



US Army Corps  
of Engineers  
Portland District



WASHINGTON STATE  
DEPARTMENT OF  
E C O L O G Y

# Joint Public Notice

## Application for a Department of the Army Permit and a Washington Department of Ecology Water Quality Certification and/or Coastal Zone Management Consistency Concurrence

**US Army Corps of Engineers**  
Regulatory Branch  
Post Office Box 2946  
Portland, OR 97208-2946  
Telephone (503) 808-4385  
Attn: Melody White, Project Manager

**WA Department of Ecology**  
SEA Program  
Post Office Box 47600  
Olympia, WA 98504-7600  
Telephone (360) 407-6068  
Attn: SEA Program, Federal Permit  
Coordinator

**Public Notice Date:** October 9, 2015  
**Expiration Date:** November 9, 2015

Reference No.: NWP-2014-177/2  
Name: Port of Kalama

Reference No.: NWP-2015-111  
Name: Northwest Pipeline, LLC

Interested parties are hereby notified that the U.S. Army Corps of Engineers (Corps) and the Washington Department of Ecology (Ecology) have received an application to perform work in waters of the United States as described below and shown on the enclosed drawings.

The Corps will review the work in accordance with Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Ecology will review the work pursuant to Section 401 of the CWA, with applicable provisions of State water pollution control laws.

This public notice encompasses the work of two projects: NWP-2014-177/2 (Kalama Manufacturing and Marine Export Facility) and NWP-2015-111 (Kalama Lateral Project).

NWP-2014-177/2:

APPLICANT: Port of Kalama  
110 West Marine Drive  
Kalama, Washington 98625  
ATTN: Tabitha Reeder  
Telephone: (360) 673-2325

AGENT: BergerABAM  
210 East 13<sup>th</sup> Street, Suite 300  
Vancouver, Washington 98660  
ATTN: Dan Gunderson  
Telephone: (360) 823-6100

NWP-2015-111:

APPLICANT: Northwest Pipeline LLC  
295 Chipeta Way  
Salt Lake City, Utah 84108  
ATTN: Lenor Komatar  
Telephone: (801) 584-6259

AGENT: Northwest Pipeline LLC  
295 Chipeta Way  
Salt Lake City, Utah 84108  
ATTN: Kris Thorne  
Telephone: (801) 584-6474

## **LOCATION:**

NWP-2014-177/2: The project is located in the Columbia River at River Mile 72, at the Port of Kalama, at the terminus of Tradewinds Road, Kalama, Cowlitz County, Washington (Sections 25 and 36, Township 7 North, Range 2 West, and Section 31, Township 7 North, Range 1 West). The coordinates of the project are 46.043235° North, 122.87678° West.

NWP-2015-111: The 3.1-mile linear project is located in water bodies and wetlands in Kalama, Cowlitz County, Washington (Sections 28, 29, 31, 32, 33, Township 7 North, Range 1 West, and Section 36, Township 7 North, Range 2 West). The starting coordinates of the project are 46.053155 ° North, 122.812895° West. The ending coordinates of the project are 46.047724° North, 122.866394° West. The project would begin near Mile Post (MP) 1254.1 of the existing northwest mainline system. The route runs west following the Mt. Pleasant ridgeline for approximately 0.8 mile, then turning sharply southwest for 0.1 mile crossing the intersection of Raven Ridge and Hale Barber Roads. After crossing the intersection, the route continues southwest following Raven Ridge Road and the Mt. Pleasant ridgeline for about 0.3 mile before heading down slope in a westerly direction toward the floodplain of the Kalama River for 0.8 mile passing the north side of the Kress Lake recreation area. From there, the pipeline route continues to the northwest, crossing the Olympic Pipeline right-of-way, a Bonneville Power Administration power line right-of-way, and Old Highway 99 before turning southwest and crossing Interstate 5 (I-5) and the Burlington Northern Santa Fe Railroad line. After crossing the railroad, the pipeline would enter the Methanol Plant site.

## **WORK:**

**NWP-2014-177/2: The proposed project involves construction of the Kalama Manufacturing and Marine Export Facility to manufacture and export methanol.**

### **Marine Terminal Construction**

The proposed project involves the construction of a new marine terminal located on the Columbia River at River Mile 72. The marine terminal will consist of a dock, a berth, loading equipment, utilities, and a stormwater system. The terminal will consist of a single berth to accommodate the oceangoing tankers that will transport methanol to destination ports. The dock will be designed to accommodate oceangoing vessels. An estimated 3 to 6 ships per month will use the terminal based on the production of the plant. The berth will be designed to accommodate other vessel types and, when not in use for loading methanol, will be made available for general use by the Port, primarily as a lay berth where vessels could moor while waiting to use other Port berths and for cleaning holds.

The dock will consist of a transition platform, berth trestle, and turning platform. A single access trestle will be constructed measuring 34 feet wide and approximately 365 feet long to provide vehicle, equipment, and emergency access to the dock. From the access trestle, the berth face of the dock will extend approximately 530 feet downstream, and will consist of an approximately 100-foot by 54-foot transition platform, a 370-foot by 36-foot berth trestle, and a 104-foot by 112-foot turning platform. The dock will be supported by precast 24-inch octagonal concrete piles supporting a cast-in-place (CIP) concrete pile caps and precast, prestressed, haunched concrete deck panels. Piles will be installed by impact hammer or by vibratory hammer, dependent on pile type. The dock will total approximately 44,943 square feet and include 320 concrete piles and 16 steel pipe piles. The bottom of the superstructure (deck, pile caps, etc.) will be located above the ordinary high water mark.

For vessel mooring, two 15-foot-by-15-foot breasting dolphins will be constructed near the center of the berth trestle. Steel plates will bridge the distance between the dock and dolphins. Each breasting dolphin will consist of

seven 24-inch precast, prestressed concrete battered piles supporting a cast-in-place concrete pile cap with mooring bollards.

Four 15-foot-by-15-foot mooring dolphins will be constructed (two upstream and two downstream of the platforms) for securing bow and/or stern lines. Each mooring dolphin will consist of 12, 24-inch diameter precast 24-inch octagonal diameter concrete piles supporting a cast-in-place concrete pile cap. The dolphins will be equipped with mooring bollards and electric capstans. Access to the mooring dolphins will be provided from the platform by trussed walkways with open grating surfaces. The walkways will be 3 feet wide, have a combined length of 375 feet and will be supported by four 18-inch diameter steel pipe piles.

The fender system will consist of a 9-foot by 9-foot ultra-high molecular weight polyethylene (UHMW-PE) face panels with a super cone fender unit and two 12-inch diameter steel pipe fender piles. Below the fender panels, the fender piles will have 18-inch-diameter high-density polyethylene sleeves. Fender units will be placed on the dock face, two upstream and two downstream, and on the two breasting dolphins.

A small building will be constructed on a corner of the turning platform for dockworker use. A second small building will be constructed at the center of the dock, adjacent to the loading arms. The building will be used as an operations shack for the loading arms.

Since pile layout is conceptual, a 10 percent contingency has been added for the estimated number of concrete piles. This will accommodate potential revisions to the pile layout and configuration as the structural design is finalized. The project may require the installation of temporary piles during construction. Temporary piles are typically steel pipe or h-piles and will be driven with a vibratory hammer. These are placed and removed as necessary during the pile driving and over-water construction process. With the addition of the contingency, the proposed terminal will require the installation of approximately 320, 24-inch concrete piles; 12, 12-inch steel pipe piles; and 4, 18-inch steel pipe piles.

The proposed terminal will result in a total of approximately 44,943 square feet of new solid overwater coverage. A total of 1,079 square feet of new benthic impact will be associated with new pile footprints.

### **Berth Dredging**

The existing berth serving the Port's North Port Terminal will be extended downstream to accommodate vessel activities at the proposed dock. The extended berth area will be deepened to -48 feet Columbia River datum (CRD) with a 2-foot over dredge allowance consistent with the existing adjacent berth. The berth will extend at an angle from the edge of the Columbia River navigation channel to the berthing line at the face of the proposed dock. The footprint of the expanded berth will be approximately 18 acres, of which approximately 16 acres will require dredging to achieve the berth depth. Existing water depths in the proposed berth area vary from -50 feet CRD to -39 feet CRD. The total volume to be dredged the first year is approximately 126,000 cubic yards (cy).

Sediment characterization for dredged material placement suitability was conducted in February 2015. Characterization of sediments in the aquatic area was performed in accordance with guidance from the USACE Portland Sediment Evaluation Team (PSET) and its interim final guidelines, *Regional Sediment Evaluation Framework* (US Army Corps of Engineers et al. September 2009), for the Lower Columbia River Management Area. Results indicate that the sediment samples did not exceed the sediment quality guidelines and, as such, the material proposed for dredging and placement will be suitable for placement at any of the existing Port placement sites (including in-water and upland placement sites) and on the upland portion of the project site.

Dredged material will be placed upland at the project site to provide material for construction or for other uses, or it may be placed at existing authorized in-water and upland placement sites. The existing authorized (NWP-1994-462-1) in-water placement locations include: 1) flow lane placement to restore sediment at a deep scour hole associated with pile dike 77.48 M located on the Oregon side of the river; 2) flow lane placement to restore

sediment at a deep scour hole associated with pile dike 75.63 M located on the Washington side of the river; 3) beach nourishment at the Port's shoreline park (Louis Rasmussen Park) at RM 76; and 4) the Ross Island Sand and Gravel disposal site in Portland, Oregon. The existing authorized upland disposal sites include the South Port site located north of the CHS/TEMCO grain terminal at approximately RM 77 and the project site. Additional in-water and upland sites may be identified and permitted for dredge material placement in the future if necessary.

Maintenance dredging will likely be required to maintain the berth to the permitted depth, but is not proposed with this application. This activity will occur in the same manner as used for the establishment of the berth. The volumes and frequency of maintenance dredging events will vary based on the needs of the facility and the rate of shoaling. It is estimated that an average of 27,000 cubic yards of sediment could be deposited yearly.

### **Collector Well**

The applicant proposes to install a collector well to gather water for domestic uses. The collector well will be constructed by the Port near the Columbia River shoreline. The collector well will measure 22-feet wide (inside diameter) by 100-feet in depth and will connect to a 2,200 square foot pump station facility. 200-foot infiltration laterals will be installed through the caisson, at approximately 98 feet below the existing ground surface, and into the water-bearing formations using a hydraulic jacking tool. Lateral lines will be installed below the Columbia River Ordinary High Water Line.

### **Temporary Crane Pad, Barge Access, and Temporary Site Access for Construction**

It is expected that some of the components of the facility will be assembled offsite and transported to the project site via barge. These modules may be offloaded from the existing Steelscape dock, directly from barges using a temporary crane, or would be offloaded across temporary false work for the new dock trestle. A temporary concrete crane pad will be constructed on an upland portion of the site for offloading materials/equipment from barges. The temporary crane pad will be located in an area outside of riparian buffers and above the highest high tide line of the Columbia River.

Modules will be delivered to the site in self-anchoring barges, which will anchor offshore using spuds or similar temporary anchors. Barges will anchor offshore, and will not ground out on the beach. Barges will typically only be anchored in place for approximately 1-2 days, as material is being unloaded. Once offloaded, the equipment/modules will be moved into place and erected on the site. The temporary concrete pad will be demolished and the temporary crane removed prior to project completion.

### **Construction Timing**

Proposed in-water work will be constructed only during the in-water work window that is ultimately approved for this project. The proposed project would be developed in one or two phases. The construction duration would be approximately 26 to 48 months depending on whether it is built in one or two phases. Construction is expected to begin in mid-2016 and be completed as early as mid-2018 and as late as mid-2020. It is anticipated that pile driving will be completed over approximately 120 days (not necessarily consecutive) during the 2016-2017 and /or 2017-2018 in-water work windows. Ordinarily, work will be conducted during standard day light working hours, roughly 8 to 10 hours per day. Construction will take place from the uplands and/or from barges spudded in place.

### **NWP-2015-111: The proposed project involves the construction of a pipeline to transport methanol from an existing mainline line to the proposed Kalama Manufacturing and Export Facility described above.**

The Federal Energy Regulatory Commission is the lead agency for this project. The public notice for this action was filed under Docket No: CP15-8-000.

The applicant proposes to construct and operate approximately 3.1 miles of 24-inch diameter natural gas pipeline and related facilities extending from Northwest's mainline to the proposed methanol production facility.

The pipeline will begin at the existing 30-inch mainline (Mile point 0.0) and run west to the terminus at the new delivery meter station (MP 3.07) to be constructed within the boundary of the methanol plant.

The proposed project will cross five wetland systems for a total of approximately 2,372 feet. Horizontal Directional Drill (HDD) methods will be used to cross 1,252 feet of the five wetlands.

Of the seven water bodies crossed, five are intermittent and expected to be dry at the time of construction. If water is present at the time of construction, the five intermittent water bodies will be crossed using a dry open-cut ditch method – either fluming or dam and pump, during the Washington Department of Fish and Wildlife (WDFW) recommended in-water work window. If water is not present in the streams, the applicant will complete the crossing using standard upland construction methods. All water bodies will be backfilled with native material removed from the trenches and stream bottoms will be returned to preconstruction contours. Banks will be stabilized and temporary sediment barriers will be installed before returning the flow across the construction work area by removing the flumes or other temporary structures used to isolate the stream flow from the work area during installation of the pipeline. The estimated fill volume for all water bodies crossed by the pipeline via dry-open cut trench is 224 cubic yards. This is based on a trench depth of 8 feet and width of 3.3 feet with 2:1 side slopes and a total open-cut crossing length of 40 feet through the water bodies.

The two perennial water bodies will be crossed using HDD methods and are expected to occur during the recommended in-water work window for the Columbia River tributaries. The HD entry and exit points have been located as far away from the streams as possible and the drill path will be separated from the bottom of the channel by sufficiently dense sediments to limit the potential for inadvertent surface returns in to either waterway.

The primary impact to wetlands from the pipeline construction is temporary. Construction will impact about 4.03 acres of wetlands consisting of herbaceous, forested, or scrub-shrub habitats. There will be permanent impacts to approximately 0.006 acre of scrub-shrub wetlands; all other impacts will be temporary. Appropriate re-vegetation measures will be applied to each habitat type for restoration of temporary impacts.

The applicant will install temporary construction bridges to cross water bodies, where necessary. Clearing equipment may be allowed one pass to cross over water bodies before installation of equipment bridges. All other construction equipment will only cross water bodies using equipment bridges.

The applicant proposes to start construction of the pipeline and related facilities in early summer 2017. The recommended in-water work window for Kalama River tributaries is August 1-August 15 and the recommended in-water work window for Columbia River tributaries within the Project area is August 1-March 31.

**PURPOSE:**

NWP-2014-177/2: To construct a marine terminal and supporting infrastructure to export methanol to global markets by oceangoing vessel.

NWP-2015-111: To construct and operate a 3.1, 24-inch diameter natural gas pipeline to provide 320,000Dth/d of natural gas transportation to service NW Innovation Works proposed methanol plant.

**ADDITIONAL INFORMATION:** Copies of this public notice, which have been mailed or otherwise physically distributed, feature project drawings in black and white. The electronic version features those drawings in color, which we think more accurately communicates the scope of project impacts. To access the electronic version of this public notice, go to the Seattle District’s web page at <http://www.nws.usace.army.mil/> and scroll down the alphabetical listing of District elements, and click on “Regulatory” and then “Regulatory – Permits” for the Seattle District’s Regulatory homepage. Select the prominently displayed “Public Notices” heading and a list of recently

issued public notices will appear, in chronological order of the date of issuance. Select and view the listing for this project.

**MITIGATION:**

NWP-2014-177/2: The applicant has proposed three categories of mitigation for the proposed project: 1) pile removal; 2) engineered logjam (ELJ) installation; and 3) riparian habitat restoration and wetland buffer enhancement. The project does not propose impacts to wetlands.

**File Removal:** The Applicant proposes to remove two rows of existing timber piles now located in the freshwater intertidal backwater channel adjacent to the site on Port property. The Corps own one of these timber pile structures. The piles are either untreated or treated with creosote. Piles are estimated to range between 12 and 14 inches in diameter at the mud line. Approximately 320 piles will be removed from the two structures. The removal of these piles will restore a minimum of 251 square feet of benthic habitat, within an area approximately 0.73 acres in size. These structures, in their current configuration, affect the movement of water and sediment into and out of approximately 13 acres of this backwater area. The removal of the piles will facilitate sediment transport and seasonal flushing of this backwater area, which will help improve water quality and maintain this area as an off-channel refuge for juvenile salmonids in the long term.

**Engineered Log Jam (ELJ) Installation:** The applicant will install eight ELJs along the nearshore habitat along the Columbia River shoreline adjacent to the site. Each ELJ will measure approximately 20 by 20 feet and be composed of large-diameter untreated logs, logs with root wads attached, small wood debris, and boulders. Each ELJ will be a minimum of approximately 400 square feet in size, and the eight structures will represent a total of 3,200 square feet of new large woody material, installed along approximately 800 linear feet of Columbia River shoreline. The logjams will provide refuge and foraging opportunities for out-migrating juvenile salmonids.

**Riparian Restoration and Wetland Buffer Enhancement:** The Applicant propose to conduct riparian enhancement and invasive species management within an area approximately 1.41 acres in size along approximately 700 linear feet of the Columbia River shoreline at the site. The applicant also proposes to enhance approximately 0.58 acres of wetland buffer at the north end of the site to offset unavoidable wetland buffer impacts. The riparian and wetland buffer habitats will be enhanced by removing invasive species and installing native trees and shrubs that are common to this reach of the Columbia River shoreline and adjacent wetlands. Native plantings proposed for the riparian restoration include black cottonwood and a mix of native willow species including Columbia River willow (*Salix fluviatilis*), Pacific willow (*Salix lasiandra*), and Sitka willow (*Salix sitchensis*). Portions of the wetland buffer will be planted with black cottonwood. Invasive species management at the site will target locally common and aggressive invasive weed species, primarily Scotch broom and Himalayan blackberry (*Rubus armeniacus*). The restoration sites will be monitored and maintained for 5 years to document proper site establishment.

NWP-2015-111: The applicant proposes to provide compensatory mitigation by purchasing credits from the Columbia River Wetland Mitigation Bank to compensate wetland impacts. The applicant will purchase 0.01 credits to compensate for the permanent impacts to scrub-shrub wetlands and 0.052 credits to compensate for temporary impacts to wetland and riparian buffers.

**ADDITIONAL INFORMATION:** Additional information may be obtained from Ms. Melody White, Project Manager, U.S. Army Corps of Engineers at 503-808-4386 or e-mail [Melody.J.White@usace.army.mil](mailto:Melody.J.White@usace.army.mil)

**AUTHORITY:** This permit will be issued or denied under the following:

- Section 10, Rivers and Harbors Act 1899 (33 U.S.C. 403), for work in or affecting navigable waters of the United States.
- Section 404, Clean Water Act (33 U.S.C. 1344), for discharge of dredged or fill material into waters of the United States.

**ENDANGERED SPECIES:** The Endangered Species Act (ESA) requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and/or U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of ESA on all actions that may affect a species listed (or proposed for listing) under the ESA as threatened or endangered or any designated critical habitat. After receipt of comments from this public notice, the U.S. Army Corps of Engineers will evaluate the potential impacts to proposed and/or listed species and their designated critical habitat.

**ESSENTIAL FISH HABITAT:** The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996, requires all Federal agencies to consult with the NMFS on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH). If the U.S. Army Corps of Engineers (Corps) determines that the proposed action may adversely affect EFH for federally managed fisheries in Washington waters, the Corps will initiate EFH consultation with the NMFS. The Corps' final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the NMFS.

**CULTURAL RESOURCES:** The District Engineer has reviewed the latest published version of the National Register of Historic Places, lists of properties determined eligible and other sources of information.

NWP-2014-177/2: A historic properties investigation has been conducted within the permit area. No sites determined eligible for or listed on the National Register of Historic Places were found to exist within the permit area. Coordination with the Department of Archeology and Historic Preservation and Native American Tribes will be conducted as required under Section 106 of the National Historic Preservation Act.

NWP-2015-111: The Federal Regulatory Energy Commission as the lead agency for determining compliance with Section 106 of the National Historic Preservation Act will consult with the State Historic Preservation Office as appropriate. This public notice initiates consultation under Section 106 of the National Historic Preservation Act with any Tribe that has information or concerns with historic properties in the proposed permit area.

The District Engineer invites responses to this public notice from Native American Nations or tribal governments; Federal, State, and local agencies; historical and archeological societies; and other parties likely to have knowledge of or concerns with historic properties in the area. This public notice initiates consultation under Section 106 of the National Historic Preservation Act with any Tribe that has information or concerns with historic properties in the proposed permit area.

**SECTION 408:** Project NWP-2014-177/2, the Kalama Manufacturing and Export Facility, may affect a US Army Corps of Engineers federally authorized civil works project, and if so would be subject to review and approval pursuant to Section 14 of the Rivers and Harbors Act of 1899 and codified in 33 U.S.C. 408. Section 408 authorizes the Secretary of the Army to grant permission for the alternation or occupation or use of a Corps civil work project if it is determined that the activity will not be injurious to the public interest and will not impair the usefulness of the Corps project. The Section 408 review can be conducted concurrently with the Section 10

evaluation. However, the decision by the District Engineer on the Department of the Army permit applicant pursuant to Sections 10 cannot and will not be rendered prior to the decision on the Section 408 request.

**PUBLIC HEARING:** Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

**EVALUATION – CORPS** - The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

The Corps is soliciting comments from the public; Native American Nations or tribal governments; Federal, State, and local agencies and officials; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or deny a permit for the work. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity.

The described discharge will be evaluated for compliance with guidelines promulgated by the Environmental Protection Agency under authority of Section 404(b) (1) of the CWA. These guidelines require an alternative analysis for any proposed discharge of dredged or fill material into waters of the United States.

**EVALUATION—ECOLOGY:** Ecology is soliciting comments from the public; Federal, Native American Nations or tribal governments, State, and local agencies and officials; and other interested parties in order to consider and evaluate the impacts of this activity. Ecology will be considering all comments to determine whether to certify or deny certification for the proposed project.

**ADDITIONAL EVALUATION:** The collector well will be constructed under Groundwater Permit No. G2-30283 issued by the Washington State Department of Ecology.

The Washington State Department of Ecology is reviewing the associated pipeline, production plant, and terminal under the State Environmental Policy Act as an Environmental Impact Statement (EIS). The Port of Kalama and Cowlitz County are SEPA Co-Lead Agencies for this process.

The Federal Energy Regulatory Commission is reviewing the proposed pipeline to ensure the pipeline meets their regulations. The public notice for this action was filed under Docket No: CP15-8-000.

**ADDITIONAL EVALUATION:** The Environmental Protection Agency is reviewing this work for compliance with the applicable Federal water quality standards pursuant to Section 401 of the Clean Water Act.

