Hearings Examiner Meeting Agenda
Tuesday, June 09, 2026, 5:00 PM
Council Chambers, 616 NE 4th AVE

NOTE: The City welcomes public meeting citizen participation. TTY Relay Service: 711. In compliance with the ADA, if you need special assistance to participate in a meeting, contact the City Clerk's office at (360) 834-6864, 72 hours prior to the meeting so reasonable accommodations can be made (28 CFR 35.102-35.104 ADA Title 1)

To Participate Remotely:

OPTION 1 -

1. Go to www.zoom.us and download the app or click "Join A Meeting" and use Meeting ID – 818 6521 9067
2. Or, from any device click https://cityofcamas-us.zoom.us/j/81865219067

OPTION 2 - Join by phone (audio only):
Dial 877-853-5257 and enter meeting ID# 818 6521 9067

For Public Comment:
Click the raise hand icon in the app or by phone, hit *9 to "raise your hand", or email to communitydevelopment@cityofcamas.us

These will be entered into the meeting record. Emails received up until one hour before the start of the meeting will be emailed to the Meeting Body prior to the meeting start time.

CALL TO ORDER

INTRODUCTIONS AND INSTRUCTIONS

HEARING ITEM

1. Oliver Terrace Subdivision (File No. SUB25-1010)
   Presenter: Lauren Hollenbeck, Senior Planner

CLOSE OF MEETING

LAND USE DECISION

STAFF REPORT
Oliver Terrace subdivision
File No. SUB25-1010
Type III
Staff Report date: June 4, 2026

TO	Hearings Examiner	**HEARING DATE**	**June 9, 2026**
PROPOSAL	To subdivide 18.46-acres into 12 detached single-family residential lots.		
LOCATION	The project site is located at 1004 SE Everett Street west of SE Everett Street in the NW and NW ¼ of Section 35, Township 2 North, Range 3 East of the Willamette Meridian, Clark County; and described as parcel number 178221000.		
APPLICANT	SGA Engineering 2005 Broadway Street Vancouver, WA 98683	**OWNER**	HSR Capital 19120 SE 34th Street, Suite 103 Vancouver, WA 98683
APPLICATION SUBMITTED	September 16, 2025; Resubmitted January 15 and February 6, 2026	**APPLICATION COMPLETE**	February 20, 2026
SEPA	The City issued a SEPA Determination of Non-Significance (DNS) May 7, 2026, with a comment period that ended on May 21, 2026. The SEPA DNS was mailed to property owners on May 6, 2026, and published in the Post Record on May 7, 2026. Legal publication #1100160.		
PUBLIC NOTICES	Notice of Application was mailed to property owners within 300 feet of the site on March 4, 2026, and published in the Post Record on March 5, 2026. Legal publication #1084460. Notice of Public Hearing was mailed to property owners within 300 feet of the site on May 6, 2026, and published in the Post Record May 7, 2026. Legal publication #110170.		

APPLICABLE LAW: The application was submitted on September 16, 2025 and the applicable codes are those codes that were in effect at the date of the application and therefore is vested to the July 3, 2025 version of the Camas Municipal Code (CMC) including Title 16 Environment, Title 17 Land Development, and Title 18 Zoning, specifically (but not limited to): Chapter 17.11 - Subdivision, Chapter 17.19 - Design and Improvement Standards, Chapter 18.11 - Parking, Chapter 18.13 - Landscaping, Chapter 18.19 - Design Review, and Chapter 18.55 - Administrative Procedure. The application is also subject to the North Shore Subarea Design Manual dated July 2023. [Note: Citations from Camas Municipal Code (CMC) are indicated in **bold** type.]

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PROJECT SUMMARY

Application has been made to the City of Camas for preliminary plat approval for a single-family residential subdivision located at 1004 SE Everett Street in the North Shore Lower Density Residential (LD-NS) with an Airport Overlay zone. The subject property is proposed to be developed into 2 phases. Phase 1, located on the western portion of the subject property, includes the Oliver Terrace Subdivision in the LD-NS zone. Phase 2, located in the eastern portion of the subject property includes the North Shore Mixed Use (MX-NS) zone, which is not proposed for development at this time. With the anticipated 2045 Comprehensive Plan update, the existing LD-NS and MX-NS zoning boundary is proposed to be adjusted approximately 200-feet to the west to accommodate for future development, such as the construction of the North Shore Boulevard.

The proposed preliminary plat proposal would segregate 18.46-acres into 12 lots. Lots 1-11 range in size from 8,423 square feet to 8,989 square feet, with an average lot size of 8,788 square feet. Proposed lot 12 contains an existing single-family residence with a lot area of 23,992 square feet. An existing barn will be set aside as a barn tract for Lot 12 and the three (3) existing sheds are proposed for removal. The proposal also includes landscaping, private access roads, a stormwater facility and open space/critical areas.

The subject property is bordered to the west by the Lacamas Hills Phase 2 and 3 subdivisions, to the south by the Hadley's Glen subdivision, and to the north by forested property also zoned LD-NS. To the east, across SE Everett Street, are properties that contain single-family residences also zoned MX-NS. SE Everett Street (SR500) borders the subject property to the east and site access to Lots 1-11 will be provided from N 49th Avenue to the west. Access to lot 12 is provided via the existing private driveway off of SE Everett Road.

The project site's topography consists of a relatively level plateau at the western portion of the subject property that transitions to a steep slope at the northeast and southeast sides of the plateau with an elevation change of approximately 25-30 feet. Existing vegetation consists of grass and trees across the plateau with a heavily forested area across the slope face and surrounding area. Critical areas, including wetlands, steep slopes, Oregon white oaks and a stream are primarily found east of the project development site.

The development is subject to review and approval of the following: Subdivision review, Critical Areas review, SEPA review, Archaeological review and Design Review. The staff report includes criteria for review for all these permit types except for Design Review, which will be reviewed at a later date.

The proposed preliminary plat does or can comply with the applicable standards of the Camas Municipal Code (CMC) including the North Shore Subarea Design Review Manual and the Revised Code of Washington (RCW), as discussed throughout this report, provided the applicant complies with the conditions of approval.

DISCUSSION AND FINDINGS

Title 16 Environment

STATE ENVIRONMENTAL POLICY ACT — CMC CHAPTER 16.07

A SEPA checklist was submitted, and a Determination of Non-Significance (DNS) was issued May 7, 2026, as the project site contains or is adjacent to environmentally sensitive areas per CMC 16.07.025. The comment period ended May 21, 2026. The City received SEPA comments from the following public agencies:

- Department of Natural Resources (DNR)- commented that a Forest Practices Application is required if merchantable timber is removed/harvested. (See Exhibit 29).

The applicant's response to DNR's comments above is included in Exhibit 31. In summary, the applicant does not intend to harvest merchantable timber. Staff recommends a condition of approval that if any merchantable timber is removed, the applicant is to work with DNR to submit and obtain a Forest Practice application.

- Washington Department of Fish and Wildlife (WDFW)- WDFW's primary concern is regarding impacts to the riparian area and recommends the stream buffer width be expanded to 215-feet to account for the Site-Potential Tree Height at 200-Years but recommends a minimum 100-foot buffer to accomplish pollutant removal from runoff. WDFW also recommends preserving the identified Oregon White Oak trees and the two priority snags within the riparian area. (See Exhibit 30).

The applicant's response to WDFW's comments above is included in Exhibit 32. In summary, the applicant voluntarily elects to increase the minimum buffer width to 100 feet and does not intend to remove or impact the identified Oregon White Oak trees and priority snags as recommended by WDFW.

Staff finds the applicant meets the required minimum stream buffer widths of the current City adopted Critical Areas ordinance as well as preserving the identified oak trees and priority snags as discussed below in the Critical Areas section of this staff report.

> **FINDING:** Staff recommends a condition of approval that if any merchantable timber is removed, the applicant is to work with DNR to submit and obtain a Forest Practice application.

ARCHAEOLOGICAL RESOURCE PRESERVATION — CMC CHAPTER 16.31

An Archaeological Predetermination survey report dated August 22, 2025, was prepared by Applied Archaeological Research, Inc. and concluded that no further work was necessary. The report and findings are not subject to the open public records act and as such, the City cannot disclose the results.

> **FINDING:** Staff recommends a condition of approval is warranted that if potential artifacts are discovered during construction, work must immediately cease and the State Department of Archaeological and Historic Preservation, the tribes and the City shall be notified.

CRITICAL AREAS — CMC CHAPTER 16.51

CMC Chapter 16.53 - Wetlands

Wetland and buffers

Clark County GIS mapping identified the subject property with wetlands, including wetlands within 300-feet of the project area. A such, a *Critical Areas Report* dated June 16, 2025 (Exhibit 17), and a *Mitigation*

Plan dated August 26, 2025 (Exhibit 18), prepared by Ecological Land Services, identified one Category I forested, scrub-shrub, emergent, depressional wetland described as Wetland A. Wetland A (2.35-acres) is located at the southeast portion of the site to be adjacent to a high land use intensity (i.e. residential use), where a 260-foot buffer is required per CMC Table 16.53.040-2. Wetland A's buffer is functionally isolated due to the topographical steep vertical separation on its west side and the driveway that serves the existing house on its east side, which limits connectivity between the buffer and surrounding areas per CMC 16.53.040.B.4.b.i. Therefore, staff finds the required buffer widths immediately behind proposed Lots 4-7 and the existing driveway are limited.

Two off-site Category III wetlands were also identified and described as Offsite Wetland 1 (part of a larger wetland complex north of the property outside of the project site area, size unknown) and Offsite Wetland 2 (0.44-acres) located north of the project site area. Offsite Wetlands 1 and 2 adjacent to the high land use intensity (i.e. residential use) both require a 150-foot buffer per CMC Table 16.53.040-3. No buffer reductions or impacts are proposed to Offsite Wetland 1 as it is located outside the project site boundary area.

[Buffer reductions and mitigation]
The applicant is proposing to reduce the required buffer width of Wetland A from 260-ft. to 195-ft. and Offsite Wetland 2 from 150-ft.to 110-ft as allowed per CMC 16.53.050.C.1.a where high intensity land uses can be reduced to those for moderate intensity land uses if a) an undisturbed vegetated corridor at least 100-feet wide is provided between the wetland and other priority habitats and 2) measures to minimize impacts of the land use adjacent to the wetlands are applied. At page 11 of the *Mitigation Plan*, the proposed measures to minimize impacts adjacent to the wetlands include a minimum 100-foot wide vegetated corridor to be established and protected between Wetland A and Offsite Wetland 2 for a total of 0.81-acres. In addition, stormwater from the residential lots will be directed to a stormwater facility to be treated and either infiltrate or outflow to the offsite wetland buffer for hydrology, lighting is to be shielded and directed away from wetlands, and backs of homes will be adjacent to buffers to minimize noise in compliance with CMC 16.53.050.C.1.a.i and ii.

The applicant proposes to further reduce the Offsite Wetland 2 buffer from 110 to 83 feet, where an additional 25% reduction may be permitted pursuant to CMC 16.53.050.C.1.b if the buffer is restored and enhanced from a pre-project condition. At page 14 of the *Mitigation Plan*, the applicant proposes to enhance 0.24-acres of the Offsite Wetland 2 buffer from a pre-project condition via removal of invasive blackberries and installation of native vegetation within a 146-wide 0.81-acre vegetated corridor.

[Buffer Impacts and mitigation]
The proposed site layout utilizes buffer modification through reduction to avoid permanent impacts to wetlands and by locating the site improvements as far west as possible. However, approximately 0.03-acres of temporary buffer impacts are proposed to Wetland A due to the installation of a sewer main line within an existing sparsely vegetated farm road. Per CMC 16.53.050.C.4, crossing buffers within new utilities is allowed if buffer functions are replaced and impacts to the buffer are minimized. The temporarily disturbed area will be revegetated with 0.03-acres of native seed mix.

A 15-foot wide pedestrian access easement is required to connect from the subdivision to the proposed North Shore Boulevard right of way as discussed in further detail under the Parks and Open Space Plan section of this staff report. The required trail would likely cross wetland buffers. A 4-foot or narrower path using natural, wood-based, or vegetated pervious surfacing in wetlands and wetland buffers is exempt from the provisions of the Critical Areas Ordinance per CMC 16.53.010.C.1.l. If the trail is proposed to be constructed beyond those parameters, mitigation will be required.

FINDING: Staff recommends a condition of approval that prior to engineering plan approval a revised mitigation plan should be submitted to the City for review and approval for trails constructed within wetland or wetland buffers.

CMC Chapter 16.59 – Geologically Hazardous Areas

Clark County GIS mapping identified the subject property to contain geologically hazardous areas (i.e. steep slopes and severe erosion hazard areas). Therefore, the applicant submitted a *Geotechnical Engineering Study* dated July 2025 prepared by Soil and Water Technologies, Inc (SWT) (Exhibit 19). The report indicated the proposed building area is predominately flat, transitioning to a steep downward slope along the outside northeast edge and then to a predominately moderate slope across the south/ southeast edge. Total elevation change is approximately 25-30 feet. Per pages 5 and 6 of the report, steep slopes, landslide and erosion hazards should not be considered due to the weathered bedrock, heavily forested slope face, and heavily vegetated plateau. SWT recommended a 10-foot horizontal foundation set-back from top-of-slope as shown on the preliminary plan set. All lots are shown outside of this recommended 10-foot setback from the top-of-slope. At page 7 of the report, SWT found that "the proposed residential buildings can be constructed as planned, provided the geotechnical recommendations contained in this report are incorporated into the final design."

FINDING: Staff recommends a condition of approval that the geotechnical report recommendations in the Soil and Water Technologies, Inc (SWT) 2025 report be complied with to minimize any potential hazards associated with construction and if the site design is revised an updated geotechnical report should be submitted for city review and approval prior to final engineering plan approval.

CMC Chapter 16.61 - Fish and Wildlife Habitat Conservation Areas

Stream

The *Critical Areas Report* dated June 16, 2025 (Exhibit 17), and the *Mitigation Plan* dated August 26, 2025 (Exhibit 18), prepared by Ecological Land Services, identified one Type Ns (non-fish bearing seasonal) stream described as Stream A, which flows east to southwest where it continues offsite along the southern property boundary. At page 5 of the *Critical Areas Report*, the stream originates within and serves as the outlet for Wetland A. The applicant has provided a 25-ft. wide buffer for Stream A, consistent with CMC 16.61.040.D. However, the applicant has elected to increase the minimum stream buffer width to 100-feet as recommended by WDFW's SEPA comment (Exhibit 32). No development impacts are proposed to the stream and proposed buffer.

FINDING: Staff recommends a condition of approval that prior to engineering plan approval, the applicant revise the mitigation plan to include the proposed 100-foot stream buffer width.

Habitats of Local Importance

Oregon White Oaks that meet the criteria of CMC 16.61.010.A.3.a are considered Habitats of Local Importance. The *Critical Areas Report* dated June 16, 2025 (Exhibit 17), and the *Mitigation Plan* dated August 26, 2025 (Exhibit 18), prepared by Ecological Land Services, identified two (2) Oregon White Oak trees measuring at 12- and 15-inches diameter breast height (dbh) within the southwest portion of the project site area behind proposed Lot 4. Both Oregon White Oaks do not meet the code criteria to qualify as a critical area per CMC 16.61.010.A.3.a.i and ii which states, "Individual Oregon White Oak trees with a 20-inch dbh" and "Stands of Oregon White Oak trees greater than one acre". However, the applicant has elected to protect the Oregon White Oak trees as discussed in the Applicant's narrative (Exhibit 1) and the *Mitigation Plan* (Exhibit 18). In addition, two (2) priority snags were identified immediately west of the storm tract and within the stream buffer, meeting the criteria of a critical area per CMC 16.61.010.A.1.a.iii and is shown to be protected on the *Mitigation Plan* (Exhibit 18).

CMC Chapter 16.51 – General Provisions for Critical Areas
The critical areas as shown on the *Mitigation Plan* (Exhibit 18) will be set aside in a critical area/open space tract for preservation. Staff recommends a condition of approval that prior to final plat approval a a note should be added to the face of the final plat that the open space/critical areas tract is to remain in a natural state. Any maintenance activities within the Open Space Tract, including removal of invasive species and dead or dying trees, will require prior approval from the City. The Homeowner's Association will own and maintain the open space/critical areas tract in Phase I lots 1-12.

Staff recommends a condition of approval for the installation of temporary construction fencing prior to construction that clearly marks in the field the critical area buffers and said fencing should remain throughout permitted construction activities. In addition, prior to final plat approval, permanent signs and fencing should be installed at the edge of the critical area buffers per CMC 16.51.210.B and C. Sign and fencing specifications should be submitted to the City for review and approval prior to installation.

Prior to final plat approval, a conservation covenant should be recorded with the County to ensure long-term preservation of the critical areas and their associated buffer, including maintenance of any mitigation actions, per CMC 16.51.240 and conditioned as such. Further, a copy of the recorded conservation covenant document must be submitted to the City prior to final plat approval.
Prior to final plat approval, the applicant will be required to post a mitigation bond in an amount deemed acceptable by the City to ensure the wetland mitigation is fully functional per CMC 16.51.250.

> **FINDING:** Staff finds the proposal can or will comply, as conditioned, with the applicable provision of CMC Title 16 Environment as discussed above.

Title 17 Land Development

SUBDIVISIONS CMC CHAPTER 17.11

CMC Chapter 17.11.030(D) Criteria for Preliminary Plat Approval:
The hearings examiner decision on application for preliminary plat approval shall be based on the following criteria:

1. The proposed subdivision is in conformance with the Camas Comprehensive Plan, Parks and Open Space Comprehensive Plan, Neighborhood Traffic Management Plan, and any other City adopted plans.

Comprehensive Plan
The project development site is designated as North Shore Single-Family Low in the City's Comprehensive Plan, which includes the LD-NS North Shore Lower Density Residential zone designation. The zone is intended for residential dwellings in the North Shore subarea with a minimum density of four dwellings per acre and a maximum density of five and eight tenths dwelling per acre.

Overall, the 2035 City of Camas Comprehensive Plan supports the subdivision through a number of land use policies such as the following:

- LU Policy 1.3: Maintain compatible use and design with the surrounding built and natural environments when considering new development or redevelopment.
- LU Policy 3.3: Encourage connectivity between neighborhoods (vehicular and pedestrian) to support citywide connectivity and pedestrian access.
- LU Policy 3.4: Camas residents are protective of the small-town ambiance and family-friendliness of the community. Discourage exclusive neighborhoods, privacy wall, and gated communities.

- LU Goal 4: Develop an interconnected network of parks, trails, and open space to support wildlife corridors and natural resources and enhance the quality of life for Camas residents and visitors.
- NE-2: To preserve, maintain, and restore the City's critical areas to protect their function and values.
- NE-2.8: Ensure that development throughout the City meets or exceeds standards and practices for long-term wetland protection and mitigation.

The proposed subdivision will help accommodate the projected growth through utilization of existing land. The proposed houses, when built, will provide housing opportunities to meet the needs of the community in accordance with the Housing element of the Comprehensive Plan. The Open Space Tract surrounding the boundary of the project development area will preserve the stream, steep slopes, wetlands as well as support wildlife corridors.

Parks and Open Space Plan

The City's 2022 Parks & Open Space Plan (2022 PROS), Map 7 – Existing Trails; and Map 8 – Potential Trails (Exhibit 35) includes an extensive park/open space/trail network for active and passive recreation throughout the North Shore area, which includes the future T-27 trail that will follow the future alignment of North Shore Blvd. The updated preliminary site plans (Exhibit 15, Sheet PRE2.0) show the proposed future North Shore Blvd. alignment located in the upper northeast corner of Phase 2 of the Oliver Terrace subdivision. However, the proposed development does not show or reference the future T-27 trail alignment.

Staff recommends a condition of approval that prior to engineering plan approval, the site improvement plans, landscape plans, and wetland mitigation plans are to be revised to show the approximate location and reference the T-27 regional trail that will follow the alignment of the future North Shore Blvd. alignment.

The proposed development will not be required to construct the portion of the T-27 regional trail that transects the Phase 2 parcel of the Oliver Terrace subdivision; however, the development will be required to construct a public pedestrian trail connection to the future T-27 regional trail.

The applicant is to work with Engineering staff and the Parks and Recreation Director, to determine the location for the future public pedestrian trail and trail easement and to construct said public pedestrian trail within the public pedestrian trail easement. A minimum 4-foot-wide natural, wood-based surfacing will be required within the wetlands and wetland buffers.

Staff recommends a condition of approval that prior to engineering plan approval, the site improvement plans, landscape plans, and wetland mitigation plans are to be revised to include the location of the minimum 4-foot-wide public pedestrian trail, details for the trail construction, and the location of minimum 15-foot-wide public pedestrian trail access easement. The applicant is to work with Staff to determine the location of said trail and easement.

Staff recommends a condition of approval that prior to final plat approval, the preliminary plat is to be revised to include the location of the 15-foot-wide public pedestrian trail access easement in the Open Space Tract, including showing the minimum 4-foot-wide public pedestrian trail. The applicant and/or Homeowners' Association (HOA) will be responsible for ownership and maintenance of said public pedestrian trail located in the Open Space Tract.

Proposed Plat Note: The Homeowners Association (HOA) is responsible for ownership and maintenance of the public pedestrian trail located in the Open Space Tract.

Neighborhood Traffic Management Plan:

The City has a Neighborhood Traffic Management Plan (NTM). The NTM plan identifies the need for installation of acceptable traffic calming features when a proposed development will create 700 Average Daily Trips (ADT) or more.

An original Transportation Impact Study (TIS Memo) (Exhibit 20) dated July 28, 2025, was submitted with the application. An updated Transportation Impact Study (TIS Memo) dated October 21, 2025, was prepared by Kittleson & Associates (Exhibit 21). The *Trip Generation Estimate*, shown on Table 1, page 1, of the October 21, 2025, TIS Memo was prepared using the 12th Edition ITE Manual (Institute of Transportation Engineers) for the proposed residential development, which is composed of the following information:

- Single-Family Detached Housing, ITE 210: 11 units which will generate 100 average daily trips (ADTs), for a total of 8 AM Peak Hour trips (2 in, 6 out) and a total of 10 PM Peak Hour trips (6 in, 4 out).

The total number of average daily trips are less than 700 ADTs. Therefore, the proposed development will not be required to install traffic calming features.

FINDING: Staff finds that the proposed project can and will meet the requirements as noted in the City's NTM plan.

North Shore Subarea Design Review Manual

The project site is located within the North Shore Subarea and therefore subject to the North Shore Subarea Design Review Manual dated July 2023 (Exhibit 33). The North Shore – Lower Density (LD-NS) zoning district is intended for low density residential developments to include detached single-family homes. The development character of the North Shore is intended to be a Pacific Northwest building style and all new development in the subarea is subject to the City's design review process as discussed in further detail under Design Review section of this staff report. One of the site development guidelines in the LD-NS district is to create varied lot sizes and development patterns that better reflect the natural geography.

FINDING: Staff finds the lot layout is designed to integrate with the existing topography and natural habitat by being placed on the upper plateau area outside of critical areas and their associated buffers.

2. Provisions have been made for water, storm drainage, erosion control and sanitary sewage disposal for the subdivision that are consistent with current standards and plans as adopted in the Camas Design Standard Manual.

Water:

Per CMC 17.19.040.C.4 Water System, each lot within a development shall be served by a water distribution system designed and installed in accordance with the *Camas Design Standards Manual* (CDSM).

There is an existing 8-inch ductile iron (DI) water main that was extended to the dead-end at the east end of N 49th Avenue that was constructed with the Lacamas Hills subdivision.

Preliminary plans, including sanitary and water utility plans, were submitted with the initial application in September 2025 (Exhibit 14). Updated preliminary plans were subsequently submitted in January 2026 with the final updated preliminary plans submitted in February 2026 (Exhibit 15).

The February 2026 updated preliminary sanitary and water plans (Exhibit 15, Sheet PRE4.0), show a proposed 8-inch DI water main connecting to the dead-end of the existing 8-inch water main and extending east to the east end of the cul-de-sac with a blowoff.

Per CMC 17.19.040.C.4.a A minimum 1-inch water service is to be provided to each dwelling unit of the proposed development.

The preliminary plans (Exhibit 15, Sheet PRE4.0), show the required 1-inch water service to each of Lots 1 through 12. Lots 1-11 are new single-family lots, with Lot 12 consisting of the existing single-family residence and barn which will remain on Lot 12.

There is an existing well on Lot 12 that currently provides water to the existing single-family residence. The well is to be decommissioned in accordance with State and County requirements and any water rights associated with the decommissioned well is to be transferred to the City.

> Staff recommends a condition of approval that prior to final acceptance, documentation should be provided to the city that states that said well/s has been properly decommissioned in accordance with State and County guidelines, and any water rights associated with a decommissioned well shall be transferred to the City.

CMC 17.19.040.C.4.a Location of fire hydrants and flow rates shall be in accordance with city standards and the International Fire Code.

The February 2026 updated preliminary sanitary and water plans (Exhibit 15, Sheet PRE4.0) show the future fire hydrants located east of tie-in point for water main off NE 49th Avenue. During engineering plan review, the Fire Marshal may determine that an additional fire hydrant is needed, or the proposed location needs to change.

> Staff recommends a condition of approval that prior to engineering plan approval, the applicant should work with engineering and the Fire Mashal's Office to determine if an additional fire hydrant is required.

Per CMC 17.19.040.C.4.d Landscaping in Open Space tracts must have a separate irrigation service and meter. Irrigation services are to be a minimum 1-inch service. The size of the irrigation meter is to be determined in advance and shown on the water utility plans and landscape. The owner of the open space tract is responsible for installation of the meter and water usage. Landscaping water services and meters are to be privately owned and maintained by the Owner and/or Homeowners Association (HOA).

> Staff recommends a condition of approval that prior to engineering plan approval, the applicant should submit revised water utility plans showing the location and size of all proposed irrigation services and the size of each irrigation meter.
>
> Staff recommends a condition of approval that prior to final plat approval, a note is to be added to the final plat stating that irrigation meters required for open space areas are to be privately owned and maintained by the Owners and/or Homeowners Association (HOA).
>
> Proposed Plat Note: All irrigation meters required for open space areas are to be privately owned and maintained by the Owners and/or Homeowners Association (HOA).
>
> **FINDINGS:** Staff finds that, as conditioned, adequate provisions for water can or will be made in accordance with CDSM and CMC 17.19.040.

Storm Drainage:
Per CMC 17.19.040.C.3 the storm drainage collection system shall meet the requirements of the city's stormwater standards, the *Camas Design Standards Manual* (CDSM), CMC 14.02 Stormwater Control, and Ecology's latest Stormwater Management Manual for Western Washington (2024 SWMMWW).

The proposed development is located on a parcel that is approximately 18.15 acres (790,614 sf) in size. The total land-disturbing activities, per the preliminary stormwater report (PTIR) (Exhibit 23), is approximately 3.22 acres (140,263 sf).

Per Figure 1-3.2: Flow Chart for Determining Requirements for Redevelopment of Ecology's Stormwater Management Manual for Western Washington (SWMMWW):

- If the land-disturbing activities are greater than 7,000-square feet, Minimum Requirements (MRs) 1-9 will apply.

The proposed development will have land-disturbing activities greater than 7,000-square feet, therefore Minimum Requirements (MRs) 1-9 apply.

A preliminary stormwater Technical Information Report (TIR) (Exhibit 23), dated January 14, 2026, was prepared by SGA Engineering. The site contains an existing home, a barn and other outbuildings. The existing home will be located on future Lot 12, and the barn will be located on a separate tract (Barn Tract) which is shown to be in Phase II, located in the southeast corner of the property adjacent to NE Everett Street (SR 500). Slopes onsite range between 0% to 25% with existing vegetation consisting of mostly dense tree cover on the north end of the site.

Stormwater treatment of runoff from the future public and private roads is proposed via a 3 cartridge StormFilter manhole located at the western end of the 'Private Road' Tract to Lots 9 and 10 and a StormFilter catch basin located at the eastern end of the Private Road' Tract to Lots 9 and 10, prior to discharging into the stormwater detention pond located in the 'Storm Tract'. The stormwater detention pond will then discharge to a dispersion trench adjacent to the wetlands.

MR #1 – Preparation of Stormwater Site Plans: The preliminary stormwater utility plan was incomplete. The plans were not a complete set of the stormwater design system, including profiles of the conveyance system, sizing of laterals and manholes, and design plans for the stormwater treatment and detention facilities.

Staff recommends a condition of approval that prior to engineering plan approval the applicant should submit a complete set of stormwater plans, including the design for the collection and conveyance system in accordance with the Camas Design Standards Manual (CDSM); and a complete set of the design plans for the stormwater detention and treatment system, per MR #1 of the TIR.

MR #2 – Construction Stormwater Pollution Prevention Plan (SWPPP): The SWPPP was not included in the preliminary TIR.

Staff recommends a condition of approval that prior to any land-disturbing activities the applicant should be required to submit a site specific SWPPP in addition to Ecology's NPDES Temporary Construction Stormwater Permit, per MR #2. The SWPPP is to include 24-hour contactor information; and the name of the Project CESCL and CESCL certification number and expiration date. (CESCL = Certified Erosion Sediment Control Lead). A copy of the SWPPP is to be onsite at all times.

MR #3 – Source Control of Pollution: The preliminary TIR (Exhibit 23), Section D, addresses the various BMPs required for erosion prevention and sediment control (ESC measures), however, Source Control BMPs are different from the required erosion prevention and sediment control (ESC) BMPs that are included in the SWPPP.

The preliminary TIR did not address the various BMPs proposed for source control and stated that these will be addressed during engineering plan review of the "erosion control plans". However, source control BMPs are not typically included in site improvement plans or the SWPPP as these BMPs apply to source control practices such as material storage areas, equipment wash down areas, on-site spill prevention kits, employee training, etc.

Staff recommends a condition of approval that prior to engineering plan approval, the applicant should revise the Final Stormwater Technical Report (TIR) to include source control BMPs, per MR #3, for the proposed development.

MR #4 – Preservation of Natural Drainage Systems and Outfalls: Per The preliminary TIR, existing drainage patterns shall be maintained, and discharges from the project site shall occur a is, to the maximum extent practicable.

MR #5 – On-Site Stormwater Management: The preliminary TIR addresses this requirement in Section E.

MR #6 – Runoff Treatment: The preliminary TIR addresses this requirement in Section F. Treatment is proposed via treatment catch basins and manholes.

MR #7 – Flow Control: The preliminary stormwater report (TIR), sufficiently discusses the proposed flow control methods in Section G.

MR #8 – Wetlands Protection: Section H along with Appendix I-C.2 and I-C.3, of the preliminary TIR states sufficiently address the proposed wetland protections.

MR #9 – Operation and Maintenance (O&M): The preliminary TIR did not provide an O&M manual for either the stormwater detention facilities or the treatment vaults. The proposed development is in the City of Camas and Camas has a stormwater operation and maintenance manual included in the Camas Design Standards Manual.

Staff recommends a condition of approval that prior to engineering plan approval the final stormwater TIR is to be submitted with both the City of Camas June 2022 *Stormwater Sewer System Operations & Maintenance Manual* and the manufacturer's maintenance requirements for the treatment vaults.

Per CMC 14.02 and 17.19.040, stormwater is not to negatively affect adjacent property owners. This requirement encompasses both roof drain downspouts and overland surface flow as noted below:

- CMC 14.02 Stormwater Control:
  14.02.010.B.2 Minimize damage to property from increased runoff rates and volumes.
- CMC 17.19 Design and Improvement Standards:
  17.19.040.C.3 Storm Drainage - The storm drainage collection system shall meet the requirements of the city's officially adopted storm water standards.
  17.19.040.C.3.e - All lots shall provide drainage for stormwater runoff from roof and footing drains to an approved drainage system. Rear yard low point area drains and/or storm drain lateral stubs connected to an approved drainage system shall be provided to each lot as necessary to prevent stormwater runoff impacts to adjoining parcels as determined by the city.

Per CMC 17.19.040.C.a, storm drainage facilities shall be placed on their own tract or within an open space tract and are to be owned and maintained by the homeowners and/or the HOA.

Staff recommends a condition of approval that prior to final plat approval a note is to be added to the final plat stating that the stormwater facility located in the 'Storm Tract', the StormFilter Manhole, and the StormFilter catch basin located in the 'Private Road' tract are to be owned and maintained by

the homeowners and/or Homeowners' Association (HOA), at the end of the two-year warranty period, with right-of-entry granted to the city for inspection purposes.

Proposed Plat Note: The stormwater facility located in the 'Storm Tract', and the StormFilter Manhole, and the StormFilter catch basin located in the 'Private Road' tract are to be owned and maintained by the homeowners and/or Homeowners' Association (HOA), at the end of the two-year warranty period, with right-of-entry granted to the city for inspection purposes..

Per CMC 14.02.090.1 Stormwater facilities, located within residential subdivisions and short plats, shall be the maintenance responsibility of the applicant for two (2) years after the date of final acceptance. This maintenance period shall run concurrent with the City's required two-year warranty period that begins at the issuance of final acceptance.

Prior to the end of the two-year warranty period, and upon inspection by the City, the applicant shall ensure that a fully functional facility is turned over to the new owners (e.g., homeowners' associations (HOAs/homeowners). At the completion of the 2-year warranty period, the stormwater facility in the 'Storm Tract' 'will be owned and maintained by the Homeowner's Association/homeowners.

FINDING: Staff finds that, as conditioned, the development can and will meet the requirements for stormwater control, conveyance, and water quality treatment per the Camas Design Standards Manual (CDSM), CMC 17.19.040.C.3, CMC 14.02, and Ecology's SWMMWW.

Erosion Control:

Per CMC 14.06 Erosion Control, adequate erosion control measures are to be provided during the site improvements for the proposed development in accordance with the *Camas Design Standards Manual* (CDSM) and Ecology's latest *Stormwater Management Manual for Western Washington* (SWMMWW).

The proposed development is located on a parcel that is approximately 18.15 acres (790,614 sf) in size. The total land-disturbing activities per the preliminary stormwater report is approximately 3.22 acres (140,263 sf).

Per CMC 17.21.030.A installation of erosion prevention / sediment control measures are required per an approved erosion and sediment control plan.

The preliminary grading and erosion prevention plans, included in the updated preliminary plan set (Exhibit 15, Sheet PRE6.0) are not a complete set of erosion prevention and sediment control plans. A complete set of plans are required to be submitted for review and approval prior to any land-disturbing activities.

Staff recommends a condition of approval that prior to engineering plan approval, the applicant should submit a complete set of erosion and sediment control (ESC) plans that include all the applicable erosion and sediment control Details and BMPs as noted in the CDSM and Ecology's SWMMWW.

Per CMC 14.06.200 and CMC 17.21.030 B financial security for erosion control, in the amount of 200% of the estimated erosion control items is required prior to land-disturbing activities of one acre or more.

As the proposed land-disturbing activities are greater than an acre in size, financial security for erosion and sediment control (ESC) is to be submitted to the city prior to start of any land-disturbing activities, which include tree felling, tree removal, clearing and grading. Staff will provide documentation to the applicant with the approved amount and the acceptable format for ESC financial security.

Staff recommends a condition of approval that prior to any land-disturbing activities, the applicant should submit an approved form of financial security for erosion and sediment control. Staff will provide documentation with the financial security amount.

Staff recommends a condition of approval that prior to any land-disturbing activities, the applicant should have approved engineering plans, which include tree felling, tree removal, clearing and grading, an approved set of engineering plans, including the erosion prevention and sediment control measures required.

Additionally, the applicant is required to provide a copy of both their *NPDES General Construction Stormwater Permit* (GCSWP) and their *Stormwater Pollution Prevention Plan* (SWPPP), which is a requirement of the NPDES GCSWP permit. The NPDES GCSWP permit is issued by the Washington State Department of Ecology for land-disturbing activities of an acre or more.

Staff recommends a condition of approval that prior to any land-disturbing activities, an electronic copy of Ecology's NPDES GCSWP permit, an electronic copy of the SWPPP, and the financial security for erosion and sediment control are to be submitted to the city.

Per CMC 17.21.030.D Implementation of erosion prevention/sediment control measures in addition to those measures approved on the erosion prevention/sediment control (ESC) plan may be required to address weather-related problems and to assure compliance with local, state, and federal requirements for water quality. Any proposed additional erosion prevention/sediment control measures must be approved by the city prior to use. The city shall have the right to issue a stop work order on all construction not related to erosion prevention/sediment control unit such time as acceptable erosion prevention and control measures are implemented.

A Stormwater Pollution Prevention Plan (SWPPP) is required per Ecology's NPDES Permit. The SWPPP is a living document that is to be updated by the contractor as site conditions change, and ESC measures are revised. Said documents are required to always be on-site and available for staff and/or Ecology to review.

Staff recommends a condition of approval that prior to land-disturbing activities, the contractor is to always have a hard copy of the SWPPP on site during construction of the site improvements. Said copy is to be updated as ESC measures are revised and is to be available for review by staff and Ecology.

FINDINGS: Staff find that, as conditioned, adequate provisions for erosion control can or will be made per CMC 14.06, the CDSM, and Ecology's SWMMWW.

<u>Sanitary Sewage Disposal:</u>
Per CMC 17.19.040.C.2, sanitary sewers shall be provided and designed in accordance with the city's *Design Standards Manual* (CDSM).

There is an existing 8-inch gravity main with a clean-out at the east end of N 49th Avenue that was extended to the eastern dead-end of N 49th Avenue as part of the Lacamas Hills development. Additionally, the Camas Woods I development has approved offsite sanitary sewer plans that show the installation of a 6-inch PVC force main that will connect to a future manhole on the 8-inch gravity sewer main that will be extended from the end of N 49th Avenue to the cul-de-sac in future N 49th Circle.

The updated preliminary plans with sanitary and water utility plans (Exhibit 15, Sheet PRE4.0) submitted in February 2026, shows the sanitary sewer main to be installed by the Camas Woods I development improvements. The Camas Woods I Offsite Sewer Improvement plans are approved and includes the

extension of the 6-inch Sanitary Force Main from NE Everett Street (SR 500), overland to the future N 49th Circle. 8-inch gravity main from the manhole o the end of the cul-de-sac.

Staff recommends a condition of approval that prior to engineering plan approval, the sanitary sewer utility plans are to be revised to clearly depict the sections of 6-inch sanitary sewer force main and the sections of the 8-inch gravity sewer main to be installed with the Camas Woods I Offsite Sewer Plans, from the improvements, e.g. sanitary laterals to be installed by the Oliver Terrace Subdivision.

The offsite sanitary sewer force main will be owned and maintained by the City. A 15-foot-wide public utility easement is to be granted to the city for access, maintenance, replacement, repair, or extension over and under the section of the sanitary sewer force main that is to be extended west from Lot 12 across the Open Space Tract in Phase 1 to the 'Storm Tract', and south through the 'Private Road' Tract for Lots 9 and 10, to N 49th Circle. Additionally, a minimum 10-foot-wide gravel access road is to be constructed over the sanitary sewer main, which will allow for access and maintenance activities by the City.

A 30-foot-wide public utility access easement is to be granted to the city for access, maintenance, replacement, repair, or extension over and under the section of the sanitary sewer force main that is to be extended northwest from NE Everett Street, via the existing private road located in Phase I and Phase II to Lot 12. The existing private road will be owned and maintained by the property owner of Lot 12. The 30-foot easement will allow for access and maintenance activities by the City.

Staff recommends a condition of approval that prior to engineering plan approval, the sanitary sewer utility plans are to be revised to include construction of a minimum 10-foot-wide gravel access road over the sanitary sewer force main located within the 15-foot-wide sanitary sewer easement that extends west from Lot 12 through the Open Space Tract in Phase 1 of the proposed development.

Staff recommends a condition of approval that prior to final plat approval, a minimum 15-foot-wide public utility easement is to be recorded over and under the sanitary sewer force main that extends west from Lot 12 through the Open Space Tract Phase 1 to future N 49th Circle of the proposed development.

Staff recommends a condition of approval that prior to final plat approval, a minimum 30-foot-wide public utility access easement is to be recorded over and under the sanitary sewer force main that extends northwest from NE Everett Street (SR 500), via the existing private road located in Phase 1 and Phase II to Lot 12. The existing private road will be owned and maintained by the owner of Lot 12.

Proposed Plat Notes:
A 15-foot-wide public utility and access easement is granted to the City for access, maintenance, replacement, repair, or extension over and under the sanitary sewer force main that is extended west from Lot 12 through the Open Space Tract in Phase 1, to N 49th Circle.

A 30-foot-wide public utility and access easement is granted to the City for access, maintenance, replacement, repair, or extension over and under the sanitary sewer force main that is extended NE Everett Street (SR 500), via the existing road through Phase 1 and Phase II to Lot 12,

The updated preliminary plans with sanitary and water utility plans (Exhibit 15, Sheet PRE4.0) also show 6-inch gravity sanitary sewer laterals to Lots 1-8 and Lot 9; with 1-inch sanitary force main laterals to Lots 9 and 10. Lots 9 and 10 will require grinder pumps per the Camas Design Standards Manual (CDSM) and said grinder pumps will be owned and maintained by the property owners of Lots 9 and 10.

Staff recommends a condition of approval that prior to engineering plan approval, the applicant is required to submit revised sanitary sewer plans with the approved grinder pumps and laterals for Lots 9 and 10 per the Camas Design Standards Manual (CDSM).

Staff finds that a condition of approval is warranted that prior to final plat approval, the following note are to be added to the final plat:

Proposed Plat Note:

- The grinder pumps and laterals for Lots 9 and 10 are to be owned and maintained by the property owners.

FINDINGS: Staff finds that, as conditioned, adequate provisions for sanitary sewage disposal can or will be made.

[Existing wells, septic tanks, and septic drain fields]:
Per CMC 17.19.020.A.3 requires abandonment of existing wells, septic tanks, and septic drain fields. Any existing wells, septic tanks, and drain fields should be properly decommissioned in accordance with State and County guidelines prior to final plat approval. If applicable, any water rights associated with the decommissioned well(s) shall be transferred to the City.

Staff recommends a condition of approval that prior to final acceptance, the applicant should provide documentation to the city that any existing wells, or septic systems have been properly decommissioned in accordance with State and County guidelines. Additionally, any water rights associated with a decommissioned well shall be transferred to the City.

3. Provisions have been made for road, utilities, street lighting, street trees and other improvements that are consistent with the Six-Year Street Plan, the Camas Design Standards Manual and other State adopted standards and plans;

Roads:
Streets for the proposed development shall be designed in accordance with CMC 17.19.040.A Private Streets and B Public Streets; the Camas Design Standards Manual (CDSM); and the North Shore Design Standards (NSDS) Manual.

Per CMC 17.19.040.B.7 All street names, street numbers, and building numbers shall be assigned in accordance with CMC 12.24. Street naming is the responsibility of the Building Official. The street names and numbers, as shown on the updated preliminary plat (Exhibit 15) will be revised per the Building Official. These names are subject to change during the engineering plan review process.

Staff recommends a condition of approval that prior to engineering plan approval, the future interior street names and numbers, public and private, are to be revised in accordance to the street names and numbers as determined by the Building Official.

Staff recommends a condition of approval that prior to final plat approval, the preliminary plat is to be revised with the final street names and numbers as determined by the Building Official.

[Public Roads]
Per 17.19.040.B.1 half-width street improvements along an existing roadway is required when determined appropriate by the city engineer, shall include utility easements, pedestrian pathway, storm water drainage, street lighting and signage, bike lanes, and improvements to the centerline of the right-of-way as necessary to provide the minimum structural street section per CDSM and the NSDS. Street improvements are to consist of the full-depth road section.

Per CMC 17.19.040.B.5 dedication of additional right-of-way may be required for development improvements when it is necessary to meet the minimum street width standards or when lack of such dedication would cause or contribute to an unsafe road or intersection.

Future North Shore Blvd.:
The North Shore Blvd. street standard (Exhibit 33, Figure 13) consists of the following:

- Up to 88 feet of right-of-way width, a 10-foot-wide center pedestrian refuge island, with 8-foot-wide sidewalks, 5-foot-wide planter strips, 5-foot-wide bike lanes, 8-foot-wide on-street parking strips (commercial zones only), and 11-foot-wide drive lanes on each side of the center pedestrian refuge.

The approximate right-of-way alignment for the future North Shore Blvd. is shown on the updated preliminary plans (Exhibit 15, PRE2.0) in the northeast quadrant of the proposed development.

Per CMC 17.19.040.B.5 the applicant for the proposed development, Oliver Terrace Subdivision, is required to dedicate the right-of-way for the future North Shore Blvd.

> Staff recommends a condition of approval that the applicant work with Camas staff to dedicate the North Shore Blvd. right-of-way once the final horizontal alignment is determined.

[Interior Public Roads]:
The proposed development is located on the east end of N 49th Avenue, which is considered a local road with 52-foot right-of-way, 28-foot pavement, planter strip and sidewalk on both sides of the street.

Per CDSM Table 2 – General Guidelines for Geometry of a Roadway, a 2-lane local neighborhood road with a 52-foot-wide right-of-way width, a 28-foot paved surface, 5-foot-wide detached sidewalks, 5 to 7-foot planter strips on both sides, a minimum 35-foot cul-de-sac radius, and parking permitted on one side only, requires approval from the city engineer. On street parking is not permitted on cul-de-sacs. ***The city engineer supports the proposed 52-foot-wide interior public road.***

The updated preliminary site plans (Exhibit 15, Sheet PRE2.0), proposes to extend the existing N 49th Avenue, from the eastern property line of Lacamas Hills to a cul-de-sac for access to Lots 1-11 of future Phase 1. The proposed road section is shown to match the existing N 49th Avenue with 52-foot right-of-way, 28-foot pavement, planter strip and sidewalk on both sides of the street. However, the proposed cul-de-sac radius is shown to be 45-feet, with a 50-foot radius to the back of curb. These dimensions would provide a 4.5-foot-wide sidewalk, which does not meet the local 52-foot right-of-way street section.

> Staff recommends a condition of approval that prior to engineering plan approval a complete set of street improvement plans are to be submitted with the future N 49th Circle constructed in accordance with CDSM Street Detail ST2 – 2 Lane Local Road (52' ROW), including a cul-de-sac radius that provides for a minimum 5-foot-wide curb tight sidewalk.

[Private Roads]:

CMC 17.19.040.A and CDSM Table 1 – Guidelines for Geometry of a Private Roadway, Private Street Standard A, access to four or less dwelling units, shall consist of a tract width of 20-feet, a minimum 12-foot-wide paved surface, sidewalk optional, and no parking on both sides. Additionally, streets more than 150-feet in length, as measured from the centerline of the adjacent road, require a dead-end turn around.

Existing Private Road – Lot 12
Per the updated preliminary street plan (Exhibit 15, Sheet PRE2.0) the proposed access to future Lot 12, which is shown to retain the existing single-family residence, will be via the existing private road

that is accessed from NE Everett Drive (SR 500). The existing private road runs southeast to northwest and is located in both Phase 1 and Phase 2. Lot 12 is located entirely in Phase 1 of the proposed development.

The existing private road is approximately 680-feet in length as measured from the centerline of NE Everett Street (SR 500). The existing private road is more than 150-feet to the from NE Everett Street (SR 500) to the existing single-family residence. There is a dead-end turnaround area at the single-family residence, as well as a turnaround on the 'Barn Tract' that is at the southeastern end of the private road.

There are approved plans for a future sanitary sewer force main, Camas Woods Offsite Sewer Improvements, that will be installed within the existing private road to Lot 12. A 30-foot-wide access and utility easement over and under the existing road is to be granted to the City for

Until such time as future development improvements are proposed in Phase II, Lot 12 will continue to take access to NE Everett Street (SR 500) via the existing private road. Additionally, the existing private road

Proposed Private Road – Lots 9 & 10

Per the updated preliminary street plan (Exhibit 15, Sheet PRE2.0) the proposed access to future Lots 9, 10 and the 'Storm Tract' will be via an unnamed 'Private Road' tract at the intersection with N 49th Circle heading north. Per the updated preliminary street plan, the future unnamed 'Private Road' tract to Lots 9, 10 and the 'Storm Tract' is approximately 206-feet in length as measured from the centerline of future N 49th Circle. The proposed private road is more than 150-feet to the end of the private road and is proposed as a 20-foot-wide tract, with a 20-foot-wide of paved surface.

The proposed private street section for proposed unnamed 'Private Road' tract to future Lots 9, 10 and storm tract does not meet the Minimum Private Street Standards for access to four dwelling units or less and is subject to additional requirements from the Fire Marshal (FMO), per CDSM Table 1, Private Street 'A' [3].

> Staff recommend a condition of approval that prior to engineering plan approval the applicant is to work with the Fire Marshal to determine the additional requirements for a dead-end road that exceeds 150-feet in length and serves 4 or less dwelling units.

Per CDSM Table 1 – Guidelines for Geometry of Private Roadway, Note 3, dead-end roads in excess of 150-feet, as measured from the centerline of the adjacent road, require a dead-end-turnaround.

Per CMC 17.19.040.B.12.e curb return radii shall be no less that thirty-five feet on arterial and collector streets, and no less than twenty-five feet on all other streets.

The applicant shows a dead-end-turnaround at the end of the private access to future Lots 9, 10 and 'Storm Tract' but the private road as shown does not include the minimum 25-foot curb radii on both sides of the road at the intersection with proposed N 49th Circle or at the hammerhead of the dead-end turn around.

> Staff recommend a condition of approval that prior to engineering plan approval, the street plans are to be revised to include a minimum 25-foot curb radii on both sides of the road at the intersection with proposed N 49th Circle and at the hammerhead of the dead-end turnaround of the future 'Private Road' tract to Lots 9, 10 and the 'Storm Tract'.

Proposed Private Road – Lot 3

Per the updated preliminary street plan (Exhibit 15, Sheet PRE2.0) access to future Lot 3 is shown as a 'Private Road' tract that intersects the cul-de-sac of future N 49th Circle. Per the updated preliminary

street plan, the future unnamed 'Private Road' tract to Lot 3 is approximately 170-feet in length as measured from the centerline of the cul-de-sac at N. 49th Circle. The proposed access is more than 150 feet to the end of the private road, and it is approximately a 20-foot-wide tract, with 20-feet of paved surface.

The proposed private street section for proposed unnamed tract to future Lot 3 does not meet the Minimum Private Street Standards for access to four dwelling units or less and is subject to additional requirements from the Fire Marshal (FMO), per CDSM Table 1, Private Street 'A' [3].

Staff recommend a condition of approval that prior to engineering plan approval the applicant is to work with the Fire Marshal to determine the additional requirements for a dead-end road that exceeds 150-feet in length and serves 4 or less dwelling units.

Per CDSM Table 1 – Guidelines for Geometry of Private Roadway, Note 3, dead-end roads in excess of 150-feet, as measured from the centerline of the adjacent road, require a dead-end-turnaround.

Staff recommend a condition of approval that prior to engineering plan approval, the applicant is to work with the Fire Marshal's Office and engineering staff to provide an acceptable dead-end-turnaround at the south end of proposed 'Private Road' tract to Lot 3, or other additional requirements from the Fire Marshal's Office in lieu of the dead-end turnaround.

Per CMC 17.19.040.B.12.e curb return radii shall be no less that thirty-five feet on arterial and collector streets, and no less than twenty-five feet on all other streets.

The proposed 'Private Road' tract' to future Lot 3, as shown, does not include the minimum 25-foot curb radii on both sides of the road at the intersection with proposed N 49th Circle.

Staff recommend a condition of approval that prior to engineering plan approval, the street plans are to be revised to include a minimum 25-foot curb radii on both sides of the 'Private Road' tract to future Lot 3 at the intersection with future N 49th Circle.

Per CMC 17.19.040.A.8 Provisions for adequate parking enforcement are to be recorded within a private covenant to ensure emergency vehicle access. These provisions shall be noted on the final plat (e.g., Towing service).

Staff recommend a condition of approval that prior to engineering plan approval, the applicant should provide a design for a 'No Parking and Towing' sign for review and approval. Said sign is to include contact information for a private towing company, as the city does not provide towing on private roads, nor does the city enforce no parking on private roads.

Staff recommend a condition of approval that prior to final acceptance the applicant should be required to install the 'No Parking and Towing' signs.

Staff recommends a condition of approval that prior to final plat approval, a note is to be added to the plat that addresses removal of unauthorized vehicles.

Proposed Plat Note:

- Provisions for a towing service to remove unauthorized vehicles. 'No Parking' areas on the private roads is to be provided as this is the responsibility of the homeowner and/or Homeowners' Association (HOA).

Per CMC 17.19.040.A.2 Adequate and reasonable provisions are made for ownership, maintenance, and repair of all utilities and the proposed private streets.

Staff recommends a condition of approval that prior to final plat approval, the preliminary plat is to include a plat note stating that the private Tracts are to be owned and maintained by the Homeowners Association (HOA)/homeowners.

Proposed Plat Note:

- 'Private Road' tracts are to be owned and maintained by the Homeowners Association (HOA)/homeowners.

Utilities, Street Lighting, Street Trees, and Other Improvements:

[Street lighting]:
LED Street lighting is to be designed and installed along all street frontages in accordance with the Camas Design Standards Manual (CDSM) – Standards for Street Lighting. The locations for streetlights are to be coordinated with the locations of other site features, such as street trees, driveways, fire hydrants, and other utilities.

The locations for streetlights are to be coordinated with the locations of other site features, such as street trees, driveways, and other utilities. Per CDSM, private streets in excess of 100-feet in length and serving more than five dwelling units are required to have streetlights. Any streetlights proposed for private streets are required to be metered separately and are to be owned and maintained by the HOA.

Staff recommends a condition of approval that prior to engineering plan approval all streetlight locations are to be shown on the street plans, the sewer and water utility plans, and the landscape plans. Any streetlights provided for private streets are required to be metered separately and are to be owned and maintained by the HOA / homeowners.

Staff recommends a condition of approval that prior to the submittal of electrical plans to Clark Public Utilities, the preliminary electrical plans for streetlights, transformers, J-boxes, etc., which are prepared by others, are to be submitted to the city for review and approval.

[Driveways]:
Per the City of Camas Street Details for driveways (ST14-16), the driveway throat cannot exceed 40% of the total lot frontage. Thirty (30) foot wide driveways as proposed are shown on the preliminary site plan (Exhibit 15, PRE2.0) and as such any lot frontage widths smaller than 75-feet, such as lots 4-7, would exceed the 40%.

Staff recommends a conditional of approval that prior to engineering plan approval, a note is to be added to the street plans stating that driveway throats shall not exceed 40% of the total lot frontage.

Staff recommends a conditional of approval that prior to final plat approval, a note is to be added to the to the plat stating that driveway throats shall not exceed 40% of the total lot frontage.

Staff recommends a conditional of approval that prior to final plat approval, the preliminary plat is to be revised to show shared driveways between lots 4-7 or revise the width of the driveway throats to not exceed 40% of the total lot frontage.

[Street trees and Landscaping]:
CMC 17.19.030.F.1 requires one 2-inch diameter street tree in the planter strip of the right-of-way, or similar location in the front yard of each dwelling unit, except for flag lots and lots accessed by tracts.

Of the proposed 11 lots, 8 street trees are required. The preliminary landscape plan (Exhibit 15) shows 12 street trees are provided in compliance with this requirement. Street tree planting and other

landscaping should be included on the landscaping plans with final engineering plan submittal for site improvements.

Staff recommends a condition of approval that prior to engineering approval, the applicant is required to show proposed driveway locations for each lot on the landscape plans to ensure that street trees are not impacted.

Staff recommends a condition of approval is required that the applicant submit a final landscape plan consistent with the landscaping standards in CMC Chapter 18.13 and include plantings from the City's approved plant list. Landscaping adjacent to or within tracts should be installed prior to final acceptance per CMC 17.19.030.F.3. Street trees adjacent to lots should be installed prior to final occupancy or bonded for per CMC 17.19.030.F.4.

[Storm Facility Landscaping]:
CMC 17.19.030.F.6 requires that storm drainage facilities within 30-feet from any street or accessory structure to be landscaped with a 10-foot L2 buffer. The storm facility landscape buffer is conditioned in Provision 5.

Per the CDSM, the storm facilities are to be fenced with a maximum height 6-foot fence with top rail and a minimum 10-foot-wide double gate for access. The updated preliminary site plans provide for a dedicated 'Storm Tract' for the stormwater detention facility, however, the plans include fencing or gated access to the future stormwater facility.

Staff recommends a condition of approval that prior to engineering plan approval, the applicant is to submit revised stormwater facility plans that provide for a minimum 6-foot-high black vinyl coated chain link fence with top rail installed along the stormwater facility. Additionally, the plans are to provide for a minimum 16-foot-wide double gate at the paved access road to the facility and a minimum 4-foot-wide man gate for inspection access.

FINDING: Staff finds that the applicant can or will make adequate provisions as conditioned for roads, utilities, street lighting, street trees, and other improvements that are consistent with the six-year street plan, the Camas Design Standard Manual and other state adopted standards and plans.

4. Provisions have been made for dedications, easements and reservations;

[Easements]:
The following easements are to be recorded on the final plat for the proposed residential development:

- The 6-foot public utility easement (PUE) is to be located outside of the right-of-way along all the future roads.
- A utility access and maintenance easement to the city, for the sanitary sewer system in the 'Private Street' that provides access to Lots 9 and 10 and to the 'Storm Tract'.
- A minimum 15-foot-wide utility access and maintenance easement to the city over and under the sanitary sewer force main that extends from NE Everett Street (SR 500) north westerly through Phase II, then north through Phase I on the north side of the wetlands Open Space to the 'Private Road' tract for Lots 9 and 10, and south to future N 49th Circle.
- A right-of-entry is to be granted to the city for stormwater inspection purposes of the stormwater facility.
- Lot 1 and Lot 3: A minimum 15-foot-wide stormwater easement over the roof drain system and area drains located at the rear of the lots, noted on the updated preliminary stormwater plan (Exhibit 15) for the benefits of Lots 1 and 3, are to be owned and

maintained by the adjacent property owners and/or the Homeowners' Association (HOA). Construction of permanent structures within the stormwater easements is not permitted.

A homeowner's association (HOA) will be required for this development. A copy of the CC&Rs for the development will need to be submitted to the City for review and approval. The City is to receive a copy of the recorded CC&Rs at time of Final Plat.

Specifically, the applicant is to make provisions in the CC&Rs for ownership and maintenance of the storm drainage systems, stormwater treatment & detention system, fencing, trails, landscaping, irrigation, private roads, storm easements, open space/park and trail tracts outside of the City's right-of-way. Additionally, the applicant is to make adequate provisions for parking enforcement along private roads and access tracts that are acceptable to the Fire Marshal. Further, all necessary easements, dedications, and tracts should be noted on the final plat.

> **FINDING:** Staff finds that adequate provisions for dedications, easements and reservations as conditioned can or will be made by the applicant at the time of final platting.

5. The design, shape and orientation of the proposed lots are appropriate to the proposed use.

As shown on the preliminary plat, the proposed lots will have access onto a public or private street, side lot lines run at right angles to the street upon which the lots face as far as practical, or on curved streets they shall be radial to the curve, and show building envelopes that are capable of siting a 40 feet by 40 feet dwelling within the building envelope per CMC 17.19.030.D (1-3).

CMC 17.19.030.D.5 notes that the city may impose special conditions including setbacks, fencing and landscaping to protect the immediate character of the neighborhood if flag lots, access tracts and private roads are proposed. An access tract is proposed for access to lots 9, 10 and the stormwater facility. The proposed stormwater facility abuts existing single family residential lots to the west in the Lacamas Hills subdivision.

> **FINDING:** Staff recommends a condition of approval that prior to engineering plan approval the applicant should submit a revised landscape plan that shows additional landscaping and/or site obscuring fencing along the western property line of the stormwater tract to buffer the facility from the existing adjacent residences in the Lacamas Hills subdivision.

Density and Dimensions: CMC 18.09.040 Table 1, Note 3 states, "For parcels with an existing dwelling, a one-time exception may be allowed to partition from the parent parcel a lot that exceeds the maximum lot size permitted in the underlying zone. Any further partitioning of the parent parcel of the oversized lot must comply with the lot size requirement of the underlying zone." Proposed Lot 12 at 23,992 square feet includes an existing dwelling and therefore is exempt from the lot size requirement as discussed below.

Density Transfer: The preliminary plat shows a 7.6-acre open space tract for the preservation of critical areas. The applicant has the ability and has proposed to utilize the density transfer provisions per CMC 18.09.060.C when land is set aside in a tract for the protection of a critical area (i.e. wetlands, streams and steep slopes). The maximum allowed density is 5.8 dwelling units per net acre for the LD-NS zone. Based on the proposed net acreage of 3.37 acres per the preliminary plat (Exhibit 15), a maximum of 19 du/net acre is required and therefore is in compliance with this requirement.

(Lot sizes/dimensions]: The density transfer provisions require a minimum lot size of 5,250 square feet and a maximum lot size of 9,000 square feet per CMC 18.09.040 Table 1. As such, the proposed lots are between 8,423 and 8,906 square feet in compliance with this requirement and meet the required

minimum lot width of 40-feet and lot depth of 80-feet. Maximum building lot coverage is 60% and staff recommends a condition of approval that this is noted on the face of the final plat.

[Lot setbacks]: All lots are proposed with front loaded garages, not rear loaded garages, as shown on the preliminary plat (Exhibit 15). Per CMC 18.09.040 Table 2, setbacks for the LD-NS zone require the following for lots that take access from the street: 1) minimum front yard is 20-feet at garage door and 25-feet to house, 2) minimum side yard is 5-feet, 3) minimum rear yard is 10-feet. Setbacks are also subject to franchise utility easements abutting right of way. Staff recommends a condition of approval that building envelopes and the LD-NS setbacks be shown and noted on the face of the final plat.

> **FINDING:** Staff finds the proposed density and dimensions conform to the density transfer provisions of the LD-NS zone for single-family residential lots. Building envelopes, setbacks and lot coverage should be shown and noted on the face of the final plat.

6. The subdivision complies with the relevant requirements of the Camas land development and zoning codes, and all other relevant local regulations;

CMC Section 18.07.030 Table 1 Sales Office Use:

The application did not propose a sales office for the development. The absence of approval of a sales office consolidated with this Type III hearing will limit sales office at the time of development to six months as a Temporary Use per CMC 18.07.040 Table 2, Note 4. The applicant may provide for the contingency that a sales office use may be necessary for longer than six months. Staff finds that special conditions for the installation, use and removal of the sales office are appropriate and are provided with this report if the applicant is in agreement.

> **FINDING:** Staff recommends a condition of approval is required that the model home/sales office be closed upon construction of the last residential structure.

CMC Chapter 18.13 Landscaping – Tree survey/Tree density:

A minimum of 30 tree units (TUs) per net developable acre (exclusive of critical areas) is required for residential development in the North Shore Subarea per CMC 18.13.051(A) Table 1 – Required Tree Density and should be incorporated into the overall landscape plan. CMC 18.13.051 Note 1 states "at least fifty percent of minimum tree density shall be achieved through retention of existing trees where the existing tree coverage on site would allow for this standard to be met."

Based on the approximately 3.77 net developable acreage per the Arborist Report (Exhibit 22), 113 TUs are required. Per the arborist report and tree survey, 203 trees were inventoried with the boundary of the project site and approximately 86 trees of those trees will be removed due to a number of factors including tree health, if the tree is hazardous, or to accommodate on-site improvements. With that, 117 trees are proposed to be retained worth 592 tree units in addition to the planting of 12 street trees. The development proposes a final TU value post construction of 604 tree units, which complies with the minimum TU per net acre requirement. Further, over 50% of the minimum tree density is achieved via the retention of existing trees with the proposed development in compliance with CMC 18.13.051 Note 1.

> **FINDING:** Staff recommends a condition of approval is required that any required revisions to the site plan that may impact the tree unit requirement will require a revised tree report or memo for City review and approval prior to final engineering plan approval. A note should be added to the face of the final plat that tree topping is prohibited.

CMC Chapter 18.19 Design Review

Design Review is required for all new development in the North Shore subarea per the North Shore Subarea Design manual (Exhibit 33). As previously noted, the property is located with the LD-NS Lower Density Residential North Shore zoning designation. As such, Design Review would be required.

> **FINDING:** Staff recommends a condition of approval that the applicant submit a Design Review land use application for City review and approval prior to building permit approval.

CMC Chapter 18.34 Airport Overlay Zoning

The subject property is located within the Airport Overlay Zone C. An avigation easement is required to be recorded on the title that provides notice that the property is located within an air traffic area per CMC 18.34.020.B and included as a note on the final plat. Per CMC 18.34.080.A, the applicant should consider construction techniques that would decrease the noise associated with the airport per CMC 18.34.080.A.

> **FINDING:** Staff recommends a condition of approval that an avigation easement is recorded on the title to provide notice that the property is located within an air traffic area and included as a note on the final plat. Prior to building permit submittal, the applicant should consider construction techniques that would decrease the noise associated with the airport.

> **FINDING:** As stated in the responses to criteria in this staff report and as conditioned herein, this proposal can or will meet all relevant codes, regulations, ordinances and other requirements as identified herein.

7. Appropriate provisions are made to address all impacts identified by the transportation impact study;

[Traffic Impact Analysis]:

Per CMC 18.18.040.E a Transportation Impact Analysis (TIS/TIA) may be required when a development will generate 200 or greater average daily trips (ADTs).

An updated Transportation Impact Study (TIS) Memo (Exhibit 21) dated October 21, 2025, was prepared by Kittelson & Associates. Per the TIS Memo, the proposed single-family residential development will generate a combined total of approximately 100 ADTs, which does not meet the requirement for a full transportation impact study for the proposed development.

> **FINDING:** Staff finds that this development can or will meet any impacts identified by the transportation impact study.

8. Appropriate provisions for maintenance of commonly owned private facilities have been made;

Per CMC 14.02.090.A.1 Stormwater facilities, located within residential subdivisions and short plats, shall be the maintenance responsibility of the applicant for two-years after the date of final acceptance. This maintenance period shall run concurrent with the city's required two-year warranty period that begins at final acceptance.

Per CMC 14.02090.C, the City shall have the right-of-entry and authority to inspect of the stormwater facilities for compliance with this chapter. A note is to be added to the final plat granted the city right-of-entry for inspection purposes. A condition of approval is warranted.

Per CMC 17.19.040.A.2 the HOA and/or homeowners are responsible for the ownership and maintenance of the private streets. A note is to be added to the final plat stating that private Tracts are to be owned and maintained by the individual property owners and/or homeowners association (HOA). A condition of approval is warranted.

FINDING: Staff finds that, as conditioned, this development can or will meet the appropriate provisions for maintenance of private facilities.

9. Appropriate provisions in accordance with RCW 58.17.110, are made for (a) the public health, safety, and general welfare, and (b)The public use and interest will be served by the platting of such subdivision and dedication;

Privately owned and maintained tracts will be provided for private roads, landscaping, trail connections, fencing and open spaces/park amenities. Furthermore, the applicant is providing adequate and appropriate utilities for stormwater, water, and sanitary sewer that will be dedicated to the public. The applicant will also provide sidewalks with the proposed street construction for adequate pedestrian mobility.

FINDING: As discussed throughout this report, staff finds that the subdivision can be conditioned to provide the appropriate provisions for public health, safety, general welfare, and assure safe walking conditions for pedestrians.

10. The application and plans shall be consistent with the applicable regulations of the adopted comprehensive plans, shoreline master plan, state and local environmental acts and ordinances in accordance with RCW36.70B.030.

FINDING: Staff concurs that the proposed subdivision can or will meet the requirements of RCW 58.17 and other applicable state and local laws that are in at the time of final platting. The final plat will be processed in accordance with the requirements of CMC 17.21.060.

PUBLIC COMMENTS

As of the writing of this staff report, one public comment was received from Max Ivanitski concerning the preservation of the Oregon White Oaks (Exhibit 34). Staff's response is that both Oregon White Oaks are proposed to be preserved in a critical areas/open space tract with a recorded conservation covenant as previously discussed in this staff report.

CONCLUSION

Based on the above findings and discussion provided in this staff report, staff concludes that the Oliver Terrace subdivision (SUB25-1010) should be approved, because it does comply with the applicable standards if all of the conditions of approval are met.

RECOMMENDATION

Staff recommends APPROVAL of the preliminary plat of Oliver Terrace subdivision (SUB25-1010) subject to the following conditions of approval:

CONDITIONS OF APPROVAL

Standard Conditions:

1. Engineering site improvement plans shall be prepared in accordance with the City of Camas Design Standards Manual (CDSM), which includes the North Shore Design Standards, and CMC 17.19.040.
2. The engineering site improvement plans shall be prepared by a licensed civil engineer in Washington State and submitted to the City's Community Development Engineering Department for review and approval.

3. Per CMC 17.19.040.C.1 and 1.a: All utilities designed to serve the development shall be placed underground. Those utilities to be located beneath paved surfaces, including all service connections, shall be installed prior to application of any surface materials.
4. The installation of public improvements shall be in accordance with CMC 17.21 Procedures for Public Improvements.
5. After the land-use decision is issued, the applicant is to submit the Civil construction plans via the online portal at *www.cityofcamas.us/Permits/Civil Construction Application*.
6. Community Development (CDEV) Engineering shall collect a total 3% plan review and construction inspection (PR&CI) fee for the proposed development.
    a. Payment of the 1% plan review (PR) fee is required prior to start of initial plan review. Staff will review the preliminary engineer's estimate and invoice the applicant via the online portal.
    b. Payment of the 2% construction inspection (CI) fee is required prior to final plan approval. Staff will invoice the applicant via the online portal.
    c. Under no circumstances will the applicant be allowed to begin any land-disturbing activities prior to engineering plan approval.
7. If applicable, existing wells, septic tanks, and septic drain fields shall be decommissioned in accordance with state and county guidelines per CMC 17.19.020.
8. Street names shall be reviewed and approved by the Building Official prior to final plan approval.
9. A 6-foot private utility easement (PUE) shall be located outside of the right-of-way on public streets and outside of the tracts on private streets.
10. A draft street lighting plan shall be submitted to engineering staff for review prior to submittal of final street lighting plan to Clark Public Utility.
11. The applicant will be required to purchase all permanent traffic control signs, street name signs, street lighting and traffic control markings and barriers for the improved subdivision.
12. Prior to any land-disturbing activities of an acre or more, the applicant shall submit a copy of the *NPDES General Construction Stormwater Permit* (GCSWP), which is issued by the Washington State Dept. of Ecology, and the *Stormwater Pollution Prevention Plan* (SWPPP), which is required as a component of the NPDES GCSWP permit.
13. Prior to commencing any land-disturbing activities of an acre or more, the applicant shall submit an Erosion Control Bond in the amount of 200% of the cost for erosion control (ESC) measures, per CMC 14.06.200. Staff will provide a letter to the applicant with the required ESC amount.
14. If in the event any items or archaeological interest is uncovered during the course of a permitted ground disturbing action or activity, all ground disturbing activities shall immediately cease, and the applicant shall notify the City, the tribes, and the Department of Archaeology and Historic Preservation (DAHP).
15. Any entrance structures or signs proposed or required for this project will be reviewed and approved by the city.
    a. All designs will be in accordance with applicable City codes.
    b. The maintenance of the entrance structure will be the responsibility of the homeowners.
16. Final plat submittals shall meet the requirements of the CMC 17.11.060, CMC 17.01.050, and the Camas Design Standards Manual.
17. A homeowner's association (HOA) will be required and a copy of the CC&Rs for the development will need to be submitted to the City for review and approval. Specifically, the applicant will need to make

provisions in the CC&Rs for ownership and maintenance of the private storm drainage systems, open spaces, retaining walls, fencing, walls, landscaping, irrigation, private roads, and tracts or easements outside of the City's right-of-way if applicable. Further, all necessary easements and dedications should be noted on the final plat.

18. Provisions for parking enforcement on private Tracts/access driveways, acceptable to the Fire Marshal, shall be included in the CC&Rs at the time of final platting.
19. Prior to final acceptance, the applicant shall remove all temporary erosion prevention and sediment control measures from the site at completion of all site improvements, which includes stabilization of all disturbed soil.
20. As a component for final acceptance, final as-built construction drawing submittals shall meet the requirements of the Camas Design Standards Manual (CDSM).
    a. The as-built cover sheet is to be the originally approved cover sheet signed by the City Engineer.
    b. As-builts are to be submitted as PDFs.
    c. As-builts are to be submitted in either AutoCad or Carlson formats.
21. Per CMC 17.21.050.B.2 and prior to final acceptance a 2-year warranty maintenance bond is to be submitted for all public improvements.
    a. Per CMC 17.21.070.A Upon final acceptance of the development improvements the two-year (2) warranty bond commences.
22. Per CMC 17.21.070.E A letter of final acceptance will be issued once all items listed in 17.21.070.B-C have been completed and approved by the city.
23. Per CMC 18.18.070.B, prior to the issuance of final occupancy permits, all public and private improvements shall be completed in accordance with CMC 17.21.070 Final Acceptance.
24. Automatic fire sprinklers installed per NFPA 13D or 13R shall be required in all new residential structures.
25. The applicant will be responsible for maintenance of all private improvements, including but not limited to the stormwater facility Tract and easements, Open Space Tracts, parking areas, landscaping and irrigation, and any retaining walls.
26. Per CMC 17.21.060.H Permits for one sales office and/or one model home per plat or phase may be issued after the final plat is recorded, and prior to final acceptance. Building permit applications for any other residential buildings will not be accepted until after final acceptance.
27. At the time of building permit approval, the applicant shall pay the appropriate impact fees in accordance with the provisions of CMC 3.88.
28. The applicant shall take appropriate measures to ensure landscaping success for a minimum of three years after issuance of Certificate of Occupancy. If plantings fail to survive, the property owner shall promptly replace them.
29. A final plat shall be submitted to the City for approval within 5 years of the date of this preliminary plat approval, otherwise this decision will expire.

Special Conditions of Approval:

30. If any merchantable timber is removed, the applicant is to work with DNR and obtain a Forest Practice application.

31. A single sales office in a model home for purpose of selling lots may be located within the development. Upon construction of the last unit, the model home/sales office shall be closed.
32. Any additional tree removal will require an updated arborist report or memo for City review and approval prior to removal.
33. Future North Shore Blvd.; the applicant shall work with Camas staff to dedicate the North Shore Blvd. right-of-way once the final horizontal alignment is determined.

Prior to Land-disturbing Activities:

Planning

34. Prior to any land disturbing activities, temporary high-visibility construction fencing shall be installed that clearly marks in the field the critical area buffers and remain throughout permitted construction activities.

Engineering

[Storm Drainage]

35. The applicant shall be required to submit a site specific SWPPP in addition to Ecology's NPDES Temporary Construction Stormwater Permit, per MR #2. The SWPPP is to include 24-hour contactor information; and the name of the Project CESCL and CESCL certification number and expiration date. (CESCL = Certified Erosion Sediment Control Lead). A copy of the SWPPP is to be onsite at all times.

[Erosion Control]

36. The applicant shall submit an approved form of financial security for erosion and sediment control. Staff will provide documentation with the financial security amount.
37. The applicant shall have approved engineering plans, which include tree felling, tree removal, clearing and grading, an approved set of engineering plans, including the erosion prevention and sediment control measures required.
38. Prior to any land-disturbing activities, an electronic copy of Ecology's NPDES GCSWP permit, an electronic copy of the SWPPP are to be submitted to the city.
39. The contractor is to always have a hard copy of the SWPPP on site during construction of the site improvements. Said copy is to be updated as ESC measures are revised and is to be available for review by staff and Ecology.

Prior to Engineering Plan Approval:

Planning

40. The geotechnical report recommendations shall be complied with to minimize any potential hazards associated with construction and if the site design is revised an updated geotechnical report shall be submitted for city review and approval.
41. The site improvement plans, landscape plans, and wetland mitigation plans are to be revised to show the approximate location and reference the T-27 regional trail that will follow the alignment of the future North Shore Blvd. alignment.
42. The site improvement plans and landscape plans shall be revised to include the location of the minimum 4-foot-wide public pedestrian trail, details for the trail construction, and the location of minimum 15-foot-wide public pedestrian trail access easement. The applicant is to work with Staff to determine the location of said trail and easement.

43. The mitigation plan shall be revised to include the required minimum 4-foot wide public pedestrian trail if constructed within wetland buffers, except for 4-foot wide or narrower paths using natural, wood-based, or vegetated pervious surfacing.
44. The mitigation plan shall be revised to include the proposed 100-foot stream buffer width.
45. Critical area signage and fencing specifications shall be submitted.
46. The preliminary plat shall be revised to show shared driveways between lots 4-7 or revise the width of the driveway throats to not exceed 40% of the total lot frontage.
47. Prior to engineering plan approval, a final landscape plan consistent with the landscaping standards in CMC Chapter 18.13 shall be submitted to the City for review and approval to include the following but not limited to:
    a. Additional landscaping and/or fencing shall be provided along the western property line of the stormwater tract to the buffer the facility from the existing adjacent residences in the Lacamas Hills subdivision.
    b. Plants utilized shall be per the approved City's Plan Materials list and per the Camas Design Manual planting specifications and landscape notes. Plants not on the approved City list, a characteristic card shall be submitted to the City for review and approval.
    c. The planting specifications from the Camas Design Manual shall be included on the final landscape plan.
    d. Irrigation shall be noted on the final landscape plan.

Engineering

[Water]

48. The applicant shall work with engineering and the Fire Mashal's Office to determine if an additional fire hydrant is required.
49. The applicant shall submit revised water utility plans showing the location and size of all proposed irrigation services and the size of each irrigation meter.

[Storm Drainage]

50. The applicant shall submit a complete set of stormwater plans, including the design for the collection and conveyance system in accordance with the Camas Design Standards Manual (CDSM); and a complete set of the design plans for the stormwater detention and treatment system, per MR #1 of the TIR.
51. The applicant shall revise the Final Stormwater Technical Report (TIR) to include source control BMPs, per MR #3, for the proposed development.
52. The final stormwater TIR is to be submitted with both the City of Camas June 2022 *Stormwater Sewer System Operations & Maintenance Manual* and the manufacturer's maintenance requirements for the treatment vaults.

[Erosion Control]

53. The applicant shall submit a complete set of erosion and sediment control (ESC) plans that include all the applicable erosion and sediment control Details and BMPs as noted in the CDSM and Ecology's SWMMWW.

[Sanitary Sewage Disposal]

54. The sanitary sewer utility plans are to be revised to clearly depict the sections of 6-inch sanitary sewer force main and the sections of the 8-inch gravity sewer main to be installed with the Camas Woods I Offsite Sewer Plans, from the improvements, e.g. sanitary laterals to be installed by the Oliver Terrace Subdivision.

55. The sanitary sewer utility plans are to be revised to include construction of a minimum 10-foot-wide gravel access road over the sanitary sewer force main located within the 15-foot-wide sanitary sewer easement.

56. The applicant is required to submit revised sanitary sewer plans with the approved grinder pumps and laterals for Lots 9 and 10 per the Camas Design Standards Manual (CDSM).

Roads

57. The future interior street names and numbers, public and private, are to be revised in accordance to the street names and numbers as determined by the Building Official.

[Interior Public Roads]

58. A complete set of street improvement plans are to be submitted with the future N 49th Circle constructed in accordance with CDSM Street Detail ST2 – 2 Lane Local Road (52' ROW), including a cul-de-sac radius that provides for a minimum 5-foot-wide curb tight sidewalk.

[Private Roads]

<u>Private Road – Lot 9 & 10</u>

59. The applicant is to work with the Fire Marshal to determine the additional requirements for a dead-end road that exceeds 150-feet in length and serves 4 or less dwelling units.

60. The street plans are to be revised to include a minimum 25-foot curb radii on both sides of the road at the intersection with proposed N 49th Circle and at the hammerhead of the dead-end turnaround of the future 'Private Road' tract to Lots 9, 10 and the 'Storm Tract'.

<u>Private Road – Lot 3</u>

61. The applicant is to work with the Fire Marshal to determine the additional requirements for a dead-end road that exceeds 150-feet in length and serves 4 or less dwelling units.

62. The applicant is to work with the Fire Marshal's Office and engineering staff to provide an acceptable dead-end-turnaround at the south end of proposed 'Private Road' tract to Lot 3, or other additional requirements from the Fire Marshal's Office in lieu of the dead-end turnaround.

63. The street plans are to be revised to include a minimum 25-foot curb radii on both sides of the 'Private Road' tract to future Lot 3 at the intersection with future N 49th Circle.

<u>All Private Roads</u>

64. The applicant shall provide a design for a 'No Parking and Towing' sign for review and approval. Said sign is to include contact information for a private towing company, as the city does not provide towing on private roads, nor does the city enforce no parking on private roads.

Utilities, Street Lighting, Street Trees, and Other Improvements:
[Street lighting]

65. All streetlight locations are to be shown on the street plans, the sewer and water utility plans, and the landscape plans. Any streetlights provided for private streets are required to be metered separately and are to be owned and maintained by the HOA / homeowners.
66. Prior to the submittal of electrical plans to Clark Public Utilities, the preliminary electrical plans for streetlights, transformers, J-boxes, etc., which are prepared by others, are to be submitted to the city for review and approval.

[Driveways]

67. A note is to be added to the street plans stating that driveway throats shall not exceed 40% of the total lot frontage.

[Street Trees and Landscaping]

68. The applicant is required to show proposed driveway locations for each lot on the landscape plans to ensure that street trees are not impacted.

[Storm Facility Landscaping]

69. The applicant is to submit revised stormwater facility plans that provide for a minimum 6-foot-high black vinyl coated chain link fence with top rail installed along the stormwater facility. Additionally, the plans are to provide for a minimum 16-foot-wide double gate at the paved access road to the facility and a minimum 4-foot-wide man gate for inspection access.

Prior to Final Plat Approval:

Planning

70. An avigation easement shall be recorded on the title that provides notice that the property is within an air traffic area and included as a note on the final plat.
71. Permanent critical area signs and fencing shall be installed at the edge of the critical area buffers per CMC 16.51.210.B and C.
72. A conservation covenant shall be recorded with the County to ensure long-term preservation of the critical areas and their associated buffers, including maintenance of any mitigation actions per CMC 16.51.240. A copy of the recorded conservation covenant shall be submitted to the City.
73. A critical areas bond shall be submitted in an amount deemed acceptable by the City to ensure the wetland mitigation is fully functional per CMC 16.51.250.
74. The preliminary plat is to be revised to include the location of the 15-foot-wide public pedestrian trail access easement in the Open Space Tract, including showing the minimum 4-foot-wide public pedestrian trail. The applicant and/or Homeowners' Association (HOA) will be responsible for ownership and maintenance of said public pedestrian trail located in the Open Space Tract.
75. A note shall be added to the face of the final plat that the open space/critical areas tract is to remain in a natural state. Any maintenance activities within the Open Space Tract, including removal of invasive species and dead or dying trees, shall require prior approval from the City.
76. A note shall be added to the face of the final plat that tree topping is prohibited.
77. A note shall be added to the face of the final plat that all required tree plantings shall be maintained in good health and shall be promptly replaced (within six months) if damaged or in poor health.
78. All building envelopes, setbacks and lot coverage shall be shown on the final plat.

79. Plat notes shall be added to the face of the final plat regarding ownership and maintenance responsibilities of the individual Tracts.
80. A plat note shall be added to the face of the final plat regarding ownership and maintenance responsibilities of the public access pedestrian trail easement.
81. The applicant shall submit to the City for review and approval a copy of the CC&Rs.

Engineering

[Water]

82. A note is to be added to the final plat stating that irrigation meters required for open space areas are to be privately owned and maintained by the Owners and/or Homeowners Association (HOA).

[Storm Drainage]

83. A note is to be added to the final plat stating that the stormwater facility located in the 'Storm Tract', the StormFilter Manhole, and the StormFilter catch basin located in the 'Private Road' tract are to be owned and maintained by the homeowners and/or Homeowners' Association (HOA), at the end of the two-year warranty period, with right-of-entry granted to the city for inspection purposes.

[Sanitary Sewage Disposal]

84. A minimum 15-foot-wide public utility easement is to be recorded over and under the sanitary sewer force main that extends west from Lot 12 through the Open Space Tract Phase 1 to future N 49th Circle of the proposed development.
85. A minimum 30-foot-wide public utility access easement is to be recorded over and under the sanitary sewer force main that extends northwest from NE Everett Street (SR 500), via the existing private road located in Phase 1 and Phase II to Lot 12. The existing private road will be owned and maintained by the owner of Lot 12.
86. A note is to be added to the final plat stating that the grinder pumps and laterals for Lots 9 and 10 are to be owned and maintained by the property owners.

[Roads]

87. The preliminary plat is to be revised with the final street names and numbers as determined by the Building Official.

[Private Roads]

88. The following note is to be added to the plat that addresses removal of unauthorized vehicles.
    a. Provisions for a towing service to remove unauthorized vehicles. 'No Parking' areas on the private roads is to be provided as this is the responsibility of the homeowner and/or Homeowners' Association (HOA).
89. The preliminary plat is to include a plat note stating that the private Tracts are to be owned and maintained by the Homeowners Association (HOA)/homeowners.

[Driveways]:

90. A note is to be added to the to the plat stating that driveway throats shall not exceed 40% of the total lot frontage.

Prior to Final Acceptance:

Planning

91. Trails shall be installed prior to final acceptance.
92. Landscaping and irrigation adjacent to or within tracts shall be installed or bonded for as approved on the final landscape plans prior to final acceptance.
93. The critical area signage and fencing shall be installed prior to final acceptance.

Engineering

94. Documentation shall be provided to the city that states that said well/s on Lot 12 has been properly decommissioned in accordance with State and County guidelines, and any water rights associated with a decommissioned well shall be transferred to the City.
95. The applicant shall be required to install the 'No Parking and Towing' signs on the private roads.

Prior to Building Permit Approval:

96. The applicant shall submit a Design Review application for City review and approval consistent with the North Shore Subarea design manual.
97. The applicant shall consider construction techniques that would decrease the noise associated with the airport.

Prior to Final Occupancy:

98. Street trees, at a minimum 2-inch caliper, shall be installed prior to final occupancy or bonded and installed prior to expiration of the two year-warranty period, whichever comes first.

Proposed Plat Notes:

1. A homeowner's association (HOA) will be required for this development. Copies of the CC&R's shall be submitted and on file with the City of Camas.
2. The homeowner's association is responsible for maintaining all private roads, and associated infrastructure in this subdivision, including but not limited to the pavement, curbs, sidewalks, trail, fencing, landscaping, streetlights and storm drainage utilities.
3. An access and utility maintenance easement if proposed to the City over the private street tracts for inspection, maintenance and operation of said sanitary sewer force main.
4. The following minimum setbacks shall apply: Minimum Front Yard setback: 20-feet to garage door and 25-feet to house; Minimum Side Yard setback: 5-feet; Minimum Rear Yard setback: 10-feet. These setbacks are subject to franchise utility easements abutting right of way.
5. Maximum building lot coverage is 60%.
6. No further short platting or subdividing will be permitted once the final plat has been recorded.
7. The lots within this subdivision are located within an air traffic area.
8. The lots in this subdivision are subject to traffic impact fees, school impact fees, and park/open space impact fees. Each new dwelling unit will be subject to the payment of appropriate impact fees at the time of building permit issuance or as otherwise provided by the city.
9. Street trees shall be maintained in good health, and damaged or dying trees shall be promptly replaced (within six months) by the homeowner.

10. Tree topping is prohibited.
11. The Private Road to Lot 12 and the Barn Tract shall be owned and maintained by the property owner of Lot 12.
12. The Open Space Tract contains critical areas and is to be owned and maintained by the Homeowner's Association in Phase 1 which includes lots 1-12. This tract is to remain in a natural state. Any maintenance activities within the Open Space Tract, including removal of invasive species and dead or dying trees, will require prior approval from the City.
13. The Homeowners Association (HOA) shall be responsible for ownership and maintenance of the public pedestrian trail located in the Open Space Tract.
14. All irrigation meters required for open space areas are to be privately owned and maintained by the Owners and/or Homeowners Association (HOA).
16. The stormwater facility located in the 'Storm Tract', and the StormFilter Manhole, and the StormFilter catch basin located in the 'Private Road' tract are to be owned and maintained by the homeowners and/or Homeowners' Association (HOA), at the end of the two-year warranty period, with right-of-entry granted to the city for inspection purposes..
17. A 15-foot-wide public utility and access easement is granted to the City for access, maintenance, replacement, repair, or extension over and under the sanitary sewer force main that is extended west from Lot 12 through the Open Space Tract in Phase 1, to N 49th Circle.
18. A 30-foot-wide public utility and access easement is granted to the City for access, maintenance, replacement, repair, or extension over and under the sanitary sewer force main that is extended NE Everett Street (SR 500), via the existing road through Phase 1 and Phase II to Lot 12,
19. The grinder pumps and laterals for Lots 9 and 10 are to be owned and maintained by the property owners.
20. Provisions for a towing service to remove unauthorized vehicles. 'No Parking' areas on the private roads is to be provided as this is the responsibility of the homeowner and/or Homeowners' Association (HOA).
21. 'Private Road' tracts are to be owned and maintained by the Homeowners Association (HOA)/homeowners.

Oliver Terrace Subdivision
Preliminary Narrative

INTRODUCTION

The Oliver Terrace Subdivision proposes to divide parcel 178221000, approximately 18.46 acres of gross site area into 12 single-family residential lots. The site is located at 1004 SE Everett Rd, Camas, Washington 98607. There is one existing home, one barn and other outbuildings on the site. These outbuildings are slated to be removed with the proposed plan.

Right-of-way widths and any necessary dedications will be confirmed with the pre-app. A boundary and topography survey of the property has been completed. The existing home on site along with the existing driveway will remain. Lots 1-11 will gain access through a proposed public road, N. 49th street, terminating with a cul-de-sac on-site. Lot 12 will remain using the existing driveway and access from SE Everett Road. The existing development to the west, Lacamas Hills Sub division, has stubbed all the necessary utilities and roadway to the site, while the proposed Lot 12 is proposed to get a water service line extended from SE Everett Road.

The parcel has 2 zoning classifications on-site. There is North Shore Lower Density (LD-NS) as well as North Shore Mixed Use (MX-NS). The existing home will remain on lot 12. All of the subdivision is located in the LD-NS zone. Developments to the West and South are zoned LD-NS. This project proposes to shift the zoning boundary for the MX-NS approximately 200 feet to the west. This is shown on the pre-application plat. Approximately 5 acres of MX-NS zoned property would be a remainder lot with this subdivision. This would be available for future MX-NS development along with any City transportation improvement projects.

Per 18.09.040 – Density and dimensions – Single-family residential zones (B. Density Transfer Lots) states that LD-NS requires maximum lot size of 9,000 square feet, with minimum lot sizes to be 5,250 square feet. The site is proposing 14 new single-family lots with a storm tract and an open space tract that is encumbered with critical areas and steep slopes. These critical areas allow the use of density transfer for the proposed lots. The proposed average lot size is 8,724 square feet with all lot sizes complying to the min./max. required. A second remainder lot is proposed in the LD-NS zoned area. This lot is adjacent to the MX-NS zoned property and could further develop in the future. There is approximately 8 acres of open space tracts proposed with the project.

Homes on the future lots are tentatively scheduled to be constructed in 2026 or later.

TITLE 13: PUBLIC SERVICES

Camas is the water purveyor for the parcel. The site will extend the water main to serve the new lots and loop where feasible. A new water service line will extend from SE Everett Road to serve only the existing Lot 12. Fire hydrants will be placed at the direction of the Fire Marshal meeting the necessary spacing requirements. There is an existing well on the property that provides water for the existing home and AG purposes. This well will be decommissioned.

Oliver Terrace Subdivision
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Camas is the sewer purveyor for this property. The point of connection is located in N. 49th to the west. Sewer main will be extended into the site to serve the proposed lots with gravity sewer in phase I. Phase II would require grinder pumps and pressure sewer to serve the existing home and proposed lots 13-14. An existing septic system would be removed with phase II of the project and the existing home would be connected to public sewer.

All new fire hydrants required will be shown on the preliminary plans. Camas Fire will review the hydrant locations and plans for compliance. The cul-de-sac turnaround will serve as the emergency and fire turnaround as well as any public turnaround with phase I. The local streets will provide adequate access for fire trucks and emergency vehicles. A hammerhead turnaround is proposed for emergency vehicle access in phase II. The new homes proposed with this development will be sprinkled per Camas Fire requirements.

TITLE 14: STORMWATER PROVISIONS

CMC 14.02 – STORMWATER CONTROL
Stormwater control will conform to the requirements of the Camas City Code 14.02. Stormwater from the new impervious surfaces will be treated by bioretention, bioswales, mechanical storm filters or other approved bmp's.

On-site infiltration will be used where feasible for disposal. Also, other approved LID or traditional BMP's may be used to treat or infiltrate stormwater on-site. There are currently no stormwater facilities on site.

The on-site soil is HcB, HcE, LlB, MeA, OmE, ThA (hydric), VaB, and VaC. The geotechnical report and infiltration testing will confirm this and be submitted with the preliminary application.

CMC 14.04 – WATER RESOURCES PROTECTION
Water resource protection will conform to the requirements of the Camas City Code 14.04. All proposed systems on-site account for and do not allow for any other discharges than what is considered allowed in this code section.

CMC 14.06 – EROSION AND SEDIMENT CONTROL
Erosion and sediment control will conform to the requirements of the Camas City Code 14.06. The proposed subdivision is required to submit a Stormwater Pollution Prevention Plan (SWPPP) due to the size being greater than 1 acre. This plan will be submitted with the final engineering submittals after the preliminary phase.

TITLE 15: BUILDINGS AND CONSTRUCTION

CMC 15.40 – BLASTING
Construction of the proposed utilities and stormwater infrastructure may require limited blasting depending on subsurface conditions encountered during final design and

Oliver Terrace Subdivision
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excavation. Should blasting be necessary, all activities will be conducted in full compliance with *CMC 15.40 - Blasting*, including permit acquisition, safety planning, and coordination with the Fire Marshal as required. At this time, no blasting is proposed and no blasting permit is being requested; this note is provided to acknowledge the applicable regulatory framework should blasting become necessary during construction.

TITLE 16: ENVIRONMENT

CMC 16.01 – SEPA

Due to the critical areas mapped on-site and the project proposing more than the exempt level of 9 dwelling units, the project is required to submit an environmental checklist and comply with the *CMC 16.01* code section under the State Environmental Protection Act. The completed checklist has been submitted with this application.

CMC 16.31 – ARCHAEOLOGICAL

The site is located in an area known to be moderate to high probability for the presence of archaeological objects, and is therefore required to submit an archaeological predetermination report to comply with the requirements of *CMC 16.31.*

The DAHP receipt has been submitted with this application.

CMC 16.51 – CRITICAL AREAS

GIS shows there are critical habitat areas, wetland presence, as well as steep slopes on the property. SWT has performed geotechnical soils testing on the site. Ecological Land Services has evaluated the site for wetlands and habitat. Two Oregon White Oaks were located on-site and are shown on the plans to be retained and avoided in the open space tract.

A full critical areas report will be prepared by ELS and submitted with this application.

TITLE 17: LAND DEVELOPMENT

ROADS, PARKING AND ACCESS

N. 49th is an existing road from the development to the West with a connection point to lead into the site which will terminate at a cul-de-sac. N. 49th Circle will provide access to the proposed lots with phase I. At minimum each lot will have two driveway parking spaces and two garage spaces. The existing home will remain on lot 12 and a hammerhead turnaround is proposed to meet fire turnaround requirements. Improvements to Everett Road/ SR-500 will take place with future MX-NS development on the east side of the property.

TRAFFIC

It has been determined that a transportation impact analysis is not required due to the proposed development not creating more than 199 vehicle trips per day. However, Site distance, vision clearance, traffic circulation, trip distributions for both AM and PM

Oliver Terrace Subdivision
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Peaks along with intersection analysis's for intersections with 20 or more additional trips will need to be addressed by a traffic engineer.

A report covering the items mentioned above has been submitted within section I of this application.

CMC 17.11 – SUBDIVISIONS

The City of Camas defines a subdivision as having more than 10 lots. The project proposes 12 lot, 11 new lots and 1 existing home on Lot 12. The residential development in the LD-NS zone are slated for phase 1 while MX-NS is slated in phase 2 with no plans to develop at this time. The proposed project will be processed as a Type III decision under *CMC 18.55.*

Due to the proposed phasing of the project, a phase lines have are identified in the preliminary site plans. Furthermore, the explanation of phasing and timing will be described here in the narrative.

The Oliver Terrace Subdivision is now proposed as a two-phase development. Phase 1 includes the construction of N. 49th Circle, a public road terminating in a cul-de-sac that will serve Lots 1 through 11. Lot 12, which contains the existing home, will remain and is exempt from minimum lot size requirements under CMC 18.09.040 due to its status as an existing dwelling. This phase also includes a zoning map adjustment to shift the LD-NS and MX-NS boundary approximately 200 feet west, increasing the MX-NS area and better aligning with anticipated transportation improvements. The adjustment is reflected on the pre-application plat and will be processed in coordination with the City's comprehensive plan update. A Homeowners' Association (HOA) will be established as part of the subdivision to assume ownership and maintenance responsibilities for the open space tracts, stormwater facilities, and any shared access improvements not maintained by the City. The HOA will be responsible for ensuring long-term compliance with applicable maintenance standards and will be governed by recorded CC&Rs submitted with the final plat.

Phase 2 will encompass the MX-NS zoned remainder lot. At this time, there are no plans for development within Phase 2. The area is expected to be influenced by the City of Camas road improvement project involving North Shore Boulevard, which remains in the design phase. Final alignments and construction timelines have not yet been established, and future development of the MX-NS area will be coordinated with the City once those improvements are underway.

All plan requirements shall be met under this code section. All required plans have been submitted with this application.

CMC 17.19 – DESIGN AND IMPROVEMENT STANDARDS

The project proposes development improvements in a variety of areas and will be required to meet the minimum standards outlined in *CMC 17.19* in addition to the requirements set forth in the underlying zoning code sections.

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The project proposes 2 flag lots, Lots 10 and 11 and will conform to the design criteria stated in *CMC 17.19.D.05*. The code sections states that the pole of the lot must be a minimum of 20feet wide with a minimum of 12 feet of pavement. This is for a singular flag lot, and the project proposes Lots 10 and 11 to each have a pole width of 10 feet each, equalling 20 feet in total. The proposed pavement will be approximately 18 feet in width and serve as access to both lots. Both lots will have sufficient driveway space within the primary area of the lot to service 2 off-street parking spaces each.

In addition to the lotting design, CMC 17.19.F outlines landscaping requirements for the proposed subdivision. It is required that each dwelling unit shall have at least (1) 2 inch caliper tree in the right-of-way planting strip or in the front yard except for flag lots and lots accessed by a tract. The plans

TITLE 18: ZONING

CMC 18.09 – DENSITY AND DIMENSIONS

The project parcel has 2 zoning classifications within it, LD-NS and MX-NS. The subdivision is an outright allowed use in the LD-NS portion of the site and will be subjected to the requirements of CMC 18.09.040 Table 1 listed below and highlighted for the applicable information.

Table 1—Density and Dimensions for Single-family Residential Zones[1]

	R-6	R-7.5	R-10	R-12	R-15	LD-NS
A. Standard New Lots						
Maximum density (dwelling units/net acre)	7.2	5.8	4.3	3.6	2.9	5.8[7]
Minimum density (dwelling units/net acres)	X	X	X	X	X	4
Average lot area (square feet)[4]	6,000	7,500	10,000	12,000	15,000	7,500
Minimum lot size (square feet)	4,800	6,000	8,000	9,600	12,000	5,400[8]
Maximum lot size (square feet)[3]	9,000	12,000	14,000	18,000	24,000	12,000
Minimum lot width (feet)	60	70	80	90	100	40[9]
Minimum lot depth (feet)	80	90	100	100	100	90[10]
Maximum building lot coverage[5]	40%	40%	35%	30%	30%	N/A
Average building lot coverage[6]	N/A	N/A	N/A	N/A	N/A	45%
Maximum building height (feet)[2]	35	35	35	35	35	35[11]
B. Density Transfer Lots[1]						
Maximum density (dwelling units/net acre	7.2	5.8	4.3	3.6	2.9	5.8
Minimum lot size (square feet)	4,200	5,250	7,000	8,400	10,500	5,250
Maximum lot size (square feet)[3]	7,200	9,000	12,000	14,400	18,000	9,000
Minimum lot width (feet)[1]	50	60	60	70	80	40
Minimum lot depth (feet)[1]	80	80	90	90	100	80
Maximum building lot coverage	40%	40%	40%	35%	35%	60%
Maximum building height (feet)[2]	35	35	35	35	35	35

Notes:

1. For additional density and dimension provisions, see CMC Sections 18.09.060 through 18.09.180.

2. Maximum building height: three stories and a basement, not to exceed height listed.

3. For parcels with an existing dwelling, a one-time exception may be allowed to partition from the parent parcel a lot that exceeds the maximum lot size permitted in the underlying zone. Any further partitioning of the parent parcel or the oversized lot must comply with the lot size requirements of the underlying zone.

4. Average lot area is based on the square footage of all lots within the development or plat. The average lot size may vary from the stated standard by no more than five hundred square feet.

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5. The maximum building lot coverage for single-story homes may be up to forty-five percent in R-6, R-7.5, and LD-NS zones, and forty percent in R-10 and R-12 zones. To qualify for increased lot coverage, a single-story home cannot include a basement or additional levels.
6. Average building lot coverage is based on the square footage of all lots within the development or plat with an LD-NS zoning designation. The average building lot coverage may increase to fifty-five for single-story development and/or lots below five thousand square feet.
7. Does not apply to cottage-style development.
8. Minimum lot size for cottage-style development shall be two thousand four hundred square feet and rowhouse developments shall be one thousand eight hundred square feet.
9. Minimum lot width for cottage-style development shall be thirty feet and rowhouse developments shall be twenty feet.

Oliver Terrace Subdivision will utilize the density and lot dimensions set forth in Table 1 to meet the requirements of Density Transfer Lots. The project should be allowed to follow these standards to protect the critical areas previously mentioned on the site. The proposed project will have a net area of approximately 18.08 acres. Phase 1 will comply with the density transfer lots. Phase 1 will have lots 1-11 which are not proposed to exceed 9,000 sf and comply with the minimum lot frontage width of 40 feet. Lots 1-11 also have a lot depth greater than the 80 feet minimum. Lot 12 will encompass the existing home, therefore making it exempt from the lot dimensional standards. Under the Density Transfer Lots, there is no minimum density requirements. The project calculates the net area in accordance with the city requirements of the gross project area minus open space and critical areas. The net acreage of the LD-NS zone with this proposed plan equals 3.73 acres. The maximum density allowed is 5.8 du/ac. The 12 lots proposed, gives a density calculation of 3.2 du/ac and does not exceed the allowed maximum.

Table 2—Building Setbacks for Single-Family Residential Zones[1]

Lot Area	Up to 4,999 sq. ft.	5,000 to 11,999 sq. ft.	12,000 to 14,999 sq. ft.	15,000 or more sq. ft.	LD-NS
Minimum front yard (feet)	20[2]	20[2]	25[2]	30[2]	10-25[3]
Minimum side yard (feet)	5	5	10	15	5
Minimum side yard flanking a street and corner lot rear yard (feet)	10	10	15	15	10
Minimum rear yard (feet)	20	25	30	35	10-20[4]
Minimum lot frontage on a cul-de-sac or curve (feet)	25	30	35	40	25

Notes:
1. Setbacks may be reduced to be consistent with the lot sizes of the development in which it is located. Notwithstanding the setbacks requirements of this chapter, setbacks and/or building envelopes clearly established on an approved plat or development shall be applicable. In the LD-NS zone, cottage-style development setbacks are identified in the North Shore Design Manual.
2. Garage setback is five feet behind the front of the dwelling.
3. LD-NS subarea developments are encouraged to vary the front yard building setbacks to provide visual interest along a residential block. Garage faces shall maintain a minimum setback of twenty feet. Lots with alley-access garages may have a minimum front yard building setback of ten feet.
4. LD-NS subarea developments with street-access garages may have a minimum rear yard setback of ten feet. LD-NS developments with alley-access garages must maintain a twenty foot rear-yard building setback from the alley.

All lots through both phases are in compliance with the setbacks as described above.

CMC 18.11 – PARKING
CMC 18.11.100 states that residential off-street parking shall be proposed of either a parking strip, driveway, garage, or a combination of the 3 and should be located on the lot they are intended for. The proposed project does not require additional parking beyond this requirement and will be proposed in the form of a driveway and garage. Each lot will have the capacity for up to 4 parking space, but no less than the required minimum of 2.

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CMC 18.13 – LANDSCAPING
Required as a part of this application, on-site significant trees have been surveyed and evaluated as a part of the impacts of the development. It has been observed that 2 oaks are on-site and will need to be avoided where developing. The current proposal shows the locations of these oaks and avoids developing within the drip lines.

Additional landscaping requirements mentioned previously in this narrative stated that 1 tree per lot, except for flag lots and lots accessed by a tract, will be required in the right-of-way planting strip or in the front lawn.

CMC 18.13.051 Table 1 outlines the required tree density units. This table states that the proposed project shall meet the 30 Tree Units per Net Acre. At approximately 18.08 acres, the proposal shall meet a minimum of 542.4 Tree Units. *CMC 18.13.051 Table 2* breaks down the tree units per the trees size for existing trees. The project will retain approximately 400 trees which equates to rough 1,800 tree units and far exceeds the required, despite proposing new trees. An arborist report will be conducted and submitted with this application.

CMC 18.15 – SIGNS
There are no permanent signs being proposed at this time. It was discussed that temporary address signs will need to be constructed and used during the construction phase in case of emergencies. These temporary signs will be constructed on site and are exempt from permit requirements per *CMC 18.15.100*.

CMC 18.17 – SUPPLEMENTAL DEVELOPMENT STANDARDS
At this time the project is not proposing accessory structures or retaining walls. If this changes, the project will address this code section for further information and design requirements.

CMC 18.19 – DESIGN REVIEW
Due to the location of the proposed project and being within the North Shore subarea the proposal will be required to adhere to the procedures and requirements of *CMC 18.19*.

The proposed project, although is only proposing low density single family residential, will be required to meet the minimums determined in the North Shore Design Manual. The requirements described in CMC 18.19.050.4 seem to only reflect on projects in HD-NS, C-NS, MX-NS, and ME-NS zones. The proposed project has an MX-NS zone, but is not being proposed with any improvements within that zone therefore making this code section not applicable to the proposed plans.

CMC 18.34 – AIRPORT OVERLAY ZONING
The project does have an existing overlay and is subjected to the procedures and requirements within Zone C of the Airport Overlay Zone. CMC 18.34.080 states that the owner will be informed of construction and remodeling techniques that would decrease the noise associated with the airport operation. It also states that all permitted uses are

Oliver Terrace Subdivision
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permitted through the underlying zone.

CMC 18.51 – COMPREHENSIVE PLAN AND ZONING AMENDMENTS

This project does propose an update to the comprehensive and zoning maps by shifting the zone line to enhance the buildable area after the new road construction is completed. However, there is a current pause on annual comprehensive plan amendments, and this will be addressed in the 2045 Comprehensive Plan updates.

Thank you for your time and assistance with this project. Please contact Scott Taylor with SGA Engineering at 360-993-0911 or staylor@sgaengineering.com for additional information or with any questions/clarifications.

PRE-APPLICATION MEETING NOTES
The Oliver Terrace subdivision
PA25-1051

Thursday, April 17th, 2025
1:30pm, City Hall (virtual meeting)
616 NE 4th Ave. Camas, WA. 98607

Applicants:	SGA Engineering, Scott Taylor HRS Capital, LLC., Bruce Swanson
City of Camas attendees:	Lauren Hollenbeck, Senior Planner Robert Maul, Planning Manager Eric Dugger, Engineer II Anita Ashton, Engineering Project Manager Randy Miller, Deputy Fire Marshal
Location:	1004 SE Everett Road (Parcel No. 178221000) Camas, WA 98607
Zoning:	LD-NS (North Shore Lower Density Residential) MX-NS (North Shore Mixed Use)
Description:	To subdivide 18.15-acres into 14 single-family detached residential lots.

NOTICE: Notwithstanding any representation by City staff at a pre-application conference, staff is not authorized to waive any requirement of the City Code. Any omission or failure by staff to recite to an applicant all relevant applicable code requirements shall not constitute a waiver by the City of any standard or requirement. [CMC 18.55.060 (C)] This pre-application conference shall be valid for a period of 180 days from the date it is held. If no application is filed within 180 days of the conference or meeting, the applicant must schedule and attend another conference before the City will accept a permit application. [CMC 18.55.060 (D)] Any changes to the code or other applicable laws, which take effect between the pre-application conference and submittal of an application, shall be applicable. [CMC 18.55.060 (D)]. A link to the Camas Municipal Code (CMC) can be found on the City of Camas website, http://www.cityofcamas.us on the main page under "City Codes".

PLANNING DIVISION **LAUREN HOLLENBECK (360) 817-7253**

Applicable codes for this proposal include Title 16 Environment, Title 17 Land Development and Title 18 Zoning of the Camas Municipal Code (CMC), which can be found on the city website. Please note it remains the **applicant's responsibility** to review the CMC and address all applicable provisions. The following pre-application notes are based on application materials and site plan submitted to the City on March 10, 2025:

PLEASE NOTE: Land use applications are now required to be submitted and paid on-line at www.cityofcamas.us/com-dev. When you apply online, be sure to select SUBDIVISION as the main application plan type. If you are unsure, contact the Planning Department for assistance.

Application Requirements

Your proposal will need to comply with the general application requirements per **CMC Section 18.55.110** in addition to the specific applicable application requirements outlined in **CMC Section 17.11.030.B** for a preliminary subdivision plat. An application for a subdivision is considered a Type III permit. The following is an excerpt from the requirements of CMC Section17.11.030.B (see code section for full text):

1. A completed city application form and required fee(s), which are addressed at on-line submittal;

Fees will be based on the adopted fees at the time of land use application submittal. The current fees include the following:	
1. Preliminary Plat	$9,155.00 + 290.00 per lot
2. Design Review (major)	$3,017.00
3. SEPA	$1,029.00
4. Critical Areas Review *(wetlands)*	$985.00
5. Critical Areas Review (*habitat conservation area)*	$985.00
6. Critical Areas Review (*geologically hazardous areas*)	$985.00
7. Archaeological Review	$174.00
8. Fire Department Review	$446.00
Fees for building permit are collected at the time of the building permit submittal. Fees for engineering are collected at time of engineering plan approval.	
9. Building Permit and Plan Review	based on the valuation of the project
10. Engineering Review	3% of estimated construction costs

2. A completed and signed SEPA checklist;
3. Complete applications for other required land use proposals applicable to the proposal;
4. A vicinity map showing location of the site;
5. A survey of existing significant trees as required under CMC Section 18.13.045;
6. All existing conditions shall be delineated on the site plan per CMC Section 17.11.030.B.6(a-p);
7. A preliminary grading plan as slopes are greater than ten percent;
8. Preliminary stormwater plan and report;
9. A geotechnical report consistent with CMC Chapter 16.59 if development is proposed on slopes greater than ten percent
10. A copy of the Clark County assessor's map which show the location of each property within 300 feet of the subdivision;
11. A current (within thirty days prior to application) mailing list and mailing labels of owners of real property within three hundred feet of the subject parcel, certified as based on the records of the Clark County assessor;
12. A traffic study
13. A narrative addressing ownership and maintenance of open spaces, stormwater facilities, public trails and critical areas, and the applicable approval criteria (CMC Section 17.11.030.D) and standards of the Camas Municipal Code. It should also address any proposed building conditions or restrictions.
14. A development sign must be posted on site per CMC Section 18.55.110.H (1-5).
15. Necessary drawings and reports- three full size paper copies of the site plan drawings. All other documents and reports shall be provided with the on-line application submittal.

Preliminary Plat

The following comments are based on the site plan materials submitted with this Pre Application:

1. The preliminary plat drawings must meet the density and dimensional standards for lots in a North Shore Lower Residential (LD-NS) zone, and infrastructure improvements (i.e. roads, easements, etc.).
2. Density calculation is based on development/net acreage which is defined as the total land use development exclusive of open space and critical areas. Do not include the MX-NS zoned portion of the property in the net acreage calculation.
3. Density transfer provisions of CMC 18.09.040.B Table-1 may be utilized if a land division sets aside of tract for the protection of a critical area, natural open space network, or network connector, or approved as a recreational area.
    - Further, the city may provide additional or negotiated flexibility to the lot size, lot width, lot depth, building setback, or lot coverage standards under CMC Section 18.09.040 Table 1 and 2. In no case shall the maximum density of the overall site be exceeded. **A letter explaining the request for negotiated flexibility shall be submitted to the director for consideration per CMC 18.09.060.D.**
4. Building setback requirements are found at CMC 18.09.040-Table 2, which includes the requirement for setbacks to be drawn on the plat.

Lot Area	**LD-NS**
Minimum front yard (feet)	10-25[3]
Minimum side yard (feet)	5
Minimum side yard flanking a street and corner lot rear yard (feet)	10
Minimum rear yard (feet)	10-20[4]
Minimum lot frontage on a cul-de-sac or curve (feet)	25

- Per Note 3 in Table 2 above, garage faces shall maintain a minimum setback of 20-feet.
- Per Note 4 in Table 2 above, street-access garages shall have a minimum rear yard setback of 10-feet.

5. Side lot lines shall be radial to curved streets per CMC 17.19.030.D.2.
6. Building envelopes (setbacks) shall be shown on the preliminary and final plats. Per CMC Section 17.19.030.D.3.a, a 40ft. by 40ft. square dwelling should be able to fit within the building envelope.
7. Each dwelling unit within a new development shall be landscaped with at least one tree per CMC 17.19.030.F.
8. Per CMC 17.19.040.B.1.c, if the average lot size is less than 7,500 square feet, one additional off-street parking space is required for every 5 units and shall be located within a common tract.
9. Per CMC 17.19.040.B.10.a, a Circulation plan is required at application that includes the subject site and properties within six hundred feet showing topography, critical areas and existing and proposed streets, trails, etc.
10. The storm drainage facility shall include a 10-foot L2 landscape buffer per CMC 17.19.030.F.6.

11. If phasing is proposed, submit a phasing plan per CMC 17.11.040.
12. Accessory structures shall be located on the same lot as the principal structure per CMC 18.17.040.A.
13. The location and height of any retaining walls shall be shown on the grading plan. Retaining wall height requirements are found in CMC 18.17.060.
14. The property is located within the Airport Overlay Zone C and the applicable provisions in Chapter 18.34 shall apply.
15. The undeveloped MX-NS zoned portion of the property shall be placed in a future development tract with this residential plat.

Comprehensive Plan and Zoning Amendment
There is a current pause on annual comprehensive plan amendments due to the 2045 Comprehensive Plan update work. Staff recommends any proposed comprehensive plan and zoning amendments to be processed with the 2045 Comprehensive Plan update, which is to be completed at the end of the year. Please contact the Community Development Director for further guidance.

