

DRAFT ENVIRONMENTAL ASSESSMENT
BNSF Sandpoint Junction Connector Project

Bonner County, Idaho



April 3, 2018

U.S. Coast Guard
District Thirteen
Seattle, Washington

EXECUTIVE SUMMARY

The United States Coast Guard (USCG) as the lead agency, in coordination with BNSF Railway Company (BNSF) and their consultant Jacobs Engineering Group, Inc. (Jacobs), has prepared this environmental document pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 USC 4321 *et seq.*). This Environmental Assessment (EA) examines the potential environmental effects of the proposed BNSF Sandpoint Junction Connection Project. The project is the construction of a second mainline track connection between its Algoma Siding track and the Sandpoint Junction, where BNSF and the Montana Rail Link (MRL) mainline tracks join.

The basic purpose of the project is to provide improvements for freight and passenger rail transportation to meet capacity needs. The detailed project purpose is to provide improved rail operations on this section of the BNSF interstate mainline with the construction of a second mainline track connection between its Algoma Siding track south of Sandpoint (BNSF MP 5.1) and the Sandpoint Junction (MP 2.9), where BNSF and the Montana Rail Link (MRL) mainline tracks join just north of the Sandpoint Amtrak Station.

The project need is based on the existing infrastructures' ability to handle the continued growth of freight rail service demands in the BNSF northern tier, a high-volume traffic corridor between the Midwest (Chicago Terminus) and the West Coast. The single mainline and portions of the over-water rail bridges date from the early 1900s. Rail traffic volumes have risen steadily for the past three decades in this portion of the interstate mainline, and this area has become a constraint to interstate commerce in this region. This project will relieve system congestion of rail traffic, and reduce hold times on sidings and wait times at grade crossings, both locally and regionally.

The construction of the second mainline track adjacent to the existing single mainline track connects this 2.2-mile section and includes construction of two over-water bridges and one bridge crossing over a public street. Due to the need to conduct in-water and over-water work across navigable waters, the project requires bridge permits from the USCG.

Several alternatives were considered and rejected, these alternatives are summarized in Chapter 2. As a result, this NEPA EA evaluates a No Action Alternative and a Proposed Action Alternative. Both alternatives are within the existing BNSF right-of-way (ROW) with the new, second mainline track and bridges having a similar alignment and footprint as the existing single mainline track and bridges.

The No Action Alternative does not fulfill the project purpose and need. The Proposed Action Alternative meets the project purpose and need through the provision of a second mainline track on this section of the BNSF mainline tracks.

The Proposed Action Alternative consists of a new mainline track to the west of the existing BNSF mainline track; track, switch and signal upgrades; a new bridge over Lake Pend Oreille (LPO) (Bridge 3.9) adjacent to (west of) the existing rail bridge; a bridge over Sand Creek (Bridge 3.1) adjacent to (west of) the existing rail bridge, and a new bridge over Bridge Street (Bridge 3.0) adjacent to (west of) the existing rail bridge. This alternative meets the project purpose and need while having the least impact to land, water and other environmental resources, including water resources, floodplains, and wetlands.

The Proposed Action Alternative is anticipated to have no permanent substantial impacts to health and human resources. While the project does result in minimal localized short-term disturbances during construction, impact minimization measures are designed to reduce construction-related disturbances to a point where they are deemed negligible.

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Preliminary Draft for Agency Review

ABBREVIATIONS AND ACRONYMS

ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effect
ARPA	Archaeological Resources Protection Act
BA	Biological Assessment
BiOp	Biological Opinion
BMP	Best Management Practice
BNSF	BNSF Railway Company
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program
DAHP	Department of Historic Preservation
dB	Decibel
dBA	Decibel A-weighted
DPG	Deck Plate Girder
EA	Environmental Assessment
Ecology	Washington Department of Ecology
EDNA	Environmental Designations for Noise Abatement
EFH	Essential Fish Habitat
EPA	U. S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
FRA	Federal Railroad Administration
HUC	Hydrologic Unit Code
IMM	Impact Minimization Measure
ITD	Idaho Transportation Department
LPO	Lake Pend Oreille
MBTA	Migratory Bird Treaty Act
MP	Milepost
MRL	Montana Rail Link
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
NWP	Nationwide Permit
OHWM	Ordinary High Water Mark

OSHA	Occupational Safety and Health Act
PFMC	Pacific Fisheries Management Council
PHS	Priority Habitats and Species
PM	Particulate Matter
PPA	Pollution Prevention Act
ppt	parts per thousand
ppb	parts per billion
RCRA	Resource Conservation and Recovery Act
RM	River Mile
RMS	Root Mean Square
ROW	Rights-of-Way
SDWA	Safe Drinking Water Act
SEL	Sound Exposure Level
SR	State Route
TMDL	Total Maximum Daily Load
TSCA	Toxic Substances Control Act
U.S.	United States
USACE	U.S. Army Corps of Engineers, Seattle District
USC	U.S. Code
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife
WQC	Water Quality Certification
WRIA	Water Resource Inventory Area

Preliminary Draft for
Agency Review

1.0 INTRODUCTION

The United States Coast Guard (USCG) as the lead federal agency, in coordination with BNSF and their consultant Jacobs, has prepared this environmental document pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 *et seq.*). This Environmental Assessment (EA) examines the potential environmental effects of the BNSF Sandpoint Junction Connector Project. Where potential adverse impacts have been identified, this document discusses practical measures to avoid, minimize, or mitigate them.

1.1 Site Location and Existing Structure

Site Location

The project is located within the existing BNSF Rights-of-Way (ROW) from Milepost (MP) 2.9+/- to MP 5.1+/-, on Line Segment 45 within the Montana Division, Kootenai River Subdivision. It is in portions of Sections 15, 22, 23, 23, 26, and 36; Township 57 North; Range 2 West, Boise Meridian. Latitudinal and longitudinal coordinates for the approximate project center are 48°15'54.81"N 116°32'13.05"W (Figure 1). The USGS Hydrologic Unit Code is 17010214 within the Idaho Panhandle Basin, Lake Pend Oreille Subbasin.

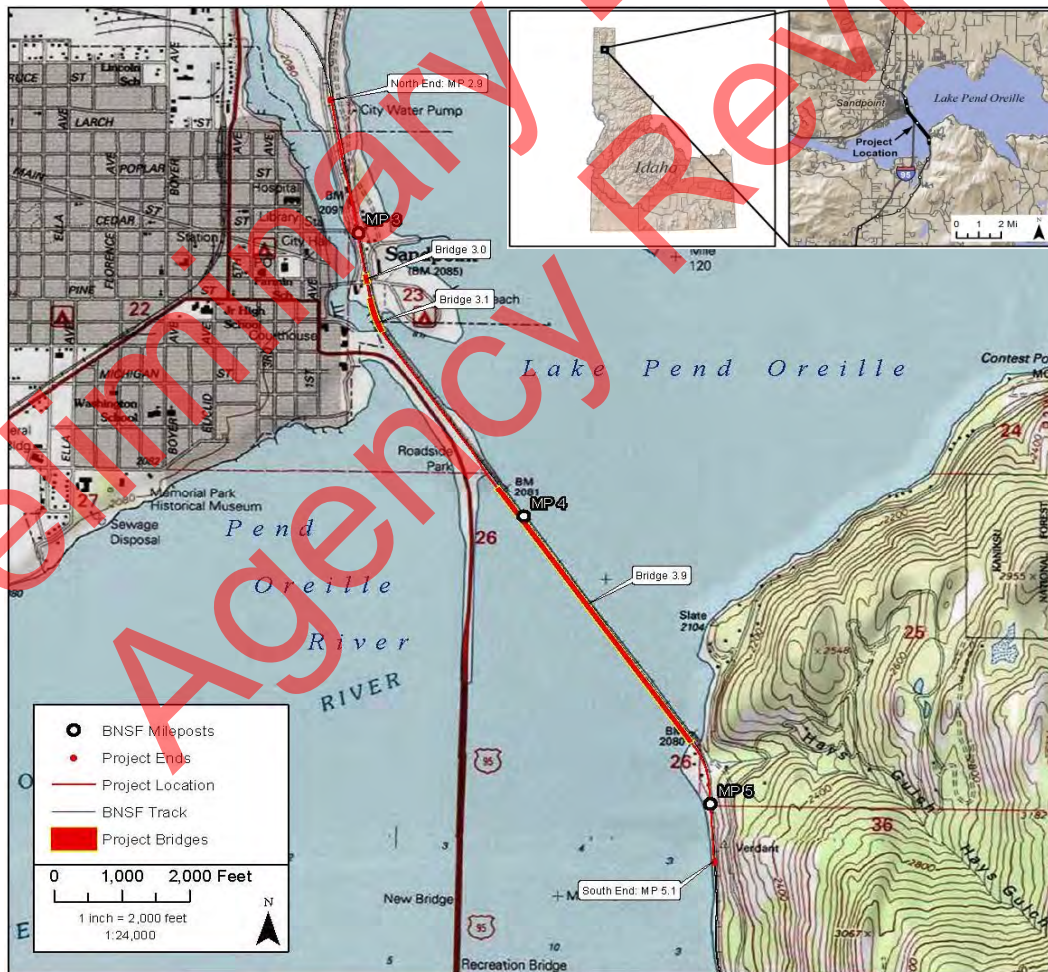


Figure 1. Project Location / Vicinity

Existing Conditions and Structures

The current track configuration involves a Montana Rail Link (MRL) siding and two mainline tracks, BNSF and MRL, meeting at the Sandpoint Junction (north end of the project at BNSF MP 2.9) just north of the Sandpoint Amtrak Station, becoming a single mainline track through Sandpoint and over Sand Creek and Lake Pend Oreille to the BNSF Algoma (East) Siding track (south end of the project at BNSF MP 5.1) where the single mainline switches to two mainlines.

These sections of existing double track on the north side of Sandpoint and the south side of Sandpoint are separated by a 2.2-mile section where there is only one mainline track. This condition creates a constraint and reduces the efficiency of the system resulting in train delays and subsequent impacts to shipping and interstate commerce.

- The north end of the project (BNSF MP 2.9) is within the City of Sandpoint and is designated as an Urban Transportation Corridor (Bonner County, 2017).
- From BNSF MP 2.9 – 3.9, the existing BNSF mainline track is surrounded by the BNSF maintenance road, the Sandpoint Amtrak Depot, US Highway 95, and Sandpoint Marina to the west; and Sandpoint Avenue, Seasons of Sandpoint Condominiums, Best Western Edgewater Resort, Sandpoint Edgewater RV Park, and a portion of the Sandpoint City Beach Marina to the east.
- BNSF Bridge 3.0 spans over Bridge Street in Sandpoint.
- BNSF Bridge 3.1 spans over Sand Creek in Sandpoint.
- BNSF Bridge 3.9 spans over the open water of Lake Pend Oreille from MP 3.9-4.9.
- The south end of the project (BNSF MP 5.1) is designated as a Rural-Residential Transportation Corridor (Bonner County, 2017).

The existing BNSF Bridge 3.1 over Sand Creek is a fixed single-track bridge 155 feet long and 19 feet wide with four concrete piers, two of which are abutments. It was originally constructed in 1902, but was modified in 1990 with replacement of the superstructure, concrete pier caps, deck and walk. The existing bridge will remain unchanged.

The existing BNSF Bridge 3.9 is a fixed bridge that has both open-deck and ballast-deck spans, and is 4,769 feet long with 88 piers. Thirty-two of the original 100+ year-old single-column concrete piers on wood pilings (16 on the north end and 16 on the south end of the bridge) were replaced in 2006-2009 with steel bents, each comprised of six closed-end steel pipe piles. The existing bridge also has a non-operable swing span over the two existing, published 76.6-foot-wide navigation channels.

Appendix A includes a set of permit drawings showing the primary components of the existing bridges and trackwork along the project work corridor.

1.2 Purpose and Need

The basic purpose of the project is to provide improvements for freight and passenger rail transportation to meet capacity needs. The overall project purpose is to provide improved rail operations on this section of the BNSF interstate mainline with the construction of a second mainline track connection between its Algoma Siding track south of Sandpoint (BNSF MP 5.1) and the Sandpoint Junction (MP 2.9), where BNSF and the Montana Rail Link (MRL) mainline tracks join just north of the Sandpoint Amtrak Station.

The project need is based on the existing infrastructures' ability to handle the continued growth of freight rail service demands in the BNSF northern tier, a high-volume traffic corridor between the Midwest (Chicago Terminus) and the West Coast. The single mainline and portions of the over-water rail bridges date from the early 1900s. Rail traffic volumes have risen steadily for the past three decades in this portion of the interstate mainline, and this area has become a constraint to interstate commerce in this region. This project will relieve system congestion of rail traffic, and reduce hold times on sidings and wait times at grade crossings, both locally and regionally.

2.0 ALTERNATIVES

2.1 Alternative 1 – No Action Alternative

The No Action Alternative would result in no impacts to wetlands or other waters of the U.S. Under the No Action Alternative, the current track configuration would stay the same (two mainline tracks that switch to a single mainline track through Sandpoint and over the bridges over Sand Creek and Lake Pend Oreille). The No Action Alternative does not meet the purpose or need of the project, and does not address specific conditions that currently result in delays to passenger and freight service or delays of traffic at local and regional road crossings. The status quo includes efficient use of the existing line, however these elements are no longer sufficient to address the demand and even though they make the existing system more efficient, they do not meet the project purpose and need.

The No Action Alternative is projected to result in continued and increased levels of trains waiting on regional sidings, with associated continued and increased idling emissions and noise at locations where trains wait for clearance, as well as slower train clearing of local and regional at-grade crossings. As additional trains are delayed and commerce does not meet expected transportation goals it is assumed that freight train use could decline and truck & passenger traffic could increase. The results of increased truck traffic will include increased vehicle traffic, increased congestion on roadways, increased air quality emissions, etc.

Increased potential conflicts could arise with emergency services or first responders in the project vicinity due to more frequent blocked public at-grade road crossings with the No Action Alternative.

2.2 Alternative 2 – Proposed Action Alternative

The Proposed Action Alternative involves the construction of an approximately 2.2 - mile-long second mainline track west of the existing BNSF mainline to connect the Algoma Siding track (MP 5.1) south of Sandpoint, to the Sandpoint Junction switch (MP 2.9), where the BNSF and the MRL mainlines converge in Sandpoint. This action consists of:

- A new mainline track west of the existing BNSF mainline track;
- A new bridge over LPO (Bridge. 3.9) adjacent to (west of) the existing rail bridge;
- A new bridge over Sand Creek (Bridge 3.1) adjacent to (west of) the existing rail bridge;
- A new bridge over Bridge Street (Bridge 3.0) adjacent to (west of) the existing rail bridge;
- Temporary construction bridges over LPO and Sand Creek;
- 0.88-acre of permanent and 0.38-acre of temporary nearshore fill below the jurisdictional ordinary high water mark (OHWM) of 2062.5 feet, associated with bridge abutments and the south switch;
- 0.28-acre of wetland fill in one location between the rail grade and the pedestrian path south of the Sand Creek Bridge 3.1;
- Development of temporary construction material/equipment work staging areas, and
- Track, switch and signal upgrades.

Appendix A includes a set of permit drawings with design details of the Proposed Action Alternative.

Construction Process

The construction process includes all assumed project activities including, but not limited to: mobilization of equipment and materials needed for construction, re-establishing and improving existing access roads at the north and south end of the project corridor, improvements to staging areas within the existing BNSF ROW, construction of temporary work bridges, construction of new permanent bridges, removal of temporary work bridges, site restoration, and demobilization of equipment. The assumed construction process is summarized as follows:

1. Mobilization of equipment and materials to staging areas (this will be an ongoing process during construction).
2. Site Preparation includes clear and grub activities, removal of existing fencing, installation of temporary construction fencing, and installation of temporary erosion control measures. Site preparation also includes improvement of existing access roads and staging areas in the existing BNSF ROW. For the most part, these areas have already been cleared and overlaid with compacted gravels. Site access will be from Highway 95 and Bridge Street at the north end of the project; and from Bottle Bay Road at the south end.
3. Construct temporary work bridges. Two temporary work bridges will be constructed.
 - 3a. - Temporary work bridge over Lake Pend Oreille (LPO). A temporary timber deck construction bridge will be constructed immediately adjacent to and west of the new LPO bridge location (Table 1).

The temporary bridge over LPO will be approximately 4,800 feet long and 32 feet wide, with 101 approximate 48-foot-long spans and one 24-foot-long span at the north end. Additionally, there will be eight 64-foot-wide staging set-outs at approximately 500-foot intervals along the bridge for safety and material staging, and to provide continuous through-access for the length of the temporary bridge. The temporary work bridge will support large cranes that will be working to construct the new permanent bridge over LPO.

The temporary work bridge piles will be vibrated to resistance, and one pile per pier will be proofed with an impact hammer at an estimated 20 - 50 strikes for a short duration. Impact and vibratory pile driving will occur only during daylight working hours. Assuming that two temporary work bridge piles can be driven per day, pile driving is expected to occur for an estimated one calendar year for the temporary work bridge over LPO, dependent on weather or other interruptions.

The low chord elevation of the temporary work bridge over LPO will gradually rise from the abutments at each end to a four-span section, corresponding to two spans on the existing bridge (Spans 64 and 65) with 15 feet of vertical clearance above the regulated summer pool elevation of 2062.5 feet. The construction bridge will grade at a 0.5% or less slope from the abutments to these 15-foot elevations. This will result in Spans 1 through 16 at the north end of the bridge having less than 10 feet of vertical clearance and the remaining 72 spans having 10 feet or greater vertical clearance.

The temporary work bridge over LPO will be constructed first and will remain in place until the new permanent bridge is placed into service. No foreseeable impacts to marine traffic on LPO as a result of the temporary work bridge over LPO are expected.

3b. – Temporary work bridge of Sand Creek. A temporary timber deck construction bridge will be constructed immediately adjacent to and west of the new Sand Creek bridge location (Table 1).

The temporary bridge over Sand Creek will be approximately 528 feet long and 32 feet wide, with 11 approximate 48-foot-long spans. The temporary work bridge over Sand Creek will be supported by 10 piers partially or fully below the OHWM. Eight piers will consist of four 24-inch-diameter, open-ended steel pipe piles, and two piers will consist of eight 24-inch-diameter, open-ended steel pipe piles. In total there will be 30 - 40 piles below the OHWM to account for minor adjustments in span support needs and site conditions. The temporary work bridge will support large cranes that will be working to construct the new permanent bridge over Sand Creek.

The temporary work bridge piles will be vibrated to resistance, and one pile per pier will be proofed with an impact hammer at an estimated 20 - 50 strikes for a short duration. Impact and vibratory pile driving will occur only during daylight working hours. Assuming that two temporary work bridge piles can be driven per day, pile driving is expected to occur for about a month for the temporary work bridge over Sand Creek dependent on weather or other interruptions.

The temporary work bridge span over the Sand Creek marked and lighted navigation channel will be limited to the period when no navigational access up Sand Creek is available, from approximately October 15 to April 15, depending on Albeni Falls Dam fall drawdown and spring fill. If required, the temporary work bridge span over the marked and lighted navigation channel for Sand Creek will be removed between April 15 and October 15 so there are no impacts to marine traffic in Sand Creek when navigational access up Sand Creek is available as a result of the temporary work bridge over Sand Creek.

The temporary work bridges will be used to facilitate construction of the new permanent bridges as needed.

4. Construct new permanent bridges over LPO and Sand Creek. Some of this work may occur concurrently with the construction of the temporary work bridges. Construction of the new permanent bridges includes: pile driving, setting concrete pier caps & abutments,

including excavation for foundations at each abutment, setting the new bridge girders, installing decking, drainage, and handrails, and any final grading needed.

The new permanent bridge over LPO will be constructed approximately 50 feet west of the existing rail bridge in existing BNSF ROW. It will be approximately 4,874 feet long by 18 feet wide. The new bridge will have 49 spans at the following lengths: 42 at 104' length; 6 at 75'11" length; and 1 at 47'10" length. Each pier bent will consist of six open-ended, 36-inch diameter steel pipe piles for a total of 288 piles below the 2062.5-foot jurisdictional Ordinary High Water Mark (OHWM) of the lake. The new piers will align approximately with every other pier of the existing bridge.

The new permanent bridge over LPO will have 10 spans at, and adjacent to, the designated navigation spans on the existing bridge that will closely match those longer span horizontal clearances. The maximum vertical clearance (low chord) of the new bridge will be 15 feet above the regulated summer pool elevation of 2062.5 feet. These 15-foot clearances will consist of six 75' 11" spans, four of which will align with the existing rail bridge's 77-foot spans that are equal to or greater than 15-foot vertical clearance.

The new permanent LPO bridge piles will be vibrated to resistance into the lakebed and finished with an impact hammer with an average of 1,600 strikes per pile. Pile driving will occur only during daylight working hours. Assuming that up to two piles could be driven per day, pile driving would occur for at an estimated six months, dependent on weather-related or other interruptions. Air bubble curtains will be used during impact pile driving to attenuate in-water sound pressure levels per U.S. Fish & Wildlife Service (USFWS) protocol provided to BNSF, and a turbidity curtain will surround the area (when water is more than 3-feet deep) being disturbed. Open-ended piles will generally further attenuate in-water sound from pile driving (Table 1).

