

**ENVIRONMENTAL INFORMATION
DOCUMENTS ADDENDUM
FOR THE
CITY OF POTLATCH
REGIONAL WASTEWATER TREATMENT
SYSTEM**

**FEBRUARY 25, 2013
(REVISED MARCH 25, 2013,
2ND REVISION APRIL 5, 2013)**

**SUBMITTED BY:
TAYLOR ENGINEERING, INC.**

**PREPARED BY:
ANGELA TAYLOR, PE, ENVIRONMENTAL CONTACT
CHRIS MANSFIELD, PE, PROJECT CONTACT**

**OWNER:
CITY OF POTLATCH
MAYOR DAVE BROWN
PO BOX 525
POTLATCH, ID 83855
(208) 875-0708
POTLATCHMAYOR@POTLATCH.COM**



**245 E Main St.
Pullman, Washington 99163**

1. PROJECT DESCRIPTION

As discussed in the *Environmental Information Documents for the City of Potlatch Regional Wastewater Treatment System* dated August 25, 2011, the proposed project is a wastewater reuse (land application) system for the City of Potlatch, Idaho. To improve the sustainability of the project and decrease the travel time for the operator of the facility, an access bridge is proposed to be built across the Palouse River north of the land application area. This bridge was included in the February 2011 *Wastewater Facilities Plan Addendum*.

In Table 5-2 of the *Facilities Plan Addendum* (see reproduced Table 5-2 below) and Table 3-2 of the *EID*, the Recommended Alternative "B" includes the cost of the bridge. The cost of the bridge is included in Table 5-2 below, under the Site Finishes item, and is detailed in Exhibit B2 of the Feb 2011 *Facilities Plan Addendum* and included on the following page).

**Table 5-2
Project Cost Matrix**

	A River Discharge plus LSAS on Potlatch Land south of river	B River Discharge plus Land App on Potlatch Land south of river	C Land App on Potlatch Land north of river
Construction Costs			
Site Prep	\$127,000	\$116,000	\$330,400
Treatment Plant Upgrades	\$0	\$0	\$100,000
Headworks and Piping	\$63,600	\$63,600	\$43,380
Disposal System	\$542,400	\$269,300	\$390,400
Site Finishes	\$329,700	\$319,900	\$322,200
Subtotal	\$1,062,700	\$768,800	\$1,186,380
Contingency (15%)	\$159,405	\$115,320	\$177,957
Subtotal, Construction Costs	\$1,222,105	\$884,120	\$1,364,337
Land Acquisition Costs	\$157,800	\$157,800	\$108,000
Engineering Costs			
Design & Bidding Services	\$43,108	\$43,108	\$135,000
Construction Management & Inspection	\$122,960	\$122,960	\$189,000
Total Project Costs	\$1,545,973	\$1,207,988	\$1,796,337

Exhibit B2

ENGINEER'S OPINION OF PROJECT COSTS

Alternative B: Hybrid System II

River Discharge + Land App (Spray Irrigation) on Potlatch Corp. Land South of the River

Potlatch Wastewater Treatment Study

Taylor Engineering Project No. 09-C011, Amendment 2

By: Chris Mansfield

2/16/2011

Description	Unit	Quantity	Unit Price	Total
Site Prep				
Mobilization	LS	1	\$54,000.00	\$54,000
Silt Fence / Erosion Control	LF	1,500	\$6.00	\$9,000
Demolition of Existing Structures	LS	1	\$5,000.00	\$5,000
Clearing & Grubbing	AC	8	\$2,500.00	\$20,000
Monitoring Wells (20-ft deep on 200-ft intervals)	EA	7	\$4,000.00	\$28,000
Headworks and Piping				
12-inch Sewer Pipe	LF	630	\$40.00	\$25,200
Manholes	EA	3	\$2,800.00	\$8,400
Underground Sewage Dosing Tanks	EA	4	\$7,500.00	\$30,000
Land Application System				
400-amp Electric Service	LS	1	\$25,000.00	\$25,000
Pumps and Control System	LS	1	\$107,000.00	\$107,000
Irrigation Piping, 4-inch	LF	6,700	\$15.00	\$100,500
Irrigation System (Sprinkler Heads & Misc Parts)	AC	8	\$2,000.00	\$16,000
Seed & Fertilize	AC	8	\$2,600.00	\$20,800
Site Finishes				
Gravel Access Road (2200'x14')	SF	31,000	\$2.00	\$62,000
Ped Access Bridge over River (100'x8', Steel)	LS	1	\$125,000.00	\$125,000
Maintenance & Control Bldg	SF	480	\$135.00	\$64,800
Landscaping (Buffer Trees & Shrubs)	LF	1,500	\$12.00	\$18,000
Wire Fence, 4-strand	LF	2,500	\$15.00	\$37,500
Hydroseeding	SY	7,000	\$1.80	\$12,600
Subtotal =				\$768,800
15% Contingency =				\$115,320
Estimated Construction Costs =				\$884,120
Land Acquisition				
AC	52.6	\$3,000.00	\$157,800	
Engineering				
Design & Bidding Services =				\$43,108
Construction Mgt & Inspection =				\$122,960
Estimated Total Project Costs =				\$1,207,988



Notes

1 Costs include consideration of Davis-Bacon wages.

Alternative B was chosen for construction and design with funding coming from the DEQ Loan WW #0904, a 2013 DEQ Loan WW #1104 (covering bridge expenses), and CDBG funding as seen in the following breakdown:

<u>With CDBG Funding</u>	
Total project cost with contingency:	\$1,207,988
Remaining funds, DEQ Loan WW 0904	- 166,068
Community Development Block Grant:	- 450,000
Amount of 2011/2013 DEQ Loan needed:	\$ 591,920

The 2011/2013 DEQ Loan estimate is for \$1.2 million, with a 20-year repayment, 0% interest during design and construction and a \$243,852 subsidy. If the City borrows less than \$1.2 million, it is assumed the subsidy will be reduced accordingly. Further, assume DEQ will charge 1.75% interest over 20 years if the City borrows less than \$956,148. The debt service fee, spread out over both Onaway and Potlatch users, can be calculated as follows:

Debt Service with CDBG Funding

\$591,920 DEQ Loan @ 1.75% for 20 years = \$35,300 annual payment for 20 years.
 \$ 35,300 / 516 Equivalent Dwelling Units / 12 months per year =
\$ 5.70 per EDU monthly debt service fee

The existing user charge as of February 2011 for operation and maintenance in the City of Potlatch was \$19.23 per month, and for debt service was \$25.18. The new user charge for operation and maintenance in the City of Potlatch will be \$21.43 per month, and the new debt service charge will be \$32.25 per month, a total increase of \$9.27 per month.

There are 416 sewer connections in the City of Potlatch and 100 in the Onaway Water and Sewer Association (OWASA), and user charges vary in these two communities. Potlatch residents were paying \$45.00 per month for sewer until October 1, 2012 when sewer rates were increased to \$47.00 per month.

Table 5-3 on the following page shows the financial plan and includes the project cost with CDBG Funding taken into account. This table is reproduced from the 2011 *Facilities Plan Addendum* with only the discussion including CDBG funding shown, as this was the final outcome of the funding partners for the project.

Therefore, the cost of the proposed bridge is already included in the user costs, as discussed above, included in the 2011 EID, and as described in Section 5.4 Financial Plan of the approved *Facilities Plan Addendum*. No additional user costs will result from the proposed bridge.

ABSTRACT: The following narrative satisfies the requirements of the Idaho Department of Environmental Quality (IDEQ) Environmental Information Documents (EIDs) and outlines the environmental impact of the proposed project on the surrounding areas. Discussion includes the need for the proposed facility and its impact on air, water, land, plants, and wildlife, among others. In addition, mitigation measures will be discussed.

**Table 5-3
Financial Plan**

Description	Existing Conditions (FEB 2011)	Project Cost, with CDBG Funding
Annual Operating Costs	\$ 96,000	\$107,000
Annual Payment, RD Loan	\$109,280	\$109,280
Additional 10% of RD Loan	\$10,928	\$10,928
Annual Payment, DEQ Loan 2009	\$5,000	\$5,000
Additional 10% of DEQ Loan 2009	\$500	\$500
Annual Payment, DEQ Loan 2011	---	\$35,300
Capital Improvements Fund (Note 1)	\$18,484	---
= Total Revenue Required	\$240,192	\$268,008
Less Revenue from Onaway (Note 2)	(\$15,552)	(\$22,392)
= Annual Revenue Required from City of Potlatch Sewer Customers	\$224,640	\$245,616
Divided by 12 = Monthly Rev. Req'd	\$18,720	\$20,468
Divided by # of Potlatch EDU's	416	416
Monthly User Fee =	\$45.00	\$49.20

Note 1: Capital Fund no longer needed, since the City is constructing the project they've been saving for.

Note 2: Assumes the City of Potlatch will raise Onaway's rates proportionately, i.e. the 100 users in Onaway and the 416 users in Potlatch each pay the same debt service cost for the project.

2. PURPOSE AND NEED FOR THE PROPOSED PROJECT

This access bridge will decrease the amount of drive time and fuel consumption used in order for maintenance personnel to access the lagoon site. The need for this bridge is tied to the sustainability of the project overall as well as reducing maintenance time.

3. AFFECTED ENVIRONMENT

The Proposed Project Planning Area (PPPA), outlined in blue on Figure 3-2 from the August 2011 EID and shown on the page 6, includes the incorporated areas of Potlatch and Onaway as well as the areas outside of the city limits that include the lagoons and proposed land application area. The Area of Potential Effect (APE) is the same as the PPPA. The land application area boundary includes the bridge area in the northeast corner where the boundary extends across the Palouse River. Below is an amended discussion of the affected environments due to the bridge construction as well as a discussion of the construction mitigation that decreased impact to the wetlands due to the irrigation patterns.

A. Physiography, Topography, Geology and Soils

No change to this section.

B. Climate

No change to this section.

C. Population

No change to this section.

D. Economics and Social Profile

No change to this section.

E. Land Use

No change to this section.

F. Floodplain Development

i Affected Environment

The bridge site is located near the 100-year floodplain and all construction of the superstructure will occur within this area. Additionally, no construction will occur below the ordinary high water mark so as to not impact the river channel. The bridge will span the river channel with no columns or structures extending into or affecting the channel. The Floodway / Floodplain map showing the location of the PPPA and bridge is seen on the following pages.

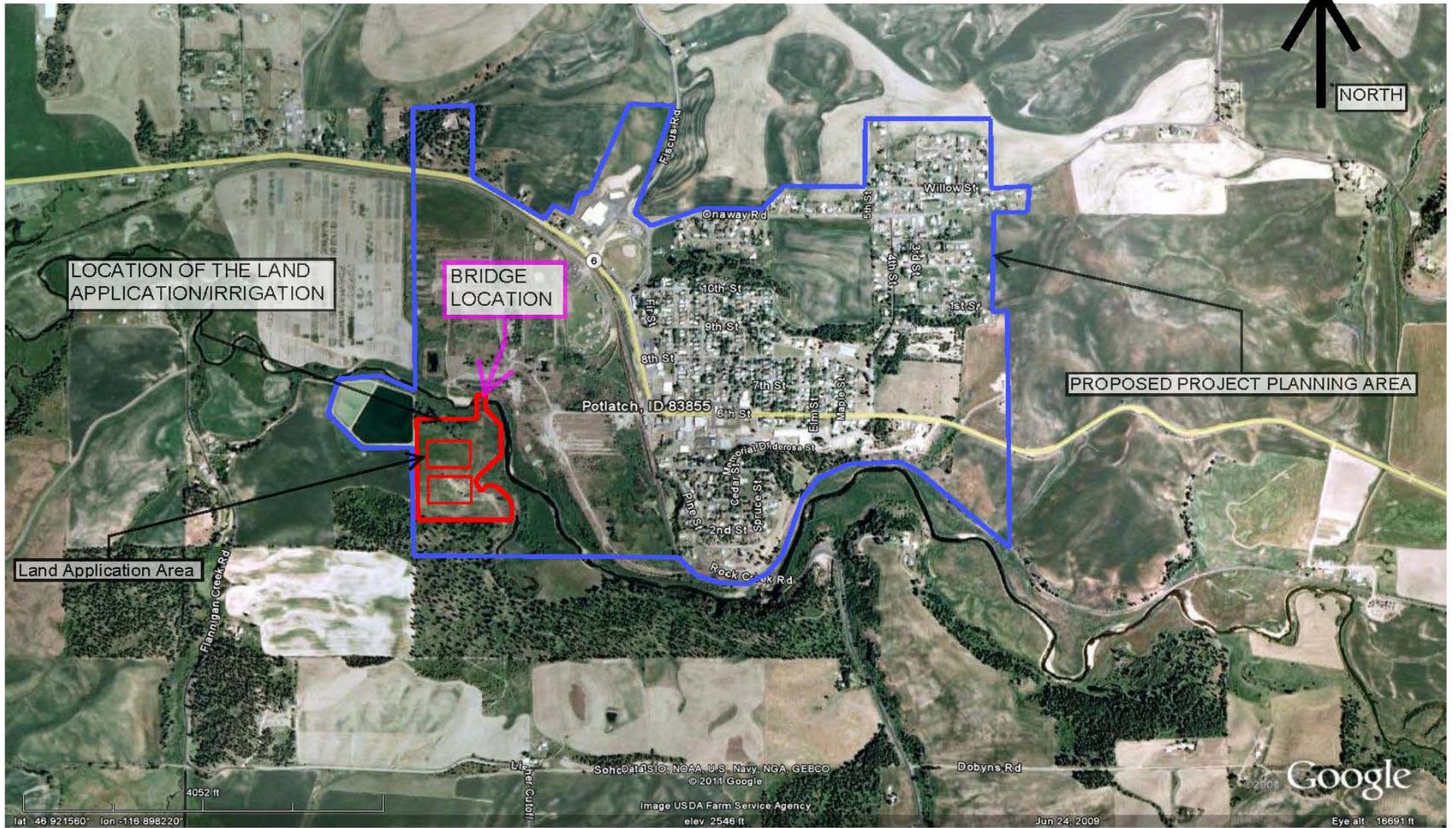
ii Environmental Consequences

Both bridge abutment locations are above the 100-year floodplain elevation but occur within the horizontal extent of the floodplain. However, gravel base material will be imported and added in the floodplain in order to gain elevation from the access roadway to the bridge deck on both the north and south sides of the bridge. This imported material will consist of crushed surfacing top course and base course. A Hec-RAS analysis has been completed to verify that the bridge and associated approaches does not raise the 100-year flood water surface elevation or adversely affect the water surface elevations upstream or downstream of the proposed structure.

iii Mitigation

A Development Permit was obtained from Latah County. The documentation for this permit is attached and includes a Hec-RAS no-rise analysis. This analysis is completed by obtaining the original step-backwater model data, completing a run using the original conditions within the vicinity of the bridge, adding new cross-sections into the analysis and re-running the model. Finally, the bridge section is added to the model and rerun to verify that the section does not create a water surface elevation rise (refer to proposed bridge plans in the attachments). This analysis was completed and the no-rise condition is satisfied. No mitigation will be necessary as the bridge will not affect the floodplain or 100-year water surface elevations.

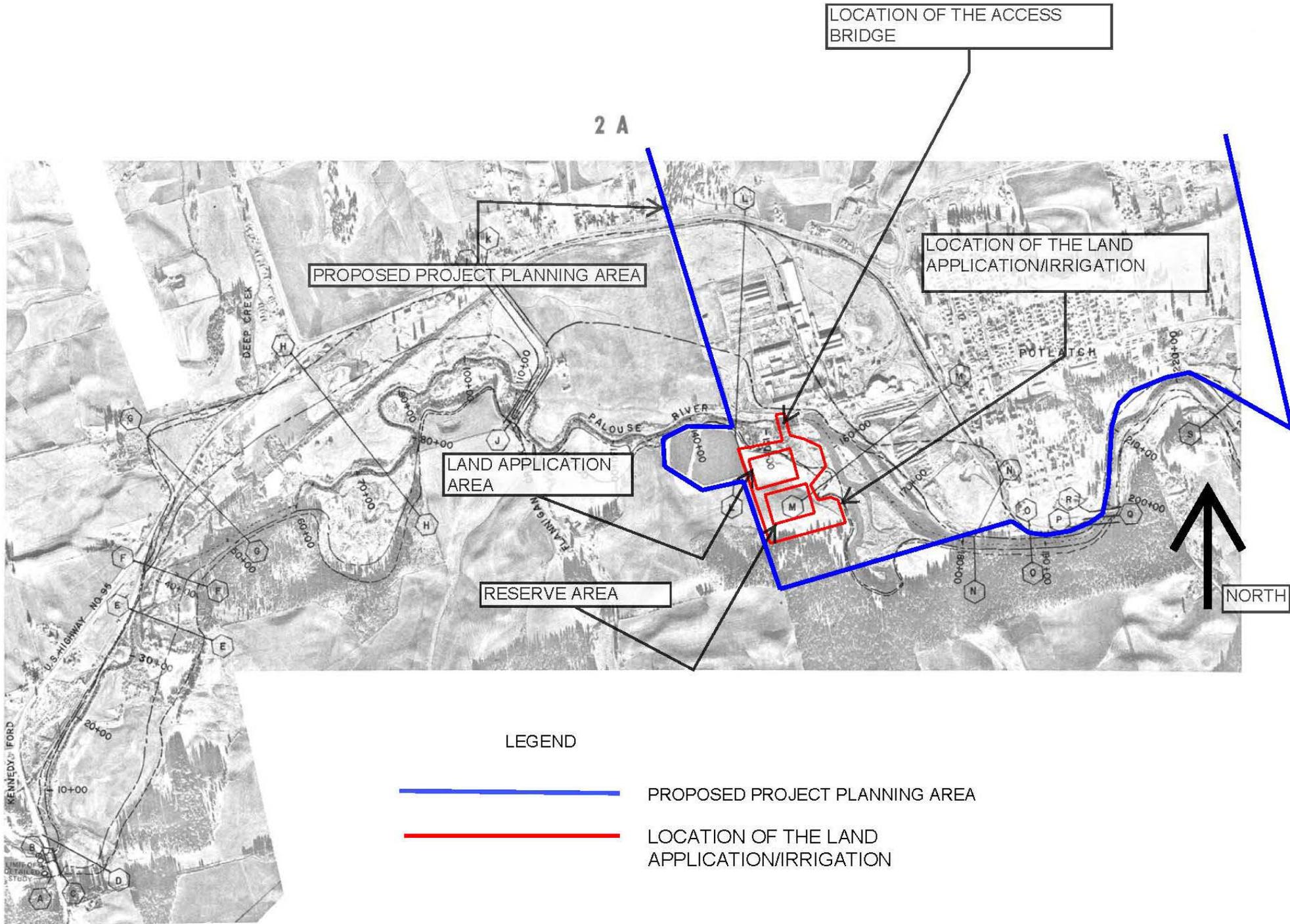
PROPOSED WASTEWATER TREATMENT IMPROVEMENTS (AERIAL IMAGE)



LEGEND

-  PROPOSED PROJECT PLANNING AREA
-  LOCATION OF THE LAND APPLICATION/IRRIGATION

Figure 3-2



Additionally, the design-build contractor has verified with the Army Corps of Engineers and Idaho Department of Water Resources (IDWR) that a (Joint Resources Permit Application) JRPA application is not necessary for installation of the bridge. IDWR stated that they did not need to see any maps or exhibits for the project after the design-build contractor explained that the project would occur outside of the ordinary high water mark. This conversation occurred on August 1, 2012 between Shem Johnson of S & L Underground (design-build contractor) and Kenneth Knoblock with IDWR. Documentation of all correspondence with Army Corps of Engineers and IDWR is attached.

Mary McGown, of IDWR, was contacted to determine if she had any concerns about the construction of the proposed bridge. She was provided with a copy of the bridge specifications, plan sheet, development permit application, and floodway map. This documentation and her correspondence is included as an attachment.

G. Wetlands

i Affected Environment

Wetlands were investigated by Tom Duebendorfer in January 2010 and again in June-July 2011 (see Appendix D of the August 2011 EID). As seen in the report, the land application area is bounded to the north and east by wetlands. In addition, three small isolated wetlands occur toward the northwest of the site. Installation of underground irrigation lines will be excluded from the wetland areas. However, after construction is complete, recycled water may enter the wetlands by spray application. Additionally, the wheels from the center pivot irrigation system travel over a small portion of the wetland. The area where the travel path was constructed occurs within a non-jurisdictional wetland.

The proposed bridge abutments will occur within wetland areas located adjacent to the Palouse River on both the north and south sides of the river as shown in the Wetland investigations by Tom Duebendorfer. In phone conversations with Shane Slate with the Army Corps of Engineers, no adverse affects will occur due to this bridge construction. A Nationwide Section 18 permit was obtained for work within the wetlands associated with the bridge and the travel pathways. This permit is seen in Appendix B – Army Corps of Engineers correspondence.

ii Environmental Consequences

Construction of a raised travelway will extend into the wetland for the wheel path of the center pivot tires. This construction consists of small pier installation with a small elevated pathway above the wetland for a total length of 170 feet (90 feet for the interior wheel path and 80 feet for the exterior wheel path). The improvements are seen in exhibits 3-3, 3-4, 3-5, and 3-6 on the following pages.

iii Mitigation

The raised travel-way is a means to mitigate impacts from the wheel tread within the wetland.

Stormwater management BMPs will be installed to limit sediment migration into these wetlands during bridge construction. Construction will occur within a limited area directly adjacent to the bridge abutments and roadway approaches. This area will be linearly confined to edge of gravel roadway, bridge abutments and approaches leading to the bridge deck.

Exhibit 3-3 Wetland Elevated Wheel Pathway (looking southwest)



Exhibit 3-4 Wetland Elevated Wheel Pathway (looking south-southwest)



Exhibit 3-5 Wetland Elevated Wheel Pathway (looking west)



Exhibit 3-6 Wetland Elevated Wheel Pathway (looking south)



ACCESS BRIDGE LOCATION

RAISED TRAVEL PATHWAYS

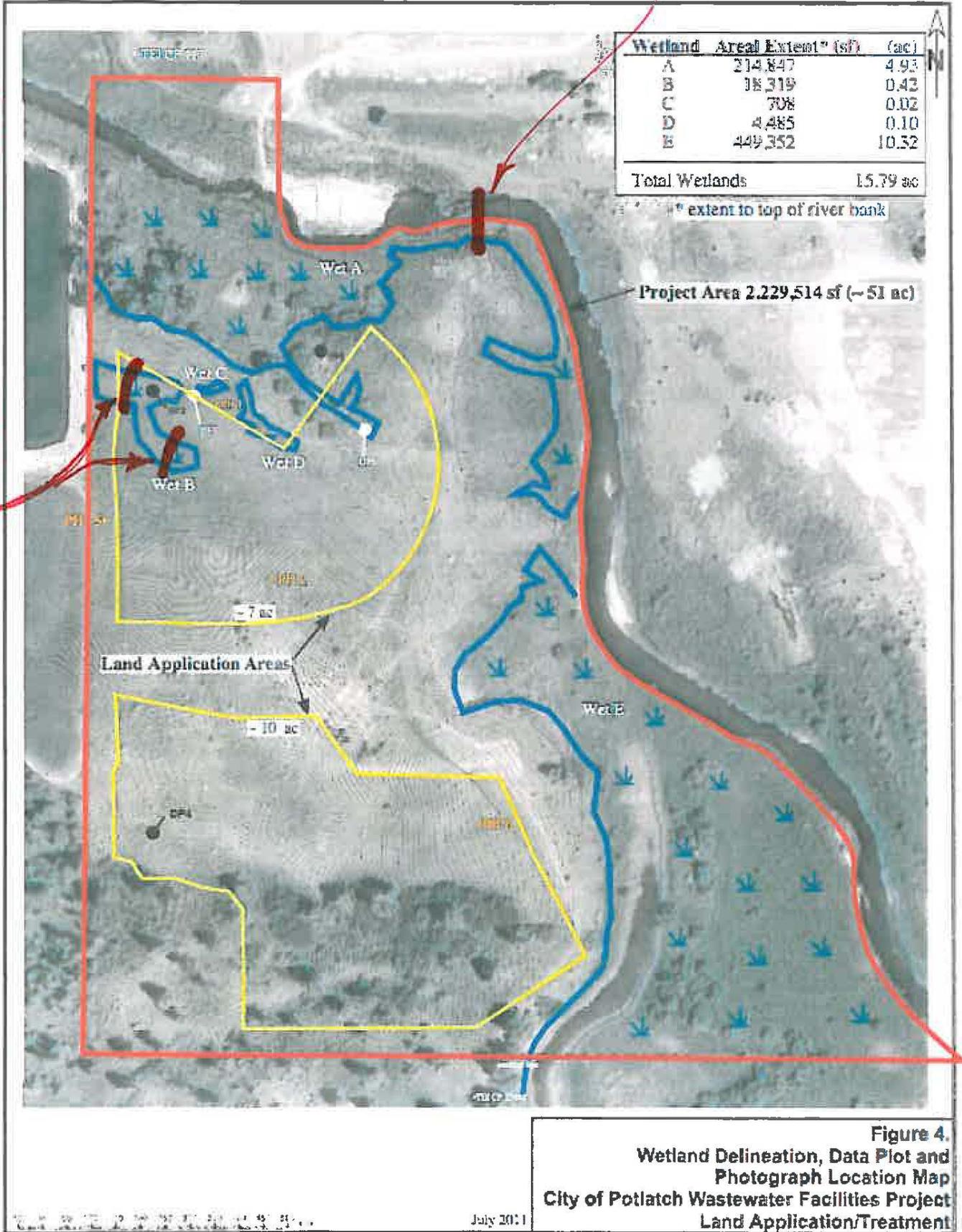


Figure 4.
Wetland Delineation, Data Plot and
Photograph Location Map
City of Potlatch Wastewater Facilities Project
Land Application/Treatment

H. Wild / Scenic Rivers

No change to this section.

I. Proximity to Sole Source Aquifer, Water Quality and Quantity

No change to this section.

J. Environmental Justice

No change to this section.

K. Cultural Resources

i Affected Environment

Plateau Archaeological Investigations, LLC completed a Cultural Resource Survey in April 2011 (Appendix G of the August 2011 EID). The report includes discussion of a historic dump site that includes a secondary scatter area. The bridge site will not include construction through this dump site or scatter area.

ii Environmental Consequences

As bridge construction will not occur within the dump area or scatter area, the project will not adversely affect the area. No short-term or long-term effects will be seen.

iii Mitigation

No mitigation will be necessary, as the bridge is located greater than 100 feet from both the dump site and secondary scatter areas shown in the exhibit on the following page.

L. Flora and Fauna, Biological Resources

No change to this section.

M. Recreation and Open Space

This bridge may be used in the future for pedestrian access across the river. Therefore, there is a potential benefit to recreational opportunities as a result of the bridge construction.

N. Agricultural Lands

No change to this section.

O. Air Quality

No change to this section.

