



Staff Report & Recommendations

Clark Public Utilities (CPU) Flow Station: Type II Site Plan Review

(#2022-023-SPR) August 4, 2022

PROPOSAL:	The applicant is proposing to upgrade the existing CPU flow station near the intersection of NE Timmen Road and La Center Road with new pressure reducing valves and flow valves inside a new above ground 10.5-foot wide by 16-foot long by 10-foot tall pre-manufactured concrete utility building structure. The total new hard surfacing will include 168 square feet of roof area, 158 square feet of concrete sidewalk (on the south and east side of the building), and approximately 576 square feet of gravel driveway for a total of 902 square feet of new impervious surfacing. Total earthwork is estimated at approximately 25 cubic yards.
LOCATION:	<ul style="list-style-type: none">▪ No site addresses.▪ The project is located within the City of La Center right-of-way, north of intersection of NW La Center Road and NW Timmen Road.
HEARING:	Not required for a Type II procedure
APPLICABLE STANDARDS	La Center Municipal Code (LCMC) Title 18, Development Code: Type II Procedure, 18.30.090; Notices, 18.30.120; Mixed-use District, 18.165; Site Plan Review, 18.215; Supplementary Development Standards, 18.245; Limited Uses, 18.270.030, Public Utility Uses; Critical Areas, Geologically Hazardous Areas, 18.300.090(4); Environmental Policy, 18.310, Archaeological Protection, 18.360.
RECOMMENDATION:	APPROVAL , subject to conditions

I. CONTACT LIST

APPLICANT

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OWNERS

Bryan Kast, P.E.
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City of La Center
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APPLICANT'S REPRESENTATIVE

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LA CENTER STAFF

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II. OVERVIEW

The applicant is proposing to upgrade the Clark Public Utilities flow station No.1. The proposed project is located within the City of La Center right-of-way north of the intersection of NW La Center Road and NW Timmen Road. Constructed in 1997/1998, the flow station is the means by which CPU provides potable water to City of La Center and vicinity. The flow station regulates water flow and reduces the pressure to meet the City's potable water demand. The automated valve within the flow station opens and closes to keep the City's water reservoirs full, but not overflowing. The flow station also reduces the pressure to match the City's reservoir pressure.

The existing flow station automated valves are at ground level and prone to damage from stormwater flow from La Center Road. Growth within the general La Center area has also increased water demand such that the existing flow station has insufficient capacity. Therefore, the purpose of the new flow station is to meet current and future water demand, while providing a more reliable water system.

According to Clark County Maps Online and the Soil Survey of Clark County, an erosion hazard is mapped approximately 130 feet northwest of the project area which is not anticipated to impact the project. The project area includes mapped seismic hazards (Site Class D for ground shaking amplification) and is also mapped as having a "low to moderate" risk of liquefaction during an earthquake; both classifications are considered geologically hazardous critical areas under La Center's critical areas ordinance (LCMC 18.300). However, the applicant completed a site-specific geotechnical site investigation showing that erosion hazards, landslide hazards, and seismic hazards do not exist on the site in the opinion of the applicant's geotechnical engineer. Therefore, critical areas do not exist on the site and a critical areas permit is not required.

The site is also mapped as having a moderate-high and high risk of encountering archaeological resources. The applicant provided an archeological predetermination under separate cover which does not recommend that further archaeological work be performed.

Figure 1 – Project Location



III. REVIEW

III. A Jurisdiction

The project is located within the NW La Center Road right-of-way and within La Center city limits. The site is zoned Mixed-Use (MX).

III.B Public Notice

The City issued a notice of application on June 19, with the 14-day notice period ending July 13, 2022. The City did not receive any public comments on the proposal.

The City issued a likely determination of non-significance (DNS) under the State Environmental Policy Act (SEPA) on April 19, 2022. The Department of Ecology entered the SEPA Checklist and DNS in the Ecology SEPA Register on April 19, 2022. (Ecology SEPA # 202201832.) The notice of application and SEPA comment period closed on May 3, 2022 and the City received comments from the Washington Department of Ecology (Ecology) on May 3, 2022 (Exhibit B.2).

III.C Key Issues

The relevant issues to consider include:

1. **Landscaping and Screening:** LCMC 18.270.030 requires that public utility uses be screened to an L3 level and be enclosed by a fence of five to eight feet tall or equivalent wall, landscaping or vegetation. The applicant is proposing to use existing vegetation on the north and west sides of the site to screen the use from adjacent residences and to provide ground cover and shrubs on the south side of the site. However, the proposed landscaping will not adequately screen the use to the L3 level from the residence to the east. The City is conditioning the applicant to provide screening on the east side of the site and additional trees on the south side of the site to meet the L3 standard.

III.D Land Use Analysis

LCMC 18.30 Procedures

LCMC 18.30.080 Type I Procedures

Finding: The project is subject to a Type I preliminary site plan review procedure as specified in LCMC 18.215.040 for projects which do not 4,000 square feet of floor area and twenty new parking spaces. The proposed flow station building will be approximately 170 square feet and parking for two maintenance vehicles. However, the applicant has optionally elected to be subject to a Type II process to allow for public notice to adjacent property owners.

The Type II process requires public notice and requires the City to issue a decision within 56-days of the application being deemed complete. The City deemed the application complete on June 15, 2022, and provided a 14-day notice of application on June 29 with the notice period ending on July 14. The City issued this notice of decision with the required 56-day review period.

LCMC 18.165 Mixed-Use (MX)

LCMC 18.165.030 Permitted Uses

Finding: The site is zoned Mixed Use (MX) and utilities and communication facilities are permitted in this zone. Therefore, the proposed flow station and associated facilities are a permitted use in the zone.

LCMC 18.165.030-18.165.060 General Standards; Site Design Standards; Lighting

Finding: The City has determined that none of the general standards (LCMC 18.165.040) and site design standards (LCMC 18.165.050) are applicable to the development since these standards apply to

commercial, residential, and mixed uses. The lighting standards of 18.165.060 also do not apply since the applicant is not proposing any lighting with this application.

LCMC 18.165.070 View Preservation

Finding: The proposed flow station meets the view preservation standards because it will be located north of La Center Road right-of-way and outside of view corridors toward the mountains or the La Center bottoms. In addition, the building will be approximately 10.25 feet tall and less than the height of surrounding trees. A view corridor analysis is not required.

LCMC 18.165.080 Off-Street Parking and Loading

Finding: The proposed flow station will have a gravel parking area which can accommodate two maintenance vehicles. LCMC 18.280 does not specify parking requirements for utility uses, therefore no minimum parking is required. Staff find that the standards of LCMC 18.165.080 are intended to apply to parking lots for residential, commercial, and mixed uses and do not apply to the proposed gravel parking area for infrequent use by CPU maintenance vehicles.

LCMC 18.165.090 Open Space Standards

Finding: The open space standards apply to residential-only, commercial, and vertical mixed-use zones and do not apply to utility uses.

LCMC 18.165.100 Process

Finding: The development is less than five acres in size and the standards of the master planning standards of this section do not apply to the proposed use.

LCMC 18.215 Site Plan Review

LCMC 18.215.020 Applicability

The proposed development of the flow station and associated improvements does not meet the exemptions stated in LCMC 18.215.030 and is therefore subject to site plan review.

LCMC 18.215.040 Site Plan Review Types and Procedures

The development meets the requirements to be considered a Type I site plan review having less than 4,000 square feet of floor area and less than 20 new parking spaces. However, the applicant has elected to provide public notice and therefore is being considered under a Type II site plan review.

LCMC 18.215.050 Submittal Requirements

For Type II site plan review applications, the applicant shall submit the information required for a Type II application as set forth in LCMC 18.30.090, as well as the following:

- (a) Written narrative description of uses, types of structures proposed, hours of operation, abutting properties, proposed access, frequency of deliveries and construction schedule including project phasing, if known;*
- (b) Current list of names and addresses of all property owners within a 300-foot radius as shown upon the Clark County assessor's records. The list shall be no older than 90 days and shall be dated and certified as being a complete list of adjacent owners by the assessor's office, surveyor, or title company. This list shall also be provided on self-adhesive mailing labels;*

- (c) Developer's GIS packet (can be obtained from the Clark County planning department);*
- (d) Ten copies of an existing conditions plan drawn to a minimum scale of one inch equals 200 feet on a sheet no larger than 24 inches by 36 inches and including one reduced 11-inch by 17-inch copy. The existing conditions plan shall indicate the items as set forth in LCMC 18.215.050 (2)(d)(i-xiv);*
- (e) Five copies of a site plan drawn to a minimum scale of one inch equals 200 feet on a sheet no larger than 24 inches by 36 inches and including one reduced 11-inch by 17-inch copy. The site plan shall at a minimum indicate the items as set forth in LCMC 18.215.050 (2)(e)(i-xiv);*
- (f) Preliminary utilities plan indicating the proposed location, size, connection points to existing public systems, and terminus points for sanitary sewer, water and stormwater drainage and control. Stormwater information shall be provided in conformance with Chapter 18.320 LCMC and shall indicate compliance with all applicable standards of LCMC Titles 13 and 15. Public and private easements for sanitary sewer, water and stormwater shall also be indicated;*
- (g) Preliminary grading and erosion control plan indicating proposed on-site excavation and fill activities, and within public rights-of-way, if applicable, including demonstration of conformance with city of La Center erosion control measures;*
- (h) Landscape plan indicating the location of proposed vegetation, the common and botanical name of the proposed vegetation, the initial planting size (height or gallon) and the mature planting size, and proposed methods of irrigation, if any. Landscaping proposed in and around buildings, on the perimeter of the site and within proposed parking areas shall be indicated. In addition, street trees or other forms of landscaping within the public rights-of-way shall be indicated;*
- (i) Architectural elevations, showing north, south, west and east elevations and specifying a measurable scale, structural dimensions and structural heights;*
- (j) Lighting plan indicating the location, height and type of proposed exterior lighting fixtures (pole-mounted or wall-mounted);*
- (k) Legal description for the parcel(s) in question;*
- (l) Most recent conveyance document (deed) showing current ownership;*
- (m) State Environmental Policy Act (SEPA) checklist, completely filled out in ink or type and signed, if applicable;*
- (n) Traffic study, if applicable;*
- (o) Sign plan(s) (if applicable);*
- (p) Copy of pre-application conference report and any other items requested in the pre-application conference report, if completed. [Ord. 2006-17 § 1, 2006.]*

Finding: The applicant provided the following items in their submittal pertinent to the above submittal requirements:

- A signed application form;
- A written narrative;
- A list of property owners within 300 feet;
- Project plans including an existing conditions plan, site plan, utilities plans, landscape plans, floor plans, and architectural elevations;
- A copy of the pre-application conference report;
- A geotechnical investigation report;
- An archaeological predetermination report; and,
- A signed SEPA determination of non-significance.

The applicant did not submit the following items and staff find that they are not applicable to the project:

- A GIS Developer's packet: staff find that this standard submittal requirement is unnecessary to provide for the project.
- A lighting plan: The applicant is not proposing lighting, therefore a lighting plan is not required.
- A legal description: The project site is located within the City of La Center right-of-way not on a parcel and therefore does not have a legal description.
- A conveyance document: The site is located within the City of La Center's right-of-way and covenance and deed documents are not relevant to the project. The site would continue to be located in public right-of-way under the ownership of the City of La Center once completed. No ownership transfers are proposed.
- A traffic study: The flow station would only generate infrequent and low levels of traffic associated with maintenance of the building and facilities within and therefore a traffic impact study is not required.
- A sign plan: The applicant is not proposing any signage, therefore a sign plan is not required.

LCMC 18.215.060 Criteria for Site Plan Approval

In reviewing a site plan for approval, the director shall find that all of the following have been met:

(a) The proposed plan shall meet all applicable provisions of this title and other appropriate provisions of the La Center Municipal Code; the following are enumerated to indicate the various requirements under which a plan must be found consistent. Failure to meet any one of these, and other requirements not necessarily specified here, shall be grounds for denial of site plan approval.

(b) The proposed use is permitted within the district in which it is located.

(c) The proposal meets the lot, yard, building, height and other dimensional requirements of the district within which it is located.

(d) The proposal meets the screening, buffering and landscape strip requirements, as set forth in LCMC 18.245.060.

(e) Minimum parking and loading space requirements are met, as required by Chapter 18.280 LCMC.

(f) All applicable conditions and criteria contained in other titles of the La Center Municipal Code are met.

(g) Improvement requirements are provided in accordance with the applicable sections of the La Center development code.

(h) All conditions of any applicable previous approvals (i.e., CUP) have been met.

(i) Development subject to site plan review has provided underground public and private utility lines including but not limited to those for electricity and communication.

(j) Public water, sewer and stormwater lines have been installed in conformance with the standards of the city code. Public water, sewer and stormwater lines within or along the frontage of a development have been extended to the extreme property lines of that development unless it can be demonstrated to the city engineer that such extensions are impractical, infeasible or inappropriate.

(k) Proposed phasing plans do not exceed six years and all required public infrastructure is installed in the first phase of the development. [Ord. 2010-05 § 6, 2010; Ord. 2006-17 § 1, 2006.]

Findings: Compliance with the City of La Center's code is documented in this staff report. This requirement is met.

The flow station is a utility use which is a permitted use in the MX District.

Setback and building height requirements only apply to legal lots within the MX District within Commercial and Vertical Mixed-Use zones and not within the La Center Road right-of-way. However, staff notes that the building would be 10.25 feet tall, well below the height requirement stated for commercial or mixed-use buildings in the MX District. Therefore, setback requirements are not applicable to the project.

Landscape strip, buffering, and screening requirements are addressed in response to LCMC 18.245 and 18.270 of this staff report. Those staff report sections demonstrate that the applicant has met the landscape strip, buffer, and screening requirements of the code as conditioned to provide screening on the east side of the site and additional trees on the south side of the site.

Parking and loading requirements are not applicable to the use. LCMC 18.280 does not require parking for utility uses.

Improvements would be provided as shown on the applicant's plans and as conditioned and required in this staff report.

There are no other applicable approvals for the subject site.

The applicant is including underground utilities to serve the use as shown on their utility plans. These include telephone, electric, and water. Sanitary sewer will not be provided because wastewater will not be generated by the project. Stormwater from the roof would flow into downspouts and onto splash blocks. Roof flow and gravel driveway flow would sheet flow and no additional stormwater detention or treatment facilities are proposed or required.

The applicant is not proposing to phase the project.

Based on the above analysis, staff find that the site plan review criteria are met.

LCMC 18.245 Supplemental Development Standards

LCMC 18.245.020 Heights of Fences and Hedges

Finding: Heights of fences are limited to six feet in height. The applicant is not proposing any fencing. Therefore, these requirements do not apply. However, the applicant is being conditioned to provide an L3 screen on the east side of the site which may include a fence.

LCMC 18.245.030 Solid Waste

Finding: The use would not generate solid waste and the solid waste provisions of the code are not applicable.

LCMC 18.245.040 Lighting

Finding: The applicant is not proposing new lighting and therefore the lighting standards do not apply to the project.

LCMC 18.245.050 Noise

Finding: The flow station equipment will be contained within the flow station building and will not generate noise exterior to the building. Staff find that the City's noise requirements are met.

LCMC 18.245.060 Landscaping

Finding: As per LCMC 18.270.030, public utility uses are required to be landscaped on their perimeter to at least an L3 standard and be enclosed by a sight-obscuring fence not less five feet in height nor more than eight feet in height or a solid wall, landscaping or vegetation. Table 18.245.060 does not require landscaping between the MX zone and other MX zoned properties to the south nor adjacent to low density residentially zoned areas in Clark County to the north of the site.

The applicant is proposing to use existing vegetation to the north and west to screen the site from view from adjacent residences and from areas west of the site. LCMC 18.245.060(3) allows for existing vegetation to be used to screen uses if it provides an equivalent level of screening. Staff find that the existing vegetation located west and north of the site will screen the use from residences to the north and the public right-of-way to the west. The applicant is proposing arbor vitae plantings and Kinnikinnick on the south side of the building. The arbor vitae would provide a solid screen that is 95 percent opaque at least 6 feet tall to screen the use from views from the south. However, additional trees are required to meet the L3 screening spacing requirement of one tree per 30 lineal feet on the south side of the site.

The site and flow station building would not be screened from view from the residence to the east. To fully comply with the L3 screening requirements in LCMC 18.270.030 and 18.245.060, a condition of approval will require that the applicant provide screening to meet the L3 requirement on the east side of the site. Additional trees will be required along the southern portion of the site to comply with the L3 standard.

As a condition of approval, the applicant shall provide screening on the east side of the flow station site and additional trees on the south side of the site to meet the L3 standard. A final landscape plan shall be provided to the City in compliance with this requirement prior to construction.

LCMC 18.270 Limited Uses

LCMC 18.270.030 Public Utility Uses

Public utility uses permitted subject to Type II review shall comply with the following:

- (1) The perimeter of the site shall be landscaped to at least an L3 standard;*
- (2) The use shall be enclosed by sight-obscuring fence not less than five feet nor more than eight feet in height or equivalent solid wall, landscaping or vegetation;*

(3) Structures and development for the use shall comply with applicable setbacks and development standards of the zoning district. [Ord. 2007-09 § 7, 2007.]

Finding: The flow station and associated improvements are a public utility use subject to a Type II review and are therefore subject to these standards. An L3 landscaped screen is required on the perimeter of the site. The applicant is using existing vegetation to screen the site from the north and west as permitted by LCMC 18.245.060(3) and staff finds the existing vegetation provides an equivalent level of screening as viewed from these angles. However, to fully comply with the L3 perimeter landscaping standard, a condition of approval will require that the applicant provide screening on the east side of the site and additional trees on the south side of the site to meet the L3 standard.

As a previously stated condition of approval, the applicant shall provide screening on the east side of the flow station site and additional trees on the south side of the site to meet the L3 standard. A final landscape plan shall be provided to the City in compliance with this requirement prior to construction.

III.E Critical Areas Review / SEPA Analysis

LCMC 18.300, Critical Areas

According to Clark County Maps Online and the Soil Survey of Clark County, an erosion hazard is mapped approximately 130 feet northwest of the project area which is not anticipated to impact the project. The project area includes mapped seismic hazards (Site Class D for ground shaking amplification) and is also mapped as having a “low to moderate” risk of liquefaction during an earthquake; both classifications are considered geologically hazardous critical areas under La Center’s critical areas ordinance (LCMC 18.300). However, the applicant completed a site-specific geotechnical site investigation showing that erosion hazards, landslide hazards, and seismic hazards do not exist on the site in the opinion of the applicant’s geotechnical engineer. Therefore, critical areas do not exist on the site and a critical areas permit is not required.

Chapter 18.310 LCMC Environmental Policy

The City issued a mitigated determination of non-significance on April 19, 2022 for the combined La Center Road paving, CPU waterline, and CPU flow station project under reference number 202201832. A condition of approval will require the applicant to comply with all applicable mitigation measures of that determination. In addition to those mitigation measures, the applicant is conditioned to comply with the Washington Department of Ecology’s (Ecology) SEPA comment letter dated May 3, 2022.

As a condition of approval, the applicant shall comply with the mitigation measures specified in the mitigated determination of non-significance dated April 19, 2022 and Ecology letter dated May 3, 2022.

Chapter 18.360 LCMC Archaeological Preservation

The site is located in an area mapped as having a high risk for encountering archaeological resources by the Clark County Archaeological Predictive Model. The City required the applicant to complete an archaeological predetermination study in compliance with LCMC 18.360. The archaeological predetermination study recommended that no further archaeological work be performed, but that the applicant and their contractor adhere to inadvertent discovery protocols.

The SEPA MDNS issued on April 19, 2022 included an inadvertent discovery mitigation measure which is repeated here as a condition of approval.

As a condition of approval, in the event that any archaeological or historic materials are encountered during project activity, work in the immediate area (initially allowing for a 100-foot buffer; this number may vary by circumstance) must stop and the following actions must be taken:

- Implement reasonable measures to protect the discovery site, including any appropriate stabilization or covering;
- Take reasonable steps to ensure confidentiality of the discovery site; and,
- Take reasonable steps to restrict access to the site of discovery.

The applicant shall notify the concerned Tribes and all appropriate county, city, state, and federal agencies, including the Washington Department of Archaeology and Historic Preservation and the City of La Center. The agencies and Tribe(s) will discuss possible measures to remove or avoid cultural material, and will reach an agreement with the applicant regarding actions to be taken and disposition of material. If human remains are uncovered, appropriate law enforcement agencies shall be notified first, and the above steps followed. If the remains are determined to be Native, consultation with the affected Tribes will take place in order to mitigate the final disposition of said remains.

See the Revised Code of Washington, Chapter 27.53, "Archaeological Sites and Resources," for applicable state laws and statutes. See also Washington State Executive Order 05-05, "Archaeological and Cultural Resources." Additional state and federal law(s) may also apply.

Copies of the above inadvertent discovery language shall be retained on-site while project activity is underway.

Contact	Information
Cowlitz Indian Tribe, Nathan Reynolds, Interim Cultural Resources Manager	Phone: 360-575-6226; email: nreynolds@cowlitz.org
City of La Center, Bryan Kast, Public Works Directors	Phone: 360- 263-5189; email: bkast@ci.lacenter.wa.us
Office of the Clark County Medical Examiner (for human remains)	Phone: 564-397-8405; email: medical.examiner@clark.wa.gov
Washington DAHP, Dr. Allison Brooks, Ph.D, Director	Phone: 360-586-3066; email: Allyson.Brooks@dahp.wa.gov

III.F Public Works and Engineering Analysis

Section 18.320.120 (1) LCMC states that ground-disturbing activities of more than 500 square feet are subject to the requirements of *City of La Center Erosion Control Guidelines*. Section 18.320.120 (2)(a) LCMC states that the creation of more than 2,000 square feet of impervious surface is subject to stormwater regulation.

The applicant proposes to create new impervious surface from roofs, approximately 160

SF and driveway of approximately 900 SF for a total area of 1,060 SF. The erosion control standards apply but no stormwater requirement for water quality or detention of stormwater will apply to the applicant.

The applicant will however will need to direct stormwater outfall from the roof downspouts away from the structure and from the adjacent property.

IV. CONCLUSIONS & RECOMMENDATION

The review authority finds the applicant has sustained the burden of proving the application complies with the applicable provisions of the La Center Municipal Code. The subject application should be **APPROVED, SUBJECT TO THE FOLLOWING CONDITIONS.**

IV.A Planning Conditions

1. The applicant shall provide screening on the east side of the flow station site and additional trees on the south side of the site to meet the L3 standard. A final landscape plan shall be provided to the City in compliance with this requirement prior to construction.
2. In the event that any archaeological or historic materials are encountered during project activity, work in the immediate area (initially allowing for a 100-foot buffer; this number may vary by circumstance) must stop and the following actions must be taken:
 - Implement reasonable measures to protect the discovery site, including any appropriate stabilization or covering;
 - Take reasonable steps to ensure confidentiality of the discovery site; and,
 - Take reasonable steps to restrict access to the site of discovery.

The applicant shall notify the concerned Tribes and all appropriate county, city, state, and federal agencies, including the Washington Department of Archaeology and Historic Preservation and the City of La Center. The agencies and Tribe(s) will discuss possible measures to remove or avoid cultural material, and will reach an agreement with the applicant regarding actions to be taken and disposition of material. If human remains are uncovered, appropriate law enforcement agencies shall be notified first, and the above steps followed. If the remains are determined to be Native, consultation with the affected Tribes will take place in order to mitigate the final disposition of said remains.

See the Revised Code of Washington, Chapter 27.53, "Archaeological Sites and Resources," for applicable state laws and statutes. See also Washington State Executive Order 05-05, "Archaeological and Cultural Resources." Additional state and federal law(s) may also apply.

Copies of the above inadvertent discovery language shall be retained on-site while project activity is underway.

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City of La Center, Bryan Kast, Public Works Directors	Phone: 360- 263-5189; email: bkast@ci.lacenter.wa.us
Office of the Clark County Medical Examiner (for human remains)	Phone: 564-397-8405; email: medical.examiner@clark.wa.gov
Washington DAHP, Dr. Allison Brooks, Ph.D, Director	Phone: 360-586-3066; email: Allyson.Brooks@dahp.wa.gov

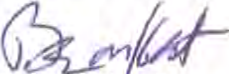
IV.B Public Works and Engineering Conditions

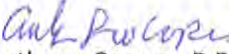
Stormwater and Erosion Control

1. The City Erosion Control Standards require that any activity disturbance over 500 SF must comply with the city standards.
2. The applicant will need to obtain an erosion control permit from the city, including providing a plan showing how the existing wetland south of the proposed structure will be protected from erosion.
3. The applicant will need to direct stormwater outfall from the roof downspouts from the new building and parking lot, away from the structure and from the adjacent property.

V. APPEALS

The applicant, applicant's representative, or any person, agency or firm with an interest in the matter may appeal the Critical area decision. The appellant shall file the appeal together with the requisite fee and information within 14 calendar days of the date of the decision being appealed. (18.030.130 LCMC.)


Bryan Kast, P.E.,
Public Works Director
City of La Center


Anthony Cooper, P.E.
City Engineer
City of La Center

Exhibits

Exhibit A – Application Materials

1. Type I Application
2. Project Narrative
3. Pre-Application Conference Notes Copy
4. SEPA Determination of Nonsignificance
5. Preliminary Flow Station And 12" Water Main Improvement Plans
6. Preliminary La Center Roadway Surface Improvement Plans
7. Geotechnical Investigation Report
8. 300' Mailing List and Certification

Exhibit B – Staff Report

1. Notice of Application
2. Technical Completeness Review

Exhibit A.1



Master Land Use Application

City of La Center, Planning Services

210 E. 4th Street

La Center, WA 98629

www.ci.lacenter.wa.us

Ph. 360.263.7665 Fax: 360.263.7666

www.ci.lacenter.wa.us

Property Information

Site Address The North Right of Way of NW LaCenter Road and NW Timmen Road intersection.

Legal Description N/A

Assessor's Serial Number N/A

Lot Size (square feet) Public Right of Way

Zoning/Comprehensive Plan Designation N/A

Existing Use of Site Existing Clark Public Utilities Flow Station (Flow Station No. 1)

Contact Information

APPLICANT:

Contact Name Barry Lovingood

Company Clark Public Utilities

Phone 360-992-8020 Email blovingood@@clarkpud.com

Complete Address 8600 NE 117th Ave

Signature *Barry Lovingood*
(Original Signature Required)

APPLICANT'S REPRESENTATIVE:

Contact Name Bob Carpenter, PE

Company Carpenter Engineering Inc

Phone 360-574-6088 Email bcarped@comcast.net

Complete Address 4114 NW 122nd Street, Vancouver WA 98685

Signature *Bob Carpenter*
(Original Signature Required)

PROPERTY OWNER:

Contact Name City of LaCenter Public Right of Way

Company _____

Phone 360-263-2782 Email _____

Complete Address _____

Signature _____
(Original Signature Required)

Development Proposal

Project Name _____

Type(s) of Application Clark Public Utilities Flow Station # 1 Reconstruction

Previous Project Name and File Number(s), if known _____

Pre-Application Conference Date and File Number Meeting Date - January 25, 2022

File Number - 2022-002 PAC

Description of Proposal

Clark Public Utilities is proposing to reconstruct the existing potable water flow station, known as Flow Station No. 1, located within the north right-of-way of the NW La Center and NW Timmen Road Intersection.

Improvements will include new valve assemblys, a new above ground 10.5' W x 16' L x 8' H shed structure, new gravel parking and landscape screening. The total new hard surfacing will include

168 square feet of roof area, 158 square feet of paved sidewalk and approx. 576 square feet of gravel driveway for a total of 902 square feet of new impervious surfacing. Total earthwork is estimated at approximately 25 cubic yards.

Office Use Only

File # _____

Planner _____

Received By _____

Fees: \$ _____

Date Received: _____

Date Paid: _____

Procedure: ☐ Type I
☐ Type II
☐ Type III
☐ Type IV

Receipt # _____

Notes _____

Exhibit A.2

Project Narrative: Clark Public Utilities Flow Station No. 1 Reconstruction Project

Project Overview:

Clark Public Utilities (Utility) is proposing to reconstruct the existing potable water flow station, known as Flow Station No. 1, located within the north right-of-way of the NW La Center Road and NW Timmen Road Intersection.

Flow Station No. 1 is the means by which the Utility provides potable water to the City of La Center and its outlying areas. The flow station regulates water flow and reduces the pressure to meet the City's potable water demand. The automated valve within the flow station opens and closes as needed to keep the City's water reservoirs full, but not overflowing. The Utility's water system pressure at NW La Center Road and NW Timmen Road Intersection is high, and the flow station reduces the pressure to match the City's reservoir pressure.

The Utility constructed the initial flow station in 1997/1998 to replace the City's existing wells. The existing flow station automated valves are at ground level and prone to damage from storm surface water flowing from La Center Road. In addition, growth within the general La Center area has increased water demand. Water demand has recently increased to a point that the existing flow station now has insufficient capacity. Therefore, the purpose of the new flow station is to meet current and future water demand, while providing a more reliable water system.

The new flow station will consist of the following:

1. A 10.5' wide X 16' long pre-manufactured concrete utility building to house the automated valve and electric control equipment.
2. New automated valve and pressure regulator manifold assembly. Also, a separate manually operated valve and pressure regulator manifold assembly will be provided for emergency situations when the power is out, or the automated valve is malfunctioning.
3. Electric control equipment to operate the automated valve and monitor the water system. Electric service from the power pole to the flow station building.
4. Emergency backup power. The nature of the emergency backup power has not been determined yet. The utility is leaning towards a battery backup system, which could be provided inside the building, or in an outside enclosure. The battery backup is the preferred solution, but provides limited charge life. During extended power outages longer than 24 hours, the Utility will need to employ a small portable emergency generator outside the building.

5. Concrete walk adjacent to the south and east sides of the flow station building.
6. Gravel driveway to provide on truck parking and access to the flow station building.
7. Underground water mains to connect to the flow station valve and pipe manifold.

The total new hard surfacing will include 168 sf of roof area, 630 sf of concrete sidewalk, 723 sf of gravel parking and 246 sf of rip-rap for a total of 1,767 sf of new impervious surfacing.

Total earthwork for this site is estimated at less than 25 cy not including water main trenching.

Stormwater management for this work will include sheet flow dispersion to native grasses and vegetation surrounding the facility.

Other activities related to Flow Station No.1 reconstruction is the construction of a new 12-inch diameter water main easterly from the Flow Station to the East Fork Lewis River Bridge. Growth and water demand in La Center has increased to a point that the existing 8-inch water main within La Center Road corridor has insufficient capacity. The Utility will keep the existing 8-inch water main in service. With the existing 8-inch water main, combined with the new 12-inch water main and reconstructed flow station, the Utility can provide reliable water transmission conveyance to the City of La Center for the present and future. The new 12-inch water main will be constructed by way of a combined public works project with the City of La Center's La Center Road Paving project.

Applicable Approval Criteria:

This application will be reviewed for compliance with the following La Center Municipal Codes (LCMC). Applicable code sections are listed in bold with project narrative response following in italics.

LCMC 3.35 Impact Fees

No impact fees are associated with this project.

LCMC Title 12- Street, Sidewalks and Public Ways

Since no development will be done, there are no public improvements requirements per LCMC 12.10.040. However, the City's CFP shows a roundabout may be warranted in the future at the intersection of Timmen Road and La Center Road. A schematic drawing of the roundabout was provided to the applicant. The flow station building

as proposed is outside of the footprint of the roundabout and does not appear to cause a conflict. In the future, if the roundabout is to be constructed, CPU will coordinate with the City to review locations and make any accommodations for conflict avoidance. All work will be conducted within existing public right of way owned and maintained by the City of La Center.

LCMC Title 13 – Public Utilities

Since a structure is proposed that will result in no added impact, no sewer improvements are necessary.

LCMC Title 18.30 Procedures

Although all work will be conducted in existing City right of way and roadway, the site is bound by critical areas of potential geologic and archaeological impacts. As such this application is subject to a Type II review process.

A pre-application meeting was held on Tuesday January 25, 2022 and the date of pre-app issuance was February 4, 2022, (File # 2022-002-PAC). A copy the pre-application conference notes is included with this submittal.

LCMC Title 18.165 (Mixed Use MX)

The location of the proposed flow station, 12" water main and pavement improvements are within the La Center Road right of way. According to the City's adopted zoning map, the site is zoned Mixed Use (MX). Utilities and communication facilities are a permitted use in this zone. City staff has determined that the design standards in the MX zone do not apply to a utility use.

LCMC Title 18.215 Site Plan Review

This code section requires that proposals undergo site plan review for proposal that exceed 4,000 square feet. This proposal is subject to Critical Area and therefore subject to a Type II Site Plan review process.

LCMC Title 18.245 – Supplementary Development Standards

This code states that if fencing is proposed it must be no taller than 6 ft and shall not conflict with sight distance.

No fencing is proposed with this project.

LCMC Title 18.270 – Landscape

This title requires that public utilities subject to Type II reviews require L3 landscaping. A preliminary Landscape plan has been prepared and attached with the site plans.

LCMC 18.280 – Off Street Parking

LCMC 18.280 does not list the proposed use and therefore no parking is required. However, a gravel parking area is provided in front of the proposed flow station building to allow for up to two maintenance vehicles to park.

LCMC Title 18.282 – Outdoor Lighting

This title requires that any proposed onsite lighting must not cause more than one foot-candle measured at the property line.

No lighting is proposed with these improvements.

LCMC 18.300 – Critical Areas

City of La Center Municipal Code (LCMC Development Code Section 18.300) defines geologic hazard requirements for proposed development in areas subject to the City of La Center jurisdiction. Three potential geologic hazards are identified: (1) erosion hazard areas, (2) landslide hazard and steep slope areas, and (3) seismic hazard areas.

A site investigation report was prepared by Columbia West Geotechnical outlining findings of the above potential geologic hazards as they apply to the proposal. A copy is attached with this application.

Columbia West conducted a geologic hazard review to assess whether a geologic hazard is present in the vicinity of proposed development, and if so, to provide mitigation recommendations.

- *Erosion Hazard Areas - According to Clark County Maps Online, and the Soil Survey of Clark County, Washington an erosion hazard is mapped approximately 130 feet northwesterly of the area of proposed development at a mapped contact of surficial soil units consisting of Gee silt loam and Rough Broken Land. This mapped erosion hazard is not anticipated to adversely affect proposed development and no erosion hazard is mapped on the development site. Therefore, according to the City of La Center Development Code, a soil erosion hazard is not present at the site.*
- *Landslide Hazard and Steep Slope Areas - To evaluate steep slope areas and assess whether landslide hazards are present in the vicinity of proposed development, Columbia West conducted a review of literature, subsurface exploration, and physical slope reconnaissance. The site and neighboring slopes are mapped as (1) stable areas – no slides or unstable slopes. Columbia West*

also reviewed the Geologic Map of the Ridgefield Quadrangle, Clark County, Washington (R.C. Evarts, Washington Division of Geology and Earth Resources, Scientific Investigations Map 2844, 2004), which indicates that no landslide deposits are mapped at the subject site or in the surrounding vicinity. There was no observed direct evidence of large-scale, mass slope movements or historic landslides. No landslide debris was observed within subsurface soils explored onsite and no slope face groundwater seeps or springs were observed. Based upon the results of slope reconnaissance, subsurface exploration, and site research, slopes on the subject site do not appear to meet the definition of a landslide hazard according to City of La Center Municipal Code.

- *Seismic Hazard Areas - According to the Liquefaction Susceptibility Map of Clark County Washington (Washington State Department of Natural Resources, 2004), the area of proposed development is mapped as very low to moderate susceptibility for liquefaction. Neighboring slopes are primarily mapped as very low susceptibility for liquefaction with areas mapped as high nearing the toe of the northeast trending slope and the wetland. These areas are not anticipated to adversely affect proposed development as Columbia West understand it. Based upon results of literature review, site-specific testing, and laboratory analysis, the potential for soil liquefaction in the location of proposed development is considered to be low.*

The flow station site has a Ground Shaking Amplification Site Class C to D. Site Class D is considered a Geohazard per the City of La Center Municipal Code. The Applicant does not consider this to be a significant hazard and the impacts of this can be mitigated by competent structural design of the building. Columbia West discusses the Ground Shaking Amplification Site Class on Page 8 of their report.