The new permanent bridge over Sand Creek will be constructed approximately 35 feet west of the existing rail bridge in existing BNSF ROW. It will be approximately 505 feet long by 21 feet wide. The new bridge will be supported by 11 piers, each consisting of open-ended, 24-inch-diameter steel pipe piles. Two piers within the OHWM of the creek channel will consist of eight piles each; seven piers (one partially or wholly within the OHWM and six fully upland) will consist of six piles each; and two piers upland of the OHWM will consist of three piles each. There will be a total of 64 piles, 22 of which will be below the OHWM. Piles within the main channel of Sand Creek will be driven during low-water conditions/winter pool elevation.

Only two of the piers will be fully within the Sand Creek navigational channel. The new bridge navigational horizontal clearance is 74 feet; the existing bridge has an approximate 45-foot horizontal clearance. Vertical clearance of the new bridge will match the vertical clearance of the existing bridge, which is 17 feet above the 2062.5-foot OHWM.

The new permanent Sand Creek bridge piles will be vibrated to resistance into the creek bed and finished with an impact hammer with an average of 1,200 strikes per pile. Pile driving will occur only during daylight working hours. Assuming that up to two piles could be driven per day, pile driving would occur for about one month, dependent on weather-related or other interruptions.

5. Construct new second mainline track on new permanent bridges. Once the new permanent bridges over LPO and Sand Creek are completed. BNSF employees, with contractor support, will construct the new second mainline track on the new permanent bridges. The temporary work bridges will be used to facilitate the track construction on

the new permanent bridges.

6. Dismantle and remove temporary work bridges and temporary nearshore fills. The temporary work bridges will be removed in sections, stockpiled in upland staging areas as needed, and ultimately removed from the site. The temporary work bridge piles will be removed with a vibratory hammer as needed. The temporary nearshore fills will be removed once temporary work bridge removal allows.
7. Final grading, cleanup, and stabilization. While the temporary works bridges are being dismantled and removed from site, all remaining final grading and track construction will be occurring in upland areas within the project limits. All disturbed areas within the project limits will be stabilized as required by permits. Permanent fencing, where appropriate, will be constructed and temporary construction fencing and erosion control measures will be removed. Final inspection punch-list items will be addressed at this time.
8. Demobilize. All construction supplies and equipment will be removed from the staging areas, project is completed.

Table 1. Number of Piles and Installation Detail

Action	Support Type	Installation Method	Total Quantity	In-water Quantity
Temporary Work Bridges				
Bridge 3.1 Install and remove temporary work bridge piles.	24-inch Steel Pipe Pile	Install: Vibratory to refusal and impact hammer for proofing, estimated 20-50 strikes per pile. Removal would be vibratory extraction.	30-40	10
Bridge 3.9 Install and remove temporary work bridge piles.	24-inch Steel Pipe Pile	Install: Vibratory to refusal and impact hammer for proofing, estimated 20-50 strikes per pile. Removal would be vibratory extraction.	700	600
Install and remove temporary platforms on west side of bridges (Staging setouts).	24-inch Steel Pipe Pile	Install: Vibratory to refusal and impact hammer for proofing, estimated 20-50 strikes per pile. Removal would be vibratory extraction.	Included in overall temp bridge pile quantities	Included in overall temp bridge pile quantities
New Bridges				
Bridge 3.1 Install bridge piles.	24-inch Steel Pipe Pile	Install: Vibratory to resistance and finished with an impact hammer, estimated 1200 strikes per pile.	64	22
Bridge 3.9 Install bridge piles.	36-inch Steel Pipe Pile	Install: Vibratory to resistance and finished with an impact hammer, estimated 1600 strikes per pile.	288	288
TOTAL			1024	920

Temporary Bridge Demolition

The temporary bridges will not be demolished until the new bridge is in place and work complete. At that time, bridge components will be partially disassembled, breaking the spans down to more manageable pieces that can be safely removed from the temporary work bridges. A crane will be used to hoist sections of the bridge to either a flatbed or dump truck. These parts will either be

removed entirely from the project area and/or stockpiled at the staging areas to be further dismantled or removed after construction has been completed.

Appendix B includes existing conditions site photographs that depict the location of the bridges along with conceptual renderings of the proposed new bridges' relationship to the existing bridges. Best Management Practices (BMPs) will be implemented during the temporary work bridge demolition to prevent temporary bridge materials from entering Sand Creek or LPO.

Demolition includes removal of the temporary work bridges, including staging setouts or work platforms. This work will occur in sequential order and generally proceed toward the abutments. All temporary piles will be removed with a vibratory extractor.

Site Rehabilitation

Site rehabilitation includes final grading along the new railgrade and around upland areas associated with the new bridge abutments, removal of temporary fills associated with the access roads, temporary at-grade crossings, seeding/mulching open soil bare earth, and removal of temporary construction materials, such as fencing, signage, and erosion control products. This is the final construction-related action associated with this project.

Construction Equipment

The project will require the use of a wide array of construction equipment.

Construction Schedule and Design Year

There is no in-water work window for LPO for avoiding impacts to aquatic resources, such as listed endangered species or designated critical habitat. However, due to the fact that LPO water levels are controlled by dams, the upstream Noxon Dam and the downstream Albeni Falls Dam, nearshore fills are proposed to be completed during low or no-water times in the winter months.

Table 2 summarizes the general work activities sequencing and timeline. The current proposed start date is late Fall of 2018.

Table 2. General Work Activities Sequencing and Timeline

Fall 2018	Develop access and staging areas Wetland & nearshore structural fills Begin temporary work bridges
2019	Finish structural fills Temporary work bridge(s) construction Begin permanent bridge(s) pile driving
2020	Finish permanent bridge(s) pile driving Install permanent bridge spans Track & infrastructure construction
2021	Finish track & infrastructure construction Remove temporary work bridges

2.3 Alternatives Considered and Dismissed

Alternatives to the proposed alternative of constructing a second mainline track west of the existing track are limited due to the linear nature of the existing rail line and the existing BNSF-owned property (i.e. ROW). However, two other alternatives were reviewed and discussed and are summarized in the following sub-sections. They do not meet the purpose and need for the project.

New Track East of the Existing Mainline Track

This alternative would have essentially all of the same work elements described under the Proposed Action Alternative, but places the new tracks on the east side of the existing mainline. The following bullet items summarize why this alternative was determined to not be practical, nor have the least impact to the environment:

- For a new mainline track to the east of the existing BNSF mainline track, access to all the work by large equipment within Sandpoint City Limits is either limited to Bridge Street, or would need to be barged in from the lake. This would likely have a measurable increase in traffic congestion in the Bridge Street Corridor. Additionally, approximately 0.5 miles of railgrade was already constructed at the time of the Highway 95 Sandpoint Bypass project on the west side of the existing tracks. To provide an equivalent area on the east side of the existing tracks would require approximately 2.9 acres of nearshore fill from Bridge 3.1 (Sand Creek) to Bridge 3.9 (LPO);
- Track, switch and signal upgrades would remain generally the same as the Proposed Action Alternative;
- To construct a new bridge over LPO (Bridge 3.9) east of the existing rail bridge would require substantially increased, additional nearshore fills beyond what is proposed under the Proposed Action Alternative. The cranes necessary would need to be brought in by barge and require a large fill area for a barge landing, crane assembly and staging; Pilings and bridge decks would also need to be barged to the site and require landing and staging areas. The estimated additional nearshore fill for the minimum staging required is approximately 1.2 acres. Additionally, a large barge landing area would be required for this staging access resulting in both lake-bottom excavations and adjacent fill of an undetermined quantity up to 2 acres. There is no land available to lease or purchase for the staging, assembly, and landing areas. All project elements would need to be built in regulated areas adjacent to a high use recreational boating corridor where Sand Creek enters LPO;
- A new bridge over Sand Creek (Bridge 3.1) east of the existing rail bridge would have approximately the same nearshore fills as the Proposed Action Alternative, and 0.28 acres less fill to the wetlands just south of the bridge on the west side. However, the same limitation for access to the area with equipment and materials as with Bridge 3.9 under this alternative would occur. Generally, the same staging for both bridges could be used other than some additional staging would be required where the Sandpoint Marina encroaches on BNSF ROW, with a subsequent loss of boat slips and access;
- A new bridge over Bridge Street (Bridge 3.0) would be approximately the same as with the Proposed Action Alternative. However, due to close proximity, increased disruptions

to existing public and private road access to residents east of the tracks, and to the Edgewater Hotel adjacent to (east of) the existing Bridge 3.0 would be anticipated;

- The proposed 0.88-acre of permanent and 0.38-acre of temporary nearshore fill below the jurisdictional ordinary high water mark (OHWM) of 2062.5 feet, associated with bridge abutments and the south switch identified in Proposed Action Alternative would remain approximately the same; and
- As identified above, the 0.28-acre of wetland fill in one location between the rail grade and the pedestrian path south of the Sand Creek Bridge 3.1 would not be required under this alternative.

Offsite/Outside of Existing BNSF ROW

This alternative would require incorporation of property outside of the proposed project limits as well as the need to purchase or acquire new ROW to meet up with the existing track configuration. This alternative is not preferred or viable for the following reasons:

- Large tracts of property to build new tracks outside of the BNSF transportation corridor are not available;
- Social and environmental displacement risks to develop a new rail transportation corridor would be high; and
- Environmental impacts at new acquired properties would still require crossing of LPO and Sand Creek, are unlikely to be less than the Proposed Action Alternative and those impacts would be outside of an existing transportation corridor.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Air Quality

The Clean Air Act (CAA) established a comprehensive program for improving and maintaining air quality throughout the United States (U.S.). The focus of the CAA is to reduce ambient concentrations of air pollutants and toxins that degrade air quality; the reduction of air pollution, in turn, improves the human and biologic environment. The intent of the act is achieved through permitting of stationary sources, restriction of toxic substance emissions from stationary and mobile sources, and the establishment of National Ambient Air Quality Standards (NAAQS) as set by the U.S. Environmental Protection Agency (EPA). The CAA prohibits federal agencies from funding, authorizing, or approving plans, programs, or projects that do not meet or conform to the NAAQS requirements. The Idaho Department of Environmental Quality (DEQ) is responsible for ensuring compliance with federal, state, and local air quality regulations in the State of Idaho.

3.1.1 Affected Environment

The EPA sets the national air quality standards for six common pollutants (referred to as “criteria” pollutants) emitted by any stationary and mobile (marine and/or terrestrially based) source. These standards consist of threshold levels for carbon monoxide, lead, nitrogen oxides, ozone, particulate matter (PM), and sulfur dioxide. The CAA requires EPA to designate each area of Idaho in one of three ways: attainment (meeting a standard), nonattainment (failing to meet a standard), and unclassifiable (not enough information to classify).

“Located in Bonner County, the Sandpoint area rests on the northwest corner of Lake Pend Oreille within the Panhandle National Forest. The topography influences much of the PM buildup in the area. In 1997, the area was designated moderate PM10 nonattainment, and an emissions inventory identified the primary PM10 source as residential wood burning. Fugitive road dust and some industrial sources were also considered as contributors.

Since 1997, substantial improvements in air quality have been realized thanks to the efforts of the community. In December 2011, DEQ submitted a PM10 Limited Maintenance Plan and Re-Designation Request to EPA to re-designate the area to attainment status. The plan focuses on a comprehensive residential wood combustion program, controls on fugitive road dust, and emission limitations on industrial sources. In April 2013, EPA approved in part and disapproved in part the Sandpoint PM10 Limited Maintenance Plan and re-designated the Sandpoint area to attainment for PM10” (IDEQ, 2017).

3.1.2 Environmental Consequences

No Action

The No Action Alternative would not be expected to result in a net reduction in air emissions, or a net improvement in air quality. Based on the current structural conditions of the over 100 years old MP 3.9 bridge over LPO, continued and increased work will be required to maintain service and safety. BNSF will be entering a third year of bridge structural maintenance and repairs. Thus, an ongoing level of equipment emissions will occur each year from diesel and gasoline-powered equipment. There would be no potential for construction dust generation from a No Action Alternative.

Long term, the No Action Alternative will result in a continuing, and increased, need for train idling in regional sidings and associated power up starts from those holds. Emission impacts are reduced under the other alternatives by reducing train idling and start-ups, and trains are able to operate in a more continuous and consistent speed through the area.

Proposed Action

The Proposed Action Alternative is expected to result in short term and localized increases of air emissions from the operation of diesel and gasoline-powered equipment during construction, as well as the potential for localized increase in dust under dry soil conditions. This would be expected to represent a slight increase over background air quality levels for the duration of construction activities. By implementing Best Management Practices (BMPs), such as maintained emission control devices on equipment, and proper dust control, this temporary emissions increase would not be expected to result in a measurable impact on local or regional air quality.

The Proposed Action Alternative will improve efficient movement of rail traffic through the project area specifically, and the region in general.

The need to construct a second mainline track and new bridges is a response to an existing condition in which the volume of trains has met and exceeded the capacity of a single track and bridge crossing from Sandpoint Junction to the existing double track configuration starting at BNSF MP 5.1. This volume of traffic will continue, as well as grow, just as it has for decades.

As a result of that existing high train traffic volume, trains must stop and wait as other trains cross and clear the existing bridges. This results at times in long periods of locomotives idling; and an interrelated higher rate of fuel consumption and emissions associated with trains having to power up from idle holding. Both of these emission impacts are reduced when trains are able to operate

in a more continuous and consistent speed through the area. Therefore, there would be no anticipated net reduction in air quality or visibility within the Project Area from the completed project.

3.2 Geology, Soils and Topography

3.2.1 Affected Environment

The project site is located within the Lake Pend Oreille Watershed and is defined as within the existing BNSF ROW from approximate BNSF MP 2.9 north of the Amtrak Station in Sandpoint, to approximate MP 5.1 at the Algoma Siding. The geology, soils, and topography of the project area are directly related to its geomorphology. Major geologic events that have influenced existing geomorphology in the project vicinity include prehistoric volcanic eruptions, uplift processes, epic floods, and massive landslides. There are no documented unique geologic features in the work corridor.

Two levels of information were used to define the soils in the work corridor: preliminary research using the published data in the Bonner County Soil Survey (including information obtained from the Web Soil Survey (NRCS) and site-specific soil evaluations at wetland field data points. The Soil Survey Report of Bonner County Area, Idaho (USDA 2006) defines two main soil series in the study area: (31) Mission silt loam, 0 to 2 percent slopes and (35) Pend Oreille silt loam, 5 to 45 percent slopes.

The northern portion of the work corridor is mapped as (31) Mission silt loam, 0 to 2 percent slopes. The Mission series consists of somewhat poorly drained soils on terraces and terrace escarpments that formed in glaciolacustrine sediments with a mantle of volcanic ash and loess. Permeability is very slow and slopes range from 0 to 30 percent. This soil is not on the Bonner County Hydric Soil List.

The southern portion of the work corridor near MP 5.1 is mapped as (35) Pend Oreille silt loam, 5 to 45 percent slopes. The Pend Oreille series consists of very deep, well drained soils on mountain slopes, foothills, outwash terraces and lateral moraines, formed in glacial till with a thick mantle of volcanic ash. Permeability is moderate in the upper part and moderately rapid below.

Overall, throughout the length of the project work corridor within the BNSF ROW, the soils have been buried or replaced with fills consisting of compactable soils and structural rock since the time of the railroad construction in the late 19th century.

The overall topography within the BNSF ROW is by design generally flat or grades less than 1%. Although the slopes adjacent to the mainline may be considered steep (45-65%) they are designed cut and fill slopes associated with the structural fills on which the railroad is built. At the south end of the project are bedrock outcrops on the west side of the tracks.

3.2.2 Environmental Consequences

No Action

The No Action Alternative would not alter any geologic, soil, or topographic features.

Proposed Action

The Proposed Action Alternative does not substantially affect or alter geology, soils, or topography within the limits of the project. The proposed work is limited to constructing a parallel grade immediately to the west of the existing mainline grade within the BNSF ROW. Essentially all of the areas proposed for construction are already altered through past construction and maintenance activities. Some small areas of existing bedrock outcrop on the west side of the tracks may be cut and excavated for improving the existing access road and at-grade crossing for safety. However, expansive cuts or alterations to these outcrops have been avoided by the project design. While the earthwork associated with the Proposed Action is greater than that of the No Action Alternative, it would not result in a substantial impact on local geology or soils.

The Proposed Action Alternative would require development of access roads, staging areas, and general construction access, which would result in an overall construction footprint of approximately 50+/- acres. Generally, most of areas proposed for use for construction purposes was previously cleared and is currently composed of predominately compacted gravels used for BNSF maintenance vehicle parking.

Installation of bridge abutments for the new bridges will permanently displace approximately 2,500+/- square feet of uplands. However, these areas currently have minimal vegetation so clearing/grubbing/excavation activities will be minimal. Approximately 100+/- cubic yards of soil would be excavated from the area where the bridge abutment will be built. The excavated soil would be disposed of in an upland location, away from wetlands and waters of the U.S., and outside the floodplain, at an approved facility or location.

The installation of in-water support piles for the temporary work bridges would displace 2,000+/- square feet of substrate. However, the substrate would revert back to its natural condition once the piles have been removed after construction.

3.3 Water Resources and Water Quality

The Clean Water Act (CWA) governs the release of pollutants into waterways. Four sections of the Act potentially apply to the project Action Alternatives: Sections 401, 402, 404, and 303(d):

- Section 401 requires Water Quality Certification (WQC) from the state when a 404 permit or USCG bridge permit is triggered. Typically, this certification is granted by the state certifying that the discharge will not violate the state's water quality standards. EPA retains jurisdiction in limited cases.
- Section 402 authorizes the EPA, or states to which the EPA has delegated authority, to permit the discharge of pollutants under the National Pollutant Discharge Elimination System (NPDES) program. Construction projects that disturb one or more acres of ground and discharge to surface waters are required to obtain an NPDES Storm Water Construction General Permit.

- Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the U.S., including wetlands. Section 404 requires a permit from the USACE before dredged or fill material may be discharged into waters of the U.S. The basic premise of the 404 program is that no discharge of dredged or fill material may be permitted if 1) a practicable alternative exists that is less damaging to the aquatic environment or 2) the nation's waters would be considerably degraded.
- Section 303(d) of the CWA establishes that states are to list waters which are not meeting applicable water quality standards. The list includes priority rankings set by the states for the listed waters. Once the impaired waters are identified, Section 303(d) requires that the states establish total maximum daily loads (TMDLs) that would meet water quality standards for each listed waterbody.

The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of American's drinking water. Under the SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards. The best way to maintain high-quality drinking water is to prevent contaminants from reaching drinking water sources. The SDWA was amended in 1986 to require states to develop Wellhead Protection Programs.

3.3.1 Affected Environment

The proposed project is located adjacent to and over Lake Pend Oreille (LPO) and Sand Creek. It is within the USGS Hydrologic Unit Code is 17010214 within the Idaho Panhandle Basin, Lake Pend Oreille Subbasin.

LPO is a natural, temperate, oligotrophic lake. It is the largest natural lake in Idaho and the fifth deepest lake in the United States, with a mean depth of 538 feet, a maximum depth of 1,152 feet at its southern end, and a surface area of 94,720 acres. It is fed by over 20 streams originating in the Selkirk Mountains to the northwest, the Cabinet Mountains to the northeast, and the Coeur d'Alene Mountains to the east. The shoreline is comprised mostly of the largely undeveloped, steep rocky terrain. The remaining littoral zone at the lake's northern end and bays consists of gradual or moderately sloping bottom, surrounded by level to gently sloping uplands and floodplain.

The Clark Fork River, originating in western Montana, is the largest tributary into the lake providing 92% of the lake's inflow at the river's mouth near the City of Clark Fork, east of Sandpoint.

The Pend Oreille River is the lake's only surface water outlet west of Sandpoint near the City of Dover. The river flows approximately 27 miles from LPO in Idaho into eastern Washington, then north into Canada where it joins the Upper Columbia River. The Pend Oreille River (along with the Lake) is impounded by the Albeni Falls hydroelectric dam, constructed in 1955 near the Idaho/Washington border, which regulates the lake's surface elevation / pool at 2062.5 feet from approximately mid-June through September, and at 2051 to 2056 feet from October through May.

The Sand Creek watershed covers 38 square miles or 24,209 acres, and includes Jack Creek, Little Sand Creek, Swede Creek, and Schweitzer Creek northeast of Sandpoint. Sand Creek generally flows from north to south for approximately 16 miles and discharges into LPO within the City of Sandpoint, where it is subject to the regulated levels of LPO. The average gradient of Sand Creek in the project vicinity is 1% and the primary channel substrate is sand.

The average annual precipitation is about 33 inches and average annual air temperature is about 45 F with a fairly typical Inland Northwest climate of cold, snowy winters and dry summers with large diurnal temperature swings from hot in the day to very cool at night. The majority of precipitation occurs as winter snowfall and spring rain. High-volume runoff occurs during spring snowmelt and major rain-on-snow events (IDL 2003).