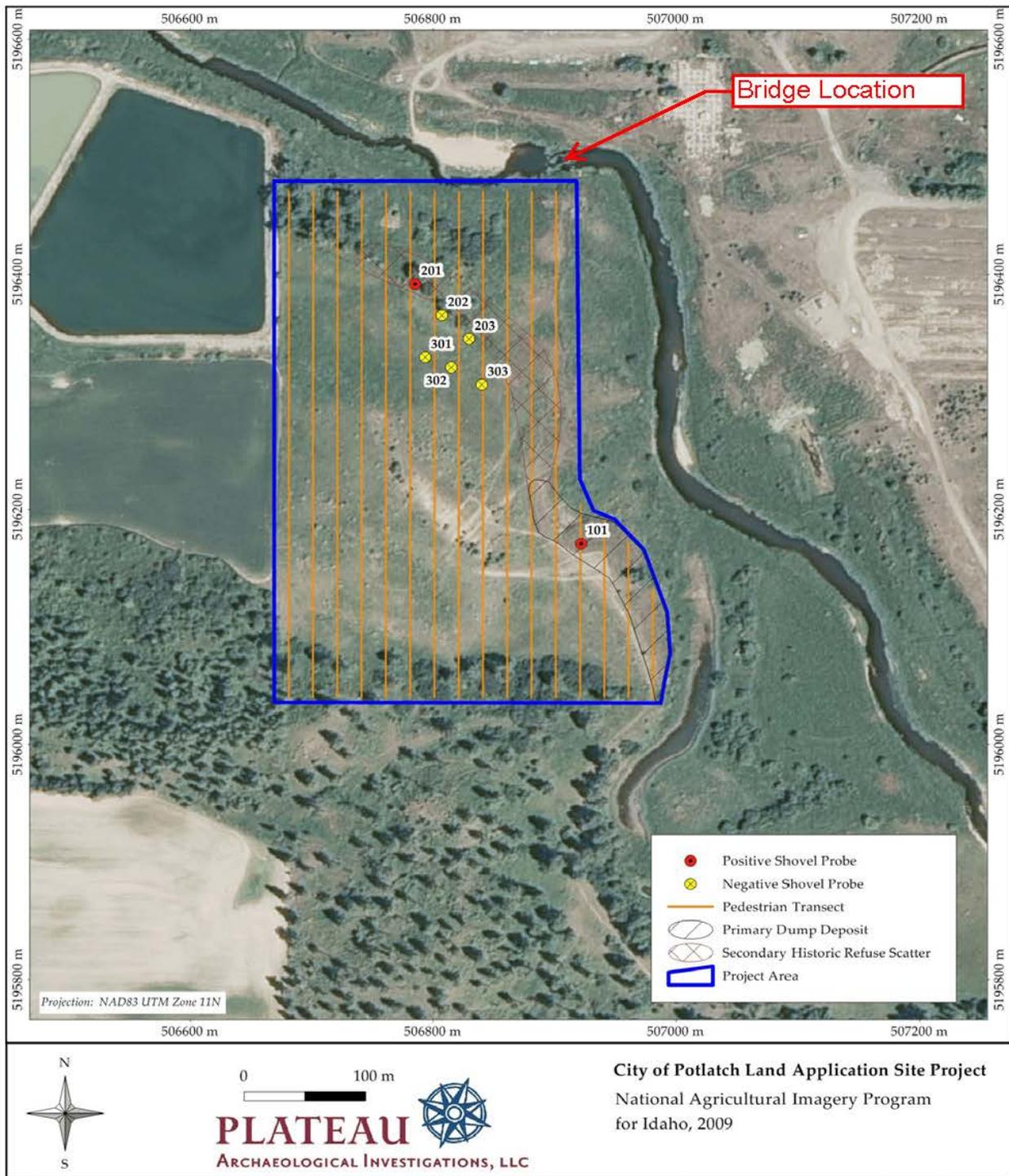


Figure 3. Map of the Project Area showing the location of survey efforts and cultural materials.

P. Public Health

No change to this section.

Q. Water Reuse

No change to this section.

4. ENVIRONMENTAL IMPACTS OF PROPOSED PROJECT

A. Floodplain

The access bridge will be constructed within the floodplain and only short term impacts will occur as a result of this construction. A no-rise analysis of the proposed bridge was completed to verify that the structure would not impact the 100-year water surface elevation upstream or downstream of the structure. This no-rise analysis shows that there are no short-term, long-term, indirect, direct, or cumulative effects to the floodplain as a result of the bridge installation. Additionally, the bridge will be constructed a minimum of 1 foot above the 100-year water surface elevation. The floodplain will be disturbed by construction equipment during installation but no long term effects from the construction will be seen. Vegetation will be re-established at the end of construction to stabilize the soils within the floodplain and limit their migration during and after construction. Some soil will be temporarily unstable due to construction of the bridge but this will only be a short-term effect. Additionally, piles will be utilized with a small impact to the surrounding areas while they are driven into the underlying stratum. This pile driving is a way to minimize impacts to soils and floodplain are short term with regard to the pile installation.

B. Wetlands

Due to the proximity of the wetlands to the proposed project improvements, some impacts to the wetlands may occur. Construction was excluded from wetland areas and construction stormwater BMPs will be implemented during construction. During heavy rain events, some sediment may enter these areas creating a direct short-term impact to the wetlands. No indirect, long-term or cumulative adverse impacts are anticipated on this natural feature.

5. MEANS TO MITIGATE ADVERSE ENVIRONMENTAL IMPACTS

A. Floodplain Mitigation

A Latah County Development Permit was obtained prior to starting bridge construction. This permit application includes documentation of the no-rise analysis. No water surface rise will result from the proposed bridge. No work will occur below the ordinary high water mark and no mitigation will be necessary as a result of this work within the floodplain.

B. Wetland Mitigation

During grading operations for the land application system, the Contractor protected the wetlands by constructing silt fence around the perimeter (See Exhibit 5-1). In addition,

the wheel path of the center pivot irrigator extends through a portion of the wetland. To mitigate this impact, a raised travel-path was constructed to elevate the wheel above the wetland. This travel-path is a permanent BMP that will protect the wetland from long-term impacts from the center pivot irrigation system.

The bridge construction will occur within wetlands where the abutments are located. Therefore, an Army Corps of Engineers Nationwide Permit Section 18 was obtained. See Appendix B for a copy of the permit and correspondence associated with the wetlands.

Additionally, an EPA Stormwater Construction General Permit is in effect for this construction project and will be maintained throughout the duration of the bridge construction. A Stormwater Pollution Prevention Plan was developed as part of this permit and will be referenced during the construction of the bridge. Stormwater BMPs will be installed prior to constructing the bridge.

Exhibit 5-1 Silt Fencing Around Wetlands During Construction (looking north)



6. ACRONYMS & ABBREVIATIONS

APE	Area of Potential Effect
BMP	Best Management Practice
EPA	Environmental Protection Agency
IDEQ	Idaho Department of Environmental Quality
IDWR	Idaho Department of Water Resources
PPA	Proposed Planning Area

Appendix A

Latah County Development Permit



LATAH COUNTY PLANNING & BUILDING

Latah County Courthouse

PO Box 8068, 522 South Adams

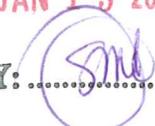
Moscow, ID 83843

(208) 883-7220 ♦ FAX (208) 883-7225 ♦ E-Mail: pb@latah.id.us ♦ In Latah County, Toll Free: 1-800-691-2012

January 14, 2013

City of Potlatch
Attn: Mayor David Brown
PO Box 525
Potlatch, ID 83855

RECEIVED
JAN 15 2013

BY: 

Reference: DP13-04

Dear Mr. Brown:

Attached is a copy of your development permit for a bridge to cross the Palouse River to access your sewage treatment area. The project is located in Section 01, Township 41 North, Range 05 West, Boise Meridian and referenced as Assessor's Tax Parcel 41N05W014381. This permit is granted under the provisions of §5.01 of the Latah County Land Use Ordinance #269 as amended.

This development permit provides approval based upon the information provided in your application of January 7, 2013, as long as the following conditions are met.

- 1) The work is completed in accordance with the submitted plans, no rise certification and submitted application.
- 2) No toxic substances that will be used in the construction of the bridge.
- 3) Submit a post construction elevation certificate.

A copy of the approved development permit application has been included.

If you have any questions, please contact me.

Sincerely,



Jason Boal
Associate Planner

cc: Angela Taylor, PE

F. Statement of Development Compliance (Complete for All Work):

1. Attach a technical analysis, by a professional engineer licensed in the State of Idaho, which shows whether a proposed development to be located in a flood hazard area may result in physical damage to any property.
2. An engineer must certify that:

This development will not be in violation of the purpose of any provision of Section 5.01 of the Latah County Zoning Ordinance.

Signature: Angela Taylor
Date: 12/21/12



This Development will not be subject to substantial flood damage and will not cause flood losses on other land or to the public.

Signature: Angela Taylor
Date: 12/21/12

ADMINISTRATIVE

CONDITIONS SET FOR THIS APPLICATION THAT APPLICANT MUST ADHERE TO:

- Compliance w/ Plans, Notice, & Application
- Submit Post development elevation certificate
- No Toxic Substances

1. Is the development considered to be a Critical Facility? Yes No
2. Required compliance with Sections A B C D E F of this application
3. Permit **approved** Permit denied (Statement attached)
4. Work inspected by: _____
5. Local Administrator Signature: [Signature] Date 1/14/13
6. Post development elevation certificate received? Yes No
7. Post development engineering certification of development received? Yes No
8. Fee Paid: waived Date: 1/14/13 Receipt #: _____

COPY

DEVELOPMENT PERMIT APPLICATION

PROHIBITION ON NEW ACTIVITIES - There shall be no new construction of dwellings, placement of manufactured housing, or accessory buildings in the floodplain or floodway unless an applicant can show that there is no other portion of their parcel available for their intended purpose that is outside of the floodplain. Parcels created after the date of adoption of this ordinance shall only be allowed to develop on portions of these parcels that are outside of the designated floodplain. If an act of nature destroys a residence, and the infrastructure for that residence is still useable, the residence may be replaced at that location so long as the remaining portions of the old structure, the new structure, and any additional improvements that need to be made are brought into compliance with this ordinance, and so long as its location is not in the floodway.

DEVELOPMENT INCLUDES: new construction, a substantially improved structure, placement of a manufactured home or building, mining, dredging, filling, grading, excavating, roads, bridges, culverts, altering or relocating stream channels, storage of materials including gas or liquid storage tanks, stockpiling, septic systems, drainfields, and sewage lagoons.

The undersigned hereby makes application for a permit to develop in a designated floodplain area. The work to be performed is described below and in attachments hereto. The undersigned agrees that all such work shall be done in accordance with the requirements of the Latah County Floodplain Ordinance and with all other applicable local, State and Federal regulations. This application does not create liability on the part of Latah County or any officer or employee thereof for any flood damage that results from reliance on this application or any administrative decision made lawfully thereunder.

Owner: City of Potlatch Builder/Other: _____
Address: PO Box 525 Address: _____
Potlatch, ID 83855
Telephone: 208-875-0708 Telephone: _____
Address of Property: SW 1/4 SECTION 1, T41N, R5W, B.M., Across Palouse River SW of Potlatch City Limits

Applicant's Signature: _____ Date _____
Owner's Signature (if different than applicant) _____ Date _____

A. Description of Work (Complete for All Work):

- 1. Proposed Development Description:
 New Building Improvement to Existing Building Septic System
 Manufactured Home Filling Stream Channel Alteration/Relocation
 Other Bridge for Access to Sanitary Sewer treatment area

2. Size and location of proposed development (attach site plan):
span 124 ft, width 8' 7" across Palouse River

3. Per the floodplain map, what is the zone, panel number, and base flood elevation of the area of the proposed development?
Zone A4 Panel Number 1600860135B Base Flood Elevation 2488.16 feet NAVD
2484.5 feet NGVD

Does the location of the development have a FIRM designated floodway area? Yes No

If no, please attach a technical evaluation by a professional engineer licensed in the State of Idaho demonstrates that the proposed development along with existing development will not increase the base flood elevation more than one foot above the base flood elevation as indicated by the FIRM.
Within flood hazard areas where the base flood elevation has been determined but the floodway has not been determined, no new construction, substantial improvement, or other development (including fill) shall be permitted unless a technical evaluation by a professional engineer licensed in the State of Idaho demonstrates that the proposed development along with existing development will not increase the base flood elevation more than one foot above the base flood elevation as indicated by the Flood Insurance Rate Map.

Is the development in an unnumbered flood hazard area? Yes No
If yes, the Planning Department, in order to administer this article, may review and reasonably utilize information presented to them from the applicant that has been verified by a professional engineer licensed in the State of Idaho regarding any base flood elevation and floodway data available from a Federal, State, or other qualified source, in order to administer this Article.

4. Are other Federal, State or local permits obtained or required? see attached e-mails from Army Corps of Engineers and Idaho Dept. of Water Resources
 Yes No If yes, please attach copies of all permits
Type: _____

As a condition of development permit issuance, the permittee shall receive all necessary permits from those Federal, State, or local governmental agencies from which approval is required. The Planning Department shall also notify the Idaho Department of Water Resources and the U.S. Army Corps of Engineers for their determination if any additional permits are necessary.

5. Is the proposed development in an identified floodway? Yes No

If yes, submit plans stamped by a professional engineer licensed in the State of Idaho and an agreement with the engineer that states they will certify the development was constructed in compliance with the approved plans. *See attached*

If yes, attach a "No Rise Certification," which must be completed by a licensed engineer in the State of Idaho, with approved supporting data (a step-backwater analysis and a conveyance compensation computation) that demonstrates that the proposed development will not result in any increase in base flood elevation as indicated by the Flood Insurance Rate Map. *See attached*

All development in the floodway shall be designed or reviewed and approved by a professional engineer licensed in the State of Idaho who shall ensure that all elevations, structural design, and other requirements of this and the building code ordinances are met and who shall also certify that the completed construction is in compliance with the approved plans.

Within a regulatory floodway, no new construction, substantial improvements or other development (including fill) shall be permitted unless a technical evaluation (a no rise certification that includes both a step-backwater analysis and a conveyance compensation computation) by a professional engineer licensed in the State of Idaho demonstrates that the proposed development will not result in any increase in base flood elevation as indicated by the Flood Insurance Rate Map.

6. Is the proposed development a critical facility (see Section E of this application)? Yes No *Access Bridge*

B. Complete for New Structures, Manufactured Homes and Buildings, Building Sites, Alterations, Additions, or Improvements to Existing Structures:

1. For alterations, additions or improvements to existing structures:

What are the proposed changes to the existing structure? (be very specific, if adding onto a structure list the square footage and type of addition, if doing other repairs such as roofing, siding, etc.. list out all materials and provide receipts for materials or a signed bid estimate from two contractors)

N/A

What is the estimated market value of the existing structure? \$ _____

What is the cost of the proposed construction? \$ _____
The Building Department will provide/verify the assessed value of the structure and the valuation of the addition/improvements.

2. Attach the plans for the structure (residential or non-residential) that have been designed or reviewed and approved by a professional engineer licensed in the State of Idaho and an agreement with the engineer that states they will certify the development was constructed in compliance with the approved plans and that they will submit an as-built elevation (elevation certificate) of the lowest floor/floodproofing to the Planning Department.

The plans must show anchoring, materials to be used, methods and practices to be used that will minimize flood damage, utility locations, and the location and sizes of openings in spaces below the lowest floor, in addition to the requirements of submittals from the building code.

Is this in Zone AH or AO? Yes No

If yes, submit a design stamped by a professional engineer licensed in the State of Idaho that shows designed, adequate drainage paths that guide flood water around and away from proposed structures on slopes.

New structures and substantial improvements to structures in flood hazard areas shall be anchored to prevent flotation, collapse, or lateral movement during the base flood event. The new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage, as well as using methods and practices that minimize flood damage.

Within Flood Zones AH and AO, adequate drainage paths, as designed by a professional engineer licensed in the State of Idaho, are required to guide flood water around and away from proposed structures on slopes.

Spaces below the lowest floor of a new or substantially improved structure shall be used solely for parking of vehicles, building access, or storage. These spaces shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of flood waters. Designs must meet the following minimum criteria:

1. A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding; and
2. The bottom of all such openings no higher than one foot above the lowest adjacent finished grade.

The engineer shall also ensure that all elevations, structural design, and other requirements of this and the building code ordinances are met and shall also certify that the completed construction is in compliance with their approved plans.

3. Required lowest floor elevation (*basements are not allowed in the floodplain/floodway*): N/A feet NAVD
Attach the agreement with the engineer that states they will certify the development was constructed in compliance with the approved plans and that they will submit an as-built elevation (elevation certificate) of the lowest floor/floodproofing to the Planning Department
The engineer shall submit, upon completion of the lowest floor or the floodproofed portion of a non-residential structure, the as-built elevation of the lowest floor or flood-proofing. The as-built elevation must show that the lowest floor or flood-proofing, together with attendant utilities, is one foot above the BFE in zones where flood elevation information is available and three feet above the highest adjacent ground elevation where the BFE's are not available.

4. Elevation to which all attendant utilities, including all heating and electrical equipment will be protected from flood damage: N/A feet NAVD

Will any utilities will be located below the base flood elevation? Yes No N/A

Is the development in a location where base flood elevation data is not available? Yes No

If yes to either of the previous questions, attach plans for utilities that have been designed or reviewed and approved by a professional engineer licensed in the State of Idaho and attach an agreement with the engineer that states they will certify the utilities were constructed in compliance with the approved plans and that they will submit an as-built elevation (elevation certificate) of the utilities to the Planning Department.

All mechanical, electrical, heating, ventilation, air conditioning equipment, plumbing, other utilities, and other service facilities shall be designed so as to prevent water from entering or accumulating within the components during conditions of flooding and shall be elevated one foot above base flood elevation. When located below the base flood elevation or if base flood elevation data is not available all utilities shall be designed or reviewed and approved by a professional engineer licensed in the State of Idaho who shall ensure that all elevations, structural design, and other requirements of this ordinance, the building code ordinance, or other state or local regulations are met and who shall also certify that the completed construction is in compliance with their approved plans. New and replacement water supply and sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding. Sanitary sewer and storm drainage systems for buildings that have openings below the base flood elevation shall be provided with automatic backflow valves or other automatic backflow devices that are installed in each discharge line passing through a building's exterior wall.

5. In addition to the above, for manufactured homes or buildings: N/A
Is your manufactured home going to be placed in an existing manufactured home park? Yes No

If yes, attach plans to elevate home and plans that show attachments to supporting pier structures, including the anchoring of the piers.

If no, attach plans for a real property foundation that elevates the home to the appropriate level and that has adequate openings (see #2 above), and plans that show the anchoring of the foundation and the mobile home to the foundation.

Manufactured homes placed or substantially improved manufactured homes in a flood hazard area shall be elevated on a permanent foundation such that the lowest floor is elevated at least one foot above the base flood elevation or, if no base flood elevation is given, three feet above the highest adjacent grade. The home shall be securely anchored to a permanent, adequately anchored foundation system to resist flotation, collapse and lateral movement.

Manufactured homes placed in existing spaces in a previously established manufactured home park shall be elevated as specified above and attached to and supported by reinforced piers which are adequately anchored to resist flotation, collapse or lateral movement of the manufactured home.

6. In addition to the above, for non-residential floodproofed construction (applicable for garage/shop or buildings used solely for limited storage or parking, bridges, signs, fences, towers, windmills, gazebos, decks, docks, playground equipment, dams):

abutments will be set on piers drilled to firm subgrade. Structure outside of Ordinary High Water Mark, Bridge deck set minimum Type of floodproofing method: 1ft above calculated 100-year flood elevation.

The required floodproofing elevation is: _____ feet NAVD

Attach floodproofing certification and building plans certified by a professional engineer registered in the State of Idaho that any non-residential floodproofed structure will meet one of the following criteria:

1. These spaces shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of flood waters. Designs must meet the following minimum criteria:
 - A. A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding; and
 - B. The bottom of all such openings no higher than one foot above the lowest adjacent finished grade.

OR

2. All structural components located below the floodproofed level must be capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.

Attach the agreement with the engineer that states they will certify the development was constructed in compliance with the approved plans and that they will submit an as-built elevation (elevation certificate) of the lowest floor/floodproofing to the Planning Department.

For a non-residential structure to be eligible for wet-floodproofing, the structure must be a garage/shop or must be used solely for limited storage or parking, and must meet the criteria for wet-floodproofing set forth in Section 5.01.04.05 of this ordinance, as well as other criteria for building in a floodplain as set forth in this ordinance.

If base flood elevation data are given on the Flood Insurance Rate Map, new construction and substantial improvements, together with attendant utility and sanitary facilities, shall have the lowest floor (including crawl spaces and basements) elevated one foot above base flood elevation or shall be wet or dry floodproofed so that the structure is watertight up to one foot above the base flood elevation. All structural components located below the floodproofed level must be capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.

If no base flood elevation data are given on the Flood Insurance Rate Map, new and substantially improved structures shall have the lowest floor (including crawl spaces and basements) elevated three feet above the highest adjacent grade or shall be wet or dry floodproofed so that the structure is watertight up to three feet above the highest adjacent grade. All structural components located below the floodproofed level must be capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.

Within Flood Zones AH and AO, adequate drainage paths, as designed by a professional engineer licensed in the State of Idaho, are required to guide flood water around and away from proposed structures on slopes.

C. Complete for Divisions, Subdivisions and Manufactured Home Parks: N/A

1. Will the subdivision or other development contain 50 lots or 5 acres? Yes No
2. If yes, does the plat or proposal clearly identify base flood elevations? Yes No
3. Please submit a preliminary plat that shows the locations of the lots, the related floodplain, the location of all utilities, information that shows how flood damage will be minimized, and how there will be adequate drainage on each lot.
Each proposed lot shall have a building site outside of a designated flood hazard area. The plat or land division must include a development restriction prohibiting the placement of any residences, accessory buildings, wells or sewage disposal systems within the designated flood hazard area.
4. If no to question #2, please have an engineer submit a report generating base flood elevation data
All subdivision proposals shall be consistent with the need to minimize flood damage;

All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage;

All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage; and

Where base flood elevation data has not been provided or is not available from another authorized source, it shall be generated for subdivision and manufactured home park proposals and other proposed developments where floodplain exists which contain at least 50 lots or 5 acres (whichever is less).

D. Complete for Stream Channel Alterations or Relocations

Any person who alters a watercourse (dredge, fill, relocation, dike, dam, etc) must contact the IDWR and ACOE to obtain their permits prior to the issuance of this permit. All altered water courses must be maintained so the flood carrying capacity is not diminished.

1. A description of the extent to which any watercourse will be altered or relocated as a result of proposed development.
2. Computations by a professional engineer licensed in the State of Idaho must be submitted that demonstrate that the altered or relocated segment will provide equal or greater conveyance than the original stream segment.
3. Copies of legally binding commitments that the conveyance capacity of the altered or relocated stream segment will be maintained.
4. Documentation for the Federal Emergency Management Agency to revise the floodplain maps, if necessary.
5. Copies of notifications to adjacent communities, the Army Corp of Engineers, the Idaho Department of Environmental Quality, and the Idaho Department of Water Resources prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Planning Department and to the Regional Director of the Federal Emergency Management Agency.

A description of the extent to which any watercourse will be altered or relocated as a result of proposed development. Computations by a professional engineer licensed in the State of Idaho must be submitted that demonstrate that the altered or relocated segment will provide equal or greater conveyance than the original stream segment. The applicant must provide legally binding commitments that the conveyance capacity of the altered or relocated stream segment will be maintained. The applicant must also provide the Federal Emergency Management Agency with all documentation it deems necessary to revise the documents listed in Section 5.01.02.1 of this ordinance.

The applicant shall notify adjacent communities, the Army Corp of Engineers, the Idaho Department of Environmental Quality, and the Idaho Department of Water Resources prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Planning Department and to the Regional Director of the Federal Emergency Management Agency.

E. Complete for Critical Facilities (depending on type of critical facility other sections may apply)

Critical facilities include, but are not limited to, emergency service facilities and equipment (fire stations, police stations, rescue squads, public works facilities, custodial facilities such as jails and juvenile detention centers, hospitals, and other health care facilities, etc.), communications networks (telephones, emergency service radio systems, repeater sites and base stations, television and radio stations, etc.), water supply system/facilities, waste water treatment facilities, public utilities (power plants, substations, power lines, etc.), transportation networks (roads, bridges, airports, rail terminals), public facilities, or any other similar facilities the Planning Department deems to be a critical facility.

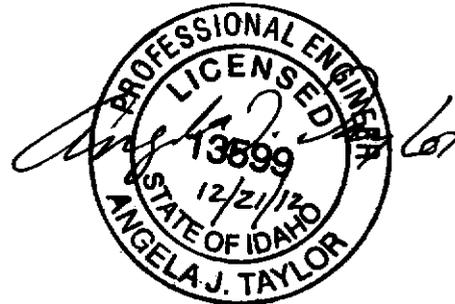
1. Submit plans for your critical facility that show floodproofing and sealing measures to ensure that toxic substances will not be displaced by or released into flood waters. *See attached - no toxic substance*
Floodproofing and sealing measures are required to be taken to ensure that toxic substances will not be displaced by or released into flood waters.
2. Submit plans for your critical facility that show the access routes and the elevations of such. *See attached (Appendix B)*
Access routes to all critical facilities shall be elevated to or above the level of the base flood to the extent possible.
3. Submit plans for your critical facility that show the lowest floor elevated three feet or more above the 100 year base flood elevation at the site or if no base flood elevation has been provided, a report by a professional engineer licensed in the State of Idaho that shows the base flood elevations. *N/A*
Critical facilities constructed within the floodplain or flood hazard area shall have the lowest floor elevated three feet or more above the level of the 100-year base flood elevation at the site. When base flood elevations have not been provided, they shall be generated.

F. Statement of Development Compliance (Complete for All Work):

1. Attach a technical analysis, by a professional engineer licensed in the State of Idaho, which shows whether a proposed development to be located in a flood hazard area may result in physical damage to any property.
2. An engineer must certify that:

This development will not be in violation of the purpose of any provision of Section 5.01 of the Latah County Zoning Ordinance.

Signature: Angela Taylor
Date: 12/21/12



This Development will not be subject to substantial flood damage and will not cause flood losses on other land or to the public.

Signature: Angela Taylor
Date: 12/21/12

ADMINISTRATIVE

CONDITIONS SET FOR THIS APPLICATION THAT APPLICANT MUST ADHERE TO:

1. Is the development considered to be a Critical Facility? Yes No
2. Required compliance with Sections A B C D E F of this application
3. Permit **approved** Permit **denied** (Statement attached)
4. Work inspected by: _____
5. Local Administrator Signature: _____ Date _____
6. Post development elevation certificate received? Yes No
7. Post development engineering certification of development received? Yes No
8. Fee Paid : _____ Date: _____ Receipt #: _____

TECHNICAL MEMORANDUM

Date: December 21, 2012

To: Latah County Planning and Building Department

From: Angela Taylor, PE, LEED AP
Taylor Engineering, Inc.

RE: City of Potlatch Access Bridge – Palouse River

The City of Potlatch has requested Taylor Engineering, Inc.'s assistance with determining the hydraulic capabilities of the proposed 124 foot span bridge to be installed for a maintenance access across the Palouse River for the sanitary sewer treatment area. In addition, assistance was given in completing the Development Permit Application as required by Latah County by a Licensed Professional Engineer in the State of Idaho. This memorandum summarizes the findings of our study.

The bridge is to be placed across the Palouse River and is located within a jurisdictional floodway as determined by the FEMA Flood Insurance Study for Latah County Idaho Unincorporated Areas (Revised April 15, 2002). The site is located within Zone A4 of the FEMA flood insurance map and is located between two Flood Insurance Study (FIS) Cross Sections with defined base flood elevation (BFE) (See Appendix A for FEMA FIS and Flood Insurance maps). The bridge is proposed to span 124 feet over the Palouse River outside of the ordinary high water mark. The width of the bridge is 8 feet 7 inches. Appendix B has bridge plans obtained from the design build contractor.

As this bridge is to be constructed within the floodway a no-rise analysis is required according to FEMA guidelines (Section 60.3(d) (3) of the National Flood Insurance Program regulations) prior to installation. See Appendix C for the No-Rise procedures. Also, a Latah County Development Permit Application is necessary to ensure that planning staff has the necessary information to make decisions with respect to the floodplain.

The first step in completing the No-Rise analysis was to obtain the original HEC-2 data used by FEMA to complete the FIS. This data was imported into HEC-RAS and the published 100-year water surface elevations were matched with the FIS to within 0.5 feet as allowed for HEC-2 imports into HEC-RAS (see Appendix D). We completed five surveyed cross-sections of the Palouse River, two upstream, one at the proposed bridge centerline, and two downstream of the crossing. This new and current cross-section data was input into the HEC-RAS model and the existing conditions were modeled to obtain the pre-existing 100-year water surface elevation that the bridge improvements would be related to for the no-rise condition. Lastly, the proposed bridge was input into the model and the steady state analysis was completed. A comparison was made to the pre-development 100-year water surface and the post-development water surface and the no-rise condition is satisfied for the proposed bridge. Additionally, no impacts were seen

upstream or downstream of the proposed bridge. Therefore, no increase in flood hazard will result from the installation of the bridge.

