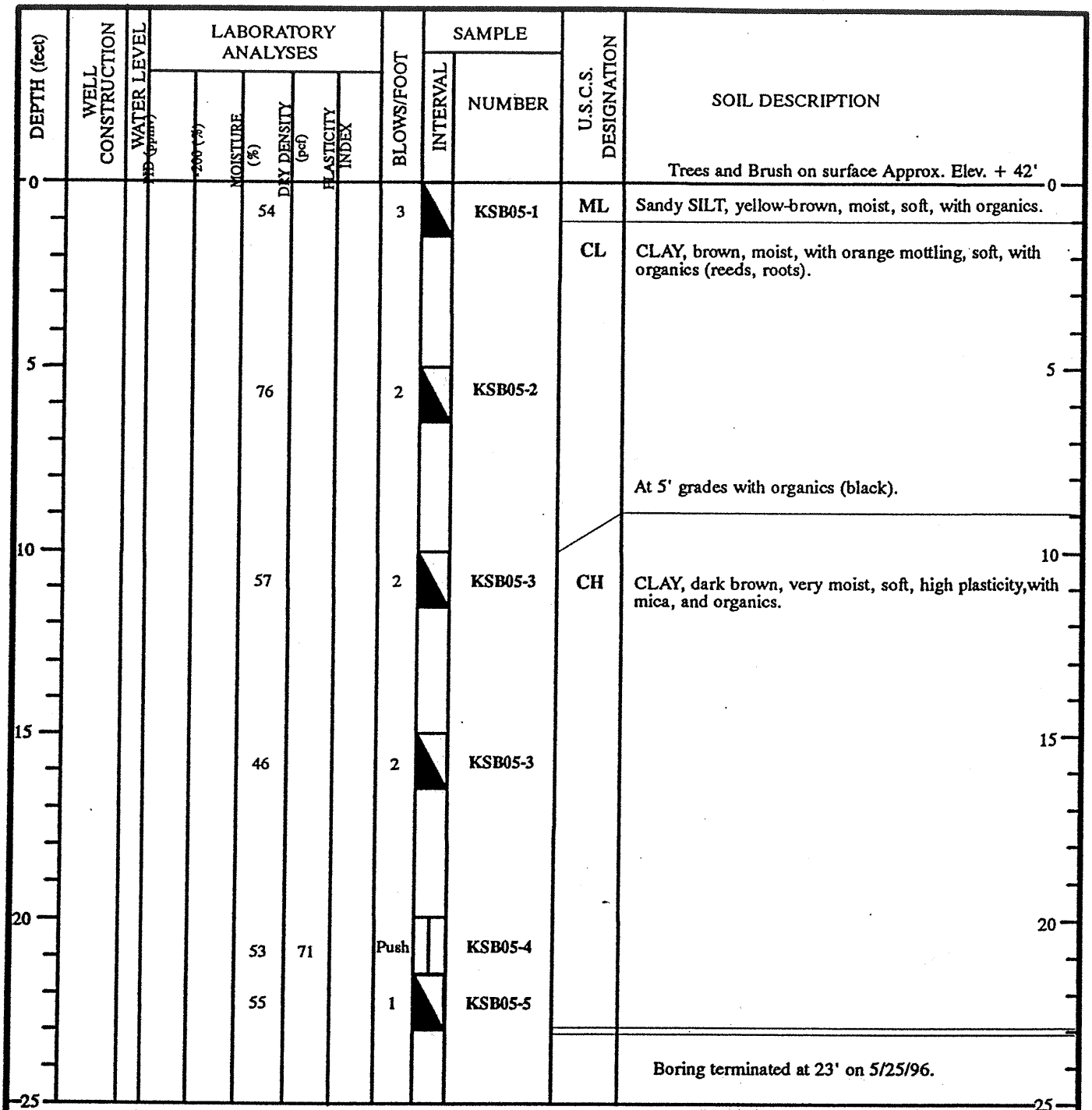
LOG OF SOIL BORING - KSB04

YOUTH CORRECTION FACILITY
WARRENTON, OREGON

Project # 60-8065-01

FIGURE 7

NOTE: Logs are to be used only for the designated purposes and in context with the attached report.



LOGGED BY: RR
DATE DRILLED: 5-25-96
CASING TYPE:
Comments:

TOTAL DEPTH (feet): 23'
DIAMETER OF BORING: 6"

DRILLING METHOD: Hollow Stem Auger
SCREEN SIZE: NA
CASING SIZE: NA

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LOG OF SOIL BORING - KSB05

YOUTH CORRECTION FACILITY
WARRENTON, OREGON

Project # 60-8065-01

FIGURE 8

NOTE: Logs are to be used only for the designated purposes and in context with the attached report.

DEPTH (feet)	WELL CONSTRUCTION	WATER LEVEL	LABORATORY ANALYSES: PID (ppmv)	LABORATORY ANALYSES: -200 (%)	LABORATORY ANALYSES: MOISTURE (%)	LABORATORY ANALYSES: DRY DENSITY (pcf)	LABORATORY ANALYSES: PLASTICITY INDEX	BLOWS/ft	SAMPLE: INTERVAL	SAMPLE: NUMBER	U.S.C.S. DESIGNATION	SOIL DESCRIPTION (Depths measured below surface grade.)
0												
					50.0			5		KSB06-1	ML	Sandy SILT, red-brown, moist, medium stiff, some organics, low plasticity.
					88.2			1		KSB06-2	CL	Sandy CLAY with SILT, red-brown, moist, very soft, some organics, low plasticity.
5					439			2		KSB06-3	OL	Organic CLAY with SILT, black, wet, soft
					369			4		KSB06-4		
					118			2		KSB06-5		dark brown to black
10					47.8	68.4				KSB06-6	CH	CLAY, gray, wet, soft, with black organics
					51.1			2		KSB06-7		same as above
					89.7			2		KSB06-8		
15												
					50.4	72.2				KSB06-9		same as above
20												
					48.2			4		KSB06-10		same as above
25												

LOGGED BY: **JS** TOTAL DEPTH (feet): **84.0'** DRILLING METHOD: **Tri Cone**

DATE DRILLED: **1 August 1996** DIAMETER OF BORING: **4.5"** SCREEN SIZE: **Not Applicable**

CASING TYPE: **Not Applicable** CASING SIZE: **Not Applicable**

Comments: Boring performed in a level grass field. Boring was backfilled with native soil from the maximum depth of the boring to the surface gradeto match original surface conditions.

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LOG OF SOIL BORING KSB-06

YOUTH CORRECTION FACILITY

WARRENTON, OREGON

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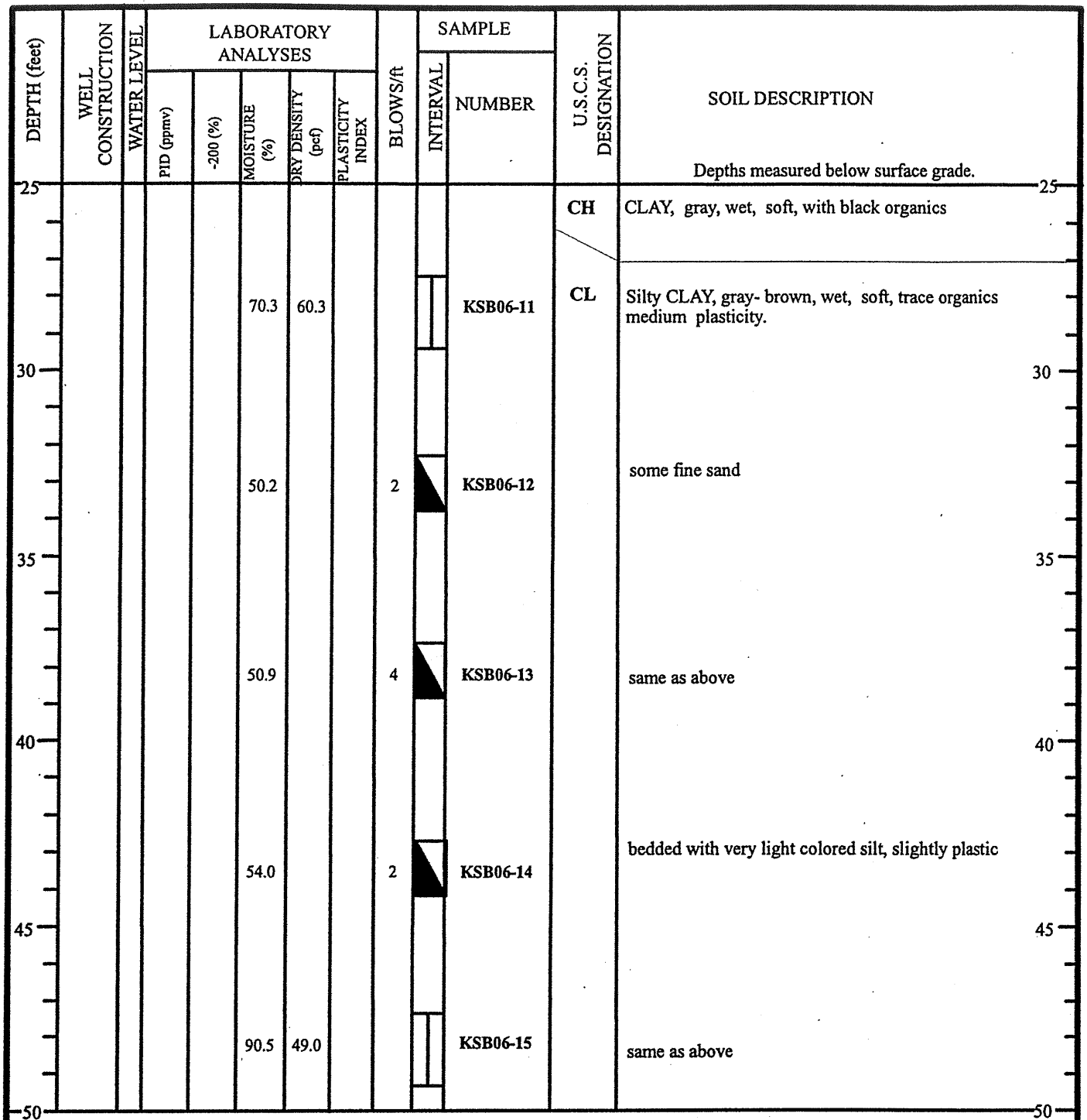
Project # 60-8065-01

FIGURE 9

NOTE: Logs are to be used only for the designated purposes and in context with the attached report.