Existing environmental conditions found within the project work corridor is summarized below, describing conditions along the BNSF ROW from the north end of the project (MP 2.9) to the south end of the project (MP 5.1):

- BNSF MP 2.9 – 3.1: BNSF track and access road and either bare ground or disturbed upland grasses are on both sides of the track from the Sandpoint Junction switches at MP 2.9, south to the riparian area associated with Sand Creek at BNSF MP 3.1 Bridge;
- BNSF MP 3.1 – 3.14: BNSF bridge over Sand Creek; and Sand Creek with riparian vegetation is on both sides above the high water line;
- from BNSF MP 3.14 – 3.15: A small wetland area (Wetland A) on the west side of the track (between the track and the pedestrian path) with riparian, scrub-shrub, and open water wetland vegetation, and the OHWM of LPO with riparian vegetation on the east side of the track;
- BNSF MP 3.15 – 3.8: The BNSF access road with sparse upland grasses on the west side of the track, and the OHWM of LPO with riparian vegetation on the east side of the track;
- BNSF MP 3.8 – 3.9: The OHWM of LPO with riparian vegetation is on both sides of the track.
- BNSF MP 3.9 – 4.89: The BNSF MP 3.9 Bridge spans LPO;
- BNSF MP 4.89 – 4.9: The OHWM of LPO with riparian vegetation is the east side of the tracks and an existing access and staging pad is on the west side of the tracks;
- BNSF MP 4.9 to 5.0: Steep upland forest and an unnamed seasonal creek on the east side of the track and BNSF access road, rock staging pad, and residential lots west of the tracks;
- BNSF MP 5.0 to 5.1: The OHWM of LPO with riparian vegetation on the west side of the track and steep upland forest and rock outcrops on the east side;

No wellhead protection areas are located within the immediate project vicinity (IDWR, 2018).

LPO is listed as Category 4a for total phosphorus; with a TMDL that was approved in 2008, and is listed as Category 5 in need of a TMDL for mercury impairment. Sand Creek is listed as Category 4a for sediment/siltation and temperature, and has TMDLs in place that were approved in 2008 (IDEQ, 2017).

3.3.2 Environmental Consequences

No Action

Under the No Action Alternative there be no construction impacts. This alternative would similarly have no future operational impacts as no change to freight being carried on trains is proposed

under any of the alternatives.

Proposed Action

The Proposed Action Alternative for the construction of a second mainline track would impact jurisdictional areas as follows:

- Overall impacts 1.54 acres (AC).
 - 0.88 AC is related to permanent nearshore fill below the LPO ordinary high water mark (OHWM) of 2062.5' for both new bridges and a south switch area;
 - 0.28 AC of permanent wetland fill at the south end of Bridge 3.1; and
 - 0.38 AC of temporary nearshore impacts for construction access at various locations throughout the project work limits.

The primary water quality impacts related to this construction would be the potential for sedimentation, potential petroleum spills from construction equipment operations, and potential spills from concrete work above the OHWM of LPO.

Implementation of BMPs defined within the Water Quality Monitoring and Protection Plan (WQMPP / 401 WQC) and the Storm Water Pollution Prevention Plan (SWPPP / 402 NPDES) as well as ongoing adaptive management adjustments throughout construction will be the means to maintain water quality standards during construction.

This alternative would not result in increased impacts to water quality from operations as this is an existing interstate rail transportation corridor. The type of freight currently carried will not change with the proposed mainline track.

The Proposed Action Alternative would require a Bridge Permit, with the USCG as the lead federal agency, which is a federal action requiring NEPA review and compliance with various federal regulations, including the CWA. The fill required for the construction of the new, second mainline track and bridges triggers the need for a Section 404 (Individual Permit and/or Section 10 permit from the USACE). DEQ will review the project for compliance with CWA Section 401 WQC.

Construction projects in Idaho that disturb greater than one acre of ground must acquire a NPDES Permit. The Proposed Action Alternative would require approximately 20+/- acres of ground disturbing activities, exceeding the threshold triggering this permit. A Stormwater Pollution Prevention Plan (SWPPP), including a Spill Containment and Countermeasures Plan (SPCC) will be prepared in accordance with the requirements of the NPDES authorization via US EPA.

Upon implementation of BMPs identified in **Section 4.0**, potential impacts to water quality during construction are not considered substantial.

3.4 Vegetation

Vegetation stabilizes soils, controls erosion, and reduces sedimentation. Upland vegetation also provides habitat and forage for wildlife.

3.4.1 Affected Environment

Disturbed upland grasses in the project work corridor include species such as cheat grass,

common mullein, common timothy, orange hawkweed, panic grass, perennial rye grass, rush skeleton weed, spotted knapweed, and Western wheatgrass.

The riparian vegetation of Sand Creek and LPO includes emergent species such as reed canarygrass, stinging nettle, and common sedges; and scrub-shrub and forested species such as black cottonwood, red alder, blue elderberry, Rocky Mountain maple, Scouler willow, red-osier dogwood, Nootka rose, Pacific ninebark, trailing blackberry, and Douglas spirea.

Wetland vegetation in the one wetland identified in the project work corridor includes species such as common cattail, duck weed, and panicked bulrush, in addition to the riparian vegetation described above.

The upland forested vegetation in the study area includes species such as Douglas fir, lodgepole pine, Ponderosa pine, Western hemlock, and Western red cedar; and is often mixed with an understory of American trailplant, common snowberry, myrtle pachystima, Nootka rose, and various native and non-native grasses.

3.4.2 Environmental Consequences

No Action

Other than the removal of the cottonwood trees that presently threaten the integrity of the track structure along the west side of the mainline, no other vegetation impacts would occur under this alternative. Potential impacts to upland vegetation would not be extensive.

Proposed Action

The Proposed Action Alternative is within the BNSF ROW and 90% of the work is within areas already filled or highly altered and compacted, requiring minimal vegetation impacts.

The Sand Creek Bridge (3.1) and the Lake Pend Oreille Bridge (3.9) will both result in losses of the cottonwood trees that are growing out of the existing rail grade base. These trees are already scheduled for removal because they pose an existing danger to trains if they fell on the tracks and to the stability of the rail grade if they were to blow over and pull out structural support base with their root mass. Thus, this alternative does not in itself result in the loss of the majority of those trees.

There would be a loss of some upland trees, shrubs and grasses between the south end of Bridge 3.9 and the nearshore fill at MP 5.1. At that nearshore fill, most of that area is currently riprap facing along the lake, though several riparian shrubs will be lost in that location.

All of the wetland trees, shrubs, forbs and grasses will be lost in the 0.28-acre wetland fill south of Bridge 3.1.

3.5 Wetlands

Executive Order 11990 – Protection of Wetlands requires federal agencies to take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. Wetlands adjacent to navigable waters, tributaries of navigable waters, or with a major nexus to interstate commerce are regulated pursuant to the CWA. Section 404 of the CWA defines wetlands as areas that are “inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of

vegetation typically adapted for life in saturated soil conditions.” Wetlands generally include swamps, marshes, bogs, and similar areas.

3.5.1 Affected Environment

The Nation Wetland Inventory (NWI) mapping did not identify any wetlands in the project work corridor, but mapped LPO as L2UBH (lacustrine, littoral, unconsolidated bottom, permanently flooded). During the project plan development, one jurisdictional wetland was identified, delineated and mapped at the south end of Bridge 3.1 between the rail grade and Highway 95 multi-use pathway. This wetland, at 0.28 acres, is connected to, and appears to be associated with, the high water inundation of the lake and may be a direct result of the construction of the Albeni Falls Dam in the 1950s. It fulfills all of the jurisdictional criteria of hydrology, hydric soils, and hydrophytic vegetation presence.

3.5.2 Environmental Consequences

No Action

The No Action Alternative would result in no wetland impacts.

Proposed Action

As stated in section 3.2.2, the Proposed Alternative would result in the unavoidable filling of the jurisdictional wetlands. Specifically:

- Overall impacts 1.54 acres (AC).
 - 0.88 AC is related to permanent nearshore fill below the LPO ordinary high water mark (OHWM) of 2062.5' for both new bridges and a south switch area;
 - 0.28 AC of permanent wetland fill at the south end of Bridge 3.1 for the bridge and development of new railgrade/support for the second mainline track; and
 - 0.38 AC of temporary nearshore impacts for construction access at various locations throughout the project work limits.

3.6 Floodplains

Executive Order 11988, Floodplain Management requires federal agencies to consider how their actions may encourage future development in floodplains and to minimize such development.

3.6.1 Affected Environment

LPO and Sand Creek are both mapped as Zone AE on the Federal Emergency Management Agency's (FEMA) effective Flood Insurance Rate Map for this area (Panel 16017C0718E). The US Army Corps of Engineers also has a flood flowage easement up to 2067.5' elevation to regulate emergency conditions at and downstream of the Albeni Falls Dam.

3.6.2 Environmental Consequences

No Action

Ongoing maintenance activities would not result in any floodplain impacts since they would not require additional fill or excavation on the project site. The No Action Alternative would not encourage future development in floodplains since it would constitute maintenance and eventual replacement of an existing structure.

Proposed Action

The Proposed Action Alternative would result in 1.54 acres of fill within jurisdictional areas, all of which are considered floodplain. Approximately 1^{+/-} additional acre of fill above the jurisdictional elevation of 2062.5' will occur. The 2067.5' upland flood easement would be filled by structural grading work. These fills constitute approximately 0.0026 percent of the total area of the lake and flood flowage easement. This alternative would not result in increased danger of flooding or flowage easement restriction, nor direct, indirect, or facilitated increases in flood plain development.

3.7 Fish and Wildlife

The Fish and Wildlife Coordination Act (1934) directs federal agencies to prevent the loss and damage to fish and wildlife resources. Consultation with the U.S. Fish and Wildlife Service (USFWS) is required when activities result in the control of, diversion, or modification to any natural habitat or associated water body, altering habitat quality and/or quantity for fish and wildlife.

The Migratory Bird Treaty Act (MBTA) makes it unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. Provisions are in place for the protection of migratory bird, part, nest, egg, or product. Under the MBTA, "migratory birds" essentially include all bird species native to the U.S.; and the Act pertains to any time of the year, not just during migration.

The Bald and Golden Eagle Protection Act provides for the protection of bald and golden eagles by prohibiting the taking, possession, and commerce of such birds, except under certain specified conditions.

3.7.1 Affected Environment

Birds

Lake Pend Oreille and surrounding environments provide suitable foraging, nesting, and dispersal habitat for numerous species of avifauna. Numerous species utilize Lake Pend Oreille, its tributaries and backwaters, and the surrounding uplands during various times of the year for various life stages. Many waterfowl species utilize the area for nesting, and also for overwintering or as a stopover during periods of migration.

The following listed in **Table 3** are the observed birds in Bonner County Birds as documented by the Idaho Department of Fish and Game. (IDFG, 2018)

Table 3: Birds of Bonner County

Species	Species	Species
American Coot (<i>Fulica americana</i>)	Ring-necked Duck (<i>Aythya collaris</i>)	Lesser Yellowlegs (<i>Tringa flavipes</i>)
American Crow (<i>Corvus brachyrhynchos</i>)	Hooded Merganser (<i>Lophodytes cucullatus</i>)	Lewis's Woodpecker (<i>Melanerpes lewis</i>)
American Dipper (<i>Cinclus mexicanus</i>)	Lesser Scaup (<i>Aythya affinis</i>)	Lincoln's Sparrow (<i>Melospiza lincolni</i>)
American Goldfinch (<i>Spinus tristis</i>)	Horned Grebe (<i>Podiceps auritus</i>)	Peregrine Falcon (<i>Falco peregrinus</i>)
American Kestrel (<i>Falco sparverius</i>)	Least Sandpiper (<i>Calidris minutilla</i>)	Pied-billed Grebe (<i>Podilymbus podiceps</i>)
American Robin (<i>Turdus migratorius</i>)	House Finch (<i>Haemorhous mexicanus</i>)	
American Wigeon (<i>Anas americana</i>)	House Sparrow (<i>Passer domesticus</i>)	Pileated Woodpecker (<i>Dryocopus pileatus</i>)
Anna's Hummingbird (<i>Calypte anna</i>)	House Wren (<i>Troglodytes aedon</i>)	Pine Siskin (<i>Spinus pinus</i>)
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Indigo Bunting (<i>Passerina cyanea</i>)	Pygmy Nuthatch (<i>Sitta pygmaea</i>)
Barn Swallow (<i>Hirundo rustica</i>)	Killdeer (<i>Charadrius vociferus</i>)	Red-breasted Nuthatch (<i>Sitta canadensis</i>)
Barrow's Goldeneye (<i>Bucephala islandica</i>)	King Eider (<i>Somateria spectabilis</i>)	Red-breasted Merganser (<i>Mergus serrator</i>)
Belted Kingfisher (<i>Megaceryle alcyon</i>)	Lark Sparrow (<i>Chondestes grammacus</i>)	Red-breasted Sapsucker (<i>Sphyrapicus ruber</i>)
Black-capped Chickadee (<i>Parus atricapillus</i>)	Red-tailed Hawk (<i>Buteo jamaicensis</i>)	Ruby-crowned Kinglet (<i>Regulus calendula</i>)
Black-headed Grosbeak (<i>Pheucticus melanocephalus</i>)	Red-winged Blackbird (<i>Agelaius phoeniceus</i>)	Savannah Sparrow (<i>Passerculus sandwichensis</i>)
Bonaparte's Gull (<i>Chroicocephalus philadelphia</i>)	Ring-billed Gull (<i>Larus delawarensis</i>)	Say's Phoebe (<i>Sayornis saya</i>)
Brewer's Blackbird (<i>Euphagus cyanocephalus</i>)	MacGillivray's Warbler (<i>Geothlypis tolmiei</i>)	Short-eared Owl (<i>Asio flammeus</i>)
Brown-headed Cowbird (<i>Molothrus ater</i>)	Mallard (<i>Anas platyrhynchos</i>)	Hermit Thrush (<i>Catharus guttatus</i>)
Bufflehead (<i>Bucephala albeola</i>)	Long-billed Curlew (<i>Numenius americanus</i>)	Song Sparrow (<i>Melospiza melodia</i>)
Bullock's Oriole (<i>Icterus bullockii</i>)	Marsh Wren (<i>Cistothorus palustris</i>)	Harris's Sparrow (<i>Zonotrichia querula</i>)
Northern Flicker (<i>Colaptes auratus</i>)	Merlin (<i>Falco columbarius</i>)	Spotted Towhee (<i>Pipilo maculatus</i>)
California Gull (<i>Larus californicus</i>)	Mew Gull (<i>Larus canus</i>)	Stellar's Jay (<i>Cyanocitta stelleri</i>)
California Quail (<i>Callipepla californica</i>)	Mountain Bluebird (<i>Sialia currucoides</i>)	Swainson's Thrush (<i>Catharus ustulatus</i>)
Canada Geese (<i>Branta canadensis</i>)	Mountain Chickadee (<i>Parus gambeli</i>)	Tree Swallow (<i>Tachycineta bicolor</i>)
Canvasback (<i>Aythya valisineria</i>)	Mourning Dove (<i>Zenaidura macroura</i>)	Trumpeter Swan (<i>Cygnus buccinator</i>)
Caspian Tern (<i>Hydroprogne caspia</i>)	Nashville Warbler (<i>Oreothlypis ruficapilla</i>)	Western Grebe (<i>Aechmophorus occidentalis</i>)
Chestnut-backed Chickadee (<i>Parus rufescens</i>)	Western Grebe (<i>Aechmophorus occidentalis</i>)	Tundra Swan (<i>Cygnus columbianus</i>)
Common Goldeneye (<i>Bucephala clangula</i>)	Northern Pintail (<i>Anas acuta</i>)	Turkey Vulture (<i>Cathartes aura</i>)
Common Loon (<i>Gavia immer</i>)	Northern Rough-winged Swallow (<i>Stelgidopteryx serripennis</i>)	Varied Thrush (<i>Ixoreus naevius</i>)
Common Merganser (<i>Mergus merganser</i>)	Northern Shoveler (<i>Anas clypeata</i>)	Violet-green Swallow (<i>Tachycineta thalassina</i>)
Northern Harrier (<i>Circus cyaneus</i>)	Northern Shrike (<i>Lanius excubitor</i>)	Warbling Vireo (<i>Vireo gilvus</i>)
Common Yellowthroat (<i>Geothlypis trichas</i>)	Downy Woodpecker (<i>Picoides pubescens</i>)	Western Meadowlark (<i>Sturnella neglecta</i>)
Dark-eyed Junco (<i>Junco hyemalis</i>)	Western Wood-Pewee (<i>Contopus sordidulus</i>)	White-crowned Sparrow (<i>Zonotrichia leucophrys</i>)
Double-Crested Cormorant (<i>Phalacrocorax auritus</i>)	Yellow-rumped Warbler (<i>Setophaga coronata</i>)	Western Tanager (<i>Piranga ludoviciana</i>)
Eared Grebe (<i>Podiceps nigricollis</i>)	Emden-style Goose (<i>Anser anser domesticus</i>)	Wild Turkey (<i>Meleagris gallopavo</i>)
Fox Sparrow (<i>Passerella iliaca</i>)	Olive-sided Flycatcher (<i>Contopus cooperi</i>)	Willow Flycatcher (<i>Empidonax traillii</i>)
Golden-Crowned Sparrow (<i>Zonotrichia atricapilla</i>)	Orange-crowned Warbler (<i>Oreothlypis celata</i>)	Wilson's Warbler (<i>Cardellina pusilla</i>)
Great Blue Heron (<i>Ardea herodias</i>)	Osprey (<i>Pandion haliaetus</i>)	Wood Duck (<i>Aix sponsa</i>)
Green Heron (<i>Butorides virescens</i>)	Pacific Loon (<i>Gavia pacifica</i>)	Yellow Warbler (<i>Dendroica petechia</i>)
Harlequin Duck (<i>Histrionicus histrionicus</i>)	Pacific Wren (<i>Troglodytes pacificus</i>)	Yellow-breasted Chat (<i>Icteria virens</i>)

Numerous other species likely utilize the project work corridor and the surrounding uplands during various times of the year for various purposes. Many waterfowl species utilize this area for nesting, but also for overwintering or as a stopover during periods of migration.

Terrestrial Mammals

Due to the relatively high level of human-related activity associated with the rail line and Highway 95, generally only disturbance-tolerant terrestrial mammals are expected to occur within or around the project site. Deer, coyotes, skunks, raccoons, muskrat, and various rodents have been observed to occur in the project vicinity. Typically, transportation corridors are purposely managed to be unattractive to larger terrestrial mammals to reduce both safety concerns (car and truck strikes) and wildlife kill. The immediate project footprint (BNSF ROW) is predominantly limited to disturbed open ground with sparse vegetation surrounded by marginal to medium value upland habitats.

Fish

Bullheads, crappies, perch, largemouth bass, smallmouth bass, and various trout species are found in nearshore sloughs, backwaters, and deep-water bays of Lake Pend Oreille. The lake and tributaries provide habitat for kokanee, Gerrard rainbows, bull trout and lake trout. Fish species found in Sand Creek include brook trout, sculpin and sunfish (TerraGraphics, 2006), as well as various other warm water species.

The fish species outlined in **Table 4** is based on the current observed fish species by Idaho Fish and Game, 2017 data.

Table 4. Fishes of Lake Pend Oreille

Species	Species
Bluegill/Pumpkinseed/Sunfish (<i>Lepomis spp</i>)	Largemouth bass (<i>M. salmoides</i>)
Brown trout (<i>Salmo trutta</i>)	Northern pike (<i>Esox lucius</i>)
Bull Trout (<i>Salvelinus confluentus</i>)	Walleye (<i>Sander vitreus</i>)
Mountain whitefish (<i>Prosopium williamsoni</i>)	Cutthroat Trout (<i>Oncorhynchus clarki</i>)
Bullhead Catfish (<i>Ameiurus spp.</i>)	Kokanee (<i>Onchorynchus nerka</i>)
Cutthroat trout (<i>Oncorhynchus clarki</i>)	Lake Trout (<i>Salvelinus namaycushi</i>)
Crappie (<i>Pomoxis spp.</i>)	Smallmouth Bass (<i>Micropterus dolomieu</i>)
Rainbow trout (<i>Oncorhynchus mykiss</i>)	Yellow Perch (<i>Perca flavescens</i>)
Westlope Cutthroat Trout (<i>Oncorhynchus clarki lewis</i>)	Longnose Sucker (<i>Catostomus catostomus</i>)
Peamouth (<i>Mylocheilus caurinus</i>)	Gerrard-strain Rainbow Trout (<i>Kamploops</i>)
Pygmy Whitefish (<i>Prosopium coulterii</i>)	Largescale Sucker (<i>Castomus clupeaformis</i>)

In September 2010, the USFWS designated critical habitat for bull trout throughout their range that contains features considered essential for conservation of the species (75 FR 63898). Thirty-two Critical Habitat Units (CHUs) were designated, including Habitat Unit 31-Clark Fork River Basin that includes the open water and shorelines of LPO and the Pend Oreille River within the project action area, but does not include Sand Creek.

The primary function of individual CHUs is to maintain and support core areas. The 32 designated CHUs are clustered into six recovery units. The Columbia Headwaters Recovery Unit (CHRU)

includes western Montana, northern Idaho, and the northeastern corner of Washington. The CHRU is further divided into five geographic regions and 35 core areas. Core areas are defined as groups of partially isolated local populations of bull trout with some degree of gene flow occurring between them, and are considered to be “metapopulations” (USFWS BO, 2015).