Site construction recommendations are provided in the geotechnical report and will be utilized in the design and construction of facilities.

LCMC Title 18.320 – Stormwater and Erosion Control

Projects that create more than 2,000 square feet of impervious surface are subject to the provisions of this code section. This proposal will create new impervious surfaces including roof, gravel driveway, and concrete sidewalk totaling 1,767 square feet and therefore not subject to all sections of this code. However, projects that create in excess of 500 square feet of ground disturbance are subject to the “City of La Center Erosion Control Guidelines.

A preliminary Grading and Erosion Control Plan has been prepared and include with the preliminary plans. Surface waters from gravel drives and from roof water will sheet flow to existing ground surfaces. The project does not alter the existing site drainage pattern. A low area just west of the proposed flow station currently has an existing gravel infiltration trench where surface waters drain and apparently infiltrate.

The water main project includes erosion control measures off the side of the existing pavement to ensure no soils migrate offsite or into the existing roadside ditch systems. See erosion control plans attached with this application.

LCMC Title 310 – Environmental Policy

A SEPA determination of a mitigated determination of non-significance (DNS) has been published for the project. The DNS covers the Flow Station Building and Site Improvements, the La Center Road 12" Water Main construction and the City of La Center Road Paving Project.

A copy of the DNS is attached with this application.

LCMC Title 18.360 – Archaeological Resource Protection

An Archaeological Predetermination investigation was performed by Applied Archaeological Research Inc. (Report # 2574). Copy attached with this application. The archaeological investigation covered the areas of the flow station site, the 12" water main length and the pavement improvements for La Center Road. The results of the investigation concluded that no artifacts were identified on the surface or in the soil test pit's (STP's), and that no further archaeological work is necessary in the footprint related to the proposed project.

Exhibit A.3



PRE-APPLICATION CONFERENCE NOTES
Clark Public Utilities PUF Flow Station (File # 2022-002-PAC)

PROJECT INFORMATION

Site Address	Not Applicable
Parcel Numbers:	Not applicable – public right-of-way
Applicant	Barry Lovingood Clark Public Utilities 8600 NE 117 th Avenue Vancouver, WA 98662 Ph: (360)992-8020
Applicant's Representative	Bob Carpenter, P.E. Carpenter Engineering Inc. 4114 NW 122 nd Street Vancouver, WA 98685 Ph: (360)-907-8629
Property Owner	City of La Center 305 NW Pacific Highway La Center, WA 98629 Ph: 360-263-7665
Proposal	The applicant proposes to modify and upgrade an existing CPU flow station with new pressure reducing valves and flow valves inside a new above ground 10-foot by 16-foot shed structure with new associated gravel parking. The total new hard surfacing will include 160 square feet of roof area and approximately 900 square feet of gravel surface for a total of 1,060 square feet of new impervious surfacing. Total earthwork is estimated at approximately 25 cubic yards.
Meeting Date	Tuesday, January 25, 2022 at 3:00 p.m.
Date of Issue	Friday, February 4, 2022

SUMMARY

The applicant proposes to modify and upgrade an existing CPU flow station with new pressure reducing valves and flow valves inside a new above ground 12-foot by 16-foot shed structure with new associated gravel parking. The total new hard surfacing will include 192 square feet of roof area and approximately 900 square feet of gravel surface. Total earthwork is estimated at approximately 25 cubic yards.

The location of the proposed flow station improvements is within the La Center Road right-of-way. According to the City's adopted zoning map, the site is zoned Mixed Use (MX). Utilities and communication facilities are a

permitted use in this zone. Staff have determined that the design standards in the MX zone do not apply to a utility use.

According to Clark County Maps Online, the site contains critical areas (geologic hazards) in the form of seismic hazards (Site Class D for ground shaking amplification) and landslide and erosion hazards are mapped immediately north of the site. The applicant will be required to submit a letter from a geotechnical engineer stating that the mapped hazards are not present on the site based on field conditions or, if one or more of the hazards are present, a geotechnical report in compliance with 18.300.090(4) is required. If only seismic hazards are present, documentation of compliance with the 2018 International Building Code is required.

The proposed development will require review and approval of a Type I Site Plan Review application as required by LCMC 18.215.040 for construction of 4,000 square feet of floor area or less. A likely result of the site plan review will be a requirement to landscape the perimeter of the use to screen it from adjacent uses.

PRELIMINARY REVIEW

Subsequent application(s) shall address the following development standards. Failure of the City to cite specific requirements of the La Center Municipal Code (LCMC) in this report does not relieve the applicant of the responsibility to meet all applicable criteria. If the proposal changes from what was presented in the pre-application conference, it may trigger other review standards and processes than what is identified in this report.

Applicable Criteria: The application will be reviewed for compliance with the La Center Municipal Code (LCMC): 3.35 Impact Fees; Title 12, Streets, Sidewalks & Public Ways; Title 13, Public Utilities; Title 18, Development Code (18.165 Mixed-Use; 18.215 Site Plan Review; 18.245 Supplementary Development Standards; 18.300 Critical Areas; 18.320 Stormwater and Erosion Control).

Public Works Engineering Analysis

Comments

Grading

Since the building and flow station will not be over 500 SF, the City Erosion Control Standards will not apply. However, the applicant will need to show how the parking area will drain stormwater as to not impact adjacent property.

Chapter 12.10 -- Public and Private Road Standards

Since no development will be done, there are no public improvement requirements per LCMC 12.10.040. However, the City's CFP shows a roundabout may be warranted in the future at the intersection of Timmen Road and La Center Road. A schematic drawing of the roundabout was provided to the applicant. The flow station building will need accommodate this roundabout, and access to the flow station may have to be relocated, based on the configuration of the roundabout.

Chapter 13.10 -- Sewer System Rules and Regulations

Since a structure is proposed that will result no added impact, no sewer improvements are necessary.

Chapter 18.320 (Stormwater and Erosion Control)

Section 18.320.120 (1) LCMC states that ground-disturbing activities of more than 500 square feet are subject to the requirements of *City of La Center Erosion Control Guidelines*. Section 18.320.120 (2)(a) LCMC states that the creation of more than 2,000 square feet of impervious surface is subject to stormwater regulation.

The added impervious area is not over 500 SF and will not require compliance with the City's Erosion Control Ordinance, or the stormwater standards. The applicant will however need to direct stormwater outfall from the roof downspouts away from the structure and from the adjacent property.

Stormwater Plan

The downspout connection to the existing grade will need to be shown in the plans, and how it will drain away from the site.

Land Use Analysis

LCMC 18.30 Procedures

The project will be reviewed as a Type I permit. If a critical areas permit is required, it will be a Type II review.

LCMC 18.30.080 and 18.30.090 Type I and Type II Procedures (Site Plan Review and Critical Areas Permit)

Site plan reviews are classified in two ways. This project is classified as the first and simplest level of review called Building Permit review (18.215.040 1.a) and will be processed as a Type I review. If a critical areas permit is required, that will be reviewed concurrently under a Type II process. The Type I and Type II process includes the following:

- A pre-application review meeting
- A 14-day application completeness review during which staff will review the application to make sure all necessary information is provided to conduct formal review.
- A 21-day application review period (for Type I applications) or a 56-day review (for Type II applications) during which staff will review the application against all applicable code standards. The review period does not include times during which staff requests additional information or updated application materials when the review clock would be stopped.
 - If a Type I review is required, no public notice is required. If a Type II review is required, then staff would notice all property owners within 150 feet of the proposal.
 - Prior to the end of the review period, staff would issue a draft staff report as a courtesy to the applicant to provide an opportunity to review the report and conditions of approval.
 - The City would issue a notice of decision on permit either approving, approving with conditions, or denying the permit.

LCMC 18.30.050 Review for Technically complete status

Upon receipt of the Type I Site plan review, staff will conduct a completeness review.

LCMC 18.30.050 provides a list of general submittal requirements applicable to all applications. **Bold** items are required for this application.

Submittal requirements

- ***A completed application form that features the name, mailing address, and telephone number of the owner(s), engineer, surveyor, planner, and/or attorney and the person with whom official contact should be made regarding the application***
- ***If critical areas impacts are proposed, A SEPA environmental checklist (see further discussion under LCMC 18.310) below.***
- ***An existing conditions plan drawn to a minimum scale of one inch equals 200 feet on a sheet no larger than 24 inches by 36 inches.***
- ***A preliminary plan at a scale of no more than one inch equals 200 feet, with north arrow, date, graphic scale, existing and proposed lots, tracts, easements, rights-of-way and structures on the site, and existing lots, tracts, easements, rights-of-way and structures abutting the site; provided, information***

about off-site structures and other features may be approximate if such information is not in the public record. The applicant shall provide one copy of the plan reduced to fit on an eight-and-one-half-inch by 11-inch page. Principal features of the plan shall be dimensioned.

- ***A preliminary grading and erosion control plan containing the items in 18.215.050.***
- ***Proposed easements or dedications to the city or other agency, if applicable***
- ***Written authorization to file application by the owner of the property that is the subject of the application if the applicant is not the same as the owner listed by the Clark County assessor***
- ***Proof of ownership document such as deed***
- ***A legal description of the site***
- ***A copy of the pre-application summary***
- ***A written description of how the application does or can comply with each applicable approval criterion and basic facts and other substantial evidence supportive of the description***
- ***For a Type II application, the names and addresses of owners of land within a 150-foot radius of the site for a type II review (can be obtained from Clark County for \$10). A statement to the assessor's office certifying the list is complete within 30 days of completion.***
- ***Applications necessarily associated with the proposal such as applications for exceptions, adjustments, or variances.***
- ***A wetlands delineation and assessment as required by LCMC 18.300. (not required as long as development and operations remain entirely within the previously cleared gravel area).***
- ***A delineation of the stream and riparian area and critical areas report for the onsite riparian area (not required as long as development and operations remain entirely within the previously cleared gravel area).***
- ***A Geotechnical report, if there are seismic and/or landslide hazards on the site and they will be impacted. If a geotechnical engineer provides a letter that no such areas are located on site and/or that mapped hazard areas will not be impacted, a complete geotechnical information report is not required.***
- ***An archaeological predetermination.***
- ***Information about proposed utilities, including water and sanitary waste and hydrant locations.***

Submittal requirements (Critical Areas Permit)

The project is not exempt from critical areas review as it constitutes the repair, alteration, replacement or expansion of an existing structure and related improvements within a seismic and/or landslide hazard area. A geotechnical report discussed under 18.300 below and listed above under submittal items is required, if the critical areas is determined to be present.

LCMC Chapter 18.165 (Mixed-Use MX)

The Mixed-use district (MX) is intended for a mix of uses in a single building or an integrated site of multiple buildings. Mixed-use developments are intended to allow for efficient use of land and public services in an urban setting with a mix of mutually supporting retail, services, office, and medium density residential uses.

The applicant's proposal is not a change of use as the site is currently used for utilities. Staff have determined that the design standards in the MX zone do not apply to a utility use.

LCMC 18.215 Site Plan Review

LCMC 18.215 requires that the proposal undergo site plan review as the proposal exceeds 4,000 square feet. Section 18.215.050 specifies submittal requirements for site plan review applications and are also provided above in these notes. The City's site plan review process is divided into two parts: preliminary and final site plan review. During the Type I preliminary site plan review process, the City will review the application against all relevant code requirements and issue a decision approving, approving with conditions, or denying the application. If the application complies with all relevant criteria, the City will issue approval with conditions. During final site plan review, the City will ensure that all conditions of approval of the preliminary site plan review process are met.

Review Criteria

LCMC provides review criteria for site plan applications that this project must comply with. The criteria are provided here for the applicant's reference. A written narrative is not required *provided the City can verify all criteria are met in reviewing the applicant's site plan.*

(a) The proposed plan shall meet all applicable provisions of this title and other appropriate provisions of the La Center Municipal Code; the following are enumerated to indicate the various requirements under which a plan must be found consistent. Failure to meet any one of these, and other requirements not necessarily specified here, shall be grounds for denial of site plan approval.

(b) The proposed use is permitted within the district in which it is located.

(c) The proposal meets the lot, yard, building, height and other dimensional requirements of the district within which it is located.

(d) The proposal meets the screening, buffering and landscape strip requirements, as set forth in LCMC 18.245.060.

(e) Minimum parking and loading space requirements are met, as required by Chapter 18.280 LCMC.

(f) All applicable conditions and criteria contained in other titles of the La Center Municipal Code are met.

(g) Improvement requirements are provided in accordance with the applicable sections of the La Center development code.

(h) All conditions of any applicable previous approvals (i.e., CUP) have been met.

(i) Development subject to site plan review has provided underground public and private utility lines including but not limited to those for electricity and communication.

(j) Public water, sewer and stormwater lines have been installed in conformance with the standards of the city code. Public water, sewer and stormwater lines within or along the frontage of a development have been extended to the extreme property lines of that development unless it can be demonstrated to the city engineer that such extensions are impractical, infeasible or inappropriate.

(k) Proposed phasing plans do not exceed six years and all required public infrastructure is installed in the first phase of the development.

LCMC 18.245 Supplementary Development Standards

If fences are proposed, they must be no taller than 6 feet. Fencing shall not conflict with the sight distance requirements of the La Center Engineering Standards for Construction. 18.245.020 states that security fencing may be permitted within commercial or industrial land uses. The fencing may be six feet tall with four strands of barbed wire on top.

On-site lighting must not cause more than one foot-candle measured at the property line. All outdoor lighting must comply with LCMC 18.282 (Outdoor Lighting).

LCMC 18.270.030 also requires that public utilities subject to Type II reviews require L3 landscaping.

L3 landscaping standards are listed below:

(c) L3 – High Screen.

(i) The L3 standard provides physical and visual separation between uses or development principally using screening. It is used where such separation is warranted by a proposed development, notwithstanding loss of direct views.

(ii) The L3 standard requires enough high shrubs to form a screen six feet high and 95 percent opaque year-round. In addition, one tree is required per 30 lineal feet of landscaped area or as appropriate to provide a tree canopy over the landscaped area. Groundcover plants must fully cover the remainder of the landscaped area. A six-foot-high wall or fence that complies with an F1 or F2 standard with or without a berm may be substituted for shrubs, but the trees and groundcover plants are still required. When applied along street lot lines, the screen or wall is to be placed along the interior side of the landscaped area.

Landscaping shall meet the material requirements in LCMC 18.245.060(11-16) and must be irrigated with a permanent system unless a statement is provided from a landscape architect certifying the materials will survive without watering.

During the pre-application meeting, the applicant inquired about omitting trees. The above standard indicates that trees cannot be omitted. However, spacing can be varied as long as there is a canopy over the landscaped area. In addition, the standard does not specify type of trees that must be used; a low maintenance variety such as evergreen or arbor vitae could be used. Finally, 18.245.060(3) allows for existing vegetation to be used if it provides an equivalent screen. Given that there is vegetation to the north and west that would screen the use from those angles, staff find that it is appropriate for the applicant to provide landscaping only on the south and east sides of the use.

LCMC 18.280 Off Street Parking (

LCMC 18.280 does not list the proposed use and therefore no parking is required. The city is recommended that the proposal provide 1-2 spaces for maintenance workers onsite.

A durable and dustless surface is required for parking. Parking spaces must be 180 square feet and aisles must be adequately dimensioned to allow vehicles to enter the public right-of-way moving forward. Aisles must be 20 feet (2-way) or 12 feet (one way). Parking spaces and drive aisles must be dimensioned on the site plan.

LCMC 18.300 Critical Areas

Clark County MapsOnline indicates the proposed improvements are within the vicinity of erosion and landslide hazard areas.. Additionally, the site is located within a seismic hazard (Site Class D for ground shaking amplification) These critical areas are regulated under LCMC 18.300. A geologist or geotechnical engineer should visit the site to determine whether or not these areas are present. If present, a geotechnical engineering report must be filed and a Type II critical areas permit must be approved for impacts to these areas or buffers in compliance with LCMC 18.300.090(4).

LCMC 18.310 Environmental Policy

The application is exempt from SEPA per WAC 197-11-800 (23b) as the improvements constitute water facilities, lines, equipment, hookups, and appurtenances related to lines twelve inches or less provided that no critical areas impacts are proposed. LCMC 18.310.235 indicates that a SEPA determination is required for utility-related actions if occurring in critical areas. If critical areas are determined to be present on the site, please submit a SEPA checklist along with all other submittal items.

LCMC 18.360 Archaeological Resource Protection

The project requires a predetermination report, meeting the standards of 18.360.080 (4), per LCMC 18.360.030 (2c) which states that a project, regardless of predictive model probability class, is not exempt if ground disturbing actions or activities are within one-quarter mile of a known, recorded archaeological site as measured on a horizontal plan extending in all directions. A known, recorded archaeological site is within one-quarter mile of the proposed project site. The predetermination process is codified under LCMC 18.360.080. The submitted predetermination will determine whether or not the applicant will need to complete a full archaeological survey. Because CPU is undertaking a project to replace the waterline in La Center Road, it may be beneficial from a cost perspective to include both the flow station and the waterline in a single predetermination report.

Application Fees

An estimated fee schedule was provided during the meeting. Based upon the information provided to date, we estimate that the land use application fees will include:

- Type 1 Site Plan Review (\$425+\$84/1000sf)
- Critical Area review (\$340):
- SEPA (if required)(\$510)

The City requires an applicant pay actual costs of outside professional services including engineering, legal, and planning. Impact fees shall be assessed against each lot at time of building permit. (La Center Resolution No. 13-372). A copy of the agreement is attached to the City's Master Application form.

Please note that the City is due to update its land use fees. Timeline for that is uncertain, but the fees listed above could change.

January 25, 2022 – Attendees

Name	Organization Name	Email Address	Phone Number
Tony Cooper	City of La Center	acooper@ci.lacenter.wa.us	360-263-7665
Jessica Nash	City of La Center	jnash@ci.lacenter.wa.us	360-263-7665
Jeff Swanson	Exigy Consulting	jswanson@ci.lacenter.wa.us	360-975-9466
Ethan Spoo	WSP	ethan.spoo@wsp.com	971-219-5169
Barry Lovingood	Clark Public Utilities	blovingood@clarkpud.com	360-600-4834
Bob Carpenter	Carpenter Engineering, INC	bcarped@comcast.net	360-574-6088

Exhibit A.4



**NOTICE OF APPLICATION
AND LIKELY SEPA MITIGATED DETERMINATION OF NON-SIGNIFICANCE
City of La Center Road Pavement and Clark Public Utilities Water Main and Flow Station Project
(File # 2022-015-SEPA)**

Description of proposal: The applicant proposes to improve La Center Road including repaving and reconstructing portions of the road, construction of a new waterline in La Center Road, placement of a concrete barrier along the road adjacent to the gravel parking area, and reconstruction of a potable water flow station at the NW Timmen Road intersection. Further details are as follows:

- The City of La Center (City) will repave 2,150 lineal feet of the westbound travel lane of La Center Road between NW Timmen Road and the Lewis River Bridge with a 3-inch depth asphalt overlay.
- The City will reconstruct 200 lineal feet of the westbound travel lane with placement of a 6-inch diameter perforated pipe to drain groundwater.
- Clark Public Utilities (CPU) will construct a 12-inch diameter water main between NW Timmen Road and the Lewis River Bridge – a distance of approximately 2,000 lineal feet. The waterline will be placed under the road pavement at the north edge of the road.
- The City will place a concrete barrier on the gravel parking area adjacent to the north side of La Center Road to prevent access for parking except for emergency access and some limited parking during summer months.
- CPU will reconstruct a potable water flow station to be located within the north shoulder of the La Center Road and NW Timmen Road intersection. The existing flow station is malfunctioning due to age and environmental conditions. The proposed flow station will include a flow control valve manifold within a small utility single-story building.

Likely SEPA DNS: NOTICE IS HEREBY GIVEN that, an application has been submitted as noted below and based on a review of that application, the City of La Center expects to issue a Mitigated Determination of Non-Significance (MDNS) for this proposal pursuant to the “Optional DNS process” allowed by State Law (WAC 197-11-355) and the La Center Municipal Code (LCMC 18.310). A copy of the determination may be requested now and will be mailed when available. Comments received within the deadline, will be considered in the review of the proposal and the State Environmental Policy Act (SEPA) environmental checklist. ***This may be the only opportunity to comment on the environmental impacts of the proposal and no additional comment period will be provided, unless probable significant environmental impacts are identified during the review process, which would require additional study or special mitigation.*** The proposal may include mitigation under applicable codes, and the project review process may incorporate or require mitigation measures.

Any person has the right to comment on this application, receive notice of and participate in any hearings, request a copy of the decision once made, and appeal the final SEPA determination of the project. **Written comments submitted by 5:00 PM on May 3, 2022 will be considered in the application and amended SEPA determination.** Please send comments to the City of La Center, Community Development, 210 E 4th Street, La Center, WA 98629 or by email to Jessica Nash, Permit Technician, at jnash@ci.lacenter.wa.us

Application: City of La Center Road Pavement and Clark Public Utilities Water Main and Flow Station Project (File # 2022-015-SEPA)

Application date: April 19, 2022

Technically Complete: April 19, 2022

Proponent/applicant: Representative: Tony Cooper, P.E., City Engineer, City of La Center. 210 East 4th Street, La Center, WA 98629. Applicant: Same as representative.

Property owner: City of La Center.

Location of proposal: La Center Road right-of-way between NW Timmen Road and the Lewis River Bridge.

Public Hearing: Not applicable. A public hearing will not be required.

Existing Environmental Documents relied upon: SEPA requires that a review of the potential environmental impacts be conducted. City staff and interested agencies will review the proposal for compliance with applicable state requirements and city codes. Through this process, a determination will be made as noted under the following statement of determination.

The following environmental documents were relied upon in the City's assessment of a likely determination of non-significance: SEPA Environmental Checklist dated, April 13, 2022; Archaeological Predetermination Survey for the City of La Center to Install a Water Line (Report No. 2574) dated April 5, 2022; La Center Road Paving project plans dated April 22, 2020; Geotechnical Site Investigation (Columbia West Engineering, Inc.) dated March 8, 2022; and Flow Station and 12-inch Water Main Plans (CPU) dated March 23, 2022.

Statement of Determination: As lead agency under the State Environmental Policy Act (SEPA) rules [Chapter 197-11, Washington Administrative Code] the City of La Center must determine if there are potential significant adverse environmental impacts associated with this proposal. The options include the following:

- Determination of Significance – (DS). The impact cannot be mitigated and therefore requires the preparation of an Environmental Impact Statement (EIS).
- Mitigated Determination of Nonsignificance – (MDNS). The impact can be mitigated through conditions of approval, or;
- Determination of Nonsignificance – (DNS). The impacts can be addressed by applying the city codes.

Approval Standards/Applicable Laws: The following standards will apply to the application: 18.300 Critical Areas; 18.310 Environmental Policy; 18.320 Stormwater and Erosion Control; and 18.360 Archaeological Resource Protection.

Mitigation Measures: The applicant will be required to comply with all applicable approval standards and laws in addition to the following project-specific mitigation measures:

- General: The applicant shall construct the project in substantial conformance with the La Center Road Paving Project plans dated April 22, 2020 and the Flow Station and 12-inch Water Main Plans dated March 23, 2022.
- Earth: The applicant shall comply with the City's erosion control and stormwater requirements in LCMC 18.320 (Stormwater and Erosion Control) during construction.
- Earth: The applicant shall comply with the recommendations of the Geotechnical Site Investigation by Columbia West Engineering, Inc. dated March 8, 2022.
- Air: Construction equipment shall have manufacturer's standard emission's equipment.
- Air: The contractor shall implement standard best management practices such as watering to control dust during construction.
- Air: The emergency power generator shall meet all Southwest Clean Air Agency requirements for emergency power generators and the applicant shall obtain all necessary permits from the Southwest Clean Air Agency prior to construction.
- Water: The applicant shall comply with the City's erosion control and stormwater requirements in LCMC 18.320 (Stormwater and Erosion Control) during construction.
- Plants: The applicant shall replace all grass or other vegetation removed during construction.
- Plants: The applicant shall screen the flow station facility in compliance with the requirements of LCMC 18.245.

- Environmental Health: The applicant shall apply hot mix asphalt concrete in accordance with all federal and state regulations.
- Environmental Health: The applicant shall prepare and implement a spill control plan, which will include the proper use and storage of hazardous materials, and a hazardous material spill response and clean up protocol, in the event of a mishap.
- Environmental Health (Noise): The contractor's construction equipment must make sure their equipment meets the noise levels in Washington Administrative Code Chapter 173-60.
- Environmental Health (Noise): Construction is limited to 7 a.m. to 6 p.m., Monday through Friday.
- Land and Shoreline Use: The applicant shall comply with the recommendations of the Geotechnical Site Investigation by Columbia West Engineering, Inc. dated March 8, 2022.
- Land and Shoreline Use: CPU shall apply for all applicable land use permits for the flow station building including, but not limited to preliminary and final site plan review and critical areas permit prior to construction, as applicable.
- Light and Glare: All proposed exterior lighting for the flow station, if proposed, shall comply with the City of La Center's outdoor lighting standards in LCMC 18.282.
- Recreation: The contractor shall only be allowed access to the gravel parking area west of La Center Road during construction.
- Recreation: The applicant shall place signs at the entrances to the gravel parking area west of La Center Road 48 hours in advance of closing the area that notifies the public of the parking lot closure and shall maintain the signs throughout construction. Access to the recreational parking area east of the bridge shall be maintained throughout construction.
- Historic and Cultural Preservation: In the event that any archaeological or historic materials are encountered during project activity, work in the immediate area (initially allowing for a 100-foot buffer; this number may vary by circumstance) must stop and the following actions must be taken:
 - Implement reasonable measures to protect the discovery site, including any appropriate stabilization or covering;
 - Take reasonable steps to ensure confidentiality of the discovery site; and,
 - Take reasonable steps to restrict access to the site of discovery.

The applicant shall notify the concerned Tribes and all appropriate county, city, state, and federal agencies, including the Washington Department of Archaeology and Historic Preservation and the City of La Center. The agencies and Tribe(s) will discuss possible measures to remove or avoid cultural material, and will reach an agreement with the applicant regarding actions to be taken and disposition of material. If human remains are uncovered, appropriate law enforcement agencies shall be notified first, and the above steps followed. If the remains are determined to be Native, consultation with the affected Tribes will take place in order to mitigate the final disposition of said remains.


See the Revised Code of Washington, Chapter 27.53, "Archaeological Sites and Resources," for applicable state laws and statutes. See also Washington State Executive Order 05-05, "Archaeological and Cultural Resources." Additional state and federal law(s) may also apply.

Copies of the above inadvertent discovery language shall be retained on-site while project activity is underway.

Contact	Information
Cowlitz Indian Tribe, Nathan Reynolds, Interim Cultural Resources Manager	Phone: 360-575-6226; email: nreynolds@cowlitz.org
City of La Center, Bryan Kast, Public Works Directors	Phone: 360- 263-5189; email: bkast@ci.lacenter.wa.us
Office of the Clark County Medical Examiner (for human remains)	Phone: 564-397-8405; email: medical.examiner@clark.wa.gov
Washington DAHP, Dr. Allison Brooks, Ph.D, Director	Phone: 360-586-3066; email: Allyson.Brooks@dahp.wa.gov

- Transportation: The applicant is required to maintain access to properties fronting La Center Road throughout construction.

Responsible Official: Greg Thornton, Mayor

Date: 4-19-22 **Signature:** 

Issued: April 19, 2022



File Name: City of La Center Road Pavement and Clark Public Utilities Water Main and Flow Station Project (File # 2022-015-SEPA)

Date Published: April 19, 2022

Attached is a likely SEPA environmental Mitigated Determination of Non-Significance (MDNS) and associated environmental checklist issued pursuant to the State Environmental Policy Act (SEPA) rules (WAC 197-11). The City (lead agency) completed evaluation of the environmental checklist as required by WAC 197-11. You may comment on this likely determination within fourteen (14) days of the issuance of this notice April 19, 2022. The lead agency will not act on this proposal until the close of the **14-day comment period, which ends May 3, 2022.**

Please address any correspondence to: Jessica Nash, Permit Technician
ATTN: SEPA COMMENTS – La Center Road Improvements and
CPU Flow Station
210 East 4th Street
La Center, WA 98629

DISTRIBUTION:

Federal Agencies: National Marine Fisheries, PRD Division (Mail)
US Army Corps of Engineers, Regulatory Functions (Mail)

Native American Interests: Confederated Tribes of the Grande Ronde (Mail)
Cowlitz Tribe, Longview, WA (Mail and email)\
Confederated Tribes and Bands of the Yakama Nation

State Agencies: Dept of Ecology (Email)
Dept of Health, Office of Drinking Water (Email)
Dept of Commerce (Email)
Dept of Fish & Wildlife, Region 5 (Email)
Dept of Natural Resources, SEPA Center (Email)
Dept of Transportation, Environmental Services (Email)
Dept of Transportation, SW Region (Email)
Department of Archaeology & Historic Preservation (Email)
Washington Parks & Recreation Commission (Email)

Local Agencies: City of Ridgefield (Email)
Clark County, Dept of Community Development (Email)
Clark County, Dept of Health (Email)
Clark County, Dept of Parks & Recreation (Mail)
Clark County, Dept of Public Works (Email)
Clark County Sheriff
Clark County Fire and Rescue
Town of Yacolt (Email)
La Center Police Department

School Districts: La Center (WA) School District (Mail)

Special Purpose Agencies:	Clark Public Utilities (Email) Columbia River Economic Development Council (Email) C-TRAN (Email) Lower Columbia Fish Recovery Board Southwest Clean Air Agency Southwest Washington Regional Transportation Council Clark Regional Wastewater District KWRL Transportation Cooperative
Libraries:	Fort Vancouver Regional Library, La Center (Mail)
Fire Districts:	Clark County Fire & Rescue
Media:	The Columbian
Other Interested Parties:	Audubon Society, Vancouver (Mail) Clark County Natural Resources Council (Email) NW Natural (Mail) Vancouver Wildlife League (Mail)



NW La Center Road



Legend

- ☐ Taxlots
- All Roads**
 - Interstate
 - State Route
 - Arterial
 - Forest Arterial
 - Minor Collector
 - Forest Collector
 - Private or Other
- Cities Boundaries
- Urban Growth Boundaries

Notes:

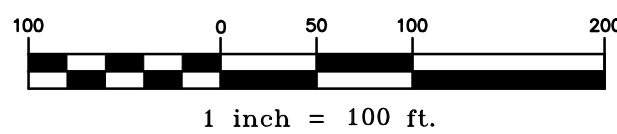
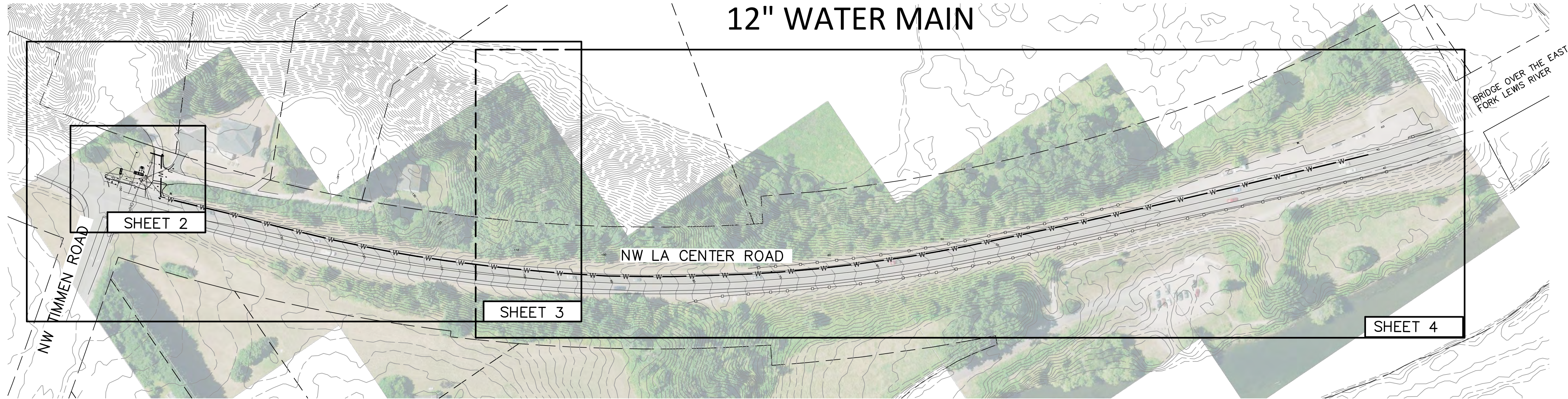
752.3 0 376.17 752.3 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Clark County, WA. GIS - <http://gis.clark.wa.gov>

This map was generated by Clark County's "MapsOnline" website. Clark County does not warrant the accuracy, reliability or timeliness of any information on this map, and shall not be held liable for losses caused by using this information.

Exhibit A.5

FLOWSTATION #1 IMPROVEMENTS
&
NW LA CENTER ROAD
12" WATER MAIN



FOR ALL CROSSINGS:

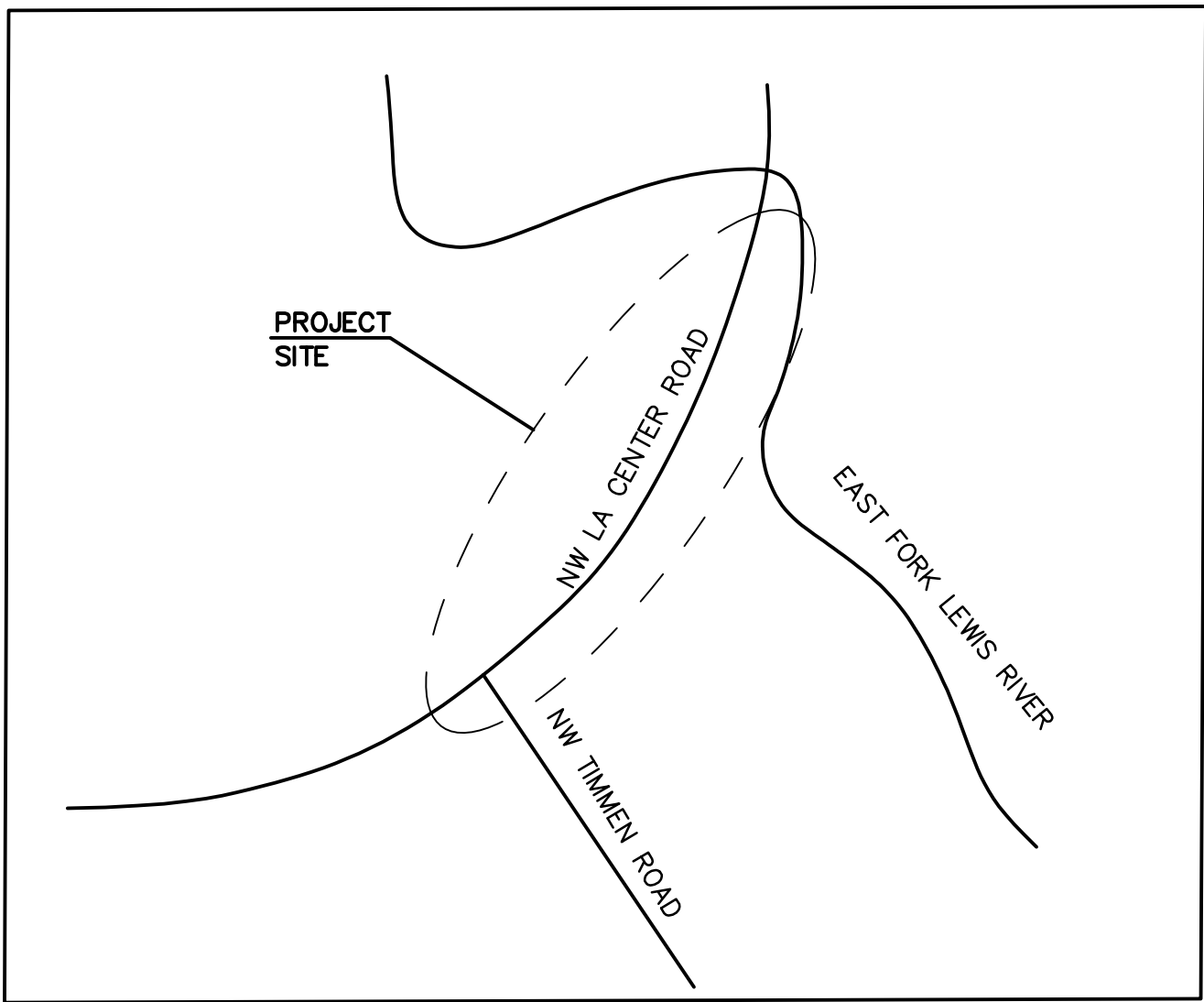
VERIFY EXACT LOCATION & ELEVATION PRIOR TO CONSTRUCTION. ANY CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

MAINTAIN ALL MINIMUM CLEARANCE BETWEEN NEW WATER LINES & EXISTING UTILITIES AS IDENTIFIED IN THE PLANS, AND DESCRIBED BY THE GENERAL NOTES.

