

COLUMBIA COUNTY  
**LAND DEVELOPMENT SERVICES**

COURTHOUSE  
230 STRAND  
ST. HELENS, OREGON 97051  
(503) 397-1501

General Application

File No. \_\_\_\_\_

**GENERAL LAND USE PERMIT APPLICATION**

**TYPE OF PERMIT:** \_\_\_\_\_ Zone Change \_\_\_\_\_ Temporary Permit  
 X  Site Design Review \_\_\_\_\_ Resource Management Plan

**APPLICANT:** Riley Baker, Columbia County Park Dept. (Applicant) & Brett Khar, Lower Columbia Engineering (Agent)

Mailing address: Riley Baker: 230 Strand Street, St. Helens, OR 97051 (971) 328-2537 riley.baker@columbiacountyor.gov

Brett Kahr: 58640 McNulty Way, St. Helens, OR 97051 (503) 366-0399 brett@lowercolumbiaengr.com

Phone No.: Office \_\_\_\_\_ Home \_\_\_\_\_

Are you the \_\_\_\_\_ property owner? \_\_\_\_\_ owner's agent?

**PROPERTY OWNER:** \_\_\_\_\_ same as above, OR:

Name: Holce Logging Co. Inc.

Mailing Address: PO Box 127, Vernonia, OR 97064

**PROPERTY ADDRESS** (if assigned): N/A

**TAX MAP NUMBER:** 4403-00-00100 Acres: 106.5 Zoning: PF-80

\_\_\_\_\_ Acres: \_\_\_\_\_ Zoning: \_\_\_\_\_

\_\_\_\_\_ Acres: \_\_\_\_\_ Zoning: \_\_\_\_\_

**PRESENT USES:** (farm, forest, bush, residential, etc.)

Use: \_\_\_\_\_ Approx. Acres

Trail staging area \_\_\_\_\_ 0.4

Recreational Trail \_\_\_\_\_ 1.8

Forestry \_\_\_\_\_ 104.4

Total acres (must agree with above): \_\_\_\_\_ 106.5

**PROPOSED USES:**

Trail staging area improvements - addition of 16' x 16' picnic shelter, approximately 10,000 SF paved area lot with 18  
standard parking spaces and one ADA space, a 9' x 16' vault toilet, bicycle parking, bicycle repair station, trailhead and historical  
information signage, two vegetated stormwater swales, and landscaping along the perimeter including native trees and shrubs .

**WATER SUPPLY:** \_\_\_\_\_ Private well. Is the well installed? \_\_\_ Yes \_\_\_ No  
No water supply needed \_\_\_\_\_ Community system. Name \_\_\_\_\_

**METHOD OF SEWAGE DISPOSAL:** \_\_\_\_\_ Community Sewer. Name \_\_\_\_\_  
Vault toilet. No sewer or septic. \_\_\_\_\_ Not applicable.  
\_\_\_\_\_ Septic System.  
If Septic, does the subject property already have a system? \_\_\_ Yes \_\_\_ No  
If no, is the property approved for a Septic System? \_\_\_ Yes \_\_\_ No

**CONTIGUOUS PROPERTY:** List all other properties you own which have boundary lines touching this property:

| <u>Tax Account No.</u> | <u>Acres</u> | <u>Co-owners (if any)</u> |
|------------------------|--------------|---------------------------|
| _____                  | _____        | _____                     |
| _____                  | _____        | _____                     |
| _____                  | _____        | _____                     |

**CERTIFICATION:**

I hereby certify that all of the above statements, and all other documents submitted, are accurate and true to the best of my knowledge and belief.

Date: 9/18/2024 Signature:   
*Randall E. Holec, Pres.*

**NOTE:** Please attach an accurate and detailed plot plan, including property lines, existing and proposed structures, location of septic tank and drainfield, farm - forest areas, large natural features (cliffs, streams, etc.).

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Planning Department Use Only

Date Rec'd. \_\_\_\_\_ Hearing Date: \_\_\_\_\_  
Or: Administrative \_\_\_\_\_

Receipt No. \_\_\_\_\_ Stormwater & Erosion Control Fees \_\_\_\_\_

Zoning: \_\_\_\_\_ Staff Member: \_\_\_\_\_

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## Section 1550      **SITE DESIGN REVIEW**

The Site Design Review process shall apply to all new development, redevelopment, expansion, or improvement of all community, governmental, institutional, commercial, industrial and multi-family residential (4 or more units) uses in the County.

### .1      Types of Site Design Review:

Type 1:      Projects, developments and building expansions which meet any of the following criteria:

1.      are less than 5,000 sq.ft., and are less than 10% of the square footage of an existing structure.
2.      Increase the number of dwelling units in a multi-family project.
3.      Increase the height of an existing building.

Type 2:      Projects, developments and building expansions which meet any of the following criteria:

1.      have an area of 5,000 sq.ft. or more, or are 10% or more of the square footage of an existing structure.
2.      Change the category of use (e.g., commercial to industrial, etc.).
3.      New off-site advertising signs or billboards.
4.      Any project meeting any of the Type 2 criteria shall be deemed a Type 2 Design Review application.

.2      Design Review Process: The Planning Director shall review and decide all Type 1 Site Design Review applications. The Planning Commission shall review all Type 2 Design Review applications. Applications shall be processed in accordance with Sections 1600 and 1700 of this ordinance.

.3      Pre-application Conference: A pre-application conference is required for all projects applying for a Site Design Review, unless the Director or his/her designate determines it is unnecessary. The submittal requirements for each application are as defined in this section and the standards of the applicable zone, and will be determined and explained to the applicant at the pre-application conference.

.4      Pre-application Conference Committee: The committee shall be appointed by the Planning Director and shall consist of at least the following officials, or their designated staff members. Only affected officials need to be present at each pre-application conference.

- a)      The County Planning Director.
- b)      The County Director of Public Works.
- c)      The Fire Marshal of the appropriate Rural Fire District.

- d) The County Building Official.
- e) The County Sanitarian.
- f) A city representative, for projects inside Urban Growth Boundaries.
- g) Other appointees by the Planning Director, such as an Architect, Landscape Architect, real estate agent, appropriate officials, etc.

.5 Submittal documents: The following documents, when applicable, are required for a Site Design Review. The scope of the drawings and documents to be included will be determined at the pre-application conference by the Pre-application Conference Committee, and a Site Design Review Submittal Checklist will be given to the applicant, documenting which items are deemed not applicable or not necessary to determine compliance with County and State standards, with a short explanation given for each item so determined.

- 
- A. History.
  - B. Project narrative.
  - C. Existing site plan.
  - D. Proposed site plan.
  - E. Grading plan.
  - F. Drainage plan.
  - G. Wetland mitigation plan.
  - H. Landscaping plan.
  - I. Architectural plans.
  - J. Sign drawings.
  - K. Access, parking and circulation plan.
  - L. Impact assessment.
  - M. Site Design Review Submittal Checklist.

.6 Site Plan Submittal and Analysis: The applicant shall submit an application and any necessary supplemental information as required by this ordinance to the Land Development Services Department. The Planning Director or designate shall review the application and check its completeness and conformance with this ordinance. Once a Type 2 application is deemed complete, it shall be scheduled for the earliest possible hearing before the Planning Commission. A staff report shall be prepared and sent to the applicant, the Planning Commission, and any interested party requesting a copy.

.7 Planning Director Review: All Type 1 design review applications will be processed by the Planning Director or designate according to Sections 1601, 1602 and 1609 of this ordinance. If the Director determines that the proposed development meets the provisions of this ordinance, the director may approve the project and may attach any reasonable conditions.

.8 Planning Commission Review: The Planning Commission shall hold a public hearing for all Type 2 Design Review applications according to Sections 1603, 1604 and 1608 of this ordinance. If the Planning Commission determines that the proposed development meets the provisions of this ordinance, it may approve the project. The Planning Commission may attach any reasonable conditions to its approval of a site plan.

.9 Compliance: Conditions placed upon the development of a site are also placed upon



any building permits issued for the same site. These conditions shall be met by the developer prior to an occupancy permit being issued by the Building Official, or as an alternative, a bond shall be posted equal to 125% of the estimated cost of the unfinished work, to ensure completion within 1 year of occupancy. If all improvements are not completed within the 1-year bond period, the County may use the bond to complete the work.

.10 Existing Site Plan: The degree of detail in the existing site plan shall be appropriate to the scale of the proposal, or to special site features requiring careful design. An existing site plan shall include the following, unless it is determined by the Planning Director that the information is not applicable or is not necessary to determine compliance with County and State standards, and a short explanation will be given for each item so determined:

- A. A vicinity map showing location of the property in relation to adjacent properties, roads, pedestrianways and bikeways, and utility access. Site features, manmade or natural, which cross property boundaries are to be shown.
- B. A site description map at a suitable scale (i.e. 1"=100'; 1"=50'; or 1"=20') showing parcel boundaries and gross area, including the following elements, when applicable:
  - 1. Contour lines at the following minimum intervals:
    - a. 2 foot intervals for slopes 0-20%;
    - b. 5 or 10 foot intervals for slopes exceeding 20%;
    - c. Identification of areas exceeding 35% slope.
  - 2. In special areas, a detailed slope analysis may be required. Sources for slope analysis include maps located at the U.S. Natural Resources Conservation Service office.
  - 3. Potential natural hazard areas, including potential flood or high ground water, landslide, erosion, and drainage ways. An engineering geologic study may be required.
  - 4. Wetland areas, springs, wildlife habitat areas, wooded areas, and surface features such as mounds and large rock outcroppings.
  - 5. Streams and stream corridors.
  - 6. Location, species and size of existing trees proposed to be removed.
  - 7. Significant noise sources.
  - 8. Existing structures, improvements, utilities, easements and other development.

9. Adjacent property structures and/or uses.

.11 Proposed Site Plan: A complete application for design review shall be submitted, including the following plans, which may be combined, as appropriate, onto one or more drawings, unless it is determined by the Planning Director that the information is not applicable or is not necessary to determine compliance with County and State standards, and a short explanation will be given for each item so determined:

A. Site Plan: The site plan shall be drawn at a suitable scale (i.e. 1"=100', 1"=50', or 1"=20') and shall include the following:

1. The applicant's entire property and the surrounding area to a distance sufficient to determine the relationships between the applicant's property and proposed development and adjacent properties and developments.
2. Boundary lines and dimensions of the property and all proposed property lines. Future buildings in phased development shall be indicated.
3. Identification information, including names and addresses of project designers.
4. Natural features which will be utilized in the site plan.
5. Location, dimensions and names of all existing or platted roads or other public ways, easements, and railroad rights-of-way on or adjacent to the property, city limits, section lines and corners, and monuments.
6. Location and dimensions of all existing structures, improvements, or utilities to remain, and structures to be removed, all drawn to scale.
7. Historic structures, as designated in the Comprehensive Plan.
8. Approximate location and size of storm water retention or detention facilities and storm drains.
9. Location and exterior dimensions of all proposed structures and impervious surfaces.
10. Location and dimension of parking and loading areas. pedestrian and bicycle circulation, and related access ways. Individual parking spaces shall be shown.
11. Orientation of structures, showing entrances and exits.
12. All exterior lighting, showing type, height, wattage, and hours of use.
13. Drainage, including possible adverse effects on adjacent lands.
14. Service areas for waste disposal and recycling.

15. Noise sources, with estimated hours of operation and decibel levels at the property boundaries.
16. A landscaping plan which includes, if applicable:
  - a. Location and height of fences, buffers, and screening;
  - b. Location of terraces, decks, shelters, play areas, and common open spaces;
  - c. Location, type, size, and species of existing and proposed shrubs and trees; and
  - d. A narrative which addresses soil conditions and erosion control measures.

B. Grading Plans: A preliminary grading plan indicating where and to what extent grading will take place, including general contour lines, slope ratios, slope stabilization proposals, and natural resource protection proposals.

C. Architectural Drawings:

1. Building elevations and sections;
2. Building materials (color and type);
3. Floor plan.

D. Signs: (see also Zoning Ordinance Section 1300)

1. Freestanding sign:

- a. Location of sign on site plan;
- b. Elevation of sign (indicate size, total height, height between bottom of sign and ground, color, materials, and means of illumination).

2. On-Building Sign:

- a. Building elevation with location of sign (indicate size, color, materials and means of illumination);
- b. Plot plan showing location of signs on building in relation to adjoining property.

.12 Landscaping: Buffering, Screening and Fencing:

A. General Provisions:

1. Existing plant materials on a site shall be protected to prevent erosion.

Existing trees and shrubs may be used to meet landscaping requirements if no cutting or filling takes place within the dripline of the trees or shrubs.

2. All wooded areas, significant clumps or groves of trees, and specimen conifers, oaks or other large deciduous trees, shall be preserved or replaced by new plantings of similar size or character.

B. Buffering Requirements:

1. Buffering and/or screening are required to reduce the impacts on adjacent uses which are of a different type. When different uses are separated by a right of way, buffering, but not screening, may be required.
2. A buffer consists of an area within a required setback adjacent to a property line, having a width of up to 10 feet, except where the Planning Commission requires a greater width, and a length equal to the length of the property line adjacent to the abutting use or uses.
3. Buffer areas shall be limited to utilities, screening, pedestrian and bicycle paths, and landscaping. No buildings, roads, or parking areas shall be allowed in a buffer area.
4. The minimum improvements within a buffer area shall include:
  - a. One row of trees, or groupings of trees equivalent to one row of trees. At the time of planting, these trees shall not be less than 10 feet high for deciduous trees and 5 feet high for evergreen trees, measured from the ground to the top of the tree after planting. Spacing of trees at maturity shall be sufficient to provide a year-round buffer.
  - b. In addition, at least one 5-gallon shrub shall be planted for each 100 square feet of required buffer area.
  - c. The remaining area shall be planted in grass or ground cover, or spread with bark mulch or other appropriate ground cover (e.g. round rock). Pedestrian and bicycle paths are permitted in buffer areas.

C. Screening Requirements:

1. Where screening is required, the following standards shall apply in addition to those required for buffering:
  - a. A hedge of evergreen shrubs shall be planted which will form a four-foot high continuous screen within two years of planting; or,
  - b. An earthen berm planted with evergreen plant materials shall be provided which will form a continuous screen six feet in height within two years. The unplanted portion of the berm shall be

planted in lawn, ground cover or bark mulch; or,

- c. A five foot or taller fence or wall shall be constructed to provide a continuous sight obscuring screen. Fences and walls shall be constructed of any materials commonly used in the construction of fences and walls such as wood, brick, or other materials approved by the Director. Corrugated metal is not an acceptable fencing material. Chain link fences with slats may be used if combined with a continuous evergreen hedge.
2. When the new use is downhill from the adjoining zone or use being protected, the prescribed heights of required fences, walls, or landscape screening along the common property line shall be measured from the actual grade of the adjoining property at the common property line. This requirement may be waived by the adjacent property owner.
3. If four or more off-street parking spaces are required, off-street parking adjacent to a public road shall provide a minimum of four square feet of landscaping for each lineal foot of street frontage. Such landscaping shall consist of landscaped berms or shrubbery at least 4 feet in total height at maturity. Additionally, one tree shall be provided for each 50 lineal feet of street frontage or fraction thereof.
4. Landscaped parking areas may include special design features such as landscaped berms, decorative walls, and raised planters.
5. Loading areas, outside storage, and service facilities must be screened from adjoining properties.

           D. Fences and Walls:

1. Fences, walls or combinations of earthen berms and fences or walls up to four feet in height may be constructed within a required front yard. Rear and side yard fences, or berm/fence combinations behind the required front yard setback may be up to six feet in height.
2. The prescribed heights of required fences, walls, or landscaping shall be measured from the lowest of the adjoining levels of finished grade.
3. Fences and walls shall be constructed of any materials commonly used in the construction of fences and walls such as wood, brick, or other materials approved by the Director. Corrugated metal is not an acceptable fencing material. Chain link fences with slats may be used if combined with a continuous evergreen hedge.

- E. Re-vegetation: Where natural vegetation or topsoil has been removed in areas not occupied by structures or landscaping, such areas shall be replanted to prevent erosion.

.13 Standards for Approval:

The Planning Commission or Director shall make a finding with respect to each of the following criteria when approving, approving with conditions, or denying an application:

- A. Flood Hazard Areas: See CCZO §1100, Flood Hazard Overlay Zone. All development in Flood Hazard Areas must comply with State and Federal Guidelines.
  - B. Wetlands and Riparian Areas: Alteration of wetlands and riparian areas shall be in compliance with State and Federal laws.
  - C. Natural Areas and Features: To the greatest practical extent possible, natural areas and features of the site shall be preserved.
  - D. Historic and Cultural sites and structures: All historic and culturally significant sites and structures identified in the Comprehensive Plan, or identified for inclusion in the County Periodic Review, shall be protected if they still exist.
  - E. Lighting: All outdoor lights shall be shielded so as to not shine directly on adjacent properties and roads.
  - F. Energy Conservation: Buildings should be oriented to take advantage of natural energy saving elements such as the sun, landscaping and land forms.
  - G. Transportation Facilities: Off-site auto and pedestrian facilities may be required by the Planning Commission, Planning Director or Public Works Director consistent with the Columbia County Road Standards and the Columbia County Transportation Systems Plan.
- .14 Final Site Plan Approval: If the Planning Director or Planning Commission approves a preliminary site plan, the applicant shall finalize all the site drawings and submit them to the Director for review. If the Director finds the final site plan conforms with the preliminary site plan, as approved by the Director or Planning Commission, the Director shall give approval to the final site plan. Minor differences between the preliminary site plan and the final site plan may be approved by the Director. These plans shall be attached to the building permit application and shall become a part of that permit.





# FINAL EROSION CONTROL PLAN

A final erosion control plan shall contain the information outlined below. The information shall be shown on one or more plan sheets that are drawn to scale. Narrative information can be included as notes on the plans.

*Existing Conditions Plan* showing:

1. The information provided for the preliminary erosion plan is sufficient, assuming that information accurately reflects the current state of the site. If significant changes have occurred to the site, a revised existing conditions plan is required.

*Site Plan* showing:

- Property boundaries, both existing and proposed, with dimensions.
- For commercial, multi-family, and industrial subdivisions, approximate locations of proposed structures on the site.

*Erosion Control Plan* showing:

- Locations and sizes (Areas or lengths) of erosion measures proposed to be used on the site during construction and after construction is completed.
- Maintenance schedule for insuring the erosion control measures continue to function as they are designed to function.
- For those measures requiring sizing calculations, a summary of the design calculations.
- This summary can be submitted in report form rather than shown on the plans.
- Contingency plan discussing additional erosion control measures to be applied if the proposed measures fail or are insufficient to control erosion.
- Discussion of how the site will be secured to prevent stormwater and erosion measures for being vandalized. A security fence with a locked gate or an on-site security guard are examples of methods to secure a large site.

# FINAL STORMWATER PLAN

## Purpose

The final stormwater plan provides the final design and analysis of stormwater facilities on the site. The final stormwater plan consists of engineering construction plans and a detailed discussion, in report form, of the various aspects of stormwater design on the project.

## **Format**

### *Engineering Plans*

Plans shall be stamped, signed, and dated by an engineer.

Typically engineering plans for a project shall contain, at a minimum, the sheets listed below. However, the engineer has the discretion to organize the plans differently, as long as the content requirements are met which include:

1. Site Plan
  - Grading and erosion Control Plan
  - Stormwater Plan
  - Stormwater and Erosion Control Details

### *Stormwater Report*

The stormwater report shall be stamped, signed, and dated by an engineer

The report shall be bound in a notebook or other type of binder. Drawing larger than 8 ½ X 11 can be attached to the report.

Detailed computations and software printouts utilized in the runoff analysis shall be included in the report appendix

Portions of the contents may be excluded, with county approval, if not applicable to the project.

## **Contents**

### *Engineering Plans*

The engineering plan set shall contain the following information:

- Existing and proposed property boundaries, easements, and right-of-ways, including stormwater easements.
- Existing and proposed topography in 2-foot contours, unless site topography makes a different contour interval more appropriate.
- Existing drainage features including streams, ditches, ponds, flood plains, and wetlands, on or adjacent to the site.
- Drainage flow routes through and on the site, including existing discharge points to and from the site.
- Proposed buildings, pavement areas, and other impervious surfaces.
- Proposed stormwater treatment and runoff control facilities, in plan and cross-section.
- Lengths and rim elevations of storm manholes.

- Cross sections and lengths of proposed open channel conveyance systems.
- Existing and proposed utilities.
- Existing and proposed on-site sewage disposal systems;
- Details of erosion control measures proposed.
- Details with sizes, lengths, and inverts for any orifices or weirs used for flow control.

### *Stormwater Report*

The stormwater report set shall contain the following information:

#### Maps:

- Site location map,  
At a minimum a USGS 7.5 minute topo series map shall be used showing site boundaries or site location for small sites and contributing drainage areas to the site.
- Soils map with site identified.
- Flood plain map with the site highlighted, if the site is in a flood plain.

#### Project Overview:

- Discussion of project scope and timing.
- Description of drainage to and from adjacent properties.
- Overview of methods used to mitigate stormwater impacts.
- Discussion of software and models used for computing runoff.
- If project went through an earlier review by the County, list approval conditions related to stormwater and describe how final plan meets conditions.
- List additional permits (e.g., wetland, flood plain, etc.) that may be required for the project and discuss any impacts these permits have on the proposed stormwater facilities.

#### Pre-Development Analysis

- Tabulate and discuss parameters impacting pre-development runoff calculations including curve numbers, impervious surface areas, slopes, and soil types and groups.
- Compute and tabulate pre-development flows for the 2, 10, and 100-year storms for the various discharge points from the site.
- Compute and tabulate existing off-site flows entering the site for the 2, 10, and 100-year storms.
- Compute and tabulate off-site flows for the 2, 10, and 100-year storms at build-out, if these flows will be different than the existing flows.
- Show on a map the point and basins included in the calculations.

#### Post Development Analysis

- Tabulate and discuss parameters impacting post-development runoff calculations including curve numbers, impervious surface areas, slopes, and soil types and

groups.

- Compute and tabulate post-development flows for the 2, 10, and 100-year storms for the various discharge points from the site.
- Compute the water quality storm flows that are required to be treated
- Compute and tabulate runoff flows that are required to be detained for the 2, 10, and 100-year storms at the various discharge points from the site.

#### Runoff Treatment

- Identify water quality storm runoff that will be treated
- Describe runoff treatment method to be utilized.
- List design parameters utilized to size runoff treatment facilities

#### Runoff Quality Control

- Tabulate flow rates that are allowed to leave the site based on pre and post development runoff analysis and the requirements in this ordinance.
- Describe runoff quality control methods to be utilized.
- List design parameters utilized to size runoff treatment facilities.
- Compute and tabulate peak flow rates, storage volumes, and ponding elevations for all design storms.
- If infiltration of runoff is proposed: Identify on-site soil types and discuss their suitability for the project; identify seasonal high water table elevations in relevant areas; identify on-site septic systems and discuss the impact of proposed infiltration facilities on these sewage systems; and discuss infiltration rates based on soil tests conducted by a geotechnical engineer.

#### Conveyance System

- Identify criteria used in sizing conveyance system.
- Compute and tabulate design flows, velocities, and conveyance capabilities for all parts of the proposed conveyance system.

#### Maintenance

- Identify who will maintain all parts of the stormwater system after completion.
- Describe operation and maintenance procedures for runoff treatment and quantity control facilities.

#### Appendix

- Include any report and permits associated with the site that impact stormwater runoff analysis. Examples of these types of reports include: geotechnical and soil reports, wetland delineations, floodplain analysis, groundwater studies, wetland fill permits, and other applicable permits.

Form #7

02/01/02

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**CONDITIONAL USE PERMIT APPLICATION**

**PROPOSED USE:** Trail staging area and picnic shelter

**APPLICANT** Riley Baker, Columbia County Park Dept. & Brett Kahr, Lower Columbia Engineering

Riley Baker: 230 Strand St., St. Helens, OR 97051 Riley.Baker@columbiacountyor.gov (971) 328-2537

Brett Kahr: 58640 McNulty Way, St. Helens, OR 97051 brett@lowercolumbiaengr.com (503) 366-0399

Are you the \_\_\_\_\_ property owner? \_\_\_ owner's agent?

**PROPERTY OWNER:** \_\_\_\_\_ same as above, OR:  Applicant and Applicant's Agent

Name: Holce Logging Co. Inc.

Mailing Address: PO Box 127, Vernonia, OR 97064

|                 |           |              |
|-----------------|-----------|--------------|
| <u>Vernonia</u> | <u>OR</u> | <u>97064</u> |
| City            | State     | Zip Code     |

Phone No.: Office 503.429.6783 Home (cell) 503.781.3801

**PROPERTY ADDRESS** (if assigned): N/A

|       |       |          |
|-------|-------|----------|
| _____ | _____ | _____    |
| City  | State | Zip Code |

**TAX MAP NO.:** 4403-00-00100 Acres: 106.5 Zoning: PF-80

\_\_\_\_\_ Acres: \_\_\_\_\_ Zoning: \_\_\_\_\_

\_\_\_\_\_ Acres: \_\_\_\_\_ Zoning: \_\_\_\_\_

**PRESENT USES:** (farm pasture, forest, residential, etc.)

| <u>Use:</u>                                 | <u>Approx. Acres</u> |
|---|----------------------|
| <u>Trail staging area</u>                   | <u>0.4</u>           |
| <u>Recreational Trail</u>                   | <u>1.8</u>           |
| <u>Forestry</u>                             | <u>104.4</u>         |
| <b>Total acres (must agree with above):</b> | <u>106.5</u>         |

**WATER SUPPLY:** \_\_\_\_\_ Private well. Is the well installed? \_\_\_ Yes \_\_\_ No  
No water needed. \_\_\_\_\_ Community system. Name \_\_\_\_\_

**METHOD OF SEWAGE DISPOSAL:** \_\_\_\_\_ Community Sewer. Name \_\_\_\_\_  
Vault toilet. No sewer or septic needed. \_\_\_\_\_ Not applicable.  
\_\_\_\_\_ Septic System.  
If Septic, does the subject property already have a system? \_\_\_ Yes \_\_\_ No  
If no, is the property approved for a Septic System? \_\_\_ Yes \_\_\_ No

**ELECTRICITY SUPPLIER:** N/A \_\_\_\_\_

**CONTIGUOUS PROPERTY:** List all other properties you own which have boundary lines touching this property:

| <u>Tax Account No.</u> | <u>Acres</u> | <u>Co-owners (if any)</u> |
|------------------------|--------------|---------------------------|
| _____                  | _____        | _____                     |
| _____                  | _____        | _____                     |

**ACCESS CONSULTATION:** The applicant has consulted with the local Rural Fire Protection District regarding emergency apparatus access.

Fire Official's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**CERTIFICATION:**  
I hereby certify that all of the above statements, and all other documents submitted, are accurate and true to the best of my belief and knowledge.

Date: 9/18/2024 Signature:   
Randall E. Holce, Pres.

+++++  
Planning Department Use Only

Date Rec'd. \_\_\_\_\_ Hearing Date: \_\_\_\_\_  
Or: Administrative \_\_\_\_\_  
Receipt No. \_\_\_\_\_  
Zoning: \_\_\_\_\_ Staff Member: \_\_\_\_\_

Previous Land Use Actions: \_\_\_\_\_

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## CONDITIONAL USE PERMIT FACT SHEET

Please attach extra pages if necessary.

1. **New Uses:** What new uses will occur on the property if this Conditional Use Permit is approved? Describe your project.

Trail staging area improvements - addition of 16' x 16' picnic shelter, approximately 10,000 SF paved area lot with 18 standard parking spaces and one ADA space, a 9' x 16' vault toilet, bicycle parking, bicycle repair station, trailhead and historical information signage, two vegetated stormwater swales, and landscaping area along the perimeter including native trees and shrubs.

2. **Suitability:** Why is the property suitable for this use (considering lot size, shape and location, access and roads, natural features and topography, existing improvements, etc.)?

The trail staging area occupies a relatively small site within a public easement at the periphery of privately-owned forest land. Adjacent to the Crown-Zellerbach Trail, the site is relatively level, outside the floodplain, and not within any riparian buffer areas.

3. **Compatibility:** How will the use be compatible with surrounding uses?

Located at the perimeter of forest land and adjacent to the City of Vernonia's Urban Growth Boundary, proposed improvements will not impede or increase the cost of forestry activities in surrounding areas. The parking lot will be screened by vegetation from nearby residential uses. As a day use area, the use will not contribute any nuisances such as nighttime glare or noise from generators.

4. Impact: What impact will the proposed use have on existing public facilities, or on your neighbors' use of their land? Why?

No connections to existing public facilities are proposed. Stormwater will be managed on-site by vegetated swales (see Exhibit A - Stormwater Report). The site will be accessible from the existing E. Knott St. right-of-way. As the site has already been in use as a trail staging area, there is no change of use proposed that would significantly alter the character of the area or impact neighbor's uses of their land. A Traffic Impact Study conducted by Lancaster Mobley found that peak hour and daily trips generated by the use would not rise to the level that would require a full Traffic Impact Analysis (see Exhibit F - Traffic Impact Statement). Note that trip estimates in the TIS are for total usage, not net new trips.

5. Hazards: Does the proposed use create any hazardous conditions such as fire hazards, traffic hazards, slope stability hazards or use any poisonous materials? Please describe them.

No hazardous conditions will be created by the proposed use. In conformance with fire siting standards a 30-foot fuel-free fire break will be maintained around both structures. The Vernonia Rural Fire Protection District found that access and water for the proposed use adequate (see Exhibit D - Fire District Letter). A geotechnical analysis performed by Rapid Soil Solutions found no hazards related to slope stability (see Exhibit B - Geotechnical Report). A Traffic Impact Study (TIS) was conducted by Traffic Impact Study (TIS) was conducted by Lancaster Mobley (see Exhibit F - Traffic Impact Study). The TIS included a sight-distance of E. Knott St. and OR-47 (located approximately 3,250 feet west of the site) as requested by the City of Vernonia.

The TIS did not identify any traffic hazards related to the proposal, and did not recommend any safety mitigation measures.  
+++++

**Submission: All of the following must be completed and submitted for a complete application:**

1. The attached CONDITIONAL USE PERMIT APPLICATION.
2. Answers to the above questions.
3. An accurate site plan of your property including property lines and dimensions, all existing and proposed structures, septic tank and drainfield and well locations, prominent natural features (slopes, cliffs & streams, etc.), roads, easements, and forested areas.
4. Proof of legal usable access to your property (unless you can show an unobstructed frontage on a public or county road or on a state highway).
5. A vicinity map.
6. The application fee.
7. Please also address the criteria (on a separate sheet of paper) of Section 1503, Conditional Uses, from the Columbia County Zoning Ordinance. (See below.)

+++++

**Section 1503, Conditional Uses:**

- .5 Granting a Permit: The Commission may grant a Conditional Use Permit after conducting a public hearing, provided the applicant provides evidence substantiating that all the requirements of this ordinance relative to the proposed use are satisfied and demonstrates the proposed use also satisfies the following criteria:
  - A. The use is listed as a Conditional Use in the zone which is currently applied to the site;
  - B. The use meets the specific criteria established in the underlying zone;
  - C. The characteristics of the site are suitable for the proposed use considering size, shape, location, topography, existence of improvements, and natural features;
  - D. The site and proposed development is timely, considering the adequacy of transportation systems, public facilities, and services existing or planned for the area affected by the use;
  - E. The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs, or precludes the use of surrounding properties for the primary uses listed in the underlying district;
  - F. The proposal satisfies the goals and policies of the Comprehensive Plan which apply to the proposed use;
  - G. The proposal will not create any hazardous conditions.



# Holce Trailhead Improvements

Conditional Use Permit / Type II Design Review

---

Lower Columbia Engineering, LLC

58640 McNulty Way

Saint Helens, OR 97051

Phone: (503) 366-0399

Project Manager & Contact: Brett Kahr

Phone: (503) 366-0399

Email: [brett@lowercolumbiaengr.com](mailto:brett@lowercolumbiaengr.com)

**Client:**

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Director of General Services

Columbia County

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Phone: (971) 328-2537

Email: [Riley.Baker@columbiacountyor.gov](mailto:Riley.Baker@columbiacountyor.gov)

Project Type: Trailhead Improvements

Project Location:

Knott St.

Vernonia, OR

September 2024

LCE Project No. 3615



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## Project Summary

### History

The Crown-Zellerbach (Crown-Z) Trail is a historic logging trail through rural areas of Columbia County that connects to the Banks-Vernonia State Trail in Vernonia. Opened to the public in 2014, it is now a partially paved, partially gravel linear trail for use by walkers, hikers, horseback riders and cyclists.

The existing Holce Trailhead is located just east of the Vernonia City limits, at the furthest west end of the 23-mile Crown-Z Trail. It is accessible via East Knott Street. It is within a 160' x 100' public easement located at the northern edge of a 106-acre parcel of privately owned forestry land. The parcel falls within Columbia County's Primary Forest Zone (PF-80). The trailhead area is a relatively flat site without any major vegetation, and falls outside the 50-foot riparian buffer for nearby Knickerson Creek. Adjacent uses include forestry (Columbia County), residential (City of Vernonia), and light industrial (City of Vernonia).

### Project Narrative

Holce Trailhead currently consists of an informal, partially graveled parking area at the eastern end of East Knott Street. The proposed improvements will provide trail users with amenities for comfort and safety and will contribute to the trailhead's appeal as a day-use area from which to embark on recreational and tourist activities in the local community. No development is proposed within the 50-foot riparian buffer around Knickerson Creek, and no artificial lighting is proposed for the site.

Proposed improvements for the 16,000 square-foot easement area include:

- Approximately 10,000 SF of paved area with 18 standard parking spaces and 1 ADA parking space
- 16' x 16' picnic shelter with fixed picnic table and benches
- 9' x 6' vault toilet
- Existing bollards and gate
- Trailhead and historical information signage
- 5 bicycle parking spaces
- Bicycle repair station
- Two fixed benches
- Two vegetated stormwater swales
- Landscaping along perimeter including native trees and shrubs

## Applicable Review Criteria

*Section 500: Primary Forest Zone (PF-80)*

[...]

### Section 505: Conditional Uses

---

*The following conditional uses may be allowed subject to the general review standards and process in Sections 1503 and 1603 of the Zoning Ordinance. All authorized uses and permanent structures shall also meet the applicable standards listed in Sections 506, 507, and 508 of the Zoning Ordinance and all other local, state, and federal laws pertaining to these uses.*

[...]



14. Public Parks including only those uses specified under OAR 660-034-0035 or OAR 660-034-0040, whichever is applicable, and subject to provisions in Sections 508 through 510, 1503 and 1550.

[...]

Response: Per item (14) above, the project's proposed uses of picnic shelter and trail staging area are allowed as conditional uses in the PF-80 zone as specified by OAR 660-034-0040(2)(b) and (c), excerpted below:

*OAR 660-034-0035*

*(1) All uses allowed under Statewide Planning Goal 3 are allowed on agricultural land within a state park, and all uses allowed under Statewide Planning Goal 4 are allowed on forest land within a state park, provided such uses are also allowed under OAR chapter 736, division 18 and all other applicable laws, goals and rules. Local governments may allow state parks and park uses as provided In OAR chapter 660, division 33, and ORS 215.213 or 215.283 on agricultural lands, regardless of whether such uses are provided for in a state park master plan.*

*(2) The park uses listed in subsection (a) through (i) of this section are allowed in a state park subject to the requirements of this division, OAR chapter 736, division 18, and other applicable laws. Although some of the uses listed in these subsections are generally not allowed on agricultural lands or forest lands without exceptions to Statewide Planning Goals 3 or 4, a local government is not required to adopt such exceptions in order to allow these uses on agricultural or forest land within a state park provided the uses, alone or in combination, meet all other applicable requirements of statewide goals and are authorized in a state park master plan adopted by OPRD, including a state park master plan adopted by OPRD prior to July 15, 1998:*

*[...]*

*(b) Day use areas: picnic shelters, barbecue areas, swimming areas (not swimming pools), open play fields, play structures;*

*(c) Recreational trails: walking, hiking, biking, horse, or motorized off-road vehicle trails; trail staging areas;*

*[...]*

**Section 508: General Review Standards**

*The Planning Director or hearings body shall determine that a use authorized by Sections 504 and 505 meets all of the following requirements:*

*1. The proposed use will not force significant change in, or significantly increase the cost of, accepted farming or forest practices on agriculture or forest lands;*

Response: The proposed use is located at the periphery of a resource area and allows for continued vehicle access to the privately-owned forest property from E. Knott Street. Thus, the project will not significantly affect the practices or cost of activities on forest lands.

*2. The proposed use will not significantly increase fire hazard or significantly increase fire suppression costs or significantly increase risks to fire suppression personnel;*

Response: The proposed improvement will comply with relevant fire siting standards (as described in the response to Section 510, below) and will not significantly increase fire hazard or fire suppression costs, thus meeting this criterion. Through a review of the site plan as well as a site visit Vernonia Rural Fire Protection District personnel have verified the project meets fire department access and water supply requirements (see **Exhibit E - Fire District Letter**).





3. A waiver of remonstrance shall be recorded with the County Clerk certifying that the owner will not remonstrate against or begin legal action or suit proceeding to cause or persuade the owner or operator of any farm or forest lands to modify the conduct of legal and accepted farm or forest operations; and

Response: Per discussion with County planning staff, In lieu of a waiver of remonstrance the proposed trail signage will include a notice to trail users that Holce Trailhead and the Crown-Z Trail are within a forestry resource area and that trail users should be aware that logging related activities may be occurring in the area (see **Sheet D-3 – Signage Details**). The final wording for signage will be approved by the County prior to posting to ensure it meets the intention of this criterion.

4. The proposed use is consistent with requirements contained in the Comprehensive Plan or implementing ordinances, including, but not limited to, regulations which apply to flood hazard areas, development within the Willamette River Greenway, development in forested areas or development in significant resource areas, such as riparian, wetlands or slide-prone areas.

Response: The proposed use is not within a flood hazard area, the Willamette River Greenway, or any riparian or wetlands areas (see **Exhibit C – Wetlands Determination Report**). It is small in size, located at the periphery of a forested area, and abutting the City of Vernonia urban growth boundary. Thus, it will not limit or impede use of designated resources areas for forestry, as indicated by the Comprehensive Plan and implementing ordinances. The use as a day use area and recreational trail is consistent with the Comprehensive Plan policies and implementing ordinances for forested areas.

## **Section 509: Standards of Development**

---

1. The minimum average lot or parcel width and minimum average lot or parcel depth shall be 100 feet for all activities except farming or forestry.

Response: The proposed improvements will not modify the dimensions of the parcel on which they will be located, which has a primary use of forestry. Thus, this criterion is not applicable.

2. Access to parcels in this zone shall meet Fire Safety Design Standards for Roads in the County Road Standards and access standards found in Section 510 of the Zoning Ordinance.

Response: Based on review of the site plan and a site visit, Vernonia Rural Fire Protection District personnel concluded that the proposed project meets fire department access and water supply requirements (see **Exhibit E – Fire District Letter**).

3. There shall be no height limitation for forest operation and management- related structures unless otherwise permitted in the Primary Forest Zone. The maximum building height for all non-farm, non-forest structures shall be 50 feet or 2 ½ stories, whichever is less.

Response: Please see **Sheet A-1 – Picnic Shelter** and **Sheet A-2 – Vault Toilet**. The proposed picnic shelter has a height of 13.5 feet and the vault toilet is 9 feet tall. These are both below the maximum building height of 50 feet for all non-farm, non-forest structures. Thus, this requirement is met.

4. The standards and requirements described in Section 1300 of the Zoning Ordinance shall apply to all signs and name plates in the Primary Forest Zone.

Response: Please see **Sheet D-3 – Signage Details**. All signs and name plates will comply with the standards and requirements described in Section 1300.

5. The Oregon Department of Fish & Wildlife shall be notified and provided with the opportunity to comment on any development within major and peripheral Big Game Habitat.



Response: The proposed improvements are not within major or peripheral Big Game Habitat, according to the Upper Nehalem Valley CPAC Wildlife Game Habitat map provided by Columbia County, dated 6/26/95 (see **Exhibit F – Big Game Habitat Map**).

**6. Setbacks:**

*A. There shall be a minimum setback of 50' for front, side, and rear yards for all development in the Primary Forest Zone.*

Response: See **Sheet G-1 – Cover Sheet – Enlarged Plot Plan**. The proposed picnic shelter will be set back approximately 65 feet from the front property line, 1,723 feet from the rear property line, 733 feet from the western property line, and 1,732 feet from the eastern property line. The proposed vault toilet will be setback approximately 78 feet from the front property line, 1,725 feet from the rear property line, 345 feet from the western property line, and 1,633 feet from the eastern property line. All setbacks exceed the minimum of 50 feet.

*B. When this Ordinance or any other ordinance requires a greater or lesser setback than is required by this subsection, the greater setback shall apply.*

Response: No other ordinance specifies a different setback standard.

*C. All structures are subject to any special setbacks when adjacent to arterial or collector streets designated in the County Transportation Systems Plan.*

Response: Knott Street is classified as a Collector in the City of Vernonia TSP (2011). The City's code does not specify any special setbacks for this street classification.

*D. No structure or use shall be established in a manner likely to cause contamination of a stream, lake or other body of water. Riparian and natural hazard setbacks set forth in Sections 1170 and 1180 of the Zoning Ordinance shall apply.*

Response: Please see **Exhibit C – Wetlands Determination Report**. No structure or use will occur within a riparian or natural hazard setback.

*E. When land divisions create parcels of less than 40 acres for uses listed in Subsection 511.2A., provided those uses have been approved pursuant to this Ordinance, required building setbacks for these parcels will be determined on a case-by-case basis by the Director or the hearings body.*

Response: No land divisions are proposed. This criterion is not applicable.

*F. The owner shall provide and maintain primary fuel-free fire break and secondary fire break areas on land surrounding the dwelling and primary fuel-free break areas surrounding accessory structures in the Primary Forest Zone pursuant to the provisions in Subsections 510.2 and .3.*

Response: Please see **Sheet L-1 – Landscaping Plan**. The owner (Columbia County) will provide and maintain a primary fuel-free fire break in the area surrounding the proposed picnic shelter and vaulted toilet per Subsections 510.2 and .3, as described below. A secondary fuel-free fire break is not required as there is no dwelling proposed.

[...]

## **Section 510: Fire Siting Standards for Dwellings, Structures and Roads**

*The following fire siting standards or their equivalent shall apply to new dwellings in this zone:*

*1. If a water supply is available, suitable and acceptable for fire protection by the fire protection district, such as a swimming pool, pond, stream, or lake, then road access to within 15 feet of the water's edge shall be provided for pumping units. The road access to the dwelling and access to the on-site water supply shall accommodate the turnaround of firefighting equipment during the fire season. The applicant shall provide verification from the Water*



Resources Department that any permits or registrations required for water diversion or storage have been obtained or that permits or registrations are not required for the use. Permanent signs shall be posted along the access route to indicate the location of the emergency water source.

Response: See **Exhibit E – Fire District Letter**. After reviewing the proposed site plan and conducting a site inspection, the Vernonia Rural Fire Protection District concluded that this project meets the fire department access and water supply requirements referenced in the Oregon Fire Code.