Major Design Review
Design Review is required for all new developments located within the North Shore subarea as defined per CMC 18.19.020. The applicable development standards for Design Review are found in CMC 18.19.050.4 (a-h), in addition to the *North Shore Subarea Design Manual's Guidelines & Principles* for low density residential developments in the LD-NS district.

A submittal for design review should include a site plan drawing, a detailed landscape plan, exterior elevation, building materials and colors, lighting specs and plan, and sign plan (if proposed).

Landscaping Regulations and Tree Retention
Landscaping standards shall apply to all new land divisions per CMC 18.13.020.B.1.

- A Landscape, Tree and Vegetation plan must be submitted pursuant to CMC 18.13.040.A and CMC 18.13.050.
- If trees are proposed for removal, a Tree Survey is required per CMC 18.13.040.B and must be prepared by a certified arborist or professional forester pursuant to the requirements outlined in CMC 18.13.045. The tree survey must include an assessment of the tree's health and recommendations for preservation and removal.
- A minimum 20-unit tree density per net acre is required and needs to be incorporated in the overall landscape plan per CMC 18.13.051.A.

Parking Regulations
The proposed use will need to meet the automobile parking requirements pursuant to CMC Chapter 18.11. The number of off-street parking spaces is calculated based on the table at CMC 18.11.130 Standards.

Critical Areas Review
Clark County GIS mapping identifies Wetlands, Fish & Wildlife Habitat Conservation Areas (i.e. oak habitat), and Geologically Hazardous Areas (i.e. steep slopes and severe erosion hazard areas) on and adjacent to the subject property. The applicant's narrative also indicated a stream is located at the southern end of the property. As such, per CMC Section 16.51.130, a critical areas report prepared by a qualified professional is required if a proposed development is within or adjacent to a critical area. The

general requirements for a critical areas report are found in CMC Section 16.51.140. The City's code contains additional requirements for each type of critical area.

- The critical areas report requirements for *Wetlands* are found in CMC 16.53.030.
- The critical areas report requirements for *Fish and Wildlife Habitat Conservation areas* including Oregon White Oaks (OWO) greater than 20" dbh, which are considered a habitat of local importance, and streams are found in CMC 16.61.020. Oregon White Oaks shall be set aside in a separate tract for preservation.
- The critical areas report requirements for *Geologically Hazardous Areas* are found in CMC 16.59.060 and 16.59.070.

SEPA

The proposed development is not categorically exempt from the requirements of the State Environmental Policy Act (SEPA) per CMC Section 16.07.020.A as the proposed is more than ten residential units and contains environmentally sensitive areas per CMC 16.07.025.C. The current SEPA environmental checklist is on the website.

Archaeological Review

The site is located in an area of moderate-high probability for the presence of archaeological objects. As such, an archaeological predetermination report is required consistent with the requirements of CMC 16.31.070.A. Submit proof of mailing or emailing the tribes per CMC 16.31.160.

ENGINEERING DIVISION — **ANITA ASHTON (360) 817-7231 aashton@cityofcamas.us**
ERIC DUGGER (360) 817-7442 edugger@cityofcamas.us

General Requirements:

1. Final engineering site improvement plans shall be prepared in accordance with the Camas Design Standards Manual (CDSM) and CMC 17.19.040, by a licensed Civil Engineer in Washington State.
2. ***Civil construction plans are not to be submitted until after Planning issues the land-use decision.***
3. ***After the land-use decision is issued, the applicant is to submit civil construction plans via the online portal at www.cityofcamas.us/Permits under the 'Civil Construction Application'.***
4. CDev Engineering Dept. is responsible for plan review (PR) and construction inspection (CI) of the civil site improvements.
5. A 3% PR&CI fee is collected by engineering for all infrastructure improvements.
    a. A stamped preliminary engineer's estimate is to be submitted with the plans for first review.
    b. Payment of the 1% plan review (PR) fee shall be due prior to the start of the first review. Staff will review and approve the estimate and invoice the applicant.
    c. Payment of the 2% construction inspection (CI) fee is due prior to construction plan approval and release of approved plans to the applicant's consultant. Staff will invoice the applicant.
    d. Under no circumstances will the applicant be allowed to begin construction, including any land-disturbing activities prior to engineering plan approval.
6. *Per CMC 17.21.060.H Except for one sales office or one model home, building applications will not be accepted until after Final Acceptance has been issued for all infrastructure improvements.*
7. *Final acceptance is issued by the Community Development Engineering Dept.*

8. Any existing wells and septic tanks and septic drain fields shall be decommissioned in accordance with State and County guidelines per CMC 17.19.020 (A3).
9. The applicant will be required to purchase all permanent traffic control signs, street name signs, street lighting, and traffic control markings for the proposed development.
10. Work within the city right-of-way (ROW) will require submittal an encroachment permit and an approved traffic control plan (TCP), prior to the start of any work. This permit is not to be submitted via the online portal. It is to be submitted to the future site Inspector for review and approval.
11. Regulations for installation of public improvements, improvement agreements, bonding, final plating, and final acceptance can be found at CMC 17.21.
12. The applicant will be responsible for ensuring that private utilities; underground power, telephone, gas, CATV, interior street/parking lighting, and associated appurtenances are installed.

Neighborhood Traffic Management Plan

1. The City has a Neighborhood Traffic Management Plan (NTM). The NTM plan identifies the need for installation of acceptable traffic calming features when a proposed development will create 700 Average Daily Trips (ADT) or more.
2. The proposed development will not result in 700 or more ADTs and therefore may not require traffic calming features.

Traffic/Transportation:

1. A transportation impact analysis (TIA) is not required as the proposed development will not result in 199 vehicle trips per day (VPD) or more.
2. However, the Applicant will be required to have a traffic engineer analyze the following:
    a. Site distance access at applicants proposed access off SE Everett Road (SR-500)
    b. Vision clearance areas are to be addressed, per CMC 18.17.030.
    c. Address potential for left-turn pocket at access off SE Everett Road (SR-500)
    d. A traffic circulation plan showing on-site ingress and egress, per CMC 17.19.040 (B.10.a).
    e. Address movement conflicts with existing nearby intersections; and
    f. Provide trip AM and PM Peak distribution to and from the site.
    g. AM and PM Peak Hour analysis for intersections with 20 or more additional trips

North Shore Subarea Plan:

1. The proposed development is in the North Shore Subarea.
2. The alignment for the future North Shore Blvd. will transect the applicant's property from the northern edge to NE Everett Street (SR 500).
3. The proposed location of Phase 2 will be affected by the future alignment.
4. The applicant should contact Engineering for additional information regarding the North Shore Alignment.
5. Where feasible, development improvements are to be extended to the limits of adjacent property lines for future adjacent property owners, per CMC 17.19.040.B.6.
6. The property owner to the north is interested in a conversation with the applicant regarding circulation for the North Shore Blvd. that would transect their property.
    a. Contact Engineering for contact information.

Streets:

1. The proposed development is located on Tax Parcel 178221000. Phase 1 is proposed to be accessed by extending N 49th Avenue from its dead-end east of the intersection with N Adams

Street. Phase 2 is proposed to be accessed via an existing driveway off NE Everett Street (SR-500).
2. The proposed roads are to be per the North Shore Subarea Street Standards.
3. N 49th Avenue will be classified as an existing local road.
4. NE Everett Street (SR-500) is classified as an existing 2-lane arterial.
5. NE Everett Street (SR-500) is a state route and WSDOT will have an opportunity to review the application.
6. LED street lighting is to be installed along all street frontages within and adjacent to the proposed development, in accordance with CDSM.

Proposed N 49th Circle:

1. Proposed N 49th Circle is shown as a public street that is approximately 330-feet as measured from the existing centerline of N 49th Avenue and the intersection of N Adams Street.
2. Per CMC 17.19.040.B Street, public roads shall meet the requirements as shown on Table 17.19.040-2 'Minimum Public Street Standards'.
    a. The applicant has proposed constructing N. 49th Circle as follows: 52-foot-wide right-of-way with a 28-foot paved surface into a cul-de-sac with a 50'-radius and a 45-foot paved radius. As proposed, N 49th Circle does not meet the minimum North Shore Subarea Street Standards.
    b. The applicant will be required to provide 5-foot detached sidewalks and planter strips on both sides.

Proposed Tract A:

1. Proposed Tract A is shown to be a private access road that is approximately 170-feet in length as measured from the centerline of proposed N 49th Circle.
2. Per CDSM Section III, Table 1 – Guidelines for Private Roadway, Private Street Standard A
    a. Access to Four or Less Dwelling Units (DU), requires a 20-foot-wide tract or easement, with a minimum 12-feet-wide paved surface with no parking on either side.
    b. As proposed, Tract A meets the minimum private street requirements.
    c. A dead-end turnaround will be required as the road is in excess of 150-feet as measured from the centerline of the adjacent road.

Proposed Tract B:

1. Proposed Tract B is shown to be a private access road that is approximately 245-feet in length as measured from the centerline of proposed N 49th Circle.
2. The private road as shown adjacent to the rear of Lots 124-128 of Lacamas Hills is not supported by staff. The private access road is to be located on the east side of proposed Lots 9-11.
3. Per CDSM Section III, Table 1 – Guidelines for Private Roadway, Private Street Standard A
    a. Access to Four or Less Dwelling Units (DU), requires a 20-foot-wide tract or easement, with a minimum 12-feet-wide paved surface with no parking on either side.
    b. Per Table 1, Note 3, dead-end roads in excess of 150-feet, as measured from the centerline of the adjacent road, require a dead-end turnaround.
    c. A dead-end turnaround will be required per CDSM Section IV, Street Detail ST36.
    d. As proposed, Tract B meets the minimum private street requirements.

Proposed Phase II:

1. Per CDSM Section III, Table 1 – Guidelines for Private Roadway, Note 3, dead-ends more than 150-feet, as measured from the centerline of the adjacent road, require a dead-end turnaround.
    a. The proposed private road is approximately 630-feet in length, as measured from the centerline of SE Everett Road to the southern boundary of proposed Lot 14.

b. A dead-end turnaround will be required per CDSM Section IV, Street Detail ST36.
c. The applicant is to work with FMO and Engineering to provide an acceptable dead-end turnaround.

2. Per CDSM Section III, Table 1 – Guidelines for Private Roadway, Private Street Standard A
   a. Access to Four or Less Dwelling Units (DU), requires a 20-foot-wide tract or easement, with a minimum 12-feet-wide paved surface with no parking on either side.
3. The applicant is to submit plan and profile for the proposed private road. If the road grades are in excess of 15%, grooved concrete will be required per the FMO. Additionally, based on the length of the private road, a mid-pullover area may be required.

Stormwater:

1. The combined site of the proposed development is approximately 18.15 acres in size.
2. The applicant shall submit a preliminary stormwater report (PTIR) in accordance with CMC 14.02 Stormwater Control and the most current edition of Ecology's *Stormwater Management Manual for Western Washington* ***(latest edition 2024 SWMMWW*)**.
3. Stormwater treatment and detention shall be designed in accordance with the latest edition of Ecology's ***Stormwater Management Manual for Western Washington (2024 SWMMWW).***
4. Refer to Ecology's *Figure I-3.2 Flow Chart for Determining Requirements for New-Development (Vol. I, Chapter 3, Page 109)*.
   a. As the project will result in 5,000 sf, or greater, of new plus replaced hard surface area; then all Minimum Requirements (#1-#9) will apply.
5. Per CMC 17.19.040.C.3.a Stormwater facilities are to be placed in a Tract, with right-of-entry to the City for inspection purposes.
6. Per CMC 14.02.090 ownership and maintenance of onsite stormwater facilities will be the responsibility of the Owner/HOA, per CMC 17.19.040 (C3).
7. Public and private storm easements, if required, are to be shown on the final engineering plans.
8. Provisions are to be provided for roof downspout controls. Stormwater from downspouts is not to be directed onto adjoining parcels. Reference CMC 14.02 and 17.19.040.C for roof downspout controls.

Erosion Control:

1. The combined site of the proposed development is approximately 18.15 acres in size.
2. Per CMC 17.21.030.B an erosion and sediment control (ESC) bond, in the amount 200% of the engineer's estimate for ESC measures, is to be submitted prior to any land-disturbing activities.
3. As the land-disturbing activities are greater than one acre, the applicant will be required to obtain an *NPDES Construction Stormwater General Permit* from Ecology, which includes the *Stormwater Pollution Prevention Plan (SWPPP)*. Copies of both are to be submitted to Engineering prior to any land-disturbing activities.
4. The applicant will be responsible for all erosion and sediment control measures to ensure that sediment laden water does not leave the site or impact adjacent parcels.
5. Mud tracking onto the road surface is discouraged and any mud tracking is to be cleaned up immediately.

Water:

1. There are two existing watermains located around the vicinity of the proposed development:
   a. An 8-inch ductile iron main stubbed to the north side of N 49th Avenue from Lacamas Hills Phase 2.
   b. An 8-inch ductile iron main located along the north side of NE Everett Street (SR-500).

2. Per CMC 17.19.040.C.4 Each lot within a proposed development shall be served by a water distribution system designed and installed in accordance with city design standards.
    a. The applicant will be required to design and construct a minimum 8-inch ductile iron water main to serve the proposed development.
    b. The applicant shall provide a minimum 1-inch water service and water meter box to each of the single-family residential lots located within this development.
3. Phase I: The applicant will be required to extend the 8-inch water main at N 49th Avenue through proposed N 49th Circle to serve Phase 1.
4. Phase II will require that the 8-inch water main system is to be tapped from the 8-inch water main in NE Everett Street.
    a. An access and maintenance easement to the City will be required.
5. Landscaping in open space tracts must have a separate irrigation service, backflow prevention device, meter box, and irrigation meter.
    a. The owner of the tract is responsible for payment for all fees associated with the installation of the meter and the water usage.
    b. Irrigation meters are to be owned by the HOA.
6. The applicant will be required to provide new fire hydrants located within the new development, per CDSM and the FMO.
7. Trenching and surface restoration is to be per CDSM Details G2 and G2A.
8. The applicant shall demonstrate that there are adequate fire flows available for the development.
9. The tap on the existing water main is to be performed by a tapping Contractor approved by the City's Water/Sewer Dept. Approved list of Contractor's provided below.
10. A 10-foot separation shall be maintained between water and sanitary sewer lines.

Sanitary Sewer:

1. There is an existing 8-inch PVC gravity main stubbed to the south side of N 49th Avenue from Lacamas Hills Phase 2.
2. Per CMC 17.19.040.C.2 The applicant will be required to design and construct a minimum 8-inch sanitary sewer system to serve Phase I of the proposed development.
    a. The applicant shall provide a separate sanitary lateral for each single-family residential lot located within Phase I
3. The applicant is proposing to utilize grinder pumps and pressure sewer for Phase II, trenching across critical areas in Tract D to discharge into the Phase I gravity sewer.
    a. Staff will require a 12-foot minimum gravel access road for maintenance between Phases I & II.
    b. A 15-foot minimum access and maintenance easement over the sanitary sewer to the City will be required.
4. Trenching and surface restoration is to be per CDSM Details G2 and G2A.
5. A 10-foot separation is required, within the right-of-way and the private road serving the development, between the water service and sewer lateral.

City Approved Tapping Contractors:

1. A&A Drilling Services, Inc (water & pressure sewer):
   16734 SE Kens Ct. #B, Milwaukie, OR 97267, 800-548-3827,
   http://www.aadrilling.com
2. Ferguson Waterworks (water only):
   14103 NW 3rd Court, Vancouver, WA 98685, 360-896-8708,
   https://www.ferguson.com/branch/nw-3rd-ct-vancouver-wa-waterworks

Garbage and Recycling:

1. Garbage and recycling receptacles are to be placed at the city right-of-way for pickup.

Parks/Trails:

1. Not applicable

Impact Fees & System Development Charges (SDCs):

1. This development is in the North District.
2. Impact fees and SDCs are collected at time of building permit issuance.
3. The impact fees and SDCs noted below are for informational purposes only.
4. **Impact fees and SDCs are adjusted on January 1st of each year.**

Impact Fees for 2025 (North District):

Single Family:

1. Traffic Impact Fees (TIF) - $10,633.00
2. School Impact Fees (SIF) – $6,650.00
3. Park/Open Space (PIF) – Residential Scaled by Square Footage
    a. 0 to 1,000 sf - $4,259.00
    b. 1,001 to 2,000 sf - $7,802.00
    c. 2,001 to 2,600 sf - $11,841.00
    d. 2,601 sf and above - $13,549.00
4. Fire (FIF) - $0.71 psf

System Development Charges (SDCs) – 2025 Charges:

1. Water –
    a. 3/4” meter - $9,337.00 + $495 connection fee
    b. 1” meter - $15,560.00 + $552 connection fee
2. Sewer – Residential
    Residential - $7,407.00 + STEF Inspection

BUILDING DIVISION **BRIAN SMITH (360) 817-7243**

1. Property corners shall be established by a licensed surveyor.
2. The structures will be reviewed under the most current building codes as adopted by The State of Washington.
3. The structural drawings and calculations shall be prepared and stamped by a Professional Engineer licensed by the State of Washington.
4. The placement of buildings and structures on or adjacent to slopes steeper than one unit vertical in three units horizontal shall conform to Sections R403.1.7.1 through R403.1.7.4. A geotechnical report may be required
5. The required fire suppression system shall be in accordance with IBC and other applicable codes standards and shall be reviewed by the Camas Fire Marshal’s office.
6. Storm water from adjacent properties and existing developments should be taken into consideration.
7. Storm sewer disposal and connections shall be identified on the approved plans.
8. All lots shall be provided a storm drain lateral at the lowest practical location.
9. Developer shall provide a designated concrete wash out area.
10. Impact fees and System Development charges shall be applicable

FIRE DEPARTMENT **RANDY MILLER (360) 834-6191**

1) For any required Blasting a permit with the fire Marshals Office is required. Please submit this as early as possible in your process as a third-party review may be required.
2) Any existing structures scheduled for demolition may be considered for use as a fire department training burn. Contact DFM Randy Miller at the FMO for further information. 360-834-6191
3) NFPA 13D Residential Fire Sprinklers required in all new dwellings. Additionally, it is recommended or may be required to mitigate access or turnaround issues, to install fire sprinklers in garages, all closets, all bathrooms and any covered outdoor living area. Contact the FMO for further information.
4) If a larger water meter is required to meet fire flow design and the larger meter is not required for reasons of the international residential code/building department, the SDC up-charge fees are waived, the minimal cost difference in the actual meter shall be paid.
5) A flow switch is optional but recommended to tie into the homes security system and or an outside bell.
6) If a PRV is installed, it shall be installed after the fire line supply. If the pressure is over 80 PSI a PRV may be needed on the toilet supply line supplied from the fire sprinkler system.
7) An inside bell or horn strobe is recommended (If system is not tied into a security system) Contact Randy Miller in the FMO for more information.
8) Water supply line from the meter into the structure shall be sized per the fire sprinkler contractors design calculations or a 2- inch line shall be installed.
9) A fire hydrant is required near the subdivision phase 1 entrance on the NW corner of lot 1.
10) A fire hydrant is required at the entrance to phase 2, locate on the NE corner of the entrance.
11) Witnessed hydrant flushing required to be scheduled with the FMO on any new fire hydrant installation.
12) Access roads or flag lots to be a minimum 12-foot wide paved with a 20-foot wide clearance and a minimum 13.6-foot vertical clearance. These minimums may be greater per city of Camas engineering department where the more restrictive shall apply.
13) Approved Fire Department turnaround required for dead end streets or access driveway over 150 ft to residential structures measured from the center line of where the access road leaves the public street. There may be some additional distance approved with added sprinkler coverage above the Basic 13D requirements… all garages full coverage or dry sidewalls if not heated space above the garage), all bathrooms, all closets, any outdoor living/kitchen area with dry sidewalls. A Platt note shall denote the lots requiring this extra coverage if utilized in the design and approved by the FMO.
14) Provide approved radiuses to access roads/driveways or tracts.
15) Obstructed access plan required for all private roads, flag lots serving more than one home or access tracts. Towing signs are the recommended plan unless an alternate method is provided and approved.
16) Any discovered underground oil or fuel storage tank requires a decommissioning permit through the Fire Marshal Office.
17) A propane Permit is required with the Fire Marshals Office for any tank installation over 124 gallons.
18) Approved address monuments required for the side drives off of the main private street. Contact the FMO for approval.

19) Temporary Addresses required at all times for each structure/lot until permanent address numbers are installed, please give attention to making the numbers extremely visible from the street and unlikely to be blocked by parked vehicles so emergency services can easily see and read. Illumination of address numbers is not yet code required however it is highly recommended.
20) For a courtesy list of 13D installers that have been installing systems in Camas and Washougal please contact our admin specialist at 360-834-6191 Option 2.
21) Please do not hesitate to contact the FMO if you have any questions. 360-834-6191 or FMO@cityofcamas.us

DEVELOPER'S PACKET

Produced By:

Clark County Geographic Information System (GIS)

For:

SGA Engineering-#2452

Subject Property Account Number(s):

178221000

PDF # 311821

Printed: October 29, 2024
Expires: October 29, 2025

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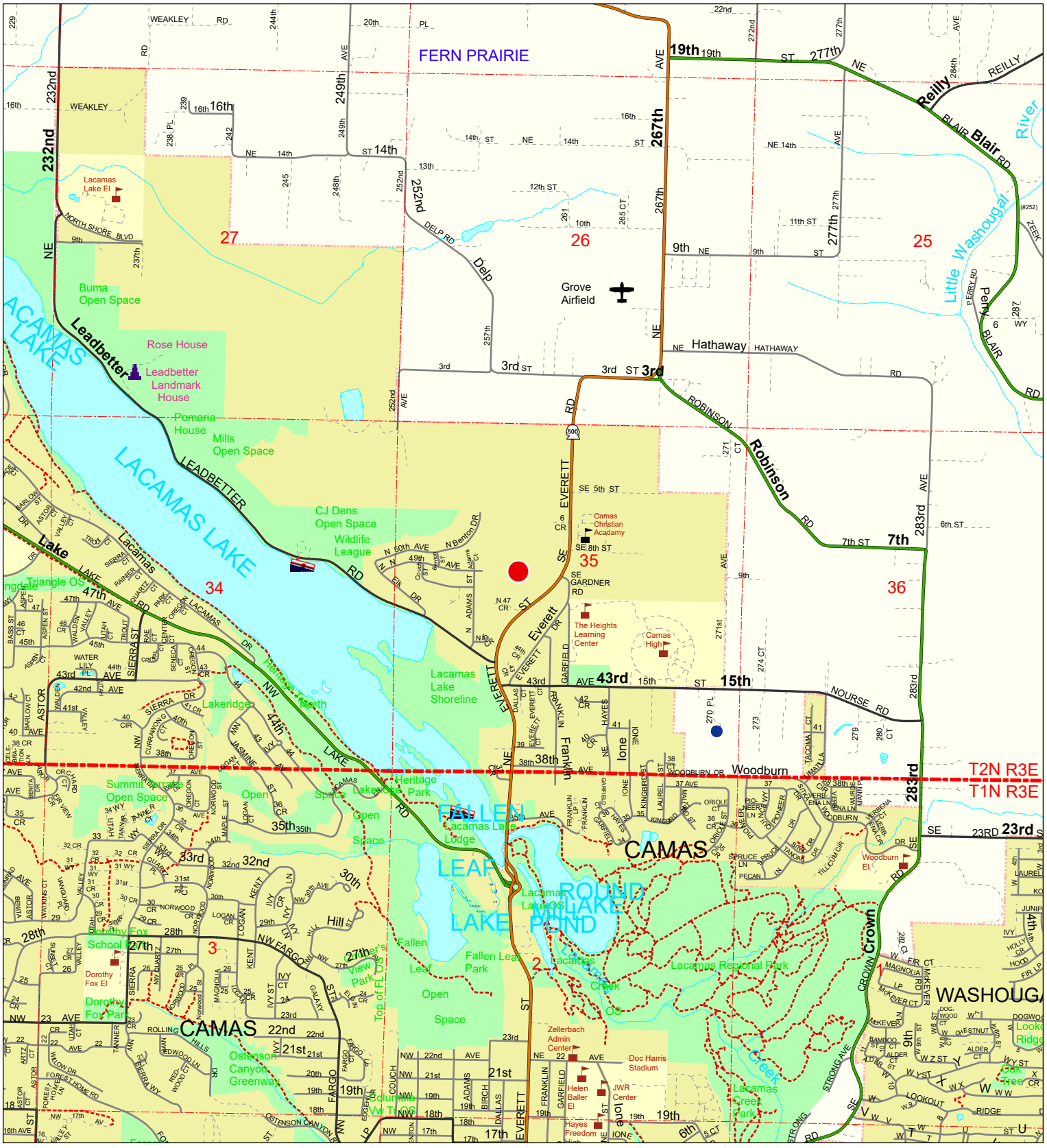


General Location

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

Location of Subject Property(s)

Printed on: October 29, 2024

CLARK COUNTY, WASHINGTON
Geographic Information System

0 1,000 2,000 Feet

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

Property Information Fact Sheet

Mailing Information:
Account No.: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671
Assessed Parcel Size: 18.15 Ac
Property Type: PRIME DEVELOPABLE GROUND

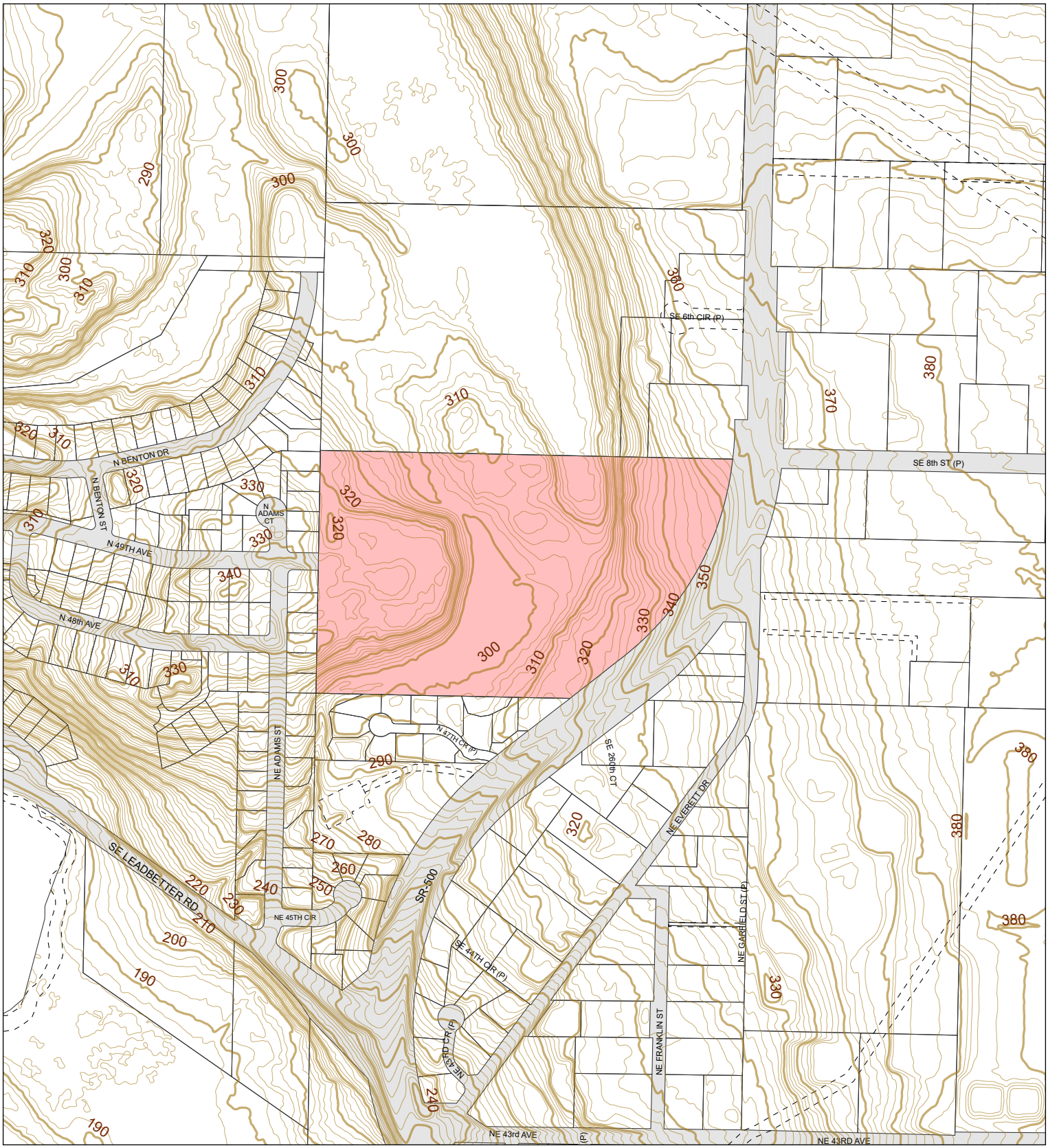
PARCEL LOCATION FINDINGS:

Quarter Section(s): NW 1/4,S35,T2N,R3E
Municipal Jurisdiction: Camas
Urban Growth Area: Camas
Zoning: LD-NS, MX-NS
Zoning Overlay: Airport Overlay - Zone C, Gateway Corridor
Comprehensive Plan Designation: LD-NS, C-NS
Columbia River Gorge NSA: No Mapping Indicators
Late-Comer Area: No Mapping Indicators
Trans. Impact Fee Area: Camas
Park Impact Fee District: No Mapping Indicators
Neighborhood Association: No Mapping Indicators
School District: Camas
Elementary School: Lacamas Lake
Junior High School: Liberty
Senior High School: Camas
Fire District: City of Camas
Sewer District: Camas
Water District: Camas
Wildfire Danger Area: No Mapping Indicators

ENVIRONMENTAL CONSTRAINTS:

Soil Type(s): HcB, 12.2% of parcel
HcE, 12.1%
LlB, 23.2%
MeA, 1.6%
OmE, 10.4%
ThA, 7.0%
VaB, 0.3%
VaC, 33.2%
Hydric Soils: Hydric, 7.0% of parcel
Non-Hydric, 93.0%
Flood Zone Designation: Outside Flood Area
CARA: Category 2 Recharge Areas
Forest Moratorium Area: No Mapping Indicators
Liquefaction Susceptibility: Very Low, Bedrock
NEHRP: B, C
Slope: 0 - 5 percent, 34.2% of parcel
10 - 15 percent, 16.0%
15 - 25 percent, 13.5%
25 - 40 percent, 1.8%
5 - 10 percent, 34.5%
Landslide Hazards: Slopes > 15%
Slope Stability: Severe Erosion Hazard Area
Cultural Resources:
Archeological Predictive: High, 1.5% of parcel
Moderate, 25.6%
Moderate-High, 72.9%
Archeological Site Buffers: Mapping Indicators Found
Historic Sites: No Mapping Indicators

Information shown on this page was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.



Elevation Contours

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

Printed on: October 29, 2024

Subject Property(s)
Public Road
Transportation or Major Utility Easement
10' Elevation Contours
2' Elevation Contours

23127	23126	23125
23134	23135	23136
13103	13102	13101

CLARK COUNTY, WASHINGTON
Geographic Information System

0 200 400 Feet

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

2023 Aerial Photography

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

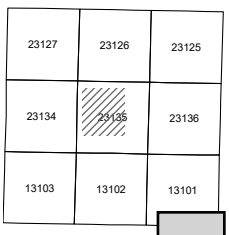
Printed on: October 29, 2024

CLARK COUNTY, WASHINGTON
Geographic Information System

N

0 200 400 Feet

Subject Property(s)



Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

2023 Aerial Photography with Elevation Contours

Printed on: October 29, 2024

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

CLARK COUNTY, WASHINGTON
Geographic Information System

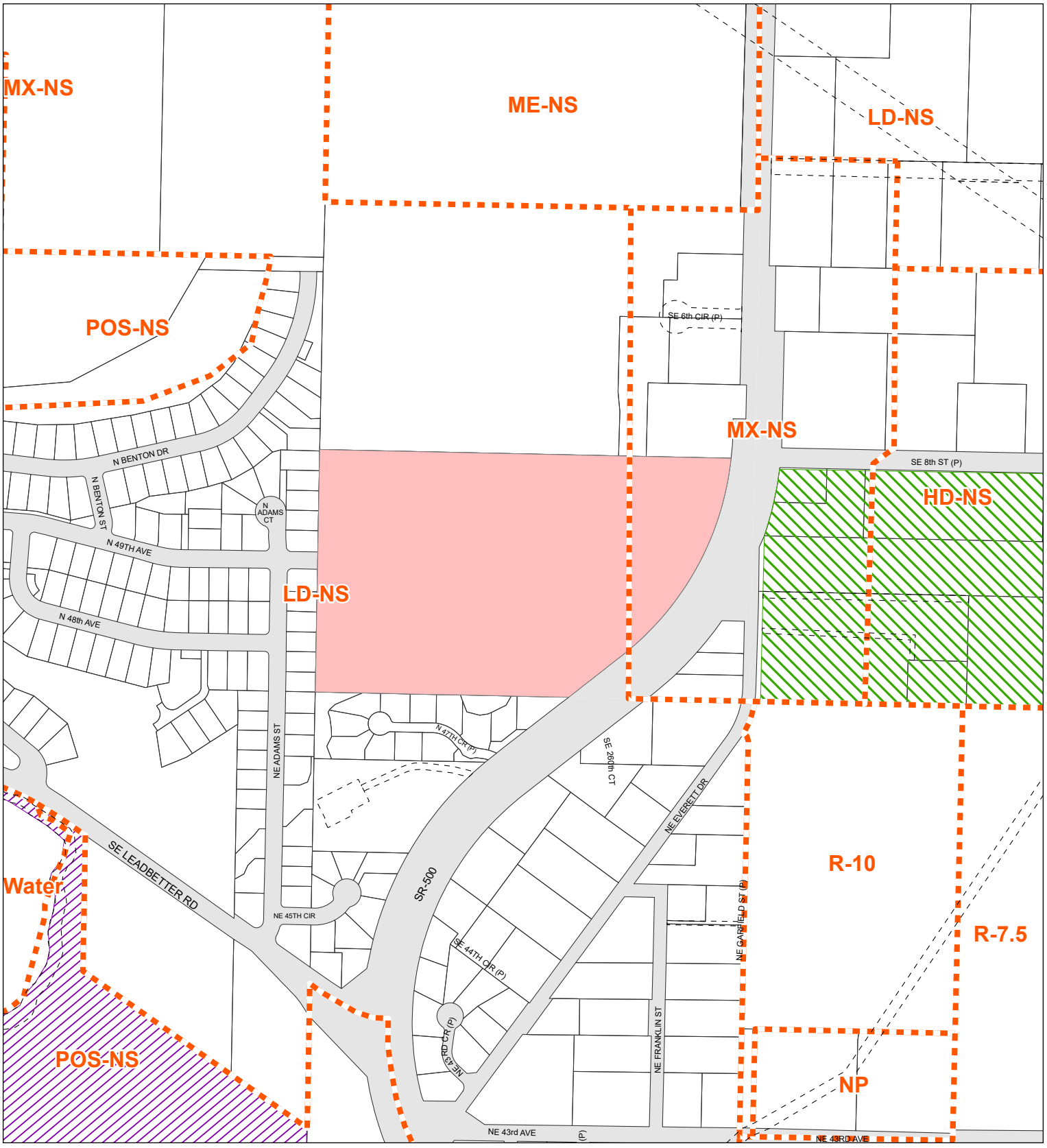
N

0 100 200 Feet

2' Elevation Contours
Subject Property(s)

23127	23126	23125
23134	23135	23136
13103	13102	13101

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.



Zoning Designations

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

Printed on: October 29, 2024

CLARK COUNTY, WASHINGTON
Geographic Information System

0 200 400 Feet

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- Zoning Boundary
- Urban Holding - 10 (UH-10)
- Urban Holding - 20 (UH-20)
- Urban Holding - 40 (UH-40)
- Surface Mining Overlay District

23127	23126	23125
23134	23135	23136
13103	13102	13101

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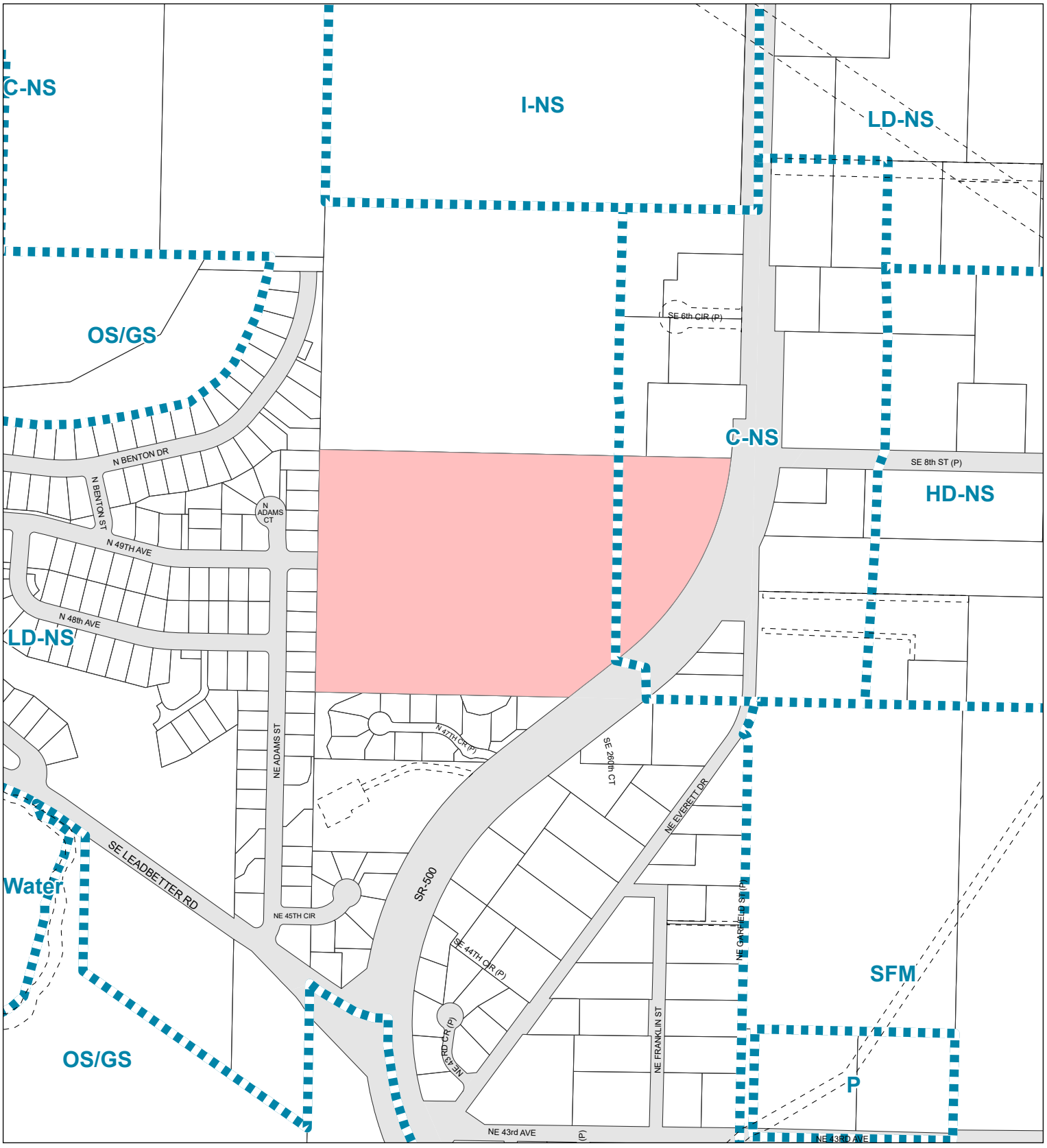


Comprehensive Plan Designations

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

Printed on: October 29, 2024

CLARK COUNTY, WASHINGTON
Geographic Information System

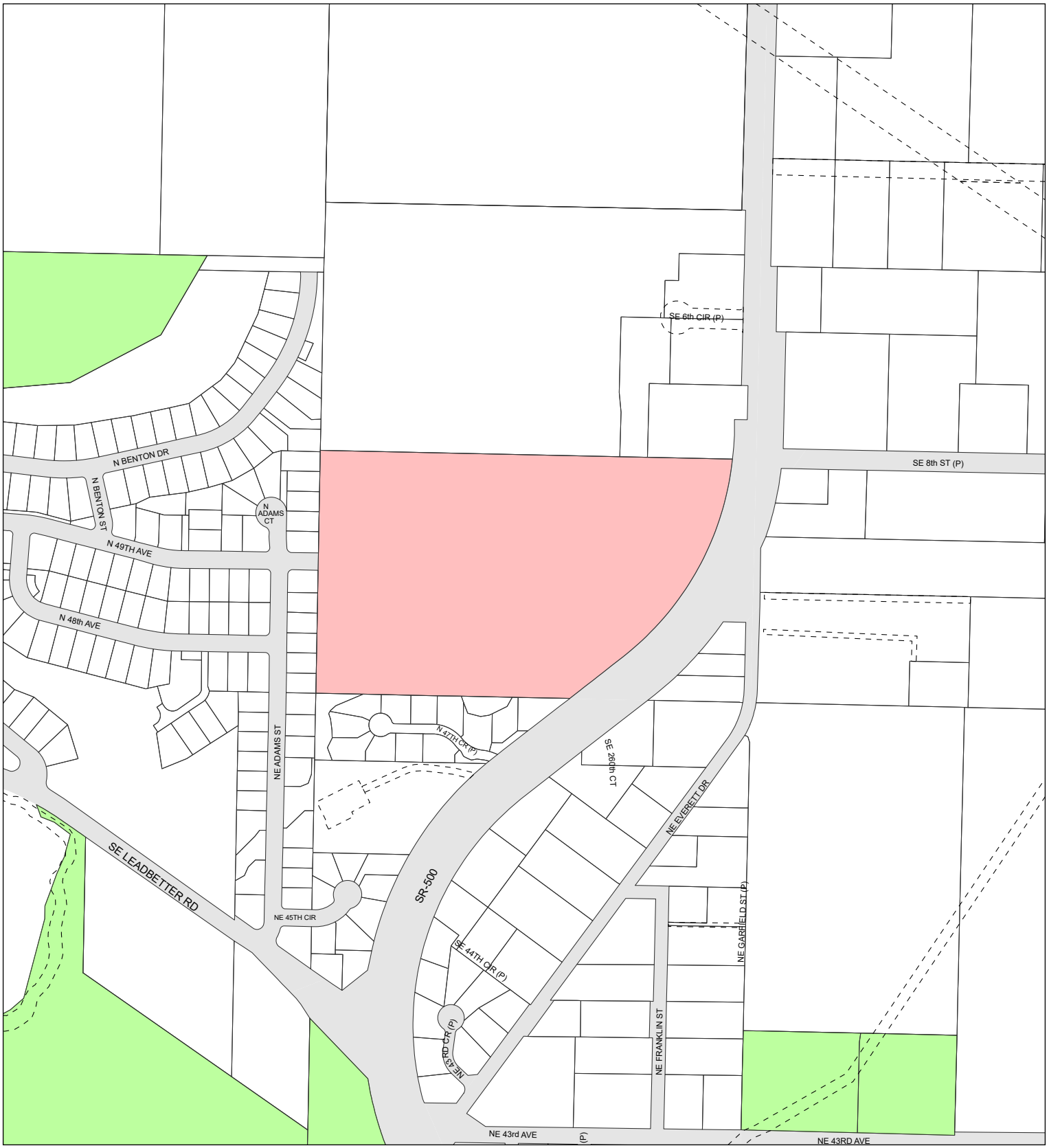
N

0 200 400 Feet

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- Comprehensive Plan Boundary
- Urban Reserve
- Industrial Reserve
- Railroad Industrial Reserve
- Mining
- Rural Center Mixed Use
- Columbia River Gorge Scenic Area

23127	23126	23125
23134	23135	23136
13103	13102	13101



Arterials, C-Tran Bus Routes, Parks & Trails

Printed on: October 29, 2024

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

CLARK COUNTY, WASHINGTON
Geographic Information System

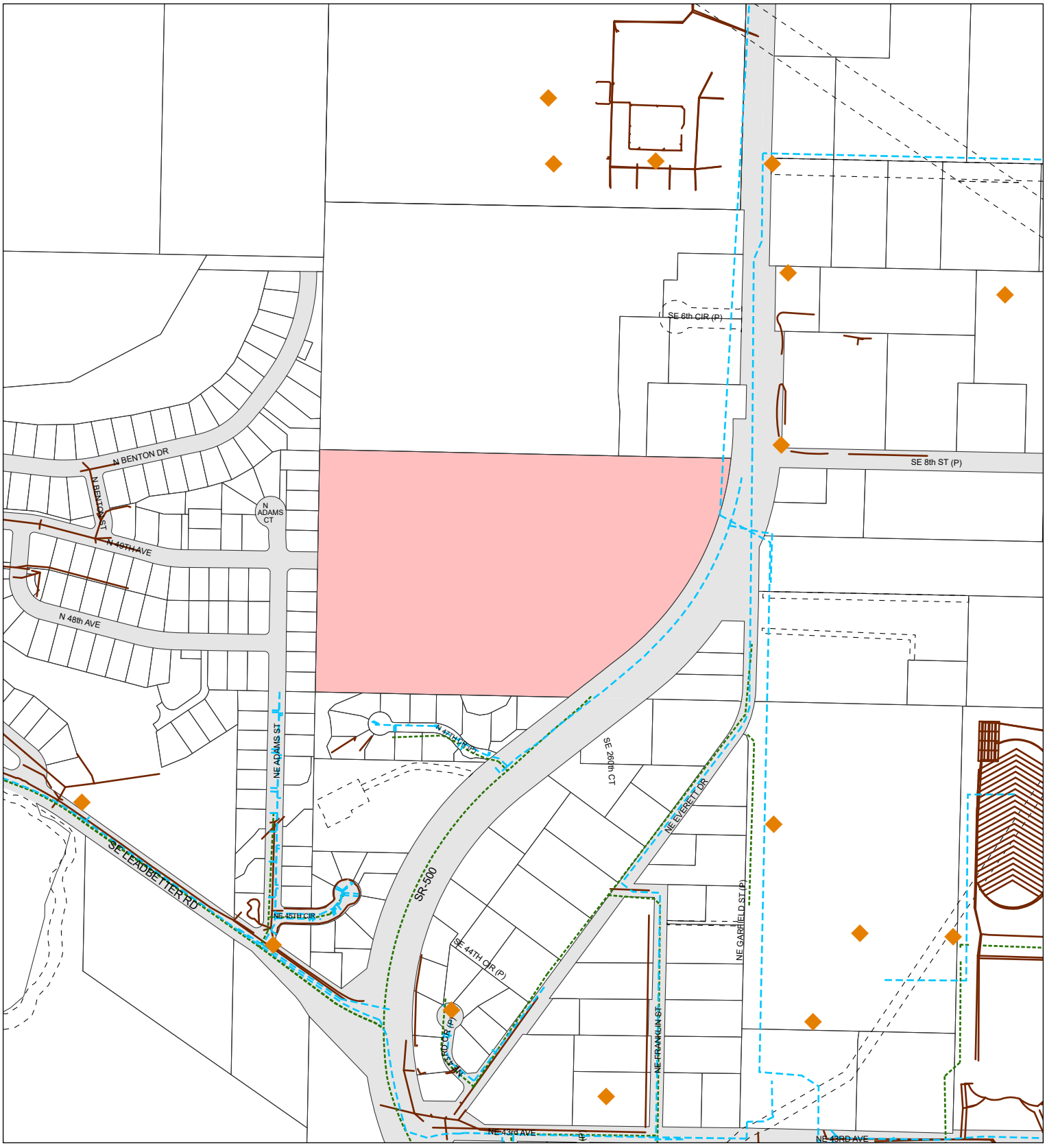
N

0 200 400 Feet

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- Parks
- Trail
- C-Tran Route
- Principal Arterial
- Minor Arterial
- Collector
- Rural Major Collector
- Rural Minor Collector
- State Route
- Other
- Proposed Arterial
- Scenic Highway

23127	23126	23125
23134	23135	23136
13103	13102	13101

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.



CLARK COUNTY, WASHINGTON

Geographic Information System

0 200 400 Feet

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

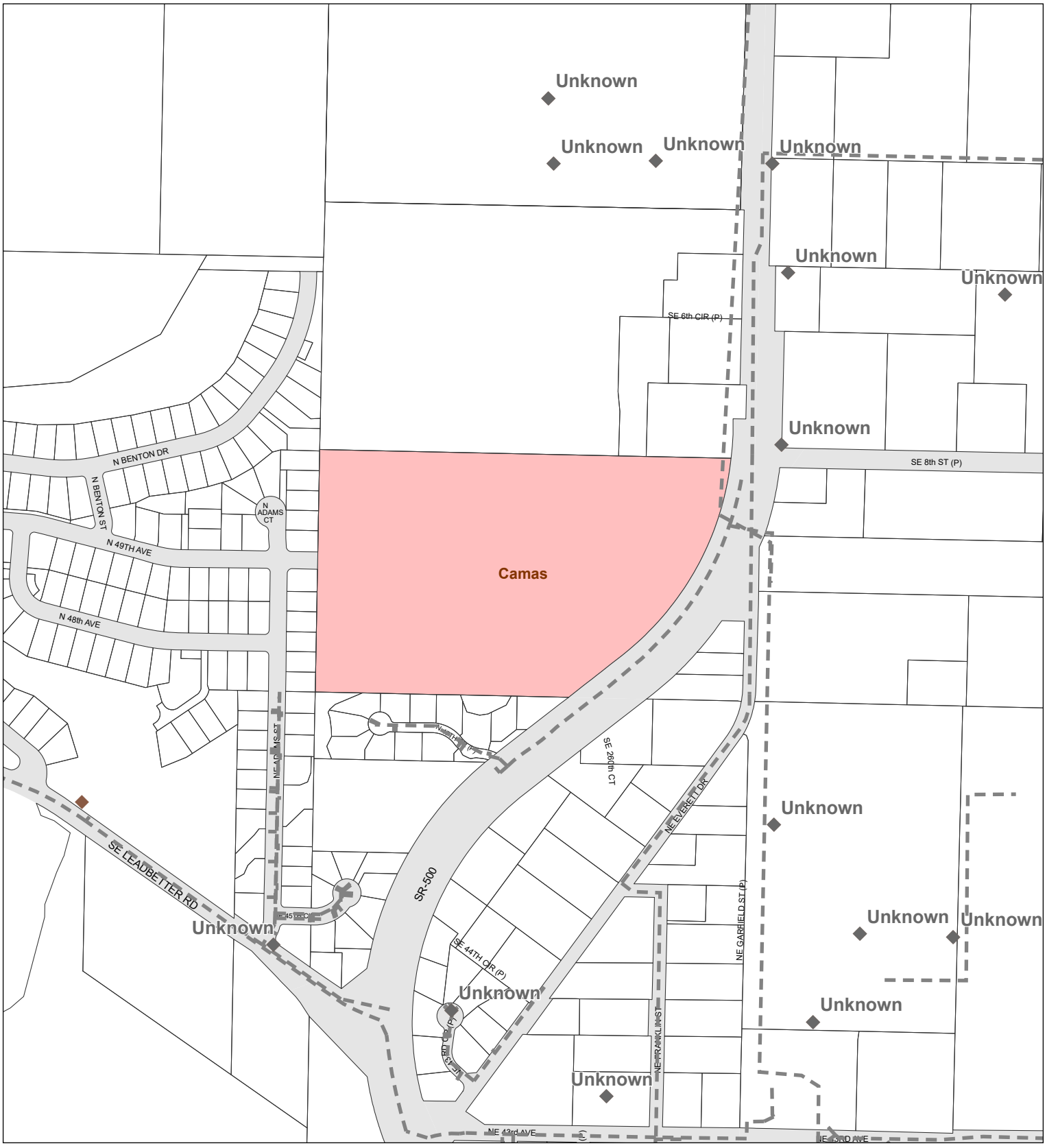
Water, Sewer, and Storm Systems

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- 1-Year Wellhead ZOC
- 5-Year Wellhead ZOC
- 10-Year Wellhead ZOC
- Water Lines
- Sewer Lines
- Storm Water Lines
- Hydrants

Printed on: October 29, 2024

23127	23126	23125
23134	23135	23136
13103	13102	13101



Water Systems

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

Printed on: October 29, 2024

CLARK COUNTY, WASHINGTON
Geographic Information System

0 200 400 Feet

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

- Subject Parcel
- Public Road
- Water District Boundary
- Unknown Size Water Line
- < 10" Water LIne
- 10-20" Water Line
- > 20" Water Line
- No Flow Data Hydrant
- 0 - 499 GPM at 20 PSI
- 500 - 999 GPM at 20 PSI
- > 1000 - 1749 GPM at 20 PSI
- > 1750 GPM at 20 PSI
- Hydrant > 500' from parcel(s)

23127	23126	23125
23134	23135	23136
13103	13102	13101

Hydrant Fire Flow Details

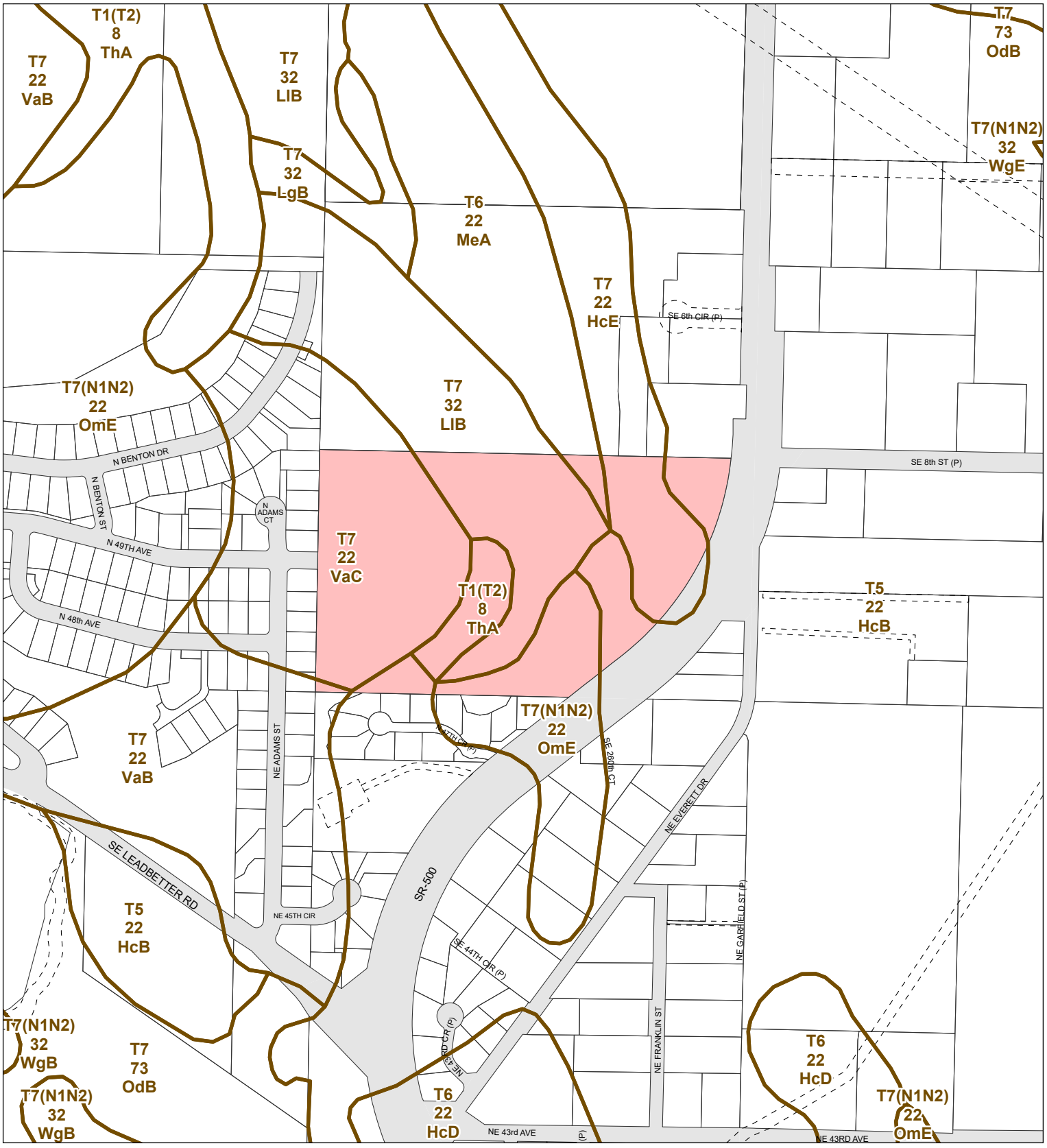
Account No.: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

Water District(s)	Hydrant Data Update	Project Site Provider
Camas	October 18, 2023	Service Provider

HYDRANT INFORMATION:

Hydrant ID	Hydrant Owner	Main Diameter	Flow at 20 PSI	Test Date	Distance to site
Unknown	Unknown	0.0"	No Data		158 ft

Information shown on this page was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

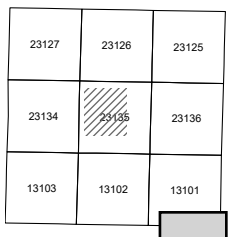


Soil Types

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

Printed on: October 29, 2024

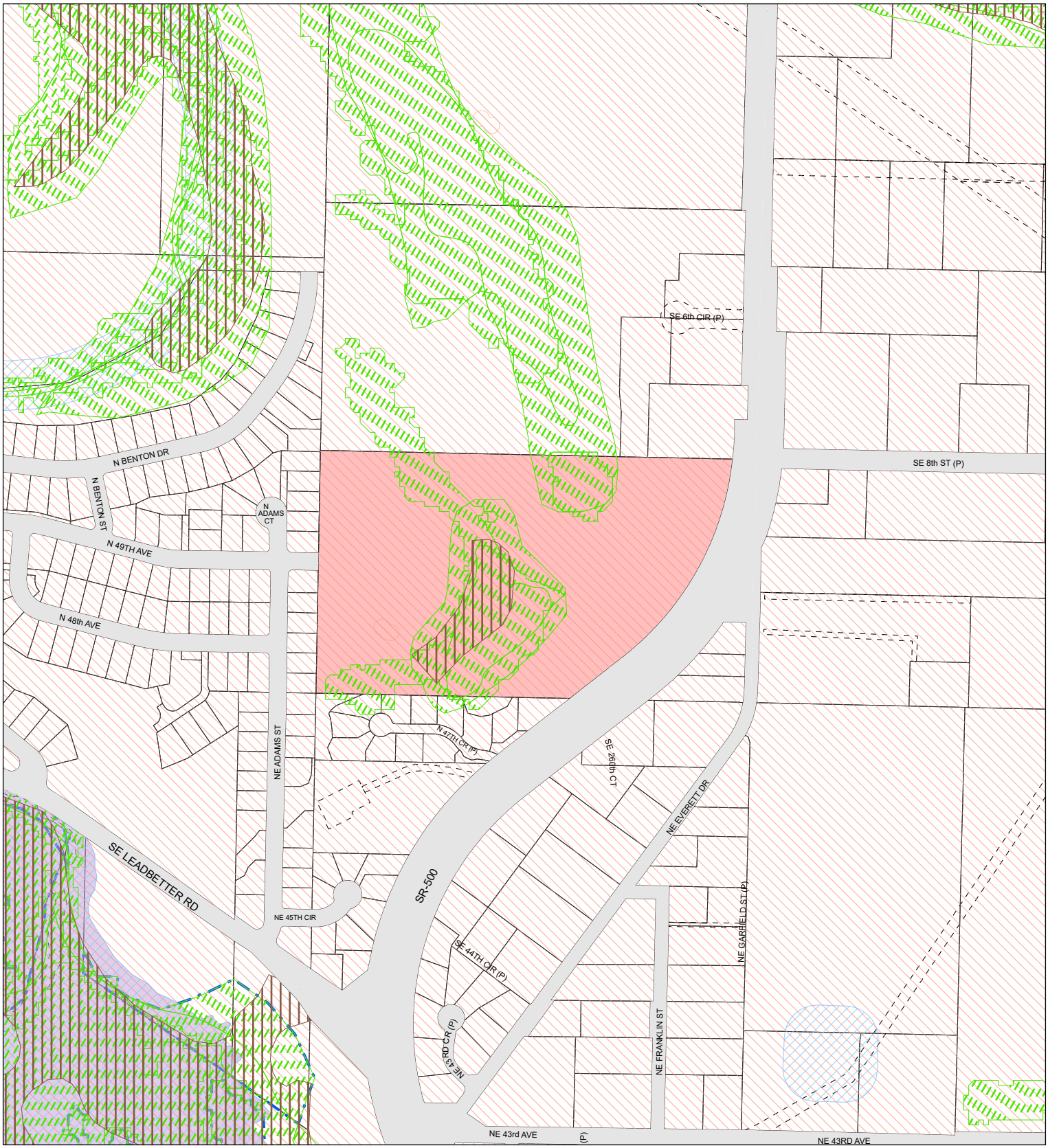
Subject Property(s)
Public Road
Transportation or Major Utility Easement
Soil Type Boundary



CLARK COUNTY, WASHINGTON
Geographic Information System

0 200 400 Feet

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.



CLARK COUNTY, WASHINGTON

Geographic Information System

N

0 200 400 Feet

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

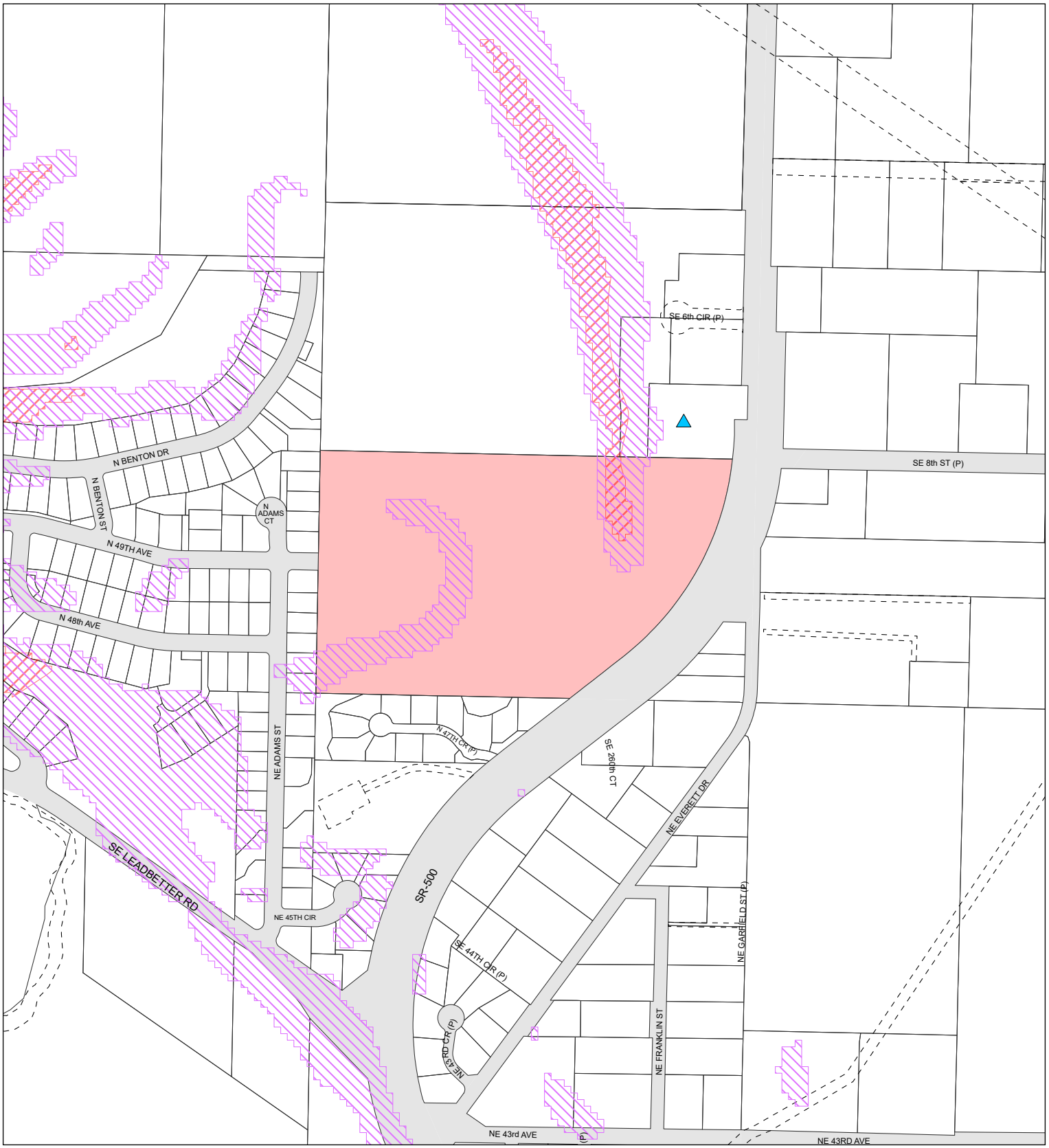
Environmental Constraints I

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- Hydric Soils
- Wetland Inventory
- CARA Category 1
- Riparian Habitat or Species Area
- Non-Riparian Habitat or Species Area
- 100 year Floodplains
- Floodway
- Shorelines
- Stream

Printed on: October 29, 2024

23127	23126	23125
23134	23135	23136
13103	13102	13101



Environmental Constraints II

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

Printed on: October 29, 2024

CLARK COUNTY, WASHINGTON
Geographic Information System

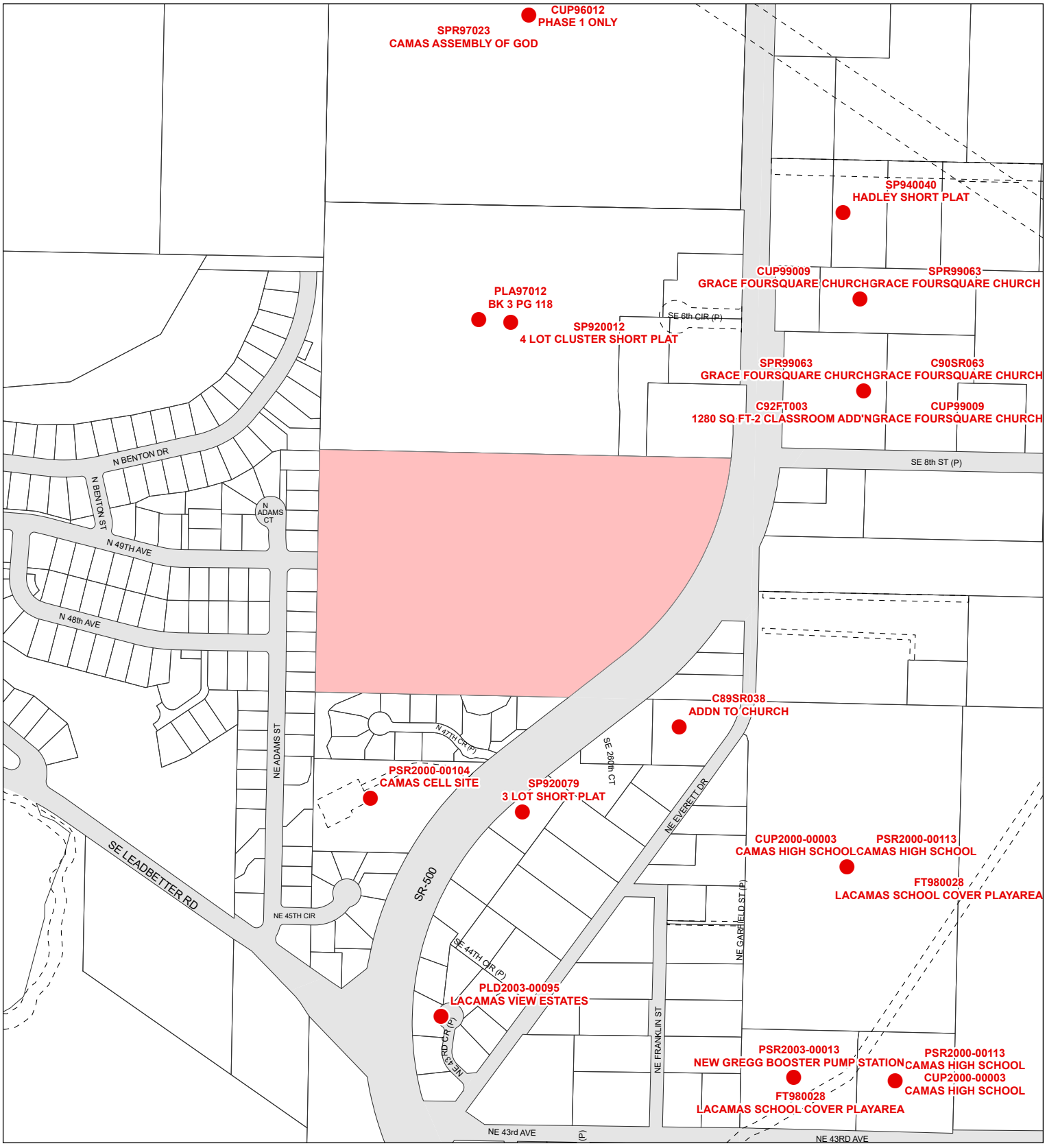
N

0 200 400 Feet

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- Slopes > 15%
- Potentially Unstable Slope
- Historic or Active Landslide
- Severe Erosion Hazard Area
- Forest Moratorium Area
- CCHR Historic Site
- NRHP Historic Site
- WSHR Historic Site
- WSHR Historic Barn
- INV Historic Site

23127	23126	23125
23134	23135	23136
13103	13102	13101



Adjacent Development

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

Printed on: October 29, 2024

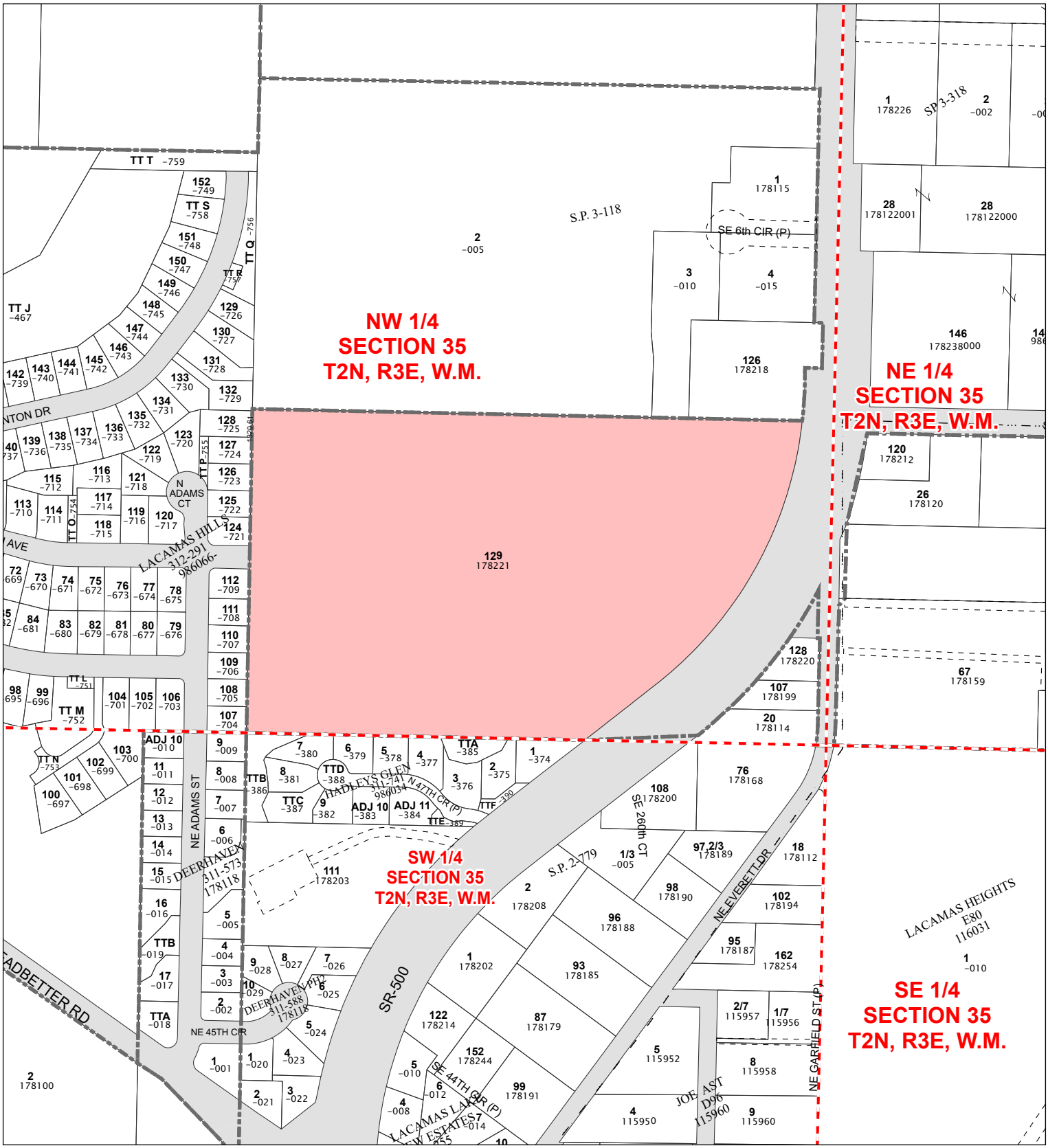
Subject Property(s)
Public Road
Transportation or Major Utility Easement
Adjacent Development

23127	23126	23125
23134	23135	23136
13103	13102	13101

CLARK COUNTY, WASHINGTON
Geographic Information System

0 200 400 Feet

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.



Quarter Section Parcels

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

Printed on: October 29, 2024

Geographic Information System

0 150 300 Feet

Subdivision Lines
Donation Land Claim
Section Quarters
City Boundaries
Subject Property(s)
Road Right of Way - Actual Road May not Exist
Transportation or Major Utility Easement

23127	23126	23125
23134	23135	23136
13103	13102	13101

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

COMMUNITY DEVELOPMENT DEPARTMENT
616 NE 4th Avenue
Camas, WA 98607
www.ci.camas.wa.us

October 9, 2025

Scott Taylor
SGA Engineering
2005 Broadway Street
Vancouver, WA 98683

RE: Oliver Terrace Subdivision (SUB25-1010) application completeness review letter

Dear Mr. Taylor,

Thank you for your application submittal for the Oliver Terrace subdivision. There are items that remain to be addressed with your application. The purpose of this letter is to inform you that the above application submitted on September 16, 2025, has been deemed incomplete in accordance with Camas Municipal Code (CMC) Section 18.55.130. You have 180 days from the date of application to submit the missing information pursuant to CMC 18.55.130.C. If the below requested information is submitted, staff will again verify whether the application is complete.

Items necessary for completeness:

1. The following shall be submitted per the pre-application notes:
    a. Density calculation is based on development/net acreage which defined as the total land use development exclusive of open space and critical areas.
        - The density calculation excludes ROW only and needs to be revised to exclude open space and critical area acreage only.
    b. Garage faces shall maintain a minimum 20-foot front yard setback per CMC 18.09.040 Table 2 note 3.
        - The front yard setback listed on the plat shall be revised.
2. Per CMC 17.11.030.B.6(a-p), the following shall be included on the site and development plans:
    a. A plat meeting the standard identified in CMC Section 17.01.050,
        - A.4- Legal description of boundaries
        - B.4 (a-g), Land Inventory
    b. The names of property owners of adjacent land-
        - The parcel numbers are shown; however, the owners of adjacent lands are not included on the preliminary site plan aka preliminary plat.
        - The adjacent subdivisions are labeled only.
    l. Existing and proposed topography at 2-foot contour intervals extending to 5-feet beyond project boundaries.
        - Neither the existing nor proposed grading plans show topo beyond the property boundaries.
    m. Location of any critical areas and critical area buffers to indicate compliance with all applicable provisions of the critical areas legislation
        - Show location of steep slopes.
    n. Description, location and size of existing and proposed utilities, storm drainage facilities and roads to serve the lots.

- Sizes of existing and proposed utilities; water main, sewer main, and storm mains have not been shown.
- Sizes of proposed services/laterals; water, sewer, and storm have not been shown.

p. Regardless of height, are there any retaining walls planned?

3. Per CMC 17.11.030.B.7.b, the proposed lots are to be shown on the existing topography plan sheet.
4. Per CMC 17.11.030.B.8, Preliminary stormwater plan and preliminary stormwater technical information (TIR) report is to be prepared in accordance with Ecology's SWMMWW.
    - A preliminary TIR was not submitted.
5. Per CMC 17.11.030.B.11, Applicant shall furnish one set of mailing labels for all property owners
    - Mailing labels were not included.
6. Per CMC 17.11.030.B.13, A narrative addressing ownership and maintenance of open spaces, stormwater facilities, public trails and critical areas, etc.
    - The narrative does not address ownership or maintenance.

Other preliminary project issues noted by staff to be addressed but are not completeness review items:

7. Preliminary plat plans:
    - CMC 17.11.030.12: The TIS Memo was prepared using the 11th Edition ITE manual. The 12th Edition ITE manual was issued in August 2025.
        - All TIS/A are to be prepared using the 12th Edition ITE manual.
    - CMC 17.11.030.14: An engineering estimate of costs for site improvements, both public and private.
        - An engineer's estimate was not submitted with application.
        - Required by code but not considering a TC item. It is to be submitted with the Civil Construction Application.
    - The narrative states that the existing home on proposed Lot 12 will retain the existing well for irrigation purposes. Water and sewer services are to be extended from the future improvement of N 49th Circle to the future Lot 12. The existing septic system and the existing well are to be decommissioned prior to engineering plan approval and the water rights for the well are to be transferred to the city.
    - Are the 3 existing sheds (i.e. accessory structures) proposed for removal? If not, those will need to be located on the lot with the existing residential structure (proposed Lot 12).

Once the application is deemed complete, the City will begin its review of the project application and provide subsequent review comments. If you have any questions, please contact me at lhollenbeck@cityofcamas.us.

Respectfully,

Lauren Hollenbeck

Lauren Hollenbeck
Senior Planner

COMMUNITY DEVELOPMENT DEPARTMENT
616 NE 4th Avenue
Camas, WA 98607
www.ci.camas.wa.us

October 9, 2025

SGA responses in GREEN

Scott Taylor
SGA Engineering
2005 Broadway Street
Vancouver, WA 98683

RE: Oliver Terrace Subdivision (SUB25-1010) application completeness review letter

Dear Mr. Taylor,

Thank you for your application submittal for the Oliver Terrace subdivision. There are items that remain to be addressed with your application. The purpose of this letter is to inform you that the above application submitted on September 16, 2025, has been deemed incomplete in accordance with Camas Municipal Code (CMC) Section 18.55.130. You have 180 days from the date of application to submit the missing information pursuant to CMC 18.55.130.C. If the below requested information is submitted, staff will again verify whether the application is complete.

Items necessary for completeness:

1. The following shall be submitted per the pre-application notes:
   a. Density calculation is based on development/net acreage which defined as the total land use development exclusive of open space and critical areas.
      - The density calculation excludes ROW only and needs to be revised to exclude open space and critical area acreage only. **Density calculations are better explained in the narrative as well as on PRE2.0**
   b. Garage faces shall maintain a minimum 20-foot front yard setback per CMC 18.09.040 Table 2 note 3.
      - The front yard setback listed on the plat shall be revised. **Data table updated on PRE2.0**
2. Per CMC 17.11.030.B.6(a-p), the following shall be included on the site and development plans:
   a. A plat meeting the standard identified in CMC Section 17.01.050,
      - A.4- Legal description of boundaries
      - B.4 (a-g), Land Inventory

      Section O added to the submittal for the Boundary Survey
   b. The names of property owners of adjacent land-
      - The parcel numbers are shown; however, the owners of adjacent lands are not included on the preliminary site plan aka preliminary plat. **Owner names updated**
      - The adjacent subdivisions are labeled only. **Subdivision names remain the same**

   l. Existing and proposed topography at 2-foot contour intervals extending to 5-feet beyond project boundaries.
      - Neither the existing nor proposed grading plans show topo beyond the property boundaries. **Existing and Proposed Contours are now shown on the Grading Sheet**

   m. Location of any critical areas and critical area buffers to indicate compliance with all applicable provisions of the critical areas legislation
      - Show location of steep slopes. **Top of slope as well as a 10ft. setback are shown on PRE2.0**

   n. Description, location and size of existing and proposed utilities, storm drainage facilities and roads to serve the lots.

Sizes of utilities now called out on plans

- Sizes of existing and proposed utilities; water main, sewer main, and storm mains have not been shown.
- Sizes of proposed services/laterals; water, sewer, and storm have not been shown.

p. Regardless of height, are there any retaining walls planned? **No retaining walls currently planned, but lots 9 & 10 may need to become daylight foundations**

3. Per CMC 17.11.030.B.7.b, the proposed lots are to be shown on the existing topography plan sheet. **Existing contours are shown on the Preliminary Grading and Erosion Control Plan**
4. Per CMC 17.11.030.B.8, Preliminary stormwater plan and preliminary stormwater technical information (TIR) report is to be prepared in accordance with Ecology's SWMMWW.
    - A preliminary TIR was not submitted. **A Preliminary TIR will be included with this submittal**
5. Per CMC 17.11.030.B.11, Applicant shall furnish one set of mailing labels for all property owners
    - Mailing labels were not included. **Mailing Labels are now included.**
6. Per CMC 17.11.030.B.13, A narrative addressing ownership and maintenance of open spaces, stormwater facilities, public trails and critical areas, etc.
    - The narrative does not address ownership or maintenance. **Narrative updated**

Other preliminary project issues noted by staff to be addressed but are not completeness review items:

7. Preliminary plat plans:
    - CMC 17.11.030.12: The TIS Memo was prepared using the 11th Edition ITE manual. The 12th Edition ITE manual was issued in August 2025.
        - All TIS/A are to be prepared using the 12th Edition ITE manual. **Ok.**
    - CMC 17.11.030.14: An engineering estimate of costs for site improvements, both public and private. **An engineer's estimate will be submitted with Final Engineering.**
        - An engineer's estimate was not submitted with application.
        - Required by code but not considering a TC item. It is to be submitted with the Civil Construction Application.
    - The narrative states that the existing home on proposed Lot 12 will retain the existing well for irrigation purposes. Water and sewer services are to be extended from the future improvement of N 49th Circle to the future Lot 12. The existing septic system and the existing well are to be decommissioned prior to engineering plan approval and the water rights for the well are to be transferred to the city. **A water service line and a sanitary sewer force main have been extended through the existing driveway up to proposed Lot 12, and is shown on Sheet PRE4.0**
    - Are the 3 existing sheds (i.e. accessory structures) proposed for removal? If not, those will need to be located on the lot with the existing residential structure (proposed Lot 12). **The narrative has been updated and explains these 3 structures are slated for removal.**

Once the application is deemed complete, the City will begin its review of the project application and provide subsequent review comments. If you have any questions, please contact me at lhollenbeck@cityofcamas.us.

Respectfully,

Lauren Hollenbeck

Lauren Hollenbeck
Senior Planner

COMMUNITY DEVELOPMENT DEPARTMENT
616 NE 4th Avenue
Camas, WA 98607
www.ci.camas.wa.us

January 28, 2026

Scott Taylor
SGA Engineering
2005 Broadway Street
Vancouver, WA 98683

RE: Oliver Terrace Subdivision (SUB25-1010) 2nd application completeness review letter

Dear Mr. Taylor,

Thank you for your application resubmittal for the Oliver Terrace subdivision. There are items that remain to be addressed with your application. The purpose of this letter is to inform you that the above application resubmitted on January 15, 2026, has been deemed incomplete in accordance with Camas Municipal Code (CMC) Section 18.55.130. You have 180 days from the date of application to submit the missing information pursuant to CMC 18.55.130.C. If the below requested information is submitted, staff will again verify whether the application is complete.

Items necessary for completeness:

1. Per CMC 17.11.030.B.6(a-p), the following shall be included on the site and development plans:
    a. A plat meeting the standard identified in CMC Section 17.01.050,
        - A.4- Legal description of boundaries
        - B.4 (a-g), Land Inventory
            - This information needs to be shown on the preliminary plat.
    n. Description, location and size of existing and proposed utilities, storm drainage facilities and roads to serve the lots.
        - Sizes of existing and proposed utilities; water main, sewer main, and storm mains have not been shown-
            - The existing water main size from Lacamas Hills is not shown
        - Sizes of proposed services/laterals; water, sewer, and storm have not been shown.
            - The size of the proposed sanity force main is not shown
            - The proposed 4-inch water main is incorrect and is to be an 8-inch water main.
            - Required minimum 1-inch water services are not called out.
            - All services, water & sanitary are to be perpendicular to the mains. Not a TC item but will be a condition of approval.

Other preliminary project issues noted by staff to be addressed but are not completeness review items:

2. Preliminary plat plans:
    - CMC 17.11.030.12: The TIS Memo was prepared using the 11th Edition ITE manual. The 12th Edition ITE manual was issued in August 2025.
        - All TIS/A are to be prepared using the 12th Edition ITE manual.

  - There will be a condition of approval for a revised TIS memo prior to engineering approval.

- CMC 17.11.030.14: An engineering estimate of costs for site improvements, both public and private.
  - An engineer's estimate was not submitted with application.
  - Required by code but not considering a TC item. It is to be submitted with the Civil Construction Application.
  - It is to be submitted with the Civil Construction Application.

- The narrative states that the existing home on proposed Lot 12 will retain the existing well for irrigation purposes. Water and sewer services are to be extended from the future improvement of N 49th Circle to the future Lot 12. The existing septic system and the existing well are to be decommissioned prior to engineering plan approval and the water rights for the well are to be transferred to the city.
  - Applicant was informed by staff that the septic system and well are to be decommissioned with Phase 1 improvements.

- Are the 3 existing sheds (i.e. accessory structures) proposed for removal? If not, those will need to be located on the lot with the existing residential structure (proposed Lot 12).
  - This will be a condition of approval.

Once the application is deemed complete, the City will begin its review of the project application and provide subsequent review comments. If you have any questions, please contact me at lhollenbeck@cityofcamas.us.

Respectfully,

Lauren Hollenbeck

Lauren Hollenbeck
Senior Planner

COMMUNITY DEVELOPMENT DEPARTMENT
616 NE 4th Avenue
Camas, WA 98607
www.ci.camas.wa.us

January 28, 2026

Scott Taylor
SGA Engineering
2005 Broadway Street
Vancouver, WA 98683

SGA responses in GREEN
***In addition to these updates, the narrative has been updated to include a section regarding CMC 15.40 - Blasting.**

RE: Oliver Terrace Subdivision (SUB25-1010) 2nd application completeness review letter

Dear Mr. Taylor,

Thank you for your application resubmittal for the Oliver Terrace subdivision. There are items that remain to be addressed with your application. The purpose of this letter is to inform you that the above application resubmitted on January 15, 2026, has been deemed incomplete in accordance with Camas Municipal Code (CMC) Section 18.55.130. You have 180 days from the date of application to submit the missing information pursuant to CMC 18.55.130.C. If the below requested information is submitted, staff will again verify whether the application is complete.

Items necessary for completeness:

1. Per CMC 17.11.030.B.6(a-p), the following shall be included on the site and development plans:
   a. A plat meeting the standard identified in CMC Section 17.01.050,
      - A.4- Legal description of boundaries **Legal Description has been added to PRE2.0**
      - B.4 (a-g), Land Inventory
        - This information needs to be shown on the preliminary plat.

   n. Description, location and size of existing and proposed utilities, storm drainage facilities and roads to serve the lots.
      - Sizes of existing and proposed utilities; water main, sewer main, and storm mains have not been shown-
        - The existing water main size from Lacamas Hills is not shown **A label has been added to PRE4.0 calling out the existing 8" DI water main**
      - Sizes of proposed services/laterals; water, sewer, and storm have not been shown.
        - The size of the proposed sanity force main is not shown **6" Sizing added to PRE4.0**
        - The proposed 4-inch water main is incorrect and is to be an 8-inch water main. **Updated to an 8" callout on PRE4.0**
        - Required minimum 1-inch water services are not called out. **Label updated to call out 1" service on sheet PRE4.0**
        - All services, water & sanitary are to be perpendicular to the mains. Not a TC item but will be a condition of approval. **OK**

Other preliminary project issues noted by staff to be addressed but are not completeness review items:

2. Preliminary plat plans:
   - CMC 17.11.030.12: The TIS Memo was prepared using the 11th Edition ITE manual. The 12th Edition ITE manual was issued in August 2025.
     - All TIS/A are to be prepared using the 12th Edition ITE manual.

"I - Traffic Study by Kittleson" has been updated to match the 12th edition ITE manual.

- There will be a condition of approval for a revised TIS memo prior to engineering approval.

- CMC 17.11.030.14: An engineering estimate of costs for site improvements, both public and private.
  - An engineer's estimate was not submitted with application.
  - Required by code but not considering a TC item. It is to be submitted with the Civil Construction Application.

OK

- It is to be submitted with the Civil Construction Application.

- The narrative states that the existing home on proposed Lot 12 will retain the existing well for irrigation purposes. Water and sewer services are to be extended from the future improvement of N 49th Circle to the future Lot 12. The existing septic system and the existing well are to be decommissioned prior to engineering plan approval and the water rights for the well are to be transferred to the city.
  - Applicant was informed by staff that the septic system and well are to be decommissioned with Phase 1 improvements.

- Are the 3 existing sheds (i.e. accessory structures) proposed for removal? If not, those will need to be located on the lot with the existing residential structure (proposed Lot 12).
  - This will be a condition of approval.

3 sheds are slated for removal. PRE2.0 updated to reflect this in the plans.

Once the application is deemed complete, the City will begin its review of the project application and provide subsequent review comments. If you have any questions, please contact me at lhollenbeck@cityofcamas.us.

Respectfully,

Lauren Hollenbeck

Lauren Hollenbeck
Senior Planner

Narrative updated to indicate well to be fully decommissioned.

COMMUNITY DEVELOPMENT DEPARTMENT
616 NE 4th Avenue
Camas, WA 98607
www.ci.camas.wa.us

February 20, 2026

Scott Taylor
SGA Engineering
2005 Broadway Street
Vancouver, WA 98683

RE: Oliver Terrace Subdivision (SUB25-1010) technically complete review letter

Dear Mr. Taylor,

The purpose of this letter is to inform you that the above application resubmitted on February 6, 2026, has been **deemed complete** in accordance with the Camas Municipal Code (CMC) Section 18.55.130. Staff will begin reviewing the application and contact you with review comments and/or questions. Meanwhile, below are some preliminary review comments:

- CMC 17.11.030.8: Preliminary stormwater plan and preliminary stormwater technical information (TIR) report is to be prepared in accordance with Ecology's SWMMWW.
    - The preliminary TIR, dated January 14, 2026, references the City's CDSM and Ecology's 2024 SWMMWW on page 3, paragraph 2.
    - However, page 3, paragraph 3, Section B, references Chapter 1 of the Camas Stormwater Design Standards Manual. This manual was removed from the city's website in 2017. Ecology's 2024 SWMMWW, Figure 1-3.1 New Development is required to be used for determining the minimum requirements.
    - The rest of the TIR references the 2015 Clark County Stormwater Manual. Clark County's Stormwater Manual was not adopted nor is it applicable to the City of Camas.
- The revised TIR is to be submitted prior to engineering plan application.

Do not hesitate to reach out should you have any questions.

Respectfully,

Lauren Hollenbeck

Lauren Hollenbeck, Senior Planner

NOTICE OF APPLICATION FOR OLIVER TERRACE SUBDIVISION

(File no. SUB25-1010)

NOTICE IS HEREBY GIVEN that an application for "Oliver Terrace" a 12-lot single-family detached residential subdivision requesting preliminary plat approval was received on September 16, 2025, resubmitted February 6, 2026, and deemed technically complete on February 20, 2026. A public hearing is required for the development proposal and will be scheduled at a later date. A separate public notice for the public hearing will be mailed to all property owners within 300-feet of the subject development and published in the Post Record.

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Application Materials: The application included the following: project narrative, pre-application notes, preliminary plat plans, traffic study, tree survey, preliminary stormwater report, archaeological predetermination*, SEPA checklist, and critical area report. Application materials are available for review from the Community Development Department during regular business hours Monday – Friday 8am-5pm.

Questions/Comments: For questions related to this application, please contact Lauren Hollenbeck, Senior Planner, at (360) 817-7253 or by email at communitydevelopment@cityofcamas.us.

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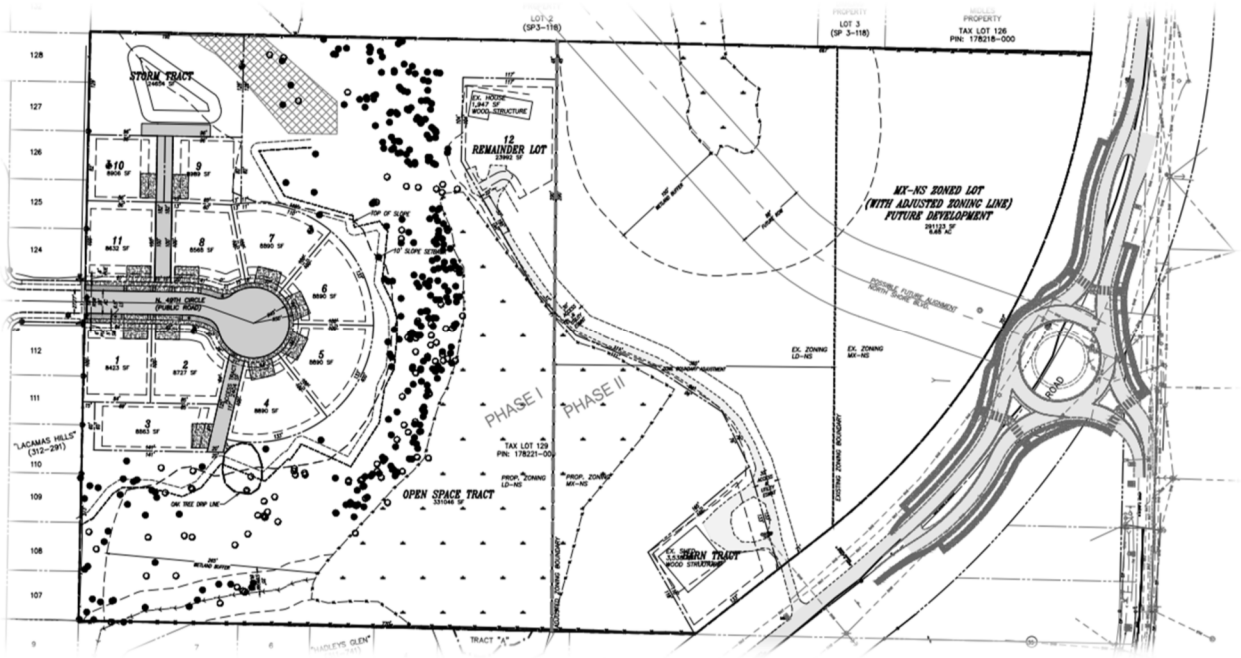
Published in the Post Record on March 5, 2026 Legal Publication #1084460
Posted at Camas City Hall, Camas Library, City of Camas website at: http://www.cityofcamas.us
Mailed to property owners within 300-feet on March 4, 2026

VICINITY MAP

CONCEPTUAL SITE PLAN



In re: Oliver Terrace

) NO. SUB25-1010
)
) AFFIDAVIT OF MAILING
)
)
)
)
)
Respondent.)

STATE OF WASHINGTON)
) ss.
CLARK COUNTY)

I, Carey Certo, on oath says:

I, Carey Certo, on March 5, 2026, I directed a true and correct copy of the Notice of Application be served upon the parties herein, in the above-entitled action, by depositing with the U.S. Post Office, Camas, Washington, a postage-prepaid envelope containing same addressed as follows: See attached list.

Carey Certo
SIGNATURE

SUBSCRIBED and SWORN to before me this 5th day of March, 2026.

Aireanna Baldwin
Notary Public
State of Washington
My Appointment Expires 10/1/2028
Commission Number 183848

Aireanna Baldwin
Notary Public in and for the State of Washington, residing at Clark County
My appointment expires: 10/1/2028

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Vancouver WA 98684

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Albany OR 97322

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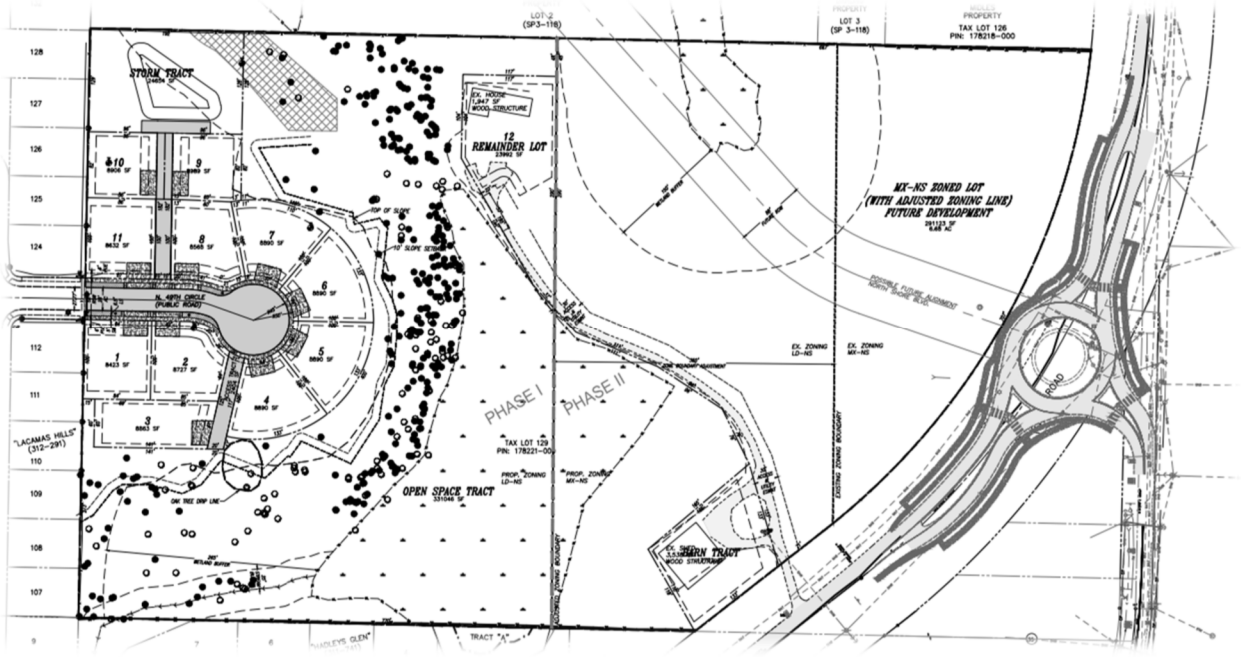

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Notice of Proposed Development

"Oliver Terrace Subdivision"

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Applications applied for with City:

Subdivison Type III review, critical areas review, Tree Plan review, SEPA checklist, Archaeological review, Fire Dept. review and major design review.

Public Hearing Schedule:

Hearing Date/Time: June 9th at 5pm

Hearing Location: 616 NE 4th Ave. Camas, WA 98607 or via Zoom.

For information regarding this project contact:

Applicant contact: Scott Taylor, 360-993-0911 or staylor@sgaengineering.com

City Contact: Lauren Hollenbeck, Planner, 360-817-817-7253 or LHollenbeck@cityofcamas.us

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OLIVER TERRACE SUBDIVISION

BEING A PORTION OF THE NORTHWEST QUARTER OF SECTION 35, TOWNSHIP 2 NORTH, RANGE 3 EAST OF THE WILLAMETTE MERIDIAN CLARK COUNTY, WASHINGTON

PRE-APPLICATION

MARCH 2025

APPLICANT:

HSR CAPITAL, LLC

ATTN: BRUCE ANDREW SWANSON

PH: 503-936-8514

EM: ANDY@HSR-CAPITAL.COM

PROPERTY OWNER:

THOMAS OLIVER

40304 NE 44TH ST

WASHOUGAL, WA 98671

PARCEL # & PROPERTY ADDRESS: 178221-000
1004 SE EVERETT RD, CAMAS, WA 98607

CONTACT PERSON:

SGA ENGINEERING, PLLC

ATTN: SCOTT TAYLOR

2005 BROADWAY STREET

VANCOUVER, WA 98663

PH: 360.993.0911

FX: 360.993.0912

EM: STAYLOR@SGAENGINEERING.COM

EXISTING SITE INFORMATION

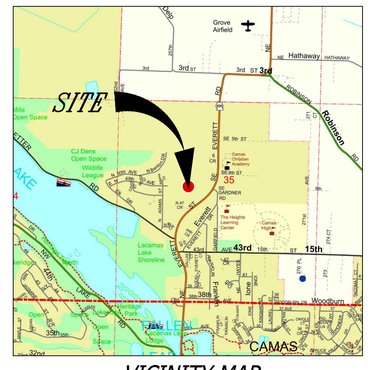
EXISTING PARCEL NUMBERS	178221-000
CURRENT USE	ONE EXISTING SINGLE-FAMILY HOME WITH OUT BUILDINGS
ZONING DESIGNATION	LD-NS & MX-NS
GROSS SITE AREA	*18.46* ACRES 804,224 S.F.
TRANSIT ROUTES	C-TRAN ROUTE DOES NOT RUN NEAR THE SITE.
EXISTING WATER AND SEWER	SEWER SERVICE WILL BE PROVIDED BY THE CITY OF CAMAS, PUBLIC WATER SERVICE WILL BE PROVIDED BY THE CITY OF CAMAS. NO SEPTIC SYSTEM IS KNOWN TO EXIST ON SITE. NO WELL IS KNOWN TO EXIST ON-SITE.

ENVIRONMENTAL CONDITIONS

THE SITE IS KNOWN TO CONTAINS SOME OF THE SIGNIFICANT ENVIRONMENTAL CONDITIONS LISTED IN THE APPLICATION CHECKLIST. THE SITE IS LOCATED IN THE LACAMAS CREEK WATERSHED. THE SITE IS MAPPED AS HAVING A HIGH PROBABILITY FOR ARCHAEOLOGICAL.

EXISTING CONDITIONS DISCLAIMER

THE EXISTING CONDITIONS SHOWN ON THIS PLAN WERE OBTAINED FROM INFORMATION PROVIDED BY PUBLIC RESOUCES. SGA ENGINEERING, PLLC DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION.



VICINITY MAP
NTS

X *- TREES TO BE REMOVED (68 TREES)*

-N-

0 80 160 240

Scale: 1" = 80'

SGA ENGINEERING & DESIGN

CIVIL ENGINEERING ~ LAND PLANNING
DEVELOPMENT SERVICES
LANDSCAPE ARCHITECTURE

2005 BROADWAY
VANCOUVER, WA 98663
PHONE (360)993-0911
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PRELIMINARY NOT FOR CONSTRUCTION — A PRELIMINARY PLAN IS A GRAPHIC REPRESENTATION OF A PROPOSED SUBDIVISION OR SHORT SUBDIVISION THAT SHOWS THE GENERAL LAYOUT OF LOTS, ROADS, AND UTILITIES. IT IS NOT A FINAL PLAN AND IS NOT SUITABLE FOR CONSTRUCTION. — 2005 REGISTERED PROFESSIONAL ENGINEER

EXISTING CONDITIONS

OLIVER TERRACE SUBDIVISION

CITY OF CAMAS *WASHINGTON*

PRELIMINARY

REVISIONS

DESIGNED BY:	*NDM*
DRAWN BY:	*NDM*
CHECKED BY:	*JAI*
SCALE:	*1" = 80'*

JOB NUMBER	*SHEET*
2452	*PRE1.0*

© SGA ENGINEERING PLLC - DATE PLOTTED: Sep. 10, 2025 - 10:12 AM SGA DRAWING FILE: W:\DWG\2452- OLIVER TERRACE\DRAWINGS\2-PRELIM SHEET SET\PRE1.0 - EXISTING CONDITIONS.DWG

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EM: ANDY@HSR-CAPITAL.COM	

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PROPOSED SITE INFORMATION

PROPOSED USE

SINGLE-FAMILY 14 LOT SUBDIVISION, MX-NS REMAINDER LOT W/ ZONING ADJUSTMENT

DEVELOPMENT STANDARDS

MINIMUM LOT AREA	5,250 SF MIN. ALLOWED
MAXIMUM LOT AREA	9,000 SF MAX LOT SIZE ALLOWED
MINIMUM LOT WIDTH	40' MIN. ALLOWED
MINIMUM LOT DEPTH	80' MIN. ALLOWED
FRONT YARD SETBACK	10' TO HOME, 18' TO GARAGE
STREET SIDE YARD SETBACK	10'
INTERIOR SIDE YARD SETBACK	5' MIN.
REAR YARD SETBACK	10'
MAXIMUM LOT COVERAGE	60%
MAXIMUM BUILDING HEIGHT	35'

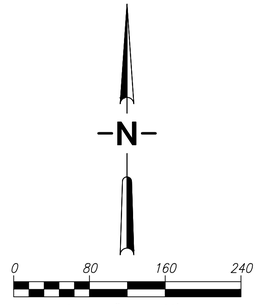
UTILITY PROVIDERS

SEWER	CITY OF CAMAS
WATER	CITY OF CAMAS
ELECTRICAL	CLARK PUBLIC UTILITIES

STORMWATER MANAGEMENT

TREATMENT	STORMWATER IS PROPOSED TO BE TREATED USING BIO-RETENTION FACILITIES OR OTHER APPROVED BMP'S
DISPOSAL	STORMWATER WILL BE INFILTRATED INTO THE GROUND WHERE FEASIBLE OR DETAINED AND RELEASED AT OR BELOW PRE-DEVELOPED RATES.

PROPOSED SITE AREA SUMMARY	***ACRES***	***S.F.***
GROSS SITE AREA	18.46	804224
NET SITE AREA (GROSS AREA-ROAD TRACTS & R/W)	18.08	787657
AVERAGE LOT AREA	0.20	8713
PUBLIC ROAD R/W	0.38	16567



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DEVELOPMENT SERVICES
LANDSCAPE ARCHITECTURE

2005 BROADWAY
VANCOUVER, WA 98663
PHONE (360)993-0911
FAX (360)993-0912

PRELIMINARY SITE PLAN

OLIVER TERRACE SUBDIVISION

CITY OF CAMAS WASHINGTON

PRELIMINARY

REVISIONS

DESIGNED BY:	NDM
DRAWN BY:	NDM
CHECKED BY:	JAI
SCALE:	1" = 80'

JOB NUMBER	SHEET
2452	PRE2.0

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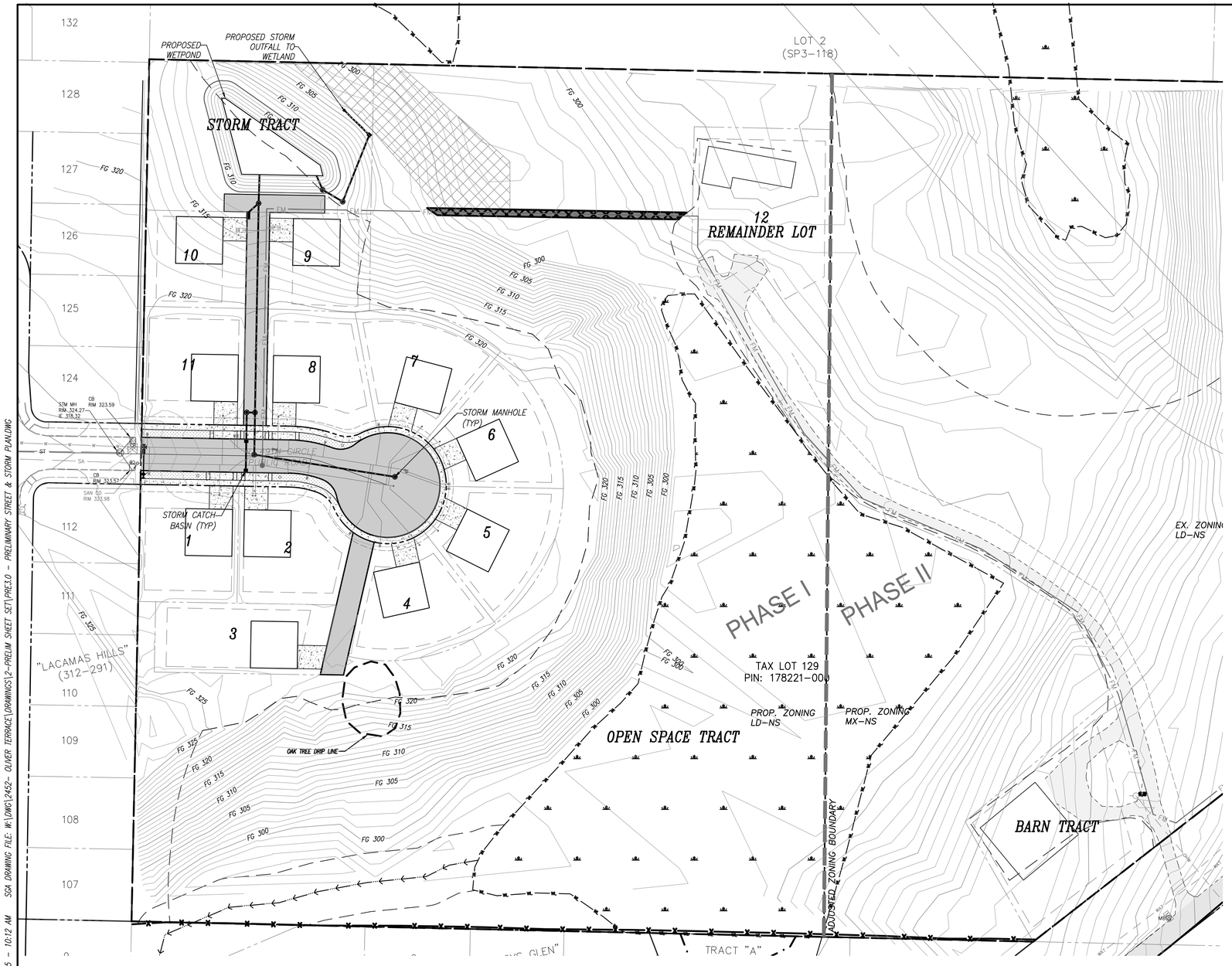
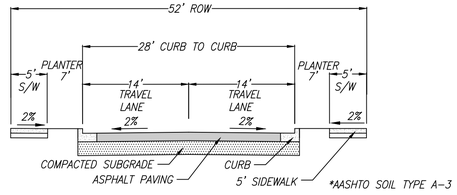
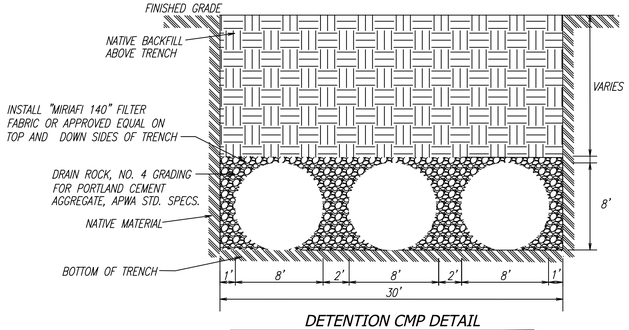




N 49TH CIRCLE (PUBLIC)

LOCAL RESIDENTIAL ACCESS
NO SCALE



DETENTION CMP DETAIL

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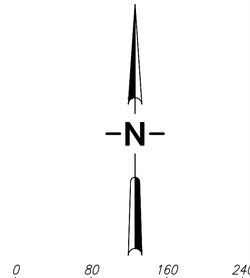

Scale: 1" = 80'

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PRELIMINARY NOT A CONSTRUCTION DOCUMENT
JOHN A. IVERSON 19905 REGISTERED PROFESSIONAL ENGINEER

PRELIMINARY STREET & STORM PLAN

OLIVER TERRACE SUBDIVISION

CITY OF CAMAS WASHINGTON

PRELIMINARY

REVISIONS

DESIGNED BY:	NDM
DRAWN BY:	NDM
CHECKED BY:	JAI
SCALE:	1" = 50'

JOB NUMBER	SHEET
2452	PRE3.0

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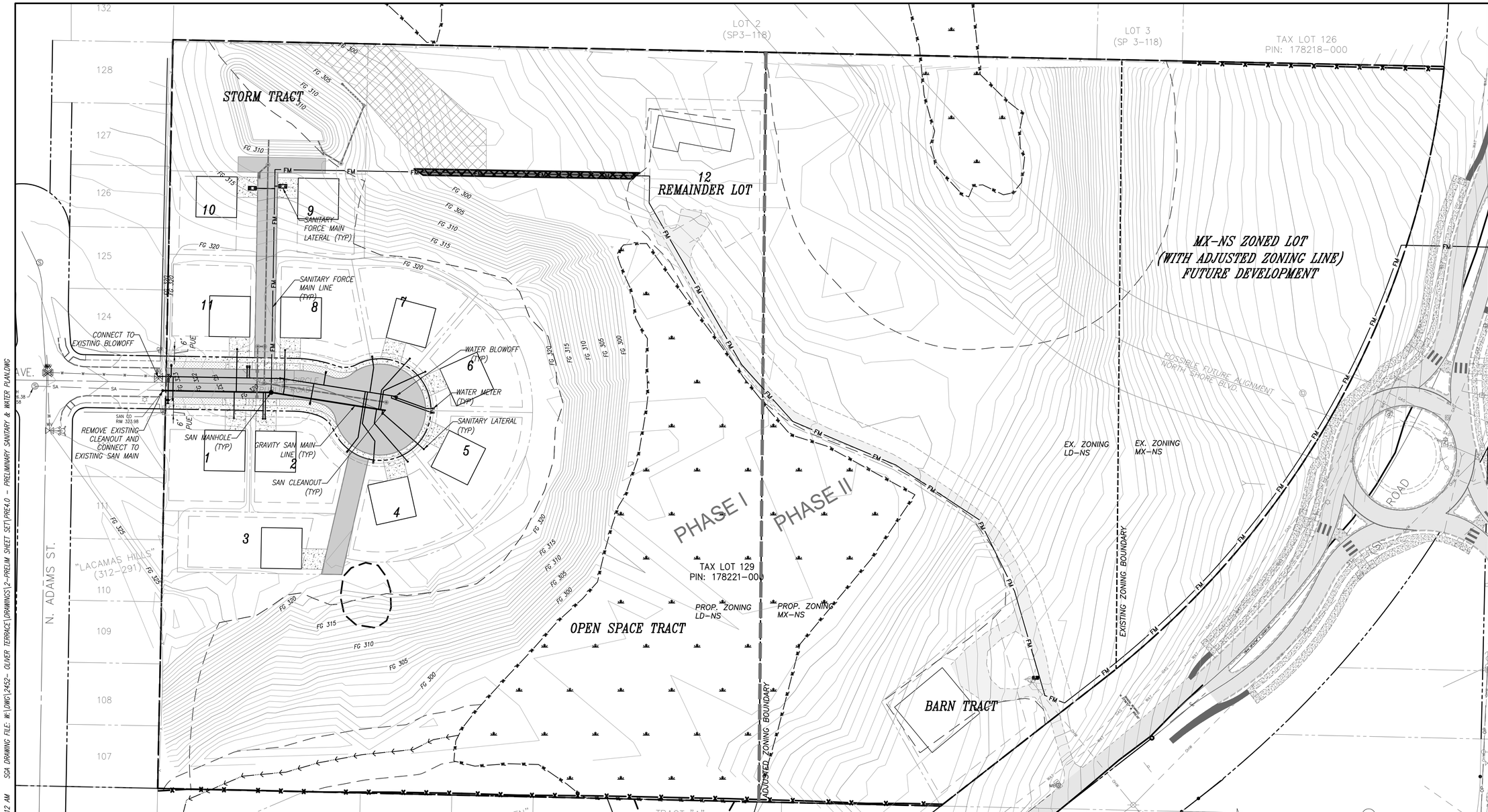

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PRELIMINARY NOT FOR CONSTRUCTION
NICHOLAS D. MARCHESI
OREGON
REGISTERED
PROFESSIONAL ENGINEER

OLIVER TERRACE SUBDIVISION

PRELIMINARY SANITARY AND WATER PLAN

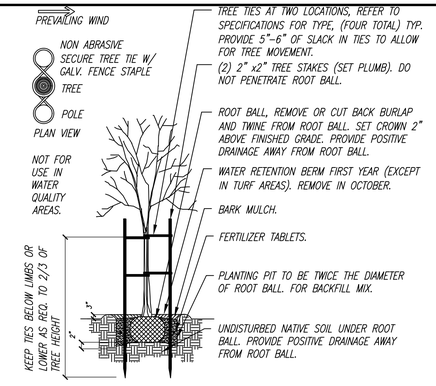
CITY OF CAMAS WASHINGTON

PRELIMINARY

REVISIONS

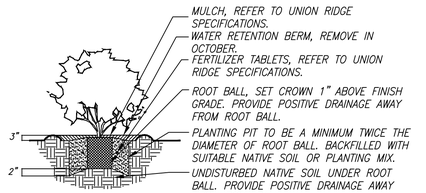
DESIGNED BY:	NDM
DRAWN BY:	NDM
CHECKED BY:	JAI
SCALE:	########

JOB NUMBER	SHEET
2452	PRE4.0



B&B Deciduous Tree Planting Details

NO SCALE



Shrub Planting Details

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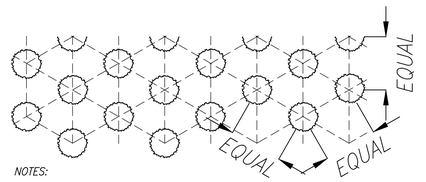

NOTES:

ALL GROUND COVER SHALL BE PLANTED AT EQUAL TRIANGULAR SPACING AS SPECIFIED IN PLANTING LEGEND. GROUND COVER TO BE LOCATED ONE HALF OF SPECIFIED SPACING DISTANCE FROM ANY HARD SURFACE, UNLESS OTHERWISE SPECIFIED. SPECIFICATIONS ARE INCLUDED WITHIN PLAN SHEETS, LANDSCAPE NOTES AND SPECIFICATIONS. REFER TO ALL PRIOR TO BIDDING AND CONSTRUCTION.