PLAN INDICATES MAINLINE CROSSINGS ONLY. CONTRACTOR TO VERIFY LOCATION OF LATERALS AS REQUIRED.

LEGEND

---	---	EXISTING PROPERTY LINE
---	---	EXISTING EDGE OF ASPHALT
---	---	EXISTING EDGE OF GRAVEL
XOH	XOH	EXISTING OVERHEAD ELECTRICAL LINE
XE	XE	EXISTING UNDERGROUND ELECTRICAL LINE
XCOM	XCOM	EXISTING COMMUNICATION LINE
XW	XW	EXISTING WATER LINE
X	X	EXISTING FENCE
---	---	EXISTING CULVERT
□		EXISTING TELEPHONE PEDESTAL/BOX
○		EXISTING UTILITY POLE
○	○	EXISTING UTILITY POLE WITH ANCHOR
⊗		EXISTING FIRE HYDRANT
⊕		EXISTING WATER VALVE
□		EXISTING WATER METER
★		EXISTING TREE
W	W	NEW WATER LINE
W	■	NEW MANUAL AIR RELEASE VALVE
▶		NEW THRUST BLOCK
⊗		NEW FIRE HYDRANT ASSEMBLY



VICINITY MAP
N.T.S.

SHEET INDEX:

COVER SHEET	1
EXISTING CONDITIONS PLAN	2
FLOW STATION PLAN	3
STORMDRAIN PLAN	4
12" WATER MAIN PLAN	5
12" WATER MAIN PLAN	6
EROSION CONTROL PLAN	7
LANDSCAPE PLAN	8
BUILDING PLAN	9

LIST OF ABBREVIATIONS

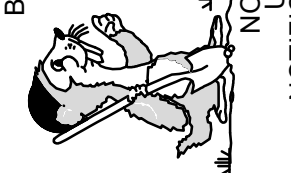
AGG	Aggregate
ASPH	Asphalt
BFV	Butterfly Valve
BO	Blow-Off
CPU	Clark Public Utilities
CV	Check Valve
DIA	Diameter
DIP	Ductile Iron Pipe
DR	Dimension Ratio
EA	Each
ELEC	Electric
EP	Edge of Pavement
EXTG	Existing
FH	Fire Hydrant
FLG	Flange
FO	Fiber Optic
GRND	Ground
GV	Gate Valve
HDPE	High Density Polyethylene
LF	Linear Feet
MAX	Maximum
MIN	Minimum
MJ	Mechanical Joint
PC	Pressure Class
PE	Plain End or Polyethylene Pipe
PSI	Pounds Per Square Inch
PVC	Polyvinyl Chloride
REST	Restrained
R/W	Right of Way
SHT	Sheet
STA	Station
STD	Standard
TB	Thrust Block
TEL	Telephone
W/	With



CALL 48 HOURS
BEFORE YOU DIG

1-800-
553-4344

"It's the Law"



FLOW STATION #1
&
12" WATER MAIN IMPROVEMENTS

COVER SHEET

RIO	567073	BCL	BRG
DESIGNED			
DRAWN			
CHECKED			
SCALE	See Bar Scale		
DATE	5-31-2022		
SHEET	1	OF	9

REVISION

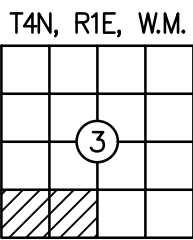
MARK

DATE

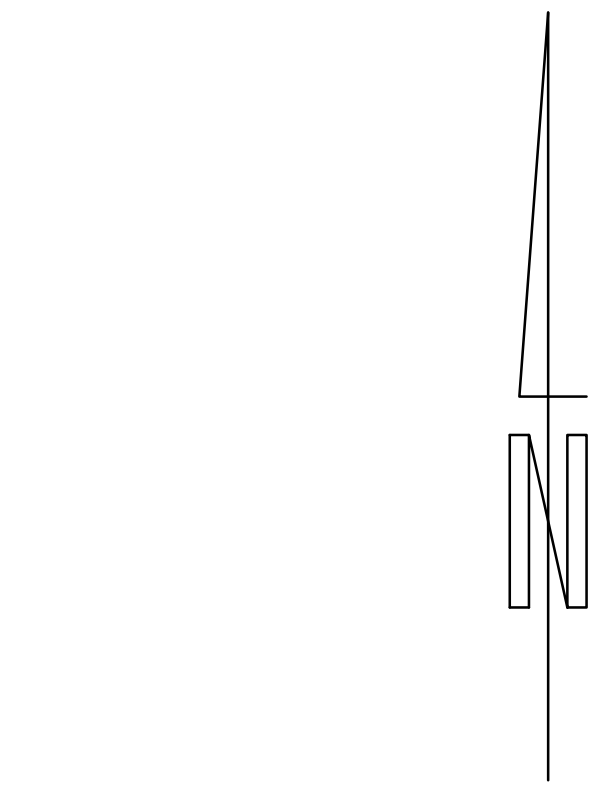
c:\civil 3d projects\21-0003 cpu drawing\la center st\sheet1 -cover.dwg

EXISTING CONDITIONS
SURVEY

LOCATED IN A PORTION OF
THE SW 1/4 AND THE SW 1/4
OF THE SW 1/4 OF SECTION 3
T. 4 N., R. 1 E., W.M.
CLARK COUNTY, WASHINGTON



- LEGEND:
- WV INDICATES WATER VALVE
 - WM INDICATES WATER METER
 - WB INDICATES WATER BLOW OFF
 - PP INDICATES POWER POLE
 - GA INDICATES GUY ANCHOR
 - JB INDICATES JUNCTION BOX
 - ESB INDICATES ELECTRIC SERVICE BOX
 - TV INDICATES TELEPHONE VAULT
 - TSB INDICATES TELEPHONE SERVICE BOX
 - TM INDICATES TELEPHONE MARKER
 - AFN: INDICATES AUDITOR'S FILE NUMBER
 - PIN: INDICATES PARCEL IDENTIFICATION NUMBER
 - ASPH INDICATES ASPHALT
 - GRVL INDICATES GRAVEL
 - INDICATES PROPERTY BOUNDARY
 - INDICATES EDGE OF ASPHALT
 - INDICATES EDGE OF CONCRETE
 - INDICATES EDGE OF GRAVEL
 - INDICATES 5 FOOT INTERVAL CONTOUR
 - INDICATES 1 FOOT INTERVAL CONTOUR
 - INDICATES PAINT STRIPE
 - INDICATES ELECTRIC LOCATE
 - INDICATES TELEPHONE LOCATE
 - INDICATES WATER LOCATE
 - INDICATES OVER HEAD POWER



SCALE 1 INCH = 10 FEET

HORIZONTAL DATUM:
NAD 83(2011)(EPOCH 2010.0000), WASHINGTON STATE PLANE COORDINATE SYSTEM,
SOUTH ZONE, US SURVEY FEET.

VERTICAL DATUM:
NAVD 88(GEOD 18)

NOTE:
A UTILITY LOCATE WAS CALLED FOR BY OTHERS. THE UNDERGROUND UTILITIES AS
SHOWN HEREIN ARE AS MARKED AT THE TIME OF THIS SURVEY. UNDERGROUND
UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY. UNDERGROUND CONNECTIONS
ARE SHOWN AS STRAIGHT LINES BETWEEN SURFACE LOCATIONS BUT MAY CONTAIN
BENDS OR CURVES NOT SHOWN. SOME UNDERGROUND LOCATIONS HEREON MAY
HAVE BEEN TAKEN FROM PUBLIC RECORDS. M.G.S. ASSUMES NO LIABILITY FOR THE
ACCURACY OF PUBLIC RECORDS.

MINISTER-GLAESER
SURVEYING INC.
2200 E. EVERGREEN BLVD.
VANCOUVER, WA 98661
(360) 694-3313

SCALE: 1"=10'
JOB NO. 21-220
DATE: 5/12/2021
CALC BY: RDH
DRAWN BY: RDH
CHECKED BY: DAR
SHEET 2 OF 9

SHEET 2
EXISTING CONDITIONS

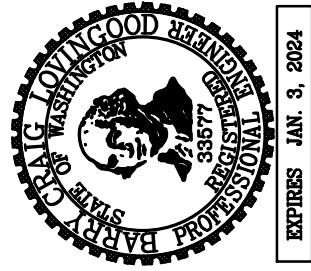


NEW 12" WATER MAIN
EXTENSION TO BRIDGE AT
EAST FORK LEWIS RIVER

R/O	567073
DESIGNED	BCL
DRAWN	BRC
CHECKED	
SCALE	See Bar Scale
DATE	5-31-2022
SHEET	3 OF 9

FLOW STATION #1
&
12" WATER MAIN IMPROVEMENTS
FLOW STATION PLAN

DATE	MARK	REVISION



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NORTHWEST
UTILITIES
NOTIFICATION CENTER





NEW 12" WATER MAIN
EXTENSION TO BRIDGE AT
EAST FORK LEWIS RIVER

SURFACES SUMMARY:		
DRIVEWAY AREA	=	723 SF
SIDEWALK AREA	=	630 SF
ROOF AREA	=	168 SF
GRAVEL SLOPE	=	246 SF
TOTAL DISTURBED AREA	=	1,767 SF

Clark
Public
Utilities

CALL 48 HOURS
BEFORE YOU DIG
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553-4344
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NORTHWEST
NOTIFICATION CENTER

CLARK COUNTY
PUBLIC UTILITY
DISTRICT
SEAL
EXP. JAN. 3, 2024

FLOW STATION #1
&
12" WATER MAIN IMPROVEMENTS
STORM DRAIN PLAN

RIO 567073

DESIGNED BCL

DRAWN BRC

CHECKED See Bar Scale

DATE 5-31-2022

SHEET 4 OF 9

REVISION

MARK

DATE

c:\civil 3d\projects\121-003 cpu drafting\la center st\type 11 land use appl4-stormdrain plan.dwg

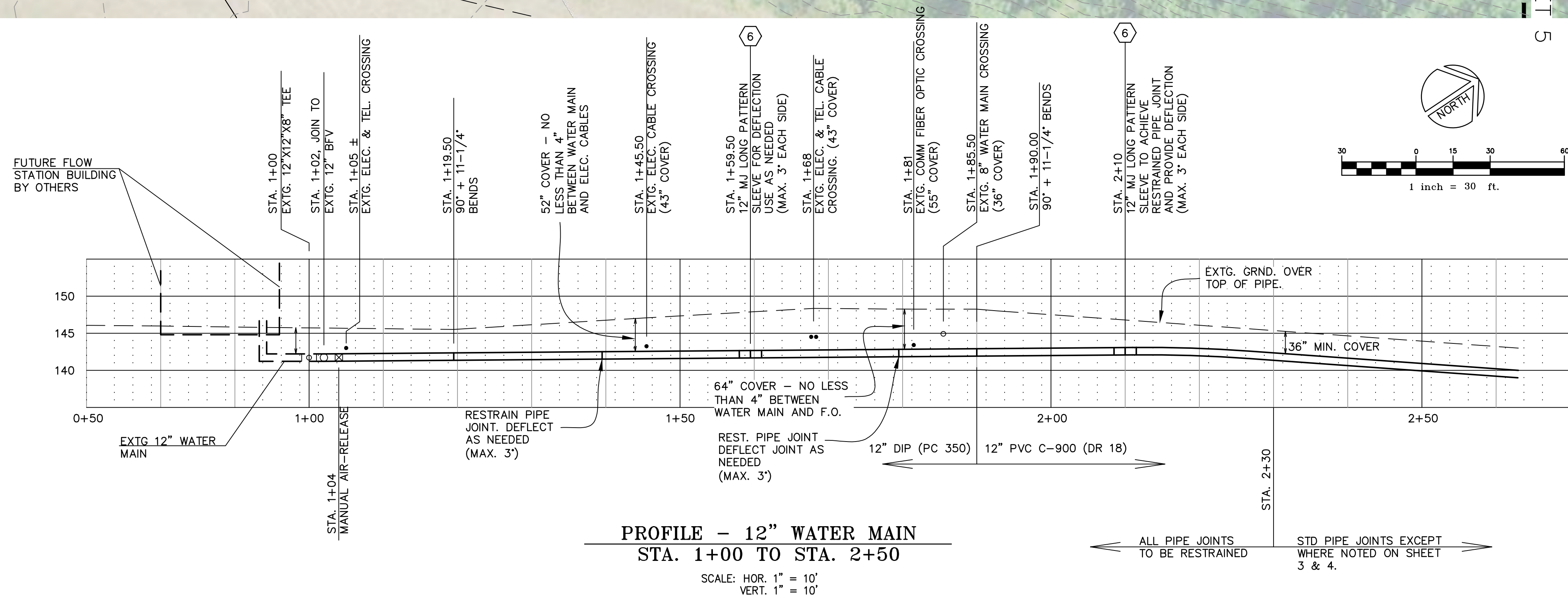


GENERAL NOTES

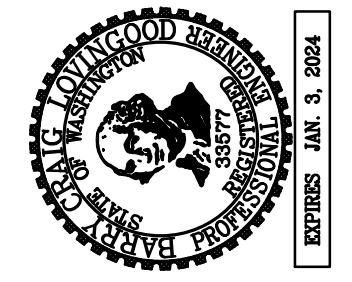
- Depths of water main called out on the plan are as measured from finished ground to top of pipe. In no case shall depth be less than 3 feet.
- Thrust Blocks are required at all tees, bends, and dead ends.
- All MJ fittings shall be restrained by MJ restraint glands.
- Only the CPU inspector will operate valves.
- After the water mains are constructed, the CPU inspector will fill all water mains with assistance from the contractor. The CPU inspector will inject chlorine solution with the initial fill to disinfect the mains. After successful disinfection, the CPU inspector will flush the water mains with the assistance of the contractor. After successful disinfection and flushing, the CPU inspector will pressure test the water mains with the assistance of the contractor.
- Restrained pipe joints are required near fittings, bends, tees, and valves as noted on the plans and as required per the standard details.
- Vertical bends shall not be used unless specifically noted on the plans and allowed by the CPU engineer. When allowed by the CPU engineer, all pipes either side of the vertical bend shall utilize restrained joints as shown on the plan and standard details.

CONSTRUCTION NOTES:

- (2) 12" PVC C-900 (DR 18) WATER MAIN, IMPORTED GRANULAR BACKFILL
- (6) 12" MJ LONG PATTERN SLEEVE WITH MJ RESTRAINT GLANDS
- (12) TRENCH SURFACE RESTORATION WITHIN LA CENTER ROAD ASPHALT ROADWAY SHOULDER - 6" THICKNESS HOT MIX ASPHALT (2 LIFTS)



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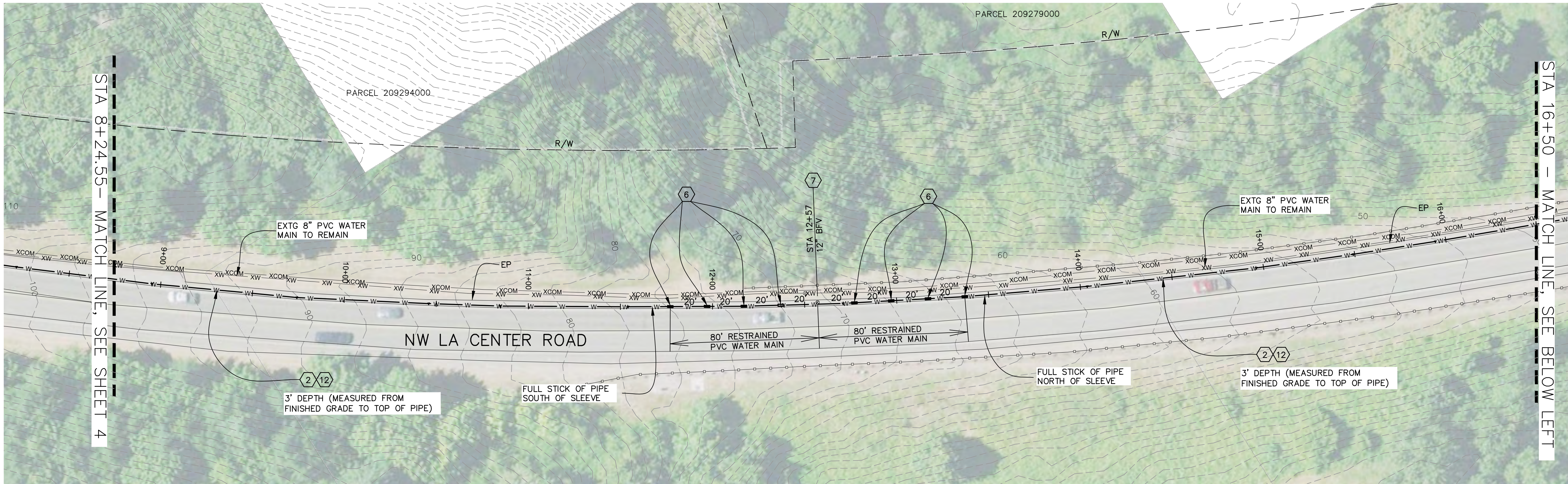


DATE	MARK	REVISION

NW LA CENTER ROAD 12" WATER MAIN

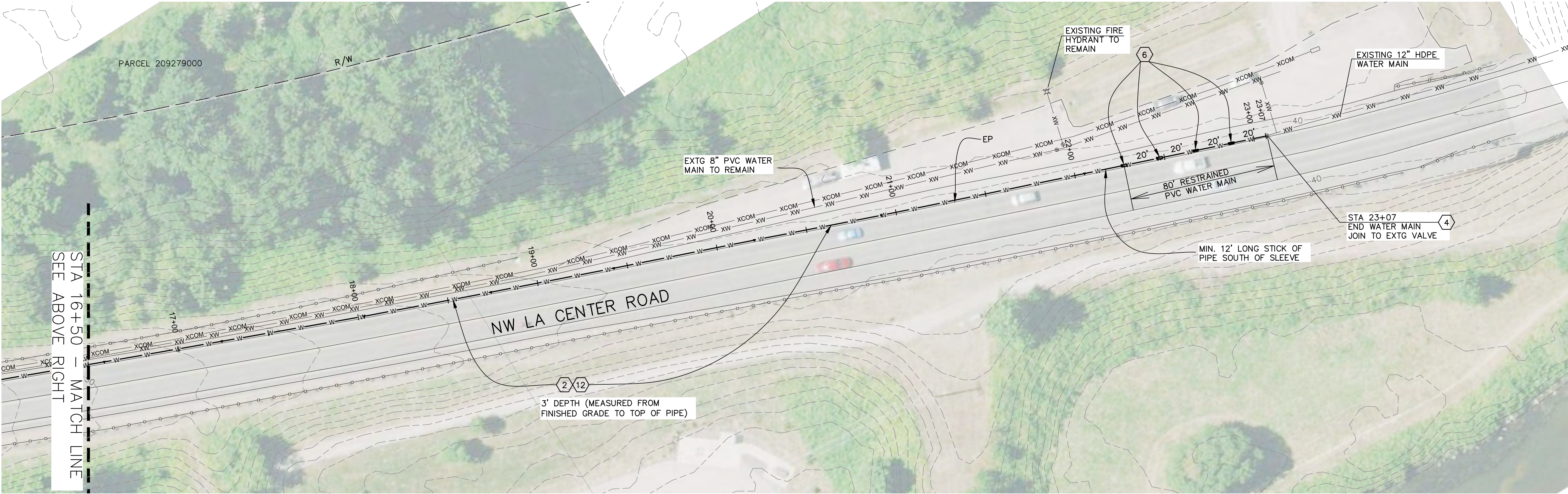
WATER MAIN PLAN

RIO	567073
DESIGNED	BCL
DRAWN	BRC
CHECKED	See Bar Scale
DATE	5-31-2022
SHEET	5 OF 9

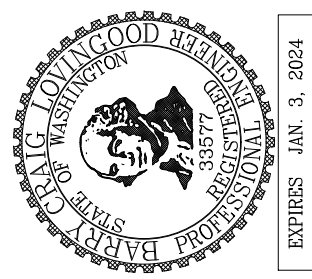


CONSTRUCTION NOTES:

- 2 12" PVC C-900 (DR 18) WATER MAIN, IMPORTED GRANULAR BACKFILL
- 4 CONNECT TO EXTG 12" BFV. WEST END OF BFV IS MJ. CONNECT TO MJ END WITH PE PIPE AND MJ RESTRAINT GLAND.
- 6 12" MJ LONG PATTERN SLEEVE WITH MJ RESTRAINT GLANDS
- 7 1 EA - 12" BFV, MJ X MJ
2 EA - 12" MJ RESTRAINT GLAND
- 12 TRENCH SURFACE RESTORATION WITHIN LA CENTER ROAD ASPHALT ROADWAY SHOULDER - 6" THICKNESS HOT MIX ASPHALT (2 LIFTS)



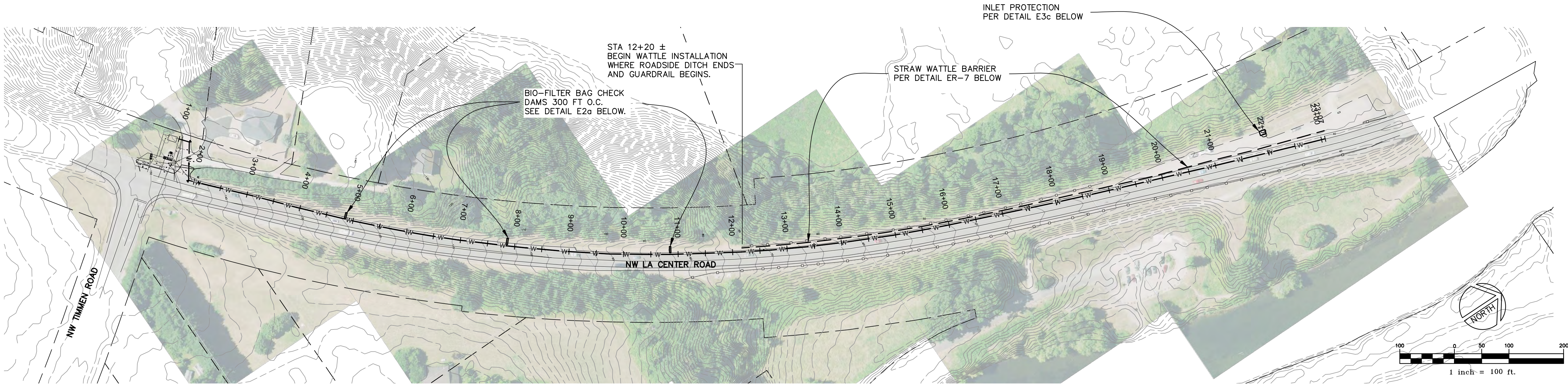
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UTILITIES
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REVISION	MARK	DATE

NW LA CENTER ROAD
12" WATER MAIN
WATER MAIN PLAN

RIO	567073
DESIGNED	BCL
DRAWN	BRC
CHECKED	
SCALE	NTS
DATE	5-31-2022
SHEET	6 OF 9



- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE AND IN WORKING CONDITION PRIOR TO ANY LAND DISTURBING ACTIVITY CAUSED BY CLEARING OR GRADING. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE APPROVED BY THE CITY PRIOR TO THE COMMENCEMENT OF WORK. THE CONTRACTOR SHALL CALL FOR AN ON-SITE INSPECTION WHEN EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE AND PRIOR TO COMMENCEMENT OF WORK.
- THE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE SITED, DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS IN THE CITY OF LA CENTER ENGINEERING STANDARDS FOR PUBLIC WORKS CONSTRUCTION.
- THE DEVELOPER IS RESPONSIBLE FOR MAINTAINING EROSION PREVENTION AND SEDIMENT CONTROL MEASURES DURING AND AFTER INSTALLATION OF ALL UTILITY WORK ASSOCIATED WITH UTILITY TRENCHES.
- PRIOR TO ANY SITE EXCAVATION, ALL STORM DRAINAGE INLETS SHALL BE PROTECTED DOWN SLOPE FROM ANY DISTURBED OR CONSTRUCTION AREAS PER THE STANDARD DETAILS TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAINAGE SYSTEM PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREAS. CLEAN THE FILTER FABRIC AS NECESSARY TO MAINTAIN DRAINAGE. REMOVE FILTER AND CLEAN CATCH BASINS FOLLOWING COMPLETION OF SITEWORK.
- THE CONTRACTOR SHALL NOT ALLOW SEDIMENT OR DEBRIS TO ENTER NEW OR EXISTING PIPES, CATCH BASINS OR INFILTRATION SYSTEMS.
- NEWLY CONSTRUCTED OR MODIFIED INLETS AND CATCH BASINS ARE TO BE PROTECTED IMMEDIATELY UPON INSTALLATION.
- TEMPORARY SEEDING AND MULCHING OF FILL SLOPES AND DIVERSION DIKES SHALL BE COMPLETED WITHIN ONE WEEK AFTER ROUGH GRADING.
- ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY THE APPROPRIATE BEST MANAGEMENT PRACTICES (BMPs). DURING THE PERIOD FROM OCTOBER 1 TO APRIL 30 NO SOIL SHALL BE EXPOSED FOR MORE THAN TWO (2) DAYS. FROM MAY 1 TO SEPTEMBER 30 NO SOIL SHALL BE EXPOSED FOR MORE THAN SEVEN (7) DAYS.
- MATERIAL STOCKPILES ARE TO BE PROTECTED BY THE FOLLOWING MEANS:
 - TEMPORARY: COVER PILES WITH TARPS OR PLASTIC SHEETING WEIGHTED WITH CONCRETE BLOCKS, LUMBER OR TIRES.
 - PERMANENT: COVER PILES WITH TARPS OR PLASTIC, OR RESEED. PERIMETER AREAS AROUND PILES ARE TO BE SURROUNDED WITH EROSION CONTROL FILTER FABRIC FENCES UNTIL SOIL SURFACE IS STABILIZED WITH RESEEDING.
- THE CONTRACTOR SHALL MAINTAIN ON SITE A WRITTEN DAILY LOG OF EROSION CONTROL BMP MAINTENANCE.
- IF THE CITY INSPECTOR OR ENGINEER HAS EVIDENCE OF POOR CONSTRUCTION PRACTICES OR IMPROPER EROSION PREVENTION BMPs, CITATIONS AND/OR A STOP WORK ORDER SHALL BE ISSUED UNTIL PROPER MEASURES HAVE BEEN TAKEN AND APPROVED BY THE CITY OF LA CENTER. IF THE BMPs APPLIED TO A SITE ARE INSUFFICIENT TO PREVENT SEDIMENT FROM REACHING WATER BODIES, ADJACENT PROPERTIES, OR PUBLIC RIGHT-OF-WAY, THEN THE CITY SHALL REQUIRE ADDITIONAL BMPs.
- ALTERNATIVE BMPs NOT SHOWN IN THESE DETAILS ARE ACCEPTABLE PROVIDED THEY ARE PART OF ECOLOGY'S WESTERN WASHINGTON STORMWATER MANAGEMENT MANUAL AND THE CITY ENGINEER REVIEWS AND APPROVES THE ALTERNATIVE BMPs AS PART OF THE EROSION CONTROL PLAN PRIOR TO THE START OF CONSTRUCTION.

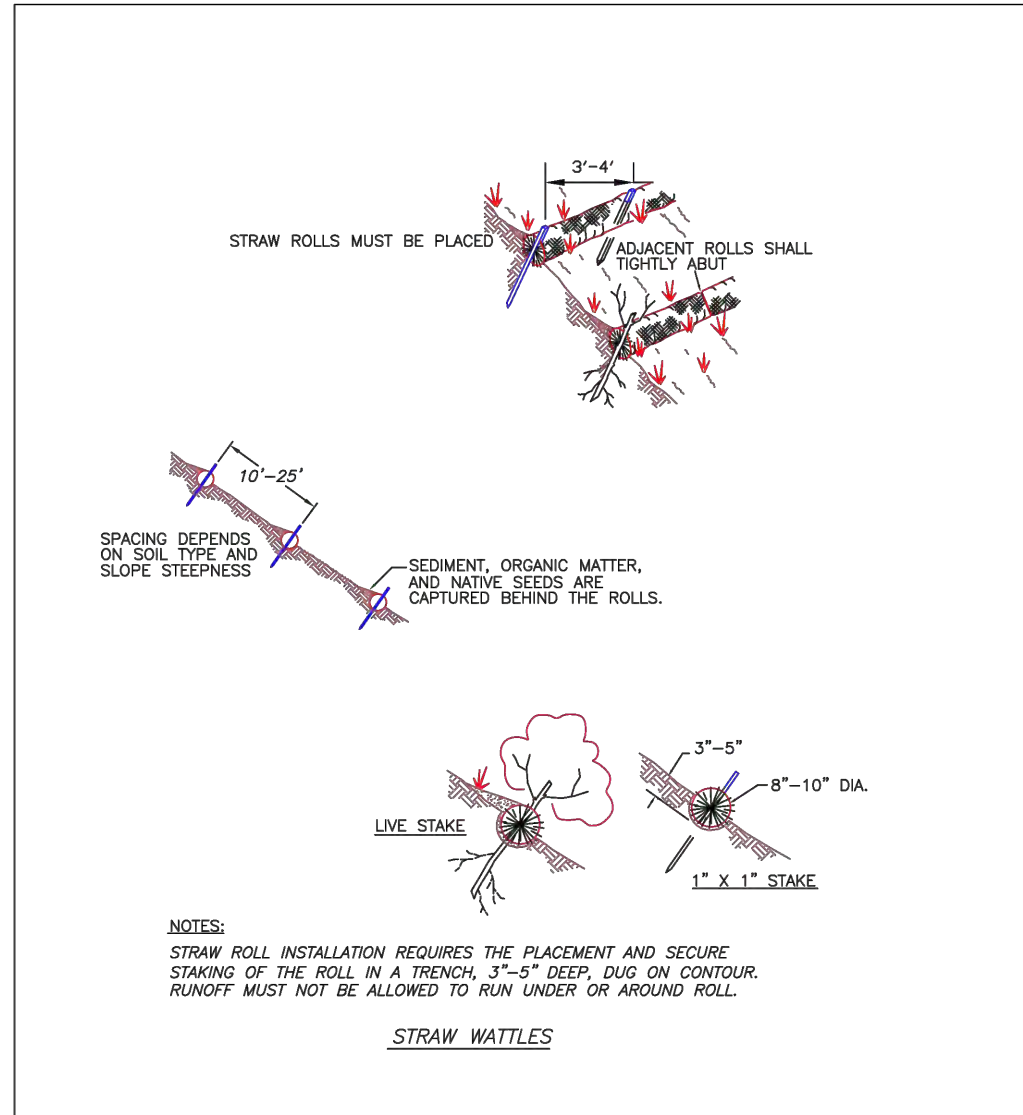
EROSION CONTROL GENERAL NOTES I

CITY OF LA CENTER APPROVED	REVISIONS	DATE	DRAWN/DESIGNED	PLAN #
<i>Barb Stapp, PE 7/23/09</i> CITY ENGINEER DATE				ER-1A

- PROVIDE A 12-INCH DEEP PAD OF CRUSHED ROCK FOR A DISTANCE OF 100 FEET INTO THE SITE FOR ALL ACCESS POINTS UTILIZED BY CONSTRUCTION EQUIPMENT AND TRUCKS. WIDTH OF THE PAD SHALL BE A MINIMUM OF 20 FEET. ALL TRUCKS LEAVING THE SITE SHALL EDGESS ACROSS THE PAD. ACCUMULATED SOIL SHALL BE PERIODICALLY REMOVED, OR ADDITIONAL ROCK SHALL BE PLACED UPON THE PAD SURFACE. ROCK SHALL BE CLEAN 4 INCH TO 8 INCH QUARRY SPALLS. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
- PAVEMENT SWEEPING AND SHOVELING IS REQUIRED. WASHING THE PAVEMENT INTO THE STORM SYSTEM IS NOT PERMITTED.
- AT SITES WITH LESS THAN 1 ACRE OF EXPOSED SOIL, PAD LENGTH MAY BE REDUCED TO 50 FEET. SINGLE FAMILY LOT ENTRANCES MAY HAVE THE PAD LENGTH REDUCED TO 20 FEET.
- INSTALL SEDIMENT FENCE IN ACCORDANCE WITH DETAIL ER-3 PRIOR TO BUILDING CONSTRUCTION AND/OR EXCAVATION TO PREVENT SILT INTRUSION UPON ADJACENT LOTS. IF CONSTRUCTION OCCURS SIMULTANEOUSLY ON ADJACENT LOTS AND THE LOTS HAVE THE SAME OWNER DURING CONSTRUCTION, THE SILT FENCE ALONG THE COMMON LOT LINE MAY BE ELIMINATED.
- CONSTRUCTION ROADS AND PARKING AREAS SHALL BE STABILIZED WHEREVER THEY ARE CONSTRUCTED, WHETHER PERMANENT OR TEMPORARY, FOR THE USE OF CONSTRUCTION TRAFFIC. THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT FROM THE CATCH BASINS, DRYWELLS, UTILITY TRENCHES AND STORM PIPES PRIOR TO ACCEPTANCE BY THE CITY.
- SEDIMENT CONTROL BMPs SHALL BE INSPECTED WEEKLY AND AFTER ANY STORM EVENT PRODUCING RUNOFF. THE INSPECTION FREQUENCY FOR STABILIZED, INACTIVE SITES SHALL BE ONCE EVERY TWO WEEKS OR MORE FREQUENTLY AS DETERMINED BY THE LOCAL PERMITTING AUTHORITY BASED ON THE LEVEL OF SOIL STABILITY AND POTENTIAL FOR ADVERSE ENVIRONMENTAL IMPACTS.
- ALL TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER SITE STABILIZATION IS ACHIEVED OR AFTER TEMPORARY BMPs ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.
- IN AREAS SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST ONE OR MORE OF THE FOLLOWING PREVENTATIVE MEASURES SHALL BE TAKEN FOR DUST CONTROL:
 - MINIMIZE THE PERIOD OF SOIL EXPOSURE THROUGH THE USE OF TEMPORARY GROUND COVER AND OTHER TEMPORARY STABILIZATION PRACTICES.
 - SPRINKLE THE SITE WITH WATER UNTIL THE SURFACE IS WET.
 - SPRAY EXPOSED SOIL AREAS WITH A DUST PALLIATIVE. NOTE: USE OF PETROLEUM PRODUCTS OR POTENTIALLY HAZARDOUS MATERIALS ARE PROHIBITED.
- EXPOSED SURFACES THAT WILL NOT BE BROUGHT TO FINAL GRADING OR GIVEN A PERMANENT COVER TREATMENT WITHIN 30 DAYS OF THE EXPOSURE SHALL HAVE SEED MIX AND MULCH PLACED TO STABILIZE THE SOIL AND REDUCE EROSION/SEDIMENTATION. SEEDING AREAS SHALL BE CHECKED REGULARLY TO ASSURE A GOOD STAND OF GRASS IS BEING MAINTAINED. AREAS THAT FAIL TO ESTABLISH VEGETATION COVER ADEQUATE TO PREVENT EROSION WILL BE RESEED AS SOON AS SUCH AREAS ARE IDENTIFIED.
- APPLY AN APPROVED TEMPORARY SEEDING MIXTURE TO THE PREPARED SEED BED AT A RATE OF 120 LBS./ACRE. NOTE: "HYDRASEEDING" APPLICATIONS WITH APPROVED SEED-MULCH-FERTILIZER MIXTURES MAY ALSO BE USED.