2. The owner of the dwelling shall establish and maintain a primary fuel-free fire break surrounding the dwelling and accessory structure(s) no less than 30 feet wide in accordance with the provisions in "Protecting Your Home From Wildfire" published by the National Fire Protection Association. The owner may be required to increase the primary fuel-free fire break if the dwelling or structure is located on a 10% or greater slope. The primary fuel-free fire break could include a lawn, low ornamental shrubbery less than 24" in height and/or individual or groups of trees separated by a distance equal to the diameter of the crowns adjacent to each other, or 15 feet, whichever is greater. All existing tree limbs shall be pruned from the base to at least eight feet in height. Dead fuels shall also be removed.

Response: Please see **Sheet L-1 – Landscaping Plan**. The owner (Columbia County) will establish and maintain a primary fuel-free fire break of at least 30 feet surrounding the picnic shelter and the vault toilet structure, in accordance with the provisions described above. Vegetation in this area will consist of low ornamental shrubbery less than 24" in height and individual trees separated by the distance equal to the diameter of the crowns adjacent to each other. Existing tree limbs will be pruned from the base to at least eight feet in height, and dead fuels will be removed.

3. A secondary fire break of 100 feet outside the primary fuel-free fire break, or its equivalent allowed by Columbia County Board Order No. 239-97 Firebreak Equivalents, shall also be provided and maintained for the dwelling in accordance with the provisions in "Protecting Your Home from Wildfire" published by the National Fire Protection Association. All existing trees shall be pruned from the base to at least 8 feet in height. Dead fuels shall be removed from the secondary fire break area. If the placement of the proposed dwelling cannot meet the secondary fire break due to physical constraints of the land or parcel size, the applicant may apply to obtain a secondary fire break easement from a neighbor or build the structure to a Class 1 or 2 Ignition Resistance Construction as allowed by Board Order No. 239-97, Firebreak Equivalents.

Response: No secondary fire break is required as no dwelling is proposed.

4. All roads in this zone, except private roads and bridges for commercial forest uses, shall be constructed so as to provide adequate access for firefighting equipment according to the standards provided by the local rural fire protection district, the County Road Department, or the State Department of Forestry.

Response: See **Exhibit E – Fire District Letter**. No new roads are proposed. After reviewing the proposed site plan and doing an on-site inspection, the Vernonia Rural Fire Protection District concluded that the project meets the fire department access and water supply requirements referenced in the Oregon Fire Code.

5. No portion of a tree or any other vegetation shall extend to within 15 feet of the outlet of a stove pipe or chimney.

Response: No stoves or chimney are proposed.

6. A dwelling shall meet all of the following requirements:

- A. The dwelling shall have a fire-retardant roof;
- B. The dwelling shall not be sited on a slope of greater than 40 percent;
- C. If the dwelling has a chimney or chimneys, each chimney shall have a spark arrester; and
- D. The dwelling shall be located upon a parcel within a fire protection district unless the applicant meets the criteria of subsection 510.7.



Response: As there are no dwellings proposed these requirements are not applicable.

7. If the dwelling is not within a fire protection district, the applicant shall provide written documentation to the County of residential fire protection. The applicant shall provide evidence that the applicant has asked to be included within the nearest such district. If the County determines that inclusion within a fire protection district or contracting for residential fire protection is impracticable, the County and fire protection district may provide an alternative means for protecting the dwelling from fire hazards which may include a fire sprinkling system, onsite equipment and water storage or other methods that are reasonable given the site conditions.

Response: The proposed improvements are within the Vernonia Rural Fire Protection District. Thus, this criterion is not applicable.

[...]

### *Section 1170: Riparian Corridors, Wetlands, Water Quality, Fish & Wildlife Habitat Protection Overlay Zone (RP)*

*[Amended by Ordinance No. 2003 - 5, effective December 15, 2003].*

*[Amended by Ordinance No. 2023-4, effective October 12, 2023]*

[...]

### **Section 1172: Riparian Corridor Standards**

A. The inventory of Columbia County streams contained in the Oregon Department of Fish and Wildlife Fish Habitat Distribution Data (published January 13, 2023), specifies which streams and lakes are fish-bearing. Fish-bearing lakes are identified on the map entitled, "Lakes of Columbia County." A copy of the most current Stream Classification Maps is attached to the Comprehensive Plan, Technical Appendix Part XVI, Article X(B) for reference. The map, "Lakes of Columbia County" is attached to the Comprehensive Plan, Technical Appendix Part XVI, Article X(B), and is incorporated therein. Based upon the stream and lake inventories, the following riparian corridor boundaries shall be established:

1. Lakes. Along all fish-bearing lakes, the riparian corridor boundary shall be 50-feet from the top-of-bank, except as provided in CCZO Section 1172(A)(5), below.
2. Fish-Bearing Streams, Rivers and Sloughs (Less than 1,000 cfs). Along all fish-bearing streams, rivers, and sloughs with an average annual stream flow of less than 1,000 cubic feet per second (cfs), the riparian corridor boundary shall be 50-feet from the top-of-bank. Average annual stream flow information shall be provided by the Oregon Water Resources Department.
3. Fish-Bearing and Non-Fish-Bearing Streams, Rivers and Sloughs (Greater than 1,000 cfs). Along all streams, rivers, and sloughs with an average annual stream flow greater than 1,000 cubic feet per second (cfs), the riparian corridor boundary shall be 75-feet upland from the top-of-bank. Average annual stream flow information shall be provided by the Oregon Water Resources Department.

Response: See **Exhibit C – Wetlands Determination Report**. The only riparian area in the vicinity of the project site is Knickerson Creek, which is a fish-bearing stream (less than 1,000 cfs), according to ODFW distribution data. As per item (2) above, the riparian corridor boundary around Knickerson Creek extends 50 feet from the top-of-bank.

#### **B. Distance Measurement.**

1. The measurement of distance to the riparian corridor boundary shall be from the top-of-bank. In areas where the top-of-bank is not clearly delineated, the riparian corridor boundary shall be measured from the ordinary high-water level, or the line of non-aquatic vegetation, whichever is most landward.



2. The measurement shall be a slope distance. In areas where the predominant terrain consists of steep cliffs, the distances to the corridor boundary shall be measured as a horizontal distance until the top of the cliff is reached, and as a slope distance on from that point

Response: See [Exhibit C – Wetlands Determination Report](#) and [Exhibit D – Knickerson Creek Centerline Map](#). The southwest corner of the easement (i.e. project area) is 80 feet (slope distance, measured from top-of-bank) away from the Knickerson Creek riparian corridor boundary at its nearest point.

### **Section 1173: Activities Prohibited within the Riparian Corridor Boundary**

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*In addition to the prohibitions in the underlying zone, the following activities are prohibited within a riparian corridor boundary, except as provided for in Sub-sections 1175 and 1176 of this Section:*

A. *The alteration of a riparian corridor by grading, placement of fill material, and/or impervious surfaces, including paved or gravel parking areas, or paths, and/or the construction of buildings or other structures which require a building permit under the Oregon State Building Code, as amended.*

B. *The removal of riparian trees or vegetation.*

Response: See [Exhibit C – Wetlands Determination Report](#). There are no development activities, grading or removal of vegetation proposed within the riparian corridor boundary.

### **Section 1175: Permitted Uses and Activities Subject to Optional Discretionary Review**

---

*Notwithstanding the prohibitions set forth in Subsection 1173 above, the following activities are allowed within the riparian corridor boundary if approved by the planning director through an optional discretionary review process:*

A. *The following riparian vegetation may be removed within the riparian corridor boundary:*

[...]

B. *The following development may be allowed within the riparian corridor boundary.*

[...]

C. *Wetland fill and removal within riparian corridors shall be avoided unless there is no reasonable alternative to allow the permitted use. DSL shall be notified of any potential impact from development proposed on wetlands identified in the State Wetlands Inventory pursuant to ORS 215.418.*

Response: See [Exhibit C – Wetlands Determination Report](#). There are no development activities proposed within the riparian corridor boundary. Thus, these criteria are not applicable.

[...]

### *Section 1300: Signs (SIGNS)*

[...]

### **Section 1302: General Provisions [Amended by Ordinance 2002-02, eff. 6/12/02]**

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1. *Design Review: In addition to complying with the standards in this Section, the design and color of commercial and industrial signs and supporting structures of signs 100 square feet or larger in size shall be compatible with the architectural design and color of existing and proposed buildings on the site as determined during site design review according to the provisions of Section 1550 of this Ordinance.*

2. *Setbacks:*



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*A. All signs shall be situated in a manner so as not to adversely affect safety, corner vision, or other similar conditions and shall not overhang or encroach upon public rights of way.*

Response: Please see **Sheet C-2 – Proposed Site Plan**. All signage will be situated in a manner that does not adversely affect safety, corner vision, or other similar conditions, and will not overhang or encroach upon public rights of way.

*B. Unless otherwise specified, all signs in residential zoning districts shall observe the yard setback requirements of the zoning district in which they are located.*

Response: The site is not situated within a residential zone. This criterion is not applicable.

*C. No setbacks from property lines shall be required for signs in non-residential zoning districts except that in all zoning districts, setbacks shall be required at corners as may be necessary to provide adequate corner vision or in cases where a sign is placed adjacent to a street, as provided is 1302.2(D), below.*

Response: The site is not situated at a corner. This criterion is not applicable.

*D. Setbacks shall be required which comply with setback requirements of the abutting residential zoning district when a sign is placed on a parcel abutting a street (except Highway 30), which separates a non-residential parcel from a residential parcel or when a sign is placed on a property line separating a non-residential parcel from a residential parcel.*

Response: The site is abutting a street (Knott St.) separating it from a City of Vernonia zoned residential parcel (Zone R). However, there are no setback requirements for signage in the “R” zone per Vernonia’s *Title 9: Land Use and Development Code*. Thus, this criterion is not applicable.

*3. Visual Obstructions: No sign shall be situated in a manner which results in the complete visual obstruction of an existing sign.*

Response: There are no existing signs that would be visually obstructed by any new proposed signage. Thus, this criterion is not applicable.

*4. Illuminated Signs: Artificially illuminated signs, or lights used to indirectly illuminate signs, shall be placed, shielded, or deflected so as not to shine into residential dwelling units or structures. The light intensity of an illuminated sign shall not exceed the following standards:*

[...]

Response: Please see **Sheet D-3 – Signage Details**. The proposed signage will not be illuminated. Thus, these criteria do not apply.

*5. Non-conforming Signs: Signs and sign structures not conforming to the requirements of this ordinance shall be subject to the provisions of Section 1506, Non-Conforming Uses, except that:*

[...]

Response: This project does not include any non-conforming signs. These criteria are not applicable.

*6. Sign Clearance: A minimum of 8 feet above sidewalks and 15 feet above driveways shall be provided under free-standing signs.*

Response: Please see **Sheet C-2 - Proposed Site Plan**. The proposed signage will not be within any areas above sidewalks or driveways. Thus, this criterion is not applicable.

[...]





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## Section 1311: Signs for Essential Services and Public Facilities

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*The following signs shall be permitted in all districts:*

- 1. City limits signs and public notice signs.*
- 2. Police, fire, school, and hospital directional signs.*
- 3. Park directional signs.*
- 4. Traffic and safety signs.*
- 5. Transit-related (bus) signs.*

*[Amd. Ordinance 2017-2 eff. 10.10.17]*

Response: Please see **Sheet D-3 – Signage Details**. The proposed signage consists of directional and public notice signs for public facilities and thus are allowed under all zoning.

*[...]*

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## Section 1314: Calculating Sign Area [Amended by Ordinance 2002-02, eff. 6/12/02]

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*The structure supporting or appearing to support a freestanding sign shall not be included in the area of the sign, unless such structural element is typically used to carry signage. In calculating the square footage of a sign, the width shall be measured at the widest part of the sign, including any cut-outs, and the length shall be measured at the longest part of the sign, including any cut-outs. The maximum square footage limitation of the sign shall be calculated such that no cutouts or other Copy shall be permitted outside of the size limitation.*

Response: Please see **Sheet D-3 – Signage Details**. No cutouts or other copy are proposed outside of the size limitation. This criterion is met.

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## Section 1315: Copy Area [Amended by Ordinance 2002-02, eff. 6/12/02]

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*Copy is allowed only on the face of the sign. Copy is prohibited in the ledger area of the sign, on the post of the sign, or other structure of the sign, except to the extent that the sign owner's logo or other disclosure is required by law to be placed on the ledger, post or other structure of the sign. For purposes of this Section, "copy" is defined as any text or image.*

Response: Please see **Sheet D-3 – Signage Details**. Copy will only be printed on the face of the sign. This criterion is met.

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## Section 1400: Off-Street Parking and Loading (OP)

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*[...]*

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## Section 1410: Size

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- 1. The standard size of a parking space shall be 9 feet by 18 feet.*
- 2. Handicapped parking spaces shall be 12 feet by 18 feet.*
- 3. Parallel parking, the length of the parking space shall be increased to 22 feet*

Response: Please see **Sheet C-2 – Proposed Site Plan**. 18 of the proposed parking spaces will be 9 feet wide by 18 feet long. The remaining space will meet ODOT standards for accessible spaces with a width of 9 feet and length of 18 feet, and an adjacent aisle with a width of 8 feet and length of 18 feet. Although this differs from the Columbia County code, the ODOT dimensions are utilized as directed by the County's building official.





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### **Section 1411: Aisles**

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*Aisles shall not be less than:*

- 1. 25'0" in width for 90-degree parking;*
- 2. 20'0" in width for 60-degree parking;*
- 3. 20'0" in width for 45-degree parking; and*
- 4. 12'0" in width for parallel parking.*

Response: Please see **Sheet C-2 – Proposed Site Plan**. The configuration of the parking area does not include aisles, but the open circulation area is approximately 50 feet across, thus exceeding the aisle width requirement of 25 feet.

---

### **Section 1412: Access**

---

*There shall be no more than one 45-foot-wide curb cut driveway per 150 feet of street frontage, or fraction thereof, permitted per site.*

Response: There is one 28-foot-wide curb cut driveway proposed for the site. The nearest existing curb cut driveway on the same street frontage is over 1,700 feet away. Thus, this criterion is met.

---

### **Section 1413: Surfacing and Marking**

---

*1. The surfacing of each parking area shall meet minimum County standards to handle the weight of the vehicles which will use the parking area. All areas used for parking and maneuvering of vehicles shall be marked in accordance with the approved plan and such marking shall be continuously maintained. Handicapped parking spaces shall be marked with a wheelchair symbol.*

Response: Please see **Sheet C-2 – Proposed Site Plan** and **Sheet D-2 – Civil Details**. The parking area will be surfaced with asphalt meeting minimum County standards. The vehicle parking and maneuvering area will be marked in accordance the parking plan and will be continuously maintained. The accessible parking space will be marked with a wheelchair symbol. Thus, the above criterion is met.

*2. The parking and loading areas for commercial, industrial, or apartment uses Shall be paved with concrete, asphaltic concrete, or another comparable surface.*

Response: There is no commercial, industrial or apartment use proposed. This criterion is not applicable.

---

### **Section 1414: Drainage and Lighting**

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*Adequate drainage shall be provided to dispose of the run-off generated by the impervious surface area to the parking area. The drainage system shall function so it will not adversely affect adjoining property. Artificial lighting shall be provided in such a manner as to ensure the safety of the parking area without interfering with adjoining properties or creating traffic hazards on adjoining streets.*

Response: Please see **Sheet C-4 – Grading and Drainage** and **Sheet D-2 – Stormwater Swale Cross Section**. The site will be graded to direct impervious area runoff into vegetated swales. This will prevent adverse effects of stormwater to adjoining areas. No artificial lighting is proposed. These criteria are met.

---

### **Section 1415: Parking Areas**

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*1. All parking areas of less than 20 parking spaces shall have one handicapped parking space. Parking areas with more than 20 spaces shall provide one handicapped parking space for every 50 standard parking spaces.*



Response: Please see **Sheet C-2 – Proposed Site Plan**. The parking area has less than 20 parking spaces and will include one accessible parking space. Thus, this criterion is met.

2. All parking areas shall be divided into bays of not more than 20 parking spaces. Between, and at the end of each parking bay, there shall be planters which have a minimum width of 5 feet and be at least 17 feet in length. Each planter shall contain one major structural tree and ground cover which has been deemed appropriate by the Director. Truck loading areas need not comply with the preceding requirements.

Response: Please see **Sheet C-2 – Proposed Site Plan**. All parking bays are below the maximum of 20 spaces and have planted areas at their ends.

3. Parking areas shall be separated from the exterior wall of a structure, exclusive of paved pedestrian entranceways, by a 5-foot strip of landscaping.

Response: Please see **Sheet C-2 – Proposed Site Plan**. Both proposed structures are separated from parking areas by at least 5 feet.

[...]

6. Parking areas shall be set back from a lot or parcel line adjoining a street. The setback area shall be landscaped.

Response: Please see **Sheet C-2 – Proposed Site Plan** and **Sheet L-1 – Landscaping Plan**. All parking areas are set back at least 5 feet from the front lot line, which is adjoining East Knott St. The setback areas will be landscaped.

7. All parking area setbacks shall be landscaped with major trees, shrubs, and ground cover as approved by the Director.

Response: Please see **Sheet L-1 – Landscaping Plan**. All parking area setbacks will be landscaped with trees, shrubs and ground cover.

8. A minimum of 10 percent of the parking area shall be landscaped and maintenance of the landscaping shall be the owner's responsibility.

Response: Please see **Sheet L-1 – Landscaping Plan**. A minimum of 1,600 SF of landscaping is required to meet the 10% minimum required for the 16,000 SF lot. The proposed landscaping totals 5,075 SF (32%), meeting this requirement.

9. Internal pedestrian connections shall be provided in parking lots with greater than ten (10) parking spaces. These connections shall be a minimum of five (5) feet wide and distinguished from vehicular areas through changes in elevation or contrasting paving materials (such as light-color concrete inlay between asphalt). Paint or thermo-plastic striping and similar types of non-permanent applications may be approved for crossings of parking lot areas that do not exceed 24 feet in crossing length.

Response: The striped access aisle for the ADA parking space also serves as a pedestrian access connection to the vault toilet.

[...]

## **Section 1419: Minimum Required Bicycle Parking Spaces**

---

1. All Public and Semi-Public buildings and uses, Retail uses, Apartment Dwelling uses and Commercial Recreation uses where required new vehicle parking areas exceed 10 motor vehicle spaces must include a designated area for bicycle parking within 50 feet of a public entrance.

2. The following are the required number of bicycle parking spaces:

[...]

B. Parking Lots. All public and commercial parking lots and parking structures shall provide a minimum of one (1) bicycle parking space for every 10 motor vehicle parking spaces.



[...]

Response: Please see **Sheet C-2 – Proposed Site Plan**. There are 5 proposed bicycle parking spaces. With a total of 19 vehicle parking spaces, the minimum required number is 2. Thus, this requirement is met.

## Section 1450: Transportation Impact Analysis

### Section 1450: Transportation Impact Analysis (TIA)

---

*Transportation Impact Analysis: A Transportation Impact Analysis (TIA) must be submitted with a land use application if the proposal is expected to involve one or more of the conditions in 1450.1 (below) in order to minimize impacts on and protect transportation facilities, consistent with Section 660-012-0045(2)(b) and (e) of the State Transportation Planning Rule.*

1. *Applicability – A TIA shall be required to be submitted to the County with a land use application if the proposal is expected to involve one (1) or more of the following:*
  - A. *Changes in land use designation, or zoning designation that will generate more vehicle trip ends.*
  - B. *Projected increase in trip generation of 25 or more trips during either the AM or PM peak hour, or more than 400 daily trips.*
  - C. *Potential impacts to intersection operations.*
  - D. *Potential impacts to residential areas or local roadways, including any non- residential development that will generate traffic through a residential zone.*
  - E. *Potential impacts to pedestrian and bicycle routes, including, but not limited to school routes and multimodal roadway improvements identified in the TSP.*
  - F. *The location of an existing or proposed access driveway does not meet minimum spacing or sight distance requirements, or is located where vehicles entering or leaving the property are restricted, or such vehicles are likely to queue or hesitate at an approach or access connection, thereby creating a safety hazard.*
  - G. *A change in internal traffic patterns may cause safety concerns.*
  - H. *A TIA is required by ODOT pursuant with OAR 734-051.*
  - I. *Projected increase of five trips by vehicles exceeding 26,000-pound gross vehicle weight (13 tons) per day, or an increase in use of adjacent roadways by vehicles exceeding 26,000-pound gross vehicle weight (13 tons) by 10 percent.*

Response: Please see **Exhibit G – Transportation Impact Study**. A Transportation Impact Study (TIS) prepared by Lancaster Mobley found that the proposed project would generate less than 25 peak hour trips, and less than 400 daily trips. Additionally, a sight distance evaluation performed for the nearest intersection to the site, between East Knott Street and Nehalem Highway (OR 47), did not identify any safety concerns or needed mitigation measures. In summary, the TIS did not find that the proposed project would involve any of the above items, and found that a Traffic Impact Analysis (TIA) will not be required by the above criteria.

[...]

## Section 1500: Discretionary Permits

[...]



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## Section 1503: Conditional Uses

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[...]

5. *Granting a Permit: The Commission may grant a Conditional Use Permit after conducting a public hearing, provided the applicant provides evidence substantiating that all the requirements of this ordinance relative to the proposed use are satisfied and demonstrates the proposed use also satisfies the following criteria:*

*A. The use is listed as a Conditional Use in the zone which is currently applied to the site;*

Response: Conditional uses in the PF-80 zone include picnic shelters and trail staging areas, as specified by OAR 660-034-0035.

*B. The use meets the specific criteria established in the underlying zone;*

Response: The proposed use meets the specific criteria for the PF-80 zone, including general standards for development, setback requirements, and fire siting standards.

*C. The characteristics of the site are suitable for the proposed use considering size, shape, location, topography, existence of improvements, and natural features;*

Response: The site is already used as trail staging area with informal parking. The site is relatively small and flat, adjacent to the Crown-Z trail, and outside of any riparian corridor buffers.

*D. The site and proposed development is timely, considering the adequacy of transportation systems, public facilities, and services existing or planned for the area affected by the use;*

Response: This project is an improvement to an existing public facility. The extent and timing of any future improvement to the East Knott Street right-of-way will be addressed through coordination between the City of Vernonia and Columbia County. Otherwise, additional infrastructure will not be required to serve this site.

*E. The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs, or precludes the use of surrounding properties for the primary uses listed in the underlying district;*

Response: The proposed use is an improvement of the existing use, and thus will not substantially alter the character of the surrounding area. Considering the site's location at the periphery of a forested area and adjacent to the City of Vernonia Urban Growth Boundary, site improvements will not impair or preclude the continued use of surrounding property for forestry or other primary uses listed in the PF-80 zone.

*F. The proposal satisfies the goals and policies of the Comprehensive Plan which apply to the proposed use;*

Response: Part IV.(1)(I) of the Columbia County Comprehensive Plan states that it shall be County Policy to conserve forest lands for forest uses, including compatible recreational activities. The project proposal is for improvements to facilitate pedestrian and cyclist use of the Crown-Z Trail, a recreational use that is managed in such a way as to be compatible with forest uses in the PF-80 zone.

*G. The proposal will not create any hazardous conditions.*

Response: The proposed project will comply with fire siting standards and has been deemed to have adequate water and access by the Vernonia Rural Fire Protection District (see **Exhibit E – Fire District Letter**). There will be no visual obstructions in rights of way or visual clearance areas. Wayfinding signage and compliance with circulation standards will provide for safe vehicle traffic and pedestrian protection. Thus, the proposed project will not create any hazardous conditions.

6. *Design Review: The Commission may require the Conditional Use be subject to a site design review by the Design Review Board or Planning Commission.*



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## Section 1550: Site Design Review

*[Amended by Ordinance 98-9, eff. 11/25/98; amended by Ordinance No. 2003 - 5, effective December 15, 2003].*

The Site Design Review process shall apply to all new development, redevelopment, expansion, or improvement of all community, governmental, institutional, commercial, industrial and multi-family residential (4 or more units) uses in the County.

---

## Section 1551: Types of Site Design Review

### *Types of Site Design Review:*

#### *A. Type 1: Projects, developments and building expansions which meet any of the following criteria:*

- 1. are less than 5,000 sq. ft., and are less than 10% of the square footage of an existing structure.*
- 2. Increase the number of dwelling units in a multi-family project.*
- 3. Increase the height of an existing building.*

#### *B. Type 2: Projects, developments and building expansions which meet any of the following criteria:*

- 1. have an area of 5,000 sq. ft. or more, or are 10% or more of the square footage of an existing structure.*
- 2. Change the category of use (e.g., commercial to industrial, etc.).*
- 3. New off-site advertising signs or billboards.*
- 4. Any project meeting any of the Type 2 criteria shall be deemed a Type 2 Design Review application*

**Response:** The proposed development area is 16,000 SF, meeting the criterion B(1) above for projects with an area of 5,000 sq. ft. or more requiring a Type 2 Site Design Review.

[...]

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## Section 1562: Landscaping, Buffering, Screening and Fencing

### *A. General Provisions:*

- 1. Existing plant materials on a site shall be protected to prevent erosion. Existing trees and shrubs may be used to meet landscaping requirements if no cutting or filling takes place within the dripline of the trees or shrubs.*
- 2. All wooded areas, significant clumps or groves of trees, and specimen conifers, oaks or other large deciduous trees, shall be preserved or replaced by new plantings of similar size or character.*

**Response:** Please see **Sheet C-1 – Existing Conditions Plan**. Aside from one fir tree at the southern border of the project area, there are no existing wooded areas, significant clumps or groves of trees, oaks or other large deciduous trees on site. The existing fir tree will be preserved.

### *B. Buffering Requirements:*

- 1. Buffering and/or screening are required to reduce the impacts on adjacent uses which are of a different type. When different uses are separated by a right of way, buffering, but not screening, may be required.*
- 2. A buffer consists of an area within a required setback adjacent to a property line, having a width of up to 10 feet, except where the Planning Commission requires a greater width, and a length equal to the length of the property line adjacent to the abutting use or uses.*
- 3. Buffer areas shall be limited to utilities, screening, pedestrian and bicycle paths, and landscaping. No buildings, roads, or parking areas shall be allowed in a buffer area.*



4. The minimum improvements within a buffer area shall include:

- a. One row of trees, or groupings of trees equivalent to one row of trees. At the time of planting, these trees shall not be less than 10 feet high for deciduous trees and 5 feet high for evergreen trees, measured from the ground to the top of the tree after planting. Spacing of trees at maturity shall be sufficient to provide a year-round buffer.
- b. In addition, at least one 5-gallon shrub shall be planted for each 100 square feet of required buffer area.
- c. The remaining area shall be planted in grass or ground cover, or spread with bark mulch or other appropriate ground cover (e.g. round rock). Pedestrian and bicycle paths are permitted in buffer areas.

Response: Please see **Sheet L-1 – Landscaping Plan**. As the site is separated by a right-of-way from a different land use (residential), buffering but not screening is required. There will be a landscaped buffer area along the full length of the site's Knott Street frontage, except where the access drive connects to the public right-of-way. The buffer area will be planted with a mix of deciduous trees (which will be at least 10 feet tall at planting) and evergreen shrubs to effectively buffer the parking area year-round, with at least one 5-gallon shrub for each 100 square feet of buffer area. There are no buildings, roads or parking spaces in the buffer area.

C. Screening Requirements:

[...]

Response: No screening is required as the site is separate by a right-of-way from a different use (residential). These criteria are not applicable.

[...]

- 3. If four or more off-street parking spaces are required, off-street parking adjacent to a public road shall provide a minimum of four square feet of landscaping for each lineal foot of street frontage. Such landscaping shall consist of landscaped berms or shrubbery at least 4 feet in total height at maturity. Additionally, one tree shall be provided for each 50 lineal feet of street frontage or fraction thereof.

Response: Please see **Sheet L-1 Landscaping Plan**. The project site has 160 feet of frontage on Knott Street, requiring a minimum 640 square feet of landscaping. There are 1,684 square feet of landscaping in the buffer areas fronting Knott St., exceeding the minimum. This includes 3 trees, which provides approximately one tree per 50 lineal feet of street frontage. Between the trees are planted shrubbery that will reach a height of at least 4 feet at maturity.

[...]

- 5. Loading areas, outside storage, and service facilities must be screened from adjoining properties.

Response: There are no loading areas, outside storage or service facilities proposed. This criterion is not applicable.

D. Fences and Walls:

[...]

Response: No fences or walls are proposed as part of this project. These criteria are not relevant.

### Section 1563: Standards for Approval

The Planning Commission or Director shall make a finding with respect to each of the following criteria when approving, approving with conditions, or denying an application:

- A. Flood Hazard Areas: See CCZO §1100, Flood Hazard Overlay Zone. All development in Flood Hazard Areas must comply with State and Federal Guidelines.



---

Response: The proposed development is not within a Flood Hazard Area. Thus, this criterion is not applicable.

*B. Wetlands and Riparian Areas: Alteration of wetlands and riparian areas shall be in compliance with State and Federal laws.*

Response: Please see **Exhibit C – Wetlands Determination Report**. The proposed development is not within a wetland or riparian area or buffer and no alteration of wetlands or riparian areas is proposed. Thus, this criterion is not applicable.

*C. Natural Areas and Features: To the greatest practical extent possible, natural areas and features of the site shall be preserved.*

Response: Please see **Sheet C-1 – Existing Conditions Plan**. Aside from one existing fir tree that will be preserved, there are no significant natural features on the site. If any are identified during the development process, they will be preserved to the greatest practical extent possible.

*D. Historic and Cultural sites and structures: All historic and culturally significant sites and structures identified in the 1984 Comprehensive Plan, or identified for inclusion in the County Periodic Review, shall be protected if they still exist.*

Response: There are no historic or cultural sites or structures impacted by the proposed development. Thus, this criterion is not applicable.

*E. Lighting: All outdoor lights shall be shielded so as to not shine directly on adjacent properties and roads.*

Response: No outdoor lighting is proposed. This criterion is not relevant.

[...]

## List of Exhibits

**Exhibit A Stormwater Report**

**Exhibit B Geotechnical Report**

**Exhibit C Wetlands Determination Report**

**Exhibit D Knickerson Creek Centerline Map**

**Exhibit E Fire District Letter**

**Exhibit F Big Game Habitat Map**

**Exhibit G Traffic Impact Analysis**

**Exhibit H Site Design Review Submittal Checklist**

**Exhibit I Drawings**

- Sheet G-1 Cover Sheet
- Sheet G-2 General Notes
- Sheet C-1 Existing Conditions Plan
- Sheet C-2 Proposed Site Plan
- Sheet C-3 Erosion and Sediment Control Plan
- Sheet C-4 Grading and Drainage Plan
- Sheet L-1 Landscaping Plan



- Sheet D-1 Erosion and Sediment Control Details
- Sheet D-2 Civil Details
- Sheet D-3 Signage Details
- Sheet A-1 Picnic Shelter
- Sheet A-2 Vault Toilet





# **Exhibit A**

## **Stormwater Report**



Lower Columbia Engineering  
58640 McNulty Way  
St. Helens, OR 97051  
503.366.0399

---

Client: Columbia County

Project: Holce Trailhead Improvements  
Vernonia, OR

**Stormwater Report**  
August, 2024  
LCE Project No. 3615

The above Seal certifies that Andrew D. Niemi, P.E. has general knowledge of the Columbia County Stormwater requirements.



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This report pertains to the proposed private improvements described below based on specific requests by our clients. Lower Columbia Engineering is not responsible for complying with any conditions of approval or adjacent storm drainage issues that are outside of the project area. Contact Lower Columbia Engineering with any questions or uncertainties. Maintenance of this system and verification of property line locations are the responsibility of others.



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## Project Description

This stormwater report pertains to the development of the Holce Trailhead at the end of Knott St outside of Vernonia, Oregon. The improvements will be located on a 160'x100' easement on lot 100, owned by Holce Logging Co, Inc. though Columbia County will be the one to develop the trailhead. Existing conditions consist of the informal trailhead for the Crown-Z Trail. Nickerson Creek is a tributary of the Nehalem River and flows approximately 80' to the southwest of the trailhead's easement corner. Site development is focused on improving the trailhead parking, comfort and safety amenities and will contribute to the trailhead's appeal as a day-use area for recreational activities.

## Design Method

Approximately 11,400sqft of the trailhead area will be improved with impervious surfaces consisting of paved parking, concrete paths or enclosed structures. Runoff from these items has been designed to be treated for quality and quantity using Low Impact Design methods via two swales which will allow for the necessary detention. Runoff will either sheet flow or be directed by the structures' down spouts into a swale located at the West or South edge of the new pavement. On-site stormwater management is designed to detain all storm events up through the 100-year storm event.

Table 1. Design Rainfall Storm Events

| Design Storm Event | Rainfall Event<br>(Inches) |
|--------------------|----------------------------|
| 2-year             | 2.00                       |
| 10-year            | 3.00                       |
| 100-year           | 4.00                       |

## Stormwater Analysis

Stormwater events for this project were calculated using the SBUH method given a Type IA storm type within the HydroCAD software system. Western Regional Climate Center's Precipitation Frequency Maps were referenced as well as the Columbia County Stormwater and Erosion Control Ordinance. Design storm events include 2-year, 10-year and 100-year as depicted in Table 1. Soil Survey Maps from NRCS were referenced to determine the site's soil composition as a Udifluvents-Dystrochepts complex and a recent geotechnical investigation found soils to be silty-clay to clayey-silt with no observed groundwater. For the purposes of the stormwater calculations, these swales have been modeled as one "pond" consisting of two areas. Based on the proposed growing medium and surrounding, the swales were calculated to infiltrate at a rate of 1.0 in/hr.

## Stormwater Management Design

Stormwater runoff from the proposed development will be managed by allowing runoff from impervious areas to sheet flow to the proposed detention swales. These detention swales work as LIDA stormwater elements that treat the collected runoff and detain runoff rates from the developed site to the predeveloped values. Anticipated pollutants include typical metals and oils associated with parking lots. Runoff is detained through the 2-year storm event, but has adequate capacity to safely retain stormwater through the 100-year storm event. Both swales will be located beyond the 50-foot riparian setback of Nickerson Creek which will remain unaffected and vegetated with existing groundcover and trees.

Table 2. Stormwater Swale Information

| Swale | Volume<br>(Cubic Feet) | Depth<br>(Feet) | Interior Slope |
|-------|------------------------|-----------------|----------------|
| West  | 610                    | 2               | 1.5:1          |
| South | 1,220                  | 2               | 1.5:1          |

As seen within Table 3, post development peak flow runoff rates have been maintained to not exceed the pre-development peak flow runoff rates. All runoff is detained with the storm system.

Table 3. Pre versus post construction runoff rates

| Design Storm Event | Pre-Development<br>Peak Flow Rate (CFS) | Post-Development<br>Peak Flow Rate (CFS) |
|--------------------|---|--|
| 2-year             | 0.01                                    | 0.00                                     |
| 10-year            | 0.04                                    | 0.00                                     |
| 100-year           | 0.10                                    | 0.00                                     |

### Operations and Maintenance Overview

The proper implementation and maintenance of the proposed on-site facilities is the responsibility of Columbia County. It is critical that stormwater basins be kept free of debris in order to facilitate effective conveyance and longevity of the system. Inspections and maintenance shall be afforded to the detention swales which shall also be kept free of sediment. Vegetation in the swales shall be inspected regularly to ensure plant health; watering may be necessary in the dry season to help establish new plantings. Any plantings that don't take shall be replaced. If excessive planting failures are observed, different plantings may need to be selected to better suit the site conditions. Areas of concern shall be inspected for the first three years to ensure that plantings are healthy and facilities are functioning properly. Beyond this time, the facilities shall continue to be inspected and maintained as needed. Off-site facilities are the responsibility of others and shall not be impacted by site runoff.

### Conclusion

On-site stormwater management will be utilized for the Holce Trailhead through the construction of two detention swales along the edges of the new pavement. Low impact design methods have been incorporated to help facilitate a system that retains stormwater up through the 100-year storm event. This system has been designed to effectively meet the Columbia County requirements. Responsibility for the proper implementation and maintenance of this facility belongs to the property owners.

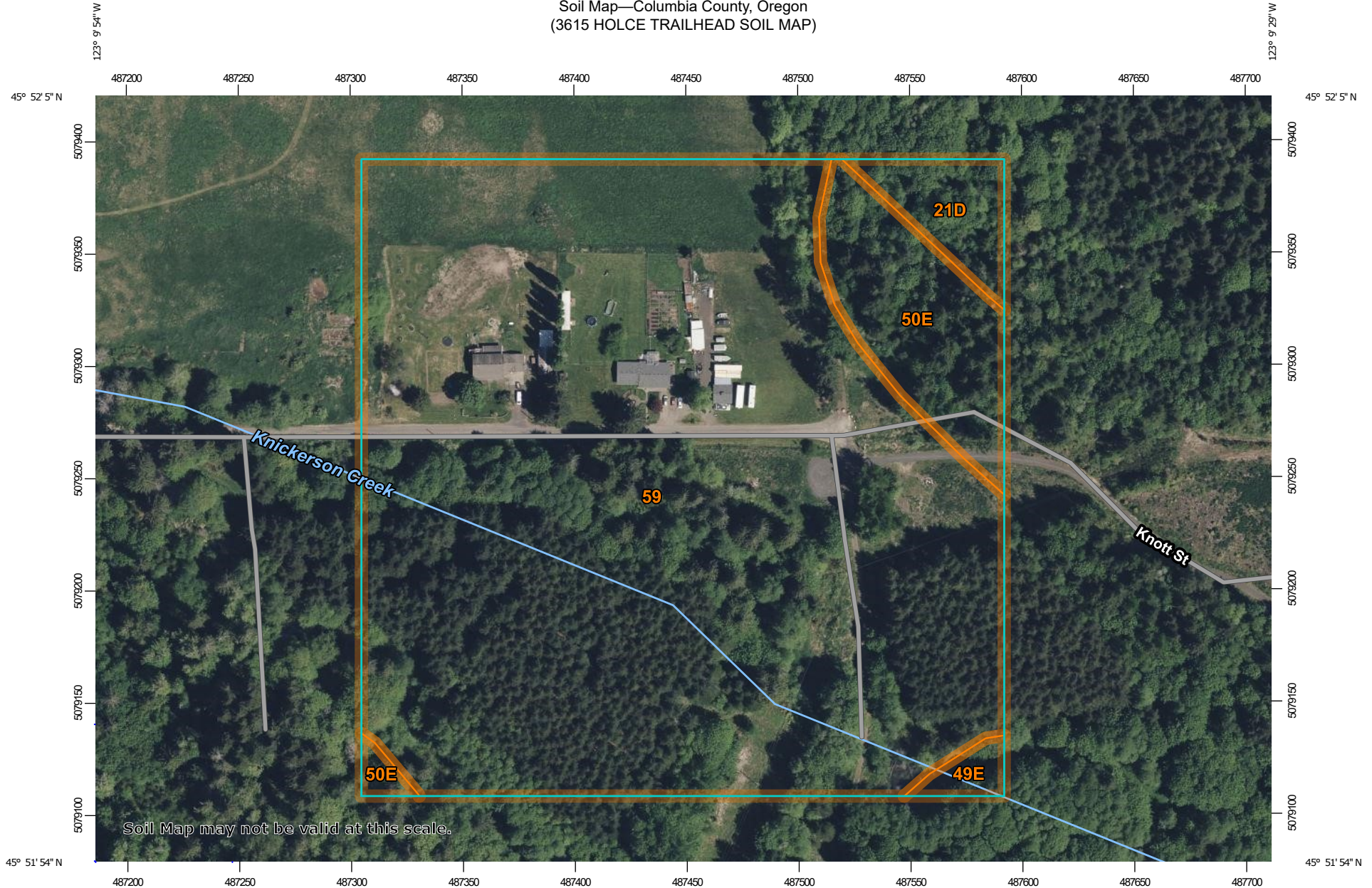


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**Attachment A- Soil Survey**

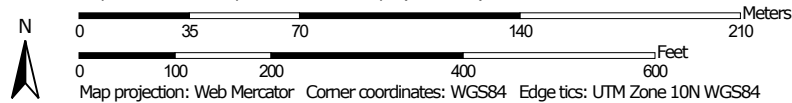


Soil Map—Columbia County, Oregon  
(3615 HOLCE TRAILHEAD SOIL MAP)



Soil Map may not be valid at this scale.

Map Scale: 1:2,400 if printed on A landscape (11" x 8.5") sheet.



## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Columbia County, Oregon

Survey Area Data: Version 21, Sep 7, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 17, 2023—Jun 3, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



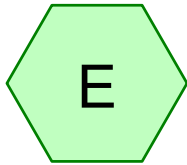
## Map Unit Legend

| Map Unit Symbol                    | Map Unit Name  | Acres in AOI | Percent of AOI |
|------------------------------------|--|--------------|----------------|
| 21D                                | Glohm silt loam, 3 to 30 percent slopes                  | 0.6          | 3.0%           |
| 49E                                | Scaponia-Braun silt loams, 30 to 60 percent north slopes | 0.2          | 0.9%           |
| 50E                                | Scaponia-Braun silt loams, 30 to 60 percent south slopes | 1.7          | 8.2%           |
| 59                                 | Udifluvents-Dystrochrepts complex                        | 17.8         | 87.9%          |
| <b>Totals for Area of Interest</b> |  | <b>20.2</b>  | <b>100.0%</b>  |

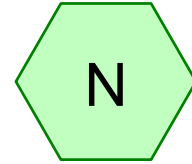


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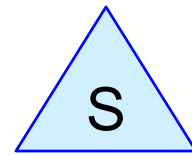
## Attachment B- Stormwater Calculations



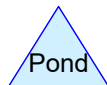
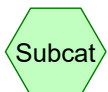
HOLCE TRIALHEAD-  
EXISTING



HOLCE TRAILHEAD  
IMPROVEMENTS



HOLCE TRAILHEAD  
SWALES



**3615 Preliminary Storm**

Prepared by Lower Columbia Engineering

Printed 9/11/2024

HydroCAD® 10.20-4a s/n 07313 © 2023 HydroCAD Software Solutions LLC

Page 2

**Rainfall Events Listing (selected events)**

| Event# | Event Name | Storm Type    | Curve | Mode    | Duration (hours) | B/B | Depth (inches) | AMC |
|--------|------------|---------------|-------|---------|------------------|-----|----------------|-----|
| 1      | 2YR        | Type IA 24-hr |       | Default | 24.00            | 1   | 2.00           | 2   |
| 2      | 10YR       | Type IA 24-hr |       | Default | 24.00            | 1   | 3.00           | 2   |
| 3      | 100YR      | Type IA 24-hr |       | Default | 24.00            | 1   | 4.50           | 2   |

**3615 Preliminary Storm**

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**Ground Covers (all nodes)**

| HSG-A<br>(acres) | HSG-B<br>(acres) | HSG-C<br>(acres) | HSG-D<br>(acres) | Other<br>(acres) | Total<br>(acres) | Ground<br>Cover | Subcatchment<br>Numbers |
|------------------|------------------|------------------|------------------|------------------|------------------|-----------------|-------------------------|
| 0.262            | 0.000            | 0.000            | 0.000            | 0.000            | 0.262            | Dirt roads      | E                       |
| 0.000            | 0.000            | 0.000            | 0.000            | 0.262            | 0.262            | Impervious      | N                       |
| <b>0.262</b>     | <b>0.000</b>     | <b>0.000</b>     | <b>0.000</b>     | <b>0.262</b>     | <b>0.523</b>     | <b>TOTAL</b>    |                         |
|                  |                  |                  |                  |                  |                  | <b>AREA</b>     |                         |

### 3615 Preliminary Storm

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HOLCE TRAILHEAD

Type IA 24-hr 2YR Rainfall=2.00"

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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

#### Subcatchment E: HOLCE TRIALHEAD-

Runoff Area=11,400 sf 0.00% Impervious Runoff Depth=0.29"  
Tc=0.0 min CN=72/0 Runoff=0.01 cfs 0.006 af

#### Subcatchment N: HOLCE TRAILHEAD

Runoff Area=11,400 sf 100.00% Impervious Runoff Depth=1.77"  
Tc=0.0 min CN=0/98 Runoff=0.12 cfs 0.039 af

#### Pond S: HOLCE TRAILHEAD SWALES

Peak Elev=0.78' Storage=0.012 af Inflow=0.12 cfs 0.039 af  
Outflow=0.02 cfs 0.039 af

**Total Runoff Area = 0.523 ac Runoff Volume = 0.045 af Average Runoff Depth = 1.03"**  
**50.00% Pervious = 0.262 ac 50.00% Impervious = 0.262 ac**

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HOLCE TRAILHEAD

Type IA 24-hr 2YR Rainfall=2.00"

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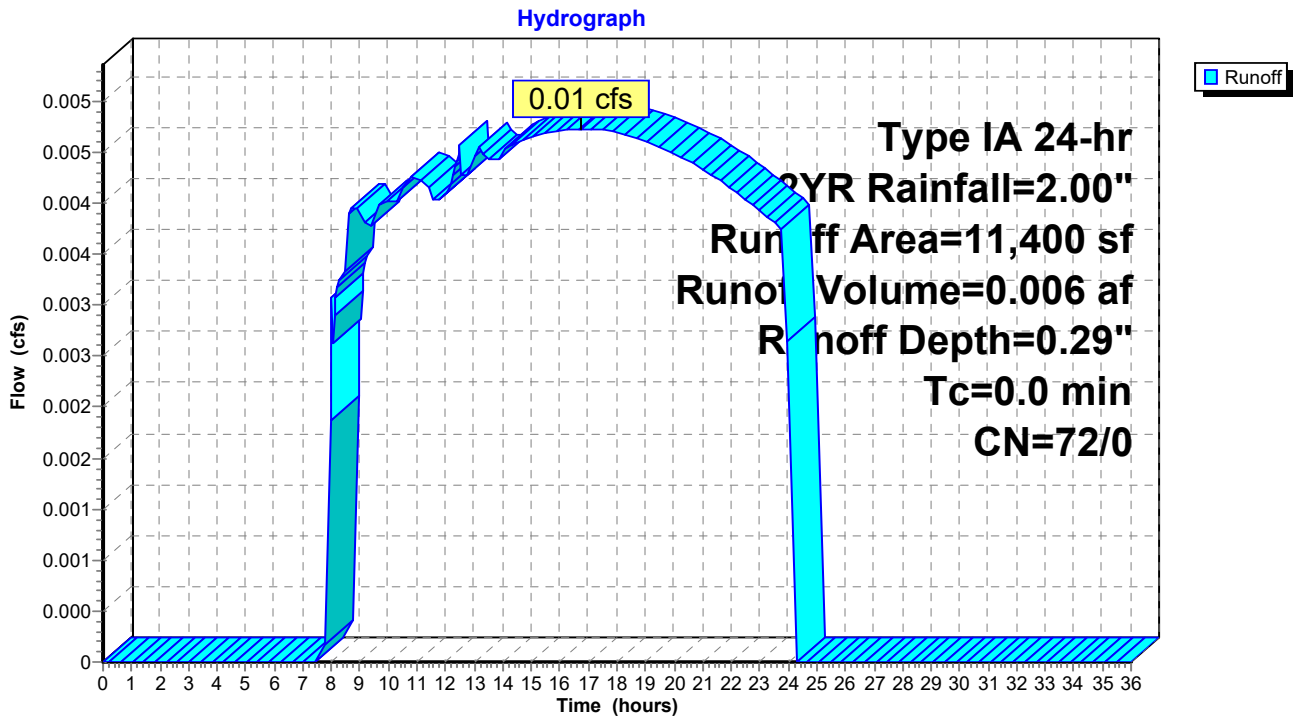
## Summary for Subcatchment E: HOLCE TRAILHEAD- EXISTING

Runoff = 0.01 cfs @ 16.72 hrs, Volume= 0.006 af, Depth= 0.29"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 2YR Rainfall=2.00"

| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 11,400    | 72 | Dirt roads, HSG A     |
| 11,400    | 72 | 100.00% Pervious Area |

## Subcatchment E: HOLCE TRAILHEAD- EXISTING



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HOLCE TRAILHEAD

Type IA 24-hr 2YR Rainfall=2.00"

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## Summary for Subcatchment N: HOLCE TRAILHEAD IMPROVEMENTS

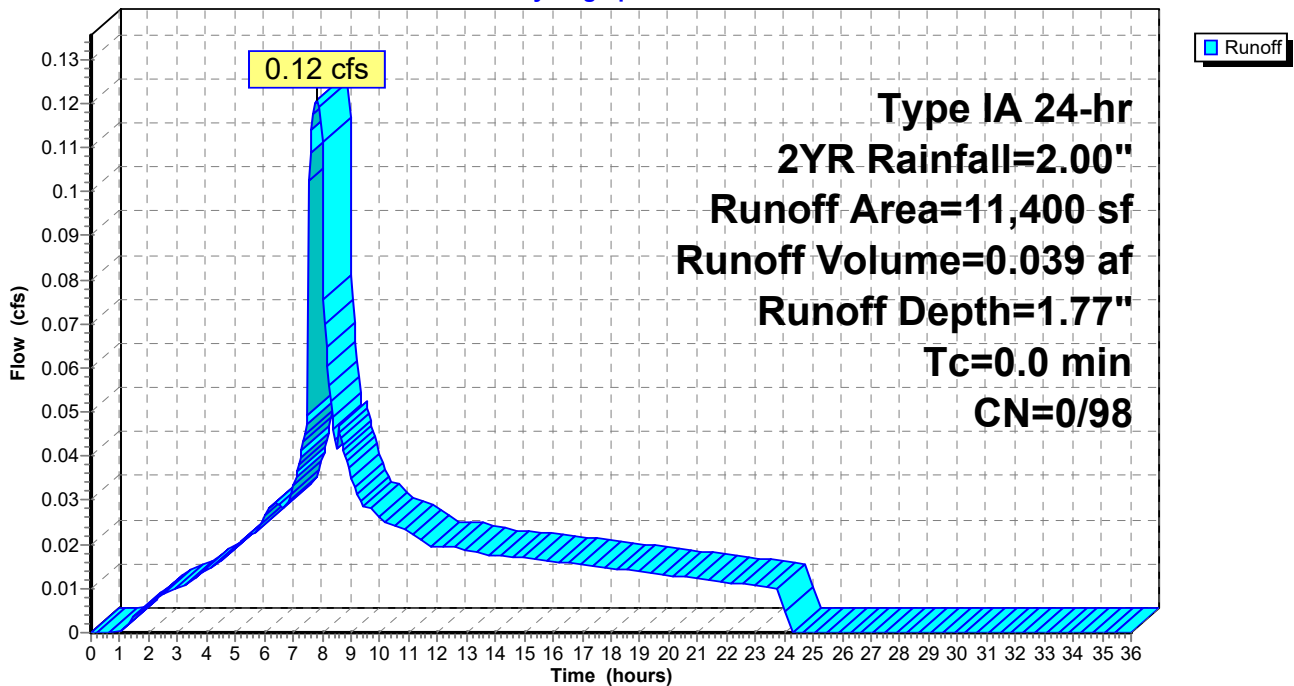
Runoff = 0.12 cfs @ 7.81 hrs, Volume= 0.039 af, Depth= 1.77"  
Routed to Pond S : HOLCE TRAILHEAD SWALES

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 2YR Rainfall=2.00"

| Area (sf) | CN | Description             |
|-----------|----|-------------------------|
| * 11,400  | 98 | Impervious              |
| 11,400    | 98 | 100.00% Impervious Area |

## Subcatchment N: HOLCE TRAILHEAD IMPROVEMENTS

Hydrograph





### 3615 Preliminary Storm

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HOLCE TRAILHEAD

Type IA 24-hr 2YR Rainfall=2.00"

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### Summary for Pond S: HOLCE TRAILHEAD SWALES

Inflow Area = 0.262 ac, 100.00% Impervious, Inflow Depth = 1.77" for 2YR event  
 Inflow = 0.12 cfs @ 7.81 hrs, Volume= 0.039 af  
 Outflow = 0.02 cfs @ 11.56 hrs, Volume= 0.039 af, Atten= 83%, Lag= 225.0 min  
 Discarded = 0.02 cfs @ 11.56 hrs, Volume= 0.039 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
 Peak Elev= 0.78' @ 11.56 hrs Surf.Area= 0.019 ac Storage= 0.012 af

Plug-Flow detention time= 296.4 min calculated for 0.039 af (100% of inflow)  
 Center-of-Mass det. time= 296.5 min ( 973.1 - 676.6 )

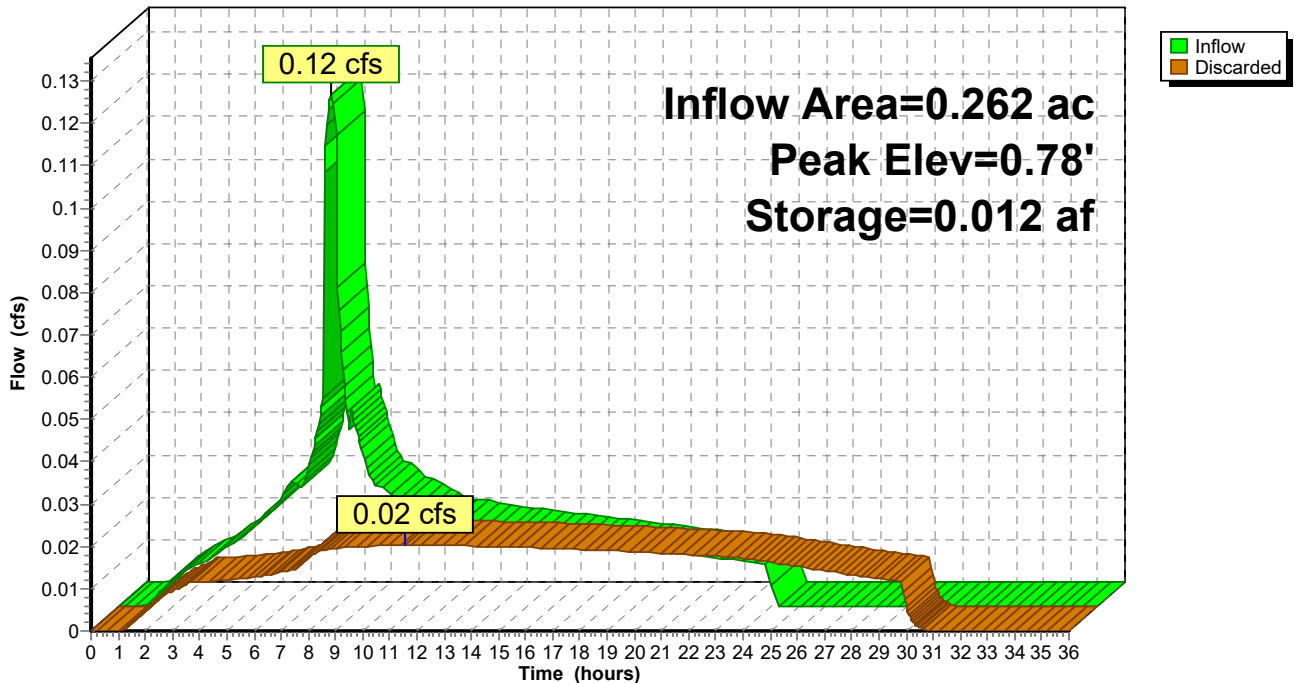
| Volume | Invert | Avail.Storage | Storage Description                                |
|--------|--------|---------------|--|
| #1     | 0.00'  | 0.014 af      | <b>4.00'W x 40.00'L x 2.00'H West Swale Z=1.5</b>  |
| #2     | 0.00'  | 0.028 af      | <b>4.00'W x 83.00'L x 2.00'H South Swale Z=1.5</b> |
|        |        | 0.042 af      | Total Available Storage                            |

| Device | Routing   | Invert | Outlet Devices                                   |
|--------|-----------|--------|--|
| #1     | Discarded | 0.00'  | <b>1.000 in/hr Exfiltration over Wetted area</b> |

Discarded OutFlow Max=0.02 cfs @ 11.56 hrs HW=0.78' (Free Discharge)  
 ←1=Exfiltration (Exfiltration Controls 0.02 cfs)

### Pond S: HOLCE TRAILHEAD SWALES

Hydrograph



### 3615 Preliminary Storm

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HOLCE TRAILHEAD

Type IA 24-hr 10YR Rainfall=3.00"

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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment E: HOLCE TRIALHEAD-** Runoff Area=11,400 sf 0.00% Impervious Runoff Depth=0.81"  
Tc=0.0 min CN=72/0 Runoff=0.04 cfs 0.018 af

**Subcatchment N: HOLCE TRAILHEAD** Runoff Area=11,400 sf 100.00% Impervious Runoff Depth=2.77"  
Tc=0.0 min CN=0/98 Runoff=0.19 cfs 0.060 af

**Pond S: HOLCE TRAILHEAD SWALES** Peak Elev=1.30' Storage=0.023 af Inflow=0.19 cfs 0.060 af  
Outflow=0.03 cfs 0.060 af

**Total Runoff Area = 0.523 ac Runoff Volume = 0.078 af Average Runoff Depth = 1.79"**  
**50.00% Pervious = 0.262 ac 50.00% Impervious = 0.262 ac**

# 3615 Preliminary Storm

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HOLCE TRAILHEAD

Type IA 24-hr 10YR Rainfall=3.00"

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## Summary for Subcatchment E: HOLCE TRIALHEAD- EXISTING

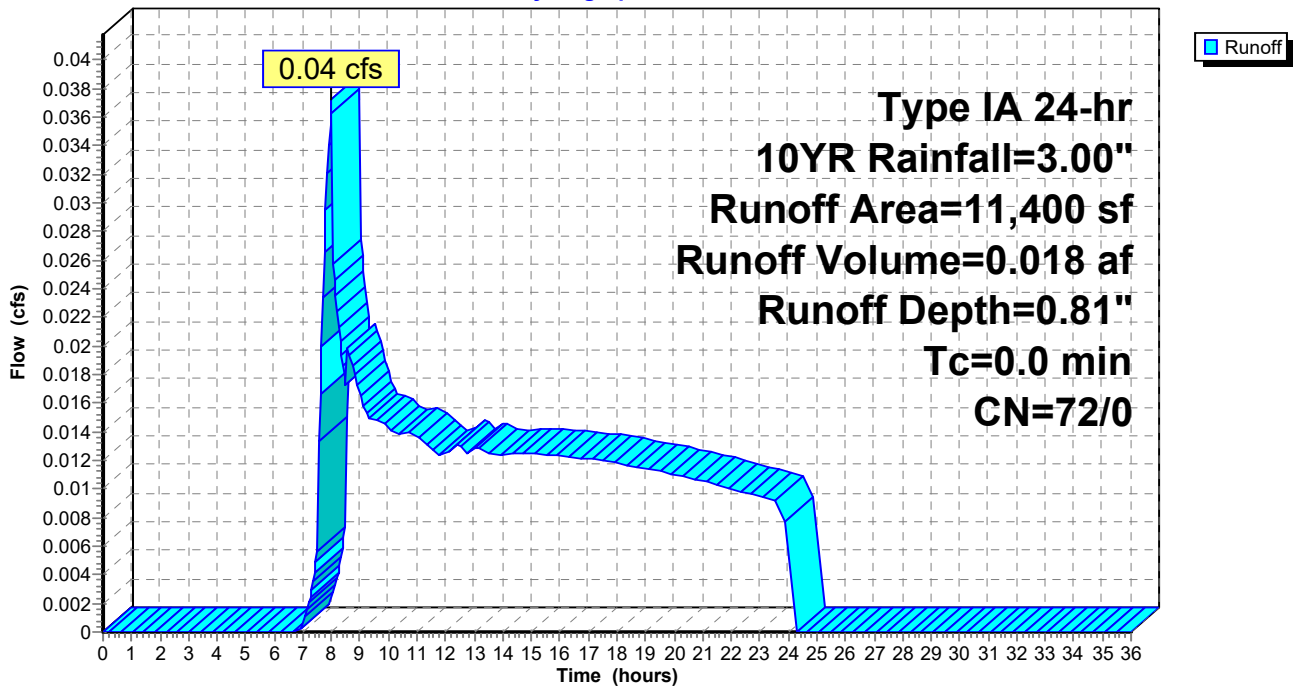
Runoff = 0.04 cfs @ 7.98 hrs, Volume= 0.018 af, Depth= 0.81"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 10YR Rainfall=3.00"

| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 11,400    | 72 | Dirt roads, HSG A     |
| 11,400    | 72 | 100.00% Pervious Area |

## Subcatchment E: HOLCE TRIALHEAD- EXISTING

Hydrograph



# 3615 Preliminary Storm

Prepared by Lower Columbia Engineering

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HOLCE TRAILHEAD

Type IA 24-hr 10YR Rainfall=3.00"

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## Summary for Subcatchment N: HOLCE TRAILHEAD IMPROVEMENTS

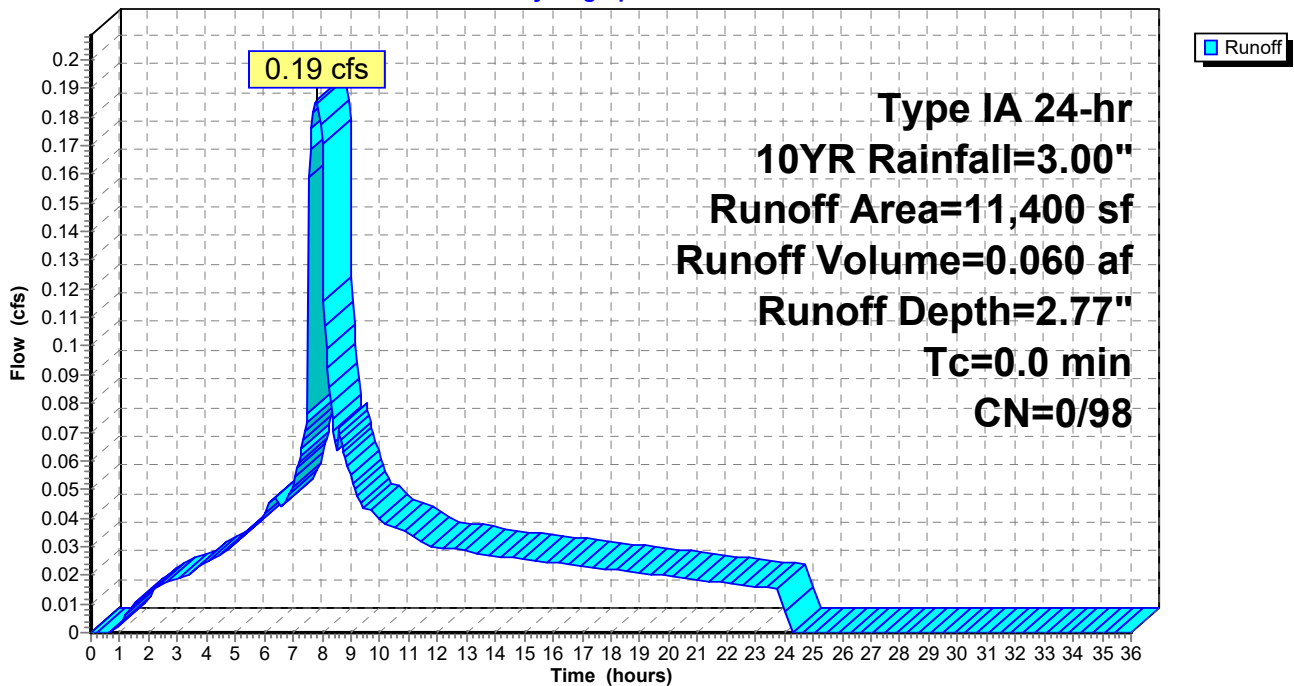
Runoff = 0.19 cfs @ 7.81 hrs, Volume= 0.060 af, Depth= 2.77"  
Routed to Pond S : HOLCE TRAILHEAD SWALES

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 10YR Rainfall=3.00"

|   | Area (sf) | CN | Description             |
|---|-----------|----|-------------------------|
| * | 11,400    | 98 | Impervious              |
|   | 11,400    | 98 | 100.00% Impervious Area |

## Subcatchment N: HOLCE TRAILHEAD IMPROVEMENTS

Hydrograph



### 3615 Preliminary Storm

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HOLCE TRAILHEAD

Type IA 24-hr 10YR Rainfall=3.00"

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### Summary for Pond S: HOLCE TRAILHEAD SWALES

Inflow Area = 0.262 ac, 100.00% Impervious, Inflow Depth = 2.77" for 10YR event  
 Inflow = 0.19 cfs @ 7.81 hrs, Volume= 0.060 af  
 Outflow = 0.03 cfs @ 14.22 hrs, Volume= 0.060 af, Atten= 86%, Lag= 385.0 min  
 Discarded = 0.03 cfs @ 14.22 hrs, Volume= 0.060 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
 Peak Elev= 1.30' @ 14.22 hrs Surf.Area= 0.024 ac Storage= 0.023 af

Plug-Flow detention time= 459.5 min calculated for 0.060 af (99% of inflow)  
 Center-of-Mass det. time= 450.8 min ( 1,114.1 - 663.2 )

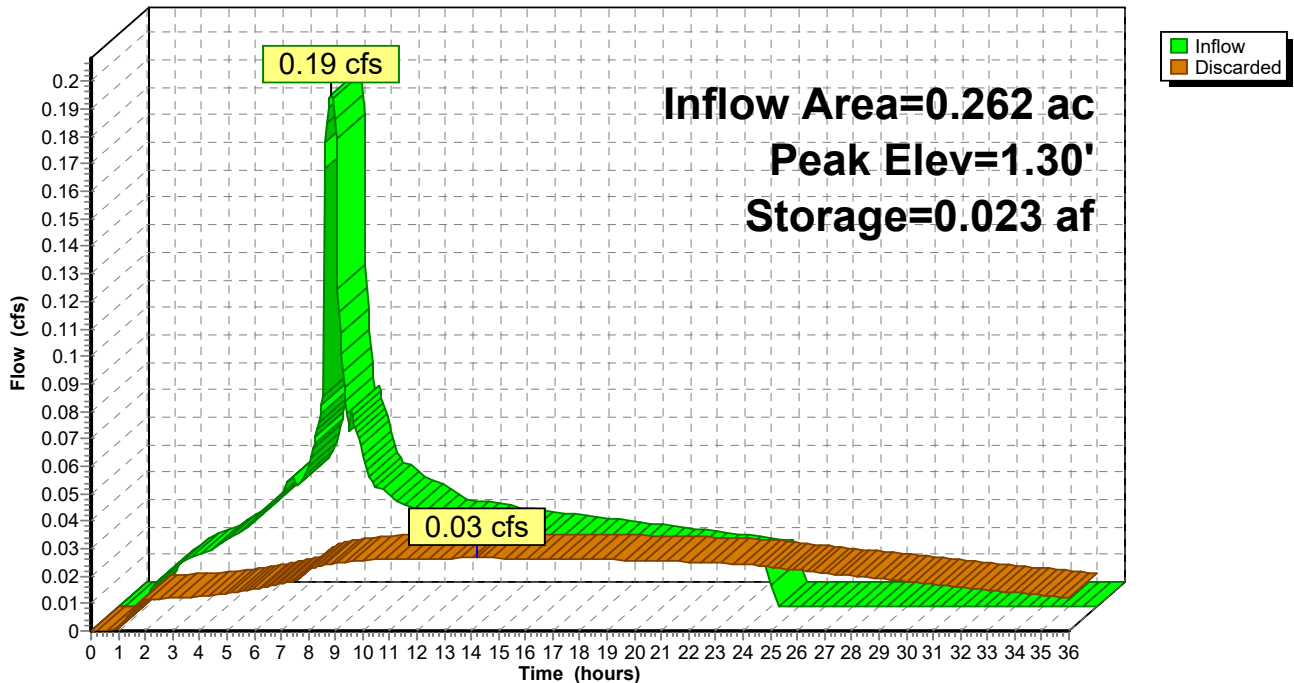
| Volume | Invert | Avail.Storage | Storage Description                                |
|--------|--------|---------------|--|
| #1     | 0.00'  | 0.014 af      | <b>4.00'W x 40.00'L x 2.00'H West Swale Z=1.5</b>  |
| #2     | 0.00'  | 0.028 af      | <b>4.00'W x 83.00'L x 2.00'H South Swale Z=1.5</b> |
|        |        | 0.042 af      | Total Available Storage                            |

| Device | Routing   | Invert | Outlet Devices                                   |
|--------|-----------|--------|--|
| #1     | Discarded | 0.00'  | <b>1.000 in/hr Exfiltration over Wetted area</b> |

Discarded OutFlow Max=0.03 cfs @ 14.22 hrs HW=1.30' (Free Discharge)  
 ↳ 1=Exfiltration (Exfiltration Controls 0.03 cfs)

### Pond S: HOLCE TRAILHEAD SWALES

Hydrograph



### 3615 Preliminary Storm

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HOLCE TRAILHEAD

Type IA 24-hr 100YR Rainfall=4.50"

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Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment E: HOLCE TRAILHEAD-** Runoff Area=11,400 sf 0.00% Impervious Runoff Depth=1.82"  
Tc=0.0 min CN=72/0 Runoff=0.10 cfs 0.040 af

**Subcatchment N: HOLCE TRAILHEAD** Runoff Area=11,400 sf 100.00% Impervious Runoff Depth=4.26"  
Tc=0.0 min CN=0/98 Runoff=0.28 cfs 0.093 af

**Pond S: HOLCE TRAILHEAD SWALES** Peak Elev=1.99' Storage=0.042 af Inflow=0.28 cfs 0.093 af  
Outflow=0.04 cfs 0.082 af

**Total Runoff Area = 0.523 ac Runoff Volume = 0.133 af Average Runoff Depth = 3.04"**  
**50.00% Pervious = 0.262 ac 50.00% Impervious = 0.262 ac**

# 3615 Preliminary Storm

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HOLCE TRAILHEAD

Type IA 24-hr 100YR Rainfall=4.50"

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## Summary for Subcatchment E: HOLCE TRIALHEAD- EXISTING

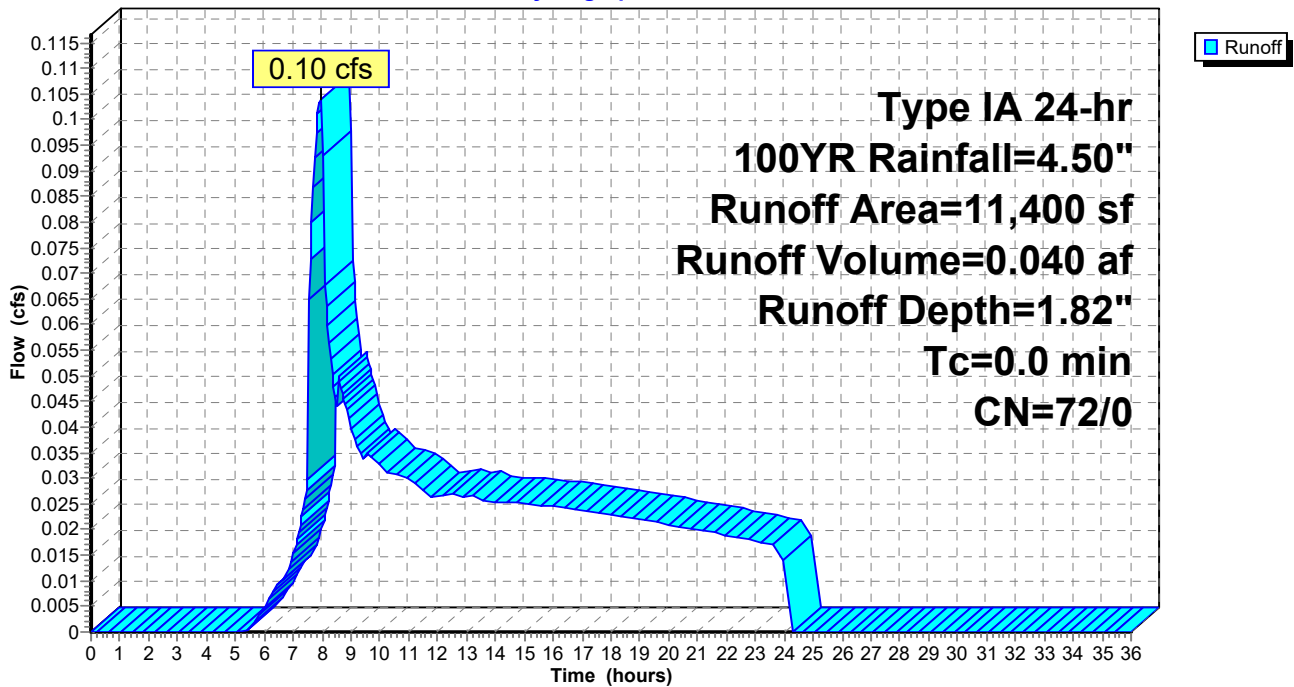
Runoff = 0.10 cfs @ 7.95 hrs, Volume= 0.040 af, Depth= 1.82"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 100YR Rainfall=4.50"

| Area (sf) | CN | Description           |
|-----------|----|-----------------------|
| 11,400    | 72 | Dirt roads, HSG A     |
| 11,400    | 72 | 100.00% Pervious Area |

## Subcatchment E: HOLCE TRIALHEAD- EXISTING

Hydrograph



# 3615 Preliminary Storm

Prepared by Lower Columbia Engineering

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HOLCE TRAILHEAD

Type IA 24-hr 100YR Rainfall=4.50"

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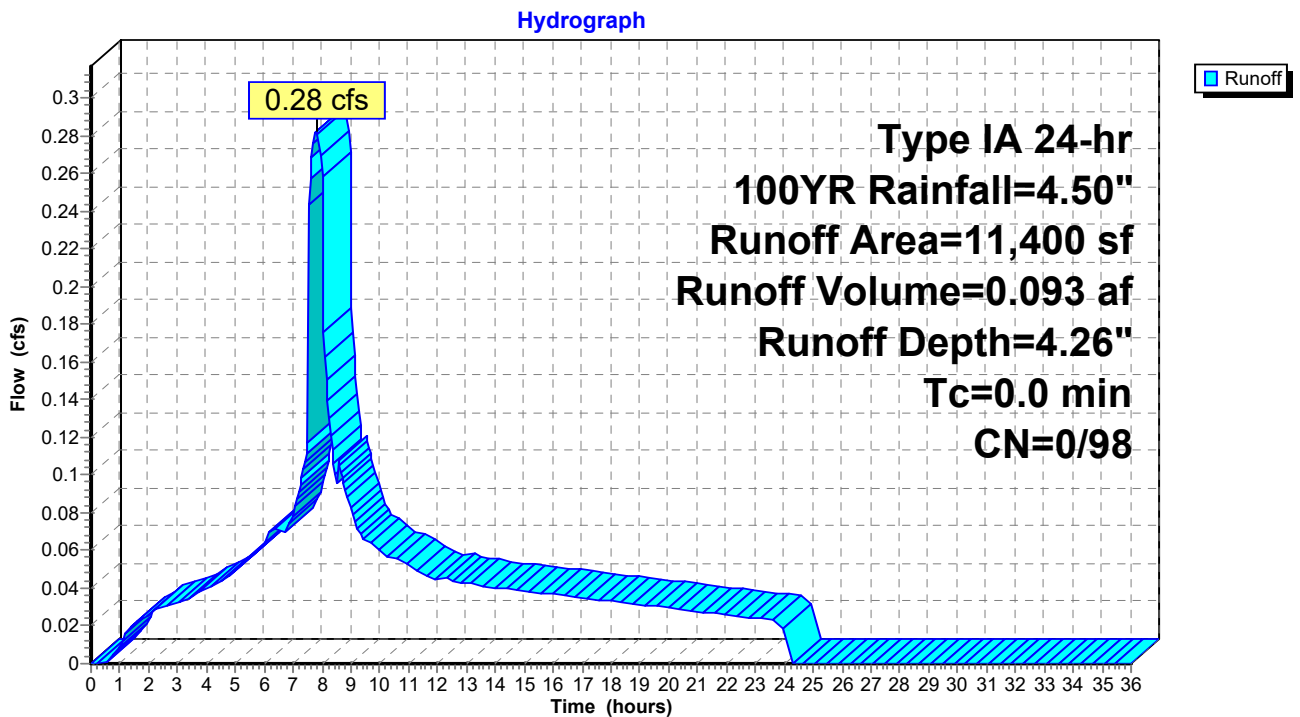
## Summary for Subcatchment N: HOLCE TRAILHEAD IMPROVEMENTS

Runoff = 0.28 cfs @ 7.80 hrs, Volume= 0.093 af, Depth= 4.26"  
Routed to Pond S : HOLCE TRAILHEAD SWALES

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 100YR Rainfall=4.50"

|   | Area (sf) | CN | Description             |
|---|-----------|----|-------------------------|
| * | 11,400    | 98 | Impervious              |
|   | 11,400    | 98 | 100.00% Impervious Area |

## Subcatchment N: HOLCE TRAILHEAD IMPROVEMENTS





### 3615 Preliminary Storm

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HOLCE TRAILHEAD

Type IA 24-hr 100YR Rainfall=4.50"

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### Summary for Pond S: HOLCE TRAILHEAD SWALES

Inflow Area = 0.262 ac, 100.00% Impervious, Inflow Depth = 4.26" for 100YR event  
 Inflow = 0.28 cfs @ 7.80 hrs, Volume= 0.093 af  
 Outflow = 0.04 cfs @ 16.86 hrs, Volume= 0.082 af, Atten= 88%, Lag= 543.2 min  
 Discarded = 0.04 cfs @ 16.86 hrs, Volume= 0.082 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs  
 Peak Elev= 1.99' @ 16.86 hrs Surf.Area= 0.031 ac Storage= 0.042 af

Plug-Flow detention time= 583.8 min calculated for 0.082 af (88% of inflow)  
 Center-of-Mass det. time= 495.9 min ( 1,149.0 - 653.1 )

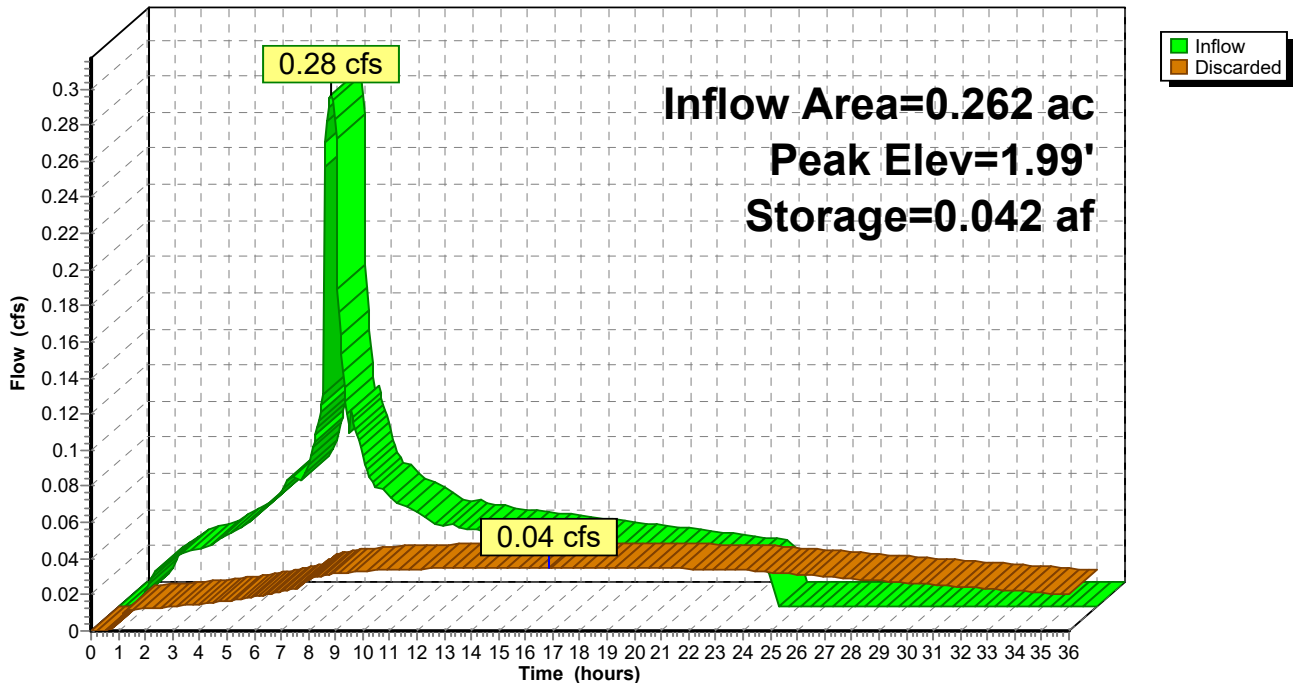
| Volume | Invert | Avail.Storage | Storage Description                                |
|--------|--------|---------------|--|
| #1     | 0.00'  | 0.014 af      | <b>4.00'W x 40.00'L x 2.00'H West Swale Z=1.5</b>  |
| #2     | 0.00'  | 0.028 af      | <b>4.00'W x 83.00'L x 2.00'H South Swale Z=1.5</b> |
|        |        | 0.042 af      | Total Available Storage                            |

| Device | Routing   | Invert | Outlet Devices                                   |
|--------|-----------|--------|--|
| #1     | Discarded | 0.00'  | <b>1.000 in/hr Exfiltration over Wetted area</b> |

Discarded OutFlow Max=0.04 cfs @ 16.86 hrs HW=1.99' (Free Discharge)  
 ↳ 1=Exfiltration (Exfiltration Controls 0.04 cfs)

### Pond S: HOLCE TRAILHEAD SWALES

Hydrograph





# **Exhibit B**

## **Geotechnical Report**

---

# GEOTECHNICAL REPORT

**Holce Traillead  
LCE Job 2615  
Vernonia, OR**

**For**

**Columbia County  
30 July 2024**



**EXPIRES:  
12/31/2024**



3915 SW Plum Street  
Portland, OR 97219  
503-816-3689

## 1- INTRODUCTION

Rapid Soil Solutions Inc (RSS) has prepared this geotechnical report, as requested, for the proposed 16,000 square-foot Holce Trailhead improvements at the eastern end of E. Knott Street within the Columbia County parcel adjacent to the City of Vernonia in the Primary Forest Zone. The site is currently vacant with a gravel portion within the site. The site is approximately 0.37-acre parcel, is accessible via E. Knott Street, and is not currently assigned a street address. RSS understands that the proposed improvements will be positioned within the entire parcel.

This report is based on visual observations of the subject site, three shallow hand auger borings, and a review of available literature as referenced at the end of this report. Slopes and disturbance envelopes discussed in this report are approximate, primary based on on-site observations by RSS staff. RSS conducted site investigations on July 18<sup>th</sup>, 2024; RSS visited the site unaccompanied.

## 2- SITE DESCRIPTION

### 2.1 Location

The subject site is located in Columbia County within the city of Vernonia, Oregon. It is not currently assigned a street address. It is positioned 0.6 miles east of Highway 47, 0.7 miles east of the Nehalem River, 200 feet northeast of Knickerson Creek, and 2.5 miles east of the community of Vernonia, Oregon. It is situated on E. Knott Street about 0.7 miles east of its intersection with Highway 47. The 0.37-acre parcel is a roughly 160' by 130' rectangle, connected to E. Knott Street and slopes gently to the west. There are no adjacent parcels with the exception of the parcel across the road, 1780 E. Knott Street (north).

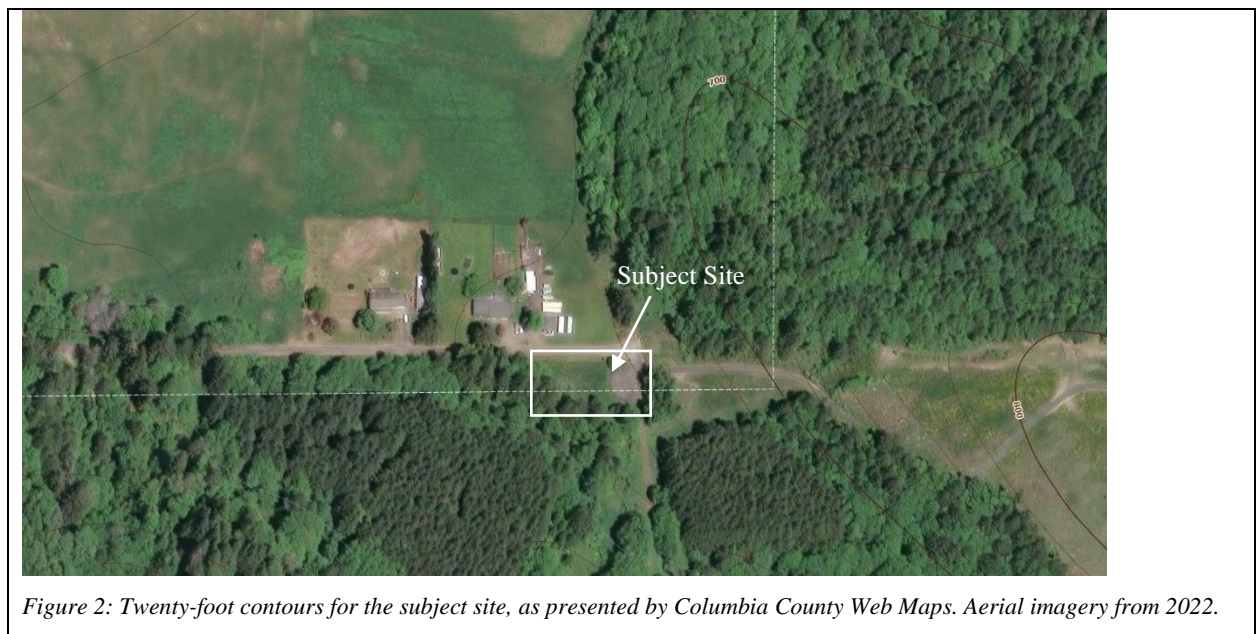
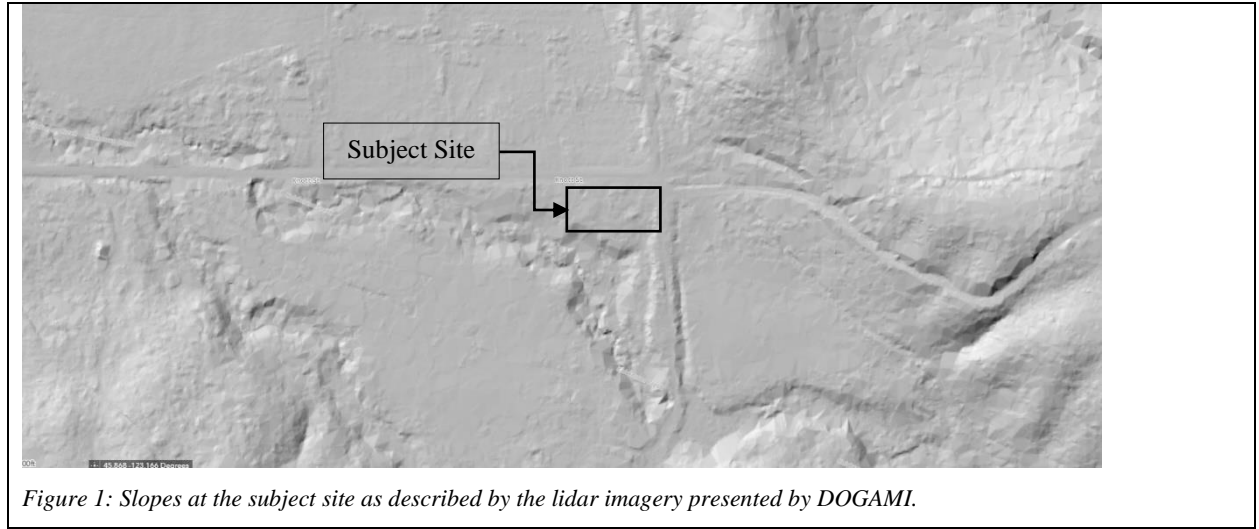
The site can be found in the southwestern quarter of the northeastern quarter of Section 3, Township 4-North, Range 4-West (W.M.) in Columbia County. The latitude and longitude of the site are 45.866761 and -123.160926 (45°52'00"N, 123°09'39"W). The site can be found in the northeastern portion of the Vernonia 7.5-minute quadrangle.