Appendix E shows the HEC-RAS data printouts for the 100-year water surface elevation for both the existing condition and the developed condition. The base flood elevation (100-year water surface elevation modeled with current cross-section data) was determined to be 2483.58 feet upstream of the bridge (Sta.12.55) and 2483.39 feet downstream of the bridge (Sta.12.45). The water surface elevations after bridge installation will be 2483.58 feet and 2483.39 feet, respectively. This satisfies the 0.00 foot no-rise condition, the table below gives a break down of each station for the published FIS elevations, duplicated FIS model, existing model with new cross sections, and proposed model water surface elevations.

Table 1. Water Surface Elevation Comparison

Station	Published FIS 100-YR Water Surface Elevation (WSE) (FEET NGVD)	Duplicated Model WSE (FT)	Existing Conditions w/surveyed x-sections WSE (FT)	Proposed Bridge WSE (FT)
8	2478.3	2478.30	2478.3	2478.3
9	2478.9	2478.88	2478.88	2478.88
10	2479.0	2477.52	2477.52	2477.52
10.1			2479.12	2479.12
10.2			2481.6	2481.6
10.3			2481.6	2481.6
11	2481.7	2481.87	2481.87	2481.87
12	2483.9	2483.91	2483.91	2483.91
12.1			2484.14	2484.14
12.2			2484.29	2484.29
12.45			2483.39	2483.39
BRIDGE				
12.55			2483.58	2483.58
12.6			2485.32	2485.32
12.8			2485.98	2485.97
13	2485.6	2485.57	2489.79	2486.79
14	2488.8	2488.80	2488.83	2488.83
15	2489.8	2489.84	2489.85	2489.85

Conversion to NAVD88 Datum: Add 3.66 ft to NGVD29 elevations to NAVD elevations.

It should be noted that the 100-year water surface elevation modeled with the surveyed cross-sections is different than the FIS 100-year water surface elevations. This can be explained by the deep pool that exists just upstream of the bridge location. Historically, FEMA has not completed detailed on-site survey prior to completing the majority of rural FIS. The Palouse River analysis follows this omission of detailed information as seen on the FIS profile versus the HEC-RAS profile seen in Appendix F.

In section D of the Latah County Development Permit, it states that all water courses must be maintained so the flood carrying capacity is not diminished. The previous discussion of the HEC-RAS analysis presents the documentation necessary to satisfy this requirement. In addition, a conveyance calculation was completed that shows the 100-year water flowing through the channel in this section is approximately 3200 cubic feet per second (cfs) while the bridge opening is capable of carrying 4650 cfs. This analysis was completed using the Chezy-Manning Equation for open channel flow:

$$Q = (1.49/n) * A * R^{(2/3)} * S^{(1/2)}$$

Where,

n = Mannings roughness coefficient

A=cross-sectional area, square feet

R=Hydraulic Radius (cross-sectional area divided by wetted perimeter), feet

S=slope

For the Palouse River n =0.045 according to the FIS. For the channel with 100-year flow, A=837 ft², R=6.97 ft, and S=.001 (averaged through for upstream and downstream of the bridge). With these parameters, flow during the 100-year flood within the channel is 3200 cfs. Completing the same analysis for the bridge with A=1077 ft², R=8.36 ft, the capacity is 4650 cfs. This capacity, is greater than the total calculated flow volume 3200 cfs therefore, this bridge has sufficient capacity.

The stream will still have adequate conveyance capacity during the 100-year storm/flood event. No alteration or relocation of the stream bed will take place, just installation of an access bridge

This access bridge installation will not create damage to upstream or downstream properties. In addition, this development maintains compliance with all FEMA Flood Insurance standards as well as Latah County development and zoning code, in particular Ordinance #269 Latah County Land Use Ordinance.

SAMPLE FORM

FLOODWAY "NO-RISE / NO-IMPACT" CERTIFICATION

This document is to certify that I am duly qualified engineer licensed to practice in the State of

IDAHO

(State)

. It is to further certify that the attached technical data supports

the fact that proposed Potlatch Access Bridge will not impact the base flood

(Name of Development)

elevations, floodway elevations, and floodway widths on Palouse River at published

(Name of Stream)

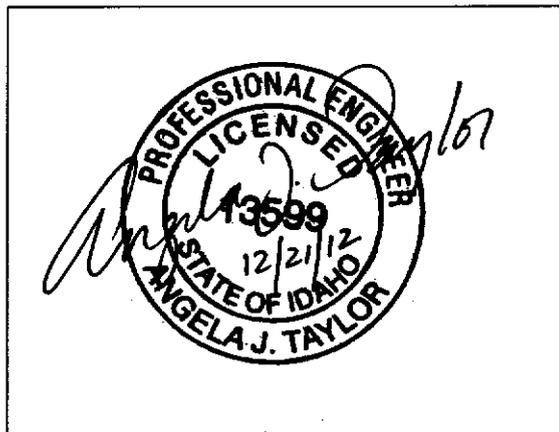
cross sections in the Flood Insurance Study for, City of Potlatch, dated 12/21/12

(Name of community)

(Date)

and will not impact the base flood elevations, floodway elevations, and floodway widths at the

unpublished cross-sections in the area of the proposed development.



SEAL, SIGNATURE AND DATE

Angela J. Taylor, PE

Name

Project Engineer, Professional Engineer

Title

Taylor Engineering, Inc.

245 E Main St. Pullman, WA 99163

Address

FOR COMMUNITY USE ONLY:

Community Approval

Approved

Disapproved

Community Official's Name

Community Official's Signature

Title

**Appendix A –
FEMA Flood Insurance Study Information
FEMA Flood Maps**

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY	INCREASE
Palouse River								
A	0	106	1,418	6.7	2,475.6	2,475.6	2,476.6	1.0
B	33	107	1,428	6.6	2,475.7	2,475.7	2,476.7	1.0
C	68	285	2,907	3.3	2,476.5	2,476.5	2,477.3	0.8
D	218	552	5,567	1.7	2,476.6	2,476.6	2,477.5	0.9
E HEC-RAS STATIONS	3,493	596	4,591	2.1	2,477.3	2,477.3	2,478.1	0.8
F	4,088	498	5,619	1.7	2,477.4	2,477.4	2,478.3	0.9
G	5,158	845	4,492	2.1	2,477.7	2,477.7	2,478.6	0.9
H8	7,428	1,622	9,409	1.0	2,478.3	2,478.3	2,479.2	0.9
I9	11,043	602	2,152	4.4	2,478.9	2,478.9	2,478.9	0.0
J10	11,143	70	676	14.1	2,479.0	2,479.0	2,479.2	0.2
K11	11,225	1,124	2,821	3.4	2,481.7	2,481.7	2,481.7	0.0
L12	14,635	901	3,487	2.7	2,483.9	2,483.9	2,484.6	0.7
M13	16,305	423	2,347	4.0	2,485.6	2,485.6	2,486.2	0.6
N14	18,175	139	1,462	6.5	2,488.8	2,488.8	2,489.0	0.2
O15	18,910	142	1,597	6.0	2,489.8	2,489.8	2,490.2	0.4
P	19,935	175	1,610	5.9	2,491.5	2,491.5	2,491.8	0.3
Q	20,035	189	678	14.0	2,492.3	2,492.3	2,492.3	0.0
R	20,114	242	1,622	5.9	2,494.4	2,494.4	2,494.4	0.0
S	22,714	199	1,890	5.0	2,497.7	2,497.7	2,498.1	0.4
T	27,324	407	3,221	3.0	2,500.9	2,500.9	2,501.8	0.9
U	29,744	1,843	9,902	1.0	2,501.6	2,501.6	2,502.5	0.9
V	37,444	920	2,693	3.5	2,503.1	2,503.1	2,504.0	0.9
W	40,644	671	2,368	1.9	2,505.5	2,505.5	2,506.4	0.9
X	43,924	169	1,240	3.7	2,506.9	2,506.9	2,507.7	0.8
Y	46,504	141	883	5.2	2,510.8	2,510.8	2,510.9	0.1
Z	46,604	90	874	5.2	2,510.8	2,510.8	2,510.9	0.1

¹ Feet Above Limit of Detailed Study

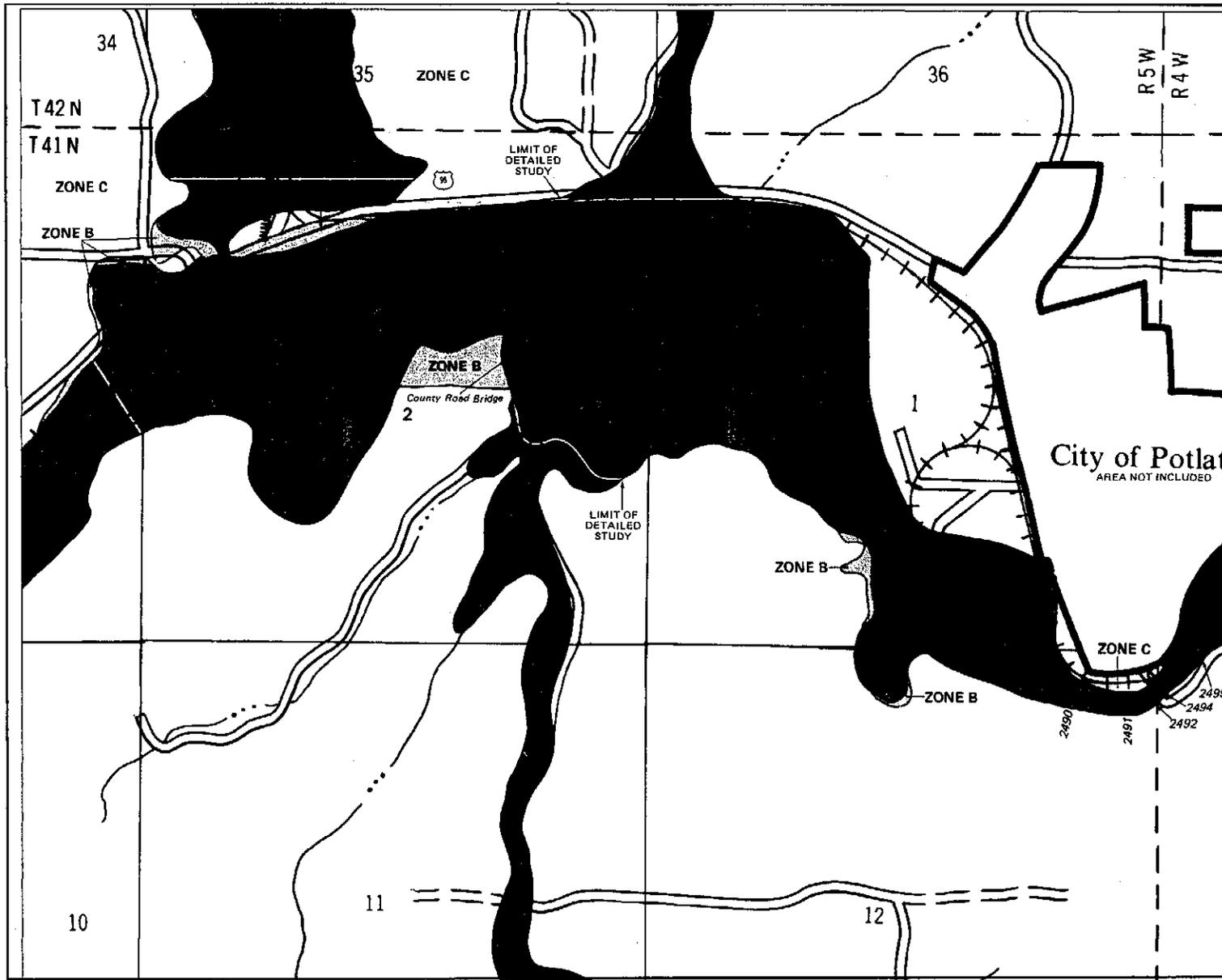
TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

LATAH COUNTY, ID
(UNINCORPORATED AREAS)

FLOODWAY DATA

PALOUSE RIVER



APPROXIMATE SCALE

1000 0 10

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

LATAH COUNTY, IDAHO
(UNINCORPORATED AREAS)

PANEL 135 OF 475
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
160886 0135 B

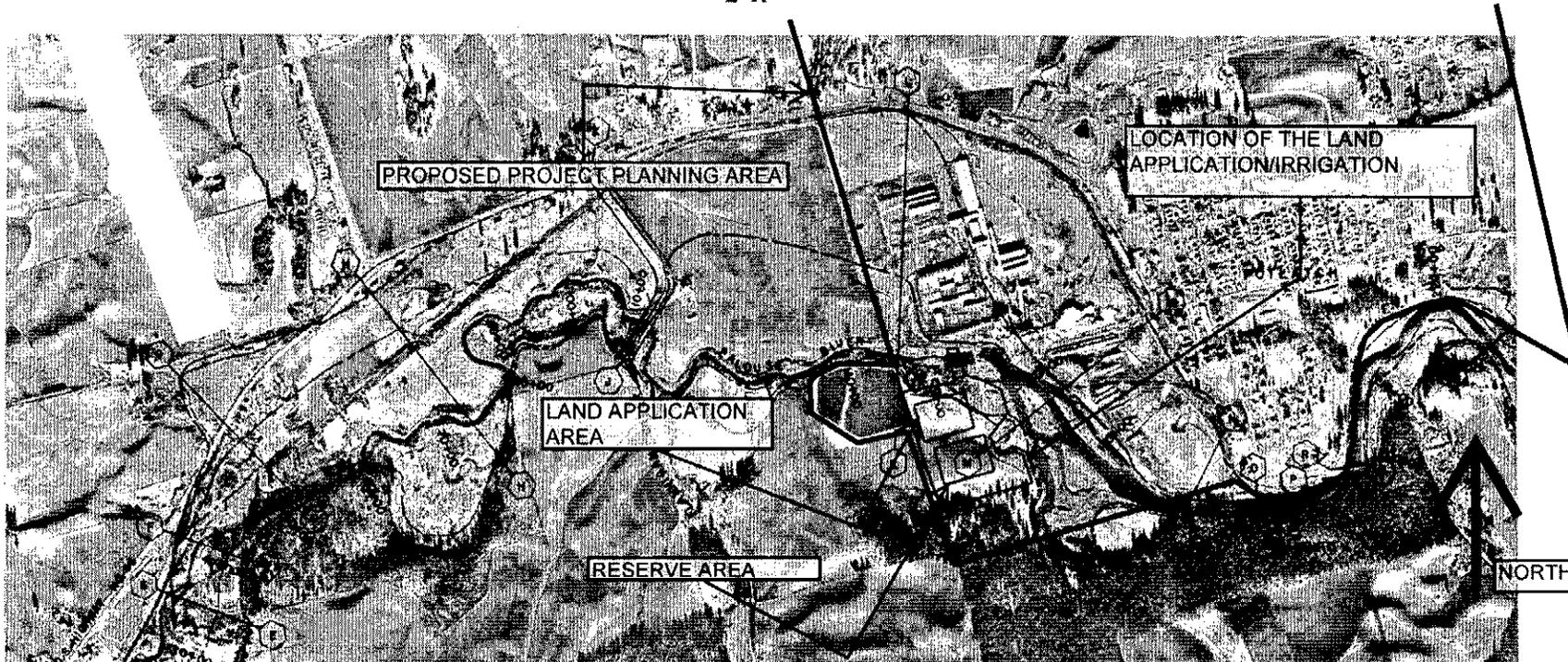
EFFECTIVE DATE:
AUGUST 15, 1980



U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

2 A



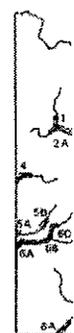
50-Year Flo
100-Year Flo
FLOODWAY
100-Year Flo
500-Year Flo

Green Section
Elevation Ref

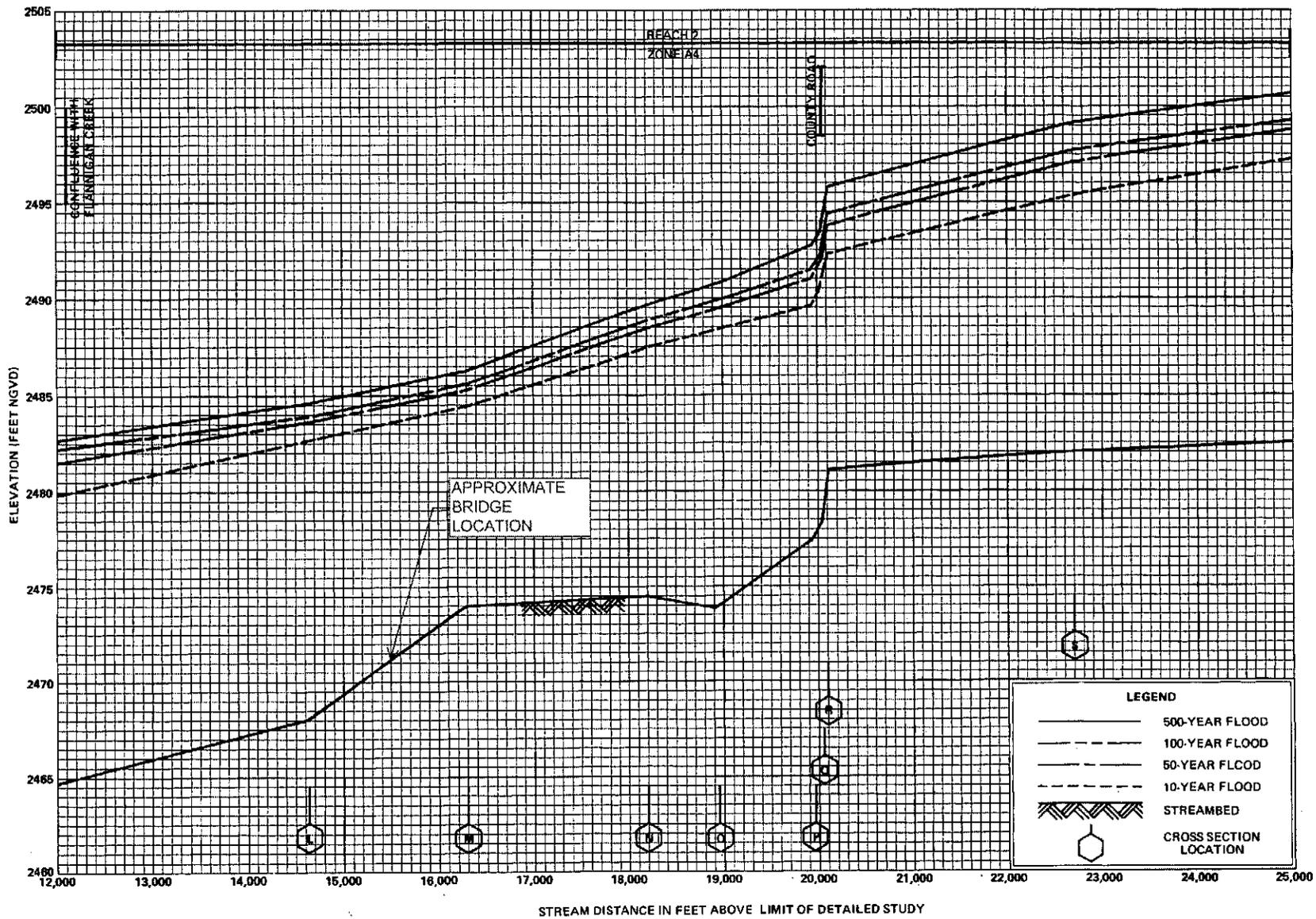
Boundaries of
interpolated to
hydrologic unit
boundary lines.
Note on the
water system
this map does
not include the

LEGEND

- PROPOSED PROJECT PLANNING AREA
- LOCATION OF THE LAND APPLICATION/IRRIGATION



2 B



FLOOD PROFILES

PALOUSE RIVER

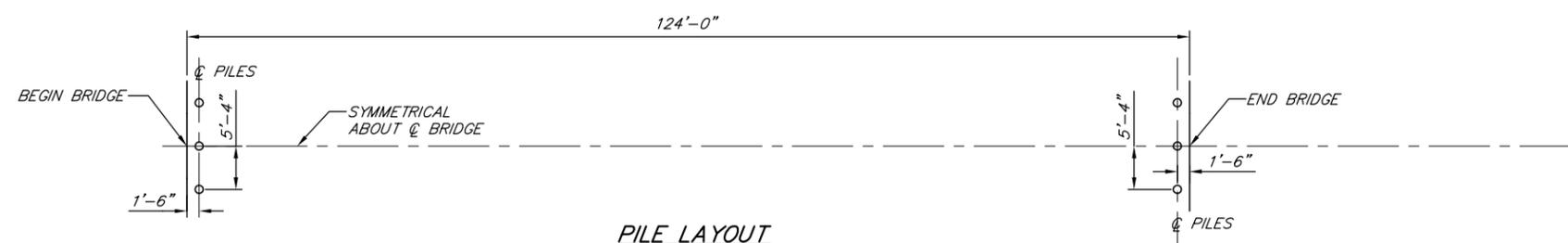
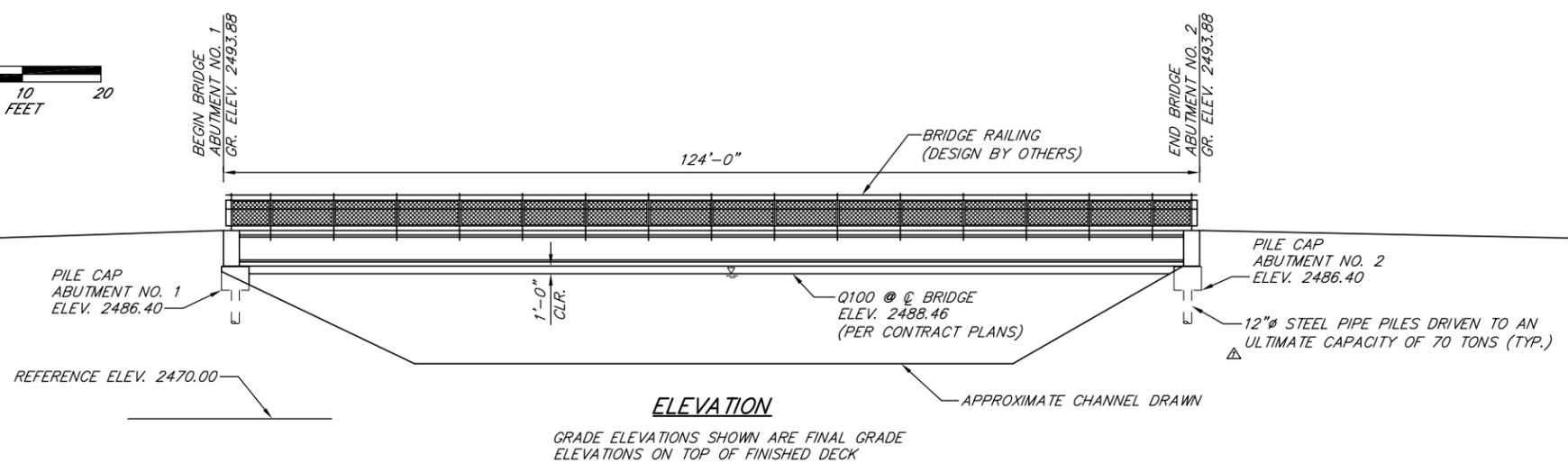
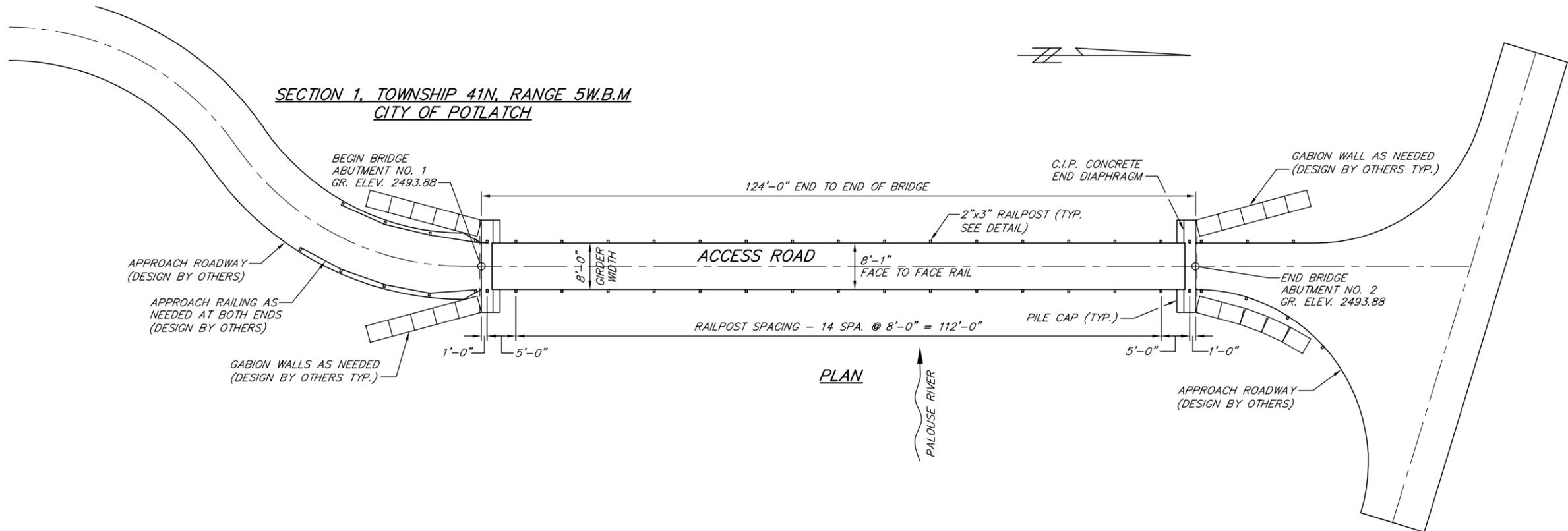
FEDERAL EMERGENCY MANAGEMENT AGENCY

LATAH COUNTY, ID
(UNINCORPORATED AREAS)

02P

**Appendix B –
Bridge Plans**

SECTION 1, TOWNSHIP 41N, RANGE 5W.B.M
CITY OF POTLATCH



**PRELIMINARY
NOT FOR CONSTRUCTION**

No.	Date	By	Ckd.	Appr.	Revision
12/7/12	AVK	JUN			REVISED PER GEO RECOMMENDATIONS

Designed By: JUN Date: 9/12
Checked By: SMK
Detailed By: AVK Date: 9/12

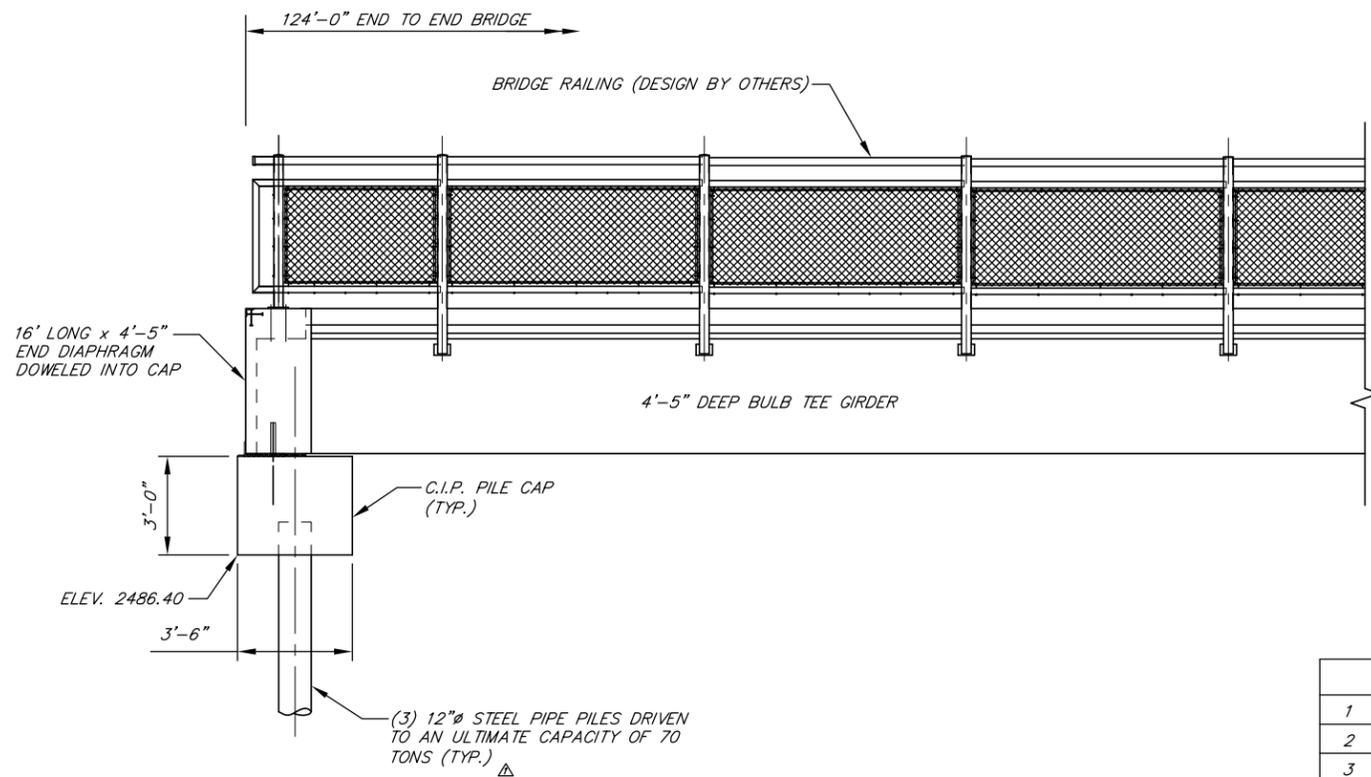
NICHOLLS ENGINEERING
CIVIL AND STRUCTURAL ENGINEERING
P.O. BOX 14706
SPOKANE, WA 99214-0706
PHONE (509) 921-8747 FAX (509) 242-8777

SCALE
HORIZONTAL: _____
VERTICAL: _____

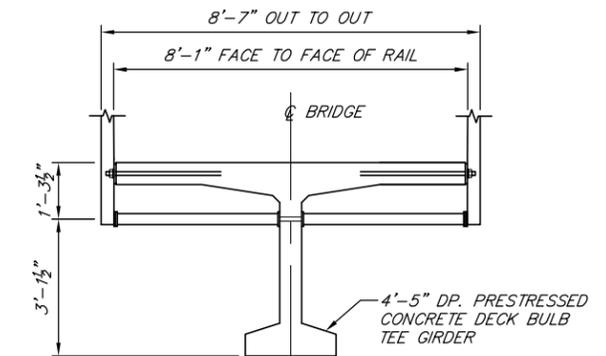
S & L UNDERGROUND, INC.
68304 HIGHWAY 2
BONNER'S FERRY, ID 83805
PHONE (208) 287-7996

BRIDGE LAYOUT
ACCESS BRIDGE - CITY OF POTLATCH

SHEET
51 of 54



PARTIAL BRIDGE ELEVATION



TYPICAL BRIDGE SECTION

SUMMARY OF QUANTITIES (ON BRIDGE)		
1	CONCRETE (PILE CAP & END DIAPHRAGM)	23 C.Y.
2	STEEL REINFORCING BARS	2079 LBS.
3	PIILING	BY OTHERS
4	PRECAST PRESTRESSED GIRDER	123.33 L.F.
5	BRIDGE RAILING	248 L.F.
6	ELASTOMERIC STRIP	32 L.F.
7	BEARING PAD	2 EA.
8	PREMOLDED JOINT FILLER	63 S.F.