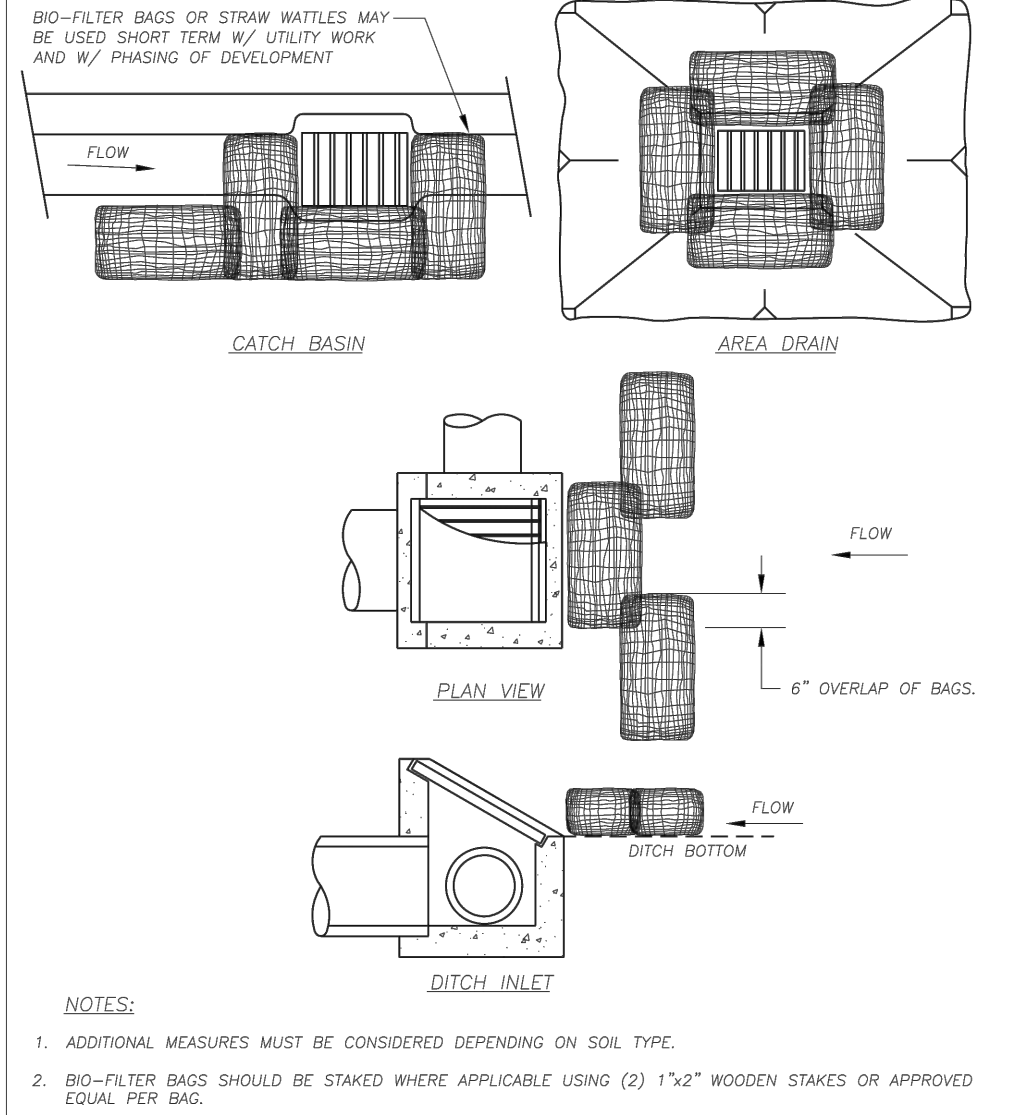
EROSION CONTROL GENERAL NOTES II

CITY OF LA CENTER APPROVED	REVISIONS	DATE	DRAWN/DESIGNED	PLAN #
<i>Barb Stapp, PE 7/23/09</i> CITY ENGINEER DATE				ER-1B



STRAW WATTLES BARRIER

CITY OF LA CENTER APPROVED	REVISIONS	DATE	DRAWN/DESIGNED	PLAN #
<i>Antony Perleberg</i> CITY ENGINEER DATE				ER-7

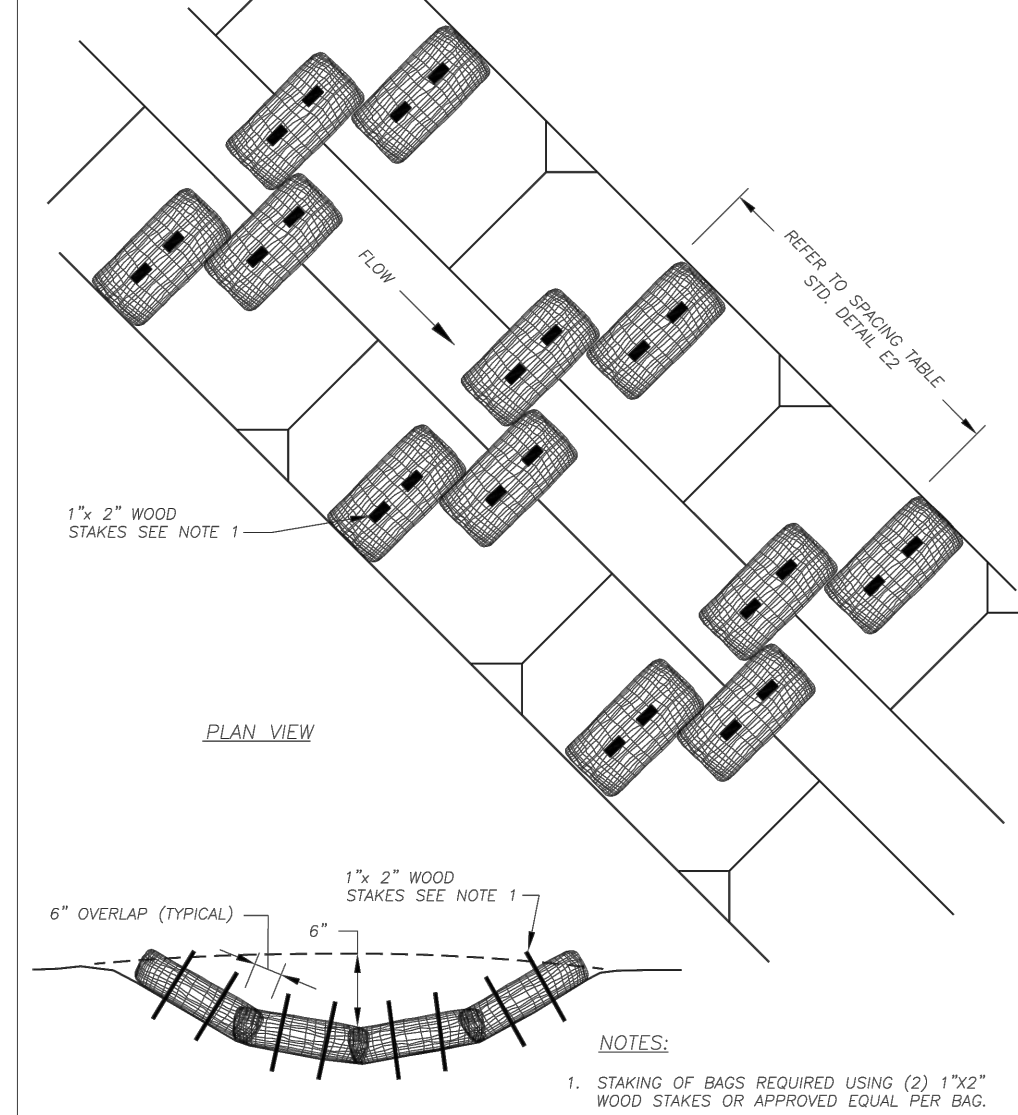


NOTES:

- ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPE.
- BIO-FILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2" WOODEN STAKES OR APPROVED EQUAL PER BAG.
- STRAW WATTLES MUST BE STABILIZED BY ATTACHING WIRE CLIPS TO THE CATCH BASIN PER MANUFACTURERS SPECIFICATIONS.
- INLET PROTECTION MUST BE REGULARLY INSPECTED BY THE EROSION CONTROL INDIVIDUAL TO INSURE PROPER PLACEMENT/FUNCTION AND MAINTENANCE.
- SEE INLET PROTECTION NOTES STD. DETAIL E3.

NO.	REVISIONS	DATE	BY
1			

Department of Public Works CLARK COUNTY proud past, promising future	INLET PROTECTION TYPE 4 BIO-FILTER BAGS APPROVED 5/23/08	STANDARD E3c DESIGNED CHECKED DATE
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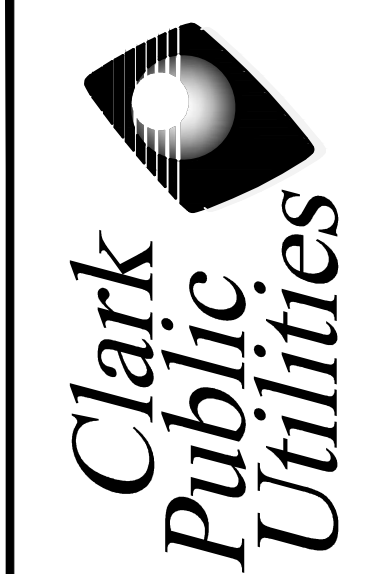


NOTES:

- STAKING OF BAGS REQUIRED USING (2) 1"x2" WOOD STAKES OR APPROVED EQUAL PER BAG.
- SURFACE MUST BE SMOOTH BEFORE APPLICATION.
- SEE CHECK DAM NOTES STD. DETAIL E2.

NO.	REVISIONS	DATE	BY
1			

Department of Public Works CLARK COUNTY proud past, promising future	BIO-FILTER BAGS CHECK DAM APPROVED 5/23/08	STANDARD E2a DESIGNED CHECKED DATE
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DATE	MARK	REVISION

NW LA CENTER ROAD 12" WATER MAIN EROSION CONTROL PLAN SNW TIMMEN ROAD TO BRIDGE

RIO	567073
DESIGNED	BCL
DRAWN	BRC
CHECKED	NTS
SCALE	6-31-2022
DATE	7
SHEET	9

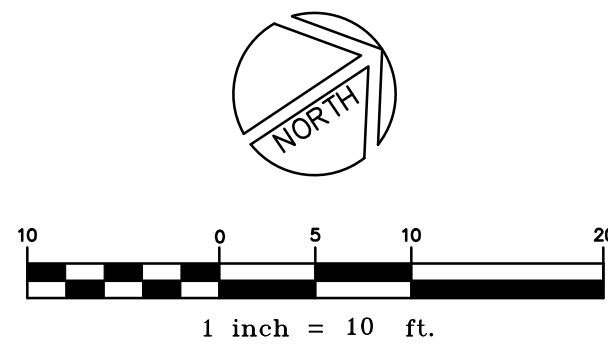
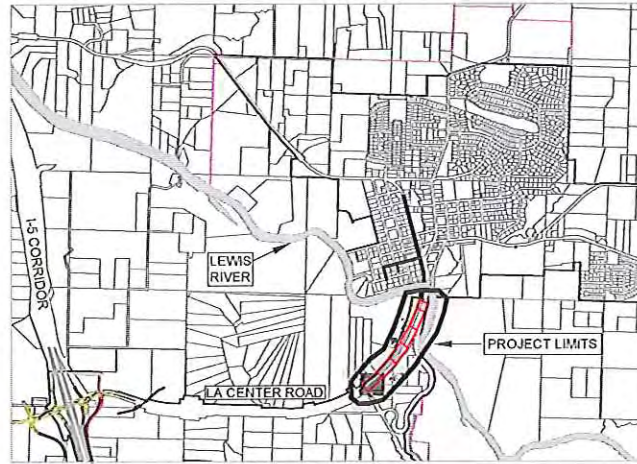


Exhibit A.6

2022 LA CENTER ROAD PAVING PROJECT



VICINITY MAP



SHEET LAYOUT

INDEX OF SHEETS

1	COVER SHEET
2	L1
3	NOTES
4	C1 LC ROAD PAVING P&P 0+35 TO 4+35
5	C2 LC ROAD PAVING P&P 4+35 TO 8+70
6	C3 LC ROAD PAVING P&P 8+70 TO 12+12
7	C4 LC ROAD PAVING P&P 12+12 TO 17+40
8	C5 LC ROAD PAVING P&P 17+40 TO 21+24
9	C6 LC ROAD PAVING P&P 21+24 TO 23+50
10	C7 PARKING/CONCRETE BARRIER PLAN
11	C8 CONCRETE BARRIER/GATE PLAN
12	DTL 1
13	DETAILS
14	DTL 2
15	DETAILS
16	DTL 3
17	TRAFFIC CONTROL STANDARD PLAN

SEPA PLANS DRAFT

BID
DRAWING
COVER SHEET

LA CENTER ROAD PAVING PROJECT

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La Center, WA 98629
(360) 263-7666 Fax
www.cliacenter.wa.us

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GENERAL NOTES:

- 1

THERE IS NO HORIZONTAL OR VERTICAL DATUM. THE CONTOURS SHOWN ARE FROM CLARK COUNTY GIS, AND ARE ONLY FOR INFORMATION
- 2

EXISTING UTILITIES SHOWN ON THE PLANS ARE PER SURFACE LOCATIONS AND RECORD DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION. IF CONFLICT EXISTS, NOTIFY THE ENGINEER AND UTILITY COMPANY. PROCEED ONLY AS DIRECTED AND PER STANDARD POLICY AND REGULATIONS (INCIDENTAL TO STORM SEWER PIPE AND OTHER UTILITY CONFLICTS).
- 3

AT THE END OF EACH DAY, THE CONTRACTOR SHALL CLEAN UP THE PROJECT AREA AND LEAVE IT IN A NEAT AND SECURED MANNER. UPON COMPLETION, THE CONTRACTOR SHALL LEAVE THE PROJECT FREE OF DEBRIS AND UNUSED MATERIAL.
- 4

IF EXISTING CURB AND OTHER FEATURES ALONG THE RECONSTRUCTION OR PAVING PORTION OF THE PROJECT ARE TO BE PROTECTED.
- 5

CONTRACTOR SHALL MAINTAIN INGRESS/EGRESS FROM ALL PRIVATE PROPERTY DRIVEWAYS DURING CONSTRUCTION. THE CONTRACTOR SHALL ALSO ALLOW ACCESS TO THE PARKING ARE UNDERNEATH THE LEWIS RIVER BRIDGE, EXCEPT DURING EXCAVATION AND PLACEMENT OF THE WATERLINE.
- 6

THE CONTRACTOR SHALL PLACE NO PARKNG SIGNS ALONG THE LENGTH OF THE PROJECT DURING CONSTRUCTION TO FACILITATE WORK. ANY VENDORS THAT ARE USING THE "GRAVEL PULLOUT" AREA DURING CONSTRUCTION SHALL NOT BE ALLOWED TO USE THIS AREA DURING CONSTRUCTION. THE CONTRACTOR SHALL PLACE NO PARKING SIGNS AT LEAST 48 HOURS PRIOR TO CONSTRUCTION
- 7

BASE COURSE SHALL BE CSBC PER WSDOT STANDARD SPECIFICATION SECTION 9-03.9(3)
- 8

THE CONTRACTOR SHALL REPLACE ANY REMOVED GRASS ALONG LA CENTER ROAD OR ALONG THE SLOPE OF THE GRAVEL AREA FOLLOWING CONSTRUCTION.

STORMWATER GENERAL NOTES

1.

ALL MATERIALS, WORKMANSHIP AND INSTALLATION OF STORM SEWERS SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE "CITY OF LA CENTER ENGINEERING STANDARDS FOR PUBLIC WORKS CONSTRUCTION" AND THE LATEST EDITION OF THE "WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION", HEREINAFTER REFERRED TO AS THE "STANDARD SPECIFICATIONS", PREPARED BY THE WASHINGTON STATE CHAPTER OF THE AMERICAN PUBLIC WORKS ASSOCIATION (APWA) AND THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION, EXCEPT AS NOTED HEREIN OR ON THE STANDARD PLANS.
2.

THE CONTRACTOR IS TO VERIFY ALL INVERT AND TOP ELEVATIONS OF EXISTING STORM SEWERS, CENTERLINE AND TOP OF CURB ELEVATIONS, AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
3.

ALL STORM SEWER CONSTRUCTION IS SUBJECT TO INSPECTION, AND APPROVAL, PRIOR TO COVER BY THE CITY OF LA CENTER. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION. A PRE-CONSTRUCTION MEETING IS REQUIRED PRIOR BEGINNING OF THE CONSTRUCTION.
4.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION AND TO NOTIFY THE ENGINEER OF ANY POTENTIAL CONFLICTS. THE CONTRACTOR SHALL DIG TEST HOLES OVER ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION TO DETERMINE THEIR EXACT LOCATION. CALL 1-800-424-5555, (NORTHWEST UTILITY NOTIFICATION CENTER), FOR MARK-UP OF EXISTING UTILITIES, A MINIMUM OF 2 WORKING DAYS PRIOR TO START OF CONSTRUCTION.
5.

IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER AND/OR CONTRACTOR TO PROCURE ALL APPLICABLE PERMITS, LICENSES AND CERTIFICATES RELATIVE TO THE TRADES TO COMPLETE THE PROJECT AND FOR THE USE OF SUCH WORK WHEN COMPLETED. COMPLIANCE SHALL BE AT ALL LEVELS, FEDERAL, STATE AND CITY, RELATING TO THE PERFORMANCE OF THIS WORK.
6.

THE CONTRACTOR SHALL OBTAIN ALL OFFSITE CONSTRUCTION EASEMENTS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THAT ALL OFFSITE UTILITIES EASEMENTS HAVE BEEN OBTAINED BY THE OWNER PRIOR TO THE COMMENCEMENT OF ANY OFFSITE CONSTRUCTION.
7.

THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE PUBLIC WORKS DEPARTMENT THAT MUST BE APPROVED BY THE PUBLIC WORKS DEPARTMENT PRIOR TO CONSTRUCTION.
8.

ALL CATCH BASINS AND CURB INLETS SHALL BE STENCILED AS FOLLOWS: "DUMP NO WASTE-DRAINS TO STREAM".
9.

VEGETATION IN BIOFILTRATION SYSTEMS SHALL BECOME FULLY ESTABLISHED PRIOR TO COMMENCING WITH INSTALLATION OF A.C. PAVEMENT FOR ALL AREAS DRAINING INTO THE WATER QUALITY SYSTEM. VEGETATION IN BIOFILTRATION SYSTEMS TO BE THE FOLLOWING GRASS SEED MIX (PROPORTIONS GIVEN BY WEIGHT):

40% REDTOP BENTGRASS, 30% RED FESCUE, 20% TALL FESCUE, 5% PERENNIAL RYE, 5% RUSSIAN WILDRYE.
10.

ALL STORM MANHOLES INSTALLED WITHIN AN EASEMENT OR OUTSIDE THE CITY RIGHT-OF-WAY SHALL HAVE LOCKING LID COVERS.
11.

MATERIAL CERTIFICATION FOR ALL STORM MANHOLES, CATCHBASINS, AND CURB INLETS SHALL BE PROVIDED TO THE CITY INSPECTOR.
12.

ALL ROOF AND LOWPOINT DRAINS TO BE DIRECTED TO APPROVED DRAINAGE PER PLANS.

ALL TRENCH BACKFILLING WILL CONFORM TO THE PLANS AND WSDOT STANDARD SPECIFICATIONS
13.

THE PERFORATED AND SOLID STORM PIPE SHALL HAVE TRACER WIRE PLACED ALONG THE LENGTH

COWLITZ INDIAN TRIBE
INADVERTENT DISCOVERY LANGUAGE

In the event any archaeological or historic materials are encountered during project activity, work in the immediate area (initially allowing for a 100' buffer; this number may vary by circumstance) must stop and the following actions taken:

1.

Implement reasonable measures to protect the discovery site, including any appropriate stabilization or covering; and
2.

Take reasonable steps to ensure the confidentiality of the discovery site; and,
3.

Take reasonable steps to restrict access to the site of discovery.

The project proponent will notify the concerned Tribes and all appropriate county, state, and federal agencies, including the Department of Archaeology and Historic Preservation. The agencies and Tribe(s) will discuss possible measures to remove or avoid cultural material, and will reach an agreement with the project proponent regarding actions to be taken and disposition of material.

If human remains are uncovered, appropriate law enforcement agencies shall be notified first, and the above steps followed. If the remains are determined to be Native, consultation with the affected Tribes will take place in order to mitigate the final disposition of said remains.

See the Revised Code of Washington, Chapter 27.53, "Archaeological Sites and Resources," for applicable state laws and statutes. See also Washington State Executive Order 05-05, "Archaeological and Cultural Resources." Additional state and federal law(s) may also apply.

It is strongly encouraged copies of inadvertent discovery language/plan are retained on-site while project activity is underway.

Contact Information:

Nathan Reynolds
Interim Cultural Resources Manager
Cowlitz Indian Tribe
PO Box 2547
Longview, WA 98632
360-575-6226 Office
360-577-6207 Fax
nreynolds@cowlitz.org

Revised 19 September 2017

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2022 LA CENTER ROAD PAVING-TIB


NOTES



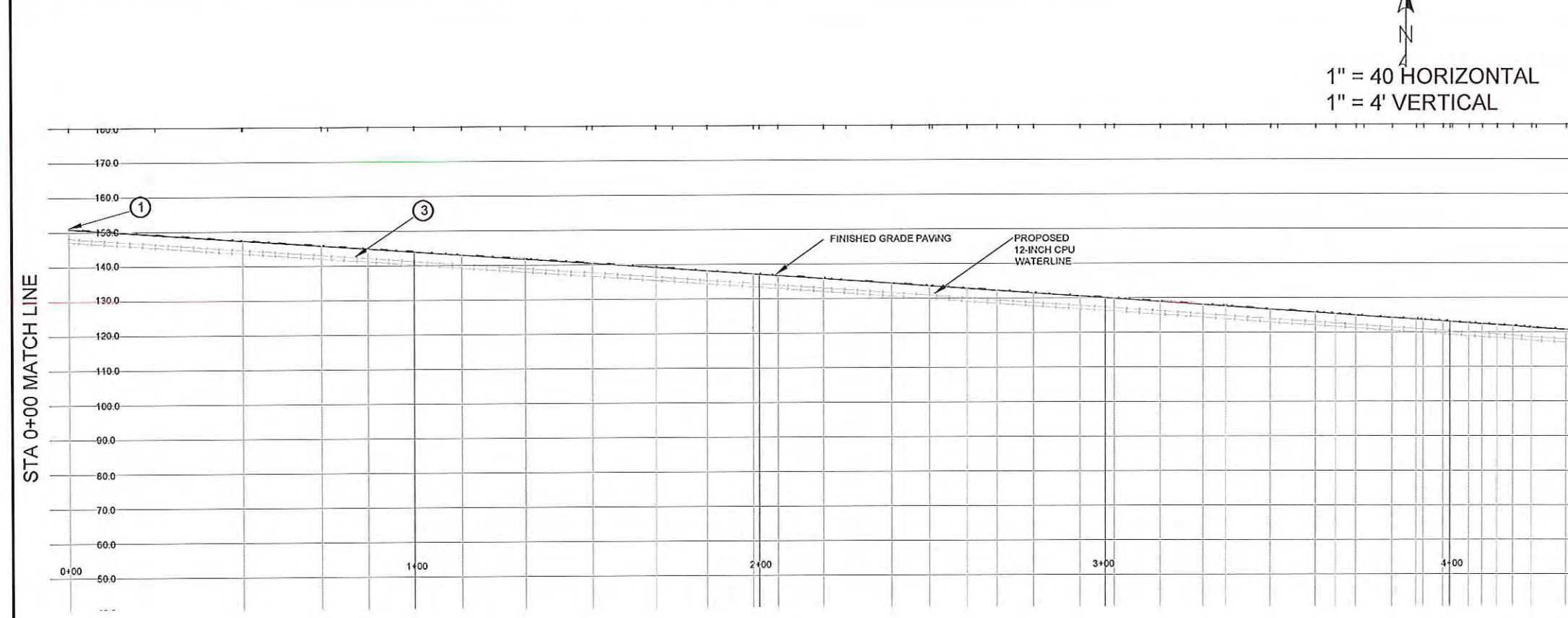
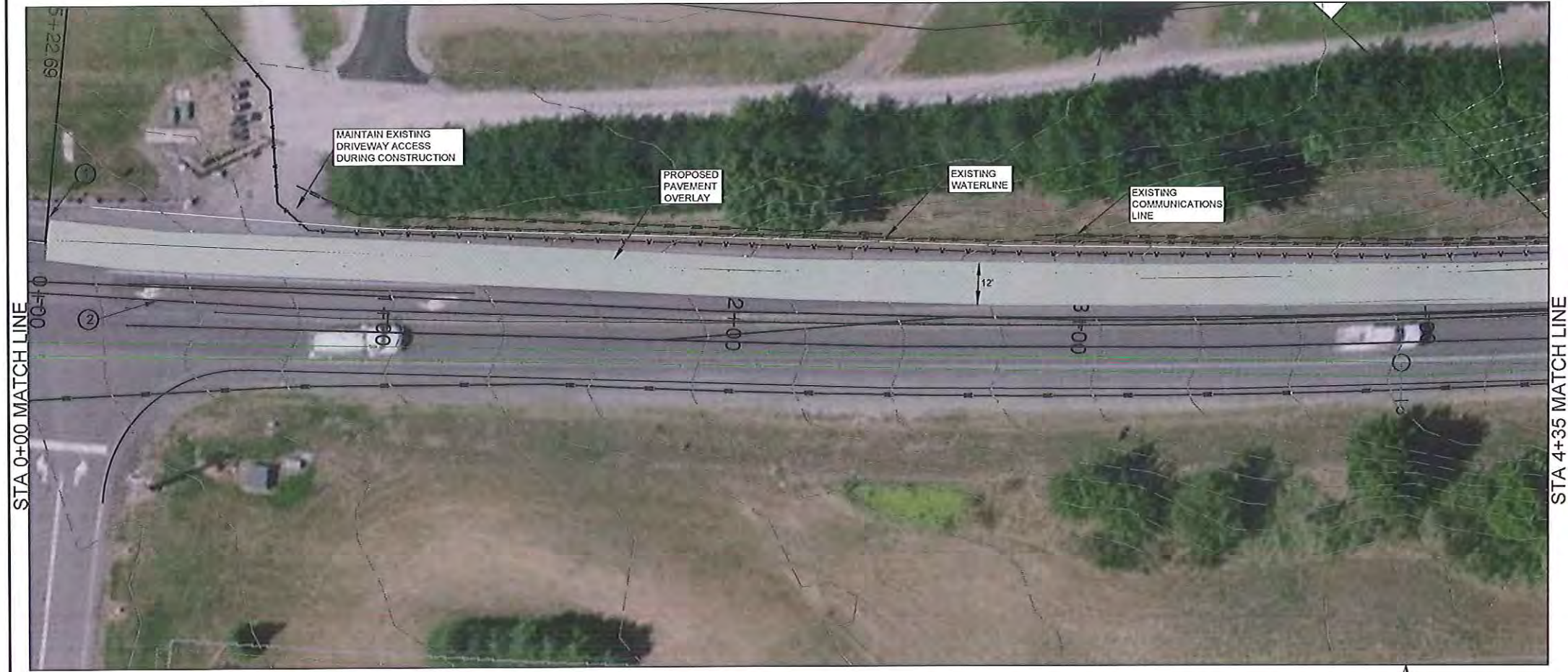
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(360) 343-7666 Fax
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1" = 40' HORIZONTAL
1" = 4' VERTICAL

NOTES

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- ⑤ INSTALL 6-INCH DIAMETER PERFORATED PIPE IN 2.5-FOOT WIDE DRAIN ROCK TRENCH. SEE DETAIL SHEET DTL 1 AND DTL2.
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- ⑫ INSTALL 2W RPMS PER WSDOT STD PLAN M-20.30-04 AND RESTRIPE 4" WHITE FOG LINE WSDOT 20.10-03.

PAVING CONSTRUCTION LEGEND

- F— EXISTING FORCE MAIN SEWER
- — — EXISTING POWER
- — — EXISTING WATERLINE
- — — EXISTING COMMUNICATIONS LINE
- — — PROPOSED CPU WATER
- PROPOSED PAVEMENT OVERLAY (TIB PROJECT)
- PROPOSED EXCAVATION AND BASE REPLACEMENT
- 6" — 6-INCH DIAMETER PERFORATED PIPE IN DRAIN ROCK TRENCH
- 6" — 6-INCH DIAMETER SOLID HDPE STORM PIPE

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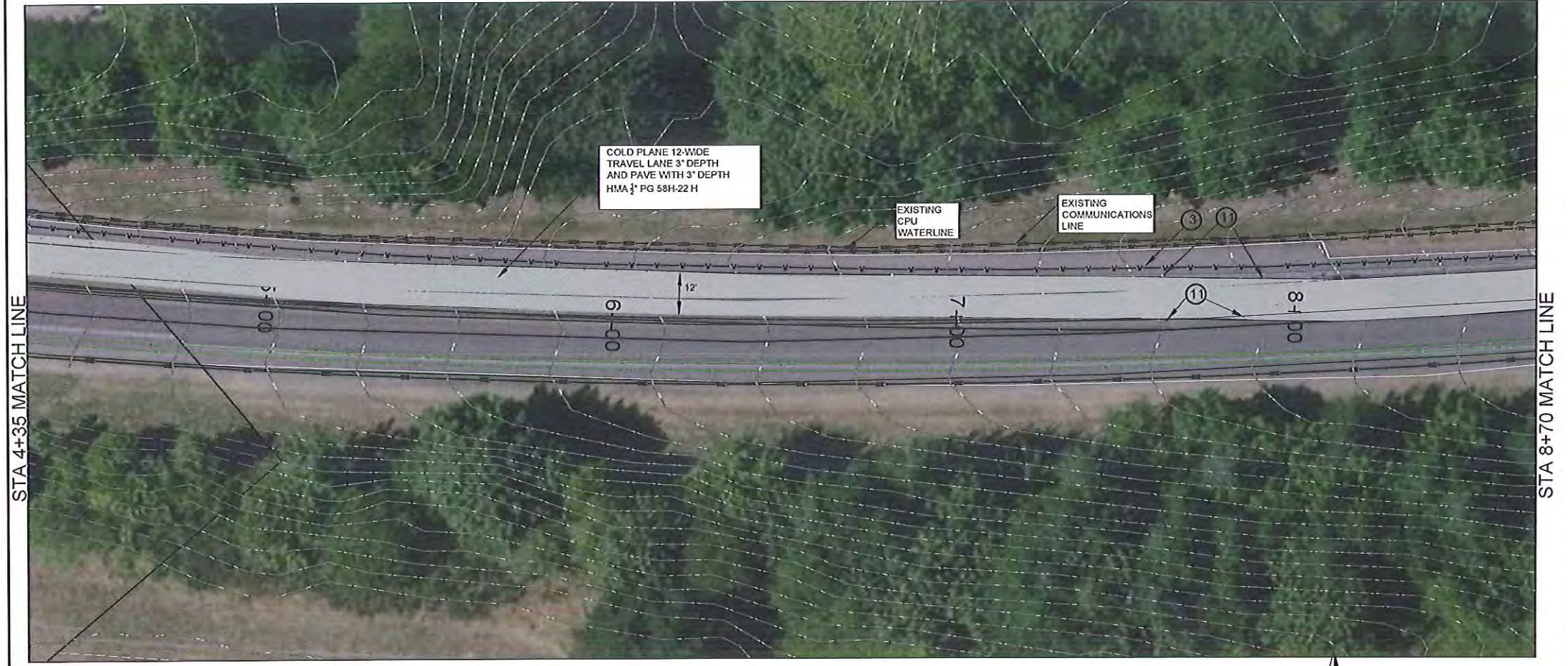
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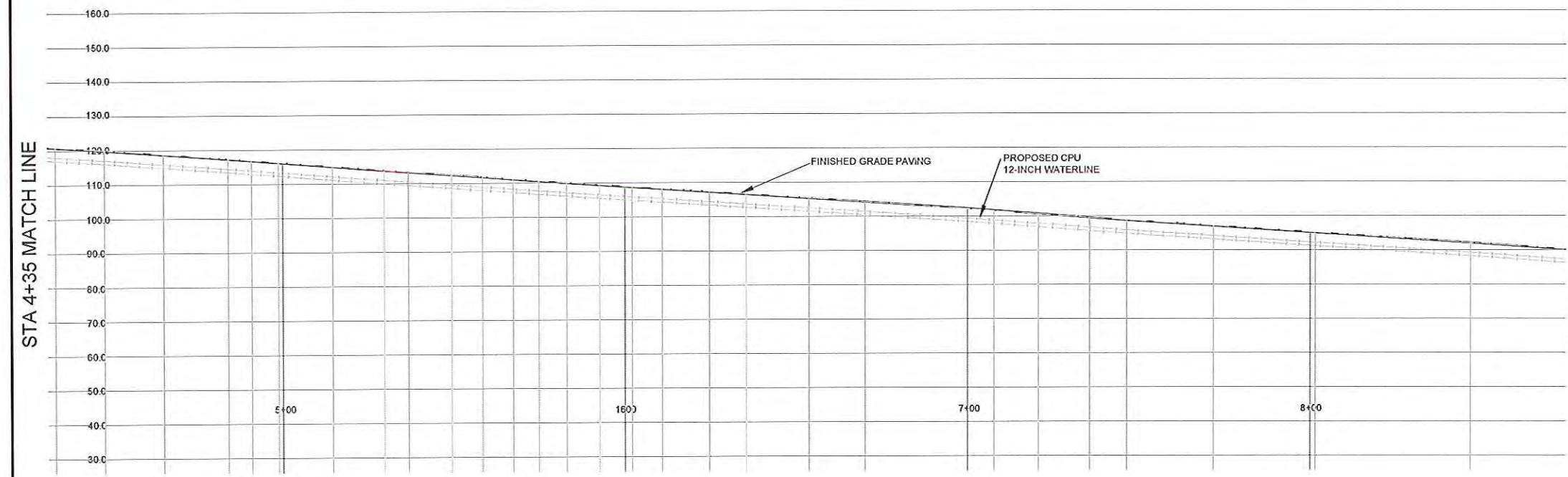
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1" = 40 HORIZONTAL
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ANTHONY L. COOPER
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
NO. 37571

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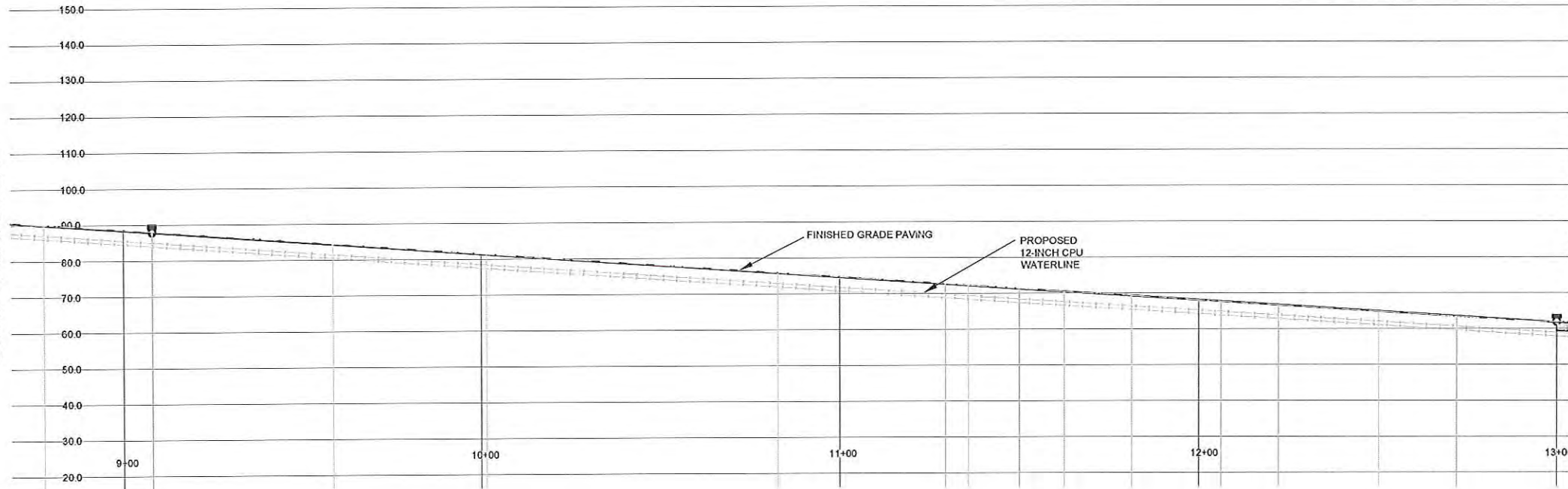
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- 11 INSTALL 2YY RPMS PER WSDOT STD PLAN M-20.30-04 AT DOUBLE YELLOW CENTERLINE PER DETAIL M20.10-03
- 12 INSTALL 2W RPMS PER WSDOT STD PLAN M-20.30-04 AND RESTRIPE 4" WHITE FOG LINE WSDOT 20.10-03

PAVING CONSTRUCTION LEGEND

- FM EXISTING FORCE MAIN SEWER
- EXISTING POWER
- EXISTING WATERLINE
- EXISTING COMMUNICATIONS LINE
- PROPOSED CPU WATER
- PROPOSED PAVEMENT OVERLAY (TIB PROJECT)
- PROPOSED EXCAVATION AND BASE REPLACEMENT
- 6-INCH DIAMETER PERFORATED PIPE IN DRAIN ROCK TRENCH
- 6-INCH DIAMETER SOLID HDPE STORM PIPE

LA CENTER ROAD PAVING PROJECT



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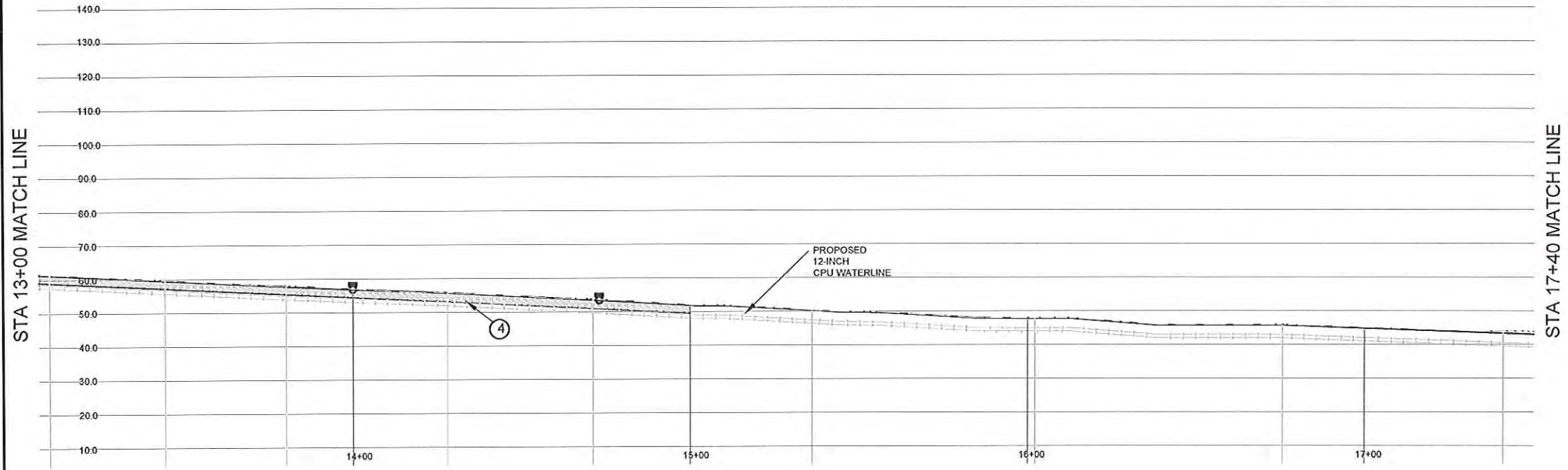
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1" = 40 HORIZONTAL
1" = 4' VERTICAL



NOTES

CONTRACTOR TO POTHOLE AND VERIFY LOCATION AND DEPTH OF EXISTING UTILITIES. CONTRACTOR TO NOTIFY ENGINEER IF EXISTING UTILITIES CONFLICT WITH DESIGN UTILITIES.