The property is situated at the base of rural slopes. The region is dominated by farmland, with a small collection of rural residential parcels nearby along E. Knott Street.

### 2.2 Slopes

The subject site is situated within irregular slopes of the Oregon Coast Range Mountains. The local uplands contain rolling slopes underlain by igneous sheet flows of the Columbia River Basalt Group. Twenty-foot contours presented by Columbia County Maps Online indicate that the subject property ranges from an elevation of 660 feet above mean sea level to 6500 feet above mean sea level.

At the southwest corner of the property, there is a 50' riparian boundary and Knickerson Creek. Lidar imagery suggest that the northern portions of the drainage gully contain a narrow channel, most likely containing flowing water for some portion of the year. These streams have very little sinuosity as they descend. Imagery of the subject site and surrounding slopes depict a smooth morphology with gradual transitions in grade.



### 2.3 Built/ Historical Conditions

The subject site is vacant and undeveloped. The proposed subject site is currently occupied by a native grass field and an unmarked gravel parking area.

Historic aerial imagery dating to 1984 was referenced as part of this investigation. This imagery indicates that the proposed area has been unoccupied since at least 1984.

## 3- GEOLOGY

### 3.1 Regional Geology

The geologic and structural setting of the Pacific Northwest is dominated by its proximity to the active, oblique subduction of the oceanic Farallon (Juan de Fuca) plate beneath the North

American continental plate margin. The subject site is situated within the Oregon Coast Range mountains, an uplifted belt of land extending roughly 200 miles and is comprised of moderately high mountains (averaging 1,500' in elevation with a maximum of 4,097') with a width of roughly 30- to 40-miles. Over tens of millions of years materials built up on the ocean floor, influenced by sea level fluctuations, birth and eventual erosion of nearby volcanoes, and the ongoing sediment supply from the adjacent continent. This mountain range is primarily comprised of accreted oceanic sediments and synchronously deposited igneous rocks (where the sediments overlay, underlay and are intruded by the volcanic flows). The compressional forces of the subduction zone uplifted the Oregon Coast Range to its modern height.

Flows of the Columbia River Basalt Group have capped the uplands in the eastern flanks of this mountain range. These flood basalts were emplaced roughly 15 to 16 million years ago. The hot, fluid lava was produced by dozens of fissure eruptions in eastern Oregon and Washington. It flowed across much of the eastern half of both Oregon and Washington, eventually reaching the Pacific Ocean. The physical properties of these flows are very similar, often making it difficult to distinguish between individual flows. The flood basalts were originally emplaced as flat sheets, but prolonged faulting and folding as created the modern structural environment. Local bedrock generally dips towards the east and south.

### 3.2 Site Geology

As a group the Columbia River Basalts are generally described as basaltic lava flows with interflow zones of breccia, ash and baked soil. Unweathered flows are generally comprised of blue-black, dense and finely crystalline basalt that often forms well-developed columns. Weathered flows are reddish-brown to gray-brown, crumbly to medium dense basalt. Structural deformation has creating abundant faulting in the local uplifted ridges, creating a variable degree of fracturing. The upper 100 to 200 feet of the unit can be deeply weathered to decomposed. Around the local region, the thickness of the unit ranges dramatically. The edges of the unit often pinch out or are featheredged. Internally, some sections can contain thickness exceeding 900 feet.

### 3.3 Geologic Hazard Document Review

The Oregon HazVu: Statewide Geohazard Viewer was reviewed on July 23<sup>rd</sup>, 2024 to investigate mapped geological hazards.

This review indicates that the subject site is outside the 100-year floodplain, as mapped by FEMA.

The expected earthquake-shaking hazard is classified as severe (VIII on the instrumental intensity map). The probability of damage from shaking is classified as 10-20%. The site has no mapped liquefaction susceptibility, crystalline bedrock is not susceptible to liquefaction during severe shaking events.

Numerous faults are mapped cross-cutting the local bedrock, the majority of these faults are not classified as active. The nearest fault mapped as active by DOGAMI is located over 13 miles from the site.

Landslide mapping indicates that there are no landslides on or adjacent to the proposed site. Slide areas are mapped southwest of the proposed site, southwest of Knickerson Creek. Regional landslide susceptibility models indicate that the proposed area has a moderate susceptibility to landsliding.

#### 4- GEOTECHNICAL INVESTIGATION

A geotechnical investigation was conducted 18 July, 2024. Three shallow hand auger borings were conducted to characterize subsurface soil and collected samples for laboratory analysis. RSS additionally conducted a visual geologic hazard reconnaissance.

##### 4.1 Field Exploration Program

The field exploration program for the Site included three shallow hand auger borings advanced to a depth of 4 feet below the ground surface. These borings provide the means to characterize subsurface soils and collected soil samples for laboratory analysis. The locations of the borings are noted in the appendix.

A Geologist in Training (GIT) observed the borings and logged the subsurface materials. The soil descriptions were reviewed by a professional engineer. The logs were created using the Unified Soil Classification and Visual Manual Procedure (ASTM-D 2488). Boring logs are included in the Appendix. Results of the field explorations are discussed in the Section 5.2.

##### 4.2 Laboratory Testing Program

Three soil samples were collected for laboratory analysis. All three samples were analyzed for soil moisture content. One sample was analyzed with an Atterberg limit test.

Samples collected for laboratory analysis were transported to the lab in sealed plastic bags.

#### 5.0 RESULTS OF INVESTIGATION

##### 5.1 Site Observations/ Conditions

RSS traversed the fielded portion of the parcel. RSS noted the following characteristics about the Site:

- Grade changes across the site were observed to be gradual and smooth.
- No standing or flowing water was observed at the subject site at the time of the site visit.

##### 5.2 Subsurface Conditions

Soil units encountered in the borings are summarized in the following Table 1. The locations are shown in the Appendix.

Table 1: Soil Units Encountered

| Soil Units  |       | Soil Unit Depths (ft) |       |      |
|---|-------|-----------------------|-------|------|
| Description   | USCS  | HA#1                  | HA#2  | HA#3 |
| Medium stiff silts with fine organics and grass roots, found at the surface across the site. Soils are medium brown in color and generally dry to damp. Gravel at the surface at HA-3   | TP    | 0-0.5                 | 0-0.5 | 0-1  |
| <u>Low Plasticity Silty-CLAY to clayey-SILT.</u> Damp to moist, medium gray brown, some gravel and fine-grained sand, low plasticity clayey-SILT. The soil appearance and texture are consistent with soils developed at the weathering upper edges of Columbia River Basalt Group flows. | CL-ML | 0.5-2                 | 0.5-2 | 1-2  |
| <u>Silty-CLAY to clayey-SILT:</u> Medium dark gray brown colored, stiff silts. Slightly increasing moisture with depth in HA#1 and HA#2.  | CL-ML | 2-4                   | 2-4   |      |

Note: np not present, USCS Unified Soil Classification System Group Symbol (from ASTM D 2487) based on visual observation

### 5.3 Groundwater

No surface water was observed at the subject site. Perched groundwater is pervasive across the local region. No groundwater or seeps were observed during subsurface investigations.

### 5.4 Laboratory Tests

Three samples were collected for moisture content. Moisture content ranged from 18% to 23.6%. One Atterberg limit test was conducted, RSS found a liquid limit of 29.3% and a plasticity index of 6.9% (CL-ML).

## 6- GEOTECHNICAL DESIGN AND RECOMMENDATIONS

### 6.1 Foundation Design

The building foundations may be installed on either engineered fill or firm native sub-grade that is found at a depth of about 0.5- 1ft. This depth may be locally variable and should be confirmed by a geotechnical engineer or their representative at the time of construction. ***Please allow 48hours notice to call for foundation inspections.***

Continuous wall and isolated spread footings should be at least 16 and 24 inches wide, respectively. The bottom of exterior footings should be at least 16 inches below the lowest adjacent exterior grade. The bottom of interior footings should be at least 12 inches below the base of the floor slab.

Footings placed on engineered fill or firm native sub-grade should be designed for an allowable bearing capacity is *2,000 pounds per square foot (psf)*. The recommended allowable bearing



pressure can be increased by 1/3 for short-term loads such as those resulting from wind or seismic forces.

Based on our analysis the total post-construction settlement is calculated to be less than 1 inch, with differential settlement of less than 0.5 inch over a 50-foot span for maximum column, perimeter footing loads of less than 100 kips and 6.0 kips per linear foot.

Lateral loads on footings can be resisted by passive earth pressure on the sides of the structures and by friction at the base of the footings. An allowable lateral bearing pressure of 150 *pounds per cubic foot (psf/f)* below grade may be used. Adjacent floor slabs, pavements or the upper 12-inch depth of adjacent, unpaved areas should not be considered when calculating passive resistance.

Engineering values summary

|                               |          |
|-------------------------------|----------|
| Bearing capacity soil:        | 2,000psf |
| Coefficient of friction soil: | 0.32     |
| Active pressure               | 40pcf    |
| Passive pressure              | 300pcf   |

6.2 Seismic Design Criteria

The seismic design criteria for this project found herein is based on the ASCE 7-16. A summary of IBC seismic design criterion is below it is generated from the USGS web site for earthquake hazards using a latitude of 45.866761 and a longitude -123.160926, soil site class D, Null = see section 11.4.8

|   | <b>Short Period</b>       | <b>1 Second</b>          |
|---|---------------------------|--------------------------|
| Maximum Credible Earthquake Spectral Acceleration | S <sub>S</sub> = 0.925 g  | S <sub>1</sub> = 0.471 g |
| Adjusted Spectral Acceleration                    | S <sub>MS</sub> = 1.045 g | S <sub>M1</sub> = null   |
| Design Spectral Response Acceleration Perimeters  | S <sub>DS</sub> = 0.697 g | S <sub>D1</sub> = null   |

6.3 Parking lot cross section

The required section for field department loading is 8in of total rock, which is broken up as 6in of 1 1/2" minus and 2" of 3/4" minus. This supports a 75,000lb truck. RSS will write a field report at that time of the driveway being ready for rock. A proof roll is required with either a loaded dump truck or water truck. If grading takes place in the winter time than geo-textile fabric is required before rock is placed.

6.4 Excavations

The initial site preparation will consist of topsoil stripping, and the removal of trees, where applicable. Removal of trees should include removal of the root ball, and any roots greater than 1/2-inch in diameter. ***Please allow 48hour notice for subgrade inspections.***

Excavations can be accomplished with conventional excavating equipment. All excavations for footings and subgrades in the coarse-grained sand should be performed by an excavator or backhoe equipped with a bucket with teeth.

Because of safety considerations and the nature of temporary excavations, the Contractor should be made responsible for maintaining safe temporary cut slopes and supports for utility trenches, etc. We recommend that the Contractor incorporate all pertinent safety codes during construction, including the latest OSHA revised excavation requirements, and based on soil conditions and groundwater evidenced in cuts made during construction.

### 6.5 Groundwater Management

The Contractor should be made responsible for temporary drainage of surface water and groundwater as necessary to prevent standing water and/or erosion at the working surface.

The ground surface around the structure should be sloped to create a minimum gradient of 2% away from the building foundations for a distance of at least 5 feet. Surface water should be directed away from all buildings into drainage swales or into a storm drainage system. "Trapped" planting areas should not be created next to any buildings without providing means for drainage. Foundation house drains are required.

### 6.6 Construction Observation

Prior to pouring any foundation the excavation shall be observed by the Geotechnical Engineer to ensure that the above items have been properly removed. ***Please allow 48-hour notice to call for subgrade inspections.*** Failure to do so can lead to foundation issues with the house. For placement of any backfilling RSS shall be called to provide compaction testing or probing of the fills

### 6.7 Conclusions

There are no issues with the development of the lot and the parking area.

### 7.0 Limitations

This report has been prepared for the exclusive use of the addressee, and their architects and engineers for aiding in the design and construction of the proposed development. It is the addressee's responsibility to provide this report to the appropriate design professionals, building officials and contractors to ensure correct implementation of the recommendations.

The opinions, comments and conclusions presented in this report were based upon information derived from our literature review, field investigation and laboratory testing. Conditions between, or beyond, my exploratory test pits may vary from those encountered. Unanticipated soil conditions and seasonal soil moisture variations are commonly encountered and cannot be fully determined by merely taking soil samples. Such variations may result in changes to our recommendations and may require that additional expenditures be made to attain a properly

constructed project. Therefore, some contingency fund is recommended to accommodate such potential extra costs.

If there is more than 2 years time between the submission of this report and the start of work at the site; if conditions have changed due to natural causes or construction operations at, or adjacent to, the site; or, if the basic project scheme is significantly modified from that assumed, it is recommended this report be reviewed to determine the applicability of the conclusions and recommendations. The work has been conducted in general conformance with the standard of care in the field of geotechnical engineering currently in practice in the Pacific Northwest for projects of this nature and magnitude. No warranty, express or implied, exists on the information presented in this report. By utilizing the design recommendations within this report, the addressee acknowledges and accepts the risks and limitations of development at the site, as outlined within the report.

## 8.0 REFERENCES

- Columbia County Web Maps (<http://webmap.co.columbia.or.us/geomoose2/>)
- DOGMAI Geologic Map of Oregon (<https://gis.dogami.oregon.gov/maps/geologicmap/>)
- DOGAMI Oregon HazVu: Statewide Geohazards Viewer (<https://www.oregongeology.org/hazvu/>)
- DOMGAI & Oregon Lidar Consortium, Lidar Viewer. (<https://gis.dogami.oregon.gov/maps/lidarviewer/>)
- DOGAMI SLIDO: Statewide Landslide Information Layer for Oregon.  
(<https://gis.dogami.oregon.gov/maps/slido/>)
- Google Earth
- Google Maps (<https://www.google.com/maps/>)
- Metromap (<https://gis.oregonmetro.gov/metromap/>)
- United States Department of Agriculture Natural Resources Conservation Service: Web Soil Survey.  
(<http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>)
- USGS topographic map viewer (<https://ngmdb.usgs.gov/topoview/viewer/>)
- USGS Earth Explorer ([earthexplorer.usgs.gov/](http://earthexplorer.usgs.gov/))
- Newton, V.C., Jr., and Van Atta, R.O., 1976, Prospects for natural gas production and underground storage of pipe-line gas in the Upper Nehalem basin, Columbia-Clatsop Counties: Oregon Department of Geology and Mineral Industries, Oil and Gas Investigations 5, scale 1:75,000.
- Walsh, T.J., 1987, Geologic map of the Astoria and Ilwaco quadrangles, Washington and Oregon: Washington Division of Geology and Earth Resources, Open File Report 87-2, scale 1:100,000.
- Warren, W.C., Norbistrath, Hans, and Grivetti, R.M., 1945, Geology of northwestern Oregon west of Willamette River and north of latitude 45 degrees and 15 minutes: U.S. Geological Survey, Oil and Gas Investigations Map OM-42, scale 1:145,728.
- Wells, R.E., and Sawlan, M.G., 2014, Preliminary geologic map of the eastern Willapa Hills, Cowlitz, Lewis, and Wahkiakum Counties, Washington: U.S. Geological Survey, Open-File Report OF-2014-1063, scale 1:50,000.

# Appendix

U.S. DEPARTMENT OF THE INTERIOR  
U.S. GEOLOGICAL SURVEY

VERNONIA QUADRANGLE  
OREGON  
7.5-MINUTE SERIES

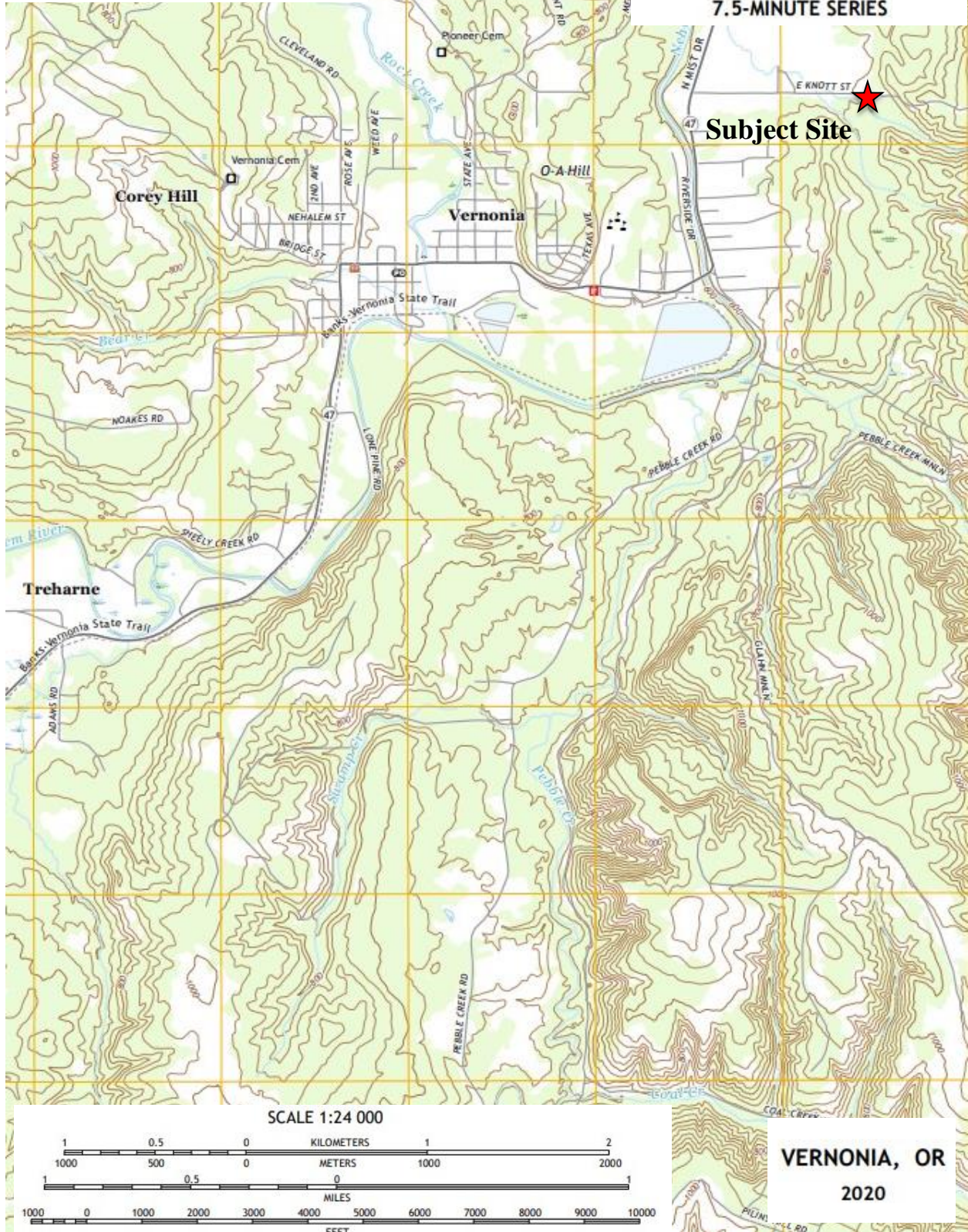


Figure 1: Subject site location on the NW quarter of the Vernonia Quadrangle



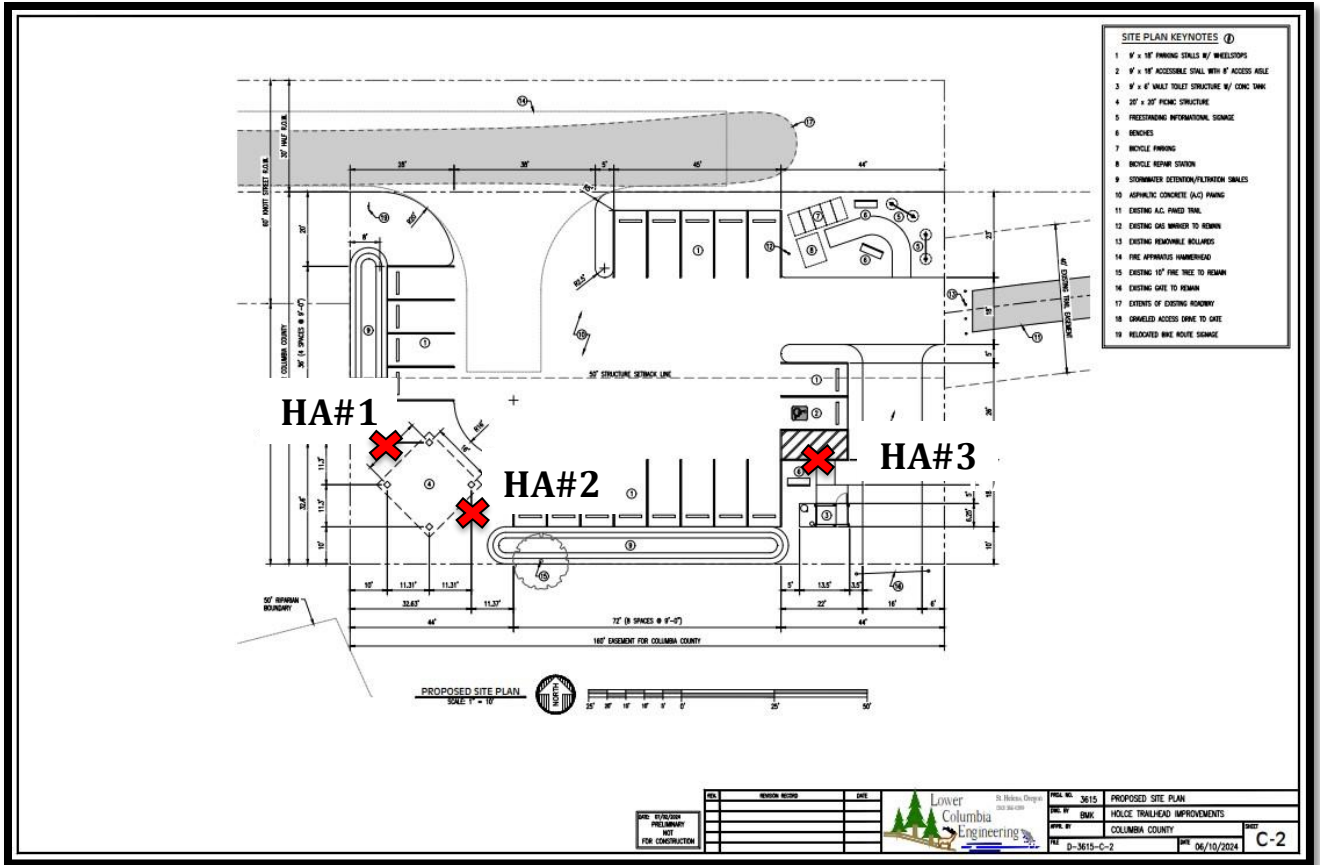


Figure 2: Approximate boring locations on a provided site plan.

Moisture

| Sample number               | HA-1                 | HA-1                 | HA-2                 | HA-3                 |
|-----------------------------|----------------------|----------------------|----------------------|----------------------|
| 1 Date and time in oven     | 07/19/2024 - 12:52PM | 07/19/2024 - 12:52PM | 07/19/2024 - 12:52PM | 07/19/2024 - 12:52PM |
| 2 Date and time out of oven | 07/20/2024 - 06:00PM | 07/20/2024 - 06:00PM | 07/20/2024 - 06:00PM | 07/20/2024 - 06:00PM |
| 3 Depth (ft)                | 2                    | 4                    | 4                    | 2                    |
| 4 Tare No.                  | 4                    | 5                    | 6                    | 7                    |
| 5 Tare Mass                 | 232                  | 234                  | 234                  | 232                  |
| 6 Tare plus sample moist    | 579                  | 829                  | 883                  | 945                  |
| 7 Tare plus sample dry      | 526                  | 717                  | 759                  | 829                  |
| 8 Mass of water (g)         | 53                   | 112                  | 124                  | 116                  |
| 9 Mass of soil (g)          | 294                  | 483                  | 525                  | 597                  |
| 10 Water Content (%)        | 18.0                 | 23.2                 | 23.6                 | 19.4                 |

Atterberg Limit Test

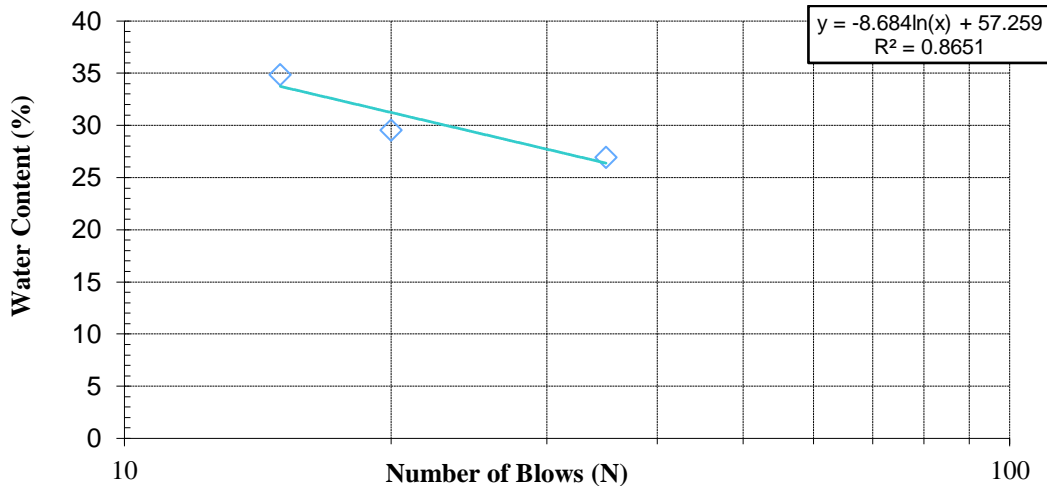
Sample Number: HA-1

Depth: 2-ft

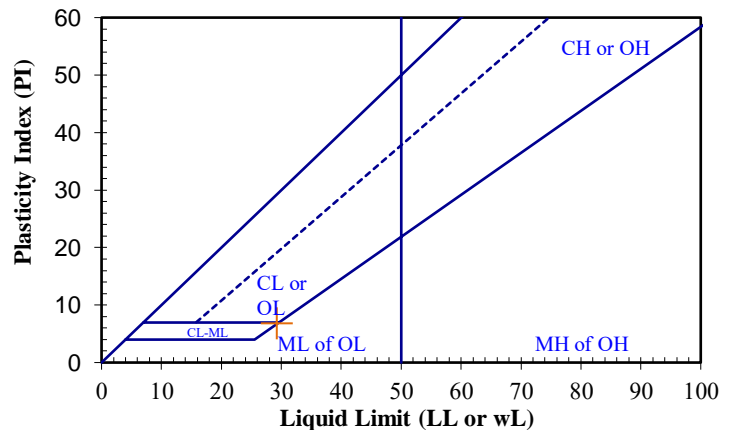
Liquid Limit

Plastic Limit

|                          |       |        |        |       |       |
|--------------------------|-------|--------|--------|-------|-------|
| 1 Tare No.               | d2.3  | d3.1   | d3.2   | d3.3  | d4.1  |
| 2 Tare Mass (g)          | 39.92 | 39.67  | 39.85  | 40.74 | 40.61 |
| 3 Tare Plus Wet Soil (g) | 97.95 | 104.88 | 111.90 | 42.64 | 43.65 |
| 4 Tare Plus Dry Soil (g) | 85.63 | 90.00  | 93.28  | 42.30 | 43.08 |
| 5 Mass of Water (g)      | 12.32 | 14.88  | 18.62  | 0.34  | 0.57  |
| 6 Mass of Soil (g)       | 45.71 | 50.33  | 53.43  | 1.56  | 2.47  |
| 7 Water Content (%)      | 26.95 | 29.56  | 34.85  | 21.79 | 23.08 |
| 8 No. Blows              | 35    | 20     | 15     |       |       |



Liquid Limit (%)      29.3  
 Plastic Limit (%)      22.4  
 Plasticity Index (%)    6.9  
 USCS Classification of fines: CL- ML



# HA-1

Surface Elevation:  
 Boring Date: 18 July 2024  
 Boring Location: Knott Street  
 Drilling Method: Hand Auger

| Depth | Remarks            | Moisture (%) | Dry Density | Blow Counts | Sample Type | Water Table   |
|-------|--------------------|--------------|-------------|-------------|-------------|---|
| 0     |                    |              |             |             | TP          | Topsoil   |
| 1     |                    |              |             |             | CL-ML       | Dry to damp, medium brown, fine grained, slightly stiff, some rootlets, clayey-SILT     |
| 2     | LL=29.3,<br>PI=6.9 | 18.0         |             |             | CL-ML       | Damp to moist, medium gray brown, trace of fine grained sand, silty-CLAY to clayey-SILT |
| 3     |                    |              |             |             |             |   |
| 4     |                    | 23.2         |             |             |             |   |
| 5     |                    |              |             |             |             |   |
| 6     |                    |              |             |             |             |   |
| 7     |                    |              |             |             |             |   |

## LOG OF BORING

**RAPID SOIL SOLUTIONS**

Knott Street  
 Vernonia, OR

Plate 1

SuperLog Civil/Tech Software, USA www.civiltech.com File: C:\Users\Owner\Desktop\HA LOGS\HAs - KNOTT ST. - VERNONIA.log Date: 7/26/2024

GWT not encountered

Boring completed at a depth of 4'



# HA-2

Surface Elevation:  
 Boring Date: 18 July 2024  
 Boring Location: Knott Street  
 Drilling Method: Hand Auger

| Depth | Remarks | Moisture (%) | Dry Density | Blow Counts | Sample Type | Water Table   |
|-------|---------|--------------|-------------|-------------|-------------|---|
| 0     |         |              |             |             | TP          | Topsoil   |
| 0.5   |         |              |             |             | CL-ML       | Dry to damp, medium brown, fine grained, slightly stiff, some rootlets, clayey-SILT     |
| 2.0   |         |              |             |             | CL-ML       | Damp to moist, medium gray brown, trace of fine grained sand, silty-CLAY to clayey-SILT |
| 4.0   | 23.6    |              |             |             |             | Boring completed at a depth of 4'   |

SuperLog Civil/Tech Software, USA www.civiltech.com  
 File: C:\Users\Owner\Desktop\HA LOGS\HAs - KNOTT ST. - VERNONIA.log Date: 7/26/2024

## LOG OF BORING

|                             |                              |         |
|-----------------------------|------------------------------|---------|
| <b>RAPID SOIL SOLUTIONS</b> | Knott Street<br>Vernonia, OR | Plate 2 |
|-----------------------------|------------------------------|---------|

# HA-3

Surface Elevation:  
 Boring Date: 18 July 2024  
 Boring Location: Knott Street  
 Drilling Method: Hand Auger

| Depth | Remarks                           | Moisture (%) | Dry Density | Blow Counts | Sample Type | Water Table  |
|-------|-----------------------------------|--------------|-------------|-------------|-------------|--|
| 0     |                                   |              |             |             |             |  |
| 0 - 1 |                                   |              |             |             | TP          | Topsoil and parking area gravel  |
| 1 - 2 |                                   | 19.4         |             |             | CL-ML       | Dry to damp, dark brown, trace roots and fine gravels, medium stiff, silty-CLAY to clayey-SILT |
| 2     | Boring completed at a depth of 2' |              |             |             |             |  |
| 3     |                                   |              |             |             |             |  |
| 4     |                                   |              |             |             |             |  |
| 5     |                                   |              |             |             |             |  |
| 6     |                                   |              |             |             |             |  |
| 7     |                                   |              |             |             |             |  |

## LOG OF BORING

**RAPID SOIL SOLUTIONS**

Knott Street  
 Vernonia, OR

Plate 3



# **Exhibit C**

## **Wetlands Determination Report**

**OFFSITE WETLAND DETERMINATION REPORT**  
**OREGON DEPARTMENT OF STATE LANDS**

**BATCH**  
**WD#: 2022-0141**

775 Summer Street NE, Suite 100, Salem OR 97301-1279 Phone: (503) 986-5200

At your request, an offsite wetland determination has been conducted on the property described below.

County: Columbia

City: Vernonia

Other Name & Address: Casey Garrett, Columbia County, 230 Strand St., St. Helens, OR 97051

Township: 4N

Range: 4W Section: 3 Q/Q:

Tax Lot(s): 100

Project Name: Crown Zellerbach Trail- Holce Trailhead

Site Address/Location: East end of Knott St

- The National Wetlands Inventory or Local Wetlands Inventory shows a wetland on the property.
- The county soil survey shows hydric (wet) soils on the property. Hydric soils indicate that there may be wetlands.
- It is unlikely that there are jurisdictional wetlands or waterways on the property based upon a review of wetlands maps, the county soil survey and other information. An onsite investigation by a qualified professional is the only way to be certain that there are no wetlands.
- There may be wetlands/waterways on the property that are subject to the state Removal-Fill Law.
  - A state permit is required for  $\geq 50$  cubic yards of fill, removal, or ground alteration in the wetlands or waterways.
  - A state permit may be required for any amount of fill, removal, or other ground alteration in the Essential Salmonid Habitat and hydrologically associated wetlands.
- A state permit will be required for the project if impacts
- The proposed parcel division may create a lot that is largely wetland and thus create future development problems.
- A wetland delineation by a qualified wetland consultant is recommended prior to site development. The wetland delineation report should be submitted to DSL for review and approval.
- A permit may be required by the Army Corps of Engineers: (503) 808-4373

**Note: This report is for the state Removal-Fill Law only. City or County permits may be required for the proposed activity.**

Comments: Based on a review of the available information, construction of the Holce Trailhead, as indicated on the attached map, appears to avoid impacts to onsite waters and possible wetlands.

Determination by:  \_\_\_\_\_ Date: 3/21/2022

This jurisdictional determination is valid for five years from the above date, unless new information necessitates a revision. Circumstances under which the Department may change a determination and procedures for renewal of an expired determination are found in OAR 141-090-0045 (available on our web site or upon request). The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months from the above date.

**This is a preliminary jurisdictional determination and is advisory only.**

Copy To:  Casey Garrett casey.garrett@columbiacountyor.gov  Enclosures: Project Map

City of Vernonia

Riley Baker, Columbia County riley.baker@columbiacountyor.gov

**FOR OFFICE USE ONLY**

|   |   |   |
|---|---|---|
| Entire Lot(s) Checked? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  | Waters Present <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Maybe | Request Received: 03/11/2022  |
| LWI Area: N/A LWI Code: N/A   | Latitude: 45.866773 Longitude: -123.159367  | Related DSL File # N/A  |
| Has Wetlands? <input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> Unk   | ESH? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N   | Wild & Scenic? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N                           |
|   | State Scenic? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N                                    | Coast Zone? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Unk |
| Adjacent Waterbody: <u>Knickerson Creek</u> NWI Quad: Vernonia <input type="checkbox"/> Scanned <input type="checkbox"/> Mailings Completed <input type="checkbox"/> Data Entry Completed |   |   |



INTERGOVERNMENTAL CONSULTATION FORM

STATE AGENCY REVIEW

A REVIEW OF A PROPOSED OUTDOOR RECREATION PROJECT FOR WHICH STATE GRANT ASSISTANCE HAS BEEN REQUESTED.

Project Name: Holce Trailhead Improvements
Applicant Agency: Columbia County
Requested Return Date: 4/1/2022

To Agency Addressed: If you intend to comment, but cannot respond by the return date, please notify us immediately. If no response is received by the due date, it will be assumed that you have no comment and the file will be closed.

STATE AGENCY REVIEW AND COMMENT

We have reviewed the project notice and have reached the following conclusions on its relationship to our plans and programs:

- [x] It has no effect.
[ ] We have no comment.
[ ] Effects, although measurable, would be acceptable.
[ ] It has adverse effects. (Explain in Remarks Section.)
[ ] We are interested, but require more information to evaluate the proposal. (Explain in Remarks Section.)
[ ] Additional comments for project improvement. (Attach if necessary).

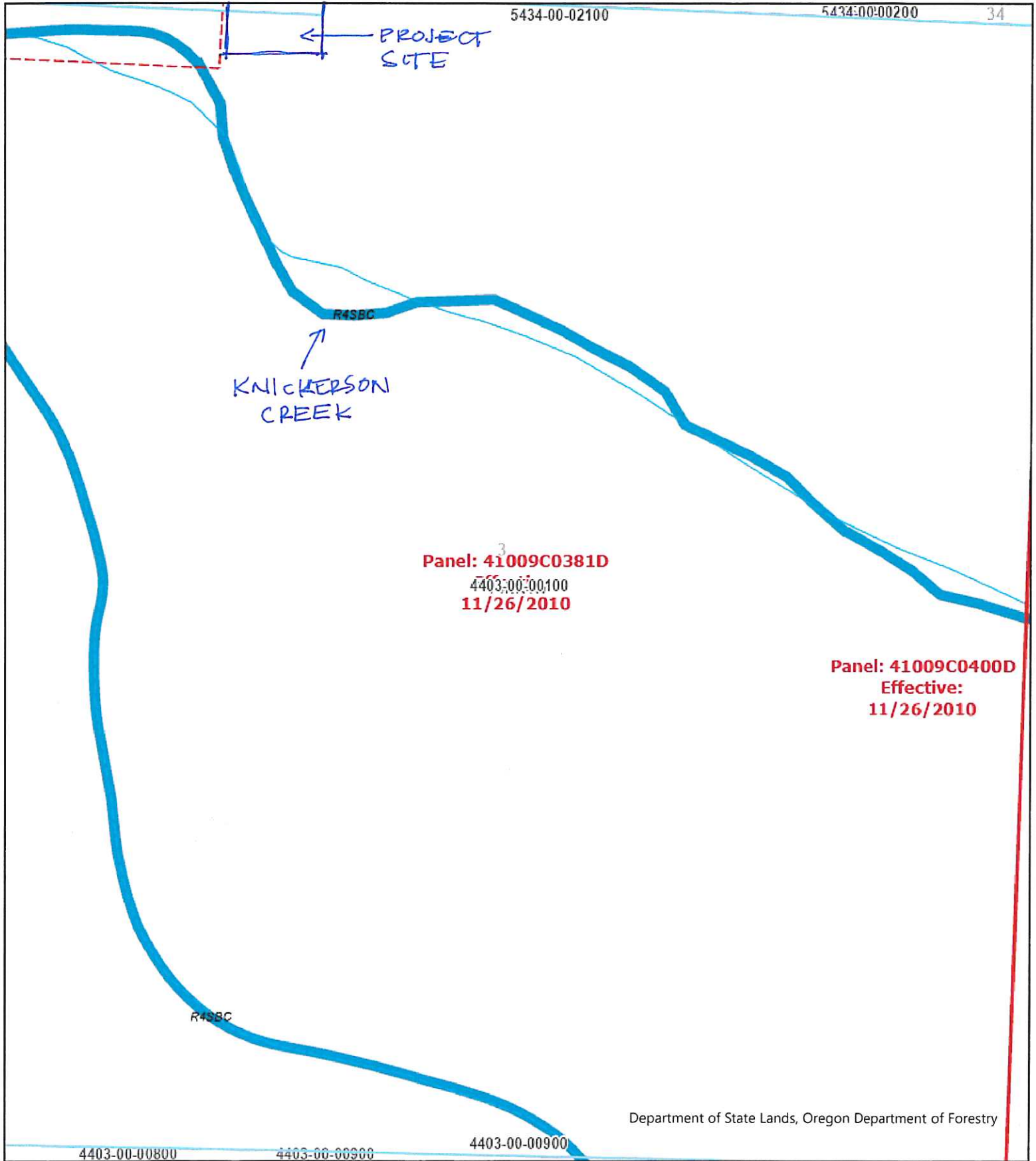
REVIEW AGENCY REMARKS:

Please see attached Offsite Wetland Determination.

Agency: Oregon Department of State Lands
Reviewed By: Chris Stevenson Title: Jurisdictional Coordinator
Email address: chris.stevenson@dsl.oregon.gov Phone: (503) 798-7622

Return to: (GRANT APPLICANT - INSERT NAME AND ADDRESS HERE)

# Columbia County Web Map



6/10/2024 3:13 PM

**Disclaimer:** This map was produced using Columbia County GIS data. The GIS data is maintained by the County to support its governmental activities and is subject to change without notice. This map should not be used for survey or engineering purposes. Columbia County assumes no responsibility with regard to the selection, performance or use of information on this map



## **Exhibit D**

# **Knickerson Creek Centerline Map**

KNOTT STREET

160.00'

100.00'

EASEMENT B

100.00'

Paved Trail

160.00'

CITY LIMITS

80.13'

SW corner of easement is 80.13'  
from creek at its nearest point.

Knickerson Creek







# **Exhibit E**

## **Fire District Letter**



## Vernonia Rural Fire Protection District

555 E Bridge St Vernonia OR, 97064

**"To Better Serve Our Community Through Preparation, Awareness, and Perseverance"**

July 10, 2024

LOWER COLUMBIA ENGINEERING, LLC

58640 McNulty Way

St. Helens, Oregon 97051

Erica@lowercolumbiaengr.com

RE: Holce Trailhead Project

Dear Ms. Smith,

I am writing to inform you that we have received and reviewed your site plan for the Holce Trailhead project in Vernonia, Oregon. After reviewing your site plan as well as doing an on-site inspection, VRFPD has concluded that it does meet the fire department access and water supply requirements referenced in the Oregon Fire Code. As for the secondary fire break easement you will need to contact either the City of Vernonia, or Columbia County Building Department, as fire departments only have jurisdiction over access and water supply.

If you have any questions please contact me at the phone number, or email address, listed below.