GENERAL NOTES

THE SUBSTRUCTURE WAS DESIGNED FOR THE H-10 TRUCK LOAD

GIRDERS & RAILINGS DESIGNED BY OTHERS

BRIDGE LENGTH IS APPROXIMATE BASED ON THE SURVEY DONE BY OTHERS AND SHOULD BE FIELD VERIFIED.

ALL C.I.P. CONCRETE SHALL BE CLASS 4000 MIX.

PILES FOR ABUTMENT NO. 1 AND ABUTMENT NO. 2 SHALL BE 12" DIAMETER CAST-IN-PLACE CONCRETE PILES. THE PILES SHALL BE DRIVEN TO AN ULTIMATE BEARING CAPACITY OF 70 TONS.

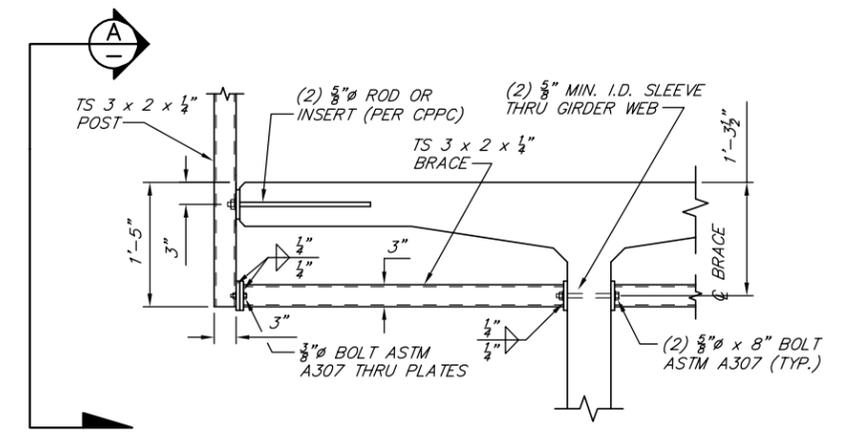
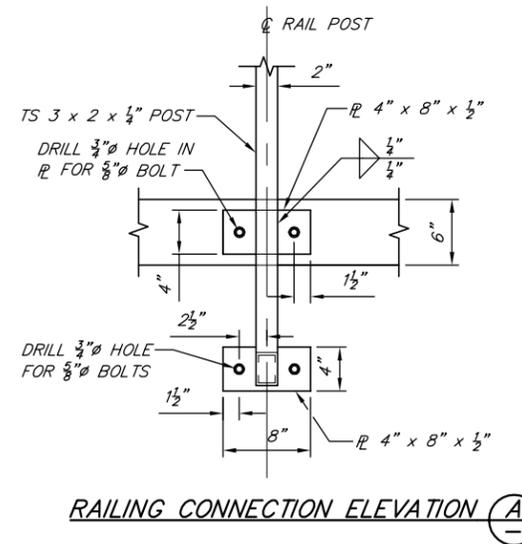
METAL REINFORCING BARS SHALL CONFORM TO AASHTO M31M, GRADE 60 (ASTM A615M)

STRUCTURAL STEEL SHALL CONFORM WITH AASHTO M270 GRADE 36

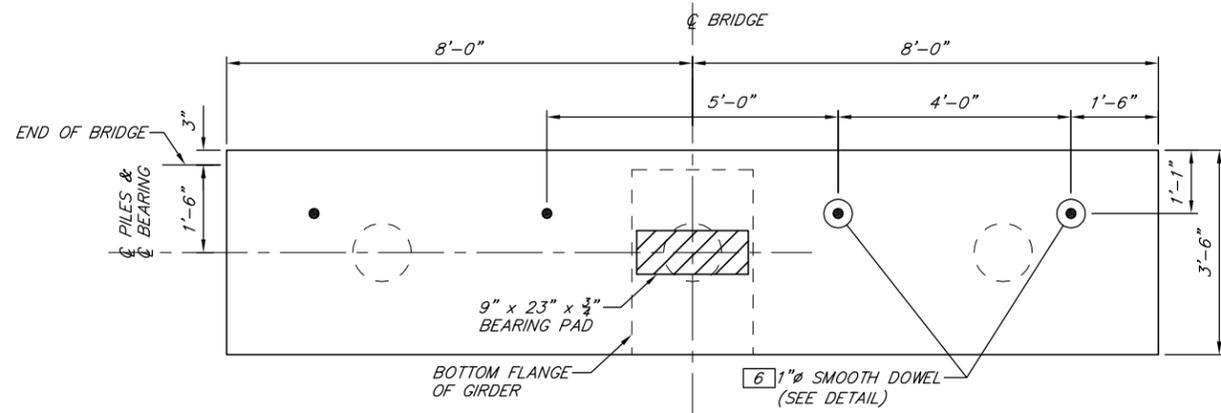
STRUCTURAL STEEL TUBING SHALL CONFORM WITH ASTM A-500 GRADE B OR ASTM A-501

BOLTS, NUTS, AND WASHERS SHALL CONFORM WITH ASTM A-307

ALL DIMENSIONS TO REINFORCING STEEL ARE TO CENTERLINE OF BAR UNLESS NOTED OTHERWISE. CONCRETE COVER MEASURED FROM THE FACE OF ANY REINFORCING BAR SHALL BE 2 1/2" AT TOP OF END DIAPHRAGM AND BOTTOM OF PILE CAP AND 1 1/2" INCHES ELSEWHERE UNLESS SHOWN OTHERWISE.

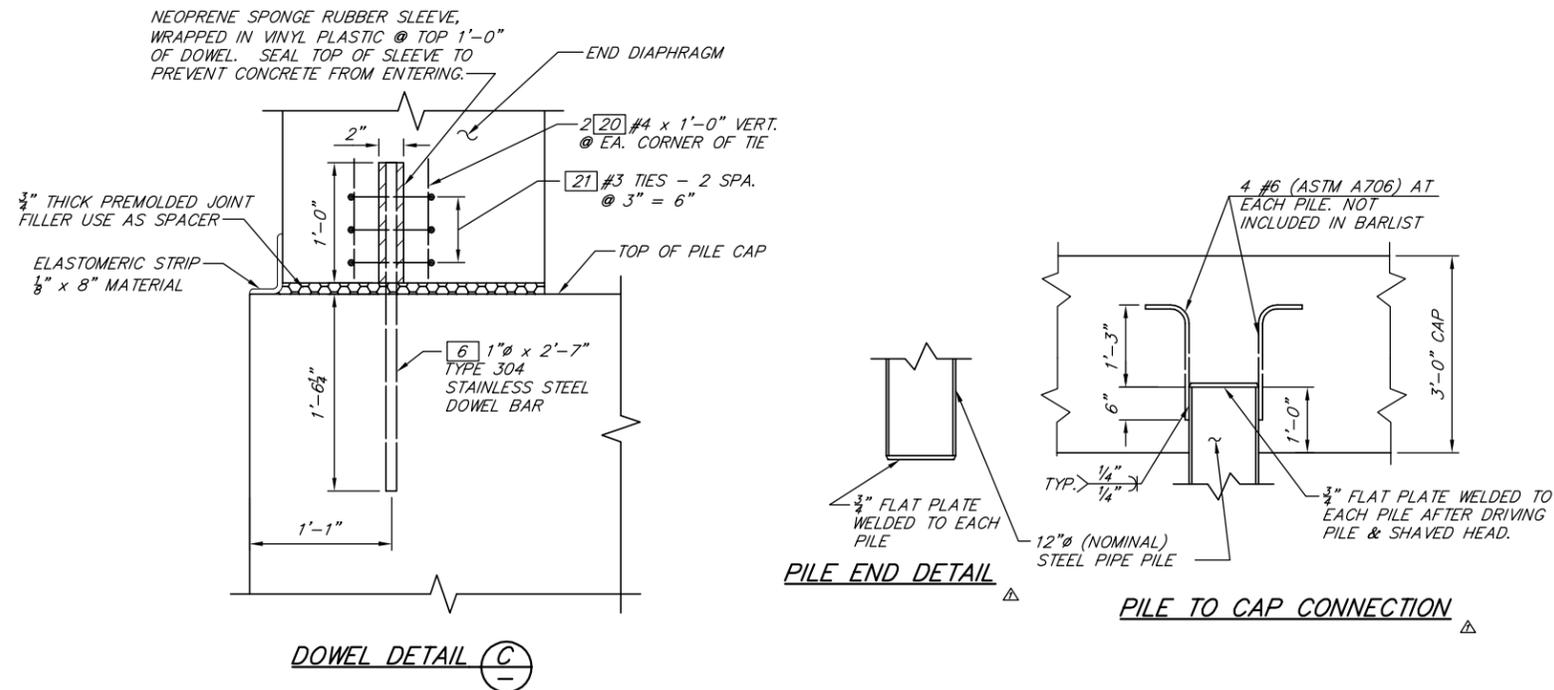


**PRELIMINARY
NOT FOR CONSTRUCTION**



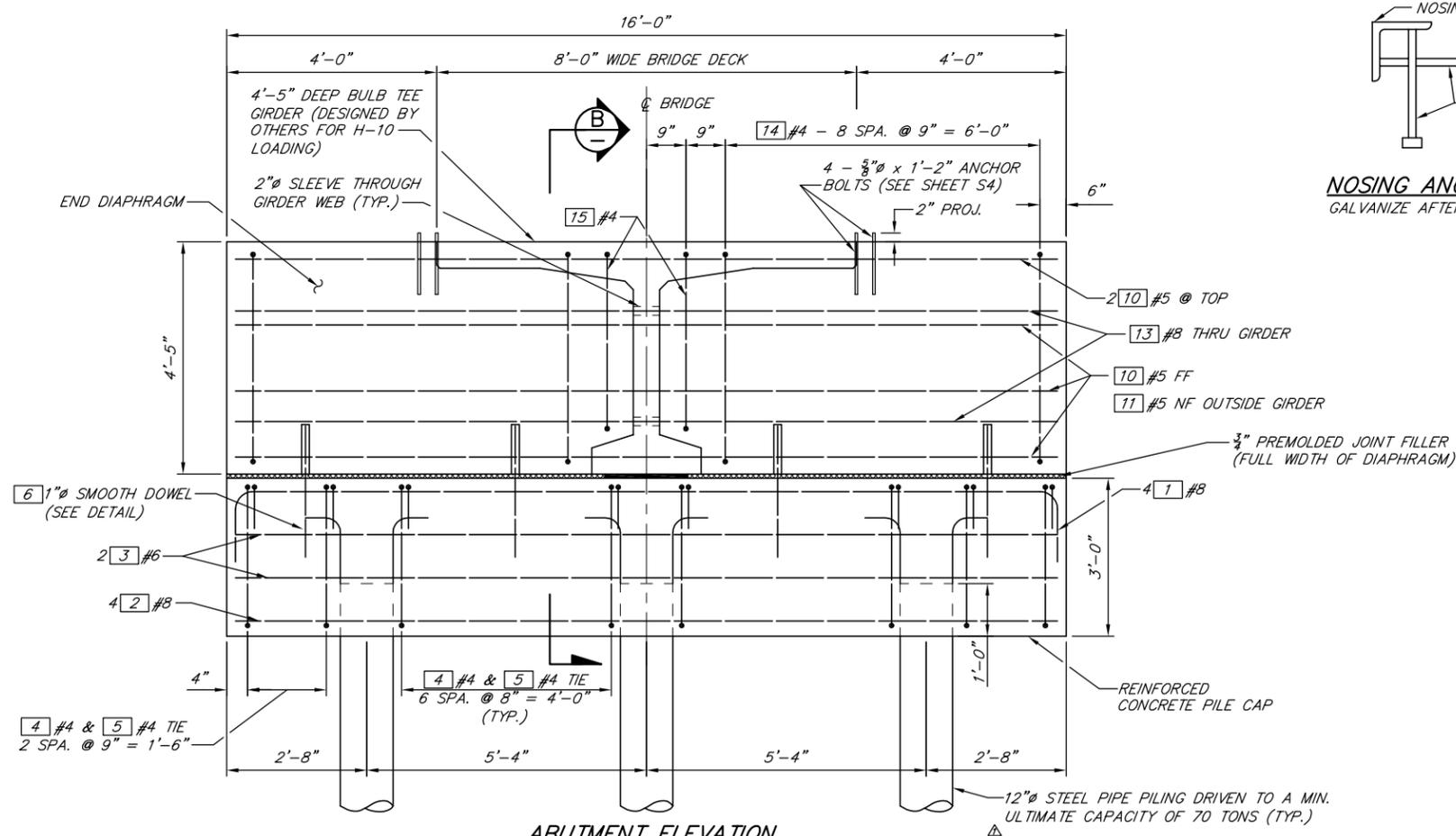
ABUTMENT PLAN

END DIAPHRAGM NOT SHOWN IN THIS VIEW FOR CLARITY



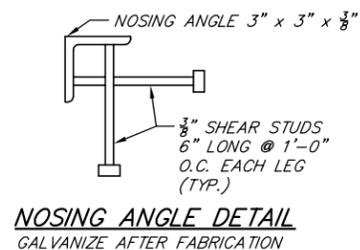
DOWEL DETAIL (C)

PILE TO CAP CONNECTION

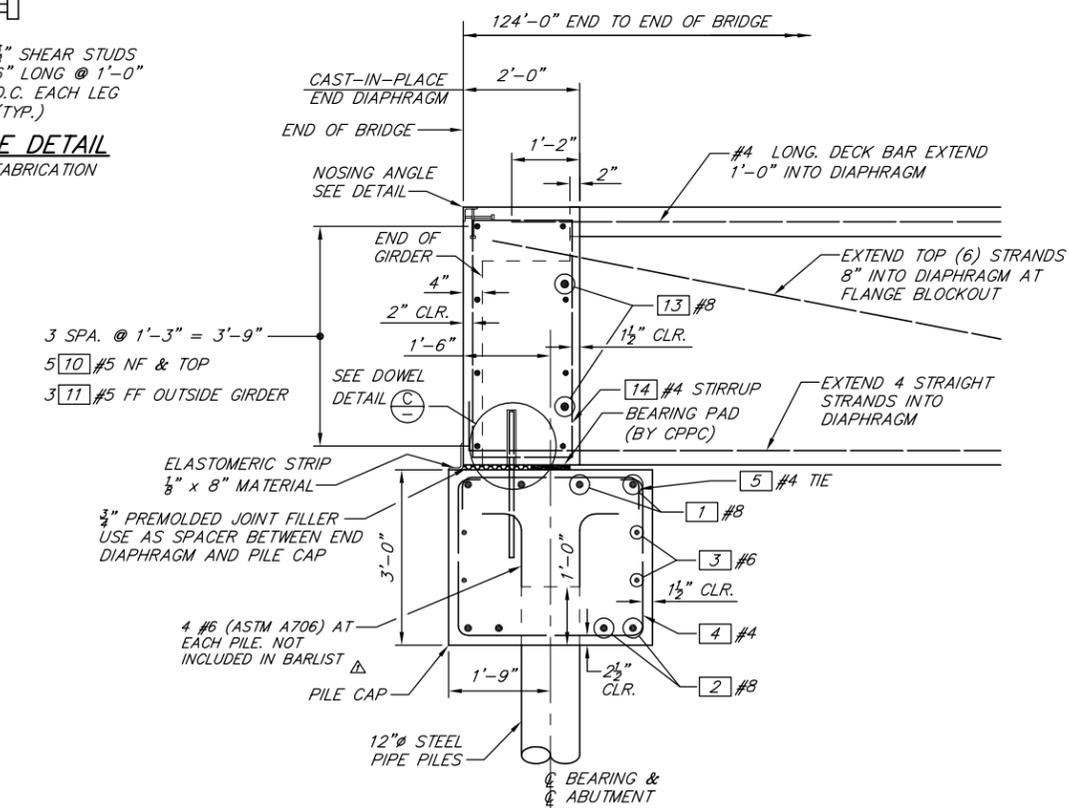


ABUTMENT ELEVATION

SOUTH ABUTMENT SHOWN
(LOOKING BACK ON STATIONING)
NORTH ABUTMENT SIMILAR



NOSING ANGLE DETAIL
GALVANIZE AFTER FABRICATION



ABUTMENT AND END DIAPHRAGM SECTION (B)

**PRELIMINARY
NOT FOR CONSTRUCTION**

No.	Date	By	Ckd.	Appr.	Revision
12/7/12	AKK	JUN			REVISED PER GEO RECOMMENDATIONS

Designed By:	Date:
JUN	9/12
Checked By:	
SMK	10/12
Detailed By:	
AVK	9/12

NICHOLLS ENGINEERING
CIVIL AND STRUCTURAL ENGINEERING
P.O. BOX 14706
SPOKANE, WA 99214-0706
PHONE (509) 921-8747 FAX (509) 242-8777

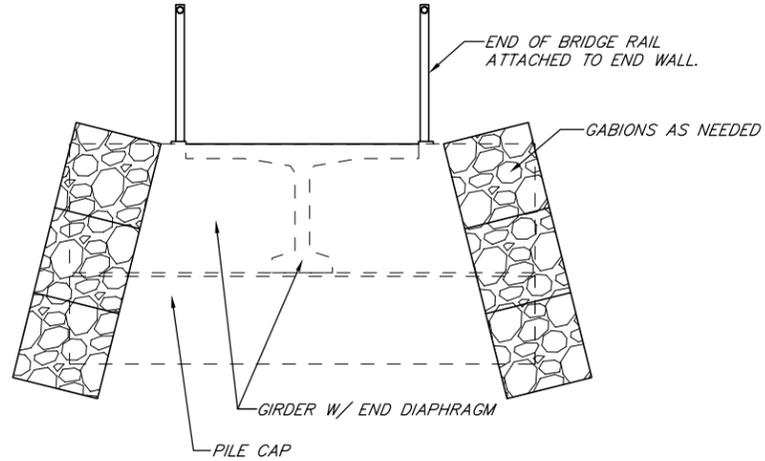
SCALE
HORIZONTAL: _____
VERTICAL: _____

S & L UNDERGROUND, INC.
68304 HIGHWAY 2
BONNER'S FERRY, ID 83805
PHONE (208) 287-7996

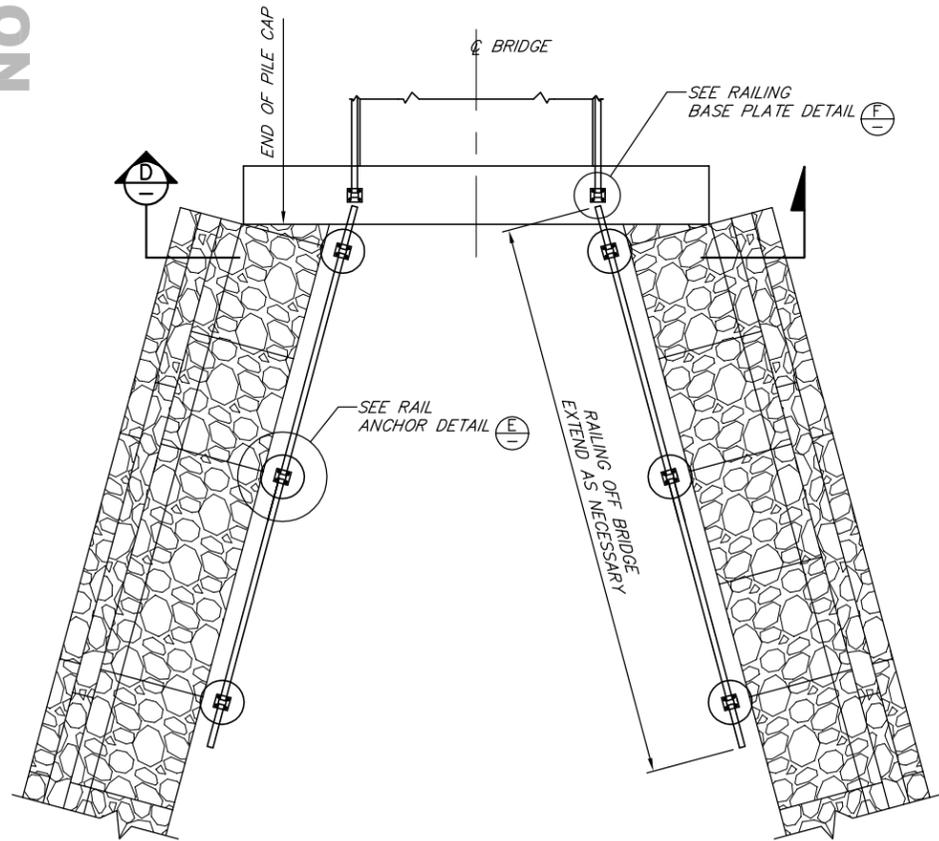
ABUTMENT DETAILS
ACCESS BRIDGE - CITY OF POTLATCH

SHEET
S3 of S4

PRELIMINARY
NOT FOR CONSTRUCTION

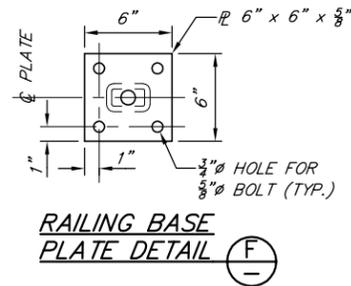


SECTION D

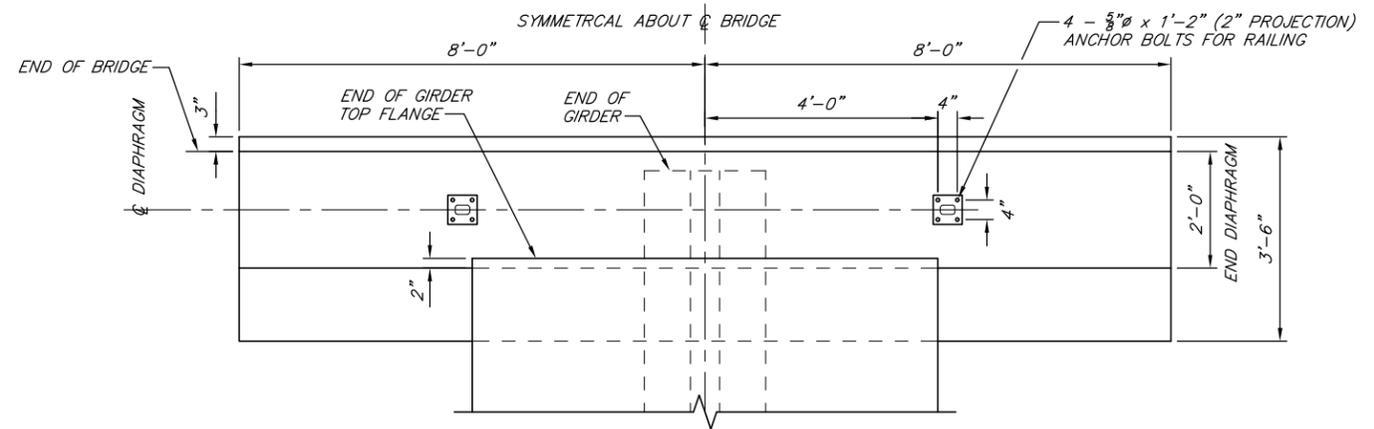


SUGGESTED BRIDGE END TREATMENT PLAN

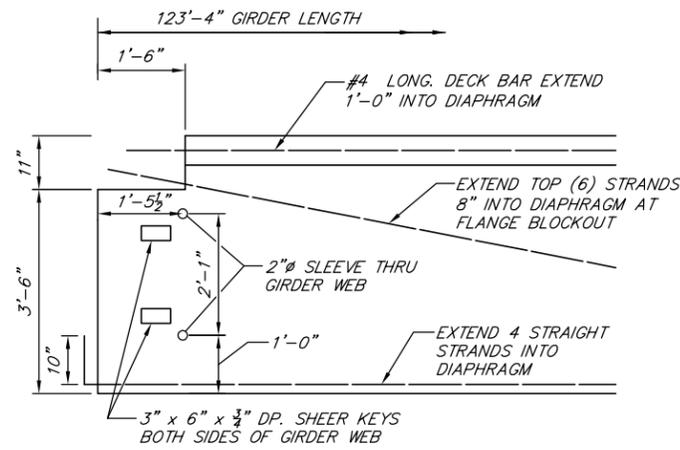
GABION & RAIL ENDS SHOWN OFF BRIDGE ARE SUGGESTIONS & SHOULD BE DESIGNED & DETAILED BY OTHERS



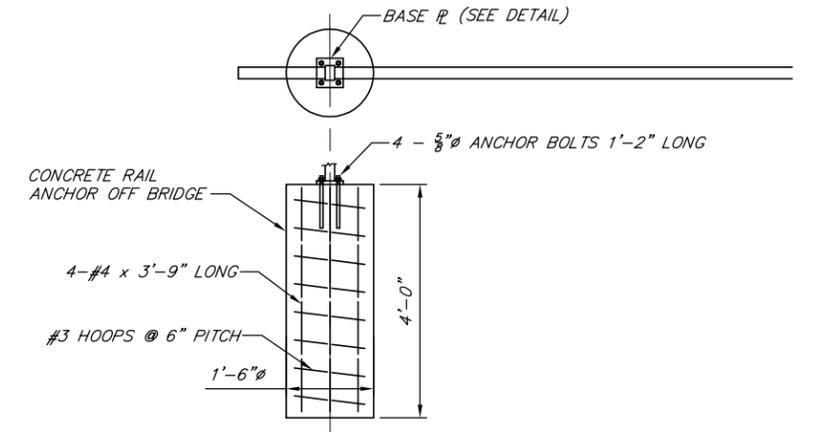
RAILING BASE PLATE DETAIL (F)



END DIAPHRAGM PLAN



GIRDER END VIEW



RAIL ANCHOR DETAIL (E)

RAIL ANCHOR REINFORCING NOT SHOWN IN BAR LIST

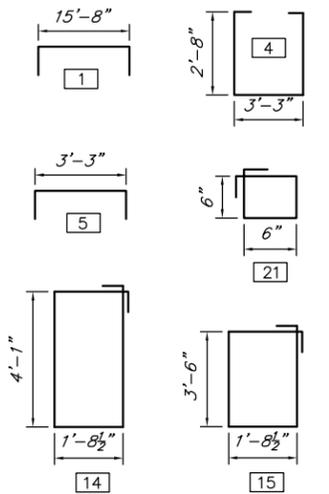
BAR LIST

BRIDGE PORTION ONLY (EXCLUDING GIRDER & PILES)

MARK NO.	LOCATION	WEIGHT	SIZE	NO. REQ'D	LENGTH	REMARKS
SUBSTRUCTURE						
1	PILE CAP TOP	383	8	8	17'-11"	
2	PILE CAP BOTTOM	335	8	8	15'-8"	STR.
3	PILE CAP SIDES	188	6	8	15'-8"	STR.
4	PILE CAP STIRRUPS	240	4	40	9'-0"	
5	PILE CAP TIES	102	4	40	3'-10"	
6	END DIAPHRAGM DOWEL (STAINLESS STEEL)	55	1"φ	8	2'-7"	STR.
END DIAPHRAGM						
10	END DIAPHRAGM BACK	163	5	10	15'-8"	STR.
11	END DIAPHRAGM OUTSIDE GIRDER	62	5	8	7'-5"	STR.
11	END DIAPHRAGM OUTSIDE GIRDER (BOT.)	27	5	4	6'-7"	STR.
13	END DIAPHRAGM THRU GIRDER	167	8	4	15'-8"	STR.
14	END DIAPHRAGM STIRRUP	287	4	36	11'-11"	
15	END DIAPHRAGM STIRRUP CENTER	29	4	4	10'-9"	
20	END DIAPHRAGM DOWEL CAGE VERT.	21	4	32	1'-0"	STR.
21	END DIAPHRAGM DOWEL CAGE TIE	20	3	24	2'-3"	
SUBSTRUCTURE		1303 lbs.				
END DIAPHRAGM		776 lbs.				