THE STATION LINE OF THIS PROJECT IS BASED ON AN APPROXIMATE CENTER OF TIMMEN AND LA CENTER ROAD. THE EXACT LIMITS OF THE PROJECT MAY VARY SLIGHTLY.

THE CONTOURS ARE FROM CLARK COUNTY GIS, AND ARE ONLY APPROXIMATE. THE PLAN AND PROFILE ELEVATIONS WILL HAVE TO BE VERIFIED BY THE CONTRACTOR IN THE FIELD.

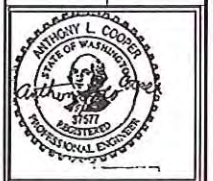
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- 3 PROPOSED WATERLINE TO BE CONSTRUCTED BY CPU CONTRACTOR. SEE CPU PLANS FOR DETAILS.
- 4 REMOVE EXISTING PAVEMENT, BASE REPLACE WITH 6" DEPTH OF HMA, ONE FOOT DEPTH 1 1/2" MINUS AGGREGATE BASE OVER ONE FOOT DEPTH 3" MINUS OVER GEOGRID. SEE DETAIL SHEET XXX.
- 5 INSTALL 6-INCH DIAMETER PERFORATED PIPE IN 2.5-FOOT WIDE DRAIN ROCK TRENCH. SEE DETAIL SHEET DTL 1 AND DTL 2.
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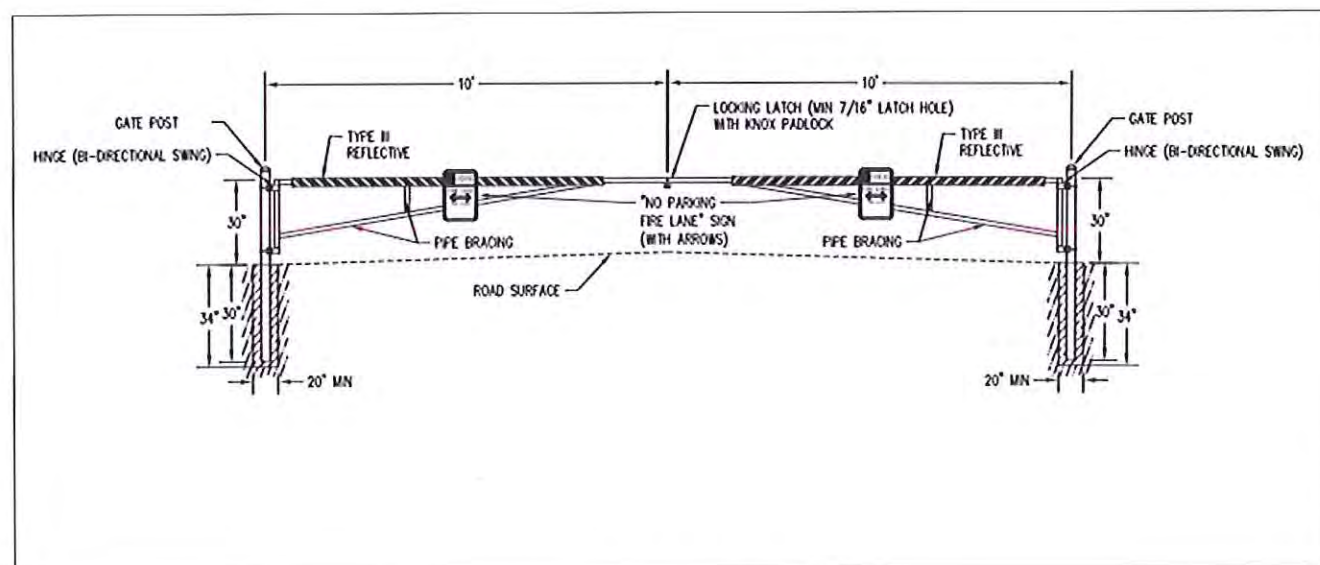
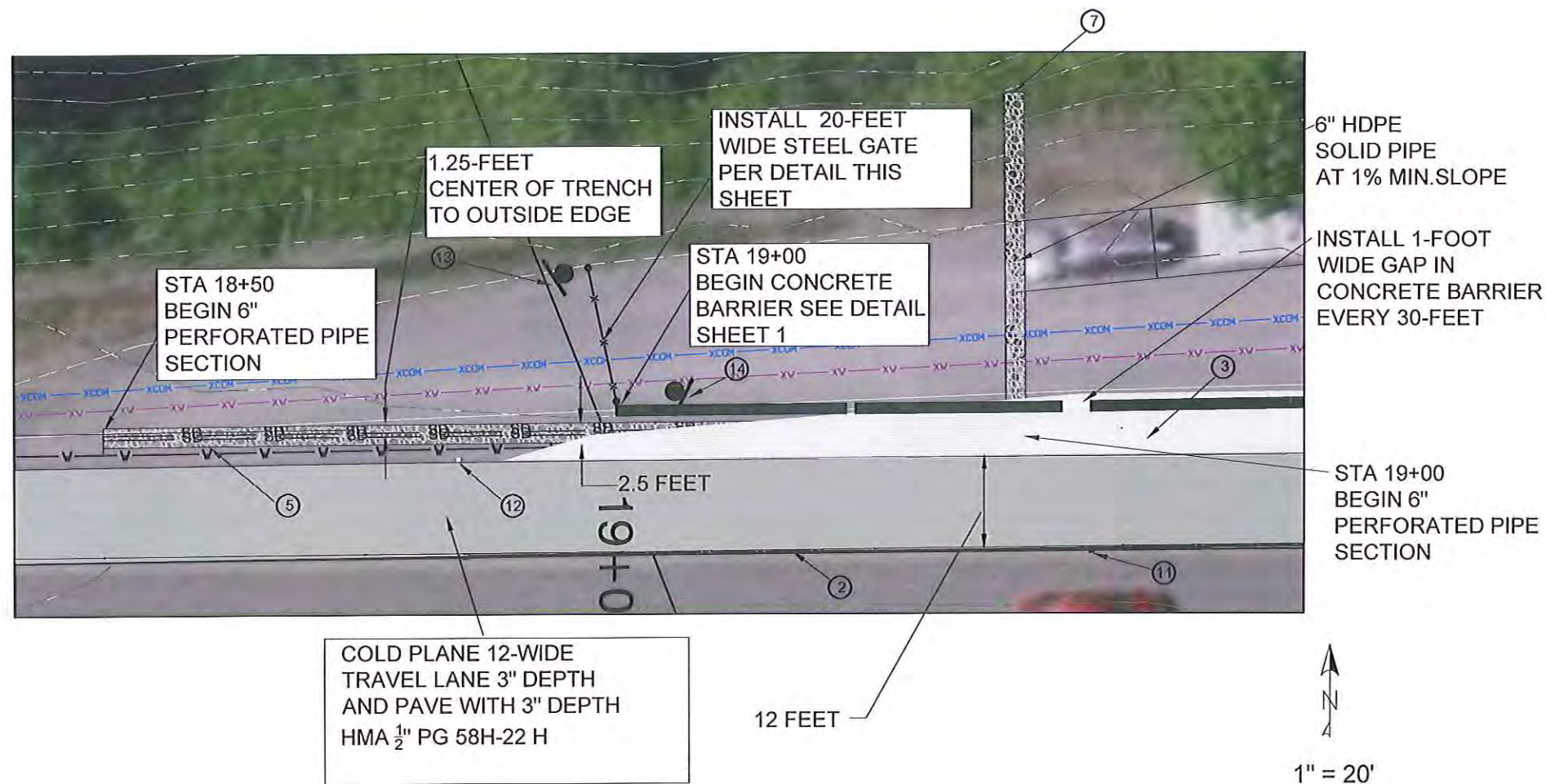


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STEEL GATE DETAIL

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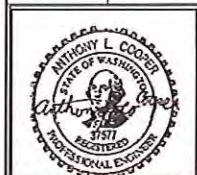
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- ⑬ INSTALL DO NOT ENTER SIGN R5-1
- ⑭ INSTALL "NO PARKING ON PAVEMENT" R811

PAVING CONSTRUCTION LEGEND

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LA CENTER ROAD PAVING PROJECT

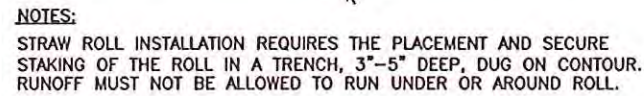


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NOTES:
STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3"-5" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.

NOTE: FILTER FABRIC FENCES SHALL BE INSTALLED ALONG
CONTOUR WHENEVER POSSIBLE

1. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT POND.
3. IT IS IMPORTANT TO CHECK THE UPHILL SIDE OF THE FENCE FOR SIGNS OF THE FENCE CLOGGING AND ACTING AS A BARRIER TO FLOW AND THEN CAUSING CHANNELIZATION OF FLOWS PARALLEL TO THE FENCE. IF THIS OCCURS, REPLACE THE FENCE OR REMOVE THE TRAPPED SEDIMENT.
4. SEDIMENT DEPOSITS SHALL EITHER BE REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-THIRD THE HEIGHT OF THE SILT FENCE, OR A SECOND SILT FENCE SHALL BE INSTALLED.
5. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED IMMEDIATELY.
6. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEED.

NOTES:

1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS (LESS THAN 5%)
2. EXCAVATE A BASIN OF SUFFICIENT SIZE ADJACENT TO THE DROP INLET.
3. THE TOP OF THE STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.

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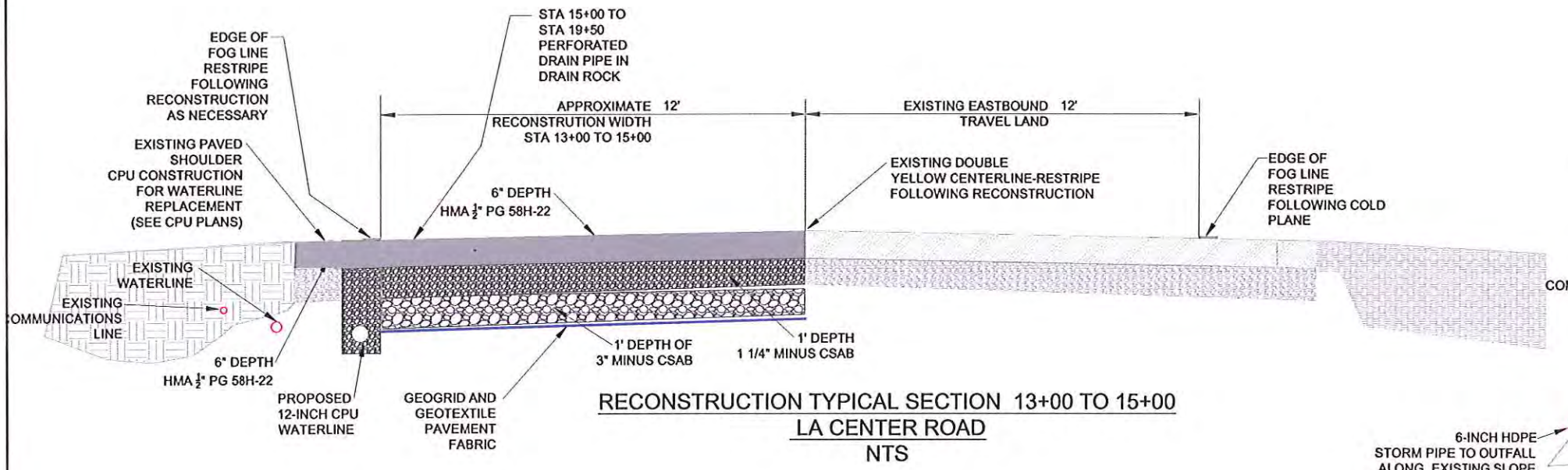
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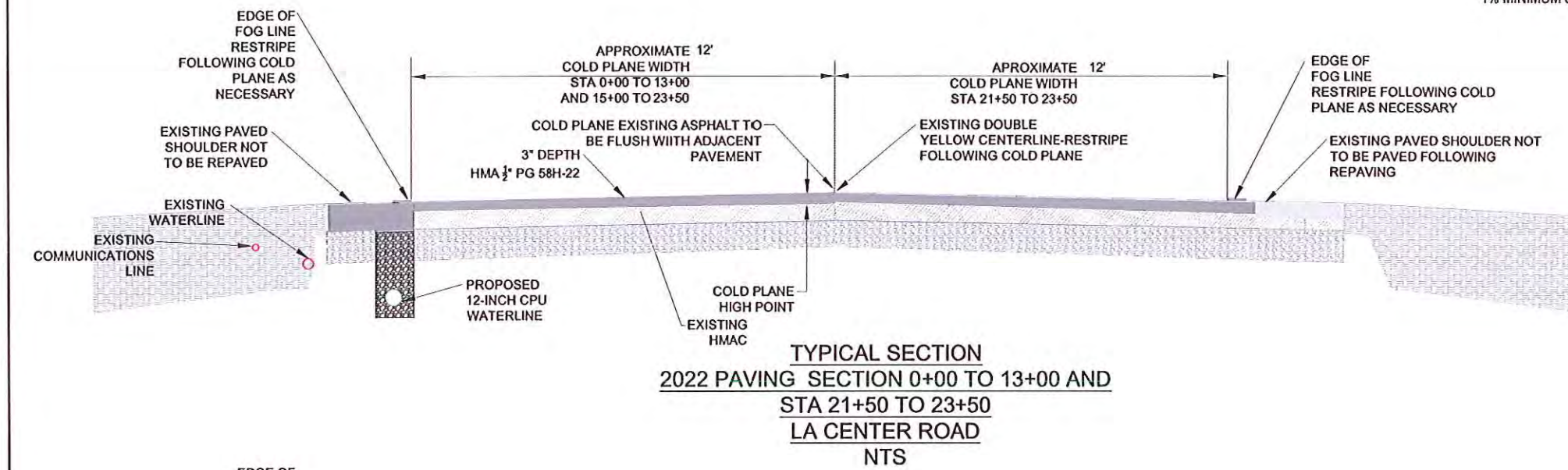
DETAIL SHEET 2
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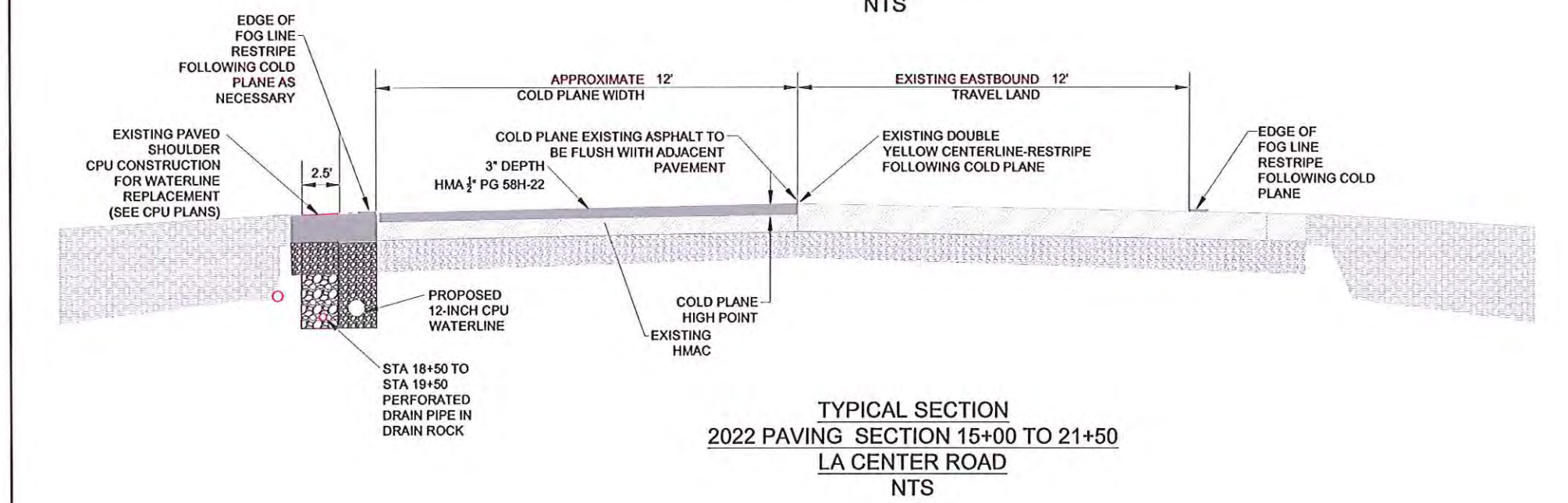
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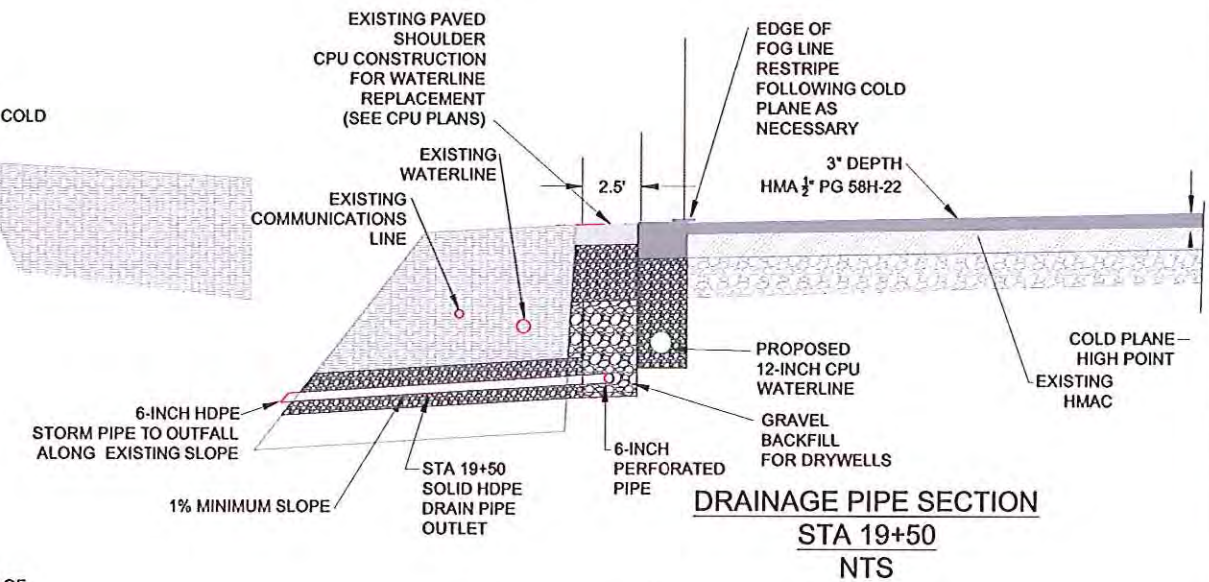
RECONSTRUCTION TYPICAL SECTION 13+00 TO 15+00
LA CENTER ROAD
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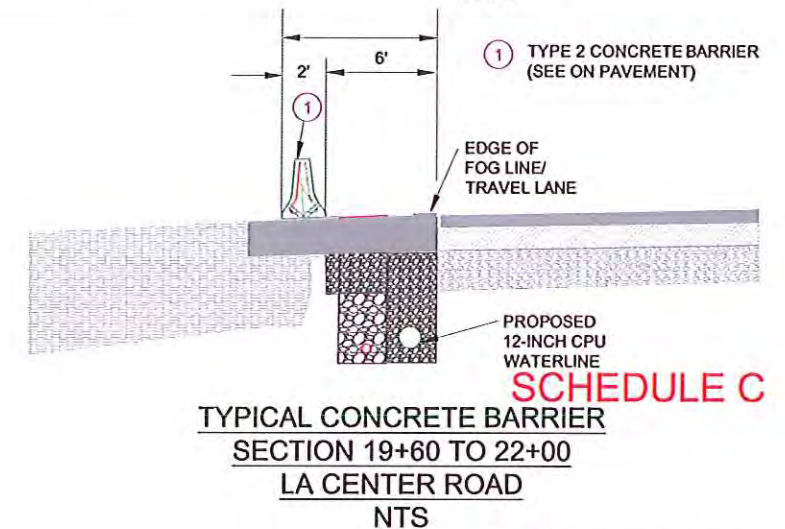
TYPICAL SECTION
2022 PAVING SECTION 0+00 TO 13+00 AND
STA 21+50 TO 23+50
LA CENTER ROAD
NTS



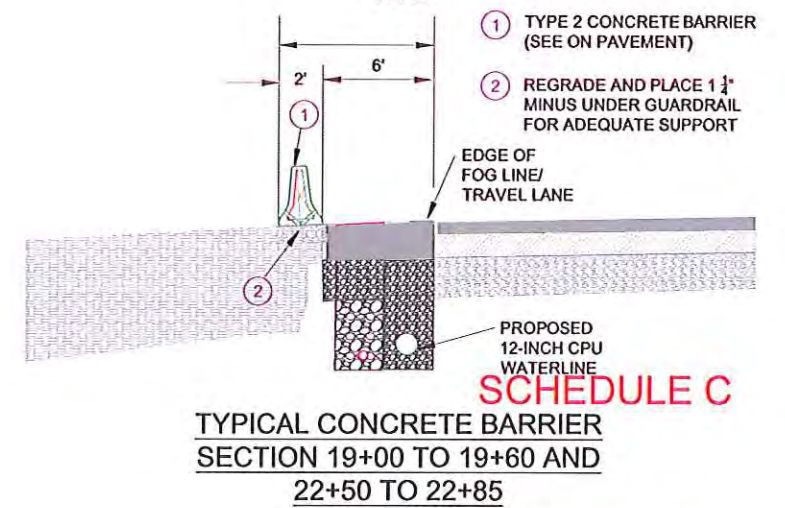
TYPICAL SECTION
2022 PAVING SECTION 15+00 TO 21+50
LA CENTER ROAD
NTS



DRAINAGE PIPE SECTION
STA 19+50
NTS



TYPICAL CONCRETE BARRIER
SECTION 19+60 TO 22+00
LA CENTER ROAD
NTS



TYPICAL CONCRETE BARRIER
SECTION 19+00 TO 19+60 AND
22+50 TO 22+85
LA CENTER ROAD
NTS

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SHEET	5 OF 8



2022 LA CENTER ROAD EPAVING PROJECT
DETAIL SHEET 2
LA CENTER ROAD



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Exhibit A.7

Geotechnical Site Investigation

La Center Flow Station #1

La Center, Washington

March 8, 2022

Geotechnical ■ Environmental ■ Special Inspections

Columbia West
Engineering, Inc



11917 NE 95th Street
Vancouver, Washington
98682
Phone: 360-823-2900
Fax: 360-823-2901



**GEOTECHNICAL SITE INVESTIGATION
LA CENTER FLOW STATION #1
LA CENTER, WASHINGTON**

Prepared For:

**Clark Public Utilities
Attn: Barry Lovingood
PO Box 8900
Vancouver, Washington 98668**

Approximate Site Location:

**32100 NW La Center Road
Ridgefield, Washington**

Prepared By:

**Columbia West Engineering, Inc.
11917 NE 95th Street
Vancouver, Washington 98682
Phone: 360-823-2900
W.O. No. 21300**

Date Prepared:

March 8, 2022

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A	Analytical Laboratory Test Reports
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D	Photo Log
E	Report Limitations and Important Information

GEOTECHNICAL SITE INVESTIGATION

LA CENTER FLOW STATION #1

LA CENTER, WASHINGTON

1.0 INTRODUCTION

Columbia West Engineering, Inc. (Columbia West) was retained by Clark Public Utilities to conduct a geotechnical site investigation for the proposed Flow Station #1 project located in La Center, Washington. The purpose of the investigation was to observe and assess subsurface soil conditions at specific locations and provide geotechnical engineering analyses, planning, and design recommendations for proposed development. The specific scope of services was outlined in a proposal contract dated December 3, 2021. This report summarizes the investigation and provides field assessment documentation and laboratory analytical test reports. This report is subject to the limitations expressed in Section 7.0, *Conclusion and Limitations*, and Appendix E.

1.1 General Site Information

As indicated on Figures 1 and 2, the subject site is located in the right-of-way bordering the north side of the intersection of NW La Center Road and NW Timmen Road in La Center, Washington. The approximate latitude and longitude are N 45° 51' 12" and W 122° 40' 37", and the legal description is a portion of the SW ¼ of Section 03, T4N, R1E, Willamette Meridian. The current regulatory jurisdictional agency is the City of La Center.

1.2 Proposed Development

Correspondence with the client and review of the preliminary site plan indicates that proposed development includes the construction of a new 10-foot by 16-foot precast concrete building and flow station. Columbia West has not reviewed preliminary grading plans but understands that cut and fill may be proposed at the subject site. This report is based upon proposed development as described above and may not be applicable if modified.

2.0 REGIONAL GEOLOGY AND SOIL CONDITIONS

The subject site lies within the Willamette Valley/Puget Sound Lowland, a wide physiographic depression flanked by the mountainous Coast Range on the west and the Cascade Range on the east. Inclined or uplifted structural zones within the Willamette Valley/Puget Sound Lowland constitute highland areas and depressed structural zones form sediment-filled basins. The site is located in the northern portion of the Portland/Vancouver Basin, an open, somewhat elliptical, northwest-trending syncline approximately 60 miles wide.

According to the *Geologic Map of the Ridgefield Quadrangle, Clark and Cowlitz Counties, Washington* (Russell C. Evarts, USGS Geological Survey Scientific Investigation Map 2844, 2004), onsite near-surface soils are primarily mapped as Pleistocene-aged, unconsolidated, rhythmically bedded, periglacial clay, silt, and fine- to medium-textured sand deposits

derived from catastrophic outburst floods of Glacial Lake Missoula (Qfs). Minor Holocene-aged, unconsolidated, soil, sand, gravel, and rock artificial fill and modified land deposits (Af) are mapped in the southwest area of the site. Fine-textured flood deposits are underlain by Pleistocene to Pliocene-aged, unconsolidated to cemented, deeply weathered, pebble to boulder sedimentary conglomerate (QTc).

The Web Soil Survey (United States Department of Agriculture, Natural Resource Conservation Service [USDA NRCS], 2022 Website) identifies surface soils as Gee silt loam. Although soil conditions may vary from the broad USDA descriptions, Gee series soils are generally fine-textured clays and silts with very low permeability, moderate to high water capacity, and low shear strength. Gee soils are generally moisture sensitive, somewhat compressible, and described as having low to moderate shrink-swell potential. The erosion hazard is slight primarily based upon slope grade.

3.0 REGIONAL SEISMOLOGY

Recent research and subsurface mapping investigations within the Pacific Northwest appear to suggest the historic potential risk for a large earthquake event with strong localized ground movement may be underestimated. Past earthquakes in the Pacific Northwest appear to have caused landslides and ground subsidence, in addition to severe flooding near coastal areas. Earthquakes may also induce soil liquefaction, which occurs when elevated horizontal ground acceleration and velocity cause soil particles to interact as a fluid as opposed to a solid. Liquefaction of soil can result in lateral spreading and temporary loss of bearing capacity and shear strength.

There are at least four major known fault zones in the vicinity of the site that may be capable of generating potentially destructive horizontal accelerations. These fault zones are described briefly in the following text.

Portland Hills Fault Zone

The Portland Hills Fault Zone consists of several northwest-trending faults located along the northeastern margin of the Tualatin Mountains, also known as the Portland Hills, and the southwest margin of the Portland Basin. The fault zone is approximately 25 to 30 miles in length and is located approximately 12 miles southwest of the site. According to *Seismic Design Mapping, State of Oregon* (Geomatrix Consultants, 1995), there is no definitive consensus among geologists as to the zone fault type. Several alternate interpretations have been suggested.

According to the *USGS Earthquake Hazards Program*, the fault was originally mapped as a down-to-the-northeast normal fault but has also been mapped as part of a regional-scale zone of right-lateral, oblique slip faults, and as a steep escarpment caused by asymmetrical folding above a south-west dipping, blind thrust fault. The Portland Hills fault offsets Miocene Columbia River Basalts, and Miocene to Pliocene sedimentary rocks of the Troutdale Formation. No fault scarps on surficial Quaternary deposits have been described along the fault trace, and the fault is mapped as buried by the Pleistocene-aged Missoula flood deposits.

However, evidence suggests that fault movement has impacted shallow Holocene deposits and deeper Pleistocene sediments. Seismologists recorded a M3.2 earthquake thought to be associated with the fault zone near Kelly Point Park in November 2012, a M3.9 earthquake thought to be associated with the fault zone near Kelly Point Park in April 2003, and a M3.5 earthquake possibly associated with the fault zone approximately 1.3 miles east of the fault in 1991. Therefore, the Portland Hills Fault Zone is generally thought to be potentially active and capable of producing possible damaging earthquakes.

Gales Creek-Newberg-Mt. Angel Fault Zone

Located approximately 32 miles southwest of the site, the northwest-striking, approximately 50-mile long Gales Creek-Newberg-Mt. Angel Structural Zone forms the northwestern boundary between the Oregon Coast Range and the Willamette Valley, and consists of a series of discontinuous northwest-trending faults. The southern end of the fault zone forms the southwest margin of the Tualatin basin. Possible late-Quaternary geomorphic surface deformation may exist along the structural zone (Geomatrix Consultants, 1995).

According to the *USGS Earthquake Hazards Program*, the Mount Angel fault is mapped as a high-angle, reverse-oblique fault, which offsets Miocene rocks of the Columbia River Basalts, and Miocene and Pliocene sedimentary rocks. The fault appears to have controlled emplacement of the Frenchman Spring Member of the Wanapum Basalts, and thus must have a history that predates the Miocene age of these rocks. No unequivocal evidence of deformation of Quaternary deposits has been described as a thick sequence of sediments deposited by the Missoula floods covers much of the southern part of the fault trace.

Although no definitive evidence of impacts to Holocene sediments have clearly been identified, the Mount Angel fault appears to have been the location of minor earthquake swarms in 1990 near Woodburn, Oregon, and a M5.6 earthquake in March 1993 near Scotts Mills, approximately four miles south of the mapped extent of the Mt. Angel fault. It is unclear if the earthquake occurred along the fault zone or a parallel structure. Therefore, the Gales Creek-Newberg-Mt. Angel Structural Zone is considered potentially active.

Lacamas Lake-Sandy River Fault Zone

The northwest-trending Lacamas Lake Fault and northeast-trending Sandy River Fault intersect north of Camas, Washington approximately 21 miles southeast of the site, and form part of the northeastern margin of the Portland basin. According to *Geology and Groundwater Conditions of Clark County Washington* (USGS Water Supply Paper 1600, Mundorff, 1964) and the *Geologic Map of the Lake Oswego Quadrangle* (Oregon DOGAMI Series GMS-59, 1989), the Lacamas Lake fault zone consists of shear contact between the Troutdale Formation and underlying Oligocene andesite-basalt bedrock. Secondary shear contact associated with the fault zone may have produced a series of prominent northwest-southeast geomorphic lineaments in proximity to the site.

According to the *USGS Earthquake Hazards Program* the fault has been mapped as a normal fault with down-to-the-southwest displacement and has also been described as a steeply northeast or southwest-dipping, oblique, right-lateral, slip-fault. The trace of the Lacamas Lake fault is marked by the very linear lower reach of Lacamas Creek. No fault

scarps on Quaternary surficial deposits have been described. The Lacamas Lake fault offsets Pliocene-aged sedimentary conglomerates generally identified as the Troutdale formation, and Pliocene- to Pleistocene-aged basalts generally identified as the Boring Lava formation.

Recent seismic reflection data across the probable trace of the fault under the Columbia River yielded no unequivocal evidence of displacement underlying the Missoula flood deposits, however, recorded mild seismic activity during the recent past indicates this area may be potentially seismogenic.