Thank you,

Brandon Carr

Lieutenant/EMT/Life Safety Specialist

Vernonia Rural Fire Protection District

503-429-8252

[bcarr@vernoniarfpd.us](mailto:bcarr@vernoniarfpd.us)





## **Exhibit F**

# **Big Game Habitat Map**



# UPPER NEHALEM VALLEY C.P.A.C. WILDLIFE GAME HABITAT

Columbia County










Prepared by: **beak** beak consultants incorporated

DATE: 6/26/95 PROJ. NO. 73824

UPPNCA.dwg

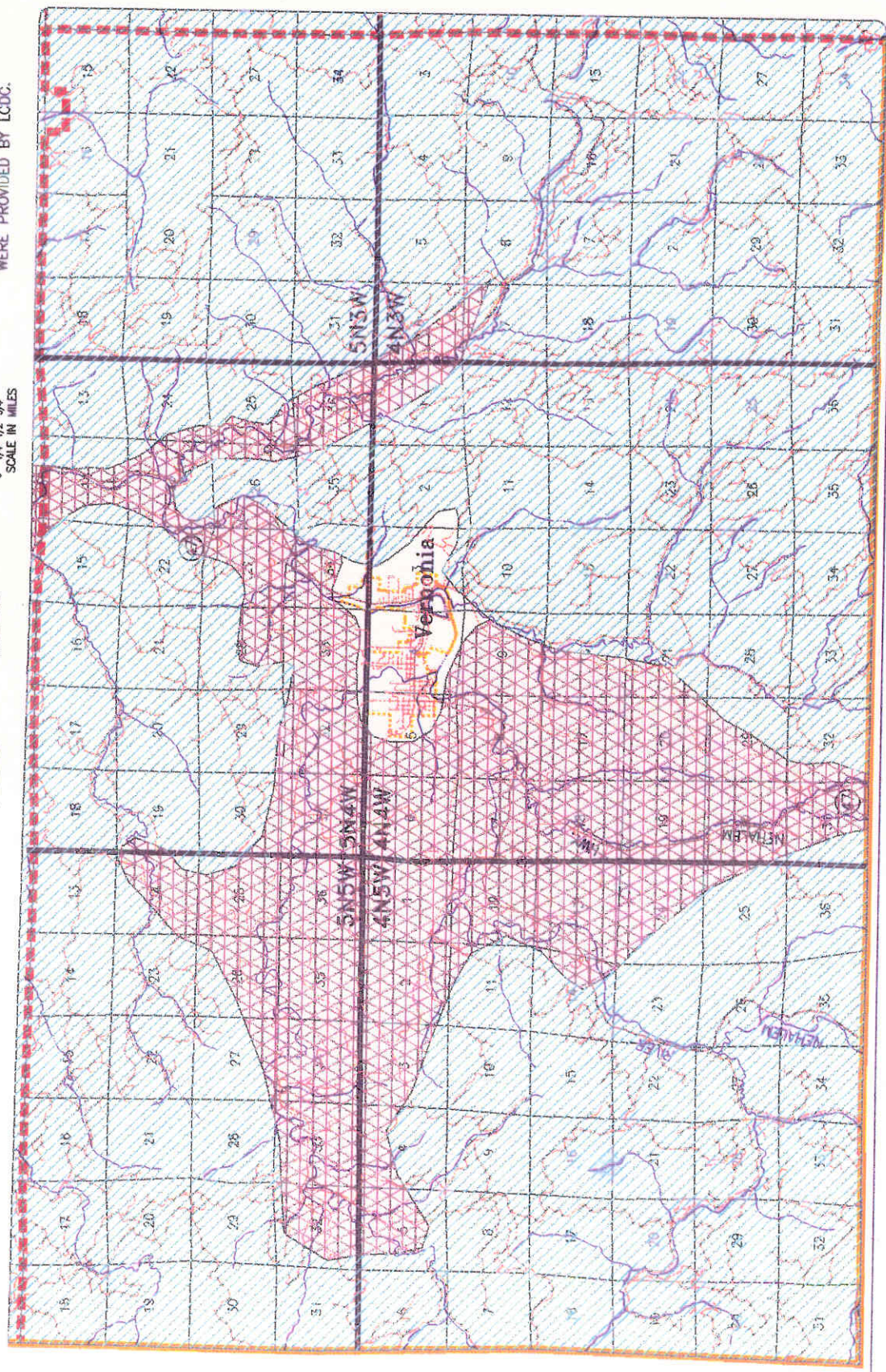
FUNDS FOR THIS MAP WERE PROVIDED BY LCDC.

**LEGEND**

|  |                             |   |   |   |                  |
|--|-----------------------------|---|---|---|------------------|
|   | BSG GAME HABITAT            |   | COLUMBIAN WHITE-TAILED KESTREL CORE HABITAT       |   | UPPER GAME AREAS |
|  | PERIPHERAL BSG GAME HABITAT |  | COLUMBIAN WHITE-TAILED KESTREL OTHER CORE HABITAT |  | UGO AREAS        |
|  | MAJOR INTERPARK HABITAT     |  | COLUMBIAN WHITE-TAILED KESTREL INTERPARK HABITAT  |  |                  |

Scale: 0 1/4 1/2 3/4 MILES

North Arrow







# **Exhibit G**

## **Traffic Impact Study**

## Memorandum

To: Riley Baker, General Services Director, Columbia County

From: Jennifer Danziger, PE  
Ken Kim, PE

Date: September 12, 2024

Subject: Holce Trailhead for Crown Zellerbach Trail  
Trip Generation and Sight Distance Evaluation



---

## Introduction

This memorandum estimates trip generation for the proposed Holce Trailhead improvements for the Crown Zellerbach Trail in Columbia County, Oregon. It also summarizes the preliminary sight distance evaluation at E Knott Street along Nehalem Highway (OR 47).

## Project Description & Location

The proposed project site is located on Tax Lot 4403-00-00100 in Columbia County, Oregon. The proposed development includes upgrading the existing gravel parking area serving the trailhead with paved parking and site amenities. Access to the parking lot will be provided via a proposed driveway along E Knott Street. Figure 1 presents an aerial image of the nearby vicinity with the project site outlined in yellow. A site plan is attached.



Figure 1: Project Location (image from Google Earth)

## Trip Generation

No comparable land use code is available in the *Trip Generation Manual* for a trail or trailhead; therefore, an alternative approach to estimate the potential number of trips is proposed. Table 1 presents a matrix of scenarios based on the parking lot size, occupancy, and turnover rates were used to estimate a possible range of site trip generation.

**Table 1: Potential Peak Hour Trip Generation for Trailhead & Parking Lot**

| Assumed Parking Occupancy | Potential Occupied Spaces | Average Trail Trip Duration | Parking Lot Hourly Turnover Rate | Potential Trips In/Out/Total |
|---------------------------|---------------------------|-----------------------------|----------------------------------|------------------------------|
| 50%                       | 10                        | 60 minutes                  | 100%                             | 10/10/20                     |
|                           |                           | 90 minutes                  | 67%                              | 7/7/14                       |
|                           |                           | 120 minutes                 | 50%                              | 5/5/10                       |
| 75%                       | 15                        | 60 minutes                  | 100%                             | 15/15/30                     |
|                           |                           | 90 minutes                  | 67%                              | 10/10/20                     |
|                           |                           | 120 minutes                 | 50%                              | 7/8/15                       |
| 100%                      | 19                        | 60 minutes                  | 100%                             | 19/19/38                     |
|                           |                           | 90 minutes                  | 67%                              | 12/13/25                     |
|                           |                           | 120 minutes                 | 50%                              | 9/10/19                      |

As shown in Table 1, depending on how full the parking lot is and how long each visitor stays, hourly trip rates range from as few as 10 trips to as many as 38 trips. Table 2 presents reasonable assumptions for average activity on a typical weekday and weekend day.

**Table 2: Trip Generation Estimates for Trailhead & Parking Lot**

| Period  | Assumed Parking Occupancy | Potential Occupied Spaces | Average Trail Trip Duration | Potential Trips In/Out/Total |
|---|---------------------------|---------------------------|-----------------------------|------------------------------|
| <b>Average Weekday Peak Hour</b>              |                           |                           |                             |                              |
| Peak Hour                                     | 75%                       | 15                        | 60-90 minutes               | 12/13/25                     |
| Daily (Assuming daily is ~8 times peak hour)  |                           |                           |                             | 100/100/200                  |
| <b>Average Weekend Peak Hour</b>              |                           |                           |                             |                              |
| Peak Hour                                     | 100%                      | 19                        | 90 minutes                  | 12/13/25                     |
| Daily (Assuming daily is ~10 times peak hour) |                           |                           |                             | 125/125/250                  |

Although trail trip duration may vary, it is reasonable to assume that the average will be in the 60-to-90-minute range for a typical weekday and that the parking lot will be no more than 75 percent occupied. Thus, the average potential peak hour trip generation is approximately 25 trips. Assuming the daily trip generation is 8 times the peak hour (assuming some low usage throughout the day and 3 to 4 hours of peak usage in the evenings) yields a daily trip rate of approximately 200 trips.



Trail trip duration is likely to be longer on weekends than weekdays; therefore, the average durations is assumed to be 90 minutes and the parking lot is assumed to be fully utilized. Thus, the average potential weekend peak hour trip generation is also approximately 25 trips. Assuming the daily trip generation is 10 times the peak hour (assuming fairly consistent usage over 10 to 12 hours of the day) yields a daily trip rate of approximately 370 trips.

Finally, it is important to remember that this trailhead already exists but is currently served by a gravel parking lot. Many of the trips in the estimates discussed above are not new trips; the trailhead already has existing usage. Therefore, these trip estimates reflect total usage not net new trips.

### **County Standard for Traffic Analysis**

Per the Columbia County Zoning Ordinance, Section 1450, a traffic analysis is required when a proposed development will generate 25 or more trips during either the AM or PM peak hour, or more than 400 daily tips.

Based on the standard in the County Zoning Ordinance, the weekday trip generation results for the proposed development will fall below the threshold. Therefore, a TIA is not required.

## **Transportation System Safety Analysis**

### Crash Data Analysis

Using data obtained from ODOT's Crash Data System, a review of five years of the most recent available crash history (January 2018 through December 2022) was performed for the intersection of Nehalem Highway (OR 47) at E Knott Street. The crash data was evaluated based on the number of crashes, the type of collisions, and the severity of the collisions.

With regard to crash severity, ODOT classifies crashes into the following categories:

- *PDO* – Property Damage Only
- *Injury C* – Possible Injury
- *Injury B* – Suspected Minor Injury
- *Injury A* – Suspected Serious Injury
- *Fatality*

Three (3) crashes were reported near the intersection of Nehalem Highway (OR 47) at E Knott Street during the five-year analysis period. Two of the crashes were a fixed object or animal crash and One (1) crash was a rear-end crash. According to ODOT's crash reports, none of these crashes were related to the study intersection.

Based on the most recent five years of available crash data, no significant trends or crash patterns were identified at the study intersection that were indicative of safety concerns. Accordingly, no safety mitigation is recommended.





## Sight Distance Evaluation

According to *Columbia County Roadway Standards*, the driver's eye is assumed to be 10 feet from the near edge of the nearest travel lane of the intersecting street and at a height of 3.5 feet above the minor-street approach pavement. The vehicle driver's eye-height along the major-street approach is assumed to be 3.5 feet above the cross-street pavement. The minimum sight distance requirement is 10 times the 85<sup>th</sup> percentile speed to be measured 10 feet. Nehalem Highway (OR 47) has a posted speed 45 mph; therefore, a design speed 50 (5 mph over the posted speed, 45 mph) was used for the sight distance calculations for E Knott Street along Nehalem Highway (OR 47). At 50 mph, the minimum sight distance requirements are 500 feet looking to both north and south of E Knott Street.

Stopping Sight distance (SSD) was also measured and evaluated in accordance with standards established in *A Policy of Geometric Design of Highways and Streets*<sup>1</sup>. SSD is considered the minimum requirement to ensure safe operation at the intersection. This distance allows the driver of a vehicle traveling on the major street to react to a turning vehicle or other object in the roadway and come to a complete stop to avoid a collision. To ensure safe operation of a driveway, the available sight distance must at least equal the minimum required stopping sight distance. At a design speed of 50 mph, the SSD is 425 feet.

The available sight distance along Nehalem Highway (OR 47) was measured to be greater than 1,000 feet to the north of E Knott Street (i.e., looking right), which is greater than the County's minimum sight distance requirement (500 feet). The available sight distance along Nehalem Highway (OR 47) was measured to be 320 feet to the south of E Knott Street (i.e., looking left), which is less than the County's minimum sight distance requirement (500 feet), due to the existing trees on the south properties (Tax Lots: 4403-BB-00202 & 00200).

The available stopping sight distance for traffic approaching from the south was measured to be 380 feet. This length is slightly greater than the required AASHTO stopping sight distance (360 feet) at 45 mph, which is the posted speed for the roadway.

With some trimming of trees along the south properties, it may be possible to increase the sight lines for improved stopping sight distance but it may be difficult to achieve the 500-foot intersection sight distance in the Columbia County standards without tree removal.

## Conclusions

Key findings of this study include:

- Based on the Trip Generation Analysis, the trip generation for the proposed development will fall below the threshold. Therefore, a TIA is not required. In addition, it is important to remember that this trailhead already exists but is currently served by a gravel parking lot. Many of the trips in the calculation are not new trips; the trailhead already has existing usage. Therefore, these trip estimates reflect total usage not net new trips.

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<sup>1</sup> American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets*, 7<sup>th</sup> Edition, 2018.



- Based on the crash data analysis, no significant trends or crash patterns were identified at the study intersection that were indicative of safety concerns. Accordingly, no safety mitigation is recommended.
- Based on the sight distance analysis, adequate intersection sight distance is available to the north. While sight lines do not meet the County's intersection sight distance standards, the national standard for stopping sight distance on the highway is met for the posted speed. With some trimming of trees along the south properties, it may be possible to increase the sight lines for improved stopping sight distance but it may be difficult to achieve the 500-foot intersection sight distance in the Columbia County standards without tree removal.

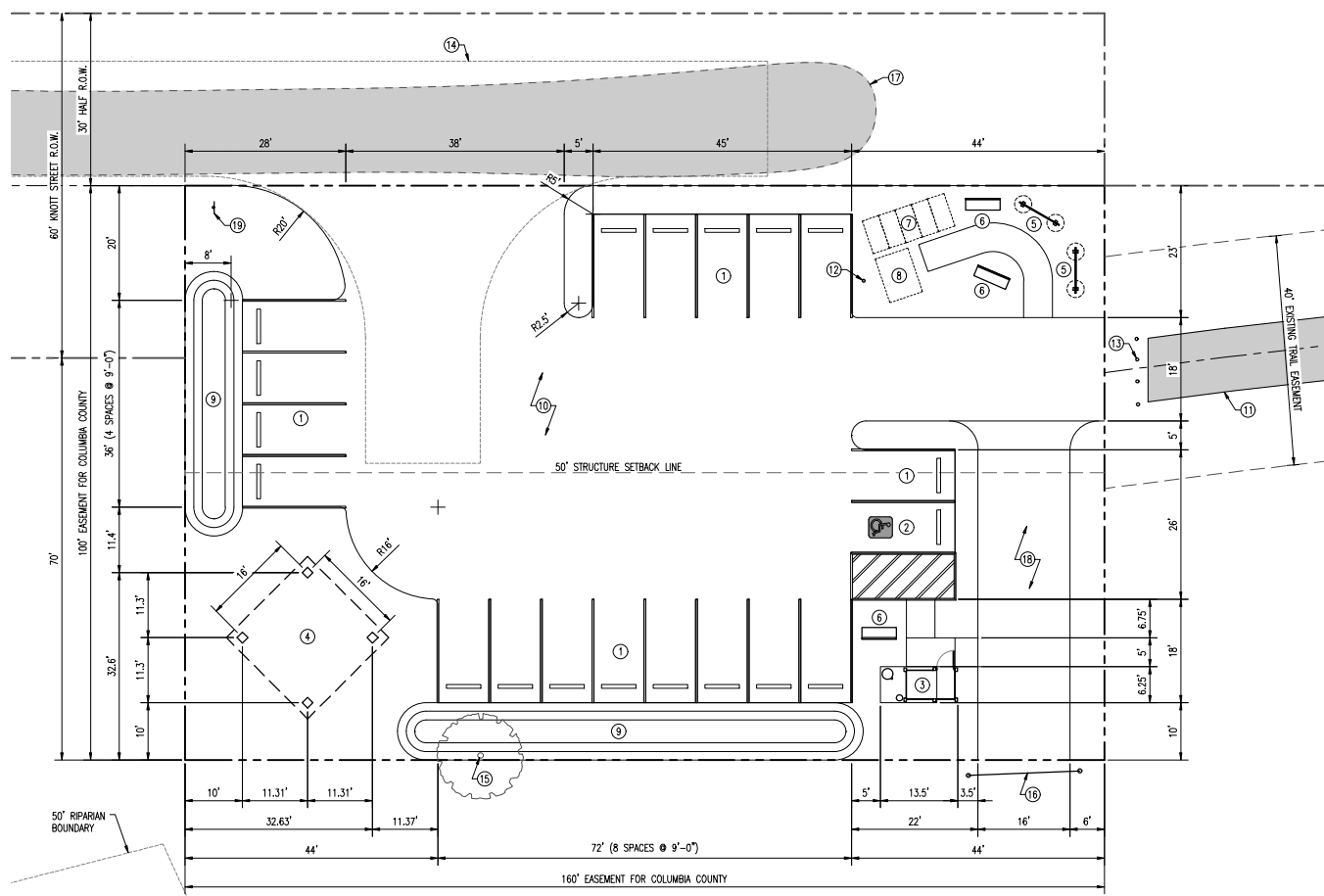
If you have any questions or concerns regarding this analysis or need further assistance, please don't hesitate to contact us.



## Appendix

1. Site Plan
2. Crash History Data
3. Sight Distance Photos





- SITE PLAN KEYNOTES ①**
- 1 9' x 18' PARKING STALLS W/ WHEELSTOPS
  - 2 9' x 18' ACCESSIBLE STALL WITH 8' ACCESS AISLE
  - 3 9' x 6' VAULT TOILET STRUCTURE W/ CONC. TANK
  - 4 20' x 20' PICNIC STRUCTURE
  - 5 FREESTANDING INFORMATIONAL SIGNAGE
  - 6 BENCHES
  - 7 BICYCLE PARKING
  - 8 BICYCLE REPAIR STATION
  - 9 STORMWATER DETENTION/FILTRATION SWALES
  - 10 ASPHALTIC CONCRETE (A.C) PAVING
  - 11 EXISTING A.C. PAVED TRAIL
  - 12 EXISTING GAS MARKER TO REMAIN
  - 13 EXISTING REMOVABLE BOLLARDS
  - 14 FIRE APPARATUS HAMMERHEAD
  - 15 EXISTING 10" FIRE TREE TO REMAIN
  - 16 EXISTING GATE TO REMAIN
  - 17 EXTENTS OF EXISTING ROADWAY
  - 18 GRAVELED ACCESS DRIVE TO GATE
  - 19 RELOCATED BIKE ROUTE SIGNAGE

**PROPOSED SITE PLAN**  
SCALE: 1" = 10'



DATE: 07/02/2024  
PRELIMINARY  
NOT  
FOR CONSTRUCTION

| REV. | REVISION RECORD | DATE |
|------|-----------------|------|
|      |                 |      |
|      |                 |      |
|      |                 |      |
|      |                 |      |



|                 |                              |
|-----------------|------------------------------|
| PROJ. NO. 3615  | PROPOSED SITE PLAN           |
| DWG. BY BMK     | HOLCE TRAILHEAD IMPROVEMENTS |
| APPR. BY        | COLUMBIA COUNTY              |
| FILE D-3615-C-2 | DATE 06/10/2024              |







E Knott Street Looking Right (North) along Nehalem Highway (OR 47) – 1,000 ft < ISD



E Knott Street Looking Left (South) along Nehalem Highway (OR 47) – Available Sight Distance, 320 ft





Looking E Knott Street from 320 ft on Nehalem Highway (OR 47) Northbound



Looking E Knott Street from 380 ft on Nehalem Highway (OR 47) Northbound



## **Exhibit H**

# **Site Design Review Submittal Checklist**





**PRE-APPLICATION CONFERENCE**

Wednesday March 27, 2024 11:00 a.m. Microsoft Teams

Proposed Trail Staging Area/Trailhead for CZ Recreational Trail in PF-80 Zone

**FILE NUMBER:** PRE 24-03

**OWNERS** Holce Logging Co. Inc., 1780 E. Knott Street, Vernonia, OR

**APPLICANT:** Melissa Enright and Riley Baker, Columbia County Parks & Recreation, 230 Strand St. St. Helens

**LOCATION:** The subject property is located at 1780 E. Knott St

**MAP ID #:** 160' by 100' (16,000 sq. ft) Easement in the NW portion of 4403-00-00100

**TAX ACCT #:** 22285

**ZONING:** Primary Forest (PF-80)

**SITE SIZE:** ~16,000 sq ft Easement on an ~100-acre property

**REQUEST:** A pre-application meeting to establishing a new tailhead for the CZ Recreational Trail with parking spaces, vault toilet, covered picnic area for hikers' day use.

**REVIEW CRITERIA**

**Oregon Administrative Rules (OAR)**

**Chapter 660 Division 34 Section 035 Park Uses on Agricultural and Forest Land**

**Columbia County Zoning Ordinance (CCZO)**

**Section 500 – Primary Forest Zone**

**Section 1170 – Riparian, Wetlands.... Overlay Zone**

**Section 1300 – Signs**

**Section 1400 – Off Street Parking and Loading**

**Section 1450 – Traffic Impact Analysis**

**Section 1503 – Conditional Uses**  
**Section 1550 – Site Design Review**

**REQUESTED PROPOSAL:**

Columbia County Parks & Recreation have submitted a request to conduct a pre-application meeting to discuss establishing a new day-use trailhead staging area for the CZ Recreational Trail at the end of E. Knott Street near Vernonia.

The proposed facilities included in the Pre-Application Proposal includes the following:

- A 160' by 100' (16,000 sq ft) Area portion if a 100-acre property
- 6' concrete walkway that is ADA accessible
- Vault Toilet Structure
- 12' by 1750' (21,000 sq ft) pavement through Easement Area
- Existing Bollards and Gate
- Tailhead and Historical Information Kiosk/Signage
- Fixed bench
- 2 bike rack/repair stations
- 20' by 20' picnic shelter with table and benches
- Proposed landscaping along perimeter including native trees and shrubs as ground covers
- 11 Standard Parking Spaces and 1 ADA Parking Space

The aerial views and submitted documentation confirm that this use has informally been established and will be officially established with the county's review and approval of the new use for compliance with the applicable regulatory requirements of the County Zoning Ordinance.

**Summary of Requirements:**

The proposal will require both a Type 2 Site Design Permit as well as a Conditional Use Permit that will be reviewed and approved by the County Planning Commission at a public hearing pursuant to the provisions in Sections 500, 1170, 1503 and 1550 of the Zoning Ordinance. Type 2 Design Review and Conditional Use applications require fees as applicable in the attached fee schedule.

The OR Department of Forestry Stream Classification Maps of Vernonia also verify Knickerson Creek that runs through the proposed Easement area is a fish-bearing stream. These are shown in the Aerial Maps on Page 2. Consequently, all activities within fish-bearing stream's 50' protected riparian corridor must be consistent with the authorized and prohibited activities identified in Section 1173, 1174 & 1175 pf the Zoning Ordinance. There are no Flood Hazard Areas associated with Knickerson Creek

**Beginning with the Columbia County Zoning Ordinance (CCZO):**

**Section 500 Primary Forest Zone**

**505** **Conditional Uses.** The following conditional uses may be allowed subject to the general review standards and process in Sections 1503 and 1603 of the Zoning Ordinance. All authorized uses and permanent structures shall also meet the applicable standards listed in Sections 506, 507, and 508 of the Zoning Ordinance and all other local, state, and federal laws pertaining to these uses.

**.14** Public Parks including only those uses specified under OAR 660-034-0035 or OAR 660-034-0040, whichever is applicable, and subject to provisions in Sections 508 through 510, 1503 and 1550.

### **660-034-0035**

#### **Park Uses On Agricultural and Forest Land**

(1) All uses allowed under Statewide Planning Goal 3 are allowed on agricultural land within a state park, and all uses allowed under Statewide Planning Goal 4 are allowed on forest land within a state park, provided such uses are also allowed under OAR chapter 736, division 18 and all other applicable laws, goals, and rules. Local governments may allow state parks and park uses as provided in OAR chapter 660, division 33, and ORS 215.213 or 215.283 on agricultural lands, or as provided in OAR 660-006-0025(4) on forest lands, regardless of whether such uses are provided for in a state park master plan.

(2) The park uses listed in subsection (a) through (i) of this section are allowed in a state park subject to the requirements of this division, OAR chapter 736, division 18, and other applicable laws. Although some of the uses listed in these subsections are generally not allowed on agricultural lands or forest lands without exceptions to Statewide Planning Goals 3 or 4, a local government is not required to adopt such exceptions in order to allow these uses on agricultural or forest land within a state park provided the uses, alone or in combination, meet all other applicable requirements of statewide goals and are authorized in a state park master plan adopted by OPRD, including a state park master plan adopted by OPRD prior to July 15, 1998:

**(b) Day use areas: picnic shelters, barbecue areas, swimming areas (not swimming pools), open play fields, play structures;**

**(c) Recreational trails: walking, hiking, biking, horse, or motorized off-road vehicle trails; trail staging areas;**

**Pertinent Issues:** This proposal and related site development presented for the new Holce Trailhead are authorized uses in the PF-80 zone and identified in Section 505.14 and OAR 660-034-0035 (2) (b & c). This use can be approved through Site Design Review and Conditional Use Permits which are quasi-judicial reviews that must be reviewed and approved by the County Planning Commission at a public hearing.

**508 General Review Standards** The Planning Director or hearings body shall determine that a use authorized by Sections 504 and 505 meets all of the following requirements:

.1 The proposed use will not force significant change in, or significantly increase the cost of, accepted farming or forest practices on agriculture or forest lands;

- .2 The proposed use will not significantly increase fire hazard or significantly increase fire suppression costs or significantly increase risks to fire suppression personnel;
- .3 A waiver of remonstrance shall be recorded with the County Clerk certifying that the owner will not remonstrate against or begin legal action or suit proceeding to cause or persuade the owner or operator of any farm or forest lands to modify the conduct of legal and accepted farm or forest operations; and
- .4 The proposed use is consistent with requirements contained in the Comprehensive Plan or implementing ordinances, including, but not limited to, regulations which apply to flood hazard areas, development within the Willamette River Greenway, development in forested areas or development in significant resource areas, such as riparian, wetlands or slide-prone areas.

**Pertinent Issues:** The DR and CU applications submitted must include supporting documentation that show

- How the new trailhead will not force significant changes in or increase cost of accepted farm/forest practices OR increase fire hazards or increase fire suppression costs or personnel.
- A recorded Waiver of Remonstrance certifying that the owner/trailhead user will not remonstrate against or take legal action against legal and accepted farm or forest operations occurring nearby.
- Showing how Knickerson Creek's 50' Riparian Corridor will not be compromised with the installation of new site improvements.

#### **509 Standards of Development**

- .1 The minimum average lot or parcel width and minimum average lot or parcel depth shall be 100 feet for all activities except farming or forestry.
- .2 Access to parcels in this zone shall meet Fire Safety Design Standards for Roads in the County Road Standards and access standards found in Section 510 of the Zoning Ordinance.
- .3 There shall be no height limitation for forest operation and management-related structures unless otherwise permitted in the Primary Forest Zone. The maximum building height for all non-farm, non-forest structures shall be 50 feet or 2 ½ stories, whichever is less.
- .4 The standards and requirements described in Section 1300 of the Zoning Ordinance shall apply to all signs and name plates in the Primary Forest Zone.
- .5 The Oregon Department of Fish & Wildlife shall be notified and provided with the opportunity to comment on any development within major and peripheral Big Game Habitat.

.6 Setbacks:

- A. There shall be a minimum setback of 50' for front, side, and rear yards for all development in the Primary Forest Zone.
- B. When this Ordinance or any other ordinance requires a greater or lesser setback than is required by this subsection, the greater setback shall apply.
- C. All structures are subject to any special setbacks when adjacent to arterial or collector streets designated in the County Transportation Systems Plan.
- D. No structure or use shall be established in a manner likely to cause contamination of a stream, lake or other body of water. Riparian and natural hazard setbacks set forth in Sections 1170 and 1180 of the Zoning Ordinance shall apply.
- E. When land divisions create parcels of less than 40 acres for uses listed in Subsection 511.2A., provided those uses have been approved pursuant to this Ordinance, required building setbacks for these parcels will be determined on a case-by-case basis by the Director or the hearings body.
- F. The owner shall provide and maintain primary fuel-free fire break and secondary fire break areas on land surrounding the dwelling and primary fuel-free break areas surrounding accessory structures in the Primary Forest Zone pursuant to the provisions in Subsections 510.2 and .3.

- .7 Approval Period for Use Permits. For all uses approved under sections 504 and 505, the approval period shall be valid for four (4) years. At a minimum, a development construction permit must be issued by the Land Development Services within the approval period. If a construction permit is not issued within the approval period, the land use permit expires. An extension of two years on the approval period may be granted by the Director if a written request is received prior to its expiration and the reason for the delay is beyond the control of the owner.

**Pertinent Issues:** All site development proposed shall comply with the minimum string requirements for all structure and road in Sections 508 and 509. Specifically the documentation must show adherence to these specifications:

- Access to parcels in this zone shall meet **Fire Safety Design Standards for Roads in the County Road Standards**
- The standards and requirements described in Section 1300 of the Zoning Ordinance shall apply to all signs and name plates in the Primary Forest Zone
- **Provide and maintain primary fuel-free fire break areas surrounding accessory structures** in the Primary Forest Zone pursuant to the provisions in Subsections 510.2 and .3.
- **Riparian Corridor activities –surveyed 50' from top of bank on both sides**
- 4 Year approval period to satisfy all conditions of approval and apply for all necessary

building permits.

510 Fire Siting Standards for Dwellings, Structures and Roads:

The following fire siting standards or their equivalent shall apply to new dwellings in this zone:

- .1 If a water supply is available, suitable and acceptable for fire protection by the fire protection district, such as a swimming pool, pond, stream, or lake, then road access to within 15 feet of the water's edge shall be provided for pumping units. The road access to the dwelling and access to the on-site water supply shall accommodate the turnaround of fire fighting equipment during the fire season. The applicant shall provide verification from the Water Resources Department that any permits or registrations required for water diversion or storage have been obtained or that permits or registrations are not required for the use. Permanent signs shall be posted along the access route to indicate the location of the emergency water source.
- .2 The owner of the dwelling shall establish and maintain a primary fuel-free fire break surrounding the dwelling and accessory structure(s) no less than 30 feet wide in accordance with the provisions in "Protecting Your Home From Wildfire" published by the National Fire Protection Association. The owner may be required to increase the primary fuel-free fire break if the dwelling or structure is located on a 10% or greater slope. The primary fuel-free fire break could include a lawn, low ornamental shrubbery less than 24" in height and/or individual or groups of trees separated by a distance equal to the diameter of the crowns adjacent to each other, or 15 feet, whichever is greater. All existing tree limbs shall be pruned from the base to at least eight feet in height. Dead fuels shall also be removed.
- .4 All roads in this zone, except private roads and bridges for commercial forest uses, shall be constructed so as to provide adequate access for firefighting equipment according to the standards provided by the local rural fire protection district, the County Road Department, or the State Department of Forestry.

**Pertinent Issues:** The **Site Plan** and submitted documentation needs to include 30' primary fuel-free areas surrounding the easement area and all vegetation in compliance with the minimum height and separation requirements in 510..

The Tailhead's Site Plan shall include proposed access and vehicle circulation map that demonstrates compliance with the minimum access requirements of the County Road Standards Ordinance enforced by the Vernonia Fire District. If the Vernonia Fire District determines Knickerson Creek is acceptable for fire prevention, the Site Plan shall also include the proposed access to within 15 feet of the water's edge for pumping units.



**Section 1170 RIPARIAN CORRIDORS, WETLANDS, WATER QUALITY, AND FISH AND WILDLIFE HABITAT PROTECTION OVERLAY ZONE**

**1171 Purpose.**

A. The purpose of this Section is to protect and restore water bodies and their associated riparian corridors, thereby protecting and restoring the hydrological, ecological and land conservation function these areas provide. Specifically, this Section is intended to protect habitat for fish and other aquatic life, protect habitat for wildlife, protect water quality for human uses and for aquatic life, control erosion and limit sedimentation, prevent property damage during floods and storms, protect native plant species, and conserve the scenic and recreational values of riparian areas.

B. This Section meets the above purpose by prohibiting structures and other development from riparian areas around fish-bearing lakes, rivers, streams and associated wetlands, and by prohibiting vegetation removal and/or other vegetative alterations in riparian corridors. In cases of hardship, the Section provides a procedure to reduce the riparian corridor boundary. Alteration of the riparian corridor boundary in such cases shall be offset by appropriate restoration or mitigation, as stipulated in this Section.

C. For the purposes of this Section, “development” includes buildings and/or structures which require a building permit under the Oregon State Building Code, as amended, or any alteration in the riparian corridor by grading, placement of fill material, construction of an impervious surface, including paved or gravel parking areas or paths, and any land clearing activity such as removal of trees or other vegetation.

**1172 Riparian Corridor Standards:**

A. The inventory of Columbia County streams contained in the Oregon Department of Fish and Wildlife Fish Habitat Distribution Data (published January 13, 2023), specifies which streams and lakes are fish-bearing. Fish-bearing lakes are identified on the map entitled, “Lakes of Columbia County.” A copy of the most current Stream Classification Maps is attached to the Comprehensive Plan, Technical Appendix Part XVI, Article X(B) for reference. The map, “Lakes of Columbia County” is attached to the Comprehensive Plan, Technical Appendix Part XVI, Article X(B), and is incorporated therein. Based upon the stream and lake inventories, the following riparian corridor boundaries shall be established:

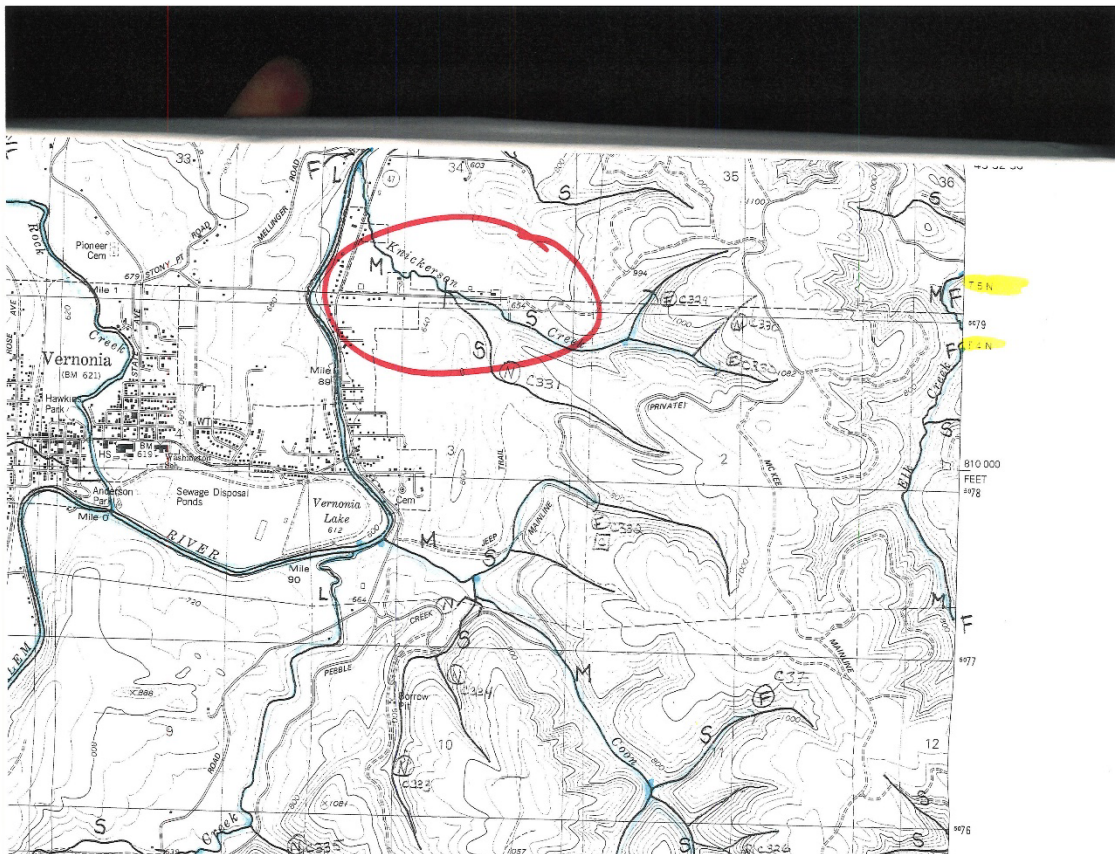
2. **Fish-Bearing Streams, Rivers and Sloughs** (Less than 1,000 cfs). Along all fish-bearing streams, rivers, and sloughs with an average annual stream flow of less than 1,000 cubic feet per second (cfs), the riparian corridor boundary shall be 50-feet from the top-of-bank. Average annual stream flow information shall be provided by the Oregon Water Resources Department.



**Knickerston Creek within in close proximity to Holce Trailhead Easement Area**



**Knickerston Creek Fish-bearing Stream per OR Dept of Forestry Map**



**Pertinent Issues:** As shown on the ODF and County GIS Maps above, Knickerson Creek is identified as a fish-bearing stream and the proposed development for Holce Trailhead meets the Zoning Ordinance’s definition of development in Section 1171.B & 1171.C and 1172. The best way to identify this 50’ protected area would be for it to be accurately surveyed by a licensed surveyor per the definition in Section 1172.A (2)

**1175 Permitted Uses and Activities Subject to Optional Discretionary Review.**

Notwithstanding the prohibitions set forth in Subsection 1173 above, the following activities are allowed within the riparian corridor boundary if approved by the planning director through an optional discretionary review process:

A. The following riparian vegetation may be removed within the riparian corridor boundary:

1. Non-native vegetation, invasive species, and noxious weeds if replaced with native plant species. The replacement vegetation shall cover, at a minimum, the area from which vegetation was removed, and shall provide for maximum soil retention and shade cover. Replacement vegetation shall, upon maturity, maintain 75%-100% canopy and ground cover.
2. Vegetation which is necessarily removed for the development of approved water-related or water dependent uses. Vegetation removal shall be kept to the minimum necessary to allow the water-dependent and water-related use.
3. Trees and vegetation in danger of falling and/or posing a hazard to life or property. If no hazard will be created, such trees or other vegetation, once felled, shall be left in place in the riparian area.

B. The following development may be allowed within the riparian corridor boundary.

1. **Streets, roads, and driveways, if:**
  - a. If it is not possible to locate the street, road or driveway outside of the riparian corridor boundary; and
  - b. The street, road or driveway is designed to minimize intrusion into the riparian corridor boundary.
2. **Pedestrian walkways, paths and trails.**
3. **Fencing and signs, not including billboards.**
4. Drainage facilities, utilities and irrigation pumps.
5. Water-related and water-dependent uses.
6. New or expanded shoreline stabilization and flood control grading and structures.
7. **Portable furniture, and other portable outdoor equipment for the private use of the property owner/resident. For purposes of this subsection, “portable” shall mean**

**that the item is not affixed to the ground, other than with a chain or other lock which is capable of being removed at any time.**

- C. Wetland fill and removal within riparian corridors shall be avoided unless there is no reasonable alternative to allow the permitted use. DSL shall be notified of any potential impact from development proposed on wetlands identified in the State Wetlands Inventory pursuant to ORS 215.418.

**Pertinent Issues:** The Site Plan submitted for this Pre-App meeting appears to indicate that all of the 16,000 sq ft Easement/Trailhead site development will need to comply with all of these allowed features. It will be up to the County Building Official to ensure all furniture and outdoor equipment meets the definitions in Section 1175.3(B).

**Pertinent Issues:** If the Building Official determines that the furniture and outdoor equipment is permanent, not portable, perhaps an option would be to relocate the Easement Area so that no portion of it is located within the surveyed 50' protected riparian corridor. The **Site Plan** submitted with the CU and DR must accurately identify the location of the Easement and all structures in relation to the surveyed 50' Riparian Corridor.

### **Section 1300 Signs**

1301 Use: No sign may be established, altered, or expanded hereafter in any district in Columbia County, except in accordance with the provisions outlined in this Section. The sign provisions apply to signs established in conjunction with any use in the county. [Amended by Ordinance 2002-02, eff. 6/12/02].

1302 General Provisions:

.1 Design Review: In addition to complying with the standards in this Section, the design and color of commercial and industrial signs and supporting structures of signs 100 square feet or larger in size shall be compatible with the architectural design and color of existing and proposed buildings on the site as determined during site design review according to the provisions of Section 1550 of this Ordinance.

.2 Setbacks:

- A. All signs shall be situated in a manner so as not to adversely affect safety, corner vision, or other similar conditions and shall not overhang or encroach upon public rights of way.
- B. Unless otherwise specified, all signs in residential zoning districts shall observe the yard setback requirements of the zoning district in which they are located.
- C. No setbacks from property lines shall be required for signs in non-residential zoning districts except that in all zoning districts, setbacks shall be required at corners as may be necessary to provide adequate corner vision or in cases where a sign is placed adjacent to a street, as provided in 1302.2(D), below.

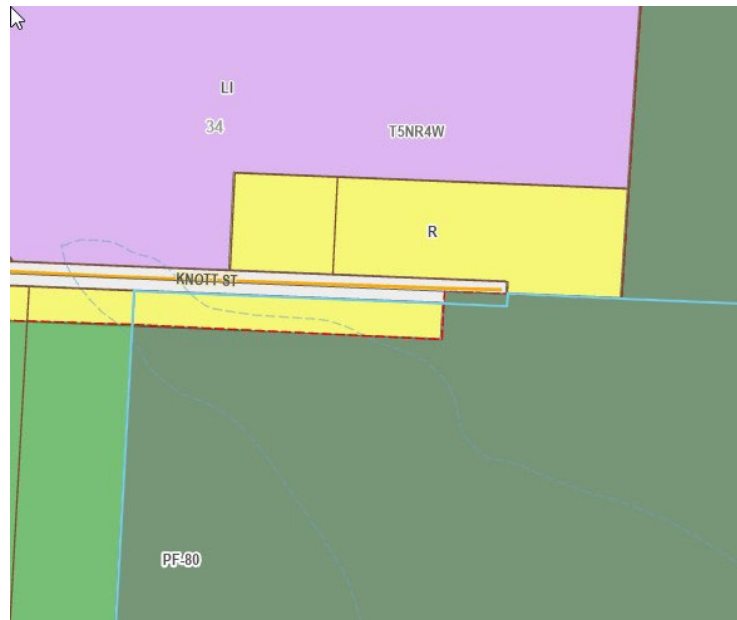
D. Setbacks shall be required which comply with setback requirements of the abutting residential zoning district when a sign is placed on a parcel abutting a street (except Highway 30), which separates a non-residential parcel from a residential parcel or when a sign is placed on a property line separating a non-residential parcel from a residential parcel.

1302.6 Sign Clearance: A minimum of 8 feet above sidewalks and 15 feet above driveways shall be provided under free-standing signs

1311 Signs for Essential Services and Public Facilities: The following signs shall be permitted in all districts:

- .1 City limits signs and public notice signs.
- .2 Police, fire, school, and hospital directional signs.
- .3 Park directional signs.
- .4 Traffic and safety signs.
- .5 Transit-related (bus) signs.

**Site is adjacent to City of Vernonia’s residential zoned property to the North**



**Pertinent Issues:** All signage shall comply with the City of Vernonia’s residential setbacks since the property abuts residential zoned property to the north. The submitted Signage shown on the submitted Site Plan shall comply with the City of Vernonia’s setback requirements as well as the county’s requirements in Section 1302 and 1311 of the Zoning Ordinance.