LOGGED BY: **JS** TOTAL DEPTH (feet): **84.0'** DRILLING METHOD: **Tri Cone**

DATE DRILLED: **1 August 1996** DIAMETER OF BORING: **4.5"** SCREEN SIZE: **Not Applicable**

CASING TYPE: **Not Applicable** CASING SIZE: **Not Applicable**

Comments: Boring performed in a level grass field. Boring was backfilled with native soil from the maximum depth of the boring to the surface gradeto match original surface conditions.

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LOG OF SOIL BORING KSB-06

YOUTH CORRECTION FACILITY

WARRENTON, OREGON

Project # 60-8065-01

FIGURE 9

NOTE: Logs are to be used only for the designated purposes and in context with the attached report.

DEPTH (feet)	WELL CONSTRUCTION	WATER LEVEL	LABORATORY ANALYSES: PID (ppmv)	LABORATORY ANALYSES: -200 (%)	LABORATORY ANALYSES: MOISTURE (%)	LABORATORY ANALYSES: DRY DENSITY (pcf)	LABORATORY ANALYSES: PLASTICITY INDEX	BLOWS/ft	SAMPLE: INTERVAL	SAMPLE: NUMBER	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
												Depths measured below surface grade.
50											CL	Silty CLAY, gray- brown, wet, soft, trace organics medium plasticity.
					45.7			3		KSB06-16		
55												
					105			9		KSB06-17		stiff
60												
					53.5			8		KSB06-18		brown
65												
					52.6			5		KSB06-19		medium stiff
70												
					49.9			8		KSB06-20		same as above
75												

LOGGED BY: **JS** TOTAL DEPTH (feet): **84.0'** DRILLING METHOD: **Tri Cone**

DATE DRILLED: **1 August 1996** DIAMETER OF BORING: **4.5"** SCREEN SIZE: **Not Applicable**

CASING TYPE: **Not Applicable** CASING SIZE: **Not Applicable**

Comments: Boring performed in a level grass field. Boring was backfilled with native soil from the maximum depth of the boring to the surface gradeto match original surface conditions.

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LOG OF SOIL BORING KSB-06

YOUTH CORRECTION FACILITY

WARRENTON, OREGON

Project # 60-8065-01

FIGURE 9

NOTE: Logs are to be used only for the designated purposes and in context with the attached report.

DEPTH (feet)	WELL CONSTRUCTION	WATER LEVEL	LABORATORY ANALYSES: PID (ppmv)	LABORATORY ANALYSES: -200 (%)	LABORATORY ANALYSES: MOISTURE (%)	LABORATORY ANALYSES: DRY DENSITY (pcf)	LABORATORY ANALYSES: PLASTICITY INDEX	BLOWS/ft	SAMPLE: INTERVAL	SAMPLE: NUMBER	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
												Depths measured below surface grade.
75											CL	Silty CLAY, gray- brown, wet, soft, trace organics medium plasticity.
											ML	Inorganic SILT to SILTY SAND, gray, wet, very stiff, highly weathered siltstone
					49.1			29		KSB06-21		
80												
					38.6			35		KSB06-22		gray to light gray, moist, hard, low plasticity, highly weathered siltstone
85												Boring terminated at 84.0' on 1 August 1996. Water encountered at 2 feet BGS.
90												
95												
100												

LOGGED BY: **JS** TOTAL DEPTH (feet): **84.0'** DRILLING METHOD: **Tri Cone**

DATE DRILLED: **1 August 1996** DIAMETER OF BORING: **4.5"** SCREEN SIZE: **Not Applicable**

CASING TYPE: **Not Applicable** CASING SIZE: **Not Applicable**

Comments: Boring performed in a level grass field. Boring was backfilled with native soil from the maximum depth of the boring to the surface gradeto match original surface conditions.

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LOG OF SOIL BORING KSB-06
YOUTH CORRECTION FACILITY
WARRENTON, OREGON

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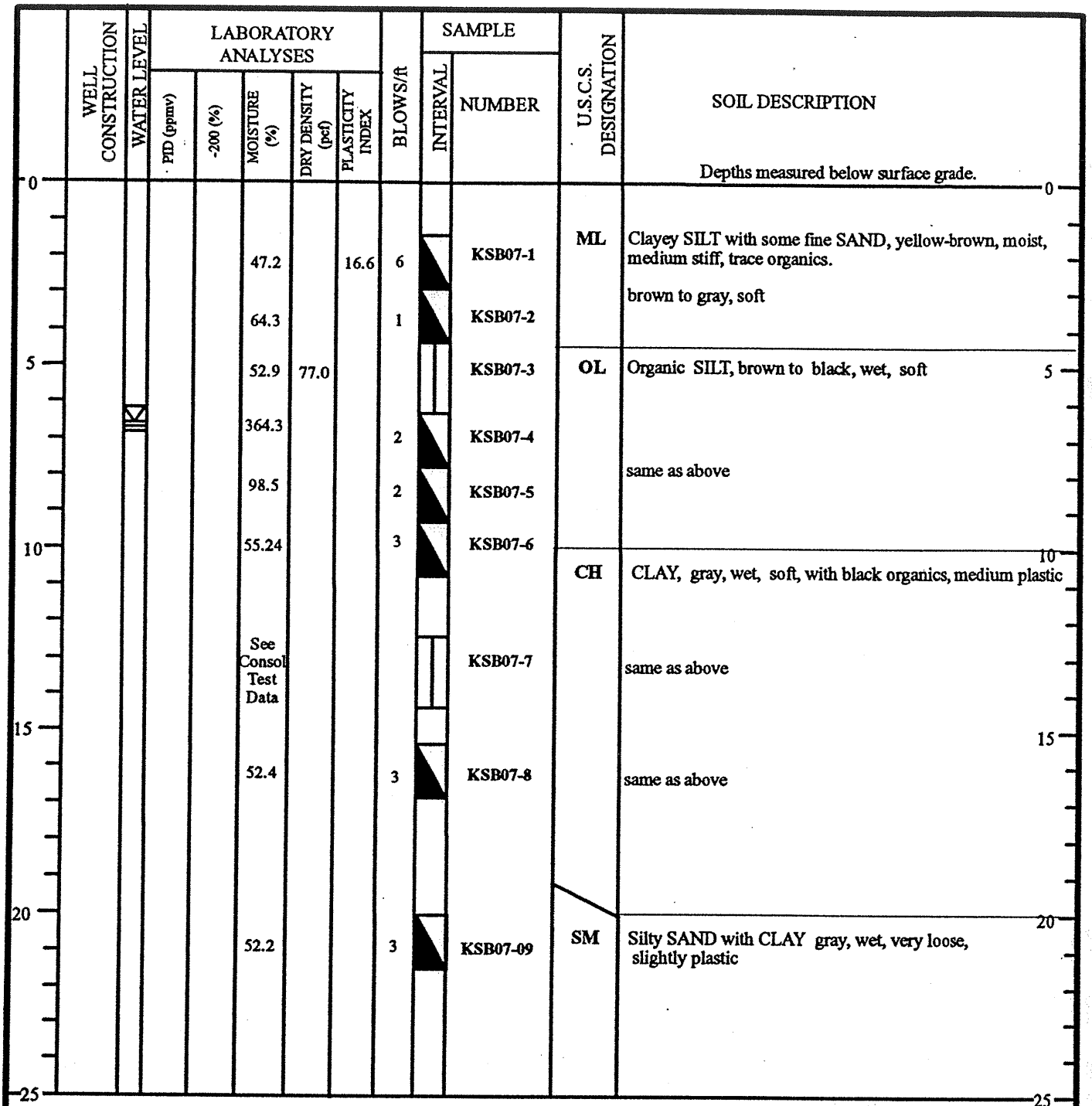
Project # 60-8065-01

FIGURE 9

NOTE: Logs are to be used only for the designated purposes and in context with the attached report.



LOGGED BY: **JS** TOTAL DEPTH (feet): **86.5'** DRILLING METHOD: **Tri Cone**

DATE DRILLED: **1 August 1996** DIAMETER OF BORING: **4.5"** SCREEN SIZE: **Not Applicable**

CASING TYPE: **Not Applicable** CASING SIZE: **Not Applicable**

Comments: Boring performed in a level grass field. Boring was backfilled with native soil from the maximum depth of the boring to the surface grade to match original surface conditions.

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LOG OF SOIL BORING KSB-07

YOUTH CORRECTION FACILITY

WARRENTON, OREGON

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Project # 60-8065-01

FIGURE 10

NOTE: Logs are to be used only for the designated purposes and in context with the attached report.