**COMMENT AND REVIEW PERIOD:** Conventional mail or e-mail comments on this public notice will be accepted and made part of the record and will be considered in determining whether it would be in the public interest to authorize this proposal. In order to be accepted, e-mail comments must originate from the author's e-mail account and must include on the subject line of the e-mail message the permit applicant's name and reference number as shown below. Either conventional mail or e-mail comments must include the permit applicant's name and reference number, as shown below, and the commenter's name, address, and phone number. All comments whether conventional mail or e-mail must reach this office, no later than the expiration date of this public notice to ensure consideration.

**CORPS COMMENTS:** All e-mail comments should be sent to [Melody.J.White@usace.army.mil](mailto:Melody.J.White@usace.army.mil). Conventional mail comments should be sent to U.S. Army Corps of Engineers, Regulatory Branch, Attn: Melody White, Post Office Box 2946, Portland, OR 97208-2946.

**ECOLOGY COMMENTS:** Any person desiring to present views on the project pertaining to a request for water quality certification under Section 401 of the CWA, may do so by submitting written comments to the following address: Department of Ecology, Attn: SEA program – Federal Permit Coordinator, P.O. Box 47600, Olympia, Washington, 98504-7600, or e-mail to [ecyrefedpermit@ecy.wa.gov](mailto:ecyrefedpermit@ecy.wa.gov)

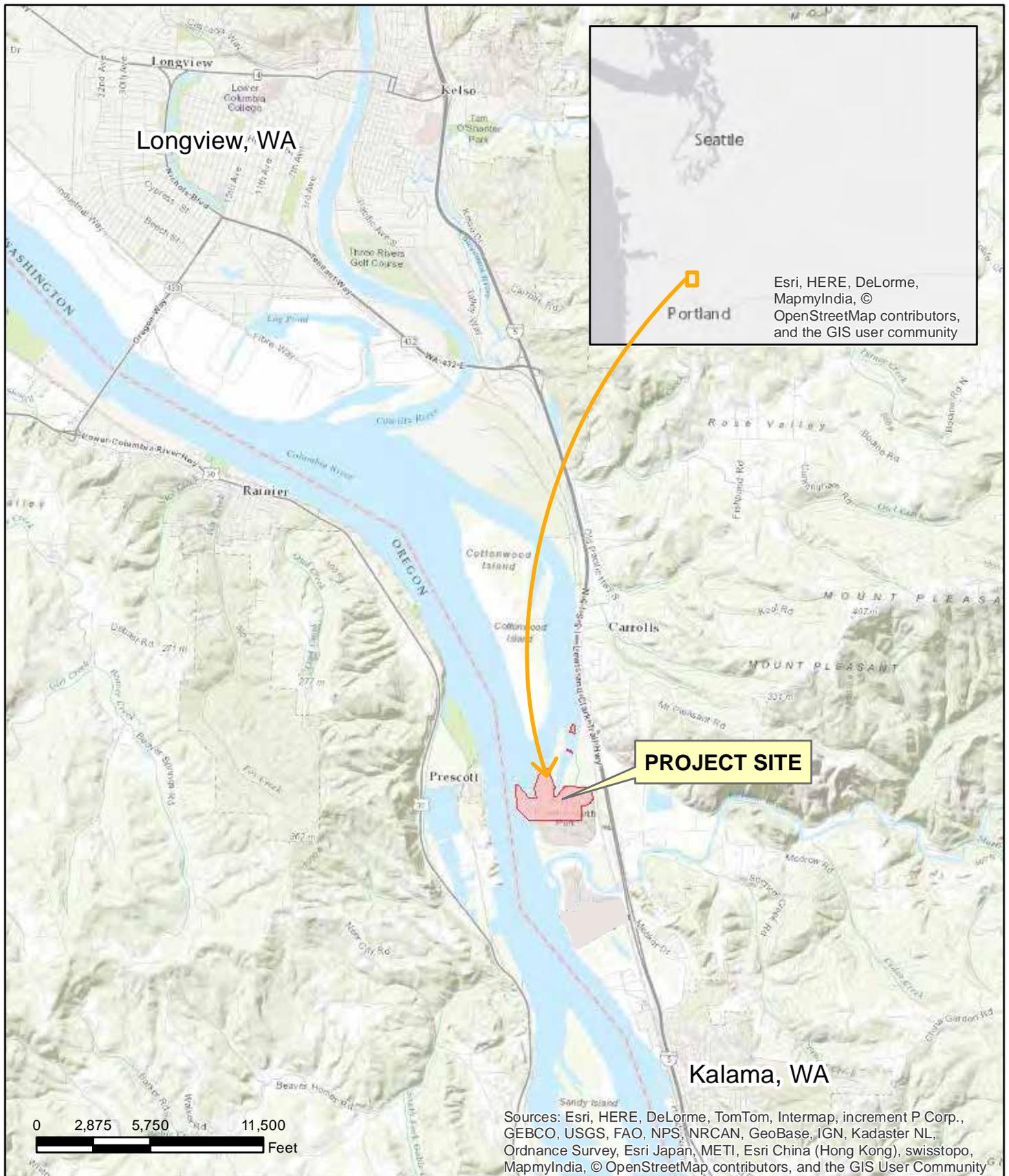
To ensure proper consideration of all comments, responders must include the following name and reference number in the text of their comments: NWP-2014-177/2 (Kalama Manufacturing and Marine Export Facility) and NWP-2015-111 (Kalama Lateral Project).

Enclosure 1: Fifteen (15) sheets, labeled NWP-2014-177/2

Enclosure 2: Seven (7) sheets, labeled NWP-2015-111

NWP-2014-177/2

Enclosures



PURPOSE: Construct a facility to manufacture and export methanol

IN: Columbia River  
 COUNTY OF: Cowlitz County  
 STATE OF: WA  
 APPLICATION BY: Port of Kalama

ADJACENT PROPERTY OWNERS: Port of Kalama, WA DNR, BNSF, WDFW

FIGURE 1: VICINITY MAP



Address: 110 W. Marine Dr.  
 Kalama, Wa. 98625

PROJECT: Kalama Manufacturing and Marine Export Facility Project

LATITUDE: 45° 02' 40"  
 LONGITUDE: -122° 52' 00"  
 DATUM: CRD Columbia River Datum  
 OHWM (USACE)= +11.6' CRD

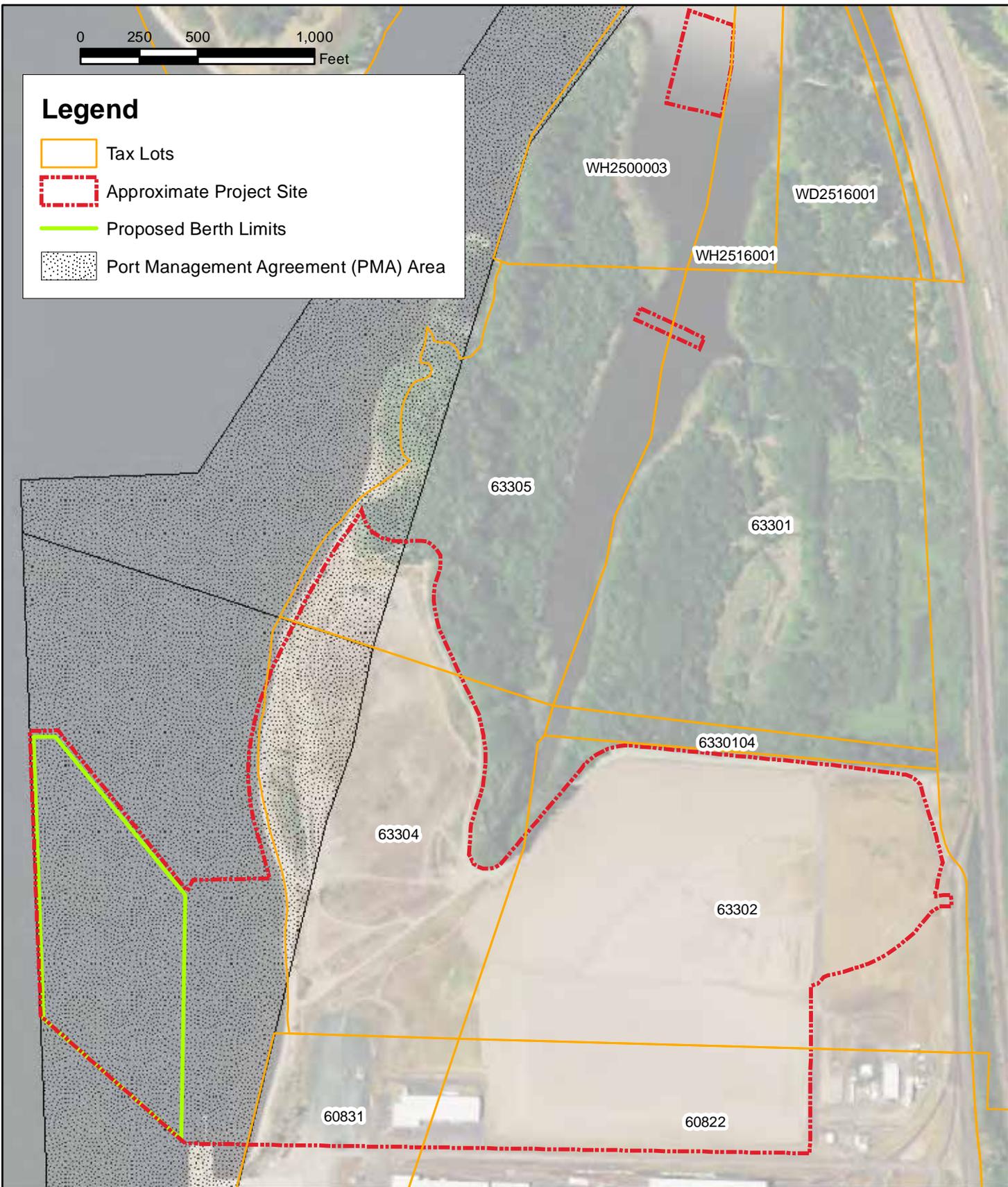


August 2015

0 250 500 1,000  
Feet

### Legend

- Tax Lots
- Approximate Project Site
- Proposed Berth Limits
- Port Management Agreement (PMA) Area



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IN: Columbia River  
 COUNTY OF: Cowlitz County  
 STATE OF: WA  
 APPLICATION BY: PORT OF Kalama

ADJACENT PROPERTY OWNERS: Port of Kalama, WA DNR, WDFW, BNSF

FIGURE 2: PARCEL MAP



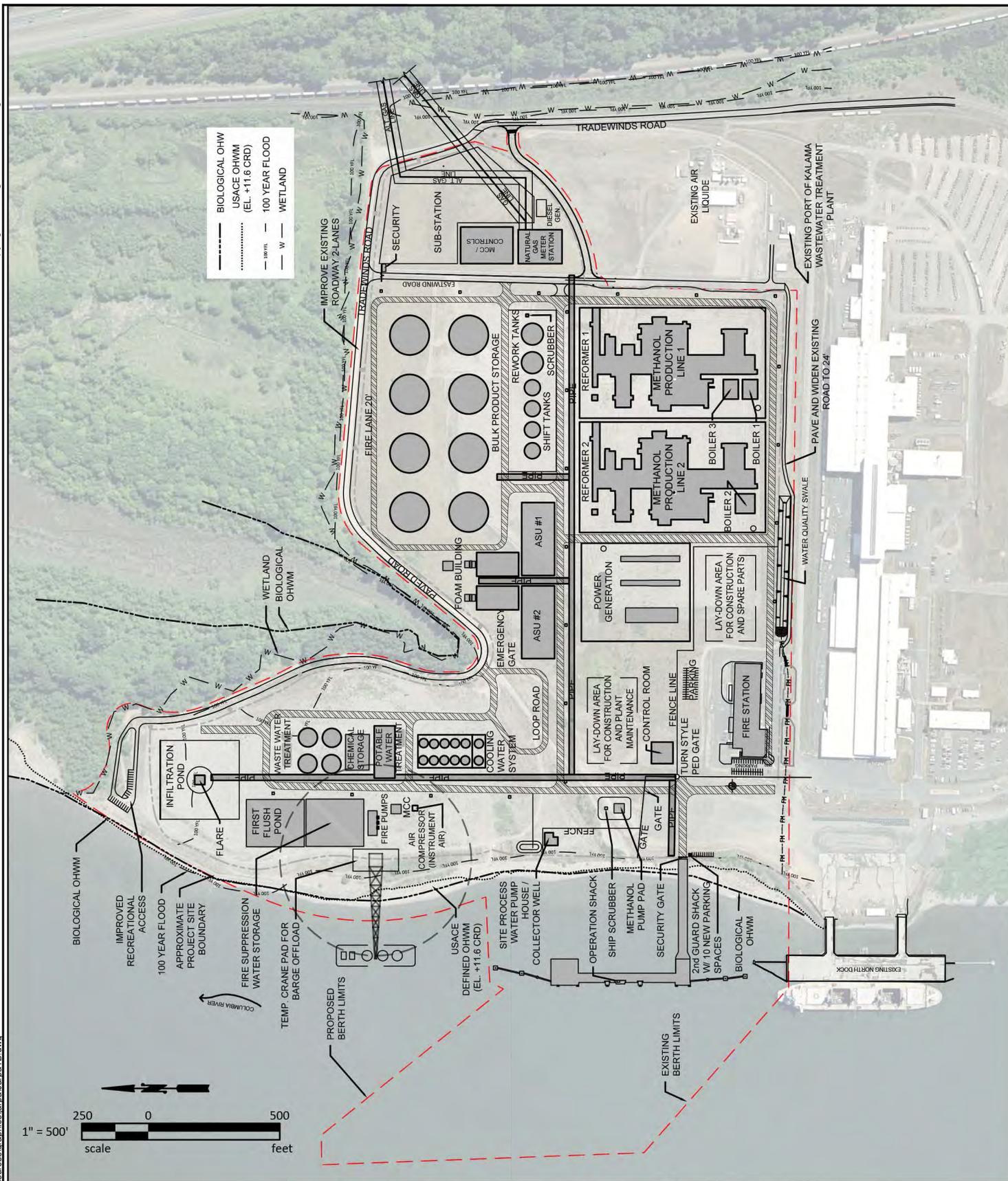
Address: 110 W. Marine Dr.  
 Kalama, Wa. 98625

PROJECT: Kalama Manufacturing and Marine Export Facility Project

LATITUDE: 45° 02' 40"  
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 DATUM: CRD Columbia River Datum  
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August 2015



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PURPOSE: Construct a facility to manufacture and export methanol

IN: Columbia River, river mile 72  
 COUNTY OF: Cowlitz  
 APPLICATION BY: Port of Kalama

ADJACENT PROPERTY OWNERS: Port of Kalama, WA  
 DNR, BNSF, WDFW

FIGURE 3: CONCEPTUAL SITE PLAN

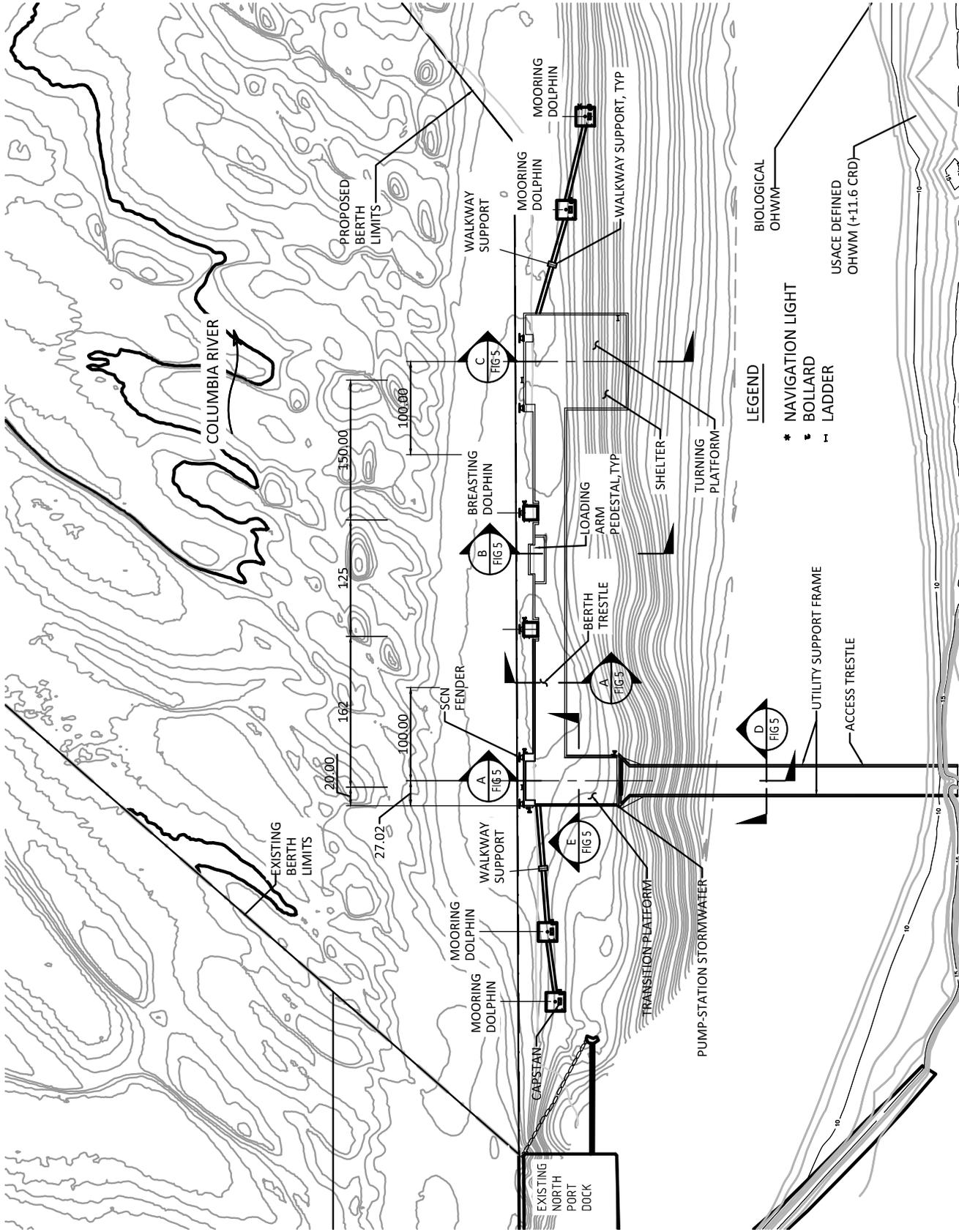


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August 2015



**PURPOSE:** Construct a facility to manufacture and export methanol  
**IN:** Columbia River, river mile 72  
**COUNTY OF:** Cowlitz  
**APPLICATION BY:** Port of Kalama  
**ADJACENT PROPERTY OWNERS:** Port of Kalama, WA  
 DNR, BNSF, WDFW

**FIGURE 4: Marine Terminal Plan**

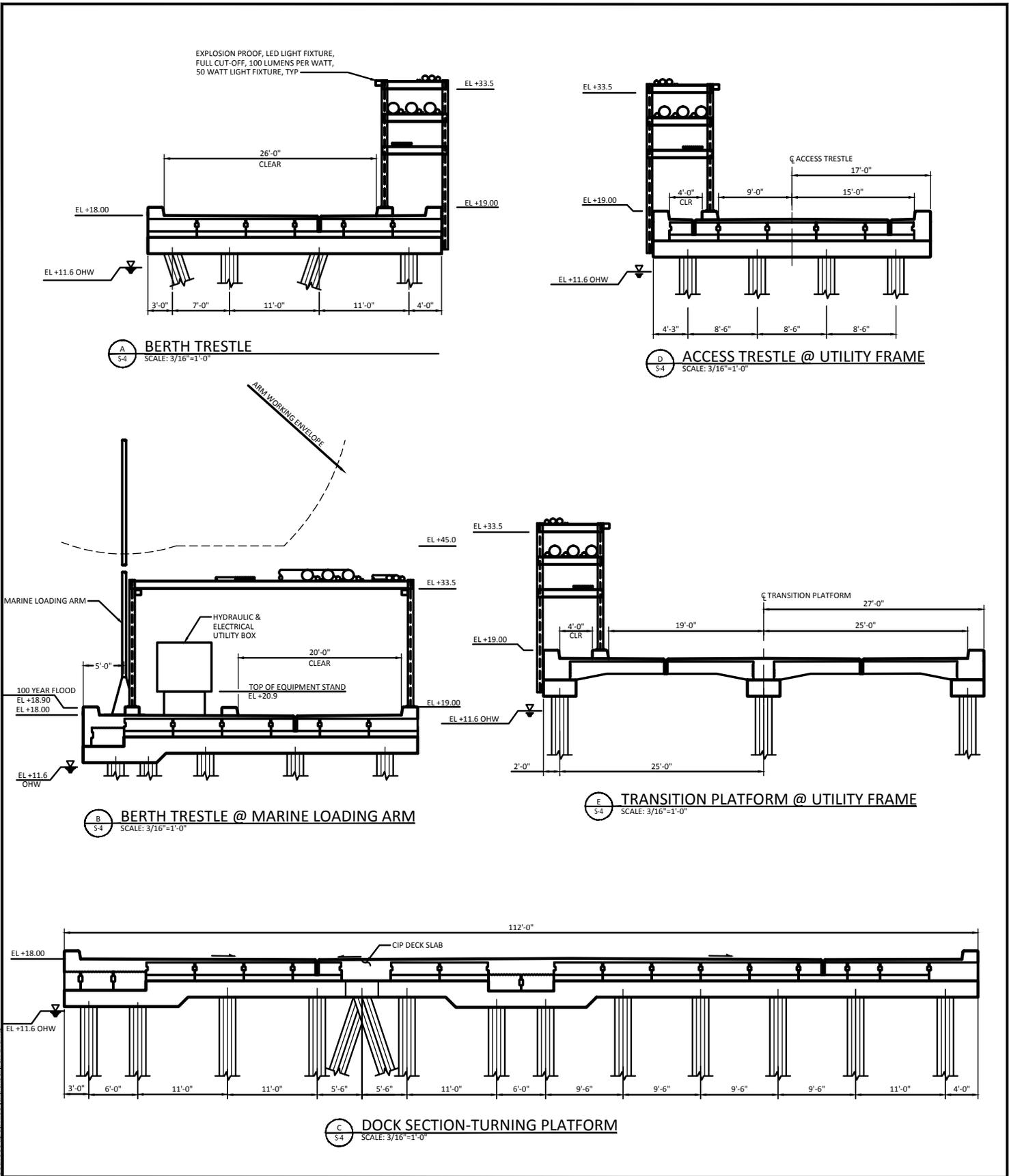
  
 Address: 110 W. Marine Dr.  
 Kalama, WA. 98625

**PROJECT:** Kalama Manufacturing and Marine Export Facility Project

SCHEMATIC  
 SUPPLEMENTAL  
**DATUM:** CRD Columbia River Datum  
 OHWM (USACE)= +11.6' CRD