## Section 1400 Off-Street Parking & Loading

1405 Plans Required: A plot plan shall be submitted in duplicate to the Director with each application for a building permit or for a change of classification to OP. The plot plan shall include the following information:

- .1 Dimensions of the parking lot.
- .2 Access to streets and location of curb cuts.
- .3 Location of individual parking spaces.
- .4 Circulation pattern.
- .5 Grade and drainage.
- .6 Abutting property.
- .7 A landscaping plan which shall include the location and names of all vegetation, and the location and size of fencing or other screening material. This plan shall be approved by the Director.

### 1410      Size:

- .1 The standard size of a parking space shall be 9 feet by 18 feet.
- .2 Handicapped parking spaces shall be 12 feet by 18 feet.
- .3 Parallel parking, the length of the parking space shall be increased to 22 feet.

### 1411      Aisles: Aisles shall not be less than:

- .1 25'0" in width for 90 degree parking;
- .2 20'0" in width for 60 degree parking;
- .3 20'0" in width for 45 degree parking; and
- .4 12'0" in width for parallel parking.

### 1412      Access: There shall be no more than one 45-foot-wide curb cut driveway per 150 feet of street frontage, or fraction thereof, permitted per site.

### 1413      Surfacing and Marking:

- .1 The surfacing of each parking area shall meet minimum County standards to handle the weight of the vehicles which will use the parking area. All areas used

for parking and maneuvering of vehicles shall be marked in accordance with the approved plan and such marking shall be continuously maintained. Handicapped parking spaces shall be marked with a wheelchair symbol.

- .2 The parking and loading areas for commercial, industrial, or apartment uses shall be paved with concrete, asphaltic concrete, or another comparable surface.

1414      Drainage and Lighting: Adequate drainage shall be provided to dispose of the run-off generated by the impervious surface area to the parking area. The drainage system shall function so it will not adversely affect adjoining property. Artificial lighting shall be provided in such a manner as to ensure the safety of the parking area without interfering with adjoining properties or creating traffic hazards on adjoining streets.

1415      Parking Areas: All parking areas, excluding one and two-family dwellings, shall meet the following requirements:

- .1 All parking areas of less than 20 parking spaces shall have one handicapped parking space. Parking areas with more than 20 spaces shall provide one handicapped parking space for every 50 standard parking spaces.
- .3 Parking areas shall be separated from the exterior wall of a structure, exclusive of paved pedestrian entranceways, by a 5 foot strip of landscaping.
- .4 Industrial or commercial parking areas, which abut a residential or apartment district, shall meet the building setback of the most restrictive adjoining residential or apartment district.
- .5 When industrial or commercial parking areas adjoin a residential or apartment district, there shall be a sight obscuring planting, which is at least 80 percent opaque and when viewed horizontally from between 2 and 8 feet above ground level. This planting shall be composed of materials which are an adequate size so as to achieve the required degree of screening within 12 months after installation.
- .6 Parking areas shall be set back from a lot or parcel line adjoining a street. The setback area shall be landscaped.
- .7 All parking area setbacks shall be landscaped with major trees, shrubs, and ground cover as approved by the Director.
- .8 A minimum of 10 percent of the parking area shall be landscaped and maintenance of the landscaping shall be the owner's responsibility.
- .9 Internal pedestrian connections shall be provided in parking lots with greater than ten (10) parking spaces. These connections shall be a minimum of five (5) feet wide and distinguished from vehicular areas through changes in elevation or contrasting paving materials (such as light-color concrete inlay between asphalt). Paint or thermo-plastic

striping and similar types of non-permanent applications may be approved for crossings of parking lot areas that do not exceed 24 feet in crossing length.

- .11 A portion of existing parking areas may be redeveloped for transit-oriented improvements, such as a bus stops and pullouts, bus shelters, park and ride stations, transit-oriented developments, and similar facilities, where identified in or consistent with an adopted County transit plan. Subject sites incorporating transit improvements as part of a development proposal are eligible for up to a 10% reduction in required vehicular parking spaces.

**Pertinent Issues** The CU & DR submitted **Site Plan's** parking design layout shall comply with the minimum requirements in Section 1400.

### **Section 1450 TRANSPORTATION IMPACT ANALYSIS**

**1450** Transportation Impact Analysis: A Transportation Impact Analysis (TIA) must be submitted with a land use application if the proposal is expected to involve one or more of the conditions in 1450.1 (below) in order to minimize impacts on and protect transportation facilities, consistent with Section 660-012-0045(2)(b) and (e) of the State Transportation Planning Rule.

- .1 Applicability – A TIA shall be required to be submitted to the County with a land use application if the proposal is expected to involve one (1) or more of the following:
- A. Changes in land use designation, or zoning designation that will generate more vehicle trip ends.
  - B. Projected increase in trip generation of 25 or more trips during either the AM or PM peak hour, or more than 400 daily trips.
  - C. Potential impacts to intersection operations.
  - D. Potential impacts to residential areas or local roadways, including any non- residential development that will generate traffic through a residential zone.
- .2 Consistent with the County's Guidelines for Transportation Impact Analysis (TIA), a landowner or developer seeking to develop/redevelop property shall contact the County at the project's outset. The County will review existing transportation data to establish whether a TIA is required. It is the responsibility of the applicant to provide enough detailed information for the County to make a determination. An applicant should have the following prepared, preferably in writing:

- A. Type of uses within the development
- B. The size of the development
- C. The location of the development
- D. Proposed new accesses or roadways
- E. Estimated trip generation and source of data
- F. Proposed study area

If the County cannot properly evaluate a proposed development's impacts without a more detailed study, a TIA will be required. The County will provide a scoping summary detailing the study area and any special parameters or requirements, beyond the requirements set forth in the County's Guidelines for Transportation Impact Analysis, when preparing the TIA.

.3 Approval Criteria. When a TIA is required, a proposal is subject to the following criteria:

- A. The TIA addresses the applicable elements identified by the County Public Works Director and the County's Guidelines for Transportation Impact Analysis;
- B. The TIA demonstrates that adequate transportation facilities exist to serve the proposed development or, identifies mitigation measures that resolve identified traffic safety problems in a manner that is satisfactory to the County Public Works Director and, when state highway facilities are affected, to ODOT;
- C. For affected non-highway facilities, the TIA establishes that mobility standards adopted by the County have been met; and
- D. Proposed public improvements are designed and will be constructed consistent with County Road Standards and access spacing standards in the Transportation System Plan.

.4 Conditions of Approval.

- A. The County may deny, approve, or approve a proposal with conditions



necessary to meet operational and safety standards; provide the necessary right-of-way for improvements; and to require construction of improvements to ensure consistency with the future planned transportation system.

- B. Construction of off-site improvements may be required to mitigate impacts resulting from development that relate to capacity deficiencies and public safety; and/or to upgrade or construct public facilities to County Standards.
- C. Improvements required as a condition of development approval, when not voluntarily provided by the applicant, shall be roughly proportional to the impact of the development on transportation facilities. Findings in the development approval shall indicate how the required improvements directly relate to and are roughly proportional to the impact of development.

**Pertinent Issues:** Land Development Services encourages property owners/developers to consult with representatives from the County Department of Public Works and discuss whether or not the existing transportation network in this area can adequately support the new trailhead. This discussion will determine if a Traffic Impact Analysis will be required to be included with the Conditional Use and Site Design Review Applications. It is the responsibility of the applicant to provide enough detailed information for the County to make a determination. Scott Toenjes and Mike Russell from Public Works have been invited to the Pre Application Meeting but you may wish to contact them prior to the meeting next week.

### **Section 1503 Conditional Uses**

- .1 Status: Approval of a conditional use shall not constitute a change of zoning classification and shall be granted only for the specific use requested; subject to such reasonable modifications, conditions, and restrictions as may be deemed appropriate by the Commission, or as specifically provided herein.
- .2 Conditions: The Commission may attach conditions and restrictions to any conditional use approved. The setbacks and limitations of the underlying district shall be applied to the conditional use. Conditions and restrictions may include a specific limitation of uses, landscaping requirements, off-street parking, performance standards, performance bonds, and other reasonable conditions, restrictions, or safeguards that would uphold the intent of the Comprehensive Plan and mitigate any adverse effect upon the adjoining properties which may result by reason of the conditional use being allowed.
- .3 Conditional Use Permit: A Conditional Use Permit shall be obtained for each conditional use before development of the use. The permit shall stipulate any modifications, conditions, and restrictions imposed by the Commission, in addition to those specifically set forth in this ordinance. On its own motion, or pursuant to a formal written complaint filed with the Planning Department, upon proper notice and hearing as provided by Sections 1603 and 1608 of this ordinance, the Commission, (or Board on appeal) may, but is not required to, amend, add to or delete some or all of the conditions applied to Conditional Use Permits issued by the Planning Commission or Board of Commissioners. The power granted by this subsection may only be exercised upon a finding such

amendment, addition or deletion is reasonably necessary to satisfy the criteria established by Section 1503.5 below.

- .4 Suspension or Revocation of a Permit: A Conditional Use Permit may be suspended or revoked by the Commission when any conditions or restrictions imposed are not satisfied.
  - A. A Conditional Use Permit shall be suspended only after a hearing before the Commission. Written notice of the hearing shall be given to the property owner at least 10 days prior to the hearing.
  - B. A suspended permit may be reinstated, if in the judgment of the Commission, the conditions or restrictions imposed in the approval have been satisfied.
  - C. A revoked permit may not be reinstated. A new application must be made to the Commission.
  
- .5 Granting a Permit: The Commission may grant a Conditional Use Permit after conducting a public hearing, provided the applicant provides evidence substantiating that all the requirements of this ordinance relative to the proposed use are satisfied and demonstrates the proposed use also satisfies the following criteria:
  - A. The use is listed as a Conditional Use in the zone which is currently applied to the site;
  - B. The use meets the specific criteria established in the underlying zone;
  - C. The characteristics of the site are suitable for the proposed use considering size, shape, location, topography, existence of improvements, and natural features;
  - D. The site and proposed development is timely, considering the adequacy of transportation systems, public facilities, and services existing or planned for the area affected by the use;
  - E. The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs, or precludes the use of surrounding properties for the primary uses listed in the underlying district;
  - F. The proposal satisfies the goals and policies of the Comprehensive Plan which apply to the proposed use;
  - G. The proposal will not create any hazardous conditions.
  
- .6 Design Review: The Commission may require the Conditional Use be subject to a site design review by the Design Review Board or Planning Commission

**Finding 4:** All Conditional Use Permit Applications must submit evidence showing how the new use will satisfy all of the criteria in Section 1503.5 The submitted Site Plan and related documentation needs to show that the site is suitable, timely, meets the minimum setback and development siting standards for PF-80 zoned properties that contain at least one 50' Riparian Corridor for a fish-bearing creek. The criteria of 1503.5 should specifically be addressed in the application relating to the subject site's suitability for the proposal, impact to surrounding area, and any potential hazards. Because the development of a Trailhead is a change in use of the property from Forest to recreation, the proposals must be reviewed as a Conditionally Permitted Type 2 Site Design Review that is approved by the Planning Commission at a public hearing.

### **Section 1550 Site Design**

The Site Design Review process shall apply to all new development, redevelopment, expansion, or improvement of all community, governmental, institutional, commercial, industrial and multi-family residential (4 or more units) uses in the County.

1551. Types of Site Design Review:

A. Type 1: Projects, developments and building expansions which meet any of the following criteria:

1. are less than 5,000 sq.ft., and are less than 10% of the square footage of an existing structure.
2. Increase the number of dwelling units in a multi-family project.
3. Increase the height of an existing building.

**B. Type 2: Projects, developments and building expansions which meet any of the following criteria:**

1. have an area of 5,000 sq.ft. or more, or are 10% or more of the square footage of an existing structure.
2. **Change the category of use (e.g., commercial to industrial, etc.).**
3. New off-site advertising signs or billboards.
4. Any project meeting any of the Type 2 criteria shall be deemed a Type 2 Design Review application.

1553 Pre-application Conference: A pre-application conference is required for all projects applying for a Site Design Review, unless the Director or his/her designate determines it is unnecessary. The submittal requirements for each application are as defined in this section and the standards of the applicable zone, and will be determined and explained to the applicant at the pre-application conference.

**Pertinent Issues:** The proposal presented for the Holce Trailhead meets the definition of a Type 2 Site Design Review since the use of the property is changing from forestry use to recreational use. This pre-application conference on March 27, 2024 satisfies the requirements in Section 1553.

**1555 Submittal documents:** The following documents, when applicable, are required for a Site Design Review. The scope of the drawings and documents to be included will be determined at the pre-application conference by the Pre-application Conference Committee, and a Site Design Review Submittal Checklist will be given to the applicant, documenting which items are deemed not applicable or not necessary to determine compliance with County and State standards, with a short explanation given for each item so determined.

- A. History.
- B. Project narrative.
- C. Existing site plan.
- D. Proposed site plan.
- E. Grading plan.
- F. Drainage plan.
- G. Wetland mitigation plan. Goal 5 Resource Protection Plans (fish-bearing streams, wetlands, riparian areas, natural areas, fish and wildlife habitat).
- H. Landscaping plan.
- I. Architectural plans.
- J. Sign drawings.
- K. Access, parking and circulation plan.
- L. Impact assessment.
- M. Site Design Review Submittal Checklist.

**1560 Existing Site Plan:** The degree of detail in the existing site plan shall be appropriate to the scale of the proposal, or to special site features requiring careful design. An existing site plan shall include the following, unless it is determined by the Planning Director that the information is not applicable or is not necessary to determine compliance with County and State standards, and a short explanation will be given for each item so determined:

- A. A vicinity map showing location of the property in relation to adjacent properties, roads, pedestrianways and bikeways, and utility access. Site features, manmade or natural, which cross property boundaries are to be shown.
- B. A site description map at a suitable scale (i.e. 1"=100'; 1"=50'; or 1"=20') showing parcel boundaries and gross area, including the following elements, when applicable:
  - 1. Contour lines at the following minimum intervals:
    - a. 2 foot intervals for slopes 0-20%;
    - b. 5 or 10 foot intervals for slopes exceeding 20%;
    - c. Identification of areas exceeding 35% slope.

2. In special areas, a detailed slope analysis may be required. Sources for slope analysis include maps located at the U.S. Natural Resources Conservation Service office.
3. Potential natural hazard areas, including potential flood or high ground water, landslide, erosion, and drainage ways. An engineering geologic study may be required.
4. Wetland areas, springs, wildlife habitat areas, wooded areas, and surface features such as mounds and large rock outcroppings.
5. **Streams and stream corridors.**
6. **Location, species and size of existing trees proposed to be removed.**
7. **Significant noise sources.**
8. **Existing structures, improvements, utilities, easements and other development.**
9. **Adjacent property structures and/or uses.**

**1561 Proposed Site Plan:** A complete application for design review shall be submitted, including the following plans, which may be combined, as appropriate, onto one or more drawings, unless it is determined by the Planning Director that the information is not applicable or is not necessary to determine compliance with County and State standards, and a short explanation will be given for each item so determined:

- A. **Site Plan: The site plan shall be drawn at a suitable scale (i.e. 1"=100', 1"=50', or 1"=20') and shall include the following:**
  1. The applicant's entire property and the surrounding area to a distance sufficient to determine the relationships between the applicant's property and proposed development and adjacent properties and developments.
  2. Boundary lines and dimensions of the property and all proposed property lines. Future buildings in phased development shall be indicated.
  3. Identification information, including names and addresses of project designers.
  4. Natural features which will be utilized in the site plan.
  5. Location, dimensions and names of all existing or platted roads or other public ways, easements, and railroad rights-of-way on or adjacent to the property, city limits, section lines and corners, and monuments.
  6. Location and dimensions of all existing structures, improvements, or utilities to remain, and structures to be removed, all drawn to scale.
  7. Historic structures, as designated in the Comprehensive Plan.

8. Approximate location and size of storm water retention or detention facilities and storm drains.
  9. Location and exterior dimensions of all proposed structures and impervious surfaces.
  10. Location and dimension of parking and loading areas. pedestrian and bicycle circulation, and related access ways. Individual parking spaces shall be shown.
  11. Orientation of structures, showing entrances and exits.
  12. All exterior lighting, showing type, height, wattage, and hours of use.
  13. Drainage, Stormwater and Erosion Control, including possible adverse effects on adjacent lands.
  14. Service areas for waste disposal and recycling.
  15. Noise sources, with estimated hours of operation and decibel levels at the property boundaries.
  16. **Goal 5 Resource Protection Plans.** Indicate how project will protect streams, wetlands, riparian areas, natural areas, and fish and wildlife habitat from negative impacts.
  17. A landscaping plan which includes, if applicable:
    - a. Location and height of fences, buffers, and screening;
    - b. Location of terraces, decks, shelters, play areas, and common open spaces;
    - c. Location, type, size, and species of existing and proposed shrubs and trees; and
    - d. A narrative which addresses soil conditions and erosion control measures.
- B. Grading Plans:** A preliminary grading plan indicating where and to what extent grading will take place, including general contour lines, slope ratios, slope stabilization proposals, and natural resource protection proposals.
- C. Architectural Drawings:
1. Building elevations and sections;
  2. Building materials (color and type);
  3. Floor plan.
- D. Signs: (see also Zoning Ordinance Section 1300)**
1. Freestanding sign:

- a. Location of sign on site plan;
- b. Elevation of sign (indicate size, total height, height between bottom of sign and ground, color, materials, and means of illumination).
- 2. On-Building Sign:
  - a. Building elevation with location of sign (indicate size, color, materials and means of illumination);
  - b. Plot plan showing location of signs on building in relation to adjoining property.

**1562 Landscaping: Buffering, Screening and Fencing:**

- A. General Provisions:
  - 1. Existing plant materials on a site shall be protected to prevent erosion. Existing trees and shrubs may be used to meet landscaping requirements if no cutting or filling takes place within the dripline of the trees or shrubs.
  - 2. All wooded areas, significant clumps or groves of trees, and specimen conifers, oaks or other large deciduous trees, shall be preserved or replaced by new plantings of similar size or character.
- B. Buffering Requirements:
  - 1. Buffering and/or screening are required to reduce the impacts on adjacent uses which are of a different type. When different uses are separated by a right of way, buffering, but not screening, may be required.
  - 2. A buffer consists of an area within a required setback adjacent to a property line, having a width of up to 10 feet, except where the Planning Commission requires a greater width, and a length equal to the length of the property line adjacent to the abutting use or uses.
  - 3. Buffer areas shall be limited to utilities, screening, pedestrian and bicycle paths, and landscaping. No buildings, roads, or parking areas shall be allowed in a buffer area.
  - 4. The minimum improvements within a buffer area shall include:
    - a. One row of trees, or groupings of trees equivalent to one row of trees. At the time of planting, these trees shall not be less than 10 feet high for deciduous trees and 5 feet high for evergreen trees, measured from the ground to the top of the tree after planting. Spacing of trees at maturity shall be sufficient to provide a year-round buffer.
    - b. In addition, at least one 5-gallon shrub shall be planted for each 100 square feet of required buffer area.

- c. The remaining area shall be planted in grass or ground cover, or spread with bark mulch or other appropriate ground cover (e.g. round rock). Pedestrian and bicycle paths are permitted in buffer areas.

1564 Final Site Plan Approval:

If the Planning Director or Planning Commission approves a preliminary site plan, the applicant shall finalize all the site drawings and submit them to the Director for review. If the Director finds the final site plan conforms with the preliminary site plan, as approved by the Director or Planning Commission, the Director shall give approval to the final site plan. Minor differences between the preliminary site plan and the final site plan may be approved by the Director. These plans shall be attached to the building permit application and shall become a part of that permit.

**Pertinent Issues:** The Site Plan and Supporting Documentation submitted with the Site Design Review Application must include all of the above items that apply to the establishment of the Holce Trailhead.

Plan on submitting both the Conditional Use Permit and the Site Design Review Permit at the same time that will allow the Planning Manager to deem them complete and allow the county to begin processing these permits. The Planning Commission hearing will be scheduled after both applications are deemed complete. The County is typically able to place both Permits on the regularly scheduled Planning Commission within 4-6 weeks of deeming both applications complete. The fees for both Permits are listed below and must be submitted when the applications are submitted:

| <b>Permit</b>                                   | <b>Fee</b> |
|---|------------|
| Type 2 Site Design Review < \$100,000 valuation | \$2,263    |
| Conditional Use Permit                          | \$2730     |
| County Sanitarian Review                        | \$89       |
| County Building Official Review                 | \$89       |
| Technology Fee                                  | 3%         |

Columbia County Land Development Services Website:

<https://www.columbiacountyor.gov/departments/LandDevelopment/Planning>

The Columbia County Zoning Ordinance be accessed via the link under **Codes, Ordinances, and Other Relevant Land Use Documents**

The Application for a Site Design and Conditional Use Permits (attached) can also be accessed via the link to **Planning Applications and Guides.**

**Attachments:**

- Site Design Review and Conditional Use Applications



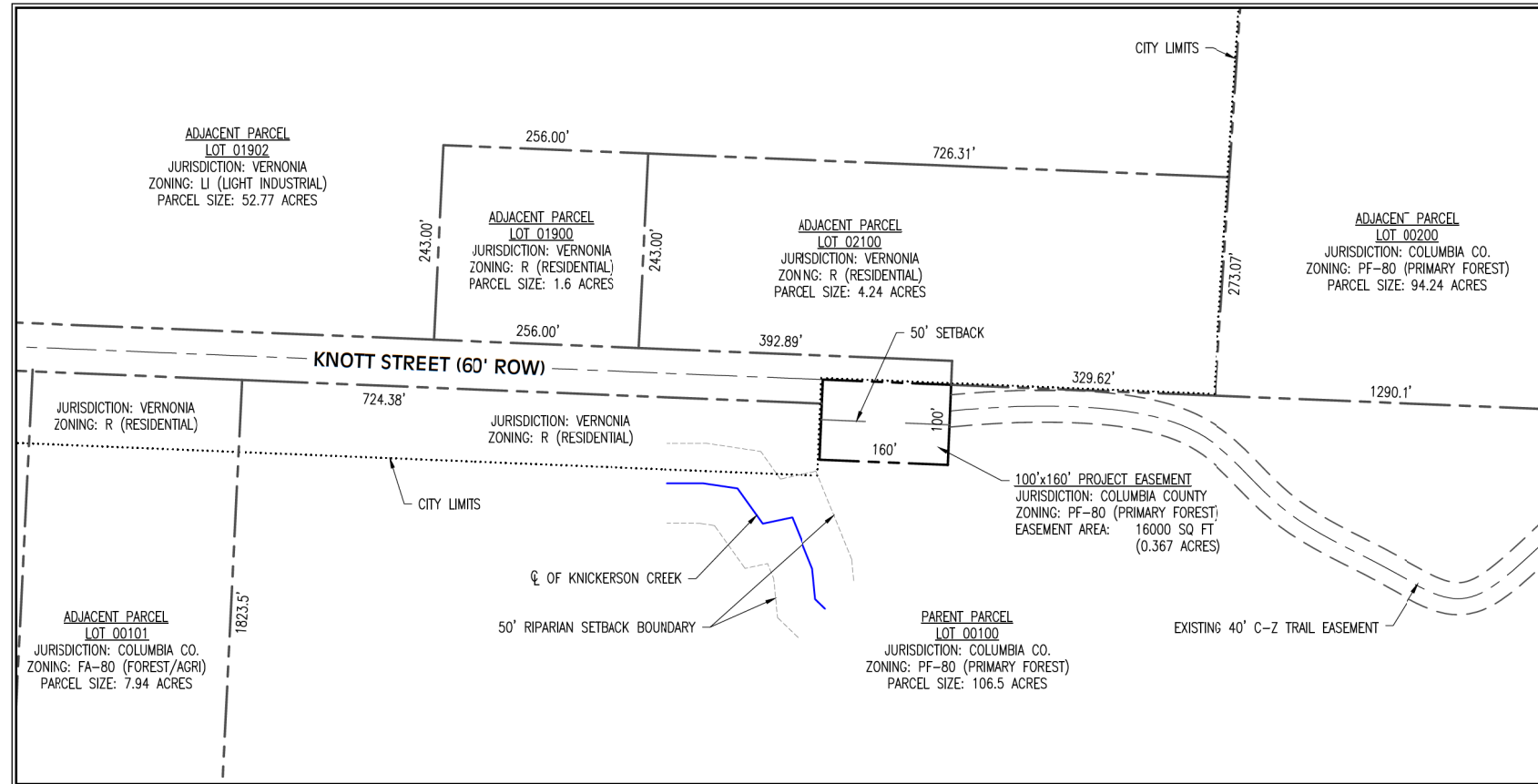


# **Exhibit I**

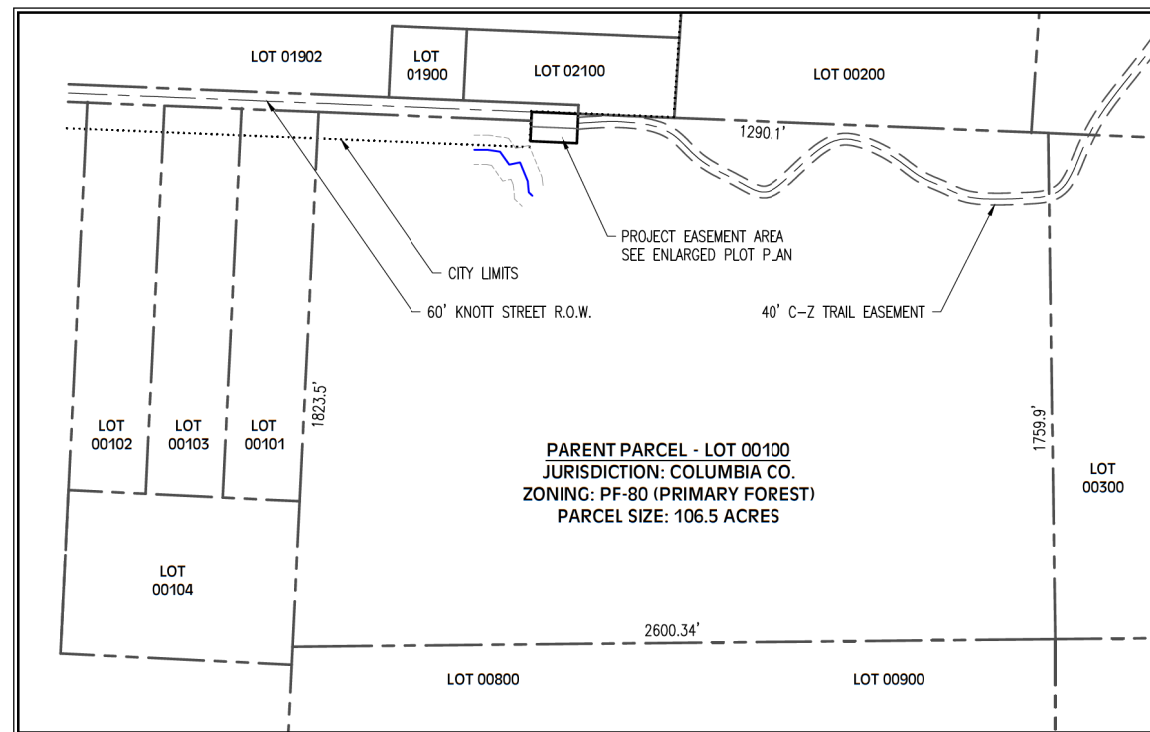
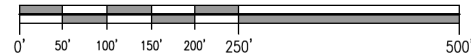
## **Drawings**

# HOLCE TRAILHEAD IMPROVEMENTS

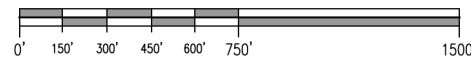
END OF KNOTT STREET, VERNONIA, OREGON



**ENLARGED PLOT PLAN**  
SCALE: 1" = 100'



**OVERALL PLOT PLAN**  
SCALE: 1" = 300'



## PROJECT TEAM

### OWNER / CONTRACTOR

COLUMBIA COUNTY  
320 STRAND STREET, SAINT HELENS, OR 97051  
CONTACT: RILEY BAKER  
PHONE: 971-328-2537  
EMAIL: riley.baker@columbiacountyor.gov

### ENGINEER OF RECORD

LOWER COLUMBIA ENGINEERING, LLC  
58640 MCNULTY WAY, ST. HELENS, OR 97051  
CONTACT: ANDREW NIEMI, P.E.  
PHONE: 503-366-0399  
EMAIL: andrew@lowercolumbiaenr.com

## DEFERRED SUBMITTALS & SEPARATE PERMITS

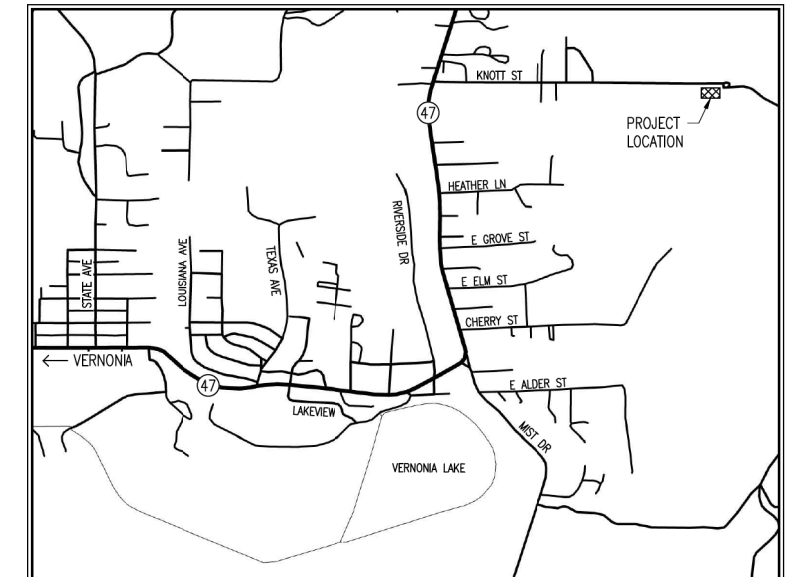
PLANS AND SPECIFICATIONS REQUIRED FOR THE WORK OF SPECIALTY TRADES MAY BE SUBMITTED AS DEFERRED SUBMITTALS IN ACCORDANCE WITH OSSC SECTION 107.3.4.2. THE FOLLOWING SPECIALTY TRADES WILL BE DESIGN-BUILD AND ARE THEREFORE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE OBTAINING SEPARATE PERMITS FOR THIS WORK AND IS RESPONSIBLE FOR ANY NECESSARY DESIGN AND/OR ENGINEERING TO MEET THE APPLICABLE CODE REQUIREMENTS:

REQUIRED SEPARATE PERMITS:  
- ELECTRICAL (IF APPLICABLE)

REQUIRED DEFERRED SUBMITTALS:  
- PICNIC STRUCTURE SHOP DRAWINGS  
- VAULT TOILET STRUCTURE SHOP DRAWINGS

## PROJECT DESCRIPTION

COLUMBIA COUNTY PROPOSES TO MAKE IMPROVEMENTS TO THE HOLCE TRAILHEAD SITE INCLUDING PICNIC SHELTER, VAULT TOILET, INFORMATION KIOSK, SUPPORTING PARKING AREA, AND NEW LANDSCAPING.



**VICINITY MAP**  
NOT TO SCALE



## DRAWING DIRECTORY

| SHEET # | SHEET TITLE                        |
|---------|------------------------------------|
| G-1     | COVER SHEET                        |
| G-2     | GENERAL NOTES                      |
| C-1     | EXISTING CONDITIONS PLAN           |
| C-2     | PROPOSED SITE PLAN                 |
| C-3     | EROSION AND SEDIMENT CONTROL PLAN  |
| C-4     | GRADING AND DRAINAGE               |
| L-1     | LANDSCAPING PLAN                   |
| D-1     | EROSION & SEDIMENT CONTROL DETAILS |
| D-2     | CIVIL DETAILS                      |
| D-3     | SIGNAGE DETAILS                    |
| A-1     | PICNIC SHELTER                     |
| A-2     | VAULT TOILET                       |



Know what's below.  
Call before you dig.

## UTILITY LOCATES

(48 HOUR NOTICE PRIOR TO EXCAVATION)

OREGON LAW REQUIRES YOU TO FOLLOW THE RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES FROM THE CENTER BY CALLING 503-246-1987

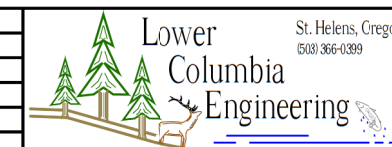
ONE CALL SYSTEM: 800-332-2344 or 811

WEBSITE: [www.callbeforeyoudig.org](http://www.callbeforeyoudig.org)

PUBLIC WORKS MUST BE NOTIFIED 48 HOURS IN ADVANCE TO COORDINATE ANY TAPS OR WATER VALVE OPERATION. THE CONTRACTOR IS NOT ALLOWED TO OPERATE ANY WATER VALVES CONTROLLING FLOW TO NEW PIPING FROM THE CITY'S POTABLE WATER SYSTEM

DATE: 09/16/2024  
ISSUED  
FOR APPROVAL

| REV. | REVISION RECORD | DATE |
|------|-----------------|------|
|      |                 |      |
|      |                 |      |
|      |                 |      |
|      |                 |      |



|                 |                              |
|-----------------|------------------------------|
| PROJ. NO. 3615  | COVER SHEET                  |
| DWG. BY BMK     | HOLCE TRAILHEAD IMPROVEMENTS |
| APPR. BY        | COLUMBIA COUNTY              |
| FILE D-3615-G-1 | DATE 11/21/2023              |

SHEET  
**G-1**

**GENERAL ESC NOTES**

- DO NOT DISTURB A LARGER AREA THAN CAN BE STABILIZED BY THE END OF EACH WORK DAY.
- SOIL EXPOSURE SHALL BE MINIMIZED BY COVERING WITH STRAW, VEGETATION, MATING OR MULCHING. DUST PRODUCING SURFACES SHALL BE SPRINKLED TO CONTROL DUST. RESEED DISTURBED AREAS WITH NATIVE GRASS SEEDINGS.
- LIMIT CONSTRUCTION ACCESS TO AS FEW OF ROUTES AS PRACTICALLY POSSIBLE. MINIMIZE TRACKING OF SOILS AND DEBRIS INTO ROADWAY.
- THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ANY SEDIMENT THAT ACCUMULATES ON ADJACENT PROPERTIES.
- NECESSARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED ONCE CONSTRUCTION AREA IS STABILIZED OR AS DIRECTED BY THE LOCAL WATER ASSOCIATION.
- CONTRACTOR IS RESPONSIBLE FOR MINIMIZING PROPERTY DAMAGE. ANY DAMAGE SHALL BE REPAIRED BY CONTRACTOR.

**EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION**

- ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
- THE "STAGING", SHALL BE MOVED TO AN APPROPRIATE LOCATION TO ACCOMMODATE IMPROVEMENTS.
- INLET PROTECTION SHALL BE IN-PLACE IMMEDIATELY FOLLOWING PAVING ACTIVITIES.

**GRADING, STREET & UTILITY EROSION AND SEDIMENT CONTROL CONSTRUCTION NOTES:**

- SEED USED FOR TEMPORARY OR PERMANENT SEEDING SHALL BE COMPOSED OF ONE OF THE FOLLOWING MIXTURES, UNLESS OTHERWISE AUTHORIZED:
  - DWARF GRASS MIX (MIN. 100 LB./AC.)
    - DWARF PERENNIAL RYEGRASS (80% BY WEIGHT)
    - CREeping RED FESCUE (20% BY WEIGHT)
  - STANDARD HEIGHT GRASS MIX (MIN. 100LB./AC.)
    - ANNUAL RYEGRASS (40% BY WEIGHT)
    - TURF-TYPE FESCUE (60% BY WEIGHT)
- SLOPE TO RECEIVE TEMPORARY OR PERMANENT SEEDING SHALL HAVE THE SURFACE ROUGHENED BY MEANS OF TRACK-WALKING OR THE USE OF OTHER APPROVED IMPLEMENTS. SURFACE ROUGHENING IMPROVES SEED BEDDING AND REDUCES RUN-OFF VELOCITY.
- LONG TERM SLOPE STABILIZATION MEASURES SHALL INCLUDE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER VIA SEEDING WITH APPROVED MIX AND APPLICATION RATE.
- TEMPORARY SLOPE STABILIZATION MEASURES SHALL INCLUDE: COVERING EXPOSED SOIL WITH PLASTIC SHEETING, STRAW MULCHING, WOOD CHIPS, OR OTHER APPROVED MEASURES.
- STOCKPILED SOIL OR STRIPPINGS SHALL BE PLACED IN A STABLE LOCATION AND CONFIGURATION. DURING "WET WEATHER" PERIODS, STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING OR STRAW MULCH. SEDIMENT FENCE IS REQUIRED AROUND THE PERIMETER OF THE STOCKPILE.
- EXPOSED CUT OR FILL AREAS SHALL BE STABILIZED THROUGH THE USE OF TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS OR MATS, MID-SLOPE SEDIMENT FENCES OR WATTLES, OR OTHER APPROPRIATE MEASURES. SLOPES EXCEEDING 25% MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES.
- AREAS SUBJECT TO WIND EROSION SHALL USE APPROPRIATE DUST CONTROL MEASURES INCLUDING THE APPLICATION OF A FINE SPRAY OF WATER, PLASTIC SHEETING, STRAW MULCHING, OR OTHER APPROVED MEASURES.
- CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, TIRE WASHES, STREET SWEEPING, AND VACUUMING MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
- ACTIVE INLETS TO STORM WATER SYSTEMS SHALL BE PROTECTED THROUGH THE USE OF APPROVED INLET PROTECTION MEASURES. ALL INLET PROTECTION MEASURES ARE TO BE REGULARLY INSPECTED AND MAINTAINED AS NEEDED.
- SATURATED MATERIALS THAT ARE HAULED OFF-SITE MUST BE TRANSPORTED IN WATER-TIGHT TRUCKS TO ELIMINATE SPILLAGE OF SEDIMENT AND SEDIMENT-LADEN WATER.
- AN AREA SHALL BE PROVIDED FOR THE WASHING OUT OF CONCRETE TRUCKS IN A LOCATION THAT DOES NOT PROVIDE RUN-OFF THAT CAN ENTER THE STORM WATER SYSTEM. IF THE CONCRETE WASH-OUT AREA CAN NOT BE CONSTRUCTED GREATER THAN 50' FROM ANY DISCHARGE POINT, SECONDARY MEASURES SUCH AS BERMS OR TEMPORARY SETTLING PITS MAY BE REQUIRED. THE WASH-OUT SHALL BE LOCATED WITHIN SIX FEET OF TRUCK ACCESS AND BE CLEANED WHEN IT REACHES 50% OF THE CAPACITY.
- SWEEPINGS FROM EXPOSED AGGREGATE CONCRETE SHALL NOT BE TRANSFERRED TO THE STORM WATER SYSTEM. SWEEPINGS SHALL BE PICKED UP AND DISPOSED IN THE TRASH.
- AVOID PAVING IN WET WEATHER WHEN PAVING CHEMICALS CAN RUN-OFF INTO THE STORM WATER SYSTEM.
- USE BMPs SUCH AS CHECK-DAMS, BERMS, AND INLET PROTECTION TO PREVENT RUN-OFF FROM REACHING DISCHARGE POINTS.
- COVER CATCH BASINS, MANHOLES, AND OTHER DISCHARGE POINTS WHEN APPLYING SEAL COAT, TACK COAT, ETC. TO PREVENT INTRODUCING THESE SUBSTANCES TO THE STORM WATER SYSTEM.

**FOUNDATION NOTES**

- CONCRETE DESIGN IS BASED ON A COMPRESSIVE STRENGTH OF 4,000 PSI. ALL CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AFTER 28 DAYS.
- ALL REINFORCING SHALL BE SPLICED AND/OR BENT 38 BAR DIAMETERS TO FULLY DEVELOP THE CAPACITY OF THE BAR.
- ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60, BILLET STEEL DEFORMED BARS.
- ALL FOUNDATIONS SHALL BE CARRIED DOWN TO THE ELEVATIONS SHOWN OR TO SUITABLE UNDISTURBED, FULLY CONSOLIDATED SOIL, FREE OF ORGANIC MATERIAL, WHICHEVER IS LOWER.
- ANY FILL MATERIAL UNDER SLAB AND FOUNDATIONS SHALL BE 3/4" MINUS CRUSHED ROCK, PLACED IN LAYERS NOT EXCEEDING 8" IN DEPTH AND COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY. ANY SLOPES SHALL BE 2 HORIZONTAL UNITS FOR 1 VERTICAL UNIT MAXIMUM. COMPACTION TESTING IS REQUIRED FOR ANY FILL OVER 12" THICK.
- ALL BACKFILL SHALL BE EVENLY PLACED IN LAYERS NOT EXCEEDING 8" IN DEPTH AND COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY. REMOVE ANY STANDING WATER PRIOR TO BACKFILLING. BACKFILL SHALL NOT BE PLACED AGAINST WALL UNTIL SUFFICIENT STRENGTH AND SUPPORT HAS BEEN ACHIEVED.
- VERIFY THAT ALL APPROPRIATE UTILITIES HAVE BEEN INSTALLED PRIOR TO EACH PHASE OF WORK.
- ALL CONCRETE MIX POURED IN A NON-CONTROLLED ENVIRONMENT SHALL CONTAIN 5% AIR ENTRAINMENT PER ASTM C260. ALL WALKING SURFACES SHALL RECEIVE A SLIP RESISTANT FINISH.
- CONTRACTOR IS RESPONSIBLE FOR ALL SITE DRAINAGE ISSUES PER CIVIL ENGINEER. ALL FINISHED GRADES SHALL SLOPE AWAY FROM ALL STRUCTURES TO APPROPRIATE COLLECTION SYSTEM.
- CONTRACTOR IS RESPONSIBLE FOR PROPERLY LOCATING ALL DESIGN ELEMENTS PRIOR TO STARTING CONSTRUCTION.
- GEOTECHNICAL ISSUES AND DESIGN ARE BY OTHERS. TYPICAL GEOTECHNICAL VALUES HAVE BEEN ASSUMED BASED ON A CONSERVATIVE BEARING STRESS OF 1,500 PSF.

**FINISH NOTES**

- OWNER IS RESPONSIBLE FOR SECURITY ISSUES SUCH AS DOOR LOCKS, ALARMS AND VIEW HOLES.
- ALL FINISH ISSUES SHALL BE AGREED UPON BY CONTRACTOR AND OWNER.
- ALL EXTERNAL HORIZONTAL TRIM SHALL HAVE GALVANIZED Z-FLASHING TO PREVENT WATER FROM ENTERING WALL.
- ALL JOINTS SHALL BE PROPERLY SEALED AND ALL SURFACES SHALL BE PRIMED AND PAINTED WITH A MINIMUM OF TWO FINISH COATS, COLOR BY OWNER.
- BATHROOMS AND SHOWER ROOMS ARE TO HAVE A SMOOTH, HARD, NON-ABSORBENT SURFACE THAT EXTENDS UP THE WALL A MINIMUM OF 4 INCHES. WALLS AT TOILETS AND URINALS SHALL HAVE AN SMOOTH, HARD, NON-ABSORBENT SURFACE THAT EXTENDS UP TO A HEIGHT OF 4 FEET ABOVE FINISH FLOOR AND SHOWER STALLS TO 6 FEET ABOVE FINISH FLOOR PER THE REQUIREMENTS OF SECTION 1209.