LPO is identified as a complex core area contained within the designated Lower Clark Fork Geographic Region. The Lower Clark Fork Geographic Region, the largest and most diverse bull trout core recovery area in the CHRU, is essential to bull trout conservation because it is among the more secure and stable bull trout refuge across the range of the species and may provide a very important stronghold against potential extinction. It also provides important bull trout FMO habitat for local populations in LPO, Pend Oreille River tributaries, and the Lower Clark Fork River, as well as an essential migratory corridor for bull trout from LPO to access upstream productive watersheds (USFWS, 2009).

3.7.2 Environmental Consequences

Numerous species of fish and wildlife use the project area as either foraging habitat, refuge, or for nesting or spawning. Some species that inhabit the area in the vicinity of the bridge are anticipated to be tolerant to moderate disturbances typical of railways. Other species may be less tolerant depending on the level and duration of disturbance. Pile driving has the highest potential to generate noise levels above the moderate level of disturbance. Species response would be, in part, dependent on proximity to the piles being installed, size (juvenile, subadult, adult), presence of a swim bladder, and activity (foraging, migrating, nesting, etc.).

No Action

Although substantially lower than the other alternatives, some impacts to wildlife and fish would occur under the No Action Alternative due to the continued need for repair and maintenance activities on the existing bridges.

Proposed Action

Large scale construction activities associated with this alternative would be expected to result in avoidance of the general vicinity by both birds and mammals for the duration of the project. However, the project footprint is already fully within a high traffic transportation corridor, much of it disturbed and rock covered, and thus not expected to create a major impact or displacement of birds or mammals.

The pile driving proposed for the bridges has the higher potential for impacts to all species, but in particular to fish species potentially in the project area. The expected response for fish species present in the work area would be avoidance of the general area. The availability of extensive alternate habitat in nearby creeks, river and lake, allows fish to widely disperse away from both the potential immediate impact zone as well as the general work action area. This behavioral impact could potentially disrupt localized feeding opportunities, hiding habitat, and short term migration.

Most species of fish are susceptible to impacts associated with underwater sound pressure waves, depending on the level. Underwater sound pressure waves can injure or even kill fish if they are close to the source. Mitigation approaches such as initiating limited low impact strikes at the beginning of each work period to encourage fish dispersal are day to day common sense approaches that minimize the potential of fish injury and mortality.

Coordination with the US Fish and Wildlife Service and Idaho Fish and Game as well as other advisory entities to the permitting agencies for the project are ongoing and are expected to result in the adoption of appropriate BMPs to avoid, minimize and mitigate impacts to fish and wildlife during construction.

Upon completion of construction, a second track will occupy a relatively small operational footprint within the existing transportation corridor. Thus, the post-construction conditions would not be expected to result in a substantial change to the present transportation corridor condition.

The Proposed Action Alternative could displace birds by altering flight patterns or cause other temporary behavioral changes during construction. It is not expected, however, that construction or operational activities in the project area associated with the bridge would rise to the level of prohibited conduct under the MBTA.

Noise within the Project Area

Audible disturbances from construction activities are likely to exceed ambient noise. Ambient noise levels at the project site are influenced by the local population level, traffic volumes on Highway 95, rail traffic, and commercial enterprises. The local population center is the City of Sandpoint. Highway 95 is located generally adjacent to the north end of the project and diverges from the rail line near the north end of BNSF Bridge 3.9 to about 2,500 feet west of the south end of Bridge 3.9. A projected 50 dBA is expected for ambient noise level with highway, local roadways, city activities, and regular train traffic. Peak rail noise levels are the whistles at 140dB. Based on FHWA referenced guidance a projected noise level of 110 dB is used for air noise levels. The distance in-air noise will extend from the project area before reaching background levels is identified in construction noise attenuation **Table 5**. Inputs included a projected intermittent 50 dBA for ambient noise level with highway and regular rail traffic, and 110 dBA for the high point source construction noise with a hard (open) site type assumed through most of the project (urban area and over water) and soft site to the south of Bridge 3.9 (over land with tree cover).

Table 5. Airborne Construction Noise Attenuation

Distance from Bridge	Construction Noise (Point source + hard site) (attenuation = -6 dBA)	Construction Noise (Point source + soft site) (attenuation = -7.5 dBA)	Ambient Noise
50 feet	110 dBA	110 dBA	50 dBA
100 feet	104 dBA	102.5 dBA	50 dBA
200 feet	98 dBA	95 dBA	50 dBA
400 feet	92 dBA	87.5 dBA	50 dBA
800 feet	86 dBA	80 dBA	50 dBA
1,600 feet	80 dBA	72.5 dBA	50 dBA
3,200 feet	74 dBA	65 dBA	50 dBA
6,400 feet	68 dBA	57.5 dBA	50 dBA

Based on the data in **Table 5**, construction noise will reach ambient noise levels over open or hard terrain approximately 50,000 feet (9.5 miles) from the project site, and over soft terrain approximately 12,559 feet (2.38 miles) from the project site. This is often referred to as the action area for in-air noise effects. The actual distance noise generated during construction travels before reaching ambient levels will be influenced by other variables not factored into the attenuation calculation, such as land forms, other roads, buildings, and weather (wind/rain).

For in water calculations, risk of injury or mortality to aquatic species resulting from noise is related to the effects of rapid pressure changes, especially on gas-filled spaces in the fish's body (such as swim bladder, lungs, sinus cavities, etc.). Noise generated by impact pile driving is impulsive - consisting of a broad range of frequencies over a short duration. Different aquatic species exhibit different hearing ranges, and threshold distances and noise levels have been established to be used as a basis for effect determinations.

The decibel (dB) thresholds used in this analysis of effects to bull trout are (WSDOT, 2017):

- Injury: > 2 grams – 187 dB cSEL; <2 grams – 183 dB cSEL; all sizes – 206 dB PEAK;
- Behavioral effects – 150 dB RMS

Peak dB describes the instantaneous peak sound pressure level and is used to evaluate potential injury to fish, and Root Mean Square (RMS) dB describes the pressure level during the impulse and is used to describe disturbance-related effects (i.e. harassment) to fish. Sound Exposure Level (SEL) is used as an indication of the energy dose.

The NOAA Pile Driving Impact Calculator was used to determine the distance that underwater unmitigated / unattenuated sound would extend for the two bridges, based on the size and type of piles as measured 10 meters from the pile driven with an impact hammer (WSDOT, 2017).

Calculated results for the proposed **Bridge 3.9 over LPO** (entering 288, 36-inch diameter steel pipe piles driven with an estimated 1,600 strikes per pile) show a cumulative SEL of 218 dB and the following distances at which various thresholds of accumulated SEL are expected to be exceeded:

- Distance at which 206 dB PEAK is expected to be exceeded (onset of physical injury) = 18 meters (59 feet)
- Distance at which 187 dB accumulated SEL is expected to be exceeded (onset of physical injury to fish 2g or greater) = 1,175 meters (0.74 mile)
- Distance at which 183 dB accumulated SEL is expected to be exceeded (onset of physical injury to fish less than 2g) = 1,585 meters (0.98 mile)
- Distance at which 150 dB RMS is expected to be exceeded (behavioral effects) = **7,356 meters (4.57 miles)**

Therefore, the farthest potential behavioral effects extent would be 4.57 miles northeast to Oden Bay and 4.44 miles southwest to the Pend Oreille River near the City of Dover at the lake's outlet.

Calculated results for the proposed **Bridge 3.1 over Sand Creek** (entering 64, 24-inch diameter steel pipe piles driven with an estimated 1,200 strikes per pile) showed a cumulative SEL of 214

dB and the following distances within which various thresholds of accumulated SEL are projected to be exceeded for bull trout:

- Distance within which 206 dB PEAK is expected to be exceeded (onset of physical injury) = 12 meters (39 feet)
- Distance within which 187 dB accumulated SEL is expected to be exceeded (onset of physical injury to fish 2g or greater) = 590 meters (0.37 mile)
- Distance within which 183 dB accumulated SEL is expected to be exceeded (onset of physical injury to fish less than 2g) = 736 meters (0.46 mile)
- Distance within which 150 dB RMS is expected to be exceeded (behavioral effects) = **8,577 meters (5.33 miles)**

Therefore, the farthest potential behavioral effects extent would be upstream on Sand Creek for approximately 1/10 of a mile where the creek turns north, and approximately 1.48 miles to the east and southeast to the LPO shoreline west of Contest Point

Invasive Species

Numerous invasive species exist in Bonner County. The Idaho Invasive Species Council, a multi-agency organization that provides direction and planning for combatting invasive species' introduction and spread. The Director of the Idaho State Department of Agriculture (ISDA) chairs the council. (ID, Office of the Governor, Executive Order NO 2017-05)

Invasive upland species are a common concern during construction activities due to the clearing and grading activities potentially leaving open soil susceptible to weed seeds pioneering the area. BMPs, such as clearing only those areas necessary for safe equipment operations and temporarily seeding or mulching areas during construction, would avoid and minimize available areas for weed seed infestation or spread. Additionally, prior to machinery arriving on site, inspecting and cleaning would be performed to minimize the potential for bringing new invasive seeds or vegetation pieces onto the sites.

Aquatic invasive species are always a concern when working above, in, or near water. Both invasive plants and invertebrates can be spread by equipment. To help prevent the spread of invasive species, all equipment would be cleaned to the greatest extent practical prior to arriving to and immediately after leaving the project site. Cleaning could include scraping/sweeping off any debris or soil and pressure washing, at an off-site location before transportation to the work site. To prevent the introduction or spread of invasive aquatic species for this proposal, project specific watercraft inspection criteria and operating protocol has been developed. Boats, barges, and over water machinery will be thoroughly inspected for invasive species and cleaned as needed prior to accessing LPO or Sand Creek. This protocol will be in effect during the entire project.

3.8 Endangered Species Act Listed Species and Essential Fish Habitat

The primary federal law protecting threatened and endangered species is the Endangered Species Act (ESA), 16 United States Code (USC), Section 1531, *et seq.*, as well as 50 CFR Part 402. The ESA and its subsequent amendments provide for the conservation and recovery of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of the ESA, federal agencies are required to consult with USFWS (and/or NMFS) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined

as geographic locations essential for the conservation of threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion (BiOp) with an Incidental Take statement, a Letter of Concurrence and/or documentation of a no effect finding. Section 3 of the ESA defines “take” as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct.”

3.8.1 Affected Environment

The action area for the proposed project, which is defined as areas where threatened or endangered species may be directly or indirectly be affected by the proposed project, is generally identified in **Figures 2 and Figure 3**, Bridge 3.1 over Sand Creek and Bridge 3.9 over Lake Pend Oreille. ESA listed species, proposed species, critical habitat, or EFH that could potentially occur in Bonner County are summarized in **Table 6**.

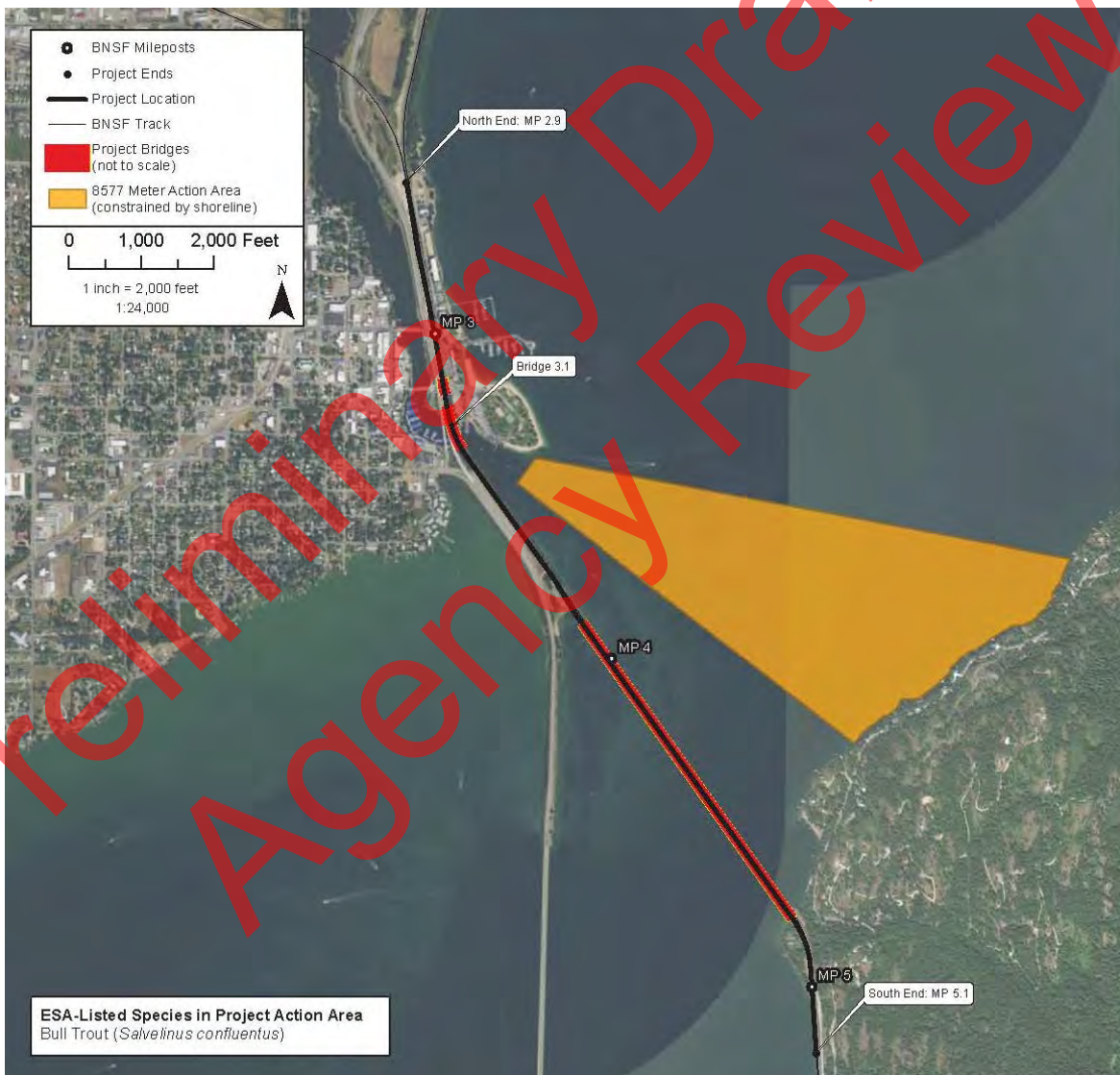


Figure 2. Bridge 3.1 over Sand Creek Action Area

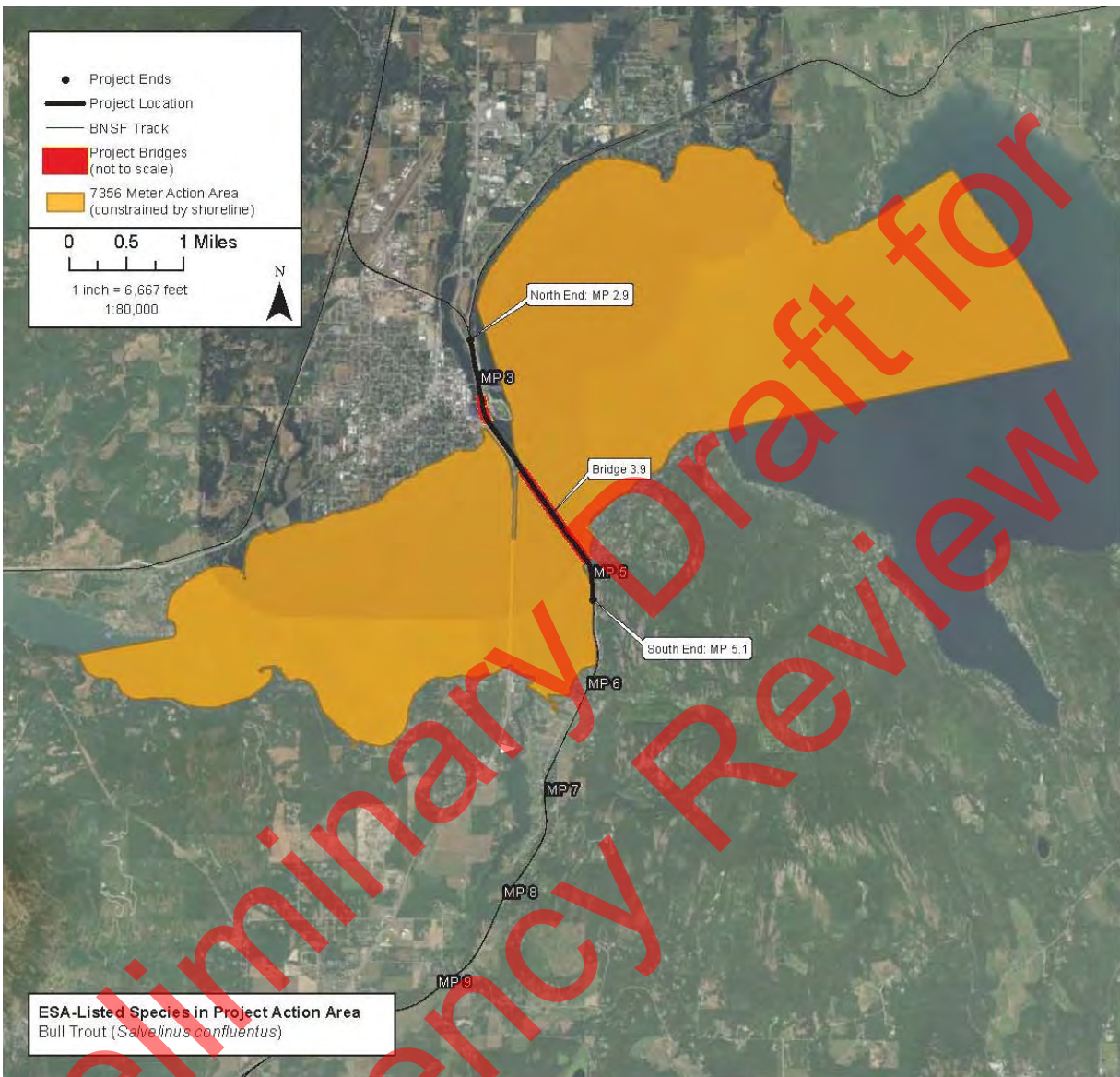


Figure 3. Bridge 3.9 over Lake Pend Oreille Action Area

The project alternatives reviewed are located across and along the western edge of LPO and immediately east of or presumably near Highway 95 and Sandpoint. Project area uplands are fully developed and consist of railroad tracks, gravel and paved parking areas, urban and urban fringe development, and highway/roadways. Other than Bull Trout, the specific habitat conditions required for the species in **Table 6** do not exist in the Alternatives Action Areas.

Table 6. USFWS Listed and Proposed Species and Critical Habitat in Bonner County

COMMON NAME	SCIENTIFIC NAME	FEDERAL (USFWS) STATUS	CRITICAL HABITAT DESIGNATED	POTENTIAL TO OCCUR IN ACTION AREA	PRELIMINARY DETERMINATION *
Canada Lynx	<i>Lynx canadensis</i>	Threatened	No	No	NE
Grizzly Bear	<i>Ursus arctos horribilis</i>	Threatened	n/a	No	NE
North American Wolverine	<i>Gulo gulo luteus</i>	Proposed Threatened	No	No	NE
Woodland Caribou	<i>Rangifer tarandus caribou</i>	Endangered	No	No	NE
Bull Trout	<i>Salvelinus confluentus</i>	Threatened	Yes	Yes	LTAA (ESA) NE (Critical Habitat)

*Definitions: NE = No Effect; NLTA = May Affect, Not Likely to Adversely Affect

Bull Trout. Both the USFWS and the Idaho Department of Fish & Game (IDFG) have confirmed that there is no documented presence of bull trout, or designated bull trout habitat, in Sand Creek, and there is minimal data on bull trout use of LPO within the project action area (K. Satori & M. Williams, personal comm.). However, bull trout most likely use the action area in the course of migrating between spawning habitat and as FMO habitat, and three separate studies of radio-tagged bull trout from 2005-2009 documented a few bull trout at or in close proximity to Bridge 3.9 throughout the winter. While most bull trout migration into LPO occurs from upstream tributaries in the spring, a fall migration occurs from the downstream East Fork River, presumably to allow bull trout to avoid swimming upstream into the lake against the current during spring high flows (USFWS BO, 2015).

LPO is identified as a complex core area contained within the designated Lower Clark Fork Geographic Region. The Lower Clark Fork Geographic Region, the largest and most diverse bull trout core recovery area in the CHRU, is essential to bull trout conservation because it is among the more secure and stable bull trout populations across the range of the species and may provide a very important stronghold against potential extinction. It also provides important bull trout FMO habitat for local populations in LPO, Pend Oreille River tributaries, and the Lower Clark Fork River, as well as an essential migratory corridor for bull trout from LPO to access upstream productive watersheds (USFWS, 2009).

Lake Pend Oreille Basin (LPO-B) proper and its tributaries, extending from Cabinet Gorge Dam on the Clark Fork River downstream to Lake Pend Oreille to Albeni Falls Dam on the Pend Oreille River, are entirely in Idaho. LPO-B represent 15 percent of the LPO complex core area, covering 0.67 million acres with 1,250 miles of mapped streams. The BNSF Sandpoint Junction Connector project lies wholly within LPO-B.

ESA Consultation History

The USCG is the lead federal agency associated with this action and has consulted with the USFWS regarding potential project-related effects to federally listed species and critical habitat. The USFWS prepared a letter of concurrence (Pending - TBD).