TIMELINE & NARRATIVE

TREES IN THE PUBLIC RIGHT OF WAY SHALL BE INSTALLED BY DEVELOPER OR BUILDER PRIOR TO ISSUING OF OCCUPANCY PERMIT FOR LOT ADJACENT TO RIGHT OF WAY IN QUESTION.

TREES ON INDIVIDUAL LOTS SHALL BE INSTALLED BY DEVELOPER OR BUILDER PRIOR TO ISSUING OF OCCUPANCY PERMIT FOR SAID LOT. TREES ARE EASILY DAMAGED DURING CONSTRUCTION AND SHOULD NOT BE INSTALLED UNTIL AFTER ALL DRIVEWAYS, SIDEWALKS AND HEAVY CONSTRUCTION ACTIVITIES ARE COMPLETED.

TREES SHALL BE WATERED AND MAINTAINED IN A HEALTHY CONDITION YEAR ROUND. EXISTING TREES SHALL BE PROTECTED FROM DAMAGE DURING AND FOLLOWING CONSTRUCTION. PRUNING AND OTHER MAINTENANCE SHALL BE PERFORMED BY INDIVIDUAL HOMEOWNERS OR THE HOMEOWNER'S ASSOCIATION.

LANDSCAPE NOTES

LANDSCAPING SHALL BE WATERED WITH AN IRRIGATION SYSTEM CAPABLE OF SUSTAINING THE PLANTINGS IN A HEALTHY CONDITION YEAR AROUND.

TREES AND OTHER PLANTINGS SHALL BE PRUNED, WATERED, FERTILIZED AND MAINTAINED IN A HEALTHY CONDITION.

APPROXIMATE LOCATIONS FOR TREES ARE SHOWN ON THE PLAN. EXACT LOCATIONS TO BE DETERMINED BY DEVELOPER OR BUILDER AFTER CONSTRUCTION OF DRIVEWAYS, SIDEWALKS AND BUILDINGS.

PLANT LEGEND

SYMBOL	PLANT NAME (SCIENTIFIC)	PLANT NAME (COMMON)	SIZE	SPACING	QUANTITY
TREES					
	Acer rubrum 'Autumn Flame'	Autumn Flame Maple	2" cal.	30' o.c. or as shown	12
MISCELLANEOUS					
	LANDSCAPE AREA: WOOD MULCH, ROCK, TURF GRASS				1,432 SF

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PRELIMINARY NOT FOR CONSTRUCTION

STATE OF WASHINGTON
LICENSED LANDSCAPE ARCHITECT

SCOTT A. TAYLOR
LICENSE NO. 1247
EXPIRES ON _____

PRELIMINARY LANDSCAPE PLAN

OLIVER TERRACE SUBDIVISION

CITY OF CAMAS WASHINGTON

PRELIMINARY

REVISIONS

DESIGNED BY:	NDM
DRAWN BY:	NDM
CHECKED BY:	JAI
SCALE:	########

JOB NUMBER	SHEET
2452	PRE5.0

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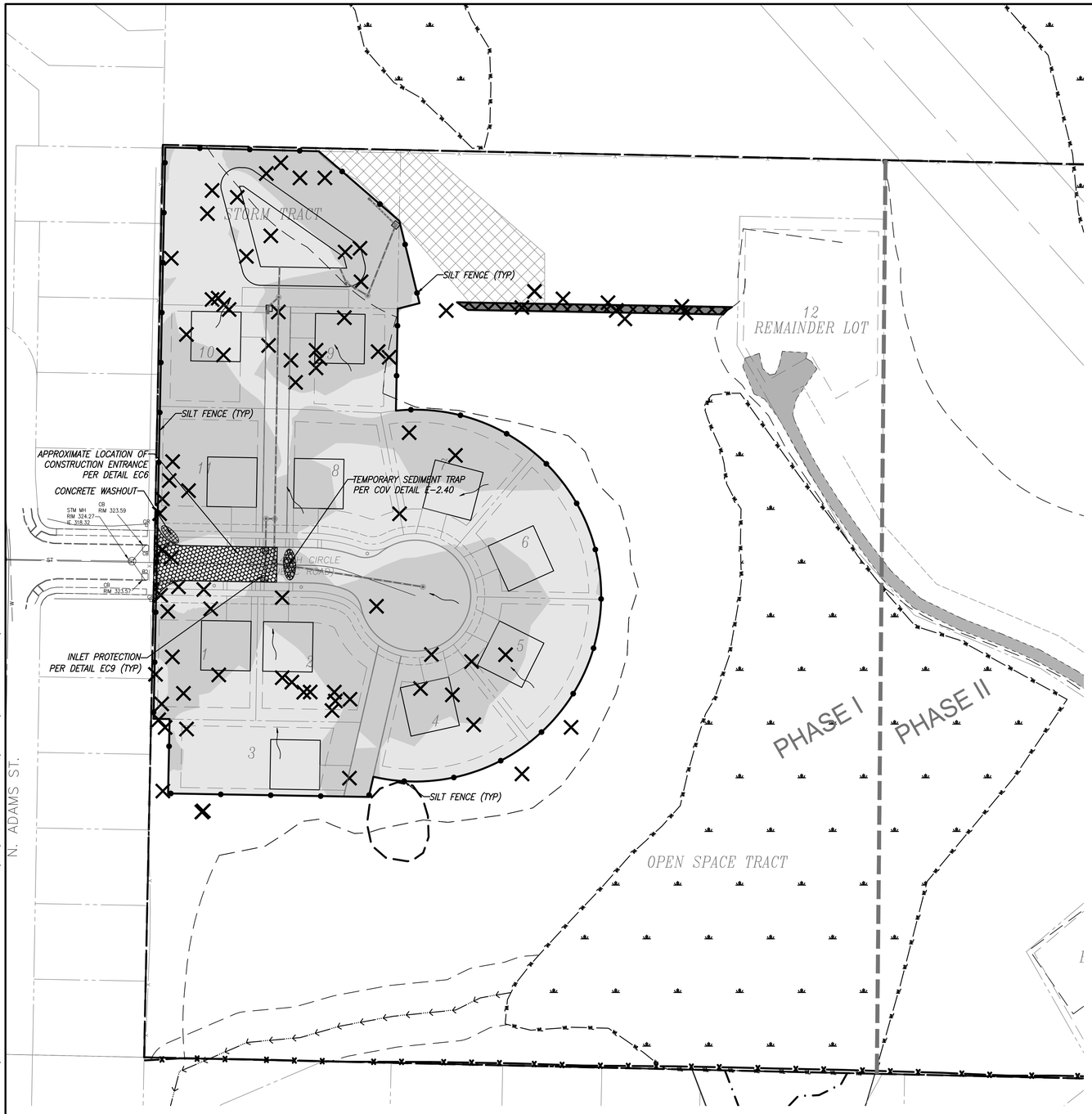


LEGEND

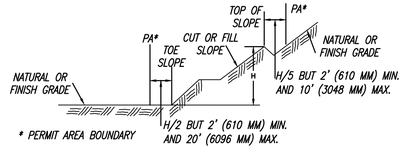
- FILL AREA
- CUT AREA
- FG 100 — FINISHED GRADE CONTOURS
- 100 — EXISTING MAJOR CONTOURS
- STABILIZED CONSTRUCTION ENTRANCE (PER DETAIL EC6)
- TEMPORARY SEDIMENTATION TRAP (PER DETAIL E22)
- TEMPORARY SILT FENCE (PER DETAIL EC12)
- TEMPORARY STRAW WADDLES (PER DETAIL EC14)
- FLOW ARROW
- WHEEL WASH (PER DETAIL EC7)
- TEMPORARY STORM INLET PROTECTION (PER DETAIL EC9)

DIRT QUANTITIES (CY)

ITEM	CUT	FILL
SITE GRADING	1,750	3,680
TRENCH SPOILS	TBD	---
IMPORT	1,930	
TOTAL	3,680	3,680

1. ASSUMED 1.00' FOR SITE STRIPPINGS PER GEOTECH RECOMMENDATIONS ACTUAL CONDITIONS MAY VARY AND WILL EFFECT THE STRIPPING VOLUME.
2. EXCESS TRENCH SPOILS WILL BE STOCKPILED PRIOR TO BEING HAULED OFF SITE OR MAY BE USED AS STRUCTURAL FILL.
3. STRIPPINGS WILL BE STOCKPILED PRIOR TO BEING HAULED OFF SITE OR MAY BE USED NON-STRUCTURAL FILL.

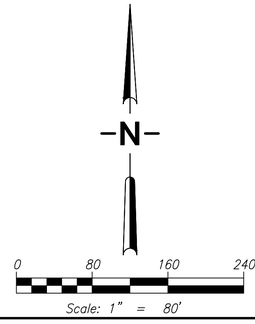
QUANTITIES DO NOT ACCOUNT FOR SHRINK AND SWELL FACTORS. ACTUAL MATERIAL QUANTITIES MAY VARY PER SOIL TYPE, SOIL CONDITIONS, & CONSTRUCTION PRACTICES.



NOTE: GRADING ACTIVITIES MUST BE AT LEAST TWO (2) FEET AWAY FROM PROPERTY BOUNDARIES

IBC APPENDIX J GRADING DETAIL

NO SCALE



Scale: 1" = 80'

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PRELIMINARY GRADING & EROSION CONTROL PLAN

OLIVER TERRACE SUBDIVISION

CITY OF CAMAS WASHINGTON

PRELIMINARY

REVISIONS

DESIGNED BY:	NDM
DRAWN BY:	NDM
CHECKED BY:	JAI
SCALE:	1" = 50'

JOB NUMBER	SHEET
2452	PRE6.0

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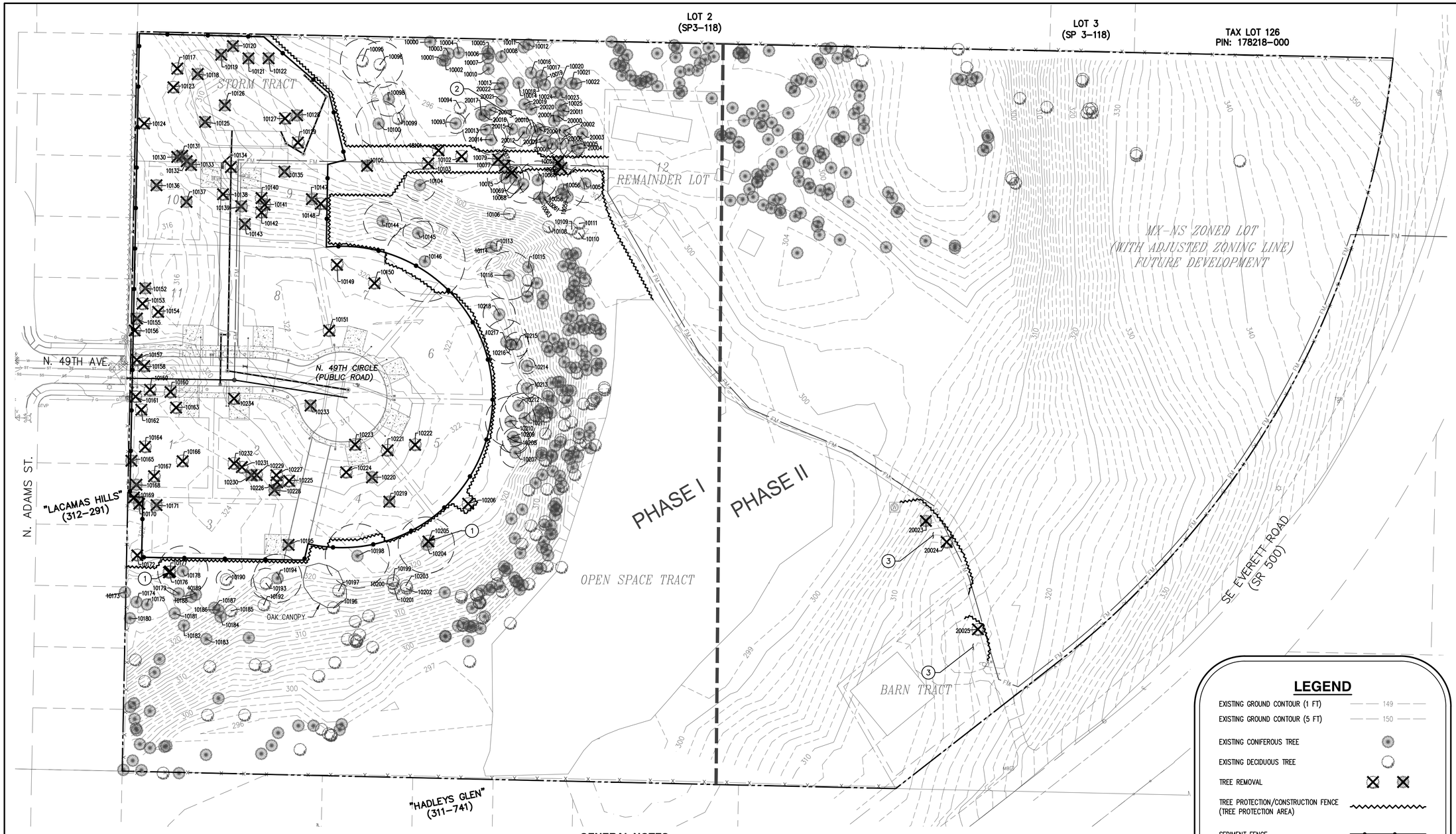

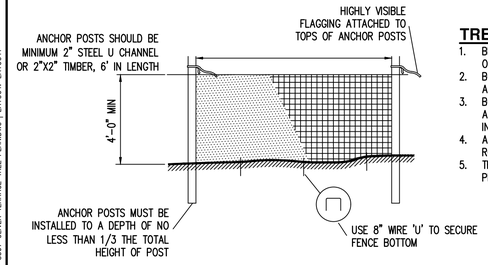

PLASTIC MESH TREE PROTECTION FENCE
NOT TO SCALE

TREE PROTECTION FENCE NOTES

1. BLAZE ORANGE OR BLUE PLASTIC MESH FENCE FOR TREE PROTECTION DEVICE, ONLY.
2. BOUNDARIES OF PROTECTION AREA WILL BE ESTABLISHED IN THE FIELD BY THE ARBORIST PRIOR TO CONSTRUCTION
3. BOUNDARIES OF PROTECTION AREA SHOULD BE STAKED AND FLAGGED BY THE ARBORIST, OR UNDER THE SUPERVISION OF THE ARBORIST, PRIOR TO INSTALLING DEVICES.
4. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
5. TREE PROTECTION TO BE INSTALLED PRIOR TO CONSTRUCTION AND REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED.

GENERAL NOTES

1. TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO DEMOLITION AND SITE GRADING ACTIVITIES. SEE DETAIL ON THIS SHEET.
2. SEE PROJECT SUPPLEMENTAL ARBORIST REPORT FOR THE DETAILED TREE INVENTORY (DATED AUGUST 2025).
3. SEE SHEET TP2 FOR TREE PROTECTION NOTES.
4. ONLY TREES WITH ASSIGNED NUMBERS WERE EVALUATED AND USED FOR TREE UNIT CALCULATIONS.
5. SOIL MITIGATION AND ENHANCEMENT MAY BE NECESSARY POST CONSTRUCTION TO ENHANCE COMPACTED SOILS AROUND TREE BASE AND ENCOURAGE TREE HEALTH.
6. THE PROJECT ARBORIST MAY REQUIRE ALTERNATIVE CONSTRUCTION MATERIALS OR METHODS DURING CONSTRUCTION TO PROTECT AND AVOID REMOVAL OF SOME ROOT SYSTEMS.
7. VARIOUS TREES EXHIBIT FORMS OF HEALTH CONCERNS OR STRUCTURAL DEFECTS, AS NOTED IN THE TREE TABLE (SEE SUPPLEMENTAL ARBORIST REPORT), THAT CURRENTLY PRESENT MINIMAL CONCERNS; HOWEVER, IT IS RECOMMENDED TO MONITOR THESE TREES OVER TIME AS ADDITIONAL MITIGATION OPTIONS MAY BE WARRANTED IF THE HEALTH AND/OR STRUCTURAL CONDITIONS WORSEN. WE RECOMMEND USING A CERTIFIED ARBORIST FOR FUTURE MONITORING.
8. SURVEYED TREE LOCATIONS AND PROJECT DEVELOPMENT PROVIDED BY OTHERS. AKS ARBORISTS PROVIDED VISUAL INSPECTION TO VERIFY APPROXIMATE LOCATION OF ON-SITE TREES.

TREE PLAN

SITE AREA:	9.93 AC
SITE AREA EXCLUDING OPEN SPACE:	3.77 AC
TOTAL TREE UNITS REQUIRED (3.77AC X 30):	113
EXISTING TREES RETAINED/(TREE UNITS):	117/(592)
PROPOSED SITE TREES/(TREE UNITS):	12/(12)
TOTAL TREE UNITS: (RETAINED AND PROPOSED)	604

NOTE: SEE LANDSCAPING PLAN (PRE5.0) FOR PROPOSED TREE PLANTING PLAN

LEGEND

- EXISTING GROUND CONTOUR (1 FT) — 149
- EXISTING GROUND CONTOUR (5 FT) — 150
- EXISTING CONIFEROUS TREE
- EXISTING DECIDUOUS TREE
- TREE REMOVAL
- TREE PROTECTION/CONSTRUCTION FENCE (TREE PROTECTION AREA)
- SEDIMENT FENCE
- ASSUMED TREE ROOT ZONE (1-FT RADIUS PER 1-IN OF DBH)

TREE PROTECTION KEYED NOTES:

1. ARBORIST OBSERVATION REQUIRED DURING TREE REMOVAL BEHIND TREE PROTECTION FENCE.
2. SOME DEAD TREES IN THIS AREA NOT SHOWN ON THE SURVEY. ADDITIONAL ARBORIST REVIEW IS RECOMMENDED DURING FINAL ENGINEERING DESIGN.
3. ARBORIST OBSERVATION RECOMMENDED DURING UTILITY TRENCHING IN THIS AREA. TREE PRESERVATION OR REMOVAL TO BE DETERMINED BY THE PROJECT ARBORIST BASED ON ROOT IMPACTS OBSERVED DURING CONSTRUCTION. TREE REMOVAL IS LIKELY BASED ON PROPOSED DESIGN.

CERTIFIED ARBORIST — PRELIMINARY NOT FOR CONSTRUCTION — ISA
BENNETT R. KOCSIS
CERTIFICATE NUMBER: PN 8877A
EXPIRATION DATE: 12/31/2025

AKS ENGINEERING & FORESTRY, LLC
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OLIVER TERRACE SUBDIVISION
CAMAS WASHINGTON
SE 1/4, SEC 35, T2N, R5E, WM
178221-000

TREE PRESERVATION AND REMOVAL PLAN

DESIGNED BY:	BRK
DRAWN BY:	BRK
MANAGED BY:	BDH
CHECKED BY:	BDH
DATE: 08/27/2025	

REVISIONS

JOB NUMBER 8397

SHEET **TP1**

AKS DRAWING FILE: 8397 OLIVER TERRACE TREE PLAN.DWG | LAYOUT: LAYOUT1

TREE PROTECTION NOTES

A. PLACING MATERIALS NEAR TREES – NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE PROTECTED AREA OF ANY TREE DESIGNATED TO REMAIN, INCLUDING, BUT NOT LIMITED TO, PARKING EQUIPMENT, PLACING SOLVENTS, STORING BUILDING MATERIALS AND SOIL DEPOSITS, DUMPING CONCRETE WASHOUT, ETC.

B. ATTACHMENTS TO TREES – DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY OBJECT TO ANY TREE DESIGNATED FOR PROTECTION.

C. PROTECTIVE BARRIER – BEFORE DEVELOPMENT, LAND CLEARING, FILLING OR ANY LAND ALTERATION FOR WHICH A TREE REMOVAL PERMIT IS REQUIRED, THE CONTRACTOR:

C.A. SHALL ERECT AND MAINTAIN READILY VISIBLE PROTECTIVE TREE FENCING ALONG THE OUTER EDGE AND COMPLETELY SURROUNDING THE PROTECTED AREA OF ALL PROTECTED TREES OR GROUP OF TREES. FENCES SHALL BE CONSTRUCTED PER THE DETAIL ON THIS SHEET.

C.B. MAY BE REQUIRED TO COVER WITH MULCH TO A DEPTH OF AT LEAST SIX (6) INCHES OR WITH PLYWOOD OR SIMILAR MATERIAL IN THE AREAS ADJOINING THE CRITICAL ROOT ZONE OF A TREE IN ORDER TO PROTECT ROOTS FROM DAMAGE CAUSED BY HEAVY EQUIPMENT.

C.C. SHALL PROHIBIT EXCAVATION OR COMPACTING OF EARTH OR OTHER POTENTIALLY DAMAGING ACTIVITIES WITHIN THE BARRIERS.

C.D. MAY BE REQUIRED TO MINIMIZE ROOT DAMAGE BY EXCAVATING A TWO (2) FOOT DEEP TRENCH, AT EDGE OF CRITICAL ROOT ZONE, TO CLEANLY SEVER THE ROOTS OF TREES TO BE RETAINED. ROOTS ONE (1) INCH DIAMETER OR GREATER SHALL BE CLEANLY CUT WITH A SAW OR PRUNERS.

C.E. MAY BE REQUIRED TO HAVE CORRECTIVE PRUNING PERFORMED ON PROTECTED TREES IN ORDER TO AVOID DAMAGE FROM MACHINERY OR BUILDING ACTIVITY. MAY BE REQUIRED TO MAINTAIN TREES THROUGHOUT THE CONSTRUCTION PERIOD BY WATERING AND FERTILIZING.

C.F. SHALL MAINTAIN THE PROTECTIVE BARRIERS IN PLACE UNTIL THE PROJECT ARBORIST AUTHORIZES THEIR REMOVAL OR A FINAL CERTIFICATE OF OCCUPANCY IS ISSUED, WHICHEVER OCCURS FIRST.

C.G. SHALL ENSURE THAT ANY LANDSCAPING DONE IN THE PROTECTED ZONE SUBSEQUENT TO THE REMOVAL OF THE BARRIERS SHALL BE ACCOMPLISHED WITH LIGHT MACHINERY OR HAND LABOR.

D. GRADE

D.A. THE GRADE SHALL NOT BE ELEVATED OR REDUCED WITHIN THE CRITICAL ROOT ZONE OF TREES TO BE PRESERVED WITHOUT THE PROJECT ARBORISTS'S AUTHORIZATION. THE PROJECT ARBORIST MAY ALLOW COVERAGE OF UP TO ONE HALF OF THE AREA OF THE TREE'S CRITICAL ROOT ZONE WITH LIGHT SOILS (NO CLAY) TO THE MINIMUM DEPTH NECESSARY TO CARRY OUT GRADING OR LANDSCAPING PLANS, IF IT WILL NOT IMPERIL THE SURVIVAL OF THE TREE. AERATION DEVICES MAY BE REQUIRED TO ENSURE THE TREE'S SURVIVAL.

D.B. IF THE GRADE ADJACENT TO A PRESERVED TREE IS RAISED SUCH THAT IT COULD SLOUGH OR ERODE INTO THE TREES CRITICAL ROOT ZONE, IT SHALL BE PERMANENTLY STABILIZED TO PREVENT SUFFOCATION OF THE ROOTS.

D.C. THE APPLICANT SHALL NOT INSTALL AN IMPERVIOUS SURFACE WITHIN THE CRITICAL ROOT ZONE OF ANY TREE TO BE RETAINED WITHOUT THE AUTHORIZATION OF THE PROJECT ARBORIST. THE PROJECT ARBORIST MAY REQUIRE SPECIFIC CONSTRUCTION METHODS AND/OR USE OF AERATION DEVICES TO ENSURE THE TREE'S SURVIVAL AND TO MINIMIZE THE POTENTIAL FOR ROOT INDUCED DAMAGE TO THE IMPERVIOUS SURFACE.

D.D. TO THE GREATEST EXTENT PRACTICAL, UTILITY TRENCHES SHALL BE LOCATED OUTSIDE OF THE CRITICAL ROOT ZONE OF TREES TO BE RETAINED. THE PROJECT ARBORIST MAY REQUIRE THAT UTILITIES BE TUNNELED UNDER THE ROOTS OF TREES TO BE RETAINED IF THE PROJECT ARBORIST DETERMINES THAT TRENCHING WOULD SIGNIFICANTLY REDUCE THE CHANCES OF THE TREE'S SURVIVAL.

D.E. TREE AND OTHER VEGETATION TO BE RETAINED SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. CLEARING OPERATIONS SHALL BE CONDUCTED SO AS TO EXPOSE THE SMALLEST PRACTICAL AREA OF SOIL TO EROSION FOR THE LEAST POSSIBLE TIME. TO CONTROL EROSION, SHRUBS, GROUND COVER, AND STUMPS SHALL BE MAINTAINED ON THE INDIVIDUAL LOTS, WHERE FEASIBLE. WHERE NOT FEASIBLE, APPROPRIATE EROSION CONTROL PRACTICES SHALL BE IMPLEMENTED PURSUANT TO CMC CHAPTER 14.06.

E. DIRECTIONAL FELLING OF TREES SHALL BE USED TO AVOID DAMAGE TO TREES DESIGNATED FOR RETENTION.

F. ADDITIONAL REQUIREMENTS – THE PROJECT ARBORIST MAY REQUIRE ADDITIONAL TREE PROTECTION MEASURES WHICH ARE CONSISTENT WITH ACCEPTED URBAN FORESTRY PRACTICES.

G. ENCROACHMENT INTO THE ROOT PROTECTION ZONE IS ALLOWED WITH PROJECT ARBORIST APPROVAL AS DESCRIBED IN THE FOLLOWING NOTES:

G.A. EXCAVATION IN THE TOP 24 INCHES OF THE SOIL IN THE CRITICAL ROOT ZONE AREA SHOULD BEGIN AT THE EXCAVATION LINE THAT IS CLOSEST TO THE TREE.

G.B. THE EXCAVATION SHOULD BE DONE BY HAND/SHOVEL OR WITH A BACKHOE AND A MAN WITH A SHOVEL, PRUNING SHEARS, AND A PRUNING SAW.

G.C. IF DONE BY HAND, ALL ROOTS 1 INCH OR LARGER SHOULD BE PRUNED AT THE EXCAVATION LINE.

G.D. IF DONE WITH BACKHOE (MOST LIKELY SCENARIO), THEN THE OPERATOR SHALL START THE CUT AT THE EXCAVATION LINE AND CAREFULLY "FEEL" FOR ROOT/RESISTANCE. WHEN THERE IS RESISTANCE, THE MAN WITH THE SHOVEL HAND DIGS AROUND THE ROOTS AND PRUNES THE ROOTS LARGER THAN 1 INCH DIAMETER.

G.E. THE BACKHOE IS TO REMAIN OFF OF THE TREE ROOTS TO BE PRESERVED AT ALL TIMES.

G.F. ALL ROOTS SHALL BE CUT CLEANLY WITH PRUNING SHEARS OR A PRUNING SAW.

G.G. PROJECT ARBORIST MUST BE ONSITE DURING ANY WORK WITHIN THE TREE ROOT PROTECTION ZONE.

G.H. CITY OFFICIAL MUST BE CONTACTED 24 HOURS PRIOR TO WORKING WITHIN THE TREE ROOT PROTECTION ZONE.

H. TREE PROTECTION ZONE IS DEFINED AS ALL AREAS BOUND AND PROTECTING THE OPTIMAL TREE PROTECTION ZONE.

I. TIMELINE FOR CLEARING, GRADING, AND INSTALLATION OF TREE PROTECTION MEASURES: WORK WILL BEGIN IMMEDIATELY FOLLOWING FINAL APPROVAL BY THE CITY. TREE PROTECTION MEASURES WILL BE DONE DURING CLEARING AND ANY GRADING WILL FOLLOW.

J. PRUNING/TREE REMOVAL NOTES: THE WORK TO BE COMPLETED UNDER THIS PROJECT SHALL CONSIST OF TREE REMOVAL AND TREE TRIMMING AS LISTED.

J.A. THE CONTRACTOR SHALL PROVIDE ADEQUATE CREW OF MEN, EQUIPMENT AND MATERIALS TO SAFELY AND EFFICIENTLY COMPLETE THE ASSIGNED WORK. EACH SUCH CREW SHALL INCLUDE AN INDIVIDUAL WHO SHALL BE DESIGNATED AS THE CREW SUPERVISOR AND WHO SHALL BE RESPONSIBLE FOR THE CREW'S ACTIVITIES AND WHO SHALL RECEIVE INSTRUCTION FROM THE OWNER OR THE OWNER'S REPRESENTATIVE AND DIRECT THE CREW TO ACCOMPLISH SUCH WORK.

J.B. WHENEVER A TREE, WHICH IS NOT SCHEDULED TO BE REMOVED, MUST BE TRIMMED OR PRUNED, THE CONTRACTOR SHALL INSURE THAT SUCH TRIMMING AND PRUNING IS CARRIED OUT UNDER THE DIRECT SUPERVISION OF A LICENSED ARBORIST. ALL PRUNING AND TRIMMING SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF ANSI A 300 "STANDARD PRACTICES FOR TREE, SHRUB AND OTHER WOODY PLANT MAINTENANCE".

J.C. THE CONTRACTOR SHALL BE REQUIRED TO CUT TREES TO A HEIGHT OF APPROXIMATELY 12". THE STUMPS AND ROOTS SHALL BE GROUND DOWN A MINIMUM OF TWELVE (12) INCHES BELOW NORMAL GROUND LEVEL.

J.D. THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE LATEST GOVERNMENTAL SAFETY REGULATIONS. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ANSI Z133.1 "PRUNING, TRIMMING, REPAIRING, MAINTAINING AND REMOVING TREES AND CUTTING BRUSH–SAFETY REQUIREMENTS" WITH SPECIAL EMPHASIS GIVEN TO THE REQUIREMENT THAT ONLY QUALIFIED LINE–CLEARANCE TREE TRIMMERS BE ASSIGNED TO WORK WHERE A POTENTIAL ELECTRICAL HAZARD EXISTS.

J.E. THE CONTRACTOR SHALL MAKE ALL THE NECESSARY ARRANGEMENTS WITH ANY UTILITY THAT MUST BE PROTECTED OR RELOCATED IN ORDER TO ACCOMPLISH THE WORK. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PROTECTION OF THE OPERATING CONDITION OF ALL ACTIVE UTILITIES WITHIN THE AREA OF CONSTRUCTION AND THEY SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING UTILITIES.

J.F. ANY MATERIAL RESULTING FROM THE TRIMMING OR REMOVAL OF ANY TREES SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR.

J.G. HAZARDOUS TREES–REPORTING – ANY PERSON ENGAGED IN TRIMMING OR PRUNING WHO BECOMES AWARE OF A TREE OF DOUBTFUL STRENGTH, THAT COULD BE DANGEROUS TO PERSONS AND PROPERTY, SHALL REPORT SUCH TREE(S) TO THE OWNER OR THE OWNERS REPRESENTATIVE. SUCH TREES SHALL INCLUDE THOSE THAT ARE OVER MATURE, DISEASED, OR SHOWING SIGNS OF DECAY OR OTHER STRUCTURAL WEAKNESS.

J.H. DAMAGES–ANY DAMAGE CAUSED BY THE CONTRACTOR, INCLUDING, BUT NOT LIMITED TO, BROKEN SIDEWALK, CURB, RUTTED LAWN, BROKEN WATER SHUT–OFFS, WIRE DAMAGE, BUILDING DAMAGE, STREET DAMAGE, ETC., WILL BE REPAIRED OR REPLACED IN A TIMELY MANNER, TO THE OWNER'S SATISFACTION, AND ALL COSTS PAID BY THE CONTRACTOR.

J.I. ANY BRUSH CLEARING REQUIRED WITHIN THE TREE PROTECTION ZONE SHALL BE ACCOMPLISHED WITH HAND OPERATED EQUIPMENT.

J.J. TREES TO BE REMOVED SHALL BE FELLED SO AS TO FALL AWAY FROM TREE ROOT PROTECTION ZONES AND TO AVOID PULLING AND BREAKING OF ROOTS TO REMAIN.

J.K. ALL DOWNED BRUSH AND TREES SHALL BE REMOVED FROM THE TREE PROTECTION ZONE EITHER BY HAND OR WITH EQUIPMENT SITTING OUTSIDE THE TREE ROOT PROTECTION ZONE. EXTRACTION SHALL OCCUR BY LIFTING THE MATERIAL OUT, NOT BY SKIDDING IT ACROSS THE GROUND.

J.L. IF TEMPORARY HAUL OR ACCESS ROADS MUST PASS OVER THE ROOT AREA OF TREES TO BE RETAINED A ROADBED OF 6 INCHES OF MULCH OR GRAVEL SHALL BE CREATED TO PROTECT THE SOIL. THE ROADBED MATERIAL SHALL BE REPLENISHED AS NECESSARY TO MAINTAIN A 6–INCH DEPTH.

J.M. PRUNING. TREES SHALL BE PRUNED PRIOR TO THE START OF CONSTRUCTION. TREES SHALL BE CROWN CLEANED TO REMOVE THE DEADWOOD 2 INCHES IN DIAMETER AND OVER. TREES SHALL BE CROWN THINNED BY 10–20%. CROWNS MAY BE RAISED BY REMOVING BOTTOM BRANCHES AS NECESSARY UP TO 14 FEET HIGH TO GIVE CLEARANCE FOR ANY CONSTRUCTION TRAFFIC, ACTIVITIES, ETC. ALL WORK TO BE DONE IN ACCORDANCE WITH ANSI A300 PRUNING STANDARDS. REMOVE ANY LIMBS OF DOUBTFUL STRENGTH THAT COULD BE DANGEROUS TO PERSONS AND PROPERTY.

CERTIFIED ARBORIST ISA

PRELIMINARY NOT FOR CONSTRUCTION

BENNETT R. KOCSIS
CERTIFICATE NUMBER: PN 8877A
EXPIRATION DATE: 12/31/2025

AKS ENGINEERING & FORESTRY, LLC
9600 NE 126TH AVE., STE 2520
VANCOUVER, WA 98682
360.882.0419
WWW.AKS-ENG.COM

ENGINEERING - SURVEYING - NATURAL RESOURCES
FORESTRY - PLANNING - LANDSCAPE ARCHITECTURE

OLIVER TERRACE SUBDIVISION

CAMAS WASHINGTON
SE 1/4, SEC 35, T2N, R5E, WM
17821-000

TREE PRESERVATION AND REMOVAL NOTES

DESIGNED BY:	BRK
DRAWN BY:	BRK
MANAGED BY:	BDH
CHECKED BY:	BDH

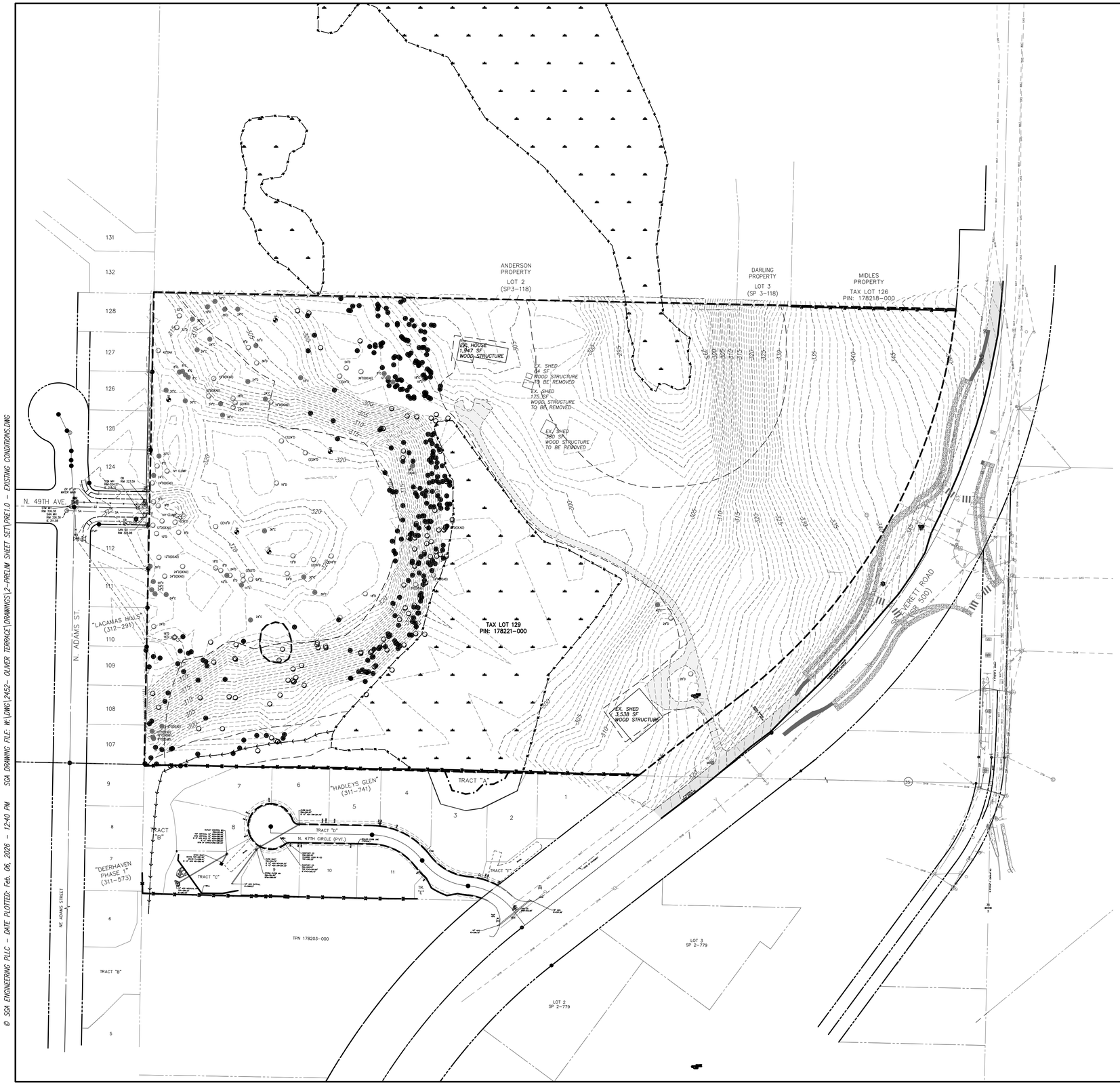
DATE: 08/27/2025

REVISIONS

JOB NUMBER
8397

SHEET
TP2

AKS DRAWING FILE: 8397 OLIVER TERRACE TREE PLAN.DWG | LAYOUT: LAYOUT1 (2)



OLIVER TERRACE SUBDIVISION

BEING A PORTION OF THE NORTHWEST QUARTER OF SECTION 35, TOWNSHIP 2 NORTH, RANGE 3 EAST OF THE WILLAMETTE MERIDIAN CLARK COUNTY, WASHINGTON

PRE-APPLICATION

MARCH 2025

APPLICANT:	***PROPERTY OWNER:***
HSR CAPITAL, LLC	THOMAS OLIVER
ATTN: BRUCE ANDREW SWANSON	40304 NE 44TH ST
PH: 503-936-8514	WASHOUGAL, WA 98671
EM: ANDY@HSR-CAPITAL.COM	

PARCEL # & PROPERTY ADDRESS: 178221-000
1004 SE EVERETT RD, CAMAS, WA 98607

CONTACT PERSON:

SGA ENGINEERING, PLLC
ATTN: SCOTT TAYLOR
2005 BROADWAY STREET
VANCOUVER, WA 98663
PH: 360.993.0911
FX: 360.993.0912
EM: STAYLOR@SGAENGINEERING.COM

EXISTING SITE INFORMATION

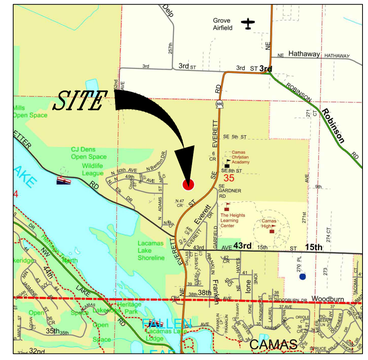
EXISTING PARCEL NUMBERS	178221-000
CURRENT USE	ONE EXISTING SINGLE-FAMILY HOME WITH OUT BUILDINGS
ZONING DESIGNATION	LD-NS & MX-NS
GROSS SITE AREA	*18.46* ACRES 804,224 S.F.
TRANSIT ROUTES	C-TRAN ROUTE DOES NOT RUN NEAR THE SITE.
EXISTING WATER AND SEWER	SEWER SERVICE WILL BE PROVIDED BY THE CITY OF CAMAS, PUBLIC WATER SERVICE WILL BE PROVIDED BY THE CITY OF CAMAS. NO SEPTIC SYSTEM IS KNOWN TO EXIST ON SITE. NO WELL IS KNOWN TO EXIST ON-SITE.

ENVIRONMENTAL CONDITIONS

THE SITE IS KNOWN TO CONTAINS SOME OF THE SIGNIFICANT ENVIRONMENTAL CONDITIONS LISTED IN THE APPLICATION CHECKLIST. THE SITE IS LOCATED IN THE LACAMAS CREEK WATERSHED. THE SITE IS MAPPED AS HAVING A HIGH PROBABILITY FOR ARCHAEOLOGICAL.

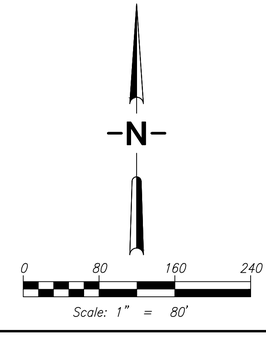
EXISTING CONDITIONS DISCLAIMER

THE EXISTING CONDITIONS SHOWN ON THIS PLAN WERE OBTAINED FROM INFORMATION PROVIDED BY PUBLIC RESOUCES. SGA ENGINEERING, PLLC DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION.



VICINITY MAP
NTS

X - TREES TO BE REMOVED (68 TREES)



SGA ENGINEERING & DESIGN
CIVIL ENGINEERING ~ LAND PLANNING
DEVELOPMENT SERVICES
LANDSCAPE ARCHITECTURE

2005 BROADWAY
VANCOUVER, WA 98663
PHONE (360)993-0911
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EXISTING CONDITIONS

OLIVER TERRACE SUBDIVISION

CITY OF CAMAS WASHINGTON

PRELIMINARY

REVISIONS

DESIGNED BY:	NDM
DRAWN BY:	NDM
CHECKED BY:	JAI
SCALE:	1" = 80'

JOB NUMBER	SHEET
2452	PRE1.0

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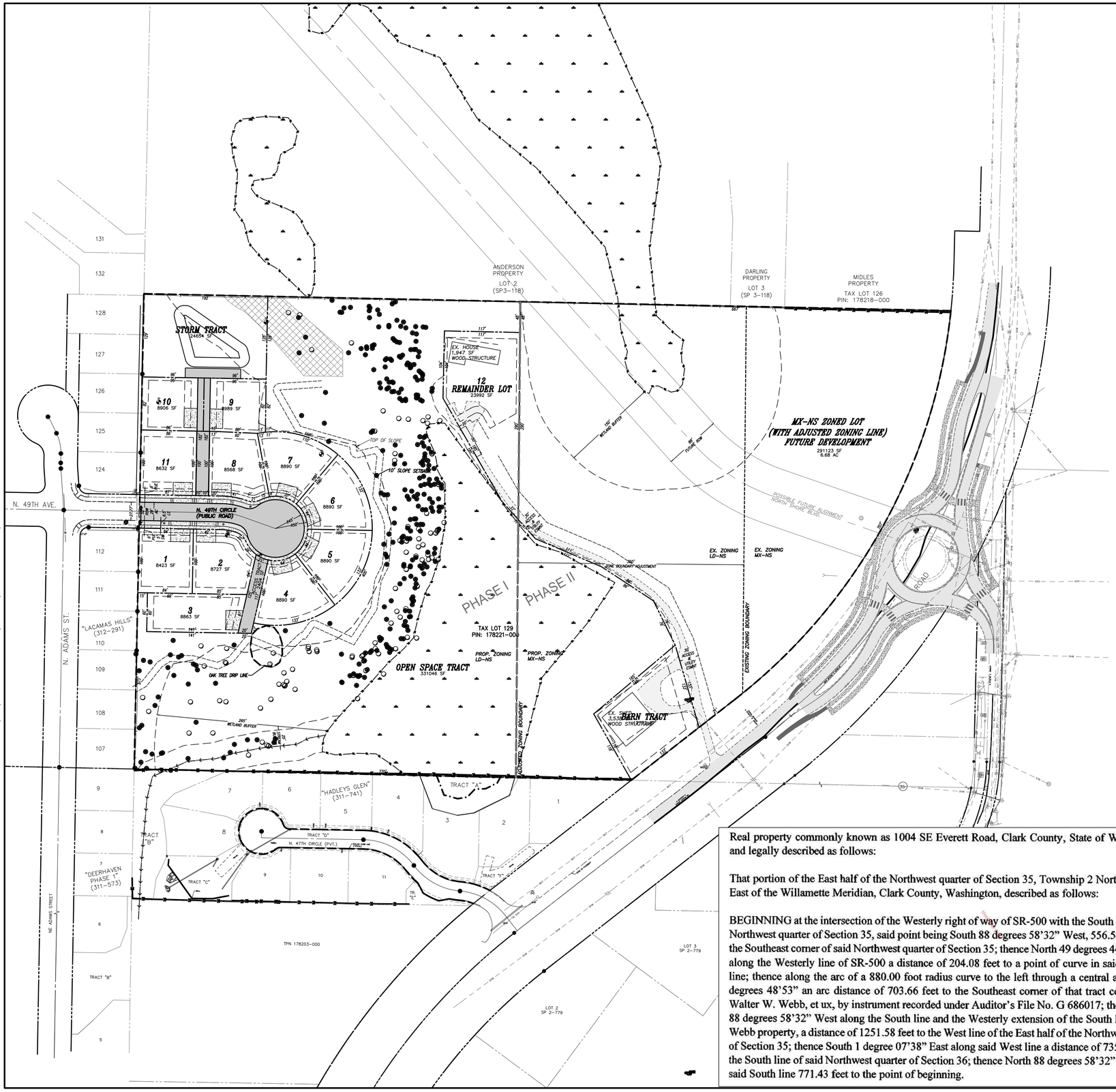

OLIVER TERRACE SUBDIVISION

BEING A PORTION OF THE NORTHWEST QUARTER OF SECTION 35, TOWNSHIP 2 NORTH, RANGE 3 EAST OF THE WILLAMETTE MERIDIAN CLARK COUNTY, WASHINGTON

PRE-APPLICATION

MARCH 2025

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EM: ANDY@HSR-CAPITAL.COM	

PARCEL # & PROPERTY ADDRESS: 178221-000, 1004 SE EVERETT RD, CAMAS, WA 98607

CONTACT PERSON:

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ATTN: SCOTT TAYLOR
2005 BROADWAY STREET
VANCOUVER, WA 98663
PH: 360.993.0911
FX: 360.993.0912
EM: STAYLOR@SGAENGINEERING.COM

EXISTING SITE INFORMATION

EXISTING PARCEL NUMBERS	178221-000
CURRENT USE	ONE EXISTING SINGLE-FAMILY HOME WITH OUT BUILDINGS
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EXISTING CONDITIONS DISCLAIMER

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PROPOSED SITE INFORMATION

PROPOSED USE

SINGLE-FAMILY 14 LOT SUBDIVISION, MX-NS REMAINDER LOT W/ ZONING ADJUSTMENT

DEVELOPMENT STANDARDS

MINIMUM LOT AREA	5,250 SF MIN. ALLOWED
MAXIMUM LOT AREA	9,000 SF MAX LOT SIZE ALLOWED
MINIMUM LOT WIDTH	40' MIN. ALLOWED
MINIMUM LOT DEPTH	80' MIN. ALLOWED
FRONT YARD SETBACK	10' TO HOME, 20' TO GARAGE
STREET SIDE YARD SETBACK	10'
INTERIOR SIDE YARD SETBACK	5' MIN.
REAR YARD SETBACK	10'
MAXIMUM LOT COVERAGE	60%
MAXIMUM BUILDING HEIGHT	35'

UTILITY PROVIDERS

SEWER	CITY OF CAMAS
WATER	CITY OF CAMAS
ELECTRICAL	CLARK PUBLIC UTILITIES

STORMWATER MANAGEMENT

TREATMENT	STORMWATER IS PROPOSED TO BE TREATED USING BIO-RETENTION FACILITIES OR OTHER APPROVED BMP'S
DISPOSAL	STORMWATER WILL BE INFILTRATED INTO THE GROUND WHERE FEASIBLE OR DETAINED AND RELEASED AT OR BELOW PRE-DEVELOPED RATES.

PROPOSED SITE AREA SUMMARY	***ACRES***	***S.F.***
GROSS SITE AREA	18.46	804224
NET SITE AREA (GROSS AREA-ROAD TRACTS & R/W)	18.08	787657
AVERAGE LOT AREA	0.20	8713
PUBLIC ROAD R/W	0.38	16567

432550 SF OR 9.93 AC GROSS SITE AREA ZONED LD-NS
162403 SF OR 3.73 AC NET DEVELOPMENT AREA (GROSS - O.S. AND CRITICAL AREAS)
MAX. DENSITY ALLOWED = 5.8 DU/NET ACRE
(12 LOTS) / (3.73 AC) = 3.2 DU/AC PROPOSED

LAND INVENTORY:
TOTAL ACREAGE = 18.46 AC
TOTAL DEVELOPED ACREAGE = 3.73 AC
TOTAL LOT AREA = 9.41 AC
TOTAL INFRASTRUCTURE ACREAGE = 1.05 AC
TOTAL TRACT AREA = 8.01 AC
TOTAL ACREAGE OF CRITICAL AREAS = 2.84 AC
TOTAL ACREAGE OF RECREATIONAL OPEN SPACES = 0 AC

Real property commonly known as 1004 SE Everett Road, Clark County, State of Washington, and legally described as follows:

That portion of the East half of the Northwest quarter of Section 35, Township 2 North, Range 3 East of the Willamette Meridian, Clark County, Washington, described as follows:

BEGINNING at the intersection of the Westerly right of way of SR-500 with the South line of said Northwest quarter of Section 35, said point being South 88 degrees 58'32" West, 556.54 feet from the Southeast corner of said Northwest quarter of Section 35; thence North 49 degrees 44'35" East, along the Westerly line of SR-500 a distance of 204.08 feet to a point of curve in said Westerly line; thence along the arc of a 880.00 foot radius curve to the left through a central angle of 45 degrees 48'53" an arc distance of 703.66 feet to the Southeast corner of that tract conveyed to Walter W. Webb, et ux, by instrument recorded under Auditor's File No. G 686017; thence South 88 degrees 58'32" West along the South line and the Westerly extension of the South line of said Webb property, a distance of 1251.58 feet to the West line of the East half of the Northwest quarter of Section 35; thence South 1 degree 07'38" East along said West line a distance of 735.20 feet to the South line of said Northwest quarter of Section 36; thence North 88 degrees 58'32" East along said South line 771.43 feet to the point of beginning.

SGA ENGINEERING & DESIGN
CIVIL ENGINEERING ~ LAND PLANNING
DEVELOPMENT SERVICES
LANDSCAPE ARCHITECTURE

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VANCOUVER, WA 98663
PHONE (360)993-0911
FAX (360)993-0912

PRELIMINARY NOT FOR CONSTRUCTION — SCOTT A. TAYLOR — 21505 — REGISTERED PROFESSIONAL ENGINEER

PRELIMINARY SITE PLAN

OLIVER TERRACE SUBDIVISION

CITY OF CAMAS WASHINGTON

PRELIMINARY

REVISIONS

DESIGNED BY:	NDM
DRAWN BY:	NDM
CHECKED BY:	JAI
SCALE:	1" = 80'

JOB NUMBER	SHEET
2452	PRE2.0

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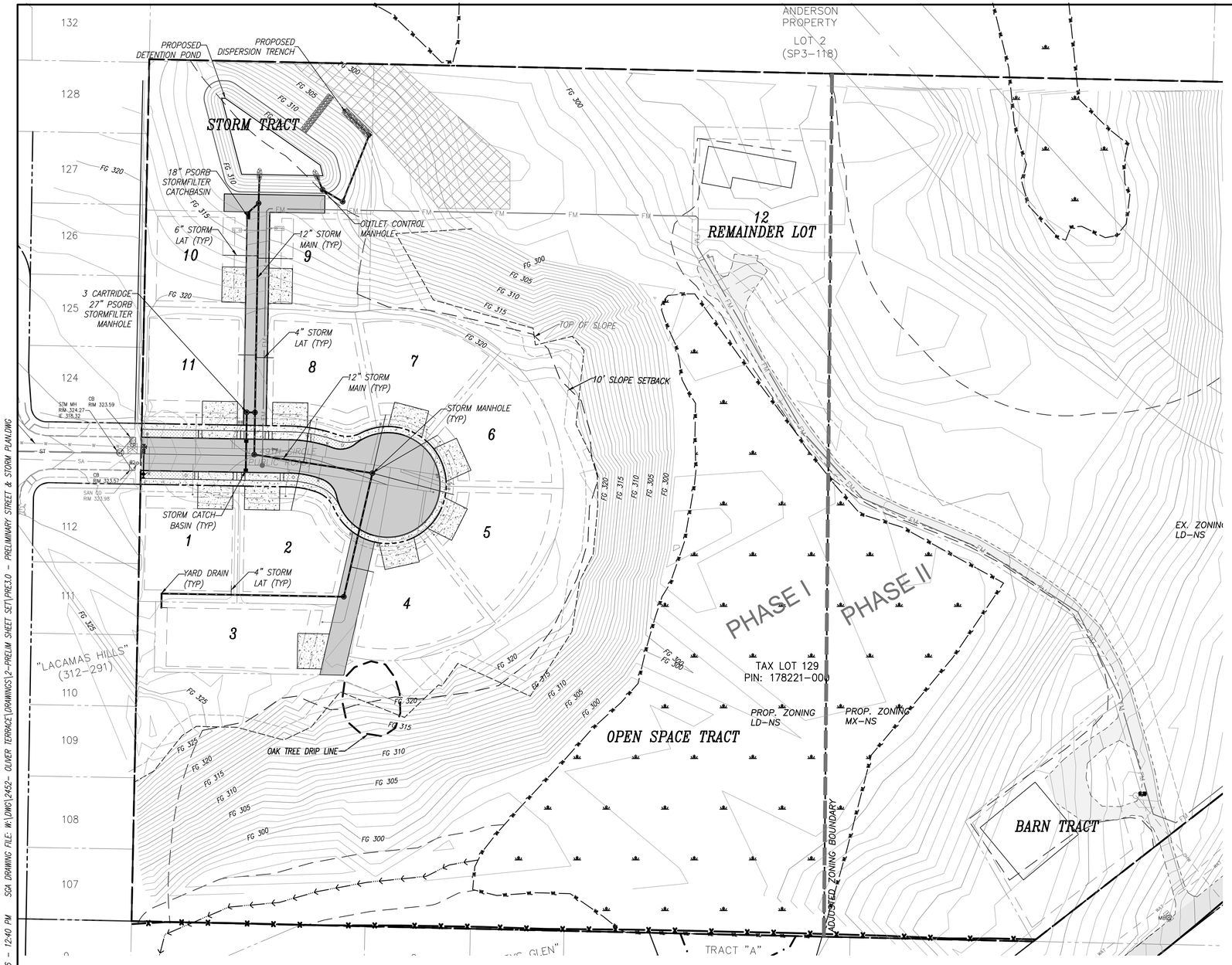

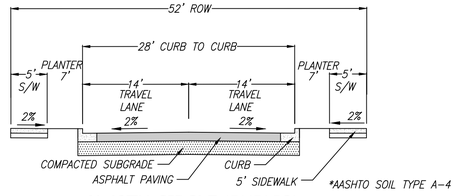

N 49TH CIRCLE (PUBLIC)

LOCAL RESIDENTIAL ACCESS – PER DETAIL ST3
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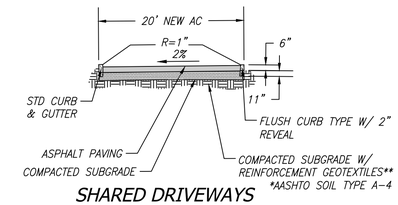

SHARED DRIVEWAYS

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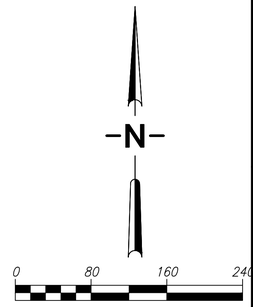

Scale: 1" = 80'

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DEVELOPMENT SERVICES
LANDSCAPE ARCHITECTURE

2005 BROADWAY
VANCOUVER, WA 98663
PHONE (360)993-0911
FAX (360)993-0912

PRELIMINARY

NOT FOR CONSTRUCTION

JASON A. IVERSON
EXPIRES 10-10-2026
REGISTERED PROFESSIONAL ENGINEER

PRELIMINARY STREET & STORM PLAN

OLIVER TERRACE SUBDIVISION

CITY OF CAMAS WASHINGTON

PRELIMINARY

REVISIONS

DESIGNED BY:	NDM
DRAWN BY:	NDM
CHECKED BY:	JAI
SCALE:	1" = 50'

JOB NUMBER	SHEET
2452	PRE3.0

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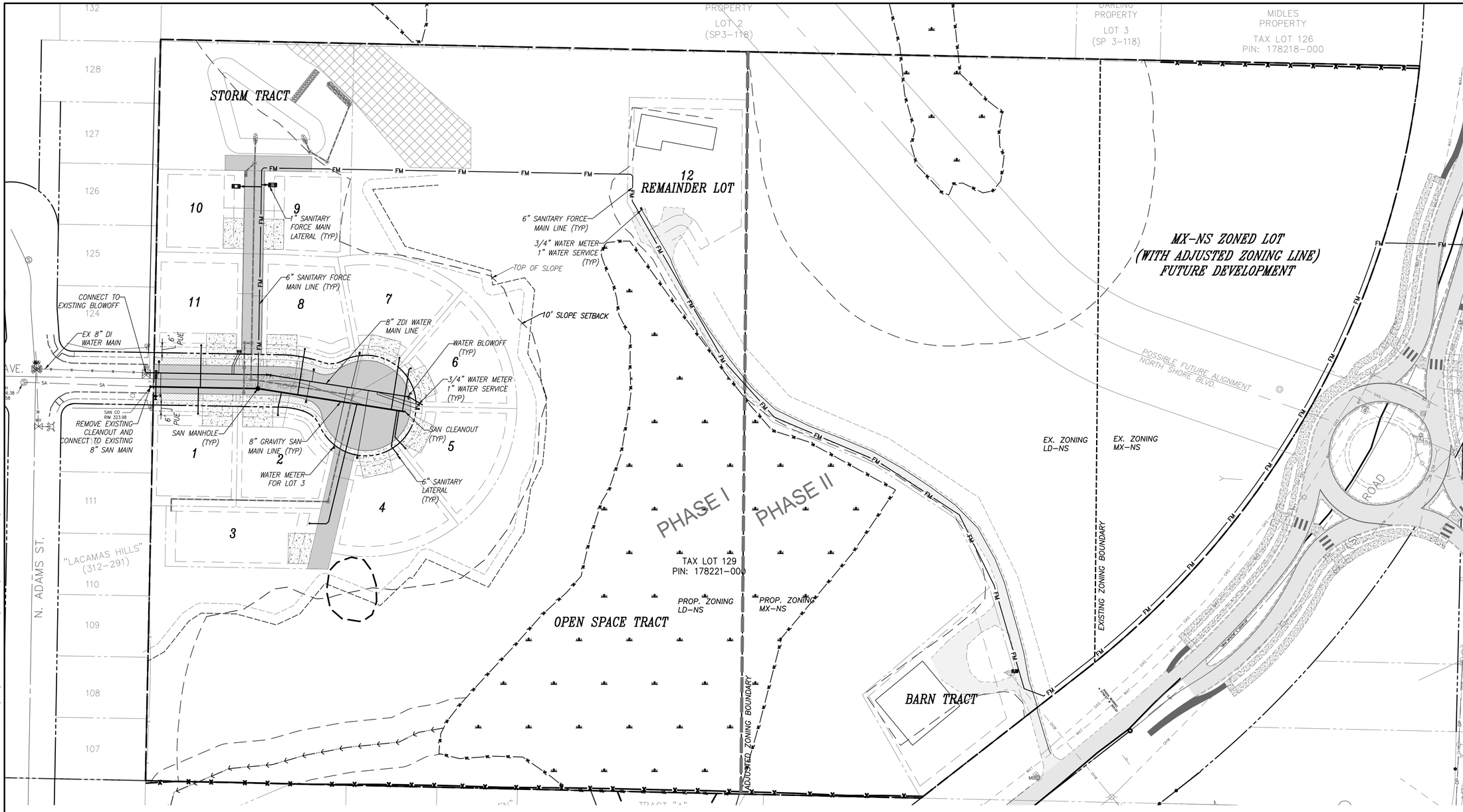

SCA ENGINEERING & DESIGN
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DEVELOPMENT SERVICES
LANDSCAPE ARCHITECTURE
2005 BROADWAY
VANCOUVER, WA 98663
PHONE (360)993-0911
FAX (360)993-0912

PRELIMINARY
NOT A CONSTRUCTION DOCUMENT
JOHN A. IVERSON
STATE OF WASHINGTON
REGISTERED
PROFESSIONAL ENGINEER

OLIVER TERRACE SUBDIVISION

PRELIMINARY SANITARY AND WATER PLAN

CITY OF CAMAS WASHINGTON

PRELIMINARY

REVISIONS

DESIGNED BY:	NDM
DRAWN BY:	NDM
CHECKED BY:	JAI
SCALE:	1" = 50'

JOB NUMBER 2452

SHEET PRE4.0

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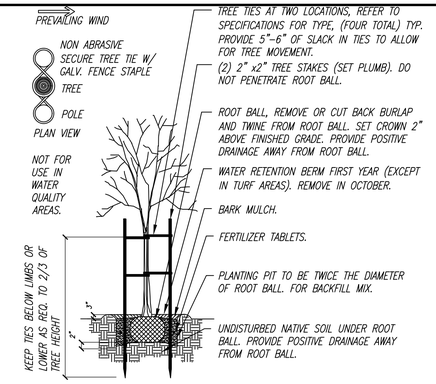
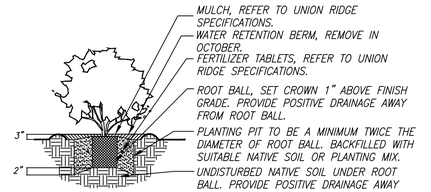


B&B Deciduous Tree Planting Details

NO SCALE



Shrub Planting Details

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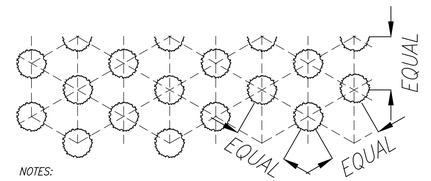

NOTES:

ALL GROUND COVER SHALL BE PLANTED AT EQUAL TRIANGULAR SPACING AS SPECIFIED IN PLANTING LEGEND. GROUND COVER TO BE LOCATED ONE HALF OF SPECIFIED SPACING DISTANCE FROM ANY HARD SURFACE, UNLESS OTHERWISE SPECIFIED. SPECIFICATIONS ARE INCLUDED WITHIN PLAN SHEETS, LANDSCAPE NOTES AND SPECIFICATIONS. REFER TO ALL PRIOR TO BIDDING AND CONSTRUCTION.

TIMELINE & NARRATIVE

TREES IN THE PUBLIC RIGHT OF WAY SHALL BE INSTALLED BY DEVELOPER OR BUILDER PRIOR TO ISSUING OF OCCUPANCY PERMIT FOR LOT ADJACENT TO RIGHT OF WAY IN QUESTION.

TREES ON INDIVIDUAL LOTS SHALL BE INSTALLED BY DEVELOPER OR BUILDER PRIOR TO ISSUING OF OCCUPANCY PERMIT FOR SAID LOT. TREES ARE EASILY DAMAGED DURING CONSTRUCTION AND SHOULD NOT BE INSTALLED UNTIL AFTER ALL DRIVEWAYS, SIDEWALKS AND HEAVY CONSTRUCTION ACTIVITIES ARE COMPLETED.

TREES SHALL BE WATERED AND MAINTAINED IN A HEALTHY CONDITION YEAR ROUND. EXISTING TREES SHALL BE PROTECTED FROM DAMAGE DURING AND FOLLOWING CONSTRUCTION. PRUNING AND OTHER MAINTENANCE SHALL BE PERFORMED BY INDIVIDUAL HOMEOWNERS OR THE HOMEOWNER'S ASSOCIATION.

LANDSCAPE NOTES

LANDSCAPING SHALL BE WATERED WITH AN IRRIGATION SYSTEM CAPABLE OF SUSTAINING THE PLANTINGS IN A HEALTHY CONDITION YEAR AROUND.

TREES AND OTHER PLANTINGS SHALL BE PRUNED, WATERED, FERTILIZED AND MAINTAINED IN A HEALTHY CONDITION.

APPROXIMATE LOCATIONS FOR TREES ARE SHOWN ON THE PLAN. EXACT LOCATIONS TO BE DETERMINED BY DEVELOPER OR BUILDER AFTER CONSTRUCTION OF DRIVEWAYS, SIDEWALKS AND BUILDINGS.

PLANT LEGEND

SYMBOL	PLANT NAME (SCIENTIFIC)	PLANT NAME (COMMON)	SIZE	SPACING	QUANTITY
TREES					
	Acer rubrum 'Autumn Flame'	Autumn Flame Maple	2" cal.	30' o.c. or as shown	12
MISCELLANEOUS					
	LANDSCAPE AREA: WOOD MULCH, ROCK, TURF GRASS				1,432 SF

SCA ENGINEERING & DESIGN
CIVIL ENGINEERING ~ LAND PLANNING
DEVELOPMENT SERVICES
LANDSCAPE ARCHITECTURE

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VANCOUVER, WA 98663
PHONE (360)993-0911
FAX (360)993-0912

PRELIMINARY NOT FOR CONSTRUCTION

STATE OF WASHINGTON
LICENSED LANDSCAPE ARCHITECT

SCOTT A. TAYLOR
LICENSE NO. 1247
EXPIRES ON _____

PRELIMINARY LANDSCAPE PLAN

OLIVER TERRACE SUBDIVISION

CITY OF CAMAS WASHINGTON

PRELIMINARY

REVISIONS

DESIGNED BY:	NDM
DRAWN BY:	NDM
CHECKED BY:	JAI
SCALE:	########

JOB NUMBER	SHEET
2452	PRE5.0

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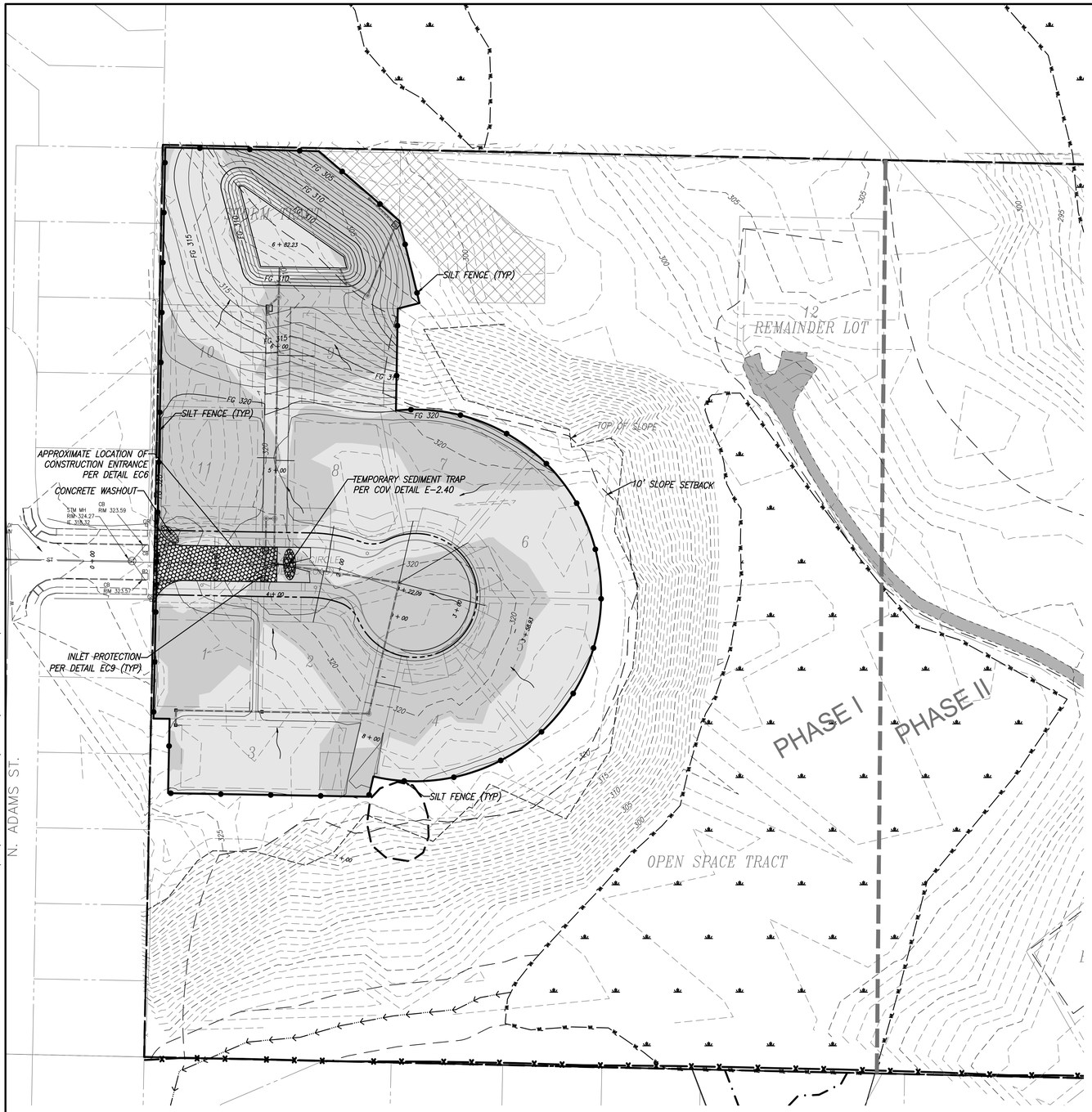


LEGEND

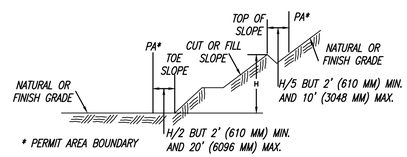
- FILL AREA
- CUT AREA
- FG 100 — FINISHED GRADE CONTOURS
- 100 — EXISTING MAJOR CONTOURS
- STABILIZED CONSTRUCTION ENTRANCE (PER DETAIL EC6)
- TEMPORARY SEDIMENTATION TRAP (PER DETAIL E22)
- TEMPORARY SILT FENCE (PER DETAIL EC12)
- TEMPORARY STRAW WADDLES (PER DETAIL EC14)
- FLOW ARROW
- WHEEL WASH (PER DETAIL EC7)
- TEMPORARY STORM INLET PROTECTION (PER DETAIL EC9)

DIRT QUANTITIES (CY)

ITEM	CUT	FILL
SITE GRADING	1,750	3,680
TRENCH SPOILS	TBD	---
IMPORT	1,930	
TOTAL	3,680	3,680

1. ASSUMED 1.00' FOR SITE STRIPPINGS PER GEOTECH RECOMMENDATIONS ACTUAL CONDITIONS MAY VARY AND WILL EFFECT THE STRIPPING VOLUME.
2. EXCESS TRENCH SPOILS WILL BE STOCKPILED PRIOR TO BEING HAULED OFF SITE OR MAY BE USED AS STRUCTURAL FILL.
3. STRIPPINGS WILL BE STOCKPILED PRIOR TO BEING HAULED OFF SITE OR MAY BE USED NON-STRUCTURAL FILL.

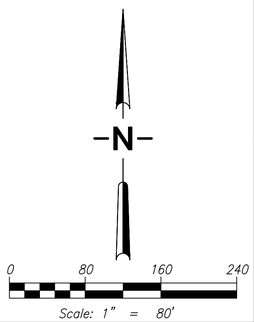
QUANTITIES DO NOT ACCOUNT FOR SHRINK AND SWELL FACTORS. ACTUAL MATERIAL QUANTITIES MAY VARY PER SOIL TYPE, SOIL CONDITIONS, & CONSTRUCTION PRACTICES.



NOTE: GRADING ACTIVITIES MUST BE AT LEAST TWO (2) FEET AWAY FROM PROPERTY BOUNDARIES

IBC APPENDIX J GRADING DETAIL

NO SCALE



Scale: 1" = 80'

SCA ENGINEERING & DESIGN
CIVIL ENGINEERING ~ LAND PLANNING
DEVELOPMENT SERVICES
LANDSCAPE ARCHITECTURE

2005 BROADWAY
VANCOUVER, WA 98663
PHONE (360)993-0911
FAX (360)993-0912

PRELIMINARY NOT FOR CONSTRUCTION — MICHAEL A. INTERMILL — EXPIRES 09/30/26 — PROFESSIONAL ENGINEER

PRELIMINARY GRADING & EROSION CONTROL PLAN

OLIVER TERRACE SUBDIVISION

CITY OF CAMAS WASHINGTON

PRELIMINARY

REVISIONS

DESIGNED BY:	NDM
DRAWN BY:	NDM
CHECKED BY:	JAI
SCALE:	1" = 50'

JOB NUMBER	SHEET
2452	PRE6.0

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EXISTING CONDITIONS SURVEY

IN A PORTION OF THE SE 1/4 OF THE NW 1/4 OF

SECTION 35 T. 2 N., R. 3 E., W.M.,

CITY OF CAMAS, CLARK COUNTY, WASHINGTON

LEGEND:

- INDICATES FOUND 1/2" REBAR WITH YPC STAMPED "AKS ENGR 54200" PER SURVEY REFERNCE NO. 4, UNLESS NOTED OTHERWISE
- INDICATES FOUND 1/2" REBAR WITH YPC STAMPED "GALVIN 43609" PER SURVEY REFERNCE NO. 3
- INDICATES CALCULATED POSITION
- AFN: INDICATES AUDITOR'S FILE NUMBER
- PIN: INDICATES PARCEL IDENTIFICATION NUMBER
- Y.P.C. INDICATES YELLOW PLASTIC CAP
- L.C.R. INDICATES LAND CORNER RECORD
- INDICATES WATER VALVE
- INDICATES FIRE HYDRANT
- INDICATES WATER METER
- INDICATES WELL
- INDICATES TELEPHONE PEDESTAL
- INDICATES STORM SEWER MANHOLE
- INDICATES CURB INLET
- INDICATES TEST PIT
- INDICATES CATCH BASIN
- INDICATES AREA DRAIN
- INDICATES SANITARY SEWER MANHOLE
- INDICATES SANITARY CLEANOUT
- INDICATES SEPTIC SYSTEM LID
- INDICATES TRAFFIC SIGNAL BOX
- INDICATES TRAFFIC SIGNAL POLE
- INDICATES POWER POLE WITH DIRECTION OF OVERHEAD LINES
- INDICATES LIGHT POLE
- INDICATES ELECTRIC SERVICE BOX
- INDICATES ELECTRIC METER
- INDICATES TRANSFORMER
- INDICATES GAS VALVE
- INDICATES GAS RISER
- INDICATES SIGN
- INDICATES MAIL BOX
- INDICATES EVERGREEN TREE WITH TRUNK DIAMETER
- INDICATES DECIDUOUS TREE WITH TRUNK DIAMETER
- INDICATES WETLAND LINE
- INDICATES GAS LOCATE
- INDICATES SANITARY LOCATE
- INDICATES STORM LOCATE
- INDICATES TELEPHONE LOCATE
- INDICATES WATER LOCATE
- INDICATES BOUNDARY
- INDICATES EDGE OF ASPHALT
- INDICATES EDGE OF CONCRETE
- INDICATES EDGE OF GRAVEL
- INDICATES 5 FOOT INTERVAL CONTOUR
- INDICATES 1 FOOT INTERVAL CONTOUR
- INDICATES FENCE LINE

N 88°47'34" W 1250.45'

LOT 2 (SP3-118)

LOT 3 (SP 3-118)

TAX LOT 126
PIN: 178218-000

FOUND 2" IRON PIPE IN CASE WITH NO LID, HELD

26
35

N 01°10'49" E 736.22'

R=70.00'
L=32.42'
Δ=26°32'21"
CHB=N 12°16'23" W
CH=32.13'

S 00°59'47" W 14.50'

R=100.00'
L=8.73'
Δ=5°00'00"
CHB=S 01°30'13" E
CH=8.72'

R=13.00'
L=19.29'
Δ=85°00'00"
CHB=S 46°30'13" E
CH=17.57'

S 89°00'13" E 81.63'

S 89°00'13" E 117.28'

S 89°00'13" E 78.20'

N. 49TH AVE.

S 00°59'47" E 64.48'

N 00°59'47" E 398.61'

N. ADAMS ST.

"LACAMAS HILLS" (312-291)

"HADLEYS GLEN" (311-741)

"DEERHAVEN PHASE 1" (311-573)

TRACT "A"

TRACT "B"

TRACT "C"

TRACT "E"

TRACT "F"

TAX LOT 129
PIN: 178221-000

N 01°02'15" E 10.00'

N 88°57'45" W 158.03'

N. 47TH CIRCLE (PVT.)

R=60.00' L=94.13' CHB=S 46°15'45" W CH=84.67'

R=60.00' L=90.09' CHB=N 45°55'35" W CH=81.80'

R=60.00' L=4.04' CHB=S 08°59'13" E CH=4.04'

R=60.00' L=3.27' CHB=N 37°57'21" W CH=3.27'

N 37°57'21" W 29.52'

5.65'

N 52°02'39" E 579.59'

N 52°02'39" E 204.36'

S 52°02'39" W 112.86'

R=880.00' L=706.71' CHB=N 25°22'57" E CH=687.87'

Δ 46°00'45"

R=55.00' L=54.55' Δ 56°49'58" CH=52.35' CHB=N 84°25'44" E

SE EVERETT ROAD (SR 500)

N 01°20'15" E 2646.90' (S2)

75.00' 150' RIGHT-OF-WAY PER SURVEY REFERENCE NO. 7

75.00'

S 88°42'30" E 770.17' (770.27')

N 88°42'30" W 431.33'

26.00' 90.00' 116.00' S 88°48'55" E

FOUND 1/2" REBAR WITH YPC, UNREADABLE HELD PER SURVEY REFERANCE NO. 5

FOUND 2" IRON PIPE W/ PIN IN MONUMENT BOX, HELD PER SURVEY REFERENCE NO. 4

CALCULATED POSITION OF 3-1/2" BRASS DISK IN MONUMENT BOX SEE L.C.R. BOOK 26, PAGE 73

FOUND 1/2" IRON ROD W/ YPC "GALVIN 43609" HELD PER SURVEY REFERENCE NO. 3

BENCH MARK:
CLARK COUNTY BENCHMARK AT 1500 SE EVERETT ST. AT THE INTERSECTION OF SE GARDNER ROAD IN CENTERLINE 1/2" WIRE IN 2" IRON
ELEVATION = 233.416' CLARK COUNTY DATUM

SURVEY REFERENCES:
(S1) GLAESER SURVEY, BOOK 39, PAGE 31
(S2) SHORT PLAT, BOOK 3, PAGE 118
(S3) "HADLEY'S GLEN SUBDIVISION" BOOK 311, PAGE 741
(S4) "LACAMAS HILLS PHASE 2 AND 3" , BOOK 312, PAGE 291
(S5) "DEER HAVEN PHASE 1", BOOK 311, BOOK 573

DEED REFERENCE:
GRANTOR: THOMAS OLIVER
GRANTEE: THOMAS OLIVER
AFN: 5657214
DATE: 10/07/19

SURVEYOR'S NOTE:
THIS "EXISTING CONDITIONS SURVEY" IS INTENDED TO FULFILL THE CLARK COUNTY REQUIREMENT FOR A "PRELIMINARY BOUNDARY SURVEY" OF TAX LOT 129 (APN 178221-000) ACCORDING TO CLARK COUNTY SUBDIVISION APPLICATION ITEM 9c, AND IS NOT INTENDED TO BE RECORDED.
KPF SURVEYING, INC. SURVEYING, INC. MAKES NO WARRANTIES AS TO MATTERS OF UNWRITTEN TITLE SUCH AS ADVERSE POSSESSION, ACQUIESCENCE, ESTOPPEL, ETC. A FIELD TRAVERSE WAS PERFORMED USING A LEICA TCRP1201+ ONE SECOND TOTAL STATION. THE FIELD TRAVERSE MET THE MINIMUM STANDARDS FOR SURVEYS AS DESIGNATED IN WAC 332-130-090. ALL CORNERS NOTED AS FOUND WERE VISITED ON 12-03-24.
A UTILITY LOCATE WAS NOT CALLED FOR ON THIS SURVEY. THE UNDERGROUND UTILITIES AS SHOWN ON THIS TOPOGRAPHIC MAP 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. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. SOME UNDERGROUND LOCATIONS HEREON MAY HAVE BEEN TAKEN FROM PUBLIC RECORDS. KPF SURVEYING, INC. ASSUMES NO LIABILITY FOR THE ACCURACY OF PUBLIC RECORDS.

KYLE PATRICK FEDER — STATE OF WASHINGTON — 41032 — REGISTERED PROFESSIONAL LAND SURVEYOR

11-11-25

NAD 83(2011)(EPOCH: 2010.0000), WASHINGTON STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, U.S. FEET.
N 00°59'47" E ALONG THE CENTERLINE OF N. ADAMS ST. BETWEEN FOUND AND HELD MONUMENTS.

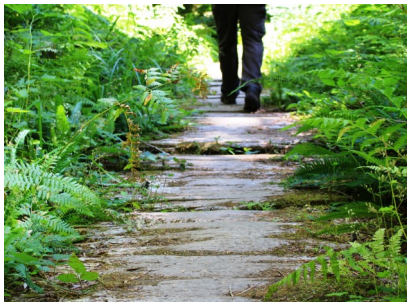
0 50 100 200
SCALE: 1"=50'

DATE:	11-11-25
SCALE:	1"=50'
JOB NO.:	24-042
CALC BY:	KPF
DRAWN BY:	GLF
CHECKED BY:	KPF
SHEET	1 OF 1

KPF
SURVEYING, INC.
2208 E. EVERGREEN BLVD. VANCOUVER, WA 98661
360-834-0174 FAX: 360-838-0155

CRITICAL AREAS REPORT

June 16, 2025



Oliver's Terrace
Camas, Washington

Prepared for

HSR Capital LLC
19120 SE 34th St. #103
Vancouver, WA 98683
Phone (360) 513.6516

Prepared by
Ecological Land Services
1157 3rd Avenue, Suite 220A • Longview, WA 98632
(360) 578-1371 • Project Number 3341.25

SIGNATURE PAGE

The information in this report was compiled and prepared under the supervision and direction of the undersigned.

Ashley Freese
Biologist

Beau Johnson
Biologist V

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INTRODUCTION

Ecological Land Servies, Inc. (ELS) has prepared this critical areas report addressing wetlands and fish and wildlife habitat conservation areas on behalf of the applicant, HSR Capital LLC, for the purpose of permitting future development. The project site includes Clark County Tax Parcel 178221000 located within the NW ¼ of Section 35, Township 2 North, Range 3 East of the Willamette Meridian (Figure 1). ELS biologists evaluated the property on April 11, 2025, and May 1, 2025, and this report summarizes the findings of critical areas onsite in accordance with the Camas Municipal Code (CMC) *16.51-General Provisions for Critical Areas, 16.53- Wetlands, and 16.61- Fish and Wildlife Habitat Conservation Areas* (March 2017).

SITE DESCRIPTION

The study area encompasses approximately 12.17 acres within the western portion of an 18.15-acre parcel located in the City of Camas. It is zoned North Shore Lower Density Residential (LD-NS) and North Shore Mixed Use (MX-NS). The site currently includes a single-family home, a barn housing cattle, some derelict farm equipment buried under brush, a driveway, a parking area, 6 – 8 vehicles which appear to be both personal and project cars, several of which are partially dismantled or appearing to be in the process of being worked on or used for parts, and perimeter fencing. Access is provided via a private road from SE Everett Drive. Adjacent properties include a residential subdivision under development to the west, established homes to the south and east, and undeveloped forested land to the north. The site lies approximately half a mile northeast of Lacamas Lake and approximately half a mile northwest of Camas High School.

The study area features varied topography, with higher elevations occurring along SE Everett Street at the southeastern edge. From this road, the terrain consists of rolling slopes that descend northwesterly toward a centrally located depression where Wetland A is situated. In the western portion of the study area the topography changes abruptly, with an elevation gain of approximately 30 feet leading up to a broad, relatively flat terrace that defines the upper western extent. A long driveway bisects the eastern portion of the site from north to south. The wetland is bordered by a mixed forest canopy, which extends offsite to the north, while its interior includes a mosaic of shrub patches, emergent vegetation and permanently ponded sections. Invasive Himalayan blackberry (*Rubus armeniacus*) is widespread throughout the study area, and particularly dense along a Type Ns (non-fish bearing seasonal) stream corridor which originates from the southwest portion of Wetland A. The slope rising west of the wetland toward the terrace is covered in mixed forest with a moss-dominated ground layer and minimal understory shrub development. At the top of the terrace, vegetation transitions to a more open structure, with widely spaced trees and shrubs interspersed with grassy clearings.

METHODOLOGY

The property was evaluated for the presence of wetlands using the Routine Determination Method according to the U.S. Army Corps of Engineer's 1987 *Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers' Wetland Delineation Manual* (Environmental

Laboratory 1987); *Western Mountains, Valleys, and Coast Regions (Version 2.0)* (Corps 2010). The Routine Determination Method and defining wetland criteria are discussed further in Appendix A. Wetlands are regulated as "Waters of the United States" by the U.S. Army Corps of Engineers (Corps) and as "Waters of the State" by the Washington State Department of Ecology (Ecology), and locally by the City of Camas.

ELS biologists evaluated the property on April 11, 2025, and May 1, 2025, to determine the presence of critical areas including streams, wetlands, and other priority habitats. Prior to conducting the site visit, ELS biologists reviewed current and historic aerial imagery dating back to 1990 and reviewed the environmental database information regarding soils, topography, wetlands, and habitat conservation areas. One wetland, one stream, two Oregon white oaks (*Quercus garryana*), and two priority snags were delineated onsite. Additionally, two wetlands located offsite were identified, with one exhibiting a buffer that extends into the boundaries of the study area. The two offsite wetlands were previously delineated and rated in the *Lacamas Farms Lot 2 Critical Areas Report* (ELS 2023), the data forms from that report can be found in Appendix B.

The demarcation of wetland boundaries was determined by changes in topography, shifts in vegetation, and indications of wetland hydrology. During the time of the site visit, vegetation, soils, and hydrology data were collected from test plots to determine the location and extent of onsite wetlands; a total of 6 test plots were collected. Photos were taken to document existing conditions. The wetland boundary was marked using consecutively numbered fluorescent, pink, flagging tape labeled Wetland Delineation. Test plots and the centerline of the stream were demarcated with consecutively numbered plain, orange, fluorescent flagging tape. Scour, drainage patterns, and changes in vegetation were used to determine the width of the stream channel. The stream centerline was mapped due to the narrow width of the stream. The width between OHWM ranged from one to three feet averaging less than two feet. The location of wetland boundaries, test plots, snags, oak, oak driplines, and OHWM were recorded using a hand-held GPS unit capable of sub-meter accuracy under ideal conditions (Figure 2). The boundaries of the offsite wetlands were taken from a previous delineation (ELS 2023).

VEGETATION

The study area is generally forested, apart from the open, ponded portions of the wetland, and its interior areas supporting shrubs and emergent vegetation. Himalayan blackberry is common throughout, especially along the onsite stream. Upland slopes are also forested with sparse understory and mossy groundcover, while the terrace top features more open forest, shrubs, and grassy clearings. The plant indicator status following the plant scientific name of species listed below is defined by the *National Wetland Plant List Indicator Rating Definitions* (Corps 2012) and can be found in Appendix A. Wetland Determination Data Forms can be found in Appendix B.

WETLAND VEGETATION

WETLAND A

Wetland A supports a diverse plant community with at least 19 different species observed. Dominant species included **Trees:** red alder (*Alnus rubra*, FAC), Oregon Ash (*Fraxinus latifolia*,

FACW), **Shrubs:** Sitka willow (*Salix sitchensis*, FACW), red osier dogwood (*Cornus sericea,* FACW), Nootka rose (*Rosa nutkana,* FAC), Scouler's willow (*Salix scouleriana*, FAC), and **Herbs:** skunk cabbage (*Lysichiton americanus*, OBL), reed canarygrass (*Phalaris arundinacea*, FACW), soft rush (*Juncus effusus*, FACW), water parsley (*Oenanthe sarmentosa,* OBL) , common duckweed (*Lemna minor,* OBL), and cattail (*Typha latifolia*, OBL).

Offsite Wetland 1 and Offsite Wetland 2

Based on the previous delineation, dominant vegetation in the offsite wetlands consisted of **Shrubs:** Douglas spiraea (*Spiraea douglasii,* FACW), Scouler's willow (FAC), Himalayan blackberry (FAC), snowberry (*Symphoricarpos albus*, FACU), and **Herbs:** reed canarygrass (FACW) and creeping buttercup (*Ranunculus repens*, FAC).

Riparian Vegetation

The small stream meanders through the southern portion of the study area and was bordered by **Trees**: Douglas-fir (*Pseudotsuga menziesii*, FACU), Oregon ash (FACW), and bigleaf maple (*Acer macrophyllum,* FACU), **Shrubs:** dense thickets of Himalayan blackberry (FAC), vine maple (*Acer circinatum*, FAC), beaked hazelnut (*Corylus cornuta*, FACU), and **Herbs:** lady fern (*Athyrium filix-femina,* FAC), sword fern (*Polystichum munitum*, FACU), and creeping butter cup (FAC).

Upland Vegetation

The upland areas included the western terrace and forested portion of the study area north of the wetland. The terrace contained moderately spaced Douglas-fir (FACU), bigleaf maple (FACU), and red alder (FAC) trees with some vine maple, beaked hazelnut (FACU), snowberry and open areas of mixed grass and forbs. Two Oregon white oaks (FACU) were located on the terrace. The northern forest area was predominantly Douglas-fir (FACU) trees nearing maturity and large bigleaf maples (FACU). The understory was predominantly covered with Himalayan blackberries (FAC) and stinging nettle (*Urtica dioica*, FAC), while the ground floor was a mix of grasses, miners' lettuce (*Claytonia sibirica*, FAC), and shining geranium (*Geranium lucidum*, assumed FACU).

Soils

As referenced on the U.S.D.A Natural Resources Conservation Service (NRCS) website, the soils within the site are mapped as Vader silt loam, 8 to 15 percent slopes (VaC), Lauren very gravelly loam, 0 to 8 percent slopes (LlB), Olympic stony clay loam, 3 to 30 percent slopes (OmE), Tisch silt loam, 0 to 3 percent (ThA), and Hesson clay loam, 0 to 8 percent slopes (HcB) (NRCS 2025a; Figure 4). Table 1 below summarizes the soils onsite.

Table 1. Soils Summary

Soil Series	Unit Symbol	Percent Slope	Landform	Drainage Class	Hydric Soil[1]	Test Plots In Soil Series
Vader silt loam, 8 to 15 percent slopes	(VaC)	8-15	Terraces	Moderately well-drained	No	

Soil Series	Unit Symbol	Percent Slope	Landform	Drainage Class	Hydric Soil[1]	Test Plots In Soil Series
Lauren very gravelly loam, 0 to 8 percent slopes	(LlB)	0-8	Terraces	Well drained	No	1
Olympic stony clay loam, 3 to 30 percent slopes	(OmE)	3-30	Terraces	Poorly drained	No	5
Tisch silt loam, 0 to 3 percent slopes	(ThA)	0-3	Depressions	Very poorly drained	Yes	2- 4
Hesson clay loam, 0 to 8 percent slopes	(HcB)	0-8	Terraces	Well drained	No	6

[1]Natural Resources Conservation Service (NRCS). 2025b. *State Soil Data Access (SDA) Hydric Soils List.*

Wetland Soils

Soils evaluated onsite within Wetland A test plots were black muck with test plots 3 and 5 being unconsolidated near the surface. Test plots all displayed a matrix color of 10YR 2/1 and were generally inundated to the surface. Test Plots 1 and 3 located in Wetland A plot met primary hydric soil indicators Histic Epipedon (A2), Black Histic (A3) and Hydrogen Sulfide (A4), and Test Plot 5 was entirely unconsolidated. Details regarding offsite wetlands can be found in the data forms in Appendix B, or the *Lacamas Farms Lot 2 Critical Areas Report* (ELS 2023).

Upland Soils

Soils evaluated within upland test plots consisted of loam and silt loam textures. Matrix colorations were predominantly dark brown (10YR 3/3). Test Plot 6 displayed a dark brown matrix color from 0-14 inches below ground surface and then transitioned to a dark grayish brown (10YR 4/2) with redoximorphic features observed as soft masses with the coloration dark brown (7.5YR 3/4); however, these features were at depths and quantities that did not meet the criteria for hydric soils.

ELS disagrees with NRCS mapped hydric soils as wetlands were found in mapped non-hydric soil areas, and conversely, uplands were found in mapped hydric soil areas[1]. Specific soil information is recorded on the attached wetland determination data forms (Appendix B).

Hydrology

Hydrology generally flows from higher elevations along NE Everett Road, and the driveway that runs north to south, down toward a large central depressional area containing Wetland A. To the west of Wetland A, the terrain rises abruptly, forming a distinct elevation change that transitions into a terraced upland area approximately 30 feet above the wetland surface. This terraced area also directs water downslope into the wetland, contributing hydrology, particularly during

[1] Areas mapped as hydric soils do not necessarily mean that an area is or is not a wetland—hydrology, hydrophytic vegetation, and hydric soils must all be present to classify an area as a wetland.

precipitation events. Additionally, a row of homes borders the wetland to the south increasing runoff to the wetland. Water collects and is retained in various low-lying pockets throughout the wetland with some areas remaining permanently ponded, while the outer fringe is seasonally ponded and saturated. In the southwest corner of Wetland A, a stream channel originates, operating as an outlet for excess hydrology not retained in the depressional areas. This stream conveys water offsite toward the southwest.

Wetland A

Wetland A is an approximately 2.35-acre forested, scrub-shrub, emergent, depressional wetland located in the southeast portion of the study area. Wetland A includes hydroperiods that are seasonally flooded, permanently flooded, and saturated only. At the highly constricted outlet in the southwest corner, a Type Ns stream develops and continues to flow southwest, while the interior of the wetland is significantly lower than the outlet and water remains impounded throughout. Test Plots 1, 3 and 5 collected in Wetland A met primary hydrology indicators Surface Water (A1), and Test Plot 1 and 3 met primary hydrology indicator Hydrogen Sulfide Odor (C1) and all met secondary indicators Geomorphic Position (D2) and FAC Neutral Test (D5). Hydrology likely comes from precipitation, runoff from adjacent uplands, a shallow ground water table, and localized seeps.

Offsite Wetland 1

Offsite Wetland 1 is part of a larger wetland unit that extends across several properties to the north and its total size is unknown. It is a forested, scrub-shrub, emergent depressional wetland. The wetland includes hydroperiods that are seasonally flooded, saturated only, and a permanently flowing stream adjacent to the wetland. Sources of hydrology likely include a shallow groundwater table, precipitation, runoff from adjacent uplands, and the adjacent stream. According to the delineation of the wetland conducted on April 18, 2023, test plots collected in the wetland met primary hydrology indicator High Water Table (A2) with a water table depth of four inches (ELS 2023).

Offsite Wetland 2

Offsite Wetland 2 is approximately 0.44 acres in size and is a scrub-shrub, depressional wetland located offsite north of the study area. The wetland includes hydroperiods that are seasonally flooded and saturated only. Sources of hydrology likely include a shallow groundwater table, precipitation, and runoff from adjacent uplands. Test plots collected in the wetland met primary hydrology indicator High Water Table (A2) and secondary hydrology indicator FAC-Neutral Test (D5) (ELS 2023).

Stream A

One Type Ns stream (Stream A) was identified in the southwest portion of the study area. The stream originates within and serves as the outlet for Wetland A. The stream is not mapped by the Washington State Department of Natural Resources (WDNR) and the stream type was determined based on observations in the field. Stream A flows from east to southwest where it continues offsite along the southern property boundary. The width between OHWM ranged from one to

three feet, while it was generally less than 2 feet wide, and the wetted channel contained 2to 5 inches of water on the May 1, 2025, site visit. The streambed consisted of clay with small cobble.

PRECIPITATION

Precipitation data was gathered from the NOAA Regional Climate Centers *Clark County*, *Washington WETS Station*: *Camas 3.0 NW (2025*), the closest WETS station to the site with complete data. The precipitation two weeks prior to the site visit on April 11, 2025, totaled 1.55 inches with 0.15 inches of rainfall occurring on the day of the field visit. A review of the Corps Antecedent Precipitation Tool (APT) indicates rainfall conditions recorded for one month prior to the April 11, 2025, site visit were in the normal range and conditions two months prior were drier than normal. The precipitation two weeks prior to the site visit on May 1, 2025, totaled 0.48 inches with 0.00 inches of rainfall occurring on the day of the field visit. Rainfall conditions recorded for one month prior to the May 1, 2025, site visit were wetter than normal and conditions two months prior were in the normal range. A copy of the APT data from the WETS station is located in Appendix D. Tables 2 and 3 below summarize the precipitation data for both site visits.

Table 2. April Site Visit Precipitation Data

Precipitation (inches)								
Date of Visit[1]	2 Weeks Prior[1]	3 Months Prior[2]		30% Below[2]	30% Above[2]	DAREM[2,3]		
		Month	Monthly Total			Value	Weight	Total
04/11/25 0.15	1.55	04/11/25	5.82	3.54	4.75	3	3	9
		03/12/25	5.28	2.56	5.46	2	2	4
		02/10/25	1.41	3.16	5.70	1	1	1
Rainfall 3 months prior was: drier than normal (sum 6-9), normal (sum 10-14), wetter (sum 15-18).[2]								14
Year to Date Mean Rainfall[1]: 47.93								
Year to Date Actual Rainfall[1]: 41.80								

[1] Based on 2005-2025 data from the NOAA Regional Climate Centers *Clark County, Washington (WETS Station: Camas 3.0 NW, WA)*
[2] Based on The Army Corps of Engineers Antecedent Precipitation Tool (APT) for coordinates 45.147683, -122.4075672
[3] Direct Antecedent Rainfall Evaluation Methods (Sumner et al 2009)

Table 3. May Site Visit Precipitation Data

Precipitation (inches)								
Date of Visit[1]	2 Weeks Prior[1]	3 Months Prior[2]		30% Below[2]	30% Above[2]	DAREM[2,3]		
		Month	Monthly Total			Value	Weight	Total
05/01/25 0.00	0.48	05/01/25	1.65	2.87	4.10	1	3	3
		04/01/25	5.60	3.70	4.67	3	2	6
		03/02/25	4.38	2.75	4.38	3	1	3
Rainfall 3 months prior was: drier than normal (sum 6-9), normal (sum 10-14), wetter (sum 15-18).[2]								12
Year to Date Mean Rainfall[1]: 47.93								
Year to Date Actual Rainfall[1]: 41.80								

[1] Based on 2005-2025 data from the NOAA Regional Climate Centers *Clark County, Washington (WETS Station: Camas 3.0 NW, WA)*
[2] Based on The Army Corps of Engineers Antecedent Precipitation Tool (APT) for coordinates 45.147683, -122.4075672
[3] Direct Antecedent Rainfall Evaluation Methods (Sumner et al 2009)

Critical Area Inventories[2]

National Wetlands Inventory

The United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping indicates the presence of a freshwater forested/shrub wetland (PSS1C) in the southeast portion of the study area. ELS generally agrees with the wetland mapping (Figure 5).

Clark County Critical Area Inventory

Clark County Critical Areas (CCCA) online mapping indicates the potential presence of wetlands spanning from north south across the study area. ELS generally agrees with the potential wetland mapping where wetlands were identified on and offsite (Figure 6).

Priority Habitat and Species

The Washington Department of Fish and Wildlife (WDFW) Priority Habitat and Species (PHS) database maps the presence of freshwater forested/shrub wetland in the southeast portion of the study area and the general location of an oak woodland in the south-central portion of the study area. PHS also maps the township of the project site as cave-rich areas (Figure 7). ELS generally agrees with the wetland and oak mapping; however, only two oaks were identified onsite (Figure 7). There were no caves identified onsite.

[2] Critical area inventory mapping is typically used to gather general wetland information about a region and due to the large scale necessary for regional mapping, are limited in accuracy for localized analyses.

CRITICAL AREAS SUMMARY

WETLANDS

WETLAND A

Wetland A is an approximately 2.35-acre forested, scrub-shrub, emergent, depressional wetland located in the southeast portion of the study area. Wetland A includes hydroperiods that are seasonally flooded, and saturated only. There are portions of the wetland that remain permanently flooded but do not meet the threshold to be considered a hydroperiod. In the southwest corner, a Type Ns stream develops from a highly constricted outlet and continues to flow southwest, while the interior of the wetland is significantly lower than the outlet and water remains impounded throughout. Snags, and small and large woody debris were noted throughout. Interior areas contained ungrazed thick stemmed vegetation suitable for amphibians to use for laying eggs. Hydrology likely comes from precipitation, runoff from adjacent uplands, a shallow ground water table, and localized seeps. According to the *Washington State Wetland Rating System for Western Washington: 2014 Update Version 2.0* (Hruby & Yanke 2023; Rating System), Wetland A is a Category I wetland scoring, 8 points for water quality functions, 8 points for hydrological functions, and 8 points for habitat functions for a total of 24 points. The wetland rating form can be found in Appendix C.

OFFSITE WETLAND 1

According to a previous delineation (ELS 2023) Offsite Wetland 1 is part of a larger wetland unit that extends across several properties to the north and its total size is unknown. It is a forested, scrub-shrub, emergent depressional wetland. The wetland includes hydroperiods that are seasonally flooded, saturated only, and a permanently flowing stream in/adjacent to the wetland. Sources of hydrology likely include a shallow groundwater table, precipitation, runoff from adjacent uplands, and the adjacent stream. According to the Rating System, Offsite Wetland 1 is a Category III wetland scoring, 7 points for water quality functions, 5 points for hydrological functions, and 7 points for habitat functions for a total of 19 points. The wetland rating form can be found in Appendix C.

OFFSITE WETLAND 2

According to a previous delineation (ELS 2023) Offsite Wetland 2 is approximately 0.44 acres in size and is a scrub-shrub, depressional wetland located offsite north of the study area. The wetland includes hydroperiods that are seasonally flooded and saturated only. Sources of hydrology likely include a shallow groundwater table, precipitation, and runoff from adjacent uplands. According to the Rating System, Offsite Wetland 1 is a Category III wetland scoring, 5 points for water quality functions, 4 points for hydrological functions, and 7 points for habitat functions for a total of 16 points. The buffer of the wetland located in the study area is predominantly forested and it's shrub component is largely dominated by blackberries. The wetland rating form can be found in Appendix C.

STREAM A

One Type Ns stream (Stream A) was identified in the southwest portion of the study area. The stream originates from the southwest portion of Wetland A, where water outlets from the highly

constricted outlet. The stream is not mapped by the WDNR and the stream type was determined based on observations in the field. Stream A flows from east to west where it continues offsite along the southern property boundary. The width between OHWM ranged from one to three feet, while it was generally less than 2 feet wide, and the wetted channel contained two to five inches of water on the May 1, 2025 site visit. The streambed consisted of clay and small cobble. Dense blackberry bordered the channel, and downed logs were observed both adjacent to and lying across the stream.

Wetland Buffers

Wetland A

Standard wetland buffers are based on wetland category and habitat score from the Rating System in conjunction with the intensity of land uses proposed on development sites. Category I wetlands with habitat scores of 8 and a high land use intensity receive buffers of 260 feet according to *CMC Table 16.53.040-2.* Due to topographical constraints, Wetland A's buffer is functionally isolated westward from the top of the slope per *Camas Municipal Code 16.53.040 (B)(4)(b)(i)* which states that:

b. Functionally Isolated Buffer Areas. Areas which are functionally separated from a wetland and do not protect the wetland from adverse impacts shall be treated as follows:

> *i. Pre-existing roads, structures, or vertical separation shall be excluded from buffers otherwise required by this chapter;*

Offsite Wetland 1 and 2

Offsite Wetlands 1 and 2 are Category III wetlands with habitat scores of 7. With a high intensity land use the wetlands receive buffers of 150 feet according to *CMC Table 16.53.040-3*. Table 5 below summarizes the wetlands and the standard buffer widths.

Stream Buffers

Stream buffer widths are based upon the WDNR Water Typing System and further classification based upon fish presence (Fish bearing v. Non-fish Bearing) for streams existing in the city of Camas. The stream is not mapped on the DNR Stream Type Map or local Clark County database. Due to the narrow width (most portions less than 2 feet wide), origination from a wetland, no connection to a mapped or observed stream, surrounding topography, absence of fish bearing streams in the vicinity, and landowner recollection of the stream being dry during portions of the year, it is assumed based on best available science the stream is a Type Ns. According to *16.61.040(D)* a Type Ns (non-fish bearing seasonal) stream receives a buffer of 25 feet. Table 4 below summarizes the stream and the standard buffer width.

Table 4. Summary of Wetlands

Wetland	Size Onsite (acre)	Hydrogeomorphic Classification[1]	Cowardin Class[2]	Habitat Score[1]	Category[1]	Buffer Width[3]
A	2.35	Depressional	Forested, Scrub-Shrub, Emergent,	8	I	260 ft.

Wetland	Size Onsite (acre)	Hydrogeomorphic Classification[1]	Cowardin Class[2]	Habitat Score[1]	Category[1]	Buffer Width[3]
Offsite 1	0.00	Depressional	Forested, Scrub-Shrub, Emergent	7	III	150 ft.
Offsite 2	0.00	Depressional	Scrub-Shrub	7	III	150 ft.

[1]Hruby 2014 [2]Cowardin et. al., 1979 [3]CMC Table 16.53.040

Table 5. Summary of Stream

Name	DNR Water Type[1]	Buffer Width (feet)[2]
Stream A	Type Ns (Seasonal, Non-fish-bearing)	25 ft.

[1]DNR 2024 [2]CMC 16.61.040(D)

OREGON WHITE OAK

ELS biologists identified two Oregon white oak trees onsite. The diameter at breast height (DBH) of Oak 1 measures 12 inches and the DBH of Oak 2 measures 15 inches. Although the project does not currently propose any impacts to the Oregon white oaks located onsite, these trees have been mapped and documented in the figure set included with the submittal. While no impacts are proposed, it is important to note that even if impacts were to occur, the Oregon white oaks present do not meet the threshold for protection under *CMC 16.51.030.A.1.a* which states protection applies to:

a. ***Oregon White Oaks.***

i. Individual Oregon White Oak trees with a twenty-inch diameter at breast height (twenty inches dbh).

ii. Stands of Oregon white oak trees greater than one acre, when they are found to be valuable to fish and wildlife (i.e., may include trees with cavities, large diameter breast height (twelve inches dbh), are used by priority species, or have a large canopy.

iii. All Oregon white oak snags unless determined by an arborist to be a hazard.

The Oregon white oaks onsite do not meet these criteria. However, ELS biologists acknowledge that Oregon white oaks are recommended for protection as a priority habitat by the Washington State Department of Fish and Wildlife.

LIMITATIONS

ELS bases this report's determinations on standard scientific methodology and best professional judgment. In our opinion, local, state, and federal regulatory agencies should agree with our determinations. However, the information contained in this report should be considered preliminary and used at your own risk until it has been approved in writing by the appropriate

regulatory agencies. ELS is not responsible for the impacts of any changes in environmental standards, practices, or regulations after the date of this report.

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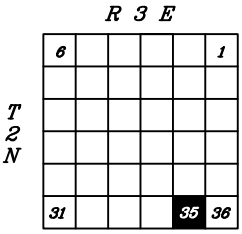
FIGURES AND PHOTOPLATES

WASHINGTON

45.6510° Latitude
-122.4079° Longitude

LOCATION MAP



PROJECT VICINITY MAP

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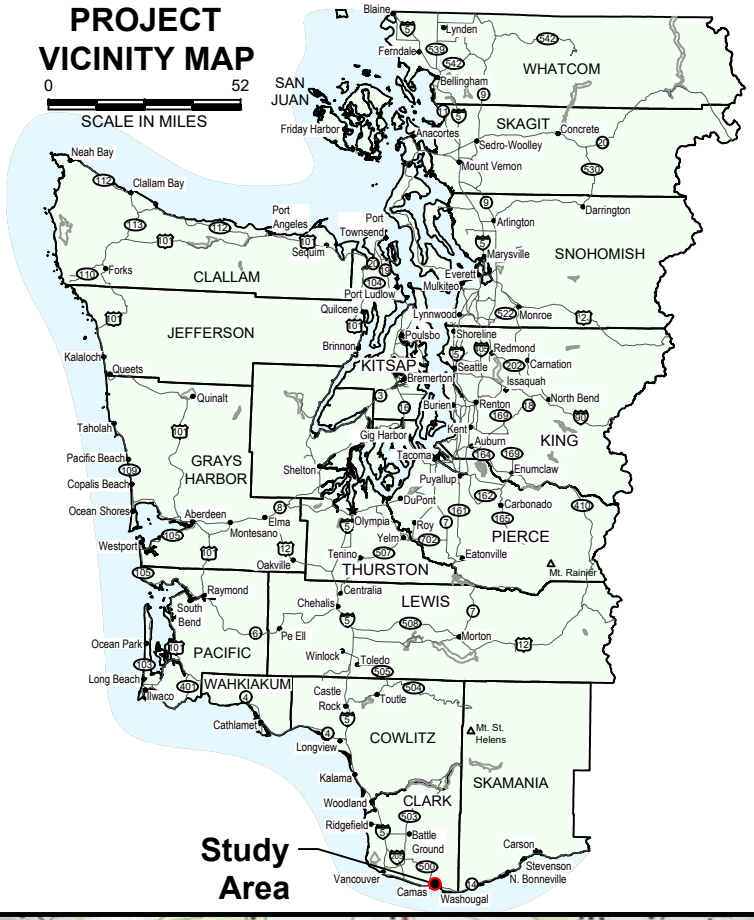
SCALE IN MILES



NOTE:
Quadrangle topographic map from USGS.