DEPTH (feet)	WELL CONSTRUCTION	WATER LEVEL	LABORATORY ANALYSES: PID (ppmv)	LABORATORY ANALYSES: -200 (%)	LABORATORY ANALYSES: MOISTURE (%)	LABORATORY ANALYSES: DRY DENSITY (pcf)	LABORATORY ANALYSES: PLASTICITY INDEX	BLOWS/ft	SAMPLE: INTERVAL	SAMPLE: NUMBER	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
												Depths measured below surface grade.
25					51.6	74.31				KSB07-10	SM	same as above
30					53.6			2		KSB07-11	ML	Clayey SILT, gray, wet, soft, some organics moderate plasticity.
35						50.3				KSB07-12	SM	Silty SAND with CLAY, olive, wet, loose, slight plasticity.
40					39.5			4		KSB07-13		medium dense
45					55.7			2		KSB07-14		loose
50												

LOGGED BY: **JS** TOTAL DEPTH (feet): **86.5'** DRILLING METHOD: **Tri Cone**

DATE DRILLED: **1 August 1996** DIAMETER OF BORING: **4.5"** SCREEN SIZE: **Not Applicable**

CASING TYPE: **Not Applicable** CASING SIZE: **Not Applicable**

Comments: Boring performed in a level grass field. Boring was backfilled with native soil from the maximum depth of the boring to the surface grade to match original surface conditions.

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8065b7.PRB

LOG OF SOIL BORING KSB-07

YOUTH CORRECTION FACILITY

WARRENTON, OREGON

Project # 60-8065-01

FIGURE 10

NOTE: Logs are to be used only for the designated purposes and in context with the attached report.

DEPTH (feet)	WELL CONSTRUCTION	WATER LEVEL	LABORATORY ANALYSES: PID (ppmv)	LABORATORY ANALYSES: -200 (%)	LABORATORY ANALYSES: MOISTURE (%)	LABORATORY ANALYSES: DRY DENSITY (pcf)	LABORATORY ANALYSES: PLASTICITY INDEX	BLOWS/ft	SAMPLE: INTERVAL	SAMPLE: NUMBER	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
50											SM	Depths measured below surface grade.
55					96.0	81.7				KSB07-15	CH	CLAY, gray to olive, wet, soft, some organics high plasticity.
60												
65					45.0			5		KSB07-16		medium stiff
70												
75												

LOGGED BY: **JS** TOTAL DEPTH (feet): **86.5'** DRILLING METHOD: **Tri Cone**

DATE DRILLED: **1 August 1996** DIAMETER OF BORING: **4.5"** SCREEN SIZE: **Not Applicable**

CASING TYPE: **Not Applicable** CASING SIZE: **Not Applicable**

Comments: Boring performed in a level grass field. Boring was backfilled with native soil from the maximum depth of the boring to the surface grade to match original surface conditions.

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LOG OF SOIL BORING KSB-07
YOUTH CORRECTION FACILITY
WARRENTON, OREGON

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Project # 60-8065-01

FIGURE 10

NOTE: Logs are to be used only for the designated purposes and in context with the attached report.

DEPTH (feet)	WELL CONSTRUCTION	WATER LEVEL	LABORATORY ANALYSES: PID (ppmv)	LABORATORY ANALYSES: -200 (%)	LABORATORY ANALYSES: MOISTURE (%)	LABORATORY ANALYSES: DRY DENSITY (pcf)	LABORATORY ANALYSES: PLASTICITY INDEX	BLOWS/ft	SAMPLE: INTERVAL	SAMPLE: NUMBER	U.S.C.S. DESIGNATION	SOIL DESCRIPTION
												Depths measured below surface grade.
75					29.8		38.1	70		KSB07-17	CH	Silty CLAY, gray to light brown, wet, hard, trace organics medium to high plasticity.
80												
85					28.1			50/ 5"		KSB07-18		light brown, very hard
												Refusal at 86.5' on 2 August 1996. Water encountered at 2 feet BGS.
90												
95												
100												

LOGGED BY: **JS** TOTAL DEPTH (feet): **86.5'** DRILLING METHOD: **Tri Cone**

DATE DRILLED: **1 August 1996** DIAMETER OF BORING: **4.5"** SCREEN SIZE: **Not Applicable**

CASING TYPE: **Not Applicable** CASING SIZE: **Not Applicable**

Comments: Boring performed in a level grass field. Boring was backfilled with native soil from the maximum depth of the boring to the surface grade to match original surface conditions.

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LOG OF SOIL BORING KSB-07
YOUTH CORRECTION FACILITY
WARRENTON, OREGON

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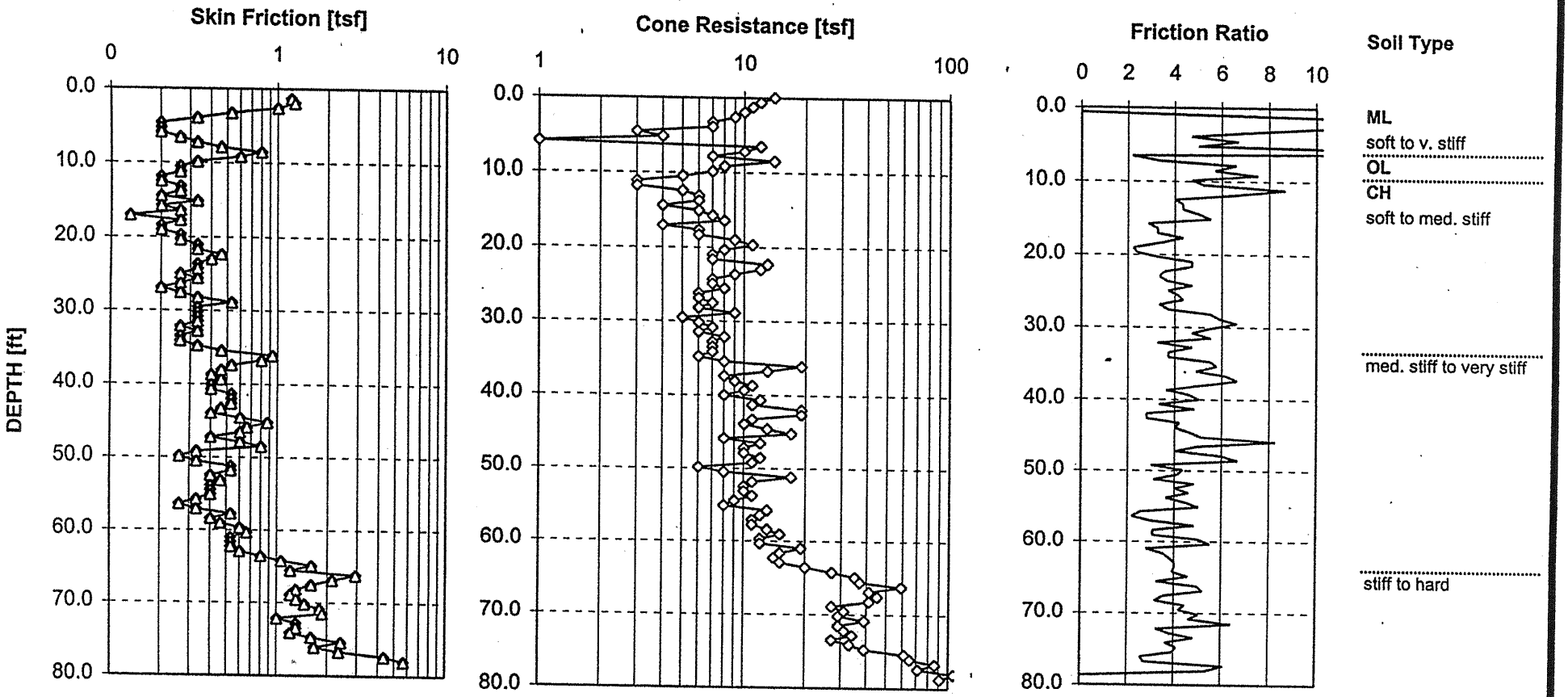
Project # 60-8065-01

FIGURE 10

NOTE: Logs are to be used only for the designated purposes and in context with the attached report.