August 2015

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**PURPOSE:** Construct a facility to manufacture and export methanol  
**IN:** Columbia River, river mile 72  
**COUNTY OF:** Cowlitz  
**APPLICATION BY:** Port of Kalama  
**ADJACENT PROPERTY OWNERS:** Port of Kalama, WA  
 DNR, BNSF, WDFW

**FIGURE 5: DOCK CROSS-SECTIONS**



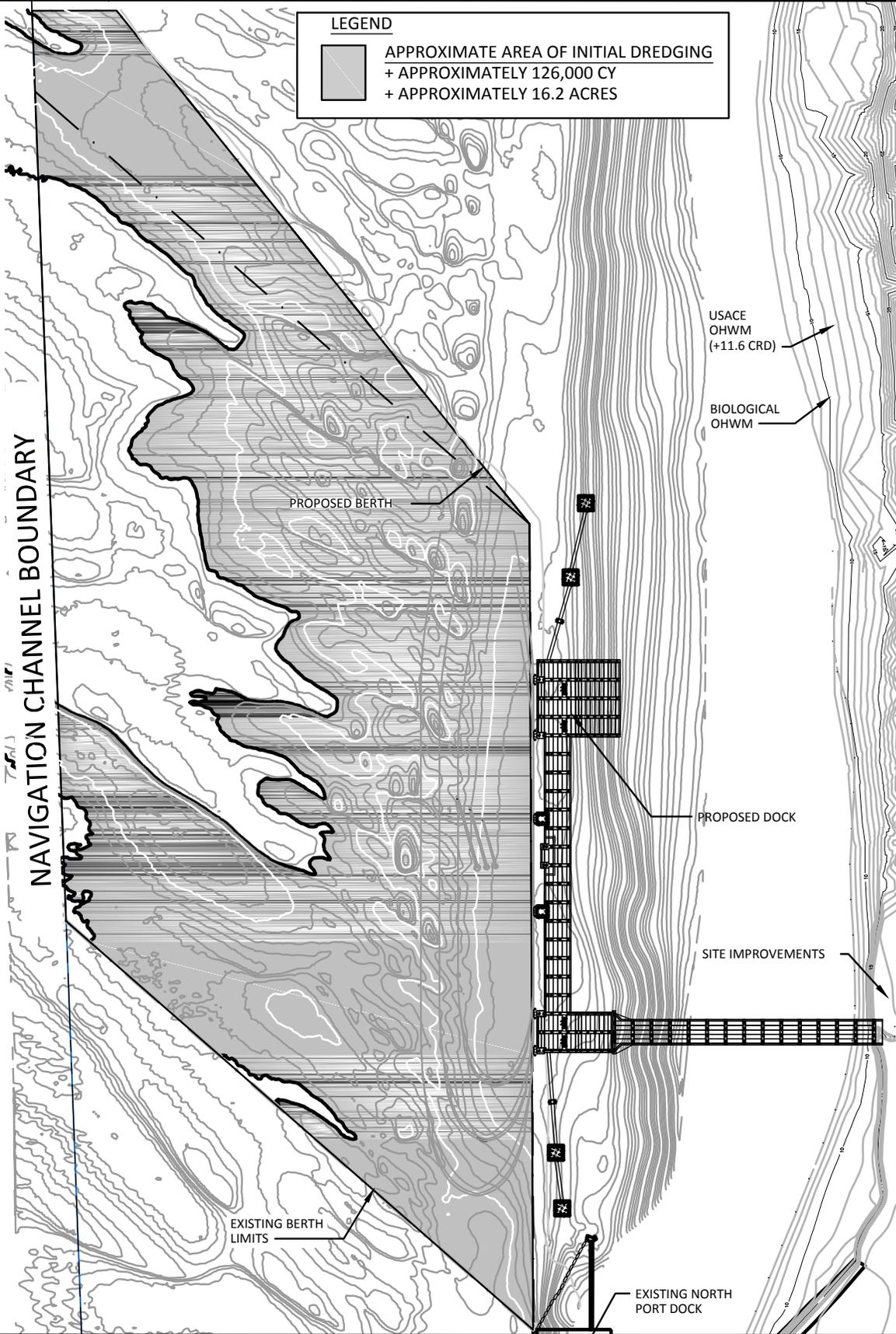
Address: 110 W. Marine Dr.  
 Kalama, WA. 98625

**PROJECT:** Kalama Manufacturing and Marine Export Facility Project

DATUM: CRD Columbia River Datum  
 OHWM (USACE)= +11.6' CRD

August 2015





**PURPOSE:** Construct a facility to manufacture and export methanol  
**IN:** Columbia River, river mile 72  
**COUNTY OF:** Cowlitz  
**APPLICATION BY:** Port of Kalama  
**ADJACENT PROPERTY OWNERS:** Port of Kalama, WA  
 DNR, BNSF, WDFW

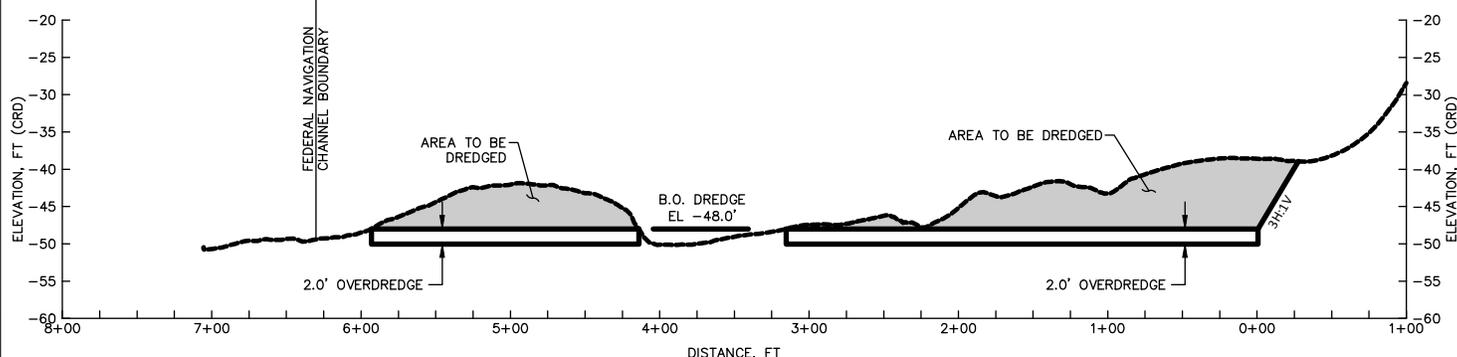
**FIGURE 7: DREDGING PLAN**

  
 Address: 110 W. Marine Dr.  
 Kalama, WA. 98625

**PROJECT:** Kalama Manufacturing and Marine Export Facility Project

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 ŠUPŌQWŌMĖGŌ ĖĖĀ  
**DATUM:** CRD Columbia River Datum  
**OHWM (USACE)=** +11.6' CRD

August 2015



**PURPOSE:** Construct a facility to manufacture and export methanol  
**IN:** Columbia River, river mile 72  
**COUNTY OF:** Cowlitz  
**APPLICATION BY:** Port of Kalama  
**ADJACENT PROPERTY OWNERS:** Port of Kalama, WA  
 DNR, BNSF, WDFW

**FIGURE 8: DREDGING SECTION**



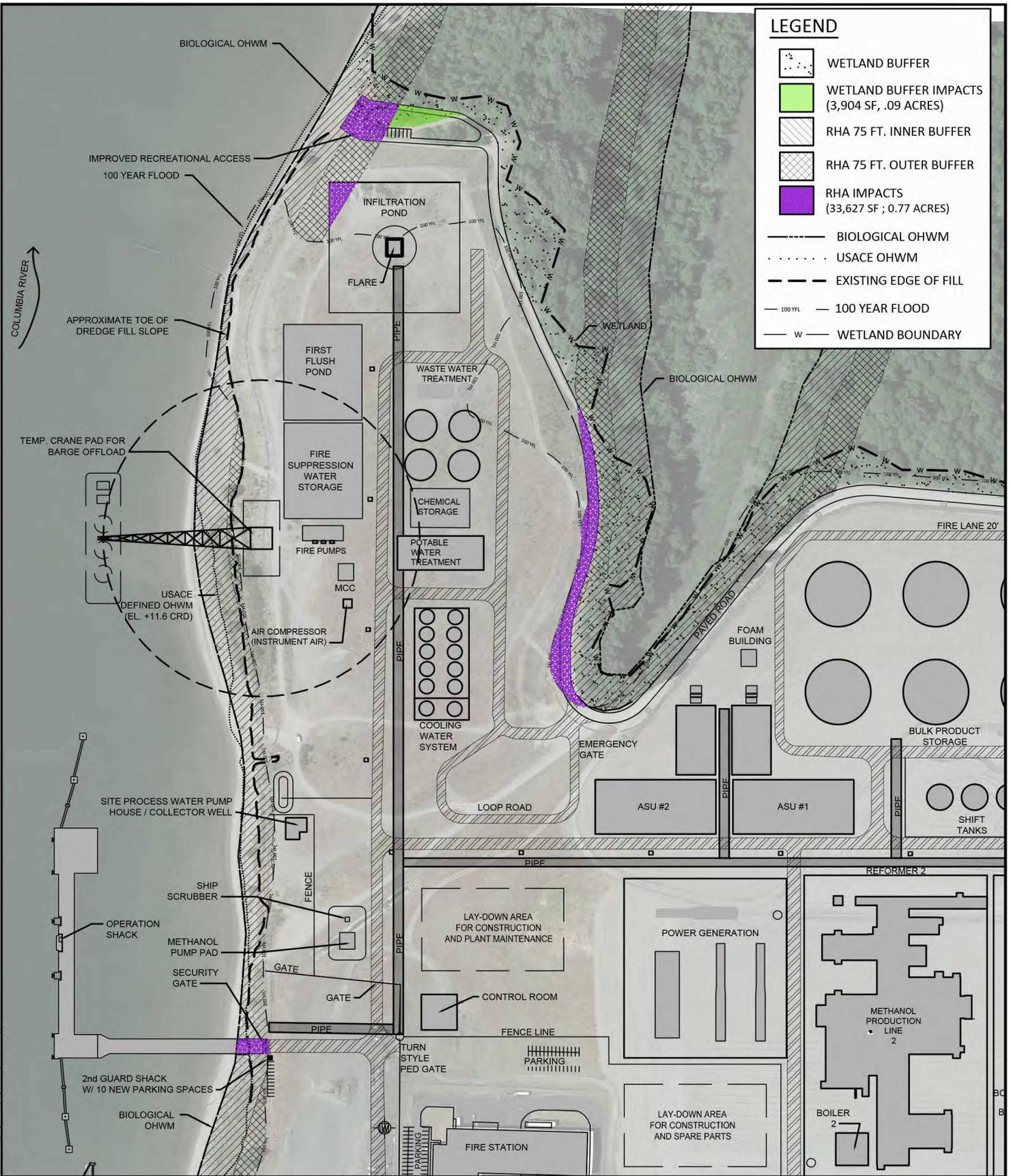
Address: 110 W. Marine Dr.  
 Kalama, WA. 98625

**PROJECT:** Kalama Manufacturing and Marine Export Facility Project

DATUM: CRD Columbia River Datum  
 OHWM (USACE)= +11.6' CRD

August 2015





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 Last Saved by: Sam.jones on: Apr 13, 2015 10:57 AM

**PURPOSE:** Construct a facility to manufacture and export methanol  
**IN:** Columbia River, river mile 72  
**COUNTY OF:** Cowlitz  
**APPLICATION BY:** Port of Kalama  
**ADJACENT PROPERTY OWNERS:** Port of Kalama, WA  
 DNR, BNSF, WDFW

**FIGURE 10 : RIPARIAN & WETLAND BUFFER IMPACTS**

**Port of Kalama**

Address: 110 W. Marine Dr.  
 Kalama, WA. 98625

**PROJECT:** Kalama Manufacturing and Marine Export Facility Project

LATITUDE: 45° 02' 40"  
 LONGITUDE: -122° 52' 00"  
 DATUM: CRD Columbia River Datum  
 OHWM (USACE)= +11.6' CRD

August 2015









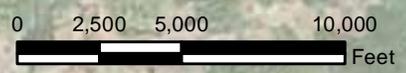
**Legend**

- Approximate Project Site
- Maximum Limits of Detectable Aquatic Noise
- Maximum Limits of Detectable Terrestrial Noise

Longview, WA

4 MILE RADIUS

Kalama, WA



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

PURPOSE: Construct a facility to manufacture and export methanol  
 IN: Columbia River  
 COUNTY OF: Cowlitz County  
 STATE OF: WA  
 APPLICATION BY: PORT OF Kalama  
 ADJACENT PROPERTY OWNERS: Port of Kalama, WA DNR, WDFW, BNSF

**FIGURE 15: ACTION AREA**

Address: 110 W. Marine Dr.  
 Kalama, Wa. 98625

**PROJECT: Kalama Manufacturing and Marine Export Facility Project**

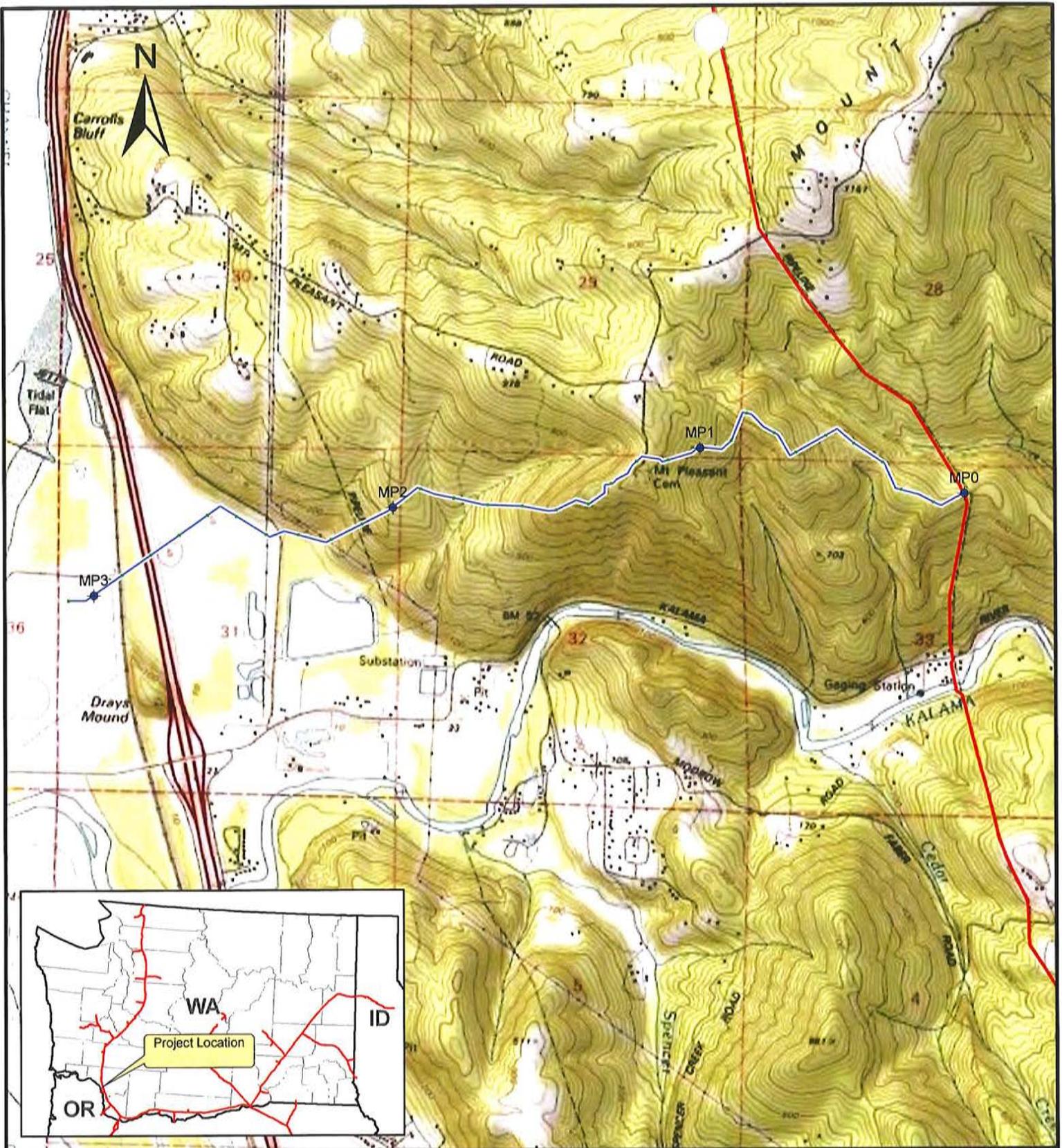
LATITUDE: 45° 02' 40"  
 LONGITUDE: -122° 52' 00"  
 DATUM: CRD Columbia River Datum  
 OHWM (USACE)= +11.6' CRD



August 2015

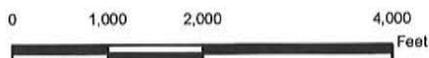
NWP-2015-111

Enclosures



**Legend**

- Proposed Kalama Energy Pipeline
- NWP Ignacio to Sumas Mainline
- Mileposts



Northwest Pipeline LLC  
Kalama Lateral Project



**Figure 1**  
**General Location**

Cowlitz County, Washington





**Figure 2B**  
**Kalama Lateral Project**  
**Northwest Pipeline LLC**  
 Wetland and Riparian Buffers

REVISED: 11/15/2012    DRAWN BY: JPBOENTJE



Sheet 1 of 4    1:6,000

**Legend**

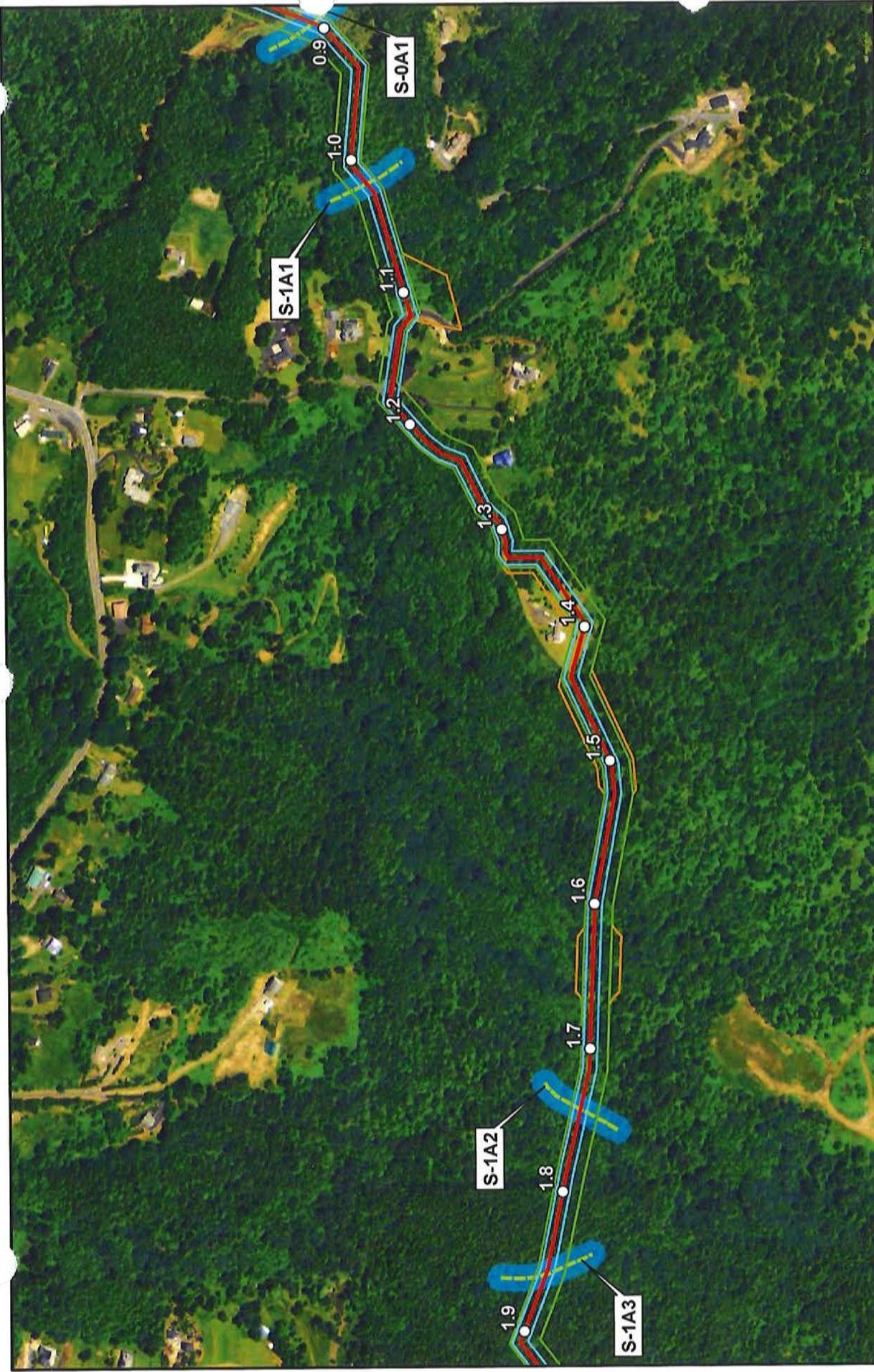
	Proposed Timber Rock Route
	Permanent ROW
	Construction ROW
	TEWA

	Delineated Wetland
	NWI Wetland
	Intermittent Stream
	Perennial Stream
	Buffer

0    250    500  
 Feet

North Arrow

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**Figure 2B**  
**Kalama Lateral Project**  
**Northwest Pipeline LLC**  
 Wetland and Riparian Buffers

REVISED: 11/15/2012 | DRAWN BY: JPBOENTJE



Sheet 2 of 4     1:6,000

**Legend**

- Proposed Timber Rock Route
- Permanent ROW
- Construction ROW
- TEWA
- Delineated Wetland
- NW1 Wetland
- Intermittent Stream
- Perennial Stream
- Buffer