BENDING DIAGRAM

ALL DIMENSIONS ARE OUT TO OUT



No.	Date	By	Ckd.	Appr.	Revision

Designed By: JLN Date: 9/12
 Checked By: SMK
 Detailed By: AVK Date: 10/12

NICHOLLS ENGINEERING
 CIVIL AND STRUCTURAL ENGINEERING
 P.O. BOX 14706
 SPOKANE, WA 99214-0706
 PHONE (509) 921-8747 FAX (509) 242-8777

SCALE
 HORIZONTAL: _____
 VERTICAL: _____

S & L UNDERGROUND, INC.
 68304 HIGHWAY 2
 BONNER'S FERRY, ID 83805
 PHONE (208) 287-7996

MISCELLANEOUS DETAILS
 ACCESS BRIDGE - CITY OF POTLATCH

SHEET
 S4 of S4

**Appendix C -
No-Rise Procedure**



FEMA

**GUIDANCE FOR "NO-RISE / NO-IMPACT" CERTIFICATION
FOR PROPOSED DEVELOPMENTS IN REGULATORY FLOODWAYS**

The National Flood Insurance Program (NFIP) floodplain management criterion that is adopted by all participating communities in their local ordinances, as described in Title 44 of the Code of Federal Regulations, Section 60.3(d)(3), states:

"A community shall prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge."

Prior to issuing any development permits involving activities in a regulatory floodway, the community must obtain a certification stating the proposed development will not impact the pre-project base flood elevations, regulatory floodway elevations, or regulatory floodway widths. The certification should be obtained from the permittee and be signed and sealed by a professional engineer in accordance with State Licensing Board specifications.

The engineering or "No-Rise / No-Impact" certification must be supported by technical data. The supporting technical data should be based upon the standard step-backwater hydraulic model utilized to develop the regulatory floodway shown on the community's effective Flood Insurance Rate Map (FIRM) or Flood Boundary and Floodway Map (FBFM) and the results tabulated in the community's Flood Insurance Study (FIS).

Communities are required to review and approve or disapprove the "No-Rise/No-Impact" submittals; however, they may request technical assistance and review from the FEMA regional office. If this alternative is chosen, the submittal will be treated as a Conditional Letter of Map Revision (CLOMR) by the National Service Provider, and will be subject to the same fees as such.

To support a "No-Rise / No-Impact" certification for proposed developments encroaching onto the regulatory floodway, a community will require that the following procedures be followed:

1. Currently Effective Model

Furnish a written request for the step-backwater hydraulic model for the specified stream and community, identifying the limits of the requested data. A fee will be assessed for providing the data. Send data requests to:

**FEMA Project Library
3601 Eisenhower Avenue
Alexandria, VA 22304-6425
Fax: (703) 751-7391**

2. Duplicate Effective Model

Upon receipt of the step-backwater hydraulic model, the engineer should run the effective hydraulic model to duplicate the data in the effective FIS.

3. Existing Conditions Model

Revise the duplicate effective model to reflect site-specific existing conditions by adding new cross-sections (two or more) in the area of the proposed development, without the proposed development in place. Regulatory floodway limits should be manually set at the new cross-section locations by measuring from the effective FIRM or FBFM. The cumulative reach lengths of the waterway should remain unchanged. The results of these analyses will indicate the base flood elevations and the regulatory floodway elevations for the effective hydraulic model revised to incorporate existing conditions at the proposed project site.

4. Proposed Conditions Model

Modify the existing conditions models to reflect the proposed development using the new cross-sections, while retaining the currently adopted regulatory floodway widths. The overbank roughness parameters should remain the same unless a valid explanation of how the proposed development will impact the roughness parameters is included with the supporting data. The results of this floodway hydraulic model will indicate the regulatory floodway elevations for proposed conditions at the project site. These results must indicate NO impact on the base flood elevations, regulatory floodway elevations, or regulatory floodway widths shown in the duplicate Effective Model or in the Existing Conditions Model (items 2 and 3 above, respectively).

The "no-impact" analysis along with supporting data and the original engineering certification must be reviewed by the appropriate community official prior to issuing a development permit. The original effective FIS model, the duplicate effective FIS model, the Existing Conditions Model, and the Proposed Conditions Model should be reviewed for any changes in the base flood elevations, regulatory floodway elevations and floodway widths.

The “No-Rise / No-Impact” supporting data should include, but may not be limited to:

- (1) Copy of the currently effective FIS hydraulic models (legible hard copy and a disc (if available))
- (2) Duplicate effective FIS hydraulic models (hard copy and a disc).
- (3) Existing conditions hydraulic models (hard copy and a disc).
- (4) Proposed conditions hydraulics models (hard copy and a disc)
- (5) Annotated effective FIRM or FBFM and topographic map, showing regulatory floodplain and floodway boundaries, the additional cross-sections, and the site location along with the proposed topographic modifications.
- (6) Documentation clearly stating analysis procedures. All modifications made to the duplicate effective hydraulic models to correctly represent existing conditions, as well as those made to the existing conditions models to represent proposed conditions should be well documented and submitted with all supporting data.
- (7) Annotated effective Floodway Data Table (from the FIS report).
- (8) Statement defining source of additional cross-sections, topographic data, and other supporting information.
- (9) Cross-section plots of the additional cross sections for existing and proposed conditions hydraulic models.
- (10) Certified planimetric (boundary survey) information indicating the location of structures on the property.
- (11) Hard copy of all output files.
- (12) Clear explanation of how roughness parameters were obtained (if different from those used in the effective hydraulic models).
- (13) Engineering certification (sample attached).

The engineering “No-Rise / No-Impact” certification and supporting technical data must stipulate NO impact or NO changes to the base flood elevations, regulatory floodway elevations, or regulatory floodway widths at the new cross-sections and at all existing cross-sections anywhere in the model. Therefore, the revised computer model should be run for a sufficient distance upstream and downstream of the development site to insure proper “No-Rise / No-Impact” certifications.

Attached is a SAMPLE "No-Rise / No-Impact" certification form that can be completed by a registered professional engineer and supplied to the community along with the supporting technical data when applying for a development permit. This form does not have to be utilized to submit for a "No-Rise / No-Impact" certification. It is provided as a guide, if needed.

Note: Definitions of terms base flood, development, and regulatory floodway are same as those included in Title 44 of the Code of Federal Regulations, Section 59.1. Additional regulations pertaining to this certification are described in Title 44 of the Code of Federal Regulations, Section 65.3.

**Appendix D –
Allowance for HEC-2 to HEC-RAS conversion**

Step 3 – Develop Duplicate Effective Model

Using same model program, i.e., HEC-2 to HEC-2: must duplicate FIS profiles and elevations in floodway data table to within 0.1 foot.

Effective model not available: then new model must reproduce FIS profiles to within 0.5 foot.

Using alternate model, i.e., HEC-2 to HEC-RAS: must reproduce FIS profiles to within 0.5 foot.

**Appendix E –
HEC-RAS Data**

DUPLICATED HEC-RAS MODEL FROM HEC-2 IMPORTED DATA FROM ORIGINAL FIS

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach-1	13	PF 1	9500.00	2473.80	2489.84		2490.42	0.001412	6.13	1574.11	151.33	0.32
Reach-1	14	PF 1	9500.00	2474.40	2488.80		2489.34	0.001512	6.11	2054.41	685.57	0.33
Reach-1	13	PF 1	9500.00	2474.00	2485.57		2485.87	0.002240	4.47	2218.41	557.73	0.36
Reach-1	12	PF 1	9500.00	2468.00	2483.91		2484.07	0.000507	4.40	4436.96	1522.19	0.21
Reach-1	11	PF 1	9500.00	2463.70	2481.87		2482.00	0.000679	3.49	4673.30	1672.33	0.21
Reach-1	10.3	PF 1	9500.00	2464.10	2481.60		2481.93	0.001580	5.89	3418.98	1426.60	0.30
Reach-1	10.2	PF 1	9500.00	2464.10	2481.60	2476.59	2481.93	0.001583	5.90	3415.15	1425.56	0.30
Reach-1	10.1	PF 1	9500.00	2464.10	2479.12	2476.65	2481.62	0.009689	12.74	815.30	321.32	0.70
Reach-1	10	PF 1	9500.00	2464.10	2477.52	2476.59	2481.09	0.022259	15.16	626.84	67.93	0.88
Reach-1	9	PF 1	9500.00	2461.80	2478.88	2474.43	2479.88	0.002616	7.65	1869.97	990.02	0.42
Reach-1	8	PF 1	9500.00	2463.00	2478.30	2472.28	2478.32	0.000127	1.84	10053.27	2125.61	0.10

EXISTING HEC-RAS MODEL WITH SURVEYED CROSS-SECTIONS

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1

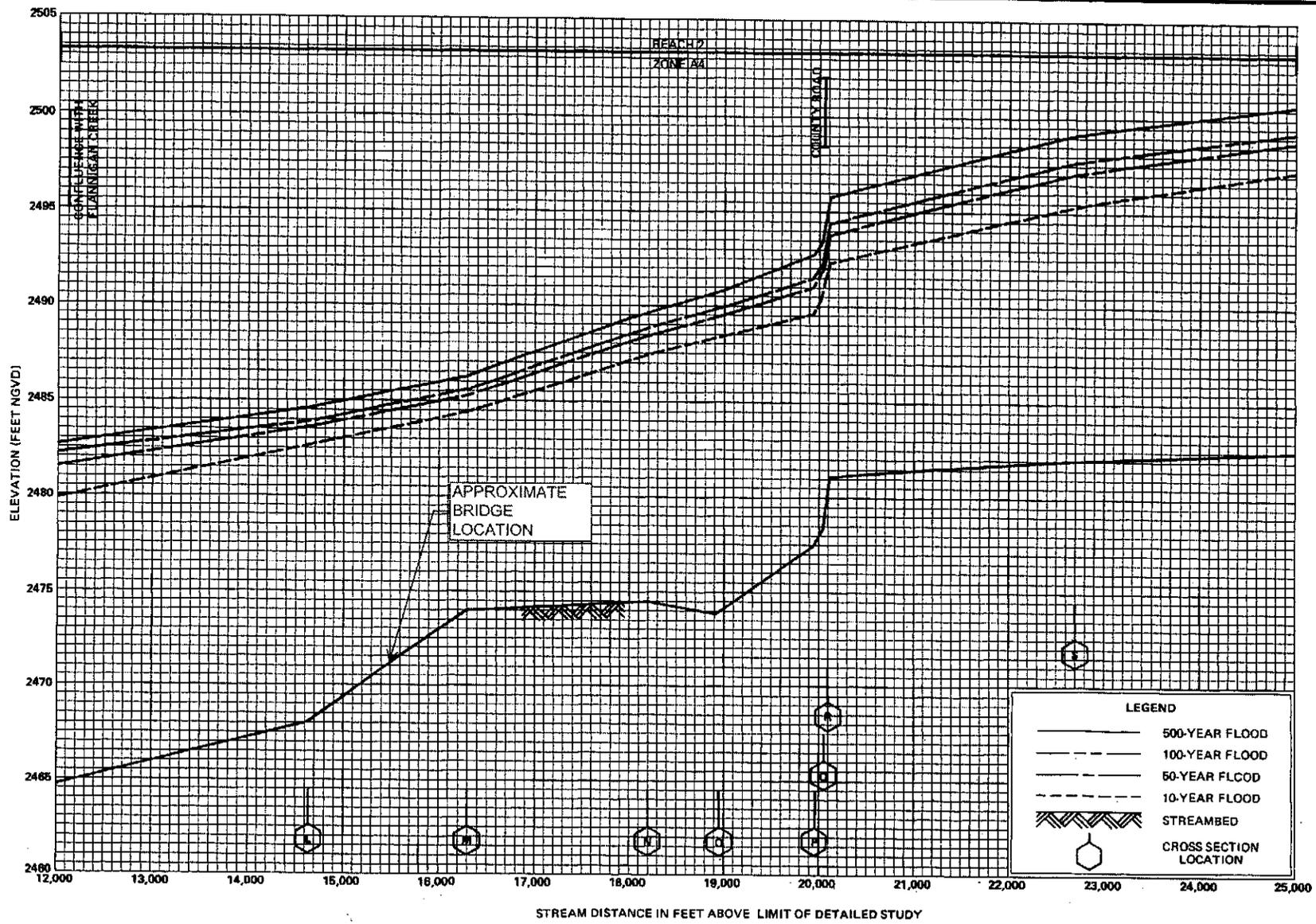
Reach	River Sta	Profile	Q Total (cfs)	Min. Ch. El. (ft)	W.S. Elev (ft)	Crit. W.S. (ft)	E.O. Elev (ft)	E.O. Slope (ft/ft)	Val. Chnl (ft/s)	Flow Area (sq. ft)	Top Width (ft)	Froude # Chl
Reach-1	15	PF 1	9500.00	2473.80	2489.85		2490.43	0.001405	6.12	1576.77	151.39	0.32
Reach-1	14	PF 1	9500.00	2474.40	2488.83		2489.36	0.001491	6.08	2076.12	693.26	0.32
Reach-1	13	PF 1	9500.00	2474.00	2486.79		2486.97	0.001025	3.49	2973.28	675.35	0.25
Reach-1	12.6	PF 1	9500.00	2470.54	2485.98		2486.36	0.001815	5.35	2268.60	525.43	0.34
Reach-1	12.6	PF 1	9500.00	2467.64	2485.32		2486.01	0.002331	6.92	1603.42	288.69	0.40
Reach-1	12.55	PF 1	9500.00	2474.10	2483.58		2485.45	0.007925	10.97	867.31	130.17	0.71
Reach-1	12.45	PF 1	9500.00	2474.10	2483.39		2485.36	0.008574	11.27	843.10	116.50	0.73
Reach-1	12.2	PF 1	9500.00	2468.05	2484.29		2484.56	0.000664	4.38	2640.10	438.80	0.22
Reach-1	12.1	PF 1	9500.00	2469.13	2484.14		2484.42	0.000963	4.54	2568.52	425.38	0.26
Reach-1	12	PF 1	9500.00	2468.00	2483.91		2484.07	0.000607	4.40	4436.96	1522.19	0.21
Reach-1	11	PF 1	9500.00	2463.70	2481.87		2482.00	0.000679	3.49	4673.30	1672.33	0.21
Reach-1	10.3	PF 1	9500.00	2464.10	2481.60		2481.93	0.001580	5.89	3418.98	1426.60	0.30
Reach-1	10.2	PF 1	9500.00	2464.10	2481.60	2476.59	2481.93	0.001583	5.90	3415.15	1425.56	0.30
Reach-1	10.1	PF 1	9500.00	2464.10	2479.12	2476.65	2481.62	0.009689	12.74	815.30	321.32	0.70
Reach-1	10	PF 1	9500.00	2464.10	2477.52	2476.59	2481.09	0.022259	15.16	626.84	67.93	0.88
Reach-1	9	PF 1	9500.00	2461.80	2478.88	2474.43	2479.68	0.002616	7.65	1869.97	990.02	0.42
Reach-1	8	PF 1	9500.00	2463.00	2478.30	2472.28	2478.32	0.000127	1.84	10053.27	2125.61	0.10

HEC-RAS MODEL WITH PROPOSED BRIDGE

HEC-RAS Plan: Imported Pla River: RIVER-1 Reach: Reach-1 Profile: PF 1

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach-1	16	PF 1	9500.00	2473.80	2489.85		2490.43	0.001405	6.12	1576.74	151.39	0.32
Reach-1	14	PF 1	9500.00	2474.40	2488.83		2489.36	0.001491	6.08	2075.78	693.15	0.32
Reach-1	13	PF 1	9500.00	2474.00	2486.79		2486.97	0.001026	3.49	2972.29	675.21	0.25
Reach-1	12.8	PF 1	9500.00	2470.54	2485.97		2486.36	0.001818	5.36	2267.19	525.37	0.34
Reach-1	12.6	PF 1	9500.00	2467.64	2485.32		2486.01	0.002335	6.92	1602.36	288.67	0.40
Reach-1	12.55	PF 1	9500.00	2474.10	2483.58	2481.87	2485.45	0.007952	10.98	866.23	129.59	0.71
Reach-1	12.5	Bridge										
Reach-1	12.45	PF 1	9500.00	2474.10	2483.39		2485.36	0.008574	11.27	843.10	116.50	0.73
Reach-1	12.2	PF 1	9500.00	2468.05	2484.29		2484.66	0.000664	4.38	2640.10	438.80	0.22
Reach-1	12.1	PF 1	9500.00	2469.13	2484.14		2484.42	0.000963	4.54	2568.52	425.38	0.26
Reach-1	12	PF 1	9500.00	2468.00	2483.91		2484.07	0.000607	4.40	4436.96	1522.19	0.21
Reach-1	11	PF 1	9500.00	2463.70	2481.87		2482.00	0.000679	3.49	4673.30	1672.33	0.21
Reach-1	10.3	PF 1	9500.00	2464.10	2481.60		2481.93	0.001580	5.89	3418.98	1426.60	0.30
Reach-1	10.2	PF 1	9500.00	2464.10	2481.60	2476.59	2481.93	0.001583	5.90	3415.15	1425.56	0.30
Reach-1	10.1	PF 1	9500.00	2464.10	2479.12	2476.65	2481.62	0.009689	12.74	815.39	321.32	0.70
Reach-1	10	PF 1	9500.00	2464.10	2477.52	2476.59	2481.09	0.022259	15.16	626.84	67.83	0.88
Reach-1	9	PF 1	9500.00	2461.80	2478.88	2474.43	2479.68	0.002616	7.65	1869.97	990.02	0.42
Reach-1	8	PF 1	9500.00	2463.00	2478.30	2472.28	2478.32	0.000127	1.84	10053.27	2125.61	0.10

**Appendix F –
HEC-RAS Profile
FIS Profile**

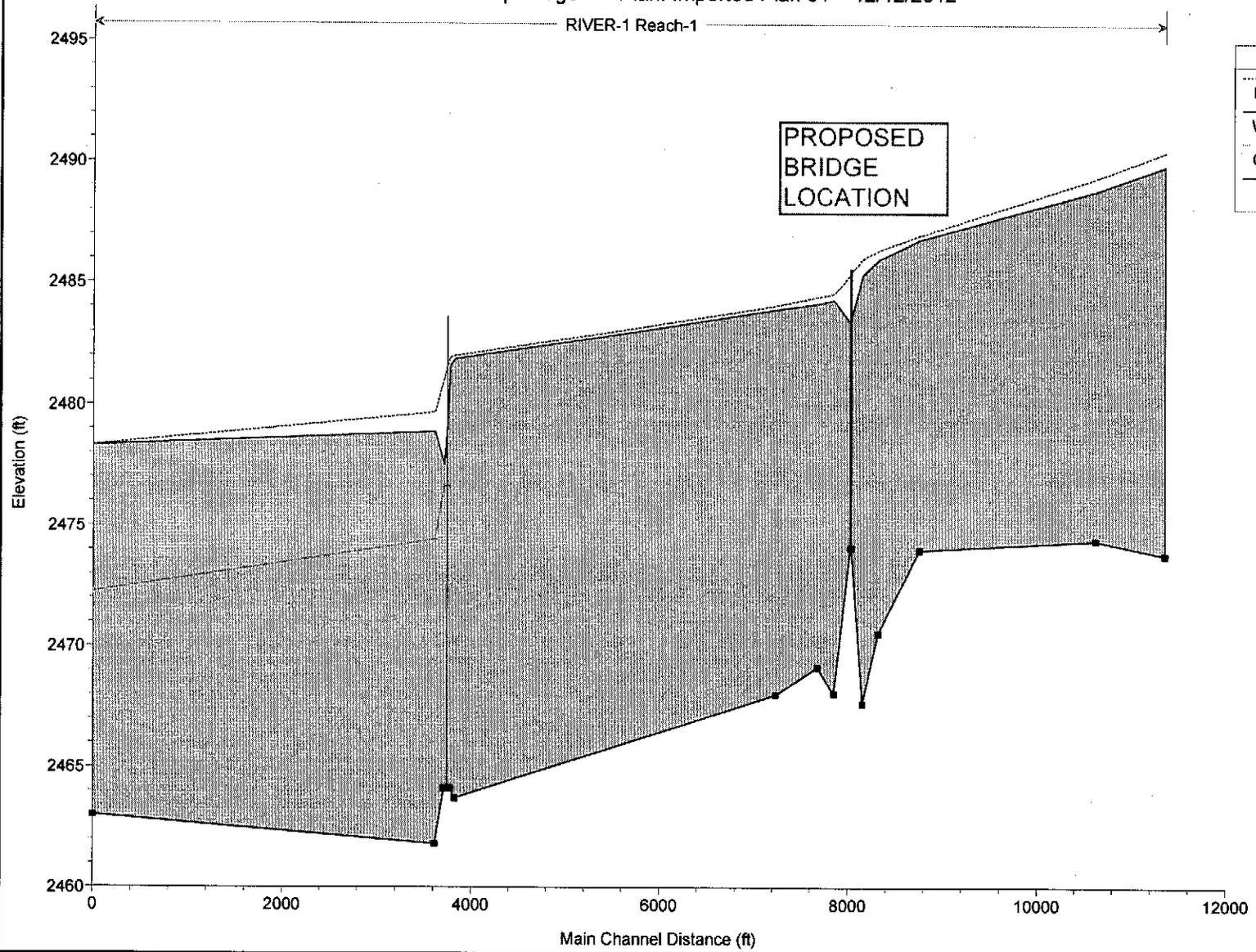


**FLOOD PROFILES
PALOUSE RIVER**

FEDERAL EMERGENCY MANAGEMENT AGENCY
LATAH COUNTY, ID
(UNINCORPORATED AREAS)

Palouse Prop bridge Plan: Imported Plan 01 12/12/2012

RIVER-1 Reach-1



Appendix B

Army Corps of Engineers Correspondence

Angela Taylor

From: S & L Underground [admin@slunder.com]
Sent: Thursday, January 31, 2013 11:34 AM
To: angela@taylorengr.com
Subject: Fw: Potlatch Bridge
Attachments: Bridge Specs for Potlatch.pdf; Sheet C12 Bridge Bid Alternate.pdf

Hello Angela,
Here is the information that we sent to Beth Reinhart back in August of 2012.
Thanks,
Margo

S & L Underground, Inc.
P.O. Box 1952
66304 Highway 2
Bonners Ferry, ID 83805
208-267-7996 phone
208-267-8097 fax
----- Original Message -----

From: [S & L Underground](#)
To: mary.e.reinhart@usace.army.mil
Sent: Thursday, August 02, 2012 1:56 PM
Subject: Potlatch Bridge

Ms. Reinhart,

We are a General Contractor working on the Potlatch Wastewater Reuse Project in Potlatch, Idaho. The project is located southwest of the Palouse River and east of sewage lagoons. Part of this project is a pedestrian access bridge going across the Palouse River.

Our intent is to install the bridge above the ordinary high water mark. What permits do we need to obtain before constructing the bridge?

For your information, I've attached the plan sheet and the specs for the access bridge.

Thank you,
Shem Johnson
S & L Underground, Inc.
208-699-1596

Please note our new email address admin@slunder.com

SECTION 32 34 00 - ACCESS BRIDGE

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This is a design-build item.
- B. The Contractor shall be responsible for designing, detailing, fabrication, delivery, construction and complete erection of bridge structure over the Palouse River. Included is the design and preparation of shop drawings; hydraulic analysis for no-rise condition and permitting through the US Army Corps of Engineers, Idaho Department of Water Resources, and Latah County Floodplain development permit; excavation, embankment, and compaction for the construction of foundations and wingwalls; over-excavation and installation of granular sub-base material below the footings; installation of granular backfill behind abutments and wingwalls; construction of abutments and wingwalls, including footings; and furnishing and installation of the bridge structure.
- C. Match into roadway constructed under other bid items for this project.
- D. The bridge furnished shall be of a standard manufacturer's configuration that conforms to the loading requirements and dimensional requirements as shown on the plans and in these specifications. The materials used may be concrete, steel, timber, or any suitable combination of these.