CPT-1



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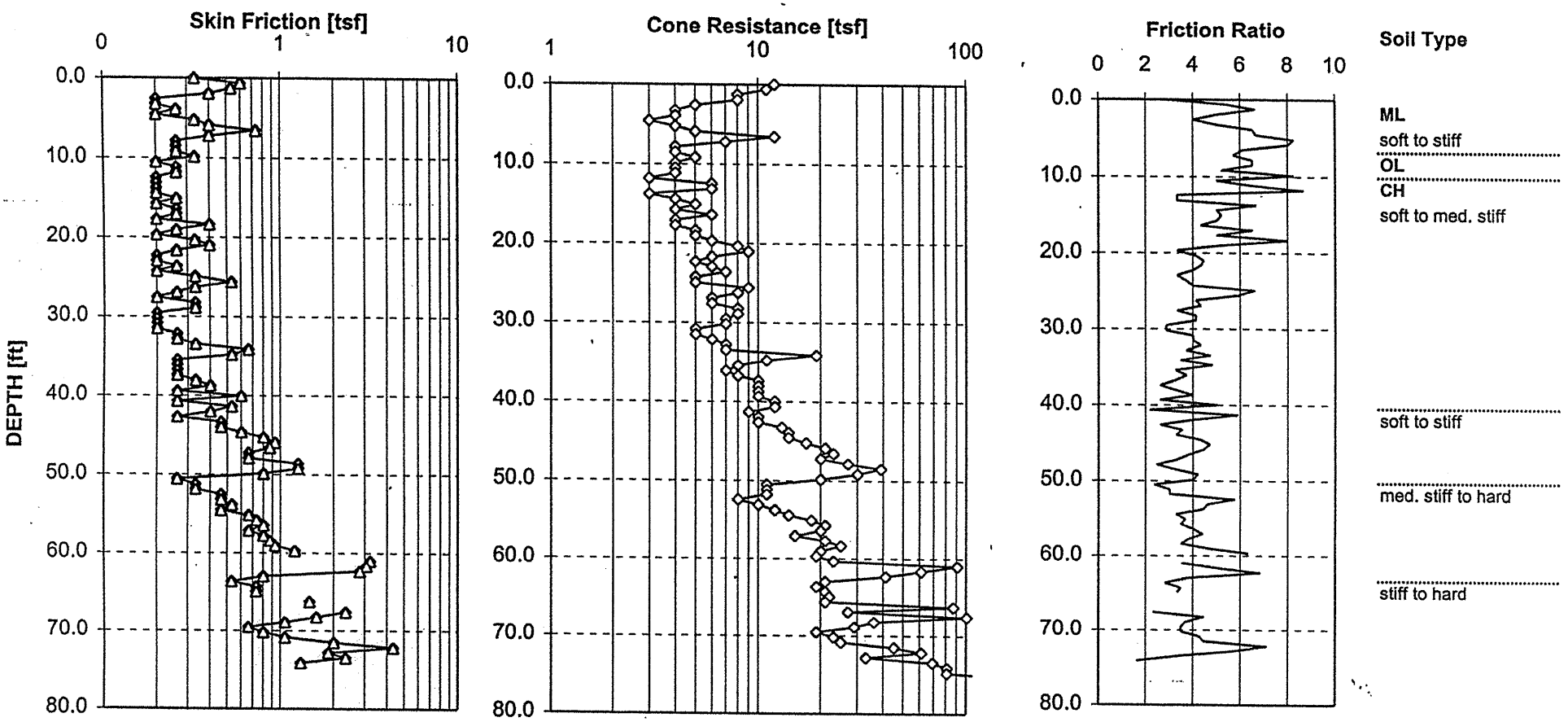
514801F3.CDR

LOG OF CONE PENETRATION TEST- CPT-1
YOUTH CORRECTION FACILITY
WARRENTON, OREGON

Project # 60-8065-01

FIGURE 11

CPT-2



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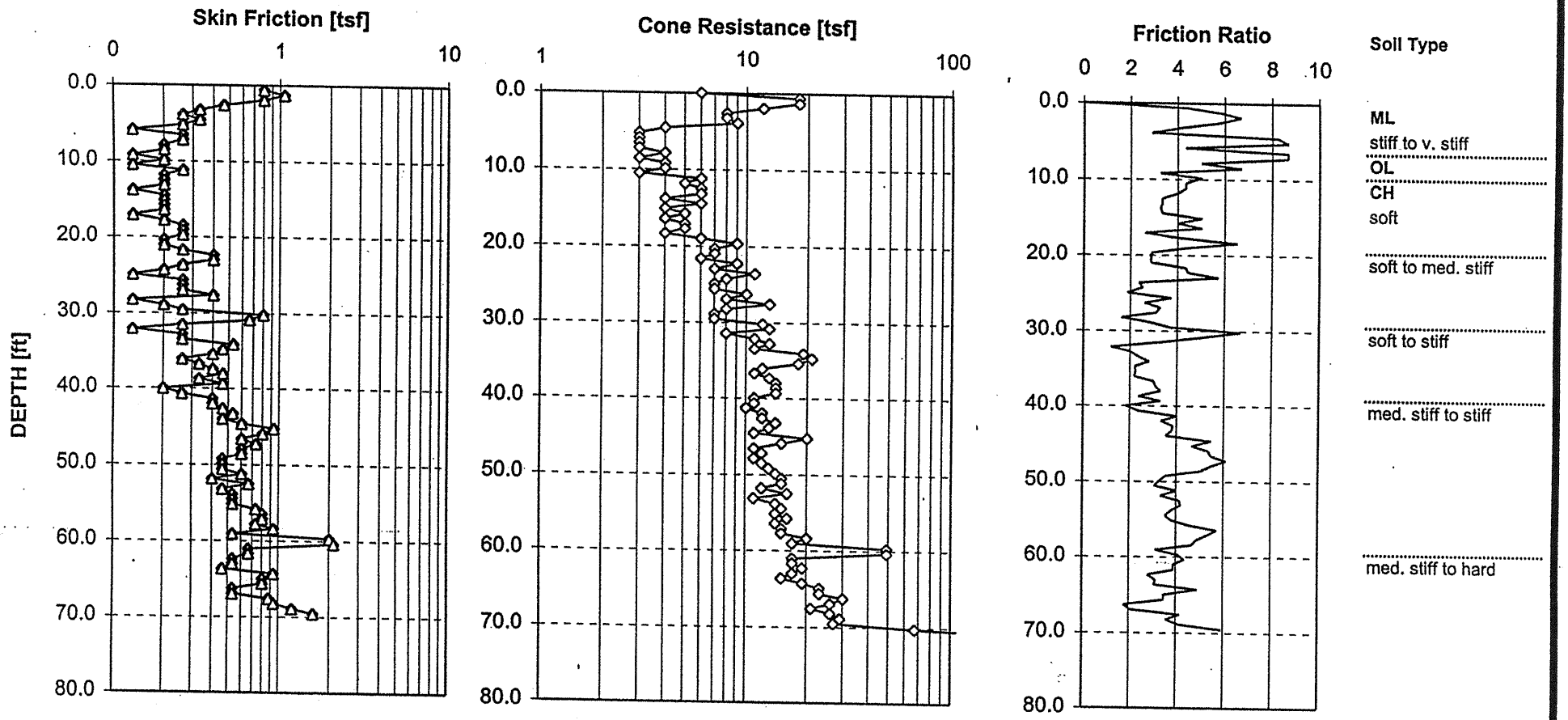
8065CPT2.CDR

LOG OF CONE PENETRATION TEST- CPT-2
YOUTH CORRECTION FACILITY
WARRENTON, OREGON

Project # 60-8065-01

FIGURE 12

CPT-3



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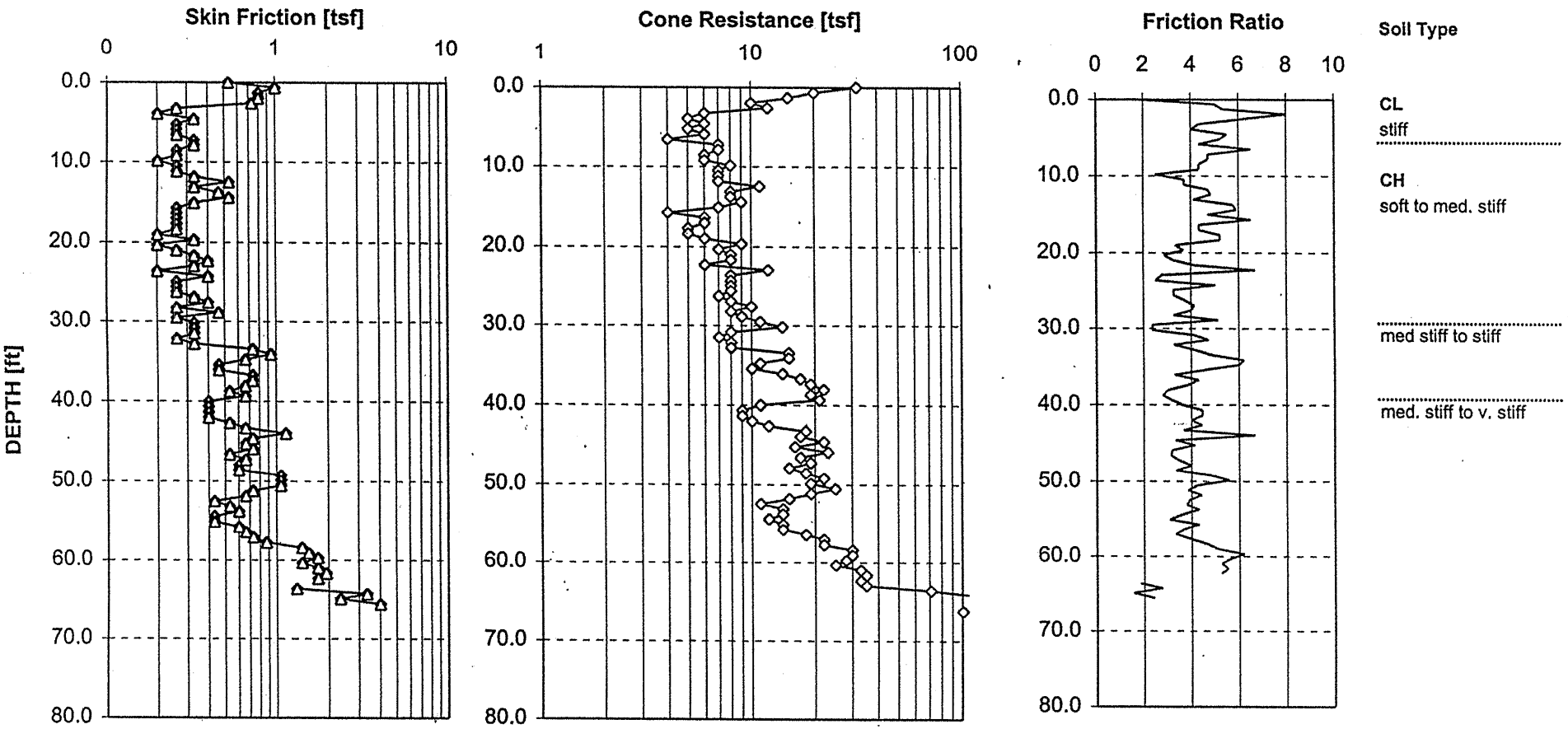
LOG OF CONE PENETRATION TEST- CPT-3
YOUTH CORRECTION FACILITY
WARRENTON, OREGON