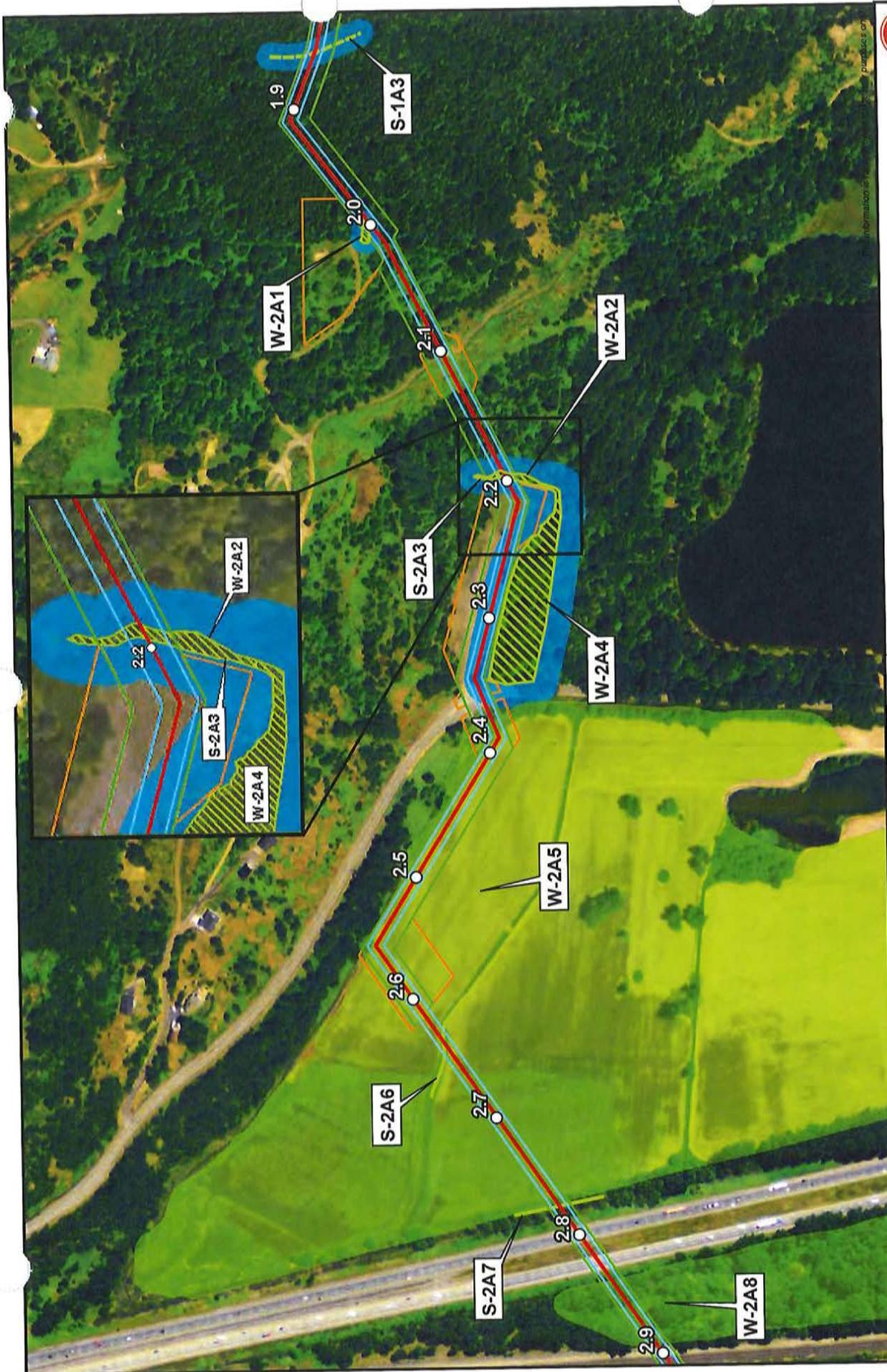
**Scale**

0     250     500  
 Feet

**North Arrow**

↑

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**Figure 2B**  
**Kalama Lateral Project**  
**Northwest Pipeline LLC**  
**Wetland and Riparian Buffers**



	Proposed Timber Rock Route
	Permanent ROW
	Construction ROW
	TEWA
	Delineated Wetland
	NWI Wetland
	Intermittent Stream
	Perennial Stream
	Buffer

Sheet 3 of 4      1:6,000

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### Figure 2B

## Kalama Lateral Project

### Northwest Pipeline LLC

#### Wetland and Riparian Buffers



<ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; border: 1px solid red; margin-right: 5px;"></span> Proposed Timber Rock Route</li> <li><span style="display: inline-block; width: 15px; height: 10px; border: 1px solid blue; margin-right: 5px;"></span> Permanent ROW</li> <li><span style="display: inline-block; width: 15px; height: 10px; border: 1px solid green; margin-right: 5px;"></span> Construction ROW</li> <li><span style="display: inline-block; width: 15px; height: 10px; border: 1px solid orange; margin-right: 5px;"></span> TEWA</li> </ul>	<ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></span> Delineated Wetland</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: yellow; margin-right: 5px;"></span> NMI Wetland</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: lightgreen; border: 1px solid black; margin-right: 5px;"></span> Intermittent Stream</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: lightblue; border: 1px solid black; margin-right: 5px;"></span> Perennial Stream</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: lightblue; margin-right: 5px;"></span> Buffer</li> </ul>
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N



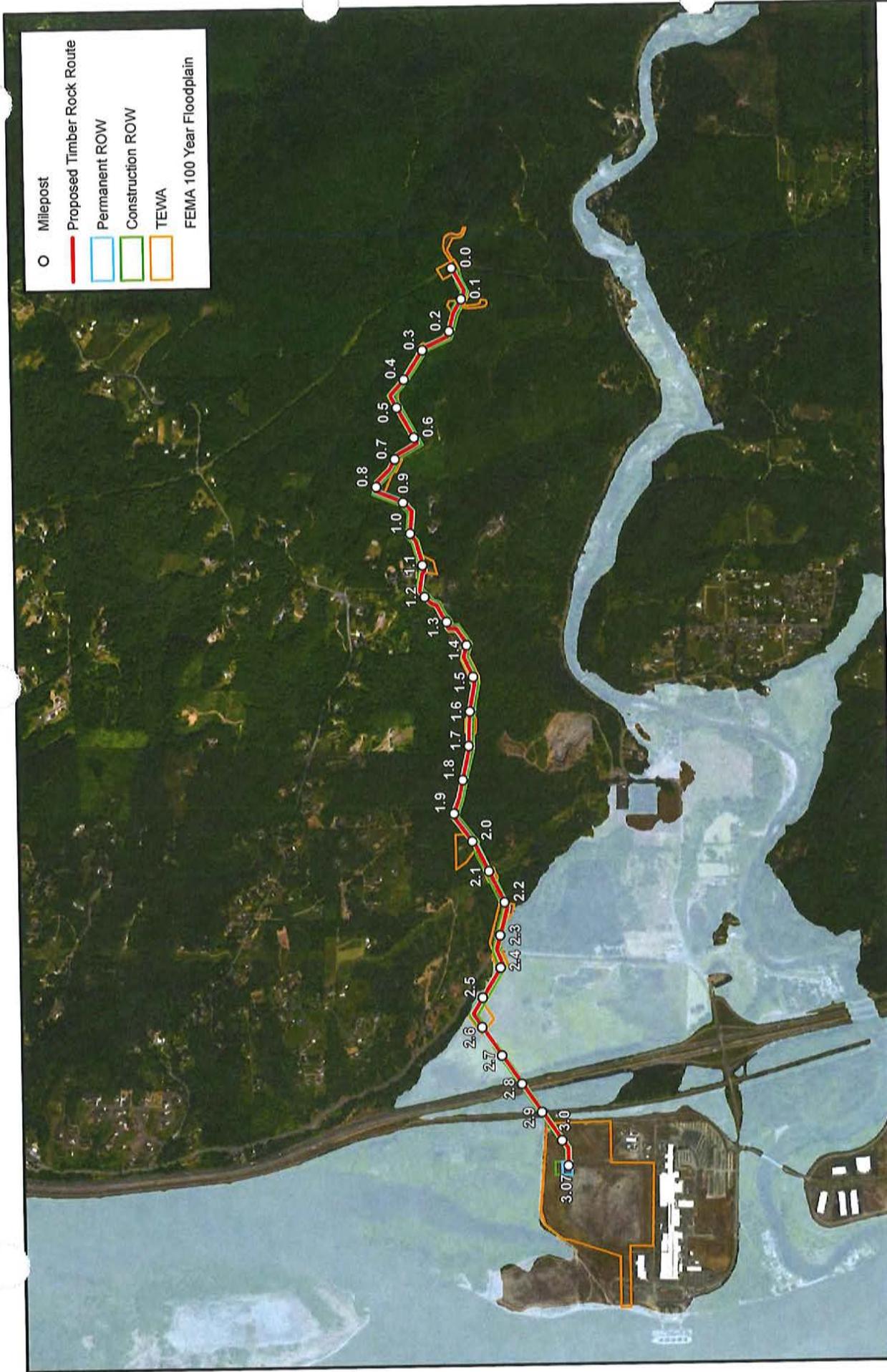


0 250 500  
Feet

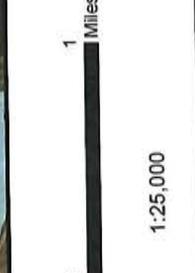
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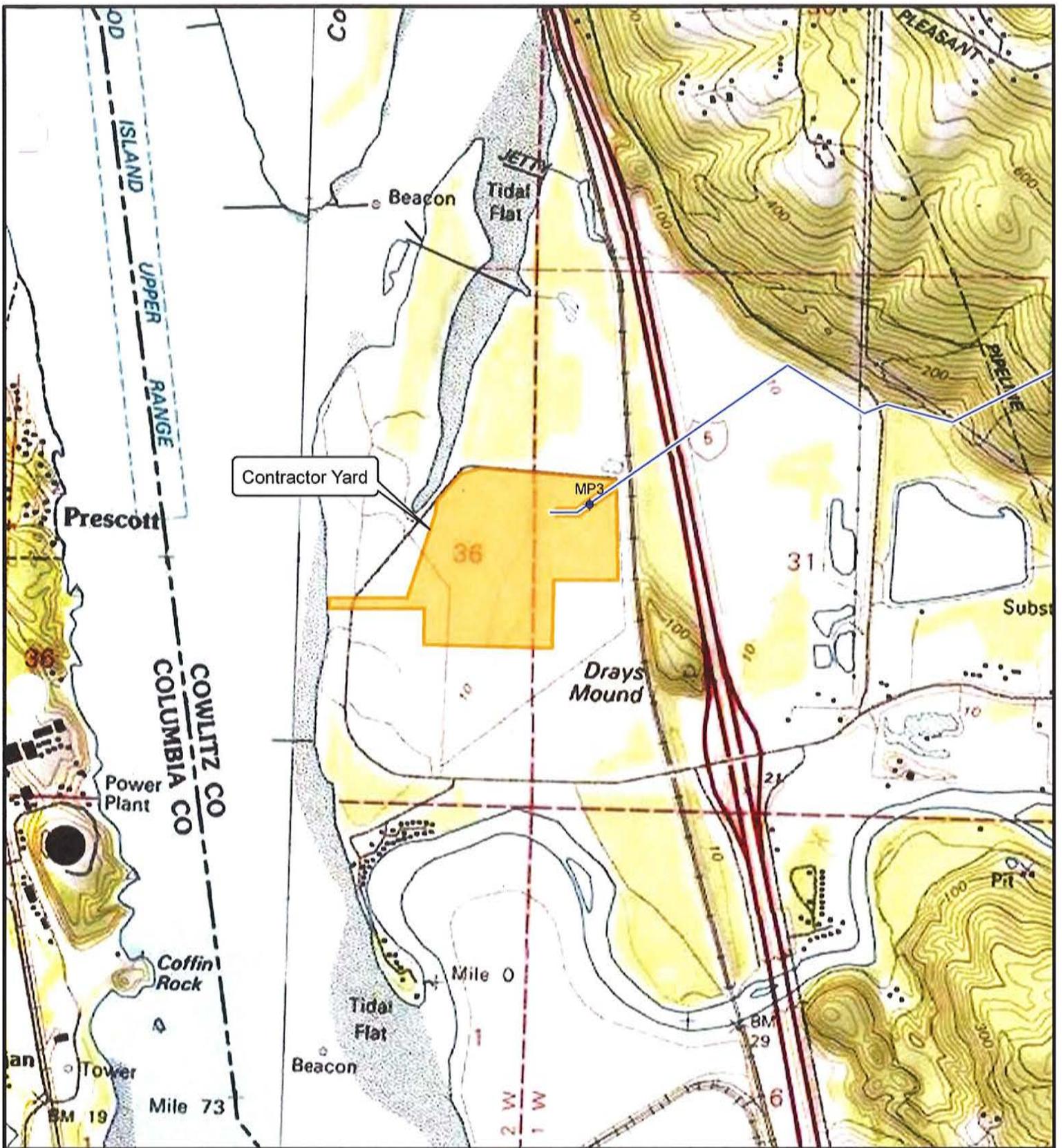


**Figure 3**  
**Kalama Lateral Project**  
**Northwest Pipeline LLC**  
**FEMA 100 Year Floodplain**



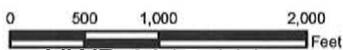
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**Legend**

-  Proposed Kalama Energy Pipeline
-  Contractor Yard
-  Mileposts

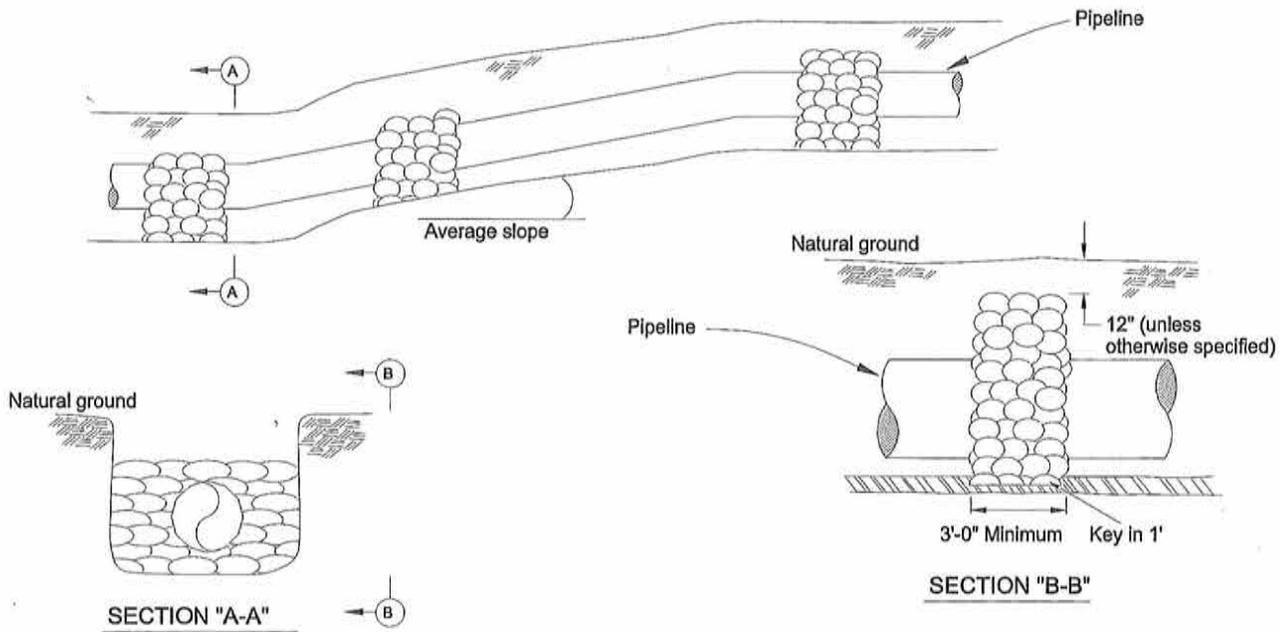


Northwest Pipeline LLC  
Kalama Lateral Project

Figure 4



Contractor Yard  
Cowlitz County, Washington

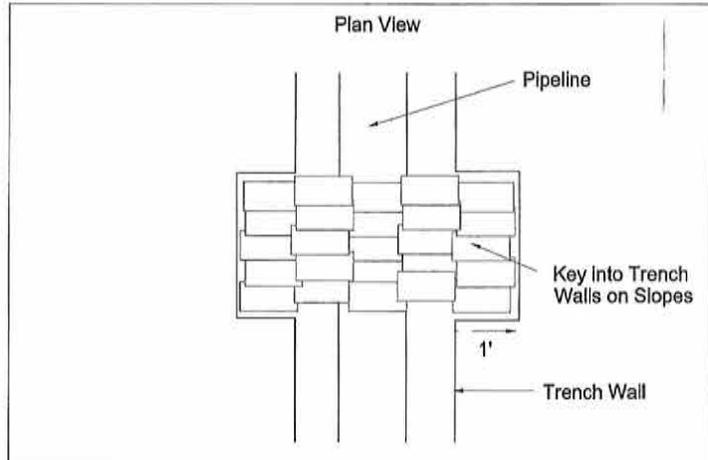


**Notes:**

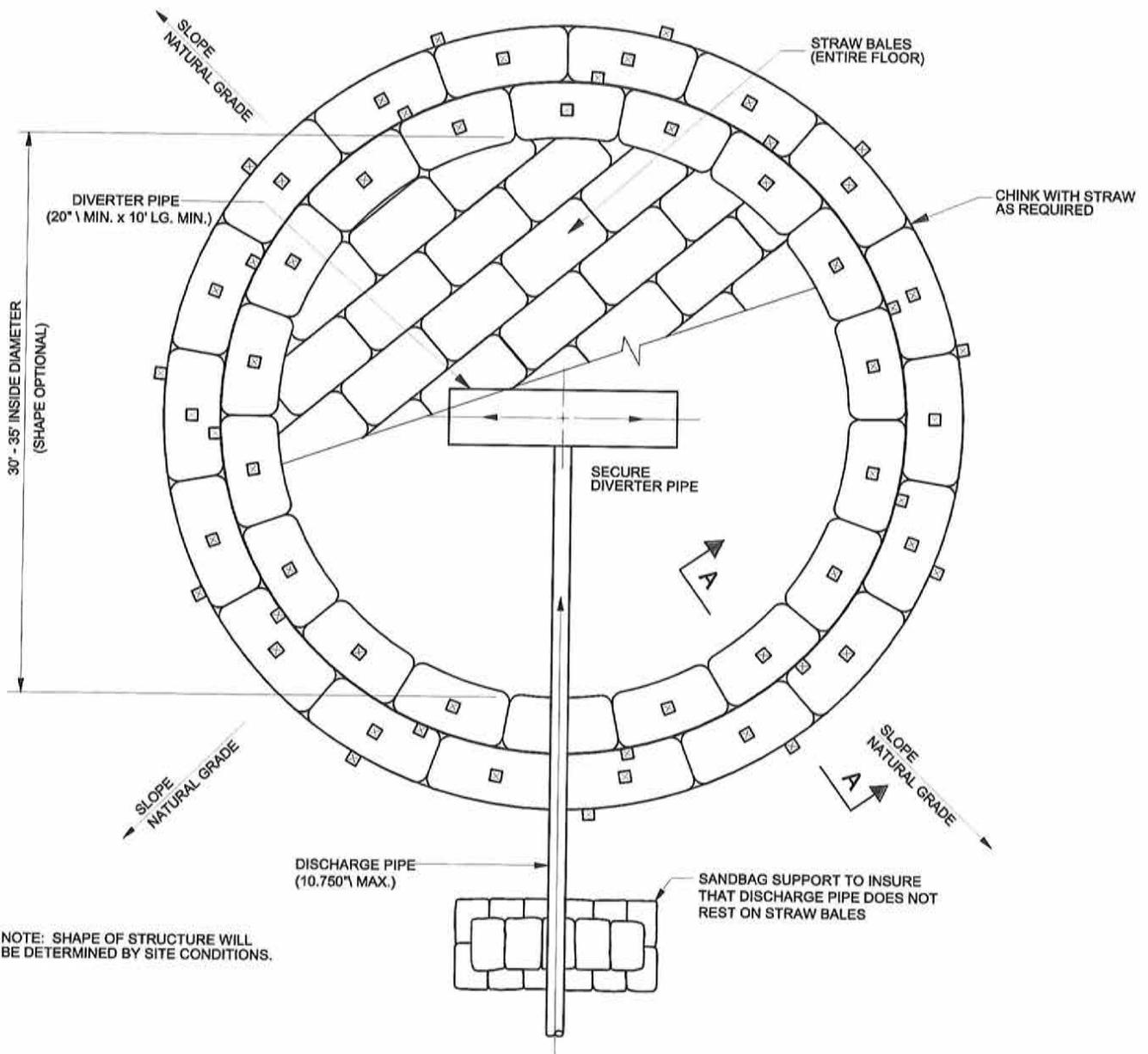
Topsoil shall not be used in trench breakers.

Spacing of trench breakers shall be as shown on the Environmental Construction Alignment sheets or as directed by Northwest Pipeline LLC authorized representative. Soft plugs (unexcavated sections along the pipeline trench line) may be left in place to perform function of permanent breakers prior to pipe placement.