3.8.2 Environmental Consequences

No Action

Implementation of maintenance actions associated with the No Action Alternative would result in limited in-water work and therefore result in a reduced level of potential impact to ESA listed species than the Proposed Action in the short term. Although both alternatives would result in elevated levels of underwater and in-air noise generated during maintenance or construction, the ongoing maintenance actions associated with the No Action Alternative would not require consultation with the USFWS.

Proposed Action

Bull Trout would be the only ESA listed species for which there would be expected effects from the Proposed Action Alternative. Temporary impacts would be primarily associated with in-water noise from pile installation, and potential water quality reduction from increased turbidity. Detailed information from proposed pile driving actions are defined in section 3.7.2 and are directly applicable to Bull Trout.

Based on the BA (Jacobs 2018), the proposed alternative may result in temporary direct effects to bull trout from pile driving associated with the construction of both Bridge 3.9 and its temporary construction bridge. Bull trout would be expected to avoid the area due to increased activity and noise during construction activities. Therefore, project activities are unlikely to substantially affect subpopulation indicators at the watershed or Recovery Unit scales, either temporarily or permanently.

There may be permanent indirect effects to bull trout due to the potential for increased predation associated with the increased shading and additional pier hiding habitat from Bridge 3.9 after construction. However, the area shaded by the permanent Bridge 3.9 over LPO is very small compared to the total surface area of the lake (approximately two acres out of a total of 94,720 acres LPO surface area). Similarly, the temporary construction bridge over LPO is also very small compared to the surface area of the lake (approximately four acres).

Other effects, turbidity, potential equipment fluid contamination, or temporary and permanent benthic habitat alteration, are also small relative to the overall area of bull trout dispersal in the lake and/or their designated critical habitat.

The project is not expected to contribute to or exacerbate the defined existing threats to the bull trout population in the LPO-B core area: (1) historic fragmentation due to dams on the lower Clark Fork River; (2) overfishing of bull trout and the presence of voracious non-native species, specifically lake trout; and (3) legacy impacts from upland/riparian land management practices.

The USFWS were consulted regarding the Proposed Action Alternative, construction methods, project timing, and impact minimization measures. The BA includes preliminary effect determinations (Jacobs 2018).

Based on a review of the action area; species utilization within the action area; project actions and timing; impact minimization measures; and federally listed species, and designated critical habitat that occur in the action area, the following determinations in **Table 7** are proposed. The USFWS concurred that the project would require formal consultation and issued a letter of concurrence (TBD - Pending).

Table 7. ESA Determination Summary (TBD)

Common Name	Determination
Bull trout	Not likely to adversely affect
Bull trout critical habitat	No effect

Indirect effects are those that may occur to listed species after the project has been completed. Common indirect effects include changes to ecological systems resulting in long-term habitat alteration, changes in predator/prey relationships, or changes in land use. Given that the proposed action is replacing an existing structure, does not include any in-water piers, and is not associated with increasing or changing rail traffic volumes, no indirect effects are anticipated to result from the proposed action.

3.9 Archaeological and Historic Resources

The National Historic Preservation Act of 1966 (NHPA), as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places (NRHP). Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP.

As part of the Section 106 process, federal agencies must consult with Idaho State Historic Preservation Office (SHPO) to assure that cultural resources are identified and to obtain the formal opinion of the SHPO on each site’s significance and the impact of its action upon the site.

The Archaeological Resources Protection Act (ARPA) applies when a project may involve archaeological resources located on federal or tribal land. ARPA requires that a permit be obtained before excavation of an archaeological resource on such land can take place.

3.9.1 Affected Environment

An evaluation of the archaeological resources in the project vicinity and history of the existing bridges was completed for the proposed project (Jacobs, 2018). The survey conducted a cultural resources assessment of the proposed Area of Potential Effects (APE) to identify and provide management recommendations regarding National Historic Preservation Act (NHPA) compliance. As a result of those efforts, two archaeological sites (10BR38 and 10BR1026) were reassessed, one new archaeological site (temporarily named Rock Wall 1) was recorded, four previously recorded historic resources (Northern Pacific Depot, Northern Pacific Railroad, Bridge 3.0, and Bridge 3.9) were revisited, and one new historic resource (Bridge 3.1) was recorded.

Current and previous field results and analyses indicate that the BNSF ROW does not contain any intact archaeological deposits, and the site boundary for 10R1026 should be truncated to areas outside the BNSF ROW. It is recommended that the project will have no effect to either 10BR38 or 10BR1206. Site Rock Wall 1 is not eligible for the NRHP.

The previously recorded historic properties noted above, each determined eligible or listed on the NRHP, retain their integrity and significance. Bridge 3.1 is recommended not eligible for the NRHP due to a loss of integrity. It is recommended that the project will have no adverse effect on the historic properties.

All survey records are on file at Jacobs Engineering Group, Bellevue, Washington. Photographic prints and site forms will be submitted to the Idaho State Historic Preservation Office, and will be on file at the Idaho State Historical Society, Boise. (Jacobs, 1/2018) The IDSHPO and Interested THPOs concurred that the project will not have an adverse effect to cultural or historic resources and issued a letter of concurrence (TBD - Pending).

3.9.2 Environmental Consequences

No Action

The No Action Alternative would result in no ground disturbance activities, but maintenance activities would continue. Maintenance would consist of periodic inspections, right-of-way maintenance, with possible replacement of individual bridge components.

A minimal amount of excavation is anticipated with these future maintenance actions. Although the project vicinity was utilized by local Native American populations for hunting, fishing, and plant gathering, the APE has been drastically altered by railroad and highway development. This development included placement of thick fill deposits to support the existing railroad and bridge abutments. Due to previous ground disturbance and fill used to construct berms on either approach to the bridge, the potential for intact archaeological deposits to exist within the APE is considered remote. An inadvertent discovery protocol would be followed during ground-disturbing activities associated with maintenance actions to ensure that potential impacts to archaeological deposits encountered during construction are avoided.

Proposed Action

Cultural Resources

Based upon survey and analysis of the proposed APE, it is unlikely that any intact portions of any site at the north end or south end occur below construction fill in the APE; beyond the fill, the APE contains reworked beach sands and artificial fill sediments. Intact deposits may be present in proximity to the APE in both the north and south areas, but these deposits are beyond the proposed impact of current construction plans.

With regard to specific sites identified, the project will directly impact the archaeological site through the placement of deep engineered fill on artifact-bearing surfaces and sediments. The site will be permanently buried by the fill, and portions may be additionally impacted by excavation or driving of permanent and temporary piles. That portion of the site within the proposed APE is not a contributing element to the site's archaeological significance or relevance to archaeological research contexts. The site has been determined to be NRHP-eligible as contributing resource to the UPORAD, although it is not individually eligible. Therefore, it is recommended that this project will have either *no effect* or *no adverse effect* to sites within the APE.

No further archaeological evaluation or monitoring is recommended for this project.

Historic Resources

None of the previously recorded historic resources within the APE have changed substantially since recordation, and all continue to be recommended eligible for listing in the NRHP. The single newly recorded historic resource, BNSF Bridge 3.1, is recommended *not eligible for listing in the NRHP*.

The BNSF (Northern Pacific Railroad) track, Bridge 3.0, and Bridge 3.9 will not be directly affected

by the project. Indirect effects during construction and operation will be negligible, and are not anticipated to alter or diminish any aspect of the resources' integrity of location, design, materials, workmanship, setting, feeling, or association. The proposed undertaking would have *no adverse effect* on these resources.

In the unlikely event that archaeological materials are discovered during ground-disturbing activities, a project specific Inadvertent Discovery Plan (IDP) has been prepared and the discovery protocol described will be implemented. Generally, the identification of archaeological remains will result in the halt of excavations in the find vicinity and appropriate parties contacted immediately. If human skeletal remains are discovered, the Bonner County Sheriff and Idaho SHPO should be notified immediately.

3.10 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations to the greatest extent practicable and permitted by law. The order also directs each agency to develop a strategy for implementing environmental justice. The order is also intended to promote nondiscrimination in federal programs that affect human health and the environment, as well as provide minority and low-income communities' access to public information and public participation.

3.10.1 Affected Environment

Land use in the area is designated incorporated Sandpoint City Limits at the north end of the project from BNSF MP 2.9 – 3.9 where the existing tracks are surrounded by the BNSF maintenance road, the Sandpoint Train Depot and US Highway 95 to the west; and Sandpoint Avenue, Seasons Resort, Best Western Edgewater Resort, Sandpoint Edgewater RV Park, and a portion of the Sandpoint City Beach Marina to the east. The BNSF Bridge 3.9 spans over the open water of Lake Pend Oreille from MP 3.9 to 4.9; and the south end of the project from BNSF MP 4.9 – 5.1 is designated as Rural (5) residential (Bonner County 2017).

3.10.2 Environmental Consequences

No Action

The No Action Alternative would result in no construction activity other than maintenance. Maintenance would consist of periodic inspections, right-of-way maintenance, and repair of steel and concrete bridge components. Potential impacts on minority or low-income populations would be similar to those described for the Proposed Action Alternative and would not result in disproportionately high and adverse impacts.

Proposed Action

Construction activities under the Proposed Action Alternative would not result in the relocation of any businesses or residents. Some of the construction activities would be visible from Sandpoint. Construction noise, particularly pile driving at the Sand Creek Bridge (3.1) would be detectable along the eastern side of Sandpoint in the vicinity of Highway 95, but is anticipated to rapidly dissipate based on the presence of vegetation, structures, changes in topography, and increasing ambient noise levels associated with local businesses and Highway 95. No construction activity

is currently proposed during nighttime hours. Construction would occur within the existing railroad ROW easement. This action would have no impact on minority and low-income populations.

3.11 Prime and Unique Farmlands

The Farmland Protection Policy Act encourages federal agencies to minimize the impact of federal programs on the unnecessary and irreversible conversion of farmland (prime or unique) to nonagricultural uses. It follows that federal programs shall be administered in a manner that, as practicable, would be compatible with state and local government and private programs and policies to protect farmland.

3.11.1 Affected Environment

All work is proposed within the existing BNSF ROW transportation corridor. There are no farmlands within that corridor and none are adjacent to the project work corridor.

3.11.2 Environmental Consequences

As indicated in the USCG NEPA Implementing Procedures and Policy for considering Environmental Impacts (USCG 2000), actions that require bridge permits are exempt from the requirements of the Farmland Protection Policy Act. A bridge permit from the USCG would be required for all Alternatives other than the no action alternative. Therefore, compliance with the Farmland Protection Policy Act is met.

3.12 Noise

The Noise Control Act of 1972 requires that activities of federal agencies, such as issuing permits, must be consistent with federal, state, interstate, and local requirements for the control and abatement of environmental noise. The primary responsibility of regulating noise is with state and local governments. In Idaho, noise abatement and control rests primarily with the local government. Bonner County has established regulations for control of noise in Title 9 "Special Environmental and Health" of its municipal code. Per code section 12 the County has adopted requirements that industrial/commercial noise are designed and operated in a safe manner that minimize noise, smoke, dust, and other nuisance factors to nearby land uses. The City of Sandpoint's Noise Ordinance (Title 5, Chapter 2, Section 6) identifies a construction activity limit of no work after 10:00 PM and before 6:30 AM of any day of the week.

The Noise Control Act states that for "major noise sources in commerce", there must be "national uniformity of treatment." See 42 U.S.C. Sec. 4901 (a)(2-3). The EPA and the Secretary of Transportation were tasked with determining allowable noise levels for railroads, which they did. The Federal Railroad Administration has issued regulations regarding noise limits for railroad equipment, and under the Act, no state or local ordinance can further limit noise from railroads. See 42 USC Sec. 4916.

3.12.1 Affected Environment

Existing noise levels in the project vicinity include train traffic, nearby vehicular traffic on local roads and Highway 95, boat traffic, and commercial and recreational activity from the adjacent

land uses. Sensitive noise receptors in the project vicinity include workers and residences/businesses in Sandpoint, and recreational and fishers.

3.12.2 Environmental Consequences

No Action

The No Action Alternative would result in no construction activity until maintenance is required to ensure that train traffic would be able to continually move through the site, including eventual repair and replacement of steel and concrete components of the bridge. No Action would result in no change to existing noise levels.

Proposed Action

Elevated noise levels are anticipated during construction, especially during pile driving activities. Potential impacts to fish and wildlife from construction noise is discussed in **Section 3.7**. During pile-driving activities, noise levels may reach up to 110 dBA; however, as noted above, construction noise is exempt from regulation by the City of Sandpoint, as long as the work occurs between 6:30 AM and 10:00 PM. It is anticipated that the predominance of construction activity would occur during daylight hours, all equipment would be muffled, and that peak noise levels from impact driving would be limited to relatively short periods of time and regular work hours from 7 AM to 5 PM. Therefore, potential noise impacts from construction are not expected to be substantial.

Based on the equipment anticipated to be used during construction, maximum noise levels could reach 110 A-weighted decibels (dBA) when piles are proofed with an impact pile driver.

Table 8 includes a list of project equipment, as well as the expected use and the typical maximum noise level as measured from 50 feet away (WSDOT 2015).

Table 8. Construction Equipment List, Use, and Reference Maximum In-Air Noise Levels

Equipment	Expected Use	Lmax (dBA)
Backhoe	Access road and abutment construction	78
Chainsaw	Clear work area and construction pad	84
Compactor	Compact fill material for ramps, access roads, and staging areas	83
Compressor	Bubble curtain and hand tools	78
Concrete Mixer Truck	New abutments, piles, and decking	79
Concrete Pump Truck	New abutments, piles, and decking	81
Crane	Bridge construction, work trestles, piles, etc.	81
Drill Rig Truck	Geotechnical or subsurface investigation	79
Drum Mixer	Mix concrete or fill material	80
Dump Truck	Deliver supplies and remove rock and soil	76
Excavator	Access road and abutment work	81
Flat Bed Truck	Move supplies and bridge components	74
Front End Loader	Move supplies and bridge components	79
Generator	Power for hand tools and small equipment	81
Generator (<2kVA)	Power roadway signage	73

Equipment	Expected Use	Lmax (dBA)
Vibratory Pile Driver	Installation and removal of in-water piles	101
Impact Pile Driver	Installation of upland and in-water piles	110
Lift	Access	75
Pickup Trucks	Construction worker site access	75
Pneumatic Tools	Power hand tools	85
Rock Drill	Rock removal	81
Roller	Compact fill for access roads	80
Welder/Torch	Welding of steel bridge components	74

3.13 Hazardous Materials and Wastes

Several federal laws, regulations, and executive orders relate to the control and handling of hazardous substances, clean-up of releases of hazardous wastes, and protection from harm of the public from these materials. These include the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), the Pollution Prevention Act (PPA) of 1990, the Emergency Planning and Community Right to Know Act (EPCRA), the Toxic Substances Control Act (TSCA), Executive Order 12088 – Federal Compliance with Pollution Control Standards, and Executive Order 12856 – Federal Compliance with Right-To-Know Laws & Pollution Prevention Requirements. Federal agencies are required to coordinate with the EPA and applicable state, interstate, and local environmental protection programs to ensure consistency of major federal actions with all federal hazardous substances and waste laws, regulations, and executive orders.

For several years, BNSF has worked throughout their system with Incident Command System (ICS) support personnel, fire departments, regional response teams, and state and federal spill response teams to develop geographic response plans (GRP). GRPs serve as standard operating procedures and protocol tools useful for strategic planning purposes and guidelines for emergency response.

The current GRP that addresses BNSF operations in the Proposed Action Alternative or project area is the “Lake Pend Oreille and Pend Oreille River GRP” developed in 2017. (**Appendix C**) Idaho DEQ, along with the EPA, USCG, WA Department of Ecology, OR Department of Environmental Quality, were co-contributors and signers of this GRP. The LPO GRP specifically addresses the Lake Pend Oreille region in Bonner County, ID. The plan assists individuals and organizations on initial responses to hazardous material and oil spills, along with prioritization of response strategies to minimize impacts to population centers and sensitive environmental, cultural, and economic resources.

BNSF current GRP training for staff and contractors is rigorous and a cornerstone of rail operations. BNSF has no record of hazardous material spills or incidents with bridges in the Proposed Action Alternative work area. BNSF implements an enhanced inspection program that exceeds FRA requirements.

3.13.1 Affected Environment

Land Use

The project site is an interstate mainline rail corridor. There is the potential for any railroad ROWs to contain contaminated materials from historic materials used, construction methods, and actions. The corridor where the project is proposed does not have a recorded history of hazardous spills. Potential inadvertent and unrecorded releases could have occurred over the 120 + years this corridor has had a railroad and associated support facilities on it, but typically contamination in soils are shallow and localized. If they are determined to be present, they are removed and disposed of in commercial approved remediation facilities. Application of herbicides along the railroad ROW to keep vegetation from growing over the tracks, can also affect the reuse of the soil. BNSF policy for contaminated conditions is to identify, remove, and safely dispose when they are found. Any soil removed from any part of the ROW must be tested prior to it leaving BNSF property.

Regulatory Database Review

The federal CERCLA and RCRA databases, and the Idaho Department of Environmental Quality Underground Storage Tank database, were reviewed for sites within one-half mile of the project work corridor. Identified in the DEQ Underground Storage Tank Database for Sandpoint, Bonner County, ID, there are:

- 22 sites are within one-half mile of the project.
- 18 are currently out of use and have been cleaned up/signed off by DEQ.
- 4 are currently used facilities and inspected by DEQ for operational compliance.

3.13.2 Environmental Consequences

No Action

Under the No Action Alternative, no change would occur to the sites identified by DEQ, with the exception of continued maintenance and repairs of the existing railroad tracks and bridges. These maintenance actions would require the use of construction equipment that contains petroleum products. LPO and Sand Creek are sensitive environmental receptors that could be impacted by spills associated with the use of petroleum products.

BNSF would continue to follow bridge and track inspections and maintenance protocol. BNSF would continue to implement the LPO GRP into staff and maintenance contractor hazardous material response training and planning. In the long-term, impacts associated with future maintenance activities would be comparable to the Proposed Action Alternative.

Proposed Action

No hazardous waste areas or underground storage tanks are identified within the BNSF ROW for the length of this project. The work proposed would not affect any identified or non-identified sites within the City of Sandpoint or the Sandpoint greater area.

The construction of the Proposed Action Alternative will require the use of construction equipment that contains petroleum products. BMPs for maintenance of construction equipment would be

implemented to minimize the potential for the release of oil, fuel, or other contaminated materials into adjacent waters (see **Section 4.0**).

The Proposed Action Alternative includes minimal clearing/grubbing activities and excavation to construct the new bridge abutments and the new grade for the second mainline track (see **Section 2.2**). Based on the use of the project site as a railroad corridor, soil contamination, if present, is likely to be limited to shallow soils. If contaminated soil is encountered during construction, the contaminated soil would be assessed, handled, stored, and disposed of in accordance with applicable state and federal regulations.

BNSF, during the construction and maintenance of the Proposed Action Alternative, BNSF would continue to follow enhanced track and bridge inspections and maintenance protocol. BNSF would continue to implement the LPO GRP into staff and maintenance contractor hazardous material response training and planning. The construction of the second mainline track and associated bridges would result in more efficient and timely transport of freight and passenger rail traffic through this portion of the BNSF interstate mainline, reducing the potential for conflicts associated with stopped or idling trains.

3.14 Traffic

Local traffic includes surface vehicle traffic on state and local roadways and watercraft traffic that utilizes LPO and Sand Creek. The predominance of watercraft traffic is associated with recreation and fishers, both primarily during the summer boating season from May 1 through October 15.

3.14.1 Affected Environment

The project area is generally isolated from surface vehicle traffic since it is located along the edge of the existing rail line. Local traffic is limited to BNSF maintenance workers, contractors. No local public access roads cross the tracks at grade within the project limits. The existing tracks pass over Bridge Street in Sandpoint via BNSF Bridge 3.0.

3.14.2 Environmental Consequences

No Action

Under the No Action Alternative, delays for at grade crossings in the greater Sandpoint area would be expected to continue and increase over time. Delays in freight and Amtrak service could result in increases in truck and vehicle traffic on local, regional, and national roads and interstate highways.

Proposed Action

Detailed analysis in the Reasonable Needs to Navigation reports for both the LPO Bridge 3.9 and Sand Creek Bridge 3.1 specify design features incorporated to minimize impacts to vessel traffic, both during construction and after bridge completion, under the Proposed Action Alternative.

It is anticipated that construction equipment and materials would be transported by truck, and potential impacts to local vehicle traffic could occur. The BNSF contractor will be required to develop a traffic control plan compliant with Idaho Transportation Department, Bonner County Road and Bridge, and Sandpoint Police Traffic Safety rules and requirements. The traffic control plan will propose transport of unique project materials during non-peak use times (such as

nighttime) on Highway 95 and other public roadways. No permanent roadway closures are anticipated.

Long term, local, at grade crossings will benefit due to more rapid clearing of at grade crossings in the vicinity due to a more continuous flow of train traffic not having to wait at sidings for the single mainline track constriction to clear.

3.15 Safety and Security

The Occupational Safety and Health Act (OSHA) was established to assure safe and healthful working conditions by providing workers a place of employment free from recognized hazards to safety and health, such as exposure to toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions. OSHA standards require that employers adopt certain practices, means, methods, or processes reasonably necessary and appropriate to protect covered workers on the job. In addition, even in situations where OSHA does not apply, the Federal Railroad Administration (FRA) has implemented safety regulations that apply to all workers who work on railroad property.