**PROJECT SPECIFIC PLANS, DETAILS, AND NOTES TAKE PRECEDENCE OVER THESE GENERAL NOTES**

**GENERAL NOTES**

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST OSSC (WITH APPROPRIATE AMENDMENTS) NDS, AISC AND ACI SPECIFICATIONS.
- CONTACT ENGINEER WITH ANY UNCERTAINTIES PRIOR TO PROCEEDING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY SUPPORT OF STRUCTURES AND EMBANKMENTS.
- DO NOT SCALE DRAWINGS.
- ALL SITE DESIGN ISSUES ARE THE RESPONSIBILITY OF OTHERS.
- ALL SUPPLY & DRAINAGE PIPE WILL MEET THE REQUIREMENTS OF THE CURRENT OPSC.

**STEEL NOTES**

- ALL STEEL SHALL BE NEW DOMESTIC STOCK. HOT ROLLED SHAPES AND PLATES SHALL CONFORM TO ASTM A36 WITH A MINIMUM YIELD STRENGTH OF 36,000 PSI. SQUARE AND RECTANGULAR TUBING SHALL BE COLD FORMED, ELECTRIC RESISTANCE WELDED AND CONFORM TO ASTM A500-GRADE B, WITH A MINIMUM YIELD STRENGTH OF 46,000 PSI. ROUND PIPE SHALL CONFORM TO ASTM A53-GRADE B, WITH A MINIMUM YIELD STRENGTH OF 35,000 PSI.
- ALL WELDING SHALL BE OF SIZE AND TYPE APPROPRIATE FOR THE MEMBERS BEING WELDED PER APPROPRIATE AWS SPECIFICATIONS USING E70XX ELECTRODES. IN GENERAL ALL JOINTS SHALL BE FULLY WELDED WITH A FILLET WELD THAT IS 1/16" LESS THAN THE THINNEST MEMBER BEING JOINED, UNLESS NOTED OTHERWISE. CONTACT ENGINEER WITH ANY UNCERTAINTIES PRIOR TO PROCEEDING. TAKE EXTREME CARE TO NOT OVERHEAT EMBEDS IN CONCRETE.
- ALL TEMPORARY SHORING FOR CONSTRUCTION PURPOSES AND SAFETY PROCEDURES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL STRUCTURAL STEEL SHALL BE HOT DIPPED GALVANIZED OR PRIMED WITH 3.5 MILS OF RUST INHIBITIVE PRIMER AFTER CLEANING OF OIL, DIRT, LOOSE SCALE AND FOREIGN MATTER AND RECEIVE A FINISH COAT PER OWNER. EXPOSED STEEL SHALL BE TOUCHED UP TO PREVENT CORROSION.
- ALL BOLT ASSEMBLIES SHALL INCLUDE BOLT, NUT AND LARGE HARDENED FLAT WASHER. BOLTS SHALL CONFORM TO ASTM A325, UNLESS NOTED OTHERWISE. TIGHTEN ALL BOLTS UTILIZING THE "TURN-OF-NUT" METHOD.
- ALL DIMENSIONS SHALL BE VERIFIED BY CONTRACTOR PRIOR TO PROCEEDING. CONTRACTOR IS RESPONSIBLE FOR DEVELOPING FABRICATION SHOP DRAWINGS. SUCH DRAWINGS SHALL BE APPROVED BY THE ENGINEER PRIOR TO PROCEEDING.

**CONCRETE FLOORS & SLABS**

- ALL INTERIOR CONCRETE FLOORS ARE TO HAVE A SMOOTH HARD TROWELED FINISH.
- ALL EXTERIOR SLABS SHALL HAVE BROOM FINISH.

**APPLICABILITY**

THE PURPOSE OF THIS SHEET IS TO PROVIDE GENERAL INFORMATION AND REQUIREMENTS FOR ITEMS THAT ARE NOT SPECIFICALLY ADDRESSED WITHIN THE DESIGN PLANS. NOT ALL OF THE GENERAL NOTES OR SPECIFICATIONS PROVIDED ON THIS SHEET ARE APPLICABLE TO THIS PROJECT. SPECIFIC INFORMATION INCLUDED IN THE DESIGN PLANS TAKES PRECEDENCE OVER THE GENERAL NOTES PROVIDED ON THIS SHEET. FOR ASPECTS OF THE PROJECT THAT ARE NOT SPECIFICALLY ADDRESSED IN THE DESIGN PLANS OR ON THIS SHEET, THE CONTRACTOR SHOULD FOLLOW COMMON INDUSTRY STANDARDS AND LEVEL OF CARE FOR THIS TYPE OF CONSTRUCTION. FOR SUCH ITEMS, THE CONTRACTOR SHALL PROVIDE A SUBMITTAL THAT DESCRIBES THE PROPOSED WORK IN DETAIL. APPROVAL OF THIS SUBMITTAL BY THE OWNER OR THEIR REPRESENTATIVE IS REQUIRED PRIOR TO PROCEEDING WITH ANY CONSTRUCTION ACTIVITY. CONTACT THE OWNER OR THEIR REPRESENTATIVE WITH ANY QUESTIONS OR UNCERTAINTIES PRIOR TO PROCEEDING WITH BIDDING OR EXECUTING ANY CONSTRUCTION ACTIVITY.


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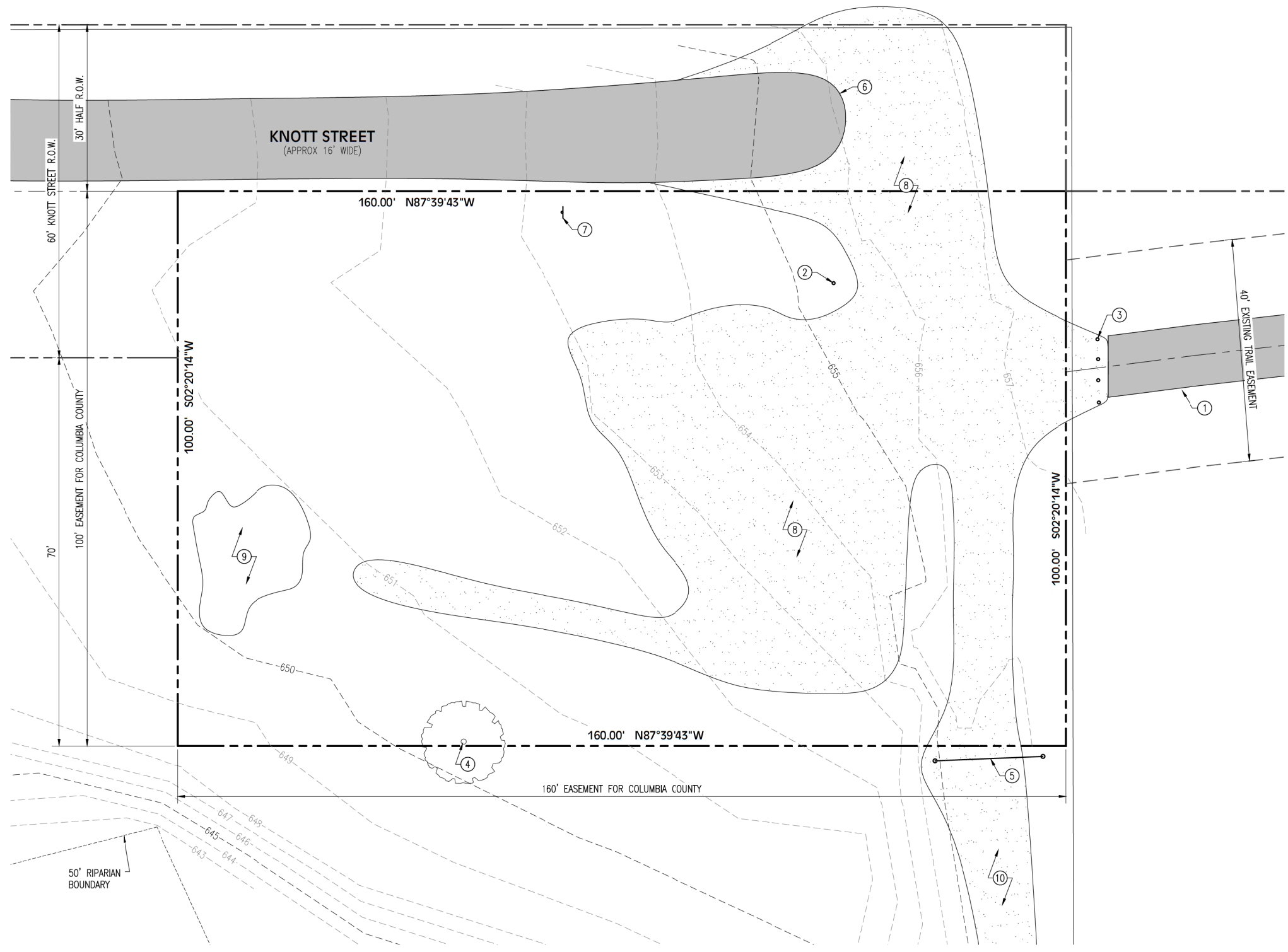
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| PROJ. NO. | 3615       | GENERAL NOTES                |
| DWG. BY   | BMK        | HOLCE TRAILHEAD IMPROVEMENTS |
| APPR. BY  |            | COLUMBIA COUNTY              |
| FILE      | D-3615-G-2 | DATE 11/21/2023              |

**G-2**

- EXISTING SITE KEYNOTES** 
- 1 EXISTING A.C. PAVED TRAIL
  - 2 EXISTING GAS MARKER TO REMAIN
  - 3 EXISTING REMOVABLE BOLLARDS
  - 4 EXISTING 10" FIRE TREE TO REMAIN
  - 5 EXISTING GATE TO REMAIN
  - 6 EXTENTS OF EXISTING ROADWAY
  - 7 EXISTING BIKE ROUTE SIGN TO BE RELOCATED
  - 8 EXISTING GRAVEL PAVING
  - 9 EXISTING CONCRETE DEBRIS PILE TO BE REMOVED
  - 10 EXISTING GRAVEL ACCESS DRIVE



**EXISTING CONDITIONS PLAN**  
SCALE: 1" = 10'



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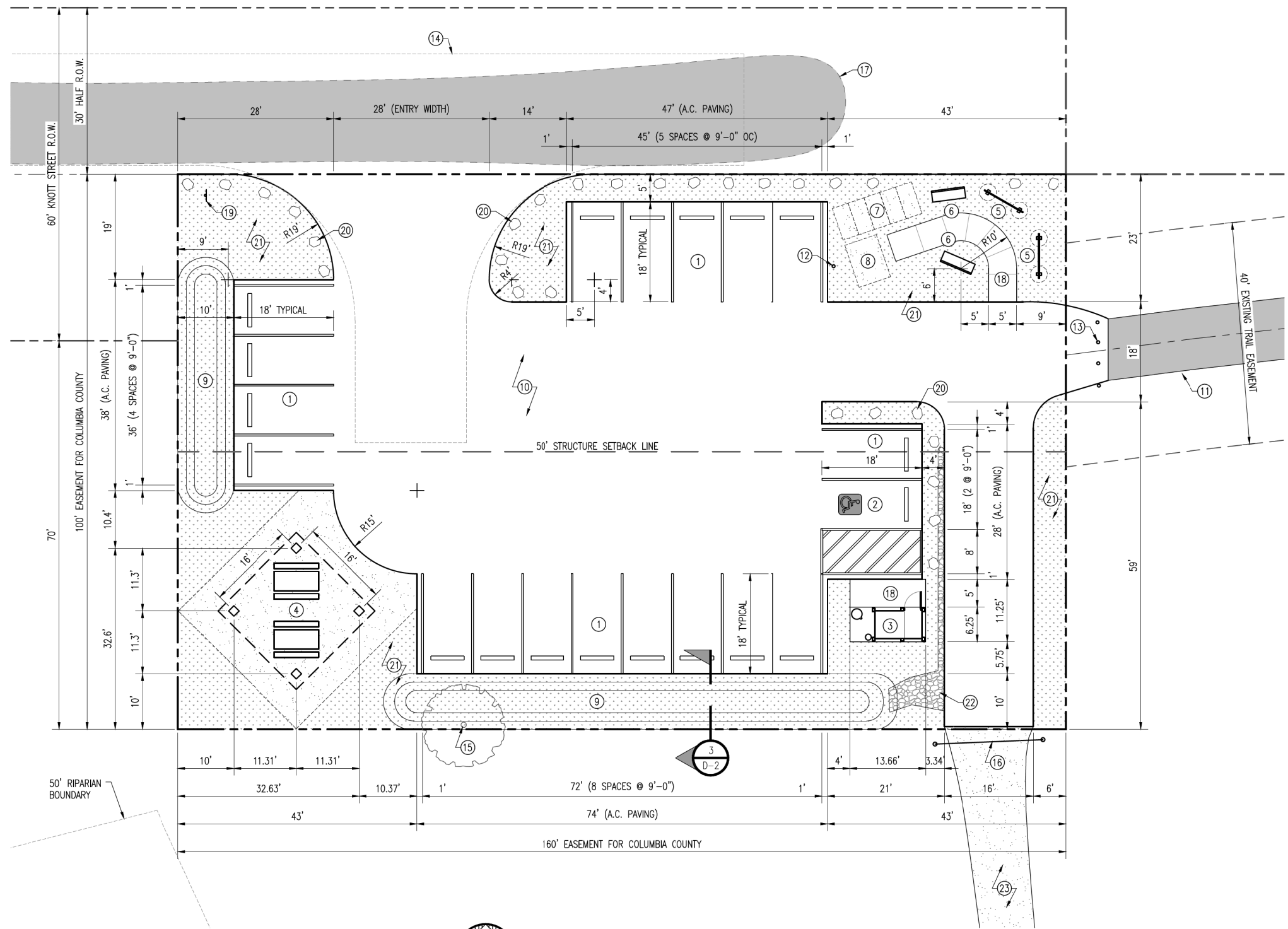
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| PROJ. NO. | 3615       | EXISTING CONDITIONS PLAN     |
| DWG. BY   | BMK        | HOLCE TRAILHEAD IMPROVEMENTS |
| APPR. BY  |            | COLUMBIA COUNTY              |
| FILE      | D-3615-C-1 | DATE 11/21/2023              |

SHEET **C-1**





- ### SITE PLAN KEYNOTES
- 9' x 18' PARKING STALLS W/ WHEELSTOPS  
SEE WHEELSTOP DETAIL 1 ON SHEET D-2
  - 9' x 18' ACCESSIBLE STALL WITH 8' ACCESS AISLE  
SEE ODOT ACCESSIBLE PARKING DETAILS ON SHEET D-2
  - 9' x 6' VAULT TOILET STRUCTURE, SEE SHEET A-2
  - 20' x 20' PICNIC STRUCTURE, SEE SHEET A-1,  
WITH PICNIC TABLES BY COUNTY.
  - FREESTANDING INFORMATIONAL SIGNAGE, SEE SHT D-3
  - BENCHES BY COUNTY.
  - 5 DESIGNATED BICYCLE PARKING SPACES,  
PROVIDE RIBBON RACK OR EQUAL BY COUNTY.
  - BICYCLE REPAIR STATION BY COUNTY
  - STORMWATER DETENTION/FILTRATION SWALES
  - ASPHALTIC CONCRETE (A.C) PAVING, SEE DETAIL 2/D-2.
  - EXISTING A.C. PAVED TRAIL
  - EXISTING GAS MARKER TO REMAIN
  - EXISTING REMOVABLE BOLLARDS
  - FIRE APPARATUS ALTERNATE HAMMERHEAD PER OREGON  
FIRE CODE FIGURE D103.1
  - EXISTING 10" FIRE TREE TO REMAIN
  - EXISTING GATE TO REMAIN
  - EXTENTS OF EXISTING ROADWAY
  - CONCRETE SIDEWALKS, TYPICAL  
4" THICK SLAB WITH #3 AT 12" O.C. EACH WAY,  
CENTERED IN SLAB. TOOLED CONTROL JOINTS AT  
APPROX 5'-0" O.C. BROOM FINISH.
  - RELOCATED BIKE ROUTE SIGNAGE
  - LARGE DECORATIVE BARRIER ROCKS OR LOG SEGMENTS
  - VEGETATED AREAS, TYPICAL, SEE LANDSCAPING PLAN
  - DRAINAGE CHANNEL WITH 1 1/2" MINUS RIVER ROCK
  - EXISTING GRAVEL ACCESS DRIVE

- ### LEGEND
- PROJECT EASEMENT BOUNDARY LINE
  - ADJACENT PARCEL PROPERTY LINE
  - TRAIL EASEMENT BOUNDARY
  - 50' BUILDING SETBACK LINE
  - SLOPE / FLOW DIRECTION
  - A.C. PAVING
  - ▨ VEGETATED AREAS / LANDSCAPING
  - ▤ GRAVEL PAVING

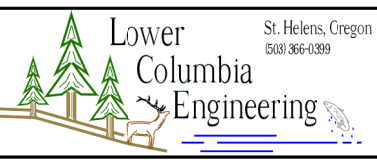
- ### ADDITIONAL NOTES:
- SITE CONTOURS NOT SHOWN FOR CLARITY. SEE SHEET C-4 FOR CONTOURS AND GRADING INFORMATION.

**PROPOSED SITE PLAN**  
SCALE: 1" = 10'



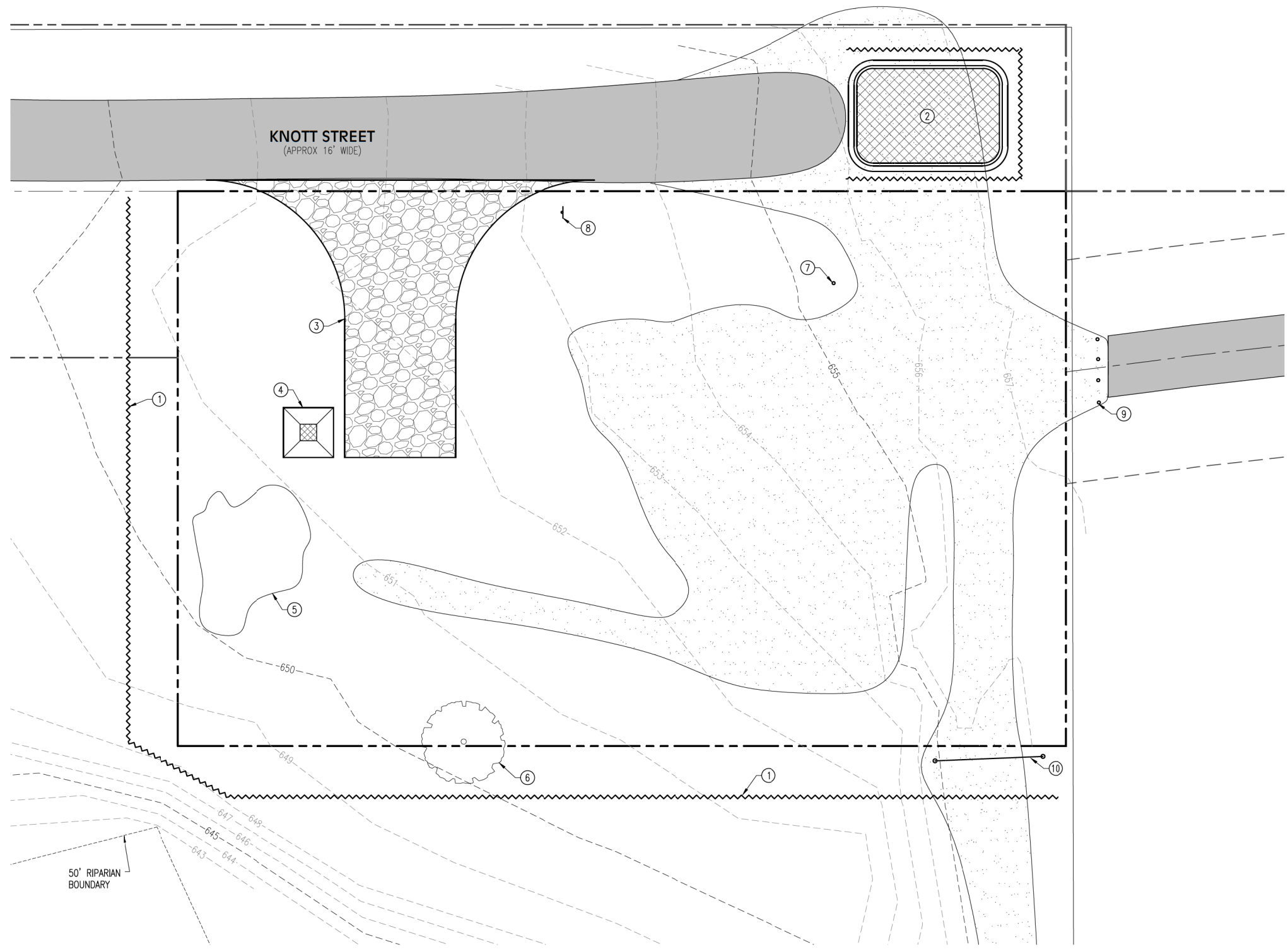
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| PROJ. NO. | 3615       | PROPOSED SITE PLAN           |
| DWG. BY   | BMK        | HOLCE TRAILHEAD IMPROVEMENTS |
| APPR. BY  |            | COLUMBIA COUNTY              |
| FILE      | D-3615-C-2 | DATE 06/10/2024              |

SHEET  
**C-2**

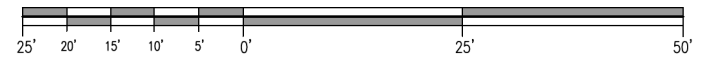


- ESC SITE KEYNOTES**
1. SEDIMENT FENCE, SEE DETAIL 875 ON SHEET D-1
  2. CONSTRUCTION STOCKPILE, SEE DETAIL ON SHEET D-1
  3. CONSTRUCTION ENTRANCE, SEE DETAIL 855 ON D-1
  4. CONCRETE WASHOUT, SEE DETAIL 900 ON SHEET D-1
  5. EXISTING CONCRETE WASTE TO BE REMOVED
  6. FIR TREE TO REMAIN, PROTECT IN PLACE
  7. GAS MARKER TO REMAIN, PROTECT IN PLACE
  8. SIGN TO BE RELOCATED PER SHEET C-2
  9. BOLLARDS TO REMAIN, PROTECT IN PLACE
  10. GATE TO REMAIN, PROTECT IN PLACE