Cascadia Subduction Zone

The Cascadia Subduction Zone has recently been recognized as a potential source of strong earthquake activity in the Portland/Vancouver Basin. This phenomenon is the result of the earth's large tectonic plate movement. Geologic evidence indicates that volcanic ocean floor activity along the Juan de Fuca ridge in the Pacific Ocean causes the Juan de Fuca Plate to perpetually move east and subduct under the North American Continental Plate. The subduction zone results in historic volcanic and potential earthquake activity in proximity to the plate interface, believed to lie approximately 20 to 50 miles west of the general location of the Oregon and Washington coast (Geomatrix Consultants, 1995).

4.0 GEOTECHNICAL AND GEOLOGIC FIELD INVESTIGATION

A geotechnical field investigation consisting of visual reconnaissance and one test pit (TP-1) was conducted at the site on January 3, 2022. The test pit was explored with a track-mounted excavator. The subsurface soil profile was logged in accordance with Unified Soil Classification System (USCS) specifications. Disturbed soil samples were collected from relevant soil horizons and submitted for laboratory analysis. Analytical laboratory test results are presented in Appendix A. The exploration location is indicated on Figure 2. A subsurface exploration log is presented in Appendix B. Soil descriptions and classification information are provided in Appendix C. A photo log is presented in Appendix D.

4.1 Surface Investigation and Site Description

The subject site is located in the right-of-way bordering the north side of the intersection of NW La Center Road and NW Timmen Road in La Center, Washington. Site observations during exploration indicate the site is generally open and vegetated with grass and brush. The site is bounded by NW La Center Road to the south and east and residential development to the north and west. Field reconnaissance and review of site topographic mapping indicate the presence of north- and northwest-facing slopes with grades ranging from 5 to 80 percent located approximately 100 to 200 feet northeast to west of the proposed development area with vertical slope heights of approximately 100 feet as measured from toe to top-of-slope break. Site elevations in the proposed development area range from approximately 156 feet above mean sea level (amsl) at the southwest property corner to 145 feet amsl at the northeast property corner with grades ranging from 5 to 15 percent. Slope geometry and geomorphic features are discussed in greater detail in Section 5.2.2, *Slope Reconnaissance and Slope Stability Assessment*.

4.2 Subsurface Exploration and Investigation

The test pit was explored to a maximum depth of approximately 14 feet below ground surface (bgs). The exploration location was selected to observe subsurface soil characteristics in proximity to proposed development areas and is indicated on Figure 2.

4.2.1 Soil Type Description

The field investigation indicated the presence of approximately 2 feet of apparent disturbed fill soils with trace organics in the observed location. Underlying the existing fill layer, subsurface soils resembling geologically mapped outburst floods of Glacial Lake Missoula (Qfs) and native USDA Gee soil series description were encountered. Subsurface lithology may generally be described by soil types identified in the following text. Field logs and observed stratigraphy for the encountered materials are presented in Appendix B, *Subsurface Exploration Logs*.

Soil Type 1 – Existing FILL

Soil Type 1 was observed to primarily consist of light brown to brown/gray, moist, apparent disturbed and re-worked native soils and trace organic debris. Soil Type 1 was observed at the ground surface in TP-1, extending to an apparent depth of approximately two feet bgs.

Soil Type 2 – Lean CLAY with Sand

Soil Type 2 was observed to consist of brown, moist to wet, medium stiff, lean CLAY with sand. Soil Type 2 was observed below Soil Type 1 and extended to an observed depth of approximately nine feet bgs where it was underlain by Soil Type 3.

Soil Type 3 – SILT

Soil Type 3 was observed to consist of brown/grey, wet, SILT. Soil Type 3 was observed below Soil Type 2 and extended to the maximum explored depth of approximately 14 feet bgs.

4.2.2 Groundwater

Groundwater seeps were encountered within test pit exploration TP-1 at 3 feet bgs on January 3, 2022. Groundwater levels are often subject to seasonal variance and may rise during extended periods of increased precipitation or flooding.

Seeps and springs may become evident during site grading, primarily along slopes or in areas cut below existing grade. Structures, roads, and drainage design should be planned accordingly. Piezometer installation and long-term monitoring beyond the scope of this investigation, would be necessary to provide more detailed groundwater information.

5.0 GEOLOGIC HAZARDS

City of La Center Municipal Code (LCMC Development Code Section 18.300) defines geologic hazard requirements for proposed development in areas subject to the City of La Center jurisdiction. Three potential geologic hazards are identified: (1) erosion hazard areas, (2) landslide hazard and steep slope areas, and (3) seismic hazard areas.

Columbia West conducted a geologic hazard review to assess whether a geologic hazard is present in the vicinity of proposed development, and if so, to provide mitigation recommendations. The geologic hazard review was based upon physical and visual reconnaissance, subsurface exploration, and review of maps and other published technical literature. The results of the geologic hazard review for potential geologic hazards are discussed in the following sections.

5.1 Erosion Hazard Areas

According to *Clark County Maps Online*, and the *Soil Survey of Clark County, Washington* an erosion hazard is mapped approximately 130 feet northwesterly of the area of proposed development at a mapped contact of surficial soil units consisting of Gee silt loam and Rough Broken Land. This mapped erosion hazard is not anticipated to adversely effect proposed development and no erosion hazard is mapped on the development site. Therefore, according to the *City of La Center Development Code*, a soil erosion hazard is not present at the site. However, if there are erosion concerns, erosion can be successfully mitigated by preparation and adherence to a site-specific erosion control plan that identifies BMPs to be utilized to reduce potential impacts on site soils during construction. Concentrated drainage or water flow over the face of slopes should be prohibited, and adequate protection against erosion is required. Erosion control measures are discussed further in Section 6.14, *Erosion Control Measures*.

5.2 Landslide Hazard and Steep Slope Areas

To evaluate steep slope areas and assess whether landslide hazards are present in the vicinity of proposed development, Columbia West conducted a review of literature, subsurface exploration, and physical slope reconnaissance. As mentioned previously, slope grades of up to 80 percent were observed west and northwest of the site.

5.2.1 Geologic Literature Review

Columbia West reviewed *Slope Stability of Clark County* (Washington Department of Natural Resources, Division of Geology and Earth Resources, Fiksdal, 1975) to assess site slope characteristics. The Fiksdal report identifies four levels of potential slope instability within Clark County: (1) stable areas – no slides or unstable slopes, (2) areas of potential instability because of underlying geologic conditions and physical characteristics associated with steepness, (3) areas of historical or still active landslides, and (4) older landslide debris. The site and neighboring slopes are mapped as (1) stable areas – no slides or unstable slopes. Columbia West also reviewed the *Geologic Map of the Ridgefield Quadrangle, Clark County, Washington* (R.C. Evarts, Washington Division of Geology and Earth Resources, Scientific Investigations Map 2844, 2004), which indicates that no landslide deposits are mapped at the subject site or in the surrounding vicinity.

5.2.2 Slope Reconnaissance and Slope Stability Assessment

Review of topographic mapping published by *Clark County Maps Online* indicates that the subject site is located in an area that slopes regionally downgradient from south to north

approximately 100 to 200 feet east to south from neighboring slope crests and 200 to 400 feet from slope toes.

The maximum grade change of neighboring slopes is approximately 100 feet, with slope grades generally ranging from 5 to 80 percent. Slopes appear planar with no observed evidence of instability. There was no observed direct evidence of large-scale, mass slope movements or historic landslides. No landslide debris was observed within subsurface soils explored onsite and no slope face groundwater seeps or springs were observed.

City of La Center Municipal Code defines a landslide hazard as areas meeting all three of the following characteristics: 1) slopes steeper than 15 percent; 2) hillsides intersecting geologic contacts with permeable sediment overlying low permeability sediment or bedrock, and; 3) any springs or groundwater seepage. The above-mentioned criteria were not observed during our field investigation or site research. Based upon the results of slope reconnaissance, subsurface exploration, and site research, slopes on the subject site do not appear to meet the definition of a landslide hazard according to *City of La Center Municipal Code*.

5.3 Seismic Hazard Areas

Seismic hazards include areas subject to severe risk of earthquake-induced damage. Damage may occur due to soil liquefaction, dynamic settlement, ground shaking amplification, or surface faulting rupture. These seismic hazards are discussed below.

5.3.1 Soil Liquefaction and Dynamic Settlement

According to the *Liquefaction Susceptibility Map of Clark County Washington* (Washington State Department of Natural Resources, 2004), the area of proposed development is mapped as very low to moderate susceptibility for liquefaction. Neighboring slopes are primarily mapped as very low susceptibility for liquefaction with areas mapped as high nearing the toe of the northeast trending slope and the wetland. These areas are not anticipated to adversely affect proposed development as Columbia West understand it. Liquefaction, defined as the transformation of the behavior of a granular material from a solid to a liquid due to increased pore-water pressure and reduced effective stress, may occur when granular materials quickly compact under cyclic stresses caused by a seismic event. The effects of liquefaction may include immediate ground settlement and lateral spreading.

Soils most susceptible to liquefaction are generally saturated, cohesionless, loose to medium-dense sands within 50 feet of the ground surface. Recent research has also indicated that low plasticity silts and clays may also be subject to sand-like liquefaction behavior if the plasticity index determined by the Atterberg Limits analysis is less than 8. Potentially liquefiable soils located above the existing, historic, or expected ground water levels do not generally pose a liquefaction hazard. It is important to note that changes in perched ground water elevation may occur due to project development or other factors not observed at the time of investigation.

Based upon results of literature review, site-specific testing, and laboratory analysis, the potential for soil liquefaction in the location of proposed development is considered to be low.

5.3.2 Ground Shaking Amplification

Review of the *Site Class Map of Clark County, Washington* (Washington State Department of Natural Resources, 2004), indicates that site soils in the location of proposed development may be represented by Site Class C to D as defined by the *ASCE 7, Chapter 20, Table 20.3-1*. A designation of Site Class D indicates that minor amplification of seismic energy may occur during a seismic event due to subsurface conditions. However, this is typical for many areas within Clark County, does not constitute a geologic hazard in Columbia West's opinion, and will not prohibit development if properly accounted for during the design process. Soils nearing the toe of the neighboring northeast trending slope and the wetland at its base are mapped as Site Class E but are not expected to adversely affect proposed development.

5.3.3 Fault Rupture

Because there are no known geologic seismic faults within the site boundaries, fault rupture is unlikely.

6.0 DESIGN RECOMMENDATIONS

The geotechnical site investigation suggests the proposed development is generally compatible with surface and subsurface soils, provided the recommendations presented in this report are utilized and incorporated into the design and construction processes. The primary geotechnical concerns associated with the site are shallow groundwater and fine-textured soils. Design recommendations are presented in the following text sections.

6.1 Site Preparation and Grading

Vegetation, organic material, unsuitable fill, and deleterious material that may be encountered should be cleared from areas identified for structures and site grading. Vegetation, other organic material, and debris should be removed from the site. Stripped topsoil should also be removed or used only as landscape fill in nonstructural areas with slopes less than 25 percent. The stripping depth for topsoil and disturbed fill soils is anticipated to be approximately 24 inches. The required stripping depth may increase in areas of existing fill, heavy organics, or previously existing structures. Actual stripping depths should be determined based upon visual observations made during construction when soil conditions are exposed. The post-construction maximum depth of landscape fill placed or spread at any location onsite should not exceed one foot.

Previously disturbed soil, debris, or unconsolidated fill encountered during grading or construction activities should be removed completely and thoroughly from structural areas. This includes old remnant foundations, basement walls, utilities, associated soft soils, and debris. These materials and associated disturbed soils should also be completely removed from structural areas. Excavation areas should be backfilled with engineered structural fill.

The test pit excavated during site exploration was backfilled loosely with onsite soils. The test pit should be located and properly backfilled with structural fill during site improvements construction. Trees, stumps, and associated roots should also be removed from structural areas, individually and carefully. Resulting cavities and excavation areas should be backfilled with engineered structural fill.

Site grading activities should be performed in accordance with requirements specified in the *2018 International Building Code (IBC)*, Chapter 18 and Appendix J, with exceptions noted in the text herein. Site preparation, soil stripping, and grading activities should be observed and documented by Columbia West.

6.2 Engineered Structural Fill

Areas proposed for fill placement should be appropriately prepared as described in the preceding text. Surface soils should be scarified and compacted prior to additional fill placement. Engineered structural fill should be placed in loose lifts not exceeding 12 inches in depth and compacted using standard conventional compaction equipment. The soil moisture content should be within two percentage points of optimum conditions. A field density at least equal to 95 percent of the maximum dry density, obtained from the modified Proctor moisture-density relationship test (ASTM D1557), is recommended for structural fill placement and scarified and recompacted subgrade.

Compaction of engineered structural fill should be verified by nuclear gauge field compaction testing performed in accordance with *ASTM D6938*. Field compaction testing should be performed for each vertical foot of engineered fill placed. Engineered fill placement should be observed by Columbia West.

Engineered structural fill placement activities should be performed during dry summer months if possible. Most clean native soils may be suitable for use as structural fill if adequately dried or moisture-conditioned to achieve recommended compaction specifications. Native soils may require addition of moisture during periods of dry weather. Compacted fill soils should be covered shortly after placement. Native soils will likely expand during excavation and transport, and consolidate during compaction. Development of site-specific expansion and consolidation factors is beyond the scope of this investigation. Columbia West can provide site-specific factors upon request.

Because they are moisture-sensitive, fine-textured soils are often difficult to excavate and compact during wet weather conditions. If adequate compaction is not achievable with clean native soils, import structural fill consisting of granular fill meeting WSDOT specifications for *Gravel Borrow 9-03.14(1)* is recommended.

Representative samples of proposed engineered structural fill should be submitted for laboratory analysis and approval by Columbia West prior to placement. Laboratory analyses should include particle-size gradation and standard Proctor moisture-density analysis.

6.3 Cut and Fill Slopes

Fill placed on existing grades steeper than 5H:1V should be horizontally benched at least 10 feet into the slope. Fill slopes greater than six feet in height should be vertically keyed

into existing subsurface soil. A typical fill slope cross-section is shown in Figure 3. Drainage implementations, including subdrains or perforated drainpipe trenches, may also be necessary in proximity to cut and fill slopes if seeps or springs are encountered. Drainage design may be performed on a case-by-case basis. Extent, depth, and location of drainage may be determined in the field by Columbia West during construction when soil conditions are exposed. Failure to provide adequate drainage may result in soil sloughing, settlement, or erosion.

Final cut or fill slopes at the site should not exceed 2H:1V or 10 feet in height without individual slope stability analysis. The values above assume a minimum horizontal setback for loads of 10 feet from top of cut or fill slope face or overall slope height divided by three (H/3), whichever is greater. A minimum slope setback detail for structures is presented in Figure 4.

Concentrated drainage or water flow over the face of slopes should be prohibited, and adequate protection against erosion is required. Fill slopes should be constructed by placing fill material in maximum 12-inch level lifts, compacting as described in Section 6.2, *Engineered Structural Fill* and horizontally benching where appropriate. Fill slopes should be overbuilt, compacted, and trimmed at least two feet horizontally to provide adequate compaction of the outer slope face. Proper cut and fill slope construction is critical to overall project stability and should be observed and documented by Columbia West.

6.4 Foundations

Foundations for proposed structures are anticipated to consist of shallow continuous perimeter or column spread footings. Footings should be designed by a licensed structural engineer and conform to the recommendations below. Typical building loads are not expected to exceed approximately 3 kips per foot for perimeter footings or 10 kips per column. If actual loading exceeds anticipated loading, additional analysis should be conducted for the specific load conditions and proposed footing dimensions.

The existing ground surface should be prepared as described in Section 6.1, *Site Preparation and Grading*, and Section 6.2, *Engineered Structural Fill*. Foundations should bear upon firm native soil or engineered structural fill.

To evaluate bearing capacity for proposed structures, serviceability and reliability of shear resistance for subsurface soils was considered. Allowable bearing capacity is typically a function of footing dimension and subsurface soil properties, including settlement and shear resistance. Based upon in situ field testing and laboratory analysis, the estimated allowable bearing capacity for well-drained foundations prepared as described above is 1,500 psf. Bearing capacity may be increased by one-third for transient lateral forces such as seismic or wind. The estimated coefficient of friction between in situ compacted native soil or engineered structural fill and in-place poured concrete is 0.35. Lateral forces may also be resisted by an assumed passive soil equivalent fluid pressure of 250 psf/f against embedded footings. The upper six inches of soil should be neglected in passive pressure calculations.

Footings should extend to a depth at least 18 inches below lowest adjacent grade to provide adequate bearing capacity and protection against frost heave. Foundations constructed

during wet weather conditions will require over-excavation of saturated subgrade soils and granular structural backfill prior to concrete placement. Over-excavation recommendations should be provided by Columbia West during foundation excavation and construction. Excavations adjacent to foundations should not extend within a 2H:1V angle projected down from the outside bottom footing edge without additional geotechnical analysis.

Foundations should not be permitted to bear upon undocumented fill or disturbed soil. Columbia West should observe foundation excavations prior to placing forms or reinforcing bar to verify subgrade support conditions are as anticipated in this report.

6.5 Slabs on Grade

Proposed structures may have slab-on-grade floors. Slabs should be supported on firm, competent, in situ soil or engineered structural fill. Disturbed soils and unsuitable fills in proposed slab locations should be removed and replaced with structural fill.

Preparation beneath slabs should be performed in accordance with the recommendations presented in Section 6.1, *Site Preparation and Grading* and Section 6.2, *Engineered Structural Fill*. Slabs should be underlain by at least 6 inches of 1 ¼"-0 crushed aggregate meeting WSDOT 9-03.9(3). Geotextile filter fabric conforming to WSDOT 2010 Standard Specification M 41-10, 9-33.2(1), *Geotextile Properties, Table 3: Geotextile for Separation or Soil Stabilization* may be used below the crushed aggregate to increase subgrade support. Base aggregate should be compacted to at least 95 percent of maximum dry density determined by the modified Proctor moisture-density relationship test (ASTM D1557).

For lightly loaded slabs not exceeding 200 psf, the modulus of subgrade reaction is estimated to be 150 psi/inch. Columbia West should be contacted for additional analysis if slab loading exceeds 200 psf. If desired, a moisture barrier may be constructed beneath the slabs. Slabs should be appropriately waterproofed in accordance with the desired type of finished flooring. Slab thickness and reinforcement should be designed by an experienced structural engineer in accordance with anticipated loads.

6.6 Static Settlement

Total long-term static footing displacement for shallow foundations constructed as described in this report is not anticipated to exceed approximately 1 inch. Differential settlement between comparably loaded footing elements is not expected to exceed approximately ½ inch over a span of 50 feet. The resulting vertical displacement after loading may be due to elastic distortion, dissipation of excess pore pressure, or soil creep.

6.7 Excavation

Soils at the site were explored to a maximum depth of 14 feet using a track-mounted excavator. Bedrock was not encountered and blasting or specialized rock-excavation techniques are not anticipated. Perched groundwater layers may exist at shallow depths depending on seasonal fluctuations in the water table. Recommendations presented in Section 6.8, *Dewatering* should be considered where below-grade construction intersects the shallow groundwater table.

Based upon laboratory analysis and field testing, near-surface soils may be Washington State Industrial Safety and Health Administration (WISHA) Type C. For temporary open-cut excavations deeper than four feet, but less than 20 feet in soils of these types, the maximum allowable slope is 1.5H:1V. WISHA soil type should be confirmed during field construction activities by the contractor. Soil is often anisotropic and heterogeneous, and it is possible that WISHA soil types determined in the field may differ from those described above.

Site-specific shoring design may be required if open-cut excavations are infeasible or if excavations are proposed adjacent to existing infrastructure. Typical methods for stabilizing excavations consist of soldier piles and timber lagging, sheet pile walls, tiebacks and shotcrete, or pre-fabricated hydraulic shoring. Because lateral earth pressure distributions acting on below-grade structures are dependent upon the type of shoring system used, Columbia West should be contacted to conduct additional analysis when shoring type, excavation depths, and locations are known.

The contractor should be held responsible for site safety, sloping, and shoring. Columbia West is not responsible for contractor activities and excavation should be conducted in accordance with all applicable local, state, and federal laws.

6.8 Dewatering

Groundwater elevation and hydrostatic pressure should be carefully considered during design of utilities, retaining walls, or other structures that require below-grade excavation. Utility trenches in shallow groundwater areas or excavations and cuts that remain open for even short periods of time may undermine or collapse due to groundwater effects. Placement of layers of riprap or quarry spalls in localized areas on shallow excavation side slopes may be required to limit instability. Over-excavation and stabilization of pipe trenches or other excavations with imported crushed aggregate or gabion rock may also be necessary to provide adequate subgrade support.

Significant pumping and dewatering may be required to temporarily reduce the groundwater elevation to allow construction of proposed below-grade structures, installation of utilities, or placement of structural fills. Dewatering via a sump within excavation zones may be insufficient to control groundwater and provide excavation side slope stability. Dewatering may be more feasibly conducted by installing a system of temporary well points and pumps around proposed excavation areas or utility trenches. Depending on proposed utility depths, a site-specific dewatering plan may be necessary. Well pumps should remain functioning at all times during the excavation and construction period. Suitable back-up pumps and power supplies should be available to prevent unanticipated shut-down of dewatering equipment. Failure to operate pumps full-time may result in flooding of the excavation zones, resulting in damage to forms, slopes, or equipment.

6.9 Lateral Earth Pressure

Lateral earth pressures should be considered during design of retaining walls and below grade structures. Hydrostatic pressure and additional surcharge loading should also be considered. Wall foundation construction and bearing capacity should adhere to specifications provided previously in Section 6.4, *Foundations*. Retained material may

include engineered structural backfill or undisturbed native soil. Structural wall backfill should consist of imported granular material meeting *Section 9-03.12(2) of WSDOT Standard Specifications*. Backfill should be prepared and compacted to at least 95 percent of maximum dry density as determined by the modified Proctor test (*ASTM D1557*). Recommended parameters for lateral earth pressures for retained soils and engineered structural backfill consisting of imported granular fill meeting WSDOT specifications for *Gravel Backfill for Walls 9-03.12(2)* are presented in Table 1.

Table 1. Recommended Lateral Earth Pressure Parameters for Level Backfill

Retained Soil	Equivalent Fluid Pressure for Level Backfill			Wet Density	Drained Internal Angle of Friction
	At- rest	Active	Passive		
Undisturbed native Lean CLAY with Sand (Soil Type 2)	60 pcf	41 pcf	293 pcf	110 pcf	27°
Undisturbed native SILT (Soil Type 3)	61 pcf	42 pcf	319 pcf	115 pcf	28°
Approved Structural Backfill Material WSDOT 9-03.12(2) compacted aggregate backfill	56 pcf	35 pcf	520 pcf	135 pcf	36°

**The upper 6 inches of soil should be neglected in passive pressure calculations. If exterior grade from top or toe of retaining wall is sloped, Columbia West should be contacted to provide location-specific lateral earth pressures.*

The design parameters presented in Table 1 are valid for static loading cases only and are based upon in situ undisturbed native soils or compacted granular fill. The recommended earth pressures do not include surcharge loads, dynamic loading, hydrostatic pressure, or seismic design. If sloped backfill conditions are proposed, Columbia West should be contacted for additional analysis and associated recommendations.

If seismic design is required for unrestrained walls, seismic forces may be calculated by superimposing a uniform lateral force of $10H^2$ pounds per lineal foot of wall, where H is the total wall height in feet. The resultant force should be applied at 0.6H from the base of the wall.

A continuous one-foot-thick zone of free-draining, washed, open-graded 1-inch by 2-inch drain rock and a 4-inch perforated gravity drainpipe is assumed behind retaining walls. Geotextile filter fabric should be placed between the drain rock and backfill soil. Specifications for drainpipe design are presented in Section 6.11, *Drainage*. If walls cannot be gravity drained, saturated base conditions and/or applicable hydrostatic pressures should be assumed.

Final retaining wall design should be reviewed and approved by Columbia West. Retaining wall subgrade and backfill activities should also be observed and tested for compliance with recommended specifications by Columbia West during construction.

6.10 Seismic Design Considerations

According to the *ASCE 7 Hazard Tool*, the anticipated peak ground and maximum considered earthquake spectral response accelerations resulting from seismic activity for the subject site are summarized in Table 2.

Table 2. Approximate Probabilistic Ground Motion Values for ‘firm rock’ sites based on subject property longitude and latitude

	2% Probability of Exceedance in 50 yrs
Peak Ground Acceleration	0.363 g
0.2 sec Spectral Acceleration	0.802 g
1.0 sec Spectral Acceleration	0.378 g

The listed probabilistic ground motion values are based upon “firm rock” sites with an assumed shear wave velocity of 2,500 ft/s in the upper 100 feet of soil profile. These values should be adjusted for site class effects by applying site coefficients F_a and F_v and F_{PGA} as defined by *ASCE 7-16 and associated ASCE 7-16 Supplement 1, dated December 12, 2018, Tables 11.4-1, 11.4-2, and 11.8-1*. The site coefficients are intended to more accurately characterize estimated peak ground and respective earthquake spectral response accelerations by considering site-specific soil characteristics and index properties.

Localized peak ground accelerations exceeding the adjusted values may occur in some areas in direct proximity to an earthquake’s origin. This may be a result of amplification of seismic energy due to depth to competent bedrock, compression and shear wave velocity of bedrock, presence and thickness of loose, unconsolidated alluvial deposits, soil plasticity, grain size, and other factors.

Identification of specific seismic response spectra is beyond the scope of this investigation. If site structures are designed in accordance with recommendations specified in the *2018 IBC*, the potential for peak ground accelerations in excess of the adjusted and amplified values should be understood.

6.11 Drainage

At a minimum, site drainage should include surface water collection and conveyance to properly designed stormwater management structures and facilities. Drainage design in general should conform to City of La Center regulations. Finished site grading should be conducted with positive drainage away from structures. Depressions or shallow areas that may retain ponding water should be avoided. Roof drains, low-point drains, and perimeter foundation drains are recommended for structures. Drains should consist of separate systems and gravity flow with a minimum two-percent slope away from foundations into an approved discharge location.

Perimeter foundation drains should consist of 3-inch perforated PVC pipe surrounded by a minimum of 1 ft³ of clean, washed drain rock per linear foot of pipe and wrapped with geotextile filter fabric. Open-graded drain rock with a maximum particle size of 3 inches and less than 2 percent passing the No. 200 sieve is recommended. Geotextile filter fabric should

consist of Mirafi 140N or approved equivalent, with AOS between No. 70 and No. 100 sieve. The water permittivity should be greater than 1.5/sec. Figure 5 presents a typical foundation drain. Perimeter drains may limit increased hydrostatic pressure beneath footings and assist in reducing potential perched moisture areas.

Subdrains should also be considered if portions of the site are cut below surrounding grades. Shallow groundwater, springs, or seeps should be conveyed via drainage channel or perforated pipe into an approved discharge. Recommendations for design and installation of perforated drainage pipe may be performed on a case-by-case basis by Columbia West during construction. Failure to provide adequate surface and sub-surface drainage may result in soil slumping or unanticipated settlement of structures exceeding tolerable limits. A typical perforated drainpipe trench detail is presented in Figure 6.

Site improvements construction in some areas may occur at or near the shallow groundwater table, particularly if work is conducted during wet-weather conditions. Dewatering may be necessary, and a drainage mat may be required to achieve sufficient elevation for fill placement. A typical drainage mat is shown on Figure 7. Columbia West should determine drainage mat location, extent, and thickness when subsurface conditions are exposed. Drainage mats may need to be constructed in conjunction with subdrains to convey captured water to an approved discharge location.

Drains should be closely monitored after construction to assess their effectiveness. If additional surface or shallow subsurface seeps become evident, the drainage provisions may require modification or additional drains. Columbia West should be consulted to provide appropriate recommendations.

6.12 Bituminous Asphalt and Portland Cement Concrete

Based upon correspondence with the client, proposed development may include new public asphalt-paved right-of-way improvements. Columbia West recommends adherence to City of La Center paving guidelines for roadway improvements in the public right-of-way.

For dry weather construction, pavement surface sections should bear upon competent subgrade consisting of scarified and compacted native soil or engineered structural fill. Wet weather pavement construction is discussed in Section 6.13, *Wet Weather Construction Methods and Techniques*. Subgrade conditions should be evaluated and tested by Columbia West prior to placement of crushed aggregate base. Subgrade evaluation should include nuclear gauge density testing and wheel proof-roll observations conducted with a loaded 12-cubic yard, double-axle dump truck or equivalent. Nuclear gauge density testing should be conducted at 150-foot intervals or as determined by the onsite geotechnical engineer. Subgrade soil should be compacted to at least 95 percent of the modified Proctor dry density, as determined by *ASTM D1557*. Areas of observed deflection or rutting during proof-roll evaluation should be excavated to a firm surface and replaced with compacted crushed aggregate.

Aggregate base should consist of 1 ¼"-0 crushed aggregate meeting *WSDOT 9-03.9(3)* and be compacted to at least 95 percent of maximum dry density as determined by *ASTM D1557*. Aggregate base should also be subject to proof-roll observations as described

above. Asphalt concrete pavement should be compacted to at least 91 percent of maximum Rice density. Nuclear gauge density testing should be conducted to verify adherence to recommended specifications. Testing frequency should be in accordance with WSDOT and City of La Center specifications.

Portland cement concrete curbs and sidewalks should be installed in accordance with City of La Center specifications. Curb and sidewalk aggregate base should consist of 1 ¼"-0 crushed aggregate meeting *WSDOT 9-03.9(3)* and be compacted to at least 95 percent of maximum dry density as determined by *ASTM D1557*. Curb and sidewalk base should also be subject to proof-roll observations as described above. Soft areas that deflect or rut should be stabilized prior to pouring concrete. Concrete should be tested during installation in accordance with *ASTM C171, C138, C231, C143, C1064, and C31*. This includes casting of cylinder specimen at a frequency of four cylinders per 100 cubic yards of poured concrete. Recommended field concrete testing includes slump, air entrainment, temperature, and unit weight.

6.13 Wet Weather Construction Methods and Techniques

Wet weather construction often results in significant shear strength reduction and soft areas that may rut or deflect. Installation of granular working layers may be necessary to provide a firm support base and sustain construction equipment. Granular layers should consist of all-weather gravel, 2x4-inch gabion, or other similar material (six-inch maximum size with less than five percent passing the No. 200 sieve).

Construction equipment traffic across exposed soil should be minimized. Equipment traffic induces dynamic loading, which may result in weak areas and significant reduction in shear strength for wet soils. Wet weather construction may also result in generation of significant excess quantities of soft wet soil. This material should be removed from the site or stockpiled in a designated area.

Construction during wet weather conditions may require increased base thickness. Over-excavation of subgrade soils or subgrade amendment with lime and/or cement may be necessary to provide a firm base upon which to place crushed aggregate. Geotextile filter fabric is also recommended. If soil amendment with lime or cement is considered, Columbia West should be contacted to provide appropriate recommendations based upon observed field conditions and desired performance criteria.

Crushed aggregate base should be installed in a single lift with trucks end-dumping from an advancing pad of granular fill. During extended wet periods, stripping activities may also need to be conducted from an advancing pad of granular fill. Once installed, the crushed aggregate base should be compacted with several passes from a static drum roller. A vibratory compactor is not recommended because it may further disturb the subgrade. Subdrains may also be necessary to provide subgrade drainage and maintain structural integrity.

Aggregate base should consist of 1 ¼"-0 crushed aggregate meeting *WSDOT 9-03.9(3)* and be compacted to at least 95 percent of maximum dry density according to the modified Proctor density test (*ASTM D1557*). Compaction should be verified by nuclear gauge density

testing, conducted at 150-foot intervals or as determined by the onsite geotechnical engineer. Observation of a proof-roll with a loaded dump truck is also recommended as an indication of the compacted aggregate's performance.

It should be understood that wet weather construction is risky and costly. Columbia West should observe and document wet weather construction activities. Proper construction methods and techniques are critical to overall project integrity.

6.14 Erosion Control Measures

Based upon field observations and laboratory testing, the erosion hazard for site soils in flat to shallow-gradient portions of the property is likely to be low. The potential for erosion generally increases in sloped areas. Therefore, disturbance to vegetation in sloped areas should be minimized during construction activities. Soil is also prone to erosion if unprotected and unvegetated during periods of increases precipitation. Erosion can be minimized by performing construction activities during dry summer months.

Site-specific erosion control measures should be implemented to address the maintenance of exposed areas. This may include silt fence, biofilter bags, straw wattles, or other suitable methods. During construction activities, exposed areas should be well-compacted and protected from erosion with visqueen, surface tackifier, or other means, as appropriate. Temporary slopes or exposed areas may be covered with straw, crushed aggregate, or riprap in localized areas to minimize erosion. Erosion and water runoff during wet weather conditions may be controlled by application of strategically placed channels and small detention depressions with overflow pipes.

After grading, exposed surfaces should be vegetated as soon as possible with erosion-resistant native vegetation. Jute mesh or straw may be applied to enhance vegetation. Once established, vegetation should be properly maintained. Disturbance to existing native vegetation and surrounding organic soil should also be minimized during construction activities.

6.15 Soil Shrink/Swell Potential

Based upon laboratory analysis, near-surface soils contain as much as approximately 93 percent by weight passing the No. 200 sieve and exhibit a plasticity index ranging from 9 to 11 percent. This indicates the potential for soil shrinking or swelling and underscores the importance of proper moisture conditioning during fill placement.

6.16 Utility Installation

Utility installation may require subsurface excavation and trenching. Excavation, trenching and shoring should conform to federal (Occupational Safety and Health Administration) (OSHA) (29 CFR, Part 1926) and WISHA (WAC, Chapter 296-155) regulations. Site soils may slough when cut vertically and sudden precipitation events or perched groundwater may result in accumulation of water within excavation zones and trenches.

Utilities should be installed in general accordance with manufacturer's recommendations. Utility trench backfill should consist of *WSDOT 9-03.19 Bank Run Gravel for Trench Backfill* or *WSDOT 9-03.14(2) Select Borrow* with a maximum particle size of 2 ½-inches. Trench

backfill material within 18 inches of the top of utility pipes should be hand compacted (i.e., no heavy compaction equipment). The remaining backfill should be compacted to at least 95 percent of maximum dry density as determined by the standard Proctor moisture-density test (*ASTM D698*). Clean, free-draining, fine bedding sand is recommended for use in the pipe zone. With exception of the pipe zone, backfill should be placed in loose lifts not exceeding 12 inches in thickness.

Compaction of utility trench backfill material should be verified by nuclear gauge field compaction testing performed in accordance with *ASTM D6938*. Field compaction testing should be performed at 200-foot intervals along the utility trench centerline at the surface and midpoint depth of the trench. Compaction frequency and specifications may be modified for non-structural areas in accordance with recommendations of the site geotechnical engineer.

7.0 CONCLUSION AND LIMITATIONS

This geotechnical site investigation report was prepared in accordance with accepted standard conventional principles and practices of geotechnical engineering. This investigation pertains only to material tested and observed as of the date of this report and is based upon proposed site development as described in the text herein. This report is a professional opinion containing recommendations established by engineering interpretations of subsurface soils based upon conditions observed during site exploration. Soil conditions may differ between tested locations or over time. Slight variations may produce impacts to the performance of structural facilities if not adequately addressed. This underscores the importance of diligent QA/QC construction observation and testing to verify soil conditions are as anticipated in this report.

Therefore, this report contains several recommendations for field observation and testing by Columbia West personnel during construction activities. Columbia West cannot accept responsibility for deviations from recommendations described in this report. Future performance of structural facilities is often related to the degree of construction observation by qualified personnel. These services should be performed to the full extent recommended.

This report is not an environmental assessment and should not be construed as a representative warranty of site subsurface conditions. The discovery of adverse environmental conditions, or subsurface soils that deviate from those described in this report, should immediately prompt further investigation. The above statements are in lieu of all other statements expressed or implied.