SLOPE PERCENT	SPACING (feet)
10-15	500
15-20	300
20-30	150
>30	100



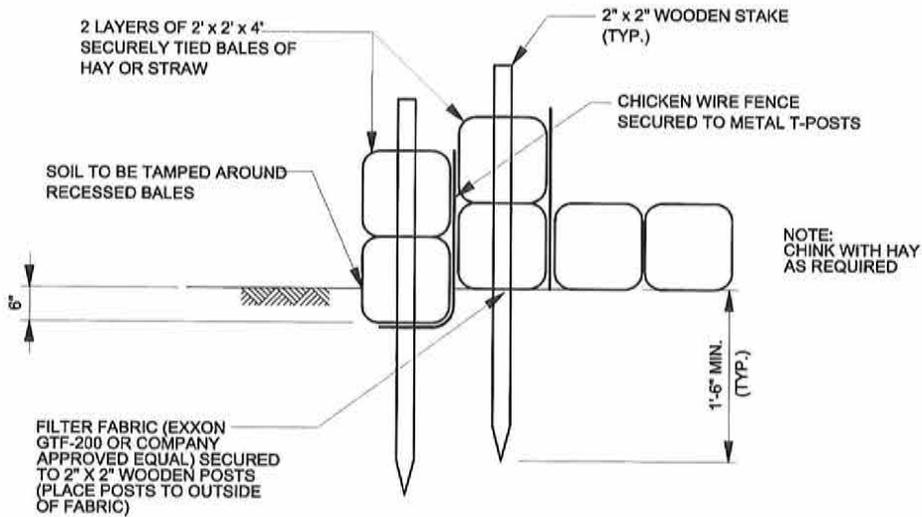
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DRAWING NO.	TITLE								
						TRENCH BREAKER INSTALLATION			
REVISIONS						DRAWN BY:	DATE:	ISSUED FOR BID:	SCALE:
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	NWP	9-02-2014	NONE
							CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:
							APPROVED BY:	DATE:	DRAWING NUMBER: 2504.34-X-0001
									SHEET 1 OF 1



## HYDROSTATIC TEST DEWATERING STRUCTURE

### TEMPORARY EROSION CONTROL MEASURE

REFERENCE DRAWINGS						NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT  TYPICAL HYDROSTATIC TEST DEWATERING STRUCTURE				
DRAWING NO.	TITLE									
REVISIONS						DRAWN BY: NWP	DATE: 9-02-2014	ISSUED FOR BID:	SCALE: NONE	
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:	
							APPROVED BY:	DATE:	DRAWING NUMBER: 2504.34-X-0002	
									SHEET	1
									Enclosure 2	3



SECTION A-A

NOTE:  
STAKES SECURING FILTER FABRIC AND  
CHICKEN WIRE FENCE ARE NOT SHOWN  
FOR CLARITY

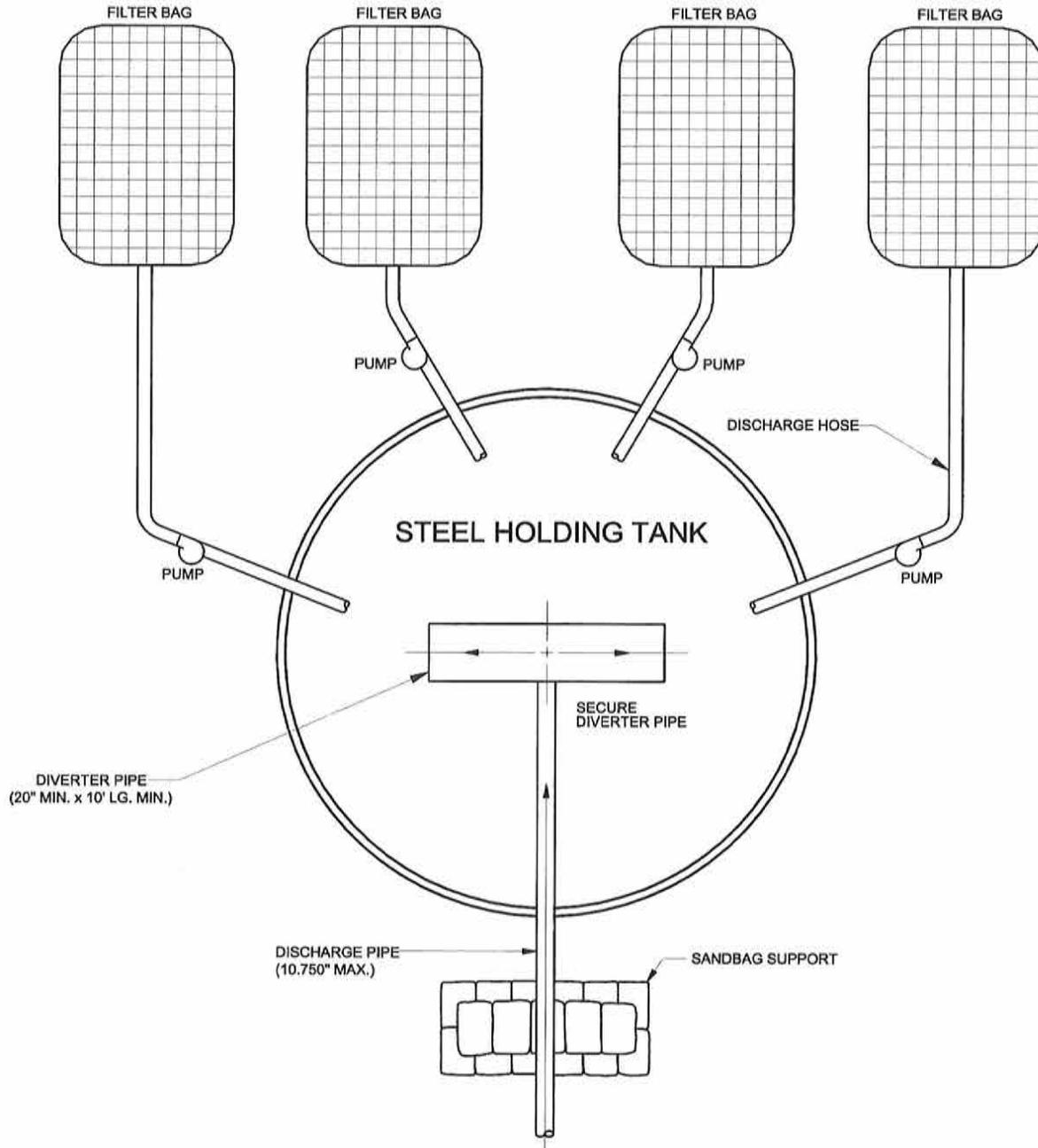
NOTES:

1. Structure shall be placed on a level well vegetated site such that water will flow away from structure and any work areas.
2. Flow rates through discharge and diverter pipes shall be such that structure will not overflow.
3. Where conditions warrant a 30' x 30' rectangular structure may be substituted for the circular configuration shown.
4. Dimensions shown are the minimum acceptable values and may be varied depending upon specific location.
5. Contractor shall use certified noxious weed free hay or straw for structure.

## HYDROSTATIC TEST DEWATERING STRUCTURE

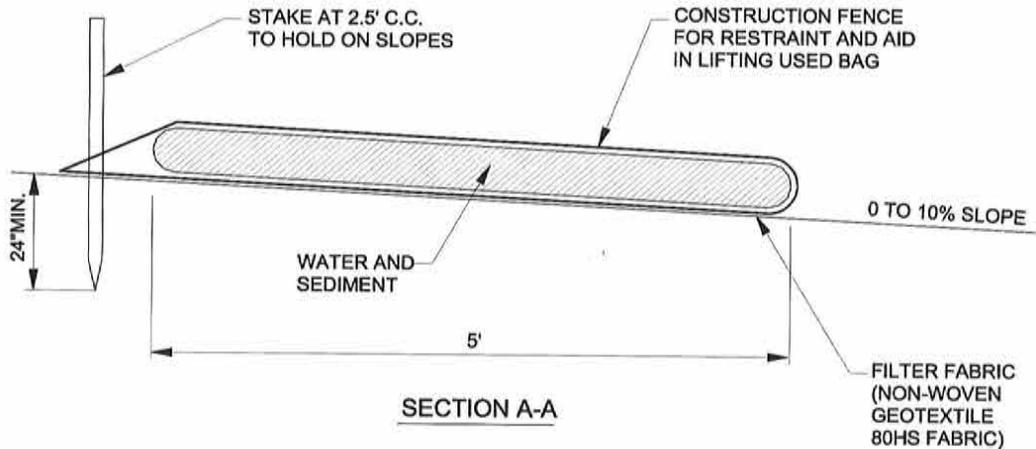
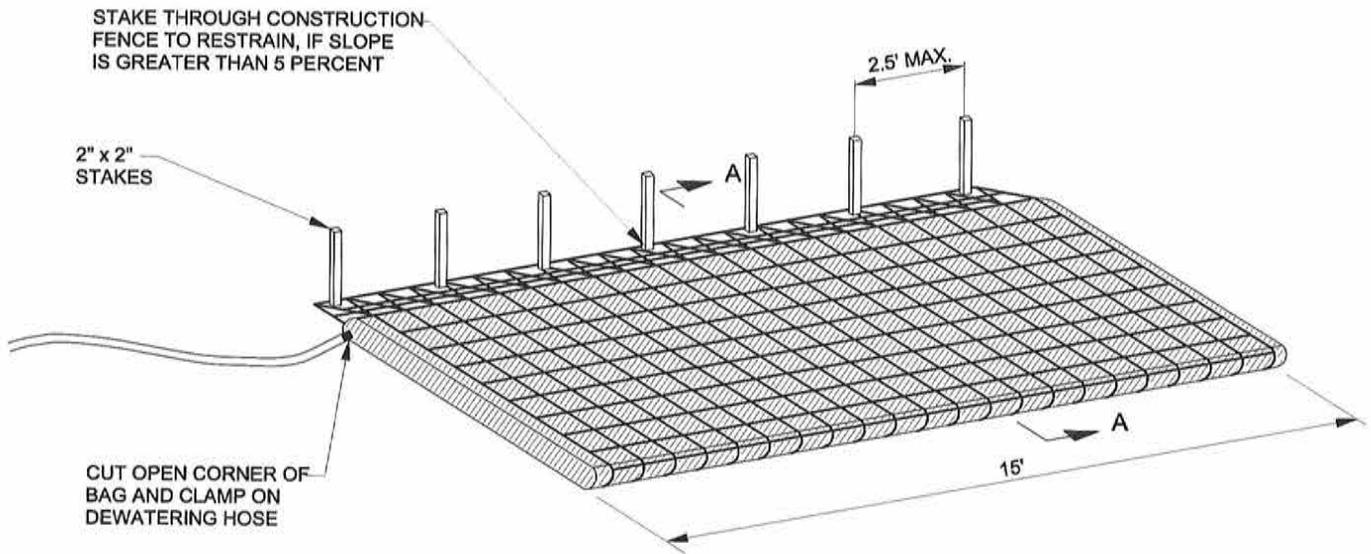
### TEMPORARY EROSION CONTROL MEASURE

REFERENCE DRAWINGS						NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT  TYPICAL HYDROSTATIC TEST DEWATERING STRUCTURE						
DRAWING NO.	TITLE											
REVISIONS						DRAWN BY:	NWP	DATE:	9-02-2014	ISSUED FOR BID:	SCALE:	NONE
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:			
							APPROVED BY:	DATE:	DRAWING NUMBER:	2504.34-X-0002	SHEET	2
											OF	3



**HYDROSTATIC TEST DEWATERING STRUCTURE**  
**TEMPORARY EROSION CONTROL MEASURE**

REFERENCE DRAWINGS				NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT					
DRAWING NO.	TITLE								
REVISIONS				DRAWN BY: NWP	DATE: 9-02-2014	ISSUED FOR BID:	SCALE: NONE		
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:
							APPROVED BY:	DATE:	DRAWING NUMBER: 2504.34-X-0002
NWP-2015-111				Page 11 of 30				SHEET 3 OF 3	
Joint Public Notice								Enclosure 2 OF 3	



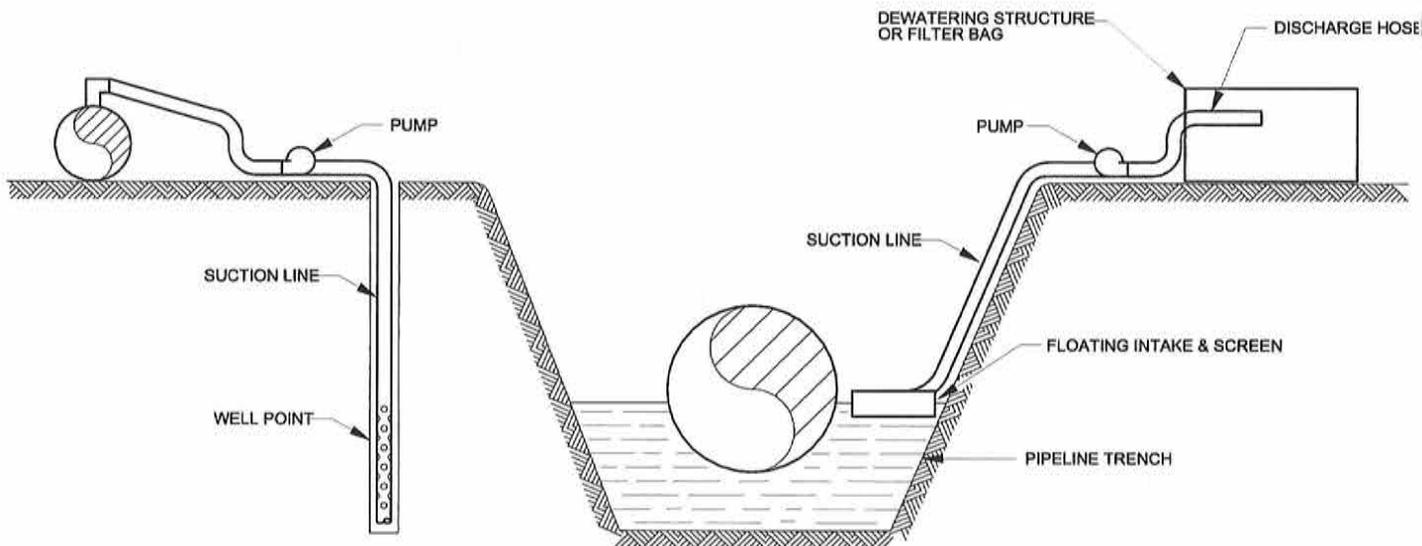
NOTES:

1. Filter bag shall be placed on a gently sloping or level, well graded vegetated site such that water will flow away from device, any work areas, waterbodies or wetlands.
2. The filter bag must be staked in place and secured to the pump discharge line.
3. Filter bag shall not be used for discharge flows greater than 300 gpm.
4. Device shall be removed and disposed of after bag is filled with sediment. sediment from bag shall be spread in an upland area.

## TRENCH DEWATERING

### TEMPORARY EROSION CONTROL MEASURE

REFERENCE DRAWINGS				NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT					
DRAWING NO.	TITLE								
REVISIONS				DRAWN BY: NWP	DATE: 9-02-2014	ISSUED FOR BID:	SCALE: NONE		
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:
				APPROVED BY:	DATE:	DRAWING NUMBER: 2504.34-X-0003		SHEET 1	OF 3



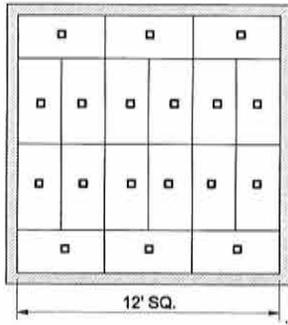
**NOTES:**

1. Dewatering measure/methods
  - a. Pump water to a filtering structure typically constructed with hay bales or geotextile and discharge as "sheet flow" out of structure. (see sht. 3)
  - b. Pump water into a filter bag. (see sht. 1)
  - c. Pump water to a settling tank and haul to a disposal site.
  - d. Pump water to a settling tank and discharge overland.
  - e. Transfer water to next section of trench.
  - f. Install well points and pump to filtering structure and discharge to drainage, channel or sheet flow.
  - g. Install well points and discharge sheet flow.
  - h. Dispose of water collected in tank or filtration structure by aeration through a sprinkler system.
2. Water pumped out of trench shall not be discharged into waterbodies or wetlands.
3. Pump shall be controlled so that discharge does not overflow dewatering structure.
4. Pump suction hose must not be allowed to settle the trench bottom. provisions must be made to elevate the suction hose to at least one foot above the bottom until bottom dewatering is necessary.

## TRENCH DEWATERING

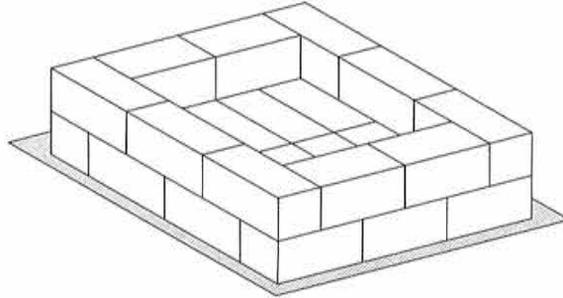
### TEMPORARY EROSION CONTROL MEASURE

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REVISIONS				DRAWN BY: NWP	DATE: 9-02-2014	ISSUED FOR BID:	SCALE: NONE						
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:				
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NWP-2015-111				Page 13 of 30			SHEET 2 OF 3 Enclosure 2 OF 3						



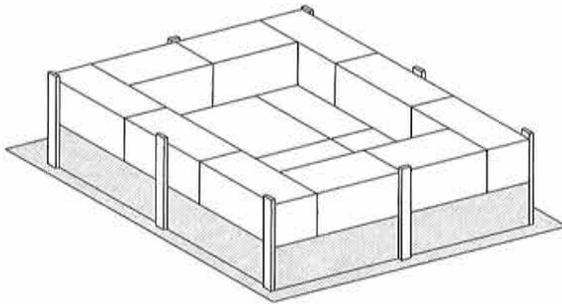
STEP 1

Arrange hay bales over filter fabric on level land tightly packed as shown to cover an area approximately 12' x 12'. Secure each haybale in place by driving rebar or a wooden stake through each of the hay bales.



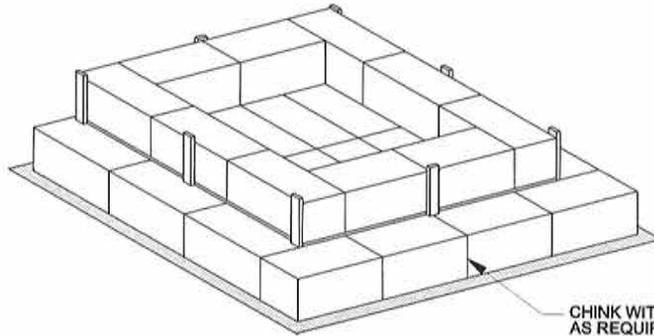
STEP 2

Install another layer of hay bales on the outer edge as shown.



STEP 3

Install filter fabric all around hay bale structure as shown.



STEP 4

Install another layer of hay bales on the outside of the filter fabric and secure in place by driving rebar or a wooden stake through each of the outer hay bales.

CHINK WITH HAY AS REQUIRED

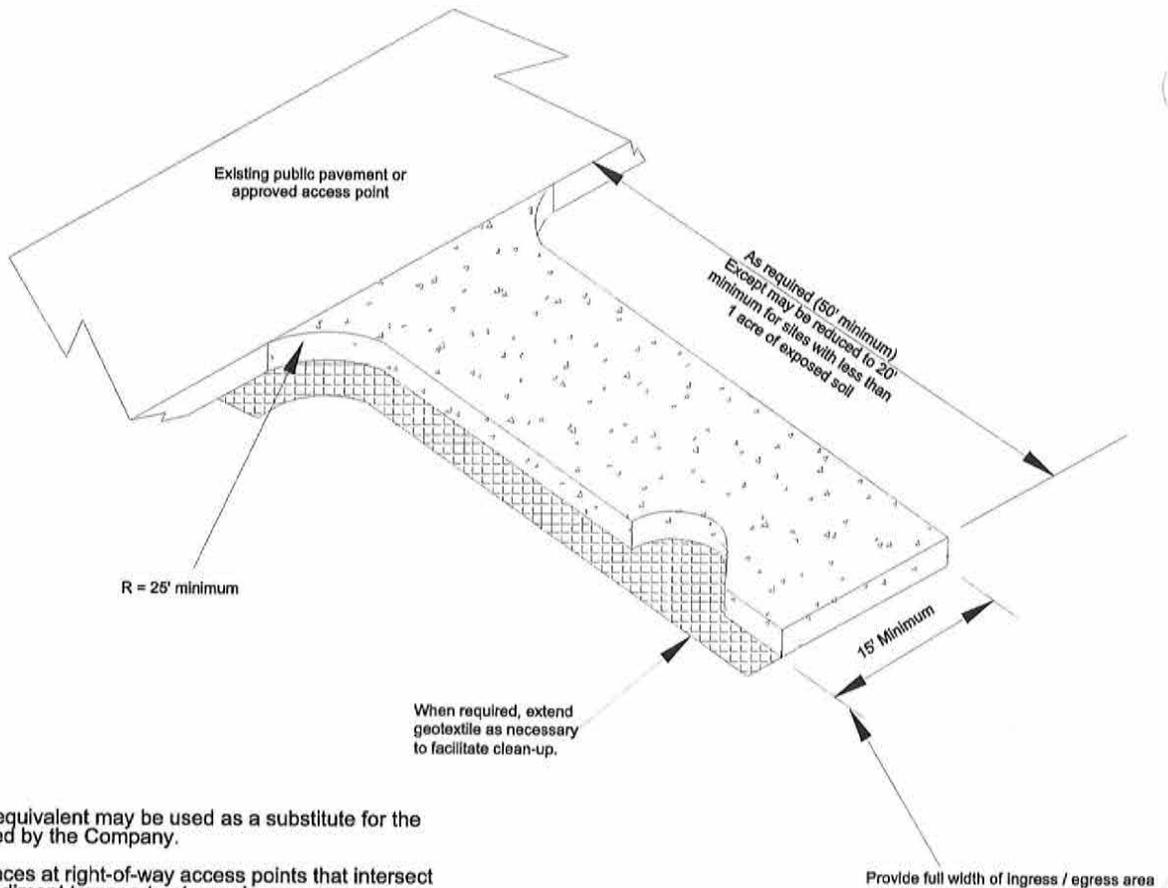
NOTES:

1. Where possible structure shall be placed on a level, well vegetated site such that water will flow away from structure and any work areas, waterbodies or wetlands.
2. This measure shall be removed upon completion of the project. removal is not contingent upon establishment of permanent vegetation. material from bales may be scattered on right-of-way.
3. Contractor shall use certified noxious weed free hay or straw for structure.

## TRENCH DEWATERING

### TEMPORARY EROSION CONTROL MEASURE

REFERENCE DRAWINGS							NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT			
DRAWING NO.	TITLE									
							TYPICAL TRENCH DEWATERING			
REVISIONS							DRAWN BY:	DATE:	ISSUED FOR BID:	SCALE:
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	NWP	9-02-2014		NONE
							CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:	
							APPROVED BY:	DATE:	DRAWING NUMBER: 2504.34-X-0003	SHEET 3 OF 3



**Notes:**

Equipment mats or their equivalent may be used as a substitute for the graveled apron if approved by the Company.

Install construction entrances at right-of-way access points that intersect paved roads to reduce sediment transport onto roadway.

Install culverts in road ditches as necessary.

Crushed stone access pads shall be placed on synthetic fabric in residential or active agricultural areas to facilitate stone removal. Use Synthetic Industries style 22TEX, Light Stabilization Fabric, or equivalent (3 oz/yd woven geotextile).

**INSTALLATION:** The area of the entrance should be cleared of all vegetation, roots and other objectionable material. The gravel shall be placed to the specified dimensions. Any drainage facilities required because of washing should be constructed according to specifications in the plan. If wash racks are used, they should be installed according to manufacturer's specifications.