1.2 REFERENCES

- A. ITD Standard Specifications for Highway Construction
- B. AASHTO Standard Specifications for Highway Bridges – current edition and interims
- C. AWPA Standards – current edition
- D. NFPA National Design Specifications for Wood Construction
- E. AITC Timber Construction Manual

1.3 DESIGN CRITERIA

- A. Design shall be in accordance with AASHTO specification, all current interims and the following criteria:
 - 1. Bridge dimensions:
 - a. Total span = minimum 124 feet as measured from abutment to abutment. This minimum span is intended to extend from above the Ordinary High Water line on both sides of the river.
 - b. Deck width = 8 feet as measured between outside panel edges.
 - c. 100-year flood water surface elevation (approximately 2484.81 NGVD 1929, 2488.46± NAVD 1988), freeboard clearance = 1 foot minimum

2. All dead loads, applied dead loads, and wind loads as specified in the AASHTO specification.
3. Live loads shall be H10 per AASHTO specifications.
4. Deflection requirements according to AASHTO.
5. Structure depth and profile grade must conform to site conditions.
6. Hand rail (pedestrian rail) shall be designed in accordance with Article 2.7.2 of the AASHTO Standard Specifications. Total rail height shall measure at least 4.5 feet above deck surface and meet AASHTO dimensional and structural requirements.

1.4 SUBMITTALS

- A. **PLANS AND CALCULATIONS:** Prior to commencement of final design, a schematic of the fabrication and construction concept shall be submitted for approval. Shop drawings and design calculations for the bridge structure, abutments and appurtenances shall be submitted for review and approval prior to fabrication of the structure. Shop drawings and calculations shall be sealed by a licensed structural engineer registered in the State of Idaho. It will take up to 3 weeks for the Engineer to review the design calculations and shop drawings.
- B. **PERMITTING**
 1. Hydraulic analysis shall be completed by the Contractor utilizing the currently effective hydraulic model according to FEMA. Model to ensure No-Rise condition of Palouse River resulting from proposed bridge construction.
 2. Joint Application for Permits – US Army Corps of Engineers permit, State Stream Alteration Permit from Idaho Department of Water Resources, and Water Quality Certification from Idaho Department of Environmental Quality will be required.
 3. Floodplain development permit from Latah County will be required.
- C. **CERTIFICATION:** Furnish AITC or APA certificate for the Glulam Beams, Mill Certificate for the Sawn Lumber, Independent Treating Certificate for Treating, and Mill Certificate for steel.

PART 2 - PRODUCTS

2.1 CONCRETE AND REINFORCING STEEL

- A. All Concrete shall be Class 40B conforming to Section 502 Concrete, of the ITD Standard Specifications for Highway Construction.
- B. Reinforcing steel shall be Grade 40 or 60 conforming to Section 503, Metal Reinforcement, of the ITD Standard Specifications for Highway Construction.

2.2 PRE-STRESSING STEEL

- A. Pre-Stressing Steel shall conform to Section 708.05, Pre-stressing Steel, of the ITD Standard Specifications for Highway Construction.

2.3 STRUCTURAL STEEL

- A. Structural steel shall conform to Section 504, Structural Metals and Section 708.06, Structural Steel and related Materials, of the ITD Standard Specifications for Highway Construction.

2.4 STEEL PROTECTION

- A. All steel and hardware required to construct and assemble the bridge superstructure including girders, beam shoes, beam braces, steel diaphragms, rod cross bracing, double grip spikes and all miscellaneous nuts and bolts shall be hot dip galvanized. Embedded steel not included.

2.5 GLULAM BEAMS

- A. All glulam beams shall have Douglas fir stringers (FIRP, reinforced optional.) They should be manufactured using 100% waterproof glue and shall be completely fabricated prior to treatment per approved shop drawings. Glulams to include stringers, deck panels, rail posts and railing.

2.6 SAWN LUMBER

- A. Douglas Fir No. 1, S4S. Completely fabricated prior to treatment per approved shop drawings. Sawn lumber to include deck stiffeners, and rail post block outs.

2.7 PRESSURE TREATMENT

- A. Glulam stringers pressure treated with 0.3 Type A Penta (medium brown color). Balance of the lumber and Glulam pressure treated with 0.3 or 0.4 light solvent Penta (light brown color), per APWA Specifications C2 and C28. All pressure treatment shall conform to all EPA and Idaho Department of Health and Welfare Division of Environmental Quality requirements.

2.8 GRANULAR SUBBASE

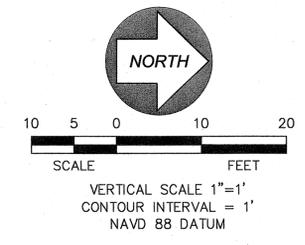
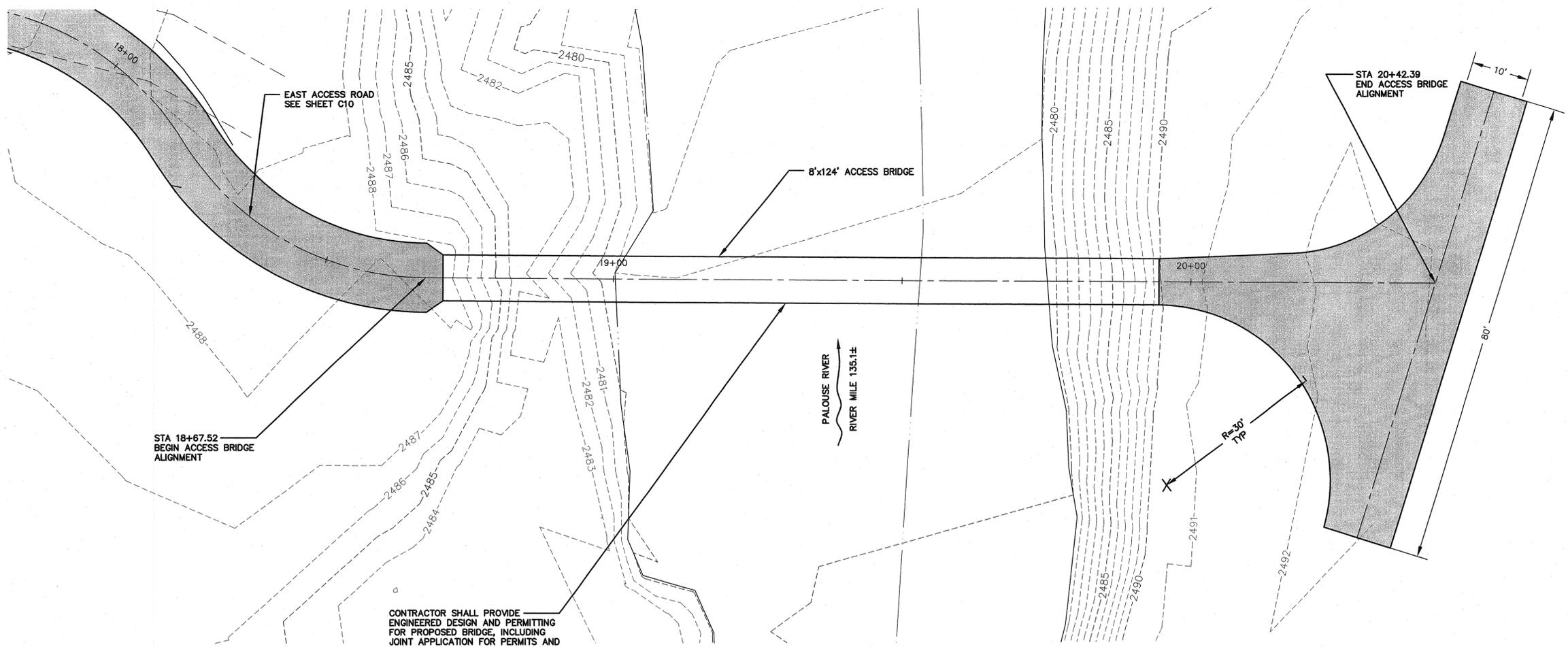
- A. All granular aggregate for granular subbase shall conform to the standards set forth in ITD Standard Specifications for Highway Construction Section 301, Granular Subbase and shall be compacted to Class A Compaction. This applies to all backfill behind abutments and wingwalls.

PART 3 - EXECUTION

3.1 WORKMANSHIP

- A. The bridge structure and abutments shall be installed in strict conformance with the manufacturer's recommendations and approved shop drawings.

END OF SECTION



THIS IS A DESIGN-BUILD BRIDGE. CONTRACTOR TO CONDUCT ITS OWN GEOTECHNICAL INVESTIGATIONS, SECURE NECESSARY PERMITS, AND SUBMIT CALCULATIONS AND SHOP DRAWINGS PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF IDAHO.

MINIMUM DESIGN CRITERIA
CLEAR WIDTH 8'-0"

VEHICLE LOADING H10

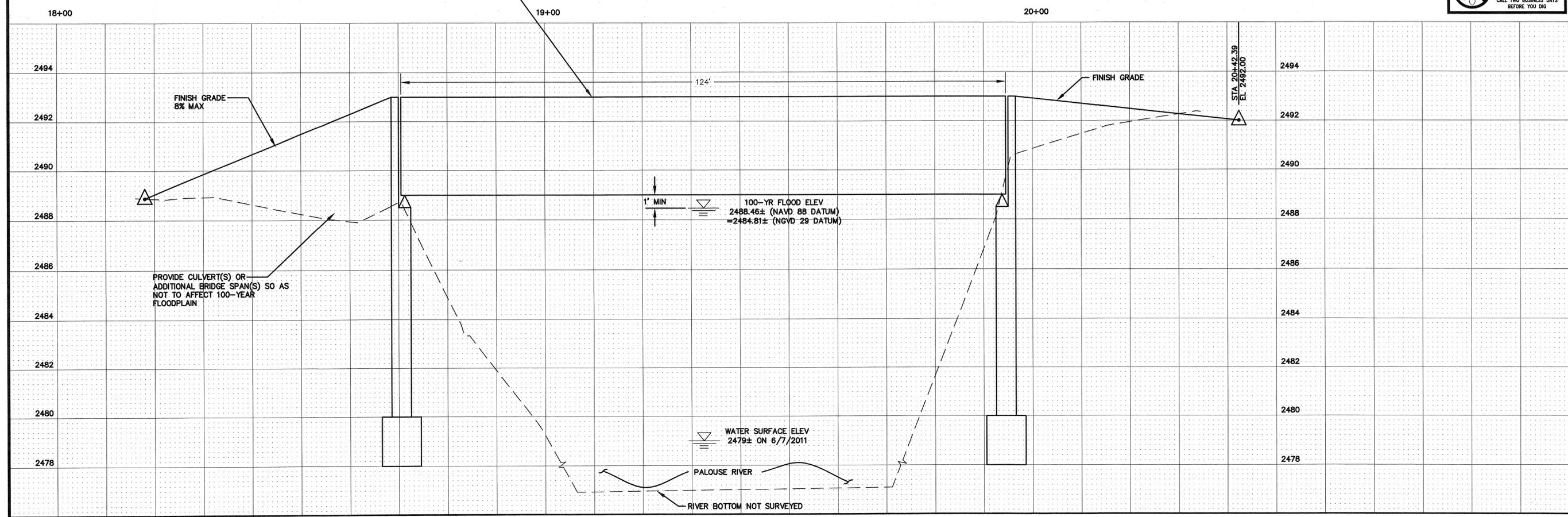
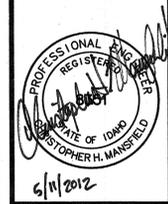
NO MATERIAL TO BE ADDED WITHIN 100-YEAR FLOODPLAIN UNLESS APPROVED BY U.S. ARMY CORPS OF ENGINEERS

CONTRACTOR SHALL PROVIDE ENGINEERED DESIGN AND PERMITTING FOR PROPOSED BRIDGE, INCLUDING JOINT APPLICATION FOR PERMITS AND LATAH COUNTY FLOODPLAIN DEVELOPMENT PERMIT. SEE SPEC SECTION 32 34 00

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

REV.	APP'D.	DATE	DESCRIPTION

Taylor Engineering, Inc.
Civil Design and Land Planning
1044 Northwest Blvd.
Coeur d'Alene, ID 83814
(208) 664-9405 FAX (208) 666-0261



CITY OF POTLATCH
195 6th Street
POTLATCH, IDAHO 83855
TEL: 208-875-0708 FAX: 208-875-0130

WASTEWATER REUSE PROJECT
ACCESS BRIDGE
PLAN AND PROFILE

DESIGN	CHM
DRAWN	BDB
CHK'D	CHM
DATE	5-11-12
PROJ.	09C020J
FILE NO.	C12-BRIDGE

Angela Taylor

From: S & L Underground [admin@slunder.com]
Sent: Monday, December 03, 2012 10:55 AM
To: angela@taylorengr.com
Subject: Fw: Potlatch Bridge (UNCLASSIFIED)

Hello Angela,
Here is the information.

Thanks,

Shem

S & L Underground, Inc.

P.O. Box 1952

66304 Highway 2

Bonnars Ferry, ID 83805

208-267-7996 phone

208-267-8097 fax

----- Original Message -----

From: "Slate, Shane P NWW" <Shane.P.Slate@usace.army.mil>

To: <admin@slunder.com>

Sent: Friday, August 03, 2012 7:51 AM

Subject: RE: Potlatch Bridge (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Hi Shem,

Beth Reinhart asked me to help out so that we could get you a response asap on the proposed pedestrian bridge over the Potlatch River. If you build the bridge so that the footings are well above the ordinary high water mark(OHWM), as you have detailed in the drawing you sent Beth, you won't need a permit from the Army Corps of Engineers. Just looking at what you sent over the only thing that would trigger need for an Army permit would be if that are going to fills in wetlands for either the bridge or any roads/trails related to the project. So, if you do not place fill below the OHWM of the river or into wetlands no permit will be required.

Feel free to contact me if you have any further questions,

Shane Slate

Regulatory Project Manager

US Army Corps of Engineers

Walla Walla District

Coeur d'Alene Regulatory Office

208-765-8961

shane.p.slate@usace.army.mil

Classification: UNCLASSIFIED

Caveats: NONE

Angela Taylor

From: Slate, Shane P NWW [Shane.P.Slate@usace.army.mil]
Sent: Monday, March 25, 2013 2:42 PM
To: shem@slunder.com; angela@tayloreng.com
Subject: NWW-2013-139 (City of Potlatch) Letter going out today. (UNCLASSIFIED)
Attachments: 2013-139 NWP18 Verification Ltr.pdf

Classification: UNCLASSIFIED

Caveats: NONE

Shem/Angela,

Attached is the permit verification letter for Maintenance Bridge and Sprinkler Pivots. The full packet is going out in the mail to the City's PO Box.

Thanks,
Shane

Shane Slate
Regulatory Project Manager
US Army Corps of Engineers
Walla Walla District
Coeur d'Alene Regulatory Office
208-765-8961
shane.p.slate@usace.army.mil

Classification: UNCLASSIFIED

Caveats: NONE



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
COEUR D'ALENE REGULATORY OFFICE
2065 WEST RIVERSTONE DRIVE, SUITE 201
COEUR D'ALENE, IDAHO 83814-5699

March 22, 2013

Regulatory Division

SUBJECT: NWW-2013-139, Maintenance Access Bridge/Sprinkler Pivot Footings

City of Potlatch
c/o Shem Johnson
PO Box 525
Potlatch, ID 83855

Dear Mr. Johnson:

We have determined that the City of Potlatch's proposed maintenance access bridge project is authorized in accordance with Department of Army (DA) **Nationwide Permit (NWP) No. 18: Minor Discharges**. This project is located within Section 1 of Township 41 North, Range 5 West, near latitude 46.92175° N and longitude -116.90921° W, in Latah County, in Potlatch, Idaho. Please refer to File Number NWW-2013-139 in all future correspondence with our office regarding this project.

Project activities include the discharge of 11 cubic yards of formed concrete into 0.005 acres of wetlands adjacent to the Palouse River, a waters of the United States (U.S.), including wetlands. This work is associated with the construction of an access bridge to the City of Potlatch's waste water treatment facilities, and to place pre-cast footings for sprinkler pivots associated with land application of treated wastewater. All work shall be done in accordance to the attached drawings, titled; *City of Potlatch, File No. NWW-2013-139, Access Bridge/Sprinkler Pivots, Sheets 1 through 4*, dated March 22, 2013.

DA permit authorization is necessary because your project would involve the discharge of fill material into Waters of the U.S., including wetlands. This authorization is outlined in Section 404 of the Clean Water Act (33 U.S.C. 1344).

PERMIT CONDITIONS

You must comply with all regional and general conditions for this verification letter to remain valid and to avoid possible enforcement actions. The regional and general permit conditions for *NWP No. 18: Minor Discharges* are found online at <http://www.nww.usace.army.mil/BusinessWithUs/RegulatoryDivision/NationwidePermits.aspx>. If you are unable to access this website or would prefer a hard copy of the regional and general conditions please notify us and we will provide you a copy.

WATER QUALITY CERTIFICATION

You must also comply with the conditions detailed in the Section 401 Water Quality Certification (WQC) issued on July 5, 2012, by the Idaho Department of Environmental Quality (IDEQ). A copy of this WQC is available on our Walla Walla Regulatory Division website, at <http://www.nww.usace.army.mil/Portals/28/docs/regulatory/NWPs/401WQC.pdf>. If you have any questions regarding the conditions set forth in the Water Quality Certification, please contact IDEQ directly at 208-769-1422.

PRELIMINARY JURISDICTIONAL DETERMINATION

Attached to this verification are two copies of the Preliminary Jurisdictional Determination (PJD) form showing that waters of the United States, including wetlands, which may be located within your project area. **Please sign both copies and return one to the Corps at the address in the letterhead above.** The other copy is for your records.

The Preliminary Jurisdictional Determination is a non-binding action and shall remain in effect, unless a request for an Approved Jurisdictional Determination or new information supporting a revision is provided to this office. Please note that since this jurisdictional determination is preliminary, it is subject to change and therefore is not an appealable action under the Corps of Engineers Administrative Appeal Procedures (33 CFR 331). Enclosed you will find a *Notification of Administrative Appeal Options and Process and Request for Appeal* (RFA) form for further clarification.

COMPLIANCE CERTIFICATION

Further, Nationwide Permit General Condition 30 (*Compliance Certification*) requires that every permittee who has received NWP verification must submit a signed certification regarding the completed work and any required mitigation. The enclosed Compliance Certification form is enclosed for your convenience and must be completed and returned to us.

LIMITATIONS OF THIS VERIFICATION

This letter of authorization does not convey any property rights, or any exclusive privileges and does not authorize any injury to property or excuse you from compliance with other Federal, State, or local statutes, ordinances, regulations, or requirements which may affect this work.

EXPIRATION OF THIS VERIFICATION

This verification is valid until **March 18, 2017**, unless the NWP is modified, suspended or revoked. If your project, as permitted under this NWP verification is changed and/or modified, you must contact our office prior to commencing any work activities. In the event you have not completed construction of your project by March 18, 2017, please contact us at least 60-days prior to this date. A new application and verification may be required.

We are interested in your thoughts and opinions concerning the quality of service you received from the Walla Walla District, Corps of Engineers Regulatory Division. Please visit us online at <http://per2.nwp.usace.army.mil/survey.html> and complete an electronic version of our

Customer Service Survey form, which will be automatically submitted to us. Alternatively, you may call and request a paper copy of the survey, which you may complete and return to us by mail. For additional information about the Walla Walla District Regulatory program please visit us on-line at <http://www.nww.usace.army.mil/BusinessWithUs/RegulatoryDivision.aspx>.

Please contact Shane Slate by telephone at 208-765-8961, by mail at the address in the letterhead, or via email at shane.p.slate@usace.army.mil if you have any questions or need additional information. For informational purposes, a copy of this letter is being sent to: Ms. Angela Taylor of Taylor Engineering.

Sincerely,



Beth Reinhart
Sr. Project Manager, Regulatory Division

Enclosures:

NWW-2013-139 Drawings, Sheets 1 through 4
Preliminary Jurisdictional Determination Form (2 copies)
Request for Appeal Form
Compliance Certification Form
NWP Transfer form

Appendix C

Idaho Department of Water Resources Correspondence

Angela Taylor

From: Shem Johnson [shem@slunder.com]
Sent: Monday, December 03, 2012 10:55 AM
To: angela@tayloreng.com
Subject: Fw:

S & L Underground, Inc.
P.O. Box 1952
66304 Highway 2
Bonners Ferry, ID 83805
208-267-7996 phone
208-267-8097 fax
----- Original Message -----

From: [Knoblock, Ken](#)
To: shem@slunder.com
Sent: Friday, August 03, 2012 9:48 AM

The stream channel protection act requires a permit to work below the ordinary high water mark of a continuously flowing stream. It is our understanding that a bridge will be constructed that will clear span the Palouse River without any work being done below the ordinary high water. No permit is required from our department for the work to proceed.

Kenneth Knoblock
Idaho Department of Water Resources
Northern Region

Appendix D

Mary McGown Correspondence

Angela Taylor

From: Angela Taylor [angela@taylorengr.com]
Sent: Thursday, January 31, 2013 7:36 PM
To: 'Mary.McGown@idwr.idaho.gov'
Subject: Potlatch Bridge
Attachments: Bridge Specs for Potlatch.pdf; Sheet C12 Bridge Bid Alternate.pdf; Development Permit.pdf; APP C Floodway map.pdf

Mary,

As part of the Potlatch Wastewater Reuse Project in Potlatch, Idaho, we are proposing to construct an access bridge that crosses the Palouse River just upstream of the existing sanitary sewer lagoons. As part of the Environmental Information Documents required for SRF loan funding through IDEQ, we are required to get your consultation and analysis of this bridge as it pertains to effects on the floodplain.

We have completed a No-Rise Analysis based on the original FEMA FIS model and found no effect on the 100-year water surface elevation as a result of the bridge. I have included the Latah County Development Permit with no-rise certificate and the analysis completed, for your reference. I have also included the specification and plan sheet referencing the bridge. In addition, I have included a drawing showing the location of the bridge.

Please let us know if you feel there will be any effects on the floodplain as a result of this construction. If you need further information, please call or e-mail.

Thanks,
Angela

Angela Taylor, PE, LEED AP
Taylor Engineering, Inc.
245 E. Main St.
Pullman, WA 99163
(509)334-5115
(509)334-5956 FAX
angela@taylorengr.com

SECTION 32 34 00 - ACCESS BRIDGE

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This is a design-build item.
- B. The Contractor shall be responsible for designing, detailing, fabrication, delivery, construction and complete erection of bridge structure over the Palouse River. Included is the design and preparation of shop drawings; hydraulic analysis for no-rise condition and permitting through the US Army Corps of Engineers, Idaho Department of Water Resources, and Latah County Floodplain development permit; excavation, embankment, and compaction for the construction of foundations and wingwalls; over-excavation and installation of granular sub-base material below the footings; installation of granular backfill behind abutments and wingwalls; construction of abutments and wingwalls, including footings; and furnishing and installation of the bridge structure.
- C. Match into roadway constructed under other bid items for this project.
- D. The bridge furnished shall be of a standard manufacturer's configuration that conforms to the loading requirements and dimensional requirements as shown on the plans and in these specifications. The materials used may be concrete, steel, timber, or any suitable combination of these.

1.2 REFERENCES

- A. ITD Standard Specifications for Highway Construction
- B. AASHTO Standard Specifications for Highway Bridges – current edition and interims
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1.3 DESIGN CRITERIA

- A. Design shall be in accordance with AASHTO specification, all current interims and the following criteria:
 - 1. Bridge dimensions:
 - a. Total span = minimum 124 feet as measured from abutment to abutment. This minimum span is intended to extend from above the Ordinary High Water line on both sides of the river.
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2. All dead loads, applied dead loads, and wind loads as specified in the AASHTO specification.
3. Live loads shall be H10 per AASHTO specifications.
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5. Structure depth and profile grade must conform to site conditions.
6. Hand rail (pedestrian rail) shall be designed in accordance with Article 2.7.2 of the AASHTO Standard Specifications. Total rail height shall measure at least 4.5 feet above deck surface and meet AASHTO dimensional and structural requirements.

1.4 SUBMITTALS

- A. **PLANS AND CALCULATIONS:** Prior to commencement of final design, a schematic of the fabrication and construction concept shall be submitted for approval. Shop drawings and design calculations for the bridge structure, abutments and appurtenances shall be submitted for review and approval prior to fabrication of the structure. Shop drawings and calculations shall be sealed by a licensed structural engineer registered in the State of Idaho. It will take up to 3 weeks for the Engineer to review the design calculations and shop drawings.
- B. **PERMITTING**
 1. Hydraulic analysis shall be completed by the Contractor utilizing the currently effective hydraulic model according to FEMA. Model to ensure No-Rise condition of Palouse River resulting from proposed bridge construction.
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 3. Floodplain development permit from Latah County will be required.
- C. **CERTIFICATION:** Furnish AITC or APA certificate for the Glulam Beams, Mill Certificate for the Sawn Lumber, Independent Treating Certificate for Treating, and Mill Certificate for steel.

PART 2 - PRODUCTS

2.1 CONCRETE AND REINFORCING STEEL

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- A. Pre-Stressing Steel shall conform to Section 708.05, Pre-stressing Steel, of the ITD Standard Specifications for Highway Construction.

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- A. Structural steel shall conform to Section 504, Structural Metals and Section 708.06, Structural Steel and related Materials, of the ITD Standard Specifications for Highway Construction.

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- A. Douglas Fir No. 1, S4S. Completely fabricated prior to treatment per approved shop drawings. Sawn lumber to include deck stiffeners, and rail post block outs.

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- A. Glulam stringers pressure treated with 0.3 Type A Penta (medium brown color). Balance of the lumber and Glulam pressure treated with 0.3 or 0.4 light solvent Penta (light brown color), per APWA Specifications C2 and C28. All pressure treatment shall conform to all EPA and Idaho Department of Health and Welfare Division of Environmental Quality requirements.

2.8 GRANULAR SUBBASE

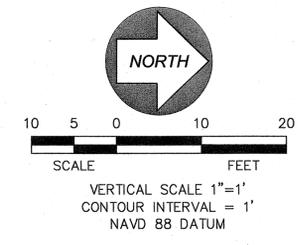
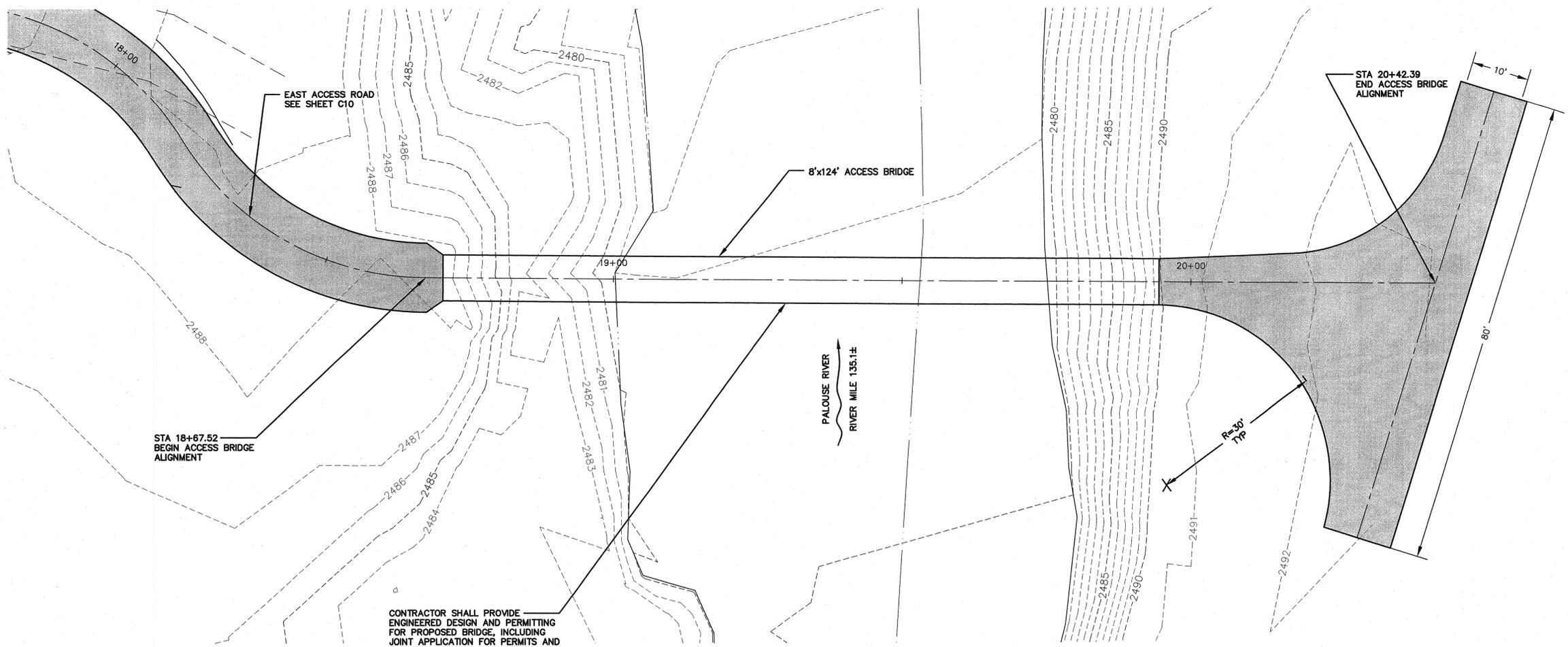
- A. All granular aggregate for granular subbase shall conform to the standards set forth in ITD Standard Specifications for Highway Construction Section 301, Granular Subbase and shall be compacted to Class A Compaction. This applies to all backfill behind abutments and wingwalls.