Project # 60-8065-01

FIGURE 13

CPT-4



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LOG OF CONE PENETRATION TEST- CPT-4
YOUTH CORRECTION FACILITY
WARRENTON, OREGON

Project # 60-8065-01

FIGURE 14

U.S. Army Corps of Engineers (Corps) and Department of State Lands (DSL) In-Water Work Period (IWWP) Variance Request for Previously Permitted Authorizations

US Army Corps of Engineers

Please submit the following information to the DSL Aquatic Resource Coordinator and Corps Regulatory Project Manager serving the county in which your project is located. DSL will coordinate this information with the Oregon Department of Fish and Wildlife (ODFW) staff for their input and recommendations; Corps will coordinate with the National Marine Fisheries Service (NMFS), U.S. Fish & Wildlife Service (USFWS) and ODFW as applicable. DSL and Corps will independently respond to the requestor approving, approving with conditions, or denying the requested in-water work period variance. If DSL or Corps denies the request, reason(s) for the denial will be provided. The Project Information, In-Water Work, and Proposed Changes & Explanation sections are required; the Biological Evaluation section is not required but will help to expedite the agency review process. **Please provide a map outlining your project location and where work is proposed to occur during the requested variance.**

Project Information **Date of Submittal: 11/27/19**

Permitee name and contact info:			
City/County: City of Warrenton, Clatsop County	Waterway/Location: Hammond Boat Basin and Lower Columbia River	ESA consultation type: Programmatic	
Corps Permit No: NWP-1997-1562-6	DSL Permit No: 1997-01562-6	NMFS Consultation No.: 2011/05585	USFWS Consultation No.: 01EOFW00-2017-F-0370
Type of project: Marina maintenance dredging and in-water disposal			
6th Field HUC Name:		6th Field HUC (12 digits): 170800060500	

In-Water Work

DSL Authorized IWWP:	Start (mo./day) 11/1	End (mo./day) 12/31	Proposed IWWP: Start (mo./day): 11/1 End (mo./day): 2/28
Corps Authorized IWWP:	Start (mo./day) 11/1	End (mo./day) 12/31	
Where will work occur? (Estuary, stream channel, side channel, wetland, etc.) Marina Basin Lower Columbia River			
Did work start/occur during the permitted IWWP? Yes			
Will work occur inside an isolated work area? Yes; however, disposal will be in the mainstem Columbia River			

Proposed Changes & Explanations

Department of State Lands website: http://www.oregon.gov/DSL/Pages/index.aspx
U.S. Army Corps of Engineers Regulatory website: http://www.nwp.usace.army.mil/Missions/Regulatory.aspx

From: Gary Kobes <gkobes@portofastoria.com>
Date: September 28, 2019 at 11:46:19 AM PDT
To: Jesse Winterowd <jesse@winterbrookplanning.com>
Cc: "cityplanner@ci.warrenton.or.us" <cityplanner@ci.warrenton.or.us>
Subject: RE: Clatsop County Jail Relocation Project - Airport coordination

Jesse, as discussed in our phone conversations, the Port of Astoria only has two concerns with the new jail facility.

First, during construction if a long boom crane(s) is being used, that the erect boom be marked with an orange and white checkered flag during daylight hours and a flashing red beacon during hours of darkness.

Second, that the County grant the Port of Astoria a standard for Avigation Easement covering the jail property which underlies the Imaginary Surfaces as described in Section 16.92 of the Warrenton Development Code. This may be accomplished in cooperation with the city during the permitting process. I have attached a copy of the easement form.

I hope this addresses your needs, if not please let me know.

Regards,

Gary Kobes
(503) 741-3338 Office
(314) 409-8392 Cell
gkobes@portofastoria.com

From: Jesse Winterowd <jesse@winterbrookplanning.com>
Sent: Thursday, September 5, 2019 9:08 AM
To: Gary Kobes <gkobes@portofastoria.com>
Subject: RE: Clatsop County Jail Relocation Project - Airport coordination

Good morning Gary,

Following up on the Clatsop County Jail project in Warrenton. Is there any additional information that I can provide to be helpful to you and the Port?

Thank you,

Jesse Winterowd, AICP, PMP | Principal | 503.827.4422
Winterbrook Planning | 610 S.W. Alder Street, Suite 810 | Portland, OR 97205

From: Jesse Winterowd
Sent: Wednesday, August 14, 2019 3:22 PM
To: gkobes@portofastoria.com
Subject: Clatsop County Jail Relocation Project - Airport coordination

Hi Gary,

Thank you for speaking with me today. Following up on our phone call, the jail is located at 1250 SE 19th Street in Warrenton (see attached image).

Clatsop County seeks to refurbish the former North Cost Youth Facility that was built and operated by the Oregon Youth Authority in 1998. The project consists of demolishing a portion of the existing building, developing additional facilities within the existing courtyard area, and refurbishing existing facilities to bring the facility up to current standards for security, repair wear and damage from the coastal climate, and meet the current needs of the Sheriff Department.

The proposed new development will be similar in height to the existing structures. Lighting will be similar to existing and shaded so as not to direct light skyward.

You mentioned potential crane lighting requirements during construction. Please let me know the specific requirements the Airport needs, and I'll bring forward to the project team to include this coordination in the land use application and construction approach.

Thank you,

Jesse Winterowd, AICP, PMP | Principal | 503.827.4422
Winterbrook Planning | 610 S.W. Alder Street, Suite 810 | Portland, OR 97205

AFTER RECORDING RETURN TO:
Miller Nash Graham and Dunn LLP
3400 U.S. Bancorp Tower
111 S.W. Fifth Avenue
Portland, OR 97204

This space is reserved for recorder's use.

Avigation Easement and Right-of-Way
at Port of Astoria Regional Airport
Clatsop County, Oregon

This Avigation Easement and Right-of-Way ("Easement"), made on _____ *[date]*, between _____ *[legal entity]* and its successors and assigns ("Grantor"), and the Port of Astoria of the State of Oregon, ("Grantee"), provides that:

1. The Grantor, for and in consideration of fulfillment of a condition of project approval, does hereby grant to the Grantee, its successors and assigns, a perpetual and assignable easement in and over that certain parcel of real property (the "Parcel") more particularly identified and described in exhibits attached to and made a part of this instrument, and a right-of-way for the free and unrestricted passage and flight of aircraft of the class, size and category as is now or hereinafter may be operationally compatible with the Port of Astoria Regional Airport, in, through, across and about the airspace above an imaginary plane, as such plane is defined by Part 77 of the Federal Aviation Regulations, over said Parcel, as described below (the "Airspace").

2. The Airspace for avigation easement purposes above said Parcel consists of all of the air space above the imaginary plane that is described by Part 77 of the Federal Aviation Regulations.

3. The easement and right-of-way described in Paragraphs 1 and 2 includes but is not limited to:

a. For the use and benefit of the public, the easement and continuing right to fly, or cause or permit the flight by any and all persons or aircraft, of the class, size and category as is now or hereinafter may be operationally compatible with the Port of Astoria Regional Airport, in, through, across or about any portion of the Airspace described above; and

b. The easement and right to cause or create, or permit or allow to be caused or created within the Airspace, such noise, dust, turbulence, vibration, illumination, air currents, fumes, exhaust, smoke and all other effects as may be inherent in the proper operation of aircraft, now known or hereafter used for navigation of or flight in air; and

c. The continuing and perpetual right to clear and keep clear the Airspace of any portions of buildings, structures, or improvements of any and all kinds, and of trees, vegetation, or other objects, including the right to remove or demolish those portions of such buildings, structures, improvements, trees or any other objects which extend into said Airspace and the right to cut to the ground level and remove any trees which extend into the Airspace; and

d. The right to mark and light, or cause or require to be marked or lighted, as obstructions to air navigation, any and all buildings, structures, or other improvements, and trees or other objects now upon, or that in the future may be upon, said Parcel, and which extend into the Airspace; and

e. The right of ingress to, passage within, and egress from said Parcel, solely for the above stated purposes.

4. Grantor, on behalf of itself, its successors and assigns hereby covenants with the Grantee, as follows:

a. Grantor, its successors and assigns, will not construct, install, permit or allow any building, structure, improvement, lighting and/or illumination, tree, or other object on said Parcel, to extend into the Airspace, or to constitute an obstruction to air navigation, or to obstruct or interfere with the use of the easement and right-of-way herein granted; and

b. Grantor, its successors and assigns, will not use or permit the use of the Parcel in such a manner as to create electrical or electronic interference with radio communication or radar operation between any installation upon the Port of Astoria Regional Airport and any aircraft.

5. The easement and right-of-way herein granted shall be deemed both appurtenant to and for the direct benefit of that real property which now or hereinafter constitutes the Port of Astoria Regional Airport, and shall further be deemed in gross, being conveyed to the Grantee for the benefit of the Grantee, and any and all members of the general public who may use said easement or right-of-way, taking off from, landing upon, or operating such aircraft in or about the Port of Astoria Regional Airport, or otherwise flying through said Airspace.

6. This Easement shall not operate to deprive the Grantor, its successors or assigns, of any rights that it may otherwise have from time to time against any individual or private operator for negligent or unlawful operation of aircraft.