3.15.1 Affected Environment

BNSF is a leader in railroad safety and recognizes that a safe and secure railroad network is essential to our nation's future. U.S. railroads have some of the lowest injury and accident rates in the transportation industry. The accident rate is substantially lower than that for the trucking industry. BNSF's vision is to operate injury and accident-free, and every day BNSF works to make that vision a reality through safety programs, training, and technology. BNSF has made a substantial investment in safety and technical training for employees. They utilize a combination of field training, on-the-job training, long-distance learning, and technical training at a centralized training center. Furthermore, all contractors and consultants are required to undertake contractor safety orientation training and railroad safety training prior to being allowed on railroad property prior to completing any work.

Per BNSF requirements, all workers that enter their right-of-way must implement all applicable OSHA and/or FRA requirements and be certified as having undertaken railroad safety and security training per FRA safety and security requirements.

3.15.2 Environmental Consequences

No Action

As stated in **Section 1.2**, the current single-mainline track configuration of this section of the BNSF mainline is causing freight and passenger rail traffic congestion throughout the region. Leaving the track configuration as it is, and conducting maintenance as needed, will not provide a reduction in rail traffic congestion, or reduce hold times on regional sidings and wait times at grade crossings. Contracted work activities associated with maintenance of the existing bridge would be covered under OSHA and/or FRA requirements.

Proposed Action

The Proposed Action Alternative would be designed to meet current design and rail traffic operations requirements and would increase safety and security of rail operations to help prevent possible future impacts to life or human health. Work activities associated with construction of the

second mainline track and new bridges would be covered under OSHA and/or FRA requirements. Implementation of the Proposed Action Alternative would result in multiple safety benefits.

3.16 Cumulative Impacts

Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative impacts can result from individually minor actions that can collectively become a measureable impact when taking place over a period of time.

Resources determined not to have the potential to result in measurable cumulative effects were not addressed in this analysis. Upon construction, the project does not have the potential to result in measurable cumulative effects as no other activities in the area are dependent on this work and the project does not encourage further development or activities within the action area. It is anticipated that regular maintenance and repair of existing track and bridge structures will occur before, during, and after the project.

Temporary impacts during the construction phase of each alternative include increased noise levels, visual disruption, and potential for erosion and sedimentation. All areas would be returned to preconstruction conditions to the extent practicable following construction. No extensive indirect or cumulative impacts from past, present, or future activities are anticipated.

3.17 Statement of Environmental Significance of Proposed Action

The Proposed Preferred Action Alternative is needed to maintain both current and future uses and to protect life, health, and the environment. Construction of the project would prevent future health and/or environmental impacts potentially associated with ongoing and more frequent maintenance actions. This alternative has been designed to minimize impacts to land and water resources, floodplains, wetlands, and other environmental resources. Specific construction methods were selected to minimize impacts to threatened and endangered species and/or habitat. It is anticipated that the project would have no significant impacts to health, human resources, and natural resources.

4.0 MITIGATION

Water Resources and Water Quality/Fish and Wildlife/Threatened and Endangered Species

To help prevent the spread of invasive species, all equipment would be cleaned to the greatest extent practical prior to arriving to and immediately after leaving the project site. Cleaning includes scraping/sweeping off any debris or soil and pressure washing, at an off-site location before transportation to the work site.

The following impact minimization measures (IMMs) have been established for this project to avoid or minimize potential impacts to water resources, water quality, and fish and wildlife, including threatened and endangered species:

- IMM1 Protection of Existing Vegetation: Specific limits of activities and disturbance areas will be clearly marked for reference by construction work crews and machinery operators.

- IMM2 All in-water work will comply with the approved permit conditions for Lake Pend Oreille and Sand Creek.
- IMM3 Temporary in-water steel piles will be installed to refusal with a vibratory driver.
- IMM4 A bubble curtain or cofferdam will be utilized when an impact hammer is used to install in-water piles in water depths greater than 6-feet.
- IMM5 Dispersal strikes will be utilized when an impact hammer is used to install permanent in-water piles to minimize the potential for fish to be in the vicinity when production pile driving occurs.
- IMM6 A Spill Prevention, Control, and Countermeasure (SPCC) Plan will be implemented to ensure that all pollutants and products will be controlled and contained.
- IMM7 BMPs will be installed to reduce erosion from exposed soils and maintained throughout the project construction to ensure effectiveness.
- IMM8 Fully stocked petroleum containment spill kits will be at all power equipment work sites and construction staging areas during construction.
- IMM9 Containment will be under all equipment that contains fuels or other hazardous materials on the temporary bridge work or within 100 feet of the creek/lake.
- IMM10 Fuel containers will not be stored on the temporary work bridge.
- IMM11 The contractor will install and maintain BMPs to keep construction debris from entering waters of the U.S.
- IMM12 A Stormwater Pollution Prevention Plan (SWPPP) will be implemented as part of the NPDES Permit.

In accordance to the (TBD) permit conditions for the Proposed Action Alternative (IMM 2), mitigation for the wetland fill will be via an agency approved mitigation bank, the Valencia Wetland Mitigation Bank/Valencia Wetlands Trust (bank) located in Priest River, Idaho. Bank credits totaling 3.64 credits to compensate for the 0.28 acres of wetland fill.

Mitigation for nearshore, in-water fills are (TBD) via LPO and Sand Creek Stakeholders including but not limited to the USFWS, Tribal fisheries, and Avista that would provide the most benefit for the affected aquatic resources.

A navigation plan addressing lighting and other required navigation markings or aids for both the Bridge 3.1 over Sand Creek and the Bridge 3.9 over LPO temporary work and new bridges will be developed and approved by IDL in accordance with Rule 015.13.g of IDAPA 20.03.04 and as required by the USCG Title 33, Section 118, Code of Federal Regulations prior to completion of the Proposed Action Alternative.

Hazardous Materials and Invasive Species

To ensure avoidance of impacts to aquatic resources within the Proposed Action Alternative, BMPs for maintenance of construction equipment include:

- All equipment would be cleaned of accumulated grease, oil, or mud and inspected daily to check for leaks or problems at an off-site location before transportation to the work site.
- Fully stocked spill kits would be kept on site during construction. Spill containment systems must be adequate to contain all fuel leaks.
- Fuel containers or other hazardous materials would not be stored unsecured at the project site during non-work hours.
- Work boats, barges, and all equipment associated with them will be inspected for invasive species prior to launching on LPO or in Sand Creek. Appropriate decontamination measures will be implemented if needed.

5.0 COORDINATION AND LIST OF PREPARERS

Agencies and persons contacted during preparation of the EA are identified in **Table 9**.

Table 9. Agencies and Persons Contacted

Agency	Individual	Date Contacted
USACE	Shane Slate, Regulatory Project Manager	February 2017 and ongoing
USCG	Steven Fisher, Bridge Program Chief	February 2017 and ongoing
USCG	John Greene, Environmental Policy Analyst	February 2017 and ongoing
ID DEQ	June Bergquist, 401 WQ Specialist	February 2017 and ongoing
ID Dept. of Lands	Amidy Fuson, Resource Specialist Sr.	February 2017 and ongoing
ID Dept. of Lands	Jim Brady, Resource Supervisor	February 2017 and ongoing
USFWS	Marshall Williams, Biologist	July 2017 and ongoing

Individuals that contributed to preparation of the EA are identified in **Table 10**.

Table 10. List of EA Preparers

Firm	Individual	Contribution
Jacobs	Pierre Bordenave, Director Environmental Rail	PM, EA Author
Jacobs	Diane Williams, Environmental Planner	QAQC
Jacobs	Ariel Bordenave, Planner/Technical Editor	EA Author, QA/QC
Jacobs	Sue PaDelford, Senior Biologist	EA Author
Jacobs	Ian David Crickmore, GIS	GIS/ Map Exhibits
BNSF	Matt Keim, Manager Engineering	Project Description
BNSF	Kris Swanson, Manager Construction Permitting	Project Description
BNSF	Dava Kaitala, Director Construction Permitting	QAQC
Hanson Professional Services, Inc.	Mat Fletcher, P.E.	Permit Drawings

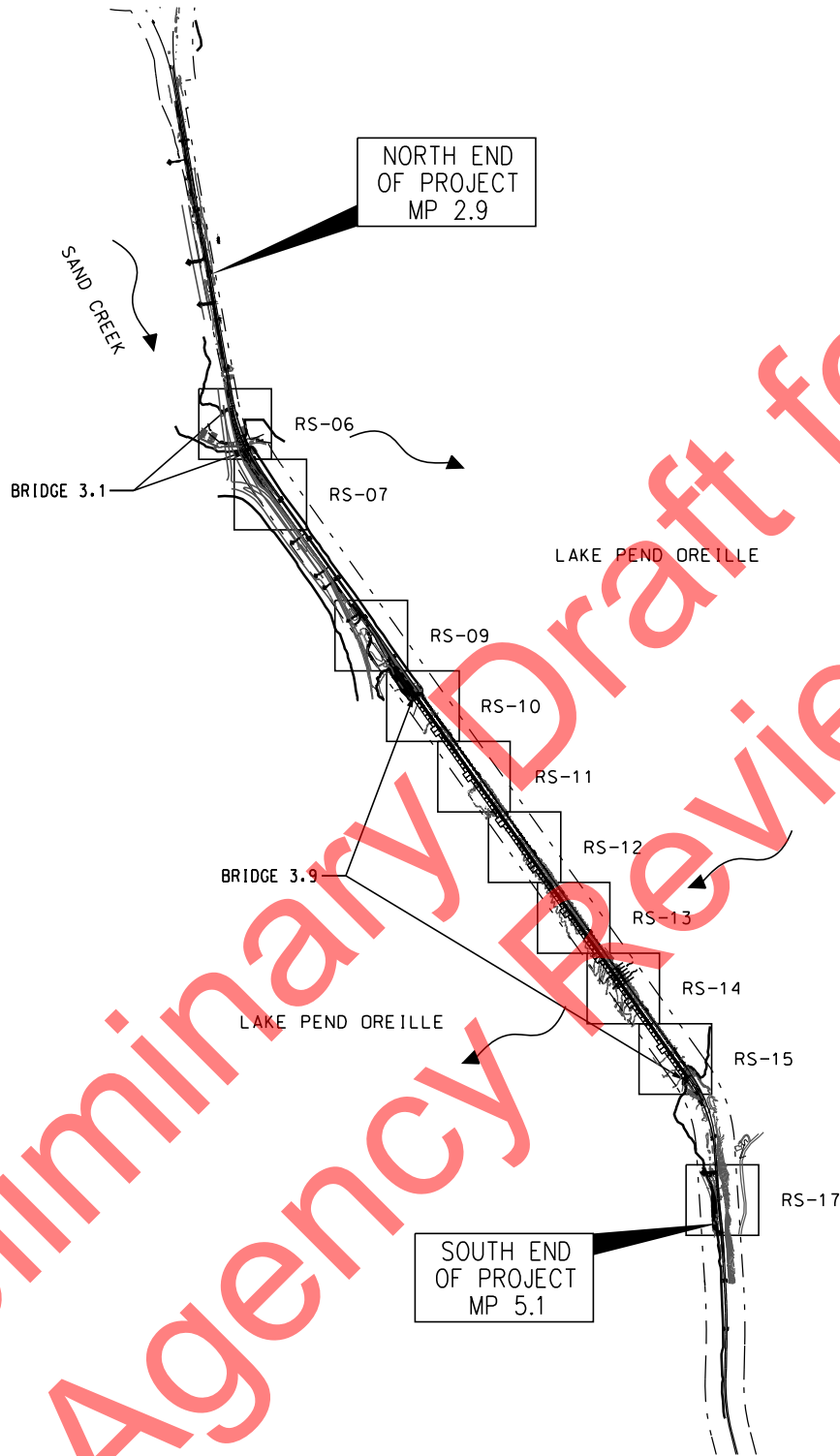
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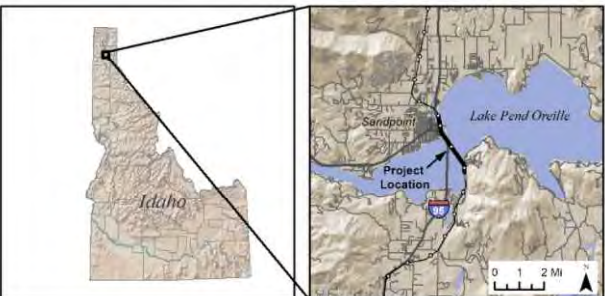
**Appendix A
Bridge Permit Drawings**

Preliminary Draft for
Agency Review



Preliminary Draft for Agency Review

BASED ON: HANSON PRELIMINARY PLANS (30%, NOV. 2017). ELEVATIONS ARE RELATIVE TO NAVD88.

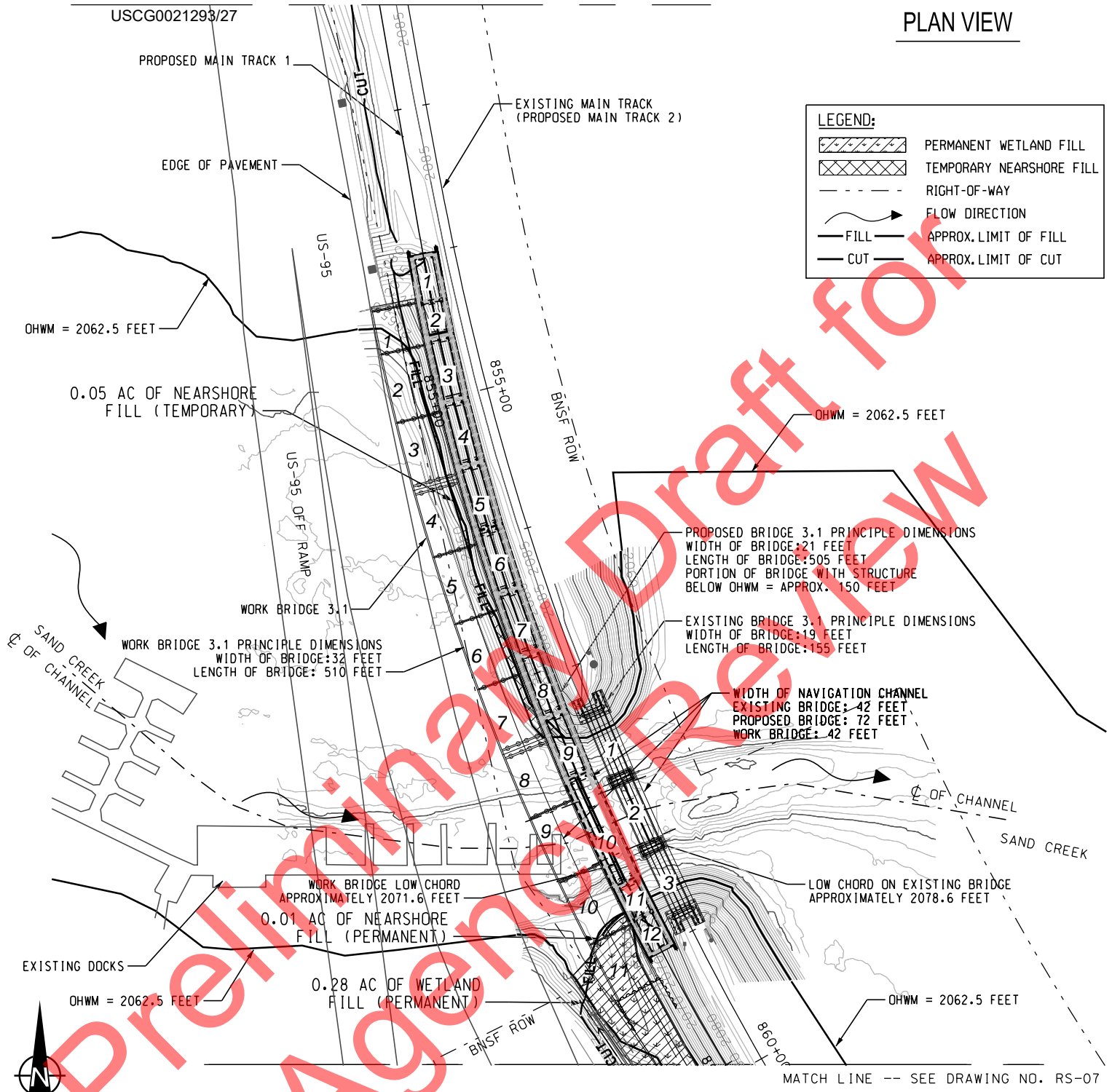


PROJECT PLAN OVERVIEW

AGENCY REF. NO.:
PROJECT: BNSF / SANDPOINT JUNCTION CONNECTOR
APPLICANT: BNSF RAILWAY COMPANY
CONSULTANT: JACOBS ENGINEERING GROUP
LOCATION: BNSF MONTANA DIVISION, KOOTENAI RIVER SUBDIVISION
 LINE SEGMENT 45, MP 2.9 - MP 5.1
PLSS: IN PARTS OF S15, 22, 23, 25, 26 & 36 T57 R2W BOISE MERIDIAN
NORTH END (MP 2.9): 48°16'54.10"N, 116°32'49.35"W
SOUTH END (MP 5.1): 48°14'56.24"N, 116°31'24.02"W
WATERWAY: LAKE PEND OREILLE, SAND CREEK
CITY: SANDPOINT **COUNTY:** BONNER **STATE:** IDAHO
DATE: DECEMBER 2017

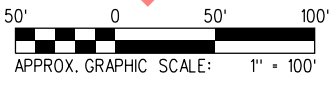
DRAWN BY: J. SIEMENS
 CHECKED BY: S. PADELFORD
 APPROVED BY: P. BORDENAVE

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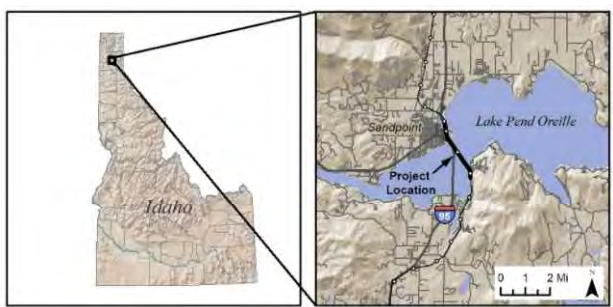


LEGEND:

- PERMANENT WETLAND FILL
- TEMPORARY NEARSHORE FILL
- RIGHT-OF-WAY
- FLOW DIRECTION
- FILL APPROX. LIMIT OF FILL
- CUT APPROX. LIMIT OF CUT



BASED ON: HANSON PRELIMINARY PLANS (30%, NOV. 2017). ELEVATIONS ARE RELATIVE TO NAVD88.