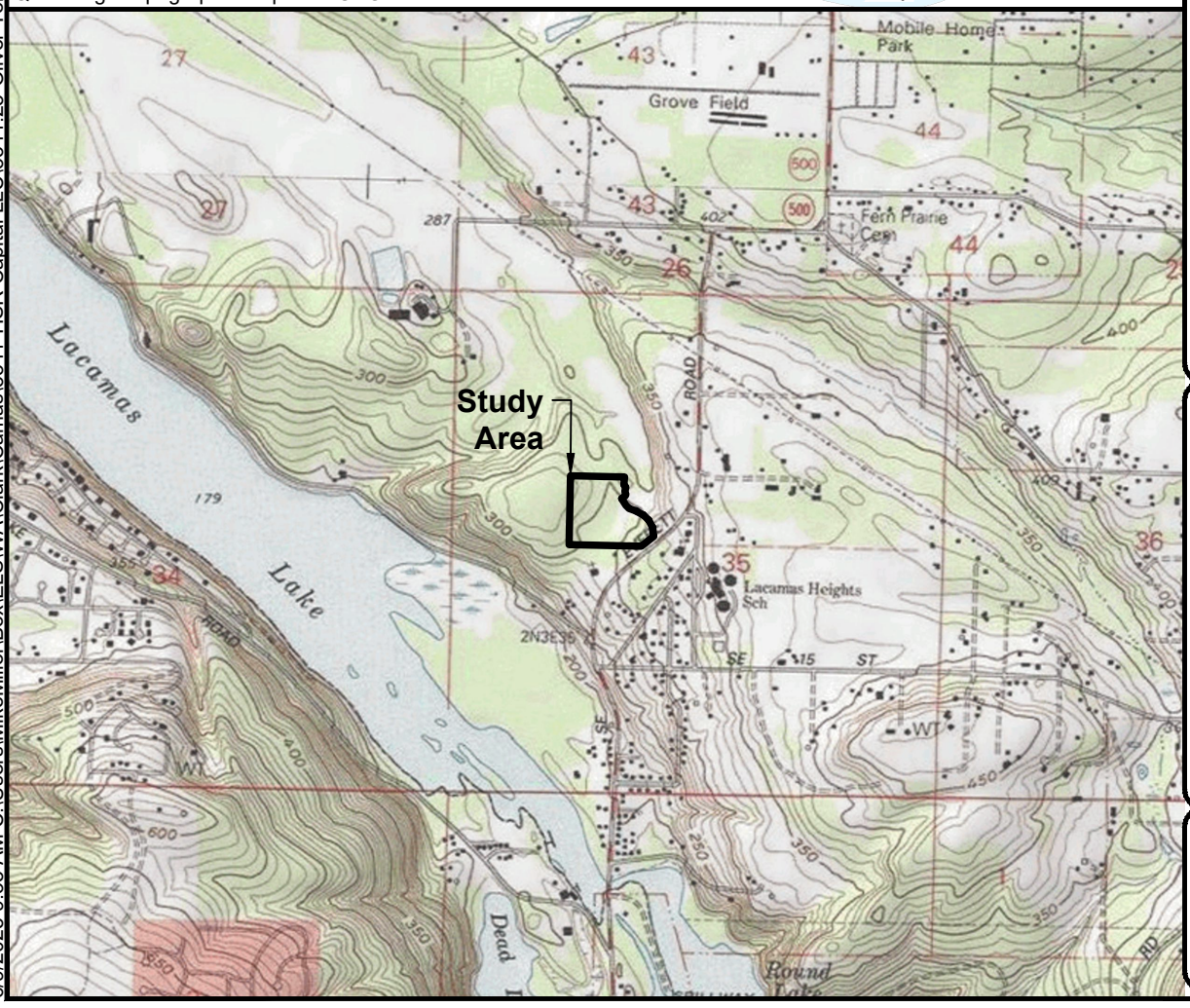


Figure 1
VICINITY MAP
Oliver's Terrace
HSR Capital LLC
City of Camas, Clark County, WA
Section 35, Township 2N, Range 3E, W.M.

DATE: 6/9/25
DWN: EF
REQ. BY: AF
PRJ. MGR: AF
CHK:
PROJECT NO: 3341.25

1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371
Fax: (360) 414-9305
www.eco-land.com
Ecological Land Services

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LEGEND:

- Study Area (12.17 ac.)
- Parcel Boundary
- Wetland Boundary
- Possible Wetland Boundary
- Wetland Buffer
- Functionally Isolated Wetland Buffer
- Existing Building
- Existing Driveway
- Existing Contours
- Culvert
- Oak (2)
- Oak Dripline (0.06 ac.)
- Snag (2)
- Stream with Flow Direction
- 25' Stream Buffer
- TP-1 Test Plot Location
- (1) Photo Point Location

NOTE(S):

1. Aerial from Google Earth™ (2022).
2. Wetlands, photo points, test plots, stream, oaks, and culvert located using handheld GPS capable of submeter accuracy.
3. Parcel data from Clark County GIS. Offsite portion of the stream was determined from contours.
4. Contours generated from LiDAR provided by WDNR.
5. Wetland A's buffer is functionally istolated from the top of the slope per Camas Code 16.53.040 (B)(4)(b)(i).

Offsite Wetland 2
Category III
Depressional
Scrub-Shrub
Saturated Only
Seasonally Flooded

150'

Existing House

260'

Parcel #: 178221000
(18.45 ac.)

Offsite Wetland 1
Category III
Depressional
Forested
Scrub-Shrub
Emergent
Saturated Only
Seasonally Flooded

Wetland A
Category I
Depressional
Forested
Scrub-Shrub
Emergent
Saturated Only
Seasonally Flooded
(2.47 ac.)

TP-4
TP-3
TP-5
TP-6
TP-2
TP-1

Oak Dripline
(0.06 ac.)

Existing Barn

25'

Stream A
Type Ns

N Adams St
N 47th Cir
SE Everett St

Figure 2
EXISTING CONDITIONS
Oliver's Terrace
HSR Capital LLC
City of Camas, Clark County, WA
Section 35, Township 2N, Range 3E, W.M.

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LEGEND:

- Study Area (12.17 ac.)
- Parcel Boundary
- Wetland Boundary
- Possible Wetland Boundary
- Wetland Buffer
- Reduced Wetland Buffer
- Functionally Isolated Wetland Buffer
- Existing Building
- Existing Driveway
- Existing Contours
- Culvert
- Oak (2)
- Oak Dripline (0.06 ac.)
- Snag (2)
- Stream with Flow Direction
- 25' Stream Buffer
- Proposed Lot
- Proposed Road
- Protected Vegetated Corridor (0.65 ac.)

NOTE(S):

1. Stream and culvert located using handheld GPS capable of submeter accuracy. Offsite portion of the stream was determined from contours.
2. Parcel data from Clark County GIS.
3. Contours generated from LiDAR provided by WDNR.
4. Wetland A's buffer is functionally istolated from the top of the slope per Camas Code 16.53.040 (B)(4)(b)(i).
5. Onsite critical areas were surveyed by SGA Engineering.
6. Site plan provided by SGA Engineering.

Offsite Wetland 2
Category III
Depressional
Scrub-Shrub
Saturated Only
Seasonally Flooded

83'

147'

195'

Existing House

STORM TRACT

11 10 9 8 7 6 5 4 3 2 1

N. 49TH CIRCLE (PUBLIC ROAD)

Offsite Wetland 1
Category III
Depressional
Forested
Scrub-Shrub
Emergent
Saturated Only
Seasonally Flooded

Wetland A
Category I
Depressional
Forested
Scrub-Shrub
Emergent
Saturated Only
Seasonally Flooded
(2.47 ac.)

OPEN SPACE TRACT 'D'

Oak Dripline
(0.06 ac.)

195'

25'

Existing Barn

Stream A
Type Ns

N 47th Cir

N Adams St

SE Everett St

Figure 3
PROPOSED CONDITIONS
Oliver's Terrace
HSR Capital LLC
City of Camas, Clark County, WA
Section 35, Township 2N, Range 3E, W.M.

DATE: 6/9/25
DWN: EF
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Ecological Land Services

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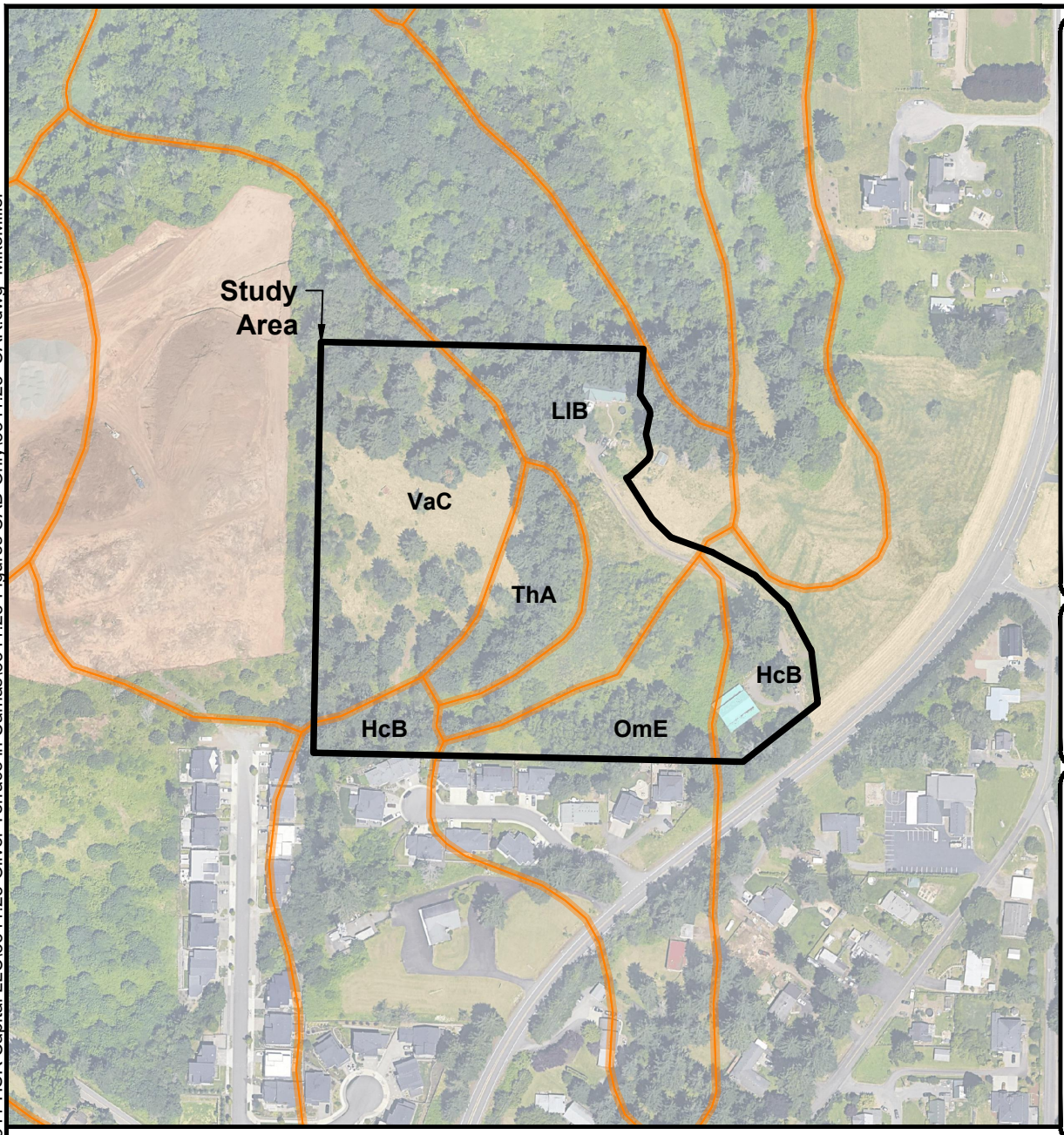

Figure 4
NRCS SOIL SURVEY
Oliver's Terrace
HSR Capital LLC
City of Camas, Clark County, WA
Section 35, Township 2N, Range 3E, W.M.

DATE: 6/9/25
DWN: EF
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Fax: (360) 414-9305
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Ecological Land Services

SCALE IN FEET
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LEGEND:

- Study Area
- NRCS Soil Boundary

HcB Hesson clay loam, 0 to 8 percent slopes. Not hydric.
LIB Lauren very gravelly loam, 0 to 8 percent slopes. Not hydric.
OmE Olympic stony clay loam, 3 to 30 percent slopes. Not hydric.
ThA Tisch silt loam, 0 to 3 percent slopes. **Hydric.**
VaC Vader silt loam, 8 to 15 percent slopes. Not hydric.

NOTE(S):
1. Map provided on-line by NRCS at web address: *http://websoilsurvey.nrcs.usda.gov/app/*

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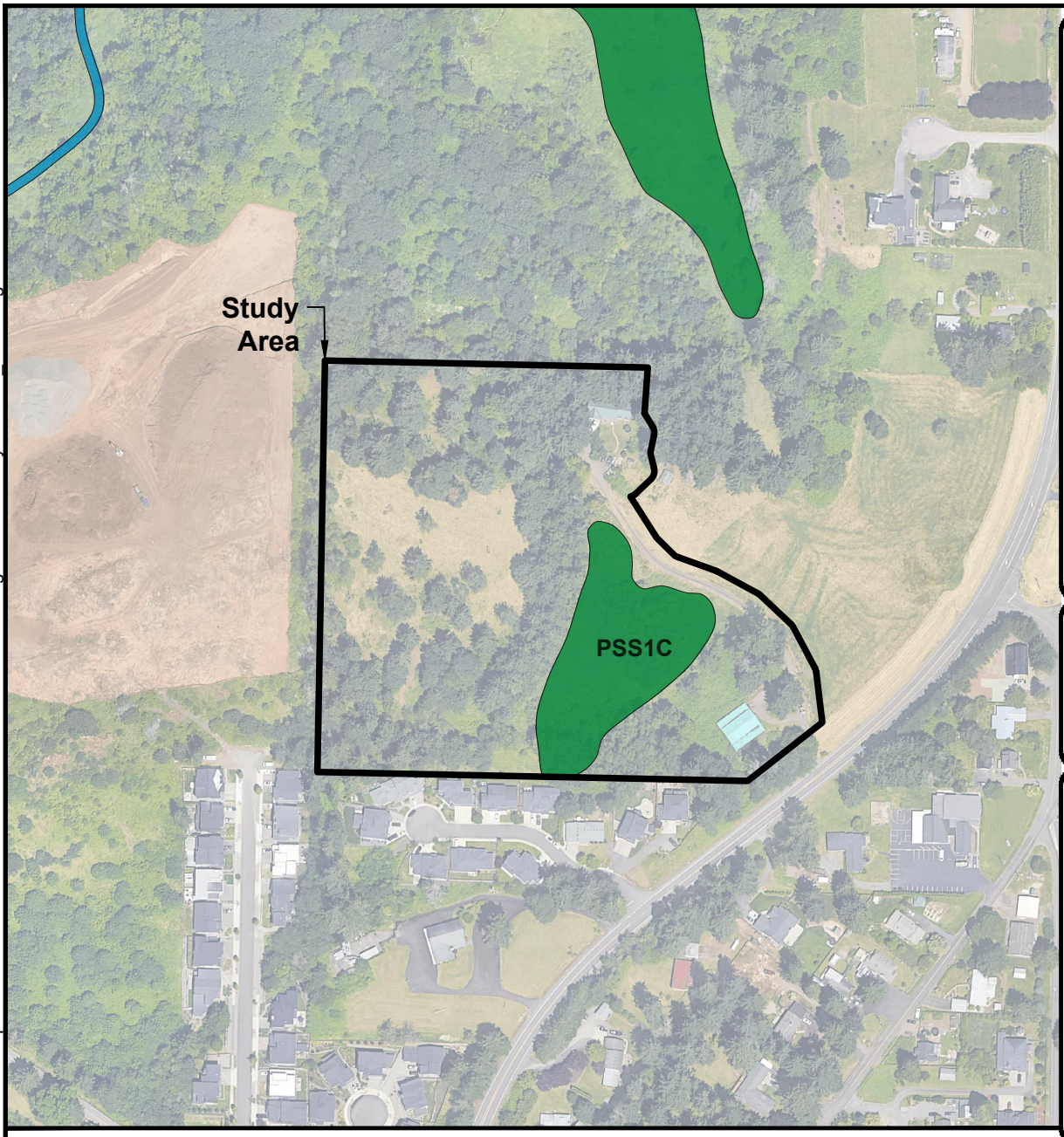

Figure 5
USFWS NATIONAL WETLANDS INVENTORY
Oliver's Terrace
HSR Capital LLC
City of Camas, Clark County, WA
Section 35, Township 2N, Range 3E, W.M.

DATE: 6/9/25
DWN: EF
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www.eco-land.com
Ecological Land Services

0 300 600
SCALE IN FEET

N W E S

LEGEND:

Study Area

Wetlands

Freshwater Forested/Shrub Wetland

Riverine

PSS1C Palustrine, scrub-shrub, persistent, seasonally flooded.

NOTE(S):

1. Map provided on-line by US Fish & Wildlife Service at web address: *https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper*

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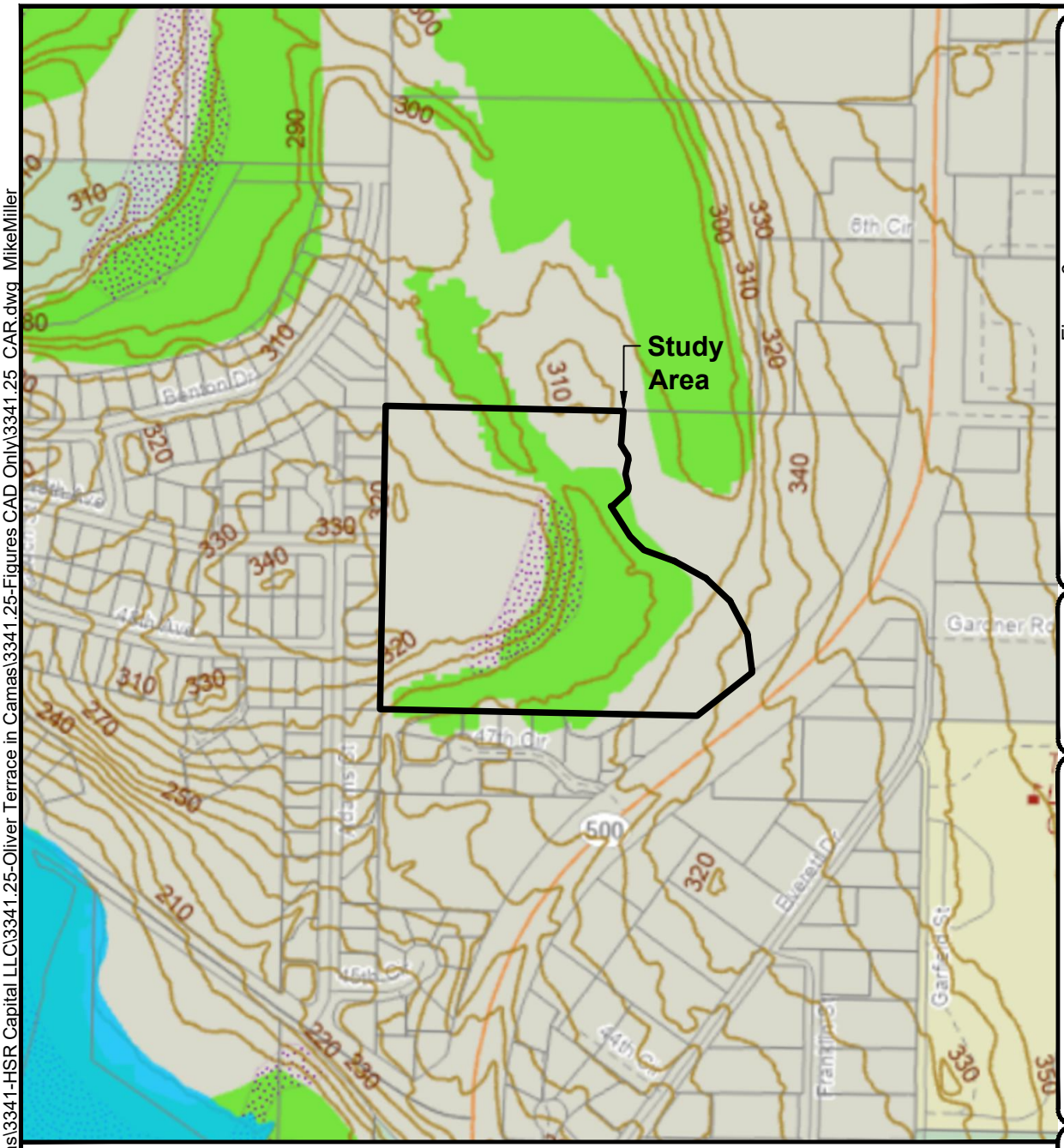

Figure 6
CLARK COUNTY CRITICAL AREAS
Oliver's Terrace
HSR Capital LLC
City of Camas, Clark County, WA
Section 35, Township 2N, Range 3E, W.M.

DATE: 6/9/25
DWN: EF
REQ. BY: AF
PRJ. MGR: AF
CHK:
PROJECT NO: 3341.25

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Fax: (360) 414-9305
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Ecological Land Services

SCALE IN FEET
0
400
800

N
W
E
S

LEGEND:

- Study Area

Environmental

Priority Habitats and Species Group

Riparian Habitat

- Riparian Habitat Area

Slopes and Geologic Hazards Group

Contour Lines

- Contour Lines - 10 ft

Soils and Wetlands Inventory

- Hydric Soils
- Potential Wetlands Presence
- Permitted Wetland

Environmental Constraints

- Floodway or Floodway Fringe

NOTE(S):

1. Map provided on-line by Clark County at web address: *https://gis.clark.wa.gov/mapsonline/index.cfm?site=Environmental*

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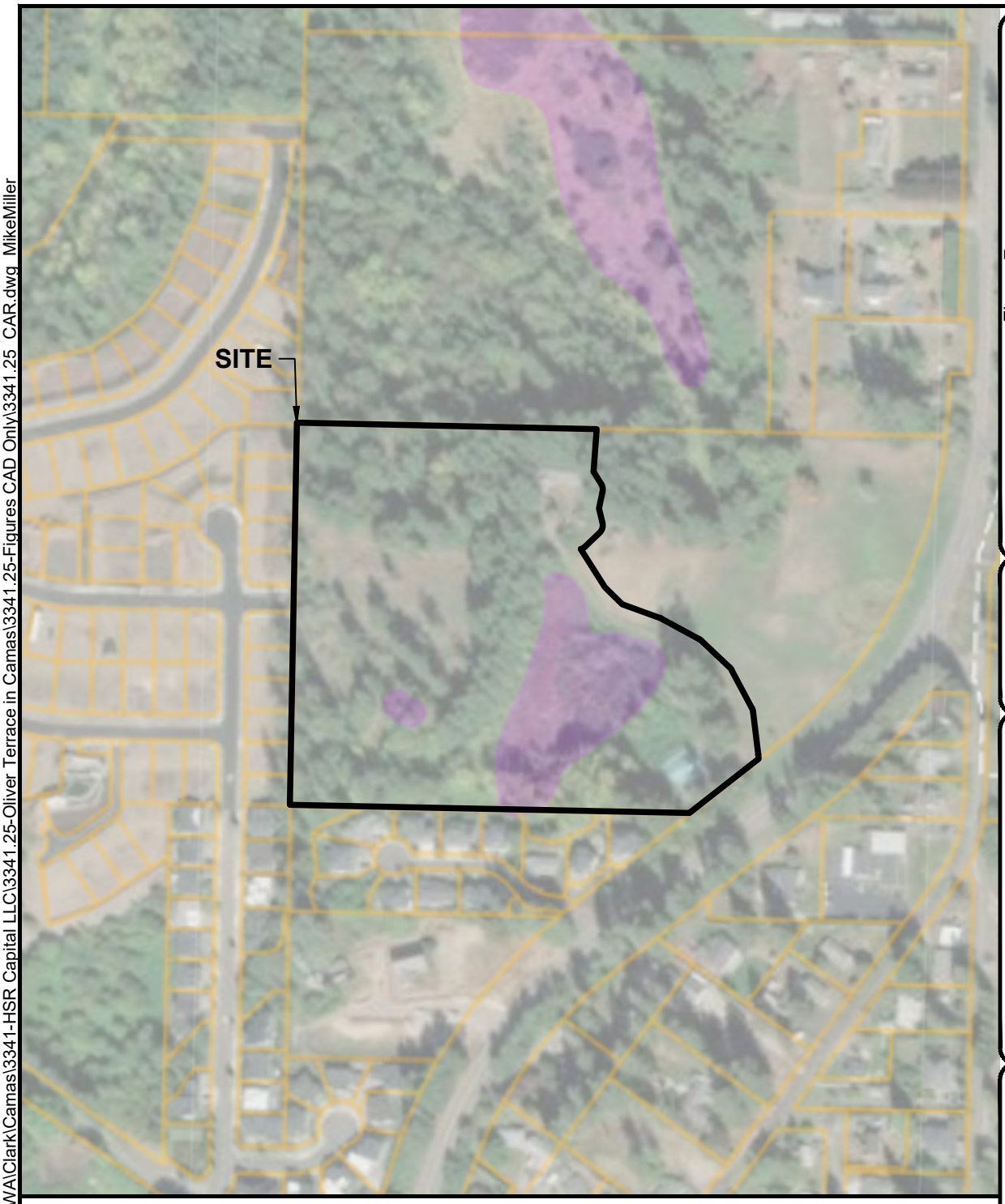

Figure 7
WDFW PRIORITY HABITATS AND SPECIES
Oliver's Terrace
HSR Capital LLC
City of Camas, Clark County, WA
Section 35, Township 2N, Range 3E, W.M.

DATE: 6/9/25
DWN: EF
REQ. BY: AF
PRJ. MGR: AF
CHK:
PROJECT NO: 3341.25

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SCALE IN FEET
0
300
600

N
W
E
S

LEGEND:

- Site Boundary
- Parcel Boundary
- Freshwater Forested/Shrub Wetland
- Oak Woodland

NOTE: Map provided on-line by Washington State Department of Fish & Wildlife at web address: *http://apps.wdfw.wa.gov/phsontheweb/*

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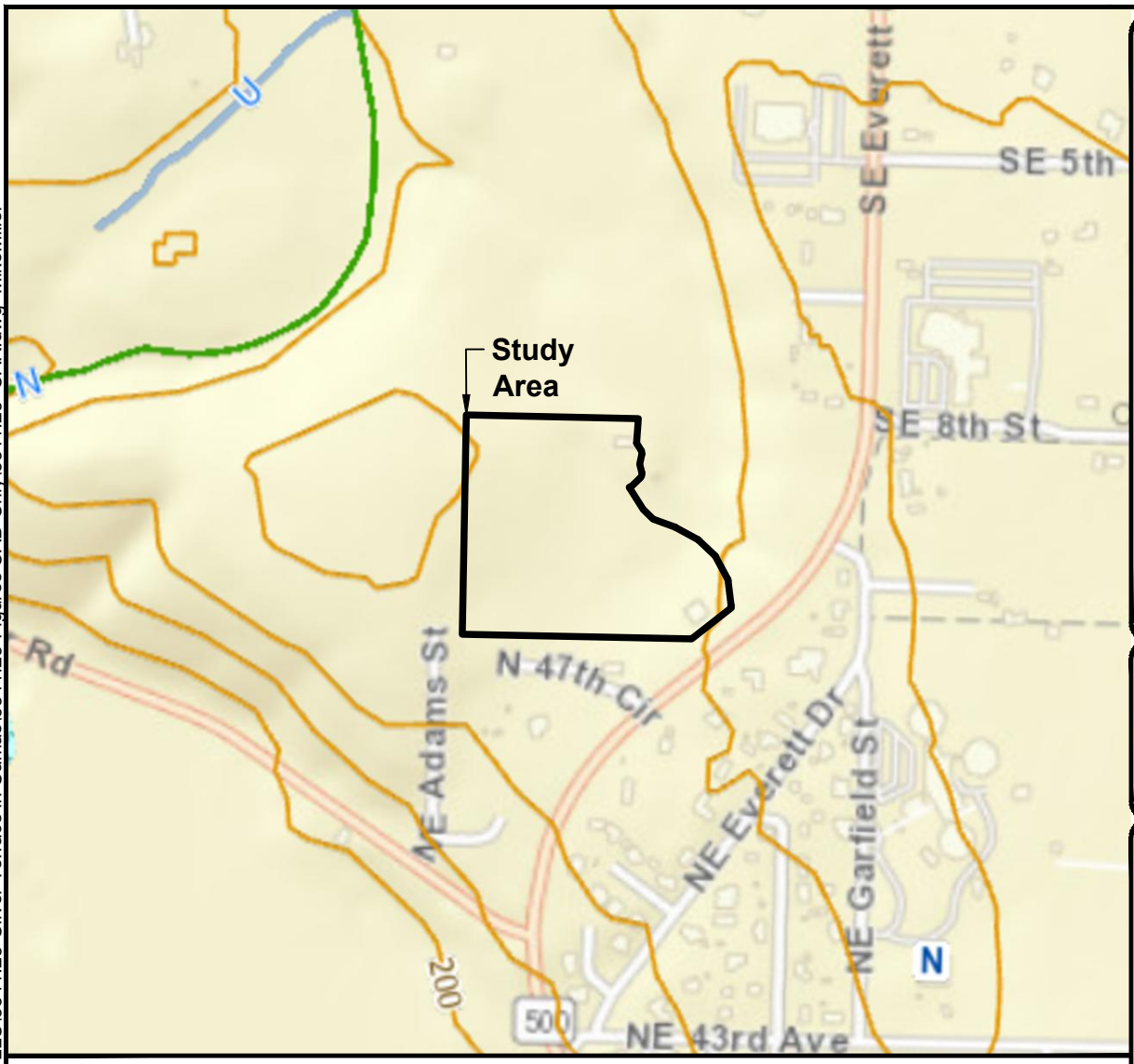

No mapped streams indicated onsite by the Washington State Department of Natural Resources (DNR).

LEGEND:

- Study Area

40-foot Contours

- 40 ft. Contours

Water Courses (FP)

- Type N, Np, Ns
- U, unknown

NOTE: Map provided on-line by Washington State Department of Natural Resources at web address: *http://fortress.wa.gov/dnr/app1/Fpars/viewer.htm*

Figure 8
WDNR STREAM TYPE MAP
Oliver's Terrace
HSR Capital LLC
City of Camas, Clark County, WA
Section 35, Township 2N, Range 3E, W.M.

DATE: 6/9/25
DWN: EF
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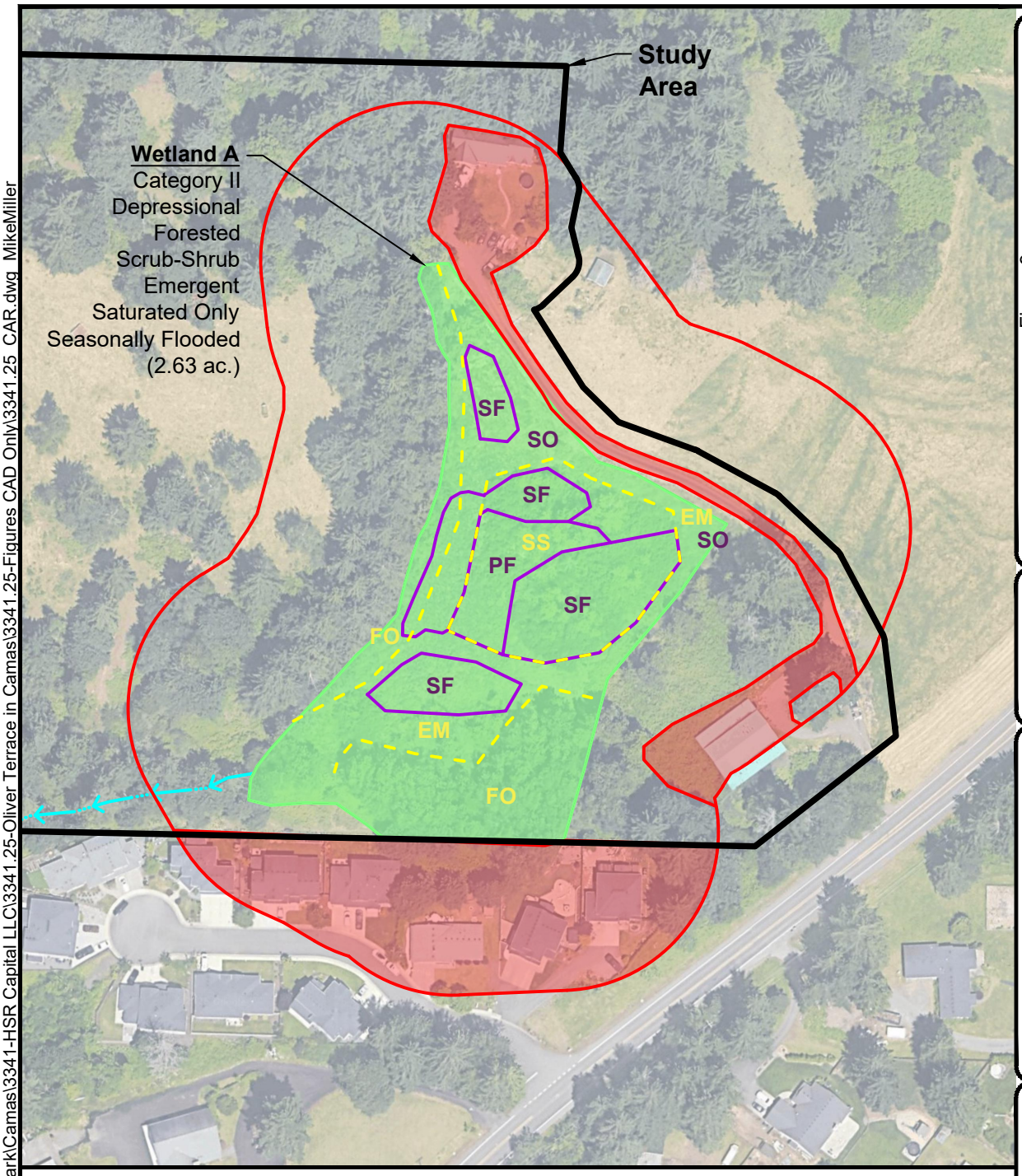

LEGEND:

- Study Area
- Wetland Unit Boundary
- Vegetation Class Division
- Hydroperiod Division
- 150' Wetland Offset
- Pollutants/Runoff - 28.5%

Cowardin Classes:

- EM Emergent (43.3%)
- SS Scrub/shrub (29.1%)
- FO Forested (27.6%)

Hydroperiods:

- PF Permanently flooded (8.1%)
- SF Seasonally flooded (30.4%)
- SO Saturated only (61.5%)

Figure 9
WETLAND RATING FORM-150' OFFSET
Oliver's Terrace
HSR Capital LLC
City of Camas, Clark County, WA
Section 35, Township 2N, Range 3E, W.M.

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SCALE IN FEET
0
150
300

N
W
E
S

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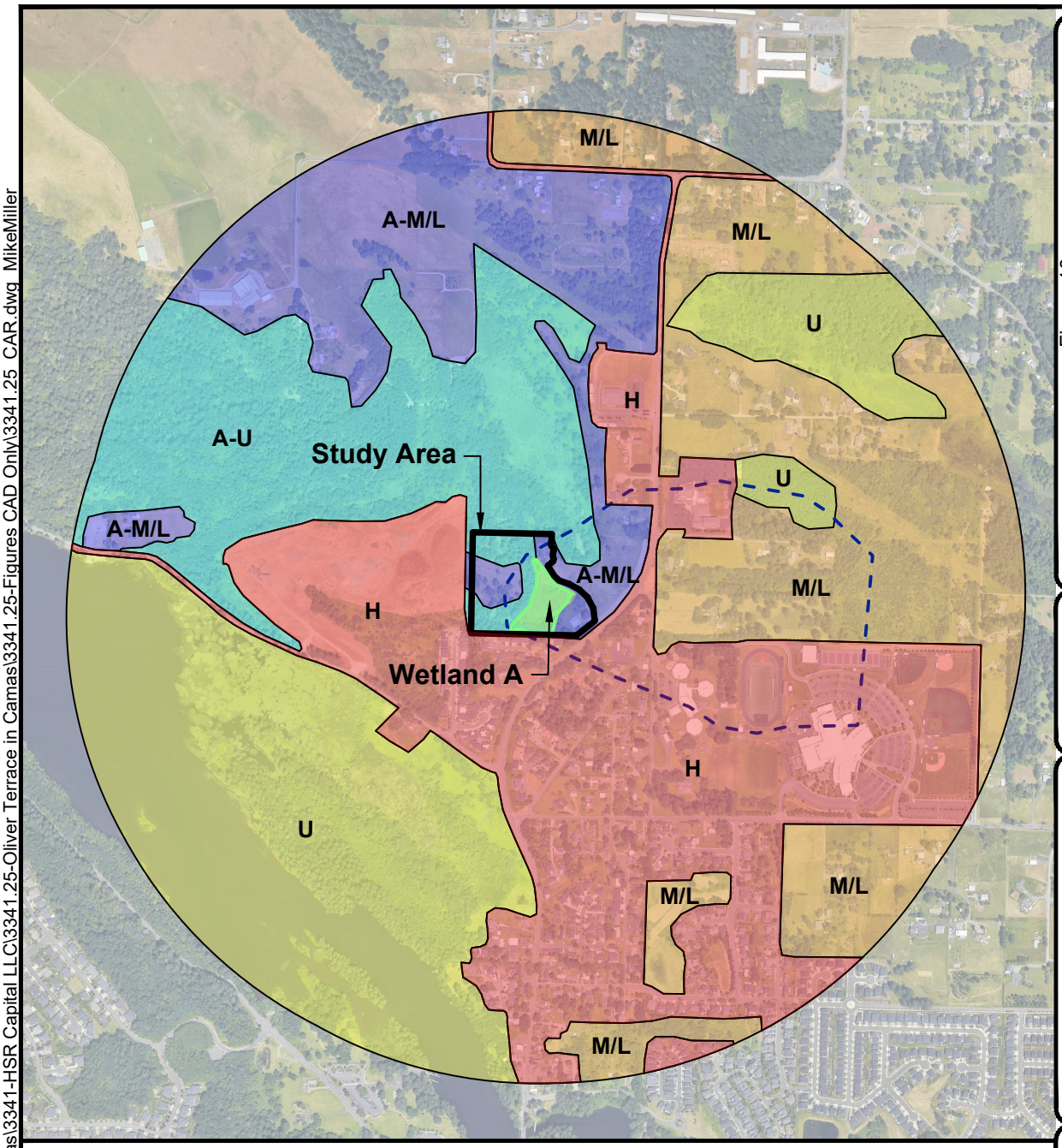

Figure 10
WETLAND RATING FORM-1 km OFFSET
Oliver's Terrace
HSR Capital LLC
City of Camas, Clark County, WA
Section 35, Township 2N, Range 3E, W.M.

DATE: 6/9/25
DWN: EF
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PRJ. MGR: AF
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LEGEND:

- Study Area
- Wetland Unit Boundary
- Contributing Basin
  35.1x area of Wetland A

H2.1 Accessible Habitat

- A-U: A-U (14.6%)
- A-M/L: A-M/L (12.8%)

H2.2 Undisturbed Habitat

- U: U (23.3%)
- M/L: M/L (20.4%)

H2.3 Land Use Intensity

- H: H (28.9%)

SCALE IN FEET: 0, 1200, 2400

N, W, E, S

H 2.1. Accessible Habitat Equation

% A-U habitat **14.6%** + [(% A-M/L intensity land uses)/2] **6.4%** = **21.0%**

H 2.2. Total Undisturbed Habitat Equation

% A-U + % U habitat **37.9%** + [(% A-M/L + % M/L land uses)/2] **16.6%** = **54.5%**

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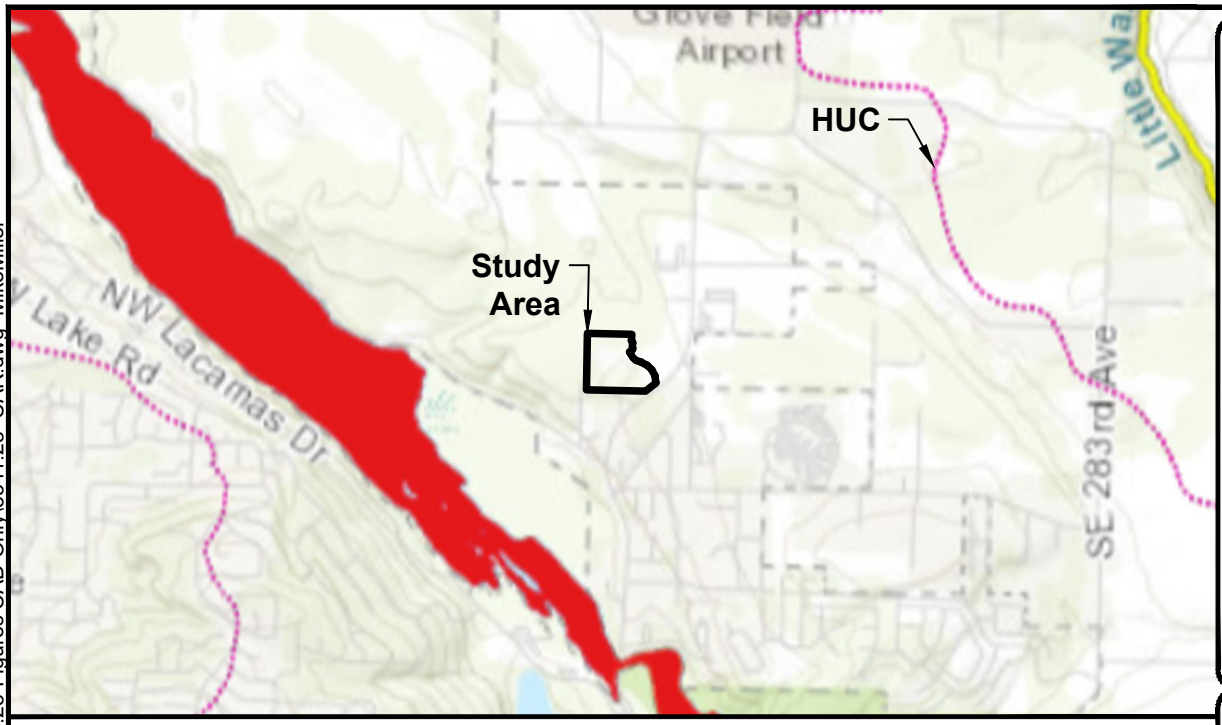

Figure 11
WETLAND RATING FORM-303(d) and TMDLs
Oliver's Terrace
HSR Capital LLC
City of Camas, Clark County, WA
Section 35, Township 2N, Range 3E, W.M.

DATE: 6/9/25
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Assessed Waters/Sediment

Water	Sediment	Subbasins
Category 5 - 303d	Category 5 - 303d	12 Digit HUC Boundary
Category 4C	Category 4C	
Category 4B	Category 4B	
Category 4A	Category 4A	
Category 2	Category 2	
Category 1	Category 1	

NOTE(S):
Map provided on-line by Washington State Department of Ecology at web address: *https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx?*

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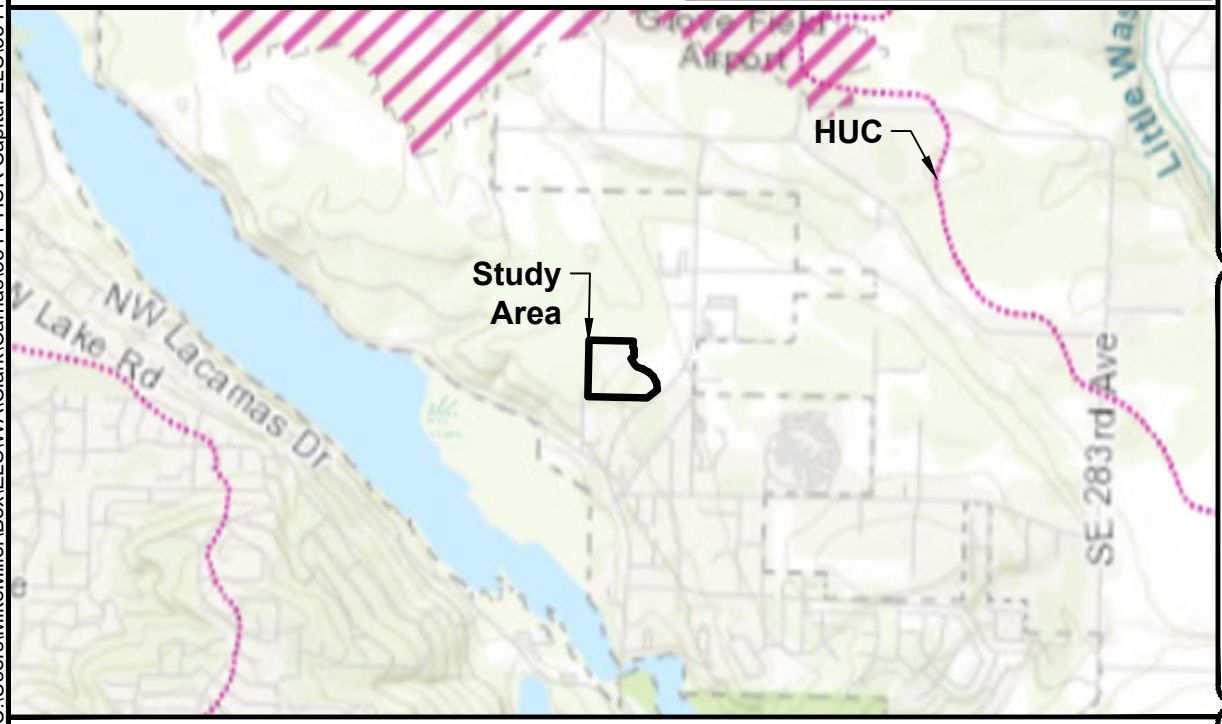

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SCALE IN FEET

WQ Improvement Projects

		Subbasins
TMDL - Approved	ARP - Approved	12 Digit HUC Boundary
4B - Approved	TMDL - In Development	
STI - Approved	STI - In Development	
	ARP - In Development	

N
W E
S

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Photo 1a. View looking southeast at the private drive entering the study area from SE Everett Road.

Photo 1b. View looking west into Wetland A.

Photo 2a. View looking northwest from upland. Wetland A is located at the top left and extends to the north and west.

Photo 2b. View looking south at upland area.

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PRJ. MGR: BJ
PROJ.#: 3341.25

Photoplate 1
Oliver's Terrace
HSR Capital LLC
Camas, Clark County, WA

Photo 3a. View looking south at permanently ponded area of Wetland A.

Photo 3b. View looking northwest at permanently ponded area of Wetland A. Forested slope can be seen in the background.

Photo 3c. View looking southwest. Standing water is visible. Forested slope leading to terrace is visible.

Photo 3d. View looking southeast at Wetland A.

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Photoplate 2
Oliver's Terrace
HSR Capital LLC
Camas, Clark County, WA

Photo 4a. View looking south at Wetland A. The division of emergent and scrub-shrub Cowardin classes can be seen.

Photo 4b. View looking northwest at the northwest corner of Wetland A.

Photo 4c. View looking west at Wetland A. Forested border, emergent, and scrub-shrub portions can be seen.

Photo 5. View looking northwest from the northwest corner of Wetland A. The slope up to the terrace can be seen.

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Photoplate 3
Oliver's Terrace
HSR Capital LLC
Camas, Clark County, WA

Photo 6a. View looking south. Wetland Flag A-21 can be seen. Forested slope up to terrace is visible.

Photo 7a. View looking west from northwest portion of the study area.

Photo 7b. View looking east from northwest portion of the study area.

Photo 7c. View looking northeast at dense cover of blackberry and sparse native shrub cover.

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Photoplate 4
Oliver's Terrace
HSR Capital LLC
Camas, Clark County, WA

Photo 8a. View looking southwest at Stream A originating from Wetland A and flowing southwestward.

Photo 8b. View looking southeast into Wetland A from origination of Stream A.

Photo 9. view looking northeasteast at Stream A. Flag at stream centerline can be seen.

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Photoplate 5
Oliver's Terrace
HSR Capital LLC
Camas, Clark County, WA

Photo 10a. View looking southeast. Seasonally ponded fringe of Wetland A can be seen.

Photo 10b. View looking northeast at seasonally ponded fringe of Wetland A.

Photo 11a. View looking north from the south central portion of Wetland A.

Photo 11b. View looking south at the edge of Wetland A. Sheet flow through the wetland toward the outlet and Stream A is visible.

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PROJ.#: 3341.25

Photoplate 6
Oliver's Terrace
HSR Capital LLC
Camas, Clark County, WA

APPENDIX A

ROUTINE DETERMINATION METHOD AND PLANT INDICATOR RATING DEFINITIONS

ROUTINE DETERMINATION METHOD

The Routine Determination Method is defined according to the U.S. Army Corps of Engineers' 1987 *Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers' Wetland Delineation Manual* (Environmental Laboratory 1987)*; Western Mountains, Valleys, and Coast Region (Version 2.0)* (Corps 2010). The Routine Determination Method examines three parameters – vegetation, soils, and hydrology – to determine if wetlands exist in a given area. Hydrology is critical in determining what is a wetland, but if often difficult to assess because hydrologic conditions can change periodically (hourly, daily, or seasonally). Consequently, it is necessary to determine if hydrophytic vegetation and hydric soils are present, which would indicate that water is present for a long enough duration to support a wetland plant community. By definition, wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

VEGETATION INDICATOR STATUS

The indicator status, following the scientific names of plant species, indicates the likelihood of the species to be found in wetlands according to the *National Wetland Plant List Indicator Rating Definitions* (Corps 2012). Listed from most likely to least likely to be found in wetlands, the indicator status categories are:

- **OBL** (obligate wetland) - occur almost always under natural conditions in wetlands.
- **FACW** (facultative wetland) - usually occur in wetlands, but occasionally found in non-wetlands.
- **FAC** (facultative) - equally likely to occur in wetlands or non-wetlands.
- **FACU** (facultative upland) - usually occur in non-wetlands, but occasionally found in wetlands.
- **UPL** (obligate upland) - occur almost always under natural conditions in non-wetlands.
- **NI** (no indicator) - insufficient data to assign to an indicator category.

APPENDIX B

WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Oliver's Terrace City/County: Camas/Clark Sampling Date: 05/01/2025
Applicant/Owner: HSR Capital LLC State: WA Sampling Point: TP-1
Investigator(s): Johnson, B., Freese, A. Section, Township, Range: S35, T2N, R3E
Landform (hillslope, terrace, etc.): Depression Local relief: (concave, convex, none): Concave Slope (%): 0-8%
Subregion (LRR): LRR A Lat: 45.6146803 Long: -122.408487 Datum: NAD83
Soil Map Unit Name: Lauren very gravelly loam, 0 to 8 percent slopes NWI classification: PSS1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Are "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** **Yes☒ No☐**
Hydric Soils Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks: Test Plot 1 was collected in the south central portion of the study area in Wetland A.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Alnus rubra*	5%	yes	FAC
2.	%		
3.	%		
4.	%		
50% = 3 20% = 1	5%	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft. radius)			
1. *Salix sitchensis*	25%	yes	FACW
2.	%		
3.	%		
4.	%		
5.	%		
50% = 13 20% = 5	25%	=Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Phalaris arundinacea*	60%	yes	FACW
2. *Veronica americana*	20%	yes	OBL
3. *Lysichiton americanus*	10%	no	OBL
4. *Athyrium filix-femina*	5%	no	FAC
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
50% = 48 20% = 19	95%	=Total Cover	
Woody Vine Stratum (Plot size: 15 ft radius)			
1.	%		
2.	%		
50% = ___ 20% = ___	%	=Total Cover	

% Bare Ground in Herb Stratum 5%

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC 100 (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1=	
FACW species		x 2=	
FAC species		x 3=	
FACU species		x 4=	
UPL species		x 5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A=

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes☒ No☐**

Remarks:

SOIL

Sampling Point: TP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	100%		%			Muck	See Remarks Below
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☒ Histic Epipedon (A2)
- ☒ Black Histic (A3)
- ☒ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____
Depth (inches):_____

Hydric Soil Present? **Yes☒ No☐**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☒ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☒ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☒ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (Inches): 2
Water Table Present? Yes ☐ No ☒ Depth (Inches): _____
Saturation Present? Yes ☐ No ☒ Depth (Inches): _____
(Includes Capillary fringe)

Wetland Hydrology Present? **Yes ☒ No ☐**

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Oliver's Terrace City/County: Camas/Clark Sampling Date: 05/01/2025
Applicant/Owner: HSR Capital LLC State: WA Sampling Point: TP-2
Investigator(s): Johnson, B., Freese, A. Section, Township, Range: S35, T2N, R3E
Landform (hillslope, terrace, etc.): Hillslope Local relief: (concave, convex, none): None Slope (%): 0-3%
Subregion (LRR): LRR A Lat: 45.6147683 Long: -122.4075672 Datum: NAD83
Soil Map Unit Name: Tisch silt loam, 0 to 3 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Are "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** **Yes☐ No☒**
Hydric Soils Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks: Test Plot 2 was collected in the south central portion of the study area on a slight hillslope approximately 4 feet above Wetland A.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pseudotsuga menziesii*	30%	yes	FACU
2. *Acer macrophyllum*	30%	yes	FACU
3.	%		
4.	%		
50% = 30 20% = 12	60%	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft. radius)			
1. *Symphoricarpos albus*	15%	yes	FACU
2.	%		
3.	%		
4.	%		
5.	%		
50% = 8 20% = 3	15%	=Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Geranium lucidum*	30%	yes	UPL
2.	%		
3.	%		
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
50% = 15 20% = 6	30%	=Total Cover	
Woody Vine Stratum (Plot size: 15 ft radius)			
1.	%		
2.	%		
50% = ___ 20% = ___	%	=Total Cover	

% Bare Ground in Herb Stratum 70%

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC 0 (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1=	
FACW species		x 2=	
FAC species		x 3=	
FACU species		x 4=	
UPL species		x 5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A=

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes☐ No☒**

Remarks:Geranium lucidum is assumed UPL due to no wetland indicator status (NI).

SOIL

Sampling Point: TP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100%		%			Loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____
Depth (inches):_____

Hydric Soil Present? **Yes☐ No☒**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (Inches): _____
Water Table Present? Yes ☐ No ☒ Depth (Inches): _____
Saturation Present? Yes ☐ No ☒ Depth (Inches): _____
(Includes Capillary fringe)

Wetland Hydrology Present? **Yes ☐ No ☒**

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Oliver's Terrace City/County: Camas/Clark Sampling Date: 05/01/2025
Applicant/Owner: HSR Capital LLC State: WA Sampling Point: TP-3
Investigator(s): Johnson, B., Freese, A. Section, Township, Range: S35, T2N, R3E
Landform (hillslope, terrace, etc.): Depression Local relief: (concave, convex, none): Concave Slope (%): 0-3%
Subregion (LRR): LRR A Lat: 45.6153608 Long: -122.407133 Datum: NAD83
Soil Map Unit Name: Tisch silt loam, 0 to 3 percent slopes NWI classification: PSS1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Are "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** **Yes☒ No☐**
Hydric Soils Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks: Test Plot 3 was collected in the central eastern portion of the study area in Wetland A.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
50% = ___ 20% = ___	%	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft. radius)			
1. *Salix sitchensis*	10%	yes	FACW
2. *Rosa nutkana*	5%	yes	FAC
3. *Cornus sericea*	5%	yes	FACW
4. *Rubus armeniacus*	5%	yes	FAC
5.	%		
50% = 13 20% = 5	25%	=Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Phalaris arundinacea*	60%	yes	FACW
2. *Juncus effusus*	20%	yes	FACW
3. *Lysichiton americanus*	5%	no	OBL
4. *Pteridium aquilinum*	5%	no	FACU
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
50% = 45 20% = 18	90%	=Total Cover	
Woody Vine Stratum (Plot size: 15 ft radius)			
1.	%		
2.	%		
50% = ___ 20% = ___	%	=Total Cover	

% Bare Ground in Herb Stratum 10%

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC 100 (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1=	
FACW species		x 2=	
FAC species		x 3=	
FACU species		x 4=	
UPL species		x 5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A=

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes☒ No☐**

Remarks:

SOIL

Sampling Point: TP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	100%		%			Muck	See Remarks Below
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☒ Histic Epipedon (A2)
- ☒ Black Histic (A3)
- ☒ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____
Depth (inches):_____

Hydric Soil Present? **Yes☒ No☐**

Remarks: Soils were unconsolidated muck near the surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☒ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ☒	No ☐	Depth (Inches): 2
Water Table Present?	Yes ☐	No ☒	Depth (Inches): _____
Saturation Present? (Includes Capillary fringe)	Yes ☐	No ☒	Depth (Inches): _____

Wetland Hydrology Present? **Yes ☒ No ☐**

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Oliver's Terrace City/County: Camas/Clark Sampling Date: 05/01/2025
Applicant/Owner: HSR Capital LLC State: WA Sampling Point: TP-4
Investigator(s): Johnson, B., Freese, A. Section, Township, Range: S35, T2N, R3E
Landform (hillslope, terrace, etc.): Hillslope Local relief: (concave, convex, none): None Slope (%): 0-3%
Subregion (LRR): LRR A Lat: 45.6153613 Long: -122.4072445 Datum: NAD83
Soil Map Unit Name: Tisch silt loam, 0 to 3 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Are "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soils Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?**	**Yes☐ No☒**

Remarks: Test Plot 4 was collected in the central eastern portion of the study area on a slight hillslope.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer macrophyllum*	30%	yes	FACU
2. *Pseudotsuga menziesii*	25%	yes	FACU
3.	%		
4.	%		
50% = 28 20% = 11	55%	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft. radius)			
1. *Corylus cornuta*	10%	yes	FACU
2.	%		
3.	%		
4.	%		
5.	%		
50% = 5 20% = 2	10%	=Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Geranium lucidum*	10%	yes	UPL
2. *Bromus carinatus*	5%	yes	FAC
3. *Taraxacum officinale*	2%	no	FACU
4. *Polystichum munitum*	2%	no	FACU
5.	%		
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
50% = 10 20% = 4	19%	=Total Cover	
Woody Vine Stratum (Plot size: 15 ft radius)			
1.	%		
2.	%		
50% = ___ 20% = ___	%	=Total Cover	

% Bare Ground in Herb Stratum 81%

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC 20 (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1=	
FACW species		x 2=	
FAC species		x 3=	
FACU species		x 4=	
UPL species		x 5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A=

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes☐ No☒**

Remarks:Geranium lucidum is assumed UPL due to no wetland indicator status (NI). The bare ground was 80% covered with unknown mosses.

SOIL

Sampling Point: TP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	100%		%			Loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____
Depth (inches):_____

Hydric Soil Present? **Yes☐ No☒**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (Inches): _____
Water Table Present? Yes ☐ No ☒ Depth (Inches): _____
Saturation Present? Yes ☐ No ☒ Depth (Inches): _____
(Includes Capillary fringe)

Wetland Hydrology Present? **Yes ☐ No ☒**

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Oliver's Terrace City/County: Camas/Clark Sampling Date: 05/01/2025
Applicant/Owner: HSR Capital LLC State: WA Sampling Point: TP-5
Investigator(s): Johnson, B., Freese, A. Section, Township, Range: S35, T2N, R3E
Landform (hillslope, terrace, etc.): Depression Local relief: (concave, convex, none): Concave Slope (%): 3-30%
Subregion (LRR): LRR A Lat: 45.6151149 Long: -122.4061474 Datum: NAD83
Soil Map Unit Name: Olympic stony clay loam, 3to 30 percent slopes NWI classification: PSS1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Are "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** **Yes☒ No☐**
Hydric Soils Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks: Test Plot 5 was collected in the south eastern portion of the study area in Wetland A.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Alnus rubra*	5%	yes	FAC
2.	%		
3.	%		
4.	%		
50% = 3 20% = 1	5%	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
50% = ___ 20% = ___	%	=Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Phalaris arundinacea*	60%	yes	FACW
2. *Circaea alpina*	25%	yes	FACW
3. *Epilobium sp.**	5%	no	FAC
4. *Urtica dioica*	5%	no	FAC
5.	5%	no	FACU
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
50% = 50 20% = 20	100%	=Total Cover	
Woody Vine Stratum (Plot size: 15 ft radius)			
1.	%		
2.	%		
50% = ___ 20% = ___	%	=Total Cover	

% Bare Ground in Herb Stratum 0%

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC 100 (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1=	
FACW species		x 2=	
FAC species		x 3=	
FACU species		x 4=	
UPL species		x 5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A=

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☒ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes☒ No☐**

Remarks:Epilobium species assumed FAC.

SOIL

Sampling Point: TP-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	100%		%			Muck	See Remarks Below
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☒ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____
Depth (inches):_____

Hydric Soil Present? **Yes☒ No☐**

Remarks: Soils were unconsolidated muck with small cobble mixed in.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☒ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (Inches): 2
Water Table Present? Yes ☐ No ☒ Depth (Inches): _____
Saturation Present? Yes ☐ No ☒ Depth (Inches): _____
(Includes Capillary fringe)

Wetland Hydrology Present? **Yes ☒ No ☐**

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region

Project/Site: Oliver's Terrace City/County: Camas/Clark Sampling Date: 05/01/2025
Applicant/Owner: HSR Capital LLC State: WA Sampling Point: TP-6
Investigator(s): Johnson, B., Freese, A. Section, Township, Range: S35, T2N, R3E
Landform (hillslope, terrace, etc.): Terrace Local relief: (concave, convex, none): None Slope (%): 0-8%
Subregion (LRR): LRR A Lat: 45.6150541 Long: -122.4059548 Datum: NAD83
Soil Map Unit Name: Hesson clay loam, 0 to 8 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☐, or Hydrology☐ significantly disturbed? Are "Normal Circumstances" present? Yes☒ No☐
Are Vegetation☐, Soil☐, or Hydrology☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes☐ No☒
Hydric Soils Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks: Test Plot 6 was collected in the southeastern portion of the study area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer macrophyllum*	10%	yes	FACU
2. *Pseudotsuga menziesii*	5%	yes	FACU
3.	%		
4.	%		
50% = 8 20% = 3	15%	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
50% = 20% =	%	=Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Dactylis glomerata*	20%	yes	FACU
2. *Geranium lucidum*	20%	yes	FACU
3. *Rubus leucodermis*	10%	no	FACU
4. *Phalaris arundinacea*	10%	no	FACW
5. *Urtica dioica*	5%	no	FAC
6.	%		
7.	%		
8.	%		
9.	%		
10.	%		
11.	%		
50% = 33 20% = 13	65%	=Total Cover	
Woody Vine Stratum (Plot size: 15 ft radius)			
1.	%		
2.	%		
50% = ___ 20% = ___	%	=Total Cover	

% Bare Ground in Herb Stratum 35%

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC _____ (A/B)

Prevalence Index worksheet

Total % Cover of:	Multiply by:
OBL species _____	x 1= _____
FACW species _____	x 2= _____
FAC species _____	x 3= _____
FACU species _____	x 4= _____
UPL species _____	x 5= _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A= _____

Hydrophytic Vegetation Indicators:

- ☐ 1 – Rapid Test for Hydrophytic Vegetation
- ☐ 2 – Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes☐ No☒

Remarks:

SOIL

Sampling Point: TP-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/3	100%		%			Silt loam	
14-16	10YR 4/2	70%	7.5YR 3/4	30%	C	M	Silt loam	
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and Wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____
Depth (inches):_____

Hydric Soil Present? **Yes☐ No☒**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) **(LRR A)**
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (Inches): _____
Water Table Present? Yes ☐ No ☒ Depth (Inches): _____
Saturation Present? (Includes Capillary fringe) Yes ☐ No ☒ Depth (Inches): _____

Wetland Hydrology Present? **Yes ☐ No ☒**

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX C

WETLAND RATING FORMS

Wetland name or number A_____

RATING SUMMARY – Western Washington

Name of Wetland (or ID #): A Date of site visit: 04/11/2025

Rated by Beau Johnson Trained by Ecology? X Yes ____ No Date of Training 2020

HGM Class used for rating Depressional Wetland has multiple HGM classes? ___ Yes X No

NOTE: **Form is not complete without the required figures** (figures can be combined).

Source of base aerial photo/map Google Earth 2025

OVERALL WETLAND CATEGORY I (based on functions X or special characteristics ____)

1. Category of wetland based on FUNCTIONS

X **Category I** – Total score = 23 - 27

_____ **Category II** – Total score = 20 - 22

_____ **Category III** – Total score = 16 - 19

_____ **Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
	Circle the appropriate ratings									
Site Potential	H	(M)	L	H	(M)	L	H	(M)	L	
Landscape Potential	(H)	M	L	(H)	M	L	(H)	M	L	
Value	(H)	M	L	(H)	M	L	(H)	M	L	**TOTAL**
Score Based on Ratings	8			8			8			24

Score for each function based on three ratings (order of ratings is not important)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I** **II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I** **II**
Interdunal	**I** **II** **III** **IV**
None of the above	

Wetland name or number A_____

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	8
Hydroperiods	D 1.4, H 1.2	8
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	8
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	8
Map of the contributing basin	D 4.3, D 5.3	9
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	9
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	10
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	10

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number A_____

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3 **YES** – The wetland class is **Flats**
If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?
___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
____The wetland is on a slope (slope can be very gradual),
____The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,
____The water leaves the wetland **without being impounded**.

NO – go to 5 **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

Wetland name or number A_____

5. Does the entire wetland unit **meet all** of the following criteria?
   ____ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   ____ The overbank flooding occurs at least once every 2 years.

NO – go to 6 **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? This means that any outlet, if present, is higher than the interior of the wetland.

NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched but has no obvious natural outlet.

NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

   NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

Wetland name or number A_____

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	2
D 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed plants > 95% of area points = 5 Wetland has persistent, ungrazed plants > ½ of area points = 3 Wetland has persistent, ungrazed plants ≥ 1/10 of area points = 1 Wetland has persistent, ungrazed plants < 1/10 of area points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is ≥ ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	2
Total for D 1 Add the points in the boxes above	9

Rating of Site Potential If score is: ____ **12-16 = H** **X** **6-11 = M** ____ **0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source manure Yes = 1 No = 0	1
Total for D 2 Add the points in the boxes above	4

Rating of Landscape Potential If score is: **X** **3 or 4 = H** ____ **1 or 2 = M** ____ **0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which the unit is found.) Yes = 2 No = 0	1
Total for D 3 Add the points in the boxes above	2

Rating of Value If score is: **X** **2-4 = H** ____ **1 = M** ____ **0 = L** *Record the rating on the first page*

Wetland name or number A_____

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	2
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part. Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	5
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself. The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5	3
Total for D 4 — Add the points in the boxes above	10

Rating of Site Potential If score is: ___**12-16 = H** **X** __**6-11 = M** ___**0-5 = L** *Record the rating on the first page*

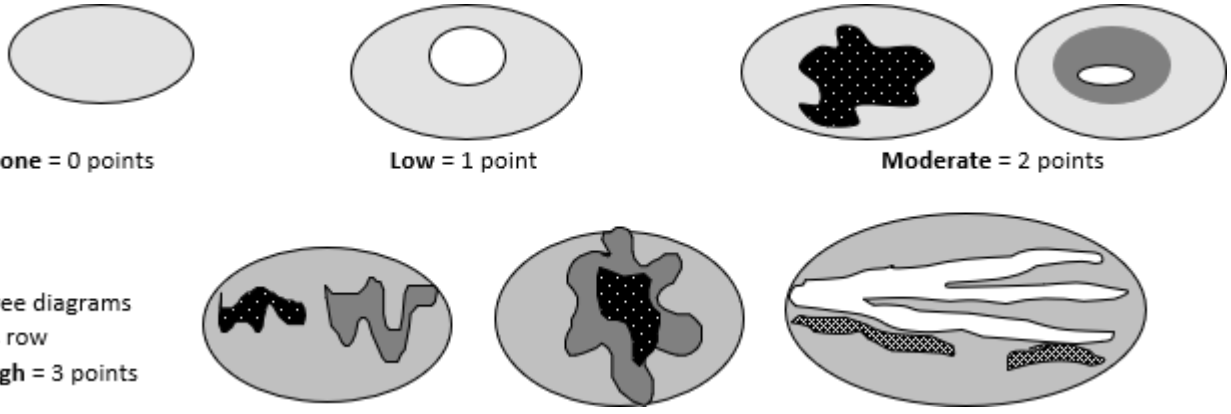
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 — Add the points in the boxes above	3

Rating of Landscape Potential If score is: _X__**3 = H** __**1 or 2 = M** ___**0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately downgradient of unit. points = 2 • Surface flooding problems are in a sub-basin farther downgradient. points = 1 • Flooding from groundwater is an issue in the sub-basin. points = 1 • The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0 • There are no problems with flooding downstream of the wetland. points = 0	2
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for D 6 — Add the points in the boxes above	2

Rating of Value If score is**: X**___**2-4 = H** __**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number A_____

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac if the unit is at least 2.5 ac, or more than 10% of the unit if it is smaller than 2.5 ac. ____Aquatic bed — 4 structures or more: points = 4 X___Emergent — 3 structures: points = 2 X___Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 X___Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon	2
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods). ____Permanently flooded or inundated — 4 or more types present: points = 3 X___Seasonally flooded or inundated — 3 types present: points = 2 ____Occasionally flooded or inundated — 2 types present: points = 1 X___Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Intermittently or seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	2
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.  **None** = 0 points — **Low** = 1 point — **Moderate** = 2 points All three diagrams in this row are **High** = 3 points	3

Wetland name or number A_____

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). X Standing snags (dbh > 4 in.) within the wetland ___ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) X At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ___ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	3
Total for H 1 Add the points in the boxes above	11

Rating of Site Potential If score is: ___**15-18 = H** **X** **7-14 = M** ___**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 14.6 **+** [(% moderate and low intensity land uses)/2]**6.4 = 21.0**% Total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	2
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat **37.9 +** [(% moderate and low intensity land uses)/2]**16.6 = 54.5**% Total habitat > 50% of Polygon points = 3 Total habitat 10-50% and in 1-3 patches points = 2 Total habitat 10-50% and > 3 patches points = 1 Total habitat < 10% of 1 km Polygon points = 0	3
H 2.3. Land use intensity in 1 km Polygon: > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	5

Rating of Landscape Potential If score is**: X** **4-6 = H** ___**1-3 = M** ___**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 — It has 3 or more Priority Habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW Priority Species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources data — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 Priority Habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	2

Rating of Value If score is: **X** **2 = H** **1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number A_____

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

— **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

— **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

— **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

— **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

— **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

— **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

— **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

— **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

— **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

Wetland name or number _____

X **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

X **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

X **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

— **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

— **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

Wetland name or number A_____

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes **–** Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes **= Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No **= Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes **= Category I** No **= Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No **= Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata

[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

Wetland name or number A_____

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* — The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: — Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	

Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 4/18/23

Rated by KT Wills Trained by Ecology? Yes X No ___ Date of training 9/2016

HGM Class used for rating Depressional Wetland has multiple HGM classes? ____Y X N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map Google Earth

OVERALL WETLAND CATEGORY III (based on functions X or special characteristics _)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 – 27

_____**Category II** – Total score = 20 – 22

X **Category III** – Total score = 16 – 19

_____**Category IV** – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H (M) L	H (M) L	H (M) L	
Landscape Potential	H (M) L	H (M) L	(H) M L	
Value	(H) M L	H M (L)	H (M) L	**TOTAL**
Score Based on Ratings	**7**	**5**	**7**	**19**

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	**(N/A)**

Wetland name or number __A_

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	6
Hydroperiods	D 1.4, H 1.2	6
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	6
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	6
Map of the contributing basin	D 4.3, D 5.3	7
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	7
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	8
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	8

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number __A_

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3 **YES** – The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?
___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
___The wetland is on a slope (*slope can be very gradual*),
___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
___The water leaves the wetland **without being impounded**.

NO – go to 5 **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?
___The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
___The overbank flooding occurs at least once every 2 years.

Wetland name or number __A__

NO – go to 6 **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number __A__

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	2
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*. Yes = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > 1/10 of area points = 1 Wetland has persistent, ungrazed plants < 1/10 of area points = 0	5
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	2
Total for D 1 Add the points in the boxes above	9

Rating of Site Potential If score is: ___**12-16 = H** __**x**__**6-11 = M** ___**0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___**3 or 4 = H** __**x**__**1 or 2 = M** ___**0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	1
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above	2

Rating of Value If score is: __**x**__**2-4 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number __A_

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?	
D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	2
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	3
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5	3
Total for D 4 Add the points in the boxes above	8

Rating of Site Potential If score is: ___**12-16 = H** __**x**__**6-11 = M** ___**0-5 = L** *Record the rating on the first page*

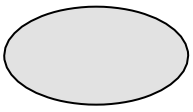
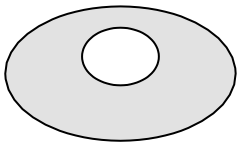
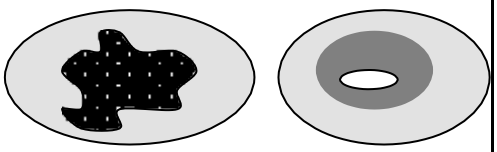
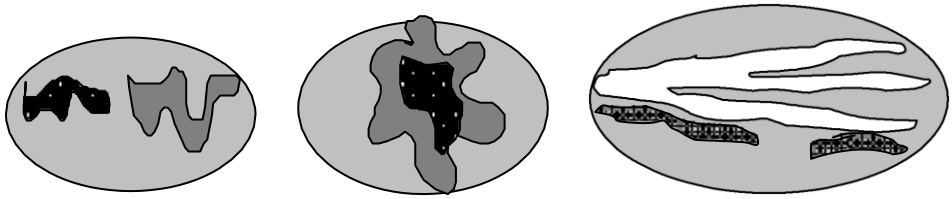
D 5.0. Does the landscape have the potential to support hydrologic functions of the site?	
D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	1
Total for D 5 Add the points in the boxes above	2

Rating of Landscape Potential If score is: ___**3 = H** __**x**__**1 or 2 = M** ___**0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?	
D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 • Surface flooding problems are in a sub-basin farther down-gradient. points = 1 Flooding from groundwater is an issue in the sub-basin. points = 1 The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0 There are no problems with flooding downstream of the wetland. points = 0	0
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for D 6 Add the points in the boxes above	0

Rating of Value If score is: ___**2-4 = H** ___**1 = M** __**x**__**0 = L** *Record the rating on the first page*

Wetland name or number __A__

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 __x__Emergent — 3 structures: points = 2 __x__Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 __x__Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* __x__The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	4
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 __x__Seasonally flooded or inundated — 3 types present: points = 2 ____Occasionally flooded or inundated — 2 types present: points = 1 __x__Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	2
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	2
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	2

Wetland name or number __A_

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* __x__Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). __x__Standing snags (dbh > 4 in) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) __x__Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* __x__At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ____Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	4
Total for H 1 Add the points in the boxes above	14

Rating of Site Potential If score is:___**15-18 = H** __**x**__**7-14 = M** ___**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat 15.2 **+** [(% moderate and low intensity land uses) 21.5/2]10.8 **= 26**% If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	2
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat 34.5 **+** [(% moderate and low intensity land uses) 36.4/2]18.2 **= 52.7**% Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	3
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	5

Rating of Landscape Pote**ntial** If score is**:** __**x**__**4-6 = H** ___**1-3 = M** ___**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 — It has 3 or more priority habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW priority species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	1

Rating of Value If score is:____**2 = H** __**x**__**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number __A_

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

____**Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

____**Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

____**Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

____**Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

____**Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

__x__**Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

____**Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

__x__**Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

____**Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

____**Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

____**Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

____**Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

____**Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number __A_

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes –Go to **SC 1.1** (No= **Not an estuarine wetland**)	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No - Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes **–** Go to **SC 2.2** (No **–** Go to **SC 2.3**) SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes **= Category I** No **= Not a WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes **– Contact WNHP/WDNR and go to SC 2.4** (No = **Not a WHCV**) SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes **= Category I** No **= Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to **SC 3.3** (No – Go to **SC 3.2**) SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** (No = **Is not a bog**) SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Is a Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Is a Category I bog** No **= Is not a bog**	**Cat. I**

Wetland name or number __A_

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: X Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yes – Go to **SC 6.1** No = **not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	N/A

Wetland name or number __A_

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Wetland name or number B

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland B Date of site visit: 4/18/23

Rated by KT Wills Trained by Ecology? Yes X No Date of training 9/2016

HGM Class used for rating Depressional Wetland has multiple HGM classes? Y X N

NOTE: **Form is not complete without the figures requested** *(figures can be combined)*.
Source of base aerial photo/map Google Earth

OVERALL WETLAND CATEGORY III (based on functions X or special characteristics)

1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 – 27

Category II – Total score = 20 – 22

X Category III – Total score = 16 – 19

Category IV – Total score = 9 – 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
	Circle the appropriate ratings			
Site Potential	H (M) L	H (M) L	H M (L)	
Landscape Potential	H M (L)	H M (L)	(H) M L	
Value	H (M) L	H M (L)	(H) M L	**TOTAL**
Score Based on Ratings	**5**	**4**	**7**	**16**

Score for each function based on three ratings *(order of ratings is not important)*

9 = H,H,H
8 = H,H,M
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	(N/A)

Wetland name or number __B_

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	6
Hydroperiods	D 1.4, H 1.2	6
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	6
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	6
Map of the contributing basin	D 4.3, D 5.3	7
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	7
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	8
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	8

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream *(can be added to another figure)*	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of **dense** trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of **dense, rigid** trees, shrubs, and herbaceous plants (*can be added to figure above)*	S 4.1	
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number __B_

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3 **YES** – The wetland class is **Flats**
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?
___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;
___At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
___The wetland is on a slope (*slope can be very gradual*),
___The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,
___The water leaves the wetland **without being impounded**.

NO – go to 5 **YES –** The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?
___The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
___The overbank flooding occurs at least once every 2 years.

Wetland name or number __B_

NO – go to 6 **YES** – The wetland class is **Riverine**

NOTE: The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 7 **YES** – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8 **YES** – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number __B_

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	3
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic *(use NRCS definitions)*. Yes = 4 No = 0	0
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area points = 5 Wetland has persistent, ungrazed, plants > ½ of area points = 3 Wetland has persistent, ungrazed plants > $^{1}/_{10}$ of area points = 1 Wetland has persistent, ungrazed plants < $^{1}/_{10}$ of area points = 0	3
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* Area seasonally ponded is > ½ total area of wetland points = 4 Area seasonally ponded is > ¼ total area of wetland points = 2 Area seasonally ponded is < ¼ total area of wetland points = 0	4
Total for D 1 Add the points in the boxes above	10

Rating of Site Potential If score is: ___**12-16 = H** __**x**__**6-11 = M** ___**0-5 = L** *Record the rating on the first page*

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	0
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	0
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source Yes = 1 No = 0	0
Total for D 2 Add the points in the boxes above	0

Rating of Landscape Potential If score is: ___**3 or 4 = H** ___**1 or 2 = M** __**x**__**0 = L** *Record the rating on the first page*

D 3.0. Is the water quality improvement provided by the site valuable to society?	
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0	1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (*answer YES if there is a TMDL for the basin in which the unit is found*)? Yes = 2 No = 0	0
Total for D 3 Add the points in the boxes above	1

Rating of Value If score is: ___**2-4 = H** __**x**__**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number __B_

DEPRESSIONAL AND FLATS WETLANDS

Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4 Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2 Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1 Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0	4
D 4.2. Depth of storage during wet periods: *Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.* Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7 Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5 Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 The wetland is a "headwater" wetland points = 3 Wetland is flat but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft (6 in) points = 0	3
D 4.3. Contribution of the wetland to storage in the watershed: *Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.* The area of the basin is less than 10 times the area of the unit points = 5 The area of the basin is 10 to 100 times the area of the unit points = 3 The area of the basin is more than 100 times the area of the unit points = 0 Entire wetland is in the Flats class points = 5	0
Total for D 4 Add the points in the boxes above	7

Rating of Site Potential If score is: ___**12-16 = H** __**x**__**6-11 = M** ___**0-5 = L** *Record the rating on the first page*

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0	0
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0	0
Total for D 5 Add the points in the boxes above	0

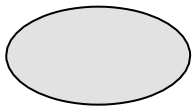
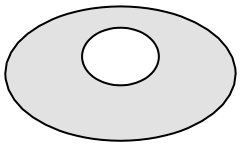
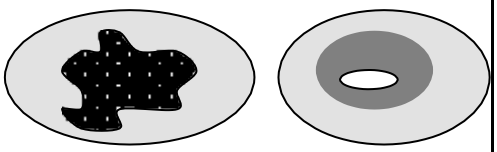
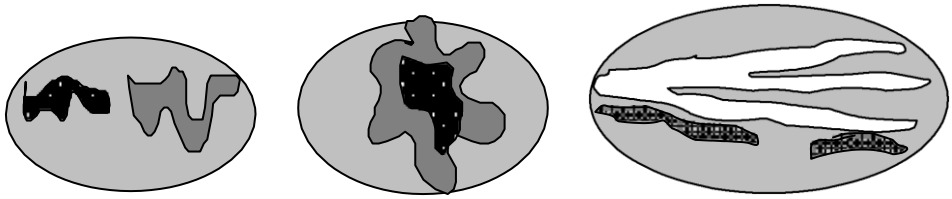
Rating of Landscape Potential If score is: ___**3 = H** ___**1 or 2 = M** __**x**__**0 = L** *Record the rating on the first page*

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. The unit is in a landscape that has flooding problems. *Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.* The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds): • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2 • Surface flooding problems are in a sub-basin farther down-gradient. points = 1 Flooding from groundwater is an issue in the sub-basin. points = 1 The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0 There are no problems with flooding downstream of the wetland. points = 0	0
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for D 6 Add the points in the boxes above	0

Rating of Value If score is: ___**2-4 = H** ___**1 = M** __**x**__**0 = L** *Record the rating on the first page*

Wetland name or number __B_

These questions apply to wetlands of all HGM classes. **HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class.* Check the Cowardin plant classes in the wetland. *Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.* ____Aquatic bed — 4 structures or more: points = 4 ____Emergent — 3 structures: points = 2 __x__Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 ____Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* ____The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	0
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*). ____Permanently flooded or inundated — 4 or more types present: points = 3 __x__Seasonally flooded or inundated — 3 types present: points = 2 ____Occasionally flooded or inundated — 2 types present: points = 1 __x__Saturated only — 1 type present: points = 0 ____Permanently flowing stream or river in, or adjacent to, the wetland ____Seasonally flowing stream in, or adjacent to, the wetland ____**Lake Fringe wetland** — **2 points** ____**Freshwater tidal wetland** — **2 points**	1
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft^2. *Different patches of the same species can be combined to meet the size threshold and you do not have to name the species.* ***Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle*** If you counted: > 19 species — points = 2 5 - 19 species — points = 1 < 5 species — points = 0	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*  **None** = 0 points  **Low** = 1 point  **Moderate** = 2 points All three diagrams in this row are **HIGH** = 3points 	0

Wetland name or number __B_

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. *The number of checks is the number of points.* __x__Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long). __x__Standing snags (dbh > 4 in) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet weathered where wood is exposed)* __x__At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated *(structures for egg-laying by amphibians)* ____Invasive plants cover less than 25% of the wetland area in every stratum of plants (*see H 1.1 for list of strata*)	3
Total for H 1 Add the points in the boxes above	5

Rating of Site Potential If score is:___**15-18 = H** ___**7-14 = M** __**x**__**0-6 = L** *Record the rating on the first page*

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include *only habitat that directly abuts wetland unit*). *Calculate:* % undisturbed habitat15.2 **+** [(% moderate and low intensity land uses)21.5/2]10.8 **= 26.0**% If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20-33% of 1 km Polygon points = 2 10-19% of 1 km Polygon points = 1 < 10% of 1 km Polygon points = 0	2
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. *Calculate:* % undisturbed habitat34.5 **+** [(% moderate and low intensity land uses)36.4/2]18.2 **= 52.7**% Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10-50% and in 1-3 patches points = 2 Undisturbed habitat 10-50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	3
H 2.3. Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (- 2) ≤ 50% of 1 km Polygon is high intensity points = 0	0
Total for H 2 Add the points in the boxes above	5

Rating of Landscape Pote**ntial** If score is**:** __**x**__**4-6 = H** ___**1-3 = M** ___**< 1 = L** *Record the rating on the first page*

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? *Choose only the highest score that applies to the wetland being rated.* Site meets ANY of the following criteria: points = 2 — It has 3 or more priority habitats within 100 m (see next page) — It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) — It is mapped as a location for an individual WDFW priority species — It is a Wetland of High Conservation Value as determined by the Department of Natural Resources — It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1 Site does not meet any of the criteria above points = 0	2

Rating of Value If score is:__**x**__**2 = H** ___**1 = M** ___**0 = L** *Record the rating on the first page*

Wetland name or number __B_

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: ***NOTE:*** *This question is independent of the land use between the wetland unit and the priority habitat.*

____**Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

____**Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).

____**Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

____**Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

____**Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).

__x__**Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

____**Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).

__x__**Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.

____**Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page).*

____**Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

____**Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

____**Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

__x__**Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number __B_

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt Yes –Go to **SC 1.1** (No= **Not an estuarine wetland**)	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No - Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are *Spartina*, see page 25) — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes **–** Go to **SC 2.2** (No **–** Go to **SC 2.3**) SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes **= Category I** No **= Not a WHCV** SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes **– Contact WNHP/WDNR and go to SC 2.4** (No = **Not a WHCV**) SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes **= Category I** No **= Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to **SC 3.3** (No – Go to **SC 3.2**) SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** (No = **Is not a bog**) SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Is a Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Is a Category I bog** No **= Is not a bog**	**Cat. I**

Wetland name or number __B_

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? ***If you answer YES you will still need to rate the wetland based on its functions.*** — **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. — **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer yes you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: X Long Beach Peninsula: Lands west of SR 103 — Grayland-Westport: Lands west of SR 105 — Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yes – Go to **SC 6.1** No = **not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	N/A

Wetland name or number __B_

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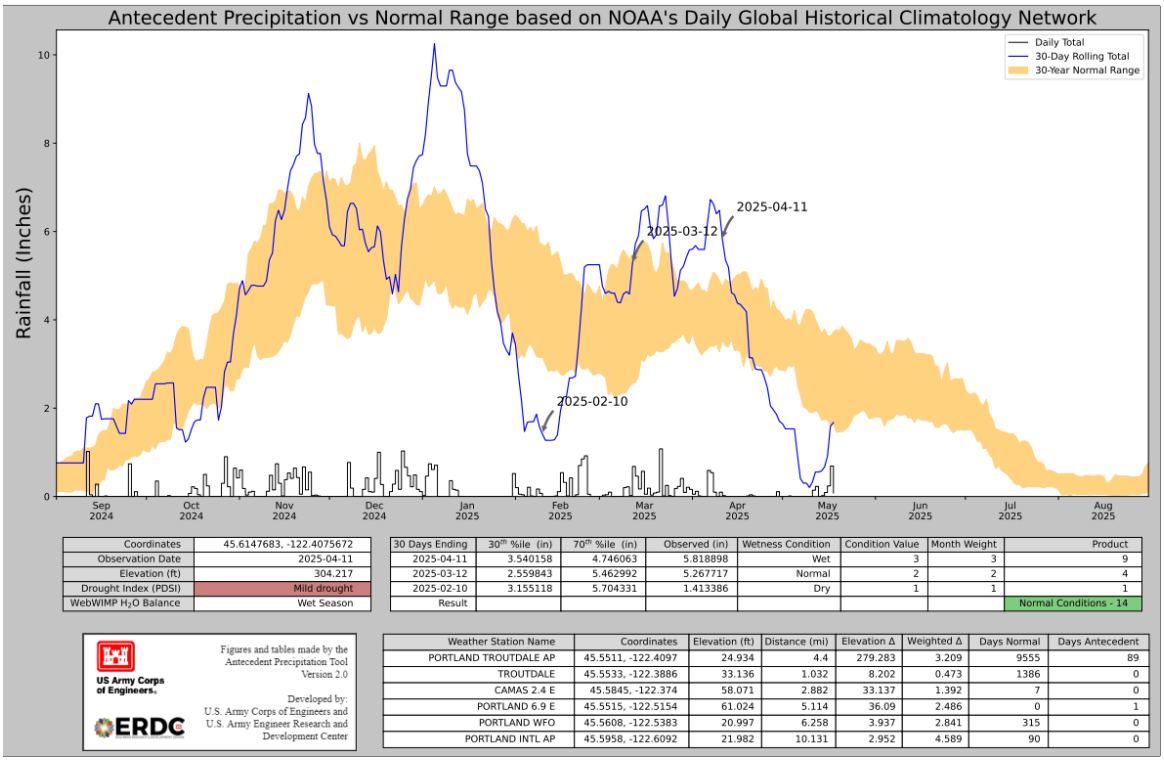
APPENDIX D

USACE ANTECEDENT PRECIPITATION TOOL DATA



Coordinates	45.6147683, -122.4075672
Observation Date	2025-04-11
Elevation (ft)	304.217
Drought Index (PDSI)	Mild drought
WebWIMP H_2O Balance	Wet Season

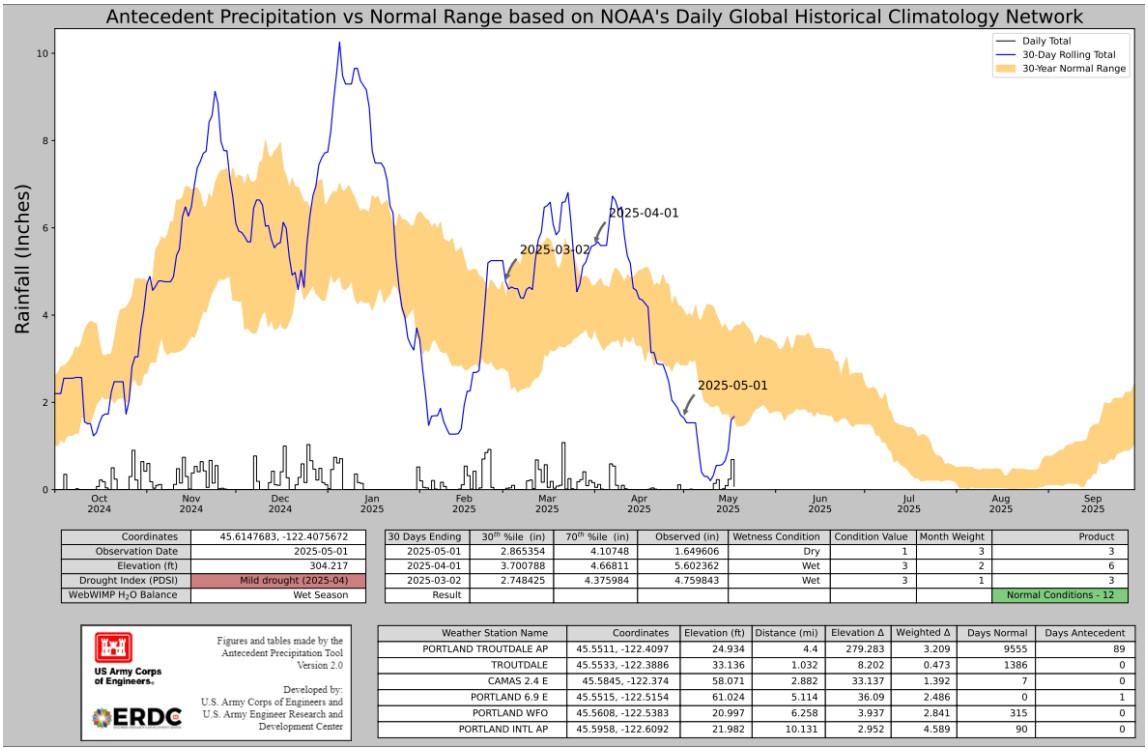
30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-04-11	3.540158	4.746063	5.818898	Wet	3	3	9
2025-03-12	2.559843	5.462992	5.267717	Normal	2	2	4
2025-02-10	3.155118	5.704331	1.413386	Dry	1	1	1
Result							Normal Conditions - 14

US Army Corps of Engineers.
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PORTLAND TROUTDALE AP	45.5511, -122.4097	24.934	4.4	279.283	3.209	9555	89
TROUTDALE	45.5533, -122.3886	33.136	1.032	8.202	0.473	1386	0
CAMAS 2.4 E	45.5845, -122.374	58.071	2.882	33.137	1.392	7	0
PORTLAND 6.9 E	45.5515, -122.5154	61.024	5.114	36.09	2.486	0	1
PORTLAND WFO	45.5608, -122.5383	20.997	6.258	3.937	2.841	315	0
PORTLAND INTL AP	45.5958, -122.6092	21.982	10.131	2.952	4.589	90	0



Coordinates	45.6147683, -122.4075672
Observation Date	2025-05-01
Elevation (ft)	304.217
Drought Index (PDSI)	Mild drought (2025-04)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-05-01	2.865354	4.10748	1.649606	Dry	1	3	3
2025-04-01	3.700788	4.66811	5.602362	Wet	3	2	6
2025-03-02	2.748425	4.375984	4.759843	Wet	3	1	3
Result							Normal Conditions - 12

US Army Corps of Engineers.
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PORTLAND TROUTDALE AP	45.5511, -122.4097	24.934	4.4	279.283	3.209	9555	89
TROUTDALE	45.5533, -122.3886	33.136	1.032	8.202	0.473	1386	0
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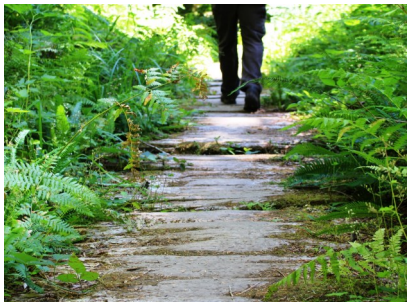
PORTLAND WFO	45.5608, -122.5383	20.997	6.258	3.937	2.841	315	0
PORTLAND INTL AP	45.5958, -122.6092	21.982	10.131	2.952	4.589	90	0

MITIGATION PLAN

August 26, 2025



Oliver's Terrace

Camas, Washington

Prepared for

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SIGNATURE PAGE

The information in this report was compiled and prepared under the supervision and direction of the undersigned.

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INTRODUCTION

Ecological Land Servies, Inc. (ELS) has prepared this Mitigation Plan on behalf of the applicant, HSR Capital LLC, for the purpose of permitting an 11-lot residential subdivision. The project site includes the western portion of Clark County Tax Parcel 178221000 located near 1004 SE Everett Road, Camas, WA 98607 within the NW ¼ of Section 35, Township 2 North, Range 3 East of the Willamette Meridian (Figure 1). ELS biologists evaluated the property on April 11, 2025, and May 1, 2025, to determine the presence and extent of critical areas onsite. The results of the findings of critical areas are detailed in the *Critical Areas Report for Oliver's Terrace* (ELS 2025*)*.

The project proposes a wetland buffer reduction under *CMC 16.53.050-(C)(1)* to avoid and minimize impacts. Following the reduction, approximately 0.03 acres of temporary indirect impacts to Wetland A will result from the installation of a sewer main crossing its buffer.

To satisfy buffer reduction requirements and restore temporarily impacted areas, the applicant will:

- Protect an approximately 0.81-acre vegetated corridor with an average width of at least 100 feet connecting Offsite Wetland 2 to Wetland A through a conservation covenant.
- Enhance the southwest portion of Offsite Wetland 2 by removing invasive species and enhancing predominantly herbaceous areas with native tree and shrub plantings, improving conditions beyond pre-construction levels. This effort will extend through the newly created corridor and across the buffer of Wetland A.
- Restore temporarily disturbed areas by seeding with a native seed mix after construction activities are complete.
- Retain any trees removed during grading onsite and place them within the corridor as priority habitat features.

These measures will collectively meet the buffer reduction requirements, restore temporary impacts, improve habitat connectivity, and enhance ecological conditions in both wetlands and their buffers.

This mitigation plan was prepared according to Camas Municipal Code (CMC) *16.51-General Provisions for Critical Areas, 16.53- Wetlands, and 16.61- Fish and Wildlife Habitat Conservation Areas* (March 2017), the Washington State Department of Ecology (Ecology) *Wetland Mitigation in Washington State Part 1: Agency and Policies and Guidance (version 2)* (2021), and the U.S. Army Corps of Engineers' (Corps) *Compensatory Mitigation for Losses of Aquatic Resources* (33 C.F.R. §332 (2008)).

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PROJECT DESCRIPTION

PROJECT LOCATION

The approximately 12.17-acre study area consists of a portion of Clark County Tax Parcel Number(s) 178221000, located near 1004 SE Everett Road in Camas, Washington within the NW ¼ of Section 35, Township 2 North, Range 3 East of the Willamette Meridian (Figure 1).

PROJECT PROPOSAL

The proposed project includes the development of an 11-lot residential subdivision with interior roads, sidewalks, utilities, and stormwater facilities on a terrace in the central west portion of the study area. The main construction elements of the project will include grading associated with lot development and interior roads, installing utilities, constructing proposed residential units, fencing, and building a stormwater pond. The extent of development will generally end at the top of the steep slope located in the central portion of the study area, with the exception of the stormwater pond located slightly downslope to the north. Additionally, a sewer main line is set to be installed which will cross through the buffer of Wetland A.

Before work begins, a construction entrance will be established. All construction and tree removal will strictly adhere to the designated construction area. Equipment used may include excavators, haul trucks, construction trucks, and hand tools. To minimize impacts, best management practices (BMPs) will be utilized before, during, and after construction. Utilized BMPs include installing silt fencing at the edge of grading during construction, locating equipment and staging areas in uplands outside of critical areas buffers, fueling equipment offsite to prevent spills, having a spill kit onsite to contain any unintended fuel spills, conducting work during normal daytime hours to prevent nighttime disturbance, applying native grass seed to disturbed areas, and making a water truck available to prevent wind erosion and dust blowing during construction.

The applicant proposes utilizing the buffer reduction allowed under *CMC 16.53.050-(C)(1*) to avoid and minimize indirect impacts to onsite and adjacent wetlands. The project fully avoids direct impacts to the onsite wetland and stream; however, due to the surrounding critical areas and topography restraints, the sewer line will extend through the buffer of Wetland A resulting in temporary impacts. Following implementation of avoidance and minimization measures, as detailed in the Avoidance and Minimization of Impacts section, the project proposes:

- 0.03 acres of temporary indirect impacts to Wetland A from the installation of a sewer main line.

All temporarily impacted areas will be restored to or enhanced beyond the pre-project conditions.

Existing Conditions

Site Description and Surrounding Land Uses

The study area encompasses approximately 12.17 acres within the western portion of an 18.45-acre parcel in the City of Camas, zoned for North Shore Lower Density Residential (LD-NS) and North Shore Mixed Use (MX-NS). The study area currently includes a single-family home, a barn housing cattle, some derelict farm equipment buried under brush, a driveway, a parking area, six to eight vehicles which appear to be both personal and project cars, and perimeter fencing. Access is provided via a private driveway from SE Everett Street. Adjacent properties include a residential subdivision under development to the west, established homes to the south and east, and undeveloped forested land to the north. The property lies approximately half a mile northeast of Lacamas Lake and approximately half a mile northwest of Camas High School.

The study area features varied topography, with higher elevations along SE Everett Street and rolling slopes descending northwest toward a central depression that supports Wetland A (Figure 2). In the west, the terrain rises abruptly by about 30 feet to a broad relatively flat terrace. A long driveway bisects the eastern portion from north to south. Wetland A is bordered by mixed forest canopy extending offsite to the north, while its interior supports shrub patches, emergent vegetation, and permanently ponded areas. Invasive Himalayan blackberry (*Rubus armeniacus*) is widespread and is especially dense along a Type Ns (non-fish-bearing seasonal) stream corridor originating from the southwest edge of Wetland A. The slope west of the wetland is forested with a moss-dominated ground cover and sparse understory, transitioning at the terrace top to more open vegetation with widely spaced trees, shrubs, and grassy clearings.

Existing Critical Areas and Buffers

A delineation of one onsite wetland following the appropriate technical manuals: *The Routine Determination Method according to the Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (U.S. Army Corps of Engineers 2010), was completed by ELS in April 2025. ELS biologists determined the OHWM boundary of one onsite stream following *RCW 90.58.030 and Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Ecology 2016). Priority habitat and species are determined and regulated by the Washington Department of Fish and Wildlife (WDFW). ELS identified two Oregon white oaks (Quercus garryana) and two snags onsite. The details and delineation for two offsite wetlands was gathered from *Lacamas Farms Lot 2 Critical Areas Report* (ELS 2023). The delineation of onsite wetlands and streams is described in detail in the *Critical Areas Report for Oliver's Terrace* (ELS 2025).

Wetland A

Wetland A is an approximately 2.35-acre forested, scrub-shrub, emergent, depressional wetland located in the southeast portion of the study area. Wetland A includes hydroperiods that are seasonally flooded and saturated only. There are portions of the wetland that remain

permanently flooded but do not meet the threshold to be considered a hydroperiod. In the southwest corner, a Type Ns stream develops from a highly constricted outlet and continues to flow southwest, while the interior of the wetland is significantly lower than the outlet and water remains impounded throughout. Snags, and small and large woody debris were noted throughout. The wetland supports a diverse plant community with at least 19 different species observed. Interior areas contained ungrazed thick stemmed vegetation suitable for amphibians to use for laying eggs. Hydrology likely comes from precipitation, runoff from adjacent uplands, a shallow ground water table, and localized seeps. According to the *Washington State Wetland Rating System for Western Washington: 2014 Update Version 2.0* (Hruby & Yanke 2023; Rating System), Wetland A is a Category I wetland scoring, 8 points for water quality functions, 8 points for hydrological functions, and 8 points for habitat functions for a total of 24 points.

Offsite Wetland 1

According to a previous delineation (ELS 2023) Offsite Wetland 1 is part of a larger wetland unit that extends across several properties to the north and its total size is unknown. It is a forested, scrub-shrub, emergent depressional wetland. The wetland includes hydroperiods that are seasonally flooded, saturated only, and a permanently flowing stream in/adjacent to the wetland. Sources of hydrology likely include a shallow groundwater table, precipitation, runoff from adjacent uplands, and the adjacent stream. According to the Rating System, Offsite Wetland 1 is a Category III wetland scoring, 7 points for water quality functions, 5 points for hydrological functions, and 7 points for habitat functions for a total of 19 points.

Offsite Wetland 2

According to a previous delineation (ELS 2023) Offsite Wetland 2 is approximately 0.44 acres in size and is a scrub-shrub, depressional wetland located offsite north of the study area. The wetland includes hydroperiods that are seasonally flooded and saturated only. Sources of hydrology likely include a shallow groundwater table, precipitation, and runoff from adjacent uplands. According to the Rating System, Offsite Wetland 1 is a Category III wetland scoring, 5 points for water quality functions, 4 points for hydrological functions, and 7 points for habitat functions for a total of 16 points. Portions of the buffer are located within the study area and are predominantly forested with some gaps, and its shrub component is largely dominated by blackberries.

Stream A

One Type Ns stream (Stream A) was identified in the southwest portion of the study area. The stream originates from the southwest portion of Wetland A where drainage patterns in the wetland finally appear as a defined channel. The stream is not mapped by the Washington Department of Natural Resources (WDNR) and the stream type was determined based on observations in the field. Stream A flows from east to west where it continues offsite along the southern property boundary. The width between OHWM ranged from one to three feet, while it was generally less than 2 feet wide, and the wetted channel contained two to five inches of water on the May 1, 2025, site visit. The streambed consisted of clay and small cobbles. Dense

blackberry bordered the channel, and downed logs were observed both adjacent to and lying across the stream.

Wetland Buffers

Wetland A

Standard wetland buffers are based on wetland category and habitat score from the Rating System in conjunction with the intensity of land uses proposed on development sites. Category I wetlands with habitat scores of 8 and a high land use intensity receive buffers of 260 feet according to *CMC Table 16.53.040-2.* Due to topographical constraints, Wetland A's buffer is functionally isolated westward from the top of the slope per *CMC 16.53.040 (B)(4)(b)(i)* which states that:

> *b. Functionally Isolated Buffer Areas. Areas which are functionally separated from a wetland and do not protect the wetland from adverse impacts shall be treated as follows:*
>
> *i. Pre-existing roads, structures, or vertical separation shall be excluded from buffers otherwise required by this chapter;*

The buffer is effectively isolated by a steep slope, rising about 30 feet over a horizontal distance of 80 feet. This grade creates a strong vertical separation that limits connectivity between the buffer and surrounding areas.

Offsite Wetland 1 and 2

Offsite Wetlands 1 and 2 are Category III wetlands with habitat scores of 7. Due to a proposed high intensity land use the wetlands receive buffers of 150 feet according to *CMC Table 16.53.040-3*. Table 1 below summarizes the wetlands and the standard buffer widths.

Stream Buffers

Stream buffer widths are based upon the WDNR Water Typing System and further classification based upon fish presence (Fish bearing v. Non-fish Bearing) for streams existing in the City of Camas. The stream is not mapped on the WDNR Stream Type Map or local Clark County database. Due to the narrow width (most portions less than 2 feet wide), origination from a wetland, no connection to a mapped or observed stream, surrounding topography, absence of fish bearing streams in the vicinity, and landowner recollection of the stream being dry during portions of the year, it is assumed based on best available science the stream is a Type Ns. According to *16.61.040(D)* a Type Ns (non-fish bearing seasonal) stream receives a buffer of 25 feet. Table 2 below summarizes the stream and the standard buffer width.

Table 1. Summary of Wetlands

Wetland	Size Onsite (acre)	Hydrogeomorphic Classification[1]	Cowardin Class[2]	Habitat Score[1]	Category[1]	Buffer Width[3]
A	2.35	Depressional	Forested, Scrub-Shrub, Emergent,	8	I	260 ft.

Offsite 1	0.00	Depressional	Forested, Scrub-Shrub, Emergent	7	III	150 ft.
Offsite 2	0.00	Depressional	Scrub-Shrub	7	III	150 ft.

[1]Hruby 2014 [2]Cowardin et. al., 1979 [3]CMC Table 16.53.040

Table 2. Summary of Stream

Name	DNR Water Type[1]	Buffer Width (feet)[2]
Stream A	Type Ns (Seasonal, Non-fish-bearing)	25 ft.

[1]DNR 2024 [2]CMC 16.61.040(D)

Oregon White Oak

ELS biologists identified two Oregon white oak trees onsite. The diameter at breast height (DBH) of Oak 1 measures 12 inches and the DBH of Oak 2 measures 15 inches. Although the project does not currently propose any impacts to the Oregon white oaks located onsite, these trees have been mapped and documented in the figure set included with the submittal. The Oregon white oaks onsite do not meet the threshold for protection under *CMC 16.51.030.A.1.a* which states protection applies to:

a. ***Oregon White Oaks.***

i. Individual Oregon White Oak trees with a twenty-inch diameter at breast height (twenty inches dbh).

ii. Stands of Oregon white oak trees greater than one acre, when they are found to be valuable to fish and wildlife (i.e., may include trees with cavities, large diameter breast height (twelve inches dbh), are used by priority species, or have a large canopy.

iii. All Oregon white oak snags unless determined by an arborist to be a hazard.

Although the Oregon white oaks onsite do not meet these criteria, ELS biologists acknowledge that the oaks are considered a Priority Habitat by the Washington State Department of Fish and Wildlife.

Wetland Buffer Modification

This project proposes a reduction to the buffers of Wetland A and Offsite Wetland 2 from those required for high land use intensity to the moderate land use intensity identified in *CMC Table 16.53.040-3* and *16.53.040-4*, by meeting the required criteria (excerpted in italics below). Specifically, the buffer of Offsite Wetland 2 will be reduced from 150 feet to 110 feet, and the buffer of Wetland A will be reduced from 260 feet to 195 feet, with standard text below the excerpted italics detailing how each condition allowing the reduction is met by the proposed project in accordance with *CMC 16.53.050 (C)(1)(a):*

a. Lower Impact Land Uses. The buffer widths recommended for proposed land uses with high-intensity impacts to wetlands can be reduced to those recommended for moderate-intensity impacts if both of the following criteria are met:

i. A relatively undisturbed, vegetated corridor at least one hundred feet wide is protected between the wetland and any other priority habitats that are present as defined by the Washington State Department of Fish and Wildlife [8]; and

ii. Measures to minimize the impacts of the land use adjacent to the wetlands are applied, such as infiltration of stormwater, retention of as much native vegetation and soils as possible, direction of noise and light away from the wetland, and other measures that may be suggested by a qualified wetland professional.

A relatively undisturbed, vegetated corridor at least 100 feet wide will be established and protected between Wetland A and Offsite Wetland 2 (Figure 3). In total, the protected area will encompass 0.81 acres. Native vegetation will be retained to the greatest extent possible, except where necessary for residential lot and road development outside of critical areas. Additionally, all runoff from the proposed development will be directed to a stormwater facility where it will be treated and either infiltrate or outflow to the offsite wetland buffer during periods of heavy precipitation. Streetlights will be hooded and oriented downward and landscape lighting will be hooded or directed toward residential structures. The stormwater pond will be located adjacent to the reduced buffer, which will help reduce noise and disturbance from residential activities Back or side yards of future homes will be located adjacent to the reduced buffers, minimizing traffic noise and fencing will be placed along the side and rear of the lots to minimize pet and human disturbance to the wetland buffers.

The project proposes to further reduce the buffer of Offsite Wetland 2 from 110 to 83 feet as combined reductions are allowed under *CMC 16.53.050(C)(1)(c*) – which states:

c. Combined Reductions. Buffer width reductions allowed under subsections (C)(1)(a) and (C)(1)(b) of this section may be added provided that minimum buffer widths shall never be less than seventy-five percent of required buffer width for all Categories I and II, or less than fifty feet for Category III wetlands, and twenty-five feet for all Category IV wetlands.

Per this provision the moderate intensity land use buffer will be reduced by an additional 25 percent after meeting the criteria listed in *CMC 16.53.050-(C)(1)(b) –*

b. Restoration. Buffer widths may be reduced up to twenty-five percent if the buffer is restored or enhanced from a pre-project condition that is disturbed (e.g., dominated by invasive species), so that functions of the post-project wetland and buffer are equal or greater. To the extent possible, restoration should provide a vegetated corridor of a

minimum one hundred feet wide between the wetland and any other priority habitat areas as defined by the Washington State Department of Fish and Wildlife. The habitat corridor must be protected for the entire distance between the wetland and the priority habitat area by some type of permanent legal protection such as a covenant or easement. The restoration plan must meet requirements in subsection D of this section for a mitigation plan, and this section for a critical area report.

The project will enhance the onsite portion of the buffer of Offsite Wetland 2 from its pre-project condition through the removal of invasive species, as the area indicated in Figure 5 is currently dominated by Himalayan blackberries. These areas will then be replanted with native trees and shrubs. The stormwater pond and its outfall will be located adjacent to the reduced buffer, which has a low land use intensity and will provide hydrology to the buffer of Offsite Wetland 2. The project will also protect an approximately 146-foot-wide, 0.81-acre, vegetated corridor that will connect Offsite Wetland 2 and Wetland A. Signage will be installed and it will have permanent legal protection through a conservation covenant. Additionally, the restoration plan will meet the requirements of subsection D which includes avoiding, minimizing, and compensating for wetland impacts, as well as prioritizing onsite mitigation. There will be no impacts to Offsite Wetland 2 after buffer reductions are applied. Details regarding the enhancement measure and planting specifications to meet buffer reduction requirements are discussed in the Buffer Reduction Enhancement Section below and summarized in Table 6.

Avoidance and Minimization of Impacts

Avoidance of Impacts

The mitigation requirements of the City specify that all regulated development activities proposing impacts to wetlands shall examine whether the impacts can be avoided and/or minimized prior to proposing compensation for the impacts. The applicant used preferred mitigation sequencing that first avoids, then minimizes, and finally compensates for unavoidable impacts. The proposed plan utilizes buffer modification through reduction to avoid all direct and indirect impacts to critical areas. Specific design measures have been taken to avoid indirect impacts to the offsite wetland, including a revised storm pond design utilizing existing topography and situating it as far west and south as possible given topography to avoid critical areas. In order to avoid impacts to the oaks or their associated dripline, silt fencing will be placed around the oaks at the edge of the canopy.

Minimization of Impacts

The project has been carefully designed to minimize impacts to critical areas and their associated buffers. Site planning prioritized the retention of existing vegetation and trees throughout the majority of the study area. Temporary buffer impacts to Wetland A have been minimized by designing the sewer main pathway to utilize an existing farm road where there are no trees and

minimal shrub and herbaceous cover, resulting in minimal temporary ground disturbance. The disturbed area will be seeded with a native seed mix following installation.

The project incorporates several minimization measures to reduce the degree and magnitude of impacts to critical areas. These efforts aim to limit disturbances while ensuring compliance with applicable codes and utilizing BMPs as follows:

- Clearing limits will be vividly marked with orange construction fencing or similar fencing.
- Silt fencing, or similar erosion control measures, will be installed at the edge of grading prevent sediment runoff.
- Equipment and staging areas will be located in uplands.
- Equipment will be fueled offsite.
- Ground disturbance will be limited strictly to areas necessary for the construction of project elements.
- Grading will be scheduled during the dry season to minimize surface runoff.
- A water truck will be available to control wind erosion and dust during construction.
- Bare areas will be seeded with a native seed mix suited to the local water regime.

UNAVOIDABLE IMPACTS

After implementing avoidance and minimization measures, the proposed project is anticipated to result in 0.03 acres of temporary buffer impacts to Wetland A from the installation of a sewer main line. Impacts include temporary ground disturbance and construction noise during installation.. Table 3 below summarizes anticipated impacts.

Table 3. Impact Summary

Location	Impact	Proposed Impact Area
Wetland A buffer	Temporary - Ground Disturbance	0.03 acres

TEMPORARY IMPACT RESTORATION

To restore the 0.03 acres of temporary buffer impacts to Wetland A, the disturbed area will be reseeded with a native upland seed mix. The proposed restoration is summarized in Table 4 below, and the seed specifications are summarized in Table 5 below.

Table 4. Summary of Proposed Enhancement and Restoration

Identifier	Type/Impact	Impact Amount	Proposed Mitigation Measures
Wetland A Buffer	Temporary- ground and vegetation disturbance	0.03 acres	▪ Reseed disturbed area with a native seed mix.

Table 5. Temporary Impact Area Seed Mix Specifications

Sunmark Seed International – Native Upland Seed Mix			
Common Name	**Scientific Name**	**Percent of Seed Mixture**	**Maximum Amount of Seed Mixture Anticipated**
Elymus glaucus	*Blue Wildrye*	50	1.5 lbs (1 pound per 1,000 square feet recommended)
Festuca rubra rubra	*Native Red Fescue*	30	
Bromus carinatus	*California Brome*	10	
Agrostis exarata	*Spike Bentgrass*	10	

BUFFER REDUCTION ENHANCEMENT PLAN

To meet the requirements for buffer reductions, the applicant proposes creating a protected vegetated corridor with a width of 146 feet and a total area of 0.81 acres. Enhancement will consist of removing invasive species, including but not limited to non-native black berries, along the western edge of the corridor spanning from the southwest buffer of Offsite Wetland 2 to the buffer of Wetland A followed by planting native trees and shrubs. Invasive species will be removed from approximately 0.24 acres. The applicant proposes to plant trees with a spacing radius of 10 foot on-center and shrubs with a spacing radius of 6 foot on-center across the 0.24 -acre invasive species removal/wetland buffer enhancement area, resulting in the installation of 100 trees and 50 shrubs (Figure 5). Plant specifications are summarized in Table 6 below.