7. It is understood and agreed that these covenants and agreements run with the land and shall be binding upon the heirs, representatives, administrators, executives, successors, and assigns of the Grantor, and that for the purposes of this instrument, the Parcel shall be the servient easement and the Port of Astoria Regional Airport shall be the dominant tenement.

8. The avigation easement, covenants and agreements described herein shall continue in effect until the Port of Astoria Regional Airport shall be abandoned or shall cease to be used for public airport purpose, at which time it shall terminate.

9. Should any portion of this Easement be invalidated by local, state, or federal laws, then the remaining portion(s) of the easement remain in effect.

10. [OPTIONAL CLAUSE – WHEN THERE IS A LIEN ON THE PROPERTY.]In consideration of the premises and to assure Grantee of the continued benefits accorded it under this Easement, (name of mortgagee), owner and holder of a mortgage dated _____ and recorded _____ covering the premises above described, does hereby covenant and agree that said mortgage shall be subject to and subordinate to this Easement and the recording of this Easement shall have preference and precedence and shall be superior and prior in lien to said mortgage irrespective of the date of the making or recording of said mortgage instrument.

IN WITNESS WHEREOF, the parties have executed this Easement the day and year first set forth above.

DATED this ____ day of _____, 2018.

GRANTOR:

_____

By: _____
Its: _____

_____
Name

_____
Name

GRANTEE:
PORT OF ASTORIA

By: _____
Its: _____

STATE OF OREGON)
) ss.
County of _____)

This instrument was acknowledged before me on this ____ day of _____, 2018, by _____as _____of _____.

_____
NOTARY PUBLIC FOR OREGON
My Commission Expires:_____

STATE OF OREGON)
) ss.
County of _____)

This instrument was acknowledged before me on this ____ day of _____, 2018, by _____.

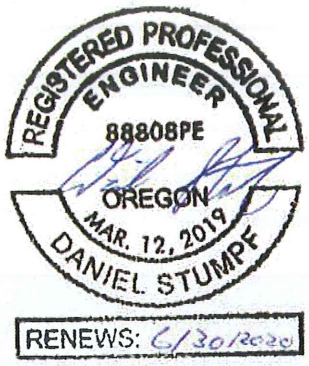
_____
NOTARY PUBLIC FOR OREGON
My Commission Expires:_____

STATE OF OREGON)
) ss.
County of _____)

This instrument was acknowledged before me on this ____ day of _____, 2018, by _____.

_____
NOTARY PUBLIC FOR OREGON
My Commission Expires:_____

Technical Memorandum



LANCASTER
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To: David Dieffenbach
Clatsop County

From: Daniel Stumpf, PE
Gregory Mallon

Date: October 1, 2019

Subject: Clatsop County Jail – Transportation Analysis Letter

Introduction

This memorandum reports and evaluates the transportation impacts related to the proposed conversion of the North Coast Youth Correctional Facility, located at 1250 SE 19th Street in Warrenton Oregon, to a Clatsop County Jail. The proposed use will be designed to accommodate a prisoner capacity of up to 172 people and will maintain access at the existing building's current driveway location along SE 19th Street.

The purpose of this memorandum is to examine the projected trip generation of the proposed use relative to the existing use, evaluate multimodal traffic safety within the site's vicinity, review identified issues or concerns within the City's Transportation System Plan (TSP) relevant to proposed development, and evaluate other potential issues with regard to the site access and nearby public intersections. Recommendations for safety improvements will be suggested if necessary.

Project Site Description

The site is located within a developing area near the southern edge of City limits, with single-family houses to the south, apartments to the east, and predominately forested land to the north and west. The subject site consists of a single tax lot (lot 203), which encompasses an approximate total of 18 acres, and is currently developed as a youth correctional facility.

The current application proposes the repurposing of the existing facility as a County jail. The site is currently served by a single driveway onto SE 19th Street, which will be maintained upon completion of the proposed project.

Vicinity Roadways

The proposed development is expected to impact the following four nearby vicinity roadways SE 19th Street, SE Ensign Lane, SE Willow Street, and Warrenton-Astoria Highway. Table 1 provides a description of each of the vicinity roadways.

Table 1: Vicinity Roadway Descriptions

Roadway	Jurisdiction	Functional Classification	Cross-Section	Speed	On-street Parking	Bicycle Lanes	Curbs	Sidewalks
SE 19th Street	Warrenton	Major Collector	2 Lanes	35 mph Posted	Not Permitted	None	None	Partial West Side
SE Ensign Lane	Clatsop County	Minor Arterial	2 to 5 Lanes	25/35 mph Posted	Not Permitted	Both Sides	Both Sides	Both Sides
SE Willow Street	Warrenton	Local Street	2 Lanes	20/25 mph Posted	Partial Both Sides	None	Partial Both Sides	Partial Both Sides
Warrenton-Astoria Highway	ODOT	Minor Arterial/ District Highway	2 to 3 Lanes	45/55 mph Posted	Not Permitted	Partial Both Sides	None	None

Note: Functional Classification based on City of Warrenton Transportation System Plan (Volume 1 Figure 9) and ODOT Oregon Highway Plan/Oregon Transportation Map.

Figure 1 presents an aerial image of the nearby vicinity with the project site outlined in yellow.

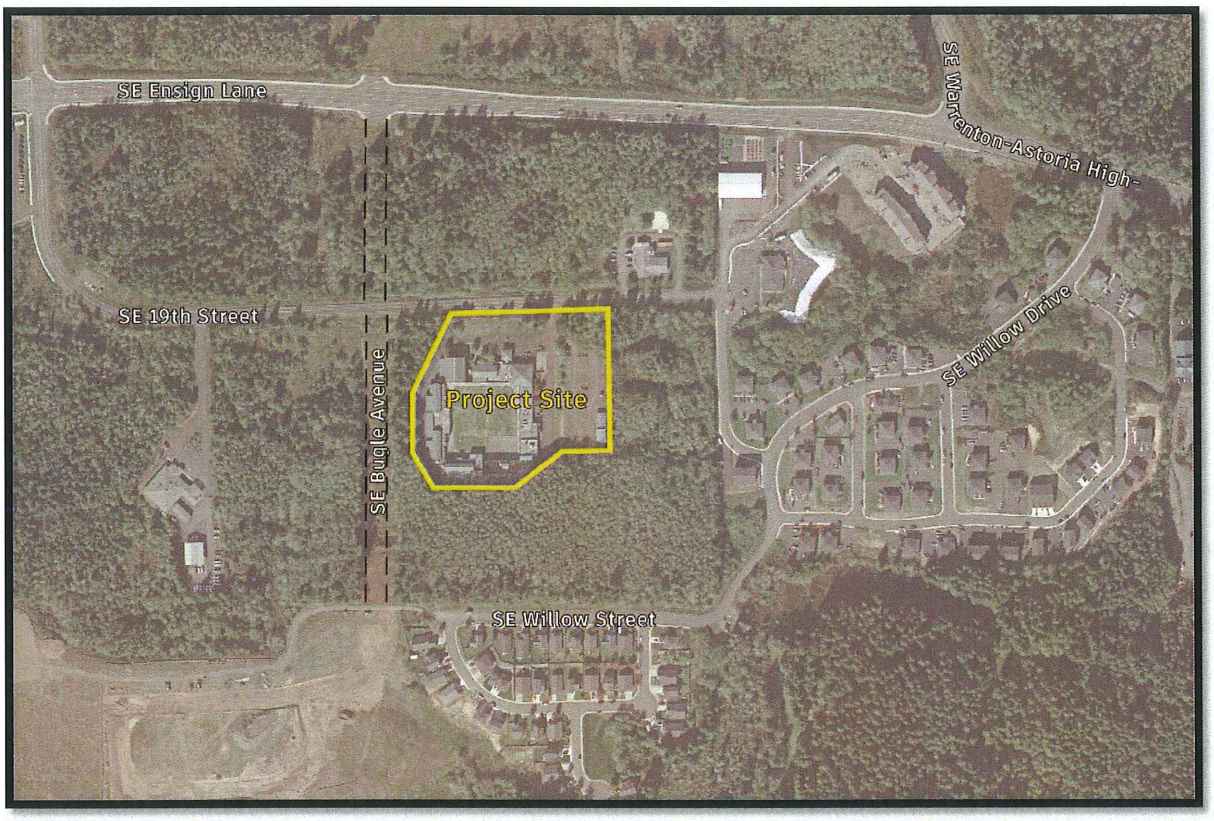

Figure 1: Aerial Photo of Site Vicinity (Image from Google Earth)

Trip Generation & Distribution

The proposed Clatsop County Jail will repurpose the existing North Coast Youth Correctional Facility. Based on correspondence with the applicant, the proposed jail will be designed to accommodate a prisoner capacity of up to 172 people, while the current use has a capacity of 200 people. To estimate the number of net trips that will generated by the proposed development, trip rates from the *Trip Generation Manual* [1] were used. Data from land-use code 571, *Prison*, was used to estimate the existing and proposed development's trip generation based on the number of beds each facility was and would be designed to provide.

The trip generation calculations show that the proposed development is projected to generate 3 fewer morning peak hour trips, 1 less evening peak hour trip, and 14 fewer average weekday site trips. The trip generation estimates are summarized in Table 2. Detailed trip generation calculations are included as an attachment to this study.

[1] Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 10th Edition, 2017.