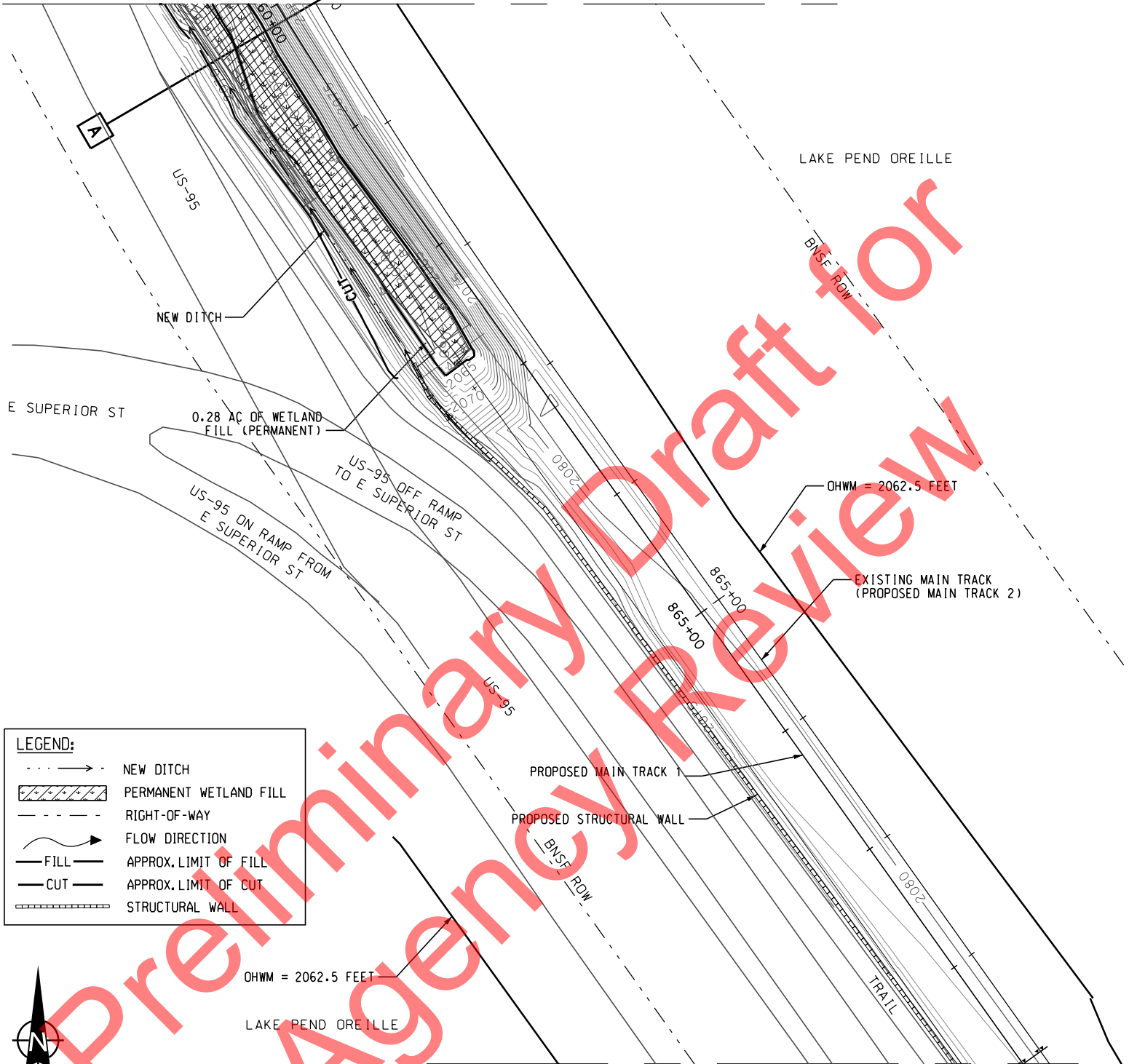


EXISTING CONDITIONS / PROPOSED WORK

AGENCY REF. NO.:
PROJECT: BNSF / SANDPOINT JUNCTION CONNECTOR
APPLICANT: BNSF RAILWAY COMPANY
CONSULTANT: JACOBS ENGINEERING GROUP
LOCATION: BNSF MONTANA DIVISION, KOOTENAI RIVER SUBDIVISION LINE SEGMENT 45, MP 2.9 - MP 5.1
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CITY: SANDPOINT **COUNTY:** BONNER **STATE:** IDAHO
DATE: DECEMBER 2017

DRAWN BY: J. SIEMENS
CHECKED BY: S. PADEFORD
APPROVED BY: P. BORDENAVE

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LEGEND:

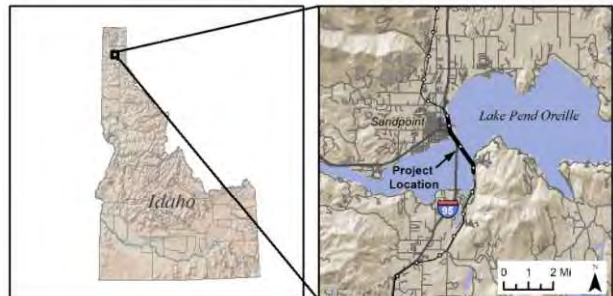
- NEW DITCH
- PERMANENT WETLAND FILL
- RIGHT-OF-WAY
- FLOW DIRECTION
- FILL
- APPROX. LIMIT OF FILL
- CUT
- APPROX. LIMIT OF CUT
- STRUCTURAL WALL

OHWM = 2062.5 FEET

LAKE PEND OREILLE

MATCH LINE -- DRAWING NO. RS-08

BASED ON: HANSON PRELIMINARY PLANS (30%, NOV. 2017). ELEVATIONS ARE RELATIVE TO NAVD88.



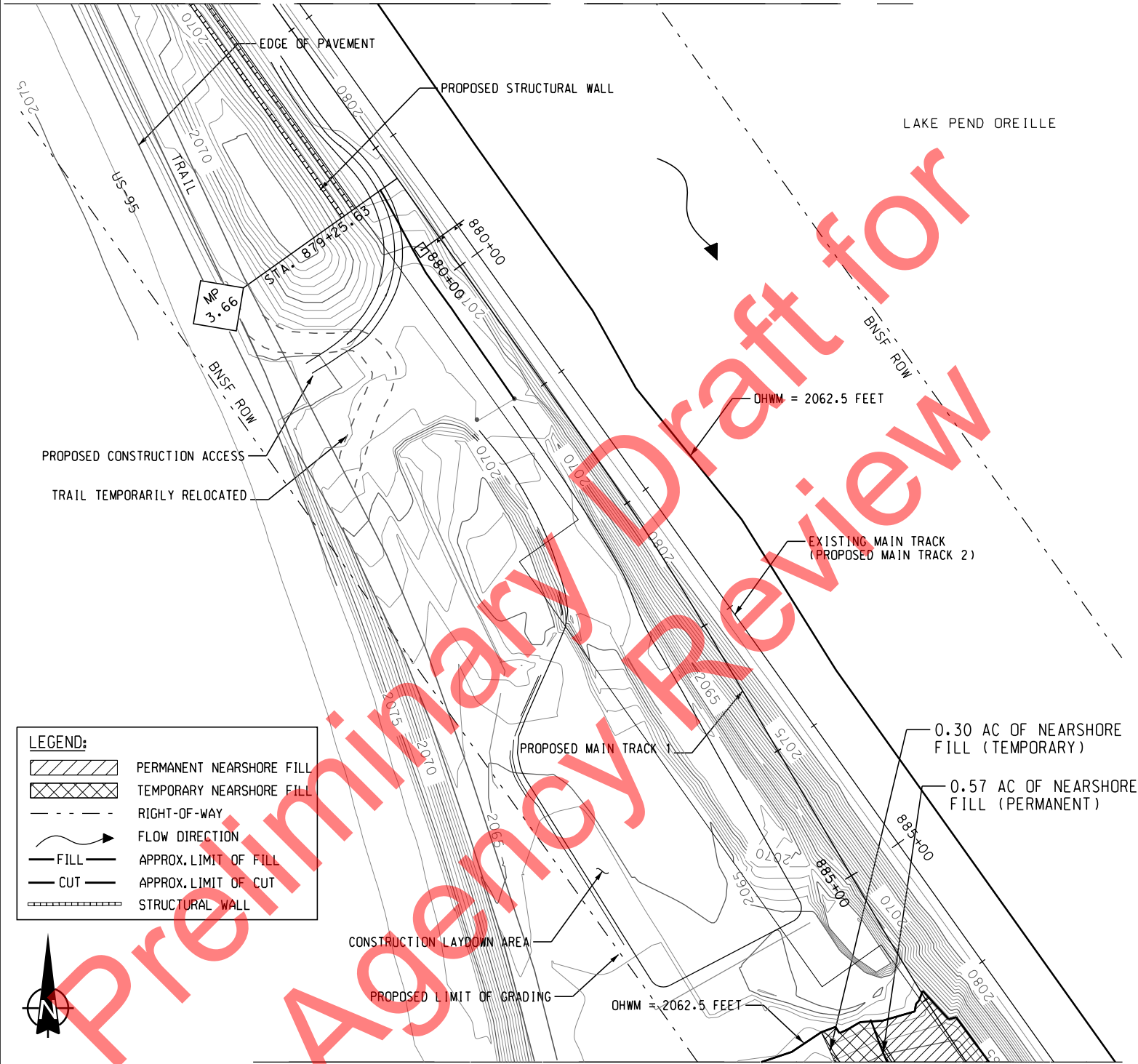
EXISTING CONDITIONS / PROPOSED WORK

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WATERWAY: LAKE PEND OREILLE, SAND CREEK
CITY: SANDPOINT **COUNTY:** BONNER **STATE:** IDAHO
DATE: DECEMBER 2017

DRAWN BY: J. SIEMENS
CHECKED BY: S. PADELFORD
APPROVED BY: P. BORDENAVE

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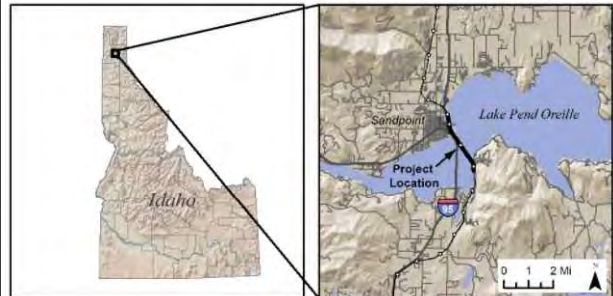
MATCH LINE -- DRAWING NO. RS-08



LEGEND:

- PERMANENT NEARSHORE FILL
- TEMPORARY NEARSHORE FILL
- RIGHT-OF-WAY
- FLOW DIRECTION
- FILL APPROX. LIMIT OF FILL
- CUT APPROX. LIMIT OF CUT
- STRUCTURAL WALL

BASED ON: HANSON PRELIMINARY PLANS (30%, NOV. 2017). ELEVATIONS ARE RELATIVE TO NAVD88.



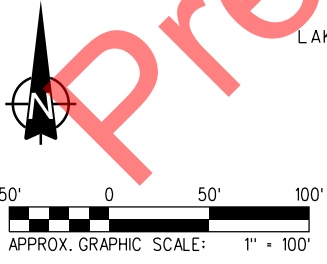
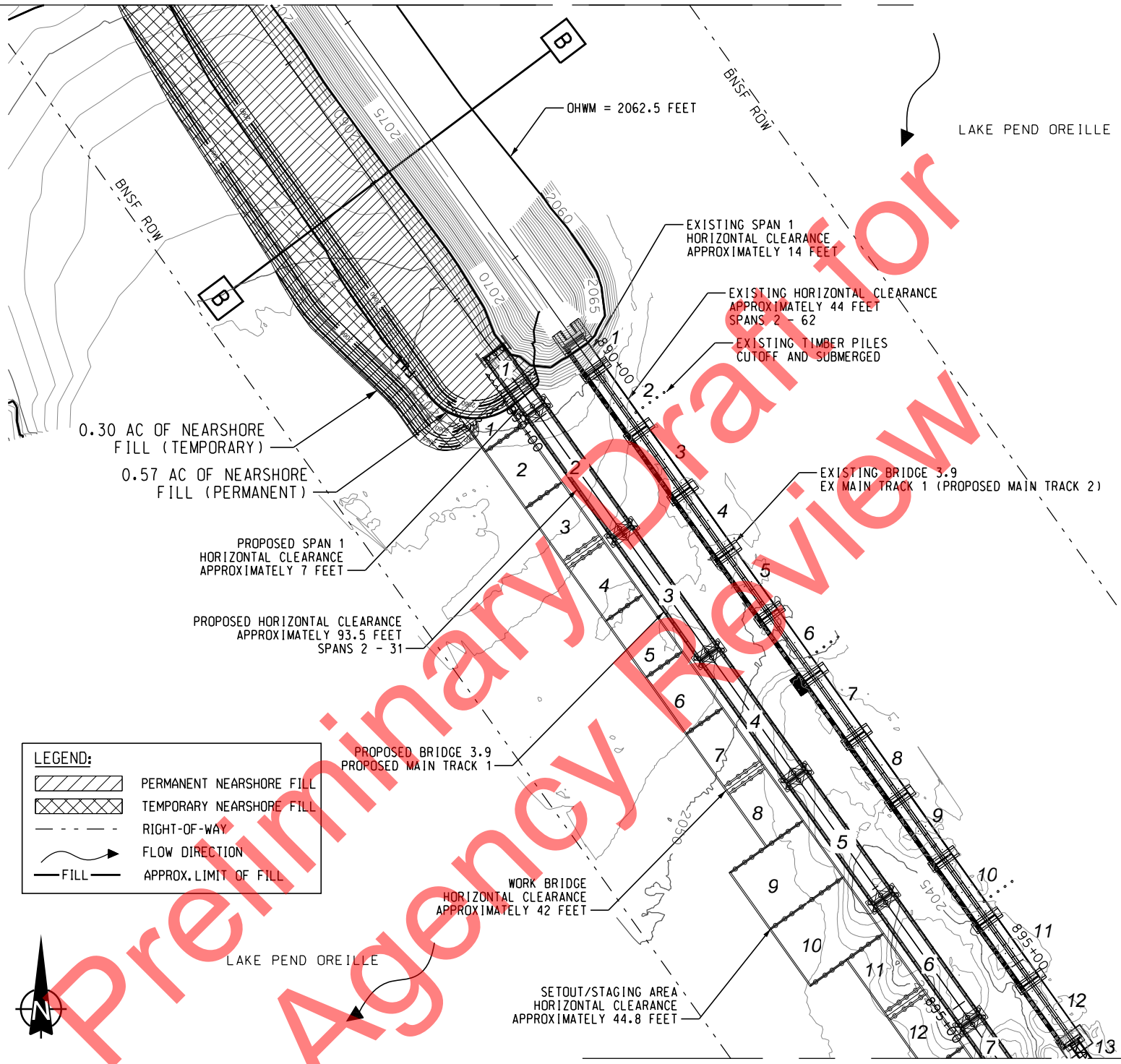
EXISTING CONDITIONS / PROPOSED WORK

AGENCY REF. NO.:
PROJECT: BNSF / SANDPOINT JUNCTION CONNECTOR
APPLICANT: BNSF RAILWAY COMPANY
CONSULTANT: JACOBS ENGINEERING GROUP
LOCATION: BNSF MONTANA DIVISION, KOOTENAI RIVER SUBDIVISION LINE SEGMENT 45, MP 2.9 - MP 5.1
PLSS: IN PARTS OF S15, 22, 23, 25, 26 & 36 T57 R2W BOISE MERIDIAN
NORTH END (MP 2.9): 48°16'54.10"N, 116°32'49.35"W
SOUTH END (MP 5.1): 48°14'56.24"N, 116°31'24.02"W
WATERWAY: LAKE PEND OREILLE, SAND CREEK
CITY: SANDPOINT **COUNTY:** BONNER **STATE:** IDAHO
DATE: DECEMBER 2017

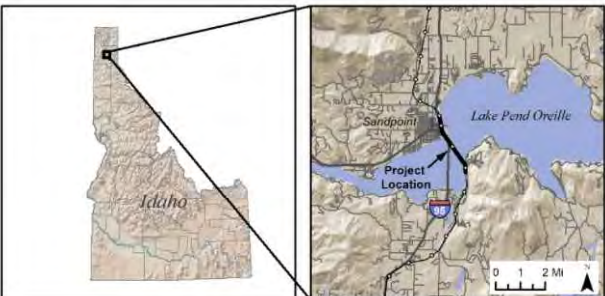
DRAWN BY: J. SIEMENS
CHECKED BY: S. PADELFORD
APPROVED BY: P. BORDENAVE

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MATCH LINE -- SEE DRAWING NO. RS-09



BASED ON: HANSON PRELIMINARY PLANS (30%, NOV. 2017). ELEVATIONS ARE RELATIVE TO NAVD88.



EXISTING CONDITIONS / PROPOSED WORK

AGENCY REF. NO.:

PROJECT: BNSF / SANDPOINT JUNCTION CONNECTOR

APPLICANT: BNSF RAILWAY COMPANY

CONSULTANT: JACOBS ENGINEERING GROUP

LOCATION: BNSF MONTANA DIVISION, KOOTENAI RIVER SUBDIVISION
LINE SEGMENT 45, MP 2.9 - MP 5.1

PLSS: IN PARTS OF S15, 22, 23, 25, 26 & 36 T57 R2W BOISE MERIDIAN

NORTH END (MP 2.9): 48°16'54.10"N, 116°32'49.35"W

SOUTH END (MP 5.1): 48°14'56.24"N, 116°31'24.02"W

WATERWAY: LAKE PEND OREILLE, SAND CREEK

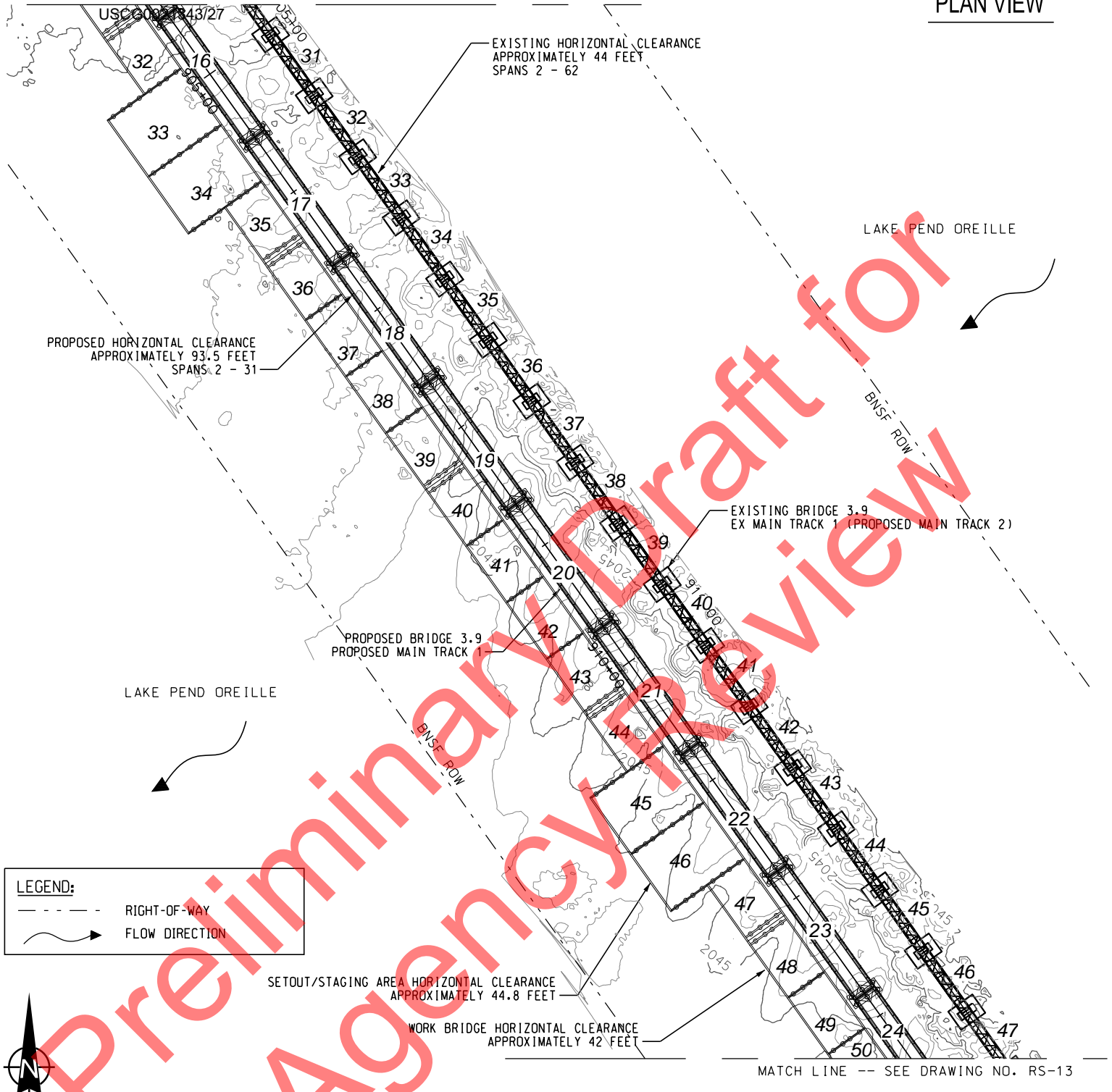
CITY: SANDPOINT COUNTY: BONNER STATE: IDAHO

DATE: DECEMBER 2017

DRAWN BY: J. SIEMENS

CHECKED BY: S. PADEFORD

APPROVED BY: P. BORDENAVE

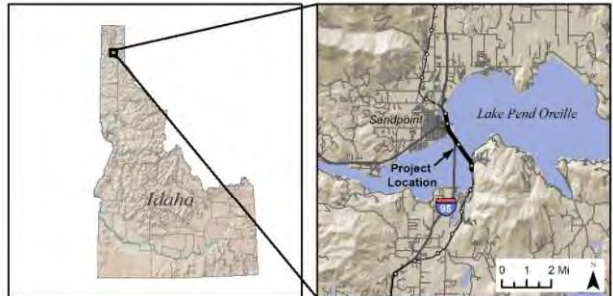


LEGEND:

- RIGHT-OF-WAY
- ~> FLOW DIRECTION

APPROX. GRAPHIC SCALE: 1" = 100'

BASED ON: HANSON PRELIMINARY PLANS (30%, NOV. 2017). ELEVATIONS ARE RELATIVE TO NAVD88.