Table 6. Summary of Proposed Enhancement

Identifier	Size	Proposed Measures
Vegetated Corridor	0.81 acres 146 ft. Max Width	▪ Connect Offsite Wetland 2 buffer to Wetland A ▪ Protect 0.81 in perpetuity under a recorded conservation covenant ▪ Place signs and fencing around boundary
Offsite Wetland 2/ Wetland A Buffers	0.24 acres	▪ Remove blackberry from 0.24 acres and plant with native trees and shrubs ▪ Monitor and report annually for 5 years

SITE PREPARATION

Invasive species, including but not limited to, nonnative blackberries, will be removed/controlled during the growing season following permit approval in the protected vegetated corridor. Invasives will be sprayed with herbicide approved for use near wetlands or will be removed mechanically. Follow-up control will occur throughout the growing season as necessary to fully suppress invasive species prior to native plant installation. Native trees and shrubs will be installed between late October and March after invasive have been removed. When ground disturbing activities related to the sewer main installation in the buffer of Wetland A are complete all bare areas within the protected vegetated corridor will be reseeded with a native seed mix appropriate for the water regime.

Plant Specifications

The prescribed plantings will be installed during the late fall to early spring when the plants are dormant, and the soil moisture conditions are favorable for planting. Each planting will be flagged for monitoring purposes. Mulch may be placed in a 2-foot diameter circle around all plant species for moisture retention and to help suppress competing vegetation. Table 7 details the quantity of plants to be installed as well as the minimum spacing on-center to achieve the best survivorship for sub-canopy plantings. The enhancement area can be found on the Mitigation and Planting Plan (Figure 5).

Table 7. Buffer Enhancement Plant Specifications

Location	Common Name	Scientific Name	Planting Size	Amount	Spacing (on-center)[1]
Biodiversity and Riparian Mitigation Area	Douglas-fir	*Pseudotsuga menziesii*	One Gallon Potted	25	10’
	Red Alder	*Alnus rubra*		25	10’
	Nootka Rose	*Rosa nutkana*		50	6’
	Beaked Hazelnut	*Corylus cornuta*		50	6’
			Total	**Trees = 50 Shrubs = 100**	

Planting and Plant Material Specifications

Planting specifications for one gallon stock shrubs to be installed are as follows:

Planting Implementation

- Plant the specified shrubs in the fall (October-November) or early spring (Feb-March) at the intervals listed in the construction schedule. Space the plants somewhat irregularly and in groups to create heterogeneity in the density and appearance of the enhancement areas.
- Plant containerized stock using the guidance below.
- Irrigate all newly installed plants as site and weather conditions warrant.

Containerized Stock

- Containerized species will be purchased from a native plant nursery.
- Plants will be protected until installation by being refrigerated, covered with damp burlap, and placed in moist sand, peat, or other method of keeping the roots cool and moist.
- Plants will have well-developed roots and sturdy stems, with an appropriate root-to-shoot ratio.
- No damaged or desiccated roots or diseased plants will be accepted. Gallon potted stock will have well developed roots and sturdy stems, with an appropriate root-to-shoot ratio.

- One-gallon potted plants will be a minimum size of 18- to 36-inches tall.
- The planter will be responsible for inspecting the containerized stock prior to and during planting; unacceptable plant materials will not be planted.
- The environmental consultant will be responsible for inspecting potted plant stock prior to and during planting, culling unacceptable plant materials.

GOALS OBJECTIVES AND PERFORMANCE STANDARDS

The goal of this mitigation plan is to avoid and minimize impacts to the greatest extent possible and to restore temporarily impacted critical areas to pre-project conditions, additionally to ensure enhancement measures are being met. To accomplish this goal, the following objectives and performance standards have been established.

Objective A: *Create a protected vegetated corridor at least 100-feet wide connecting the impacted wetland to Wetland A and protect the mitigation area in perpetuity.*

Performance Standard 1a: Signage stating "Protected Critical Area. Please Retain in Natural State"

or similar approved wording, will be placed every 100 feet along the boundary of the mitigation area and remaining buffers.

Performance Standard 2a: Establish a deed restriction over the mitigation area and record with the Clark County auditor.

Objective B: *Restore 0.03 acres of temporarily impacted buffer of Wetland A seeding with the native seed mix specified in Table 5.*

Performance Standard 1b: Seed temporarily disturbed areas after construction elements are complete. This standard will be considered met when recorded on the as-built report.

Objective C: *Enhance Offsite Wetland 2 buffer through removal and control of invasive species and native tree and shrub plantings.*

Performance Standard 1c: Document plant species installation in the 0.24-acre planting area, and tree installation within the preservations area as specified, in an as-built report including planting area locations and photo documentation. The as-built assessment will be conducted within 30 days of plant installation.

Performance Standard 2c: Native trees and shrubs in the enhancement areas will achieve 90 percent survival in Year 1. If dead plants are replaced to meet this standard, this performance standard will be met.

Performance Standard 3c: In Years 2, 3, and 5 planted species will achieve at least 80 percent survival.

Performance Standard 4c: In all years, non-native invasive plant species including blackberries, will not exceed 20 percent aerial cover in the Invasive Species Removal Area.

Monitoring, Maintenance, and Contingency Measures

Monitoring

The goal of monitoring will be to determine if previously stated performance standards are being met. Monitoring and maintenance of the enhancement areas will occur for a 5-year period with annual monitoring and reporting occurring in Years 1, 2, 3, and 5. The applicant will conduct monitoring and maintenance unless otherwise assigned. Monitoring reports will be submitted to the City of Camas by November 1st of each monitoring year. Installed plantings will be counted to determine survival percentage and will be assessed for health during monitoring events. The preservation areas will be assessed for presence of invasive species including Himalayan black berry. At least five photo stations will be established to photo-document vegetation establishment over the monitoring period. Pictures will be taken from the same location and direction and will be provided in the monitoring report. Monitoring will occur annually during the growing season, preferably during the same two-week period to better compare data.

At minimum, the following items will be included in the report:

- Location map and as-built drawing, including any changes.
- Historic description of project, including dates of plant installation, current year of monitoring, and remedial actions taken (if any).
- Description of monitoring methods.
- Plant count and determination of percent survival for installed species.
- Assessment of invasive plant species and recommendations for management.
- Photographs from established photopoints.
- Summary of maintenance and contingency measures completed for the past year and proposed for the next year.

Maintenance

Maintenance will occur during the growing season and will include the following:

- Irrigating planting areas every other week or as needed in the dry season, taper watering in Years 2 and 3 as vegetation establishes.
- Remove competing herbaceous species within a 3-foot radius of planted species as needed.
- Weed-eat, spray, or mow non-native blackberries from within the planting areas as needed.
- Replace dead or failed saplings as described for the original installation to meet the minimum performance standards.

Contingency Plan

If the performance criteria are not met by Year 3, steps will be taken to correct the situation in a timely manner. The following steps may be implemented when area is identified as failing or potentially failing:

- Identify the cause(s) of the failure or potential failure.
- Implement corrective actions such as irrigating, fertilizing, and replanting.
- Document the activities and include this data in the monitoring reports.
- If routine corrective action will not correct the problem, immediately consult with the appropriate agencies.

LIMITATIONS

ELS bases this report's determinations on standard scientific methodology and best professional judgment. In our opinion, local, state, and federal regulatory agencies should agree with our determinations. However, the information contained in this report should be considered preliminary and used at your own risk until it has been approved in writing by the appropriate regulatory agencies. ELS is not responsible for the impacts of any changes in environmental standards, practices, or regulations after the date of this report.

REFERENCES

Camas Municipal Code (CMC). 2017. *City of Camas Code of Ordinances 16.53- Wetlands, and 16.61- Fish and Wildlife Habitat Conservation Areas*. Clark County, Washington. March 2017.

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FIGURES

WASHINGTON

45.6510° Latitude
-122.4079° Longitude

LOCATION MAP

PROJECT VICINITY MAP

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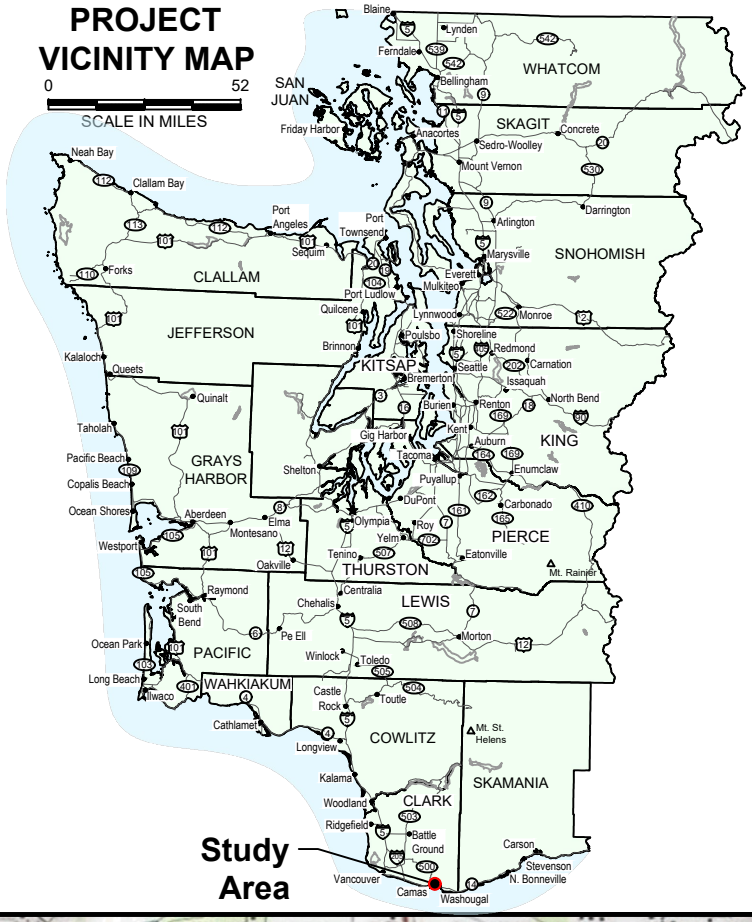

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NOTE:
Quadrangle topographic map from USGS.

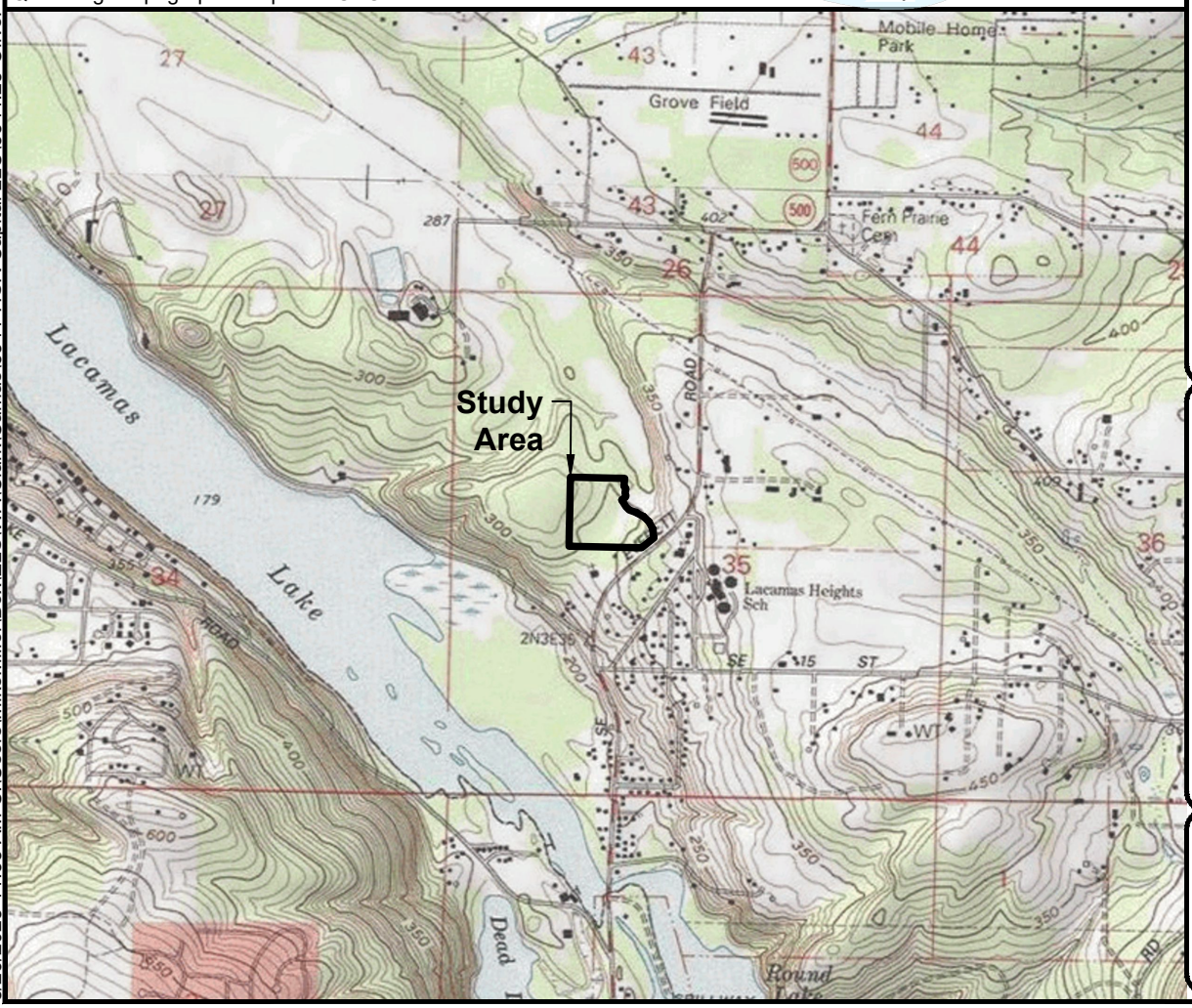

Figure 1
VICINITY MAP
Oliver's Terrace
HSR Capital LLC
City of Camas, Clark County, WA
Section 35, Township 2N, Range 3E, W.M.

DATE: 8/26/25
DWN: EF
REQ. BY: AF
PRJ. MGR: AF
CHK:
PROJECT NO: 3341.25

1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371
Fax: (360) 414-9305
www.eco-land.com

Ecological Land Services

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LEGEND:

- Study Area (12.17 ac.)
- Parcel Boundary
- Wetland Boundary
- Possible Wetland Boundary
- Wetland Buffer
- Functionally Isolated Wetland Buffer
- Existing Building
- Existing Driveway
- Existing Farm Road
- Existing Contours
- Culvert
- Oak (2)
- Oak Dripline (0.06 ac.)
- Snag (2)
- Stream with Flow Direction
- 25' Stream Buffer
- TP-1 Test Plot Location
- 1 Photo Point Location

NOTE(S):

1. Aerial from Google Earth™ (2022).
2. Wetlands, photo points, test plots, stream, oaks, and culvert located using handheld GPS capable of submeter accuracy.
3. Parcel data from Clark County GIS. Offsite portion of the stream was determined from contours.
4. Contours generated from LiDAR provided by WDNR.
5. Wetland A's buffer is functionally istolated from the top of the slope per Camas Code 16.53.040 (B)(4)(b)(i).
6. Offsite boundaries per Lacamas Farms Lot 2 Critical Areas Report (ELS 2023).

Offsite Wetland 2
Category III
Depressional
Scrub-Shrub
Saturated Only
Seasonally Flooded

Existing House

Existing Farm Road

150'

260'

Parcel #: 178221000
(18.45 ac.)

Offsite Wetland 1
Category III
Depressional
Forested
Scrub-Shrub
Emergent
Saturated Only
Seasonally Flooded

Wetland A
Category I
Depressional
Forested
Scrub-Shrub
Emergent
Saturated Only
Seasonally Flooded
(2.47 ac.)

TP-1
TP-2
TP-3
TP-4
TP-5
TP-6

Oak Dripline
(0.06 ac.)

25'

Stream A
Type Ns

Existing Barn

N Adams St

N 47th Cir

SE Everett St

Figure 2
EXISTING CONDITIONS
Oliver's Terrace
HSR Capital LLC
City of Camas, Clark County, WA
Section 35, Township 2N, Range 3E, W.M.

DATE: 8/26/25
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LEGEND:

- Study Area (12.17 ac.)
- Parcel Boundary
- Wetland Boundary
- Possible Wetland Boundary
- Wetland Buffer
- Reduced Wetland Buffer
- Functionally Isolated Wetland Buffer
- Existing Building
- Existing Driveway
- Existing Contours
- Culvert
- Oak (2)
- Oak Dripline (0.06 ac.)
- Snag (2)
- Stream with Flow Direction
- 25' Stream Buffer
- Proposed Final Contours (1' Intervals)
- Proposed Lot
- Proposed Road
- Proposed Sewer Main
- Protected Vegetated Corridor (0.81 ac.)

NOTE(S):

1. Stream and culvert located using handheld GPS capable of submeter accuracy. Offsite portion of the stream was determined from contours.
2. Parcel data from Clark County GIS.
3. Wetland A's buffer is functionally istolated from the top of the slope per Camas Code 16.53.040 (B)(4)(b)(i).
4. Onsite critical areas were surveyed by SGA Engineering.
5. Proposed Conditions based on drawing file titled Preliminary Sanitary and Water Plan, (undated), prepared and provided by SGA Engineering.
6. Offsite boundaries per Lacamas Farms Lot 2 Critical Areas Report (ELS 2023).

Offsite Wetland 2
Category III
Depressional
Scrub-Shrub
Saturated Only
Seasonally Flooded

Existing House

83'

146'

195'

STORM TRACT

12 REMAINDER LOT

MX-NS ZONED LOT (WITH ADJUSTED ZONING LINE) FUTURE DEVELOPMENT

Offsite Wetland 1
Category III
Depressional
Forested
Scrub-Shrub
Emergent
Saturated Only
Seasonally Flooded

Wetland A
Category I
Depressional
Forested
Scrub-Shrub
Emergent
Saturated Only
Seasonally Flooded
(2.47 ac.)

PHASE I

PHASE II

OPEN SPACE TRACT

Oak Dripline
(0.06 ac.)

195'

25'

Stream A
Type Ns

N 47th Cir

N Adams St

Existing Barn

BARN TRACT

SE Everett St

Figure 3
PROPOSED CONDITIONS
Oliver's Terrace
HSR Capital LLC
City of Camas, Clark County, WA
Section 35, Township 2N, Range 3E, W.M.

DATE: 8/26/25
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Ecological Land Services

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LEGEND:

- Study Area (12.17 ac.)
- Parcel Boundary
- Wetland Boundary
- Possible Wetland Boundary
- Wetland Buffer
- Reduced Wetland Buffer
- Functionally Isolated Wetland Buffer
- Existing Building
- Existing Driveway
- Existing Contours
- Culvert
- Oak (2)
- Oak Dripline (0.06 ac.)
- Snag (2)
- Stream with Flow Direction
- 25' Stream Buffer
- Proposed Lot
- Proposed Road
- Proposed Sewer Main
- Protected Vegetated Corridor (0.81 ac.)
- Temporary Impact Area (0.03 ac.)

NOTE(S):

1. Stream and culvert located using handheld GPS capable of submeter accuracy. Offsite portion of the stream was determined from contours.
2. Parcel data from Clark County GIS.
3. Wetland A's buffer is functionally istolated from the top of the slope per Camas Code 16.53.040 (B)(4)(b)(i).
4. Onsite critical areas were surveyed by SGA Engineering.
5. Proposed Conditions based on drawing file titled Preliminary Sanitary and Water Plan, (undated), prepared and provided by SGA Engineering.
6. Offsite boundaries per Lacamas Farms Lot 2 Critical Areas Report (ELS 2023).

Offsite Wetland 2
Category III
Depressional
Scrub-Shrub
Saturated Only
Seasonally Flooded

Existing House

83'

146'

195'

STORM TRACT

12 REMAINDER LOT

MX-NS ZONED LOT (WITH ADJUSTED ZONING LINE) FUTURE DEVELOPMENT

Offsite Wetland 1
Category III
Depressional
Forested
Scrub-Shrub
Emergent
Saturated Only
Seasonally Flooded

Wetland A
Category I
Depressional
Forested
Scrub-Shrub
Emergent
Saturated Only
Seasonally Flooded
(2.47 ac.)

PHASE I

PHASE II

OPEN SPACE TRACT

Oak Dripline
(0.06 ac.)

195'

25'

Existing Barn

BARN TRACT

SE Everett St

Stream A
Type Ns

N 47th Cir

N Adams St

Figure 4
IMPACT ANALYSIS
Oliver's Terrace
HSR Capital LLC
City of Camas, Clark County, WA
Section 35, Township 2N, Range 3E, W.M.

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LEGEND:

- Study Area (12.17 ac.)
- Parcel Boundary
- Wetland Boundary
- Possible Wetland Boundary
- Wetland Buffer
- Reduced Wetland Buffer
- Functionally Isolated Wetland Buffer
- Existing Building
- Existing Driveway
- Existing Contours
- Culvert
- Oak (2)
- Oak Dripline (0.06 ac.)
- Snag (2)
- Stream with Flow Direction
- 25' Stream Buffer
- Proposed Lot
- Proposed Road
- Proposed Sewer Main
- Protected Vegetated Corridor (0.81 ac.)
- Seeding Area (0.03 ac.)
- Invasive Species Removal Area/ Wetland Buffer Enhancement Area (0.24 ac.)

NOTE(S):

1. Stream and culvert located using handheld GPS capable of submeter accuracy. Offsite portion of the stream was determined from contours.
2. Parcel data from Clark County GIS.
3. Wetland A's buffer is functionally istolated from the top of the slope per Camas Code 16.53.040 (B)(4)(b)(i).
4. Onsite critical areas were surveyed by SGA Engineering.
5. Proposed Conditions based on drawing file titled Preliminary Sanitary and Water Plan, (undated), prepared and provided by SGA Engineering.
6. Offsite boundaries per Lacamas Farms Lot 2 Critical Areas Report (ELS 2023).

Planting Diagram
(Not to Scale)

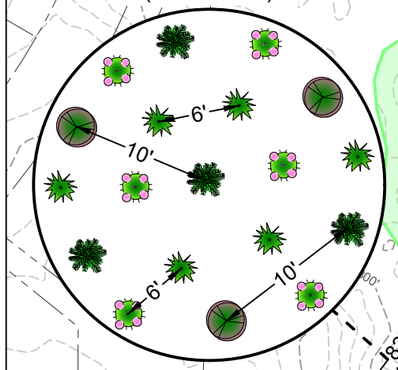

Table 1. Buffer Enhancement Plant Specifications

Location		Common Name	Scientific Name	Planting Size	Amount	Spacing (on-center)[1]
Offsite Wetland 2 Buffer/ Wetland A Buffer/ Vegetated Corridor		Douglas-fir	*Pseudotsuga menziesii*	One Gallon Potted	25	10'
		Red Alder	*Alnus rubra*		25	10'
		Nootka Rose	*Rosa nutkana*		50	6'
		Beaked Hazelnut	*Corylus cornuta*		50	6'
				Total	**Trees = 50 Shrubs = 100**	

Table 2. Temporary Impact Area Seed Mix Specifications

Sunmark Seed International – Native Upland Seed Mix			
Common Name	**Scientific Name**	**Percent of Seed Mixture**	**Maximum Amount of Seed Mixture Anticipated**
Elymus glaucus	*Blue Wildrye*	50	1.5 lbs (1 pound per 1,000 square feet recommended)
Festuca rubra rubra	*Native Red Fescue*	30	
Bromus carinatus	*California Brome*	10	
Agrostis exarata	*Spike Bentgrass*	10	

Offsite Wetland 2
Category III
Depressional
Scrub-Shrub
Saturated Only
Seasonally Flooded

Offsite Wetland 1
Category III
Depressional
Forested
Scrub-Shrub
Emergent
Saturated Only
Seasonally Flooded

Wetland A
Category I
Depressional
Forested
Scrub-Shrub
Emergent
Saturated Only
Seasonally Flooded
(2.47 ac.)

Oak Dripline
(0.06 ac.)

Stream A
Type Ns

Existing House

Existing Barn

STORM TRACT

12 REMAINDER LOT

MX-NS ZONED LOT (WITH ADJUSTED ZONING LINE) FUTURE DEVELOPMENT

PHASE I

PHASE II

OPEN SPACE TRACT

BARN TRACT

N 47th Cir

SE Everett St

183'

146'

195'

195'

25'

Figure 5
MITIGATION AND PLANTING AREA
Oliver's Terrace
HSR Capital LLC
City of Camas, Clark County, WA
Section 35, Township 2N, Range 3E, W.M.

DATE: 8/26/25
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SCALE IN FEET
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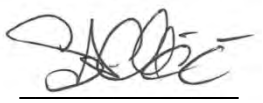
GEOTECHNICAL ENGINEERING STUDY W/INFILTRATION

Proposed Oliver's Terrace Subdivision
1004 SE Everett Road
Camas, WA 98607
(Parcel No. 178221000)

Prepared for:

Kevin Miller
HSR Development
19120 SE 34th St #103
Vancouver, WA 98683

Prepared By:



Seth A. Chandlee
President

Adam Swenson, PE
Project Engineer

Project No. G2352400r
{July 2025}

Soil and Water Technologies, Inc.
2306 E Evergreen Blvd. | Vancouver, Washington 98661
(360) 200-8693 | www.swt.ski

Soil and Water Technologies, Inc.
Geotechnical, Monitoring I Materials Testing I Erosion Compliance

HSR Development
19120 SE 34th St. #103
Vancouver, WA 98683
Attn: Kevin Miller

July 23rd 2025
G2352400r

Hello Kevin,

We are pleased to submit our report titled "Geotechnical Engineering Study with Infiltration Testing, for the proposed Oliver's Terrace Subdivision located at 1004 SE Everett Road in Camas, Washington. This report presents the results of our field exploration, laboratory testing, and engineering analyses.

Based on the results of this study, it is our opinion that construction of the proposed residential building lots are feasible from a geotechnical standpoint, provided recommendations presented in this report are included in the project design.

We appreciate the opportunity to have been of service to you and look forward to working with you in the future. Should you have any questions about the content of this report, or if we can be of further assistance, please call (360) 200-8693.

Respectfully Submitted,
Soil and Water Technologies, Inc.

Seth A. Chandlee
President

Adam Swenson, PE
Project Engineer

Exhibit 19 SUB25-1010

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Exhibit 19 SUB25-1010

INTRODUCTION

General

This report presents the results of the geotechnical engineering study completed by Soil and Water Technologies, Inc. (SWT) for the proposed Oliver's Terrace Subdivision located in Camas, Washington. The general location of the site is shown on the *Vicinity Map, Figure 1.* Our approximate exploratory test pit locations are shown in relation to the site on the *Site Plan, Figure 2.*

The purpose of this study is to explore and evaluate subsurface conditions at the site and provide geotechnical recommendations for the proposed construction based on the conditions encountered. These recommendations include site specific geotechnical parameters for foundation support, earthwork grading, stormwater infiltration, site drainage, erosion control and a seismic hazard evaluation.

Project Description

Based on our review of the preliminary site plan provided, it is our understanding that the west side of the 18.15-acre property, designated Clark County tax parcel 178221000, will consist of the construction of a total of 11 single-family residential building lots. The project will also include associated underground utilities and a paved onsite roadway/shared driveway. A grading plan was not provided at this time; however, we anticipate earthwork grading to consist predominately of minimal cuts/fills ranging from approximately 1 to 3 feet in thickness. However, based on our onsite observations and site topography, thicker structural fills may be feasible at the north side of the site to accommodate an additional building lot north of proposed lots 7 & 8.

Specific structural design loads were also not available, however, based on our experience with similar projects, we anticipate that wall loads will be approximately 700 to 1,500 pounds per lineal foot (plf). Slab-on-grade floor loads will most likely range from one hundred to one hundred and fifty pounds per square foot (100-150 psf).

If any of the above information is incorrect or changes, we should be consulted to review the recommendations contained in this report. In any case, it is recommended that Soil and Water Technologies perform a general review of the final design.

SITE CONDITIONS

General Regional/Local Geology

General information about geologic conditions and soil in the vicinity of the site was obtained by reviewing the USGS Geologic Map of Washington-Southwest Quadrant, WA. State Department of Natural Resources, (Geologic Map GM-34, 1987) and the Geologic Map of the Vancouver Quadrangle, Washington & Oregon, (DLNR), Open File Report 87-10 and the USDA web soil survey.

Regionally, the site is located within Portland-Vancouver Basin/ Willamette Valley/Puget Sound lowland. This area is defined by the coastal range mountains located to the west and the Cascade volcanic mountains to the east.

Locally, the site is located within the Late Pleistocene (17 -13 kya) Cayaclysmic-flood deposit zone. These deposits were created by a series of floods caused by the failure of the ice dam at Glacial Lake

Missoula in western Montana. This dam failure caused the deposition of suspended sediments after the floodwaters became hydraulically dammed north of the confluence of the Columbia and Lewis Rivers. Fine-grained sediments were deposited when the flood waters slowed down and created a series of distinct layers described as unconsolidated Gravels, Sands, Silts, and Clays.

Surface

The project site is located at the west side of the referenced parcel, east of terminated N. 49th Avenue of Lacamas Hills Ph. 2 & 3. The property consists of a relatively level (0-5% slope) circular plateau, that transitions to a both a steep (15-25%) downward slope at the northeast edge of the proposed building lots, and a moderate (10-15%) downward slope across the south/southeast side of the plateau. The maximum total elevation change is approximately 56 feet. The ground surface consisted of grass, weeds and mature deciduous/evergreen trees scattered across the flat plateau and heavily forested across the slope face and surrounding area. A large outcrop of bedrock was observed at the east side of the site, adjacent to N. 49th avenue.

Subsurface

On December 12th, 2024, we excavated a total of 7 test pits, designated TP-1 through TP-6 and I-7, to the maximum explored depth by refusal of 4.5 feet below the existing ground surface (bgs). Native bedrock was encountered at all test pits at depths ranging from 2.0 to 4.5 feet bgs. All exploration locations were selected by the SWT to determine subsurface conditions across the site and for the proposed stormwater treatment/control locations. The approximate locations are shown on the *Site Plan, Figure 2.*

All soil was classified in general accordance with the *Unified Soil Classification System (USCS).* Soil samples obtained from the test pits were returned to our office for additional evaluation and laboratory testing. Descriptions of field and laboratory procedures are included in Appendices A and B, respectively.

The following is a generalized description of the subsurface units encountered.

TOPSOIL:	Surface materials encountered at each test pit consisted of approximately 6 to 8 inches of grass and organic topsoil.
SILTY GRAVEL W/SAND	Native silty Gravel (GM) with sand was encountered below the Surface Materials at test pits TP-1 through TP-4, TP-6 and I-7 to depths ranging from 2.0 to 2.5 feet bgs. The silty Gravel (GM) with sand was red/brown, moist, and in a dense condition. The moisture content of this layer ranged from 22.1% to 34.9, with a fines content ranging from 13.6% to 40.8%.
GRAVEL W/SAND & SILT	Native Gravel (GP-GM) with sand and silt was encountered below the Surface Materials at test pit TP-5 to the maximum explored depth/refusal to 2.0 feet bgs. The Gravel (GP-GM) with sand and silt was red/brown, dense, and in a moist condition. The moisture content of this layer was 24.4% with a fines content of 9.7%.

GRAVEL W/SILT Native Gravel (GP-GM) with silt was encountered below the silty Gravel (GM) with sand at test pit TP-4 to depths ranging from 2.0 feet to the maximum explored depth/refusal at 4.5 feet bgs. The Gravel (GP-GM) with silt was dense, red/brown, and moist. The moisture content of this layer was 20.1% with a fines content of 5.6%.

BEDROCK Native Bedrock, consisting weathered and solid basaltic-andesite was encountered at all test pits TP-1 through TP-6 & I-7 to depths ranging from 2.0 to 2.5 feet bgs. The bedrock was easily fractured during test pit excavation in the upper ~8-12 inches underlain by solid rock. According to the *Geologic Map of the Camas Quadrangle, Clark County Washington and Multnomah County, US Geologic Survey,* Scientific Investigations Map 3017, indicates bedrock within this area to consist largely of "basalt and basaltic andesite flows during the late Oligocene time".

Infiltration Testing

Infiltration testing was performed at test pit I-7 at 0.5 feet bgs. The approximate location of the infiltration test is shown on the *Site Plan, Figure 2.* The purpose of performing this test was to determine if onsite subgrade soils are suitable for infiltration of stormwater and provide stormwater treatment and control for all onsite impervious surfaces after construction at proposed Tract 'B'. Infiltration testing methods were performed in general accordance with 2021 Clark County Stormwater Manual requirements. Each infiltration test was advanced to the desired depth and a 6-inch diameter PVC pipe was embedded at the base. Following the minimum pre-saturation period, the pipe was filled with water and timed as the head dropped. The test results were averaged and recorded in inches per hour (iph).

All soil was classified following the *Unified Soil Classification System* (USCS) and the *AASHTO Soil Classification System (M145).* The following table provides the field infiltration test results and associated laboratory testing:

Location	USCS Soil Type	Approx. depth to static groundwater	WWHM	Depth (ft.)	% Passing #200 sieve	Moisture content	Field Coefficient of Permeability (k)
I-7	**GM**	**Not encountered to 2.5 ft. bgs**	**SG-4**	**0.5**	**20.3**	**23.9**	**4.0 iph**

(USCS) Unified Soil Classification System | (GM) silty Gravel with sand
(WWHM) Western Washington Hydrology Model | Soil Group 4 (poorly drained soils)

Groundwater

Groundwater was not encountered in our test pits, which extended to the maximum explored depth/refusal of 2.5 feet bgs. Our review of Clark County MapsOnline indicates a static groundwater level exceeding 30 feet. Historical well data from the Department of Ecology Well Log Database indicates a static groundwater level of 70 feet below the ground surface within the vicinity of the site.

It is important to note that groundwater conditions are not static; fluctuations may be expected in the level and seepage of flow depending on the season, amount of rainfall, surface water runoff, and other

factors. Generally, the groundwater level is higher and seepage rate is greater in the wetter winter months (typically October through May).

Geologic Hazards

Clark County *Code Section 40.430.010* provides guidelines for the conduct of a geological hazard review of construction projects requiring permits. The code applies to properties in or within 100 feet of a geological hazard area. Geological hazards include steep slopes, landslide hazards, seismic hazards, and volcanic hazards. The purpose of this investigation was to determine if geologic hazards are present on the site, and if so, to provide recommendations to mitigate their impacts on development. The geologic hazard review is based on our site reconnaissance, subsurface explorations, laboratory analysis of representative soil samples collected in the field, and a review of publicly available published literature and maps.

Steep Slope Hazards and Observations:

As mentioned above, the proposed building area consists predominately of a flat (0-5%) circular plateau that transitions to a steep (15-40%) downward slope along the outside northeast edge. The steep slope transitions to a predominately moderate (~10-15%) slope across the south/southeast edge. See the attached site plan for areas of steep to moderate slopes. The total elevation change, as measured from the slope toe to crest, ranges from about 24 to 26 feet. During the time of our reconnaissance, the existing slope face was heavily forested with mature deciduous/evergreen trees and thick understory vegetation. No visible signs of erosion, surface slumping, tension cracks, or tilted trees were observed across the entire slope face.

Primary factors that will adversely affect slope stability include: the placement of un-retained fill on or at the top of slopes, excavation of steep un-retained cuts at the toe of slopes, and uncontrolled top of slope surface water runoff. At this time, and to the best of our knowledge, non of these are planned for the development of this property**.**

Based on the dense soil conditions encountered in our test pits, weathered bedrock encountered at depths of 2.0 to 4.5 feet bgs, and the heavily forested slope face, steep slope hazards **should not be considered.**

Building Set-backs from Top-of-Slope

- Lots 1 - 4: No set-back. Buildings may be constructed with bench-type excavations across the entire gentle to moderate slope face consisting predominantly of bedrock.

- Lots 5, 6 and east half of 7: A 10' foot horizontal foundation set-back is recommended from top-of-slope.

- Lots 8 - 11: No set-back requirement.

Landslide Hazards:

According to the "Landslide Hazard" layer on the Clark County MapsOnline, the site is not located within an active or historical landslide area. In addition, the entire site consists of bedrock at a depth of 2.0 to 4.5 feet bgs. Landslide hazard **should not be considered a hazard** for this site.

Erosion Hazards:

According to the "Erosion hazard" layer on Clark County MapsOnline, the site is not located within an area of erosion. Due to flat topography across the plateau and heavily vegetated surface, erosion **should not be considered a hazard**.

However, erosion control measures should be considered during construction to limit soil disturbance and degradation to the upper subsurface soil horizon that is considered highly moisture sensitive. As required, Best Management Practices (BMP's) should be followed per State and Local jurisdictions and approved engineering plans.

Volcanic Hazards:

Volcanic hazards include different phenomena of volcanic activity from the 5 stratovolcanoes located in Washington that include: alteration, blast, debris avalanche, lahar, surges, and regional lava flows. The site is located within a historic volcanic hazard area of regional lava flows between both Mt. St. Helens and Mt. Adams and is verified by the underlying bedrock across the site. However, due to vast distance (40-60 miles) from the historically active volcanoes (Mt. Adams and Mt. St. Helens) **volcanic hazards should not be considered** for the site.

Seismic Hazards:

Liquefaction Hazards:

Structures are subject to damage from earthquakes due to direct and indirect action. Shaking represents direct action. Indirect action is represented by foundation failures and is typified by liquefaction. Liquefaction occurs when soil loses all shear strength for short periods of time during an earthquake. Ground shaking of sufficient duration then results in the loss of grain-to-grain contact as well as a rapid increase in pore water pressure. This causes the soil to assume the physical properties of a fluid. To have potential for liquefaction a soil must be loose, cohesion-less (generally sands and silts), below the groundwater table, and must be subjected to sufficient magnitude and duration of ground shaking.

According to the "Liquefaction Susceptibility" layer of Clark County MapsOnline, the site is mapped as having "Bedrock – lowest risk" liquefaction susceptibility. Based on native bedrock encountered at a depth of 2.0 to 4.5 feet bgs and the absence of near surface static groundwater within the upper soil horizon, it is our professional opinion that soil liquefaction and induced differential settlement will not occur at the subject site during a moderate to strong seismic event and that a "very low" susceptibility is adequate for the site.

Ground Motion Amplification

According to the "Site Class Map layer on the Washington Geologic Information Portal, the site is designated as a seismic Site Class of "B – Bedrock". Based on our subsurface explorations and laboratory test results, it is our opinion that a Site Class "B-C – Bedrock/dense soil" is appropriate for the predominantly dense soil encountered in the upper 2.0 to 4.5 feet across the site. This

designation indicates that some/minor amplification of seismic activity may occur during a seismic event based on the subsurface soil conditions encountered.

Seismic Design Criteria:

As stated above, the supportive foundation soils encountered at the site are classified as a type "D". For more detail regarding soil conditions refer to the soil logs in Appendix A of this report.

The seismic design criteria for this project found herein is based on the American Society of Civil Engineers (ASCE7-22), and ASCE7Hazardtool.online. A summary of the seismic design criterion is below.

Table 1. ASCE 7-22 Seismic Design Parameters

Location (45.615395, -122.406824)	Short Period	1-Second
Maximum Credible Earthquake Spectral Acceleration	S_s = 0.81	S_1 = 0.30
Soil Site Class / Risk Category	B-C / II	
Adjusted Spectral Acceleration	S_{MS} = 0.73	S_{M1} = 0.3
Design Spectral Response Acceleration Parameters	S_{DS} = 0.49	S_{D1} = 0.20

g – acceleration due to gravity

Using the information provided, the structural engineer can select/calculate the appropriate site coefficient values (F_a and F_v) from Tables 1613.5.3(1) and 16135.3(2) of the IBC for determining an earthquake spectral response acceleration for the reference site. Please *Appendix C* for ASCE7-22 Seismic Summary for the site.

GEOTECHNICAL DESIGN RECOMMENDATIONS

General

Based on the results of our study, it is our opinion the proposed residential buildings can be constructed as planned, provided the geotechnical recommendations contained in this report are incorporated into the final design. The following sections present detailed recommendations and parameters pertaining to the geotechnical engineering design for this project.

Foundations

Based on the encountered subsurface soil conditions, preliminary building design criteria, and assuming compliance with the preceding *Site Earthwork and Grading* section, the proposed residential building foundations may be supported on conventional shallow spread footings bearing on undisturbed native dense silty Gravel (GM) with sand, native bedrock, or compacted engineered structural fill.

Individual spread footings or continuous wall footings providing support for the proposed buildings may be designed for a maximum allowable bearing value of 1,500 pounds per square foot (psf). Footings for one level structures should be at least 12 inches in width. Footings for two level structures should be at least 15 inches in width. Footings for three level structures should be at least 18 inches in width. All footings should extend to a depth of at least twelve (12) inches below the lowest adjacent finished subgrade.

These basic allowable bearing values are for dead plus live loads and may be increased one-third for combined dead, live, wind, and seismic forces. Lateral loads can be resisted by friction between the foundation and the supporting sub grade or by passive earth pressure acting on the buried portions of the foundation. For the latter, the foundations must be poured "neat" against the existing soil or back filled with a compacted fill meeting the requirements of structural fill.

- Passive Pressure = 250 pcf (equivalent fluid weight)
- Coefficient of Friction = 0.35

Slab on Grade

If concrete floor slabs are desired, then any disturbed soils must be re-compacted prior to pouring concrete. Satisfactory subgrade support for lightly loaded building floor slabs can be obtained on the undisturbed native soil or on competent engineered structural fill. Unsuitable fill material shall be removed and replaced with approved structural fill. We recommend a minimum 6-inch thick layer of compacted crushed rock beneath the slab to provide a homogeneous support surface for the slab. A subgrade modulus of 125 pounds per cubic inch (pcf) may be used to design floor slabs.

A minimum 6-inch-thick layer of free draining fill should be placed and compacted over the prepared subgrade to assist as a capillary break and blanket drain. It is also suggested that nominal reinforcement such as "6x6-10/10" welded wire mesh be employed, near midpoint, in new concrete slabs. In areas where slab moisture is undesirable, a vapor barrier such as a 6-mil plastic membrane should be placed beneath the slab.

Exterior concrete slabs that are subject to vehicle traffic loads should be at least 4 inches in thickness. It is also suggested that nominal reinforcement such as "6x6-10/10" welded wire mesh be installed, near midpoint, in new exterior concrete slabs and paving. Fiber mesh concrete may be used in lieu of welded wire mesh.

Site Drainage

The site should be graded so that surface water is directed off the site and not be allowed to stand in any area where buildings or foundations are to be constructed. Loose surfaces should be sealed at the end of each workday by compacting the surface to reduce the potential of moisture infiltrating into the soils. Final site grades should allow for positive drainage away from the building foundations.

The ground should be sloped at a gradient of 3% for a distance of at least 10 feet away from the buildings. We suggest that a foundation footing drain be installed around the perimeter of the buildings. The drain should consist of a 4-inch diameter perforated pipe with holes facing down and installed in an envelope of clean drain rock or pea gravel wrapped with free draining filter fabric. The drain should be a minimum of 1-foot-wide and 1-foot-deep with sufficient gradient to initiate flow. The drain should be routed to a suitable discharge area. Details for the footing drain have been included as *Figure 3, Typical Footing Subdrain Detail.*

Under no circumstances should the roof down spouts be connected to the perimeter building drain. We suggest that clean outs be installed at several accessible locations to allow for the periodic maintenance of the drain system.

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Pavement Areas

Asphaltic Cement (AC) and Crushed Rock Base (CRB) materials should conform to WSDOT specifications. All pavement area subgrades should be compacted to at least 95% of the ASTM D1557 modified proctor laboratory test standard. Based on our laboratory testing of the upper soil horizon, visual observations and local knowledge of soil types in the area, the subgrade soils from 0.5 to 2.5 feet is an AASHTO soil type A-2. Therefore, we recommend that a minimum of 3 inches of AC underlain by 8 inches of compacted CRB be applied at all light vehicle loading areas and a minimum of 4 inches of AC underlain by 12 inches of compacted CRB at all public right-of-way road improvement areas.

Pavements should be sloped to provide rapid drainage of surface water. Water allowed to pond on or adjacent to the pavements have the potential to saturate the subgrade and contribute to premature pavement deterioration. In addition, the pavement subgrade should be scarified 12 inches in depth, re-compacted to 95% percent (modified proctor ASTM D1557) and graded to provide positive drainage within the granular base section.

The subgrade and the pavement surface should have a minimum ¼ inch per foot slope to promote drainage. Appropriate sub-drainage or connection to a suitable daylight outlet should be provided to remove water from the base layer.

CONSTRUCTION RECOMMENDATIONS

Site Preparation and Grading

Clearing and Grubbing:

Prior to grading, the project area should be cleared of all rubble, trash, debris, etc, if necessary. Any buried organic debris, undocumented fill or other unsuitable material encountered during subsequent excavation and grading work should also be removed. Excavations for removal of any existing footings, slabs, walls, utility lines, tanks, and any other subterranean structures should be processed and backfilled in the following manner:

- Clear the excavation bottom and side cuts of all loose and/or disturbed material.
- Once the organic topsoil has been adequately removed (6 to 8 inches), the subgrade shall be scarified to 12 inches in depth and re-compacted to 95% (ASTM D1557 – Modified proctor). Density testing shall be performed prior to placement of additional fill.
- If basement demolition and backfill apply, after footing/basement removal, the excavation bottom should be moisture conditioned to within 2 percent of the optimum moisture content and compacted to at least 95% of the ASTM D1557 laboratory test standard.

  Backfill should be placed, moisture conditioned (i.e., watered and/or aerated as required and thoroughly mixed to a uniform, near optimum moisture content), and compacted by mechanical means in loose lifts not exceeding 12 inches. The degree of compaction obtained should be at least 95 % of the ASTM D-1557 laboratory test standard, as applicable.

Engineered Structural Fill

- All fill material shall be placed above a prepared subgrade in loose lifts not exceeding 12 inches, within 2-3% of its optimum moisture, and compacted to a dense condition by adequate equipment.
- Compaction of structural fill shall meet a minimum 95% of the maximum dry density determined AASHTO T-180. Engineered structural fill shall be verified by a nuclear density gauge for every vertical foot placed. The processes and procedures of earthwork grading should be observed and monitored by a field technician from SWT during construction.
- All import soils should be sampled, tested, and approved by SWT prior to arrival on site. Imported soils shall consist of clean soils (EI of 20 or less) free from vegetation, debris, or rocks larger than 3 inches in maximum dimension.
- After clearing and grading the site, it is possible that some localized areas of soft, wet or unstable subgrade may still exist. Before placement of any base aggregate, the subgrade should be scarified 8 inches in depth and compacted with suitable compaction equipment. Yielding areas that are identified should be excavated to medium dense/stiff material and replaced with compacted 2-inch-minus clean crushed aggregate. All building and pavement areas should be compacted to a dense non-yielding condition with suitable compaction equipment. This phase of earthwork compaction shall be performed prior to the placement of any structural fill, at the bottom of all foundation excavations and along the roadway subgrade, before the placement of base aggregate.

Wet Weather Construction & Moisture Sensitive Soils

Field observations and laboratory testing indicates that the subsurface soils to a depth ranging from 0.5 to 2.5 feet consist predominately of native silty Gravel (GM) with sand and is a moisture sensitive material. As such, in an exposed condition, moisture sensitive soil can become disturbed during normal construction activity, especially when in a wet or in a saturated condition. Once disturbed, these wet soils will be unsuitable for support of foundations, floor slabs, and roadways.

Therefore, where soil is exposed and will support new construction, care must be taken not to disturb its condition. If disturbed soil conditions develop, the affected soil must be removed and replaced with suitable structural fill. The depth of removal will be dependent on the depth of disturbance developed during construction. Covering the excavated area with plastic and refraining from excavation activities during rainfall will minimize the disturbance and decrease the potential degradation of supportive soils.

Utility Trench Excavation and Backfill

Excavation of utility trenches within the proposed roadway/caul-de-sac will be significantly impacted by the presence of shallow bedrock. As mentioned above and shown on the *Site Plan*, a large, exposed bedrock outcrop was observed within the proposed roadway and encountered at a shallow depth of 2.0 to 2.5 feet bgs at test pits TP-1 and TP-2. Special consideration, including the use of rock removal techniques with specialized equipment or tools, will be required for utility excavation along the proposed roadway/caul-de-sac at the central portion of the site. If bedrock cannot be excavated with a track hoe hydraulic rock breaker attachment, blasting may be an option. If so, SWT recommends a

blasting contractor review the information is this report to create a blasting plan that adheres to City of Camas specifications.

Based on the conditions encountered, the soil/bedrock to be exposed by utility trenches should provide adequate support for utilities. Utility trench backfill is a concern in reducing the potential for settlement along utility alignments, particularly in pavement areas. It is also important that each section of utility line be adequately supported in the bedding material. The backfill material should be hand tamped to ensure support is provided around the pipe haunches.

Fill should be carefully placed and hand tamped to about 12 inches above the crown of the pipe before any compaction equipment is used. The remainder of the trench back fill should be placed in lifts having a loose thickness of eight inches.

A typical trench backfill section and compaction requirements for load supporting and non-load supporting areas is presented on *Figure 4, Utility Trench Backfill Detail*.

Temporary Excavations

The following information is provided solely as a service to our client. Under no circumstances should this information be interpreted to mean that SWT is assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred. In no case should excavation slopes be greater than the limits specified in local, state and federal safety regulations.

Based on the information obtained from our field exploration and laboratory testing, the onsite soils expected to be encountered in excavations consist predominately of dense silty Gravel (GM) with sand and stable bedrock. The upper subsurface soil horizon (~2 to 4 feet) encountered is classified as a type "B" soil and should be sloped at an inclination no steeper 1:1 (horizontal to vertical). The remainder of the trench will be stable bedrock and can excavated with vertical sides and remain intact.

If slopes of this inclination, or flatter, cannot be constructed, or if excavations greater than 4 feet in depth are required, temporary shoring may be necessary. This shoring would help protect against slope or excavation collapse and would provide protection to workmen in the excavation. If temporary shoring is required, we will be available to provide shoring design criteria, if requested.

LIMITATIONS

Our recommendations and conclusions are based on the site materials observed, selective laboratory testing, engineering analyses and other design information provided to Soil and Water Technologies as well as our experience and engineering judgment. The conclusions and recommendations are professional opinions derived in a manner consistent with that level of care and skill ordinarily exercised by other members of the profession currently practicing under similar conditions in this area. No warranty is expressed or implied.

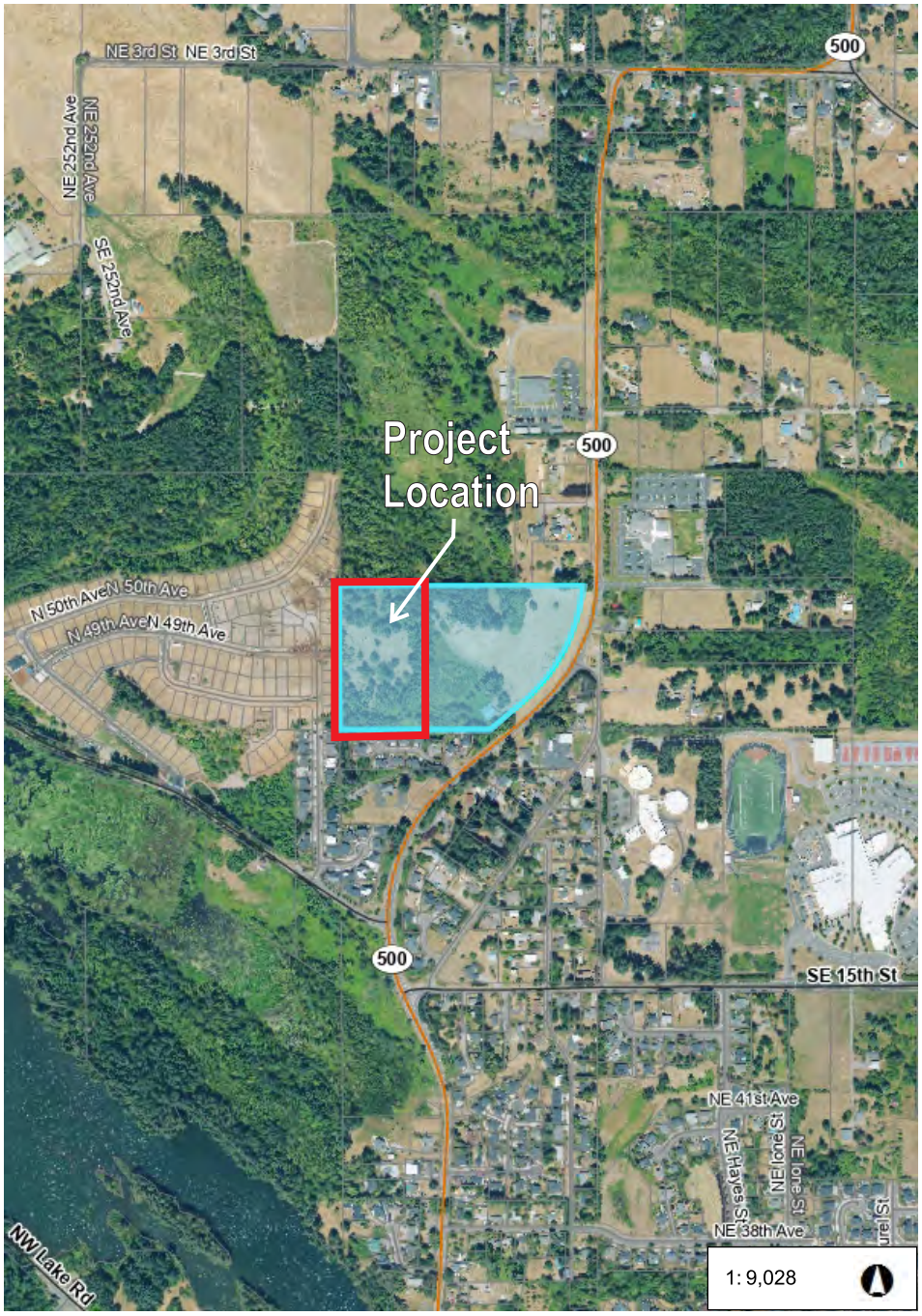
The recommendations submitted in this report are based upon the data obtained from the test pits. Soil and groundwater conditions between the test pits may vary from those encountered. The nature and extent of variations may not become evident until construction.

If variations do appear, Soil and Water Technologies should be requested to reevaluate the recommendations contained in this report and to modify or verify them in writing prior to proceeding with the proposed construction.

Temporary construction excavation and site safety are the sole responsibility of the construction contractor who also is solely responsible for the means, methods, and sequencing of construction operations. We are providing the following information only as a service to our client for planning purposes by their design team. Under no circumstances should the information provided herein be interpreted to mean that SWT is assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

VICINITY MAP

Olivers Terrace Subdivision



Legend

- Taxlots
- All Roads
  - Interstate
  - State Route
  - Arterial
  - Forest Arterial
  - Minor Collector
  - Forest Collector
  - Private or Other
- All Roads
  - Interstate or State Route
  - Arterial
  - Collector
  - Private or Other

Notes:

Parcel No. 178221000

1,504.7 0 752.33 1,504.7 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. Taxlot (i.e., parcel) boundaries cannot be used to determine the location of property lines on the ground.

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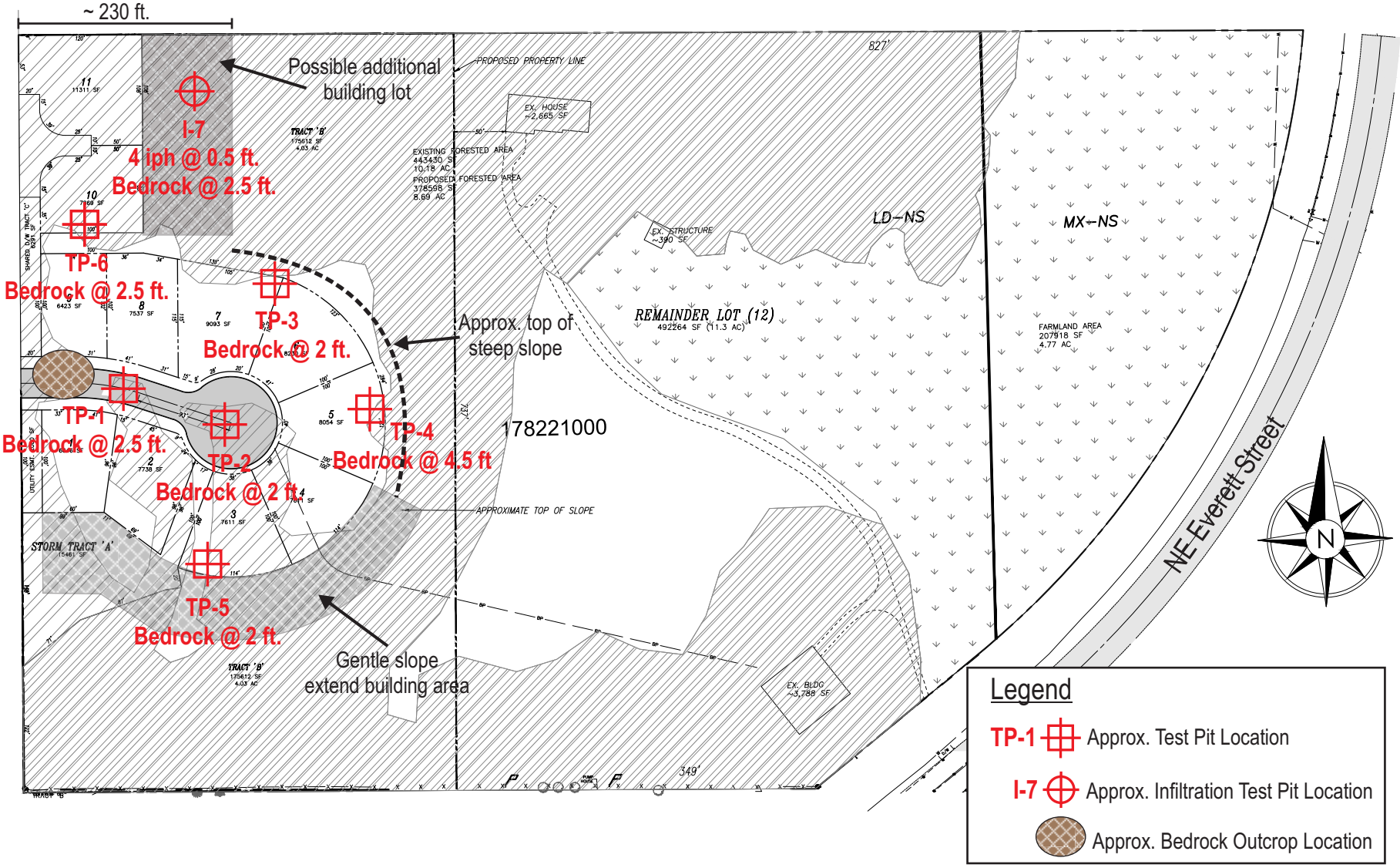
Vancouver, WA 98661
PH: (360) 200-8693
www.swt.ski

CLIENT:	HSR Development	*DRAWN:*	RN
PROJECT:	Oliver Terrace Subdivision 1004 NE Everett Street Camas, WA 98607	*DATE:*	1/11/2025
		FIGURE:	1
		PRO. #:	G2352400

SITE PIAN



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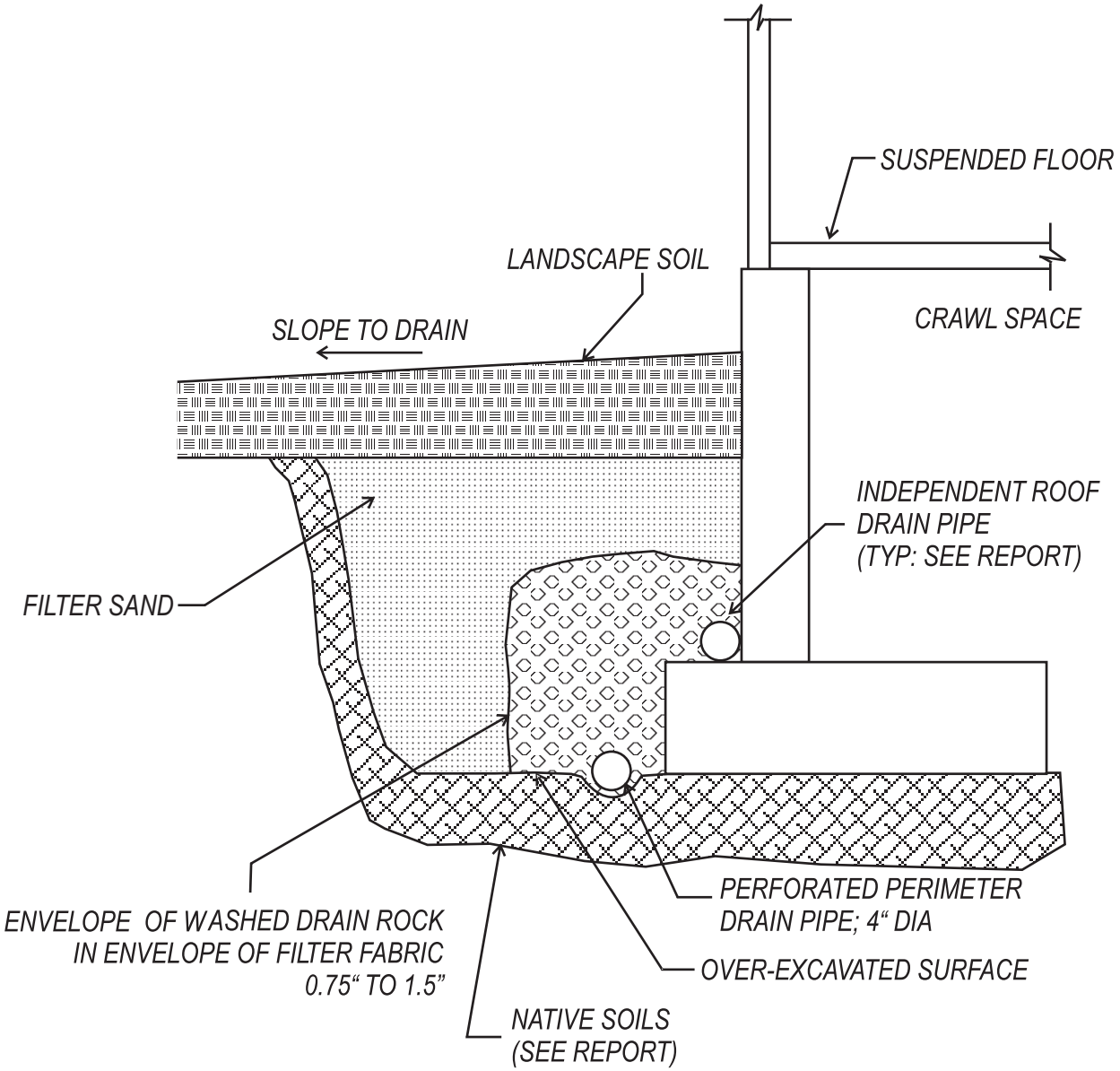
CLIENT:	HSR Development	*DRAWN:*	RN
PROJECT:	Oliver Terrace Subdivision 1004 NE Everett Street Camas, WA 98607	*DATE:*	12/19/2024
		FIGURE:	2
		PRO. #:	G2352400



NOTES:

1. FILTER SAND - FINE AGGREGATE FOR PORTLAND CEMENT; SECTION 9=03.1(2)
2. PERFORATED OR SLOTTED RIGID PVC PIPE WITH A POSITIVE DRAINAGE GRADIENT
3. FOOTINGS INSTALLED ABOVE COMPACTED NATIVE SOIL OR BEDROCK

TYPICAL SUSPENDED FOOTING DETAIL

Not to Scale

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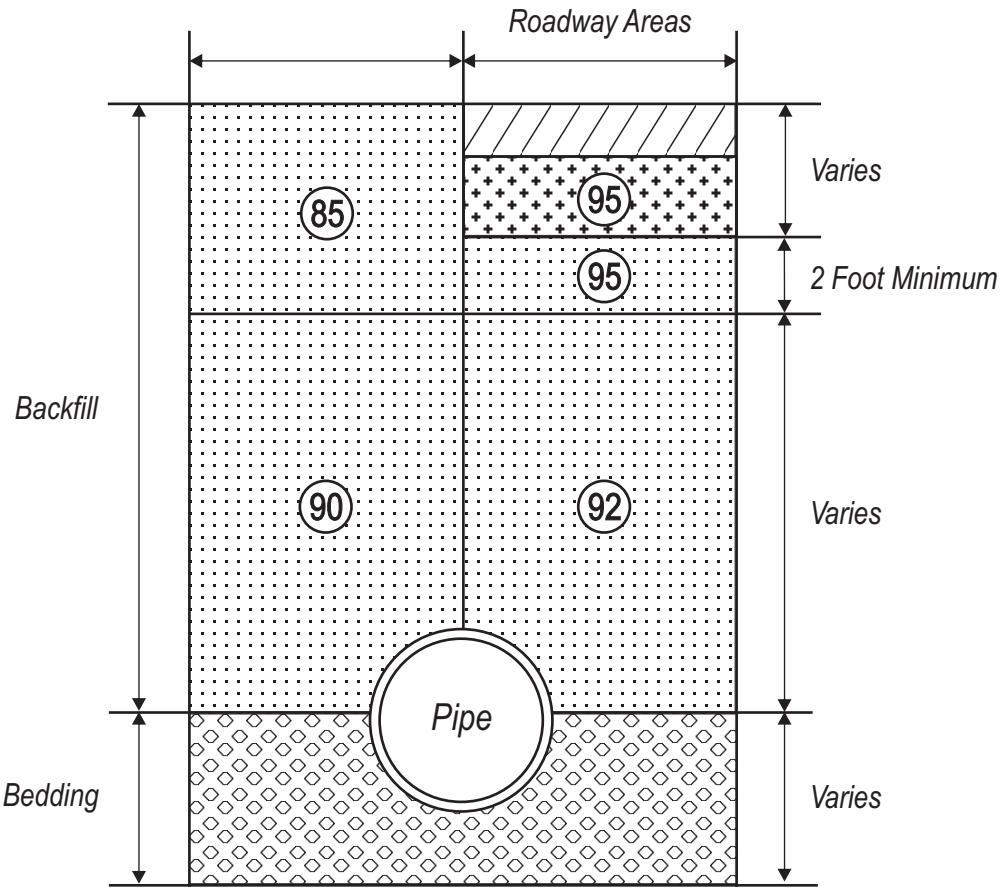
CLIENT:	HSR Development	DRAWN:	RN
PROJECT:	Oliver Terrace Subdivision 1004 NE Everett Street Camas, WA 98607	DATE:	12/17/2024
		FIGURE:	3
		PRO. #:	G2352400



LEGEND

Asphalt or Concrete Pavement

Roadway Base Material or Base Rock

Backfill: Compacted on-site soil or imported select fill material as described in the site preparation of the general Earthwork Section of the attached report text.

95 — Minimum percentage of maximum Laboratory Dry Density as determined by ASTM Test method D1557 (Modified Proctor),unless otherwise specified in the attached report text.

Bedding Material: Material type depends on type of pipe and laying conditions. Bedding should conform to the manufacturer's recommendations for the type of pipe selected.

UTILITY TRENCH BACKFILL DETAIL

Not to Scale

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PROJECT:	Oliver Terrace Subdivision 1004 NE Everett Street Camas, WA 98607	DATE:	1/5/2025
		FIGURE:	4
		PRO. #:	G2352400

APPENDIX A

(FIELD EXPLORATION)

FIELD EXPLORATION

Our field exploration was performed on December 12th, 2024. Subsurface conditions were explored by excavating a total of 7 test pits (TP-1 through TP-6 & I-7) to the maximum explored depth by refusal of 4.5 feet below the existing ground surface. Bedrock refusal was encountered at each test pit at depths ranging from 2.0 to 4.5 feet bgs.

Test pit locations was determined by Soil and Water Technologies, Inc. (SWT) by pacing from existing site features and a measuring wheel. These approximate locations are shown on the *Site Plan, Figure 2.*

The field exploration was monitored by several SWT representatives who classified the soil encountered and maintained a log of each test pit, obtained representative samples, and observed pertinent site features. Representative soil samples were collected at each defined soil horizon, placed in sealed plastic bags, and returned to the laboratory for further examination and testing.

All samples were visually classified in accordance with the Unified Soil Classification System (USCS), which is presented on *Plate A1*. Logs of each test pits is presented in *Appendix A*. The final logs represent our interpretations of the field logs and the results of the laboratory tests on field samples. The stratification lines on the logs represent the approximate boundaries between soil types. However, the transitions may be more gradual.

UNIFIED SOIL CLASSIFICATION SYSTEM
LEGEND

MAJOR DIVISIONS			GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTION
Coarse Grained Soils	Gravel and Gravelly Soils More Than 50% Coarse Fraction Retained on No 4 Sieve	Clean Gravels (little or no fines)		GW gw	Well-Graded Gravels, Gravel-Sand Mixtures Little or no Fines
				GP gp	Poorly-Graded Gravels, Gravel-Sand Mixtures, Little or no Fines
		Gravels with Fines (appreciable amount of fines)		GM gm	Silty Gravels, Gravel-Sand-Silt Mixtures
				GC gc	Clayey Gravels, Gravel-Sand-Clay Mixtures
More Than 50% Material Larger Than No 200 Sieve Size	Sand and Sandy Soils More Than 50% Coarse Fraction Passing No 4 Sieve	Clean Sand (little or no fines)		SW sw	Well-graded Sands, Gravelly Sands Little or no Fines
				SP sp	Poorly-Graded Sands, Gravelly Sands Little or no Fines
		Sands with Fines (appreciable amount of fines)		SM sm	Silty Sands, Sand-Silt Mixtures
				SC sc	Clayey Sands, Sand-Clay Mixtures
Fine Grained Soils	Silts and Clays	Liquid Limit Less than 50		ML ml	Inorganic Silts and Very Fine Sands, Rock Flour, Silty-Clayey Fine Sands; Clayey Silts w/ slight Plasticity
				CL cl	Inorganic Clays of Low to Medium Plasticity, Gravelly Clays, Sandy Clays, Silty Clays, Lean
				OL ol	Organic Silts and Organic Silty Clays of Low Plasticity
More Than 50% Material Smaller Than No 200 Sieve Size	Silts and Clays	Liquid Limit Greater than 50		MH mh	Inorganic Silts, Micaceous or Diatomaceous Fine Sand or Silty Soils
				CH ch	Inorganic Clays of High Plasticity, Fat Clays
				OH oh	Organic Clays of Medium to High Plasticity, Organic Silts
Highly Organic Soils				PT pt	Peat, Humus, Swamp Soils with High Organic Contents

Topsoil		Humus and Duff Layer
Fill		Highly Variable Constituents

SAMPLING DESCRIPTIONS

- ● Grab Sample
- SPT Drive Sampler (ASTM D1586)
- Shelby Tube Push Sampler (ASTM D1587)
- Dames and Moore Drive Sampler (ASTM D3550)

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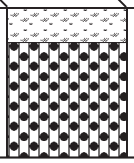
CLIENT:	HSR Development	DRAWN:	RN
PROJECT:	Oliver Terrace Subdivision 1004 NE Everett Street Camas, WA 98607	DATE:	1/5/2025
		PLATE:	A1
		PRO. #:	G2352400

LOG OF TEST PIT — TP-1

ELEVATION: **+/- 324 feet**
EXPLORATORY EQUIPMENT: **Track Hoe**
DATE: **12/12/2024**

DEPTH IN FEET	SAMPLES	SOILS CLASSIFICATION	LITHOLOGY (USGS)	MOISTURE CONTENT % OF DRY WEIGHT	PERCENT PASS NUMBER 200	NOTES
1 2	●	*red/brown, dense* *silty **Gravel** (GM) with sand* *moist* (native)		29.1	22.2	*6-8" Organic topsoil* *{a-1-b}* *{roots to 2 feet bgs}*

Refusal/bedrock at 2.5 feet below existing ground surface (bgs).
Static groundwater not encountered.

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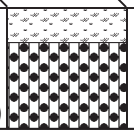
CLIENT:	HSR Development	DRAWN:	RN
PROJECT:	Olivers Terrace 1004 NE Everett Street Camas, WA 98607	DATE:	1/6/2025
		FIGURE:	A2
		PRO. #:	G2352400

LOG OF TEST PIT — TP-2

ELEVATION: **+/- 322 feet**
EXPLORATORY EQUIPMENT: **Track Hoe**
DATE: **12/12/2024**

DEPTH IN FEET	SAMPLES	SOILS CLASSIFICATION	LITHOLOGY (USGS)	MOISTURE CONTENT % OF DRY WEIGHT	PERCENT PASS NUMBER 200	NOTES
1 – 2	●	*red/brown, dense* **silty Gravel (GM)** *with sand moist* (native)		23.5	13.6	*6-8" Organic topsoil*

Refusal/bedrock at 2.0 feet below existing ground surface (bgs).
Static groundwater not encountered.

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CLIENT:	HSR Development	DRAWN:	RN
PROJECT:	Olivers Terrace 1004 NE Everett Street Camas, WA 98607	DATE:	1/6/2025
		FIGURE:	A3
		PRO. #:	G2352400

LOG OF TEST PIT — TP-3

ELEVATION: **+/- 323 feet**
EXPLORATORY EQUIPMENT: **Track Hoe**
DATE: **12/12/2024**

DEPTH IN FEET	SAMPLES	SOILS CLASSIFICATION	LITHOLOGY (USGS)	MOISTURE CONTENT % OF DRY WEIGHT	PERCENT PASS NUMBER 200	NOTES
1 – 2	•	*red/brown, dense* **silty Gravel (GM) with sand** *moist* (native)		22.1	15.4	6-8" Organic topsoil

Refusal/bedrock at 2.0 feet below existing ground surface (bgs).
Static groundwater not encountered.

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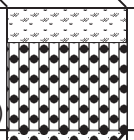
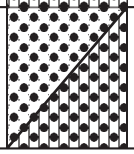
CLIENT:	HSR Development	DRAWN:	RN
PROJECT:	Olivers Terrace 1004 NE Everett Street Camas, WA 98607	DATE:	1/6/2025
		FIGURE:	A4
		PRO. #:	G2352400

LOG OF TEST PIT — TP-4

ELEVATION: **+/- 325 feet**
EXPLORATORY EQUIPMENT: **Track Hoe**
DATE: **12/12/2024**

DEPTH IN FEET	SAMPLES	SOILS CLASSIFICATION	LITHOLOGY (USGS)	MOISTURE CONTENT % OF DRY WEIGHT	PERCENT PASS NUMBER 200	NOTES
1	●	red/brown, dense silty **Gravel (GM)** with sand moist (native)		34.9	40.8	6-8" Organic topsoil {A-2 | LL-37 | PL-29 | PI-8}
2						
3	●	red/brown, dense **Gravel (GP-GM)** with silt moist		20.1	5.6	{poorly-graded - A-1-b}
4						

Refusal/bedrock at 4.5 feet below existing ground surface (bgs).
Static groundwater not encountered.

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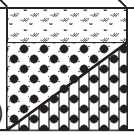
CLIENT:	HSR Development	DRAWN:	RN
PROJECT:	Olivers Terrace 1004 NE Everett Street Camas, WA 98607	DATE:	1/6/2025
		FIGURE:	A5
		PRO. #:	G2352400

LOG OF TEST PIT — TP-5

ELEVATION: **+/- 325 feet**
EXPLORATORY EQUIPMENT: **Track Hoe**
DATE: **12/12/2024**

DEPTH IN FEET	SAMPLES	SOILS CLASSIFICATION	LITHOLOGY (USGS)	MOISTURE CONTENT % OF DRY WEIGHT	PERCENT PASS NUMBER 200	NOTES
1 – 2	•	*red/brown, dense* **Gravel (GP-GM)** *with sand and silt moist* (native)		24.4	9.7	*6-8" Organic topsoil* *{roots to 2 ft. bgs}*

Refusal/bedrock at 2.0 feet below existing ground surface (bgs).
Static groundwater not encountered.

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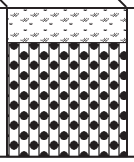
CLIENT:	HSR Development	DRAWN:	RN
PROJECT:	Olivers Terrace 1004 NE Everett Street Camas, WA 98607	DATE:	1/6/2025
		FIGURE:	A6
		PRO. #:	G2352400

LOG OF TEST PIT — TP-6

ELEVATION: ***+/- 325 feet***
EXPLORATORY EQUIPMENT: ***Track Hoe***
DATE: ***12/12/2024***

DEPTH IN FEET	SAMPLES	SOILS CLASSIFICATION	LITHOLOGY (USGS)	MOISTURE CONTENT % OF DRY WEIGHT	PERCENT PASS NUMBER 200	NOTES
1 2		*red/brown, dense* *silty **Gravel** (GM) with sand* *moist* (native)		-	-	*6-8" Organic topsoil*

Refusal/bedrock at 2.5 feet below existing ground surface (bgs).
Static groundwater not encountered.

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CLIENT:	HSR Development	*DRAWN:*	RN
PROJECT:	Olivers Terrace 1004 NE Everett Street Camas, WA 98607	*DATE:*	1/6/2025
		FIGURE:	A7
		PRO. #:	G2352400

LOG OF TEST PIT — I-7

ELEVATION: **+/- 308 feet**
EXPLORATORY EQUIPMENT: **Track Hoe**
DATE: **12/12/2024**

DEPTH IN FEET	SAMPLES	SOILS CLASSIFICATION	LITHOLOGY (USGS)	MOISTURE CONTENT % OF DRY WEIGHT	PERCENT PASS NUMBER 200	NOTES
1 2		red/brown, dense silty **Gravel (GM)** with sand moist (native)		23.9	20.3	6" Organic topsoil Coefficient Infiltration test @ 4 iph @ 0.5 ft.

Refusal/bedrock at 2.5 feet below existing ground surface (bgs).
Static groundwater not encountered.

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CLIENT:	HSR Development	DRAWN:	RN
PROJECT:	Olivers Terrace 1004 NE Everett Street Camas, WA 98607	DATE:	1/6/2025
		FIGURE:	A8
		PRO. #:	G2352400

APPENDIX B

(LABORATORY TESTING)

LABORATORY TESTING

Laboratory tests were conducted on representative soil samples to verify or modify field soil classifications, and to evaluate the general physical properties and engineering characteristics of the soils encountered.

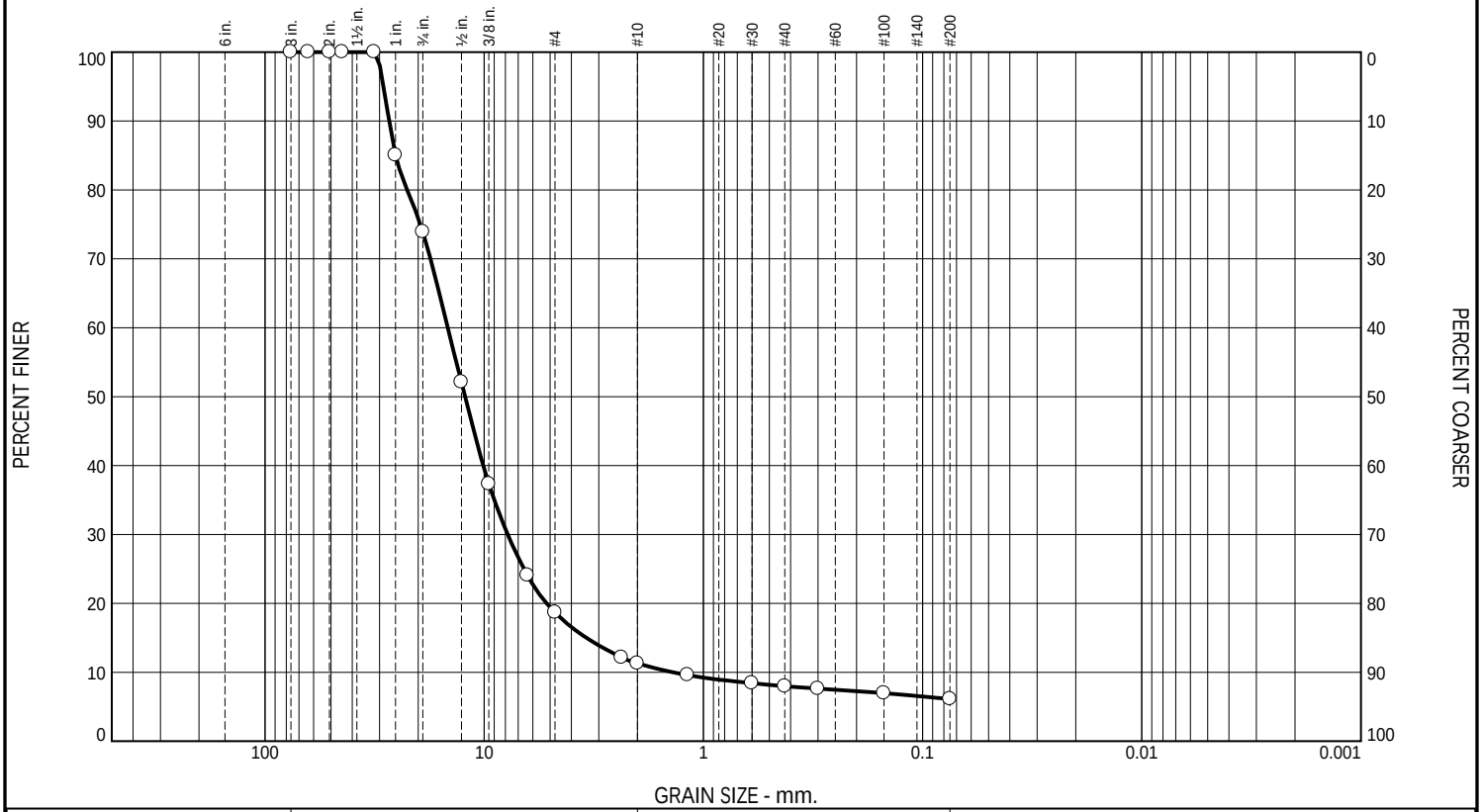
The following provides information about the testing procedures performed on representative soil samples:

- Moisture Content Tests (ASTM D2216) were performed on representative samples encountered in each soil horizon.
- Sieve Analysis - No. 200 wash (ASTM C117) was performed on representative samples encountered at each test pit.
- Atterberg Limits Testing (ASTM D4318) was performed on a representative sample collected at test pit TP-4 to determine the "water-plasticity" ratio of the upper soil horizon. This test also provides an indication of relative soil strength as well as the potential for soil volume changes with variation in moisture content.

The results of laboratory tests performed on specific samples are provided at the appropriate sample depth on the individual test pits logs. However, it is important to note that some variation of subsurface conditions may exist. Our geotechnical recommendations are based on our interpretation of these test results.

Particle Size Distribution Report

AASHTO T 27 & T 11



% +3"	% Gravel	% Sand		% Fines	
		Coarse	Fine	Silt	Clay
0.0	88.7	3.3	1.9	6.1	

Test Results (AASHTO T 27 & T 11)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
3"	100.0			
2 1/2"	100.0			
2"	100.0			
1 3/4"	100.0			
1 1/4"	100.0			
1"	85.1			
3/4"	73.9			
1/2"	52.1			
3/8"	37.3			
1/4"	24.1			
#4	18.7			
#8	12.1			
#10	11.3			
#16	9.6			
#30	8.4			
#40	8.0			
#50	7.6			
#100	7.0			
#200	6.1			

* (no specification provided)

Material Description

poorly graded Gravel with silt

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

USCS= GP-GM AASHTO= A-1-a

Test Remarks

Location: TP-4 @ -3'
Sample Number: 240

Sample Date: 12/12/24

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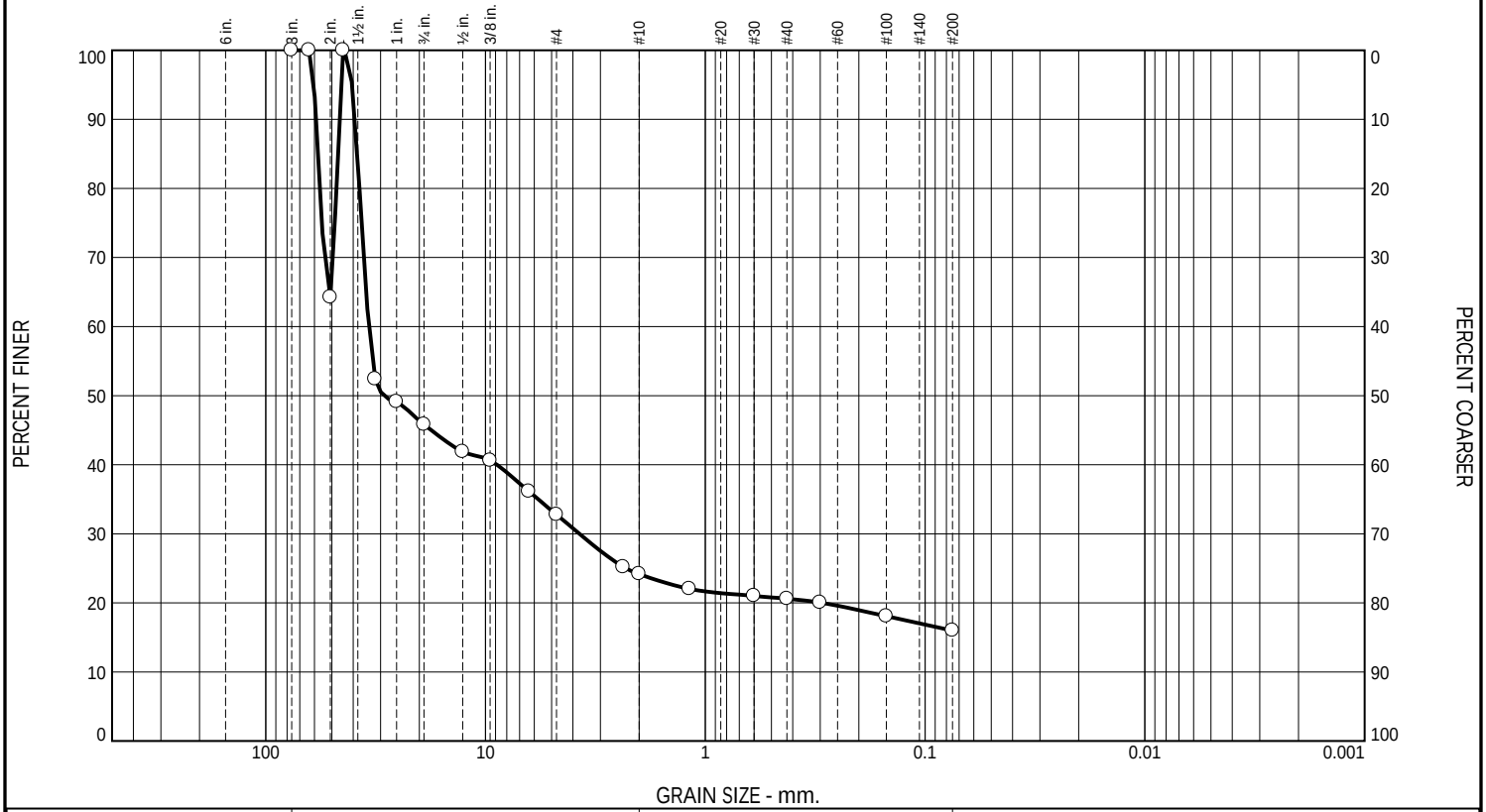
Client: HSR Development
Project: Olivers Terrace

Project No: G2352400 Figure PSD-1

Tested By: KH

Particle Size Distribution Report

ASTM C117 & C136



% +3"	% Gravel	% Sand		% Fines	
		Coarse	Fine	Silt	Clay
0.0	75.8	3.6	4.6	16.0	

Test Results (ASTM C117 & C136)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
3"	100.0			
2 1/2"	100.0			
2"	64.2			
1 3/4"	100.0			
1 1/4"	52.4			
1"	49.1			
3/4"	45.8			
1/2"	41.9			
3/8"	40.6			
1/4"	36.1			
#4	32.8			
#8	25.2			
#10	24.2			
#16	22.0			
#30	21.0			
#40	20.6			
#50	20.0			
#100	18.1			
#200	16.0			

* (no specification provided)

Material Description
silty Gravel with sand

Atterberg Limits
PL= NP LL= NV PI=

Classification
USCS= GM AASHTO= A-1-b

Test Remarks

Location: TP-1 @ -1.5'
Sample Number: 240

Sample Date: 12/12/24

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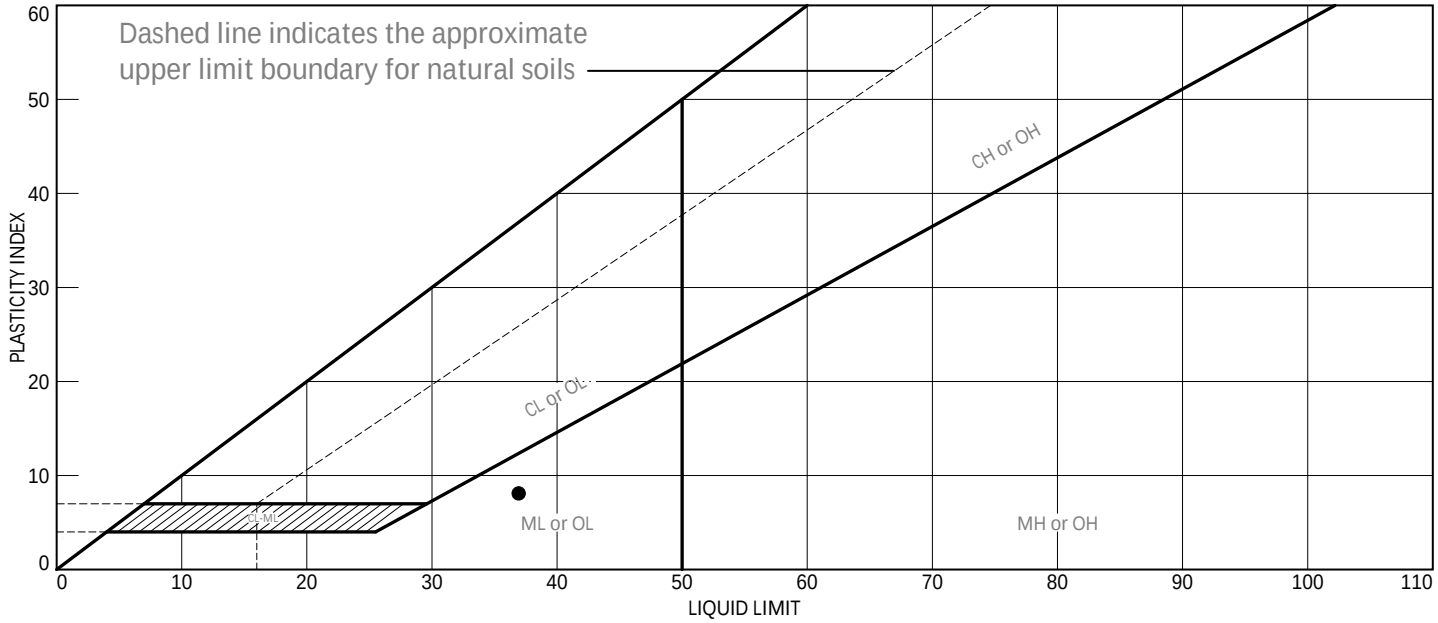
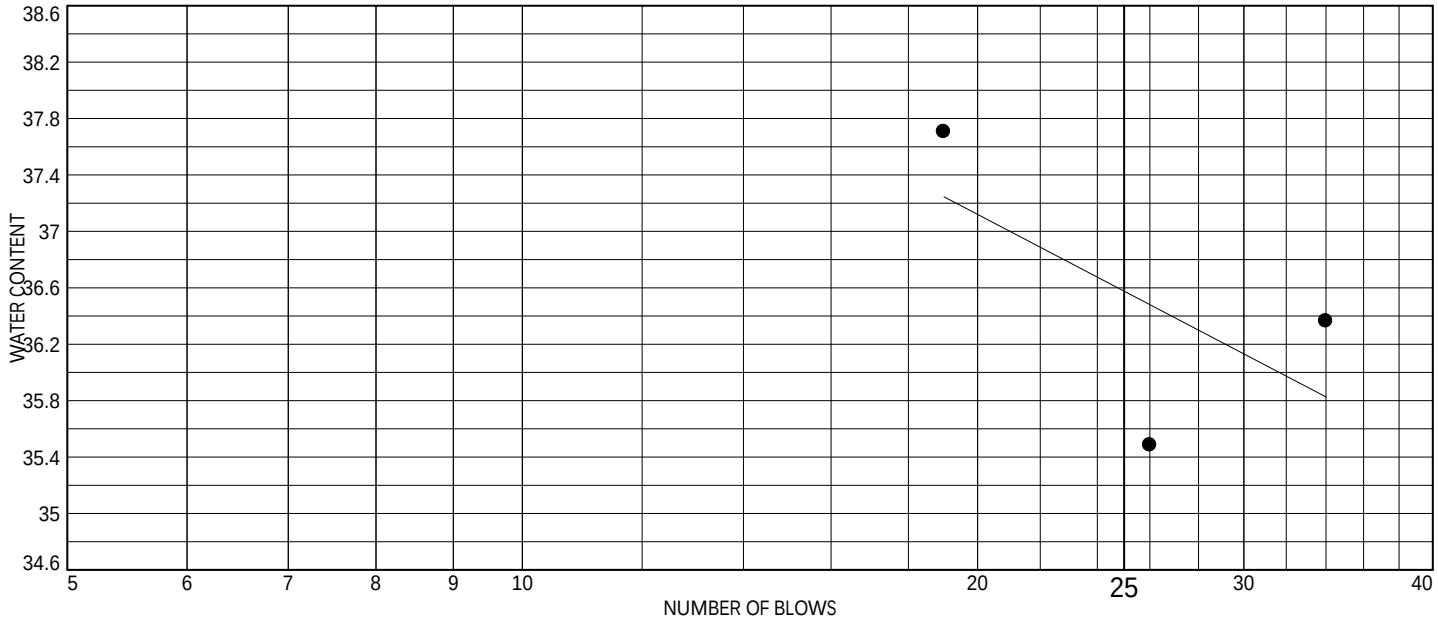
Client: HSR Development
Project: Olivers Terrace

Project No: G2352400 Figure PSD-2

Tested By: KH

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	silty Gravel with sand	37	29	8	20.6	16	GM

Project No. G2352400 Client: HSR Development

Project: Olivers Terrace

Location: TP-4 @ -1'
Sample Number: 240

Remarks:
●AASHTO A-2-4

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Figure: LPL-1

Tested By: KH Checked By: KH

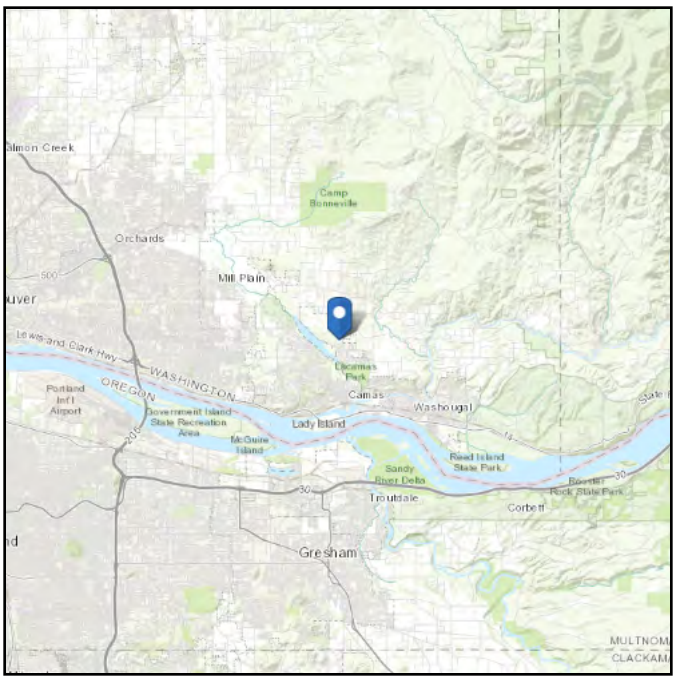
APPENDIX C

(ASCE 7-22 HAZARDS REPORT)

ASCE Hazards Report

Address:
1004 SE Everett Rd
Camas, Washington
98607

Standard:	ASCE/SEI 7-22	**Latitude:**	45.615395
Risk Category:	II	**Longitude:**	-122.406824
Soil Class:	BC	**Elevation:**	299.06581724399035 ft (NAVD 88)



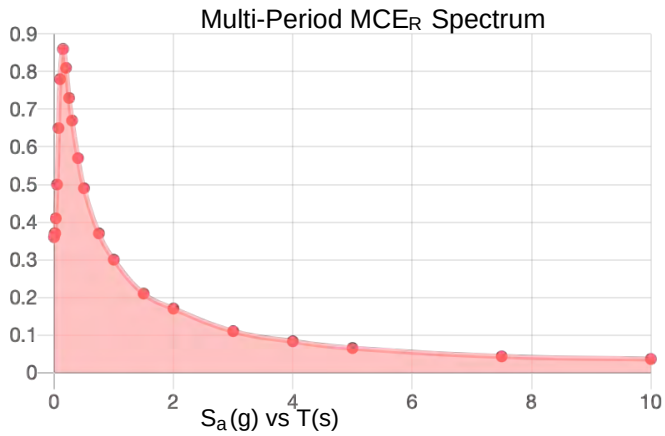
Seismic

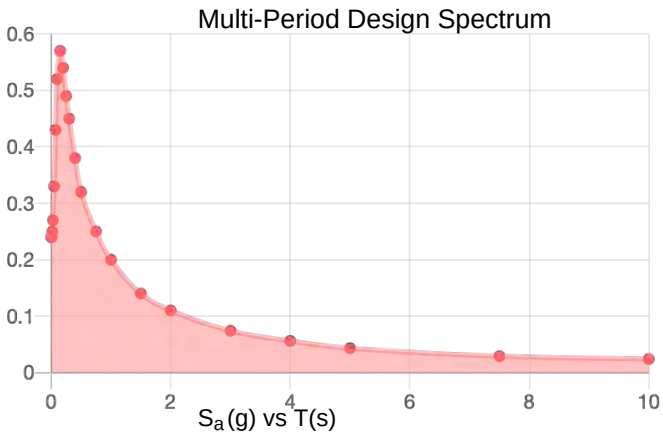
Site Soil Class: BC

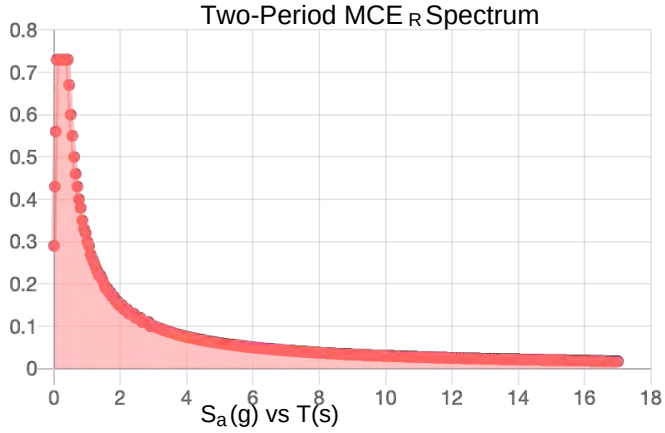
Results:

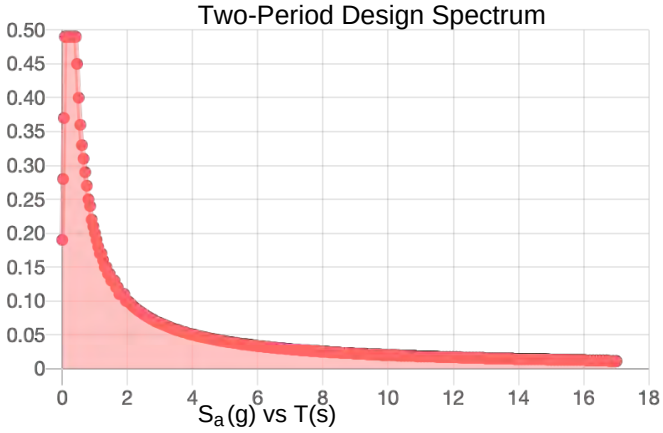
PGA_M :	0.34	T_L :	16
S_{MS} :	0.73	S_S :	0.81
S_{M1} :	0.3	S_1 :	0.3
S_{DS} :	0.49	V_{S30} :	760
S_{D1} :	0.2		

Seismic Design Category: D









MCE$_R$ Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Data Accessed: **Fri Feb 14 2025**

Date Source:
USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

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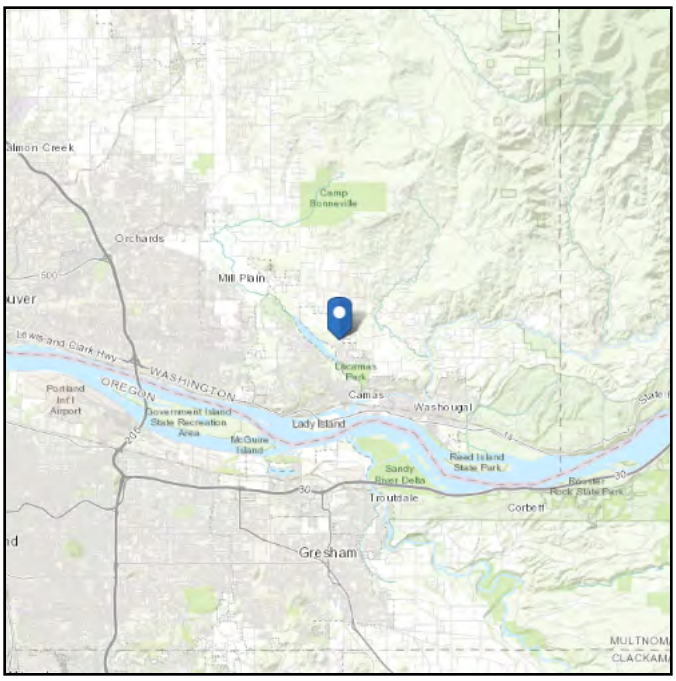
ASCE Hazards Report

Address:
1004 SE Everett Rd
Camas, Washington
98607

Standard:	ASCE/SEI 7-22	**Latitude:**	45.615395
Risk Category:	II	**Longitude:**	-122.406824
Soil Class:	BC	**Elevation:**	299.06581724399035 ft (NAVD 88)



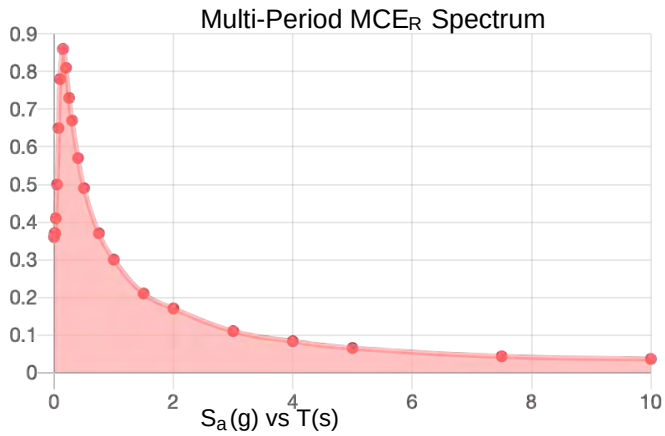
Seismic

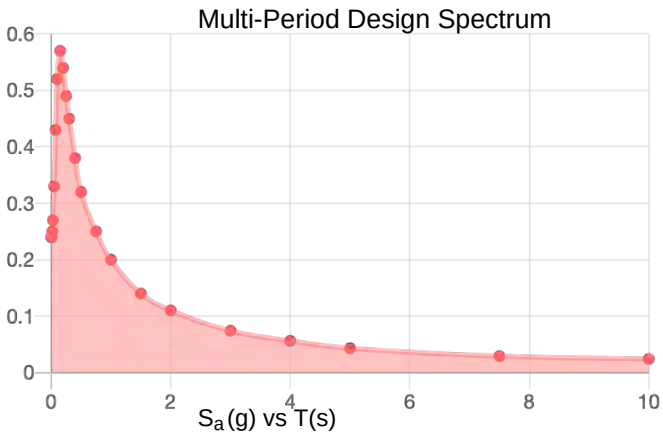
Site Soil Class: BC

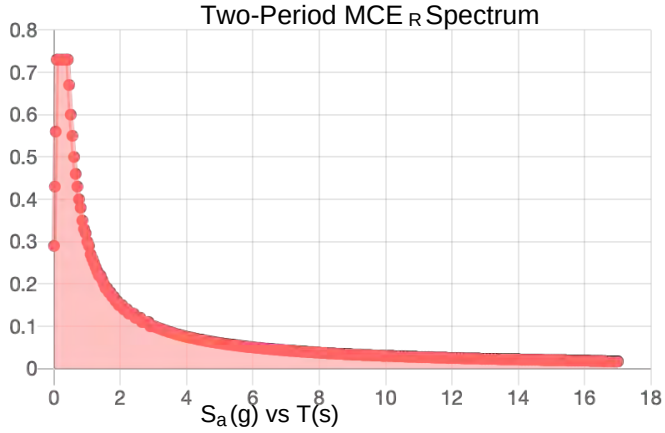
Results:

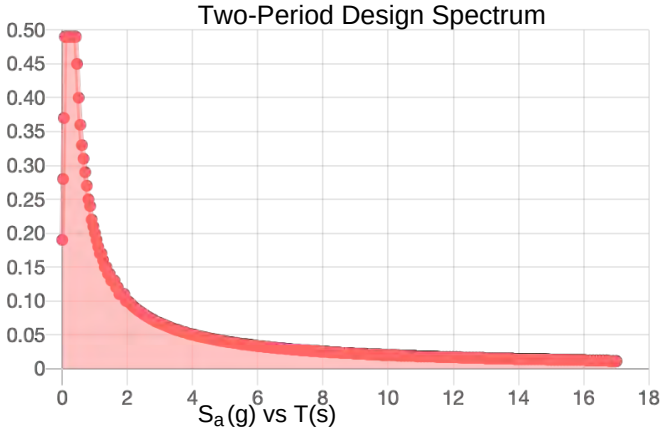
PGA_M :	0.34	T_L :	16
S_{MS} :	0.73	S_S :	0.81
S_{M1} :	0.3	S_1 :	0.3
S_{DS} :	0.49	V_{S30} :	760
S_{D1} :	0.2		

Seismic Design Category: D









MCE_R Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Data Accessed: **Fri Feb 14 2025**

Date Source:
USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

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In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE Hazard Tool.

APPENDIX D

(Test pits/ Site Photographs)

I-1. Bedrock @ 2.5 ft. bgs

TP-2. Bedrock @ 2.0 ft. bgs

TP-3. Bedrock @ 2.0 ft. bgs

TP-4. Bedrock @ 4.5 ft. bgs

TP-5. Bedrock @ 2.0 ft. bgs

TP-6. Bedrock @ 2.5 ft. bgs

I-7. Bedrock @ 2.5 ft. bgs

KITTELSON & ASSOCIATES
1851 SW 6th Avenue, Suite 600
Portland, OR 97204
P 503.228.5230

July 28, 2025

Project #: 31839

James Carothers, PE
Anita Ashton
City of Camas Community Development Engineering
616 NE 4th Avenue
Camas, WA 98607

RE: The Olivers Terrace Subdivision (PA25-1051)

Dear Curleigh and Anita:

HSR Capital, LLC proposes 11 new single family residential homes on parcel number 178221000. The site is located on the north side of SE Everett Street, east of the approved CJ Dens/Lacamas Hills subdivision. Vehicle access will be provided exclusively through the extension of N 49th Avenue from the CJ Dens/Lacamas Hills development to the west (N 49th Avenue links to N Adams Street). This letter documents transportation information requested by City staff through the project pre-application meeting.

TRIP GENERATION

Site vehicle trips were estimated per the *Trip Generation Manual, 11th Edition* (Institute of Transportation Engineers, 2021) as shown in Table 1 using average trip rates.

Table 1: Trip Generation Estimate

Land Use	ITE Code	Size (units)	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Single-Family Detached Housing	210	11	104	8	2	6	10	6	4

TRIP ASSIGNMENT

All Phase I site-generated vehicle trips will access the project site via N Adams Street. Based on the project trip generation, no study intersections will be impacted by more than 12 new peak hour trips and no off-site trip assignment is needed to address the City's 20 peak hour trip study threshold.

SIGHT DISTANCE AND VISION CLEARANCE ANALYSIS

The sight distance and vision clearance analysis identified in the project pre-application notes is provided by SGA Engineering & Design under separate cover.

ON-SITE CIRCULATION PLAN

The on-site circulation plan identified in the project pre-application notes is provided by SGA Engineering & Design under separate cover.

ACCESS INTERACTION

The project pre-application notes identified a need to address movement conflicts with nearby intersections and existing driveways. The proposed Phase I site access will be via the existing stub of N 29th Avenue and no movement conflicts with nearby intersections or existing driveways were identified.

NEXT STEPS

We trust this letter adequately addresses the trip generation and trip assignment associated with the proposed development as well as the other transportation review criteria identified in the project pre-application notes. Please contact us if you have questions or wish to discuss.

Sincerely,
KITTELSON & ASSOCIATES, INC.

Chris Brehmer, PE
Senior Principal Engineer

Cc: Scott Taylor, SGA Engineering & Design

CHRISTOPHER LYNN BREHMER
STATE OF WASHINGTON
37571
REGISTERED
PROFESSIONAL ENGINEER

2025.07.28
07:45:20-07'00'

KITTELSON & ASSOCIATES
1851 SW 6th Avenue, Suite 600
Portland, OR 97204
P 503.228.5230

October 21, 2025

Project #: 31839

James Carothers, PE
Anita Ashton
City of Camas Community Development Engineering
616 NE 4th Avenue
Camas, WA 98607

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Chris Brehmer, PE
Senior Principal Engineer

Cc: Scott Taylor, SGA Engineering & Design

CHRISTOPHER LYNN BREHMER
STATE OF WASHINGTON
37571
REGISTERED
PROFESSIONAL ENGINEER

2025.10.21
06:34:57-07'00'

Oliver Terrace Subdivision
Preliminary Tree Report

Date: August 2025

Prepared For: HSR Capital LLC
19120 SE 34th St. #103
Vancouver, WA 98663

Prepared By: Bennett Kocsis, Certified Arborist

Site Information: 1004 SE Everett Road
Camas, WA 98607
Parcel #178221-000

AKS ENGINEERING & FORESTRY
9600 NE 126th Avenue, Suite 2520
Vancouver, WA 98682
(360) 882-0419

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Designing for Tree Preservation **2**
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Soils **5**
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Planting Plan **5**
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Conclusion **5**

Technical Appendices

Appendix A: Detailed Tree Inventory Table
Appendix B: Tree Preservation and Removal Plan
Appendix C: Tree Planting Plan

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Tree Report

OLIVER TERRACE SUBDIVISION
CAMAS, WASHINGTON

Location

The project site is located at 1004 SE Everett Road, (Parcel Serial No. 178221-000) in the City of Camas, Clark County, Washington.

General Site Notes

This Tree Plan consists of a written report with tree density calculations, Site Plan, Tree Protection Plan, and Landscape Plan.

This report is for the net developable area (3.77 acres) of the proposed residential subdivision. The existing site slopes moderately to aggressively to the east with various native trees, under brush, and invasive vegetation. Open fields, existing structures, and a driveway occupy the eastern half of the site. The proposed development will result in 12 single-family residential lots with tracts set aside for a stormwater facility and open space. Tree protection will be established at the beginning of development and be maintained through the entire length of the development. See Appendix A for additional information regarding the described trees in the detailed tree inventory table. The site consists of 432 surveyed trees over 6 inches in diameter, 203 of these trees were evaluated and inventoried for this report. Due to the planned site development and high potential for extensive root impacts from site grading, 83 on-site and 3 off-site trees are proposed for removal & 117 on-site inventoried trees are planned for retention.

On-Site Tree Condition

Only trees numbered on the attached plan were included in this inventory; other trees on-site were not evaluated as they were not required for tree unit calculations and are located within critical areas and their respective buffers. Most trees on-site are concentrated within the western half of the property. The northern portion is characterized by a dense stand of Douglas-fir. Along the upper slope, a mix of Douglas-fir, Cherry, and European White Birch, was observed; many of the deciduous trees in this area are dead or in advanced decline. A wetland at the base of the slope supports a variety of native tree and shrub species. One Oregon White Oak was identified along the southern slope. The health and structure of on-site trees range from poor to good based on conditions observed during a site visit on August 7th, 2025. Tree removal was recommended based on location, root impact from development activities and higher likelihood of failure due to windthrow. Review of on-site trees was based on the site being fully developed and impacts to future site improvements.

Off-Site Trees

No trees are present to the west of the project site due to existing development. The southern and eastern site boundaries are located well outside the limits of proposed work. A stand of trees exists to the north; however, these trees were not included in the provided survey and are not expected to be impacted by the proposed improvements. The eastern portion of the site (Phase II) was not reviewed at this time except for potential tree impacts near the proposed sewer line. Several mature trees are also present along the driveway near the existing barn. While these trees were not surveyed, three were mapped using GPS coordinates due to their proximity to the proposed utility installation. Phase II will be evaluated and a separate tree plan and report prepared concurrently when applicable.

Tree Density Calculations

The total site area is 9.93 acres with 6.16 acres of open space tracts and critical areas for a net site area of 3.77 acres. Per Chapter 18.13.051 of the City of Camas municipal code, the City requires 30 tree units per acre for the North Shore Subarea, or a total of 113 tree units (30*3.77 acres) for this site. Table 1 summarizes the tree units required, removed, retained, and proposed for the entire site. All trees, both retained and removed, are

detailed on the Preliminary Tree Preservation and Removal Plans found in Appendix B and in the Detailed Tree Inventory found in Appendix A. The proposed trees are detailed within the Tree Planting Plan in Appendix C.

	Net Site Area (Acres)	Tree Units Required	Tree Units Existing	Tree Units Removed	Tree Units Retained	Proposed Tree Units	Total Tree Units
Overall	3.77	113	1071*	479	592*	12	604

Table 1: Summary of Tree Units
**Only includes trees that were inventoried and evaluated.*

Designing for Tree Preservation

Designing for tree preservation means that trees are considered an important project feature. The goal of tree preservation is to have trees remain safe assets to the site for years to come. Trees that are preserved must be carefully selected to make sure that they will survive the construction impacts, adapt to the new environment, and perform well in the new landscape. An assessment of suitability for preservation evaluates tree health, structure, age, and species factors. The consultant gathers information on the individual trees and makes recommendations as to which trees are suitable for preservation, and how much undisturbed space they will require. The consultant also provides specific guidelines regarding grading, drainage, trenching, protected areas, root pruning, etc.