Table 2: Trip Generation Summary

	ITE Code	Size	Morning Peak Hour			Evening Peak Hour			Weekday Total
			Enter	Exit	Total	Enter	Exit	Total	
Existing Development									
Prison	571	200 Beds	11	9	20	1	9	10	100
Proposed Development									
Prison	571	172 Beds	9	8	17	1	8	9	86
Net New Site Trips			**-2**	**-1**	**-3**	**0**	**-1**	**-1**	**-14**

Based on the trip generation analysis, the proposed conversion of the existing correctional facility to a County jail will result in a net decrease in peak hour and average weekday trip generation. Accordingly, the transportation impacts associated with the proposed use will not have a significant negative effect on the operation or safety on the nearby transportation system that wasn't already accounted for by the existing use.

Trip Distribution

The directional distribution of site trips to/from the project site was estimated based on the locations of likely trip destinations and major transportation facilities in the site vicinity, as well as by referencing the assumed trip distributions utilized in the *Willow Drive Apartment Complex Traffic Impact Study* (TIS), dated March 15th, 2017, and the *Roosevelt Subdivision TIS*, dated July 31st, 2017. The following trip distribution was assumed:

- Approximately 90 percent of site trips will travel to/from the west along SE Ensign Lane; and
- Approximately 10 percent of site trips will travel to/from the east along SE Ensign Lane/Warrenton-Astoria Highway.

Safety Analysis

Crash Data Analysis

Using data obtained from the Oregon Department of Transportation's (ODOT) Crash Analysis and Reporting Unit, a review was performed for the most recent five years of available crash data (January 2013 through December 2017) along SE 19th Street (inclusive of SE Chokeberry Avenue, between SE Ensign Lane and SE Willow Drive) and SE Ensign Lane (between SE 19th Street and Warrenton-Astoria Highway). The crash data was evaluated based on the number of crashes, the type of collisions, and the severity of the collisions.

Based on a review of available crash data between January 2013 through December 2017, there were two crashes that occurred along the analyzed segment of SE 19th Street, one crash along the segment of SE Ensign Lane, and four crashes at the intersection of SE 19th Street at SE Ensign Lane. None of the reported crashes resulted in a fatality or serious injuries (i.e. no crashes were classified as *Injury A, Incapacitating Injury – Bleeding, Broken Bones*), and none of the reported crashes involved a vulnerable roadway user (i.e. a pedestrian or bicyclist).

Due to the low number of crashes and the low severity of collisions along SE 19th Street (between SE Ensign Lane and SE Willow Drive) and SE Ensign Lane (between SE 19th Street and Warrenton-Astoria Highway), there do not appear to be any significant safety hazards at the nearby transportation facilities. Accordingly, no safety mitigation is necessary or recommended. Detailed information about crashes and crash reports for the nearby roadways and intersection are included as an attachment to this memorandum.

Sight Distance Analysis

Intersection sight distance was measured at the site access intersection along SE 19th Street. Sight distance was measured and evaluated in accordance with the standards established in *A Policy of Geometric Design of Highways and Streets* [2]. According to AASHTO, the driver's eye is assumed to be 15 feet from the near edge of the nearest travel lane, or travelled way, of the intersecting street and at a height of 3.5 feet above the minor-street approach pavement. The vehicle driver's eye height along the major-street approach is assumed to be 3.5 feet above the cross-street pavement.

Based on the posted speeds of 35 mph along SE 19th Street, the minimum recommended intersection sight distances for vehicles stopped on the minor-street approach is 390 feet to the east and west of the access. Sight distances were measured to the east back to the intersection of SE 19th Street at SE Chokeberry Avenue

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[2] American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets*, 6th Edition, 2011.

(approximately 486 feet away) and in excess of 500 feet to the west, as shown in Figure 2 and Figure 3 respectively.

Figure 2: Sight Distance to the East of the Site Access

Figure 3: Sight Distance to the West of the Site Access

Based on the analysis, adequate intersection sight distances are available to allow safe and efficient operation of the existing access along SE 19th Street. No sight distance related mitigation is necessary or recommended.

Intersection and Access Geometry

Based on the review of the existing nearby transportation infrastructure, as well as a review of sight distance at the access intersection and crash history along nearby vicinity roadways, no safety issues with regard to the geometry of nearby intersections and the site access were noted.

Multi-Modal Access and Safety

Motor Vehicles

As described in the *Crash Data Analysis* section, there were two reported collisions along the site adjacent roadway of SE 19th Street (between SE Ensign Lane and SE Willow Drive), one collision along SE Ensign Lane (between SE 19th Street and Warrenton-Astoria Highway), and four crashes at the intersection of SE Ensign Lane at SE 19th Street. Since the crashes resulted in no serious injuries or fatalities and the number of reported vehicular crashes were low, there do not appear to be any trends indicative of significant safety hazards at the nearby transportation facilities.

With regard to site access via motor vehicles, SE 19th Street and SE Willow Drive will serve as the main connections between the site and the greater transportation system (i.e. SE Ensign Lane, Oregon Coast Highway, and Warrenton-Astoria Highway). However, with completion of the SE Bugle Road alignment project just west of the site, the future roadway will serve as the primary north/south connection to/from the site and SE Ensign Lane, whereby site trip impacts to SE Willow Drive are expected to decrease. The aforementioned roadways will serve as the primary routes of travel between the site and other major destinations including downtown Warrenton, Astoria, Gearhart, and Seaside.

Based on a review of motor vehicle access and safety, no mitigation pertaining to this specific mode of travel is necessary or recommended.

Pedestrians

As described in the *Crash Data Analysis* section, there were no pedestrian-related collisions along the analyzed roadway segments of SE 19th and SE Ensign Lane.

Limited sidewalks and other pedestrian facilities are currently in place along the SE 19th Street; however, the County is currently constructing a multi-modal path along SE 19th Street which is expected to be completed prior to the planned occupancy date of the proposed County jail. SE Ensign Lane provides pedestrian facilities along both sides for the entire length of the roadway. Additionally, the new street alignment of SE Bugle Avenue will provide sidewalks along both sides of the street between SE Ensign Lane and SE 19th Street, improving pedestrian connectivity within the site's vicinity.

Based on a review of pedestrian access and safety, no other mitigation to this specific mode of travel is necessary or recommended beyond completion of the SE 19th Street multi-modal path.

Bicycles

As described in the *Crash Data Analysis* section, there were no bicycle-related collisions along the analyzed roadway segments of SE 19th and SE Ensign Lane.

Bicycle lanes, separating bicyclists from motor vehicle traffic, are available along both sides of SE Ensign Lane, while paved shoulders are available to bicyclists along Warrenton-Astoria Highway. Although still under construction, the County is expected to complete work on a multi-modal path along SE 19th Street prior to the planned occupancy date of the proposed County jail. For other nearby residential local streets, traffic volumes at generally low with motor vehicle traffic traveling at low speeds (i.e. nearby local streets have posted speeds of 20 mph to 25 mph). Given these vicinity streets may be considered low-stress roadways, bicyclists may safely and comfortably travel along roadway shoulders and may safely share the roadway with motor vehicle traffic when necessary.

Based on a review of bicycle access and safety, no other mitigation pertaining to this specific mode of travel is necessary or recommended beyond completion of the SE 19th Street multi-modal path.

Transit Users

The nearest bus stop that could reasonably serve the site is located within an approximate 1/10 mile walking/biking distance to the east. To access the site from stop ID: 310 "SE 19th Street", which serves *Bus Route: 101*, transit users may travel westbound from the stop along SE 19th Street. Currently no sidewalks are available along either side of SE 19th Street between the site and the transit stop; however, the County is currently constructing a multi-modal path along SE 19th Street which is expected to be completed prior to the planned occupancy date of the proposed County jail. The completion of this project is expected to improve transit rider safety and comfort of travel within the immediate area.

Transit users may also access the site from bus stop ID: 312 "Walmart" which serves *Bus Route 15*, *Route 101*, and the *Pacific Connector*. *Route 15* provides service within the immediate Warrenton, Hammond, and Astoria area while *Route 101* and the *Pacific Connector* also provide extended service south to Seaside and Cannon Beach. The walking/biking distance from bus stop ID: 312 to the site is about a half mile. Limited sidewalks are available between the site and the transit stop; however, as described above the County is currently constructing a multi-modal path along SE 19th Street which is expected to be completed prior to the planned occupancy date of the proposed County jail. Completion of the multi-modal path project is expected to improve overall transit rider safety and comfort of travel within the immediate area.

Given the variety of transit routes and wide coverage, the available transit services and facilities are sufficient to adequately serve the proposed County jail. Based on a review of transit user access and safety, no other mitigation to this specific mode of travel is necessary or recommended beyond completion of the SE 19th Street multi-modal path.

Conclusions

- The proposed repurposing of the existing youth correctional facility as a County Jail is projected to generate 3 fewer morning peak hour trips, 1 less evening peak hour trip, and 14 fewer average weekday site trips.
- Due to the low number of crashes and the low severity of collisions along SE 19th Street (between SE Ensign Lane and SE Willow Drive) and SE Ensign Lane (between SE 19th Street and Warrenton-Astoria Highway), there do not appear to be any significant safety hazards at the nearby transportation facilities. Accordingly, no safety mitigation is necessary or recommended.
- Adequate intersection sight distances are available to allow safe operation of the existing access along SE 19th Street. No sight distance related mitigation is necessary or recommended.
- Based on the review of the existing nearby transportation infrastructure, as well as a review of sight distance at the access intersection and crash history along nearby vicinity roadways, no safety issues with regard to the geometry of nearby intersections and the site access were noted.
- No mitigation pertaining to motor vehicle access and safety is necessary or recommended.
- A multi-modal path is currently under construction along SE 19th Street and is expected to be completed by the planned occupancy date of the proposed County jail. The project is expected to improve pedestrian and bicycle safety and comfort of travel within the site vicinity. No other mitigation is recommended with regard to this specific mode of travel.
- Given the variety of transit routes and wide coverage, the available transit services and facilities are sufficient to adequately serve the proposed County jail. Based on a review of transit user access and safety, no other mitigation to this specific mode of travel is necessary or recommended beyond the currently under construction SE 19th Street multi-modal path.