This report was prepared solely for the client and is not to be reproduced without prior authorization from Columbia West. Final engineering plans and specifications for the project should be reviewed and approved by Columbia West as they relate to geotechnical and grading issues prior to final design approval. Columbia West is not responsible for independent conclusions or recommendations made by other parties based upon information presented in this report. Unless a particular service was expressly included in the scope, it was not performed and there should be no assumptions based upon services not provided. Additional report limitations and important information about this document are

Geotechnical Site Investigation
La Center Flow Station #1, La Center, Washington

Page 19

presented in Appendix E. This information should be carefully read and understood by the client and other parties reviewing this document.

Sincerely,

COLUMBIA WEST ENGINEERING, Inc.



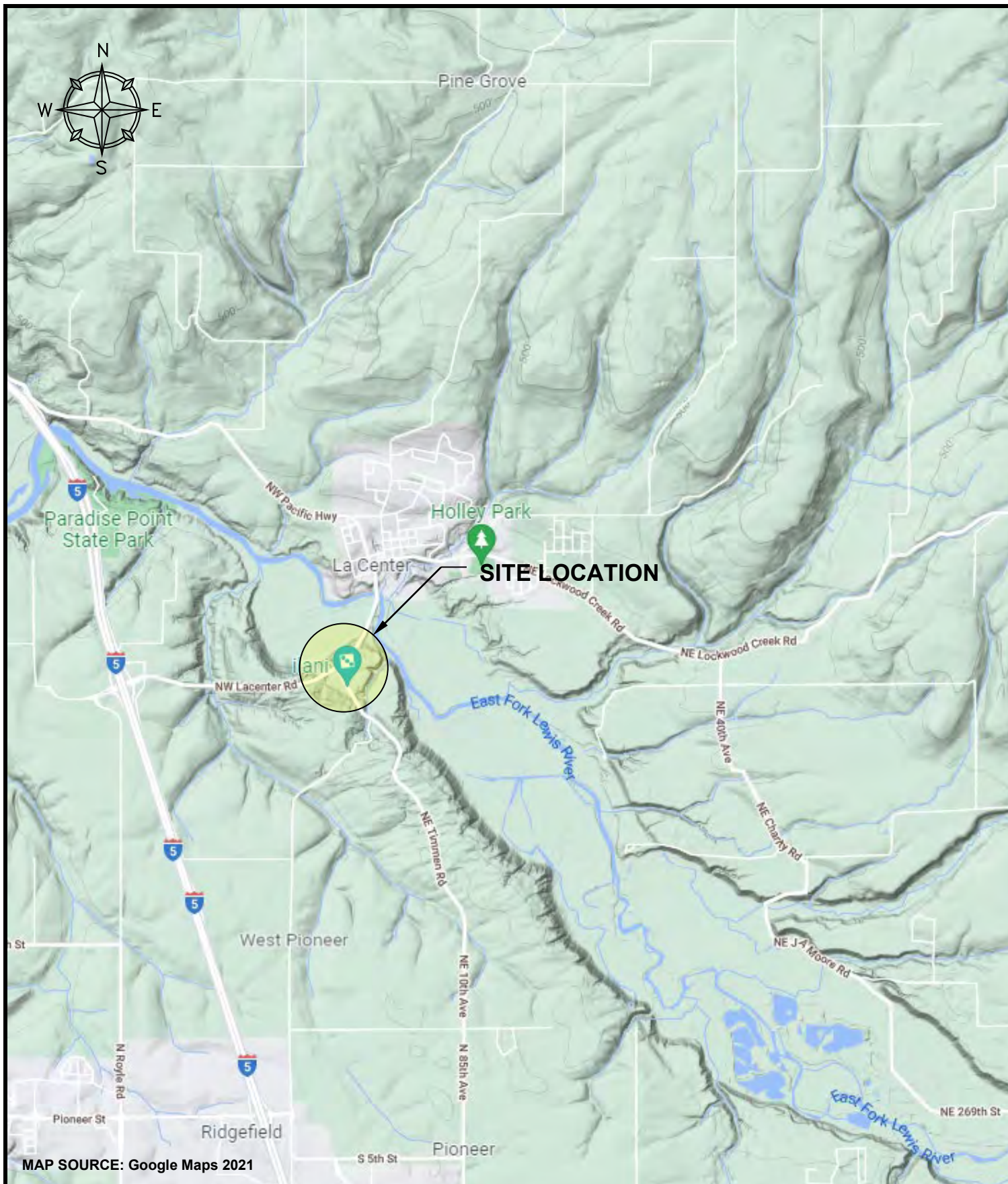
Lance V. Lehto, PE, GE
President



REFERENCES

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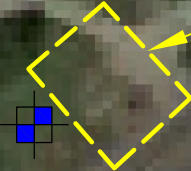
FIGURES





LOCATION OF PROPOSED FLOW STATION

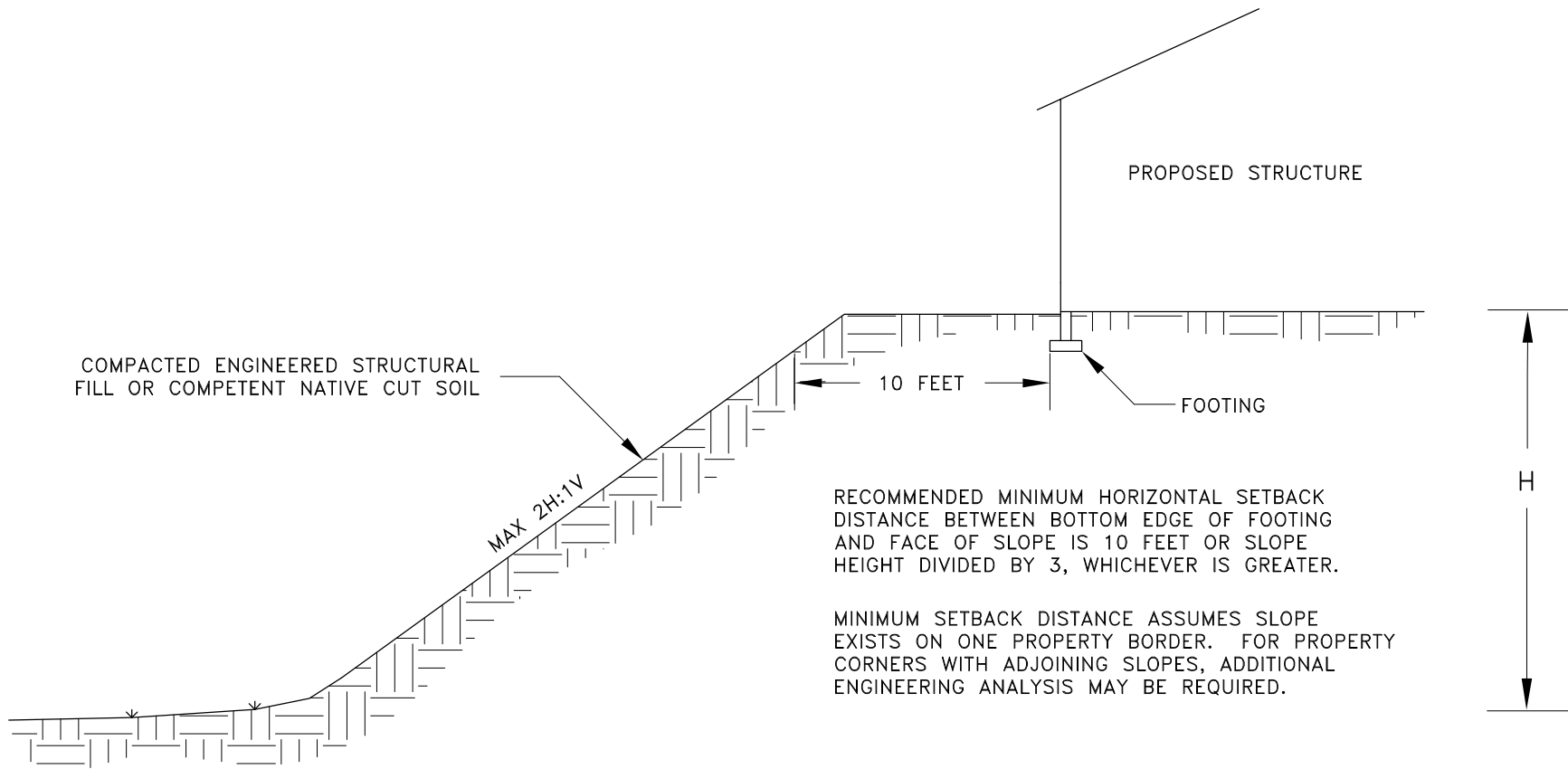
TP-1

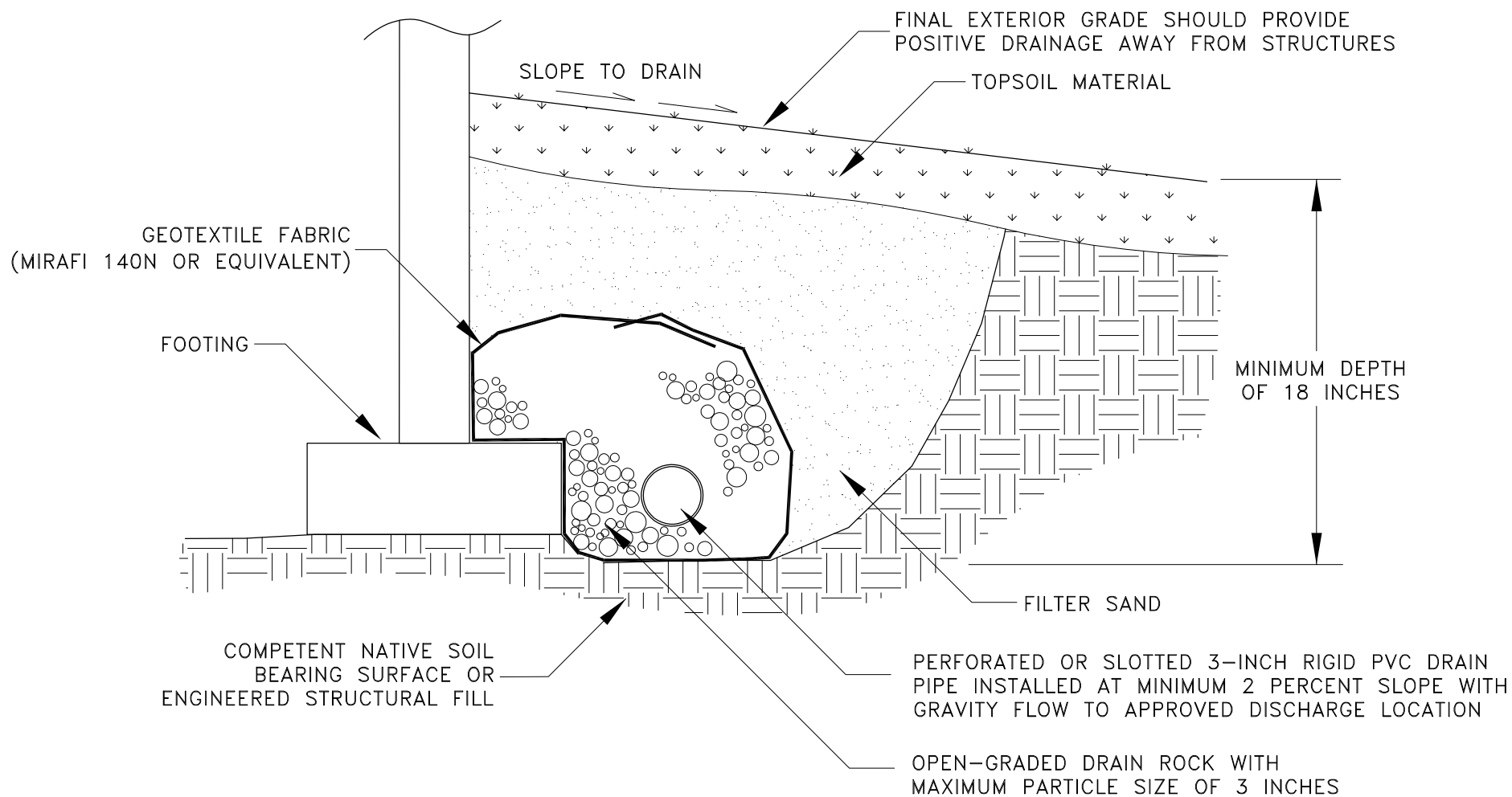


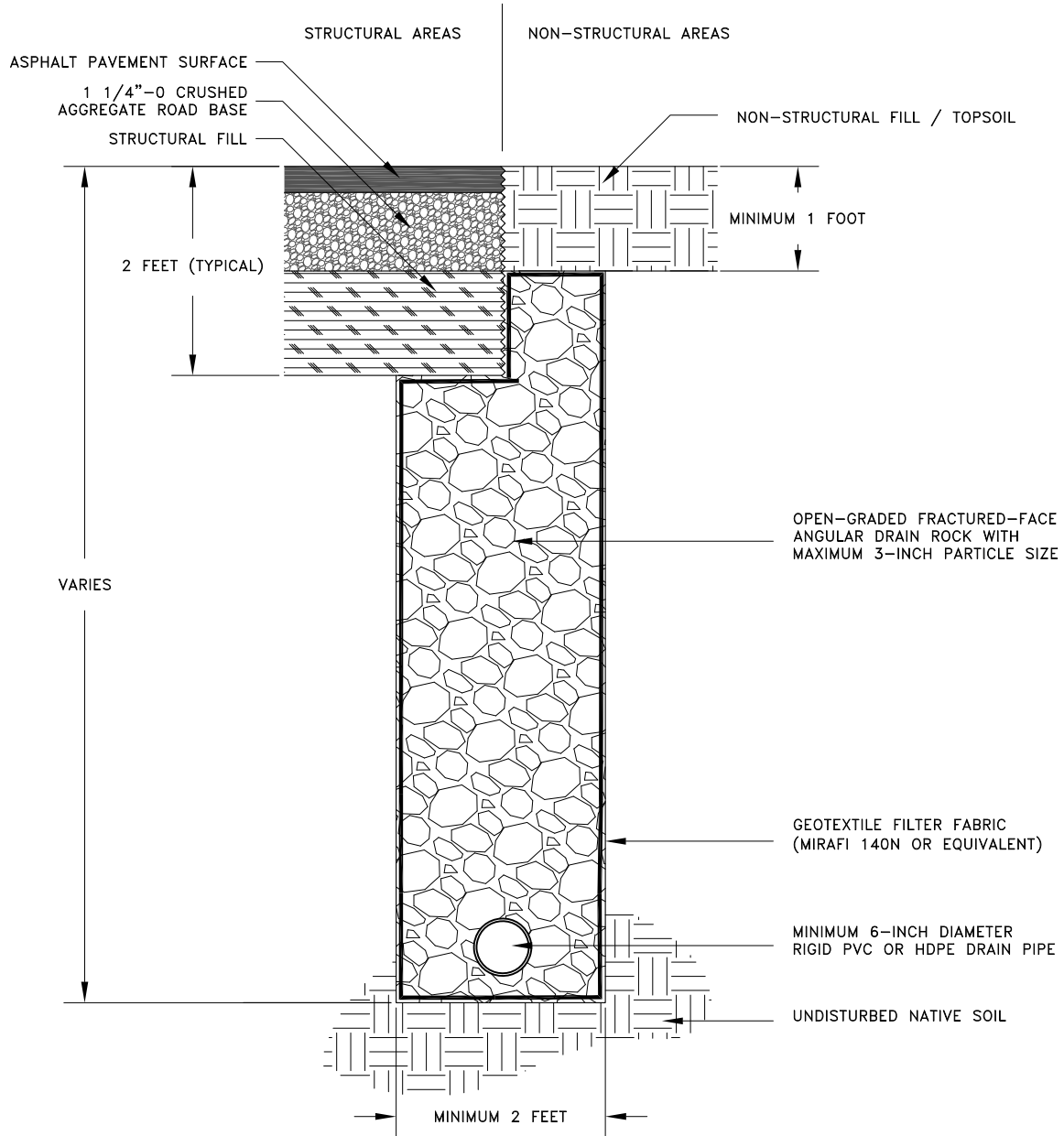
NW LA CENTER ROAD

NW TIMMEN ROAD

 LOCATION OF TEST PIT

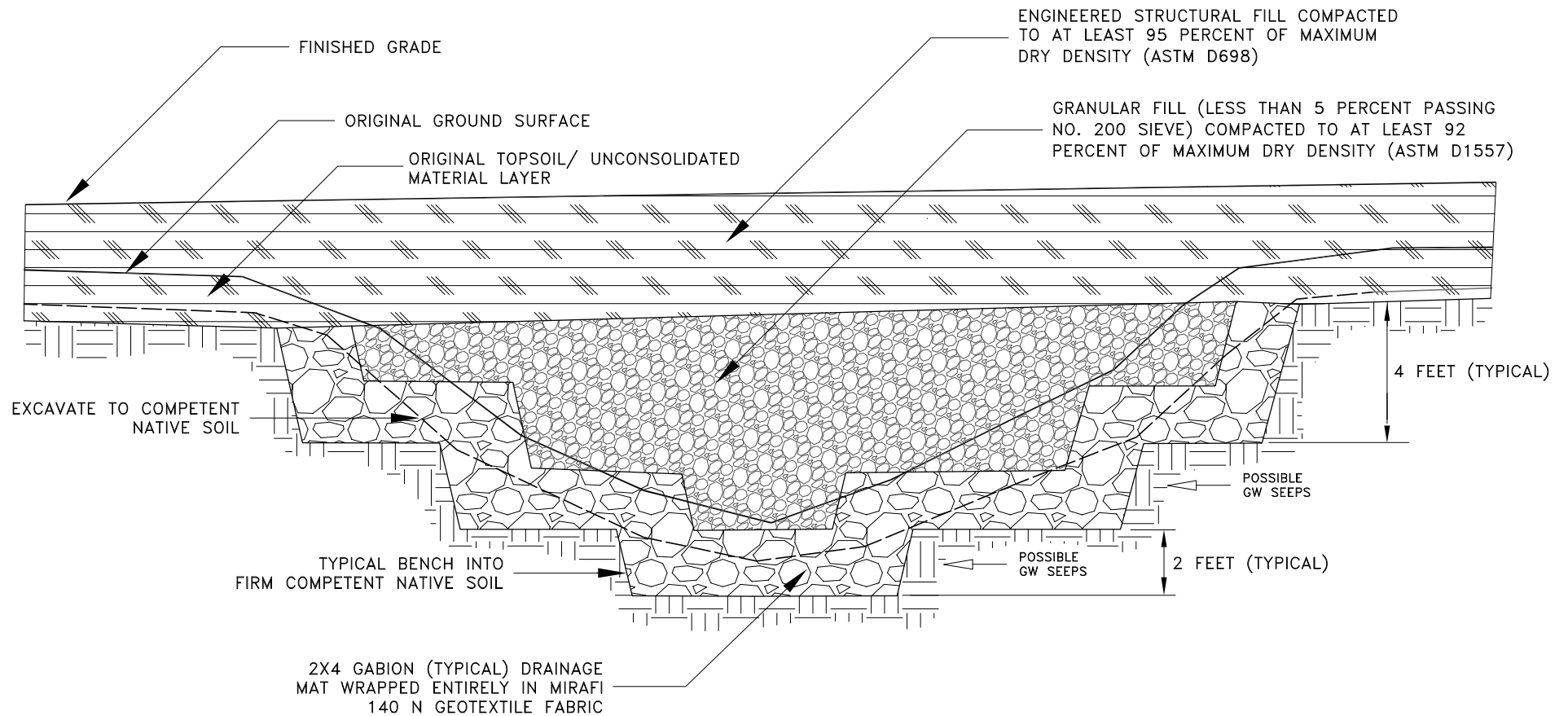






NOTE: LOCATION, INVERT ELEVATION, DEPTH OF TRENCH, AND EXTENT OF PERFORATED PIPE REQUIRED MAY BE MODIFIED BY THE GEOTECHNICAL ENGINEER DURING CONSTRUCTION BASED UPON FIELD OBSERVATION AND SITE-SPECIFIC SOIL CONDITIONS.

TYPICAL DRAINAGE MAT CROSS-SECTION



APPENDIX A

LABORATORY TEST RESULTS

PARTICLE-SIZE ANALYSIS REPORT

PROJECT La Center Flow Station #1 La Center, Washington		CLIENT Clark Public Utilities PO Box 8900 Vancouver, Washington 98668		PROJECT NO. 21300		LAB ID S22-0020																																																																																																																																																												
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SPECIFICATIONS none				AASHTO CLASSIFICATION A-6(8)																																																																																																																																																														
LABORATORY TEST DATA																																																																																																																																																																		
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ADDITIONAL DATA initial dry mass (g) = 204.20 as-received moisture content = 31.6% liquid limit = 33 plastic limit = 22 plasticity index = 11 fineness modulus = n/a coefficient of curvature, C_c = n/a coefficient of uniformity, C_u = n/a effective size, $D_{(10)}$ = n/a $D_{(30)}$ = n/a $D_{(60)}$ = n/a				SIEVE DATA % gravel = 0.2% % sand = 19.9% % silt and clay = 79.9%																																																																																																																																																														
GRAIN SIZE DISTRIBUTION 				<table border="1"> <thead> <tr> <th colspan="2">SIEVE SIZE</th> <th colspan="3">PERCENT PASSING</th> </tr> <tr> <th>US</th> <th>mm</th> <th>SIEVE act.</th> <th>interp.</th> <th>SPECS max min</th> </tr> </thead> <tbody> <tr><td>6.00"</td><td>150.0</td><td></td><td>100%</td><td></td></tr> <tr><td>4.00"</td><td>100.0</td><td></td><td>100%</td><td></td></tr> <tr><td>3.00"</td><td>75.0</td><td></td><td>100%</td><td></td></tr> <tr><td>2.50"</td><td>63.0</td><td></td><td>100%</td><td></td></tr> <tr><td>2.00"</td><td>50.0</td><td></td><td>100%</td><td></td></tr> <tr><td>1.75"</td><td>45.0</td><td></td><td>100%</td><td></td></tr> <tr><td>1.50"</td><td>37.5</td><td></td><td>100%</td><td></td></tr> <tr><td>1.25"</td><td>31.5</td><td></td><td>100%</td><td></td></tr> <tr><td>1.00"</td><td>25.0</td><td></td><td>100%</td><td></td></tr> <tr><td>7/8"</td><td>22.4</td><td></td><td>100%</td><td></td></tr> <tr><td>3/4"</td><td>19.0</td><td></td><td>100%</td><td></td></tr> <tr><td>5/8"</td><td>16.0</td><td></td><td>100%</td><td></td></tr> <tr><td>1/2"</td><td>12.5</td><td></td><td>100%</td><td></td></tr> <tr><td>3/8"</td><td>9.50</td><td></td><td>100%</td><td></td></tr> <tr><td>1/4"</td><td>6.30</td><td>100%</td><td></td><td></td></tr> <tr><td>#4</td><td>4.75</td><td>100%</td><td></td><td></td></tr> <tr><td>#8</td><td>2.36</td><td></td><td>99%</td><td></td></tr> <tr><td>#10</td><td>2.00</td><td>99%</td><td></td><td></td></tr> <tr><td>#16</td><td>1.18</td><td></td><td>99%</td><td></td></tr> <tr><td>#20</td><td>0.850</td><td>99%</td><td></td><td></td></tr> <tr><td>#30</td><td>0.600</td><td></td><td>98%</td><td></td></tr> <tr><td>#40</td><td>0.425</td><td>96%</td><td></td><td></td></tr> <tr><td>#50</td><td>0.300</td><td></td><td>95%</td><td></td></tr> <tr><td>#60</td><td>0.250</td><td>94%</td><td></td><td></td></tr> <tr><td>#80</td><td>0.180</td><td></td><td>92%</td><td></td></tr> <tr><td>#100</td><td>0.150</td><td>90%</td><td></td><td></td></tr> <tr><td>#140</td><td>0.106</td><td></td><td>85%</td><td></td></tr> <tr><td>#170</td><td>0.090</td><td></td><td>83%</td><td></td></tr> <tr><td>#200</td><td>0.075</td><td>80%</td><td></td><td></td></tr> </tbody> </table>				SIEVE SIZE		PERCENT PASSING			US	mm	SIEVE act.	interp.	SPECS max min	6.00"	150.0		100%		4.00"	100.0		100%		3.00"	75.0		100%		2.50"	63.0		100%		2.00"	50.0		100%		1.75"	45.0		100%		1.50"	37.5		100%		1.25"	31.5		100%		1.00"	25.0		100%		7/8"	22.4		100%		3/4"	19.0		100%		5/8"	16.0		100%		1/2"	12.5		100%		3/8"	9.50		100%		1/4"	6.30	100%			#4	4.75	100%			#8	2.36		99%		#10	2.00	99%			#16	1.18		99%		#20	0.850	99%			#30	0.600		98%		#40	0.425	96%			#50	0.300		95%		#60	0.250	94%			#80	0.180		92%		#100	0.150	90%			#140	0.106		85%		#170	0.090		83%		#200	0.075	80%		
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ATTERBERG LIMITS REPORT

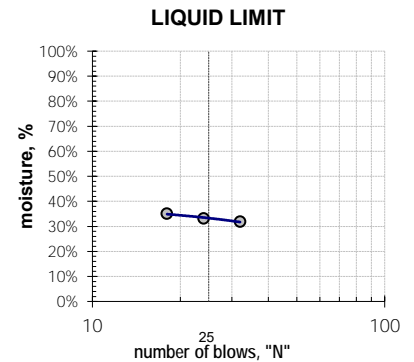
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		REPORT DATE 01/24/22	FIELD ID TP1.1
		DATE SAMPLED 01/03/22	SAMPLED BY CWS

MATERIAL DATA

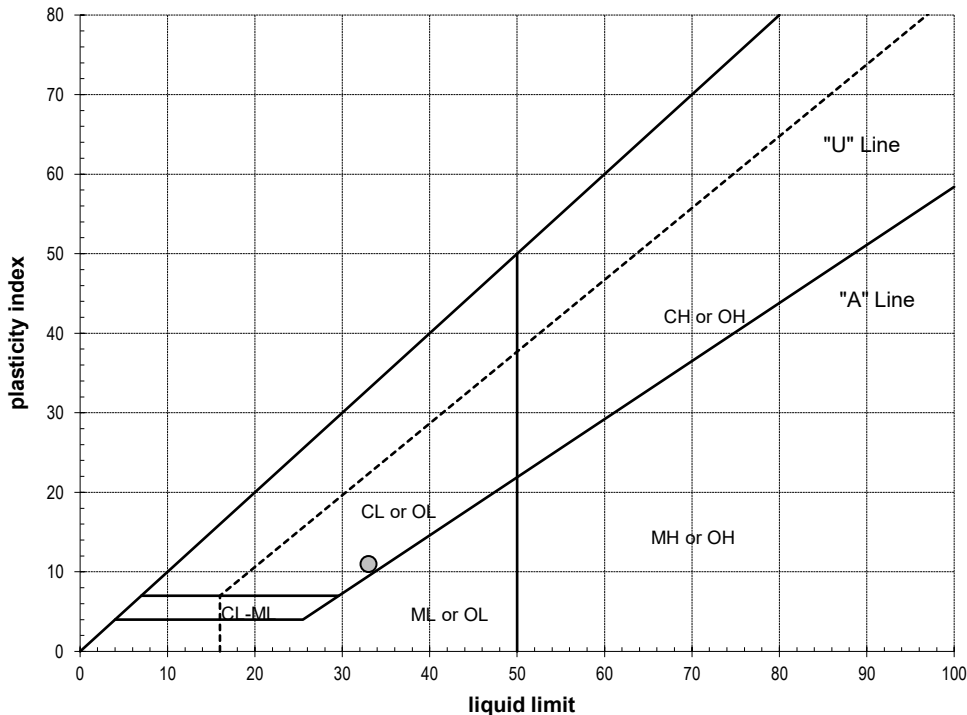
MATERIAL SAMPLED Lean CLAY with Sand	MATERIAL SOURCE Test Pit TP-01 depth = 3 feet	USCS SOIL TYPE CL, Lean Clay with Sand
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LABORATORY TEST DATA

LABORATORY EQUIPMENT		TEST PROCEDURE	
Liquid Limit Machine, Hand Rolled		ASTM D4318	
ATTERBERG LIMITS		LIQUID LIMIT DETERMINATION	
liquid limit = 33		1234	
plastic limit = 22		wet soil + pan weight, g = 31.92 33.18 33.08	
plasticity index = 11		dry soil + pan weight, g = 29.25 30.12 29.91	
		pan weight, g = 20.87 20.90 20.87	
		N (blows) = 32 24 18	
		moisture, % = 31.9 % 33.2 % 35.1 %	
SHRINKAGE		PLASTIC LIMIT DETERMINATION	
shrinkage limit = n/a		1234	
shrinkage ratio = n/a		wet soil + pan weight, g = 27.03 27.41	
		dry soil + pan weight, g = 25.96 26.23	
		pan weight, g = 20.96 20.78	
		moisture, % = 21.4 % 21.7 %	



PLASTICITY CHART



ADDITIONAL DATA

% gravel = 0.2%
 % sand = 19.9%
 % silt and clay = 79.9%
 % silt = n/a
 % clay = n/a
 moisture content = 31.6%

DATE TESTED 01/21/22	TESTED BY MJR
-------------------------	------------------

James C. Smith

PARTICLE-SIZE ANALYSIS REPORT

PROJECT La Center Flow Station #1 La Center, Washington		CLIENT Clark Public Utilities PO Box 8900 Vancouver, Washington 98668		PROJECT NO. 21300		LAB ID S22-0021	
				REPORT DATE 01/24/22		FIELD ID TP1.2	
				DATE SAMPLED 01/03/22		SAMPLED BY CWS	
MATERIAL DATA							
MATERIAL SAMPLED SILT		MATERIAL SOURCE Test Pit TP-01 depth = 10 feet		USCS SOIL TYPE ML, Silt			
SPECIFICATIONS none				AASHTO CLASSIFICATION A-4(10)			
LABORATORY TEST DATA							
LABORATORY EQUIPMENT Rainhart "Mary Ann" Sifter, moist prep, hand washed, 12" single sieve-set				TEST PROCEDURE ASTM D6913, Method A			
ADDITIONAL DATA initial dry mass (g) = 200.79 as-received moisture content = 38.6% liquid limit = 37 plastic limit = 28 plasticity index = 9 fineness modulus = n/a coefficient of curvature, C_c = n/a coefficient of uniformity, C_u = n/a effective size, $D_{(10)}$ = n/a $D_{(30)}$ = n/a $D_{(60)}$ = n/a				SIEVE DATA % gravel = 0.0% % sand = 7.0% % silt and clay = 93.0%			
GRAIN SIZE DISTRIBUTION 				SIEVE SIZE		PERCENT PASSING	
				US	mm	SIEVE act.	interp.
				GRAVEL			
				6.00"	150.0	100%	
				4.00"		100%	
				3.00"	75.0	100%	
				2.50"		100%	
				2.00"	63.0	100%	
				1.75"		100%	
				1.50"	50.0	100%	
				1.25"		100%	
				1.00"	45.0	100%	
				7/8"		100%	
				3/4"	37.5	100%	
				5/8"		100%	
				1/2"	31.5	100%	
				3/8"		100%	
				1/4"	25.0	100%	
				#4		100%	
				#8	22.4	100%	
				#10		100%	
				#16	19.0	100%	
				#20		100%	
				#30	16.0	100%	
				#40		100%	
				#50	12.5	100%	
				#60		100%	
				#80	9.50	100%	
				#100		100%	
				#140	6.30	100%	
				#170		100%	
				#200	4.75	100%	
				#8		2.36	
				#10	2.00	100%	
				#16		1.18	
				#20	0.850	100%	
				#30		0.600	
				#40	0.425	99%	
				#50		0.300	
				#60	0.250	99%	
				#80		0.180	
				#100	0.150	98%	
				#140		0.106	
				#170	0.090	96%	
				#200		0.075	
				#200	0.075	93%	
DATE TESTED 01/21/22				TESTED BY BTT			
* sieve sizes —○— sieve data							
				COLUMBIA WEST ENGINEERING, INC. authorized signature			

ATTERBERG LIMITS REPORT

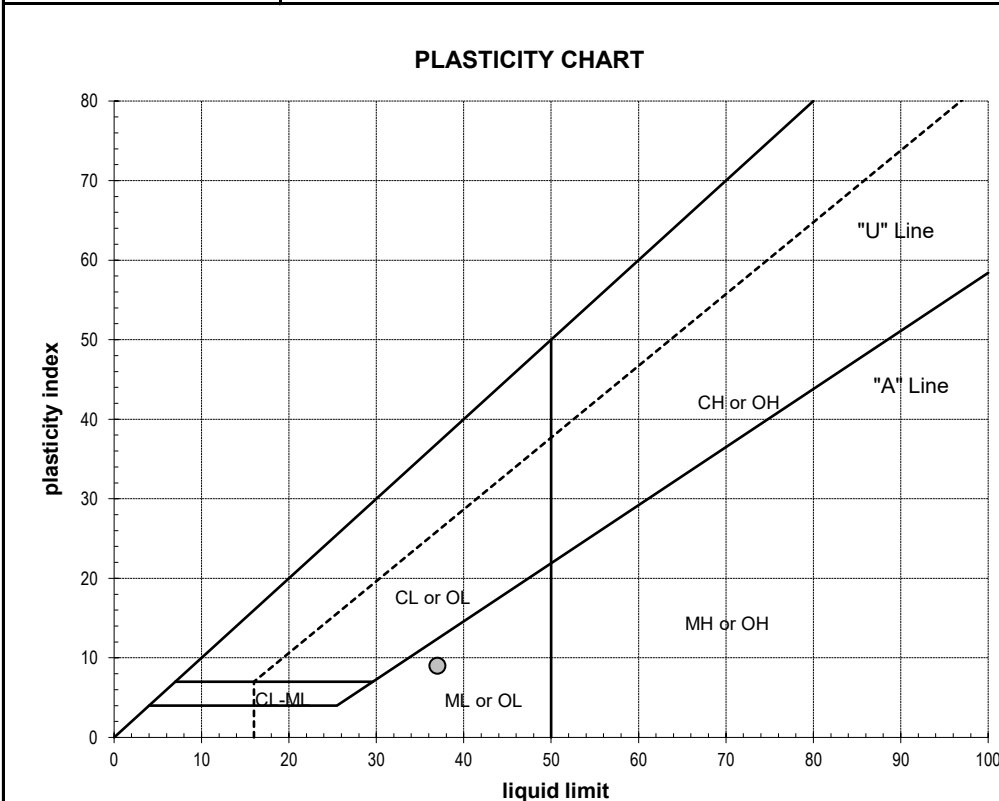
PROJECT La Center Flow Station #1 La Center, Washington	CLIENT Clark Public Utilities PO Box 8900 Vancouver, Washington 98668	PROJECT NO. 21300	LAB ID S22-0021
		REPORT DATE 01/24/22	FIELD ID TP1.2
		DATE SAMPLED 01/03/22	SAMPLED BY CWS

MATERIAL DATA

MATERIAL SAMPLED SILT	MATERIAL SOURCE Test Pit TP-01 depth = 10 feet	USCS SOIL TYPE ML, Silt
--------------------------	--	----------------------------

LABORATORY TEST DATA

LABORATORY EQUIPMENT		TEST PROCEDURE	
Liquid Limit Machine, Hand Rolled		ASTM D4318	
ATTERBERG LIMITS		LIQUID LIMIT DETERMINATION	
liquid limit = 37			
plastic limit = 28			
plasticity index = 9			



ADDITIONAL DATA

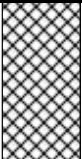
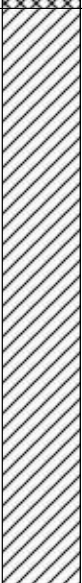
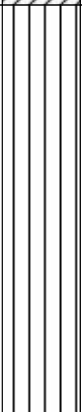
% gravel = 0.0%
 % sand = 7.0%
 % silt and clay = 93.0%
 % silt = n/a
 % clay = n/a
 moisture content = 38.6%

DATE TESTED 01/21/22	TESTED BY KMS
-------------------------	------------------

James C. Smith

APPENDIX B
SUBSURFACE EXPLORATION LOGS

TEST PIT LOG

PROJECT NAME La Center Flow Station #1						CLIENT Clark Public Utilities		PROJECT NO. 21300		TEST PIT NO. TP-1	
PROJECT LOCATION La Center, Washington						CONTRACTOR L&S Contractors		EQUIPMENT Excavator		ENGINEER/GEOLOGIST CWS	
TEST PIT LOCATION See Figure 2						APPROX. SURFACE ELEVATION 148 ft amsl		GROUNDWATER DEPTH 3 feet bgs		START TIME 0819	
FINISH TIME 0842											
Depth (feet)	Sample Field ID	SCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						FILL. Brown, moist, apparent native disturbed soils with trace organics [Soil Type 1].					
5	TP1.1		A-6(8)	CL		Brown, moist to wet, medium stiff, lean CLAY with sand [Soil Type 2]. PP=0.75 TSF TV=1.0 TSF	31.6	79.9	33	11	
10	TP1.2		A-4(10)	ML		Brown/grey, wet, SILT [Soil Type 3].	38.6	93	37	9	
15						Bottom of test pit at 14 feet bgs. Groundwater seeps observed at 3 feet bgs on 01/03/22.					