Tree Characteristics and Their Suitability for Preservation:
Trees vary in their suitability for preservation both based on their inherent characteristics and their future response to construction impacts. Trees that are structurally unstable, in poor health, or are unlikely to survive construction impacts could be a dangerous liability to future neighborhoods. A good tree preservation plan will call for the pre-construction removal of trees likely to die or to become a tree with a higher than acceptable risk of failure after construction. The factors to be evaluated are:

Tree Health-Healthy, vigorous trees are more adaptable than non-vigorous trees to tolerate construction related stresses such as root removal, changes in grade, changes in soil moisture, and soil compaction. These healthy trees are also better able to adapt to the changed site conditions that occur after development.

Tree Structure-Trees with defects such as decayed wood, poor crown structure from past manual "topping" or natural broken tops, and co-dominant trunks with poor attachments are not suitable for preservation in areas where people or property could be injured or damaged. Such defects cannot be treated and may lead to failure.

Species-Although trees require protection to avoid injury, species vary widely in their ability to withstand damage and changes in their environment.

Tree Age-As a tree ages, its capacity to overcome injury, adapt to changes in its site environment, and to resist pests declines. For these reasons, mature and over-mature trees are less adaptable to tolerate construction impacts and remain assets than are young and semi-mature trees. Young vigorous trees are able to generate new tissue and adapt to a new environment better than old trees.

Tree Size/Height-Larger, taller trees are capable of hitting targets a greater distance away from the tree and cause greater damage. Taller trees also provide a larger wind "sail", catching more wind and being more prone to blowing down in a large storm. Coupling this "sail" effect with the structural weakening of root removal/disturbance can lead to a higher than acceptable windthrow risk.

Tree Location-The best candidates for preservation are single trees that developed as individual specimens, as they typically have uniform canopies and well tapered trunks. Trees that grow in groups do not function well as

individuals. They often have tall, poorly shaped trunks, irregularly shaped crowns, and are prone to failure and decline when their neighbors are removed.

The arboricultural consultant weighs each of the above factors and makes recommendations as to which trees are likely to thrive and be a long-term asset to the new development, as well as recommendations to remove those trees that will likely have an unacceptable risk of failure and become a liability in the new development.

Guidelines for the Area Required to Preserve a Tree:
In order to preserve a tree, an area around that tree must be protected to ensure that the tree is not physically damaged and that the roots are protected. A method to calculate this area, utilizes the diameter at breast height (DBH), species, and age. The DBH is multiplied by a factor (the factor is based on the tree age and the species tolerance for disturbance) from 0.5 feet radius to 1.5 feet radius (from the trunk-often 1 foot radius per inch DBH is used for an average), and this area is called the "Optimal Tree Protection Zone". The general guidelines for preservation are that you do not want to disturb more than 1/3 of this area, but that with healthy vigorous trees, up to 50% of the area could be disturbed. In addition to these percentages, excavation should not take place within 10 feet of the base of a tree to avoid the loss of structural roots.

How to Preserve Trees During Construction:
The portion of the "Optimal Tree Protection Zone" that is being protected must be fenced off (with a "substantial" fence). Within this area, no soil disturbance, including stripping is permitted. The natural grade is to be maintained, and no storage or dumping of materials, parking, etc. will be allowed within this zone without the approval of the arboricultural consultant. This tree protection fence should remain in place through the construction of the dwellings.

Excavation Within the "Optimal Tree Protection Zone":
Where there is excavation proposed within an "Optimal Tree Protection Zone" (outside of the protected zone fenced off above), it will be important for the contractor to prune the roots along the excavation lines. These roots should be pruned in the following manner:

- Excavation in the top 24" of the soil in the critical root zone area should begin at the excavation line that is closest to the tree.
- The excavation should be done by hand/shovel or with a backhoe and a man with a shovel, pruning shears and a pruning saw.
- If done by hand all roots 1" or larger should be pruned at the excavation line.
- If done with a backhoe (most likely scenario) then the operator needs to start the cut at the excavation line and carefully "feel" for roots/resistance. When there is resistance, the man with the shovel hand digs around the roots and prunes the roots larger than 1" diameter.
- The backhoe is to remain off of the tree roots to be saved at all times.
- The work will be done under the supervision of the Project Consulting Arborist.

The above system works well and can be done quickly. The key is to avoid pulling on the roots larger than 1" diameter, potentially resulting in damage to roots between the excavation line and the tree.

How Trees Die:
Natural tree death is frequently a slow and complex process generally with a gradual decline involving a number of factors. Most trees die from one of three causes: (1) structural failure, (2) environmental degradation, or (3) pest infestation. Generally, trees die from a combination of factors. Trees weakened by changes in their environment (such as construction impacts) become more susceptible to infestation by disease and insects. Most individual trees survive for only a fraction of the potential lifespan of the species. Soil compaction, changes in grade, mechanical injury, changes in the environment around the tree, and changes in drainage may not kill

the tree themselves, but they may weaken the tree to a point that death occurs by another cause. Prevention of stress and the maintenance of health are the key elements of tree longevity.

What is "Tree Topping" and How Does It Damage a Tree?
Tree Topping is a pruning technique to reduce the height by cutting the central leader. This method of pruning is very detrimental to trees and not considered a good practice. Trees are generally topped by unknowledgeable pruners in order to lower the height of the tree and minimize the chance of windthrow by reducing the tree's wind profile. The large stub of a topped tree has a difficult time forming callus over the wound. The terminal location of these cuts, as well as their large diameter, prevents the tree's chemically based natural defense system from doing its job. The stubs are highly vulnerable to both insect invasion and the spores of decay fungi. If decay is already present, topping will speed the spread of the disease. The tree reacts to the topping cut by producing multiple shoots below the cut. These shoots develop from buds near the surface of the topping cut. Unlike normal branches that develop in a socket of overlapping wood tissues, these new shoots are anchored only in the outermost layers of the bole. These new shoots grow quickly, and are prone to breaking, especially during windy conditions. For all of these reasons, trees that have been topped pose a danger to life and safety and are recommended for removal.

Development Impacts Affecting Preserved Trees:
Construction of the site improvements generally consists of cut and fills (grading), construction of retaining walls, trenching for the wet and dry utilities, coring of roads and placement of aggregate and pavement. During this work, adjacent soil areas outside of the grading can be compacted by heavy equipment driving over it. The grading and placement of utility trenches (and subsequent pipe bedding), and retaining walls can also affect the local water table.

Construction of the buildings and landscaping requires foundation placement, pruning of trees near the buildings under construction, and the installation of lawn irrigation systems. During this work, adjacent soil areas outside of the work area can be compacted by equipment driving over it.

Impacts during development may require the removal of additional trees shown to be preserved on the Tree Protection Plan (Appendix B).

Future Condition of Trees on the Site:
The characteristics of the individual tree are a guide to how well that tree will respond to site disturbance. Larger trees have correspondingly larger root zones. Older trees are less resilient to disturbance. Unhealthy trees are less resilient to disturbance than healthy trees.

Development of this site will result in a large area of disturbance. The disturbance to the on-site trees will occur during the site grading. The trees planned for retention are relatively healthy, but proper protection methods should be followed per this document to provide the greatest opportunity for survival following development.

Windthrow Potential

The trees on-site have been evaluated for windthrow based on factors including, but not limited to soil conditions, tree health, tree structure, prevailing wind direction, and past evidence of wind damage. Windthrow is defined as full tree failure in the form of trunk breakage or root ball overturning. It should be understood that proposed retained trees are still susceptible to partial tree failure from wind exposure. Refer to the tree inventory table in Appendix A for specific tree conditions at risk of single part failure and recommendations for risk reduction as well as a windthrow rating. A windthrow rating of A, B or C was assigned to each tree that was evaluated; with A being the least windthrow resistant, B being more

windthrow resistant than A, and C being the most windthrow resistant. The trees planned for retention have been selected because of their good taper, overall structure, health, and location to site impacts. Existing wind conditions of the site are relatively high with prevailing winds coming from the south and southwest. The windthrow potential of the site, post construction, should remain similar to the existing site conditions.

Soils

Soils on-site are primarily comprised of Hesson Clay Loam with slopes ranging from 0 to 30 percent, Vader Silt Loam with slopes ranging from 3 to 15 percent, and Lauren Very Gravelly Loam with slopes ranging from 0 to 8 percent. These soils are described as deep, well-drained soils per the USDA Natural Resources Conservation Service's Web Soil Survey. However, from previous work in the surrounding vicinity, shallow bedrock is known to exist in the area; therefore, it is recommended to involve the project arborist during site construction to observe soil depths near preserved trees adjacent to the development area. Further recommendations for removals or protection measures may be recommended based on site conditions.

Tree Protection Plan

See the plans found in Appendix B.

Planting Plan

12 street trees are proposed to be planted to meet landscape requirements, which, when added to the 592 tree units being retained, results in 604 tree units and meets the tree density requirement of 113 tree units. If later determined necessary, Per Section 18.13.050 of Chapter 18 of the City of Camas Municipal Code, replacement trees shall optimize tree diversity by including a minimum of 60% native species and at least 50% evergreen. For this site, the required deciduous tree needs to be 2" or greater while a conifer tree needs to be a minimum of 5' tall. See Appendix C for the Tree Planting Plan.

Hazard Assessment

Hazard assessment of on-site trees was not performed for each tree during the initial arborist site assessment. However, general hazards may have been identified and reported in the Tree Inventory Table (Appendix A) as they were encountered during the site visit. Once development activities are complete, a hazard assessment is recommended on retained trees to review previously unseen defects or damages done to retained trees during land clearing and development activities. At that time, additional tree removal may be necessary for hazard abatement. If additional tree removal is necessary, an analysis will be submitted to the city to show that code will be met with any additional tree removal.

Conclusion

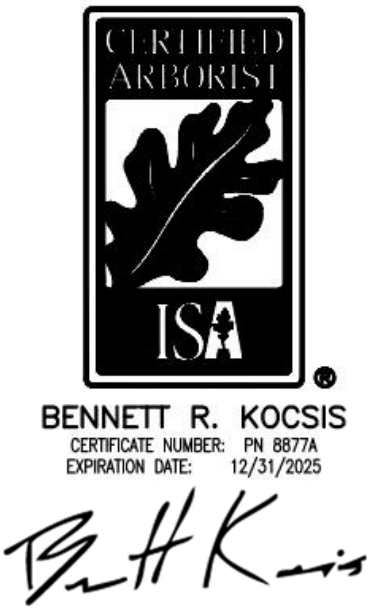
The development of the 3.77-acre site proposes to remove 83 on-site trees and 3 off-site trees. Of the existing trees, 117 will be retained. 12 street trees will be planted to meet landscape requirements. This tree report is only for the overall site development activities and tree protection measures outlined on the Tree Preservation Plan and for the protection of the existing trees from the overall proposed development. This does not include the construction of building foundations for each lot. This project reserves the right to remove additional trees, as deemed necessary/recommended by the Project Certified Arborist, for hazard abatement purposes. This cannot be evaluated until after construction as previously discussed and noted in the plans. The city will be notified of such removals and will be consulted with if a significant number of trees are recommended for removal post-construction.

Arborist Disclosure Statement

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the health of trees, and attempt to reduce the risk of living near trees. The Client and Jurisdiction may choose to accept or disregard the recommendations of the arborist, or seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like medicine, cannot be guaranteed.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.



Appendix A: Detailed Tree Inventory Table

Detailed Tree Inventory for Oliver Terrace

AKS Job No. 8397 - Evaluation Date: 8/7/2025 - Evaluated By: BRK

Tree #	DBH (in.)	Tree Species Common Name (*Scientific name*)	Tree Units Initial	Condition/Comments	Windthrow Rating	Reason for Removal	Tree Units Retained
10000	25	Douglas-fir (*Pseudotsuga menziesii*)	9	Codominant with included bark @20'	B	Preserve	9
10001	8	Douglas-fir (*Pseudotsuga menziesii*)	2	Suppressed	B	Preserve	2
10002	18	Douglas-fir (*Pseudotsuga menziesii*)	5	Good condition	C	Preserve	5
10003	23	Douglas-fir (*Pseudotsuga menziesii*)	8	Good condition	C	Preserve	8
10004	17	Douglas-fir (*Pseudotsuga menziesii*)	5	Cavity in base; Lean (W)	B	Preserve	5
10005	14	Douglas-fir (*Pseudotsuga menziesii*)	3	Good condition	C	Preserve	3
10006	13	Douglas-fir (*Pseudotsuga menziesii*)	3	Good condition	C	Preserve	3
10007	7	Douglas-fir (*Pseudotsuga menziesii*)	2	Mechanical damage at base; Sluffing bark; Sap flow	A	Preserve	2
10008	13	Douglas-fir (*Pseudotsuga menziesii*)	3	Good condition	C	Preserve	3
10010	34	Douglas-fir (*Pseudotsuga menziesii*)	13	Good condition	C	Preserve	13
10011	19	Douglas-fir (*Pseudotsuga menziesii*)	6	Good condition	C	Preserve	6
10012	11	Douglas-fir (*Pseudotsuga menziesii*)	0	Dead (±30')	A	Preserve	0
10013	17	Douglas-fir (*Pseudotsuga menziesii*)	5	Good condition	C	Preserve	5
10014	8	Douglas-fir (*Pseudotsuga menziesii*)	2	Good condition	C	Preserve	2
10016	32	Douglas-fir (*Pseudotsuga menziesii*)	12	Good condition	C	Preserve	12
10017	32	Douglas-fir (*Pseudotsuga menziesii*)	12	Good condition	C	Preserve	12
10018	6	Douglas-fir (*Pseudotsuga menziesii*)	0	Dead (±30')	A	Preserve	0
10019	16	Douglas-fir (*Pseudotsuga menziesii*)	4	Good condition	C	Preserve	4
10020	17	Douglas-fir (*Pseudotsuga menziesii*)	5	Good condition	C	Preserve	5
10021	24	Douglas-fir (*Pseudotsuga menziesii*)	8	Good condition	C	Preserve	8
10022	22	Douglas-fir (*Pseudotsuga menziesii*)	7	Good condition	C	Preserve	7
10023	28	Douglas-fir (*Pseudotsuga menziesii*)	10	Good condition	C	Preserve	10
10024	18	Douglas-fir (*Pseudotsuga menziesii*)	5	Some mechanical damage at base; Torsion seam	B	Preserve	5
10025	13	Douglas-fir (*Pseudotsuga menziesii*)	3	Good condition	C	Preserve	3
10050	11	Douglas-fir (*Pseudotsuga menziesii*)	2	Dead branches; Sparse canopy; Epicormic sprouting	B	Impacts from utility installation	0
10052	14	Douglas-fir (*Pseudotsuga menziesii*)	3	Dead branches; Sparse canopy; Epicormic sprouting	B	Impacts from utility installation	0
10054	19	Douglas-fir (*Pseudotsuga menziesii*)	6	Good condition	C	Preserve	6
10056	21	Douglas-fir (*Pseudotsuga menziesii*)	7	Dead branches; Sparse canopy; Epicormic sprouting	B	Preserve	7
10058	9	Douglas-fir (*Pseudotsuga menziesii*)	2	Suppressed; Some dead limbs	B	Preserve	2
10059	29	Douglas-fir (*Pseudotsuga menziesii*)	11	Good condition	C	Preserve	11
10061	25	Douglas-fir (*Pseudotsuga menziesii*)	9	Mechanical damage at base; Some dieback	B	Preserve	9
10063	14	Douglas-fir (*Pseudotsuga menziesii*)	3	Good condition	C	Preserve	3
10066	19	Douglas-fir (*Pseudotsuga menziesii*)	6	Dead top; Sparse canopy; In decline	A	Preserve	6
10068	19	Douglas-fir (*Pseudotsuga menziesii*)	6	Sparse canopy; Some epicormic sprouting	B	Preserve	6
10069	14	Douglas-fir (*Pseudotsuga menziesii*)	3	Good condition	C	Preserve	3
10074	15	Douglas-fir (*Pseudotsuga menziesii*)	4	Dead top; In decline	A	Impacts from utility installation	0
10075	18	Douglas-fir (*Pseudotsuga menziesii*)	5	Sweep (W)	B	Preserve	5
10077	17	Douglas-fir (*Pseudotsuga menziesii*)	5	Some dieback; Some dead branches	B	Impacts from utility installation	0
10079	9	Douglas-fir (*Pseudotsuga menziesii*)	0	Dead (±40')	A	Impacts from utility installation	0
10093	10	Douglas-fir (*Pseudotsuga menziesii*)	2	Suppressed; Dead top; Lean (W)	A	Preserve	2
10094	29	Oregon Ash (*Fraxinus latifolia*)	11	High canopy; Good condition	C	Preserve	11
10095	22,22,20	Bigleaf Maple (*Acer macrophyllum*)	15	Good condition	C	Preserve	15
10096	23,9	Douglas-fir (*Pseudotsuga menziesii*)	8	Good condition	C	Preserve	8
10098	17	Douglas-fir (*Pseudotsuga menziesii*)	5	Good condition	C	Preserve	5
10099	13	Red Alder (*Alnus rubra*)	0	Dead (±60')	A	Preserve	0
10100	23	Douglas-fir (*Pseudotsuga menziesii*)	8	Good condition	C	Preserve	8
10101	21	Oregon Ash (*Fraxinus latifolia*)	7	High canopy; Good condition	C	Impacts from utility installation	0
10102	30	Oregon Ash (*Fraxinus latifolia*)	11	Stump with some epicormic stems	A	Impacts from utility installation	0

Detailed Tree Inventory for Oliver Terrace

AKS Job No. 8397 - Evaluation Date: 8/7/2025 - Evaluated By: BRK

Tree #	DBH (in.)	Tree Species Common Name (*Scientific name*)	Tree Units Initial	Condition/Comments	Windthrow Rating	Reason for Removal	Tree Units Retained
10103	20,20,25,13	Bigleaf Maple (*Acer macrophyllum*)	16	Codominant base with included bark	B	Impacts from utility installation	0
10104	16	Douglas-fir (*Pseudotsuga menziesii*)	4	Good condition	C	Preserve	4
10105	26	Douglas-fir (*Pseudotsuga menziesii*)	9	Good condition	C	Impacts from utility installation	0
10106	33	Bigleaf Maple (*Acer macrophyllum*)	13	Good condition	C	Preserve	13
10108	11	Red Alder (*Alnus rubra*)	0	Dead (±70')	A	Preserve	0
10109	12,12	Red Alder (*Alnus rubra*)	5	Dead top half	A	Preserve	5
10110	7	Red Alder (*Alnus rubra*)	2	Broken top; Large cavity with decay	A	Preserve	2
10111	8	Red Alder (*Alnus rubra*)	0	Dead (±50')	A	Preserve	0
10113	6	Pacific Yew (*Taxus brevifolia*)	2	Mechanical damage on bole, tree fallen on top	B	Preserve	2
10114	30	Douglas-fir (*Pseudotsuga menziesii*)	11	Good condition	C	Preserve	11
10115	16	Douglas-fir (*Pseudotsuga menziesii*)	4	Deformed bole @ ±30’	B	Preserve	4
10116	24	Bigleaf Maple (*Acer macrophyllum*)	8	Good condition	C	Preserve	8
10117	19.16	Bigleaf Maple (*Acer macrophyllum*)	6	Dead codominant stem at base; Dieback; Many dead limbs; In decline	A	Direct conflict with storm water facility	0
10118	30	Douglas-fir (*Pseudotsuga menziesii*)	11	Good condition	C	Direct conflict with storm water facility	0
10119	10	Douglas-fir (*Pseudotsuga menziesii*)	2	Sparse canopy	B	Direct conflict with storm water facility	0
10120	15	Douglas-fir (*Pseudotsuga menziesii*)	4	Sparse canopy; Dead at very top	B	Direct conflict with storm water facility	0
10121	28	Douglas-fir (*Pseudotsuga menziesii*)	10	Good condition	C	Direct conflict with storm water facility	0
10122	24	Douglas-fir (*Pseudotsuga menziesii*)	8	Good condition	C	Direct conflict with storm water facility	0
10123	31	Bigleaf Maple (*Acer macrophyllum*)	12	Some scars; Sime dieback	B	Direct conflict with storm water facility	0
10124	24,24	Bigleaf Maple (*Acer macrophyllum*)	13	Large cavity with decay in base; Large dead limbs; Codominant base with included bark	A	Direct conflict with site construction	0
10125	19	Douglas-fir (*Pseudotsuga menziesii*)	6	Good condition	C	Direct conflict with storm water facility	0
10126	24	Douglas-fir (*Pseudotsuga menziesii*)	8	Good condition	C	Direct conflict with storm water facility	0
10127	8	Bigleaf Maple (*Acer macrophyllum*)	2	Good condition	C	Direct conflict with storm water facility	0
10128	30	Douglas-fir (*Pseudotsuga menziesii*)	11	Good condition	C	Direct conflict with storm water facility	0
10129	35	Bigleaf Maple (*Acer macrophyllum*)	14	Large cavity with decay in bole; Dead and broken top on one fork	B	Direct conflict with storm water facility	0
10130	13	Douglas-fir (*Pseudotsuga menziesii*)	3	Good condition	C	Direct conflict with storm water facility	0
10131	14	Douglas-fir (*Pseudotsuga menziesii*)	3	Good condition	C	Direct conflict with site construction	0
10132	12	Douglas-fir (*Pseudotsuga menziesii*)	2	Good condition	C	Direct conflict with site construction	0
10133	16	Douglas-fir (*Pseudotsuga menziesii*)	4	Good condition	C	Direct conflict with site construction	0
10134	11	Red Alder (*Alnus rubra*)	0	Dead (±50')	A	Direct conflict with site construction	0
10135	19	Douglas-fir (*Pseudotsuga menziesii*)	6	Good condition	C	Within building setback	0
10136	26	Douglas-fir (*Pseudotsuga menziesii*)	9	Low vigor; Some dieback	B	Within building setback	0
10137	30	Douglas-fir (*Pseudotsuga menziesii*)	11	Good condition	C	Within building setback	0
10138	16	Bigleaf Maple (*Acer macrophyllum*)	4	Asymmetrical canopy (N)	B	Direct conflict with site construction	0
10139	30	Douglas-fir (*Pseudotsuga menziesii*)	11	Good condition	C	Direct conflict with site construction	0
10140	15,14	Bigleaf Maple (*Acer macrophyllum*)	6	Good condition	C	Within building setback	0
10141	18	Sweet Cherry (*Prunus avium*)	5	Good condition	C	Within building setback	0
10142	19	Bigleaf Maple (*Acer macrophyllum*)	6	Asymmetrical canopy (S)	B	Within building setback	0
10143	32	Douglas-fir (*Pseudotsuga menziesii*)	12	Good condition	C	Direct conflict with site construction	0
10144	19	Douglas-fir (*Pseudotsuga menziesii*)	6	Good condition	C	Preserve	6
10145	15	Douglas-fir (*Pseudotsuga menziesii*)	4	Good condition	C	Preserve	4
10146	40	Douglas-fir (*Pseudotsuga menziesii*)	16	Good condition	C	Preserve	16
10147	19	Douglas-fir (*Pseudotsuga menziesii*)	6	Good condition	C	Within building setback	0
10148	14	European White Birch (*Betula pendula*)	0	Dead (±10')	A	Direct conflict with site construction	0
10149	25,25,25	Bigleaf Maple (*Acer macrophyllum*)	18	Good condition	C	Within building setback	0

Detailed Tree Inventory for Oliver Terrace

AKS Job No. 8397 - Evaluation Date: 8/7/2025 - Evaluated By: BRK

Tree #	DBH (in.)	Tree Species Common Name (*Scientific name*)	Tree Units Initial	Condition/Comments	Windthrow Rating	Reason for Removal	Tree Units Retained
10150	24,17	Bigleaf Maple (*Acer macrophyllum*)	11	Dead top; In decline	A	Within building setback	0
10151	16	European White Birch (*Betula pendula*)	4	Dead top; In decline	A	Direct conflict with site construction	0
10152	26	Douglas-fir (*Pseudotsuga menziesii*)	9	Very low vigor; In decline	A	Within building setback	0
10153	6	English Holly (*Ilex aquifolium*)	2	Dead top half	A	Within building setback	0
10154	6,6,6	English Holly (*Ilex aquifolium*)	2	Some dieback	B	Within building setback	0
10155	18	Douglas-fir (*Pseudotsuga menziesii*)	5	Significant dieback; In decline	A	Within building setback	0
10156	16	European White Birch (*Betula pendula*)	0	Dead (±40')	A	Impacts from site construction	0
10157	9	Willow (*Salix spp.*)	2	Dead with some epicormic stems at base	A	Direct conflict with public road construction	0
10158	7	Dogwood (*Cornus florida*)	2	Dead and broken top; Dieback; In decline	A	Direct conflict with public road construction	0
10159	6,6,6,6	English Holly (*Ilex aquifolium*)	2	Dead top; In decline	A	Direct conflict with public road construction	0
10160	7,7	Sweet Cherry (*Prunus avium*)	2	Dead	A	Direct conflict with public road construction	0
10161	12	European White Birch (*Betula pendula*)	0	Dead (±10')	C	Direct conflict with site construction	0
10162	12	Bigleaf Maple (*Acer macrophyllum*)	2	Asymmetrical canopy (E); Good condition	C	Direct conflict with site construction	0
10163	9	Sweet Cherry (*Prunus avium*)	2	Dead top; In decline	A	Direct conflict with site construction	0
10164	12	European White Birch (*Betula pendula*)	2	Dead (±30')	A	Within building setback	0
10165	28	Douglas-fir (*Pseudotsuga menziesii*)	10	Low vigor in upper canopy; Some dieback	B	Direct conflict with site construction	0
10166	15	European White Birch (*Betula pendula*)	0	Dead (±20')	A	Within building setback	0
10167	15	Red Alder (*Alnus rubra*)	0	Dead (±20')	A	Within building setback	0
10168	20	Douglas-fir (*Pseudotsuga menziesii*)	6	Significant dieback; In decline	A	Within building setback	0
10169	25	Douglas-fir (*Pseudotsuga menziesii*)	9	Dieback; Low vigor	B	Impacts from site construction	0
10170	23	Douglas-fir (*Pseudotsuga menziesii*)	8	Epicormic sprouting; Low vigor	B	Impacts from site construction	0
10171	24	Douglas-fir (*Pseudotsuga menziesii*)	8	Good condition	C	Within building setback	0
10172	19	Bigleaf Maple (*Acer macrophyllum*)	6	Some dieback; Some epicormic sprouting	B	Impacts from site construction	0
10173	13	Douglas-fir (*Pseudotsuga menziesii*)	0	Dead (±70')	A	Preserve	0
10174	17	Douglas-fir (*Pseudotsuga menziesii*)	0	Dead (±70')	A	Preserve	0
10175	27	Douglas-fir (*Pseudotsuga menziesii*)	10	Good condition	C	Preserve	10
10176	16,16	Bigleaf Maple (*Acer macrophyllum*)	7	One stem dead top	A	Poor condition	0
10177	19	Bigleaf Maple (*Acer macrophyllum*)	6	Broken at ±20'; Significant decay	A	Poor condition	0
10178	25	Douglas-fir (*Pseudotsuga menziesii*)	9	Good condition	C	Preserve	9
10179	7	Douglas-fir (*Pseudotsuga menziesii*)	0	Dead (±20')	A	Preserve	0
10180	29	Douglas-fir (*Pseudotsuga menziesii*)	11	Some dieback; Low vigor	B	Preserve	11
10181	10	Douglas-fir (*Pseudotsuga menziesii*)	2	Dead top; In decline	A	Preserve	2
10182	17	Douglas-fir (*Pseudotsuga menziesii*)	5	Good condition	C	Preserve	5
10183	24,24,24,24	Bigleaf Maple (*Acer macrophyllum*)	20	One stem dead; Others low vigor	B	Preserve	20
10184	12	Douglas-fir (*Pseudotsuga menziesii*)	2	Good condition	C	Preserve	2
10185	5	Oregon Ash (*Fraxinus latifolia*)	1	Good condition	C	Preserve	1
10186	8	Douglas-fir (*Pseudotsuga menziesii*)	2	Good condition	C	Preserve	2
10187	18	Douglas-fir (*Pseudotsuga menziesii*)	5	Good condition	C	Preserve	5
10188	15	Douglas-fir (*Pseudotsuga menziesii*)	4	Good condition	C	Preserve	4
10189	10	Douglas-fir (*Pseudotsuga menziesii*)	2	Good condition	C	Preserve	2
10190	10	Cherry (*Prunus spp.*)	2	Good condition	C	Preserve	2
10192	10,11	Bigleaf Maple (*Acer macrophyllum*)	7	Asymmetrical canopy (S)	B	Preserve	7
10193	15,6	Bigleaf Maple (*Acer macrophyllum*)	4	Lean (W)	B	Preserve	4
10194	24	Douglas-fir (*Pseudotsuga menziesii*)	8	Good condition	C	Preserve	8
10195	21	Douglas-fir (*Pseudotsuga menziesii*)	7	Good condition	C	Direct conflict with alley construction	0
10196	19	Bigleaf Maple (*Acer macrophyllum*)	6	Good condition	C	Preserve	6
10197	17,13	Oregon White Oak (*Quercus garryana*)	7	Asymmetrical canopy (N); Good condition	C	Preserve	7
10198	32	Douglas-fir (*Pseudotsuga menziesii*)	12	Good condition	C	Preserve	12

Detailed Tree Inventory for Oliver Terrace

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Tree #	DBH (in.)	Tree Species Common Name (*Scientific name*)	Tree Units Initial	Condition/Comments	Windthrow Rating	Reason for Removal	Tree Units Retained
10199	17	Bigleaf Maple (*Acer macrophyllum*)	5	Significant dieback; In decline	A	Preserve	5
10200	9	Bigleaf Maple (*Acer macrophyllum*)	2	Lean (S)	B	Preserve	2
10201	12	Bigleaf Maple (*Acer macrophyllum*)	2	Lean (S)	B	Preserve	2
10202	6	Bigleaf Maple (*Acer macrophyllum*)	2	Lean (S)	B	Preserve	2
10203	10	Bigleaf Maple (*Acer macrophyllum*)	2	Good condition	C	Preserve	2
10204	28	Douglas-fir (*Pseudotsuga menziesii*)	10	Sweep (S)	B	Preserve	10
10205	15	European White Birch (*Betula pendula*)	0	Dead (±40')	A	Poor condition	0
10206	16	European White Birch (*Betula pendula*)	4	Dead top; Significant dieback	A	Poor condition	0
10207	15	Douglas-fir (*Pseudotsuga menziesii*)	4	Good condition	C	Preserve	4
10208	13	Douglas-fir (*Pseudotsuga menziesii*)	3	Good condition	C	Preserve	3
10209	16	Douglas-fir (*Pseudotsuga menziesii*)	4	Good condition	C	Preserve	4
10210	25	Douglas-fir (*Pseudotsuga menziesii*)	9	Good condition	C	Preserve	9
10211	25	Douglas-fir (*Pseudotsuga menziesii*)	9	Good condition	C	Preserve	9
10212	13	Douglas-fir (*Pseudotsuga menziesii*)	3	Good condition	C	Preserve	3
10213	10	Douglas-fir (*Pseudotsuga menziesii*)	2	Dead and broken top	A	Preserve	2
10214	8	European White Birch (*Betula pendula*)	2	Dieback; dead limbs	B	Preserve	2
10215	12	Douglas-fir (*Pseudotsuga menziesii*)	2	Good condition	C	Preserve	2
10216	5	Douglas-fir (*Pseudotsuga menziesii*)	1	Good condition	C	Preserve	1
10217	22	Douglas-fir (*Pseudotsuga menziesii*)	7	Codominant top with included bark	B	Preserve	7
10218	16	Douglas-fir (*Pseudotsuga menziesii*)	4	Good condition	C	Preserve	4
10219	29	Douglas-fir (*Pseudotsuga menziesii*)	11	Good condition	C	Within building setback	0
10220	27	Douglas-fir (*Pseudotsuga menziesii*)	10	Good condition	C	Within building setback	0
10221	16,12	European White Birch (*Betula pendula*)	6	Dead top half	A	Direct conflict with site construction	0
10222	20,15	European White Birch (*Betula pendula*)	9	Some dieback; Codominant base with included bark	B	Within building setback	0
10223	15	European White Birch (*Betula pendula*)	0	Dead (±40')	A	Direct conflict with public road construction	0
10224	23	Bigleaf Maple (*Acer macrophyllum*)	8	Good condition	C	Within building setback	0
10225	18	European White Birch (*Betula pendula*)	5	Dead top half	A	Within building setback	0
10226	6	English Holly (*Ilex aquifolium*)	2	Good condition	C	Within building setback	0
10227	12	Sweet Cherry (*Prunus avium*)	2	Significant dieback; In decline	A	Within building setback	0
10228	12	Douglas-fir (*Pseudotsuga menziesii*)	2	Good condition	C	Within building setback	0
10229	17	Bigleaf Maple (*Acer macrophyllum*)	5	Good condition	C	Within building setback	0
10230	30	Douglas-fir (*Pseudotsuga menziesii*)	11	Good condition	C	Within building setback	0
10231	6	Sweet Cherry (*Prunus avium*)	2	Significant dieback; In decline	A	Within building setback	0
10232	10	Sweet Cherry (*Prunus avium*)	2	Significant dieback; In decline	A	Within building setback	0
10233	29	Douglas-fir (*Pseudotsuga menziesii*)	11	Good condition	C	Direct conflict with public road construction	0
10234	13,11	European White Birch (*Betula pendula*)	5	11" broken top half; 13" dieback throughout crown	A	Direct conflict with site construction	0
20000	10	Douglas-fir (*Pseudotsuga menziesii*)	2	Good condition	C	Preserve	2
20001	20	Douglas-fir (*Pseudotsuga menziesii*)	6	Some dead branches	B	Preserve	6
20002	12	Douglas-fir (*Pseudotsuga menziesii*)	2	Good condition	C	Preserve	2
20003	9	Douglas-fir (*Pseudotsuga menziesii*)	2	Good condition	C	Preserve	2
20004	7	Douglas-fir (*Pseudotsuga menziesii*)	2	Good condition	C	Preserve	2
20005	12	Douglas-fir (*Pseudotsuga menziesii*)	2	Good condition	C	Preserve	2
20006	13	Douglas-fir (*Pseudotsuga menziesii*)	3	Good condition	C	Preserve	3
20007	13	Douglas-fir (*Pseudotsuga menziesii*)	0	Dead (±60')	A	Preserve	0
20008	16	Douglas-fir (*Pseudotsuga menziesii*)	4	Some dead branches; Sparse canopy	B	Preserve	4
20009	14	Douglas-fir (*Pseudotsuga menziesii*)	3	Some dead branches; Sparse canopy	B	Preserve	3
20010	9	Douglas-fir (*Pseudotsuga menziesii*)	0	Dead (±30')	A	Preserve	0
20011	14	Douglas-fir (*Pseudotsuga menziesii*)	3	Good condition	C	Preserve	3

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Tree #	DBH (in.)	Tree Species Common Name (*Scientific name*)	Tree Units Initial	Condition/Comments	Windthrow Rating	Reason for Removal	Tree Units Retained
20012	14	Douglas-fir (*Pseudotsuga menziesii*)	3	Good condition	C	Preserve	3
20013	23	Douglas-fir (*Pseudotsuga menziesii*)	8	Good condition	C	Preserve	8
20014	15	Douglas-fir (*Pseudotsuga menziesii*)	4	Good condition	C	Preserve	4
20015	19	Douglas-fir (*Pseudotsuga menziesii*)	6	Some epicormic sprouting; Some dead branches	B	Preserve	6
20016	16	Douglas-fir (*Pseudotsuga menziesii*)	4	Good condition	C	Preserve	4
20017	19	Douglas-fir (*Pseudotsuga menziesii*)	6	Good condition	C	Preserve	6
20018	30	Douglas-fir (*Pseudotsuga menziesii*)	11	Codominant with included bark	B	Preserve	11
20019	10,12	Douglas-fir (*Pseudotsuga menziesii*)	4	Good condition	C	Preserve	4
20020	16	Douglas-fir (*Pseudotsuga menziesii*)	4	Good condition	C	Preserve	4
20021	18	Douglas-fir (*Pseudotsuga menziesii*)	5	Good condition	C	Preserve	5
20022	10	Douglas-fir (*Pseudotsuga menziesii*)	2	Good condition	C	Preserve	2
20023	40	Douglas-fir (*Pseudotsuga menziesii*)	0	OFFSITE; Low vigor	B	Impacts from utility installation	0
20024	29	Bigleaf Maple (*Acer macrophyllum*)	0	OFFSITE; Dead and broken top on one codominant stem	B	Impacts from utility installation	0
20025	28	Bigleaf Maple (*Acer macrophyllum*)	0	OFFSITE; Good condition	C	Impacts from utility installation	0

Total # of Existing Trees Inventoried = 203

Site Area = 3.77

Total # of Existing Onsite Trees = 200
- **Total Onsite Existing Tree Units = 1071**
- **Total # of Onsite Trees Retained = 117**
- **Total # of Tree Units Retained = 592**

Minimum Tree Units Required per City Code = 113
- *(3.77 acres * 30 trees/acre)*
- **Minimum # Trees to Replant = -479**

Total # of Existing Trees Removed = 86
- **Total Existing Tree Units Removed = 479**

Windthrow Rating

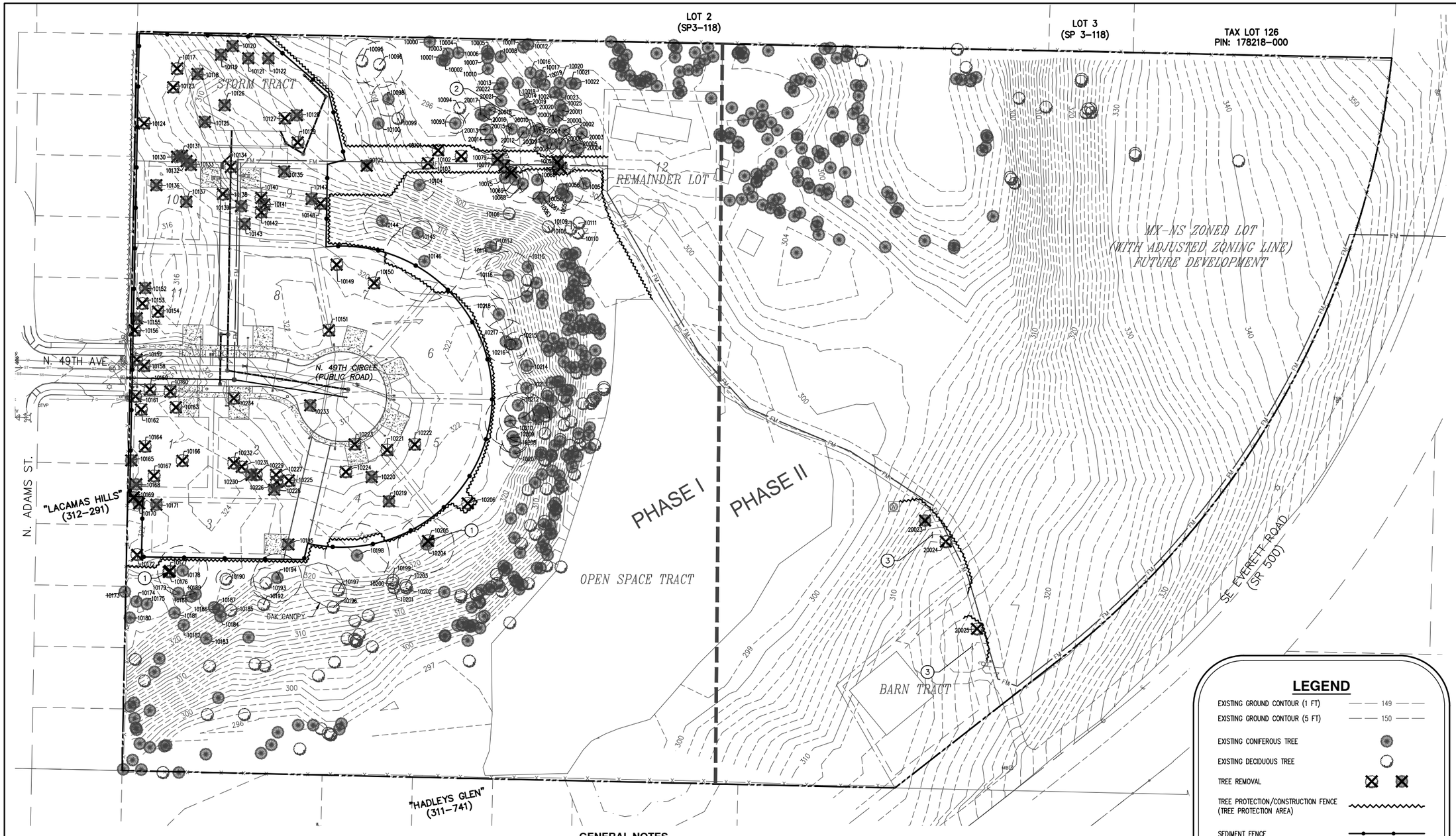
A=Least windthrow resistant
B=Moderate windthrow resistant
C=Most windthrow resistant

Arborist Disclosure Statement:

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the health of trees, and attempt to reduce the risk of living near trees. The Client and Jurisdiction may choose to accept or disregard the recommendations of the arborist, or seek additional advice. Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like medicine, cannot be guaranteed. Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees. Neither this author nor AKS Engineering & Forestry, LLC have assumed any responsibility for liability associated with the trees on or adjacent to this site.

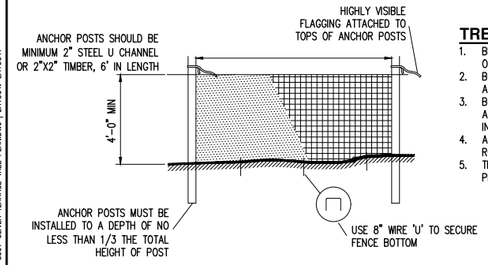
At the completion of construction, all trees should once again be reviewed. Land clearing and removal of adjacent trees can expose previously unseen defects and otherwise healthy trees can be damaged during construction.

Appendix B: Tree Preservation and Removal Plan



LEGEND

- EXISTING GROUND CONTOUR (1 FT) — 149
- EXISTING GROUND CONTOUR (5 FT) — 150
- EXISTING CONIFEROUS TREE
- EXISTING DECIDUOUS TREE
- TREE REMOVAL
- TREE PROTECTION/CONSTRUCTION FENCE (TREE PROTECTION AREA)
- SEDIMENT FENCE
- ASSUMED TREE ROOT ZONE (1–FT RADIUS PER 1–IN OF DBH)



PLASTIC MESH TREE PROTECTION FENCE
NOT TO SCALE

TREE PROTECTION FENCE NOTES

1. BLAZE ORANGE OR BLUE PLASTIC MESH FENCE FOR TREE PROTECTION DEVICE, ONLY.
2. BOUNDARIES OF PROTECTION AREA WILL BE ESTABLISHED IN THE FIELD BY THE ARBORIST PRIOR TO CONSTRUCTION
3. BOUNDARIES OF PROTECTION AREA SHOULD BE STAKED AND FLAGGED BY THE ARBORIST, OR UNDER THE SUPERVISION OF THE ARBORIST, PRIOR TO INSTALLING DEVICES.
4. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
5. TREE PROTECTION TO BE INSTALLED PRIOR TO CONSTRUCTION AND REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED.

GENERAL NOTES

1. TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO DEMOLITION AND SITE GRADING ACTIVITIES. SEE DETAIL ON THIS SHEET.
2. SEE PROJECT SUPPLEMENTAL ARBORIST REPORT FOR THE DETAILED TREE INVENTORY (DATED AUGUST 2025).
3. SEE SHEET TP2 FOR TREE PROTECTION NOTES.
4. ONLY TREES WITH ASSIGNED NUMBERS WERE EVALUATED AND USED FOR TREE UNIT CALCULATIONS.
5. SOIL MITIGATION AND ENHANCEMENT MAY BE NECESSARY POST CONSTRUCTION TO ENHANCE COMPACTED SOILS AROUND TREE BASE AND ENCOURAGE TREE HEALTH.
6. THE PROJECT ARBORIST MAY REQUIRE ALTERNATIVE CONSTRUCTION MATERIALS OR METHODS DURING CONSTRUCTION TO PROTECT AND AVOID REMOVAL OF SOME ROOT SYSTEMS.
7. VARIOUS TREES EXHIBIT FORMS OF HEALTH CONCERNS OR STRUCTURAL DEFECTS, AS NOTED IN THE TREE TABLE (SEE SUPPLEMENTAL ARBORIST REPORT), THAT CURRENTLY PRESENT MINIMAL CONCERNS; HOWEVER, IT IS RECOMMENDED TO MONITOR THESE TREES OVER TIME AS ADDITIONAL MITIGATION OPTIONS MAY BE WARRANTED IF THE HEALTH AND/OR STRUCTURAL CONDITIONS WORSEN. WE RECOMMEND USING A CERTIFIED ARBORIST FOR FUTURE MONITORING.
8. SURVEYED TREE LOCATIONS AND PROJECT DEVELOPMENT PROVIDED BY OTHERS. AKS ARBORISTS PROVIDED VISUAL INSPECTION TO VERIFY APPROXIMATE LOCATION OF ON–SITE TREES.

TREE PLAN

SITE AREA:	9.93 AC
SITE AREA EXCLUDING OPEN SPACE:	3.77 AC
TOTAL TREE UNITS REQUIRED (3.77AC X 30):	113
EXISTING TREES RETAINED/(TREE UNITS):	117/(592)
PROPOSED SITE TREES/(TREE UNITS):	12/(12)
TOTAL TREE UNITS: (RETAINED AND PROPOSED)	604

NOTE: SEE LANDSCAPING PLAN (PRE5.0) FOR PROPOSED TREE PLANTING PLAN

TREE PROTECTION KEYED NOTES:

1. ARBORIST OBSERVATION REQUIRED DURING TREE REMOVAL BEHIND TREE PROTECTION FENCE.
2. SOME DEAD TREES IN THIS AREA NOT SHOWN ON THE SURVEY. ADDITIONAL ARBORIST REVIEW IS RECOMMENDED DURING FINAL ENGINEERING DESIGN.
3. ARBORIST OBSERVATION RECOMMENDED DURING UTILITY TRENCHING IN THIS AREA. TREE PRESERVATION OR REMOVAL TO BE DETERMINED BY THE PROJECT ARBORIST BASED ON ROOT IMPACTS OBSERVED DURING CONSTRUCTION. TREE REMOVAL IS LIKELY BASED ON PROPOSED DESIGN.

PRELIMINARY NOT FOR CONSTRUCTION

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OLIVER TERRACE SUBDIVISION

CAMAS WASHINGTON
SE 1/4, SEC 35, T2N, R5E, WM
178221–000

TREE PRESERVATION AND REMOVAL PLAN

DESIGNED BY:	BRK
DRAWN BY:	BRK
MANAGED BY:	BDH
CHECKED BY:	BDH

DATE: 08/27/2025

REVISIONS

JOB NUMBER
8397

SHEET
TP1

289

AKS DRAWING FILE: 8397 OLIVER TERRACE TREE PLANDWG | LAYOUT: LAYOUT1

TREE PROTECTION NOTES

A. PLACING MATERIALS NEAR TREES – NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE PROTECTED AREA OF ANY TREE DESIGNATED TO REMAIN, INCLUDING, BUT NOT LIMITED TO, PARKING EQUIPMENT, PLACING SOLVENTS, STORING BUILDING MATERIALS AND SOIL DEPOSITS, DUMPING CONCRETE WASHOUT, ETC.

B. ATTACHMENTS TO TREES – DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY OBJECT TO ANY TREE DESIGNATED FOR PROTECTION.

C. PROTECTIVE BARRIER – BEFORE DEVELOPMENT, LAND CLEARING, FILLING OR ANY LAND ALTERATION FOR WHICH A TREE REMOVAL PERMIT IS REQUIRED, THE CONTRACTOR:

C.A. SHALL ERECT AND MAINTAIN READILY VISIBLE PROTECTIVE TREE FENCING ALONG THE OUTER EDGE AND COMPLETELY SURROUNDING THE PROTECTED AREA OF ALL PROTECTED TREES OR GROUP OF TREES. FENCES SHALL BE CONSTRUCTED PER THE DETAIL ON THIS SHEET.

C.B. MAY BE REQUIRED TO COVER WITH MULCH TO A DEPTH OF AT LEAST SIX (6) INCHES OR WITH PLYWOOD OR SIMILAR MATERIAL IN THE AREAS ADJOINING THE CRITICAL ROOT ZONE OF A TREE IN ORDER TO PROTECT ROOTS FROM DAMAGE CAUSED BY HEAVY EQUIPMENT.

C.C. SHALL PROHIBIT EXCAVATION OR COMPACTING OF EARTH OR OTHER POTENTIALLY DAMAGING ACTIVITIES WITHIN THE BARRIERS.

C.D. MAY BE REQUIRED TO MINIMIZE ROOT DAMAGE BY EXCAVATING A TWO (2) FOOT DEEP TRENCH, AT EDGE OF CRITICAL ROOT ZONE, TO CLEANLY SEVER THE ROOTS OF TREES TO BE RETAINED. ROOTS ONE (1) INCH DIAMETER OR GREATER SHALL BE CLEANLY CUT WITH A SAW OR PRUNERS.

C.E. MAY BE REQUIRED TO HAVE CORRECTIVE PRUNING PERFORMED ON PROTECTED TREES IN ORDER TO AVOID DAMAGE FROM MACHINERY OR BUILDING ACTIVITY. MAY BE REQUIRED TO MAINTAIN TREES THROUGHOUT THE CONSTRUCTION PERIOD BY WATERING AND FERTILIZING.

C.F. SHALL MAINTAIN THE PROTECTIVE BARRIERS IN PLACE UNTIL THE PROJECT ARBORIST AUTHORIZES THEIR REMOVAL OR A FINAL CERTIFICATE OF OCCUPANCY IS ISSUED, WHICHEVER OCCURS FIRST.

C.G. SHALL ENSURE THAT ANY LANDSCAPING DONE IN THE PROTECTED ZONE SUBSEQUENT TO THE REMOVAL OF THE BARRIERS SHALL BE ACCOMPLISHED WITH LIGHT MACHINERY OR HAND LABOR.

D. GRADE

D.A. THE GRADE SHALL NOT BE ELEVATED OR REDUCED WITHIN THE CRITICAL ROOT ZONE OF TREES TO BE PRESERVED WITHOUT THE PROJECT ARBORISTS'S AUTHORIZATION. THE PROJECT ARBORIST MAY ALLOW COVERAGE OF UP TO ONE HALF OF THE AREA OF THE TREE'S CRITICAL ROOT ZONE WITH LIGHT SOILS (NO CLAY) TO THE MINIMUM DEPTH NECESSARY TO CARRY OUT GRADING OR LANDSCAPING PLANS, IF IT WILL NOT IMPERIL THE SURVIVAL OF THE TREE. AERATION DEVICES MAY BE REQUIRED TO ENSURE THE TREE'S SURVIVAL.

D.B. IF THE GRADE ADJACENT TO A PRESERVED TREE IS RAISED SUCH THAT IT COULD SLOUGH OR ERODE INTO THE TREES CRITICAL ROOT ZONE, IT SHALL BE PERMANENTLY STABILIZED TO PREVENT SUFFOCATION OF THE ROOTS.

D.C. THE APPLICANT SHALL NOT INSTALL AN IMPERVIOUS SURFACE WITHIN THE CRITICAL ROOT ZONE OF ANY TREE TO BE RETAINED WITHOUT THE AUTHORIZATION OF THE PROJECT ARBORIST. THE PROJECT ARBORIST MAY REQUIRE SPECIFIC CONSTRUCTION METHODS AND/OR USE OF AERATION DEVICES TO ENSURE THE TREE'S SURVIVAL AND TO MINIMIZE THE POTENTIAL FOR ROOT INDUCED DAMAGE TO THE IMPERVIOUS SURFACE.

D.D. TO THE GREATEST EXTENT PRACTICAL, UTILITY TRENCHES SHALL BE LOCATED OUTSIDE OF THE CRITICAL ROOT ZONE OF TREES TO BE RETAINED. THE PROJECT ARBORIST MAY REQUIRE THAT UTILITIES BE TUNNELED UNDER THE ROOTS OF TREES TO BE RETAINED IF THE PROJECT ARBORIST DETERMINES THAT TRENCHING WOULD SIGNIFICANTLY REDUCE THE CHANCES OF THE TREE'S SURVIVAL.

D.E. TREE AND OTHER VEGETATION TO BE RETAINED SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. CLEARING OPERATIONS SHALL BE CONDUCTED SO AS TO EXPOSE THE SMALLEST PRACTICAL AREA OF SOIL TO EROSION FOR THE LEAST POSSIBLE TIME. TO CONTROL EROSION, SHRUBS, GROUND COVER, AND STUMPS SHALL BE MAINTAINED ON THE INDIVIDUAL LOTS, WHERE FEASIBLE. WHERE NOT FEASIBLE, APPROPRIATE EROSION CONTROL PRACTICES SHALL BE IMPLEMENTED PURSUANT TO CMC CHAPTER 14.06.

E. DIRECTIONAL FELLING OF TREES SHALL BE USED TO AVOID DAMAGE TO TREES DESIGNATED FOR RETENTION.

F. ADDITIONAL REQUIREMENTS – THE PROJECT ARBORIST MAY REQUIRE ADDITIONAL TREE PROTECTION MEASURES WHICH ARE CONSISTENT WITH ACCEPTED URBAN FORESTRY PRACTICES.

G. ENCROACHMENT INTO THE ROOT PROTECTION ZONE IS ALLOWED WITH PROJECT ARBORIST APPROVAL AS DESCRIBED IN THE FOLLOWING NOTES:

G.A. EXCAVATION IN THE TOP 24 INCHES OF THE SOIL IN THE CRITICAL ROOT ZONE AREA SHOULD BEGIN AT THE EXCAVATION LINE THAT IS CLOSEST TO THE TREE.

G.B. THE EXCAVATION SHOULD BE DONE BY HAND/SHOVEL OR WITH A BACKHOE AND A MAN WITH A SHOVEL, PRUNING SHEARS, AND A PRUNING SAW.

G.C. IF DONE BY HAND, ALL ROOTS 1 INCH OR LARGER SHOULD BE PRUNED AT THE EXCAVATION LINE.

G.D. IF DONE WITH BACKHOE (MOST LIKELY SCENARIO), THEN THE OPERATOR SHALL START THE CUT AT THE EXCAVATION LINE AND CAREFULLY "FEEL" FOR ROOT/RESISTANCE. WHEN THERE IS RESISTANCE, THE MAN WITH THE SHOVEL HAND DIGS AROUND THE ROOTS AND PRUNES THE ROOTS LARGER THAN 1 INCH DIAMETER.

G.E. THE BACKHOE IS TO REMAIN OFF OF THE TREE ROOTS TO BE PRESERVED AT ALL TIMES.

G.F. ALL ROOTS SHALL BE CUT CLEANLY WITH PRUNING SHEARS OR A PRUNING SAW.

G.G. PROJECT ARBORIST MUST BE ONSITE DURING ANY WORK WITHIN THE TREE ROOT PROTECTION ZONE.

G.H. CITY OFFICIAL MUST BE CONTACTED 24 HOURS PRIOR TO WORKING WITHIN THE TREE ROOT PROTECTION ZONE.

H. TREE PROTECTION ZONE IS DEFINED AS ALL AREAS BOUND AND PROTECTING THE OPTIMAL TREE PROTECTION ZONE.

I. TIMELINE FOR CLEARING, GRADING, AND INSTALLATION OF TREE PROTECTION MEASURES: WORK WILL BEGIN IMMEDIATELY FOLLOWING FINAL APPROVAL BY THE CITY. TREE PROTECTION MEASURES WILL BE DONE DURING CLEARING AND ANY GRADING WILL FOLLOW.

J. PRUNING/TREE REMOVAL NOTES: THE WORK TO BE COMPLETED UNDER THIS PROJECT SHALL CONSIST OF TREE REMOVAL AND TREE TRIMMING AS LISTED.

J.A. THE CONTRACTOR SHALL PROVIDE ADEQUATE CREW OF MEN, EQUIPMENT AND MATERIALS TO SAFELY AND EFFICIENTLY COMPLETE THE ASSIGNED WORK. EACH SUCH CREW SHALL INCLUDE AN INDIVIDUAL WHO SHALL BE DESIGNATED AS THE CREW SUPERVISOR AND WHO SHALL BE RESPONSIBLE FOR THE CREW'S ACTIVITIES AND WHO SHALL RECEIVE INSTRUCTION FROM THE OWNER OR THE OWNER'S REPRESENTATIVE AND DIRECT THE CREW TO ACCOMPLISH SUCH WORK.

J.B. WHENEVER A TREE, WHICH IS NOT SCHEDULED TO BE REMOVED, MUST BE TRIMMED OR PRUNED, THE CONTRACTOR SHALL INSURE THAT SUCH TRIMMING AND PRUNING IS CARRIED OUT UNDER THE DIRECT SUPERVISION OF A LICENSED ARBORIST. ALL PRUNING AND TRIMMING SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF ANSI A 300 "STANDARD PRACTICES FOR TREE, SHRUB AND OTHER WOODY PLANT MAINTENANCE".

J.C. THE CONTRACTOR SHALL BE REQUIRED TO CUT TREES TO A HEIGHT OF APPROXIMATELY 12". THE STUMPS AND ROOTS SHALL BE GROUND DOWN A MINIMUM OF TWELVE (12) INCHES BELOW NORMAL GROUND LEVEL.

J.D. THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE LATEST GOVERNMENTAL SAFETY REGULATIONS. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ANSI Z133.1 "PRUNING, TRIMMING, REPAIRING, MAINTAINING AND REMOVING TREES AND CUTTING BRUSH–SAFETY REQUIREMENTS" WITH SPECIAL EMPHASIS GIVEN TO THE REQUIREMENT THAT ONLY QUALIFIED LINE–CLEARANCE TREE TRIMMERS BE ASSIGNED TO WORK WHERE A POTENTIAL ELECTRICAL HAZARD EXISTS.

J.E. THE CONTRACTOR SHALL MAKE ALL THE NECESSARY ARRANGEMENTS WITH ANY UTILITY THAT MUST BE PROTECTED OR RELOCATED IN ORDER TO ACCOMPLISH THE WORK. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PROTECTION OF THE OPERATING CONDITION OF ALL ACTIVE UTILITIES WITHIN THE AREA OF CONSTRUCTION AND THEY SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING UTILITIES.

J.F. ANY MATERIAL RESULTING FROM THE TRIMMING OR REMOVAL OF ANY TREES SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR.

J.G. HAZARDOUS TREES–REPORTING – ANY PERSON ENGAGED IN TRIMMING OR PRUNING WHO BECOMES AWARE OF A TREE OF DOUBTFUL STRENGTH, THAT COULD BE DANGEROUS TO PERSONS AND PROPERTY, SHALL REPORT SUCH TREE(S) TO THE OWNER OR THE OWNERS REPRESENTATIVE. SUCH TREES SHALL INCLUDE THOSE THAT ARE OVER MATURE, DISEASED, OR SHOWING SIGNS OF DECAY OR OTHER STRUCTURAL WEAKNESS.

J.H. DAMAGES–ANY DAMAGE CAUSED BY THE CONTRACTOR, INCLUDING, BUT NOT LIMITED TO, BROKEN SIDEWALK, CURB, RUTTED LAWN, BROKEN WATER SHUT–OFFS, WIRE DAMAGE, BUILDING DAMAGE, STREET DAMAGE, ETC., WILL BE REPAIRED OR REPLACED IN A TIMELY MANNER, TO THE OWNER'S SATISFACTION, AND ALL COSTS PAID BY THE CONTRACTOR.

J.I. ANY BRUSH CLEARING REQUIRED WITHIN THE TREE PROTECTION ZONE SHALL BE ACCOMPLISHED WITH HAND OPERATED EQUIPMENT.

J.J. TREES TO BE REMOVED SHALL BE FELLED SO AS TO FALL AWAY FROM TREE ROOT PROTECTION ZONES AND TO AVOID PULLING AND BREAKING OF ROOTS TO REMAIN.

J.K. ALL DOWNED BRUSH AND TREES SHALL BE REMOVED FROM THE TREE PROTECTION ZONE EITHER BY HAND OR WITH EQUIPMENT SITTING OUTSIDE THE TREE ROOT PROTECTION ZONE. EXTRACTION SHALL OCCUR BY LIFTING THE MATERIAL OUT, NOT BY SKIDDING IT ACROSS THE GROUND.

J.L. IF TEMPORARY HAUL OR ACCESS ROADS MUST PASS OVER THE ROOT AREA OF TREES TO BE RETAINED A ROADBED OF 6 INCHES OF MULCH OR GRAVEL SHALL BE CREATED TO PROTECT THE SOIL. THE ROADBED MATERIAL SHALL BE REPLENISHED AS NECESSARY TO MAINTAIN A 6–INCH DEPTH.

J.M. PRUNING. TREES SHALL BE PRUNED PRIOR TO THE START OF CONSTRUCTION. TREES SHALL BE CROWN CLEANED TO REMOVE THE DEADWOOD 2 INCHES IN DIAMETER AND OVER. TREES SHALL BE CROWN THINNED BY 10–20%. CROWNS MAY BE RAISED BY REMOVING BOTTOM BRANCHES AS NECESSARY UP TO 14 FEET HIGH TO GIVE CLEARANCE FOR ANY CONSTRUCTION TRAFFIC, ACTIVITIES, ETC. ALL WORK TO BE DONE IN ACCORDANCE WITH ANSI A300 PRUNING STANDARDS. REMOVE ANY LIMBS OF DOUBTFUL STRENGTH THAT COULD BE DANGEROUS TO PERSONS AND PROPERTY.

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CERTIFICATE NUMBER: PN 8877A
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OLIVER TERRACE SUBDIVISION

CAMAS WASHINGTON
SE 1/4, SEC 35, T2N, R5E, WM
17821-000

TREE PRESERVATION AND REMOVAL NOTES

DESIGNED BY:	BRK
DRAWN BY:	BRK
MANAGED BY:	BDH
CHECKED BY:	BDH

DATE: 08/27/2025

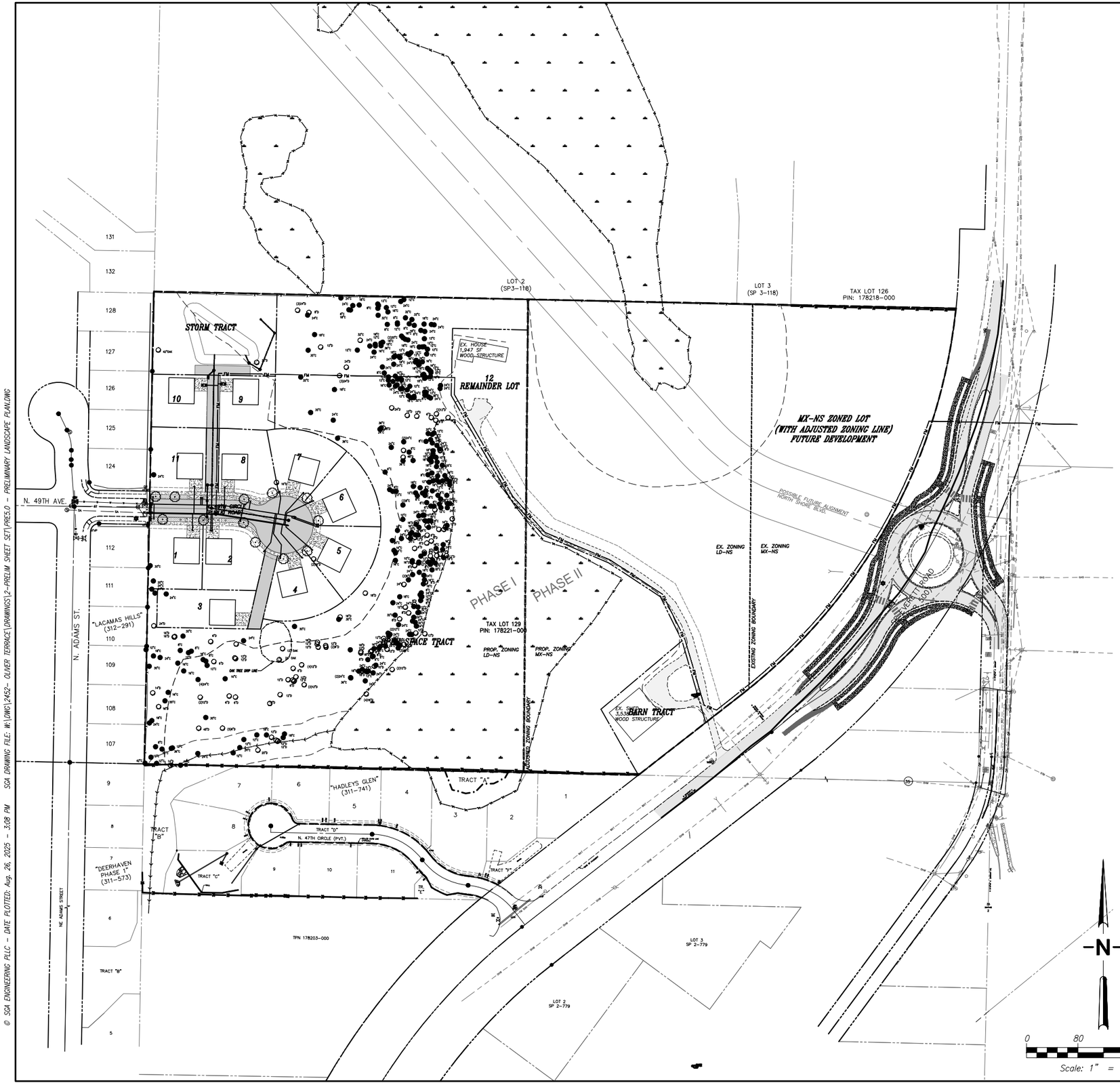
REVISIONS

JOB NUMBER
8397

SHEET
TP 290

AKS DRAWING FILE: 8397 OLIVER TERRACE TREE PLAN.DWG | LAYOUT: LAYOUT1 (2)

Appendix C: Tree Planting Plan



PREVAILING WIND

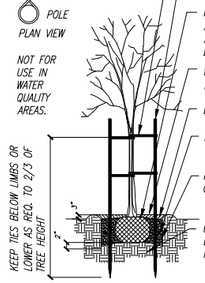
NON ABRASIVE SECURE TREE TIE W/ GALV. FENCE STAPLE

TREE

POLE

PLAN VIEW

NOT FOR USE IN WATER QUALITY AREAS.



TREE TIES AT TWO LOCATIONS, REFER TO SPECIFICATIONS FOR TYPE, (FOUR TOTAL) TYP. PROVIDE 5"-6" OF SLACK IN TIES TO ALLOW FOR TREE MOVEMENT.

(2) 2" x2" TREE STAKES (SET PLUMB). DO NOT PENETRATE ROOT BALL.

ROOT BALL, REMOVE OR CUT BACK BURLAP AND TWINE FROM ROOT BALL. SET CROWN 2" ABOVE FINISHED GRADE. PROVIDE POSITIVE DRAINAGE AWAY FROM ROOT BALL.

WATER RETENTION BERM FIRST YEAR (EXCEPT IN TURF AREAS). REMOVE IN OCTOBER.

BARK MULCH.

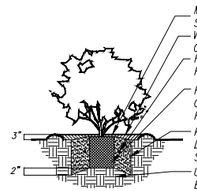
FERTILIZER TABLETS.

PLANTING PIT TO BE TWICE THE DIAMETER OF ROOT BALL. FOR BACKFILL MIX.

UNDISTURBED NATIVE SOIL UNDER ROOT BALL. PROVIDE POSITIVE DRAINAGE AWAY FROM ROOT BALL.

B&B Deciduous Tree Planting Details

NO SCALE



MULCH, REFER TO UNION RIDGE SPECIFICATIONS.

WATER RETENTION BERM, REMOVE IN OCTOBER.

FERTILIZER TABLETS, REFER TO UNION RIDGE SPECIFICATIONS.

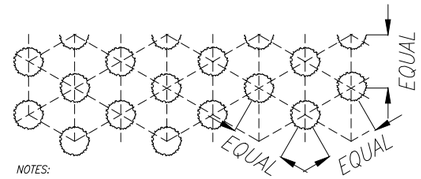
ROOT BALL, SET CROWN 1" ABOVE FINISH GRADE. PROVIDE POSITIVE DRAINAGE AWAY FROM ROOT BALL.

PLANTING PIT TO BE A MINIMUM TWICE THE DIAMETER OF ROOT BALL. BACKFILLED WITH SUITABLE NATIVE SOIL OR PLANTING MIX.

UNDISTURBED NATIVE SOIL UNDER ROOT BALL. PROVIDE POSITIVE DRAINAGE AWAY FROM ROOT BALL.

Shrub Planting Details

NO SCALE



NOTES:

ALL GROUND COVER SHALL BE PLANTED AT EQUAL TRIANGULAR SPACING AS SPECIFIED IN PLANTING LEGEND. GROUND COVER TO BE LOCATED ONE HALF OF SPECIFIED SPACING DISTANCE FROM ANY HARD SURFACE, UNLESS OTHERWISE SPECIFIED. SPECIFICATIONS ARE INCLUDED WITHIN PLAN SHEETS, LANDSCAPE NOTES AND SPECIFICATIONS. REFER TO ALL PRIOR TO BIDDING AND CONSTRUCTION.

TIMELINE & NARRATIVE

TREES IN THE PUBLIC RIGHT OF WAY SHALL BE INSTALLED BY DEVELOPER OR BUILDER PRIOR TO ISSUING OF OCCUPANCY PERMIT FOR LOT ADJACENT TO RIGHT OF WAY IN QUESTION.

TREES ON INDIVIDUAL LOTS SHALL BE INSTALLED BY DEVELOPER OR BUILDER PRIOR TO ISSUING OF OCCUPANCY PERMIT FOR SAID LOT. TREES ARE EASILY DAMAGED DURING CONSTRUCTION AND SHOULD NOT BE INSTALLED UNTIL AFTER ALL DRIVEWAYS, SIDEWALKS AND HEAVY CONSTRUCTION ACTIVITIES ARE COMPLETED.

TREES SHALL BE WATERED AND MAINTAINED IN A HEALTHY CONDITION YEAR ROUND. EXISTING TREES SHALL BE PROTECTED FROM DAMAGE DURING AND FOLLOWING CONSTRUCTION. PRUNING AND OTHER MAINTENANCE SHALL BE PERFORMED BY INDIVIDUAL HOMEOWNERS OR THE HOMEOWNER'S ASSOCIATION.

LANDSCAPE NOTES

LANDSCAPING SHALL BE WATERED WITH AN IRRIGATION SYSTEM CAPABLE OF SUSTAINING THE PLANTINGS IN A HEALTHY CONDITION YEAR AROUND.

TREES AND OTHER PLANTINGS SHALL BE PRUNED, WATERED, FERTILIZED AND MAINTAINED IN A HEALTHY CONDITION.

APPROXIMATE LOCATIONS FOR TREES ARE SHOWN ON THE PLAN. EXACT LOCATIONS TO BE DETERMINED BY DEVELOPER OR BUILDER AFTER CONSTRUCTION OF DRIVEWAYS, SIDEWALKS AND BUILDINGS.

PLANT LEGEND

SYMBOL	PLANT NAME (SCIENTIFIC)	PLANT NAME (COMMON)	SIZE	SPACING	QUANTITY
TREES					
	Acer rubrum 'Autumn Flame'	Autumn Flame Maple	2" cal.	30' o.c. or as shown	12
MISCELLANEOUS					
	LANDSCAPE AREA: WOOD MULCH, ROCK, TURF GRASS				1,432 SF

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EXPIRES ON

PRELIMINARY LANDSCAPE PLAN

OLIVER TERRACE SUBDIVISION

CITY OF CAMAS WASHINGTON

PRELIMINARY

REVISIONS

DESIGNED BY:	NDM
DRAWN BY:	NDM
CHECKED BY:	JAI
SCALE:	########

JOB NUMBER 2452

SHEET 292

© SCA ENGINEERING PLLC - DATE PLOTTED: Aug. 26, 2025 - 3:08 PM SCA DRAWING FILE: W:\DWG\2452- OLIVER TERRACE\DRAWINGS\2-PRELIM SHEET SET\PRE5.0 - PRELIMINARY LANDSCAPE PLAN.DWG

OLIVER TERRACE SUBDIVISION

PRELIMINARY
TECHNICAL INFORMATION REPORT

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01/14/2026

This project complies with Camas Municipal Code (CMC) 14.02 Stormwater Control and the July 2024 Department of Ecology Stormwater Management Manual for Western Washington (SWMMWW).

DATE: 01/14/26

JOB #: 2452

Exhibit 23 SUB25-1010

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SECTION A - Project Overview

The Oliver Terrace project proposes to develop parcel 178221-000, approximately 18.15 acres total, into 11 proposed single-family detached residential lots. The site is located at 1004 SE Everett Road, Camas, WA 98607. There is one existing home, one barn and other outbuildings on the site. The existing home will remain in a remainder lot and the barn will remain in a separate tract.

The existing vegetation on site consists of mostly dense tree cover on the north end of the site with slopes typical between 0-25%. The majority of existing runoff from the developable site area flows northeast from a highpoint in the middle of the site. This project will consist of site grading, constructing roads, and utilities necessary to develop the site. Stormwater control will conform to the requirements of the City of Camas Design Standards Manual and the 2024 Stormwater Management Manual for Western Washington. Stormwater will be managed on the site using Contech Stormfilters for treatment and a detention pond for flow control. There are currently no stormwater facilities on site.

SECTION B – Minimum Requirements

According to Table A below and Figure 1.2 from Chapter 1 of the Camas Stormwater Design Standards Manual, all Minimum Requirements (1-9) apply.

Table A. – Surface Area Breakdown Onsite

Existing Impervious Surface	**0.00 Acres**
New Impervious Surface	**1.76 Acres**
Replaced Impervious Surface	**0.00 Acres**
Native Vegetation Converted to Lawn or Landscaping	**1.46 Acres**
Native Vegetation Converted to Pasture	**0.00 Acres**
Total Land-disturbing Activity	**3.22 Acres**

1. All TDAs do not increase the 100-year flood frequency from predeveloped to developed conditions.
2. All TDAs must meet *Minimum Requirement #6: Runoff Treatment*.
3. All TDAs must meet *Minimum Requirement #7: Flow Control*.
4. All TDAs must meet *Minimum Requirement #8: Wetland Protection.*

Minimum Requirement 1. – Preparation of Stormwater Site Plans*:*
The final stormwater plan and final engineering plans with layouts and construction details will be prepared after the project receives preliminary approval.

Minimum Requirement 2. – Construction Stormwater Pollution Prevention*:*
A Construction Stormwater Pollution Prevention Plan (SWPPP) is required and will be prepared. The contractor will comply with construction SWPPP requirements including elements 1-13.

Minimum Requirement 3. – Source Control of Pollution*:*
All development activities shall consult Camas Design Standard Manual. The BMPs that may apply to land disturbance could be **BMPs for Dust Control at Disturbed Land Areas and Unpaved Roadways and Parking Lots, BMPs for Landscaping and Lawn/Vegetation Management, BMPs for Maintenance of Stormwater Drainage and Treatment Systems, BMPs for Urban Streets.** Refer to Section D of this report.

Minimum Requirement 4. – Preservation of Natural Drainage Systems and Outfalls*:*
The proposed improvements associated with this parcel will preserve the existing conveyance. Existing drainage patterns shall be maintained, and discharges from the project site shall occur as is, to the maximum extent practicable. The manner by which runoff is discharged from the project site will not cause a significant adverse impact to downstream receiving waters and downgradient properties. Refer to Section L of this report.

Minimum Requirement 5. – Onsite Stormwater Management*:*
1. General

After evaluation of the geotechnical report from Soil and Water Technologies, Inc, the following BMPs were selected based on suitability of the site:

T5.13 – Post-Construction Soil Quality and Depth

Since the majority of the site has been or will be stripped of topsoil and/or organic material for grading purposes, the remaining open spaces, yards and landscaping areas shall be restored with the appropriate soil quality and depths. See Clark County Stormwater Manual 2015: Book 2 Chapter 2 On-Site Stormwater Management BMPs for design criteria. These pervious areas are modeled as 'Field' in the WWHM program.

D6.10 - Detention Pond

The detention pond is placed at the current low point and stormwater runoff release point onsite. The pond is sized to detain and release stormwater below predeveloped rates. See Clark County Stormwater Manual 2015: Book 2 Chapter 2 On-Site Stormwater Management BMPs for design criteria.

Contech Stormfilter

Contech Stormfilter Systems were chosen as a treatment BMP for the pollution generating basins. Stormfilter systems have been approved by the Washington State Department of Ecology and can provide basic, phosphorus, oil, and enhanced treatment. Stormfilter catch basins from Contech will be utilized to treat pollution generating improvements. The main benefits of the Stormfilter

catch basins are the small footprint and minimal vertical drop within the system. The small vertical drop allows for maximum separation from the storm system to groundwater.

2. Low Impact Development (LID)

This preliminary stormwater plan will meet the LID Performance Standard, however, the List #2 Criteria may be used during final engineering due to site constraints. The proposed storm system has been modeled in the WWHM to pass the LID duration and stream protection duration for the developed condition. Design details for each BMP can be found in the following sections of the Clark County Stormwater Manual 2015:

- **T5.13 - Post-Construction Soil Quality and Depth: Book 2 Chapter 2 On-Site Stormwater Management BMPs**
- **D6.10 - Detention Pond: Book 2 Chapter 2 On-Site Stormwater Management BMPs**

A WWHM design and design report printout can be found in Appendix C of this report for the detention pond.

Minimum Requirement #6. – Runoff Treatment:
Since the thresholds for impervious area added exceeds the limits, runoff treatment is required. Basic treatment and phosphorus treatment is proposed in the form of Contech stormfilter catch basins that will meet or exceed the required treatment parameters. Other approved LID or traditional BMP's may be used to treat stormwater for this development. Refer to Section F of this report.

Table B. – Stormfilter Breakdown

RUNOFF TREATMENT -CONTECH STORMFILTER			
PG BASIN	FILTER	REQ'D WQ FLOW	TREATMENT CAPACITY
A	3 – 27" PSORB	0.0903 CFS	0.1260 CFS
B	1 – 18" PSORB	0.0236 CFS	0.0280 CFS

Minimum Requirement #7. – Runoff Flow Control:
This project's storm plan consists of a storm detention pond for the main source of flow control. The pond will detain and release water below predeveloped rates through a metered release in an outlet control structure. Roof runoff will be routed directly to the detention pond by means of a clean storm line. Pollution generated runoff will be treated and conveyed to the detention pond via the clean storm line as well. See Appendix B of this report for additional soil information. The site was evaluated using continuous modeling in the WWHM 2012 software. Refer to Section F below for more detailed flow control modeling calculations.

Minimum Requirement #8. – Wetlands Protection:
Multiple wetlands exist on site or immediately adjacent to the site, triggering Minimum Requirement #8. A Critical Areas Report and Mitigation plan have been prepared by ELS Refer to Section H below for a summary of how this requirement is satisfied.

Minimum Requirement #9. – Operation and Maintenance:
The storm systems will be privately owned and maintained by a Homeowners Association. See latest version of City of Camas *Storm Sewer Systems Operation & Maintenance Manual*.

SECTION C – Soils Evaluation

The Soil Survey of Clark County, Washington, November 1972 identifies the onsite soils as, Lauren Gravel Loam (LIB), Vader Silt Loam (VaB, VaC), Hesson Clay Loam (HcB, HcE), Hillsboro Silt Loam (HoB), McBee Silty Clay Loam (MeA), Olympic Clay Loam (OmE), and Tisch Medial Silt (ThA).

A geotechnical analysis was performed by Soil and Water Technologies, Inc. and based on their lab analysis and underlying bedrock on site, they reclassified all soils on site as Soil Group 4. Thus, Soil Group 4 was used to complete stormwater design calculations. The geotechnical investigation also found negligible infiltration rates (see Geotech Report in Appendix D) in the native soil which indicates that the site is suitable for the above ground detention pond as recommended by Soil and Water Technologies, Inc.

SECTION D – Source Control

All development activities shall consult the City of Camas Design Standard Manual and Camas Stormwater Design Standards Manual. The BMPs that may apply to land disturbance could be 'BMPs for Dust Control at Disturbed Land Areas and Unpaved Roadways and Parking Lots', 'BMPs for Landscaping and Lawn/Vegetation Management', 'BMPs for Maintenance of Stormwater Drainage and Treatment Systems' and 'BMPs for Urban Streets'.

SECTION E - Onsite Stormwater Management BMPs

1. The following is a list of onsite stormwater management BMPs:

T5.13 – Post-Construction Soil Quality and Depth

2. Refer to Section C above for geotechnical information

3./4. **T5.13 – Post-Construction Soil Quality and Depth (Volume V, SMMWW)**

Since the majority of the site has been or will be stripped of topsoil and/or organic material for grading purposes, the remaining open spaces, yards and landscaping areas shall be restored with the appropriate soil quality and depths.

T5.21 – Better Site Design (Volume V, SMMWW)

An attempt to provide better site design has been considered to the extent practical. Sensitive areas with wetlands and significant trees have been left out of the development.

Exhibit 23 SUB25-1010

5./6./7. Contech Stormfilter cartridges and detention pond are proposed on this project. They are shown on the Stormwater plan.

8. N/A; no pervious pavement is proposed.

9. N/A; no reversed slope sidewalks are proposed.

SECTION F - Runoff Treatment Analysis and Design

1. Based on the proposed site conditions and use, phosphorous treatment is proposed.

2. Since the threshold for impervious areas added exceeds the limits, runoff treatment is required. The PSORB Contech Stormfilter Catch Basins will meet or exceed the required treatment parameters as described in the Washington State Department of Ecology Stormwater Management Manual for Western Washington (SWMM), Appendix III-C.

3. See Section C for Geotechnical information.

4. The following are the BMPs used in the design.

   Contech Stormfilter Treatment System

5. In accordance with the Camas Stormwater Design Standards Manual and Volume V of the SMMWW, the water quality treatment system designs comply with these sections and provide basic treatment and phosphorus (see plans and details).

6. The Pollution Generating Areas are listed in Table C below.

Table C. – Pollution generating areas Summary

Basin ID	PGIS(Acres)	PGPS (Acres)
Basin A WQ	0.55	0.69
Basin B WQ	0.12	0.24

Refer to Table B in Section B Minimum Requirement #6 above for a detailed stormfilter cartridge breakdown.

SECTION G - Flow Control Analysis and Design

As previously mentioned in Sections A and B of this report, the proposed detention pond is designed to detain and release flows below predeveloped conditions. The detention pond was designed in accordance with Volume III-3.2.1 of the SWMMWW. The detention pond will detain and release water below predeveloped rates through a metered release in an outlet control structure. WWHM calculations are included in Appendix C.

The site was analyzed as one Threshold Discharge Area (TDA) within the developable site area. The developed stormwater plan will release runoff at the northwestern portion of the site, similar to the current flow patterns of the existing topography of the developable site area. Portions of the site that will not be developed or disturbed, flow to a separate TDA in the southwest corner of the site. The southwest TDA, which contains the existing wetland on site, will remain undisturbed.

The Detention Pond Storm Elevations are listed in Table D below. The Outlet Control Design is listed in Table E below. Refer to Section C of this report for soils information.

Table D. – Detention Pond Elevations

Storm Event	Elevation
Bottom	**0 feet**
2-Year	**3.99 feet**
10-Year	**4.46 feet**
100-Year	**4.70 feet**
Freeboard	**5.70 feet**

Table E. – Detention Pond Orifice Control Design

Orifice	Elevation	Size (dia.)
1	**0 feet**	**1.2 inch**
2 (notch)	**3.75 feet**	**2.2 inch**
3 (standpipe)	**4 feet**	**12 inch**

The site was evaluated using the continuous model using the WWHM2012 software. Electronic copies of the WWHM files will be submitted upon request.

SECTION H – Wetlands Protection

There is one wetland onsite and two adjacent offsite wetlands, which trigger the evaluation of Minimum Requirement #8. A critical areas report and bank use plan has been prepared for any impacts to the wetlands. The three wetlands in consideration are Onsite Wetland A (Category I, Habitat Score of 8), Offsite Wetland 1 (Category III, Habitat Score of 7) and Offsite Wetland 2 (Category III, Habitat Score of 7).

Onsite Wetland A contributes to the Southwest TDA onsite, which will remain undisturbed from the development due to existing topography and existing, functional isolation. Offsite Wetland 1is located in the Northeast corner of the site and will remain undisturbed due to its distance from the developed area and existing topography. Offsite Wetland 2 is part of the Northwest TDA that the developable area contributes to in the predeveloped and developed conditions. Reference the Wetland Flow Chart in Appendix C.

The Following Wetland Protection Levels Apply:

2024 SWMMWW Appendix I-C.2 General Protection

Exhibit 23 SUB25-1010

All wetlands (Categories I, II, III, and IV) must receive the following general protection:

1. Consult regulations issued under federal and state laws that regulate the discharge of pollutants to surface waters, including the Construction Stormwater General NPDES Permit.

The site stormwater system has been appropriately designed and complies with federal and state laws and discharging onsite, outside of the wetland buffer in the proposed manner is allowed. Refer to Section B of this report for compliance with Minimum Requirements 1-9. An NPDES permit has been completed for the project improvements and included in the SWPPP.

2. Maintain the wetland buffer required by county and/or state and federal regulations.

The Critical Areas Report (CAR) and Mitigation Plan (MIT) produced by Ecological Land Services (ELS) identifies the Reduced Wetland Buffer which is 83' from the wetland. The dispersion trench is outside of this buffer.

3. Retain areas of native vegetation connecting the wetland and its buffer with nearby wetlands and other contiguous areas of native vegetation.

The area between the storm pond and the wetland will be preserved in a "Protected Vegetated Corridor" per the MIT.

4. Avoid compaction of soil and introduction of invasive plant or animal species in the wetland and its buffer.

Compaction and introduction of invasive species within the buffer will be avoided to the maximum extent feasible. The only impact to the buffer will be to install the storm dispersion trench. 0.24 acres of Invasive Species Removal within the protected vegetated corridor is proposed on the mitigation and planting plan.

5. Take measures to avoid general physical impacts (e.g., littering and vegetation destruction). Examples are protecting existing buffer zones; discouraging access, especially by vehicles, by planting outside the wetland, and encouragement of stewardship and signage by landowners.

Physical impacts to the buffer will be avoided to the maximum extent feasible. Silt fencing will be installed along the project grading limits to discourage access to the wetland. Signage is also proposed. Disturbances to the buffer have been accounted for in the CAR/MIT produced by ELS.

6. Any stormwater management practices, such as Runoff Treatment or Flow Control BMP implementation, must be done outside of the wetland buffer boundary, except limited circumstances where the wetland and/or buffer may be used for additional Runoff Treatment and/or Flow Control of stormwater (See 1-H.6 Compensatory Mitigation of Wetlands)

Stormwater Management Practices are not proposed within the wetland buffer. The wetland itself is not proposed to be used for treatment or flow control.

7. Discharge from a BMP or project site should be dispersed using a method to diffuse the flow before entering the wetland buffer.

A dispersion trench is proposed to diffuse the flow from the storm facility. Impacts to the buffer have been accounted for in the CAR/BUP produced by ELS.

8. Consider fences to restrict human access, but make sure it doesn't interfere with wildlife movement. They should be used when wildlife passage is not a major issue and the potential for intrusive impacts is high. When wildlife movement and intrusion are both issues, the circumstances will have to be weighed to make a decision about fencing. Check with the local and/or state agencies to determine if fencing would be allowed.

The storm tract is located between the proposed lots and mitigated buff and will be fenced which will obstruct the human impact to the habitat buffer. The other wetlands are functionally isolated from the development due to the steep slope.

2024 SWMMWW Appendix I-C.3 Protection from Pollutants

All wetlands (Categories I, II, III, and IV) must receive the following protection from pollutants:

1. Provide Construction Stormwater BMPs as directed in Book 1, Section 1.5.2 MR #2 Construction Stormwater Pollution Prevention Plan (SWPPP) to prevent sediment and other pollutants from entering the wetland.

A Construction Stormwater Pollution Prevention Plan (SWPPP) will be prepared and submitted with the final engineering review. Refer to the SWPPP for proposed BMPs.

2. Provide Source Control BMPs as directed in Book 1, Section 1.5.3 MR #3 Source Control of Pollution.

Refer to Minimum Requirement #3 in Section B of this report for the proposed Source Control BMPs.

3. Provide On-Site Stormwater Management and use LID principles as much as practicable for the site, as directed in Book 1, Section 1.5.5 MR #5 On-Site Stormwater Management. LID principles and practices will help meet other wetland hydroperiod protection criteria and provide additional habitat.

Refer to Minimum Requirement #5 in Section B of this report for the proposed stormwater management BMPs. LID principles were incorporated into the design to the extent feasible.

4. Provide Runoff Treatment BMPs as directed in Book 1, Section 1.5.6 MR #6: Runoff

Treatment to treat runoff prior to entering the wetland and its buffer.
Note: If the thresholds for MR #6 Runoff Treatment are not met for a TDA, then it is not required to provide Runoff Treatment BMPs for that TDA to comply with MR #8 Wetlands Protection.

The stormwater from pollution generating surfaces being released to the wetland buffer has been fully treated with phosphorus treatment by Contech PSORB stormfilters, per MR #6.

2024 SWMMWW Appendix I-C.4 Wetland Hydroperiod Protection

Protection of many wetland functions and values depends on maintaining the existing wetland's hydroperiod. This means maintaining the annual fluctuations in water depth and its timing as closely as possible. The developed site contributes to the TDA of an existing Category III Wetland with a habitat score greater than 5. These characteristics require Method 2 Wetland Hydroperiod Protection. This analysis will be performed in the WWHM Modeling software and included in Appendix E of the final TIR.

References

United States Department of Agriculture, Soil Conservation Service. "Soil Survey of Clark County Washington," Washington, D.C., 1972.

United States Department of Agriculture, Soil Conservation Service, Engineering Division, "Technical Release 55: Urban Hydrology for Small Watersheds, 2nd Ed.," Washington, D.C., 1986.

United States Department of Transportation, Federal Highway Administration, "Hydraulic Engineering Circular No. 12: Drainage of Highway Pavements," Springfield, VA, 1984.

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Washington State Department of Ecology, "Stormwater Management Manual for Western Washington, Volume I-V," Olympia, WA, February 2005.

Washington State Department of Transportation, "Hydraulic Manual," Olympia, WA, 1989.

City of Camas, "Camas Stormwater Design Standards Manual," Camas, WA, 2016

Clark County Department of Assessment and GIS, "2000 Clark County Road Atlas," Vancouver, WA, 2000.

A p p e n d i x A

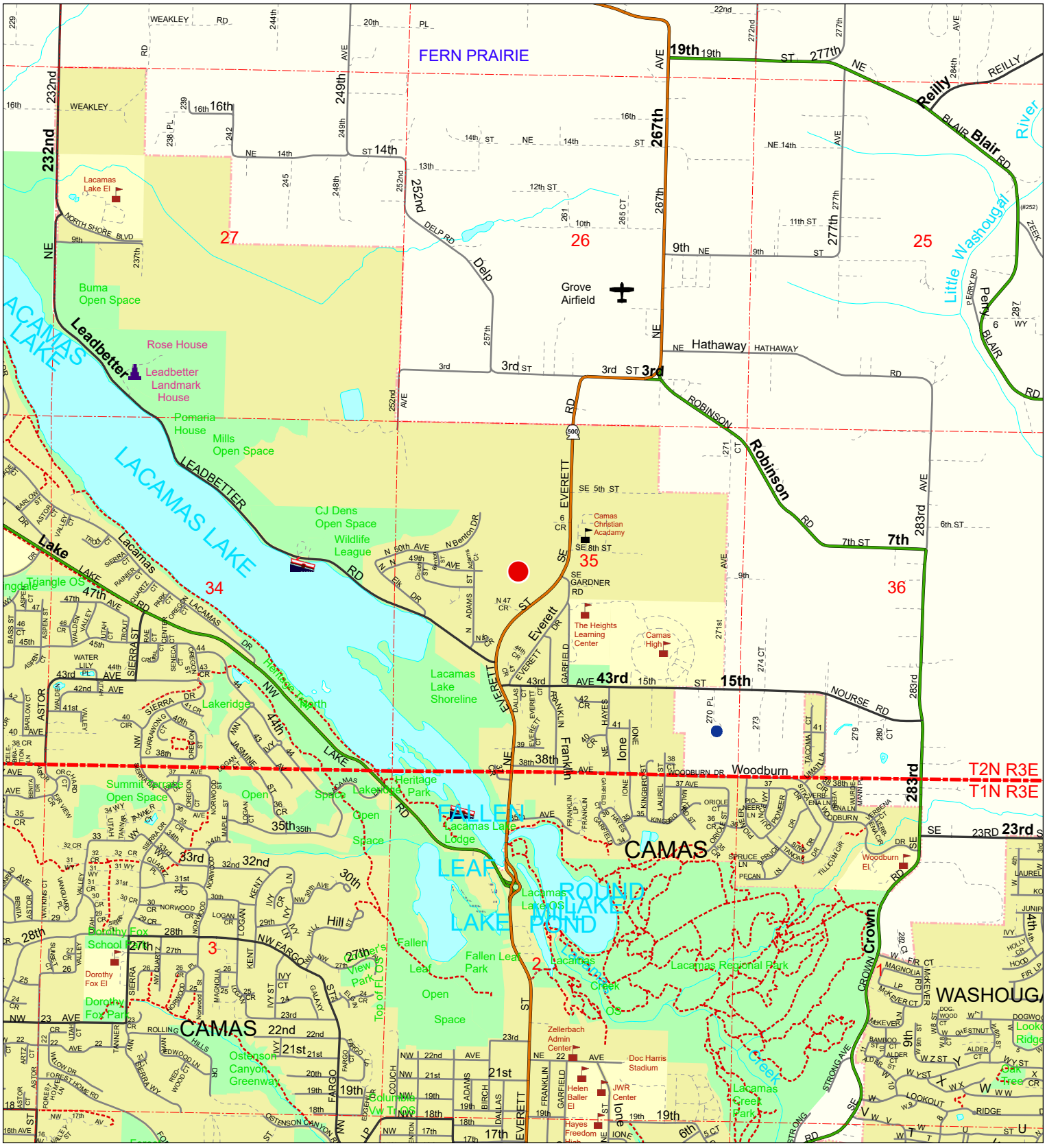
General Location Map **A1**

Elevation Contours Map **A2**

Soil Types Map **A3**

Pre-Developed Basin Map **A4**

Developed Basin Map **A5**



General Location

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

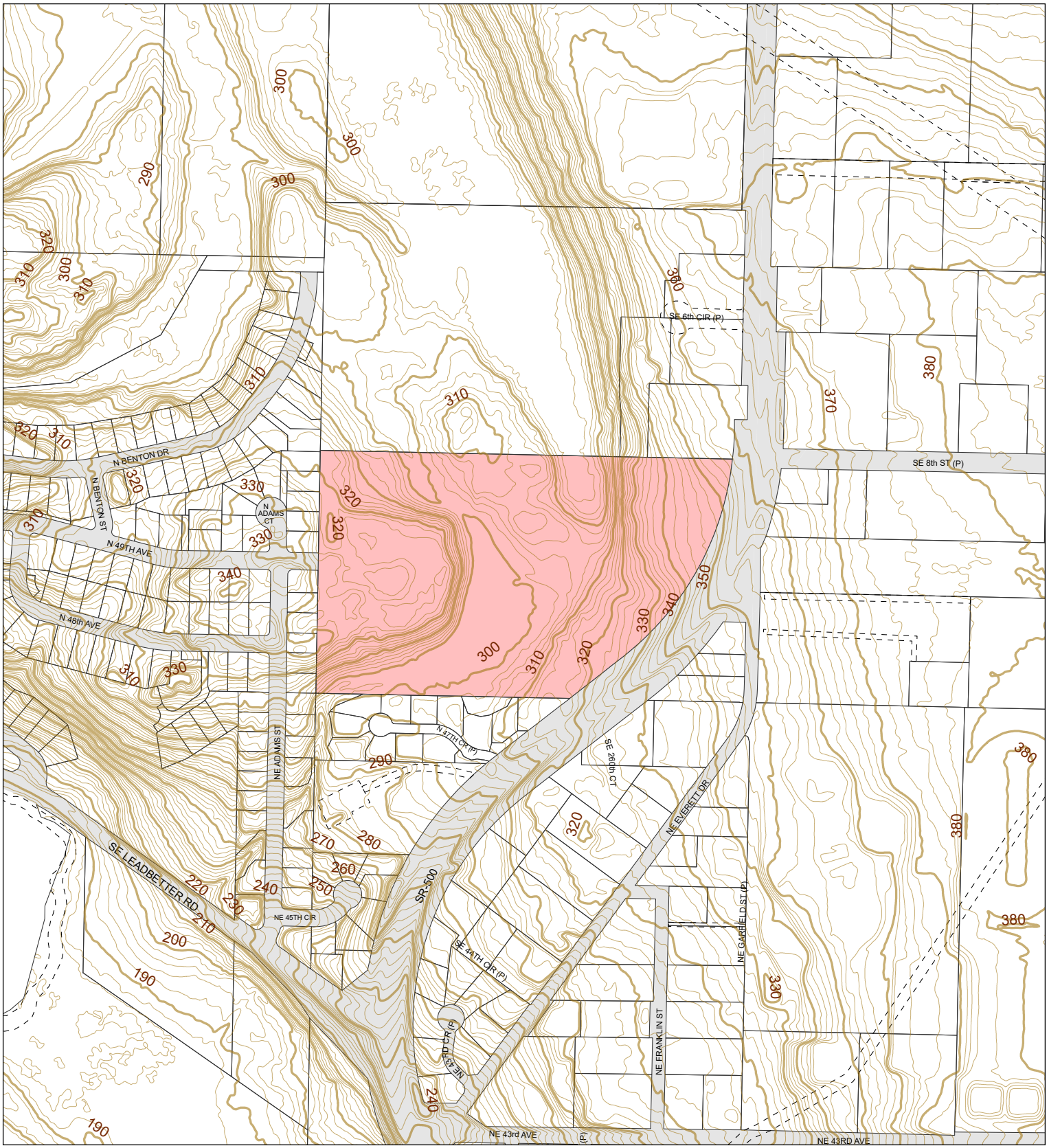
Printed on: October 29, 2024

Location of Subject Property(s)

Geographic Information System

0 1,000 2,000 Feet

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.



Elevation Contours

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

Printed on: October 29, 2024

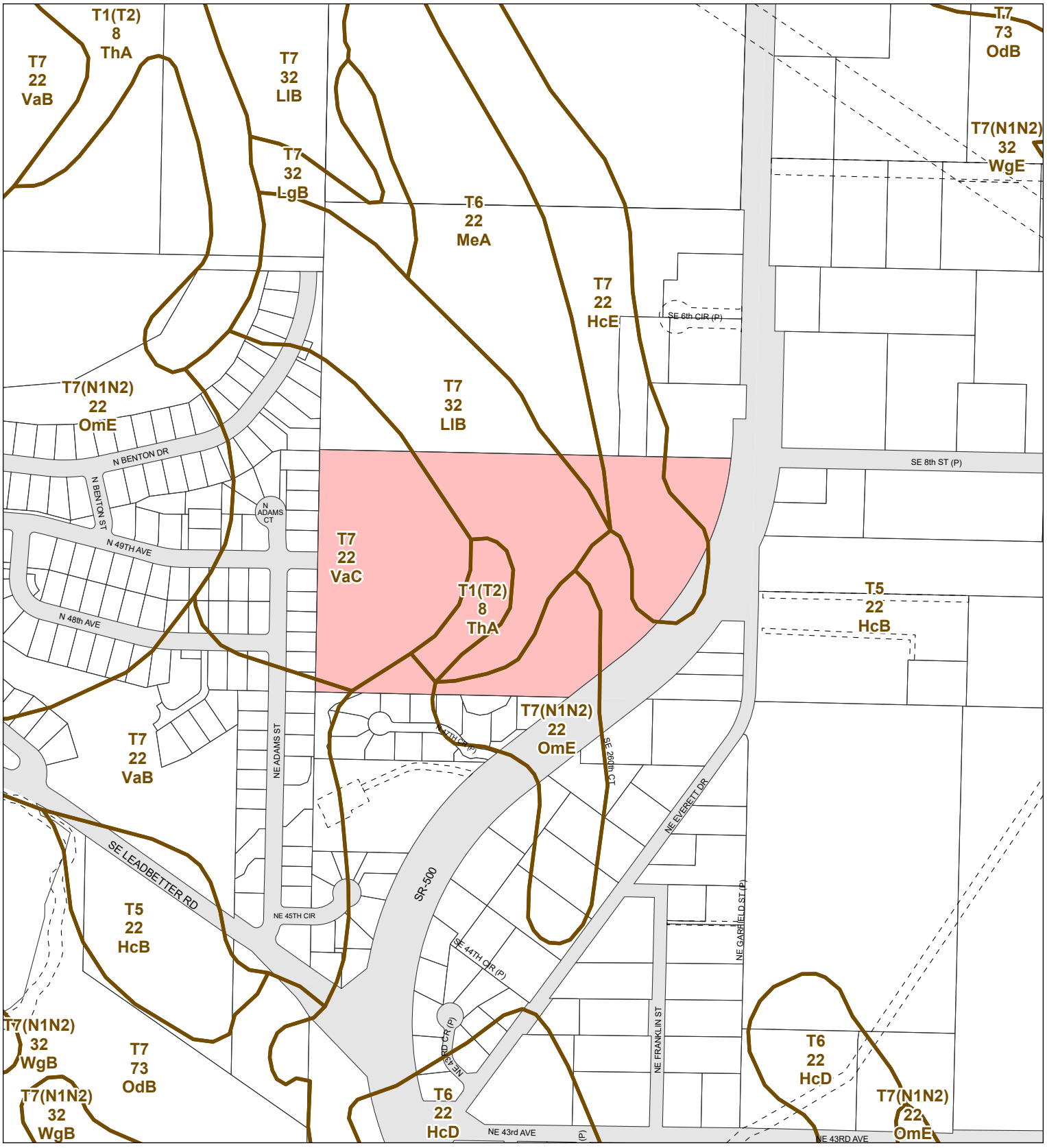
Subject Property(s)
Public Road
Transportation or Major Utility Easement
10' Elevation Contours
2' Elevation Contours

23127	23126	23125
23134	23135	23136
13103	13102	13101

CLARK COUNTY, WASHINGTON
Geographic Information System

0 200 400 Feet

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

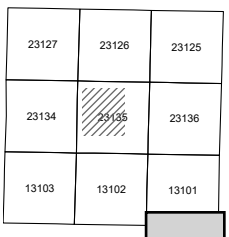


Soil Types

Account: 178221000
Owner: OLIVER THOMAS R
Address: 40304 NE 44TH ST
C/S/Z: WASHOUGAL, WA 98671

Printed on: October 29, 2024

Subject Property(s)
Public Road
Transportation or Major Utility Easement
Soil Type Boundary



CLARK COUNTY, WASHINGTON
Geographic Information System

0 200 400 Feet

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

LOT 2
(SP3-118)

EX. HOUSE
1,947 SF
WOOD STRUCTURE

EX. SHED
64 SF
WOOD STRUCTURE

EX. SHED
175 SF
WOOD STRUCTURE

EX. SHED
380 SF
WOOD STRUCTURE

-N-

0 30 60 90
Scale: 1" = 30'

PRE-SITE

STM MH
RIM 324.27
IE 318.32

CB
RIM 323.59

CB
RIM 323.57

SAN CO
RIM 323.98

"CAMAS HILLS"
(312-291)

TAX LOT 129
PIN: 178221-000

PREDEVELOPED BASIN		
	SF	Acres
EXISTING FORESTED	140283	3.22

SGA ENGINEERING & DESIGN
CIVIL ENGINEERING ~ LAND PLANNING
DEVELOPMENT SERVICES
LANDSCAPE ARCHITECTURE

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PROFESSIONAL ENGINEER
JOHN A. INVERNIZZI
STATE OF WASHINGTON
21605
REGISTERED
PROFESSIONAL ENGINEER

PREDEVELOPED BASIN

OLIVER TERRACE

CITY OF CAMAS WASHINGTON

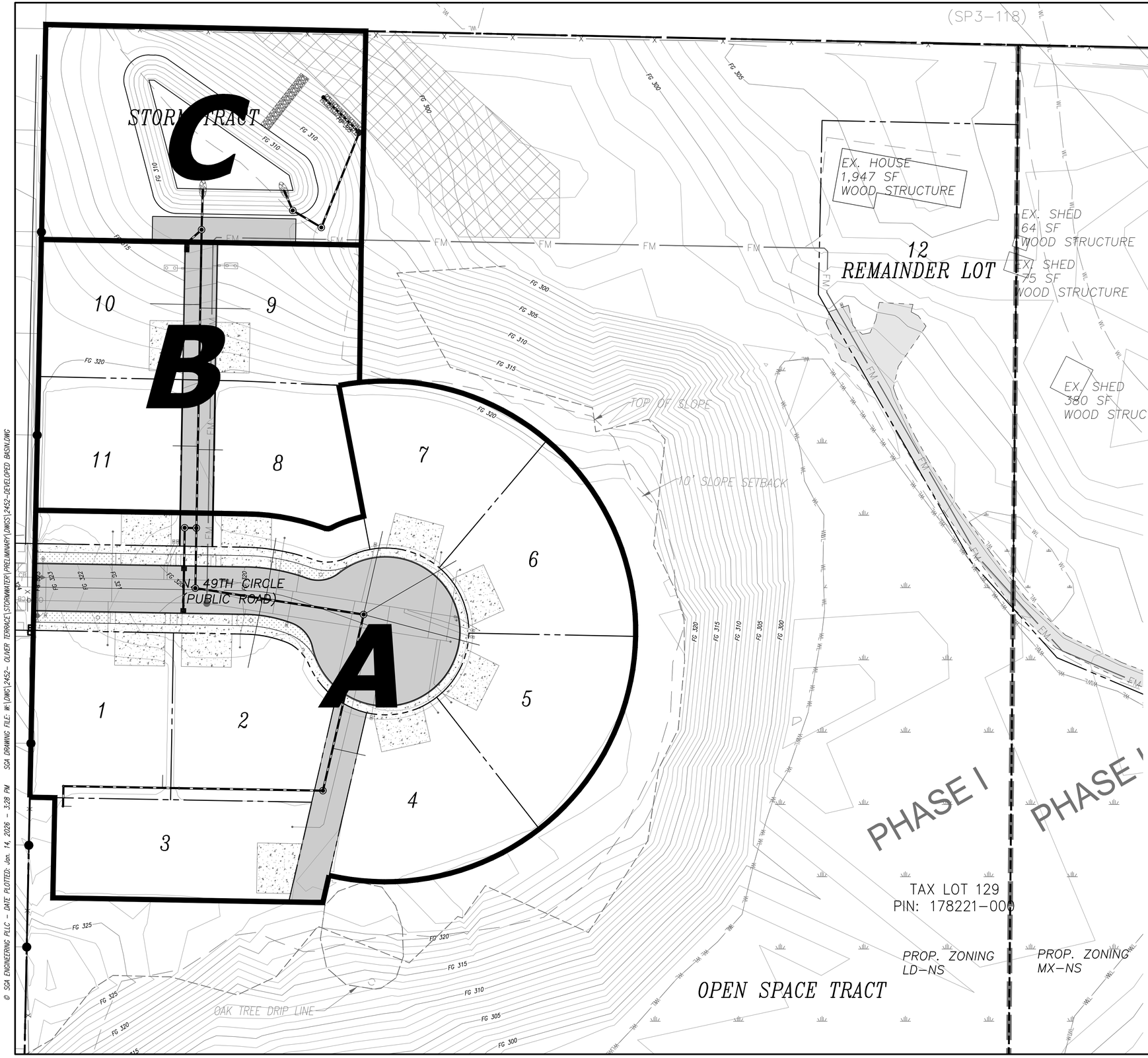
PRELIMINARY

REVISIONS

DESIGNED BY:	NDM
DRAWN BY:	NDM
CHECKED BY:	JAI
SCALE:	1" = 30'

JOB NUMBER	SHEET
2452	PREDEV

© SGA ENGINEERING PLLC - DATE PLOTTED: Jan. 14, 2026 - 3:29 PM SGA DRAWING FILE: W:\DWG\2452- OLIVER TERRACE\STORMWATER\PRELIMINARY\DWGS\2452-PREDEVELOPED BASIN.DWG



DEVELOPED A		
	SF	Acres
EX AC		
AC	13725	0.32
SW	2960	0.07
DW	4485	0.10
ROOF	30781	0.71
Total Imperv	51951	1.19
Total Perv	32613	0.75
Total	84563	1.94

DEVELOPED B		
	SF	Acres
EX AC		
AC	3460	0.08
SW		
DW	1600	0.04
ROOF	15721	0.36
Total Imperv	20781	0.48
Total Perv	10290	0.24
Total	31070	0.71

DEVELOPED C		
	SF	ACRES
EX AC		
AC	1290	0.03
SW		
DW		
ROOF		
Total Imperv	1290	0.03
Total Perv	23360	0.54
Total	24650	0.57

N

0 30 60 90

Scale: 1" = 30'

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OLIVER TERRACE

DEVELOPED BASIN

CITY OF CAMAS WASHINGTON

PRELIMINARY

REVISIONS

DESIGNED BY:	NDM
DRAWN BY:	NDM
CHECKED BY:	JAI
SCALE:	1" = 30'

JOB NUMBER	SHEET
2452	DEV

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Design Criteria Appendix B

WWHM Soil Groups

Memorandum

otak

700 Washington Street
Suite 401.
Vancouver, WA 98660
Phone (360) 737-9613
Fax (360) 737-9651

To: Rod Swanson, Clark County Environmental Services

From: Tim Kraft

Copies: File

Date: December 21, 2010

Subject: Clark County WWHM Soil Groupings

The Clark County version of the Western Washington Hydrology Model (WWHM) includes five soils groups to represent the many soil types found within the county limits. Although there are over 110 different soil types throughout Clark County, similarities between the soils allows them to be grouped into categories for modeling purposes.

Clark County soils are grouped into five categories largely based on their permeability and runoff potential. These categories include:

- Soil Group (SG) 1 – Excessively drained soils (hydrologic soil groups A & B)
- Soil Group (SG) 2 – Well drained soils (mostly hydrologic soil group B)
- Soil Group (SG) 3 – Moderately drained soils (hydrologic soil groups B & C)
- Soil Group (SG) 4 – Poorly drained soils (slowly infiltrating C soils, as well as D soils)
- Soil Group (SG) 5 – Wetland soils (mucks).

Soil Groups 1 and 2 are those most suitable for traditional infiltration facilities such as trenches and drywells, while Soil Group 3 may only be suitable for slower infiltrating facilities such as rain gardens and other Low Impact Development (LID) measures. Soil Groups 4 and 5 are those which are typically not suitable for infiltration.

For additional information on the classification of soils for use in the Clark County WWHM model, please see the report titled "Development of the Clark County Version of the Western Washington Hydrology Model", which can be found on the county's community development web site.

The following table lists the WWHM soil group for each NCRS soil type in Clark County.