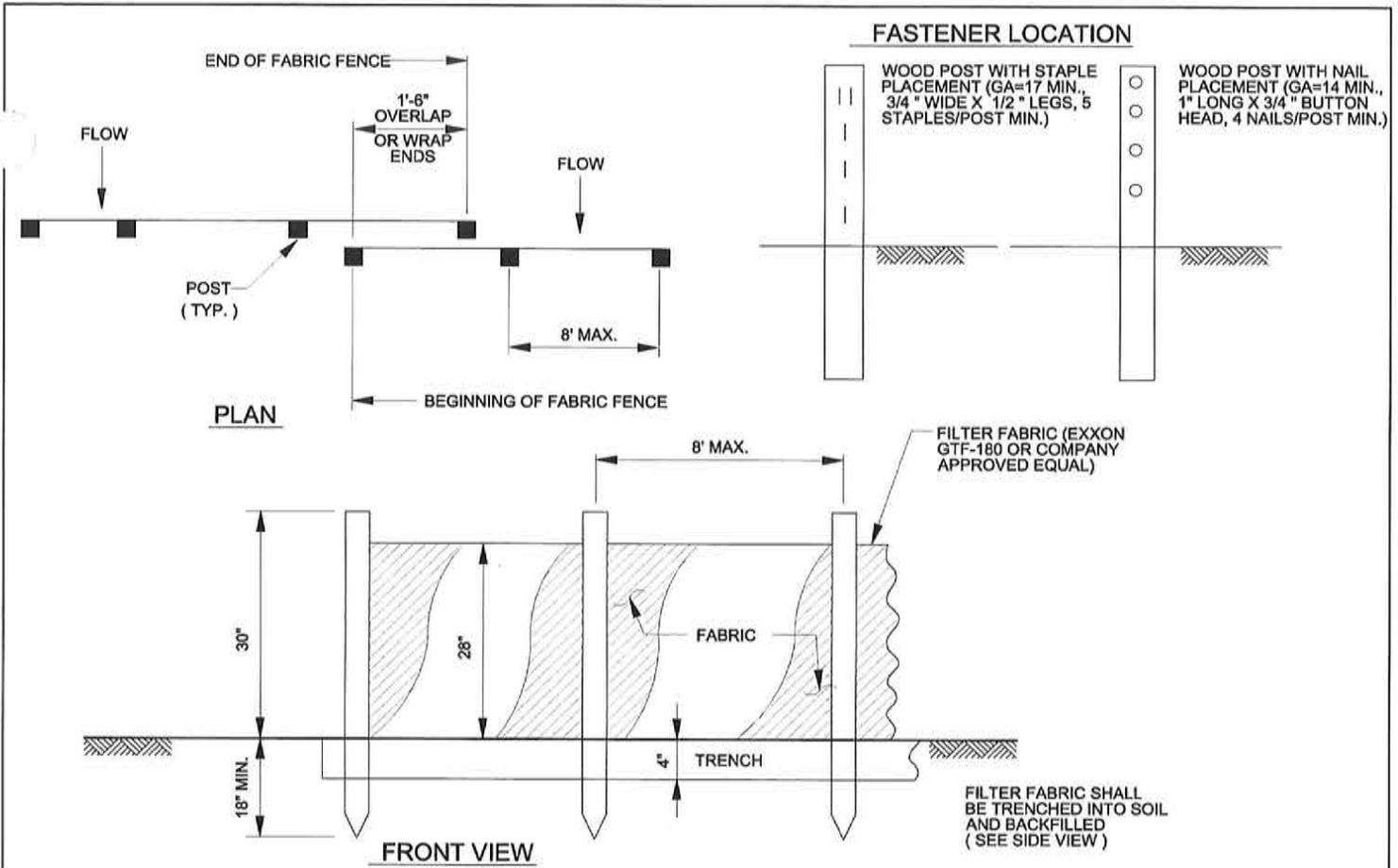
**AGGREGATE:** 2" to 6" crushed Ballast Rock.

**ENTRANCE DIMENSIONS:** The aggregate layer must be at least 6 inches thick. It must extend the full width of the vehicular ingress and egress area. The length of the entrance must be at least 50 feet.

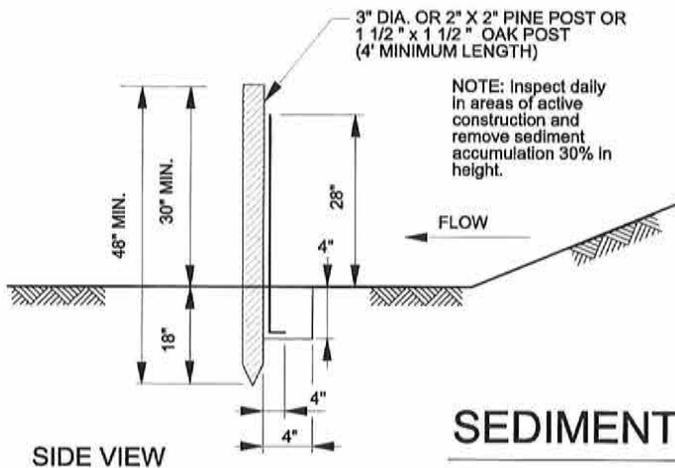
**MAINTENANCE:** The entrance shall be maintained in a condition which will prevent tracking or flow of mud onto public rights-of-way. This may require periodic top dressing with 2-inch stone, as conditions demand, and repair and/or clean out any structures used to trap sediment. All materials spilled, dropped, washed or tracked from vehicles onto roadway or into storm drains must be removed immediately.

**RESTORATION:** Access pads will be removed as soon as possible following construction activities and the area restored to pre-construction conditions.

<b>REFERENCE DRAWINGS</b>				NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT					
DRAWING NO.	TITLE			TYPICAL CONSTRUCTION ACCESS ENTRANCE PAD					
<b>REVISIONS</b>				DRAWN BY: NWP	DATE: 9-02-2014	ISSUED FOR BID:	SCALE: NONE		
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:
							APPROVED BY:	DATE:	DRAWING NUMBER: 2504.34-X-0004
				Page 15 of 30				SHEET 1	Enclosure 2 OF 1



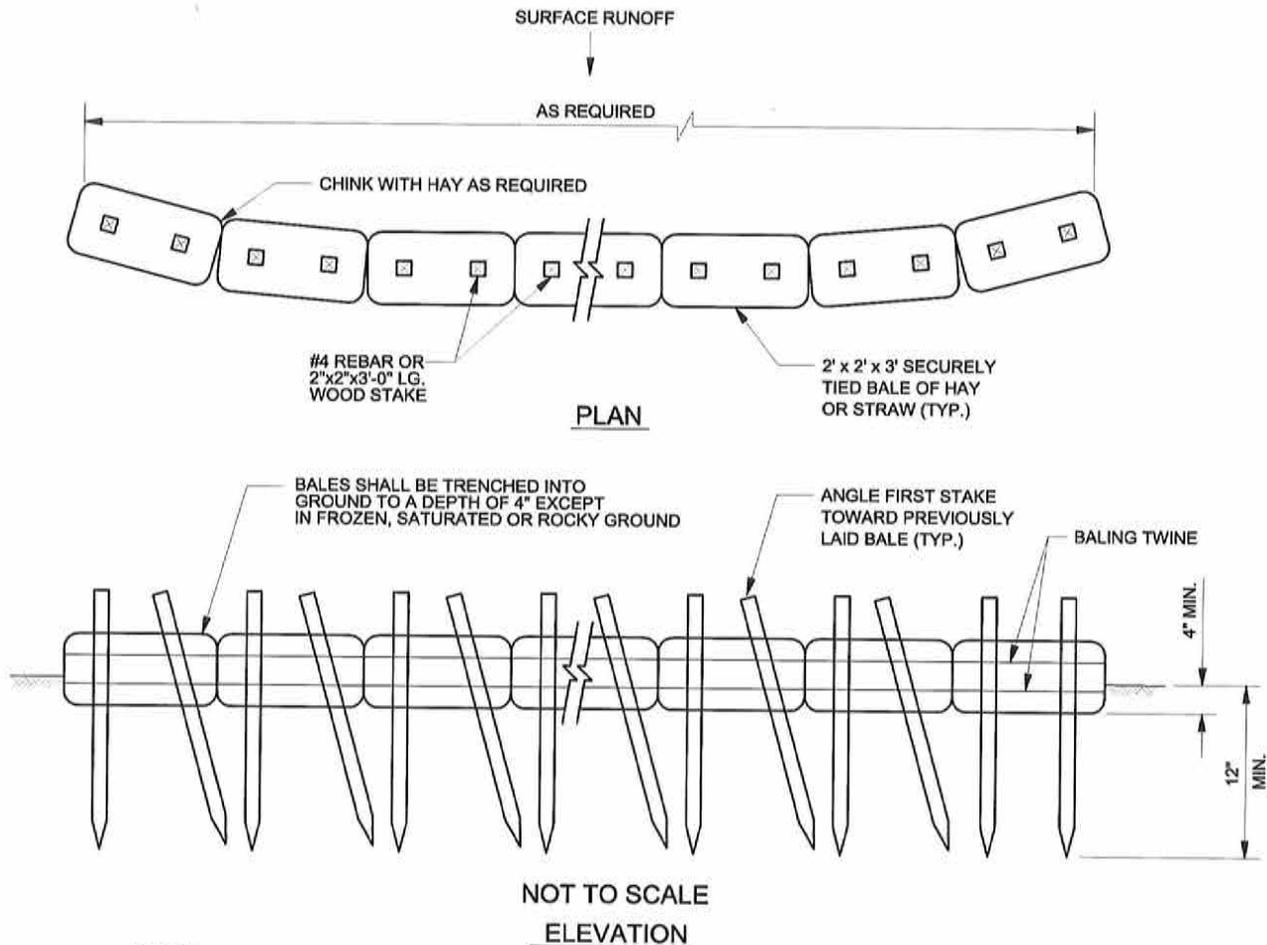
1. Install filter fabric after revegetation clearing and immediately after soil disturbance:
  - At appropriate locations to prevent siltation into waterbodies, wetlands, roads or other sensitive areas crossed by the construction right-of-way
  - To prevent stockpiled soil or spoil from leaving the work area.
2. Filter fabric shall be installed to filter sediment from surface runoff.
3. Installations shall be periodically checked according to ferc's plan and procedures, and if flow is obstructed, build-up of sediment shall be removed.
4. Filter fabric shall be left in place until permanent vegetative cover is established unless removal is authorized by company representative.
5. Filter fabric shall be replaced whenever it has deteriorated to such an extent that it reduces the effectiveness of the filter fabric.
6. Filter fabric shall be placed to follow (run parallel to) the contours.
7. On upslope installations, both ends of the filter fabric shall be turned and extended upslope.
8. Filter fabric shall be constructed of Exxon gtf-180 fabric or a similar fabric with a tensile strength at 20% (max.) elongation of 50 lb./linear inch or greater.
9. Area disturbed as a result of removing the filter fabric shall be restabilized by seeding in accordance with the revegetation plan.



## SEDIMENT BARRIER - SILT FENCE OPTION

### TEMPORARY EROSION CONTROL MEASURE

REFERENCE DRAWINGS						NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT			
DRAWING NO.	TITLE								
						TYPICAL SEDIMENT BARRIER - SILT FENCE FILTER FABRIC OPTION			
REVISIONS						DRAWN BY:	DATE:	ISSUED FOR BID:	SCALE:
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.			
						CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:	
						APPROVED BY:	DATE:	DRAWING NUMBER: 2504.34-X-0005	SHEET 1 OF 2



- NOTES:**
1. bale barriers shall be placed to follow (run parallel to) the contours and shall not be located in areas of concentrated flow.
  2. installations shall be checked after each 0.5 inches of rainfall and if flow is obstructed, the sediment shall be removed.
  3. bale barriers shall be left in place until permanent vegetation cover is established. material from bale barriers may then be used as mulch and scattered over the surrounding area as directed by company representative.
  4. on upslope installations, both ends of the bale barrier shall be turned and extended upslope.
  5. area disturbed as a result of removing the bale barrier shall be restabilized by seeding according to the revegetation specifications.
  6. contractor shall use certified noxious weed free hay or straw.
  7. bales shall be placed such that ties or baling twine is not in contact with the ground.

## SEDIMENT BARRIER - SILT FENCE OPTION

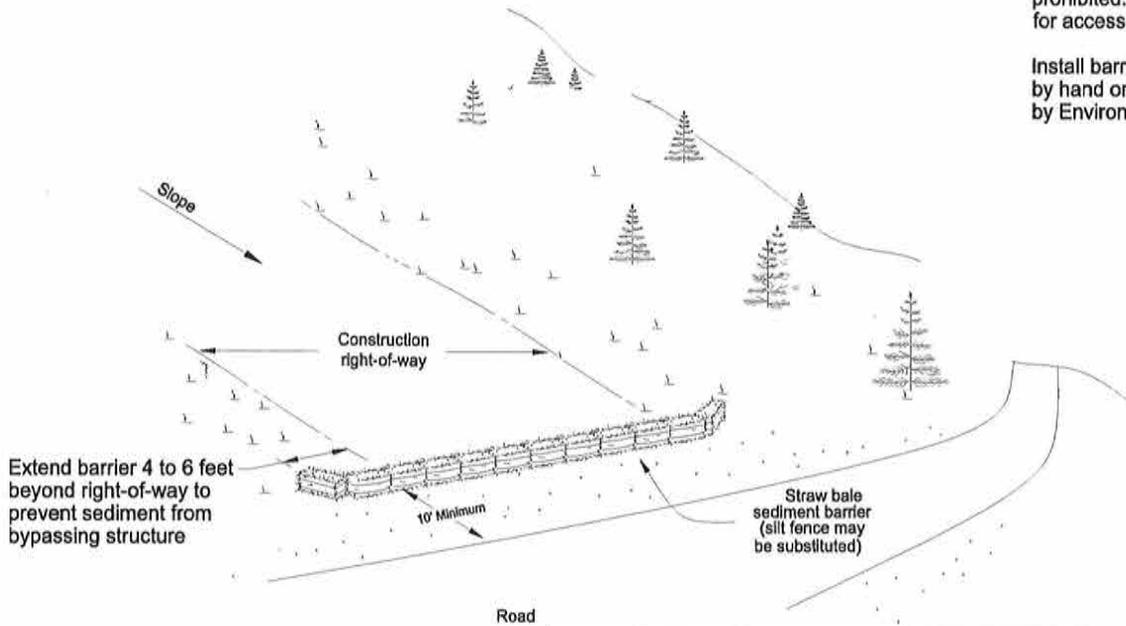
### TEMPORARY EROSION CONTROL MEASURE

REFERENCE DRAWINGS				NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT  TYPICAL SEDIMENT BARRIER - SILT FENCE STRAW BAIL OPTION								
DRAWING NO.	TITLE											
REVISIONS				DRAWN BY: NWP		DATE: 9-02-2014		ISSUED FOR BID:		SCALE: NONE		
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	CHECKED BY:		DATE:		ISSUED FOR CONSTRUCTION:	
							APPROVED BY:		DATE:		DRAWING NUMBER: 2504.34-X-0005	
NWP-2015-111				Page 17 of 30				SHEET 2		Enclosure 2 OF 2		

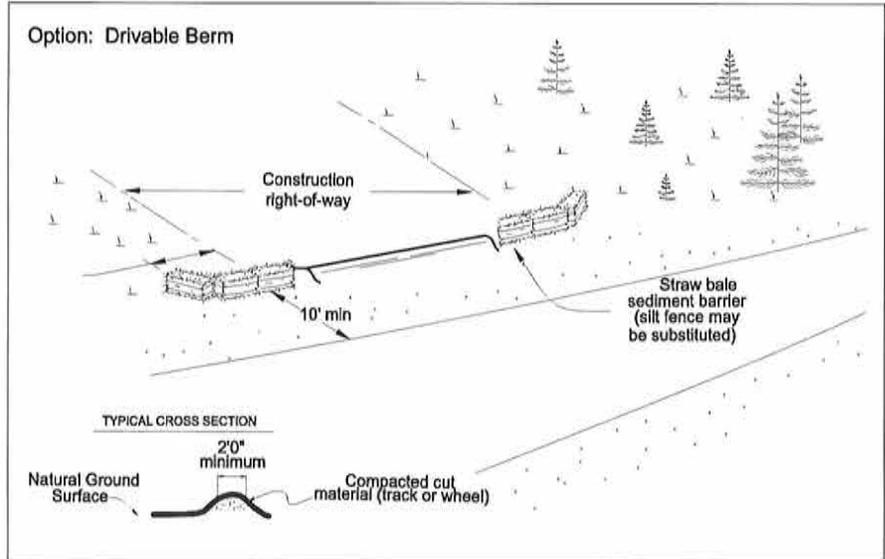
**Notes:**

Driving around sediment barriers is prohibited. Remove and replace barrier for access to right-of-way.

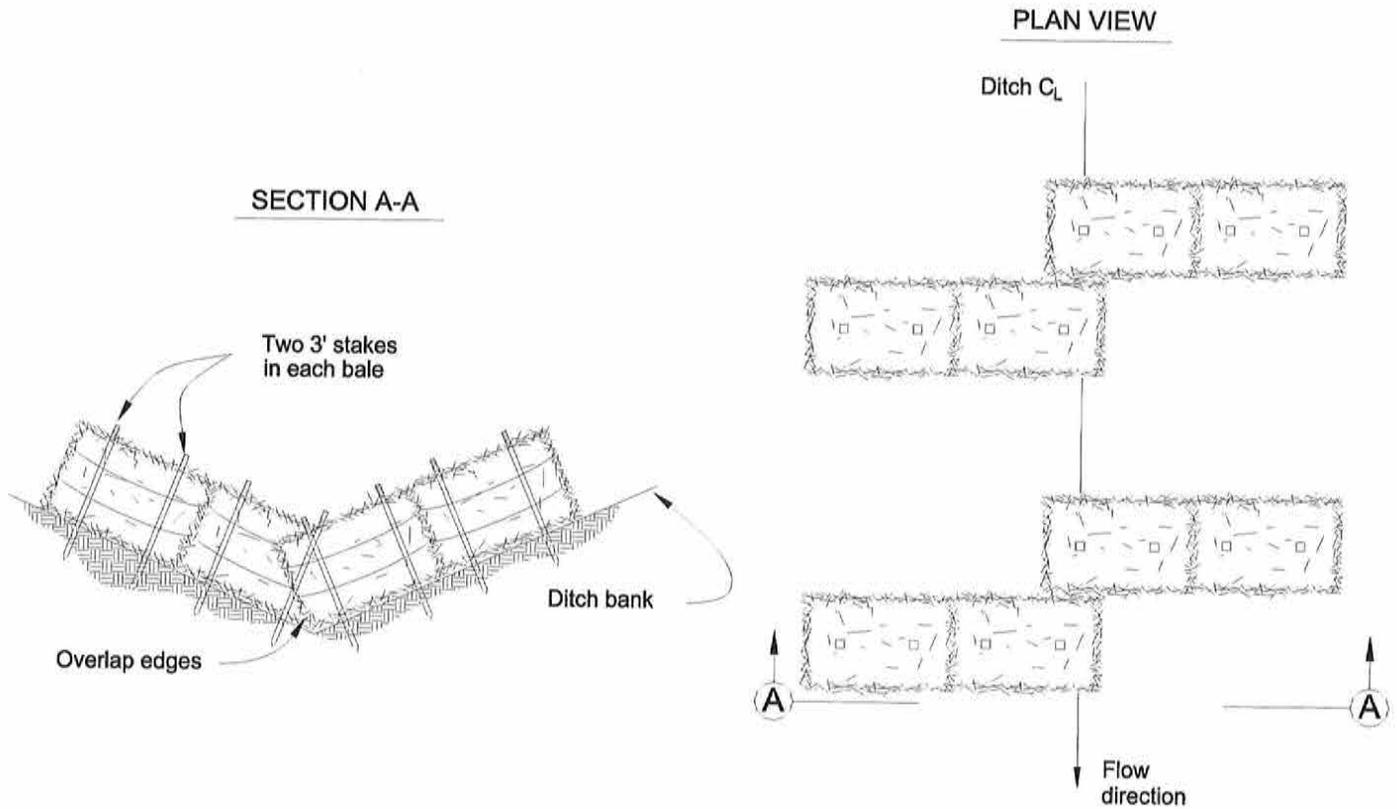
Install barriers off the right-of-way by hand only at location approved by Environmental Inspector.



**Option: Drivable Berm**



REFERENCE DRAWINGS						NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT						
DRAWING NO.	TITLE											
						TEMPORARY SEDIMENT BARRIERS DRIVEABLE BERMS ADJACENT TO ROAD CROSSINGS			SHEET 1 OF 1			
REVISIONS						DRAWN BY:	NWP	DATE:	9-02-2014	ISSUED FOR BID:	SCALE:	NONE
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:			
							APPROVED BY:	DATE:	DRAWING NUMBER: 2504.34-X-0006			



**Notes:**

Place straw bale sediment barriers in small intermittent drainages or road ditches that may convey sediment laden runoff from the right-of-way during storm events.

Drive stakes a minimum of 12 inches into the ground.

Use wood stakes whenever possible. Steel rebar may be used when soil is frozen or rocky.

Silt fence fabric may be used.

Sediment control structures can be placed off the construction right-of-way by hand if the location has been approved by the Environmental Inspector.

REFERENCE DRAWINGS		DRAWING NO.		TITLE		NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT		SEDIMENT CONTROL IN DITCHES AND SWALES			
REVISIONS						DRAWN BY: NWP	DATE: 9-02-2014	ISSUED FOR BID:	SCALE: NONE		
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:		
							APPROVED BY:	DATE:	DRAWING NUMBER: 2504.34-X-0007	SHEET 1	1
NWP-2015-111						Page 19 of 30			Enclosure 2 <sup>F</sup> 1		

SEGREGATED  
TOPSOIL - SEE NOTES 1 & 8  
(TRENCH LINE ONLY)

SILT FENCE

PIPELINE

TRENCH SPOIL

SILT FENCE  
(SEE 2504.34-X-0005 SHT 1)

TIMBER MATS

STRAW BALE SEDIMENT BARRIERS  
(SEE 2504.34-X-0005 SHT 2)

25'  
(SEE NOTE 4)  
SPOIL SIDE

50'  
WORKING SIDE

75' (SEE NOTE 4)  
CONSTRUCTION CORRIDOR  
(WETLAND)

TYPICAL 110'  
CONSTRUCTION CORRIDOR  
(UPLAND)

NOTES:

1. The top one (1) foot of topsoil shall be segregated from the trenchline except in areas where standing water or saturated soils are present.
2. The vegetation located within the proposed limits of disturbance shall be cut off at ground level leaving the existing root systems
3. Pulling of tree stumps and grading activities shall be limited to the area directly over the trenchline unless safety conditions require the removal of tree stumps from under the working side of the work corridor.
4. Construction corridor through wetlands will be 75 feet wide unless a variance is granted. Configuration of right-of-way may vary.

PLAN VIEW

REFERENCE DRAWINGS

DRAWING NO.

TITLE

NORTHWEST PIPELINE LLC  
KALAMA LATERAL PROJECT

CROSSING DETAIL FOR WETLANDS



REVISIONS

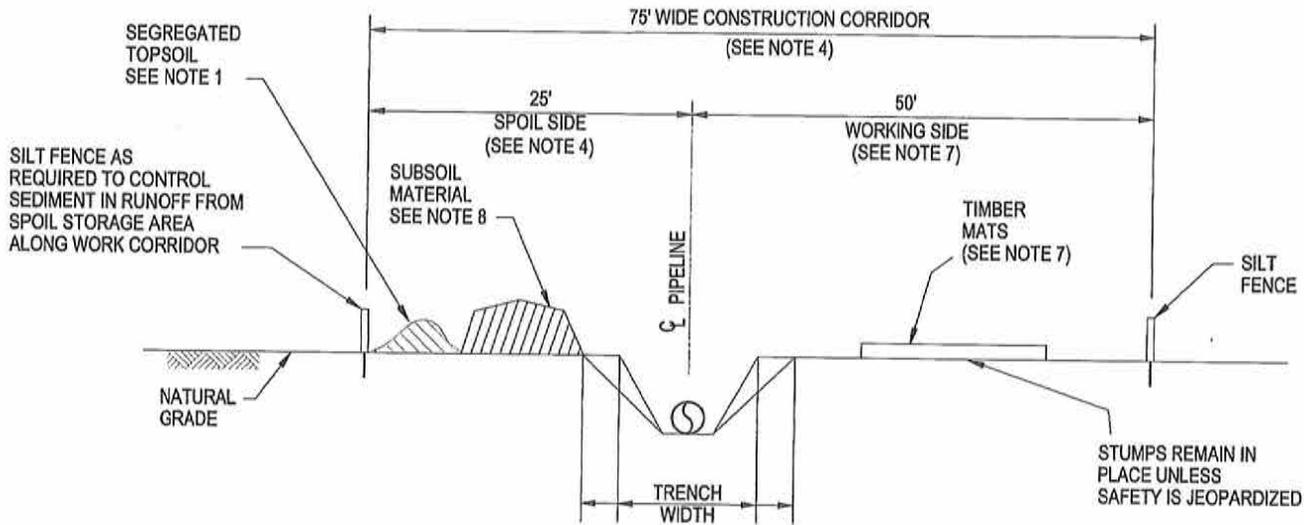
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.