APPENDIX C
SOIL CLASSIFICATION INFORMATION

SOIL DESCRIPTION AND CLASSIFICATION GUIDELINES

Particle-Size Classification

COMPONENT	ASTM/USCS		AASHTO	
	size range	sieve size range	size range	sieve size range
Cobbles	> 75 mm	greater than 3 inches	> 75 mm	greater than 3 inches
Gravel	75 mm – 4.75 mm	3 inches to No. 4 sieve	75 mm – 2.00 mm	3 inches to No. 10 sieve
Coarse	75 mm – 19.0 mm	3 inches to 3/4-inch sieve	-	-
Fine	19.0 mm – 4.75 mm	3/4-inch to No. 4 sieve	-	-
Sand	4.75 mm – 0.075 mm	No. 4 to No. 200 sieve	2.00 mm – 0.075 mm	No. 10 to No. 200 sieve
Coarse	4.75 mm – 2.00 mm	No. 4 to No. 10 sieve	2.00 mm – 0.425 mm	No. 10 to No. 40 sieve
Medium	2.00 mm – 0.425 mm	No. 10 to No. 40 sieve	-	-
Fine	0.425 mm – 0.075 mm	No. 40 to No. 200 sieve	0.425 mm – 0.075 mm	No. 40 to No. 200 sieve
Fines (Silt and Clay)	< 0.075 mm	Passing No. 200 sieve	< 0.075 mm	Passing No. 200 sieve

Consistency for Cohesive Soil

CONSISTENCY	SPT N-VALUE (BLOWS PER FOOT)	POCKET PENETROMETER (UNCONFINED COMPRESSIVE STRENGTH, tsf)
Very Soft	2	less than 0.25
Soft	2 to 4	0.25 to 0.50
Medium Stiff	4 to 8	0.50 to 1.0
Stiff	8 to 15	1.0 to 2.0
Very Stiff	15 to 30	2.0 to 4.0
Hard	30 to 60	greater than 4.0
Very Hard	greater than 60	-

Relative Density for Granular Soil

RELATIVE DENSITY	SPT N-VALUE (BLOWS PER FOOT)
Very Loose	0 to 4
Loose	4 to 10
Medium Dense	10 to 30
Dense	30 to 50
Very Dense	more than 50

Moisture Designations

TERM	FIELD IDENTIFICATION
Dry	No moisture. Dusty or dry.
Damp	Some moisture. Cohesive soils are usually below plastic limit and are moldable.
Moist	Grains appear darkened, but no visible water is present. Cohesive soils will clump. Sand will bulk. Soils are often at or near plastic limit.
Wet	Visible water on larger grains. Sand and silt exhibit dilatancy. Cohesive soil can be readily remolded. Soil leaves wetness on the hand when squeezed. Soil is much wetter than optimum moisture content and is above plastic limit.

AASHTO SOIL CLASSIFICATION SYSTEM

TABLE 1. Classification of Soils and Soil-Aggregate Mixtures

General Classification	Granular Materials (35 Percent or Less Passing .075 mm)				Silt-Clay Materials (More than 35 Percent Passing 0.075)		
Group Classification	A-1	A-3	A-2	A-4	A-5	A-6	A-7
Sieve analysis, percent passing:							
2.00 mm (No. 10)	-	-	-	-	-	-	-
0.425 mm (No. 40)	50 max	51 min	-	-	-	-	-
0.075 mm (No. 200)	25 max	10 max	35 max	36 min	36 min	36 min	36 min
<u>Characteristics of fraction passing 0.425 mm (No. 40)</u>							
Liquid limit				40 max	41 min	40 max	41 min
Plasticity index	6 max	N.P.		10 max	10 max	11 min	11 min
General rating as subgrade	Excellent to good				Fair to poor		

Note: The placing of A-3 before A-2 is necessary in the "left to right elimination process" and does not indicate superiority of A-3 over A-2.

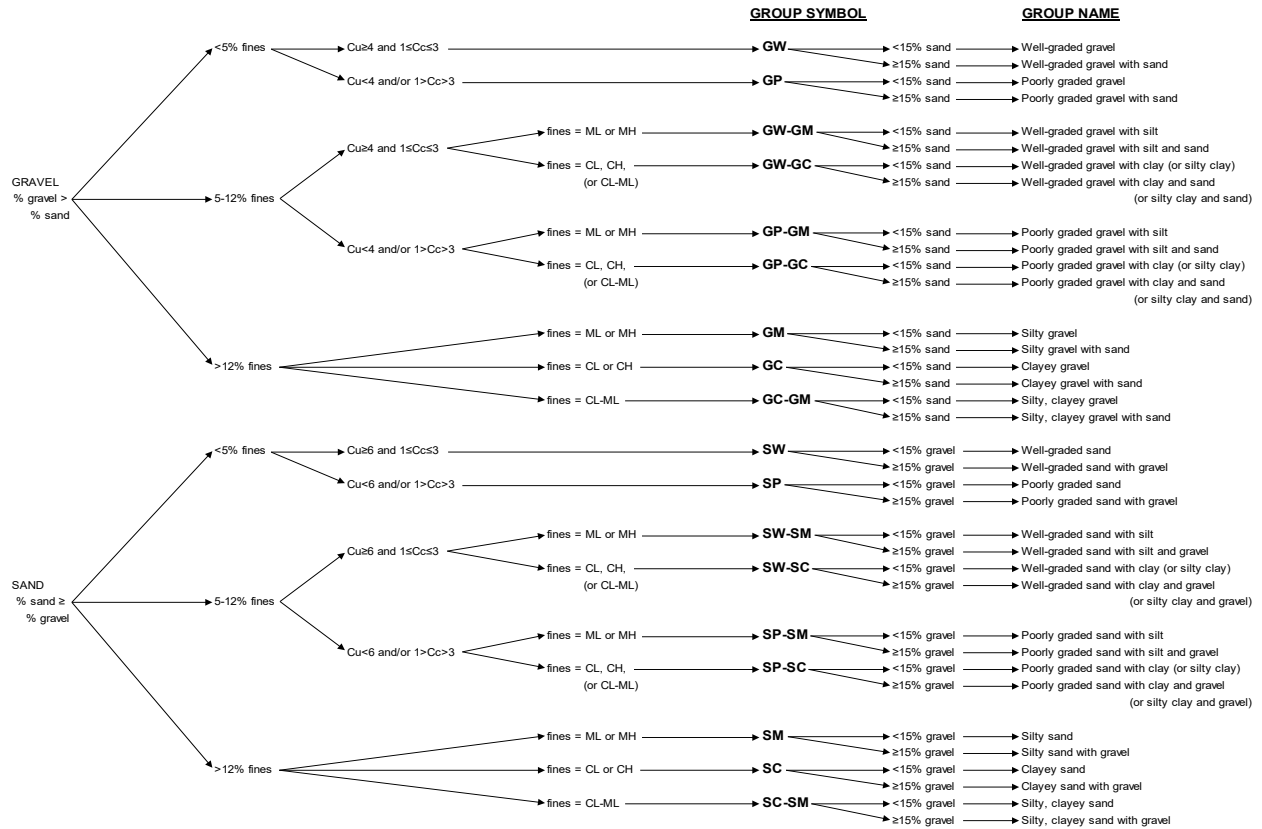
TABLE 2. Classification of Soils and Soil-Aggregate Mixtures

	Granular Materials							Silt-Clay Materials			
General Classification	(35 Percent or Less Passing 0.075 mm)							(More than 35 Percent Passing 0.075 mm)			
	A-1			A-2				A-7			
								A-7-5, A-7-6			
Group Classification	A-1-a	A-1-b	A-3	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7-6
<u>Sieve analysis, percent passing:</u>											
2.00 mm (No. 10)	50 max	-	-	-	-	-	-	-	-	-	-
0.425 mm (No. 40)	30 max	50 max	51 min	-	-	-	-	-	-	-	-
0.075 mm (No. 200)	15 max	25 max	10 max	35 max	35 max	35 max	35 max	36 min	36 min	36 min	36 min
<u>Characteristics of fraction passing 0.425 mm (No. 40)</u>											
Liquid limit				40 max	41 min	40 max	41 min	40 max	41 min	40 max	41 min
Plasticity index	6 max		N.P.	10 max	10 max	11 min	11 min	10 max	10 max	11 min	11min
Usual types of significant constituent materials	Stone fragments, gravel and sand		Fine sand	Silty or clayey gravel and sand				Silty soils		Clayey soils	
General ratings as subgrade	Excellent to Good							Fair to poor			

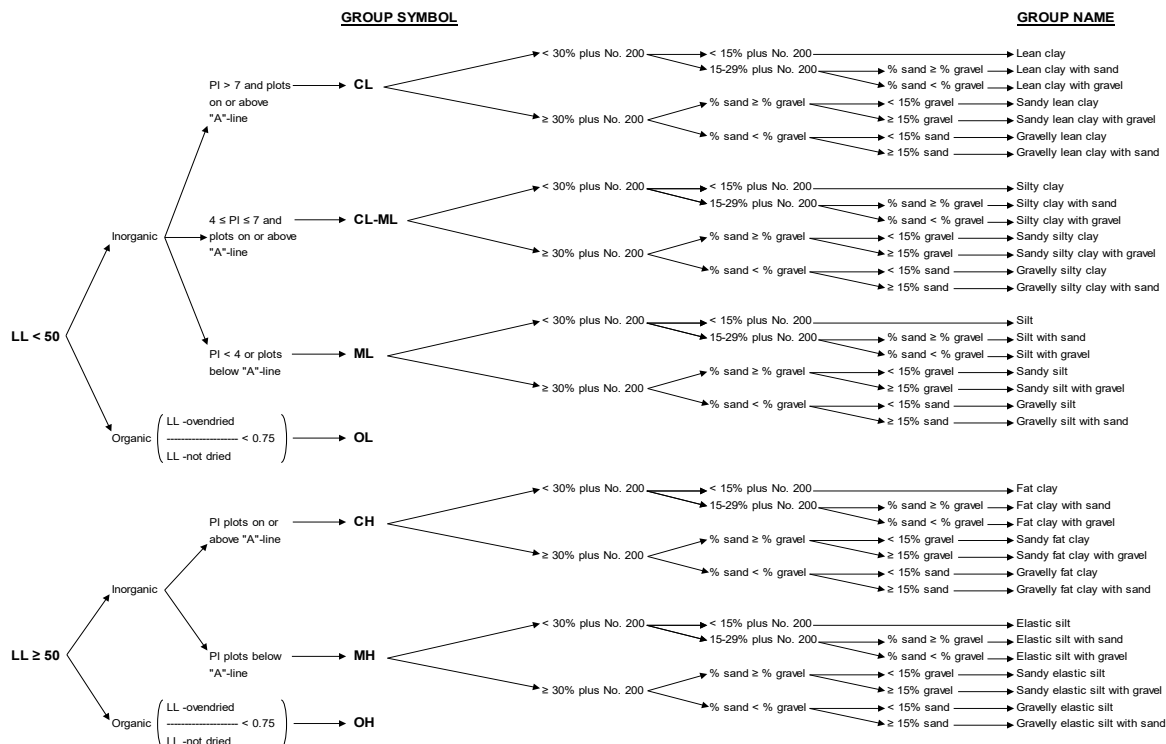
Note: Plasticity index of A-7-5 subgroup is equal to or less than LL minus 30. Plasticity index of A-7-6 subgroup is greater than LL minus 30 (see Figure 2).

AASHTO = American Association of State Highway and Transportation Officials

USCS SOIL CLASSIFICATION SYSTEM



Flow Chart for Classifying Coarse-Grained Soils (More Than 50% Retained on No. 200 Sieve)



Flow Chart for Classifying Fine-Grained Soil (50% or More Passes No. 200 Sieve)

APPENDIX D

PHOTO LOG

LA CENTER FLOW STATION #1

JANUARY, 2022

LA CENTER, WASHINGTON



Central Site View, Facing North

LA CENTER FLOW STATION #1

JANUARY, 2022

LA CENTER, WASHINGTON



Western Site Area, Facing East

LA CENTER FLOW STATION #1

JANUARY, 2022

LA CENTER, WASHINGTON



Test Pit Profile, TP-1

APPENDIX E
REPORT LIMITATIONS AND IMPORTANT INFORMATION



Date: March 8, 2022

Project: La Center Flow Station #1
La Center, Washington

Geotechnical and Environmental Report Limitations and Important Information

Report Purpose, Use, and Standard of Care

This report has been prepared in accordance with standard fundamental principles and practices of geotechnical engineering and/or environmental consulting, and in a manner consistent with the level of care and skill typical of currently practicing local engineers and consultants. This report has been prepared to meet the specific needs of specific individuals for the indicated site. It may not be adequate for use by other consultants, contractors, or engineers, or if change in project ownership has occurred. It should not be used for any other reason than its stated purpose without prior consultation with Columbia West Engineering, Inc. (Columbia West). It is a unique report and not applicable for any other site or project. If site conditions are altered, or if modifications to the project description or proposed plans are made after the date of this report, it may not be valid. Columbia West cannot accept responsibility for use of this report by other individuals for unauthorized purposes, or if problems occur resulting from changes in site conditions for which Columbia West was not aware or informed.

Report Conclusions and Preliminary Nature

This geotechnical or environmental report should be considered preliminary and summary in nature. The recommendations contained herein have been established by engineering interpretations of subsurface soils based upon conditions observed during site exploration. The exploration and associated laboratory analysis of collected representative samples identifies soil conditions at specific discreet locations. It is assumed that these conditions are indicative of actual conditions throughout the subject property. However, soil conditions may differ between tested locations at different seasonal times of the year, either by natural causes or human activity. Distinction between soil types may be more abrupt or gradual than indicated on the soil logs. This report is not intended to stand alone without understanding of concomitant instructions, correspondence, communication, or potential supplemental reports that may have been provided to the client.

Because this report is based upon observations obtained at the time of exploration, its adequacy may be compromised with time. This is particularly relevant in the case of natural disasters, earthquakes, floods, or other significant events. Report conclusions or interpretations may also be subject to revision if significant development or other manmade impacts occur within or in proximity to the subject property. Groundwater conditions, if presented in this report, reflect observed conditions at the time of investigation. These conditions may change annually, seasonally or as a result of adjacent development.

Additional Investigation and Construction QA/QC

Columbia West should be consulted prior to construction to assess whether additional investigation above and beyond that presented in this report is necessary. Even slight variations in soil or site conditions may produce impacts to the performance of structural facilities if not adequately addressed. This underscores the importance of diligent QA/QC construction observation and testing to verify soil conditions do not differ materially or significantly from the interpreted conditions utilized for preparation of this report.

Therefore, this report contains several recommendations for field observation and testing by Columbia West personnel during construction activities. Actual subsurface conditions are more readily observed and discerned during the earthwork phase of construction when soils are exposed. Columbia West cannot accept responsibility for deviations from recommendations described in this report or future

performance of structural facilities if another consultant is retained during the construction phase or Columbia West is not engaged to provide construction observation to the full extent recommended.

Collected Samples

Uncontaminated samples of soil or rock collected in connection with this report will be retained for thirty days. Retention of such samples beyond thirty days will occur only at client's request and in return for payment of storage charges incurred. All contaminated or environmentally impacted materials or samples are the sole property of the client. Client maintains responsibility for proper disposal.

Report Contents

This geotechnical or environmental report should not be copied or duplicated unless in full, and even then only under prior written consent by Columbia West, as indicated in further detail in the following text section entitled *Report Ownership*. The recommendations, interpretations, and suggestions presented in this report are only understandable in context of reference to the whole report. Under no circumstances should the soil boring or test pit excavation logs, monitor well logs, or laboratory analytical reports be separated from the remainder of the report. The logs or reports should not be redrawn or summarized by other entities for inclusion in architectural or civil drawings, or other relevant applications.

Report Limitations for Contractors

Geotechnical or environmental reports, unless otherwise specifically noted, are not prepared for the purpose of developing cost estimates or bids by contractors. The extent of exploration or investigation conducted as part of this report is usually less than that necessary for contractor's needs. Contractors should be advised of these report limitations, particularly as they relate to development of cost estimates. Contractors may gain valuable information from this report, but should rely upon their own interpretations as to how subsurface conditions may affect cost, feasibility, accessibility and other components of the project work. If believed necessary or relevant, contractors should conduct additional exploratory investigation to obtain satisfactory data for the purposes of developing adequate cost estimates. Clients or developers cannot insulate themselves from attendant liability by disclaiming accuracy for subsurface ground conditions without advising contractors appropriately and providing the best information possible to limit potential for cost overruns, construction problems, or misunderstandings.

Report Ownership

Columbia West retains the ownership and copyright property rights to this entire report and its contents, which may include, but may not be limited to, figures, text, logs, electronic media, drawings, laboratory reports, and appendices. This report was prepared solely for the client, and other relevant approved users or parties, and its distribution must be contingent upon prior express written consent by Columbia West. Furthermore, client or approved users may not use, lend, sell, copy, or distribute this document without express written consent by Columbia West. Client does not own nor have rights to electronic media files that constitute this report, and under no circumstances should said electronic files be distributed or copied. Electronic media is susceptible to unauthorized manipulation or modification, and may not be reliable.

Consultant Responsibility

Geotechnical and environmental engineering and consulting is much less exact than other scientific or engineering disciplines, and relies heavily upon experience, judgment, interpretation, and opinion often based upon media (soils) that are variable, anisotropic, and non-homogenous. This often results in unrealistic expectations, unwarranted claims, and uninformed disputes against a geotechnical or environmental consultant. To reduce potential for these problems and assist relevant parties in better understanding of risk, liability, and responsibility, geotechnical and environmental reports often provide definitive statements or clauses defining and outlining consultant responsibility. The client is encouraged to read these statements carefully and request additional information from Columbia West if necessary.

Exhibit A.8



Commissioners

Nancy E. Barnes
Jim Malinowski
Jane A. Van Dyke

***Chief Executive Officer/
General Manager***

Lena Wittler

May 27, 2022

RE: 330-Foot Radius Property Notification List
Site Plan Application to City of La Center
Clark Public Utilities Water Flow Station #1 Reconstruction

To Whom It May Concern:

Clark Public Utilities staff generated the site plan notification list, and hereby certify the list information is accurate and the latest available known information. The notification radius is 300-feet as measured from the Flow Station #1 site. The list is generated from the County/Clark Public Utilities latest GIS data base and Clark Public Utilities customer data base. Therefore, for properties of which the owner is not the resident, the list contains names/addresses for both the resident and the property owner.

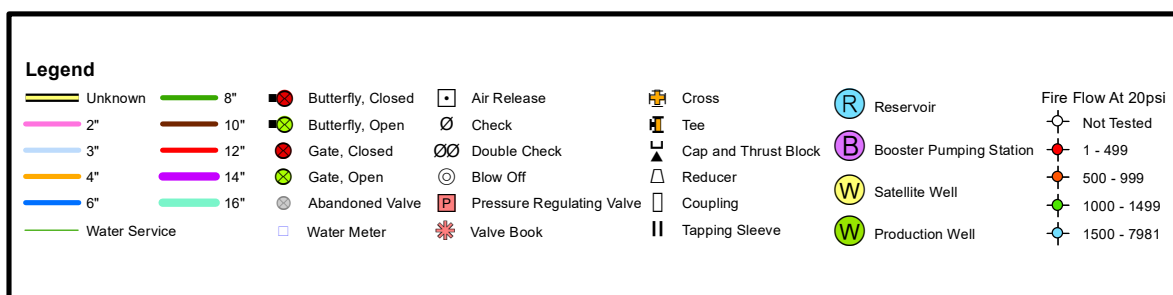
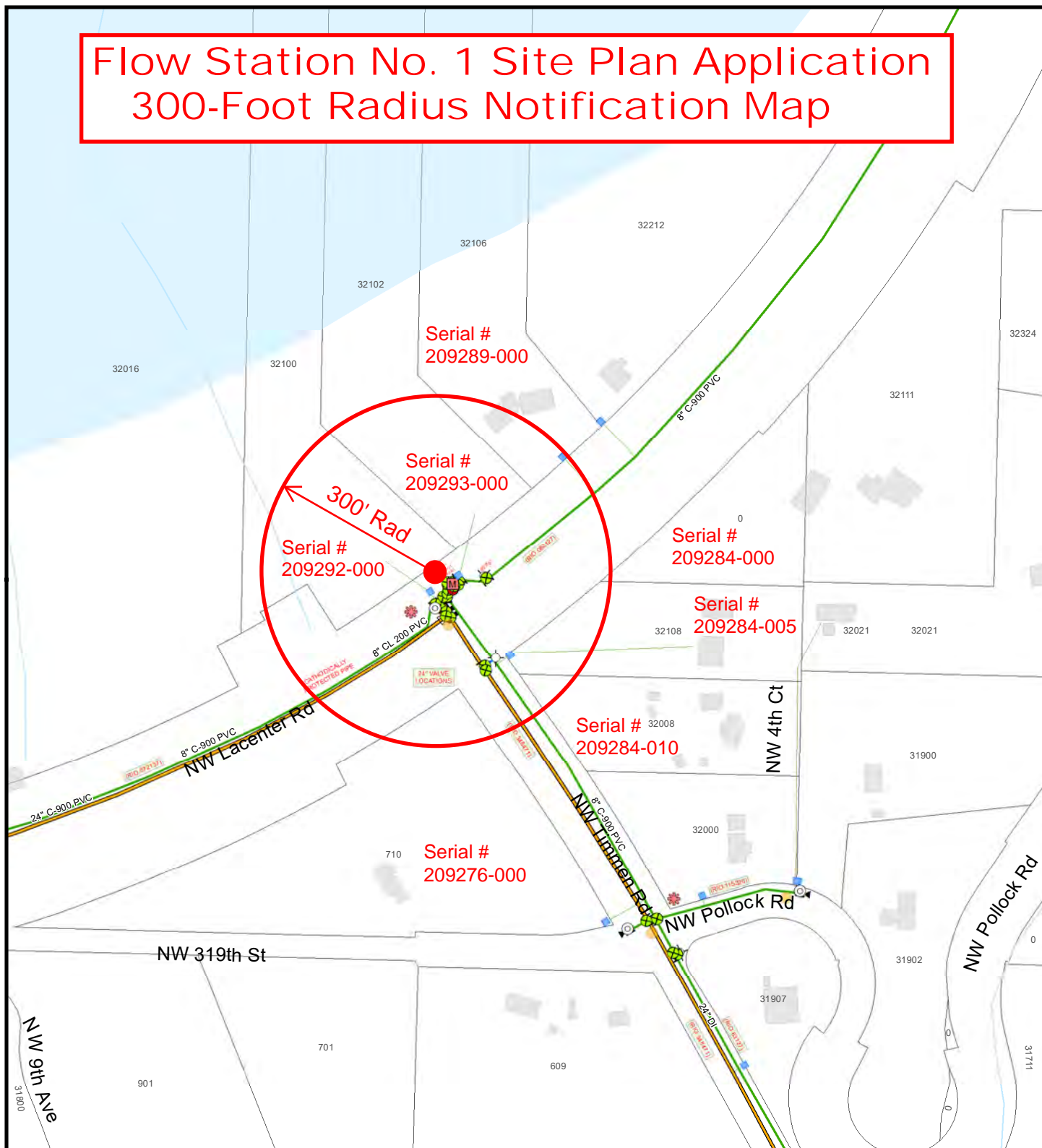
For additional information, or if you have any questions, please feel free to contact me at (360) 992-8020 or blovingood@clarkpud.com.

Sincerely,

Barry Lovingood

Barry Lovingood, PE
Senior Civil Engineer
Clark Public Utilities – Water Services

Flow Station No. 1 Site Plan Application 300-Foot Radius Notification Map



1 inch = 241 feet

Clark Public
Utilities
GIS MAP

OPERATIONS MAP

Printed on: 5/24/2022 Printed by: BarryL

**MAP NUMBER
4103-S**

FLOW #1 STATION RECONSTRUCTION NOTIFICATION LIST - 300' RADIUS FOR SITE PLAN APPLICATION

Customer	Tax Serial No.	Address	City	State	Zip	Notes
Rob and Angie Lamirata	209292-000	32100 NW La Center Rd	Ridgefield	WA	98642-9736006	Owner/Resident
Mitchell and Talia Macha	209293-000	32102 NW La Center Rd	Ridgefield	WA	98642-9736024	Owner/Resident
Nelson and Melanie Glaze	209289-000	32106 NW La Center Rd	Ridgefield	WA	98642-9736060	Owner/Resident
Michael Hudnall	209276-000	710 NW 319th St	Ridgefield	WA	98642-8758102	Resident
Steven and Leslie Headley	209276-000	32324 NW Pollock Rd	Ridgefield	WA	98642-9735241	Owner
Larry Kraemer	209284-010	32008 NW 4th Ct	Ridgefield	WA	98642-9107086	Owner/Resident
Michael and Christine Broadwater	209284-005	765 Camellia Ct	Santa Rosa	CA	95407-7474652	Owner
Michael Broadwater	209284-005	32108 NW 4th Ct	Ridgefield	WA	98642-9207085	Resident
Tom and Daniel Broadwater	209284-000	32111 NW 4th Ct	Ridgefield	WA	98642-9207111	Owner/Resident

Exhibit B.1



Notice of Application

Clark Public Utilities (CPU) Flow Station Site Plan and Critical Areas Review. (File # 2022-023-SPR/CAR)

Applicant: Barry Lovingood, Clark Public Utilities, 8600 NE 117th Avenue, Vancouver, WA 98662

Applicant's Representative: Bob Carpenter, P.E. Carpenter Engineering, 4114 NW 122nd Street, Vancouver, WA 98685.

Location of proposal: The project is located within the City of La Center right-of-way, north of the intersection of NW La Center Road and NW Timmen Road.

Description of proposal: The applicant is proposing to upgrade the existing Clark Public Utilities (CPU) flow station with new pressure reducing valves and flow valves inside a new above ground 10.5-foot wide by 16-foot long pre-manufactured concrete utility building, structure. The total new hard surfacing will include 168 square feet of roof area, 158 square feet of concrete sidewalk (on the south and east side of the building), 576 square feet of gravel driveway for a total of 902 square feet of new impervious surfacing. CPU estimates that earthwork will total 25 cubic yards.

Application review process: The application is subject to a Type II site plan and critical areas review. The site includes mapped seismic hazards, a geologically hazardous critical area in La Center regulated under La Center Municipal Code 18.300.

SEPA: The City issued a mitigated determination of non-significance (MDNS) under the State Environmental Policy Act (SEPA) on April 19, 2022.

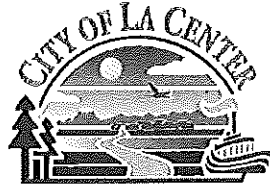
Public Review: The file may be examined between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday (except holidays) at La Center City Hall, 210 E 4th St La Center, WA. The City contact person and telephone number for any questions on this review is Jessica Nash, Permit Technician, 360.263.7665.

Comment Period: You may comment on this application within fourteen (14) days of this notice publication date; June 29, 2022. The lead agency will not act on this proposal until the close of the 14-day comment period, which ends July 13, 2022.

The public may submit written comments to:

CPU Flow Station Site and Critical Areas Review
210 E 4th Street
La Center, WA 98629
Contact: Jessica Nash, Permit Technician, 360.263.7665, jnash@ci.lacenter.wa.us

Issued: June 29, 2022



File Name: FILE NAME (File # 2022-023-SEPA)

Date Published: June 29th, 2022

Attached is a likely SEPA environmental Mitigated Determination of Non-Significance (MDNS) and associated environmental checklist issued pursuant to the State Environmental Policy Act (SEPA) rules (WAC 197-11). The City (lead agency) completed evaluation of the environmental checklist as required by WAC 197-11. You may comment on this likely determination within fourteen (14) days of the issuance of this notice Month XX, 20XX. The lead agency will not act on this proposal until the close of the **14-day comment period, which ends July 13th, 2022.**

Please address any correspondence to: Jessica Nash, Permit Technician
ATTN: SEPA COMMENTS – FILE NAME
210 East 4th Street
La Center, WA 98629

DISTRIBUTION:

Federal Agencies: National Marine Fisheries, PRD Division (Mail)
Forest Service, US Department of Agriculture, WA (Email)
US Army Corps of Engineers, Regulatory Functions (Mail)

Native American Interests: Confederated Tribes of the Grande Ronde (Mail)
Cowlitz Tribe, Longview, WA (Email)
Yakama Nation (Email)

State Agencies: Dept of Ecology (Email)
Dept of Health, Office of Drinking Water (Email)
Dept of Commerce (Email)
Dept of Fish & Wildlife, Region 5 (Email)
Dept of Natural Resources, SEPA Center (Email)
Dept of Transportation, Environmental Services (Email)
Dept of Transportation, SW Region (Email)
Department of Archaeology & Historic Preservation (Email)
Washington Parks & Recreation Commission (Email)

Local Agencies: Clark County, Dept of Community Development (Email)
Clark County, Dept of Health (Email)
Clark County, Dept of Parks & Recreation (Mail)
Clark County, Dept of Public Works (Email)
Clark County Sheriff (Email)
Clark County Fire and Rescue (Email)
City of Vancouver, Dept of Parks & Recreation (Email)
City of Vancouver
City of Camas, Community Development (Email)
Town of Yacolt (Email)
City of Ridgefield (Email)
La Center Community Library (Mail)
La Center Police Department (Email)

School Districts:

La Center (WA) School District (Mail)

Special Purpose Agencies:

Clark Public Utilities (Email)

Columbia River Economic Development Council (Email)

Lower Columbia Fish Recovery Board (Email)

C-TRAN (Email)

Southwest Clean Air Agency (Email)

Southwest Washington Regional Transportation (Email)

Council Clark Regional Wastewater District (Email)

Vancouver Audubon Society (Mail)

Vancouver Wildlife League (Mail)

NW Natural (Mail)

TDS Telecom (Mail)

Century Link (Email)

Washington State Department of Corrections

Exhibit B.2



Clark Public Utilities
Site Plan Review/Critical Area Permit
Type II
Technical Completeness Review
La Center City Hall
210 E 4th St

Site Address: The north Right of Way of NW La Center Road and NW Timmen Road Intersection

Parcel: n/a

Legal Description: n/a; Public Right of Way

Project Description:

Clark Public Utilities (Utility) is proposing to reconstruct the existing potable water flow station, known as Flow Station No. 1, located within the north right-of-way of the NW La Center Road and NW Timmen Road Intersection.

The Utility constructed the initial flow station in 1997/1998 to replace the City's existing wells. The existing flow station automated valves are at ground level and prone to damage from storm surface water flowing from La Center Road. In addition, growth within the general La Center area has increased water demand. Water demand has recently increased to a point that the existing flow station now has insufficient capacity. Therefore, the purpose of the new flow station is to meet current and future water demand, while providing a more reliable water system. The new flow station would be constructed within a 10.5-foot by 16-foot pre-manufactured concrete building and would include a concrete walk adjacent to the flow station, a gravel driveway to provide onsite truck parking, and underground water mains to connect to the flow station.

Date: June 14, 2022

Applicant's Representative:

Contact: Bob Carpenter, PE
Carpenter Engineering Inc
4114 NW 122nd Street
Vancouver WA, 98685
bcarped@comcast.net

The City's planning consultant (WSP USA Inc.) and engineering staff reviewed application materials for the proposed Type II Site Plan Review and critical areas review. We are writing to notify you that the application is deemed **Complete** as documented below.

Planning Comments

The pre-application conference notes (2021-016-PAC) contain a list of required submittal items based on LCMC 18.30.050, 18.30.150, and 18.210.

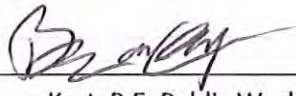
Submittal requirements

- *A completed application form that features the name, mailing address, and telephone number of the owner(s), engineer, surveyor, planner, and/or attorney and the person with whom official contact should be made regarding the application*
 - Status: **Complete**. The applicant completed a Master Land Use Application, which features the name, mailing address and telephone number of the applicant, applicant's representative and the property owner.
- *If critical areas impacts are proposed, A SEPA environmental checklist (see further discussion under LCMC 18.310) below.*
 - Status: **Not applicable**. A combined SEPA mitigated determination of non-significance (DNS) has been published for the project (see DOE file no. 202201832). The DNS covers the Flow Station Building and Site Improvements, the La Center Road 12' Water Main construction, and the City of La Center Road Paving Project.
- *An existing conditions plan drawn to a minimum scale of one inch equals 200 feet on a sheet no larger than 24 inches by 36 inches.*
 - Status: **Complete**. Sheet 2 of the applicant's plan set is the existing conditions plan.
- *A preliminary plan at a scale of no more than one inch equals 200 feet, with north arrow, date, graphic scale, existing and proposed lots, tracts, easements, rights-of-way and structures on the site, and existing lots, tracts, easements, rights-of-way and structures abutting the site; provided, information about off-site structures and other features may be approximate if such information is not in the public record. The applicant shall provide one copy of the plan reduced to fit on an eight-and-one-half-inch by 11-inch page. Principal features of the plan shall be dimensioned.*
 - Status: **Complete**. The applicant has provided a preliminary plan as sheet 3 of the plan set.
- *Proposed easements or dedications to the city or other agency, if applicable*
 - Status: **Not applicable**. The Project is within Public Right of Way.
- *Written authorization to file application by the owner of the property that is the subject of the application if the applicant is not the same as the owner listed by the Clark County assessor*
 - Status: **Complete**. The applicant provided an application form signed by the applicant and their representative. The City will sign as the property owner since this is public right-of-way.
- *Proof of ownership document such as deed*
 - Status: **Not applicable**. The Project is within Public Right of Way.
- *A legal description of the site*
 - Status: **Not applicable**. The site is on public right of way and is owned by Clark County Public Utilities.
- *A copy of the pre-application summary*
 - Status: **Complete**.
- *A written description of how the application does or can comply with each applicable approval criterion and basic facts and other substantial evidence supportive of the description*

- Status: Complete. The applicant provided this information in their Type II project narrative.
- *For a Type II application, the names and addresses of owners of land within a 150-foot radius of the site for a type II review (can be obtained from Clark County for \$10). A statement to the assessor's office certifying the list is complete within 30 days of completion.*
 - Status: Complete. The applicant provided the names and addresses of owners of land within a 300-foot radius.
- *Applications necessarily associated with the proposal such as applications for exceptions, adjustments, or variances.*
 - Status: Complete. The applicant also filed a critical areas permit along with the Type II site plan review.
- *A Geotechnical report, if there are seismic and/or landslide hazards on the site and they will be impacted. If a geotechnical engineer provides a letter that no such areas are located on site and/or that mapped hazard areas will not be impacted, a complete geotechnical information report is not required.*
 - Status: Complete. The geotechnical report addresses the presence of seismic, erosion and landslide hazards on site, and provides recommendations to minimize impacts.
- *An archaeological predetermination.*
 - Status: Complete. The applicant provided an archeological predetermination report.
- *Information about proposed utilities, including water and sanitary waste and hydrant locations.*
 - Status: Complete. The plans show existing utilities on site.

Public Works and Engineering Comments

No comments.

Signed:  Date: 6/15/22
Bryan Kast, P.E, Public Works Director

Signed:  Date: 6/15/22
Tony Cooper, P.E, City Engineer