Map Symbol	Soil Name	HSG
Soils Group (SG) 1		
LeB	LAUREN	B
LgB	LAUREN	B
LgD	LAUREN	B
LgF	LAUREN	B
LIB	LAUREN	B
Ro	ROUGH BROKEN LAND	A
SvA	SIFTON	B
WnB	WIND RIVER VARIANT	B
WnD	WIND RIVER VARIANT	B
WnG	WIND RIVER VARIANT	B
WrB	WIND RIVER VARIANT	B
WrF	WIND RIVER VARIANT	B
	PITS	A
	BONNEVILLE STONY SAND LOAM	A
Soils Group (SG) 2		
BpB	BEAR PRARIE	B
BpC	BEAR PRARIE	B
CnB	CINEBAR	B
CnD	CINEBAR	B
CnE	CINEBAR	B
CnG	CINEBAR	B
CrE	CINEBAR	B
CrG	CINEBAR	B
CsF	CISPUS	B
CtA	CLOQUATO	B
HlA	HILLSBORO	B
HlB	HILLSBORO	B
HlC	HILLSBORO	B
HlD	HILLSBORO	B
HlE	HILLSBORO	B

Map Symbol	Soil Name	HSG
HlF	HILLSBORO	B
Soils Group (SG) 2 (continued)		
KeC	KINNEY	B
KeE	KINNEY	B
KeF	KINNEY	B
KnF	KINNEY	B
LaE	LARCHMOUNT	B
LaG	LARCHMOUNT	B
LcG	LARCHMOUNT	B
MsB	MOSSYROCK	B
NbA	NEWBERG	B
NbB	NEWBERG	B
PhB	PILCHUCK	C
PuA	PUYALLUP	B
SaC	SALKUM	B
VaB	VADER	B
VaC	VADER	B
WaA	WASHOUGAL	B
WgB	WASHOUGAL	B
WgE	WASHOUGAL	B
WhF	WASHOUGAL	B
YaA	YACOLT	B
YaC	YACOLT	B
YcB	YACOLT	B

Soils Group (SG) 3

DoB	DOLLAR	C
HcB	HESSON	C
HcD	HESSON	C
HcE	HESSON	C
HcF	HESSON	C
HgB	HESSON	C
HgD	HESSON	C
HhE	HESSON	C
HoA	HILLSBORO	B

Map Symbol	Soil Name	HSG
HoB	HILLSBORO	B
Soils Group (SG) 3 (continued)		
HoC	HILLSBORO	B
HoD	HILLSBORO	B
HoE	HILLSBORO	B
HoG	HILLSBORO	B
HsB	HILLSBORO	B
McB	McBEE	C
MeA	McBEE	C
MIA	McBEE	C
OeD	OLEQUA	B
OeE	OLEQUA	B
OeF	OLEQUA	B
OlB	OLYMPIC	B
OID	OLYMPIC	B
OlE	OLYMPIC	B
OIF	OLYMPIC	B
OmE	OLYMPIC	B
OmF	OLYMPIC	B
OpC	OLYMPIC VARIANT	C
OpE	OLYMPIC VARIANT	C
OpG	OLYMPIC VARIANT	C
OrC	OLYMPIC VARIANT	C
PoB	POWELL	C
PoD	POWELL	C
PoE	POWELL	C
SmA	SAUVIE	B
SmB	SAUVIE	B
SnA	SAUVIE	D
SpB	SAUVIE	B

Soils Group (SG) 4

CvA	COVE	D
CwA	COVE	D
GeB	GEE	C

Map Symbol	Soil Name	HSG
GeD	GEE	C
Soils Group (SG) 4 (continued)		
GeE	GEE	C
GeF	GEE	C
GuB	GUMBOOT	D
HtA	HOCKINSON	D
HuB	HOCKINSON	D
HvA	HOCKINSON	D
LrC	LAUREN	C
LrF	LAUREN	C
MnA	MINNIECE	D
MnD	MINNIECE	D
MoA	MINNIECE VARIANT	D
OdB	ODNE	D
OhD	OLEQUA VARIANT	C
OhF	OLEQUA VARIANT	C
SlB	SARA	D
SlD	SARA	D
SlF	SARA	D
Soils Group (SG) 5		
Sr	SEMIAHMOO	C
Su	SEMIAHMOO VARIANT	D
ThA	TISCH	D

Hydraulic Calculations Appendix C

WWHM Schematic

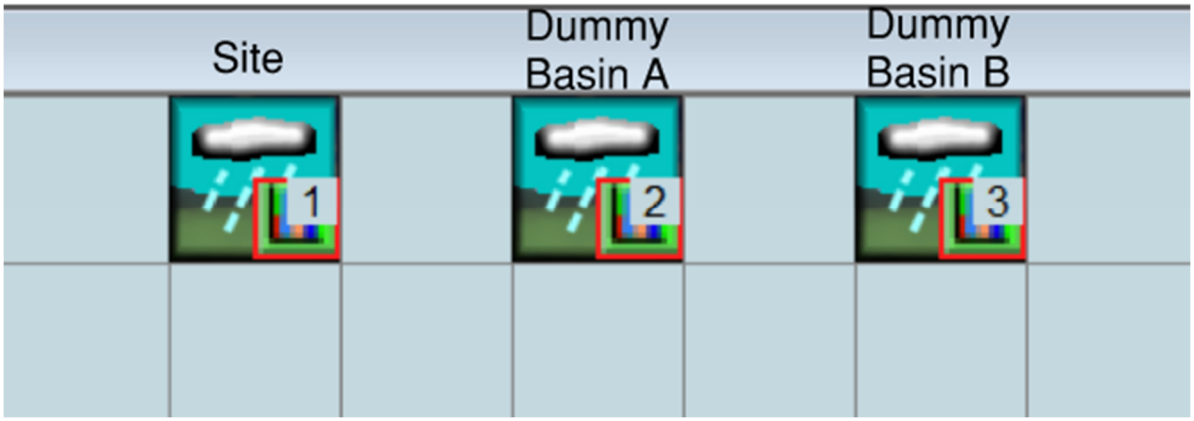
Water Quality Design

Developed Hydrologic Calculations

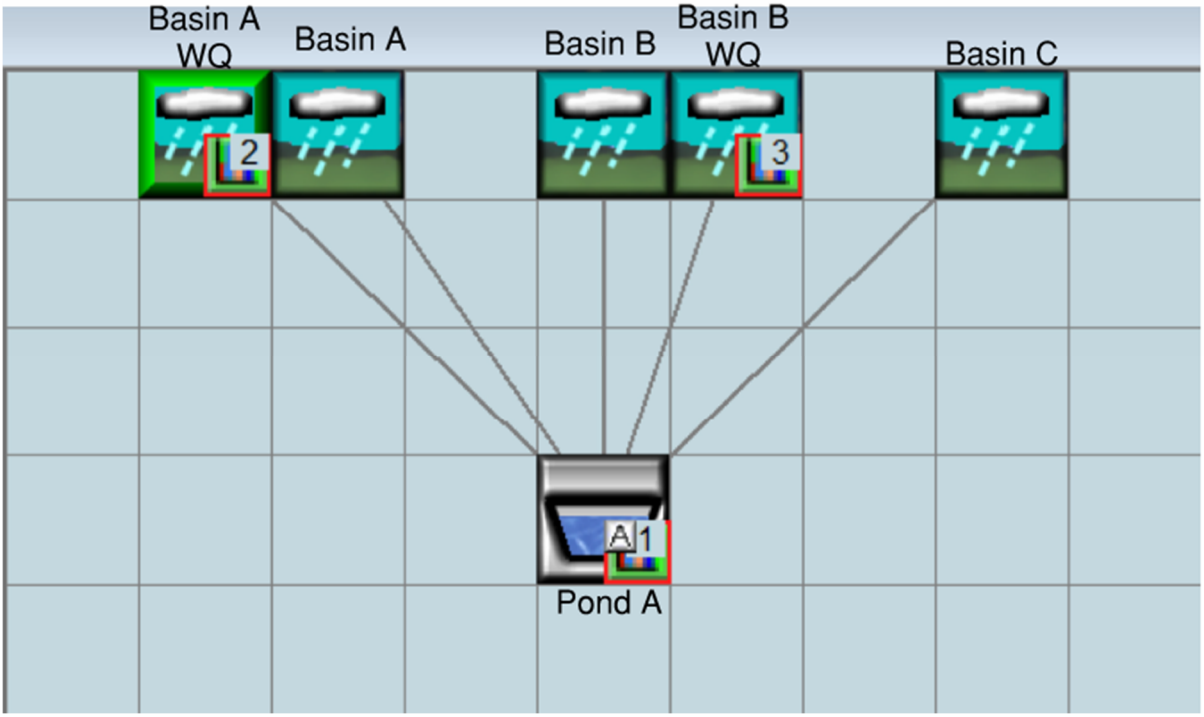
Western Washington Hydrology Model (WWHM) Project Report

WWHM SCHEMATIC

Predeveloped:



Mitigated:

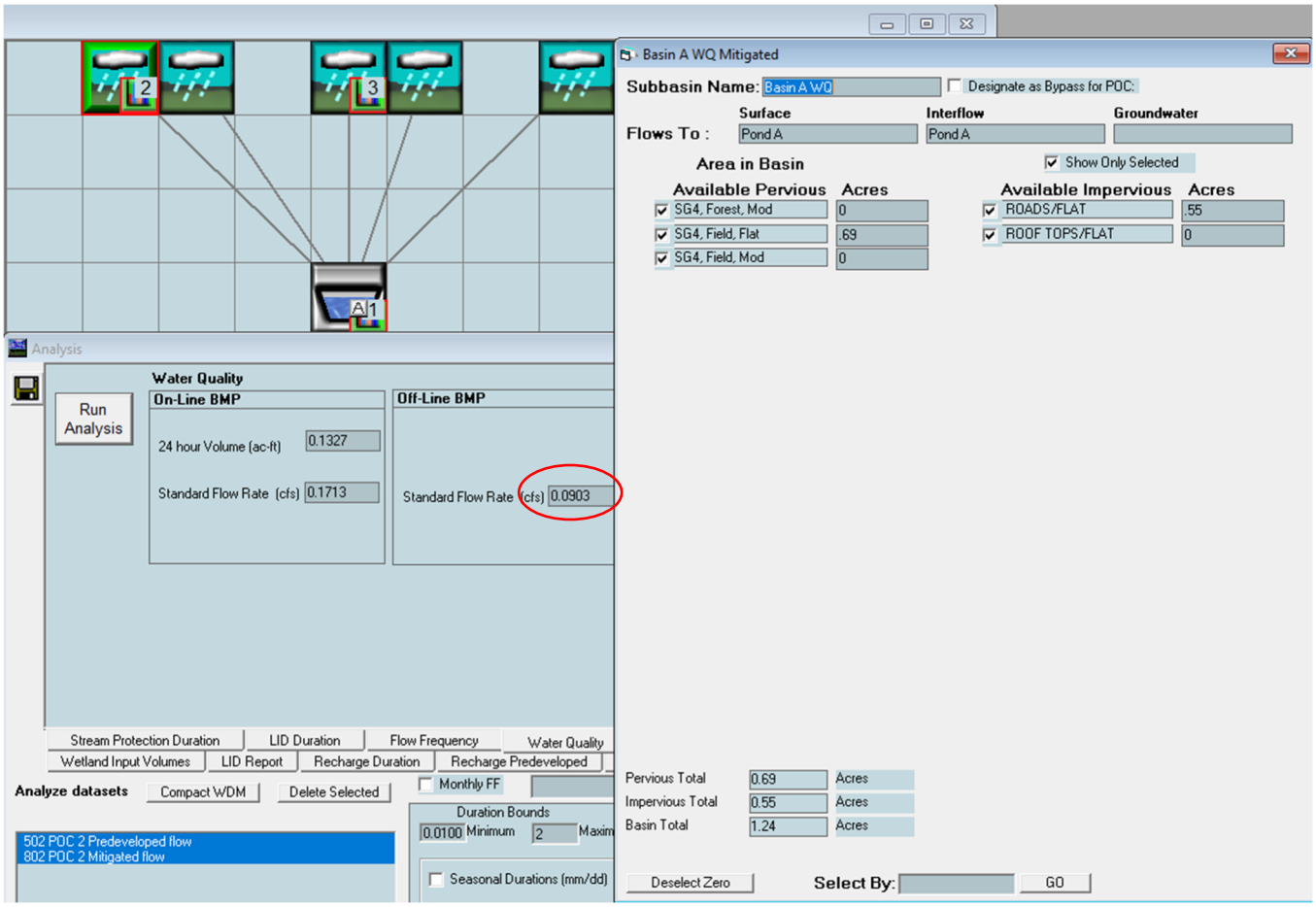


Water Quality

BASIN A:

WQ = 0.0903 CFS ~ (3) 27" PHOSPHOSORB CARTRIDGE

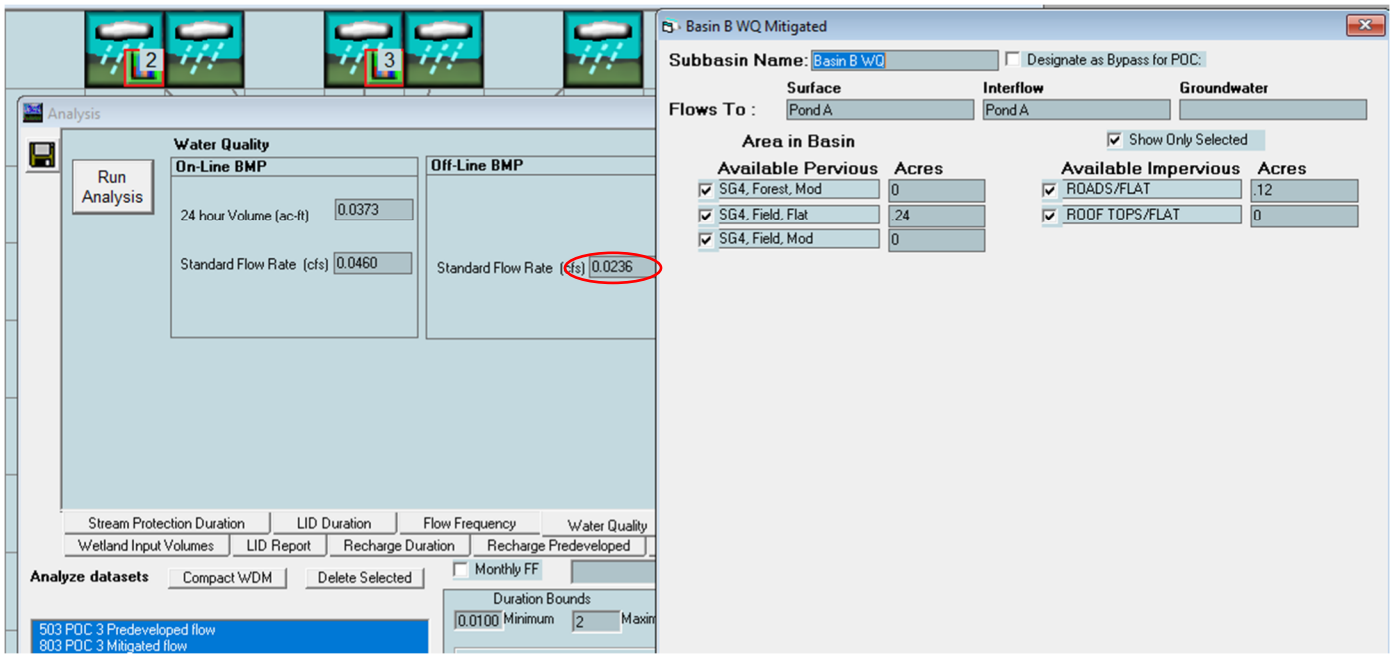
(3*0.0420 = 0.1260 CFS CAPACITY)



BASIN B:

WQ = 0.0236 CFS ~ (1) 18” PSORB CARTRIDGE

(1*0.0280 = 0.0280 CFS CAPACITY)



WWHM2012

PROJECT REPORT

General Model Information

WWHM2012 Project Name: 2452-Prelim WQ WWHM

Site Name:	Oliver Terrace
Site Address:	1004 SE Everett Road
City:	Camas
Report Date:	1/13/2026
Gage:	Lacamas
Data Start:	1948/10/01
Data End:	2008/09/30
Timestep:	15 Minute
Precip Scale:	1.300
Version Date:	2024/06/28
Version:	4.3.1

POC Thresholds

Low Flow Threshold for POC1:	50 Percent of the 2 Year
High Flow Threshold for POC1:	50 Year
Low Flow Threshold for POC2:	50 Percent of the 2 Year
High Flow Threshold for POC2:	50 Year
Low Flow Threshold for POC3:	50 Percent of the 2 Year
High Flow Threshold for POC3:	50 Year

Landuse Basin Data

Predeveloped Land Use

PREDEVELOPED

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
SG4, Forest, Mod	3.22
Pervious Total	3.22
Impervious Land Use	acre
Impervious Total	0
Basin Total	3.22

Element Flow Componants:

Surface	Interflow	Groundwater

Componant Flows To:

POC 1	POC 1

Dummy WQ Basin A

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
SG4, Field, Flat	0.69
Pervious Total	0.69

Impervious Land Use	acre
ROADS FLAT	0.55
Impervious Total	0.55
Basin Total	1.24

Element Flow Componants:

Surface	Interflow	Groundwater
Componant Flows To:		
POC 2	POC 2	

Dummy Basin B WQ

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
SG4, Field, Flat	0.24
Pervious Total	0.24

Impervious Land Use	acre
ROADS FLAT	0.12
Impervious Total	0.12
Basin Total	0.36

Element Flow Componants:

Surface	Interflow	Groundwater

Componant Flows To:

POC 3	POC 3

Mitigated Land Use

Basin A WQ

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
SG4, Field, Flat	0.69
Pervious Total	0.69

Impervious Land Use	acre
ROADS FLAT	0.55
Impervious Total	0.55
Basin Total	1.24

Element Flow Componants:

Surface	Interflow	Groundwater
Componant Flows To:		
Pond A	POC 2	POC 2

Basin B WQ

Bypass: No

GroundWater: No

Pervious Land Use	acre
SG4, Field, Flat	0.24
Pervious Total	0.24

Impervious Land Use	acre
ROADS FLAT	0.12
Impervious Total	0.12
Basin Total	0.36

Element Flow Componants:

Surface	Interflow	Groundwater

Componant Flows To:

Pond A	POC 3	POC 3

C (Excluding Pond)

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
SG4, Field, Mod	0.33
Pervious Total	0.33

Impervious Land Use	acre
ROADS FLAT	0.03
Impervious Total	0.03
Basin Total	0.36

Element Flow Componants:

Surface	Interflow	Groundwater

Componant Flows To:

Pond A	Pond A

Basin A Non Pollution

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
Pervious Total	0
Impervious Land Use	acre
ROOF TOPS FLAT	0.71
Impervious Total	0.71
Basin Total	0.71

Element Flow Componants:

Surface	Interflow	Groundwater

Componant Flows To:

Pond A	Pond A

Basin B Non Pollution

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
Pervious Total	0
Impervious Land Use	acre
ROADS FLAT	0.36
Impervious Total	0.36
Basin Total	0.36

Element Flow Componants:

Surface	Interflow	Groundwater

Componant Flows To:

Pond A	Pond A

Routing Elements
Predeveloped Routing

Mitigated Routing

Pond A

Bottom Length: 53.00 ft.
Bottom Width: 49.00 ft.
Depth: 6 ft.
Volume at riser head: 0.3685 acre-feet.
Side slope 1: 3 To 1
Side slope 2: 3 To 1
Side slope 3: 3 To 1
Side slope 4: 3 To 1
Discharge Structure
Riser Height: 4 ft.
Riser Diameter: 12 in.
Orifice 1 Diameter: 1.200 in. Elevation:0 ft.
Orifice 2 Diameter: 2.200 in. Elevation:3.75 ft.
Element Outlets:
Outlet 1 Outlet 2
Outlet Flows To:

Pond Hydraulic Table

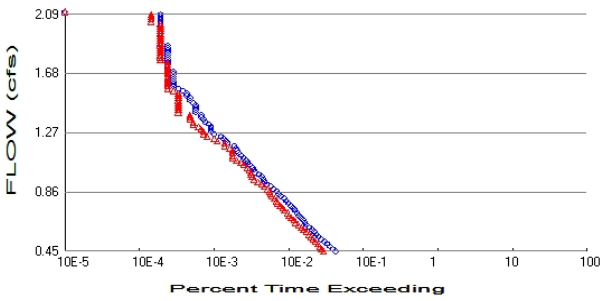
Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.059	0.000	0.000	0.000
0.0667	0.060	0.004	0.010	0.000
0.1333	0.061	0.008	0.014	0.000
0.2000	0.062	0.012	0.017	0.000
0.2667	0.063	0.016	0.020	0.000
0.3333	0.064	0.020	0.022	0.000
0.4000	0.065	0.025	0.024	0.000
0.4667	0.066	0.029	0.026	0.000
0.5333	0.067	0.033	0.028	0.000
0.6000	0.068	0.038	0.030	0.000
0.6667	0.069	0.043	0.031	0.000
0.7333	0.070	0.047	0.033	0.000
0.8000	0.071	0.052	0.035	0.000
0.8667	0.072	0.057	0.036	0.000
0.9333	0.073	0.062	0.037	0.000
1.0000	0.074	0.066	0.039	0.000
1.0667	0.075	0.071	0.040	0.000
1.1333	0.076	0.077	0.041	0.000
1.2000	0.077	0.082	0.042	0.000
1.2667	0.078	0.087	0.044	0.000
1.3333	0.079	0.092	0.045	0.000
1.4000	0.080	0.098	0.046	0.000
1.4667	0.082	0.103	0.047	0.000
1.5333	0.083	0.108	0.048	0.000
1.6000	0.084	0.114	0.049	0.000
1.6667	0.085	0.120	0.050	0.000
1.7333	0.086	0.125	0.051	0.000
1.8000	0.087	0.131	0.052	0.000
1.8667	0.088	0.137	0.053	0.000
1.9333	0.089	0.143	0.054	0.000
2.0000	0.091	0.149	0.055	0.000
2.0667	0.092	0.155	0.056	0.000
2.1333	0.093	0.161	0.057	0.000

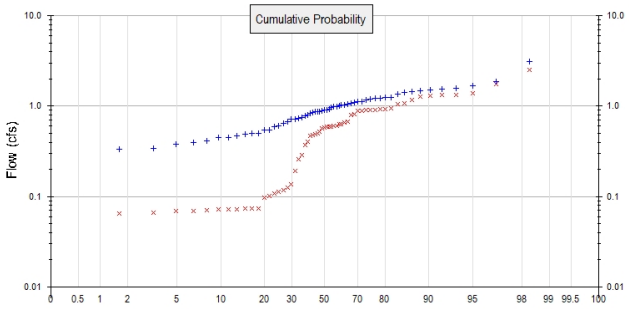
2.2000	0.094	0.168	0.058	0.000
2.2667	0.095	0.174	0.058	0.000
2.3333	0.096	0.180	0.059	0.000
2.4000	0.098	0.187	0.060	0.000
2.4667	0.099	0.193	0.061	0.000
2.5333	0.100	0.200	0.062	0.000
2.6000	0.101	0.207	0.063	0.000
2.6667	0.103	0.214	0.063	0.000
2.7333	0.104	0.221	0.064	0.000
2.8000	0.105	0.228	0.065	0.000
2.8667	0.106	0.235	0.066	0.000
2.9333	0.107	0.242	0.066	0.000
3.0000	0.109	0.249	0.067	0.000
3.0667	0.110	0.256	0.068	0.000
3.1333	0.111	0.264	0.069	0.000
3.2000	0.113	0.271	0.069	0.000
3.2667	0.114	0.279	0.070	0.000
3.3333	0.115	0.287	0.071	0.000
3.4000	0.116	0.294	0.072	0.000
3.4667	0.118	0.302	0.072	0.000
3.5333	0.119	0.310	0.073	0.000
3.6000	0.120	0.318	0.074	0.000
3.6667	0.122	0.326	0.074	0.000
3.7333	0.123	0.334	0.075	0.000
3.8000	0.124	0.343	0.105	0.000
3.8667	0.126	0.351	0.121	0.000
3.9333	0.127	0.359	0.133	0.000
4.0000	0.129	0.368	0.143	0.000
4.0667	0.130	0.377	0.334	0.000
4.1333	0.131	0.385	0.670	0.000
4.2000	0.133	0.394	1.075	0.000
4.2667	0.134	0.403	1.493	0.000
4.3333	0.136	0.412	1.865	0.000
4.4000	0.137	0.421	2.147	0.000
4.4667	0.138	0.431	2.332	0.000
4.5333	0.140	0.440	2.499	0.000
4.6000	0.141	0.449	2.644	0.000
4.6667	0.143	0.459	2.781	0.000
4.7333	0.144	0.468	2.912	0.000
4.8000	0.146	0.478	3.037	0.000
4.8667	0.147	0.488	3.157	0.000
4.9333	0.149	0.498	3.272	0.000
5.0000	0.150	0.508	3.383	0.000
5.0667	0.152	0.518	3.491	0.000
5.1333	0.153	0.528	3.596	0.000
5.2000	0.155	0.538	3.697	0.000
5.2667	0.156	0.549	3.796	0.000
5.3333	0.158	0.559	3.892	0.000
5.4000	0.159	0.570	3.986	0.000
5.4667	0.161	0.580	4.077	0.000
5.5333	0.162	0.591	4.167	0.000
5.6000	0.164	0.602	4.255	0.000
5.6667	0.165	0.613	4.341	0.000
5.7333	0.167	0.624	4.425	0.000
5.8000	0.168	0.635	4.507	0.000
5.8667	0.170	0.647	4.588	0.000
5.9333	0.172	0.658	4.668	0.000
6.0000	0.173	0.670	4.747	0.000

6.0667	0.175	0.681	4.824	0.000

Analysis Results

POC 1





\+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1
Total Pervious Area: 3.22
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 1.26
Total Impervious Area: 1.77

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.905769
5 year	1.394922
10 year	1.65891
25 year	1.926593
50 year	2.085275
100 year	2.215546

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.387829
5 year	0.945342
10 year	1.46101
25 year	2.272597
50 year	2.986901
100 year	3.788975

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1949	0.681	0.633
1950	0.878	0.596
1951	1.190	0.638
1952	0.715	0.655
1953	0.974	0.890
1954	1.490	0.592
1955	0.748	0.071
1956	1.373	1.315
1957	1.214	0.481
1958	0.901	0.118

1959	0.545	0.138
1960	0.500	0.072
1961	1.252	1.160
1962	0.876	0.193
1963	0.980	0.288
1964	0.909	0.680
1965	0.780	0.903
1966	1.091	0.573
1967	0.986	0.101
1968	1.179	0.607
1969	1.129	0.369
1970	3.123	2.545
1971	0.499	0.097
1972	0.796	0.496
1973	0.828	0.943
1974	1.254	1.345
1975	0.713	0.519
1976	1.077	0.491
1977	0.032	0.071
1978	1.568	1.403
1979	1.023	0.074
1980	0.592	0.612
1981	1.404	1.318
1982	0.929	0.909
1983	1.699	0.805
1984	0.548	0.107
1985	0.395	0.408
1986	0.489	0.069
1987	0.864	0.819
1988	0.413	0.471
1989	0.446	0.065
1990	0.380	0.256
1991	1.003	0.070
1992	1.037	0.074
1993	1.231	0.113
1994	0.889	0.915
1995	0.734	1.053
1996	1.544	1.760
1997	1.882	1.280
1998	1.521	0.074
1999	1.061	0.882
2000	0.607	0.067
2001	0.335	0.062
2002	1.463	0.929
2003	1.114	1.079
2004	0.340	0.073
2005	0.453	0.126
2006	0.858	0.576
2007	0.468	0.930
2008	0.646	0.589

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	3.1232	2.5454
2	1.8817	1.7598
3	1.6986	1.4035
4	1.5681	1.3452

5	1.5439	1.3181
6	1.5206	1.3150
7	1.4897	1.2795
8	1.4630	1.1602
9	1.4044	1.0787
10	1.3730	1.0532
11	1.2541	0.9430
12	1.2524	0.9298
13	1.2314	0.9290
14	1.2139	0.9148
15	1.1904	0.9087
16	1.1794	0.9032
17	1.1289	0.8902
18	1.1140	0.8817
19	1.0908	0.8189
20	1.0767	0.8054
21	1.0605	0.6801
22	1.0374	0.6551
23	1.0228	0.6379
24	1.0030	0.6329
25	0.9857	0.6122
26	0.9800	0.6069
27	0.9737	0.5962
28	0.9290	0.5923
29	0.9094	0.5892
30	0.9009	0.5763
31	0.8888	0.5734
32	0.8782	0.5189
33	0.8757	0.4956
34	0.8638	0.4911
35	0.8584	0.4812
36	0.8284	0.4709
37	0.7963	0.4078
38	0.7798	0.3687
39	0.7482	0.2879
40	0.7339	0.2562
41	0.7147	0.1934
42	0.7132	0.1379
43	0.6809	0.1256
44	0.6463	0.1180
45	0.6067	0.1127
46	0.5923	0.1072
47	0.5482	0.1007
48	0.5448	0.0973
49	0.5005	0.0741
50	0.4985	0.0738
51	0.4893	0.0736
52	0.4677	0.0728
53	0.4529	0.0723
54	0.4461	0.0714
55	0.4126	0.0710
56	0.3950	0.0695
57	0.3798	0.0695
58	0.3402	0.0667
59	0.3348	0.0651
60	0.0321	0.0622

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.4529	898	615	68	Pass
0.4694	823	580	70	Pass
0.4859	758	548	72	Pass
0.5024	688	515	74	Pass
0.5188	628	475	75	Pass
0.5353	576	446	77	Pass
0.5518	537	423	78	Pass
0.5683	494	392	79	Pass
0.5848	458	360	78	Pass
0.6013	431	330	76	Pass
0.6178	396	308	77	Pass
0.6343	364	283	77	Pass
0.6508	347	259	74	Pass
0.6672	324	248	76	Pass
0.6837	306	225	73	Pass
0.7002	287	211	73	Pass
0.7167	271	204	75	Pass
0.7332	253	184	72	Pass
0.7497	238	174	73	Pass
0.7662	226	161	71	Pass
0.7827	211	151	71	Pass
0.7991	193	144	74	Pass
0.8156	182	134	73	Pass
0.8321	165	124	75	Pass
0.8486	152	119	78	Pass
0.8651	145	117	80	Pass
0.8816	131	110	83	Pass
0.8981	120	98	81	Pass
0.9146	107	91	85	Pass
0.9311	100	81	81	Pass
0.9475	96	72	75	Pass
0.9640	91	68	74	Pass
0.9805	84	65	77	Pass
0.9970	75	65	86	Pass
1.0135	71	62	87	Pass
1.0300	69	59	85	Pass
1.0465	62	52	83	Pass
1.0630	59	48	81	Pass
1.0795	56	42	75	Pass
1.0959	52	38	73	Pass
1.1124	49	37	75	Pass
1.1289	44	37	84	Pass
1.1454	43	37	86	Pass
1.1619	41	34	82	Pass
1.1784	39	29	74	Pass
1.1949	32	29	90	Pass
1.2114	30	23	76	Pass
1.2279	28	21	75	Pass
1.2443	26	17	65	Pass
1.2608	21	15	71	Pass
1.2773	19	15	78	Pass
1.2938	19	14	73	Pass
1.3103	19	13	68	Pass

1.3268	18	11	61	Pass
1.3433	16	11	68	Pass
1.3598	15	10	66	Pass
1.3763	14	10	71	Pass
1.3927	14	10	71	Pass
1.4092	12	7	58	Pass
1.4257	12	7	58	Pass
1.4422	12	7	58	Pass
1.4587	12	7	58	Pass
1.4752	11	7	63	Pass
1.4917	10	7	70	Pass
1.5082	10	7	70	Pass
1.5247	9	7	77	Pass
1.5411	9	7	77	Pass
1.5576	8	6	75	Pass
1.5741	7	5	71	Pass
1.5906	6	5	83	Pass
1.6071	6	5	83	Pass
1.6236	6	5	83	Pass
1.6401	6	5	83	Pass
1.6566	6	5	83	Pass
1.6731	6	5	83	Pass
1.6895	6	5	83	Pass
1.7060	5	5	100	Pass
1.7225	5	5	100	Pass
1.7390	5	5	100	Pass
1.7555	5	5	100	Pass
1.7720	5	4	80	Pass
1.7885	5	4	80	Pass
1.8050	5	4	80	Pass
1.8215	5	4	80	Pass
1.8379	5	4	80	Pass
1.8544	5	4	80	Pass
1.8709	5	4	80	Pass
1.8874	4	4	100	Pass
1.9039	4	4	100	Pass
1.9204	4	4	100	Pass
1.9369	4	4	100	Pass
1.9534	4	4	100	Pass
1.9699	4	4	100	Pass
1.9863	4	4	100	Pass
2.0028	4	4	100	Pass
2.0193	4	4	100	Pass
2.0358	4	3	75	Pass
2.0523	4	3	75	Pass
2.0688	4	3	75	Pass
2.0853	4	3	75	Pass

Water Quality

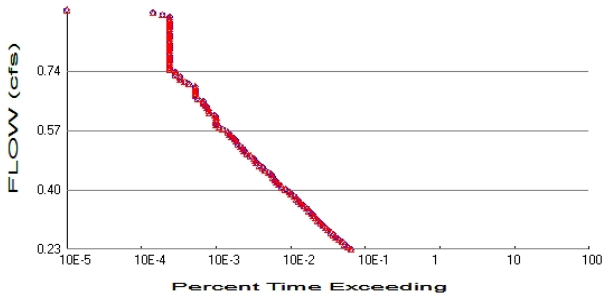
Water Quality BMP Flow and Volume for POC #1

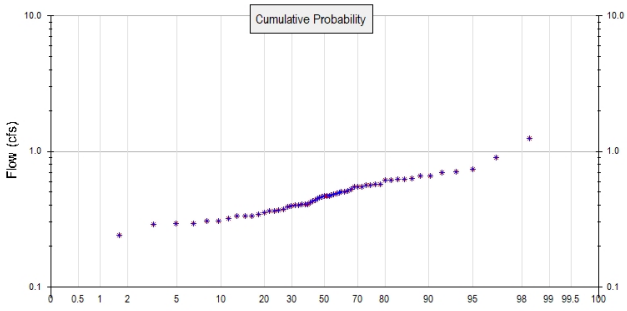
On-line facility volume:	0 acre-feet
On-line facility target flow:	0 cfs.
Adjusted for 15 min:	0 cfs.
Off-line facility target flow:	0 cfs.
Adjusted for 15 min:	0 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Pond A POC	☐	431.19			☐	0.00			
Total Volume Infiltrated		431.19	0.00	0.00		0.00	0.00	0%	No Treat. Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Passed

POC 2





\+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #2
Total Pervious Area: 0.69
Total Impervious Area: 0.55

Mitigated Landuse Totals for POC #2
Total Pervious Area: 0.69
Total Impervious Area: 0.55

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #2

Return Period	**Flow(cfs)**
2 year	0.453534
5 year	0.59897
10 year	0.694853
25 year	0.815989
50 year	0.906427
100 year	0.99718

Flow Frequency Return Periods for Mitigated. POC #2

Return Period	**Flow(cfs)**
2 year	0.453534
5 year	0.59897
10 year	0.694853
25 year	0.815989
50 year	0.906427
100 year	0.99718

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #2

Year	**Predeveloped**	**Mitigated**
1949	0.470	0.470
1950	0.407	0.407
1951	0.499	0.499
1952	0.472	0.472
1953	0.465	0.465
1954	0.659	0.659
1955	0.354	0.354
1956	0.572	0.572
1957	0.563	0.563
1958	0.563	0.563
1959	0.306	0.306

1960	0.295	0.295
1961	0.548	0.548
1962	0.453	0.453
1963	0.494	0.494
1964	0.400	0.400
1965	0.409	0.409
1966	0.512	0.512
1967	0.480	0.480
1968	0.551	0.551
1969	0.572	0.572
1970	1.250	1.250
1971	0.288	0.288
1972	0.391	0.391
1973	0.434	0.434
1974	0.545	0.545
1975	0.342	0.342
1976	0.451	0.451
1977	0.178	0.178
1978	0.656	0.656
1979	0.634	0.634
1980	0.335	0.335
1981	0.616	0.616
1982	0.471	0.471
1983	0.697	0.697
1984	0.305	0.305
1985	0.362	0.362
1986	0.369	0.369
1987	0.397	0.397
1988	0.335	0.335
1989	0.374	0.374
1990	0.334	0.334
1991	0.522	0.522
1992	0.502	0.502
1993	0.618	0.618
1994	0.401	0.401
1995	0.416	0.416
1996	0.739	0.739
1997	0.901	0.901
1998	0.706	0.706
1999	0.460	0.460
2000	0.294	0.294
2001	0.241	0.241
2002	0.617	0.617
2003	0.486	0.486
2004	0.321	0.321
2005	0.365	0.365
2006	0.433	0.433
2007	0.406	0.406
2008	0.624	0.624

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #2

Rank	Predeveloped	Mitigated
1	1.2504	1.2504
2	0.9009	0.9009
3	0.7386	0.7386
4	0.7061	0.7061
5	0.6974	0.6974

6	0.6592	0.6592
7	0.6564	0.6564
8	0.6338	0.6338
9	0.6240	0.6240
10	0.6177	0.6177
11	0.6166	0.6166
12	0.6158	0.6158
13	0.5722	0.5722
14	0.5716	0.5716
15	0.5633	0.5633
16	0.5626	0.5626
17	0.5506	0.5506
18	0.5478	0.5478
19	0.5450	0.5450
20	0.5217	0.5217
21	0.5124	0.5124
22	0.5020	0.5020
23	0.4992	0.4992
24	0.4939	0.4939
25	0.4860	0.4860
26	0.4795	0.4795
27	0.4720	0.4720
28	0.4714	0.4714
29	0.4701	0.4701
30	0.4651	0.4651
31	0.4604	0.4604
32	0.4529	0.4529
33	0.4512	0.4512
34	0.4336	0.4336
35	0.4331	0.4331
36	0.4164	0.4164
37	0.4089	0.4089
38	0.4067	0.4067
39	0.4064	0.4064
40	0.4010	0.4010
41	0.3999	0.3999
42	0.3967	0.3967
43	0.3915	0.3915
44	0.3743	0.3743
45	0.3691	0.3691
46	0.3647	0.3647
47	0.3624	0.3624
48	0.3538	0.3538
49	0.3421	0.3421
50	0.3350	0.3350
51	0.3347	0.3347
52	0.3338	0.3338
53	0.3210	0.3210
54	0.3057	0.3057
55	0.3049	0.3049
56	0.2947	0.2947
57	0.2939	0.2939
58	0.2881	0.2881
59	0.2409	0.2409
60	0.1781	0.1781

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.2268	1339	1339	100	Pass
0.2336	1228	1228	100	Pass
0.2405	1118	1118	100	Pass
0.2474	1015	1015	100	Pass
0.2542	925	925	100	Pass
0.2611	849	849	100	Pass
0.2680	791	791	100	Pass
0.2748	726	726	100	Pass
0.2817	661	661	100	Pass
0.2886	613	613	100	Pass
0.2954	565	565	100	Pass
0.3023	528	528	100	Pass
0.3092	486	486	100	Pass
0.3160	451	451	100	Pass
0.3229	423	423	100	Pass
0.3297	401	401	100	Pass
0.3366	368	368	100	Pass
0.3435	346	346	100	Pass
0.3503	313	313	100	Pass
0.3572	291	291	100	Pass
0.3641	271	271	100	Pass
0.3709	253	253	100	Pass
0.3778	236	236	100	Pass
0.3847	214	214	100	Pass
0.3915	200	200	100	Pass
0.3984	179	179	100	Pass
0.4053	159	159	100	Pass
0.4121	145	145	100	Pass
0.4190	136	136	100	Pass
0.4259	128	128	100	Pass
0.4327	123	123	100	Pass
0.4396	116	116	100	Pass
0.4465	107	107	100	Pass
0.4533	94	94	100	Pass
0.4602	90	90	100	Pass
0.4671	81	81	100	Pass
0.4739	73	73	100	Pass
0.4808	70	70	100	Pass
0.4876	67	67	100	Pass
0.4945	61	61	100	Pass
0.5014	55	55	100	Pass
0.5082	50	50	100	Pass
0.5151	48	48	100	Pass
0.5220	45	45	100	Pass
0.5288	41	41	100	Pass
0.5357	39	39	100	Pass
0.5426	37	37	100	Pass
0.5494	34	34	100	Pass
0.5563	32	32	100	Pass
0.5632	30	30	100	Pass
0.5700	26	26	100	Pass
0.5769	23	23	100	Pass
0.5838	21	21	100	Pass

0.5906	21	21	100	Pass
0.5975	21	21	100	Pass
0.6044	21	21	100	Pass
0.6112	20	20	100	Pass
0.6181	17	17	100	Pass
0.6250	17	17	100	Pass
0.6318	16	16	100	Pass
0.6387	15	15	100	Pass
0.6455	14	14	100	Pass
0.6524	14	14	100	Pass
0.6593	12	12	100	Pass
0.6661	11	11	100	Pass
0.6730	11	11	100	Pass
0.6799	11	11	100	Pass
0.6867	11	11	100	Pass
0.6936	11	11	100	Pass
0.7005	9	9	100	Pass
0.7073	8	8	100	Pass
0.7142	7	7	100	Pass
0.7211	7	7	100	Pass
0.7279	6	6	100	Pass
0.7348	6	6	100	Pass
0.7417	5	5	100	Pass
0.7485	5	5	100	Pass
0.7554	5	5	100	Pass
0.7623	5	5	100	Pass
0.7691	5	5	100	Pass
0.7760	5	5	100	Pass
0.7829	5	5	100	Pass
0.7897	5	5	100	Pass
0.7966	5	5	100	Pass
0.8034	5	5	100	Pass
0.8103	5	5	100	Pass
0.8172	5	5	100	Pass
0.8240	5	5	100	Pass
0.8309	5	5	100	Pass
0.8378	5	5	100	Pass
0.8446	5	5	100	Pass
0.8515	5	5	100	Pass
0.8584	5	5	100	Pass
0.8652	5	5	100	Pass
0.8721	5	5	100	Pass
0.8790	5	5	100	Pass
0.8858	5	5	100	Pass
0.8927	5	5	100	Pass
0.8996	4	4	100	Pass
0.9064	3	3	100	Pass

Water Quality

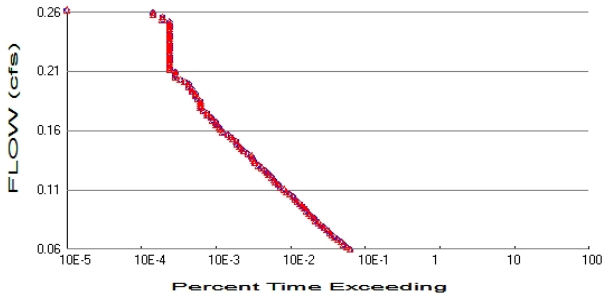
Water Quality BMP Flow and Volume for POC #2

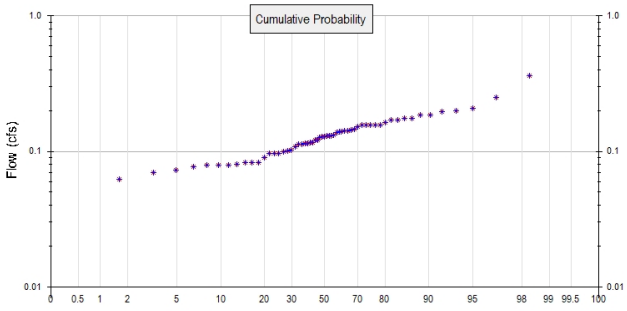
On-line facility volume:	0.1327 acre-feet
On-line facility target flow:	0.1713 cfs.
Adjusted for 15 min:	0.1713 cfs.
Off-line facility target flow:	0.0903 cfs.
Adjusted for 15 min:	0.0903 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Total Volume Infiltrated		0.00	0.00	0.00		0.00	0.00	0%	No Treat. Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Passed

POC 3





\+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #3
Total Pervious Area: 0.24
Total Impervious Area: 0.12

Mitigated Landuse Totals for POC #3
Total Pervious Area: 0.24
Total Impervious Area: 0.12

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #3

Return Period	**Flow(cfs)**
2 year	0.12356
5 year	0.167751
10 year	0.196147
25 year	0.231147
50 year	0.25665
100 year	0.28172

Flow Frequency Return Periods for Mitigated. POC #3

Return Period	**Flow(cfs)**
2 year	0.12356
5 year	0.167751
10 year	0.196147
25 year	0.231147
50 year	0.25665
100 year	0.28172

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #3

Year	**Predeveloped**	**Mitigated**
1949	0.103	0.103
1950	0.115	0.115
1951	0.142	0.142
1952	0.128	0.128
1953	0.130	0.130
1954	0.184	0.184
1955	0.099	0.099
1956	0.163	0.163
1957	0.157	0.157
1958	0.153	0.153
1959	0.082	0.082

1960	0.080	0.080
1961	0.156	0.156
1962	0.127	0.127
1963	0.139	0.139
1964	0.114	0.114
1965	0.115	0.115
1966	0.145	0.145
1967	0.132	0.132
1968	0.147	0.147
1969	0.156	0.156
1970	0.359	0.359
1971	0.077	0.077
1972	0.101	0.101
1973	0.122	0.122
1974	0.156	0.156
1975	0.096	0.096
1976	0.128	0.128
1977	0.039	0.039
1978	0.186	0.186
1979	0.170	0.170
1980	0.089	0.089
1981	0.174	0.174
1982	0.130	0.130
1983	0.198	0.198
1984	0.083	0.083
1985	0.096	0.096
1986	0.083	0.083
1987	0.112	0.112
1988	0.079	0.079
1989	0.096	0.096
1990	0.073	0.073
1991	0.142	0.142
1992	0.139	0.139
1993	0.171	0.171
1994	0.114	0.114
1995	0.116	0.116
1996	0.209	0.209
1997	0.249	0.249
1998	0.195	0.195
1999	0.131	0.131
2000	0.080	0.080
2001	0.062	0.062
2002	0.176	0.176
2003	0.139	0.139
2004	0.070	0.070
2005	0.080	0.080
2006	0.122	0.122
2007	0.109	0.109
2008	0.157	0.157

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #3

Rank	Predeveloped	Mitigated
1	0.3590	0.3590
2	0.2488	0.2488
3	0.2089	0.2089
4	0.1979	0.1979
5	0.1952	0.1952

6	0.1862	0.1862
7	0.1844	0.1844
8	0.1761	0.1761
9	0.1742	0.1742
10	0.1711	0.1711
11	0.1699	0.1699
12	0.1626	0.1626
13	0.1574	0.1574
14	0.1568	0.1568
15	0.1562	0.1562
16	0.1559	0.1559
17	0.1558	0.1558
18	0.1527	0.1527
19	0.1468	0.1468
20	0.1446	0.1446
21	0.1425	0.1425
22	0.1419	0.1419
23	0.1388	0.1388
24	0.1387	0.1387
25	0.1386	0.1386
26	0.1321	0.1321
27	0.1306	0.1306
28	0.1303	0.1303
29	0.1301	0.1301
30	0.1284	0.1284
31	0.1281	0.1281
32	0.1268	0.1268
33	0.1218	0.1218
34	0.1215	0.1215
35	0.1156	0.1156
36	0.1154	0.1154
37	0.1146	0.1146
38	0.1138	0.1138
39	0.1136	0.1136
40	0.1122	0.1122
41	0.1086	0.1086
42	0.1026	0.1026
43	0.1006	0.1006
44	0.0992	0.0992
45	0.0963	0.0963
46	0.0962	0.0962
47	0.0961	0.0961
48	0.0894	0.0894
49	0.0829	0.0829
50	0.0826	0.0826
51	0.0823	0.0823
52	0.0803	0.0803
53	0.0796	0.0796
54	0.0795	0.0795
55	0.0792	0.0792
56	0.0771	0.0771
57	0.0729	0.0729
58	0.0701	0.0701
59	0.0624	0.0624
60	0.0389	0.0389

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0618	1310	1310	100	Pass
0.0637	1178	1178	100	Pass
0.0657	1082	1082	100	Pass
0.0677	992	992	100	Pass
0.0697	902	902	100	Pass
0.0716	821	821	100	Pass
0.0736	750	750	100	Pass
0.0756	696	696	100	Pass
0.0775	640	640	100	Pass
0.0795	589	589	100	Pass
0.0815	541	541	100	Pass
0.0834	501	501	100	Pass
0.0854	457	457	100	Pass
0.0874	428	428	100	Pass
0.0893	393	393	100	Pass
0.0913	367	367	100	Pass
0.0933	345	345	100	Pass
0.0952	323	323	100	Pass
0.0972	301	301	100	Pass
0.0992	280	280	100	Pass
0.1011	255	255	100	Pass
0.1031	240	240	100	Pass
0.1051	225	225	100	Pass
0.1071	204	204	100	Pass
0.1090	183	183	100	Pass
0.1110	171	171	100	Pass
0.1130	153	153	100	Pass
0.1149	142	142	100	Pass
0.1169	130	130	100	Pass
0.1189	126	126	100	Pass
0.1208	118	118	100	Pass
0.1228	107	107	100	Pass
0.1248	101	101	100	Pass
0.1267	95	95	100	Pass
0.1287	86	86	100	Pass
0.1307	78	78	100	Pass
0.1326	69	69	100	Pass
0.1346	67	67	100	Pass
0.1366	64	64	100	Pass
0.1385	63	63	100	Pass
0.1405	56	56	100	Pass
0.1425	49	49	100	Pass
0.1445	46	46	100	Pass
0.1464	43	43	100	Pass
0.1484	40	40	100	Pass
0.1504	39	39	100	Pass
0.1523	35	35	100	Pass
0.1543	33	33	100	Pass
0.1563	30	30	100	Pass
0.1582	26	26	100	Pass
0.1602	24	24	100	Pass
0.1622	23	23	100	Pass
0.1641	21	21	100	Pass

0.1661	21	21	100	Pass
0.1681	19	19	100	Pass
0.1700	18	18	100	Pass
0.1720	16	16	100	Pass
0.1740	16	16	100	Pass
0.1759	14	14	100	Pass
0.1779	13	13	100	Pass
0.1799	13	13	100	Pass
0.1819	13	13	100	Pass
0.1838	13	13	100	Pass
0.1858	12	12	100	Pass
0.1878	11	11	100	Pass
0.1897	11	11	100	Pass
0.1917	10	10	100	Pass
0.1937	10	10	100	Pass
0.1956	9	9	100	Pass
0.1976	9	9	100	Pass
0.1996	8	8	100	Pass
0.2015	7	7	100	Pass
0.2035	6	6	100	Pass
0.2055	6	6	100	Pass
0.2074	6	6	100	Pass
0.2094	5	5	100	Pass
0.2114	5	5	100	Pass
0.2133	5	5	100	Pass
0.2153	5	5	100	Pass
0.2173	5	5	100	Pass
0.2193	5	5	100	Pass
0.2212	5	5	100	Pass
0.2232	5	5	100	Pass
0.2252	5	5	100	Pass
0.2271	5	5	100	Pass
0.2291	5	5	100	Pass
0.2311	5	5	100	Pass
0.2330	5	5	100	Pass
0.2350	5	5	100	Pass
0.2370	5	5	100	Pass
0.2389	5	5	100	Pass
0.2409	5	5	100	Pass
0.2429	5	5	100	Pass
0.2448	5	5	100	Pass
0.2468	5	5	100	Pass
0.2488	5	5	100	Pass
0.2507	4	4	100	Pass
0.2527	4	4	100	Pass
0.2547	3	3	100	Pass
0.2567	3	3	100	Pass

Water Quality

Water Quality BMP Flow and Volume for POC #3

On-line facility volume:	0.0373 acre-feet
On-line facility target flow:	0.046 cfs.
Adjusted for 15 min:	0.046 cfs.
Off-line facility target flow:	0.0236 cfs.
Adjusted for 15 min:	0.0236 cfs.

LID Report

LID Technique	Used for Treatment ?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality	Percent Water Quality Treated	Comment
Total Volume Infiltrated		0.00	0.00	0.00		0.00	0.00	0%	No Treat. Credit
Compliance with LID Standard 8% of 2-yr to 50% of 2-yr									Duration Analysis Result = Passed

Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

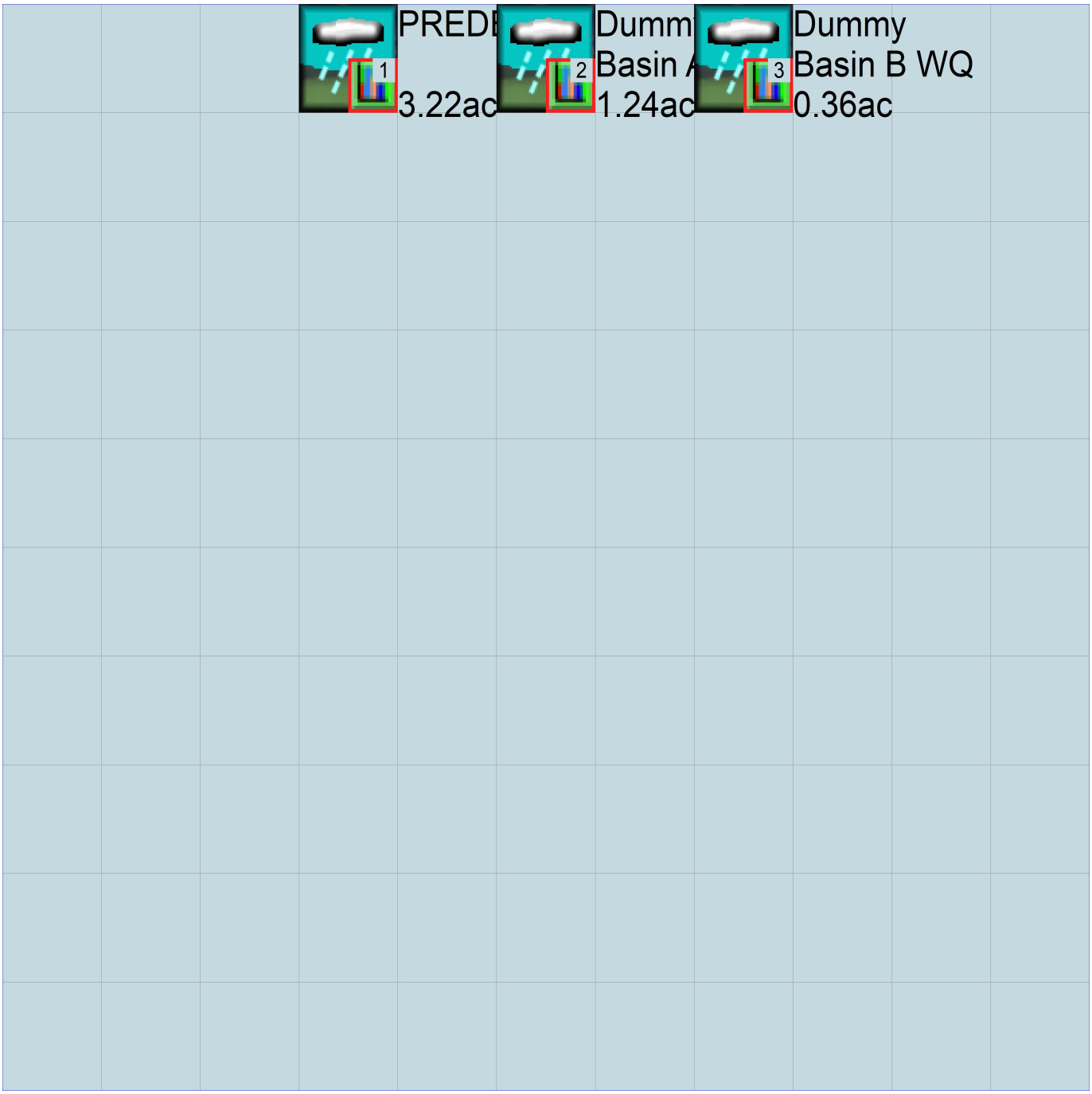
No PERLND changes have been made.

IMPLND Changes

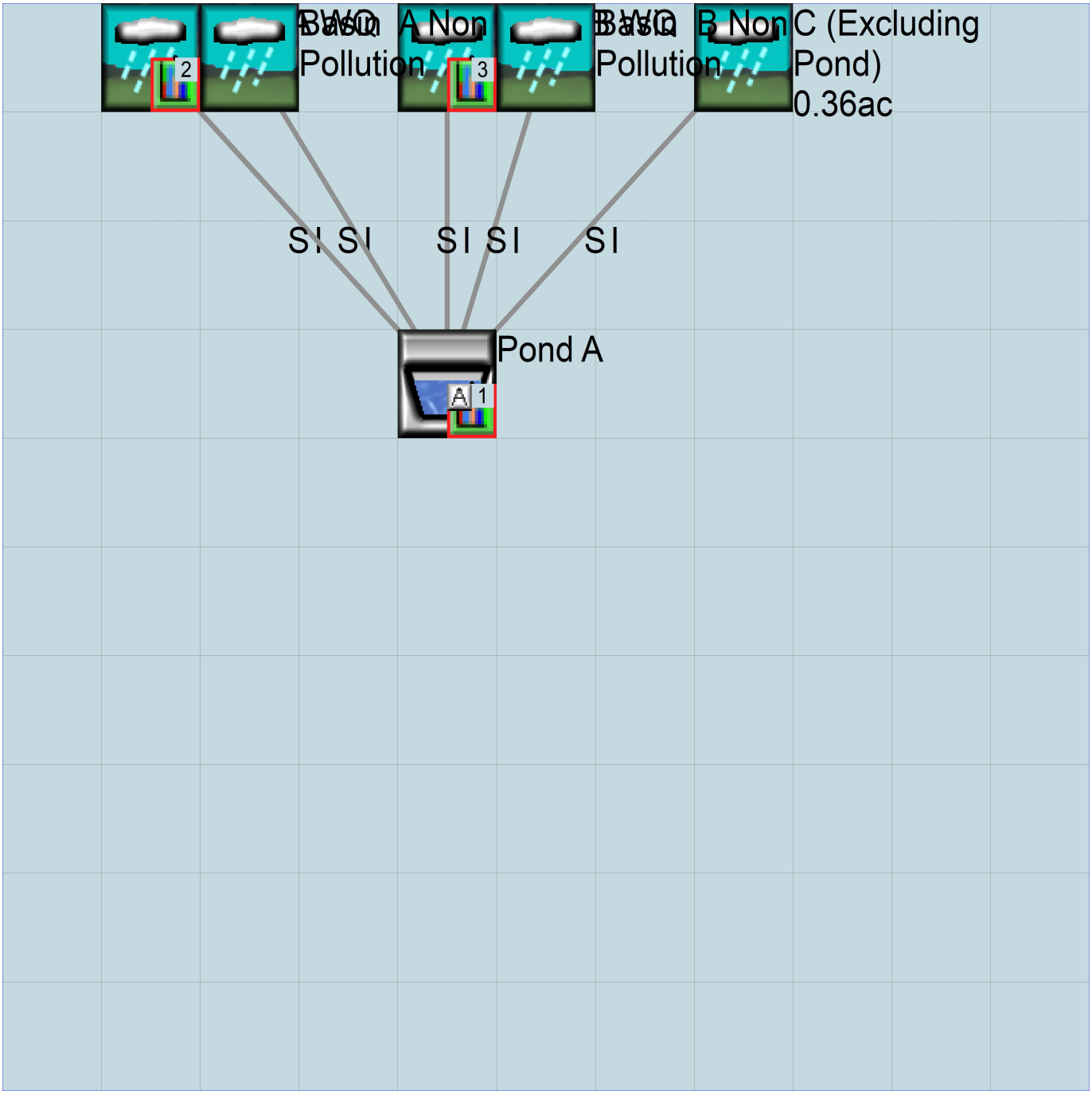
No IMPLND changes have been made.

Appendix

Predeveloped Schematic



Mitigated Schematic



Predeveloped UCI File

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RUN

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  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
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WDM         26   2452-Prelim WQ WWHM.wdm
MESSU       25   Pre2452-Prelim WQ WWHM.MES
            27   Pre2452-Prelim WQ WWHM.L61
            28   Pre2452-Prelim WQ WWHM.L62
            30   POC2452-Prelim WQ WWHM1.dat
            31   POC2452-Prelim WQ WWHM2.dat
            32   POC2452-Prelim WQ WWHM3.dat
END FILES

OPN SEQUENCE
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      PERLND      31
      IMPLND       1
      COPY       501
      COPY       502
      COPY       503
      DISPLY       1
      DISPLY       2
      DISPLY       3
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title----------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        PREDEVELOPED               MAX                    1    2   30    9
    2        Dummy WQ Basin A           MAX                    1    2   31    9
    3        Dummy Basin B WQ           MAX                    1    2   32    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  502         1    1
  503         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                          in  out           ***
   29     SG4, Forest, Mod        1    1    1    1   27    0
   31     SG4, Field, Flat        1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***
```

```
  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   29         0    0    1    0    0    0    0    0    0    0    0    0
   31         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags **************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   29         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   31         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   29         0    0    0    0    0    0    0    0    0    0    0
   31         0    0    0    0    0    0    0    0    0    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   29              0         6      0.04       400       0.1         0      0.96
   31              0         6      0.03       400      0.05         0      0.96
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   29              0         0         3         2         0         0         0
   31              0         0         3         2         0         0         0
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                              ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   29            0.2       0.4      0.35         2       0.4       0.7
   31           0.15       0.4       0.3         2       0.4       0.4
  END PWAT-PARM4

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
              ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS       AGWS      GWVS
   29              0         0         0         0       2.5          1         0
   31              0         0         0         0       2.5          1         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                     in  out           ***
    1      ROADS/FLAT              1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
    1         0    0    1    0    0    0
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
```

```
    1         0    0    4    0    0    4    1    9
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
    1         0    0    0    0    0
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
    1           400      0.01       0.1       0.1
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
    1             0         0
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
    1             0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                 <--Area-->     <-Target->   MBLK   ***
<Name>   #                 <-factor->     <Name>   #   Tbl#   ***
PREDEVELOPED***
PERLND  29                       3.22     COPY   501     12
PERLND  29                       3.22     COPY   501     13
Dummy WQ Basin A***
PERLND  31                       0.69     COPY   502     12
PERLND  31                       0.69     COPY   502     13
IMPLND   1                       0.55     COPY   502     15
Dummy Basin B WQ***
PERLND  31                       0.24     COPY   503     12
PERLND  31                       0.24     COPY   503     13
IMPLND   1                       0.12     COPY   503     15

******Routing******
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   48.4        DISPLY   1     INPUT  TIMSER 1
COPY   502 OUTPUT MEAN   1 1   48.4        DISPLY   2     INPUT  TIMSER 1
COPY   503 OUTPUT MEAN   1 1   48.4        DISPLY   3     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<----------------><---> User T-series  Engl Metr LKFG             ***
                                        in  out                             ***
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
```

```
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ****************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                    ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
           FG FG FG FG  possible  exit  *** possible  exit      possible  exit
            *  *  *  *    *  *  *  *  *       *  *  *  *  *        ***
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><-------->       ***
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                       ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1.3            PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.3            IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    0.8            PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    0.8            IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
COPY   501 OUTPUT MEAN   1 1     48.4      WDM    501 FLOW     ENGL      REPL
COPY   502 OUTPUT MEAN   1 1     48.4      WDM    502 FLOW     ENGL      REPL
COPY   503 OUTPUT MEAN   1 1     48.4      WDM    503 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>             <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13

  MASS-LINK       15
IMPLND     IWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   15


END MASS-LINK

END RUN
```

Mitigated UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1948 10 01        END    2008 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   2452-Prelim WQ WWHM.wdm
MESSU       25   Mit2452-Prelim WQ WWHM.MES
            27   Mit2452-Prelim WQ WWHM.L61
            28   Mit2452-Prelim WQ WWHM.L62
            31   POC2452-Prelim WQ WWHM2.dat
            32   POC2452-Prelim WQ WWHM3.dat
            30   POC2452-Prelim WQ WWHM1.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:15
      PERLND      31
      IMPLND       1
      PERLND      32
      IMPLND       4
      RCHRES       1
      COPY       502
      COPY       503
      COPY         1
      COPY       501
      DISPLY       2
      DISPLY       3
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title----------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    2        Basin A WQ                 MAX                    1    2   31    9
    3        Basin B WQ                 MAX                    1    2   32    9
    1        Pond A                     MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  502         1    1
  503         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                          in  out           ***
   31     SG4, Field, Flat        1    1    1    1   27    0
```

```
   32     SG4, Field, Mod         1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   31         0    0    1    0    0    0    0    0    0    0    0    0
   32         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags **************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   31         0    0    4    0    0    0    0    0    0    0    0    0    1    9
   32         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   31         0    0    0    0    0    0    0    0    0    0    0
   32         0    0    0    0    0    0    0    0    0    0    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   31              0         6      0.03       400      0.05         0      0.96
   32              0         6      0.03       400       0.1         0      0.96
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   31              0         0         3         2         0         0         0
   32              0         0         3         2         0         0         0
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                              ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   31          0.15       0.4       0.3         2       0.4       0.4
   32          0.15       0.4       0.3         2       0.4       0.4
  END PWAT-PARM4

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS       AGWS      GWVS
   31              0         0         0         0       2.5          1         0
   32              0         0         0         0       2.5          1         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                  in  out           ***
    1      ROADS/FLAT             1    1    1   27    0
    4      ROOF TOPS/FLAT         1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
    1         0    0    1    0    0    0
    4         0    0    1    0    0    0
```

```
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
    1         0    0    4    0    0    4    1    9
    4         0    0    4    0    0    0    1    9
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
    1         0    0    0    0    0
    4         0    0    0    0    0
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
    1            400      0.01       0.1       0.1
    4            400      0.01       0.1       0.1
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
    1              0         0
    4              0         0
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
    1              0         0
    4              0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                 <--Area-->     <-Target->   MBLK   ***
<Name>   #                 <-factor->     <Name>   #   Tbl#   ***
C (Excluding Pond)***
PERLND  32                       0.33     RCHRES   1      2
PERLND  32                       0.33     RCHRES   1      3
IMPLND   1                       0.03     RCHRES   1      5
Basin A WQ***
PERLND  31                       0.69     RCHRES   1      2
PERLND  31                       0.69     RCHRES   1      3
IMPLND   1                       0.55     RCHRES   1      5
Basin B WQ***
PERLND  31                       0.24     RCHRES   1      2
PERLND  31                       0.24     RCHRES   1      3
IMPLND   1                       0.12     RCHRES   1      5
Basin  A Non Pollution***
IMPLND   4                       0.71     RCHRES   1      5
Basin  B Non Pollution***
IMPLND   1                       0.36     RCHRES   1      5
Basin A WQ***
PERLND  31                       0.69     COPY   502     12
PERLND  31                       0.69     COPY   502     13
IMPLND   1                       0.55     COPY   502     15
Basin B WQ***
PERLND  31                       0.24     COPY   503     12
PERLND  31                       0.24     COPY   503     13
IMPLND   1                       0.12     COPY   503     15

******Routing******
PERLND  31                       0.69     COPY     1     12
IMPLND   1                       0.55     COPY     1     15
```

```
PERLND  31                        0.69     COPY     1     13
PERLND  31                        0.24     COPY     1     12
IMPLND   1                        0.12     COPY     1     15
PERLND  31                        0.24     COPY     1     13
PERLND  32                        0.33     COPY     1     12
IMPLND   1                        0.03     COPY     1     15
PERLND  32                        0.33     COPY     1     13
IMPLND   4                        0.71     COPY     1     15
IMPLND   1                        0.36     COPY     1     15
RCHRES   1                           1     COPY   501     16
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   502 OUTPUT MEAN   1 1   48.4        DISPLY   2     INPUT  TIMSER 1
COPY   503 OUTPUT MEAN   1 1   48.4        DISPLY   3     INPUT  TIMSER 1
COPY   501 OUTPUT MEAN   1 1   48.4        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<----------------><---> User T-series  Engl Metr LKFG             ***
                                      in  out                               ***
    1     Pond A                  1    1    1    1   28    0    1
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
    1         1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ******************* PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
    1         4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                   ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
            FG FG FG FG  possible  exit  *** possible  exit      possible  exit
             *  *  *  *    *  *  *  *  *       *  *  *  *  *        ***
    1        0  1  0  0    4  0  0  0  0       0  0  0  0  0        2  2  2  2  2
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><-------->       ***
    1             1      0.01       0.0       0.0       0.5       0.0
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                      ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
    1            0         4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
```

FTABLES
FTABLE 1
91 4

Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	0.059619	0.000000	0.000000		
0.066667	0.060559	0.004006	0.010090		
0.133333	0.061507	0.008075	0.014269		
0.200000	0.062462	0.012207	0.017476		
0.266667	0.063424	0.016403	0.020179		
0.333333	0.064394	0.020664	0.022561		
0.400000	0.065371	0.024989	0.024714		
0.466667	0.066355	0.029380	0.026695		
0.533333	0.067347	0.033837	0.028538		
0.600000	0.068346	0.038360	0.030269		
0.666667	0.069353	0.042950	0.031906		
0.733333	0.070366	0.047607	0.033464		
0.800000	0.071388	0.052333	0.034952		
0.866667	0.072416	0.057126	0.036379		
0.933333	0.073452	0.061988	0.037752		
1.000000	0.074495	0.066920	0.039077		
1.066667	0.075545	0.071921	0.040359		
1.133333	0.076603	0.076993	0.041601		
1.200000	0.077669	0.082135	0.042807		
1.266667	0.078741	0.087349	0.043980		
1.333333	0.079821	0.092634	0.045122		
1.400000	0.080908	0.097992	0.046237		
1.466667	0.082003	0.103422	0.047325		
1.533333	0.083105	0.108926	0.048388		
1.600000	0.084214	0.114503	0.049429		
1.666667	0.085331	0.120155	0.050448		
1.733333	0.086455	0.125881	0.051447		
1.800000	0.087586	0.131682	0.052427		
1.866667	0.088725	0.137559	0.053389		
1.933333	0.089871	0.143512	0.054334		
2.000000	0.091024	0.149542	0.055263		
2.066667	0.092185	0.155649	0.056177		
2.133333	0.093353	0.161834	0.057076		
2.200000	0.094528	0.168096	0.057961		
2.266667	0.095711	0.174438	0.058832		
2.333333	0.096901	0.180858	0.059691		
2.400000	0.098098	0.187358	0.060538		
2.466667	0.099303	0.193938	0.061373		
2.533333	0.100515	0.200599	0.062197		
2.600000	0.101735	0.207340	0.063010		
2.666667	0.102961	0.214163	0.063812		
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END FTABLES

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WDM      2 PREC     ENGL    1.3            PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1.3            IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    0.8            PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    0.8            IMPLND   1 999 EXTNL  PETINP
WDM      2 PREC     ENGL    1.3            RCHRES   1     EXTNL  PREC
WDM      1 EVAP     ENGL    0.8            RCHRES   1     EXTNL  POTEV

END EXT SOURCES

EXT TARGETS
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RCHRES   1 HYDR   RO     1 1        1      WDM   1000 FLOW     ENGL       REPL
RCHRES   1 HYDR   STAGE  1 1        1      WDM   1001 STAG     ENGL       REPL
COPY     1 OUTPUT MEAN   1 1     48.4      WDM    701 FLOW     ENGL       REPL
COPY   501 OUTPUT MEAN   1 1     48.4      WDM    801 FLOW     ENGL       REPL
COPY     2 OUTPUT MEAN   1 1     48.4      WDM    702 FLOW     ENGL       REPL
COPY   502 OUTPUT MEAN   1 1     48.4      WDM    802 FLOW     ENGL       REPL
COPY     3 OUTPUT MEAN   1 1     48.4      WDM    703 FLOW     ENGL       REPL
COPY   503 OUTPUT MEAN   1 1     48.4      WDM    803 FLOW     ENGL       REPL
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  END MASS-LINK    2

  MASS-LINK        3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    3

  MASS-LINK        5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    5

  MASS-LINK       12
```

```
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13

  MASS-LINK       15
IMPLND     IWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   15