If you have any questions regarding this technical memorandum, please don't hesitate to contact us.

1e

TRIP GENERATION CALCULATIONS
Existing Development

Land Use: Prison
Land Use Code: 571
Setting/Location General Urban/Suburban
Variable: Bed
Variable Value: 200

AM PEAK HOUR

Trip Rate: 0.1

	Enter	Exit	Total
Directional Distribution	54%	46%	
Trip Ends	**11**	**9**	**20**

PM PEAK HOUR

Trip Rate: 0.05

	Enter	Exit	Total
Directional Distribution	10%	90%	
Trip Ends	**1**	**9**	**10**

WEEKDAY

Trip Rate: 0.50

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**50**	**50**	**100**

Note: Weekday rate assumed to be ten times the PM peak hour.

1e

TRIP GENERATION CALCULATIONS
Proposed Development

Land Use: Prison
Land Use Code: 571
Setting/Location General Urban/Suburban
Variable: Bed
Variable Value: 172

AM PEAK HOUR

Trip Rate: 0.1

	Enter	Exit	Total
Directional Distribution	54%	46%	
Trip Ends	**9**	**8**	**17**

PM PEAK HOUR

Trip Rate: 0.05

	Enter	Exit	Total
Directional Distribution	10%	90%	
Trip Ends	**1**	**8**	**9**

WEEKDAY

Trip Rate: 0.50

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**43**	**43**	**86**

Note: Weekday rate assumed to be ten times the PM peak hour.

CITY OF WARRENTON, CLATSOP COUNTY

19TH ST and Intersectional Crashes at 19TH ST, City of Warrenton, Clatsop County, 01/01/2013 to 12/31/2017

1 - 6 of 6 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P / E / E / D	D M R J / A / L / C	S / U / G / S	W / I / N / V	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#	TYPE	SVRTY	A G E	S X	LICNS / RES / LOC	PED ERROR	ACT	EVENT	CAUSE
00648	N	N	N	N	N		12/23/2015	19	SE 19TH ST	ALLEY		N	Y	RAIN	ANGL-STP	01	NONE 0	TURN-L										08
CITY		WE						260	SE CHOKEBERRY AVE	W	(NONE)	NONE	N	WET	TURN		PRVTE	W -N									019	00
Y		1P								07			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	86	M	OR-Y	002	000		08
N		46 8 36.81		-123 54 19.78							(02)													OR<25				
																02	NONE 0	STOP										
																	PRVTE	N -N								011		00
																	PSNGR CAR		01	DRVR	NONE	18	F	OTH-Y	000	000		00
																								N-RES				
00272	N	N	N	N	N		06/01/2016	19	SE 19TH ST	STRGHT		N	Y	CLR	FIX OBJ	01	NONE 9	STRGHT									100,079,010	16
CITY		WE						100	SE CHOKEBERRY AVE	W	(NONE)	NONE	N	DRY	FIX		N/A	S -N								000		00
Y		6P								08			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000		00
N		46 8 34.21		-123 54 15.66							(02)													UNK				
00059	Y	N	N				02/06/2014	09	ENSIGN AVE	INTER	3-LEG	N	N	SNOW	S-1STOP	01	NONE 0	STRGHT									124	01
NO RPT		TH		0					NW 19TH ST	W		STOP SIGN	N	ICE	REAR		PRVTE	W -E								000		00
N		4P								06	0		N	DAY	PDO		SCHL BUS		01	DRVR	NONE	00	M	OR-Y	047	017		01
N		46 8 42.5996159		-123 54 44.1108719																				OR<25				
																02	NONE 0	STOP										
																	PRVTE	W -E								012		00
																	PSNGR CAR		01	DRVR	NONE	31	F	OR-Y	000	000		00
																								OR<25				
00138	N	N	N	N	N		03/16/2017	17	ENSIGN AVE	INTER	CROSS	N	N	CLR	OVERTURN	01	NONE 0	STRGHT									092	26
CITY		TH		0					19TH ST	CN		STOP SIGN	N	DRY	NCOL		PRVTE	W -E								007		00
N		5P								03	0		N	DAY	INJ		MTRCYCLE		01	DRVR	INJB	68	M	OR-Y	000	000		00
N		46 8 42.6		-123 54 44.11																				OR<25				
00565	N	N	N	N	N		09/27/2017	17	ENSIGN AVE	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										02
CITY		WE		0					19TH ST	CN		STOP SIGN	N	DRY	TURN		PRVTE	W -E								000		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

N 3P 04 0 N DAY INJ PSNGR CAR 01 DRVR NONE 47 F SUSP 000 000 00

N 46 8 42.6 -123 54 44.11 OR<25

02 NONE 0 TURN-L

PRVTE S -W 015 00

PSNGR CAR 01 DRVR INJC 25 F OR-Y 028 000 02

OR<25

00229 N N N Y 04/28/2017 17 ENSIGN AVE INTER CROSS N N CLD ANGL-OTH 01 NONE 9 STRGHT 02

CITY FR 0 19TH ST CN STOP SIGN N DRY ANGL N/A W -E 001 00

N 12P 03 0 N DAY PDO TRUCK 01 DRVR NONE 00 Unk UNK 000 000 00

N 46 8 42.6 -123 54 44.11 UNK

02 NONE 9 STRGHT

N/A N -S 015 00

PSNGR CAR 01 DRVR NONE 00 Unk UNK 000 000 00

UNK

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

CITY OF WARRENTON, CLATSOP COUNTY

ENSIGN AVE and Intersectional Crashes at ENSIGN AVE, City of Warrenton, Clatsop County, 01/01/2013 to 12/31/2017

1 - 49 of 49 Crash records shown (Reported crashes reduced to 6 relevant collisions).

SER# / INVEST / RD DPT / UNLOC?	S P / E / E / D	D R / A / L / C	M J / U / G / S	S / I / N / V	W / C / H / L	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	INT-TYPE / RD CHAR / DIRECT / LOCTN	(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 / S E / X	LICNS / RES	PED LOC	ERROR	ACT / EVENT	CAUSE
00260	N	N	N			05/13/2017	17	SE ENSIGN AVE	CURVE		N	N	CLR	S-STRGHT	01	NONE 9	STRGHT									02
CITY						SA	20	E HARBOR ST	W	(NONE)	L-GRN-SIG	N	DRY	SS-O		N/A	W -E							088	00
N						11A			06			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00 Unk	UNK	000	000	00
N						46 8 41.73	-123 54 8.26			(03)												UNK			
															02	NONE 9	STRGHT								
																N/A	W -E							006	00
																PSNGR CAR		01	DRVR	NONE	00 Unk	UNK	000	000	00
																						UNK			
00059	Y	N	N			02/06/2014	09	ENSIGN AVE	INTER	3-LEG	N	N	SNOW	S-1STOP	01	NONE 0	STRGHT								124	01
NO RPT						TH	0	NW 19TH ST	W		STOP SIGN	N	ICE	REAR		PRVTE	W -E							000	00
N						4P			06	0		N	DAY	PDO		SCHL BUS		01	DRVR	NONE	00 M	OR-Y	047	017	01
N						46 8 42.5996159	-123 54 44.1108719															OR<25			
															02	NONE 0	STOP								
																PRVTE	W -E							012	00
																PSNGR CAR		01	DRVR	NONE	31 F	OR-Y	000	000	00
																						OR<25			
00138	N	N	N	N	N	03/16/2017	17	ENSIGN AVE	INTER	CROSS	N	N	CLR	OVERTURN	01	NONE 0	STRGHT								092	26
CITY						TH	0	19TH ST	CN		STOP SIGN	N	DRY	NCOL		PRVTE	W -E							007	00
N						5P			03	0		N	DAY	INJ		MTRCYCLE		01	DRVR	INJB	68 M	OR-Y	000	000	00
N						46 8 42.6	-123 54 44.11															OR<25			
00565	N	N	N	N	N	09/27/2017	17	ENSIGN AVE	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT									02
CITY						WE	0	19TH ST	CN		STOP SIGN	N	DRY	TURN		PRVTE	W -E							000	00
N						3P			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	47 F	SUSP	000	000	00
N						46 8 42.6	-123 54 44.11															OR<25			
															02	NONE 0	TURN-L								
																PRVTE	S -W							015	00
																PSNGR CAR		01	DRVR	INJC	25 F	OR-Y	028	000	02

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

CITY OF WARRENTON, CLATSOP COUNTY

ENSIGN AVE and Intersectional Crashes at ENSIGN AVE, City of Warrenton, Clatsop County, 01/01/2013 to 12/31/2017

1 - 49 of 49 Crash records shown (Reported crashes reduced to 6 relevant collisions).

OR<25

00229	N N N	Y 04/28/2017	17	ENSIGN AVE	INTER	CROSS	N	N	CLD	ANGL-OTH	01 NONE	9	STRGHT											02
CITY		FR	0	19TH ST	CN		STOP SIGN	N	DRY	ANGL	N/A		W -E										001	00
N		12P			03	0		N	DAY	PDO	TRUCK			01 DRVR	NONE	00	Unk	UNK	000	000				00
N		46 8 42.6	-123 54 44.11															UNK						
											02 NONE	9	STRGHT											
											N/A		N -S										015	00
											PSNGR CAR			01 DRVR	NONE	00	Unk	UNK	000	000				00
																		UNK						

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