DRAWN BY: NWP DATE: 9-02-2014 ISSUED FOR BID: SCALE: NONE

CHECKED BY: DATE: ISSUED FOR CONSTRUCTION:

APPROVED BY: DATE: DRAWING NUMBER: 2504.34-X-0008 SHEET 1

OF 2

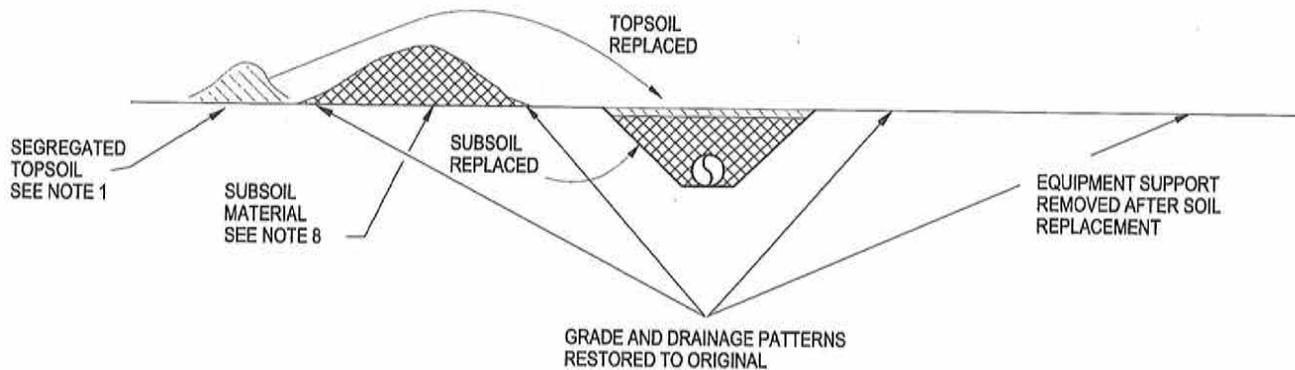


TRENCH WIDTH VARIES DEPENDING ON SOILS ENCOUNTERED DURING CONSTRUCTION

### CROSS SECTION

NOTES Continued:

5. Silt fence or straw bales will be used where appropriate to prevent siltation into water bodies or wetlands.
6. Silt fences or straw bales will also be used to prevent stockpiled soil or spoil from leaving the construction right-of-way or workspaces.
7. Timber mats may be used over spoil storage where standing water or saturated soils are present.
8. If standing water or saturated soils are present, or if construction equipment causes ruts or mixing of topsoil and subsoil in wetlands, use low-ground weight equipment, or operate normal equipment on timber riprap, prefabricated equipment mats or terra mats.



### WETLAND RESTORATION

#### REFERENCE DRAWINGS

DRAWING NO.	TITLE

NORTHWEST PIPELINE LLC  
KALAMA LATERAL PROJECT

CROSSING DETAIL FOR WETLANDS

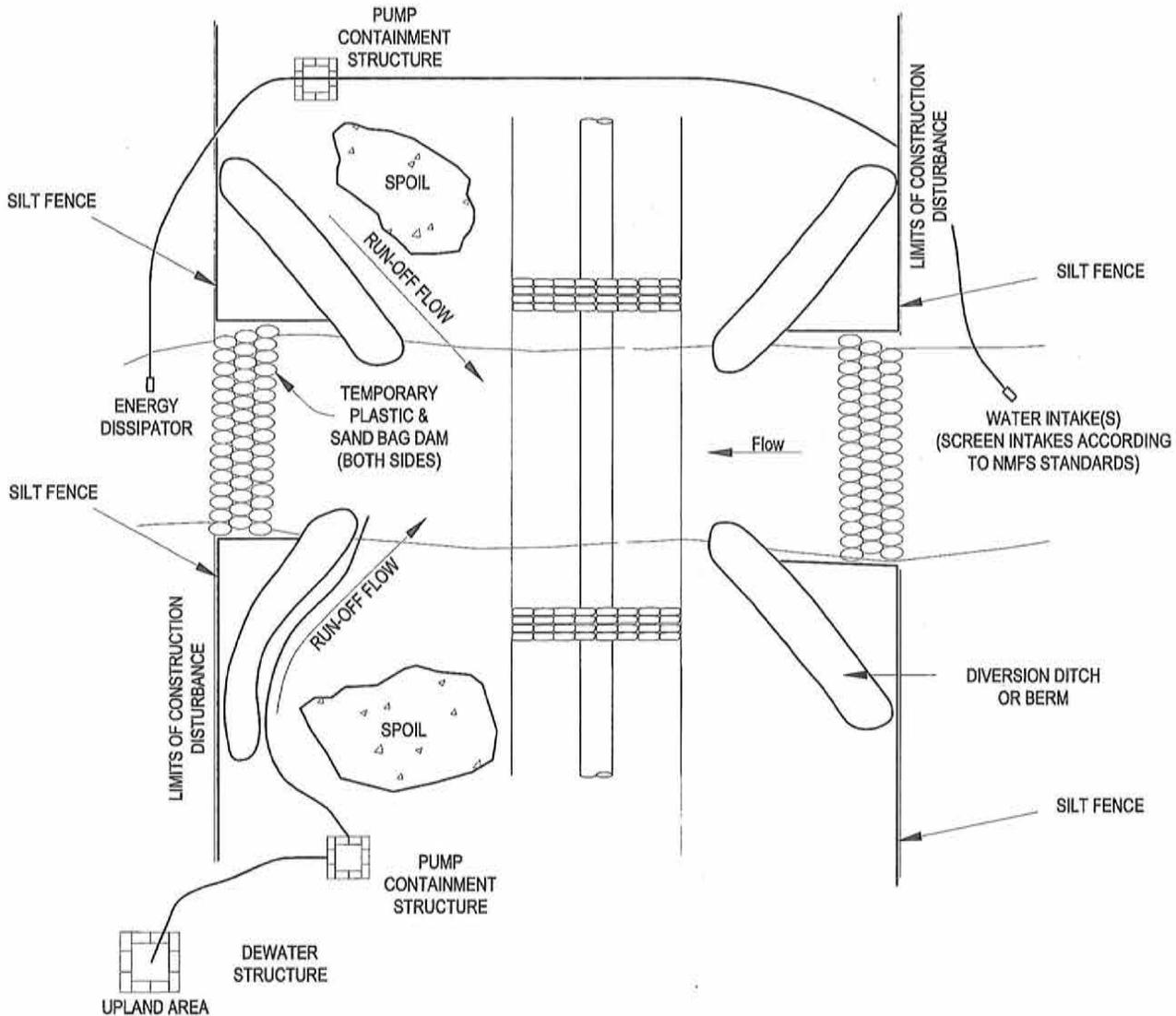


#### REVISIONS

NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.

DRAWN BY: NWP	DATE: 9-02-2014	ISSUED FOR BID:	SCALE: NONE
CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:	
APPROVED BY:	DATE:	DRAWING NUMBER: 2504.34-X-0008	SHEET 2 OF 2

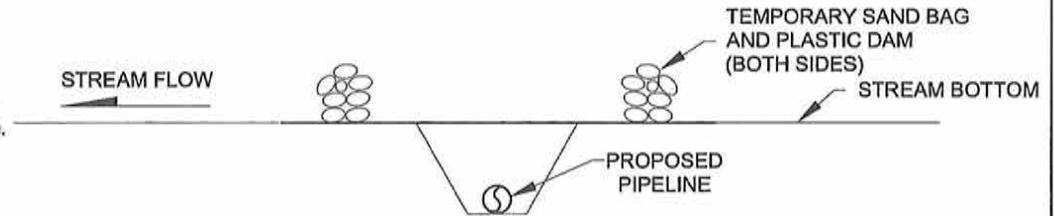
CONFIGURATION THROUGH WATERBODIES WITH ASSOCIATED WETLANDS IS VARIABLE BUT WILL NOT EXCEED 75 FEET IN WIDTH UNLESS A VARIANCE IS GRANTED



**PLAN VIEW OF DAM & PUMP CROSSING METHOD**

**NOTES:**

1. Trench width will vary due to soil conditions which are not known until actual construction takes place.
2. Extra workspace will be located 50 feet from edge of waterbody unless a variance is granted, for extra workspace locations and dimensions see environmental alignment sheets.
3. Temporary erosion control measures must be replaced at the end of each working day.

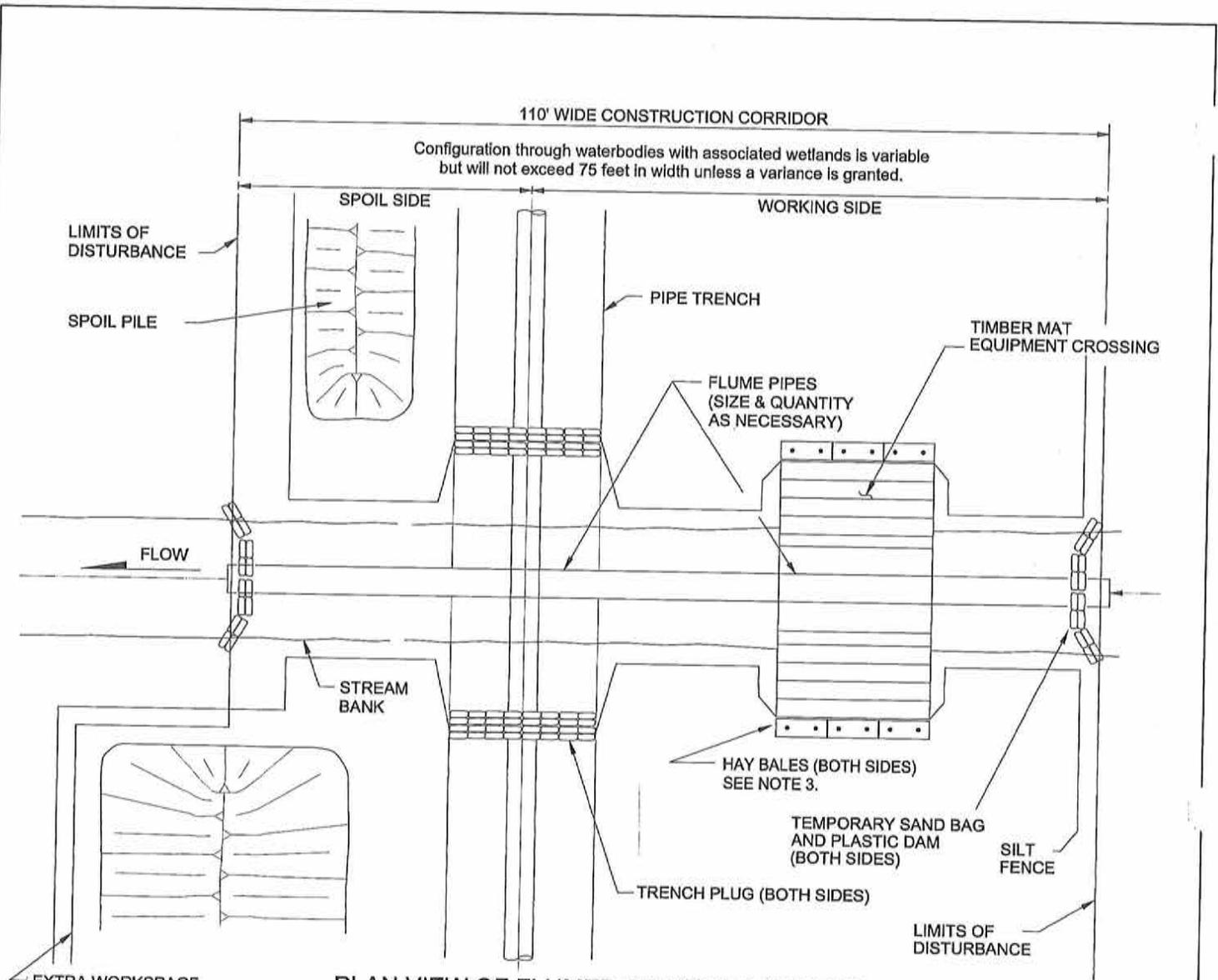


**CROSS-SECTION OF DAM & PUMP CROSSING METHOD**

REFERENCE DRAWINGS	
DRAWING NO.	TITLE

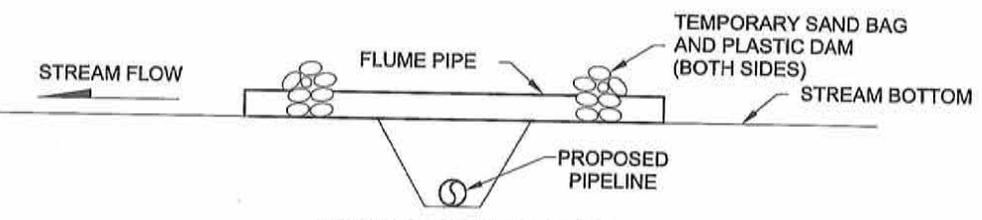
**NORTHWEST PIPELINE LLC**  
**KALAMA LATERAL PROJECT**  
  
**WATERBODY CROSSING DETAIL**  
**DAM & PUMP CROSSING METHOD**

REVISIONS					DRAWN BY:	DATE:	ISSUED FOR BID:	SCALE:
NO.	DATE	BY	DESCRIPTION	W.O. NO.	NWP	9-02-2014		NONE
					CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:	
					APPROVED BY:	DATE:	DRAWING NUMBER: 2504.34-X-0009	SHEET 1 OF 1



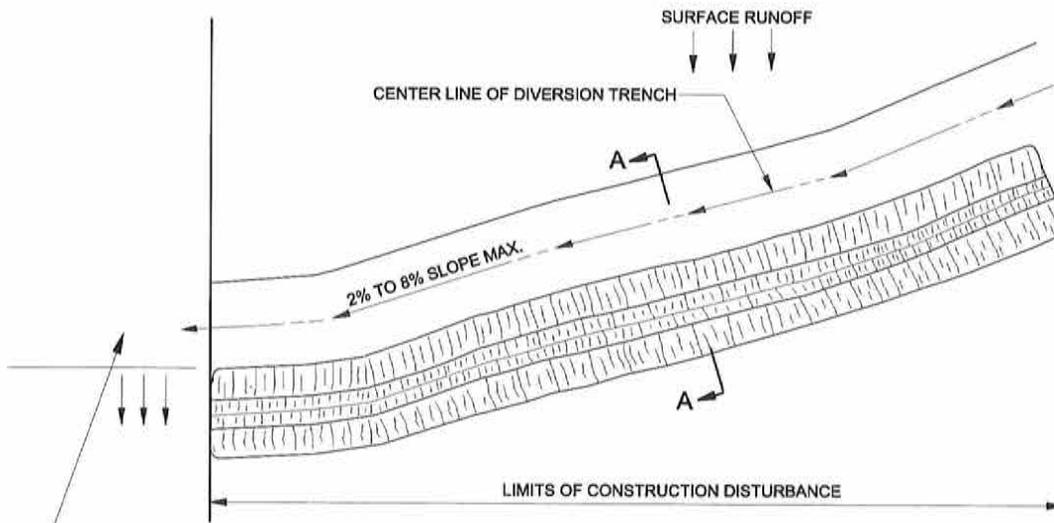
**PLAN VIEW OF FLUMED CROSSING METHOD**

- NOTES:**
1. Trench width will vary due to soil conditions which are not known until actual construction takes place.
  2. Extra workspace will be located 50 feet from edge of waterbody unless a variance is granted or the adjacent vegetation is actively cultivated as a rotated croplands. For extra workspace locations and dimensions see environmental alignment sheets.
  3. Temporary erosion control measures must be replaced at the end of each working day.



**CROSS-SECTION OF FLUMED CROSSING METHOD**

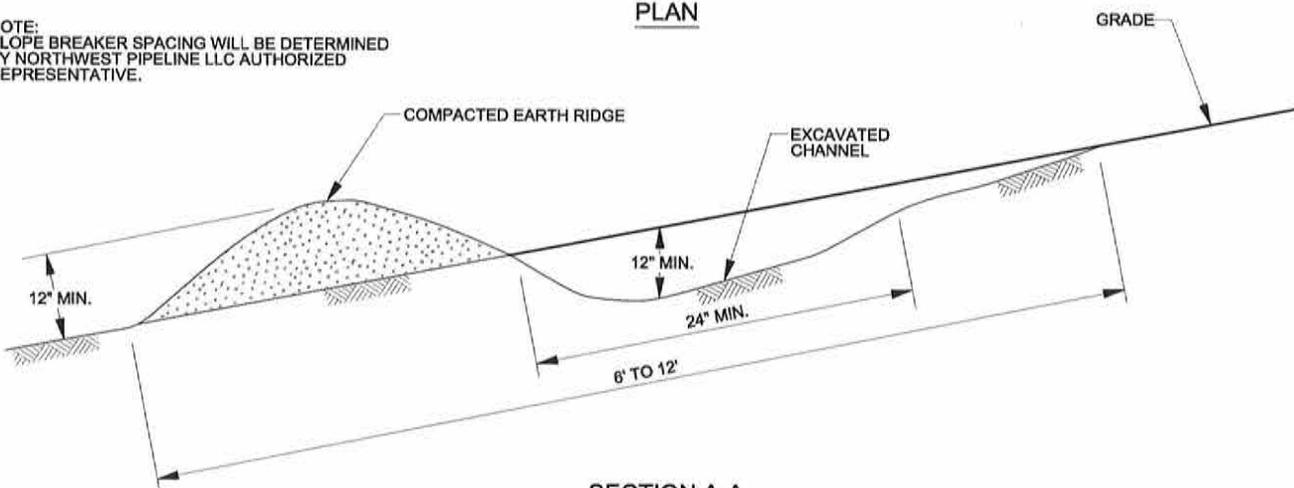
REFERENCE DRAWINGS						NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT				
DRAWING NO.	TITLE									
						<b>WATERBODY CROSSING DETAIL FLUMED CROSSING METHOD</b>				
REVISIONS						DRAWN BY:	DATE:	ISSUED FOR BID:	SCALE:	
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	NWP	9-02-2014	NONE	
							CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:	
							APPROVED BY:	DATE:	DRAWING NUMBER: 2504.34-X-0010	
									SHEET 1 OF 1	



DIVERSION TRENCH OUTLET SHALL BE PLACED WHERE RUNOFF WILL BE RELEASED ONTO STABLE WELL-VEGETATED GROUND. INSTALL GEO-JUTE AT OUTLET AS AN ENERGY-DISSIPATOR AT THE END OF THE BREAKER IF NEEDED.

NOTE:  
SLOPE BREAKER SPACING WILL BE DETERMINED BY NORTHWEST PIPELINE LLC AUTHORIZED REPRESENTATIVE.

PLAN



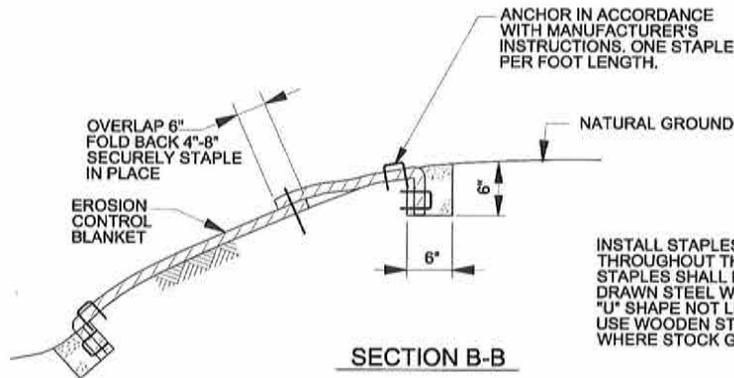
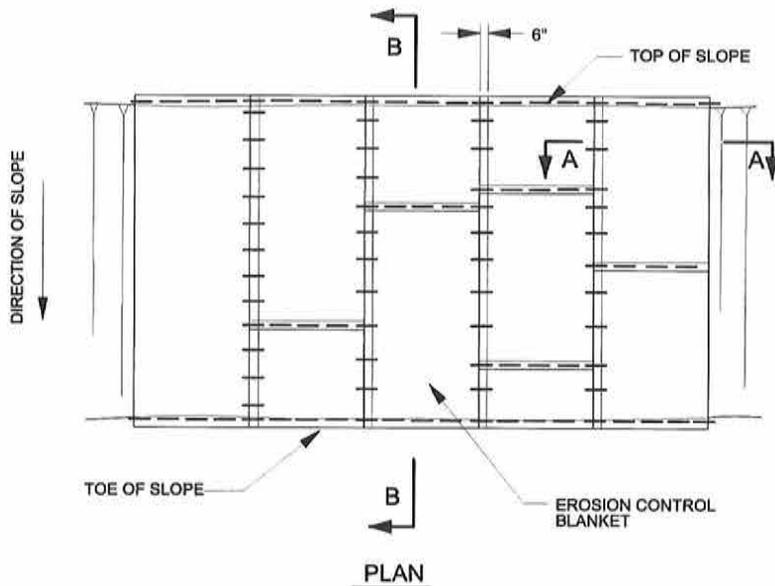
NOTE:  
SLOPE BREAKERS MAY EXTEND SLIGHTLY (ABOUT 4 FEET) BEYOND THE EDGE OF THE CONSTRUCTION RIGHT-OF-WAY TO EFFECTIVELY DRAIN WATER OFF THE DISTURBED AREA.