- LEGEND**
- PROJECT EASEMENT BOUNDARY LINE
  - - - ADJACENT PARCEL PROPERTY LINE
  - - - TRAIL EASEMENT BOUNDARY
  - ~~~~~ SEDIMENT FENCING
  - SLOPE / FLOW DIRECTION
  - A.C. PAVING

- ADDITIONAL NOTES:**
1. SEE GENERAL EROSION AND SEDIMENT CONTROL NOTES ON SHEET G-2.
  2. SEE SHEET C-4 FOR EXTENTS OF NEW GRADING.
  3. A WETLANDS DETERMINATION #2022-0141 HAS BEEN PREPARED FOR THIS SITE. GRADING ACTIVITIES IN EXCESS OF 50 C.Y., WITHIN A WETLANDS AREA, WILL REQUIRE A STATE GRADE AND FILL PERMIT.

**EROSION AND SEDIMENT CONTROL PLAN**  
SCALE: 1" = 10'



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| PROJ. NO. 3615  | EROSION AND SEDIMENT CONTROL PLAN |
| DWG. BY BMK     | HOLCE TRAILHEAD IMPROVEMENTS      |
| APPR. BY        | COLUMBIA COUNTY                   |
| FILE D-3615-C-3 | DATE 11/21/2023                   |

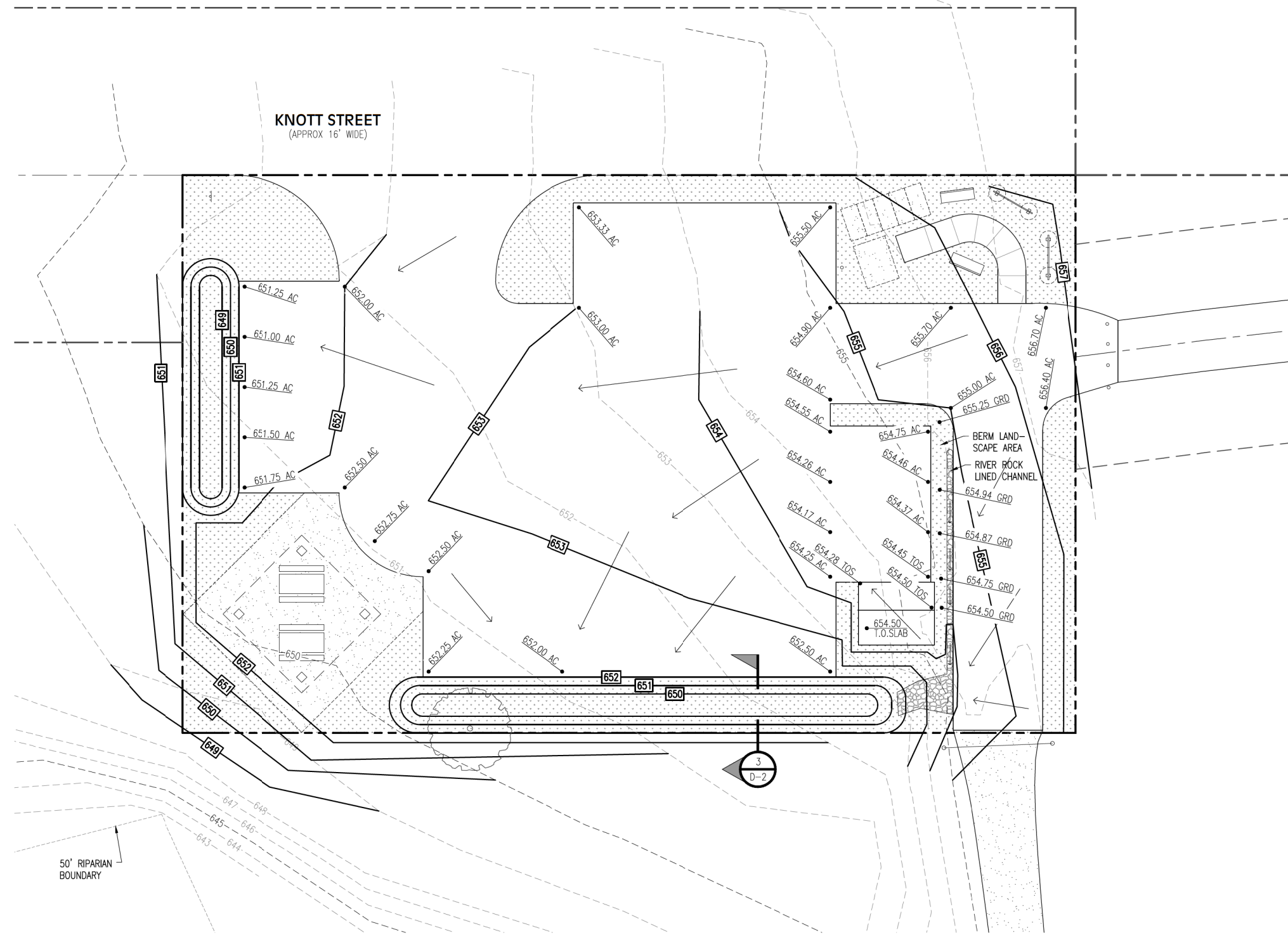
SHEET **C-3**

**GRADING PLAN LEGEND**

-  PROJECT EASEMENT BOUNDARY LINE
-  ADJACENT PARCEL PROPERTY LINE
-  TRAIL EASEMENT BOUNDARY
-  MAJOR CONTOUR (EXISTING)
-  MINOR CONTOUR (EXISTING)
-  NEW CONTOUR LINE
-  SLOPE DOWN / FLOW DIRECTION
-  VEGETATED AREAS / LANDSCAPING
-  GRAVEL PAVING

**ADDITIONAL NOTES:**

1. SEE GENERAL EROSION AND SEDIMENT CONTROL NOTES ON SHEET G-2.
2. SEE SHEET C-3 FOR EROSION AND SEDIMENT CONTROL PLAN.
3. A WETLANDS DETERMINATION #2022-0141 HAS BEEN PREPARED FOR THIS SITE. GRADING ACTIVITIES IN EXCESS OF 50 C.Y., WITHIN A WETLANDS AREA, WILL REQUIRE A STATE GRADE AND FILL PERMIT.



**GRADING AND DRAINAGE PLAN**  
SCALE: 1" = 10'



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| PROJ. NO. 3615  | GRADING AND DRAINAGE         |
| DWG. BY BMK     | HOLCE TRAILHEAD IMPROVEMENTS |
| APPR. BY        | COLUMBIA COUNTY              |
| FILE D-3615-C-4 | DATE 06/10/2024              |

SHEET **C-4**

**PLANTING LEGEND**

- 

CASCARA (TREE)  
30'H x 30'W  
QUANTITY: 4
- 

OREGON WHITE OAK  
40'H x 40'W IN 10 YEARS  
QUANTITY: 2
- 

QUAKING ASPEN  
40'H x 20'W  
QUANTITY: 2
- 

PACIFIC WAX MYRTLE  
8'H x 8'W  
QUANTITY: 7
- 

MANZANITA 'SUNSET'  
4'H x 4'-6"W  
QUANTITY: 8
- 

PROSTRATE ROCKROSE  
2'H x SPREADING  
QUANTITY: 9
- 

DOGWOOD 'KELSEY'  
2'H x 2'W  
QUANTITY: 49
- 

DOUGLAS SPIRAEA  
6'H x 5'W  
QUANTITY: 2
- 

PACIFIC COAST IRIS  
1'H x 2'W  
QUANTITY: 5
- 

RIVER BANK LUPINE  
3'H x 3'W  
QUANTITY: 6
- 

COMMON YARROW  
2'H x 2'W  
QUANTITY: 35
- 

CREeping OREGON GRAPE  
2'H x 4'W  
QUANTITY: 59
- 

SLENDER CINQUEFOIL  
2'H x 2'W  
QUANTITY: 12
- 

BASALT STEPPERS  
18" DIAMETER
- 


LARGE DECORATIVE BARRIER  
ROCKS OR LOG SEGMENTS
- 


BOTTOM OF SWALE  
DAGGER-LEAF RUSH  
PLANTED 18" O.C.
- 


MIDDLE OF SWALE  
TUFTED HAIRGRASS  
PLANTED 18" C.C.
- 


TOP OF SWALE / GROUND COVER MIX OF  
KINNIKINICK AND BEACH DAISY  
PLANTED 18" C.C.

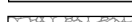
**LEGEND**

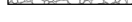
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PROJECT EASEMENT BOUNDARY LINE
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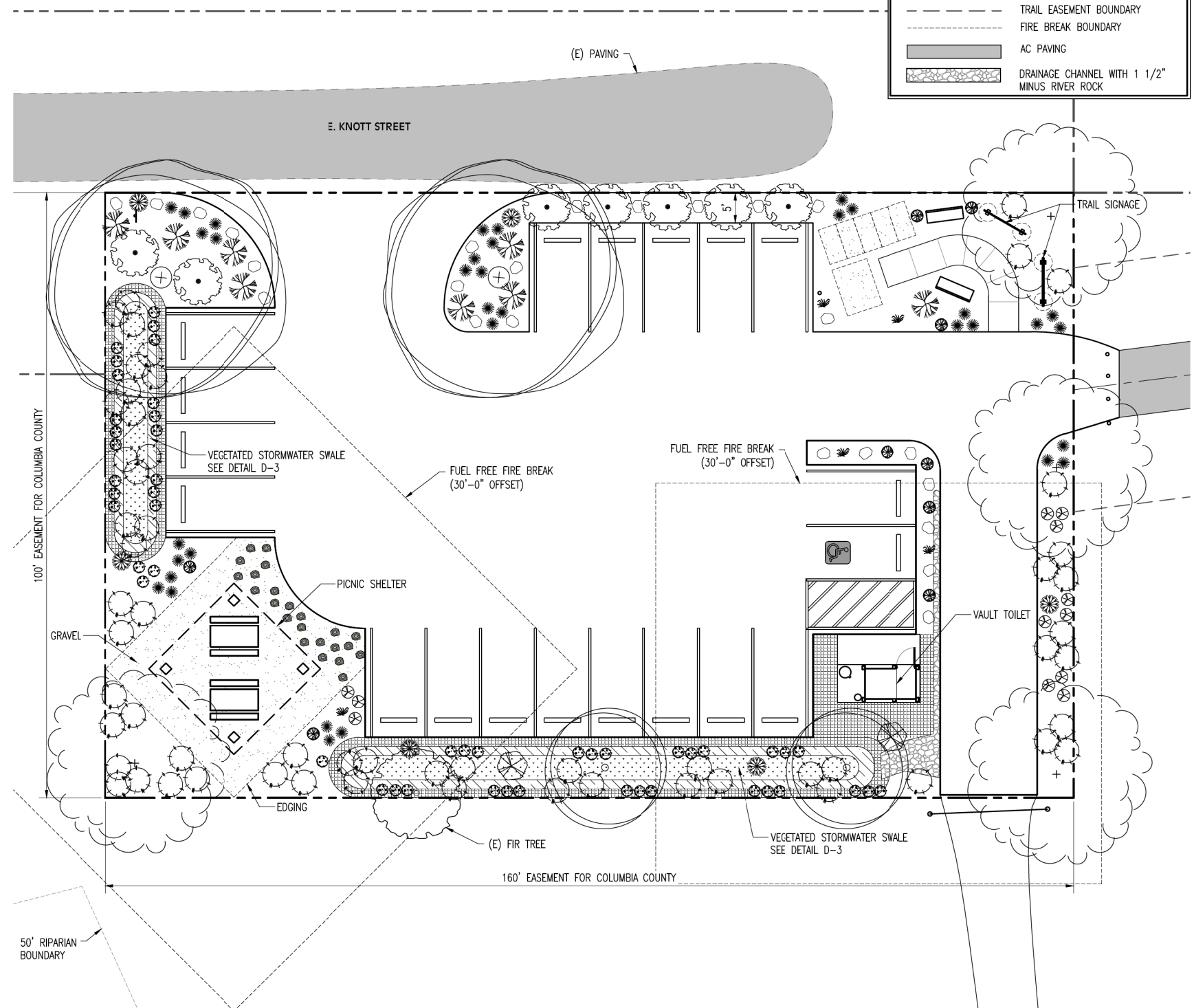
ADJACENT PARCEL PROPERTY LINE
- 

TRAIL EASEMENT BOUNDARY
- 

FIRE BREAK BOUNDARY
- 

AC PAVING
- 

DRAINAGE CHANNEL WITH 1 1/2" MINUS RIVER ROCK



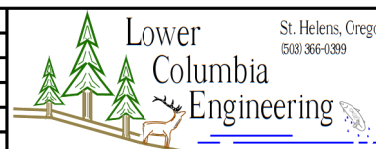
**LANDSCAPING PLAN**

SCALE: 1" = 10'



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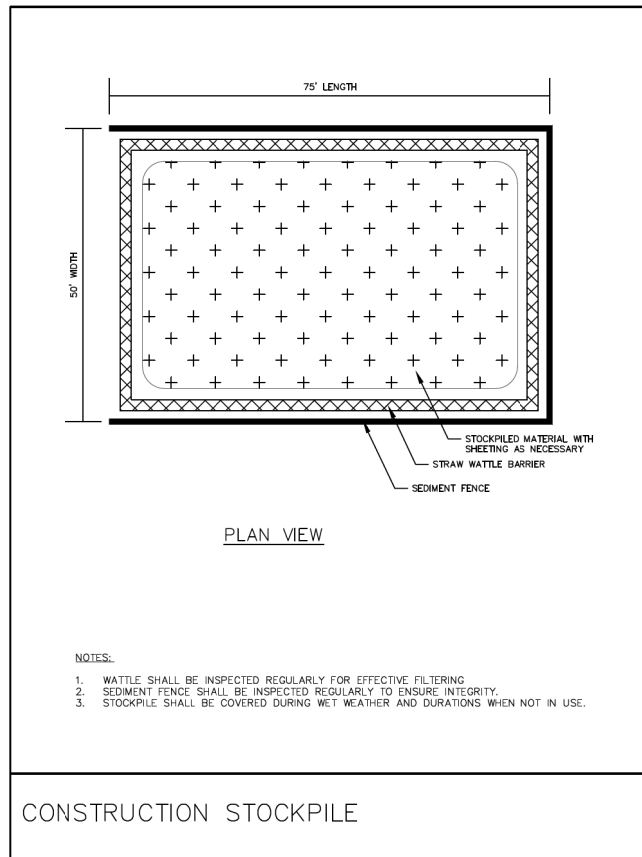
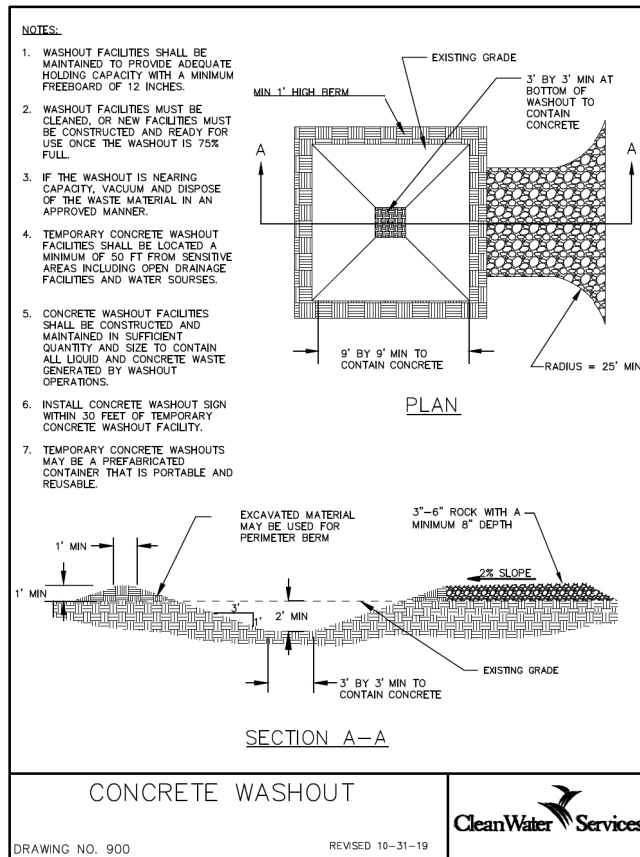
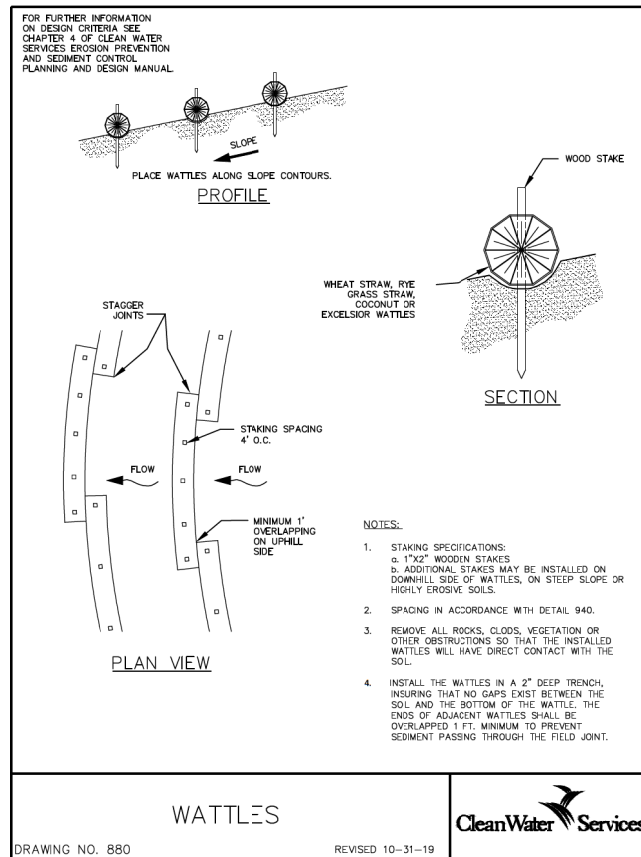
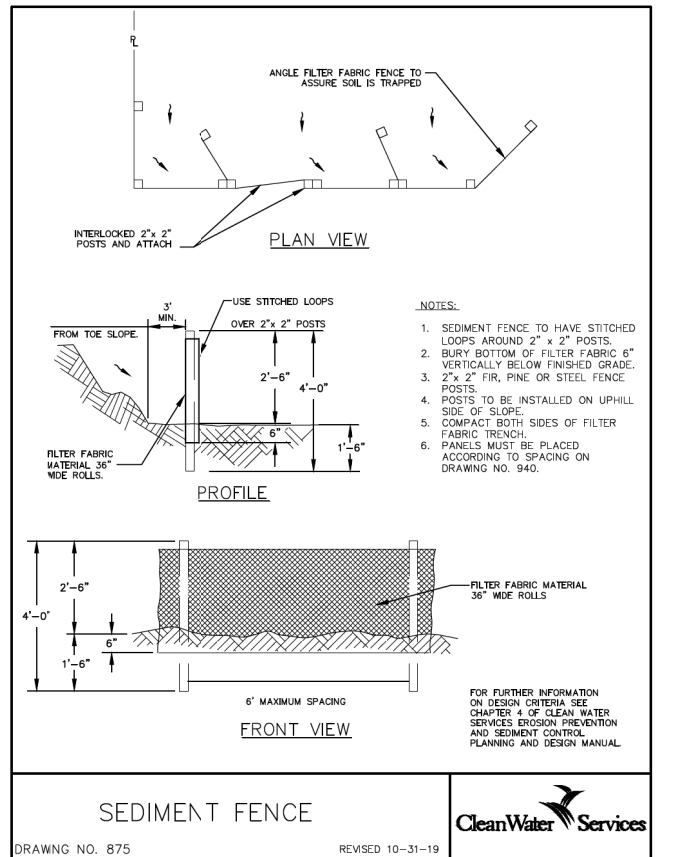
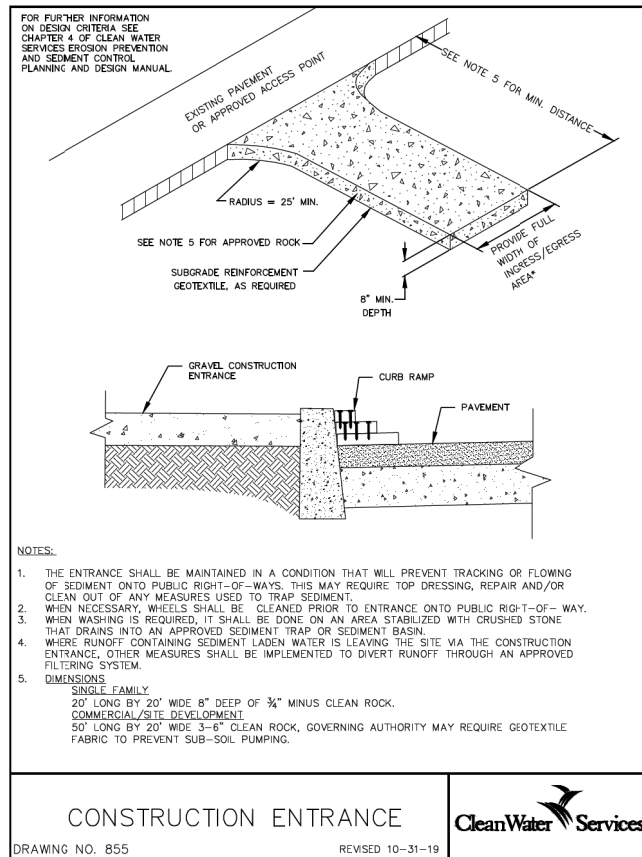
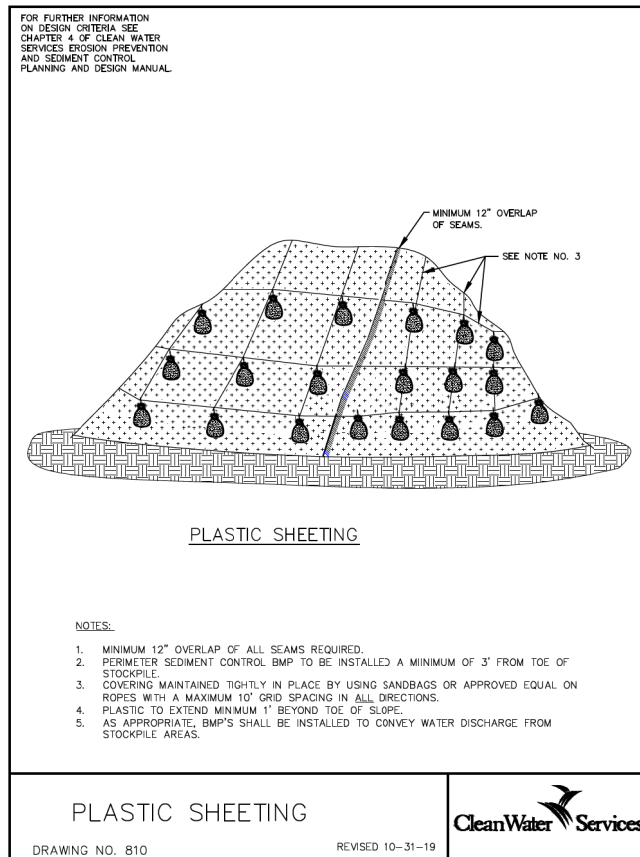
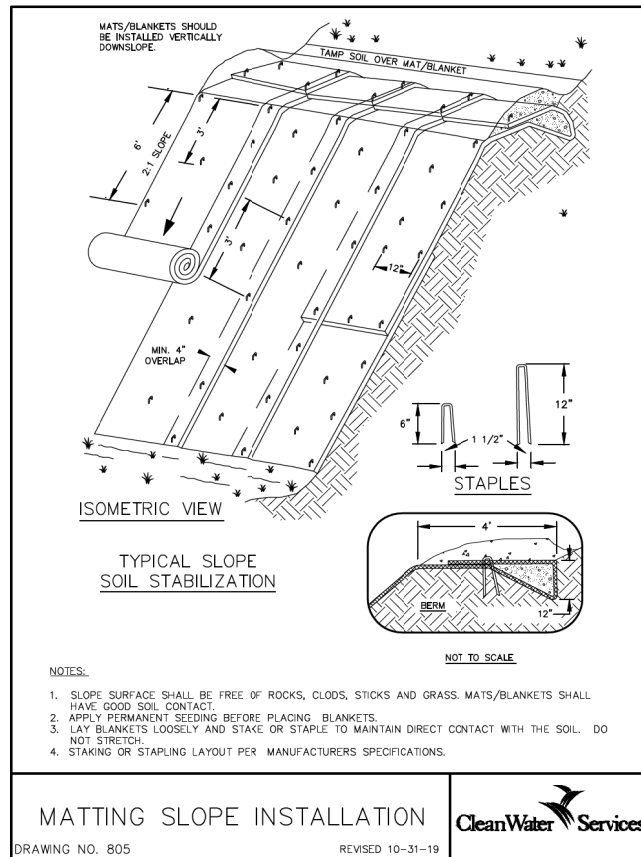
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| PROJ. NO. | 3615            | LANDSCAPING PLAN             |
| DWG. BY   | BMK             | HOLCE TRAILHEAD IMPROVEMENTS |
| APPR. BY  | COLUMBIA COUNTY | SHEET                        |
| FILE      | D-3615-L-1      | DATE 06/10/2024              |

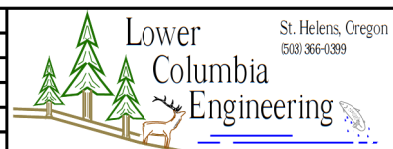
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| PROJ. NO. | 3615       | EROSION & SEDIMENT CONTROL DETAILS |
| DWG. BY   | BMK        | HOLCE TRAILHEAD IMPROVEMENTS       |
| APPR. BY  |            | COLUMBIA COUNTY                    |
| FILE      | D-3615-D-1 | DATE 11/21/2023                    |

SHEET D-1

**MINIMUM STANDARD SINGLE-ACCESSIBLE PARKING SPACE (VAN-ACCESSIBLE DESIGNATION REQUIRED)**

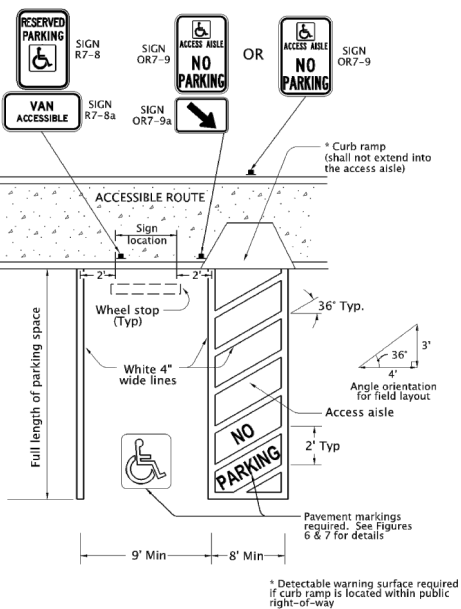
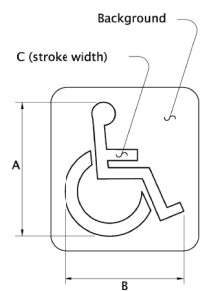


Figure 1

**PAVEMENT MARKING STENCIL**



Pavement Marking Background: Optional: Blue, Retroreflective  
Pavement Marking Stencil: White, Retroreflective

| LEGEND   | DIMENSIONS (INCHES) |    |   |   |   |   |   |
|----------|---------------------|----|---|---|---|---|---|
|          | A                   | B  | C | D | E | F | G |
| MINIMUM  | 28                  | 24 | 3 |   |   |   |   |
| STANDARD | 41                  | 36 | 4 |   |   |   |   |

The pavement marking stencil shall be used to designate an accessible parking area reserved for vehicles with DMV permits.

Figure 6

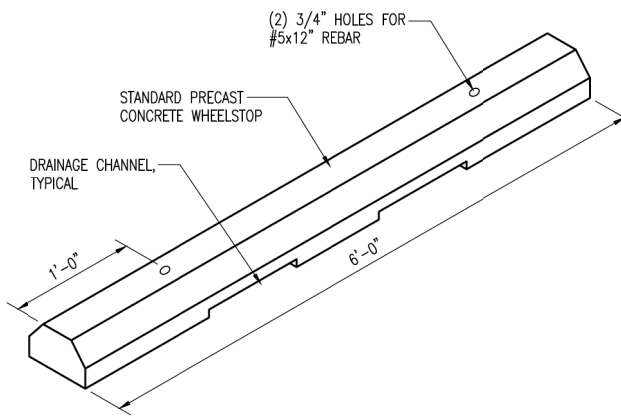
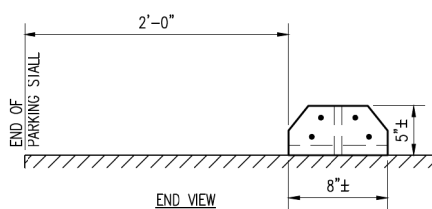
**PAVEMENT MARKING LEGEND**



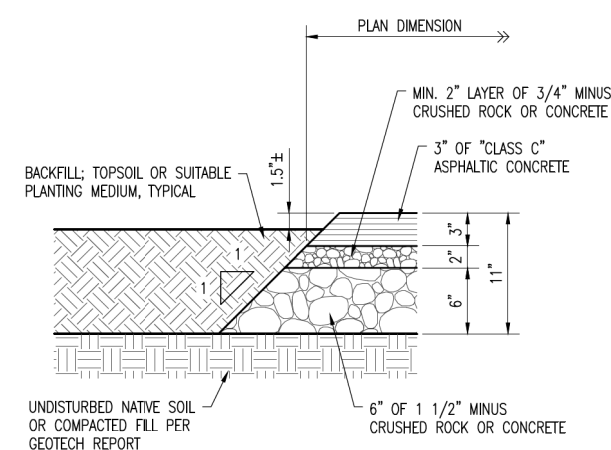
Pavement Marking Legend: White or Yellow, Retroreflective

The "No Parking" pavement marking is used to designate an access aisle reserved for persons use parking with a DMV permit. This marking shall be required for all access aisles next to accessible parking spaces. Engineering judgement should be used for placement location to give best visual location to prevent illegal use of access aisle. Yellow may be used instead of white to increase contrast between access aisle white lines and the "No Parking" legend.

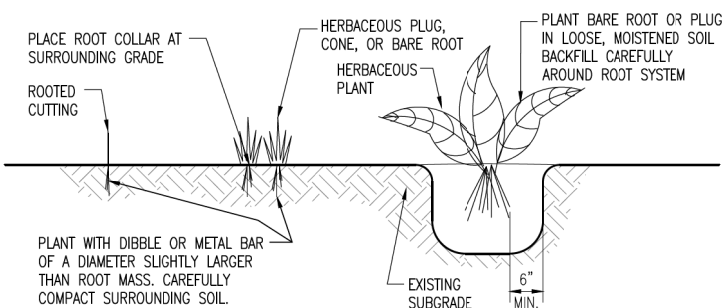
Figure 7



**1 STANDARD WHEEL STOP DETAIL**  
SCALE: N.T.S.



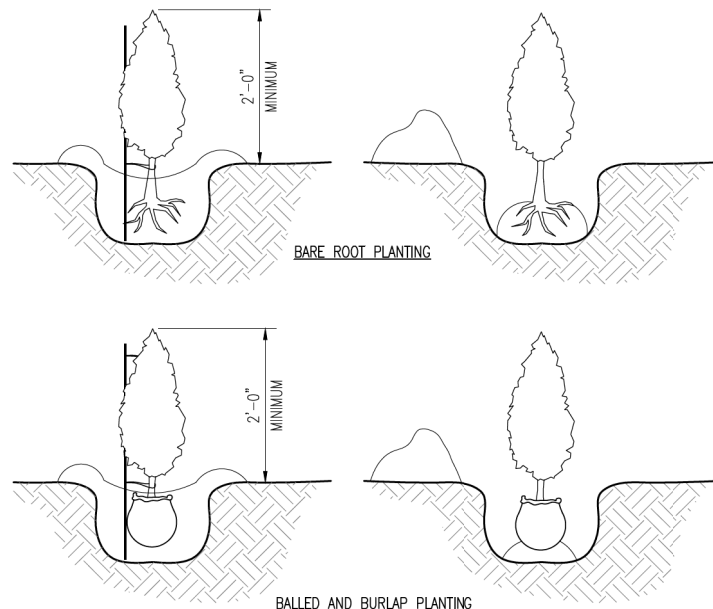
**2 PAVING PROFILE FOR PARKING AREAS**  
SCALE: 1 1/2" = 1'-0"



**BAREROOT, PLUG ROOTED CUTTING DETAIL**

**PLANTING NOTES**

1. PLANTING PLAN SHOULD BE CONSIDERED A GENERAL GUIDELINE ONLY. APPROXIMATE PLANT NUMBERS ARE BASED ON SPACING AS STATED. PLANT MATURITY AND SIZE WILL DICTATE SPACING.
2. SPECIES SELECTION MAY BE ADJUSTED BASED ON AVAILABILITY.
3. PLANTS SHOULD BE SPACED AND GROUPED IN RANDOM FASHION TO REPLICATE A NATURAL LOOKING CONFIGURATION.
4. PLANTS SHOULD BE INSTALLED IN THE FALL AFTER THE RAN HAS ARRIVED (USUALLY AFTER OCTOBER 15TH).
5. PLANTS SHOULD BE WATERED DEEPLY APPROXIMATELY ONCE PER MONTH FOR THE FIRST SUMMER AFTER PLANTING AND ONCE IN AUGUST THE SECOND SUMMER AFTER PLANTING.
6. PLANTS SHALL BE PLACED WITH SUNLIGHT NEED TAKEN INTO CONSIDERATION.
7. PRIOR TO PLANTING IDENTIFY HEALTHY PLANTS TO REMAIN OR TO BE SALVAGED.
8. FINAL PLANT PLACEMENT AND RELATED PLANT SCHEDULES SHALL BE APPROVED BY OWNER PRIOR TO SUBMITTING TO CITY FOR APPROVAL.
9. MULCH SHALL BE ADDED BETWEEN PLANTINGS TO PREVENT EROSION.
10. TOPSOIL MIXTURE SHALL BE A STANDARD FROM A SAND AND GRAVEL SUPPLIER.
11. USE ROOT GUARD, MINIMUM SIZE 10'L x 1.5"D CENTERED ON TREE FOR ANY TREES WITHIN 5 FEET OR LESS OF SIDEWALKS OR PAVED AREAS.



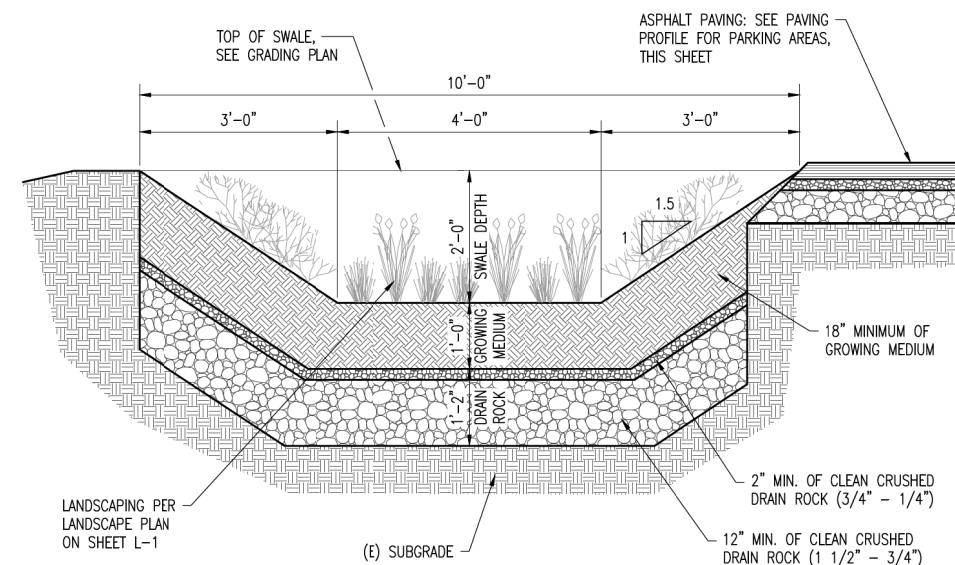
**TYPICAL PLANTING DETAILS**

**BARE ROOT PLANTING NOTES:**

1. SOAK BARE ROOT PLANTS FOR 24 HRS BEFORE PLANTING.
2. DIG HOLE APPROXIMATELY 2x ROOT BALL DIAMETER.
3. BACKFILL A CONE SHAPED MOUND IN THE HOLE.
4. SPREAD ROOTS EVENLY ON MOUND.
5. FILL 3/4 FULL, COMPACT GENTLY AND ADJUST PLANT ALIGNMENT.
6. COMPLETE FILL AND CREATE RIDGE AROUND PLANT FOR A WATERING BASIN.
7. WATER THOROUGHLY.
8. STAKE AS NECESSARY.

**BALLED AND BURLAP PLANTING NOTES:**

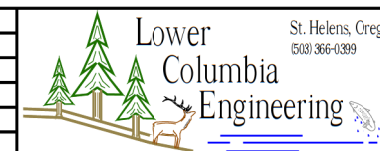
1. DIG HOLE TWICE AS LARGE AS ROOT BALL.
2. BACKFILL A CONE SHAPED MOUND IN THE HOLE.
3. INSTALL TREE AND OPEN BURLAP TO FULLY EXPOSE SURFACE SOIL.
4. FILL 3/4 FULL, COMPACT GENTLY AND ADJUST PLANT ALIGNMENT.
5. COMPLETE FILL AND CREATE RIDGE AROUND PLANT FOR A WATERING BASIN.
6. STAKE AS NECESSARY.
7. WATER THOROUGHLY.



**3 STORMWATER SWALE CROSS SECTION**  
SCALE: 3/4" = 1'-0"

DATE: 09/16/2024  
ISSUED FOR APPROVAL

| REV. | REVISION RECORD | DATE |
|------|-----------------|------|
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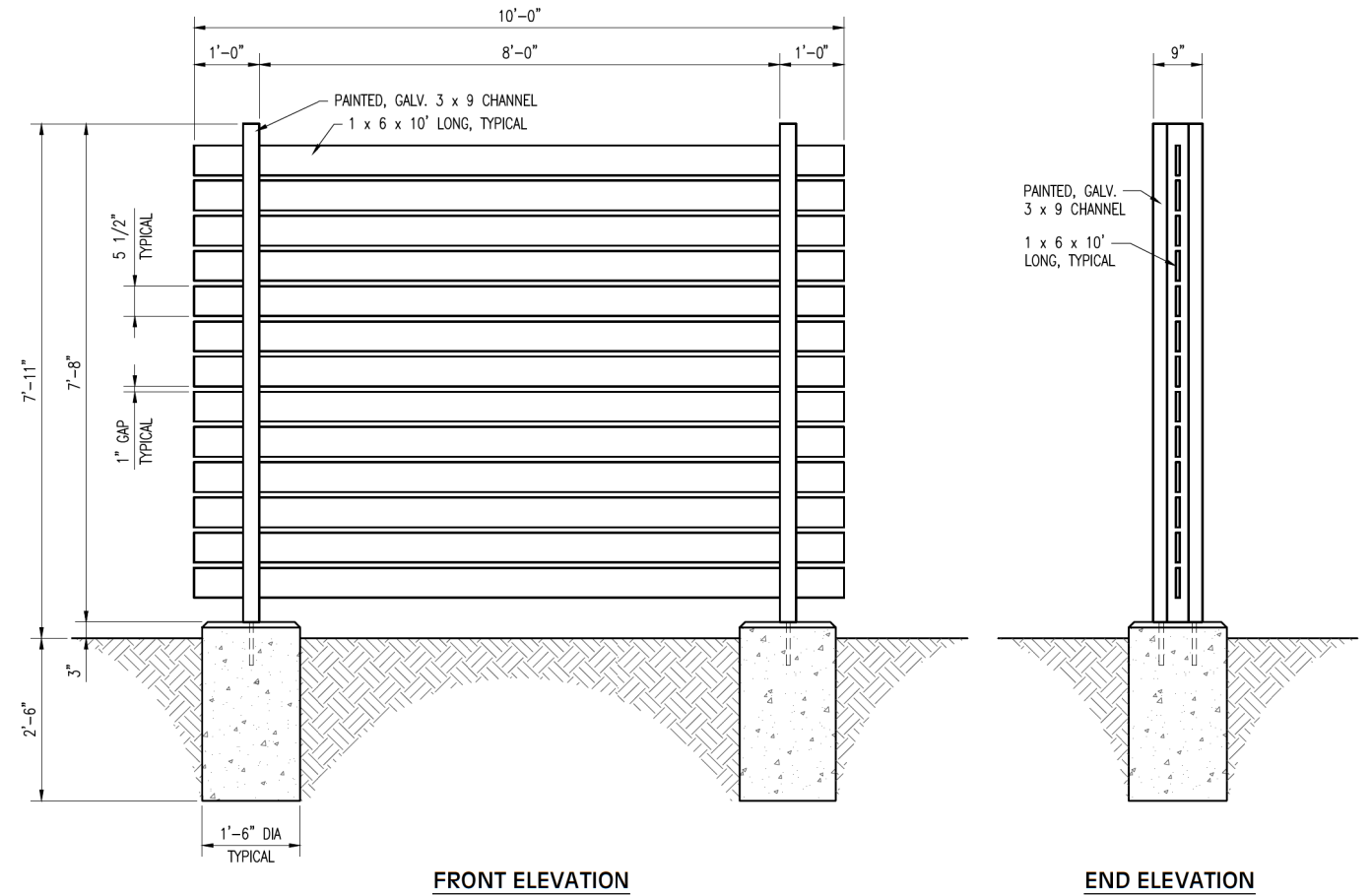
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| PROJ. NO. 3615  | CIVIL DETAILS                |
| DWG. BY BMK     | HOLCE TRAILHEAD IMPROVEMENTS |
| APPR. BY        | COLUMBIA COUNTY              |
| FILE D-3615-D-2 | DATE 11/21/2023              |

SHEET **D-2**





**HOLCE TRAILHEAD SIGNAGE**



**FRONT ELEVATION**

**END ELEVATION**

**1 TRAILHEAD SIGNAGE ASSEMBLY DETAIL**  
 D-3 SCALE: 3/4" = 1'-0"

REQUIRED WAIVER OF REMONSTRANCE SIGNAGE PER PLANNING DEPT:  
 SIGNAGE SHALL BE PROVIDED INDICATING THAT THE TRAILHEAD AND C-Z TRAIL ARE WITHIN A FORESTRY RESOURCE AREA AND TRAIL USERS SHOULD BE AWARE THAT LOGGING RELATED ACTIVITIES MAY BE OCCURRING IN THE AREA. (FINAL WORDING OF SIGNAGE TO BE VERIFIED WITH THE COUNTY.)

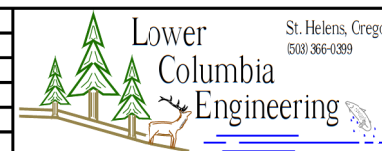


**EXAMPLE INTERPRETIVE SIGNAGE**

**2 EXAMPLE TRAILHEAD SIGNAGE**  
 D-3 SCALE: 3/4" = 1'-0"

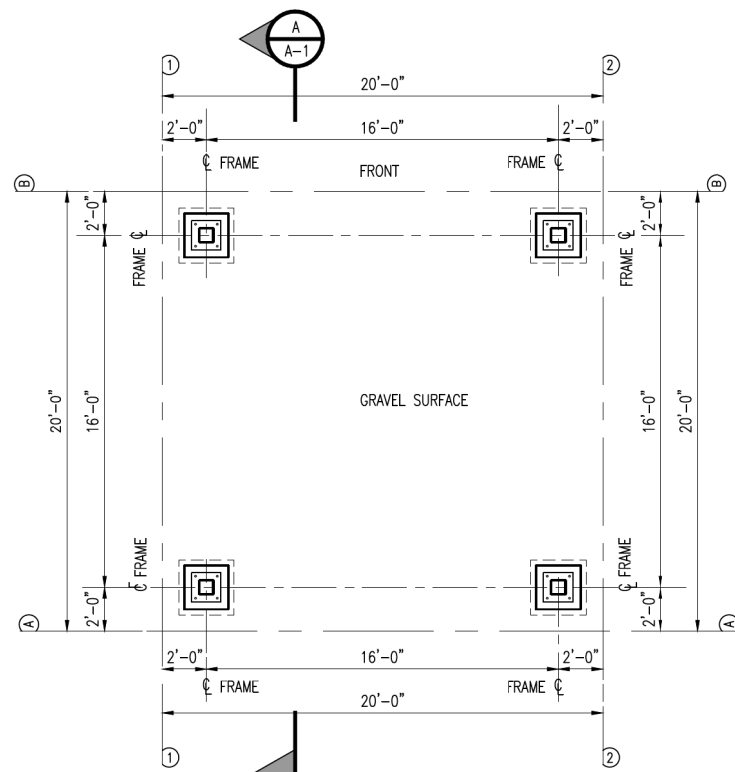
DATE: 09/16/2024  
 ISSUED FOR APPROVAL

| REV. | REVISION RECORD | DATE |
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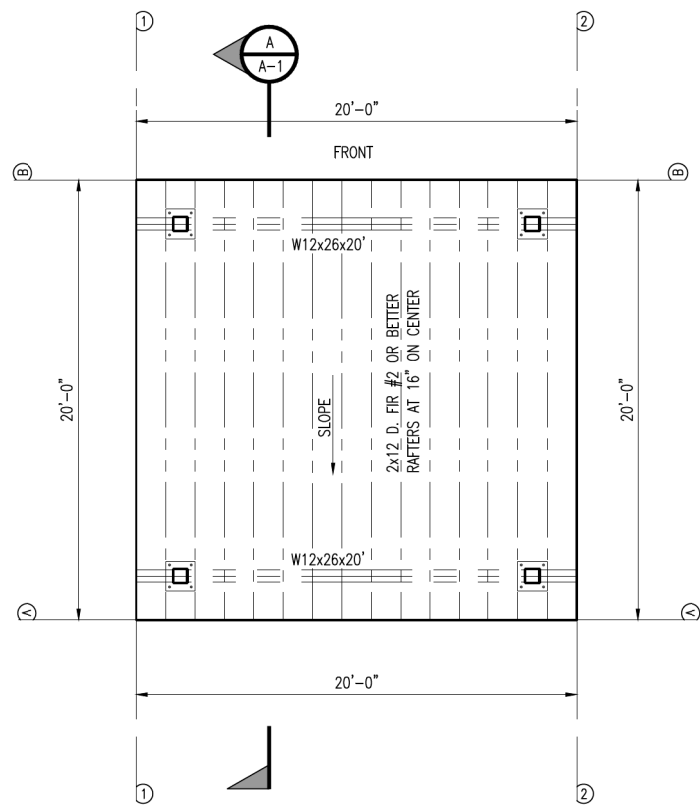


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| PROJ. NO. 3615  | SIGNAGE DETAILS              |
| DWG. BY BMK     | HOLCE TRAILHEAD IMPROVEMENTS |
| APPR. BY        | COLUMBIA COUNTY              |
| FILE D-3615-D-3 | DATE 11/21/2023              |

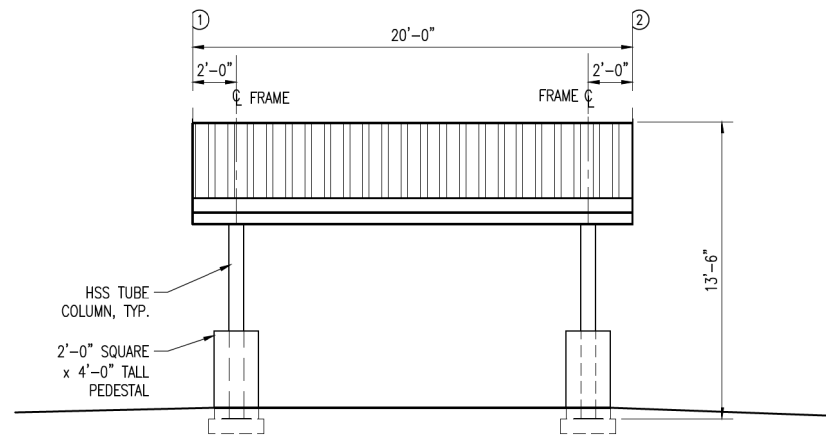
SHEET **D-3**



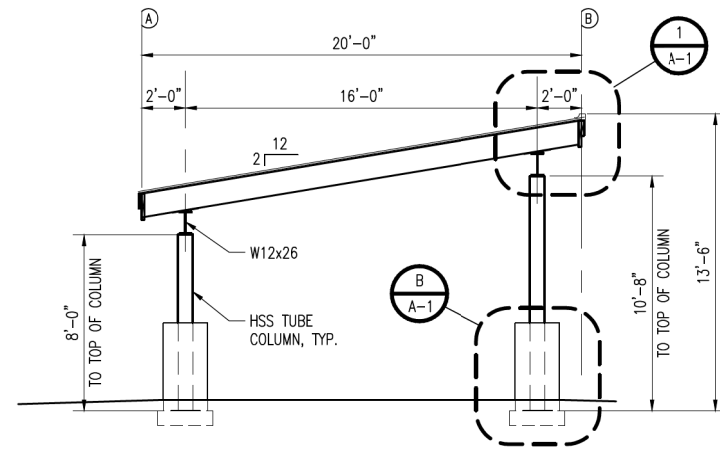
**FOUNDATION / FLOOR PLAN**  
SCALE: 1/4" = 1'-0"



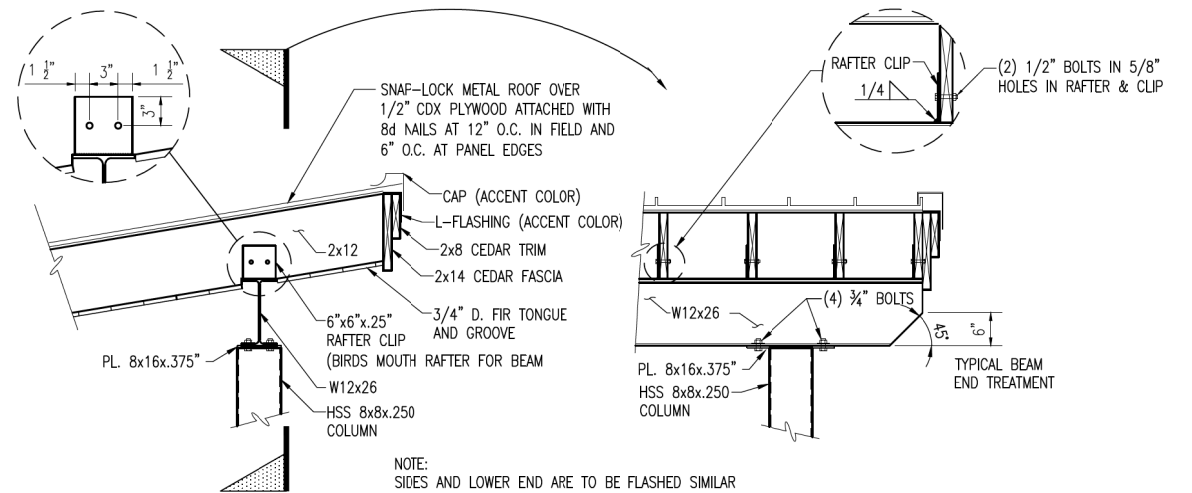
**ROOF FRAMING PLAN**  
SCALE: 1/4" = 1'-0"



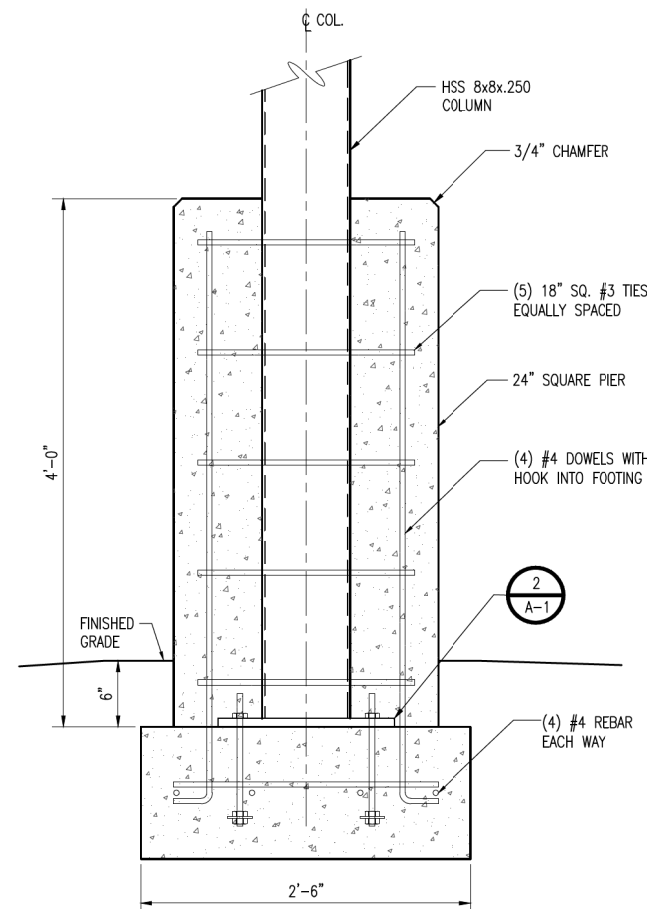
**REAR ELEVATION**  
SCALE: 1/4" = 1'-0"



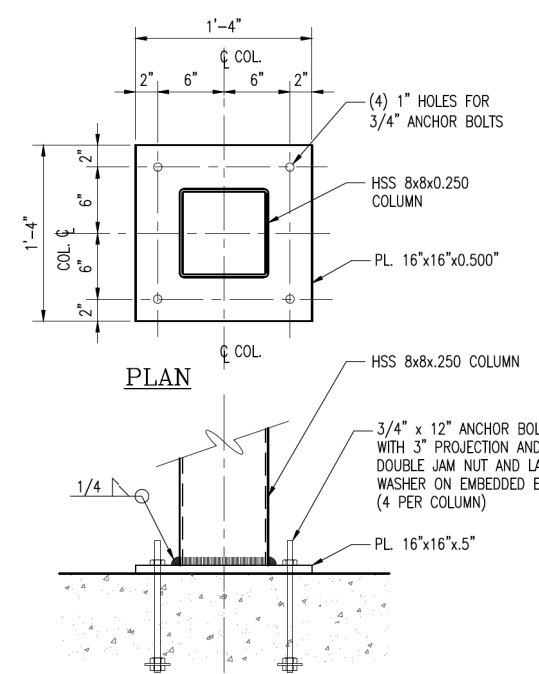
**BUILDING SECTION**  
SCALE: 1/4" = 1'-0"



**EAVE DETAIL**  
SCALE: 3/4" = 1'-0"



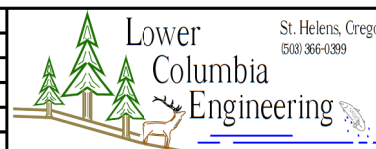
**FOOTING/PIER SECTION**  
SCALE: 1 1/2" = 1'-0"



**BASE PLATE DETAIL**  
SCALE: 1 1/2" = 1'-0"

DATE: 09/16/2024  
ISSUED FOR APPROVAL

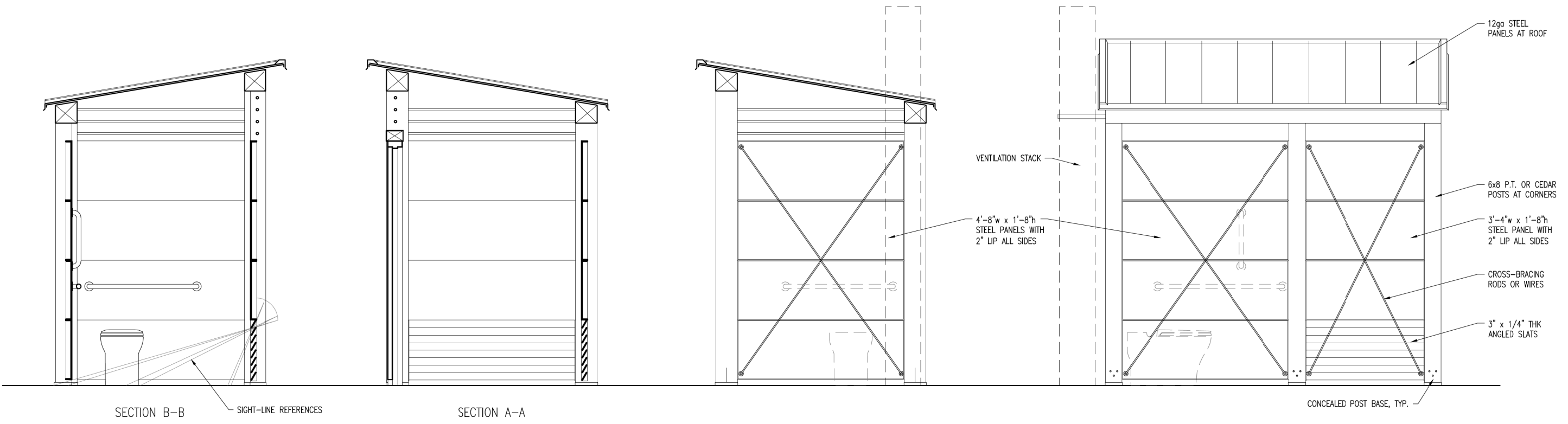
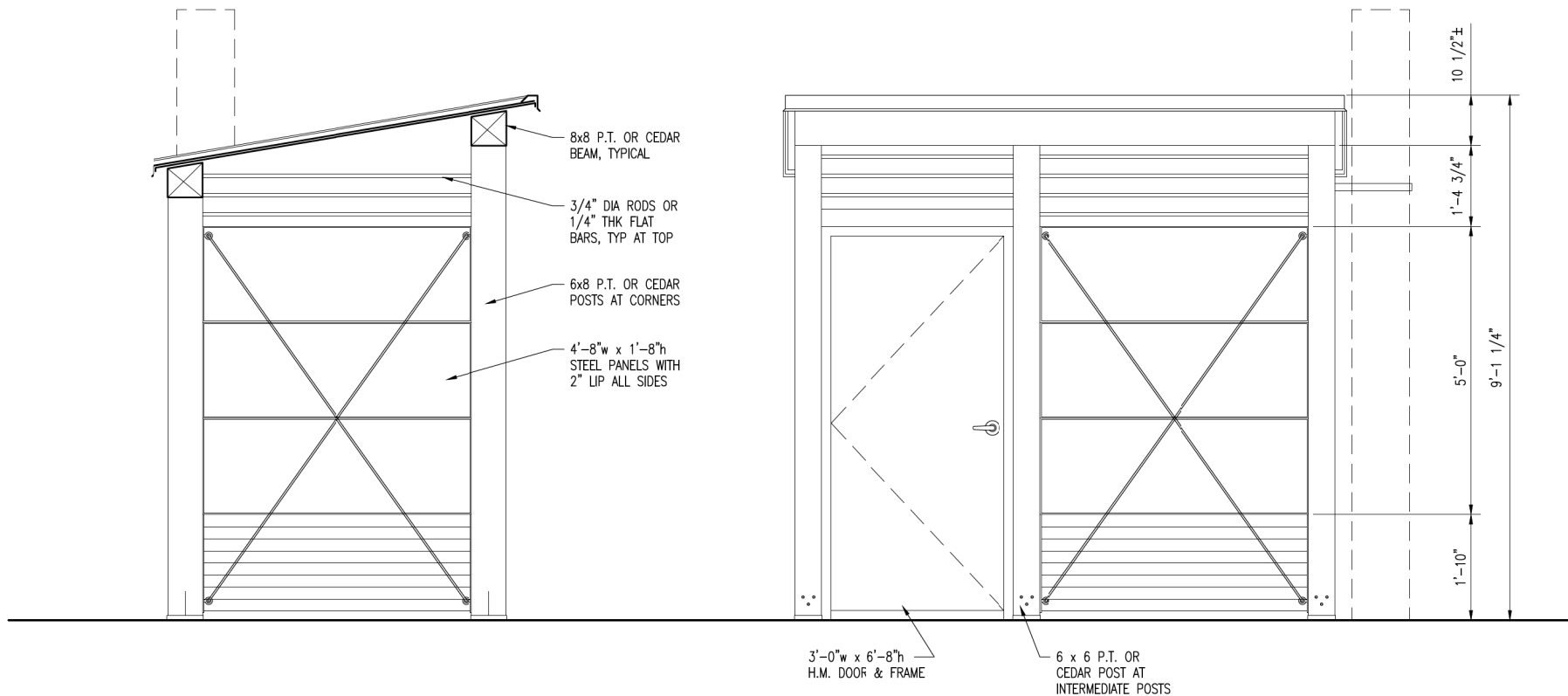
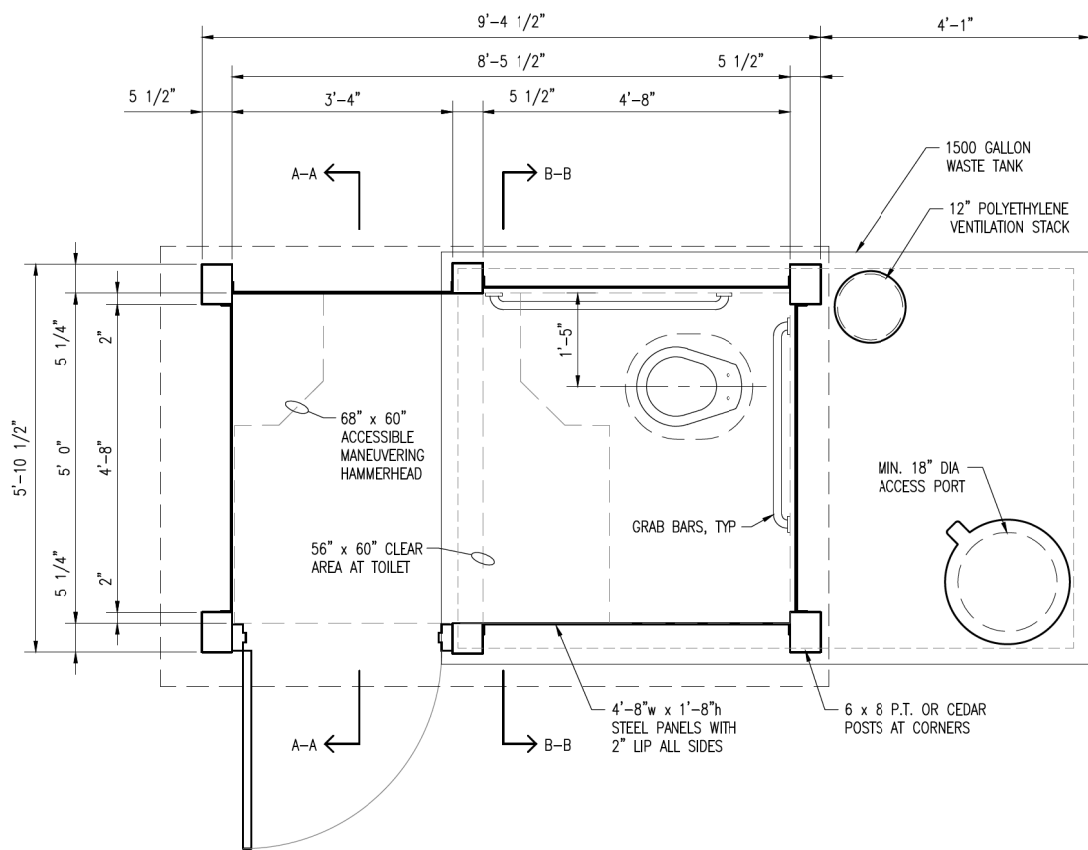
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|           |            |                              |
|-----------|------------|------------------------------|
| PROJ. NO. | 3615       | PICNIC SHELTER               |
| DWG. BY   | BMK        | HOLCE TRAILHEAD IMPROVEMENTS |
| APPR. BY  |            | COLUMBIA COUNTY              |
| FILE      | D-3615-A-1 | DATE 11/21/2023              |

SHEET **A-1**





1 CONCEPT DRAWINGS  
 A-1 SCALE: 3/4" = 1'-0"

DATE: 09/16/2024  
 ISSUED FOR APPROVAL

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| PROJ. NO. 3615  | VAULT TOILET                 |
| DWG. BY BMK     | HOLCE TRAILHEAD IMPROVEMENTS |
| APPR. BY        | COLUMBIA COUNTY              |
| FILE D-3615-A-2 | DATE 06/10/2024              |

SHEET A-2