  MASS-LINK       16
RCHRES     ROFLOW                          COPY           INPUT  MEAN
  END MASS-LINK   16


END MASS-LINK

END RUN
```

Predeveloped HSPF Message File

Mitigated HSPF Message File

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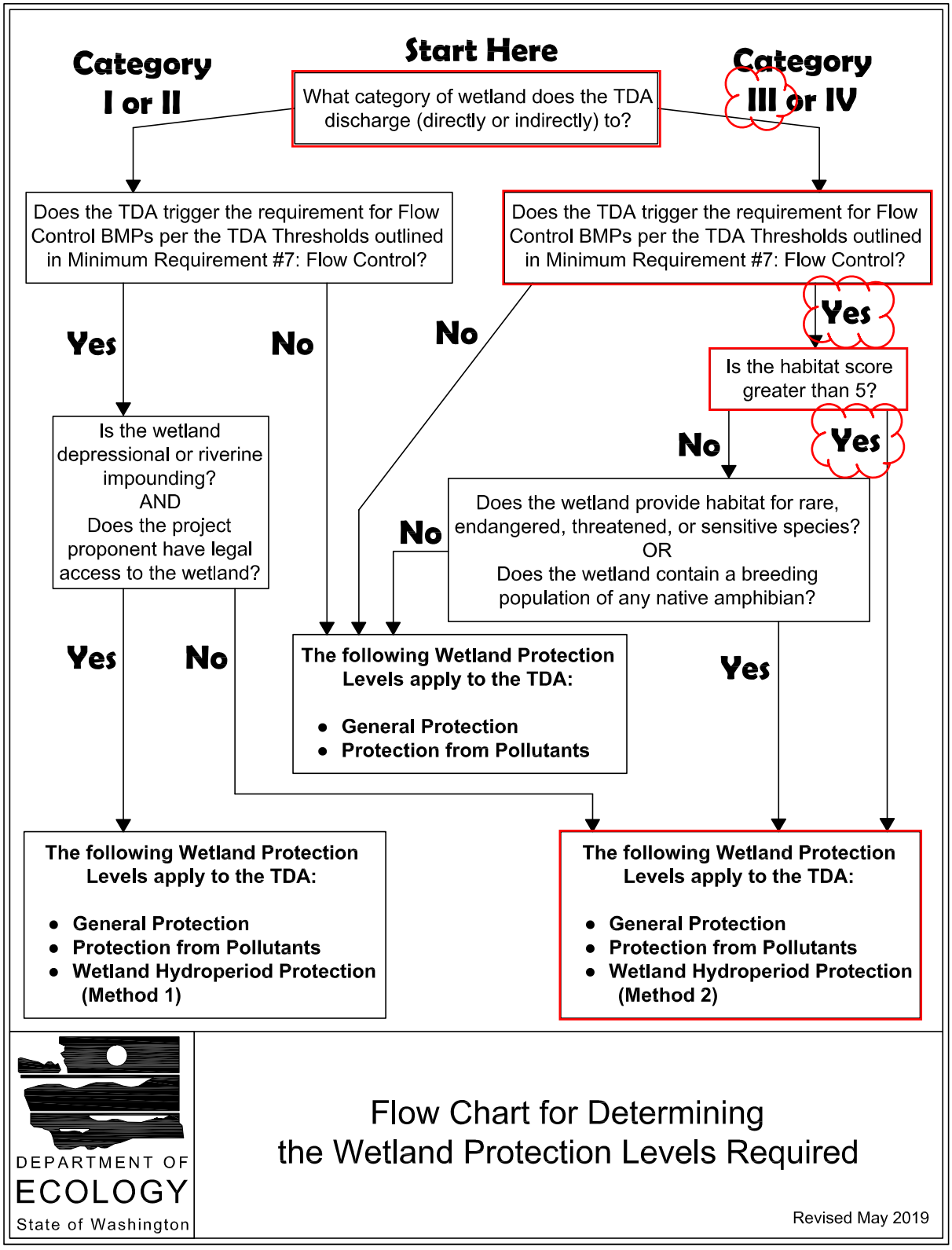
Figure I-3.5: Flow Chart for Determining Wetland Protection Level Requirements



Geotechnical Report Appendix D

Refer to Section G of the preliminary application packet

SEPA[1] Environmental Checklist

Purpose of checklist

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization, or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. **You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown.** You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to **all parts of your proposal**, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for lead agencies

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B, plus the Supplemental Sheet for Nonproject Actions (Part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in "Part B: Environmental Elements" that do not contribute meaningfully to the analysis of the proposal.

[1] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/Checklist-guidance

A.Background

Find help answering background questions[2]

1. **Name of proposed project, if applicable:**

   Oliver Terrace Subdivision

2. **Name of applicant:**

   HSR Capital, LLC

   Attn: Bruce Andrew Swanson

   andy@hsr-capital.com

   (503) 936 - 8514

   19120 SE 34th St., Suite 103

   Vancouver, WA 98683

3. **Address and phone number of applicant and contact person:**

   SGA Engineering

   Attn: Scott Taylor

   staylor@sgaengineering.com

   (360) 993 – 0911

   2005 Broadway Street

   Vancouver, WA 98663

4. **Date checklist prepared:**

   July 7, 2025

5. **Agency requesting checklist:**

   City of Camas

6. **Proposed timing of schedule (including phasing, if applicable):**

   Phase 1 to start construction in 2026. Phase 2 to potentially start construction in 2027 or later.

7. **Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.**

   Not beyond the 2 phases.

8. **List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.**

   Wetlands, Streams, and Oregon White Oaks have been mapped on site.

[2] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-A-Background

9. **Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.**

   None known.

10. **List any government approvals or permits that will be needed for your proposal, if known.**

    None known.

11. **Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)**

    The Oliver Terrace Subdivision (*LH*) proposes to divide parcel 178221000, approximately 18.46 acres of gross site area into ~~14~~ 12 single-family residential lots in two phases.

12. **Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.**

    The site is located at 1004 SE Everett Rd, Camas, Washington 98607

B.Environmental Elements

1. Earth

Find help answering earth questions[3]

a. **General description of the site:**

Circle or highlight one: Flat, rolling, hilly, steep slopes, mountainous, other:

b. **What is the steepest slope on the site (approximate percent slope)?**

   Approximately 40%

c. **What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them, and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.**

   On-site soils include Vader silt loam (VaC), Lauren very gravelly loam (LIB), Olympic stony clay loam (OmE), Tisch silt loam (ThA), and Hesson clay loam (HcB)

[3] https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-earth

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

A site evaluation was performed and no direct evidence of slope instability was noted.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Grading will occur on-site for infrastructure development and building development. The exact cut/fill quantities are unknown at this time.

f. Could erosion occur because of clearing, construction, or use? If so, generally describe.

Yes, erosion could occur due to a rain event during the construction process.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Approximately 10-15% of the site will be impervious.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any.

Silt fencing, inlet protection, mulching and seeding are all proposed methods to reduce or control erosion.

2. Air

Find help answering air questions[4]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Construction equipment will emit exhaust and air may get dusty during construction. Quantities are unknown at this time.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No significant sources are known. Some emissions from passing traffic will be present.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Water will be used to keep dust down during construction.

[4] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-Air

3. Water

Find help answering water questions[5]

a. Surface:

Find help answering surface water questions[6]

1. **Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.**

   Yes. There is a wetland and a stream on-site as well as 2 wetland areas observed off-site.

2. **Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.**

   Yes, the project will require work adjacent to the waters. Wetland and stream buffers have been accounted for and mitigation, if required, is being proposed for the impacted areas.

3. **Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.**

   The project is not proposing to fill any of the wetlands or stream.

4. **Will the proposal require surface water withdrawals or diversions? Give a general description, purpose, and approximate quantities if known.**

   No.

5. **Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

   No.

6. **Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

   No.

[5] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water
[6] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water/Environmental-elements-Surface-water

b. Ground:

Find help answering ground water questions[7]

1. **Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give a general description, purpose, and approximate quantities if known.**

   Camas is the water purveyor for the parcel. The site will extend the water main to serve the new lots and loop where feasible. Fire hydrants will be placed at the direction of the Fire Marshal meeting the necessary spacing requirements. There is an existing well on the property that provides water for the existing home and AG purposes. It would be decommissioned or approved as an irrigation only well with phase II of the project.

2. **Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (domestic sewage; industrial, containing the following chemicals…; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

   Camas is the sewer purveyor for this property. The point of connection is located in N. 49th to the west. Sewer main will be extended into the site to serve the proposed lots with gravity sewer in phase I. Phase II would require grinder pumps and pressure sewer to serve the existing home and proposed lots 13-14. An existing septic system would be removed with phase II of the project and the existing home would be connected to public sewer.

c. Water Runoff (including stormwater):

1. **Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

   Stormwater control will conform to the requirements of the ~~Clark County Code 40.386 and the 2021 Clark County Stormwater Manual~~ City of Camas Code 14.02 Stormwater Control and the current edition of Ecology's Stormwater Management Manual for Western Washington. (*LH*). Stormwater from the new impervious surface will be collected and conveyed to a similar discharge point as the existing site via flow dispersion and roof downspout dispersion. There are currently no stormwater facilities on site. The goal of the project is to infiltrate 100% of the treated stormwater.

2. **Could waste materials enter ground or surface waters? If so, generally describe.**

   No.

[7] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water/Environmental-elements-Groundwater

3. **Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.**

   No.

d. **Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:**

~~Stormwater control will conform to the requirements of the Clark County Code 40.386 and the 2021 Clark County Stormwater Manual.~~ City of Camas Code 14.02 Stormwater control and the current edition of Ecology's Stormwater Management Manual for Western Washington. *(LH)*

4. Plants

Find help answering plants questions

a. **Check the types of vegetation found on the site:**

☒ **deciduous tree: alder, maple, aspen, other** *;'/n*

☒ **evergreen tree: fir, cedar, pine, other**

☒ **shrubs**

☒ **grass**

☒ **pasture**

☒ **crop or grain**

☐ **orchards, vineyards, or other permanent crops.**

☒ **wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other**

☒ **water plants: water lily, eelgrass, milfoil, other**

☒ **other types of vegetation**

b. **What kind and amount of vegetation will be removed or altered?**

Approximately 38 trees will be removed for infrastructure. Existing vegetation will be retained when possible.

c. **List threatened and endangered species known to be on or near the site.**

None known at this time.

d. **Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any.**

Street trees, storm facility buffers, and private landscaping will replace and enhance the existing conditions. Drought tolerant and native species will be used where feasible.

e. **List all noxious weeds and invasive species known to be on or near the site.**

Himalayan blackberry (Class C), Reed Canarygrass (Class C), Creeping Buttercup (Class C), Shining Geranium (Class B)

5. Animals

Find help answering animal questions[8]

a. List any birds and other animals that have been observed on or near the site or are known to be on or near the site.

Examples include:

- **Birds: hawk, heron, eagle, songbirds, other:**
- **Mammals: deer, bear, elk, beaver, other:**
- **Fish: bass, salmon, trout, herring, shellfish, other:**

b. List any threatened and endangered species known to be on or near the site.

None known at this time.

c. Is the site part of a migration route? If so, explain.

The site is located within what is commonly referred to as the Pacific Flyway. The flyway stretches from Alaska to Mexico and from the Pacific Ocean to the Rocky Mountains.

d. Proposed measures to preserve or enhance wildlife, if any.

The preservation of Oregon White Oaks, keeping development out of the wetland buffers, and new landscape plantings will provide existing and new habitats and food for small mammals, birds, insects, and soil organisms.

e. List any invasive animal species known to be on or near the site.

None known.

6. Energy and natural resources

Find help answering energy and natural resource questions[9]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electricity and natural gas will be used to heat the building and electricity for lighting.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

[8] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-5-Animals
[9] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-6-Energy-natural-resou

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.

Compliance with state building and energy codes. Incorporate sustainable building design features like passive solar heating through the use of certain building materials and strategic placement of windows and openings. Utilize efficient building designs to maximize building materials and minimize waste.

7. Environmental health

Health Find help with answering environmental health questions[10]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur because of this proposal? If so, describe.

No.

1. **Describe any known or possible contamination at the site from present or past uses.**

   None known.

2. **Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.**

   None known.

3. **Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.**

   None known.

4. **Describe special emergency services that might be required.**

   Fire, Police, and Ambulance are typical for all projects.

5. **Proposed measures to reduce or control environmental health hazards, if any.**

   Public water instead of well water, and public sewer instead of septic systems will serve the development.

b. Noise

1. **What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?**

   Typical noise from SE Everett as well from the adjacent development to the West. The site is also within the Airport Overlay – Zone C district and may require additional building features to alleviate the noise.

[10] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-7-Environmental-health

2. **What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site)?**

   Short-Term: 7am-7pm construction noise

   Long-Term: Noise associated with residential uses similar to existing traffic noise on adjacent roads.

3. **Proposed measures to reduce or control noise impacts, if any:**

   Construction noise will be limited to the allowed hours by county code.

8. Land and shoreline use

Find help answering land and shoreline use questions[11]

a. **What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.**

   The current use is a single family residential home with outbuildings with farm equipment. The proposal will not affect current land uses on adjacent properties.

b. **Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses because of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?**

   The portion of the site that is getting developed on has not been used for working farmlands or working forest lands.

   1. **Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how?**

      No.

c. **Describe any structures on the site.**

   Single family detached house with outbuildings. There is also a large equipment shop located on the south near the existing entrance to the site.

d. **Will any structures be demolished? If so, what?**

   Phase 2 will propose to remove the outbuildings from the existing lot.

e. **What is the current zoning classification of the site?**

   LD-NS and MX-NS

f. **What is the current comprehensive plan designation of the site?**

   LD-NS and C-NS

[11] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-8-Land-shoreline-use

g. If applicable, what is the current shoreline master program designation of the site?

None.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Clark County GIS has mapped the on-site wetlands and streams.

i. Approximately how many people would reside or work in the completed project?

Approximately 30-35 could reside here.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any.

The project is providing new housing opportunities.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.

Project will comply with the city code sections for the LD-NS and all applicable code sections.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

None.

9. Housing

Find help answering housing questions[12]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

~~11~~ 12 new and 1 existing in Phase 1. ~~Also, 2 additional units with Phase 2 for a total of 14 units~~. *(LH)*

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

Provide new housing options for City of Camas residents.

[12] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-9-Housing

10. Aesthetics

Find help answering aesthetics questions[13]

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Wood construction will likely be used for the homes and the max height allowed is 35 feet. Buildings will likely be two-story, approximately 25-30 feet tall.

b. What views in the immediate vicinity would be altered or obstructed?

No significant views will be altered with this development. The majority of the work is being done on the backside of an existing development with no existing frontages.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Construction of aesthetically pleasing buildings with some unique architecture and upgraded finishes. Private landscaping will be added to the proposed development.

11. Light and glare

Find help answering light and glare questions[14]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

The buildings, sidewalks, and roads will be lighted at night. Lights will be shielded to minimize glare off-site when possible. All lighting will comply with city codes.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No. Lights will be shielded to avoid off-site glare.

c. What existing off-site sources of light or glare may affect your proposal?

None known. If anything, existing light structure to the west may reflect into the proposed development helping to illuminate sidewalks and roads.

d. Proposed measures to reduce or control light and glare impacts, if any:

Proper orientation and shielding of light sources.

12. Recreation

Find help answering recreation questions

a. What designated and informal recreational opportunities are in the immediate vicinity?

None adjacent to the site.

b. Would the proposed project displace any existing recreational uses? If so, describe.

[13] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-10-Aesthetics
[14] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-11-Light-glare

No.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Park impact fees will be paid for the new homes so the city can improve or add to their current parks system.

13. Historic and cultural preservation

Find help answering historic and cultural preservation questions[15]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

No.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

None known at this time.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

GIS Data and an Archaeological Predetermination survey.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

Inadvertent discovery language will be present on the grading and construction plans.

14. Transportation

Find help with answering transportation questions[16]

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The site has access points from SE Everett and N 49th Ave. The main portion of the site will take access from N 49th Ave.

[15] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-13-Historic-cultural-p
[16] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-14-Transportation

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

No. The nearest transit stop is approximately 2.2 miles south.

c. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

No frontage improvements are required or being proposed.

d. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The project is within the Airport Overlay – Zone C district.

e. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

The trip generation report indicates approximately 123 Average Daily Trips will be generated for the completion of this project.

f. Will the proposal interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No.

g. Proposed measures to reduce or control transportation impacts, if any:

It has been determined that no off-site trip assignment is needed to address the city's 20 peak hour trip study threshold.

15. Public services

Find help answering public service questions[17]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

The development will require all public services, and they are all available to serve the site.

b. Proposed measures to reduce or control direct impacts on public services, if any.

The proposed development will pay Traffic Impact fees, Park Impact fees, and School Impact fees. Future homes will pay taxes for other public services.

[17] https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-15-public-services

16. Utilities

Find help answering utilities questions[18]

a. **Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other:**

b. **Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.**

Water: City of Camas Public Works

Sewer: City of Camas Public Works

Telephone: Ziply, Xfinity, or CenturyLink

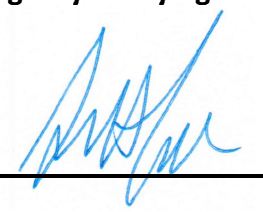
Electricity: Clark Public Utilities

Gas: NW Natural Gas

C.Signature

Find help about who should sign[19]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

X 

Type name of signee: Scott Taylor

Position and agency/organization: Planner, SGA Engineering, PLLC.

Date submitted: 9-15-2025

[18] https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-16-utilities

[19] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-C-Signature

State Environmental Policy Act
Determination of Non-Significance

CASE NO: SUB25-1010 Oliver Terrace Subdivision

APPLICANT: SGA Engineering
Attn: Scott Taylor
2005 Broadway St
Vancouver, WA 98663

REQUEST: The applicant proposes to construct a 12-lot single-family detached residential subdivision.

Location: 1004 SE Everett St Camas, WA 98607
Tax Parcel 178221000

Legal Description: The project is located in the NW ¼ of Section 35 Township 1 North, Range 3 East of the Willamette Meridian, Camas, WA.

SEPA Determination: Determination of Non-Significance (MDNS)

Comment Deadline: **May 21, 2026, at 5:00 p.m.**

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

- DS = Determination of Significance (The impacts cannot be mitigated through conditions of approval and, therefore, requiring the preparation of an Environmental Impact Statement (EIS).
- MDNS = Mitigated Determination of Non-Significance (The impacts can be addressed through conditions of approval), or;
- DNS = Determination of Non-Significance (The impacts can be addressed by applying the Camas Municipal Code).

Published in the Post Record on May 7, 2026 Legal Publication #1100160
Mailed to property owners within 300-feet on February 18, 2026
Posted on bulletin boards at Camas City Hall, Camas Library and the City of Camas website at: http://www.cityofcamas.us

Determination:

Determination of Non-Significance (DNS). The City of Camas, as lead agency for review of this proposal, has determined that this proposal does not have a probable significant adverse impact on the environment. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(e). This decision was made after review of a completed environmental checklist, and other information on file with the City of Camas.

Date of Publication & Comment Period:

Publication date of this DNS is **May 7, 2026**, and is issued under WAC 197-11-340. The lead agency will not act on this proposal until the close of the 14-day comment period which ends on **May 21, 2026**. Comments may be sent by email to communitydevelopment@cityofcamas.us or regular mail to:

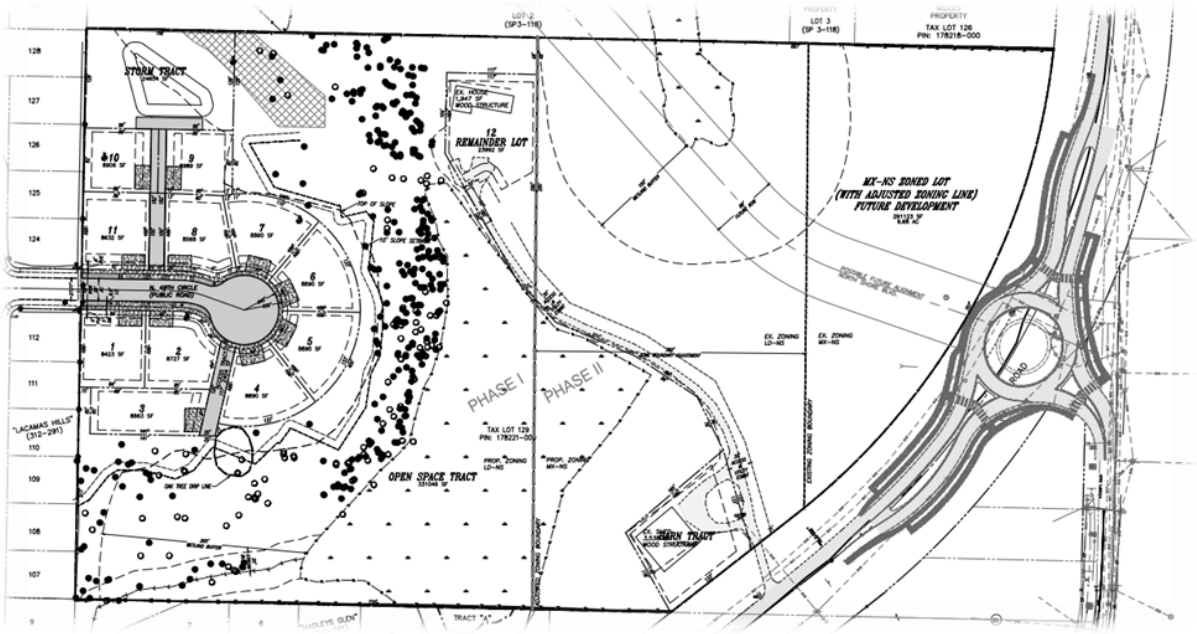
City of Camas SEPA Official
Community Development Department
616 NE Fourth Avenue
Camas, Washington 98607

Responsible Official: Robert Maul (360) 817-1568

Robert Maul, Planning Manager and Responsible Official

May 21, 2026
Date of publication

Conceptual Site Plan



Vicinity Map

COMMUNITY DEVELOPMENT DEPARTMENT
616 NE 4th Avenue
Camas, WA 98607
www.ci.camas.wa.us

Date Published: May 7, 2026

To Whom It May Concern:

Please find enclosed a Determination of Non-Significance (MDNS) **Oliver Terrace Subdivision (SUB25-1010)** that was issued pursuant to the State Environmental Policy Act (SEPA) Rules, Chapter 197-11, Washington Administrative Code. The enclosed review comments reflect evaluation of the environmental checklist by the lead agency as required by WAC 197-11-330(1)(a)(i).

The following materials were submitted with the initial application:

- Pre-Application Notes
- SEPA Checklist
- Critical Area Reports
- Site Plans
- Applicant's Narrative
- Stormwater Report
- Transportation Impact Study
- Tree Survey
- Archeological Pre-Determination Report*

Application materials are available for review upon request from the Community Development Department. *Archaeological information is exempt from public disclosure, consistent with RCW 42.56.300.

Written comments may be submitted on this determination within fourteen (14) days of its issuance, after which the DNS will be reconsidered in light of the comments received.

Please address all correspondence to:
City of Camas, SEPA Official
Community Development Department
616 NE Fourth Avenue
Camas, Washington 98607
communitydevelopment@cityofcamas.us

Distribution:

Applicant
C-Tran
Camas School District
Camas Building Official, Brian Smith
Camas Communications Director, Bryan Rachal
Camas Engineering Department Managers and Staff
Camas Fire Department, Randy Miller
Camas Finance Director, Cathy Huber Nickerson
Camas Community Development Director, Alan Peters
Camas Mayor and City Council Members
Camas Parks and Recreation Director, Chris Witkowski
Camas Planning Manager and Staff
Camas Police Chief, Tina Jones
Camas Public Works Director, Scott Collin
Camas Public Library, Connie Urquhart
Camas-Washougal Post Record
Chinook Indian Nation
Cultural Resource Program, Cowlitz Indian Tribe
Cultural Resource Program, Yakama Indian Nation
Clark County Department of Environmental Services
Clark County Department of Transportation
Clark County Natural Resources Council
Clark Public Utilities
Department of Ecology
Department of Fish and Wildlife, Region 5
Department of Natural Resources, SEPA Center
Southwest Clean Air Agency
US Army Corps of Engineers
Vancouver - Clark Parks & Recreation
Washington Office of Archaeology & Historic Preservation
Washington State Department of Transportation
Washington State Parks and Recreation Commission, Environmental Program
Property Owners within 300 feet *(mailed the SEPA Determination & map)*

State Environmental Policy Act
Determination of Non-Significance

CASE NO: SUB25-1010 Oliver Terrace Subdivision

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Attn: Scott Taylor
2005 Broadway St
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Robert Maul, Planning Manager and Responsible Official

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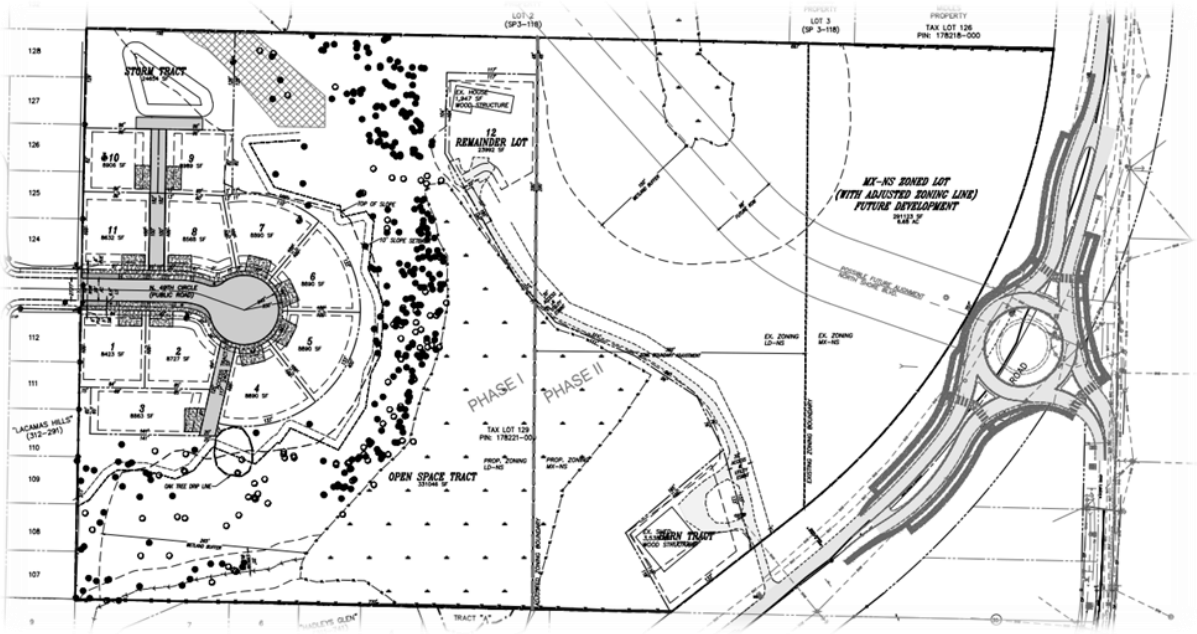


Vicinity Map

SEPA[1] Environmental Checklist

Purpose of checklist

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization, or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. **You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown.** You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to **all parts of your proposal**, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for lead agencies

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B, plus the Supplemental Sheet for Nonproject Actions (Part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in "Part B: Environmental Elements" that do not contribute meaningfully to the analysis of the proposal.

[1] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/Checklist-guidance

A.Background

Find help answering background questions[2]

1. **Name of proposed project, if applicable:**

   Oliver Terrace Subdivision

2. **Name of applicant:**

   HSR Capital, LLC

   Attn: Bruce Andrew Swanson

   andy@hsr-capital.com

   (503) 936 - 8514

   19120 SE 34th St., Suite 103

   Vancouver, WA 98683

3. **Address and phone number of applicant and contact person:**

   SGA Engineering

   Attn: Scott Taylor

   staylor@sgaengineering.com

   (360) 993 – 0911

   2005 Broadway Street

   Vancouver, WA 98663

4. **Date checklist prepared:**

   July 7, 2025

5. **Agency requesting checklist:**

   City of Camas

6. **Proposed timing of schedule (including phasing, if applicable):**

   Phase 1 to start construction in 2026. Phase 2 to potentially start construction in 2027 or later.

7. **Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.**

   Not beyond the 2 phases.

8. **List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.**

   Wetlands, Streams, and Oregon White Oaks have been mapped on site.

[2] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-A-Background

9. **Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.**

   None known.

10. **List any government approvals or permits that will be needed for your proposal, if known.**

    None known.

11. **Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)**

    The Oliver Terrace Subdivision (*LH*) proposes to divide parcel 178221000, approximately 18.46 acres of gross site area into ~~14~~ 12 single-family residential lots in two phases.

12. **Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.**

    The site is located at 1004 SE Everett Rd, Camas, Washington 98607

B.Environmental Elements

1. Earth

Find help answering earth questions[3]

a. **General description of the site:**

Circle or highlight one: Flat, rolling, hilly, steep slopes, mountainous, other:

b. **What is the steepest slope on the site (approximate percent slope)?**

   Approximately 40%

c. **What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them, and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.**

   On-site soils include Vader silt loam (VaC), Lauren very gravelly loam (LIB), Olympic stony clay loam (OmE), Tisch silt loam (ThA), and Hesson clay loam (HcB)

[3] https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-earth

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

A site evaluation was performed and no direct evidence of slope instability was noted.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Grading will occur on-site for infrastructure development and building development. The exact cut/fill quantities are unknown at this time.

f. Could erosion occur because of clearing, construction, or use? If so, generally describe.

Yes, erosion could occur due to a rain event during the construction process.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Approximately 10-15% of the site will be impervious.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any.

Silt fencing, inlet protection, mulching and seeding are all proposed methods to reduce or control erosion.

2. Air

Find help answering air questions[4]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Construction equipment will emit exhaust and air may get dusty during construction. Quantities are unknown at this time.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No significant sources are known. Some emissions from passing traffic will be present.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Water will be used to keep dust down during construction.

[4] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-Air

3. Water

Find help answering water questions[5]

a. Surface:

Find help answering surface water questions[6]

1. **Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.**

   Yes. There is a wetland and a stream on-site as well as 2 wetland areas observed off-site.

2. **Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.**

   Yes, the project will require work adjacent to the waters. Wetland and stream buffers have been accounted for and mitigation, if required, is being proposed for the impacted areas.

3. **Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.**

   The project is not proposing to fill any of the wetlands or stream.

4. **Will the proposal require surface water withdrawals or diversions? Give a general description, purpose, and approximate quantities if known.**

   No.

5. **Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

   No.

6. **Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

   No.

[5] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water
[6] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water/Environmental-elements-Surface-water

b. Ground:

Find help answering ground water questions[7]

1. **Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give a general description, purpose, and approximate quantities if known.**

   Camas is the water purveyor for the parcel. The site will extend the water main to serve the new lots and loop where feasible. Fire hydrants will be placed at the direction of the Fire Marshal meeting the necessary spacing requirements. There is an existing well on the property that provides water for the existing home and AG purposes. It would be decommissioned or approved as an irrigation only well with phase II of the project.

2. **Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (domestic sewage; industrial, containing the following chemicals…; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

   Camas is the sewer purveyor for this property. The point of connection is located in N. 49th to the west. Sewer main will be extended into the site to serve the proposed lots with gravity sewer in phase I. Phase II would require grinder pumps and pressure sewer to serve the existing home and proposed lots 13-14. An existing septic system would be removed with phase II of the project and the existing home would be connected to public sewer.

c. Water Runoff (including stormwater):

1. **Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

   Stormwater control will conform to the requirements of the ~~Clark County Code 40.386 and the 2021 Clark County Stormwater Manual~~ City of Camas Code 14.02 Stormwater Control and the current edition of Ecology's Stormwater Management Manual for Western Washington. (*LH*). Stormwater from the new impervious surface will be collected and conveyed to a similar discharge point as the existing site via flow dispersion and roof downspout dispersion. There are currently no stormwater facilities on site. The goal of the project is to infiltrate 100% of the treated stormwater.

2. **Could waste materials enter ground or surface waters? If so, generally describe.**

   No.

[7] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-3-Water/Environmental-elements-Groundwater

3. **Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.**

No.

d. **Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:**

~~Stormwater control will conform to the requirements of the Clark County Code 40.386 and the 2021 Clark County Stormwater Manual.~~ City of Camas Code 14.02 Stormwater control and the current edition of Ecology's Stormwater Management Manual for Western Washington.

(LH)

4. Plants

Find help answering plants questions

a. **Check the types of vegetation found on the site:**

☒ **deciduous tree: alder, maple, aspen, other** *;'/n*

☒ **evergreen tree: fir, cedar, pine, other**

☒ **shrubs**

☒ **grass**

☒ **pasture**

☒ **crop or grain**

☐ **orchards, vineyards, or other permanent crops.**

☒ **wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other**

☒ **water plants: water lily, eelgrass, milfoil, other**

☒ **other types of vegetation**

b. **What kind and amount of vegetation will be removed or altered?**

Approximately 38 trees will be removed for infrastructure. Existing vegetation will be retained when possible.

c. **List threatened and endangered species known to be on or near the site.**

None known at this time.

d. **Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any.**

Street trees, storm facility buffers, and private landscaping will replace and enhance the existing conditions. Drought tolerant and native species will be used where feasible.

e. **List all noxious weeds and invasive species known to be on or near the site.**

Himalayan blackberry (Class C), Reed Canarygrass (Class C), Creeping Buttercup (Class C), Shining Geranium (Class B)

5. Animals

Find help answering animal questions[8]

a. List any birds and other animals that have been observed on or near the site or are known to be on or near the site.

Examples include:

- **Birds: hawk, heron, eagle, songbirds, other:**
- **Mammals: deer, bear, elk, beaver, other:**
- **Fish: bass, salmon, trout, herring, shellfish, other:**

b. List any threatened and endangered species known to be on or near the site.

None known at this time.

c. Is the site part of a migration route? If so, explain.

The site is located within what is commonly referred to as the Pacific Flyway. The flyway stretches from Alaska to Mexico and from the Pacific Ocean to the Rocky Mountains.

d. Proposed measures to preserve or enhance wildlife, if any.

The preservation of Oregon White Oaks, keeping development out of the wetland buffers, and new landscape plantings will provide existing and new habitats and food for small mammals, birds, insects, and soil organisms.

e. List any invasive animal species known to be on or near the site.

None known.

6. Energy and natural resources

Find help answering energy and natural resource questions[9]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electricity and natural gas will be used to heat the building and electricity for lighting.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

[8] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-5-Animals
[9] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-6-Energy-natural-resou

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.

Compliance with state building and energy codes. Incorporate sustainable building design features like passive solar heating through the use of certain building materials and strategic placement of windows and openings. Utilize efficient building designs to maximize building materials and minimize waste.

7. Environmental health

Health Find help with answering environmental health questions[10]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur because of this proposal? If so, describe.

No.

1. **Describe any known or possible contamination at the site from present or past uses.**

   None known.

2. **Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.**

   None known.

3. **Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.**

   None known.

4. **Describe special emergency services that might be required.**

   Fire, Police, and Ambulance are typical for all projects.

5. **Proposed measures to reduce or control environmental health hazards, if any.**

   Public water instead of well water, and public sewer instead of septic systems will serve the development.

b. Noise

1. **What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?**

   Typical noise from SE Everett as well from the adjacent development to the West. The site is also within the Airport Overlay – Zone C district and may require additional building features to alleviate the noise.

[10] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-7-Environmental-health

2. **What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site)?**

   Short-Term: 7am-7pm construction noise

   Long-Term: Noise associated with residential uses similar to existing traffic noise on adjacent roads.

3. **Proposed measures to reduce or control noise impacts, if any:**

   Construction noise will be limited to the allowed hours by county code.

8. Land and shoreline use

Find help answering land and shoreline use questions[11]

a. **What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.**

   The current use is a single family residential home with outbuildings with farm equipment. The proposal will not affect current land uses on adjacent properties.

b. **Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses because of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?**

   The portion of the site that is getting developed on has not been used for working farmlands or working forest lands.

   1. **Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how?**

      No.

c. **Describe any structures on the site.**

   Single family detached house with outbuildings. There is also a large equipment shop located on the south near the existing entrance to the site.

d. **Will any structures be demolished? If so, what?**

   Phase 2 will propose to remove the outbuildings from the existing lot.

e. **What is the current zoning classification of the site?**

   LD-NS and MX-NS

f. **What is the current comprehensive plan designation of the site?**

   LD-NS and C-NS

[11] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-8-Land-shoreline-use

g. If applicable, what is the current shoreline master program designation of the site?

None.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Clark County GIS has mapped the on-site wetlands and streams.

i. Approximately how many people would reside or work in the completed project?

Approximately 30-35 could reside here.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any.

The project is providing new housing opportunities.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.

Project will comply with the city code sections for the LD-NS and all applicable code sections.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

None.

9. Housing

Find help answering housing questions[12]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

~~11~~ 12 new and 1 existing in Phase 1. ~~Also, 2 additional units with Phase 2 for a total of 14 units~~. *(LH)*

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

Provide new housing options for City of Camas residents.

[12] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-9-Housing

10. Aesthetics

Find help answering aesthetics questions[13]

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Wood construction will likely be used for the homes and the max height allowed is 35 feet. Buildings will likely be two-story, approximately 25-30 feet tall.

b. What views in the immediate vicinity would be altered or obstructed?

No significant views will be altered with this development. The majority of the work is being done on the backside of an existing development with no existing frontages.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Construction of aesthetically pleasing buildings with some unique architecture and upgraded finishes. Private landscaping will be added to the proposed development.

11. Light and glare

Find help answering light and glare questions[14]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

The buildings, sidewalks, and roads will be lighted at night. Lights will be shielded to minimize glare off-site when possible. All lighting will comply with city codes.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No. Lights will be shielded to avoid off-site glare.

c. What existing off-site sources of light or glare may affect your proposal?

None known. If anything, existing light structure to the west may reflect into the proposed development helping to illuminate sidewalks and roads.

d. Proposed measures to reduce or control light and glare impacts, if any:

Proper orientation and shielding of light sources.

12. Recreation

Find help answering recreation questions

a. What designated and informal recreational opportunities are in the immediate vicinity?

None adjacent to the site.

b. Would the proposed project displace any existing recreational uses? If so, describe.

[13] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-10-Aesthetics
[14] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-11-Light-glare

No.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Park impact fees will be paid for the new homes so the city can improve or add to their current parks system.

13. Historic and cultural preservation

Find help answering historic and cultural preservation questions[15]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

No.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

None known at this time.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

GIS Data and an Archaeological Predetermination survey.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

Inadvertent discovery language will be present on the grading and construction plans.

14. Transportation

Find help with answering transportation questions[16]

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The site has access points from SE Everett and N 49th Ave. The main portion of the site will take access from N 49th Ave.

[15] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-13-Historic-cultural-p
[16] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-B-Environmental-elements/Environmental-elements-14-Transportation

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

No. The nearest transit stop is approximately 2.2 miles south.

c. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

No frontage improvements are required or being proposed.

d. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The project is within the Airport Overlay – Zone C district.

e. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

The trip generation report indicates approximately 123 Average Daily Trips will be generated for the completion of this project.

f. Will the proposal interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No.

g. Proposed measures to reduce or control transportation impacts, if any:

It has been determined that no off-site trip assignment is needed to address the city's 20 peak hour trip study threshold.

15. Public services

Find help answering public service questions[17]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

The development will require all public services, and they are all available to serve the site.

b. Proposed measures to reduce or control direct impacts on public services, if any.

The proposed development will pay Traffic Impact fees, Park Impact fees, and School Impact fees. Future homes will pay taxes for other public services.

[17] https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-15-public-services

16. Utilities

Find help answering utilities questions[18]

a. **Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other:**

b. **Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.**

Water: City of Camas Public Works

Sewer: City of Camas Public Works

Telephone: Ziply, Xfinity, or CenturyLink

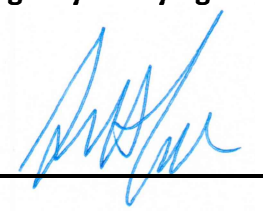
Electricity: Clark Public Utilities

Gas: NW Natural Gas

C.Signature

Find help about who should sign[19]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

X 

Type name of signee: Scott Taylor

Position and agency/organization: Planner, SGA Engineering, PLLC.

Date submitted: 9-15-2025

[18] https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-b-environmental-elements/environmental-elements-16-utilities

[19] https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-guidance/SEPA-checklist-guidance/SEPA-Checklist-Section-C-Signature

NOTICE OF PUBLIC HEARING
Oliver Terrace Subdivision
(File No. SUB25-1010)

A public hearing will be held on **June 9, 2026, at 5 p.m.** or soon thereafter, before the City's Hearings Examiner to consider the Preliminary Plat application for the "Oliver Terrace Subdivision". The public hearing will be held remotely and in person at city hall, 616 NE 4th Avenue, Camas, WA 98607. The applicant proposes to subdivide the subject site into a 12-lot single-family detached residential subdivision. The 18.15-acre site is zoned North Shore Lower Density Residential (LD-NS) and North Shore Mixed Use (MX-NS) in the City of Camas. The site is located at 1004 SE Everett Street west of SE Everett Street in the NW ¼ of Section 35 Township 2 North, Range 3 East, Camas, WA, Parcel Number: 178221-000. The application was determined technically complete on February 20, 2026.

Questions/Comments: The public hearing will follow the quasi-judicial process described within Camas Municipal Code §18.55.180. Comments related to this development may be submitted as follows: (1) In person by testifying at the public hearing; (2) by regular mail to Community Development Department staff, Lauren Hollenbeck, Senior Planner, at Camas City Hall, 616 Northeast Fourth Avenue, Camas, WA 98607; (3) by phone at (360) 817-1568; or (4) by email to: communitydevelopment@cityofcamas.us. It is preferable that written comments be received at least five working days prior to the public hearing, in order to be available with the online agenda and materials. After the agenda has been posted online, all other written comments must be received no later than noon (12:00 p.m.) the day of the hearing, in order for those comments to be handed to the Hearings Examiner by Staff. Written and oral comments may also be submitted in person during the hearing.

Application Materials: The application included the following: project narrative, pre-application notes, preliminary plat plans, traffic study, tree survey, preliminary stormwater report, archaeological predetermination*, SEPA checklist, and critical area reports, as required for a complete application pursuant to Camas Municipal Code (CMC) §18.55.110. The application materials are also available for viewing at the Community Development Department (616 NE 4th Avenue, Camas, WA) during regular business hours Monday – Friday 8 a.m-5 p.m.

Participate: All citizens are entitled to have equal access to the services, benefits and programs of the City of Camas. Please contact the City Clerk at (360) 817-1591 for special accommodations if needed. The City will provide translators for non-English speaking persons who request assistance at least three working days prior to a public meeting or hearing.

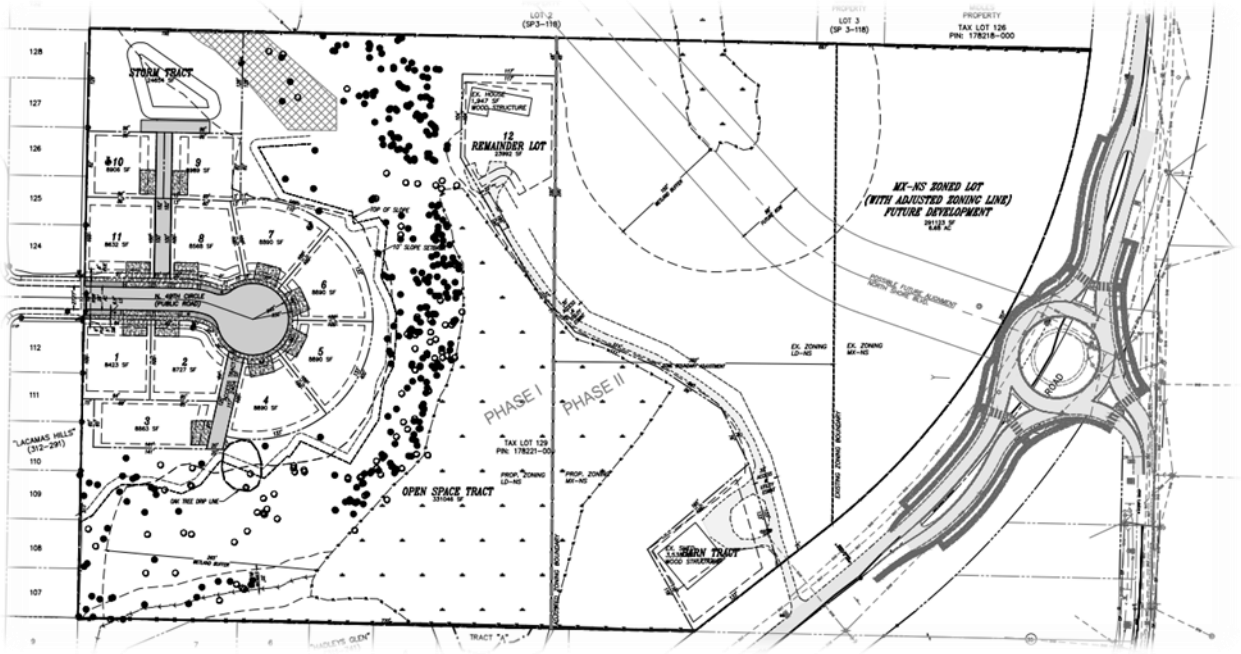
More Information: The public hearing agenda and supporting documents will be available for review on the City's website at the "Minutes, Agendas & Videos" link within the drop-down menu that is labeled "Your Government" or follow this link: http://www.cityofcamas.us/yourgovernment/minuteagendavideo.

*archaeological information is exempt from public disclosure per RCW 42.56.300

Published in the Post Record on May 7, 2026 Legal Publication #110170
Posted at Camas City Hall, Camas Library, City of Camas website at: http://www.cityofcamas.us
Mailed to property owners within 300-feet on May 6, 2026

VICINITY MAP

CONCEPTUAL SITE PLAN



In re: Oliver Terrace Subdivision

) NO. SUB25-1010
)
) AFFIDAVIT OF MAILING
)
)
)
)
)
Respondent.)

STATE OF WASHINGTON)
) ss.
CLARK COUNTY)

I, Carey Certo, on oath says:

I, Carey Certo, on May 6, 2026, I directed a true and correct copy of the Notice of Public Hearing & SEPA DNS be served upon the parties herein, in the above-entitled action, by depositing with the U.S. Post Office, Camas, Washington, a postage-prepaid envelope containing same addressed as follows: See attached list.

Carey Certo
SIGNATURE

SUBSCRIBED and SWORN to before me this 6th day of May, 2026.

Aireanna Baldwin
Notary Public
State of Washington
My Appointment Expires 10/1/2028
Commission Number 183848

Aireanna Baldwin
Notary Public in and for the State of Washington, residing at Clark County
My appointment expires: 10/1/2028

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Vancouver WA 98684

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Albany OR 97322

Dale Anderson
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Camas WA 98607

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Henry Midles
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Paula Nirschl-Robb
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Michael Hare
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Hadleys Glen Homeowners
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Vancouver WA 98666

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Lacamas Hills Owners Association
~~8815 122nd Ave NE Ste 290~~
Kirkland WA 98033

NOTICE OF PUBLIC HEARING
Oliver Terrace Subdivision
(File No. SUB25-1010)

A public hearing will be held on **June 9, 2026, at 5 p.m.** or soon thereafter, before the City's Hearings Examiner to consider the Preliminary Plat application for the "Oliver Terrace Subdivision". The public hearing will be held remotely and in person at city hall, 616 NE 4th Avenue, Camas, WA 98607. The applicant proposes to subdivide the subject site into a 12-lot single-family detached residential subdivision. The 18.15-acre site is zoned North Shore Lower Density Residential (LD-NS) and North Shore Mixed Use (MX-NS) in the City of Camas. The site is located at 1004 SE Everett Street west of SE Everett Street in the NW ¼ of Section 35 Township 2 North, Range 3 East, Camas, WA, Parcel Number: 178221-000. The application was determined technically complete on February 20, 2026.

Questions/Comments: The public hearing will follow the quasi-judicial process described within Camas Municipal Code §18.55.180. Comments related to this development may be submitted as follows: (1) In person by testifying at the public hearing; (2) by regular mail to Community Development Department staff, Lauren Hollenbeck, Senior Planner, at Camas City Hall, 616 Northeast Fourth Avenue, Camas, WA 98607; (3) by phone at (360) 817-1568; or (4) by email to: communitydevelopment@cityofcamas.us. It is preferable that written comments be received at least five working days prior to the public hearing, in order to be available with the online agenda and materials. After the agenda has been posted online, all other written comments must be received no later than noon (12:00 p.m.) the day of the hearing, in order for those comments to be handed to the Hearings Examiner by Staff. Written and oral comments may also be submitted in person during the hearing.

Application Materials: The application included the following: project narrative, pre-application notes, preliminary plat plans, traffic study, tree survey, preliminary stormwater report, archaeological predetermination*, SEPA checklist, and critical area reports, as required for a complete application pursuant to Camas Municipal Code (CMC) §18.55.110. The application materials are also available for viewing at the Community Development Department (616 NE 4th Avenue, Camas, WA) during regular business hours Monday – Friday 8 a.m-5 p.m.

Participate: All citizens are entitled to have equal access to the services, benefits and programs of the City of Camas. Please contact the City Clerk at (360) 817-1591 for special accommodations if needed. The City will provide translators for non-English speaking persons who request assistance at least three working days prior to a public meeting or hearing.

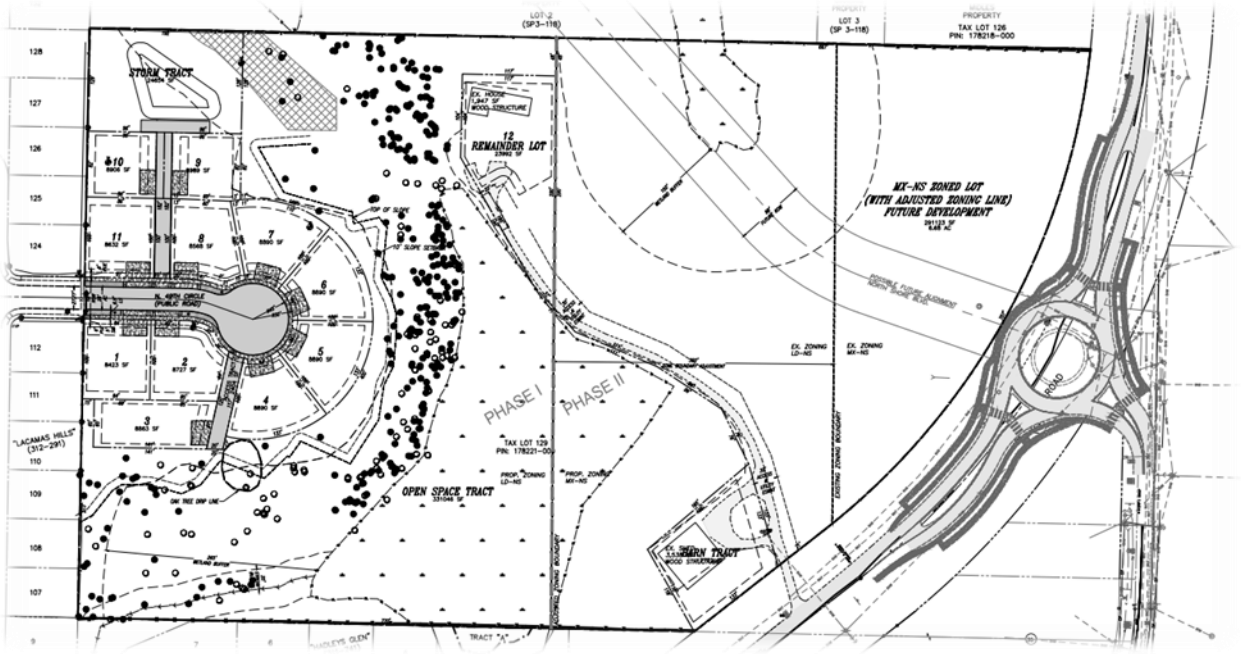
More Information: The public hearing agenda and supporting documents will be available for review on the City's website at the "Minutes, Agendas & Videos" link within the drop-down menu that is labeled "Your Government" or follow this link: http://www.cityofcamas.us/yourgovernment/minuteagendavideo.

*archaeological information is exempt from public disclosure per RCW 42.56.300

Published in the Post Record on May 7, 2026 Legal Publication #110170
Posted at Camas City Hall, Camas Library, City of Camas website at: http://www.cityofcamas.us
Mailed to property owners within 300-feet on May 6, 2026

VICINITY MAP

CONCEPTUAL SITE PLAN



State Environmental Policy Act
Determination of Non-Significance

CASE NO: SUB25-1010 Oliver Terrace Subdivision

APPLICANT: SGA Engineering
Attn: Scott Taylor
2005 Broadway St
Vancouver, WA 98663

REQUEST: The applicant proposes to construct a 12-lot single-family detached residential subdivision.

Location: 1004 SE Everett St Camas, WA 98607
Tax Parcel 178221000

Legal Description: The project is located in the NW ¼ of Section 35 Township 1 North, Range 3 East of the Willamette Meridian, Camas, WA.

SEPA Determination: Determination of Non-Significance (MDNS)

Comment Deadline: **May 21, 2026, at 5:00 p.m.**

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

- DS = Determination of Significance (The impacts cannot be mitigated through conditions of approval and, therefore, requiring the preparation of an Environmental Impact Statement (EIS).
- MDNS = Mitigated Determination of Non-Significance (The impacts can be addressed through conditions of approval), or;
- DNS = Determination of Non-Significance (The impacts can be addressed by applying the Camas Municipal Code).

Published in the Post Record on May 7, 2026 Legal Publication #1100160
Mailed to property owners within 300-feet on February 18, 2026
Posted on bulletin boards at Camas City Hall, Camas Library and the City of Camas website at: http://www.cityofcamas.us

Determination:

Determination of Non-Significance (DNS). The City of Camas, as lead agency for review of this proposal, has determined that this proposal does not have a probable significant adverse impact on the environment. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(e). This decision was made after review of a completed environmental checklist, and other information on file with the City of Camas.

Date of Publication & Comment Period:

Publication date of this DNS is **May 7, 2026**, and is issued under WAC 197-11-340. The lead agency will not act on this proposal until the close of the 14-day comment period which ends on **May 21, 2026**. Comments may be sent by email to communitydevelopment@cityofcamas.us or regular mail to:

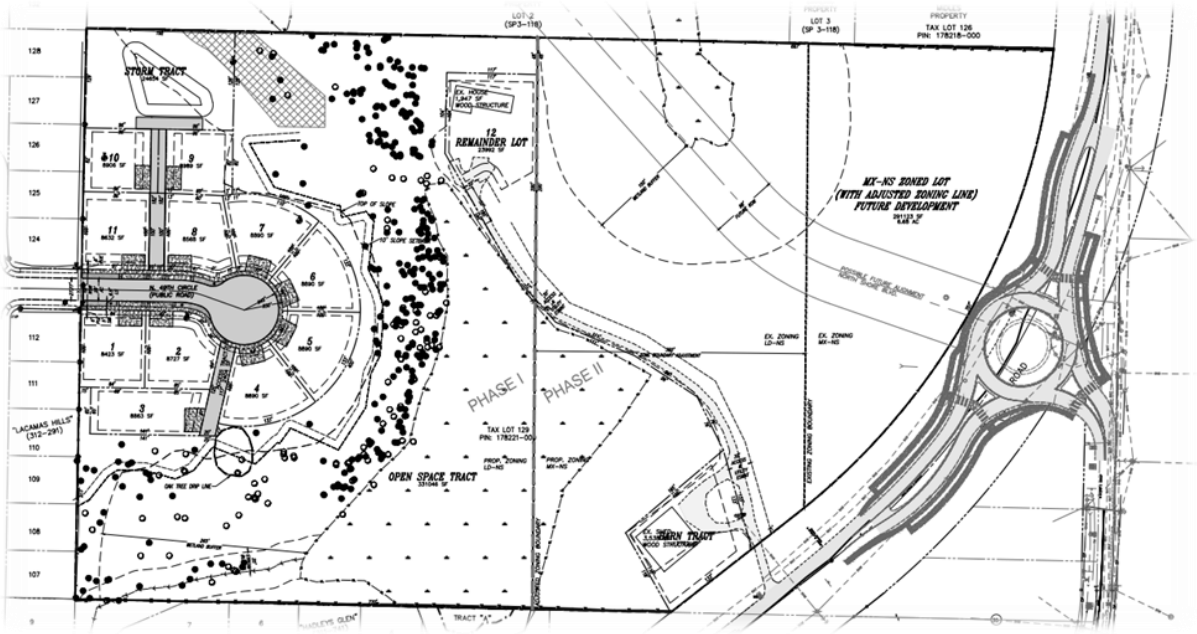
City of Camas SEPA Official
Community Development Department
616 NE Fourth Avenue
Camas, Washington 98607

Responsible Official: Robert Maul (360) 817-1568

Robert Maul, Planning Manager and Responsible Official

May 21, 2026
Date of publication

Conceptual Site Plan



Vicinity Map

DEPARTMENT OF NATURAL RESOURCES

PACIFIC CASCADE REGION
601 BOND ROAD
PO BOX 280
CASTLE ROCK, WA 98611

360-577-2025
TRS 711
PACIFIC-CASCADE.REGION@DNR.WA.GOV
WWW.DNR.WA.GOV

May 20th, 2026

City of Camas
Attn: Robert Maul – Planning Manager and Responsible Official
616 NE Fourth Avenue
Camas, WA 98607

Re: SUB25-1010 Olive Terrace Subdivision

Dear Mr. Maul,

Thank you for the opportunity to comment on the Determination of Non-Significance (DNS) for SUB25-1010 Olive Terrace Subdivision within the city of Camas, section 35 of township 02 North, Range 03 East. We have reviewed the DNS and Environmental Checklist and have the following initial comment.

As indicated in the Environmental Checklist trees exist on site and will be removed from the site. If merchantable timber is removed/harvested as part of the proposal or future development, a Forest Practices Application will be required (RCW 76.09 and WAC 222). The FPA will need to meet the requirements of the Forest Practices Act and its rules. If the applicant would like to meet on-site with our local Forest Practices Forester, call our Pacific Cascade Region office at (360) 577-2025.

Sincerely,

Alex Lilla

Alex Lilla

DNR Forest Practices Coordinator
Pacific Cascade Region
602 Bond Road
Castle Rock, WA 98611

c: Marc Ratcliff, Forest Practices District Manager
Michael Rutledge
John Tapley, Forest Practices Office Forester
SEPA Center

State of Washington
DEPARTMENT OF FISH AND WILDLIFE
Southwest Region 5 • 5525 South 11th Street, Ridgefield, WA 98642
Telephone: (360) 696-6211

May 21, 2026

City of Camas SEPA Official
Community Development Department
616 NE Fourth Avenue
Camas, WA 98607

Dear SEPA Official:

Thank you for the opportunity to comment on the **Oliver Terrace Subdivision (SUB25-1010)** proposal. The Washington Department of Fish and Wildlife (WDFW) has reviewed this proposal and offers the following comments for your consideration.

Our primary concern with this proposal regards impacts to the riparian area within the project site. We recommend increasing Stream A's riparian buffer to account for Site-Potential Tree Height at 200 Years (SPTH200), which is a guideline supported by the most current science (Quinn et al. 2020, Rentz et al. 2020). We also offer best management practices to **avoid impacts to priority Oregon white oak and snag habitat**.

Riparian Area

Riparian areas are considered a type of priority habitat per WDFW's Priority Habitats and Species (PHS) List. WDFW has published riparian ecosystem management recommendations: *Riparian Ecosystems, Volume 1: Science Synthesis and Management Implications* (Quinn et al. 2020) and *Riparian Ecosystems, Volume 2: Management Recommendations* (Rentz et al. 2020). Riparian ecological functions include, but are not limited to: stream morphology evolution, erosion and sedimentation processes, fish and wildlife habitat production, wood recruitment, water temperature stabilization, shading, pollutant removal, and nutrient cycling (Quinn et al. 2020). WDFW recommends that riparian buffers be sized based on Site Potential Tree Height at 200 years (SPTH200) to ensure that riparian ecosystems can maintain high functionality. These recommendations apply to all riparian areas and do not depend on a stream's fish-bearing status or seasonality.

The Critical Areas Report (CAR), prepared by Ecological Land Services (ELS) on June 16, 2025, documents the presence of a seasonal, non-fish-bearing (Type Ns) stream (Stream A) within the project site. The proposed buffer width for Stream A is 25 ft. **WDFW recommends that this buffer be expanded to 215 feet**, corresponding to the height of a mature Douglas fir in this soil type. WDFW recommends that riparian buffers be, **at minimum, 100 ft** in order to accomplish pollutant removal from runoff before it flows into the waterway.

Oregon White Oaks

The CAR documents two Oregon white oak (OWO) trees in the southwestern corner of the project site. OWO woodlands are a type of priority habitat per WDFW's PHS List, and even single OWO trees in urban areas can be considered priority habitat. OWO woodlands provide valuable food and habitat resources for many types of native Washington wildlife, including migratory birds (rufous hummingbirds, band-tailed pigeons, chipping sparrows, and more), nuthatches, woodpeckers, raptors, squirrels, and a wide array of invertebrates, including oak-obligate species. OWOs take decades to reach maturity, but once established, OWOs can live for hundreds of years, providing immense benefits for local ecological communities. In 2024, WDFW published guidance for avoiding, minimizing, and mitigating impacts to OWO*: Best management practices for mitigating impacts to Oregon white oak priority habitat* (Nolan & Azerrad 2024).

The CAR explains that while there is no current plan to remove the OWO trees, were that plan to change, the trees would not be large enough to be protected by Camas Municipal Code. WDFW recommends mitigation for the removal of OWO trees that are 6-in DBH or greater. The trees within project area, which measure 12 and 15-in DBH, do meet this threshold indicated by WDFW's guidance (Nolan & Azerrad 2024). The best way to ensure no net loss of ecological function is to preserve established habitat, so **WDFW strongly recommends that the plan to preserve these oak trees be maintained.**

A helpful resource for project proponents is this publication from the Oregon State University Extension Service: *Tree Protection Construction and Development Sites: A Best Management Practices Guidebook for the Pacific Northwest* (2009). If the health of an OWO tree declines during or after construction, we recommend consulting with an ISA-certified arborist to strategize means to help the tree recover.

Priority Snags

Snags, which are dead or dying trees, are priority habitat features per WDFW's PHS List. Snags provide nesting and foraging habitat for a wide variety of native wildlife species. The CAR documents the presence of two priority snag within the riparian area of Stream A. WDFW commends the decision to avoid all impacts to these features.

Thank you for the opportunity to provide input on this proposal. We are available to provide technical assistance upon request regarding minimizing impacts to riparian areas, Oregon white oak woodlands, priority snags, and other topics.

Sincerely,

Joy Peplinski

Joy Peplinski, Habitat Biologist
Washington Department of Fish & Wildlife

Outlook

Fw: SUB25-1010 Oliver Terrace Subdivision

From Lauren Hollenbeck <LHollenbeck@cityofcamas.us>
Date Mon 6/1/2026 11:26 AM
To Scott Taylor <staylor@sgaengineering.com>

3 attachments (7 MB)
ELS MEMO- Response to WDFW.pdf; Sign west side.jpg; Sign east side.jpg;

Will do, thank you.

Lauren Hollenbeck, Senior Planner
Community Development Department
Desk 360-817-7253
Cell 360-954-6618
www.cityofcamas.us |
lhollenbeck@cityofcamas.us

The City of Camas has gone digital! Apply for permits online through our new Civic Access Portal at www.cityofcamas.us/permits.

From: staylor@sgaengineering.com <staylor@sgaengineering.com>
Sent: Monday, June 1, 2026 11:09 AM
To: Lauren Hollenbeck <LHollenbeck@cityofcamas.us>
Cc: Robert Maul <RMaul@cityofcamas.us>
Subject: RE: SUB25-1010 Oliver Terrace Subdivision

WARNING: This message originated outside the City of Camas Mail system. DO NOT CLICK on links or open attachments unless you recognize the sender and are expecting the content. If you recognize the sender as a city employee and you see this message this email is a phishing email. If you are unsure, click the Phish Alert button to redirect the email for ITD review.

Hello,

See attached for the sign posting photos. The text was sort of small so I added a larger number 9 on there.

Attached is the ELS responses memo to the WDFW comment letter.

Below is the Arborist's response to the DNR comments. Please make this email and attachments exhibits in the record.

"The developer has no intentions of harvesting merchantable timber from the site. Trees to be removed will be utilized for mitigation purposes or other personal uses. I would recommend requesting that the city issues a condition to:

Prior to any merchantable timber removal, work with the Department of Natural Resources to submit and obtain a Forest Practice Application, if deemed necessary.

It generally takes 30-45 days to get an FPA, once submitted. Since there appears to be no DNR regulated critical areas/buffers being impacted, the removal of the trees, even if sending to a mill, is simple to permit."

Bryce Hanson, PE, LSIT, Certified Arborist

AKS ENGINEERING & FORESTRY, LLC

P: 360.882.0419 | www.aks-eng.com | bryceh@aks-eng.com

Thanks for confirming receipt of this email and attachments.

Sincerely,

Scott Taylor, L.A.

Partner, Landscape Architect

& Land Use Planner

SGA Engineering & Design

2005 Broadway

Vancouver, WA 98663

Office: 360-993-0911

Cell: 360-609-9540

Ecological Land Services

May 27, 2026

City of Camas SEPA Official
Community Development Department
616 NE Fourth Avenue
Camas, WA 98607

Re: Oliver Terrace Subdivision (SUB23-1010) | Camas | Response to WDFW Comments

Dear SEPA Official:

Riparian Area

The proposed project has been designed to meet the current regulations and requirements detailed in the Camas Municipal Code (CMC) *16.51-General Provisions for Critical Areas, 16.53- Wetlands, and 16.61- Fish and Wildlife Habitat Conservation Areas* (March 2017) and currently meets the applicable City of Camas critical areas and stream buffer requirements for Stream A. The WDFW management recommendations mentioned in the comment letter have not been adopted by CMC as of this date. However, in consideration of WDFW's recommendations regarding riparian habitat functions and water quality protection, the applicant has elected to voluntarily increase the proposed riparian buffer to a minimum width of 100 feet within the project design. The applicant appreciates the additional scientific guidance and recommendations provided by WDFW regarding riparian ecosystem management and will continue to consider those recommendations during final design and project implementation.

Oak Mitigation

WDFW's comments regarding the Oregon white oak trees identified onsite are acknowledged. There is currently no intention to remove or impact the identified oak trees, and they will be retained and protected onsite as part of the proposed development. Additionally, the oak trees are located on a slope that naturally limits grading and development encroachment within the area surrounding the trees, including the critical root zone. The applicant intends to continue avoiding impacts to these habitat features during construction.

Priority Snags

The applicant appreciates WDFW's acknowledgement of the proposed avoidance of impacts to the onsite priority snag habitat features. The current proposal does not include impacts to the identified snags, and avoidance measures will continue to be incorporated into the project design.

1157 · 3rd Avenue Suite 220A • Longview, Washington 98632 • Tel (360) 578-1371 • Fax (360) 414-9305

The applicant appreciates the comments and recommendations provided by WDFW during the SEPA review process and will continue to comply with applicable City of Camas requirements while considering the additional agency input during final project planning and implementation.

If you have any questions or need additional information, please call me at (360) 578-1371 or email me at afreese@eco-land.com.

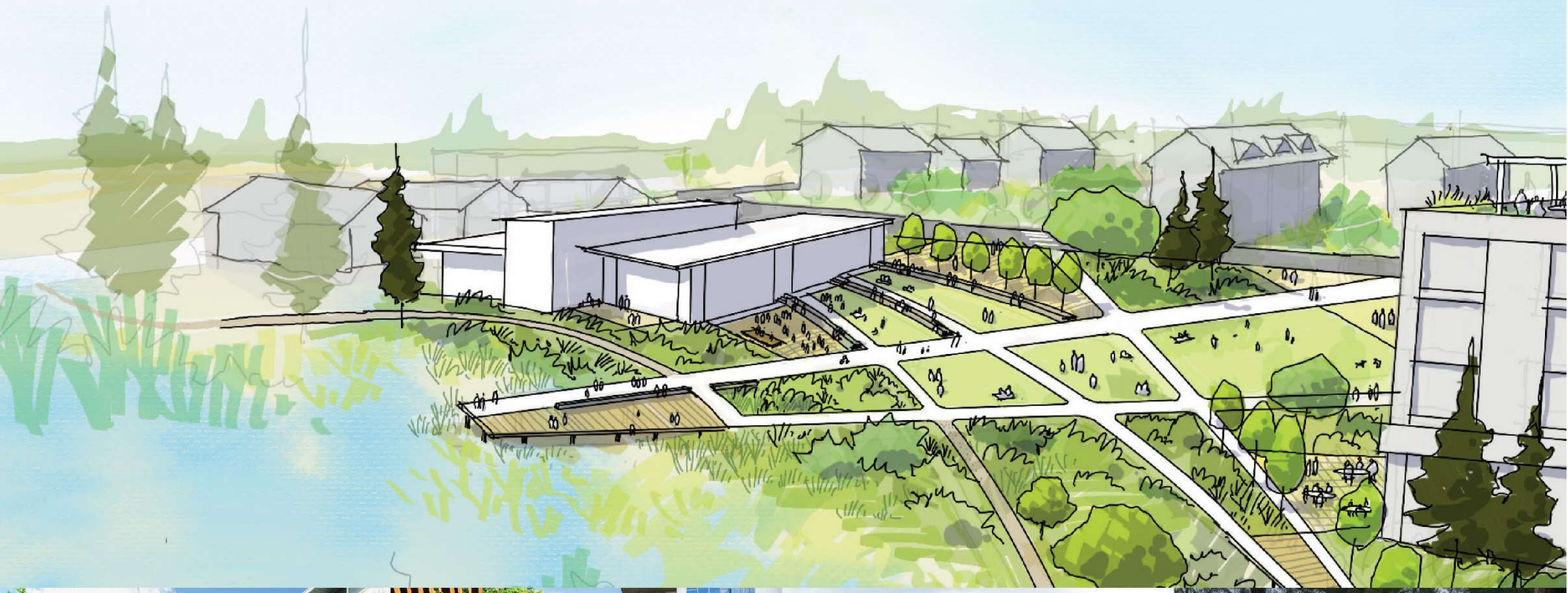
Regards,

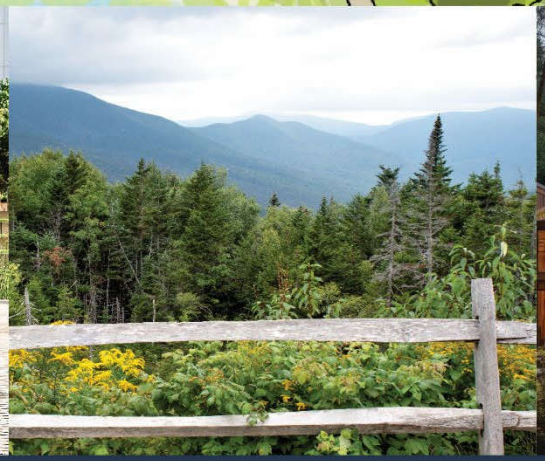
Ashley Freese

Ashley Freese
Biologist II

City of Camas WASHINGTON

North Shore **Subarea Design Manual**





July 2023

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Section 1. How to Use this Document

1.1 Purpose

The North Shore subarea consists of approximately 990 acres of land north of Lacamas Lake in Camas (**see Figure 1**). During the planning process for the subarea plan, the community expressed a desire for the North Shore to become a unique and special part of Camas that is complementary to the surrounding natural environment.

The North Shore Design Manual builds on the vision statement and design guidelines identified in the adopted subarea plan. The design guidelines have been refined where needed to provide additional details and to provide clear and objective standards for property owners and developers. These guidelines supplement the requirements included in the Camas Municipal Code (CMC) and are not intended to replace any requirements included in the code.

This document is intended to encourage high-quality design that creates a sense of place in the North Shore consistent with the community's vision. This document uses the words "should" and "encourage" to identify recommended guidelines, while the word "shall" indicates required principles for development.

Figure 1 North Shore Subarea Boundary

North Shore Vision

The North Shore is a unique and beautiful place that is valued by the Camas community. Historically, the area has included agricultural uses and single-family residences on large, rural acreages. As the area is redeveloped, consistent with the adopted North Shore Subarea Plan, it is important to balance development with the protection of the area's environmental resources and rural character.

After extensive community outreach, in September 2020, the City Council adopted the following vision statement for the North Shore.

- 1. Preserve the North Shore's natural beauty and environmental health.
- 2. Plan a network of green spaces and recreational opportunities.
- 3. Cluster uses for a walkable community.
- 4. Provide a variety of housing options.
- 5. Locate industrial parks and commercial centers to the north.
- 6. Favor local-serving businesses.
- 7. Plan for needed schools and infrastructure.
- 8. Strive to maintain Camas' small town feel.

Development Character – Pacific Northwest Style and Sustainability

Through the subarea planning process, the community provided input on the development character and architectural styles that would be consistent with the North Shore Vision. A Pacific Northwest building style was identified as the most appropriate style for future development in the North Shore. That style includes materials that are native to the Pacific Northwest and/or architectural features that are traditionally seen in historic buildings throughout the Pacific Northwest.

- Extended overhangs
- Exterior materials include a mix of, stone, concrete, wood siding, and/or stucco
- Buildings should avoid metal and stucco siding as the primary public-facing exterior
- Low-slope roof forms
- Balanced horizontal and vertical lines
- Neutral color palette complementing the natural environment

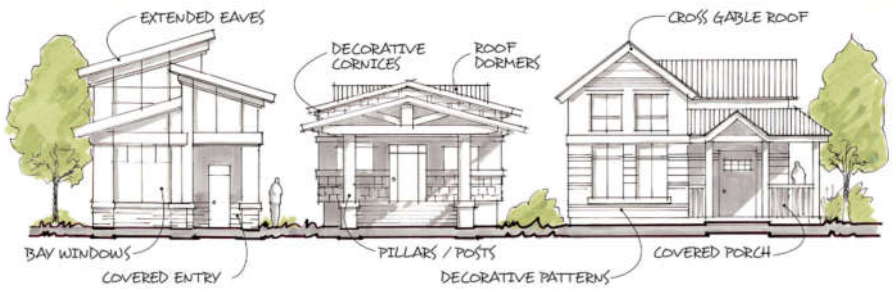


Figure 2 Elements of the Pacific Northwest Style

Many of the vision statement elements and public comments received during the subarea planning process highlighted the desire to protect the natural beauty of the North Shore and to incorporate forward-thinking sustainable practices in new construction. Sustainability guidelines and principles are identified in Section 4.

1.2 The Design Approval Process

All new development and redevelopment in the subarea are subject to the City's design review process prior to building permit issuance (**see Figure 3**). This manual is intended to supplement the development standards in the CMC and all development must be compliant with the CMC. If the requirements of this manual conflict with other regulations, the Director shall interpret which document applies.

Project proponents should contact the City of Camas for all required approval processes.

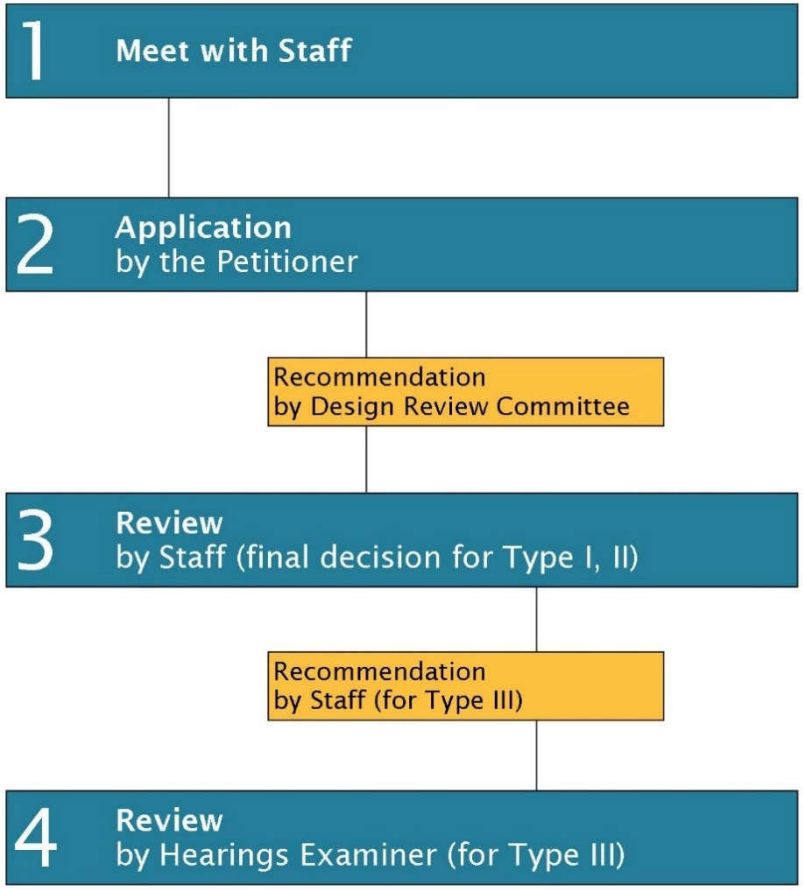


Figure 3 North Shore Design Review Process

1.3 Land Use District Map

Figure 4 identifies the six land use districts established by the North Shore subarea plan. Please review the Camas Zoning Map to confirm the zoning designation of a property, as zoning changes may occur over time.

North Shore Land Use Districts

Mixed Employment (ME-NS)
Uses include a wide variety of employment uses, including retail, office space, warehouse, and manufacturing.

North Shore Mixed Use (MX-NS)
Uses include a wide range of commercial and residential uses, including book stores, bakeries, cafes, live-work units, florists, and medical offices.

North Shore Commercial (C-NS)
Uses include a wide range of commercial uses, including banks, restaurants, fitness centers, and neighborhood grocery stores.

Higher Density Residential (HD-NS)
Uses include apartments and other multi-unit residential buildings, including rowhouses and cottage-style housing developments.

Lower Density Residential (LD-NS)
Uses include detached and attached single-family residential development, including rowhouses and cottage-style housing developments.

Park / Open Space (NS-P/OS)
Parks and open space uses could include public plazas, pocket parks, and public gathering spaces within streetscapes.

Figure 4 Land Use Districts

**Additional uses are described in Chapter 18.07 of the City of Camas Zoning Code.*

Section 2. Land Use and Development Standards

2.1 North Shore Lower Density Residential (LD-NS)

Intent and Character

The North Shore – Lower Density (LD-NS) district is intended for low density residential developments, including the following types of housing.

- Detached single-family homes
- Duplexes
- Cottage cluster developments
- Accessory dwelling units (ADUs)

A complete list of uses allowed in the LD-NS district can be found in CMC 18.07.040. Developments in this zone should support transitions from existing uses to more dense zones.

Design Standards and Guidelines

The following sections describe the standards and guidelines that should be followed for all new development and redevelopment in the LD-NS district.

Lower Density Residential Area (Source: © alenamozhjer / Adobe Stock)

Figure 5 Cottage Cluster Development

Dimensional Standards

The tables below identify the dimensional standards applicable to the LD-NS district. All standards should be confirmed in CMC 18.09. Parking requirements are determined by CMC 18.11

Table 1. Dimensions and Standards for Standard Lots in LD-NS

Item	Standard
Density range (min-max dwelling units/acre)	4-5.8
Average lot area (square feet)	7,500
Minimum lot size (square feet)	5,400
Maximum lot size (square feet)	12,000
Minimum lot width	40
Minimum lot depth	90
Average building lot coverage	45%
Average lot area (square feet)	7,500
Maximum building height (feet)	35
Setbacks, Street loaded (feet):	
Front yard	10-25
Side yard	5 / 10 if flanking a street and corner lot rear yard
Rear yard	10-20
Setbacks, Alley loaded (feet):	
Front yard	10
Side yard	5
Rear yard	10-20
Maximum building height (feet)	35

Table 2. Dimensions and Standards for Cottage Cluster Developments
Cottage-style dwellings are permitted in the LD-NS, HD-NS, and MX-NS districts.

Item	*Standard*
Developable acreage	Up to 25% of project site
Minimum lot size (square feet)	2,400
Minimum lot width	30
Minimum lot depth	50
Average building lot coverage	Minimum of 200 sf of useable yard adjacent to each dwelling unit
Maximum building height (feet)	25
Setbacks (feet):	
Front yard/at garage front	0/20
Side yard	0 / 10 if abutting LD-NS or other R-zone
Side yard, flanking street	10
Rear yard	0 / 10 if abutting LD-NS or other R-zone

Site Development Guidelines

The following guidelines apply to all development in the LD-NS district.

- Lot sizes should be varied to avoid "cookie cutter" and predictable suburban development patterns, and to better reflect the natural geography.
- Porches should be located on the street-facing façade and can be linear or wrapping.
- Attached garages are encouraged over detached garages. If detached, the garage should be located behind the primary structure.
- ADUs are encouraged to support housing variety. ADUs should be designed to complement the primary residence.
- The form and layout of buildings should be oriented to retain or integrate with the existing topography, natural habitat, and respond to climatic or solar conditions.
- Developments should integrate appropriate sustainable design features, such as passive building design, green roofs, permeable surfaces, stormwater management, and naturescaping (see Section 4).

Attached garage with matching trim and windows (Source: © bmak / Adobe Stock)

Site Development Principles

The following principles apply to all development in the LD-NS district.

- Residential development shall provide roof variation and detail through the use of dormers and other design elements of the Pacific Northwest style as described in Section 2.
- A pedestrian pathway shall be provided from the main entrance of the dwelling to the sidewalk.
- All garages shall include similar architectural features as the primary structure (e.g., windows, siding) to blend in with the residence.
- Fences shall not block views to or from the street.

ADU in the Pacific Northwest style (Source: © Joshua / Adobe Stock)

Porch and dormer windows

(Source: © bmak / Adobe Stock) *(Source: © Mark Herreid / Adobe Stock)*

2.2 North Shore Higher Density Residential (HD-NS)

Intent and Character

The North Shore – Higher Density (HD-NS) district is intended for high density residential developments. Developments in this zone should provide for a variety of housing options with a minimum density of 10 dwellings per acre. Housing types permitted in this district include multifamily buildings, rowhouses, triplexes and fourplexes, and cottage clusters.

Design Standards and Guidelines

The following sections describe the standards and guidelines that should be followed for all new development and redevelopment in the HD-NS district.

Figure 6 Rowhouse Development

Figure 7 Multifamily Building Development

Dimensional Standards

The tables below identify the dimensional standards applicable to the HD-NS district. All standards should be confirmed in CMC 18.09. Parking requirements are determined by CMC 18.11

Table 3. Dimensions and Standards for Standard Lots in HD-NS

Item	Standard
Density range (min-max dwelling units/acre)	10 - 18
Minimum lot size (square feet)	1,800
Maximum gross floor area	No maximum
Minimum lot width	20
Minimum lot depth	60
Average building lot coverage	65%
Maximum building height (feet)	50
Setbacks (feet):	
Front yard/at garage front	10/20
Side yard	3
Side yard, flanking street	15
Rear yard	10

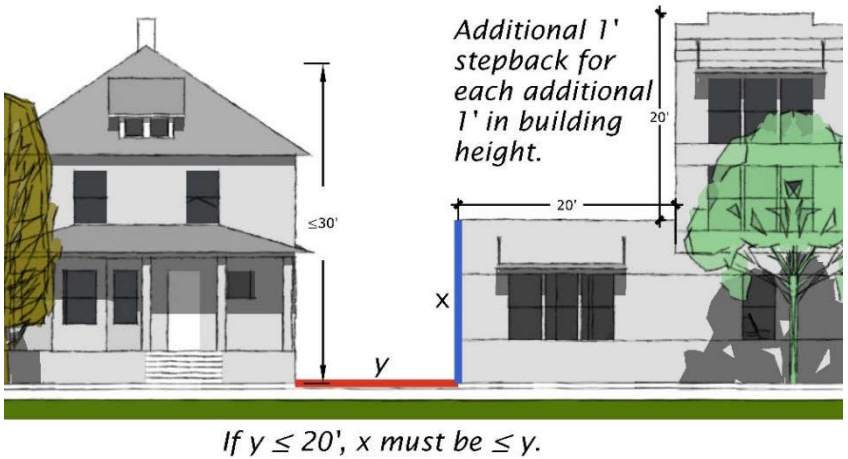


Figure 8 Stepped Transition Diagram

Table 4. Dimensions and Standards for Cottage Style Dwellings

Cottage style dwellings are permitted in the LD-NS, HD-NS, and MX-NS districts)

Item	Standard
Developable acreage	Up to 25% of project site
Minimum lot size (square feet)	2,400
Minimum lot width	30
Minimum lot depth	50
Average building lot coverage	Minimum of 200 sf of useable yard adjacent to each dwelling unit.
Maximum building height (feet)	25
Setbacks	
Front yard/at garage front	0/20
Side yard	0 / 10 if abutting LD-NS or other R-zone
Side yard, flanking street	10
Rear yard	0 / 10 if abutting LD-NS or other R-zone

As shown on Figure 8, a stepped-transition in building height and mass shall be used to move from higher density to lower density and from a more intense mix-of-uses to single uses to provide compatible scale and privacy between developments (see CMC 18.19.050).

Site Development Guidelines

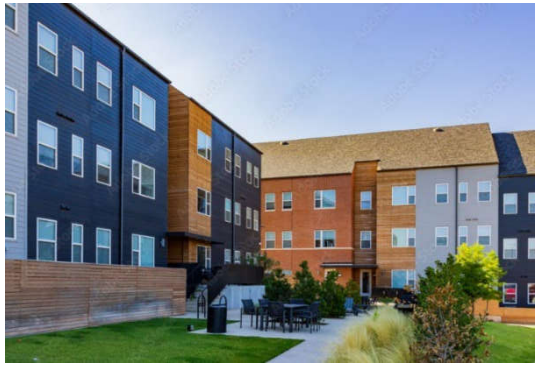
The following guidelines apply to all development in the HD-NS district.

- Residential units should be organized around common green spaces that incorporate stormwater draining, seating areas, play spaces, and internal pathways.
- The visibility of off-street surface parking should be minimized by integrating structured and tuck-under parking in buildings or locating surface parking behind buildings.
- Stoops and porches are encouraged for ground-level units. Porches are also encouraged for upper units to provide visual interest.
- Publicly dedicated parks and green or open-space within the HD-NS district should follow the design guidelines described in Section 2.6.

Site Development Principles

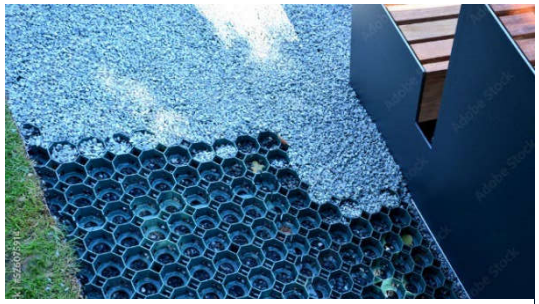
The following principles apply to all development in the HD-NS district.

- All off-street surface parking areas shall be screened with landscaping. See CMC 18.13.060 for specific requirements for parking lot landscaping.
- Principal pedestrian entries shall be located along a public street or public common space.
- A stepped-transition shall be used in building height and mass to move from higher density to lower density.
- Weather protection shall be provided along public-facing facades and building entries.
- Dark-sky friendly lighting shall be used for outdoor areas.
- Appropriate sustainable design features shall be integrated where feasible, such as passive building design, green roofs, permeable surfaces, stormwater management, and naturescaping (see Section 4).



Apartments oriented around a common space (Source: © Kit Leong / Adobe Stock)

Stoops, porches, and balconies provide visual interest (Source: © Elenathewise / Adobe Stock)



Permeable surfaces should be used in the overall stormwater management plan for developments (Source: © Michal / Adobe Stock)

2.3 North Shore Commercial (C-NS)

Intent and Character

The North Shore Commercial (C-NS) district is intended to allow for a range of commercial activities providing goods and services in the subarea. Public-facing commercial buildings should add to the pedestrian-level environment by including ground-level windows and entrances.

Design Standards and Guidelines

The following sections describe the standards and guidelines that should be followed for all new development and redevelopment in the C-NS district.

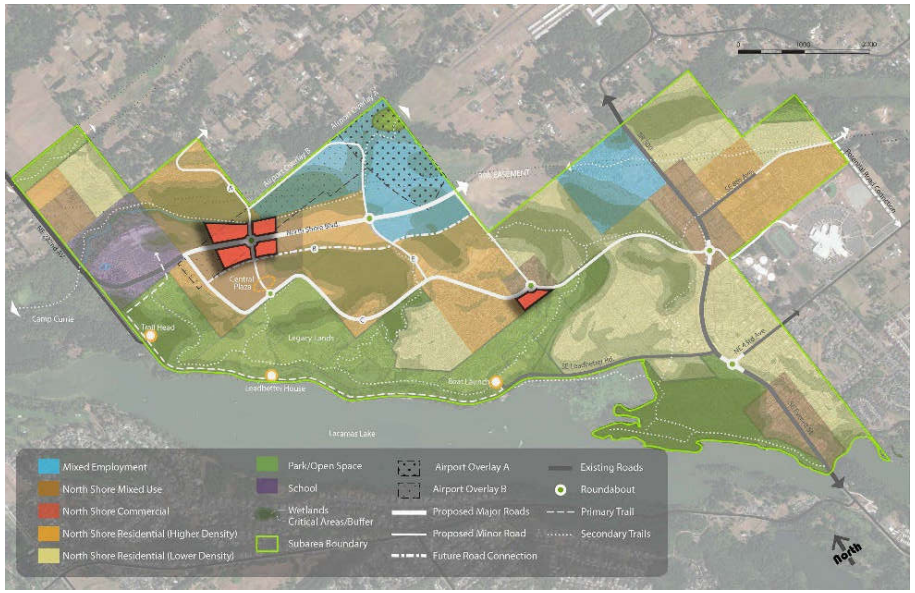
Dimensional Standards

The tables below identify the dimensional standards applicable to the C-NS district. All standards should be confirmed in CMC 18.09. Parking requirements are determined by CMC 18.11

Table 5. Dimensions and Standards in C-NS

Item	Standard
Minimum lot size (square feet)	None
Minimum lot width	None
Minimum lot depth	None
Maximum building lot coverage	None
Maximum building height (feet)	100
Minimum usable open space[1]	5% of net acreage
Setbacks (feet):	
Front yard	15
Side yard	None
Rear yard	None

1. "Usable Open Space" means areas planned and improved to provide opportunities for active recreation, passive relaxation, or community interaction, and that are accessible to the public or to residents, employees, or customers in common. Examples include plazas, courtyards, private parks, sport fields and courts, and viewpoints overlooking natural resource areas. Usable Open Space does not include public parks unless the parks were approved as Usable Open Space and conveyed to the City (CMC 18.03).



Commercial Street in Boulder, CO (Source: © Jen Lobo / Adobe Stock)

Site Development Guidelines

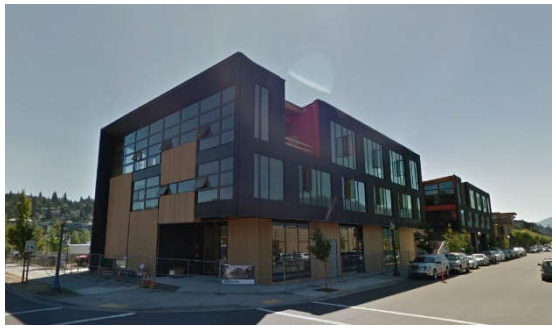
The following guidelines apply to all new development and redevelopment in the C-NS district.

- Encourage small, local businesses, such as restaurants, cafes, and grocers that serve North Shore residents and businesses, while complementing downtown Camas.
- Buildings should be oriented to enhance the natural topography.
- All new developments should provide multimodal connections throughout the development, as well as to adjacent developments.
- The visibility of off-street surface parking should be minimized by locating parking in buildings or locating surface parking behind buildings.
- Public plazas are encouraged in the C-NS district and should incorporate similar design features to the established central plaza to add to the sense of place. See Section 2.4, MX-NS district for a description of the design features recommended for the central plaza.
- Sustainable design features are encouraged, such as passive building design, green roofs, permeable surfaces, stormwater management, and naturescaping (see Section 4).

Site Development Principles

The following principles apply to all development in the C-NS district.

- Commercial buildings shall include multiple points of entry and ground-floor windows to facilities access, visual interests, and promote safety.
- Public-facing facades shall provide weather protection through deep-overhangs, which are allowed within the front yard setback.
- Developments shall avoid large blank wall surfaces.
- Outdoor storage, loading, and equipment areas shall be located and designed to blend in with the surroundings.
- Setbacks and landscaping shall include multimodal amenities where possible, such as bike racks and benches.
- Parking areas available to the general public shall be clearly identified and connected to the building entry and/or sidewalk with a pedestrian path.



Parking lots are located behind commercial buildings along the Hood River waterfront (Source: 403 Portway Ave, Hood River, OR; digital image, "Street View," GoogleMaps (45°42'52.92" N 121°30'50.66" W: accessed 5/8/2023).

Weather protection and landscaped bollards support a pedestrian friendly streetscape (Source: @ SeanVavonePhoto / Adobe Stock)

Seating, landscaping, and public art add visual interest (Source: @ Schrodington, LLC / Adobe Stock)

2.4 North Shore Mixed Use (MX-NS)

Intent and Character

The North Shore Mixed Use (MX-NS) district is intended to provide for a wide range of commercial and residential uses. Compact development is encouraged to support transit and pedestrian travel. Developments in this zone should create spaces for community gathering, waiting, discussion, and outdoor commercial activities. Cottage-style and rowhouse developments are allowed residential uses within the MX-NS zone and are to follow the design standards and guidelines described in Sections 2.1 and 2.2.

Design Standards and Guidelines

The following sections describe the standards and guidelines that should be followed for all new development and redevelopment in the MX-NS district.

The general location of the Central Plaza is shown above.

Dimensional Standards

The tables below identify the dimensional standards applicable to the MX-NS district. All standards should be confirmed in CMC 18.09. Parking requirements are determined by CMC 18.11

Table 6. Dimensions and Standards in MX-NS

Item	Standard
Density range (min-max dwelling units/acre)	24
Minimum lot size (square feet)	1,800
Maximum gross floor area	None
Minimum lot width	None
Minimum lot depth	None
Average building lot coverage	65%
Maximum building height (feet)[1]	100
Minimum Useable Open Space	100 sf / dwelling unit
Setbacks (feet):	
Front yard (maximum setback at front building line)	10
Side yard	10
Rear yard/alley-loaded	10/20

1. Bird-friendly windows and window treatments are encouraged, in particular, next to open spaces and wildlife habitat.

Site Development Guidelines

The following guidelines apply to all new development in the MX-NS district.

- Shared parking is encouraged between adjacent or vertically mixed uses.
- All new developments should provide multimodal connections throughout the development, as well as to adjacent developments.
- Parking areas available to the general public should be clearly identified.
- Sustainable design features are encouraged, such as passive building design, green roofs, permeable surfaces, stormwater management, and naturescaping (see Section 4).

Site Development Principles

The following principles apply to all new development in the MX-NS district.

- Landscaped setbacks and entry-points shall incorporate aspects from landscaping of nearby residential developments.
- For ground-floor residential spaces in this zone, landscaping shall provide adequate privacy from the public view.
- Wayfinding and interpretative signage shall be provided to direct people to historic, cultural, and natural resources throughout the area.
- Ground-floor commercial space shall include pedestrian amenities fronting the right-of-way. This may include adequate down-facing lighting, public seating or resting facilities, bicycle racks, small-scale landscaping consistent with the natural environment, and signage consistent with this design manual.
- Mixed-use developments that front the central plaza shall include ground-floor retail/commercial space to encourage pedestrian-level activity.

Central Plaza

A public central plaza shall be developed within the MX-NS zone to serve as a gateway from the recreational areas of the Legacy Lands to the commercial core of the subarea. The location of the central plaza will be determined in coordination with the City. The following standards and guidelines apply to the central plaza.

- The central plaza shall be a minimum of 1 acre and open to the general public.
- If the central plaza is bisected by a street, provisions shall be made for turning the street into a "festival street," which allows for closing the street to vehicular traffic to facilitate events.
- The central plaza should allow for a variety of activities, including passive recreation and leisure, public art features and outdoor events.
- The central plaza shall be landscaped consistent with the landscaping requirements included in Section 4.
- Signage shall be used throughout the central plaza to direct people to the established pedestrian crossings to the Legacy Lands and recreational opportunities. Signage design shall be consistent with the guidelines included in Section 3.1.

The Northwest Crossing mixed use development in Bend, OR (Source: 2021, Grove NWX-Birdseye View, hackerarchitects.com)

Figure 9 Conceptual festival street in the North Shore

2.5 North Shore Mixed Employment (ME-NS)

Intent and Character

The North Shore Mixed Use (ME-NS) district is intended to provide for a wide range of employment uses, including:

- Retail
- Office space
- Warehouses
- Manufacturing
- Other employment uses

See CMC 18.07.030 for a complete list of allowed uses in the ME-NS zone.

Design Standards and Guidelines

The following sections describe the standards and guidelines that should be followed for all new development and redevelopment in the ME-NS district.

Dimensional Standards

The tables below identify the dimensional standards applicable to the ME-NS district. All standards should be confirmed in CMC 18.09. Parking requirements are determined by CMC 18.11

Table 7. Dimensions and Standards in ME-NS

Item	Standard
Minimum lot size (square feet)	None
Minimum lot width	None
Minimum lot depth	None
Average building lot coverage	None
Maximum building height (feet)[1]	100
Minimum Useable Open Space[2]	5% of net acreage
Front yard	None
Side yard	None
Rear yard	None

1. Bird-friendly windows and window treatments are encouraged, in particular, next to open spaces and wildlife habitat.
2. "Usable Open Space" means areas planned and improved to provide opportunities for active recreation, passive relaxation, or community interaction, and that are accessible to the public or to residents, employees, or customers in common. Examples include plazas, courtyards, private parks, sport fields and courts, and viewpoints overlooking natural resource areas. Usable Open Space does not include public parks unless the parks were approved as Usable Open Space and conveyed to the City (CMC 18.03).

Site Development Guidelines

The following guidelines apply to all new development and redevelopment in the ME-NS district.

- Building elevations facing the public right-of-way should have the appearance of distinct design quality that reflects the Pacific Northwest style, as described in Section 1.1.
- Buildings should be oriented to enhance the natural topography.
- Green roof technologies are encouraged to collect, store, and discharge stormwater from building roofs by use of sloping roofs, gutters, downspouts, and cisterns.
- Integrate appropriate sustainable design features where feasible, such as passive building design, green roofs, permeable surfaces, stormwater management, and naturescaping (see Section 4).

Site Development Principles

The following principles apply to all development and redevelopment in the ME-NS district.

- Building facades shall incorporate ground-floor windows and entries where possible to establish visual breaks.
- Primary building entryways shall be visible to and accessible from the public right-of-way.
- Buildings shall locate and screen rooftop mechanical systems away from view of the public right-of-way.
- For warehouses, office spaces shall be located towards the front of the building closest to the public right-of-way.
- The visibility of off-street surface parking shall be minimized by locating parking in buildings or locating surface parking behind buildings.
- Developments shall avoid large blank wall surfaces that face public rights-of-way.
- Outdoor storage, loading, and equipment areas shall be located and designed to blend in with the surroundings.

At the LEED Silver Halyard Building in Hood River, OR, rooftop equipment is screened from the street, parking is located behind the building, and a stormwater cistern collects runoff. (Source: Halyard Building 2, robcon.com)

The LEED Silver In-situ Building in Bingen, OR, reflects the Pacific Northwest style, including wood siding and drought tolerant landscaping. (Source: lewisbuilds.com/projects/insitu)

2.6 Parks and Open Space

Intent and Character

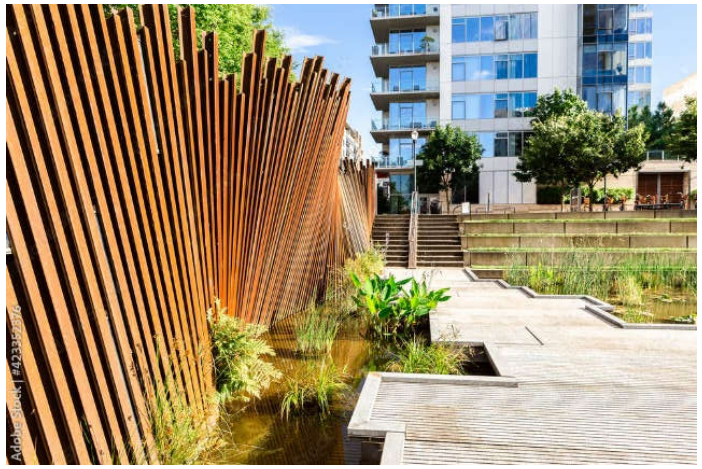
A key feature of the North Shore is the Legacy Lands, which are over 240 acres of protected open space along the north shore of Lacamas Lake.

The intent of the subarea is to locate trails and open spaces throughout the area, as well as on the edge of the subarea to create buffers for wildlife and to provide recreation opportunities. Design guidelines for parks and open space should be applied to all developments that incorporate parks and open space uses, regardless of the zone of the development. Parks and open space uses could include public plazas, pocket parks, sustainable stormwater management, HOA/private parks with future development agreements, public easements, and streetscapes, including public gathering spaces.

Site Design Principles

The following principles apply to parks and open space.

- Private developments with future development agreements shall collaborate with the Parks and Recreation Department to ensure the design is consistent with Parks and Recreation standards. Any City-owned parks or developments involving parks/open space land dedications must comply with the City's parks and open space standards included in the Camas Parks, Recreation, and Open Space Plan.
- Native soils, existing tree canopy, and topography shall be preserved to the greatest extent possible where feasible as determined by project engineers.
- Parks and open space shall incorporate landscaping consistent with Section 4 to reflect the natural character of the subarea.
- All public and regional trails throughout the subarea shall be constructed according to City specifications and refer to the design standards for trails in Appendix G of the Camas Parks, Recreation, and Open Space Plan.
- Path or bollard lighting shall be used along trails as appropriate and shall have low visual impacts to minimize interference with the natural environment while still providing safe use.



Tanner Springs Park in Portland, OR, highlights stormwater and wetland features to evoke the site's history (Source: © ansyvan / Adobe Stock)

Compass Park in Bend, OR includes native landscaping and large shelters for group gatherings (Source: Compass Park, bendparksandrec.org)

Section 3. Streetscapes and Rights-of-Way

Streetscapes refer to the elements within the public realm, typically within a right-of-way. Elements of the streetscape, such as streetlights, landscaping, benches, litter bins, etc., help set the tone of the public space. These guidelines are intended to provide a consistent theme and identity for streetscapes that reflect the natural surroundings and a small-town feel.

3.1 Design Guidelines

Street Lighting

Land use districts within the North Shore should employ lighting to set the tone for each distinct area. Not every district will use the same lighting type, but lighting elements in each district should match the general style and theme of the North Shore.

The following guidelines reflect the desired traditional "main street" lamppost form (e.g., four-sided, tapered profile) but with modern dark-sky features, including hooded luminaires directed downward to minimize shedding and light pollution.

- Lighting in the curb zone should be at the pedestrian scale, with place-identifying banners.
- Path and bollard lighting should use a traditional form and blend with natural surroundings.
- Streetlights should use a traditional form and include dark-sky features (downlighting and shielding)

Street Furniture

- Seating should be provided in public spaces (within mixed-use, commercial, and open spaces) to create passive recreation opportunities to pause or spend time.
- Planters should be used to provide transition from streetscapes to public plazas and establish a sense of place.
- To promote alternative transportation, proposed bicycle lanes, shared use paths, and trails should be supplemented with access to bicycle parking to allow for safe and easy transition from transit to interaction with commercial activities.
- Bike facilities shall be visually appealing and enhance the streetscape.
- Bike infrastructure, such as covered bike-parking, repair stations, and docked bike share, is encouraged near hubs in open space and commercial and mixed use areas.

Signage

- Consistent signage shall be used within the North Shore to establish a sense of place, signaling to visitors they are in a distinct, unique location.
- Materials should reflect and highlight the natural surroundings and promote a traditional "main street" composition.
- Non-street signs should be constructed of natural materials, such as wood and metal, to reflect the natural surroundings.
- Wayfinding and interpretive signage should be provided that directs people to historic, cultural, and natural resources throughout the area.
- Commercial blade or wall signs should be used to provide place identification at a pedestrian scale within the streetscape.

Street Landscaping

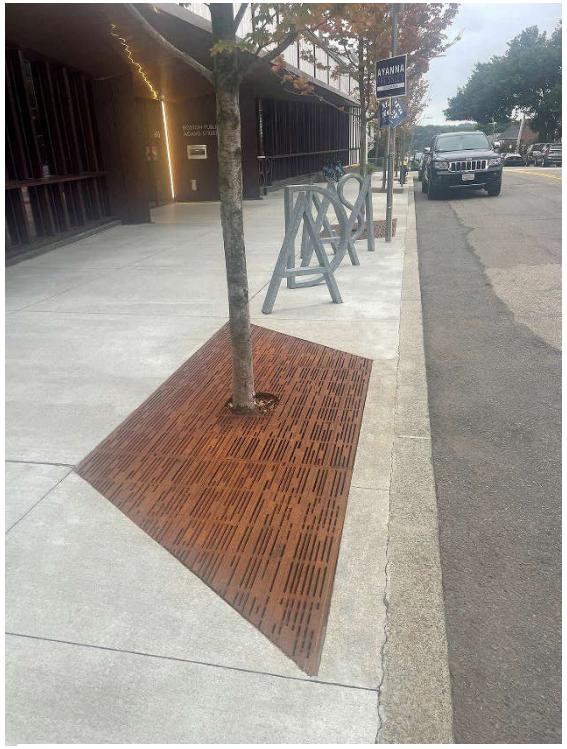
- Landscaped areas in streetscapes should be designed to reflect the natural character and ecology of the Pacific Northwest and use drought-tolerant native species that increase biodiversity. See Section 4 for additional details related to landscaping.

Tree Grates

- Custom tree and storm grates should be used to establish place identity and connect with natural surroundings.

Landscaped planters interspersed with benches along a public walkway (source: LandscapeForms)

Unique and consistent bike racks (source: LandscapeForms)



Custom tree grates and bike racks provide a unique identity (Source: Iron Age Designs)

Street and path lighting elements that have a consistent traditional form and dark-sky features (source: LandscapeForms)

Signage sets the tone for a "main street" feel (Source: Custom Logo Signs)

3.2 Rights-of-Way

Rights-of-way refer to the components and dimensions of public streets, such as sidewalks, curb zones, bicycle facilities, and drive lanes. Each right-of-way standard in this manual is set as a minimum required standard, where creativity and expansion beyond the standard is encouraged to establish North Shore as a unique setting within Camas. Components, such as bulb-outs and midblock crossings, shall be incorporated to promote safe pedestrian activity, designed according to Camas Engineering Design Standards Manual. Street trees are to follow the Landscape Standards of the Camas Engineering Design Standards Manual and Section 3.3, *Street Trees* below.

Local Streets

Local streets are designated for residential areas with a speed limit of 25 miles per hour. The figure below identifies some of the key elements of local street rights-of way. Street dimensions are represented as minimum requirements and will be subject to review by the City engineer.

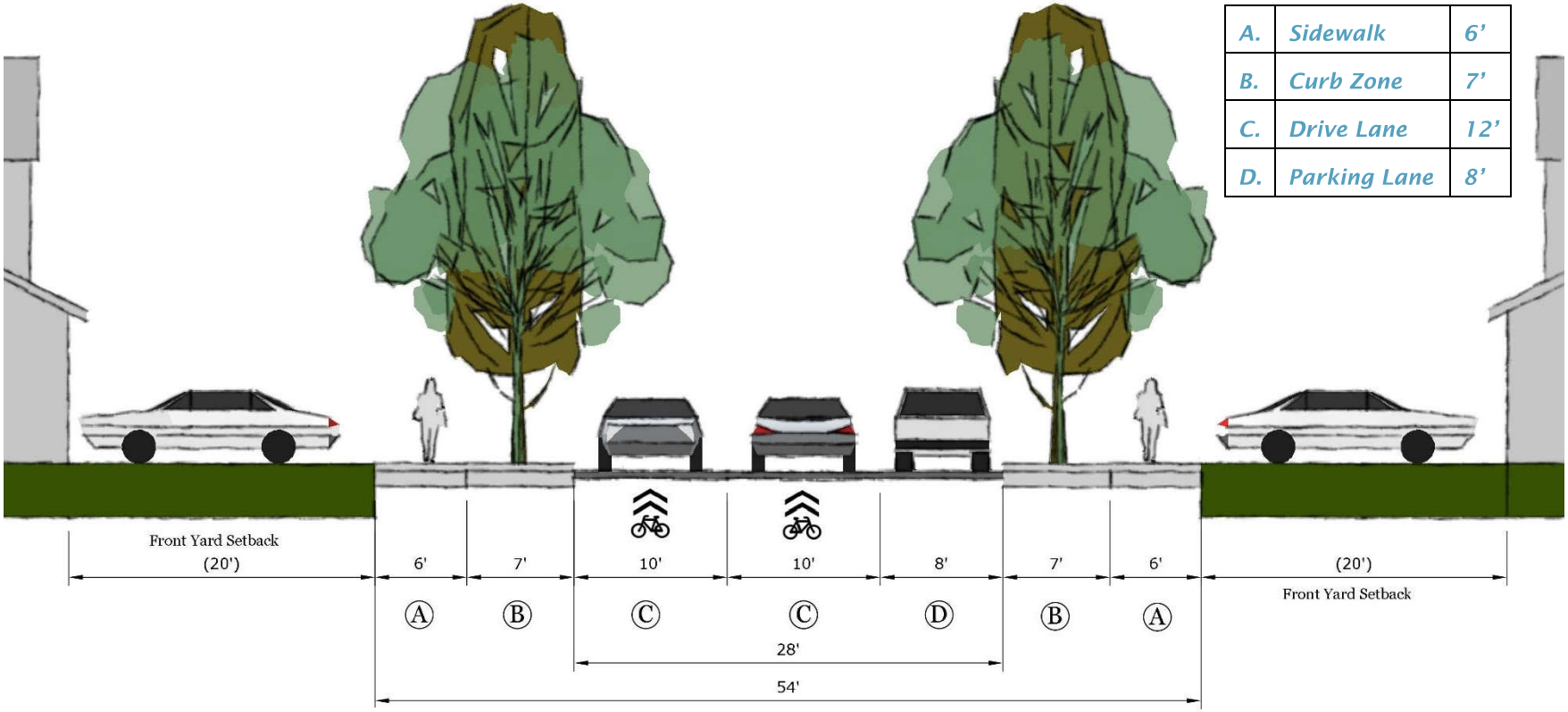


Figure 10 Local Street Right-of-Way (54' ROW min.)

Collector Streets

Collectors are the main connectors between local streets and arterials. The figure below identifies some of the key elements of collector street rights-of-way. Street dimensions are represented as minimum requirements and will be subject to review by the City engineer. Cross section details are subject to change, including the need for on-street parking in commercial nodes. Right-of-way elements should be modified to allow median turn lanes at intersections.

A.	Sidewalk	6’
B.	Curb Zone	6’
C.	Bike Lane	5’

D.	Buffer Striping	2’
E.	Drive Lane	10’
F.	Center Curb Zone	2’

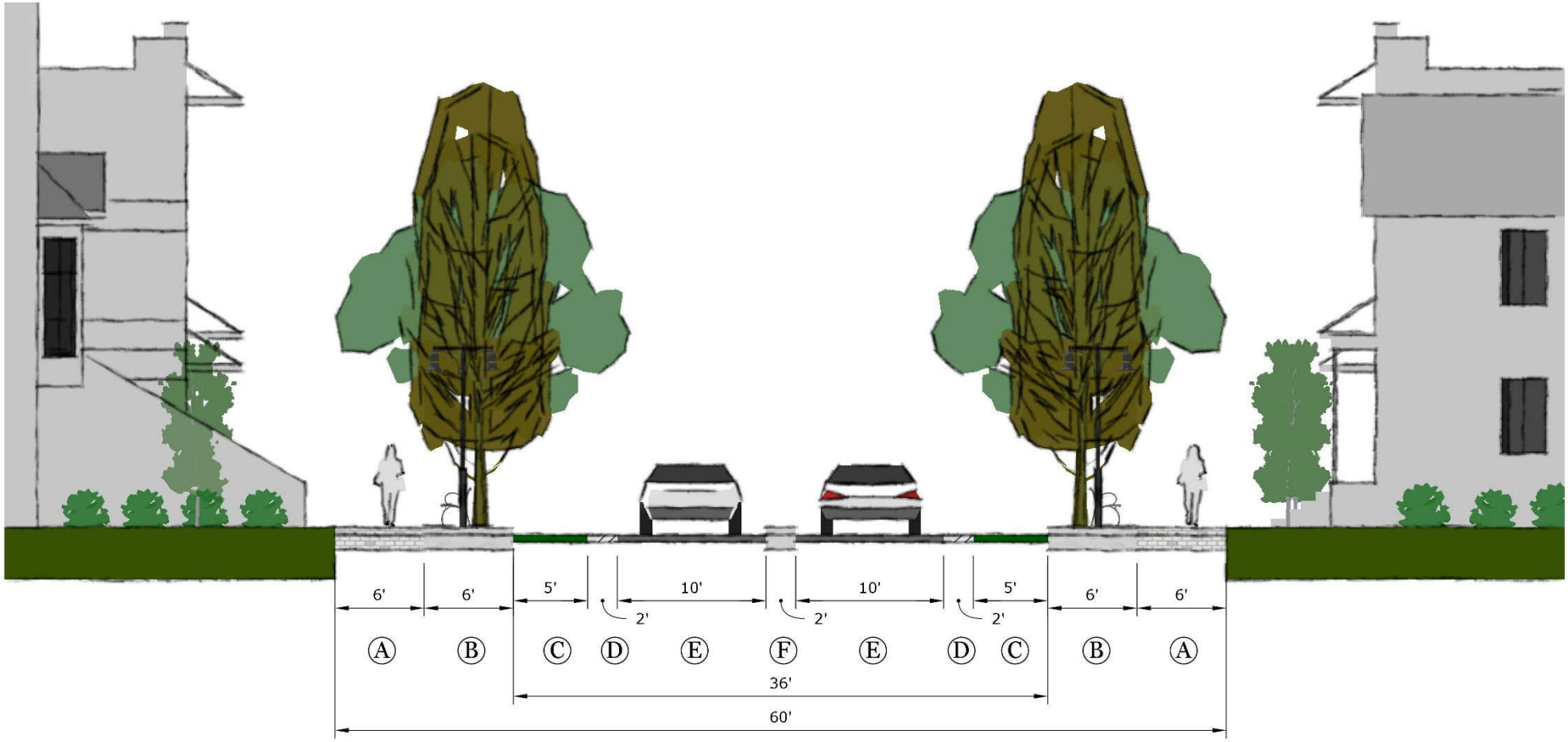
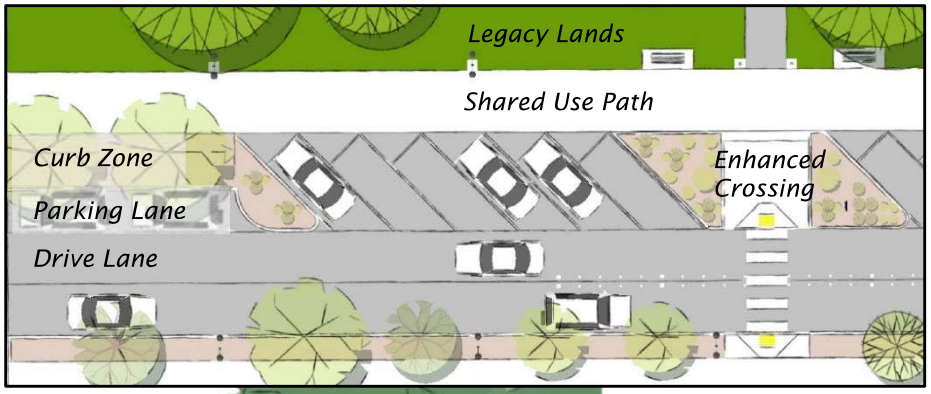


Figure 11 Collector Street Right-of-Way (60’ ROW min.)

Ridgeline Road

The ridgeline road is a planned arterial road (currently unnamed) that winds along the border of the Legacy Lands. The figure below identifies some of the key elements of the rights-of way. Street dimensions are represented as minimum requirements and will be subject to review by the City engineer. Enhanced crosswalks are required at intersections and designated midblock locations in commercial nodes.

*Parking lanes and curb zones near enhanced midblock crossings should be modified to allow angled parking spaces.



A.	Sidewalk	6'
B.	Curb Zone	5'
C.	Drive Lane	10'

D.	*Parking Lane	8'
E.	*Curb Zone	9'
F.	Shared Use Path	12'

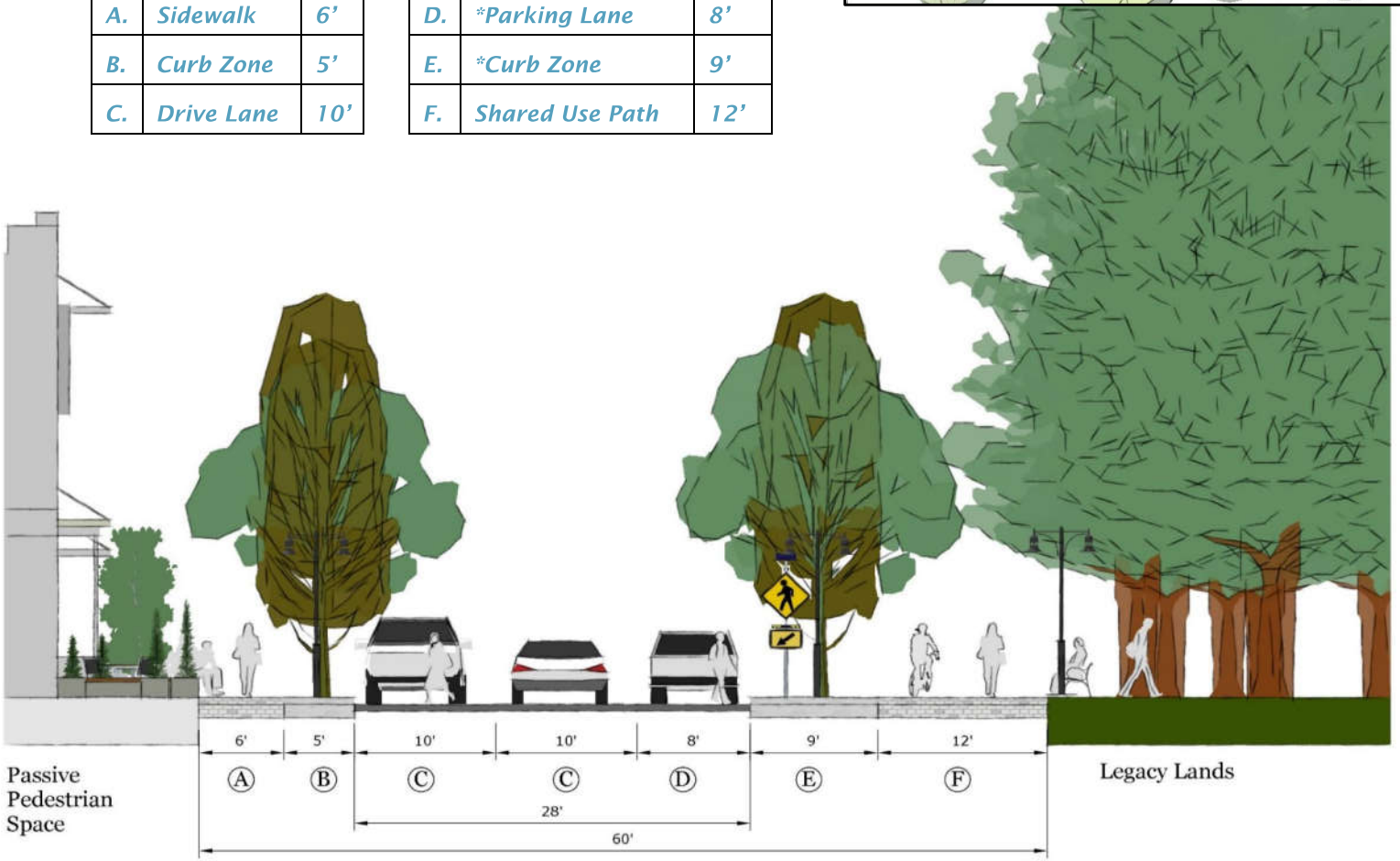


Figure 12 Ridgeline Road Right-of-Way (60' ROW min.)

North Shore Boulevard

The North Shore Boulevard is an arterial road that serves as the main thoroughfare through the downtown center of North Shore and may include roundabouts at key intersections as designated by the City. The figure below identifies some of the key elements of the rights-of way. Street dimensions are represented as minimum requirements and will be subject to review by the City engineer. Enhanced crosswalks are required in commercial nodes, subject to review by the City engineer.

A.	Sidewalk	8'
B.	Curb Zone	5'
C.	Bike Lane	5'

D.	Buffer Striping	2'
E.	Parking Lane*	8'
F.	Drive Lane	11'
G.	Center Curb Zone / Pedestrian Refuge Island	10'

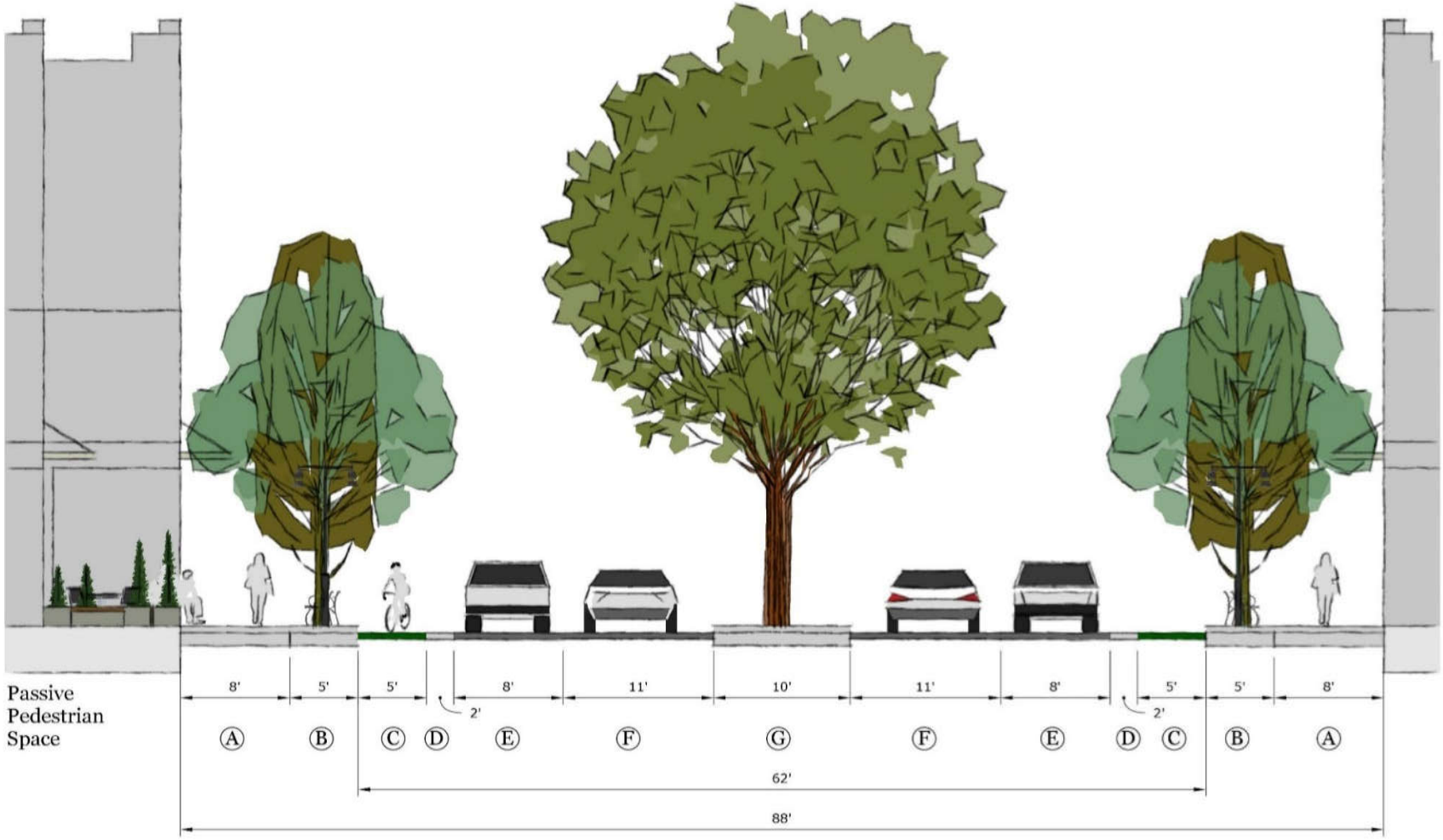


Figure 13 North Shore Boulevard Right-of-Way (88' ROW min.)

*On-street parking lanes are required in commercial nodes only. Arterials outside of commercial nodes will not allow on-street parking.

Enhanced Pedestrian Crossings

Enhanced crossings provide additional pedestrian safety and elevate the design elements of the streetscape. Developers shall work closely with the City engineer to locate and design these elements.

Bulb Outs, Refuge Islands, and Midblock Crossings

- Bulb outs should be used at intersections and midblock pedestrian crossings to shorten distances and preserve a protective visibility range by removing parking spaces where cars may otherwise obscure the view of the sidewalk.
- Where feasible, midblock crossings should be paired with bulb outs and refuge islands to shorten crossing distances across drive lanes.
- Raised crosswalks should be used to create a ramped speed table that allows pedestrians to cross at grade with the sidewalk. This design combines the effect of speed reduction with increased pedestrian visibility and accessibility.
- Midblock crossings shall be installed within blocks longer than 600 feet, or as designated by the City engineer.
- Pedestrian refuge islands shall be installed with midblock crossings and intersections of arterial streets.

Rectangular Rapid Flashing Beacons (RRFBs)

- When enhanced pedestrian crossings are required by the City engineer, RRFBs shall be used in combination with other features. RRFBs alert drivers only when pedestrians are present to preempt becoming accustomed to and selectively ignoring a continuous signal overtime.
- RRFB crosswalk signs shall be reinforced by on-grade reflectors and beacons.

Figure 14 Enhanced Crossing Elements

A.	Vegetated Bulb Out
B.	Midblock Crossing
C.	Rectangular Rapid Flashing Beacons (RRFBs)
D.	RRFB On-grade Reflectors/Beacons

Raised Crosswalk (Source: @ Michal / Adobe Stock

RRFB (Source: @ MicahaelVi / Adobe Stock

Vegetated Bulb Out (Source: portlandoregon.gov, BES)

Pedestrian Refuge Island: (Source: @ Media Castle / Adobe Stock

3.3 Street Trees

- Trees selected for use as street trees shall be long-lived species possessing qualities suitable for an urban streetscape, including branching characteristics, rooting characteristics, disease resistance, and non-fruiting. Street trees shall be selected from the Camas Design Standard Manual.
- Street trees shall be a minimum of 2-inch caliper, fully branched, and staked at the time of planting.
- Street trees shall be maintained to provide 8 feet of clearance area under the canopy at the sidewalk and 10 feet of clearance at the street.
- Street trees shall be planted on all street frontages at minimum 30-foot on-center spacing, as measured along abutting curb.
- Street trees shall be placed a minimum of 2-1/2 feet from the back of the curb as measured from the center of the tree, unless otherwise specified by the City.
- Street tree planters shall be covered with Americans with Disabilities Act (ADA) accessible tree grates that are a minimum of 6 feet by 6 feet. Street tree placement shall not impede pedestrian access and shall allow for a minimum 6-foot path of travel (the ADA accessible tree grates may be placed within the path of travel to meet these specifications).

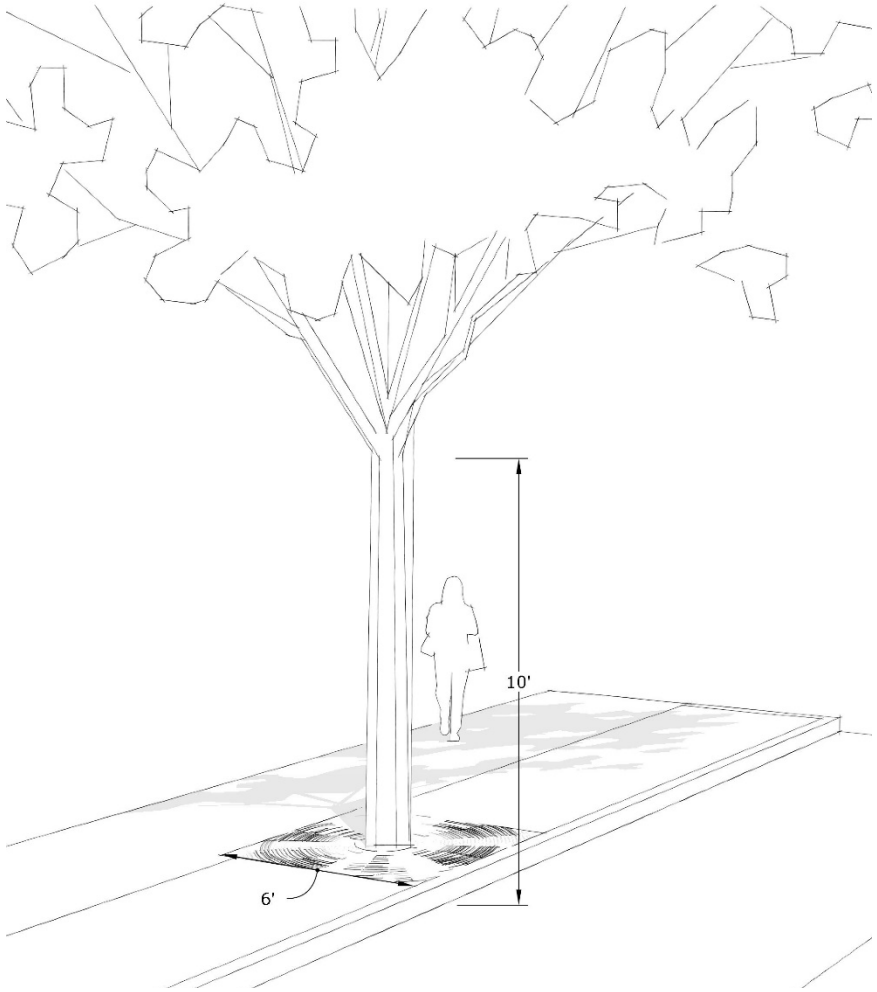


Figure 15 Street Tree Curb Zone Dimensions

Section 4. Sustainability

The following sustainable elements are strongly encouraged for all new development in the North Shore and shall not be prohibited by any covenants, conditions, and restrictions.

4.1 Sustainable Sites

- The form and layout of buildings should be oriented to retain or integrate with the existing topography, natural habitat, and respond to climatic or solar conditions.
- The amount of impervious surfaces around buildings, such as driveways, should be reduced by using permeable pavers or other pervious design elements where soil conditions permit.
- Waterways should be "daylighted," or restored to a more natural state, as part of stormwater management.
- Native soils, existing tree canopy, and topography should be preserved to the greatest extent possible.

4.2 Sustainable Buildings

- Sustainable features, such as solar panels and rain gardens, can be visually prominent.
- Bird-friendly windows and window treatments are encouraged, in particular next to open spaces and wildlife habitat.

4.3 Sustainable Streets

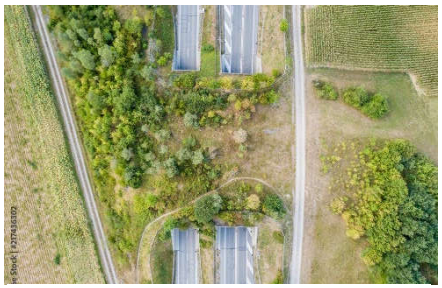
- Landscaped areas should use drought tolerant, native species that use stormwater runoff.
- Sidewalk strips should provide pollinator habitat to create "pollinator pathways" throughout the North Shore.
- Where soil conditons permit, green stormwater management facilities should be incporporated, including raingardens.
- Encourage the preservation and enhancement of wildlife corridors across public rights-of-way through wildlife crossings (under and overpasses designed for wildlife).
- Encourage the installation of electric vehicle charging stations within street curb zones.

EV charging stations in curb zones (Source: © I-Wei Huang/ Adobe Stock)

Driveways using permeable pavers (Source: © Francesco Scatena/ Adobe Stock)

Solar panels on a green roof (Source: © René Notenbomer/ Adobe Stock)

Pollinator habitat in a sidewalk strip (Source: © Sinuswelle/ Adobe Stock)



Wildlife crossing (Source: © Mario / Adobe Stock)

4.4 Sustainable Landscaping

Tree Protection and Replacement

Tree protection and replacement requirements for the North Shore are identified in CMC 18.13. The list below identifies some native and/or coniferous species that are appropriate for the North Shore.

Naturescaping

"Naturescaping" is a common approach to landscaping in the Pacific Northwest, and refers to landscaping that mimics nature and limits the need for human intervention (e.g., pesticides and irrigation). Naturescaping methods, such as those listed below, are encouraged in the North Shore.

- Limit traditional turf lawns, which require irrigation and provide limited habitat. Alternatives include clover lawns, native grasses, and "no mow" lawns.
- Use plant species that are native to the region (see the list below), which are acclimated to local climate conditions and provide habitat for local wildlife.
- Limit the use of pesticides, which have negative effects on pollinators, as well as water quality.
- Reduce water use by planting native species and using drip irrigation systems.
- Install raingardens to capture stormwater runoff and create habitat for pollinators and birds.

The following element is required in the North Shore:

- Invasive species, such as English ivy and Himalayan blackberry, are not permitted, and shall be removed where existing.

Native Plant List

The following list identifies some of the many plants that are native to Camas. Additional native species can be found through the Clark Conservation District, Washington Native Plant Society, East Multnomah Soil and Water Conservation District, or a similar organization.

Trees

- Oregon white oak (*Quercus garryana*)
- Douglas fir (*Pseudotsuga menzies*)
- Incense cedar (*Calocedrus decurrens*)
- W.V. Ponderosa pine (*Pinus ponderosa*)
- White alder (*Alnus rhombifolia*)
- Vine maple (*Acer circinatum*)

Shrubs

- Pacific ninebark (*Physocarpus capitatus*)
- Blue elderberry (*Sambucus cerulea*)
- Baldhip rose (*Rosa gymnocarpa*)
- Salmonberry (*Rubus spectabilis*)
- Evergreen huckleberry (*Vaccinium ovatum*)
- Red flowering currant (*Ribes sanguineum*)
- Salal (*Gaultheria shallon*)
- Snowberry (*Symphoricarpos albus*)
- Douglas spirea (*Spiraea douglasii*)
- Golden currant (*Ribes aureum*)

Groundcovers

- Common camas (*C. quamash Asparagaceae*)
- Kinnikinnick (*Arctostaphylos uva-ursi*)
- Lady fern (*Athyrium filix-femina*)
- False lily-of-the-valley (*Maianthemum dilatatum*)
- Slough sedge (*Carex obnupta*)
- Woodland strawberry (*Fragaria vesca*)
- Yellow wood violet (*Viola glabella*)
- Wild ginger (*Asarum caudatum*)
- Mockorange (*Philadelphus lewisi)*

Oregon white oak (Source: © SteenoWac/ Adobe Stock)

Salmonberry (Source: © Turk / Adobe Stock)

Baldhip rose (Source: © Birdmanclark / Adobe Stock)

Common Camas (Source: © Alexandra / Adobe Stock)

Carey Certo

From: Max Ivanitski <jdmax911@gmail.com>
Sent: Tuesday, June 2, 2026 8:31 PM
To: Community Development Email
Subject: Public Proposal Oliver Terrace Subdivision (File No. SUB25-1010)
Attachments: Public Proposal for Oregon White Oak Protection 06.02.2026.pdf

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Dear Hearings Examiner and Community Development Staff,

I am submitting the attached Public Proposal for Oregon White Oak Protection regarding the Oliver Terrace Subdivision (File No. SUB25-1010).

The applicant has commited that the existing Oregon White Oak trees are proposed to be retained. The attached proposal outlines several measures intended to ensure that these preservation commitments remain enforceable throughout construction and are not later modified without appropriate public review.

I respectfully request that this letter and the attached proposal be included in the official record for the public hearing and considered by the Hearing Examiner when evaluating the proposed subdivision.

Thank you for your time and consideration.

Respectfully submitted,

Max Ivanitski

06/02/2026

Public Proposal for Oregon White Oak Protection

Re: Oliver Terrace Subdivision (File No. SUB25-1010)

Purpose of this Proposal

The purpose of this proposal is to ensure meaningful and enforceable protection of the existing Oregon White Oak trees identified on the project site.

Oregon White Oak trees are a valuable native species that contribute to local wildlife habitat, environmental quality, neighborhood character, and the long-term ecological health of the area. While the applicant has stated that the existing Oregon White Oak trees are intended to be preserved, the current project record does not appear to contain sufficient enforceable measures to guarantee their protection during construction and throughout the life of the development.

Accordingly, I respectfully request that the City of Camas incorporate the following conditions of approval to minimize the risk of tree removal, construction-related damage, root-zone disturbance, and future administrative changes that could result in the loss of these trees without public review.

Proposed Conditions

1. **Tree Preservation Requirement**

   All existing Oregon White Oak trees identified within the subdivision shall be preserved and protected unless removal is specifically authorized by the City following a public review process and a finding that no reasonable alternative exists.

2. **Certified Arborist Report**

   Prior to final engineering approval, the applicant shall submit a Tree Preservation Plan prepared by a certified arborist identifying:

   - ✓ Tree locations;
   - ✓ Tree condition and health;
   - ✓ Critical Root Zones;
   - ✓ Required protection measures;
   - ✓ Long-term monitoring recommendations.

3. **Construction Exclusion Zones**

   No grading, trenching, utility installation, stockpiling of materials, parking of equipment, soil compaction, or construction activity shall occur within the Critical Root Zone of any protected Oregon White Oak.

4. **Protective Fencing**

   High-visibility protective fencing shall be installed around the entire Critical Root Zone of each protected Oregon White Oak before any land clearing or grading activities begin and shall remain in place throughout construction.

5. **Arborist Monitoring**

   A certified arborist shall be present during any grading, excavation, utility work, or construction activities occurring within 50 feet of a protected Oregon White Oak.

6. **Stormwater and Utility Design Review**

   The applicant shall demonstrate that stormwater facilities, utility alignments, grading plans, and construction activities have been designed to avoid impacts to Oregon White Oak trees to the maximum extent practicable.

7. **Financial Assurance**

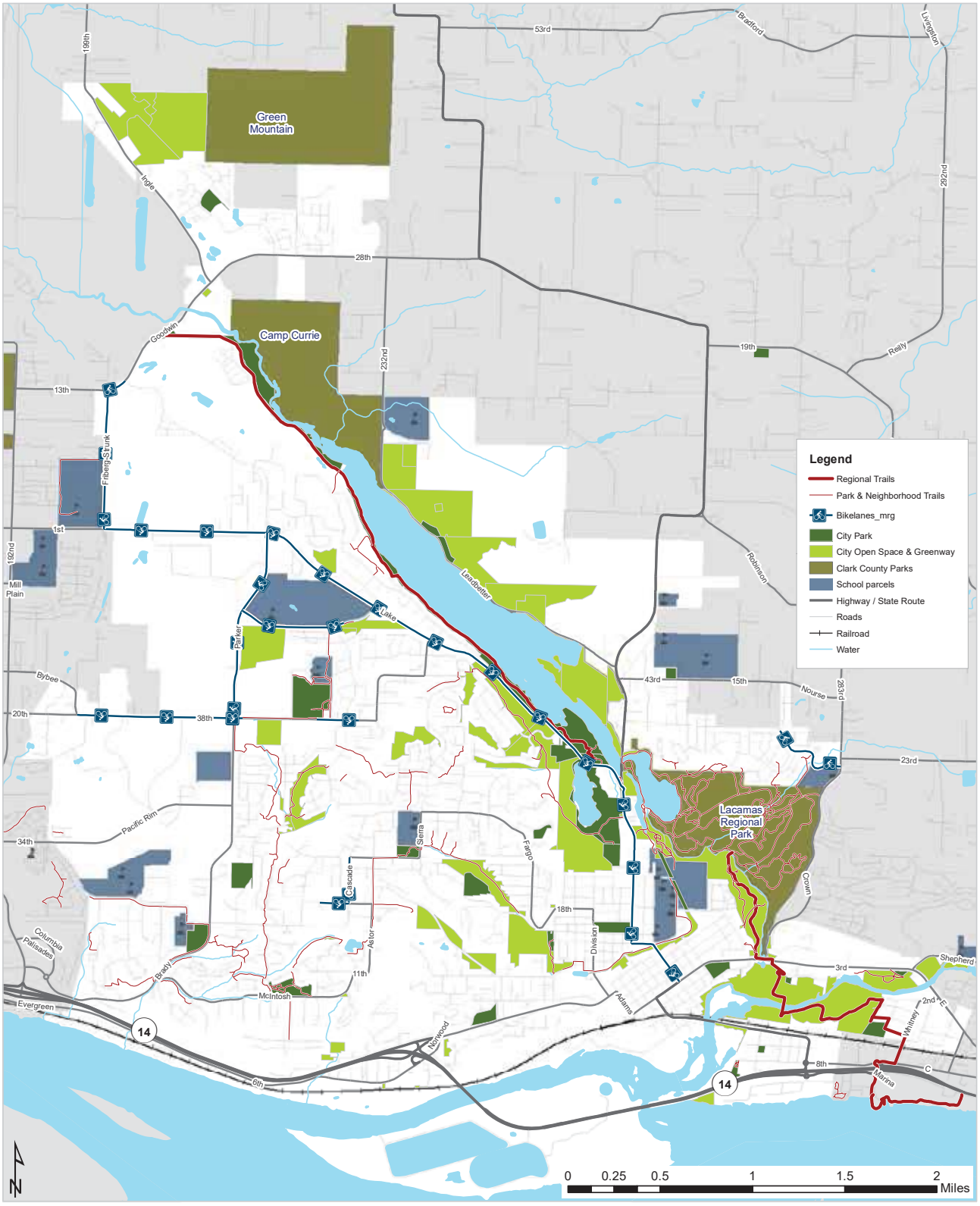
   The City shall have authority to require a tree preservation bond or other financial security sufficient to ensure compliance with approved tree protection measures.

8. **Future Public Review Requirement**

   Any future amendment, redesign, utility modification, grading change, stormwater revision, construction adjustment, or other project modification that could directly or indirectly impact, damage, relocate, or result in the removal of any protected Oregon White Oak tree shall require a new public review process, public notice, and approval by the applicable reviewing body.

The proposed subdivision can move forward while still preserving important native Oregon White Oak trees. These measures will provide meaningful safeguards, ensure accountability during construction. I respectfully request that the Planning Commission and City Council adopt these protections as conditions of approval for the Oliver Terrace Subdivision.

Respectfully submitted,
Max Nicholas Ivanitski
8950 N Kale Cir
Camas WA 98607



Map 7: Existing Trails

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Trail Demand

Park & Neighborhood Trails

During the public outreach, 80% of the community clearly identified that walking or running was a top reason for visiting Camas' parks. Park pathways are popular recreational amenities and significant contributors for promoting physical activity. This recreational trend is notable in state and national recreation surveys. Running, jogging and trail running are the most popular outdoor activities across the nation, based on levels of participation. Also, the need for more walking and biking trail connections that link parks together has been reinforced in the community survey and other public feedback. The online open house polled opinions about potential trail links and which were the highest priority. The Mill Ditch connection and safe crossings along Lake Road were also noted as important.

With the array of existing park trails and pathways within homeowner association lands, the City should prioritize a couple other connections to close existing gaps and improve options for loop trail routes, to include:

- Ostensen Canyon gap to link Dorothy Fox Park to Benton Park
- Prune Hill Sports Complex to Forest Home Park via Forest Home Open Space (will require on-street connections in coordination with transportation system planning)

Regional Trails

A regional trail system helps knit communities within Clark County together. Public feedback deemed longer trails segments, such as the Lewis and Clark Regional Trail along the Columbia River and a North Shore Lacamas Lake connection important for Camas. The ongoing development of the North Shore Subarea Plan and conceptual trail planning outlined in the North Shores Lacamas lake - A Vision for Conservation and Recreation will guide more specific planning of trails through the North Shore Lacamas Lake area, including completing the loop to Heritage Trail. Future trail connections should link Round Lake to Camp Currie to Green Mountain, in addition to neighborhood and commercial area connections, trailheads, parking and signage.

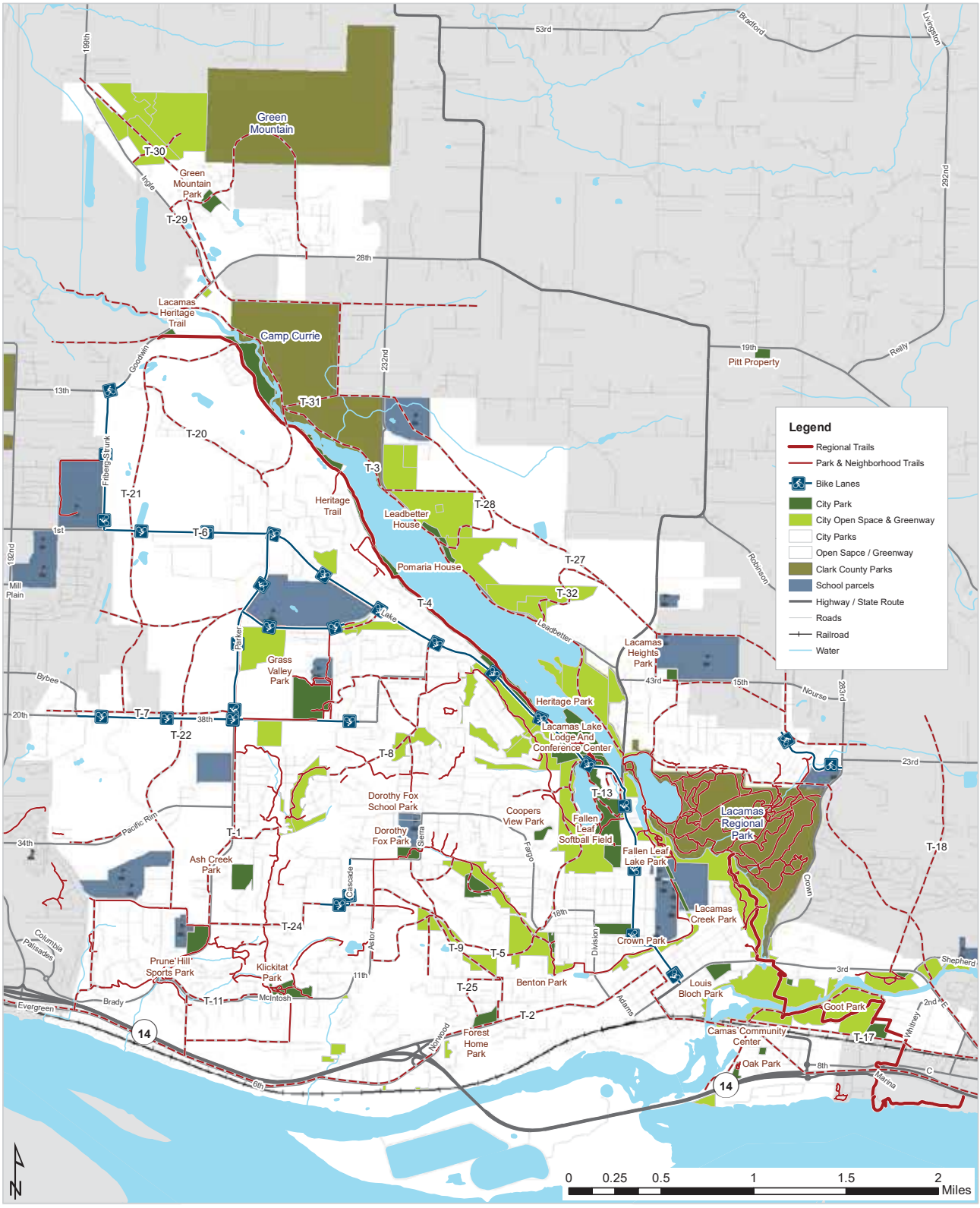
Transportation Planning

The City is currently in the process of preparing an updated Transportation System Plan, and a review of existing pedestrian and bicycle infrastructure and discussion of future needs will be included in that plan. The existing conditions memo for the plan noted that paved, shared-use paths exist along portions of NW Parker Street, NW 18th Avenue, Lacamas Lake, Washougal River, and are also scattered throughout the residential neighborhoods. Regarding pedestrian routes and sidewalk coverage, a few areas do not have complete sidewalks, and gaps are most significant in southwest, southeast and northeast Camas.

Additionally, the City of Camas has a number of targeted improvement projects that will help further the alternative transportation options for residents. The City's Six-Year Transportation Improvement Program (TIP) from 2022 to 2027 lists planned road, intersection, sidewalk and bikeway projects. Funding and project partners are identified for each planned improvement project. The TIP includes 15 road projects that include bike lanes that will improve connectivity and rider safety along Camas streets.

I just love the natural spaces, so if they're there and accessible (and safe), I'll be so grateful to walk for miles and miles. Thank you!

- Online Open House participant



Map 8: Potential Trails

Carey Certo

From: Jeffrey Hunt <jeff@farcolor.com>
Sent: Friday, June 5, 2026 7:07 PM
To: Community Development Email
Cc: City Clerk; City Council Members (GRP)
Subject: Subject: Public Comment — June 9, 2026 Hearing Examiner — Oliver Terrace Subdivision, SUB25-1010

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Subject: Public Comment — June 9, 2026 Hearing Examiner — Oliver Terrace Subdivision, SUB25-1010

From: Jeffrey Hunt
Berkeley, California
Born and raised in Camas

To: communitydevelopment@cityofcamas.us
CC: cityclerk@cityofcamas.us; council@cityofcamas.us

Please include the following comments in the official public record for the June 9, 2026 Hearing Examiner meeting regarding Oliver Terrace Subdivision, SUB25-1010. I am copying the City Clerk and City Council so that the broader public-process concern is also directly available to City decision-makers. If this proposal is later considered by City Council, Planning Commission, or under a related agenda item, I respectfully request that these comments also be included or cross-referenced in that public record.

Dear Hearing Examiner, Mayor Hogan, Members of the Camas City Council, and City Staff,

I am submitting these comments for the public record regarding the Oliver Terrace Subdivision, SUB25-1010.

I want to begin by saying that I appreciate the work of City staff, consultants, the applicant, agency reviewers, the Hearing Examiner, and members of the public who have contributed to this record. I understand that land-use review is complicated, and I also understand that many of the people involved are working within established procedures and code requirements.

My purpose in submitting this letter is to help document a public-process concern that I believe is important, not only for this application, but for the larger North Shore and Fern Prairie development pattern now unfolding.

The central question is simple:

How can the Hearing Examiner, City staff, City Council, Planning Commission, and the public make informed decisions if the full development context is not clearly visible in one place?

The Oliver Terrace application is publicly described as a 12-lot single-family subdivision. At that surface level, it may appear to be a relatively small application. But the hearing record includes approximately 35 exhibits and shows a much broader and more complicated context: Phase I and Phase II, MX-NS zoning, future development areas, open-space and critical-area tracts, wetlands, stream buffers, stormwater facilities, tree removal, trail planning, future North Shore Boulevard context, and larger North Shore development implications.

That larger picture matters.

The public should not have to reconstruct the actual project from dozens of technical exhibits, partial maps, consultant reports, agency comments, staff letters, and plan sheets. A clear consolidated public map and summary should be available before preliminary plat approval.

This is especially important because this project does not exist in isolation. It is part of a much larger pattern of development pressure in and around North Shore, Legacy Lands, the airport area, the urban growth boundary, and Fern Prairie. I have attempted to understand that broader pattern myself, but much of what I have been able to piece together has come from separate documents, meeting materials, partial maps, and even screen captures from public meetings. That should not be necessary for the public to understand the direction of growth in this area.

I know this property personally. I know the raised rocky terrace — which my brother and I called “Tarzan Rock” when we were little kids — the forested slope, the wet areas, and the general landform. Some of this land is constrained by slope, rock, wetlands, water, and other natural conditions. Because of that, I believe the City should be especially clear about what is being described as “open space.” The public deserves to know whether the proposed open-space tract represents buildable land being preserved as a public benefit, or primarily constrained land being used to support density transfer and development elsewhere on the parcel.

Those are very different things, and the distinction should be clear in the record.

I am also concerned that the environmental and technical record does not appear to describe the project consistently. The public notice describes a 12-lot subdivision. The SEPA checklist describes a 14-lot, two-phase project. Several technical reports refer to 11 new homes or lots. I am not raising this as a minor clerical issue. I am asking a substantive public-record question: what exact project version was reviewed under SEPA, and does the SEPA determination apply to the same project now before the Hearing Examiner?

If the answer is straightforward, it should be clearly stated before approval.

The WDFW comments also deserve direct public attention. WDFW identified the riparian area as its primary concern and recommended a larger buffer for Stream A than originally proposed. If the applicant has now agreed to a 100-foot minimum buffer, that should be clearly mapped, made binding, and shown in relation to the proposed lots, roads, utilities, stormwater facilities, grading limits, tree removal, snags, Oregon white oaks, wetland buffers, and future development areas.

I also want to add firsthand historical knowledge of this stream and drainage area. I spent many hours there when I was young, and I remember small fish and crawdads in that waterway, as well as pollywogs and salamanders in the connected drainage. I am not claiming that this proves current fish presence today, but it does show why the stream and wetland system should not be treated as a minor ditch or incidental seasonal drainage without careful public explanation. If Stream A is being classified as seasonal and non-fish-bearing, the basis for that classification should be clearly explained in the record, especially in light of WDFW's concern that the riparian buffer is inadequate for ecological function.

The same principle applies to the Oregon white oaks, priority snags, tree retention, and merchantable timber. Statements that certain trees, oaks, snags, buffers, or timber are not intended to be impacted are helpful, but intent is not the same as an enforceable condition. Intentions can change. Ownership can change. Future phases can change development pressure. If the City is relying on these commitments, they should be converted into binding conditions of approval, shown clearly on the plat, and made durable after ownership transfer.

Stormwater is also central to this application. It should not be treated as only a later engineering detail on this site. The record includes a Category I wetland, offsite wetlands, a stream, reduced buffers, steep slopes, shallow bedrock, grading, detention, dispersion, and wetland-protection requirements. The public should be able to see the corrected stormwater approach in relation to the critical areas before preliminary plat approval, not only after the fact.

The trail and public-access context also needs to be shown clearly. The City's own parks and open-space planning identifies North Shore trail connectivity as part of the public framework. If this subdivision affects the future T-27 trail, North Shore Boulevard, or public-access connections, that relationship should be disclosed now, not deferred to later engineering review.

The hearing notice states that it is preferable for written comments to be received at least five working days before the public hearing, in order to be available with the online agenda and materials. I understand that written comments may still be submitted no later than noon on the day of the hearing to be handed to the Hearing Examiner by staff. If I am misunderstanding the timeline, I welcome correction. However, from a public-participation standpoint, the timeframe appears very short for a record of this size and complexity. That is another reason I believe the record should remain open or the hearing should be continued long enough for the public to review a clear consolidated presentation.

My request is straightforward and constructive.

Before preliminary plat approval, I respectfully ask the Hearing Examiner to require the City to provide one clear public-facing exhibit and summary showing the full project context, including:

The current lot count and phasing; existing and proposed zoning boundaries; the MX-NS/future development area; the North Shore Boulevard relationship; the trail relationship; open-space and critical-area tracts; Wetland A; Stream A; standard and reduced buffers; WDFW's recommended buffers; stormwater facilities; sewer crossings; grading limits; tree removals; Oregon white oaks; priority snags; and all binding conditions of approval.

This is not an anti-development request. It is a request for clear documentation, transparent public process, and informed decision-making.

If the City and applicant can explain the project clearly, then that explanation should be made available before approval. If the full picture cannot be shown in one clear public map and summary, then the record is not ready for decision.

I respectfully ask that the preliminary plat not be approved until the full North Shore context is clearly reviewable by the Hearing Examiner, City decision-makers, and the public.

Respectfully submitted,

Jeffrey Hunt

Memorandum

Date: June 9, 2026

To: Hearings Examiner

From: Lauren Hollenbeck, Senior Planner

RE: Staff Report clarifications

Text in red are the proposed changes.

Scribner's Errors:

References to NE Everett Street (SR 500) and SE Everett Street (SR 500) throughout the Staff Report should actually read 'SE Everett Road (SR 500)'.

Proposed Revision to Staff Report language page 17, paragraphs 3 and 4:

There are approved plans for a future sanitary sewer force main, Camas Woods Offsite Sewer Improvements, that will be installed within the existing private road to Lot 12. A 30-foot-wide access and utility easement over and under the existing road to future Lot 12 is to be granted to the City for access, maintenance, replacement, repair or extension over and under the sanitary sewer force main that is extended northwest from SE Everett Road (SR500), via the existing road through Phase I and Phase II to future Lot 12.

> Staff recommends a condition of approval that prior to final plat approval a note is to be added to the final plat stating a minimum 30-foot-wide public utility access easement is to be recorded over and under the sanitary sewer force main that extends northwest from NE Everett Street (SR 500), via the existing private road located in Phase 1 and Phase II to Lot 12. The existing private road will be owned and maintained by the owner of Lot 12.
>
> Proposed Plat Note:
>
> - A 30-foot-wide public utility and access easement is granted to the City for access, maintenance, replacement, repair, or extension over and under the sanitary sewer force main that is extended NE Everett Street (SR 500), via the existing road through Phase 1 and Phase II to Lot 12. The existing private road will be owned and maintained by the owner of Lot 12.

Until such time as future development improvements are proposed in Phase II, Lot 12 will continue to take access to SE Everett Road (SR 500) via the existing private road. ~~Additionally, the existing private road~~

Proposed Revision to Staff Report language page 21, 2nd to last paragraph:

The maximum allowed density is 5.8 dwelling units per net acre for the LD-NS zone. Based on the proposed net acreage of ~~3.37~~ 3.73 acres per the preliminary plat (Exhibit 15), a maximum of ~~19~~ 21 du/net acre is ~~required~~ allowed and therefore is in compliance with this requirement.

Proposed revision to Staff Report condition of approval number 33, page 27:

33. ~~Future North Shore Blvd.; the~~ The applicant shall work with Camas staff to dedicate the North Shore Blvd. right-of-way once the final horizontal alignment is determined.

Proposed revision to Plat Note 18, page 33:

18. A 30-foot-wide public utility and access easement is granted to the City for access, maintenance, replacement, repair, or extension over and under the sanitary sewer force main that is extended NE Everett Street (SR 500), via the existing road through Phase 1 and Phase II to Lot 12. The existing private road will be owned and maintained by the owner of Lot 12.

Oliver Terrace Subdivision (SUB25-1010)
Index of Exhibits

Exhibit No.	Title/Description	Document Date
1	Updated Applicant Narrative	10/28/25
2	Pre-Application Conference Notes	4/17/25
3	GIS Developer's Packet	10/29/24
4	Application Review Letter	10/9/25
5	SGA Responses to Application Review Letter	
6	Second Application Review Letter	1/28/26
7	SGA Responses to Second Application Review Letter	
8	Technically Complete Letter	2/20/26
9	Notice of Application	3/6/26
10	Affidavit of Mailing Notice of Application	3/5/26
11	Mailing Labels	9/24/25
12	Development Sign Posting West Side	
13	Development Sign Posting East Side	
14	Original Preliminary Plan set	9/16/25
15	Updated Preliminary Plan Set	2/6/26
16	Boundary Survey	11/11/25
17	Critical Area Report	6/16/25
18	Mitigation Plan	8/26/25
19	Preliminary Geotechnical Report	7/2025
20	Original Transportation Impact Study (TIS)	7/28/25
21	Updated Transportation Impact Study (TIS)	10/21/25
22	Arborist Report/Tree Survey	8/2025
23	Preliminary Stormwater Plan & Technical Information Report (TIR)	1/14/26
24	SEPA Checklist	9/15/25
25	SEPA DNS	5/7/26
26	SEPA Distribution Packet	5/7/26
27	Notice of Public Hearing	5/7/26
28	Affidavit of Mailing Notice of Public Hearing & SEPA DNS	5/6/26
29	SEPA DNR Comments	5/20/26
30	SEPA WDFW Comments	5/21/26
31	Applicant Responses SEPA DNR Comments	6/1/26
32	Applicant Responses SEPA WDFW Comments	5/27/26
33	North Shore Design Manual	
34	Ivanitski Public Comment	6/2/26
35	2022 Camas Pro Plan, Existing & Proposed Trails	
36	Hunt Public Comment	6/5/26
37	Staff Memo to Hearings Examiner	6/9/26