PART 3 - EXECUTION

3.1 WORKMANSHIP

- A. The bridge structure and abutments shall be installed in strict conformance with the manufacturer's recommendations and approved shop drawings.

END OF SECTION



THIS IS A DESIGN-BUILD BRIDGE. CONTRACTOR TO CONDUCT ITS OWN GEOTECHNICAL INVESTIGATIONS, SECURE NECESSARY PERMITS, AND SUBMIT CALCULATIONS AND SHOP DRAWINGS PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF IDAHO.

MINIMUM DESIGN CRITERIA
CLEAR WIDTH 8'-0"

VEHICLE LOADING H10

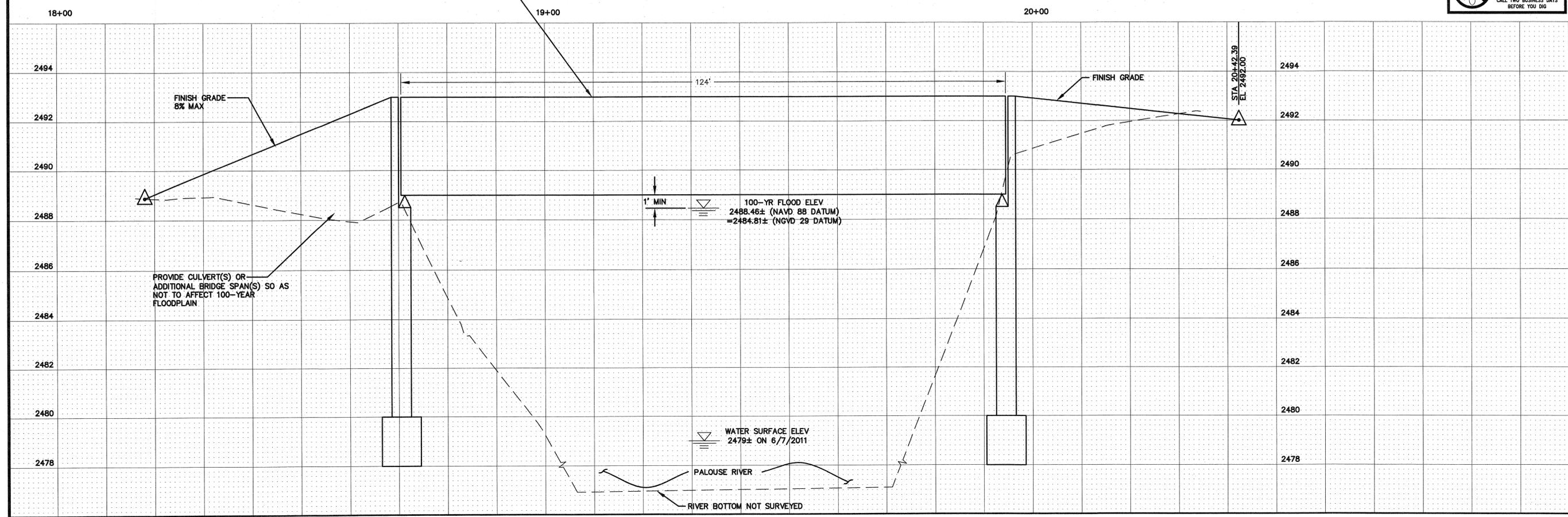
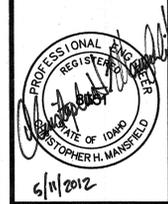
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UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
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CALL TWO BUSINESS DAYS BEFORE YOU DIG

REV.	APP'D.	DATE	DESCRIPTION

Taylor Engineering, Inc.
Civil Design and Land Planning
1044 Northwest Blvd.
Coeur d'Alene, ID 83814
(208) 664-9405 FAX (208) 666-0261



CITY OF POTLATCH
195 6th Street
POTLATCH, IDAHO 83855
TEL: 208-875-0708 FAX: 208-875-0130

WASTEWATER REUSE PROJECT
ACCESS BRIDGE
PLAN AND PROFILE

DESIGN	CHM
DRAWN	BDB
CHK'D	CHM
DATE	5-11-12
PROJ.	09C020J
FILE NO.	C12-BRIDGE

C12
SHEET 15 OF 36



LATAH COUNTY PLANNING & BUILDING

Latah County Courthouse

PO Box 8068, 522 South Adams

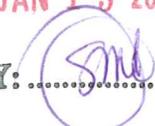
Moscow, ID 83843

(208) 883-7220 ♦ FAX (208) 883-7225 ♦ E-Mail: pb@latah.id.us ♦ In Latah County, Toll Free: 1-800-691-2012

January 14, 2013

City of Potlatch
Attn: Mayor David Brown
PO Box 525
Potlatch, ID 83855

RECEIVED
JAN 15 2013

BY: 

Reference: DP13-04

Dear Mr. Brown:

Attached is a copy of your development permit for a bridge to cross the Palouse River to access your sewage treatment area. The project is located in Section 01, Township 41 North, Range 05 West, Boise Meridian and referenced as Assessor's Tax Parcel 41N05W014381. This permit is granted under the provisions of §5.01 of the Latah County Land Use Ordinance #269 as amended.

This development permit provides approval based upon the information provided in your application of January 7, 2013, as long as the following conditions are met.

- 1) The work is completed in accordance with the submitted plans, no rise certification and submitted application.
- 2) No toxic substances that will be used in the construction of the bridge.
- 3) Submit a post construction elevation certificate.

A copy of the approved development permit application has been included.

If you have any questions, please contact me.

Sincerely,



Jason Boal
Associate Planner

cc: Angela Taylor, PE

F. Statement of Development Compliance (Complete for All Work):

1. Attach a technical analysis, by a professional engineer licensed in the State of Idaho, which shows whether a proposed development to be located in a flood hazard area may result in physical damage to any property.
2. An engineer must certify that:

This development will not be in violation of the purpose of any provision of Section 5.01 of the Latah County Zoning Ordinance.

Signature: Angela Taylor
Date: 12/21/12



This Development will not be subject to substantial flood damage and will not cause flood losses on other land or to the public.

Signature: Angela Taylor
Date: 12/21/12

ADMINISTRATIVE

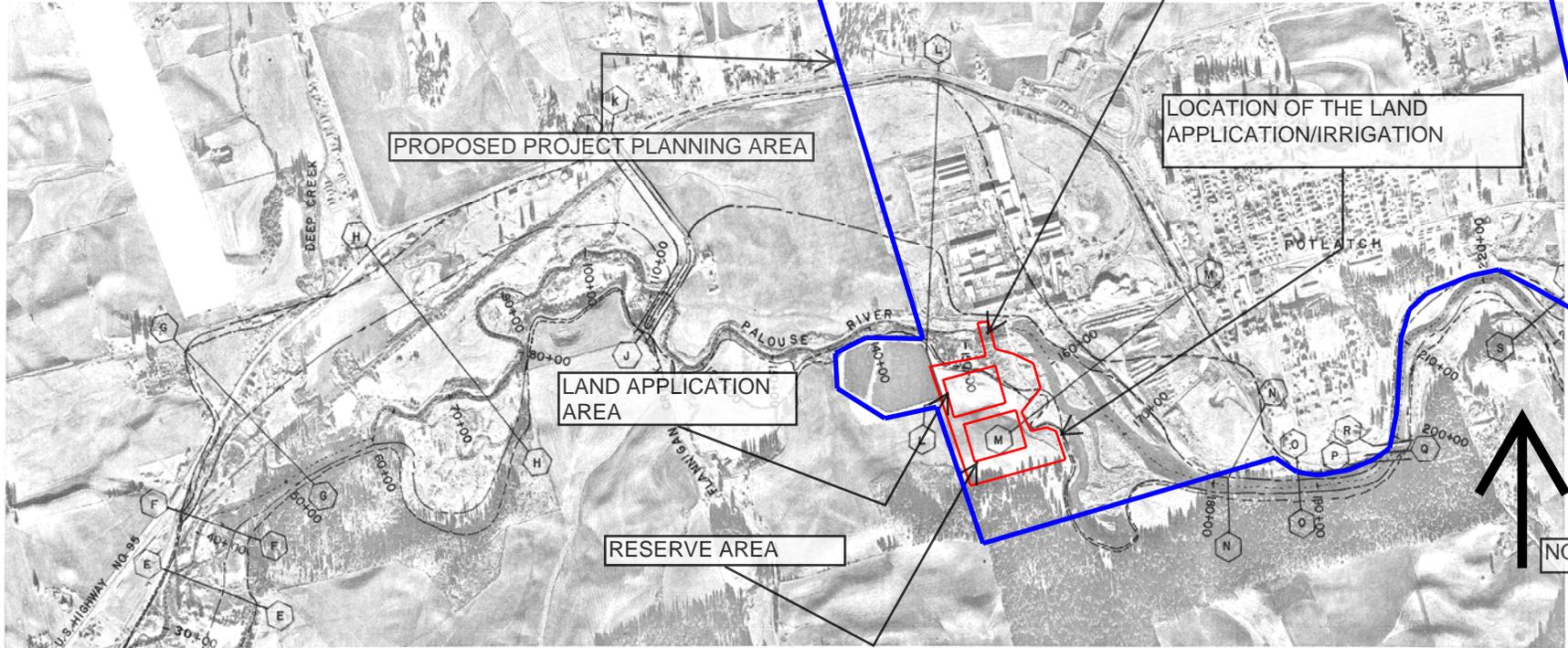
CONDITIONS SET FOR THIS APPLICATION THAT APPLICANT MUST ADHERE TO:

- Compliance w/ Plans, Notice, & Application
- Submit Post development elevation certificate
- No Toxic Substances

1. Is the development considered to be a Critical Facility? Yes No
2. Required compliance with Sections A B C D E F of this application
3. Permit **approved** Permit denied (Statement attached)
4. Work inspected by: _____
5. Local Administrator Signature: [Signature] Date 1/14/13
6. Post development elevation certificate received? Yes No
7. Post development engineering certification of development received? Yes No
8. Fee Paid: waived Date: 1/14/13 Receipt #: _____

COPY

2 A



LOCATION OF THE ACCESS BRIDGE

PROPOSED PROJECT PLANNING AREA

LOCATION OF THE LAND APPLICATION/IRRIGATION

LAND APPLICATION AREA

RESERVE AREA

NORTH

LEGEND



PROPOSED PROJECT PLANNING AREA



LOCATION OF THE LAND APPLICATION/IRRIGATION

2 B

500-Year Flood
100-Year Flood
FLOODWAY
100-Year Flood
500-Year Flood

Cross Section

Elevation Reference

Boundaries of Interpolated by Hydraulic Control Federal Insurance

Refer to the Station Reference This map does not show Insurance Rates



Angela Taylor

From: McGown, Mary [Mary.McGown@idwr.idaho.gov]
Sent: Friday, February 01, 2013 8:13 AM
To: Angela Taylor
Cc: Kelly, Patrick; jboal@latah.id.us
Subject: RE: Potlatch Bridge

Angela,

Thanks for the information about the bridge at Potlatch. Your analysis of the hydraulic impact of the bridge is complete and follows the procedures specified by the Federal Emergency Management Agency. The modeling demonstrates that the bridge will not cause an increase in the elevation of the base flood. The applicable floodplain management regulations are from Latah County, and the county has the ultimate authority to regulate development, so my review is informational.

Mary G. McGown, Ph.D., CFM
State Floodplain Coordinator
Idaho Department of Water Resources
322 E. Front Street
P.O. Box 83720
Boise, ID 83720-0098
(208) 287-4928
(208) 830-4174 mobile
(208) 287-6700 fax

From: Angela Taylor [<mailto:angela@taylorengr.com>]
Sent: Thursday, January 31, 2013 8:36 PM
To: McGown, Mary
Subject: Potlatch Bridge

Mary,

As part of the Potlatch Wastewater Reuse Project in Potlatch, Idaho, we are proposing to construct an access bridge that crosses the Palouse River just upstream of the existing sanitary sewer lagoons. As part of the Environmental Information Documents required for SRF loan funding through IDEQ, we are required to get your consultation and analysis of this bridge as it pertains to effects on the floodplain.

We have completed a No-Rise Analysis based on the original FEMA FIS model and found no effect on the 100-year water surface elevation as a result of the bridge. I have included the Latah County Development Permit with no-rise certificate and the analysis completed, for your reference. I have also included the specification and plan sheet referencing the bridge. In addition, I have included a drawing showing the location of the bridge.

Please let us know if you feel there will be any effects on the floodplain as a result of this construction. If you need further information, please call or e-mail.

Thanks,
Angela

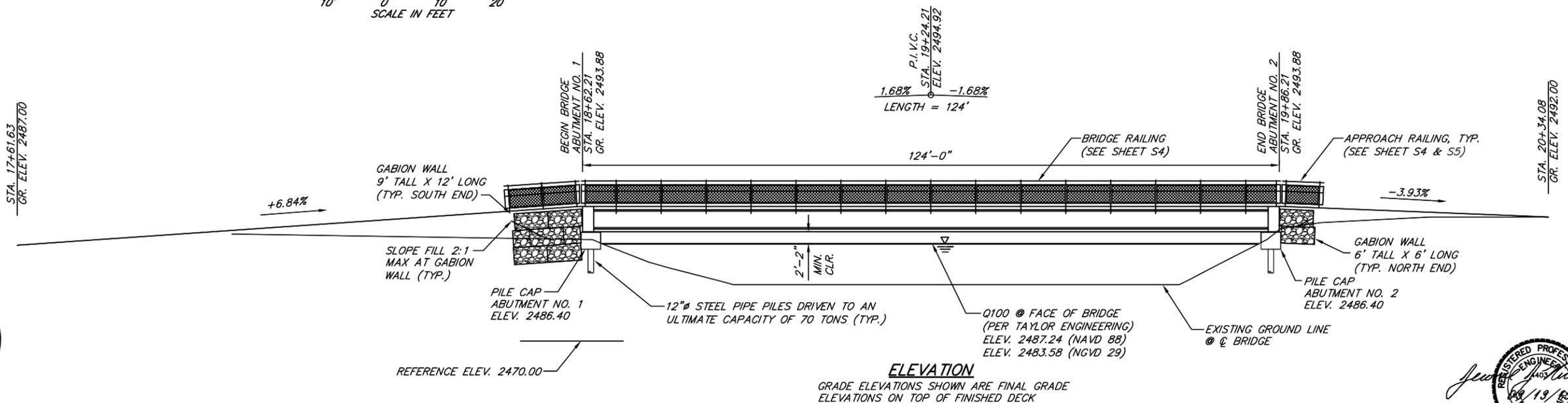
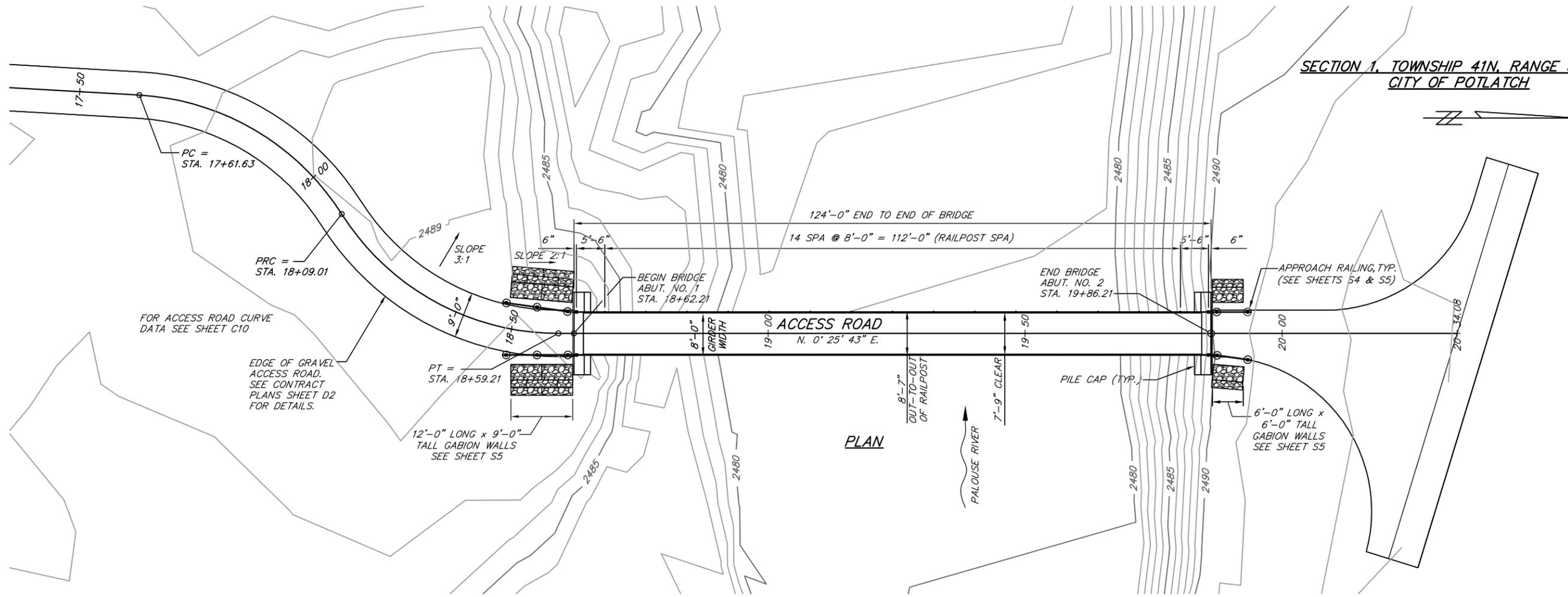
Angela Taylor, PE, LEED AP

Taylor Engineering, Inc.
245 E. Main St.
Pullman, WA 99163
(509)334-5115
(509)334-5956 FAX
angela@taylorengr.com

Appendix E

Bridge Plans

SECTION 1, TOWNSHIP 41N, RANGE 5W.B.M
CITY OF POTLATCH

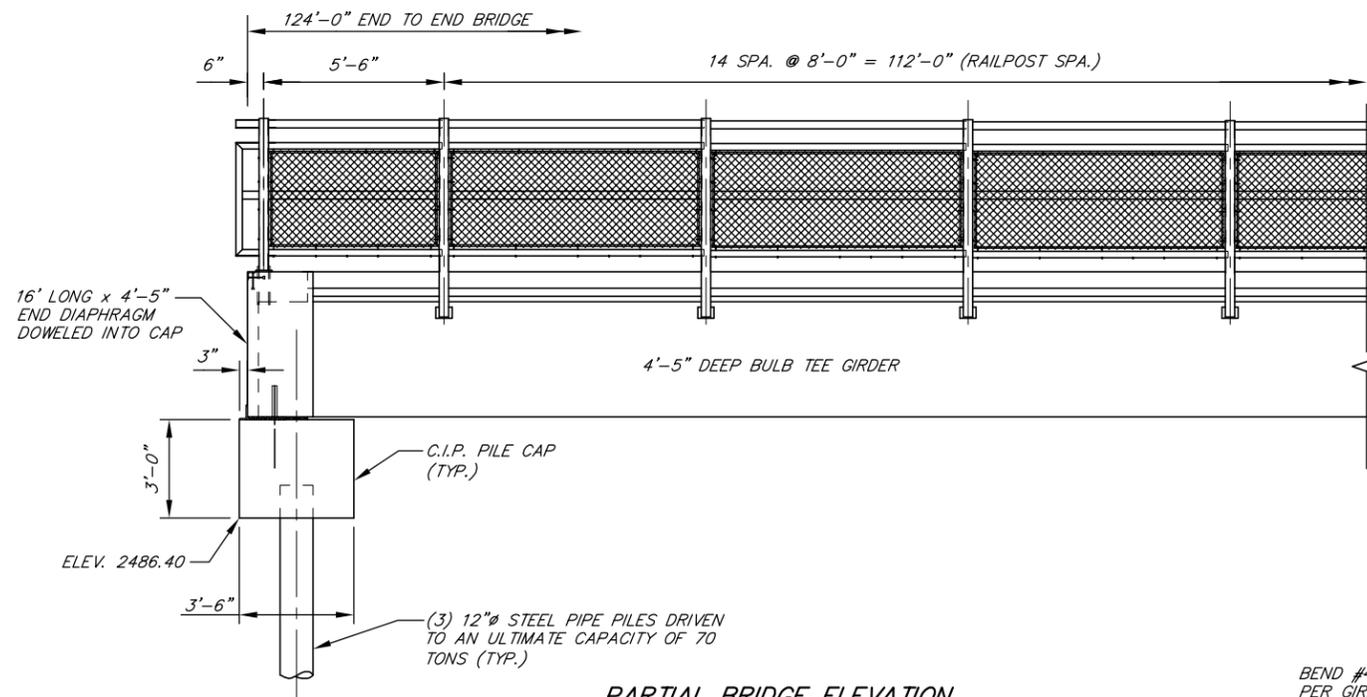


**PRELIMINARY
NOT FOR CONSTRUCTION**

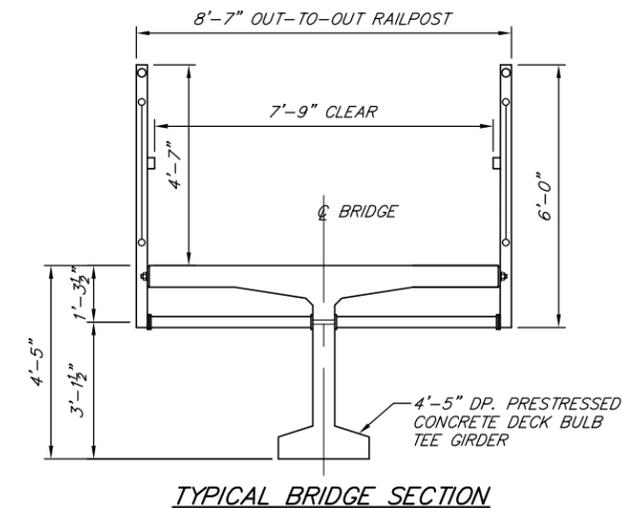
ELEVATION
GRADE ELEVATIONS SHOWN ARE FINAL GRADE
ELEVATIONS ON TOP OF FINISHED DECK



No.	Date	By	Ckd.	Appr.	Revision	Designed By: JLN Checked By: SMK Detailed By: AVK Date: 9/12 Date: 10/12 Date: 9/12	NICHOLLS ENGINEERING CIVIL AND STRUCTURAL ENGINEERING P.O. BOX 14706 SPOKANE, WA 99214-0706 PHONE (509) 921-6747 FAX (509) 242-8777	SCALE HORIZONTAL: _____ VERTICAL: _____	S & L UNDERGROUND, INC. 66304 HIGHWAY 2 BONNER'S FERRY, ID 83805 PHONE (208) 267-7996	BRIDGE LAYOUT ACCESS BRIDGE - CITY OF POTLATCH	SHEET S1 of S5
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PARTIAL BRIDGE ELEVATION



TYPICAL BRIDGE SECTION

GENERAL NOTES

STETHIS STRUCTURE WAS DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES 17TH EDITION. THE SUBSTRUCTURE WAS DESIGNED FOR THE H-10 TRUCK LOAD.

GIRDER DESIGNED BY CENTRAL PRE-MIX PRESTRESS (CPPC)
ALL C.I.P. CONCRETE SHALL BE CLASS 4000 MIX (4000 PSI).

PILES FOR ABUTMENT NO. 1 AND ABUTMENT NO. 2 SHALL BE 12" DIAMETER STEEL PIPE PILING. THE PILES SHALL BE DRIVEN TO AN ULTIMATE BEARING CAPACITY OF 70 TONS.

METAL REINFORCING BARS SHALL CONFORM TO AASHTO M31M, GRADE 60 (ASTM A615M). METAL REINFORCING BARS TO BE WELDED SHALL CONFORM WITH ASTM A706.

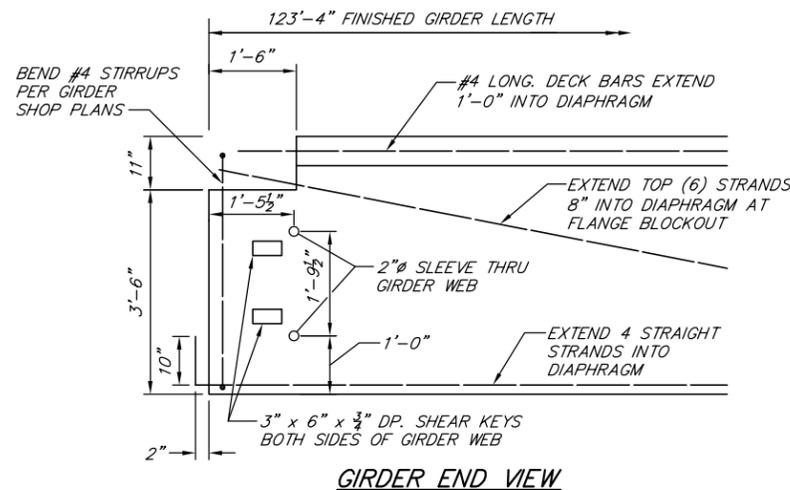
STRUCTURAL STEEL SHALL CONFORM WITH AASHTO M270 GRADE 36.

STRUCTURAL STEEL TUBING SHALL CONFORM WITH ASTM A-500 GRADE B OR ASTM A-501.

BOLTS, NUTS, AND WASHERS SHALL CONFORM WITH ASTM A-307.

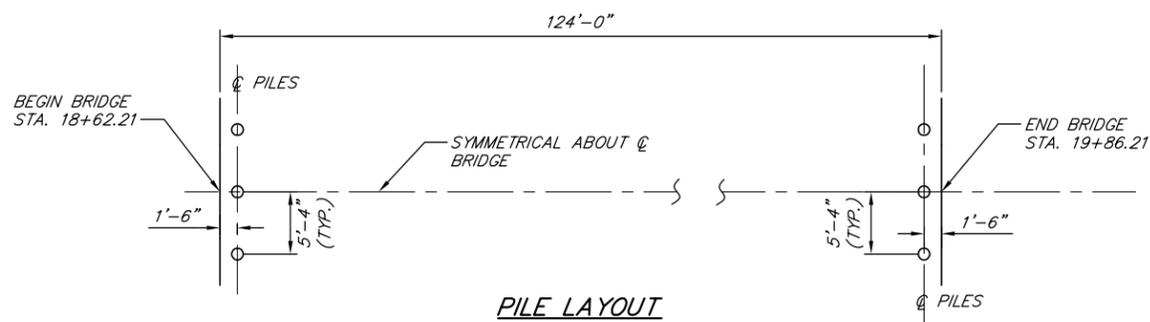
ALL DIMENSIONS TO REINFORCING STEEL ARE TO CENTERLINE OF BAR UNLESS NOTED OTHERWISE. CONCRETE COVER MEASURED FROM THE FACE OF ANY REINFORCING BAR SHALL BE 2 1/2" AT TOP OF END DIAPHRAGM AND BOTTOM OF PILE CAP AND 1 1/2" INCHES ELSEWHERE UNLESS SHOWN OTHERWISE.