SECTION A-A

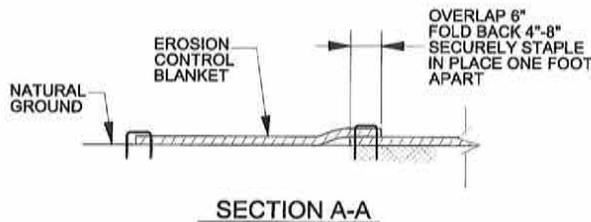
## TEMPORARY AND PERMANENT SLOPE BREAKERS

### TEMPORARY & PERMANENT EROSION CONTROL MEASURE

REFERENCE DRAWINGS							NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT							
DRAWING NO.	TITLE						TYPICAL TEMPORARY AND PERMANENT SLOPE BREAKERS							
REVISIONS							DRAWN BY:	NWP	DATE:	9-02-2014	ISSUED FOR BID:	SCALE:	NONE	
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:	DRAWING NUMBER:	2504.34-X-0011	SHEET	1	
NWP-2015-111							Page 24 of 30				Enclosure 2 <sup>OF</sup> 1			



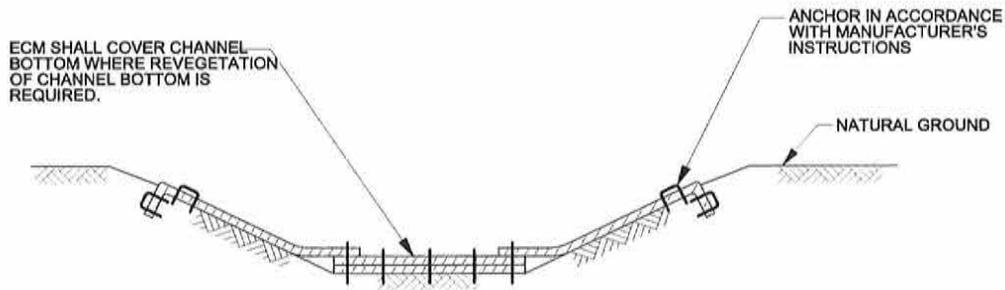
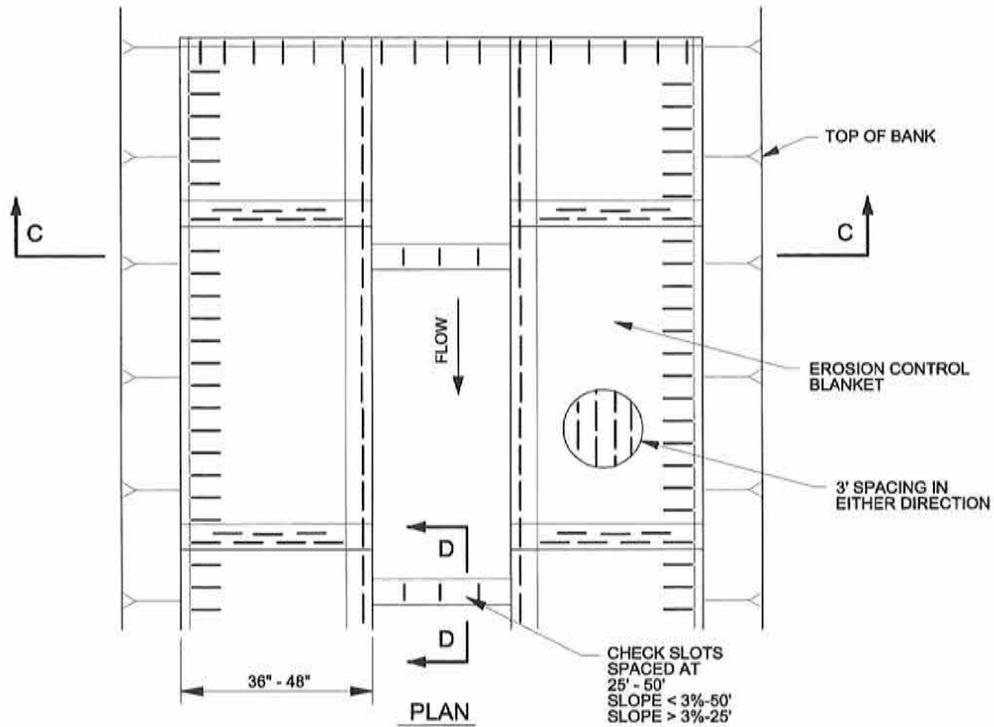
INSTALL STAPLES 18" TO 24" APART THROUGHOUT THE BLANKET/MAT. STAPLES SHALL BE 14-GAUGE COLD DRAWN STEEL WIRE FORMED IN A "U" SHAPE NOT LESS THAN 12" LENGTH. USE WOODEN STAKES AS AN ALTERNATIVE WHERE STOCK GRAZING IS ANTICIPATED.



**EMBANKMENT INSTALLATION**

**EROSION CONTROL MATTING**  
**PERMANENT EROSION CONTROL MEASURE**

REFERENCE DRAWINGS				NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT					
DRAWING NO.		TITLE		TYPICAL EROSION CONTROL MATTING					
REVISIONS				DRAWN BY: NWP	DATE: 9-02-2014	ISSUED FOR BID:	SCALE: NONE		
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:
							APPROVED BY:	DATE:	DRAWING NUMBER: 2504.34-X-0012
NWP-2015-111				Page 25 of 30				SHEET 1 OF 4 Enclosure 2 OF 4	

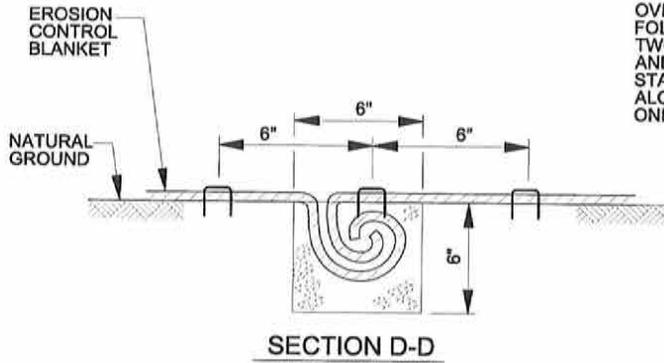


SECTION C-C

**CHANNEL INSTALLATION**

**EROSION CONTROL MATTING  
PERMANENT EROSION CONTROL MEASURE**

REFERENCE DRAWINGS									
DRAWING NO.		TITLE							
NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT  TYPICAL EROSION CONTROL MATTING									
									
REVISIONS				DRAWN BY: NWP	DATE: 9-02-2014	ISSUED FOR BID:	SCALE: NONE		
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:
							APPROVED BY:	DATE:	DRAWING NUMBER: 2504.34-X-0012
									SHEET 2
									OF 4



OVERLAP 6"  
 FOLD BACK 4"-8"  
 TWO-THREE TIMES  
 AND SECURELY  
 STAPLE IN PLACE  
 ALONG CREEK SLOT  
 ONE FOOT APART

MATERIAL
NORTH AMERICAN GREEN SC150 (OR EQUIVALENT)

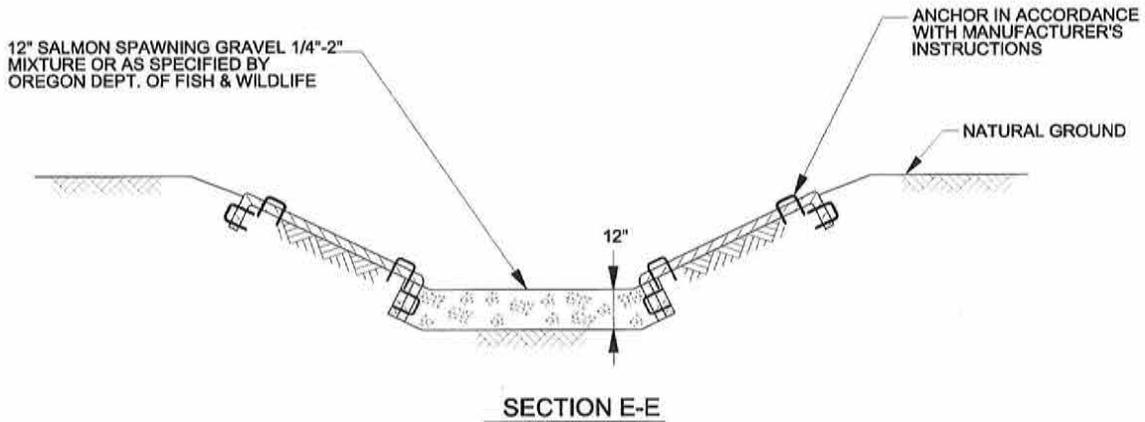
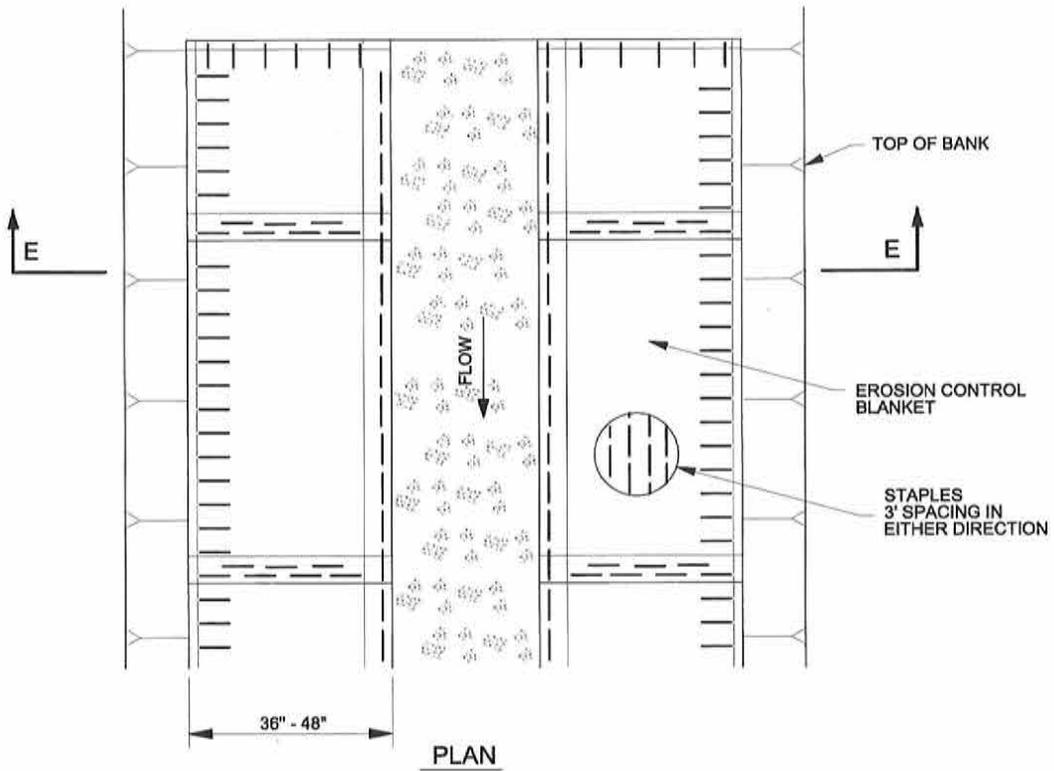
NOTES:

1. EROSION CONTROL BLANKETS SHALL EXTEND COMPLETELY ACROSS DISTURBED AREA TO PROTECT ERODIBLE SURFACES. THE SOIL SHALL BE PROPERLY PREPARED, SEEDED AND MULCHED PRIOR TO INSTALLATION.
2. INSTALL EROSION CONTROL BLANKETS ON FRESHLY GRADED EMBANKMENTS ON SLOPES IN EXCESS OF 3:1 (H:V) TO SUPPORT VEGETATION OR AS DIRECTED TO DO SO BY A COMPANY REPRESENTATIVE.
3. INSTALL BLANKETS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
4. BLANKET SHALL BE LOOSELY INSTALLED AND TAMPED OR ROLLED IN PLACE AFTER INSTALLATION. STAPLES SHALL BE DRIVEN FLUSH WITH THE GROUND.

## EROSION CONTROL MATTING

### PERMANENT EROSION CONTROL MEASURE

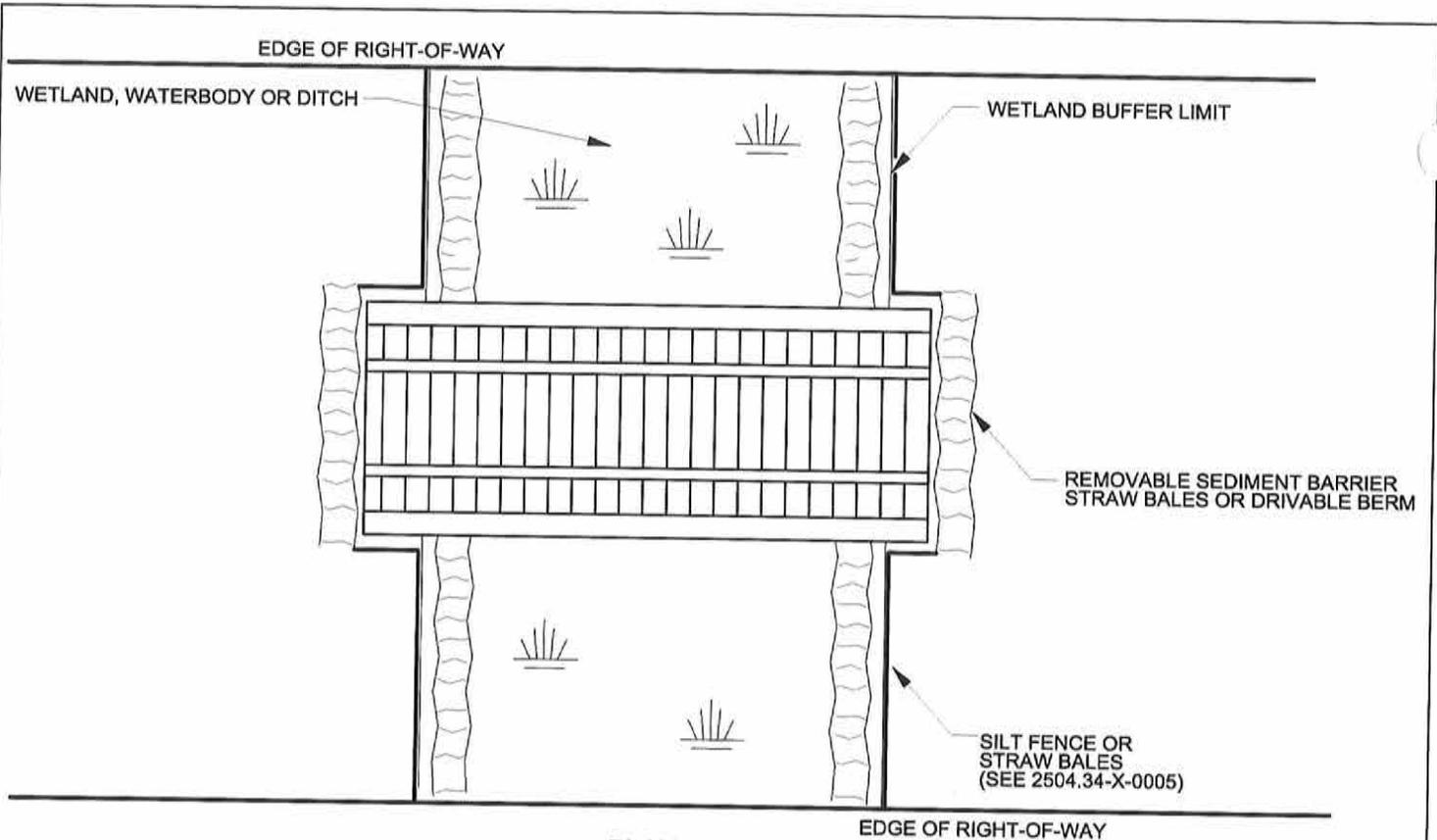
REFERENCE DRAWINGS				NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT  TYPICAL EROSION CONTROL MATTING					
DRAWING NO.	TITLE								
REVISIONS				DRAWN BY: NWP	DATE: 9-02-2014	ISSUED FOR BID:	SCALE: NONE		
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:
NWP-2015-111  Page 27 of 30				APPROVED BY:		DATE:		DRAWING NUMBER: 2504.34-X-0012	
				L		SHEET 3 OF 4		Enclosure 2 OF 4	



**SALMON STREAM RESTORATION ALTERNATIVE**

**EROSION CONTROL MATTING  
PERMANENT EROSION CONTROL MEASURE**

REFERENCE DRAWINGS						NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT			
DRAWING NO.	TITLE					TYPICAL EROSION CONTROL MATTING			
REVISIONS						DRAWN BY: NWP	DATE: 9-02-2014	ISSUED FOR BID:	SCALE: NONE
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:
							APPROVED BY:	DATE:	DRAWING NUMBER: 2504.34-X-0012
						Page 28 of 30			SHEET 4 OF 4
NWP-2015-111 Joint Public Notice						Enclosure 2			



**PLAN**



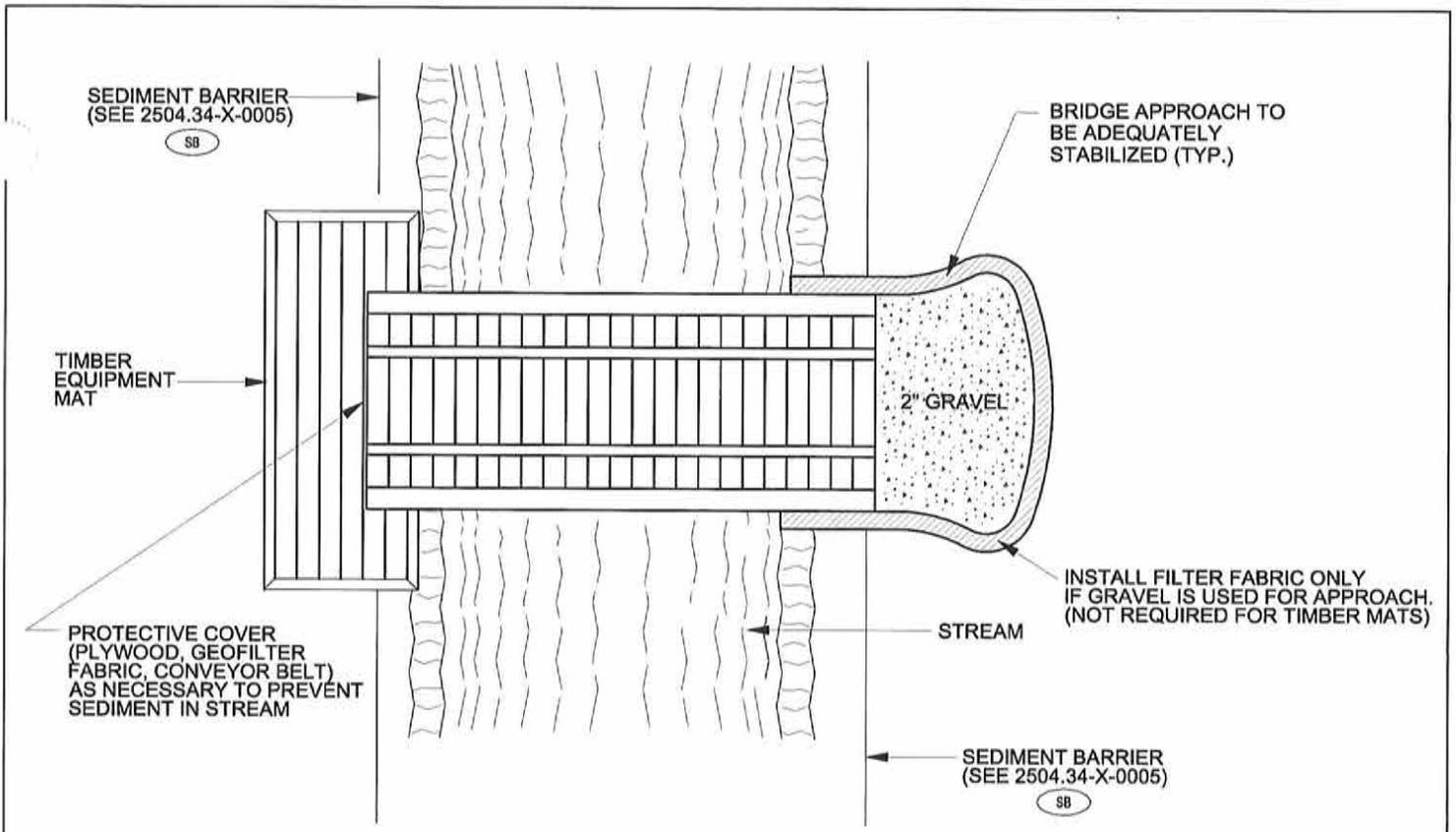
**PROFILE**

**NOTES:**

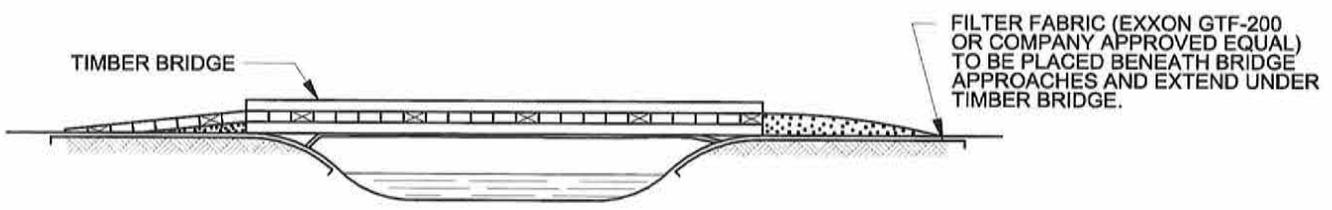
1. Periodically check installation and remove build-up of sediment or debris.
2. Materials placed in wetlands shall be completely removed during final clean-up. removal of this structure is not contingent upon establishment of permanent vegetation.
3. Extend timber mats to equipment crossing at waterbody. continue equipment mats through the wetland and waterbody area.
4. Use additional timber mat layers to raise crossing above grade where poor soil conditions exist.

## PORTABLE BRIDGE CROSSING TEMPORARY EROSION CONTROL MEASURE

REFERENCE DRAWINGS						NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT				
DRAWING NO.	TITLE									
REVISIONS						DRAWN BY:	DATE:	ISSUED FOR BID:	SCALE:	
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	NWP	9-02-2014		NONE
						CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:		
						APPROVED BY:	DATE:	DRAWING NUMBER:	2504.34-X-0013	
NWP-2015-111						Page 29 of 30			SHEET 1 Enclosure 2 of 2	



PLAN



PROFILE

- NOTES:
1. Timber bridges shall be adequately anchored at one end.
  2. Periodically check bridge installation and remove build-up of sediment or debris on bridge.
  3. Bridge approaches shall be either coarse aggregate or timber equipment mats.
  4. Materials placed along stream channel shall be completely removed during final clean-up. removal of this structure is not contingent upon establishment of permanent vegetation.
  5. Culverts shall be used to support the timber bridge to prevent settlement of the bridge if necessary. the timber bridge shall remain above the water surface elevation at all times.
  6. Contractor may use manufactured portable bridges or rail car bridges as substitutes for the measures shown, if approved by company representative.
  7. Support culverts shall not restrict flow and shall be designed to withstand and pass the highest flow that would occur while the bridge is in place.
  8. Sediment and debris shall not enter waterbody.

REFERENCE DRAWINGS						NORTHWEST PIPELINE LLC KALAMA LATERAL PROJECT			
DRAWING NO.	TITLE					TYPICAL PORTABLE BRIDGE CROSSING			
REVISIONS						DRAWN BY: NWP	DATE: 9-02-2014	ISSUED FOR BID:	SCALE: NONE
NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.	CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:
						APPROVED BY:	DATE:	DRAWING NUMBER: 2504.34-X-0013	SHEET 2 OF 2