PILES FOR ABUTMENT NO. 1 AND ABUTMENT NO. 2 SHALL BE 12" DIAMETER STEEL PIPE PILES. THE PILES SHALL BE DRIVEN TO AN ULTIMATE BEARING CAPACITY OF 70 TONS. PILES SHALL BE DRIVEN DEEPER THAN 10 FEET BELOW THE BOTTOM OF THE STREAMBED.



GIRDER END VIEW

SUMMARY OF QUANTITIES FOR BRIDGE		
1	CONCRETE (PILE CAP & END DIAPHRAGM)	23 C.Y.
2	STEEL REINFORCING BARS	2081 LBS.
3	PIILING	BY OTHERS
4	PRECAST PRESTRESSED GIRDER	123.33 L.F.
5	BRIDGE RAILING	248 L.F.
6	ELASTOMERIC STRIP	32 L.F.
7	BEARING PADS	6 EA.
8	PREMOLDED JOINT FILLER	63 S.F.
9	NOSING ANGLE	32 L.F.
10	GABION STRUCTURE	46 C.Y.
11	APPROACH RAILING	42 L.F.
12	APPROACH RAILING POST BASE	10 EA.



PILE LAYOUT

**PRELIMINARY
NOT FOR CONSTRUCTION**

BAR LIST							BENDING DIAGRAM	
BRIDGE PORTION ONLY (EXCLUDING GIRDER, PILES, AND APPROACHES)							ALL DIMENSIONS ARE OUT TO OUT	
MARK NO.	LOCATION	WEIGHT	SIZE	NO. REQ'D	LENGTH	REMARKS		
SUBSTRUCTURE								
1	PILE CAP TOP	383	8	8	17'-11"		[1]	
2	PILE CAP BOTTOM	335	8	8	15'-8"	STR.	[4]	
3	PILE CAP SIDES	188	6	8	15'-8"	STR.	[3-3"]	
4	PILE CAP STIRRUPS	240	4	40	9'-0"		[5]	
5	PILE CAP TIES	102	4	40	3'-10"		[6"]	
6	END DIAPHRAGM DOWEL (STAINLESS STEEL)	55	1"φ	8	2'-7"	STR.	[6"]	
END DIAPHRAGM								
10	END DIAPHRAGM BACK	163	5	10	15'-8"	STR.	[21]	
11	END DIAPHRAGM OUTSIDE GIRDER	63	5	8	7'-7"	STR.	[4-1"]	
11	END DIAPHRAGM OUTSIDE GIRDER(BOT.)	28	5	4	6'-9"	STR.	[3'-6"]	
13	END DIAPHRAGM THRU GIRDER	167	8	4	15'-8"	STR.	[1'-8 1/2"]	
14	END DIAPHRAGM STIRRUP	287	4	36	11'-11"		[1'-8 1/2"]	
15	END DIAPHRAGM STIRRUP CENTER	29	4	4	10'-9"		[15]	
20	END DIAPHRAGM DOWEL CAGE VERT.	21	4	32	1'-0"	STR.		
21	END DIAPHRAGM DOWEL CAGE TIE	20	3	24	2'-3"			
SUBSTRUCTURE							1303 lbs.	
END DIAPHRAGM							778 lbs.	

No.	Date	By	Ckd.	Appr.	Revision

Designed By: JLN	Date: 9/12
Checked By: SMK	Date: 10/12
Detailed By: AVK	Date: 9/12

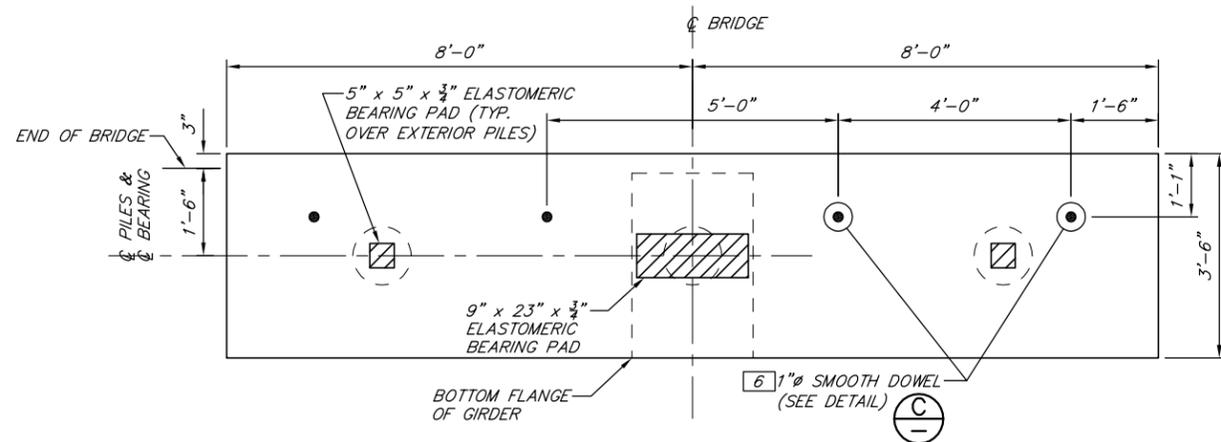
NICHOLLS ENGINEERING
CIVIL AND STRUCTURAL ENGINEERING
P.O. BOX 14706
SPOKANE, WA 99214-0706
PHONE (509) 921-8747 FAX (509) 242-8777

SCALE
HORIZONTAL: _____
VERTICAL: _____

S & L UNDERGROUND, INC.
68304 HIGHWAY 2
BONNER'S FERRY, ID 83805
PHONE (208) 287-7996

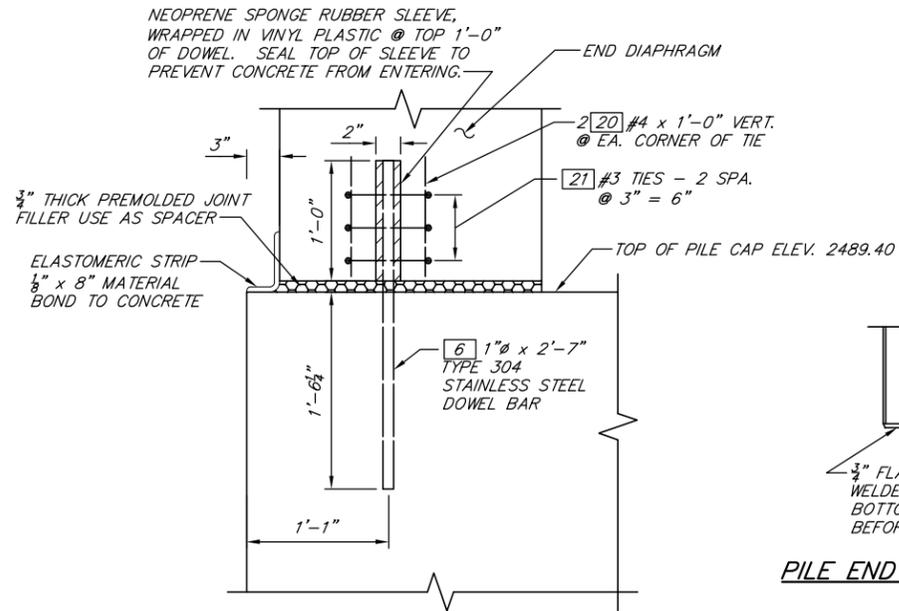
BRIDGE DETAILS
ACCESS BRIDGE - CITY OF POTLATCH

SHEET **S2** of **S5**

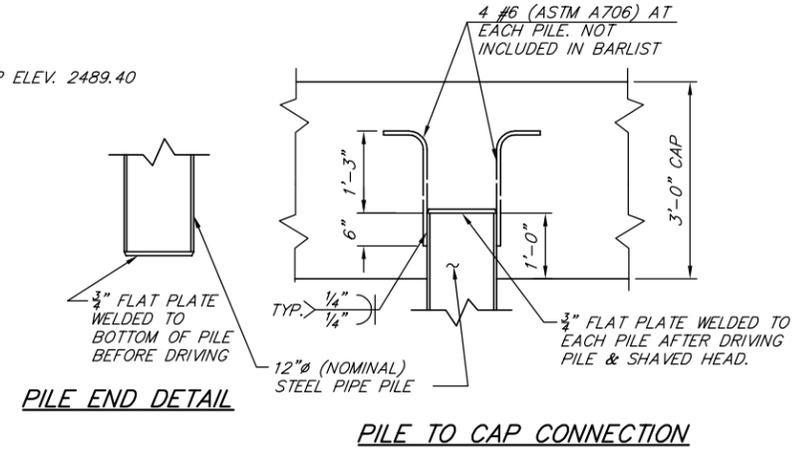


ABUTMENT PLAN

END DIAPHRAGM NOT SHOWN IN THIS VIEW FOR CLARITY
BOND ALL BRG. PADS TO ABUTMENT PRIOR TO SETTING GIRDER

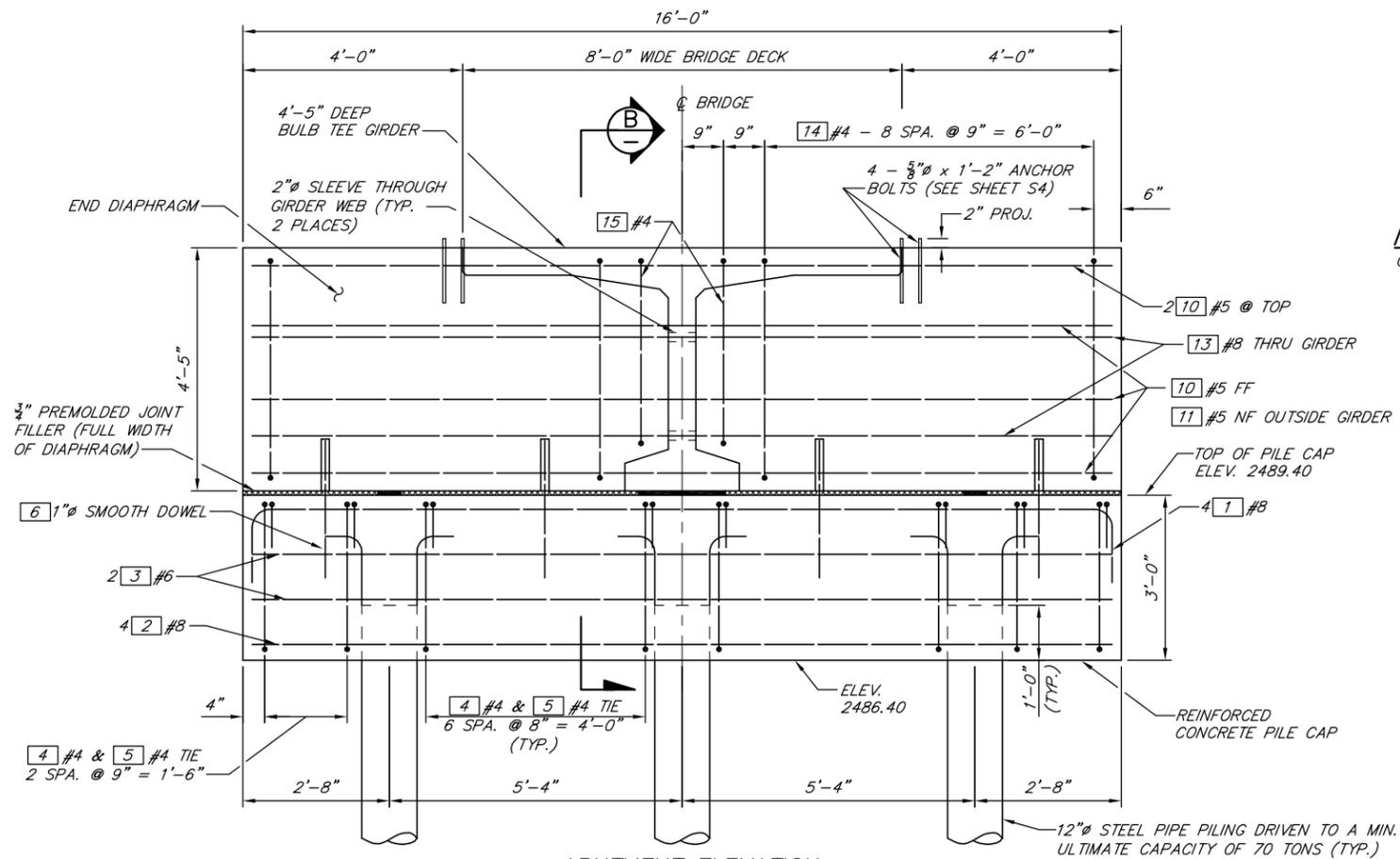


DOWEL DETAIL (C)



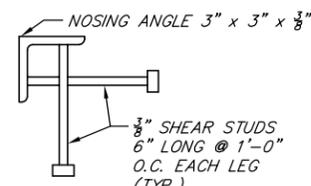
PILE END DETAIL

PILE TO CAP CONNECTION

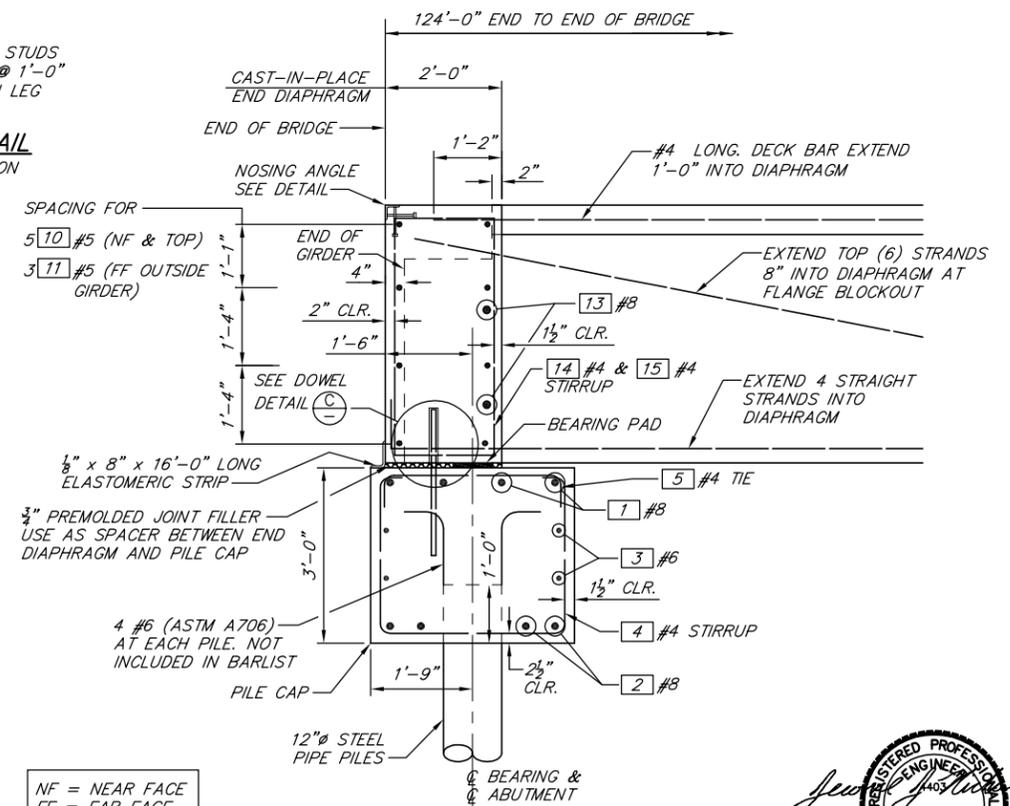


ABUTMENT ELEVATION

SOUTH ABUTMENT SHOWN
(LOOKING BACK ON STATIONING)
NORTH ABUTMENT SIMILAR



NOSING ANGLE DETAIL
GALVANIZE AFTER FABRICATION



ABUTMENT AND END DIAPHRAGM SECTION (B)

NF = NEAR FACE
FF = FAR FACE



**PRELIMINARY
NOT FOR CONSTRUCTION**

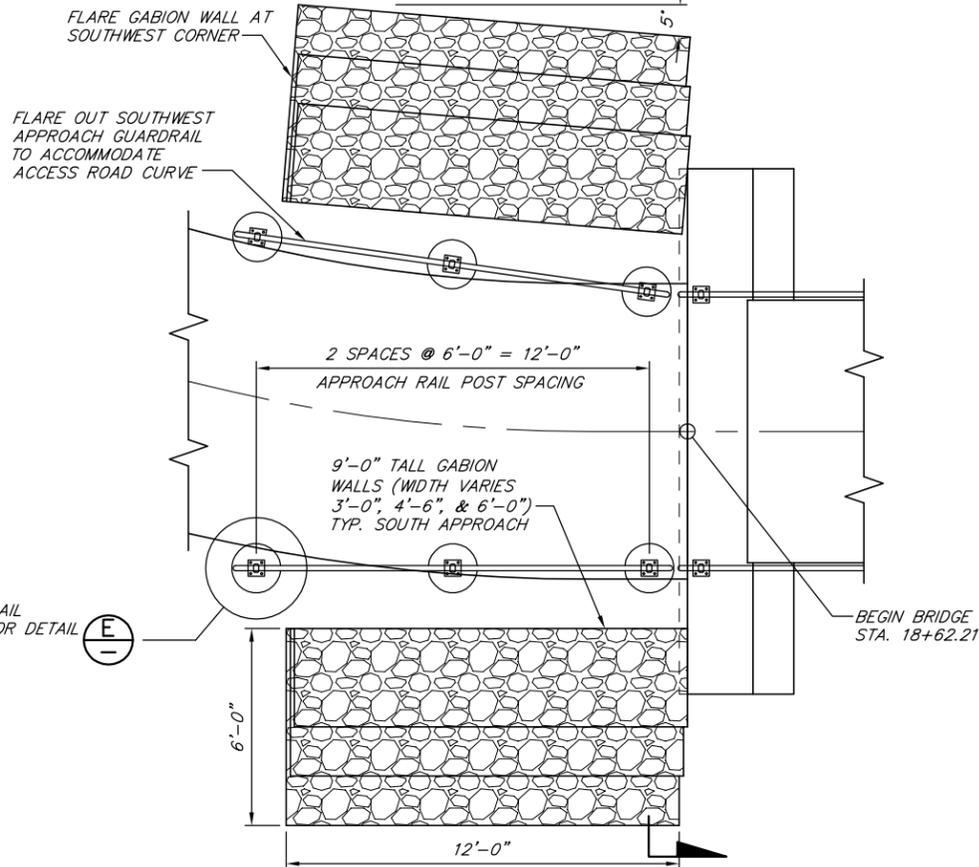
Designed By: JAN Date: 9/12 Checked By: SMK Detailed By: AVK Date: 9/12		NICOLLS ENGINEERING CIVIL AND STRUCTURAL ENGINEERING P.O. BOX 14706 SPOKANE, WA 99214-0706 PHONE (509) 921-8747 FAX (509) 242-8777		SCALE HORIZONTAL: _____ VERTICAL: _____		S & L UNDERGROUND, INC. 68304 HIGHWAY 2 BONNER'S FERRY, ID 83805 PHONE (208) 287-7996		ABUTMENT DETAILS ACCESS BRIDGE - CITY OF POTLATCH		SHEET S3 of S5	
No.	Date	By	Ckd.	Appr.	Revision						

GABION WALL NOTES

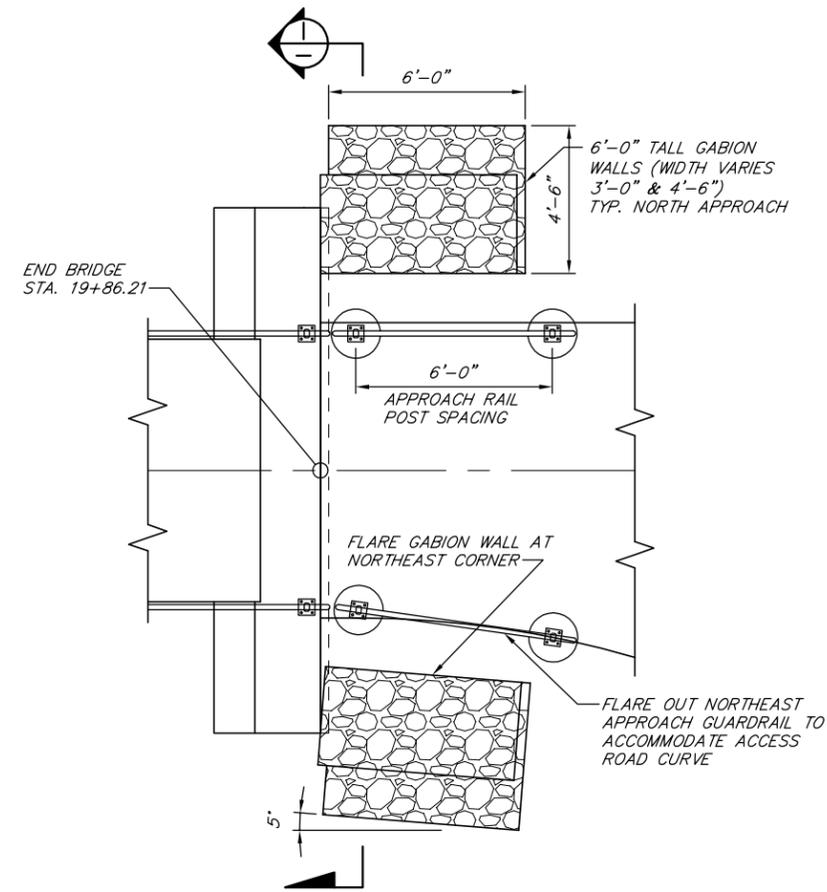
GABION WALL CONSTRUCTION, BASE PREPARATION, AND MATERIALS SHALL FOLLOW THE CURRENT ITD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION. SECTION 512 - CONSTRUCTION SECTION 715 - MATERIALS

MINIMUM UNIT WEIGHT OF ROCK-FILLED GABION SHALL BE 110 LBS./C.F.

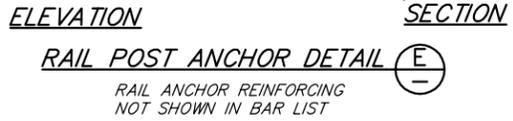
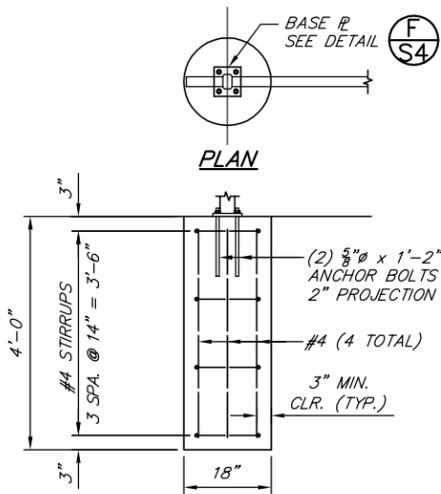
VERTICAL JOINTS IN WALLS (IF REQUIRED) SHALL BE STAGGERED BETWEEN LAYERS.



SOUTH APPROACH PLAN

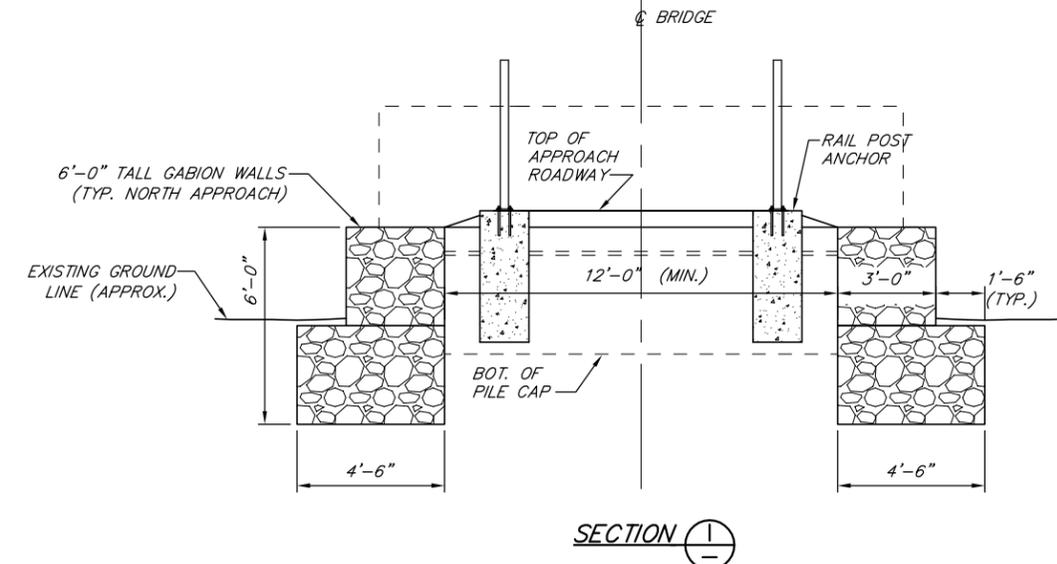
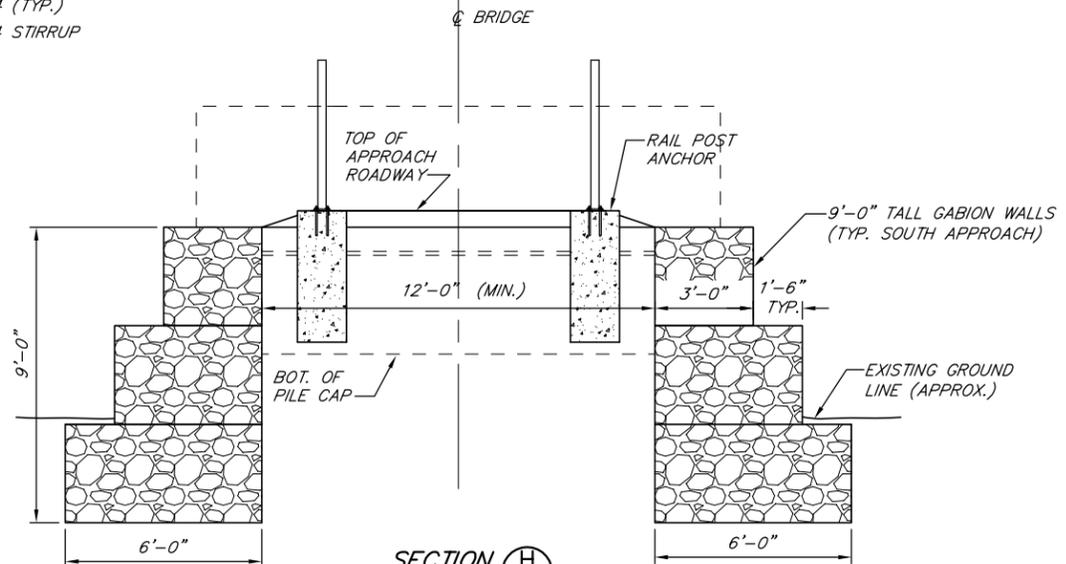


NORTH APPROACH PLAN



RAIL POST ANCHOR DETAIL (E)

RAIL ANCHOR REINFORCING NOT SHOWN IN BAR LIST



PRELIMINARY NOT FOR CONSTRUCTION

<table border="1"> <tr> <td>No.</td> <td>Date</td> <td>By</td> <td>Ckd.</td> <td>Appr.</td> <td>Revision</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>					No.	Date	By	Ckd.	Appr.	Revision							Designed By: JLN Checked By: SMK Detailed By: AVK Date: 2/13 Date: 2/13 Date: 2/13	NICHOLLS ENGINEERING CIVIL AND STRUCTURAL ENGINEERING P.O. BOX 14706 SPOKANE, WA 99214-0706 PHONE (509) 921-8747 FAX (509) 242-8777	SCALE HORIZONTAL: _____ VERTICAL: _____	S & L UNDERGROUND, INC. 68304 HIGHWAY 2 BONNER'S FERRY, ID 83805 PHONE (208) 287-7996	GABION DETAILS ACCESS BRIDGE - CITY OF POTLATCH	SHEET S5 of S5
No.	Date	By	Ckd.	Appr.	Revision																	