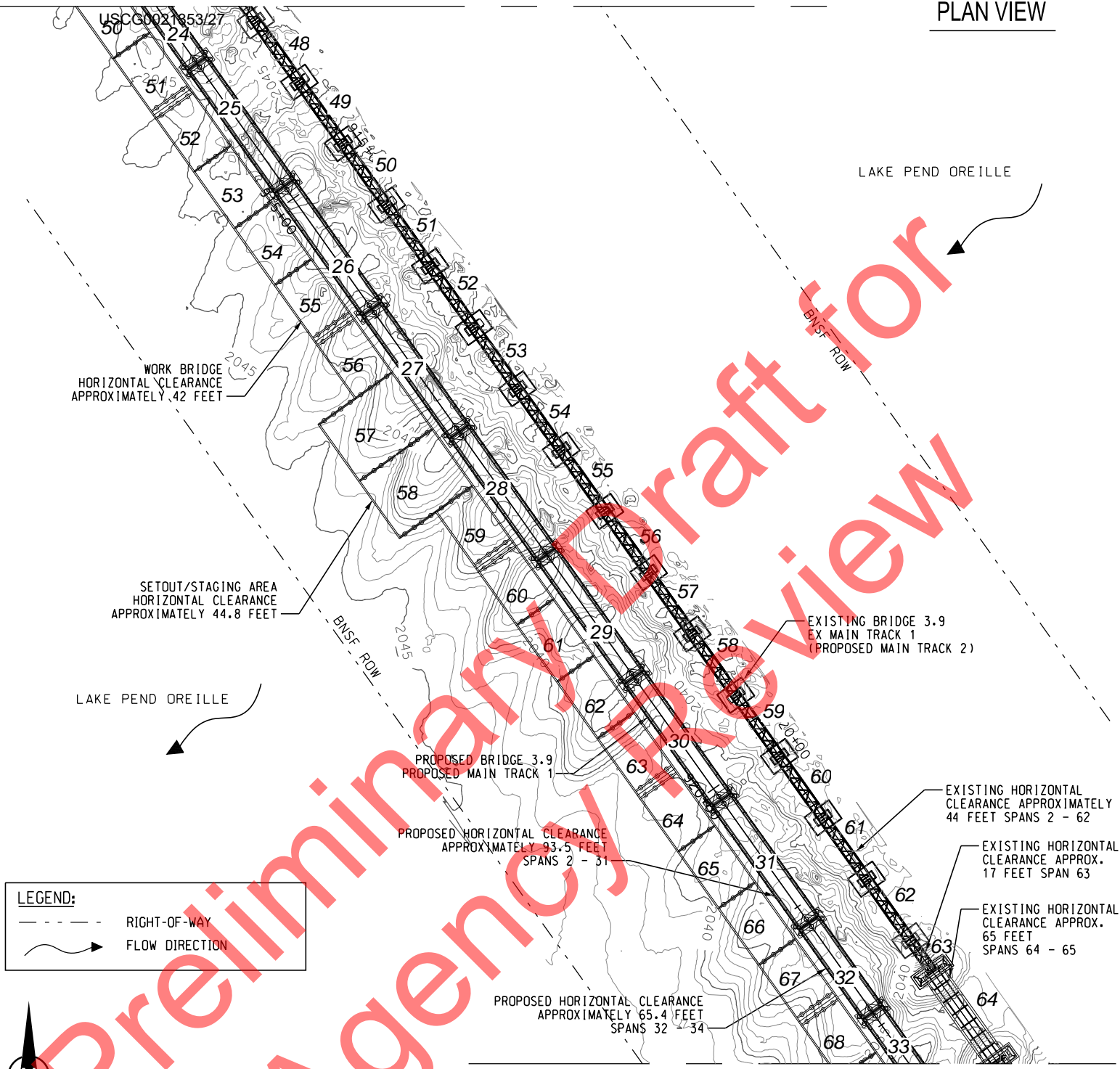


EXISTING CONDITIONS / PROPOSED WORK

AGENCY REF. NO.:
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 CONSULTANT: JACOBS ENGINEERING GROUP
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 WATERWAY: LAKE PEND OREILLE, SAND CREEK
 CITY: SANDPOINT COUNTY: BONNER STATE: IDAHO
 DATE: DECEMBER 2017

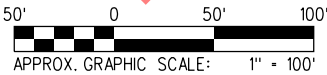
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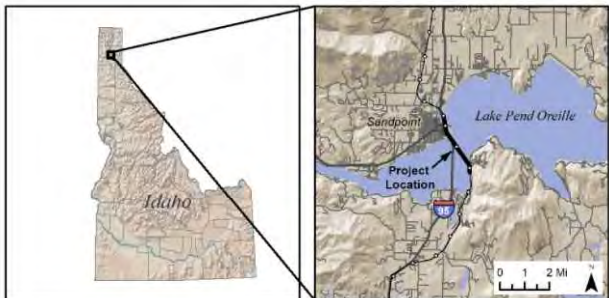


LEGEND:

- RIGHT-OF-WAY
- FLOW DIRECTION



BASED ON: HANSON PRELIMINARY PLANS (30%, NOV. 2017). ELEVATIONS ARE RELATIVE TO NAVD88.

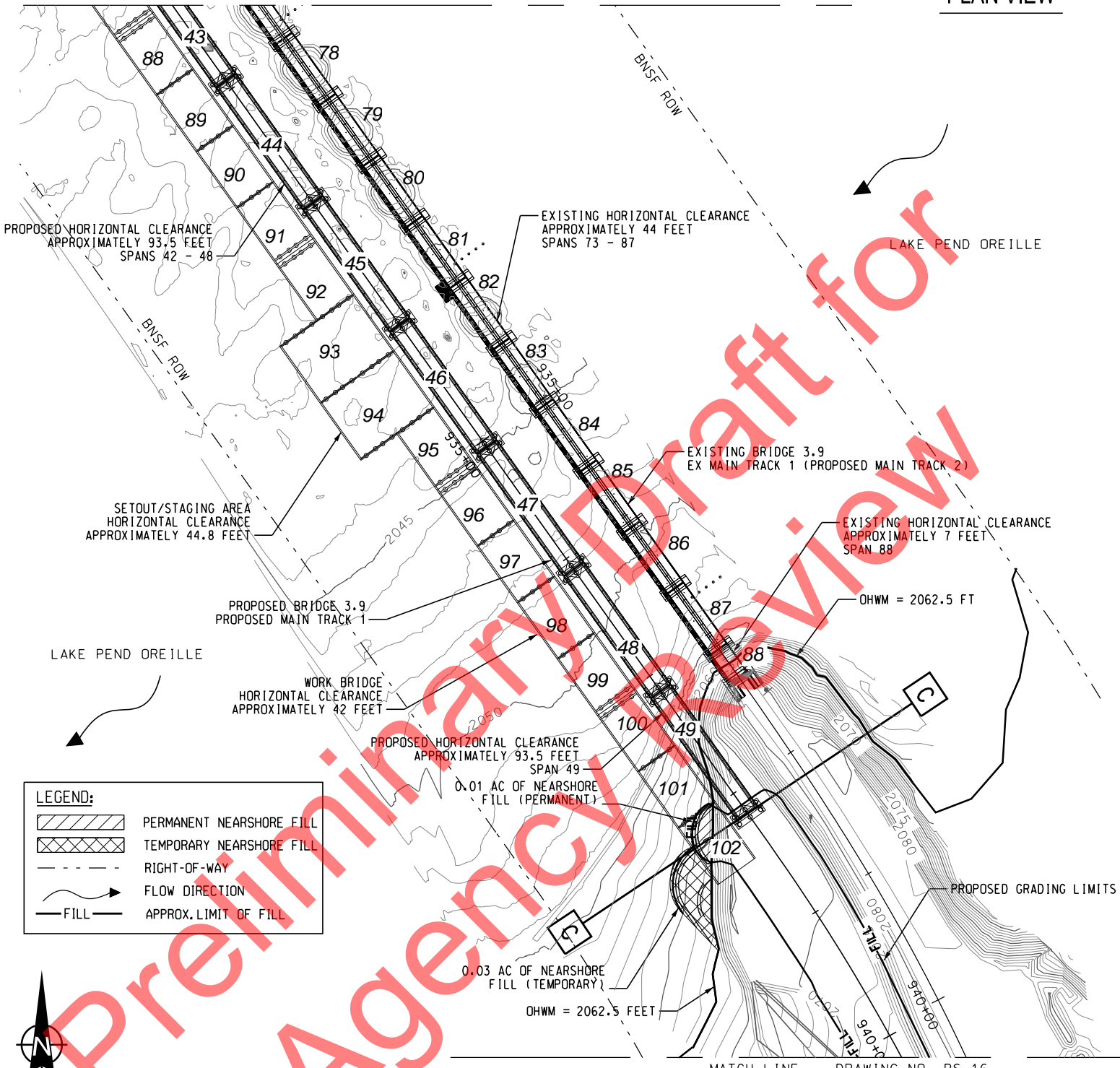


EXISTING CONDITIONS / PROPOSED WORK

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DATE: DECEMBER 2017

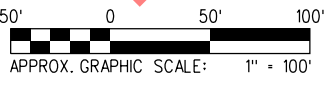
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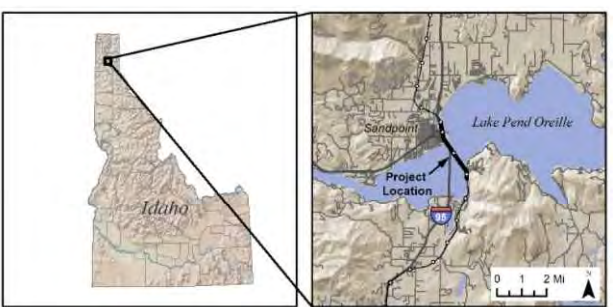


LEGEND:

- PERMANENT NEARSHORE FILL
- TEMPORARY NEARSHORE FILL
- RIGHT-OF-WAY
- FLOW DIRECTION
- FILL
- APPROX. LIMIT OF FILL



BASED ON: HANSON PRELIMINARY PLANS (30%, NOV. 2017). ELEVATIONS ARE RELATIVE TO NAVD88.

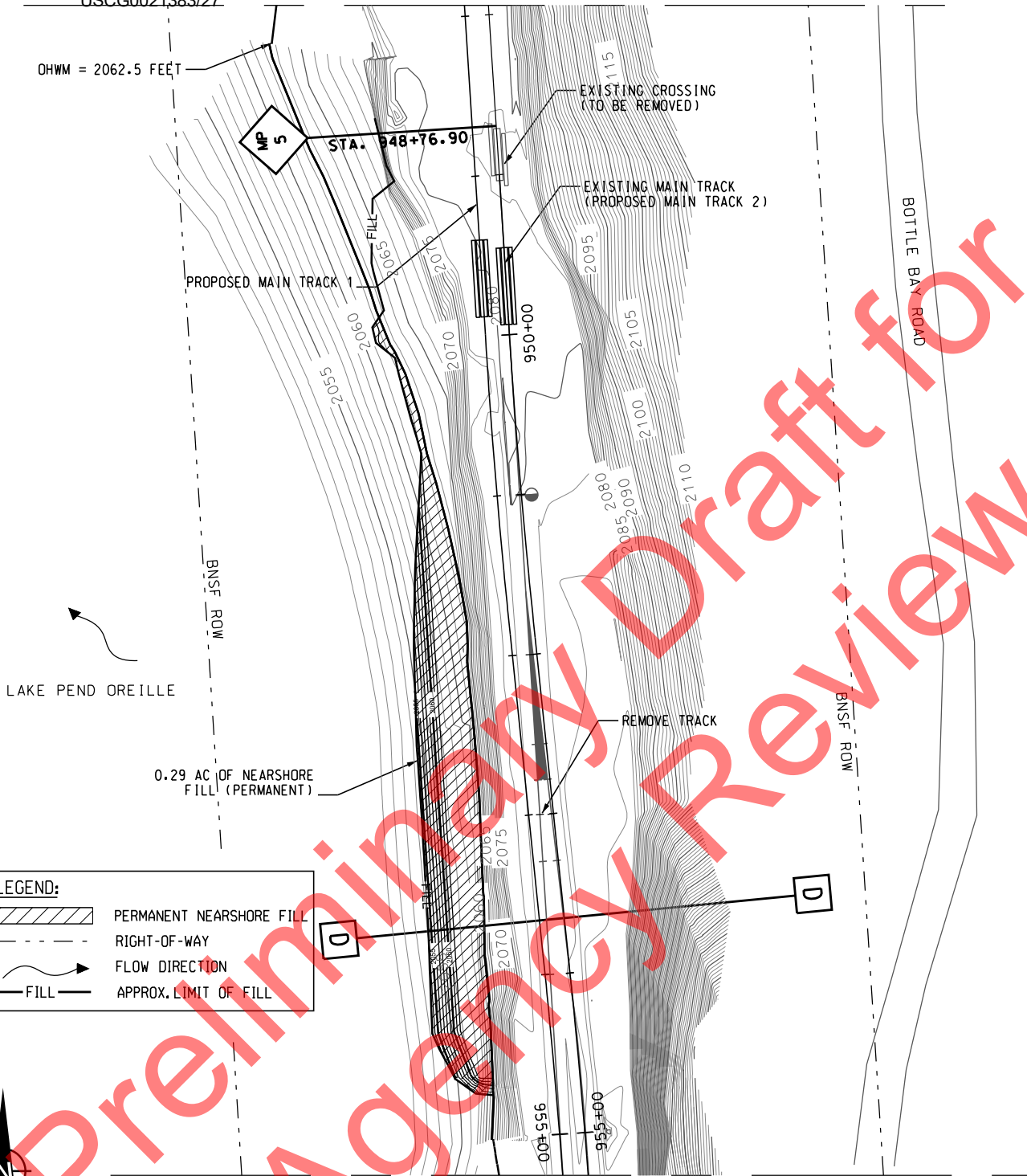


EXISTING CONDITIONS / PROPOSED WORK

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DATE: DECEMBER 2017

DRAWN BY: J. SIEMENS
 CHECKED BY: S. PADEFORD
 APPROVED BY: P. BORDENAVE

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OHWM = 2062.5 FEET

MP 5

STA. 948+76.90

EXISTING CROSSING (TO BE REMOVED)

EXISTING MAIN TRACK (PROPOSED MAIN TRACK 2)

PROPOSED MAIN TRACK 1

FILL

950+00

BOTTLE BAY ROAD

BNSF ROW

LAKE PEND OREILLE

0.29 AC OF NEARSHORE FILL (PERMANENT)

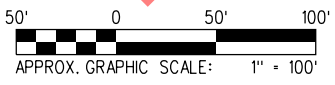
REMOVE TRACK

BNSF ROW

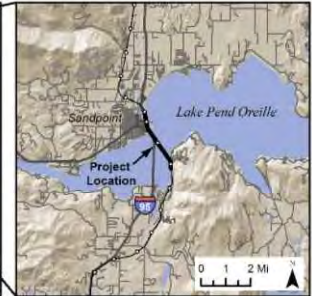
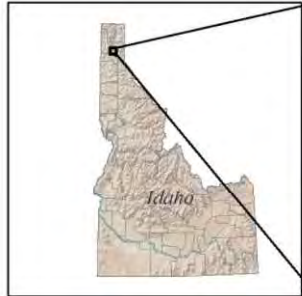
LEGEND:

- PERMANENT NEARSHORE FILL
- RIGHT-OF-WAY
- FLOW DIRECTION
- APPROX. LIMIT OF FILL

D



BASED ON: HANSON PRELIMINARY PLANS (30%, NOV. 2017). ELEVATIONS ARE RELATIVE TO NAVD88.



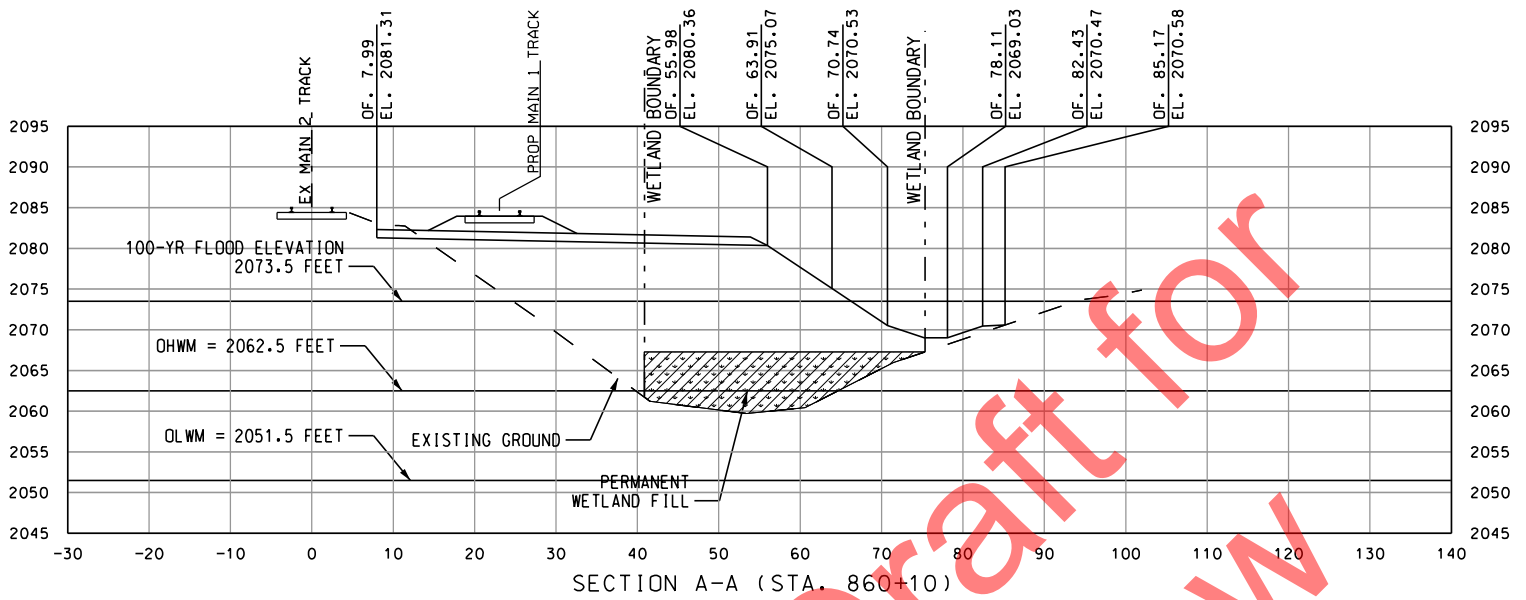
EXISTING CONDITIONS / PROPOSED WORK

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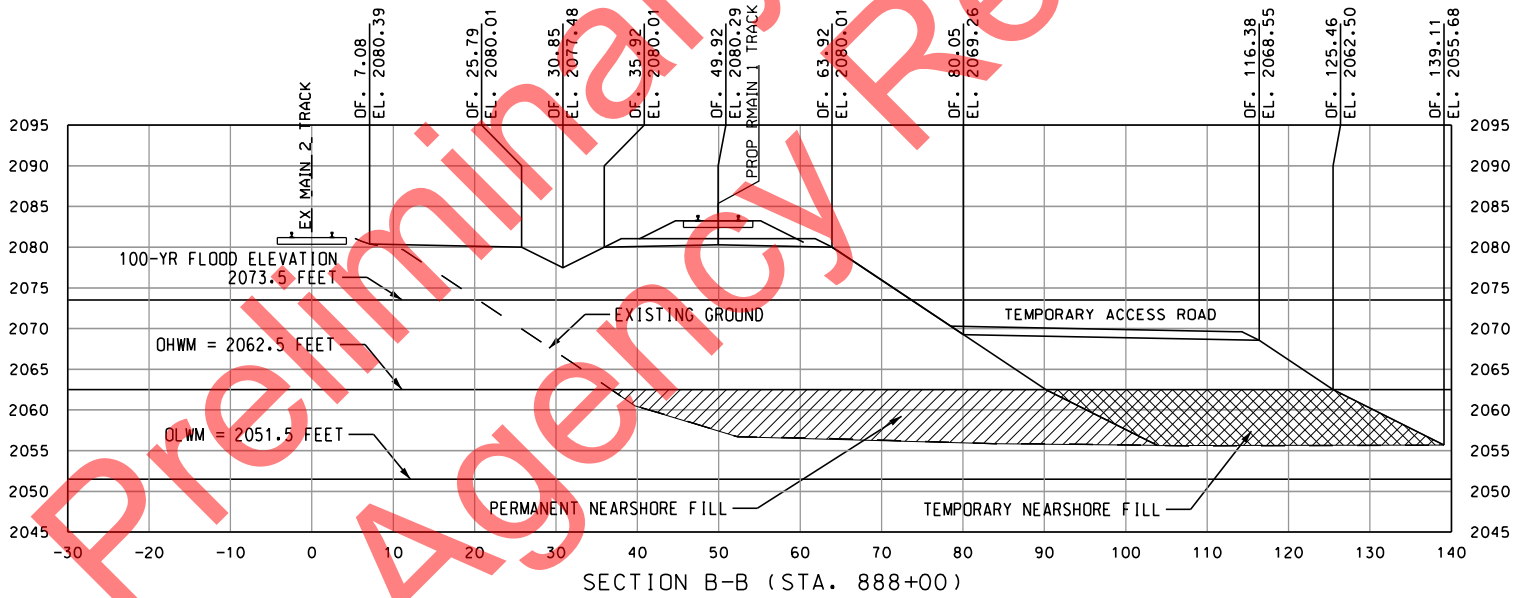
DRAWN BY: J. SIEMENS
CHECKED BY: S. PADEL FORD
APPROVED BY: P. BORDENAVE

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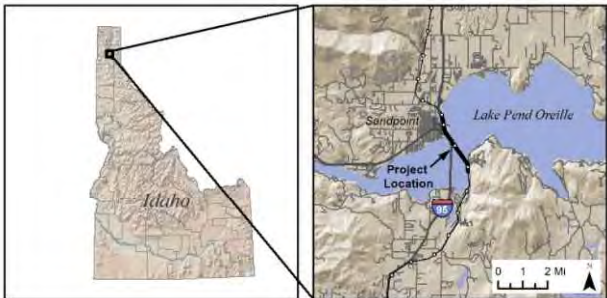
WETLAND FILL CROSS SECTION



NEARSHORE FILL CROSS SECTION



BASED ON: HANSON PRELIMINARY PLANS (30%, NOV. 2017). ELEVATIONS ARE RELATIVE TO NAVD88.

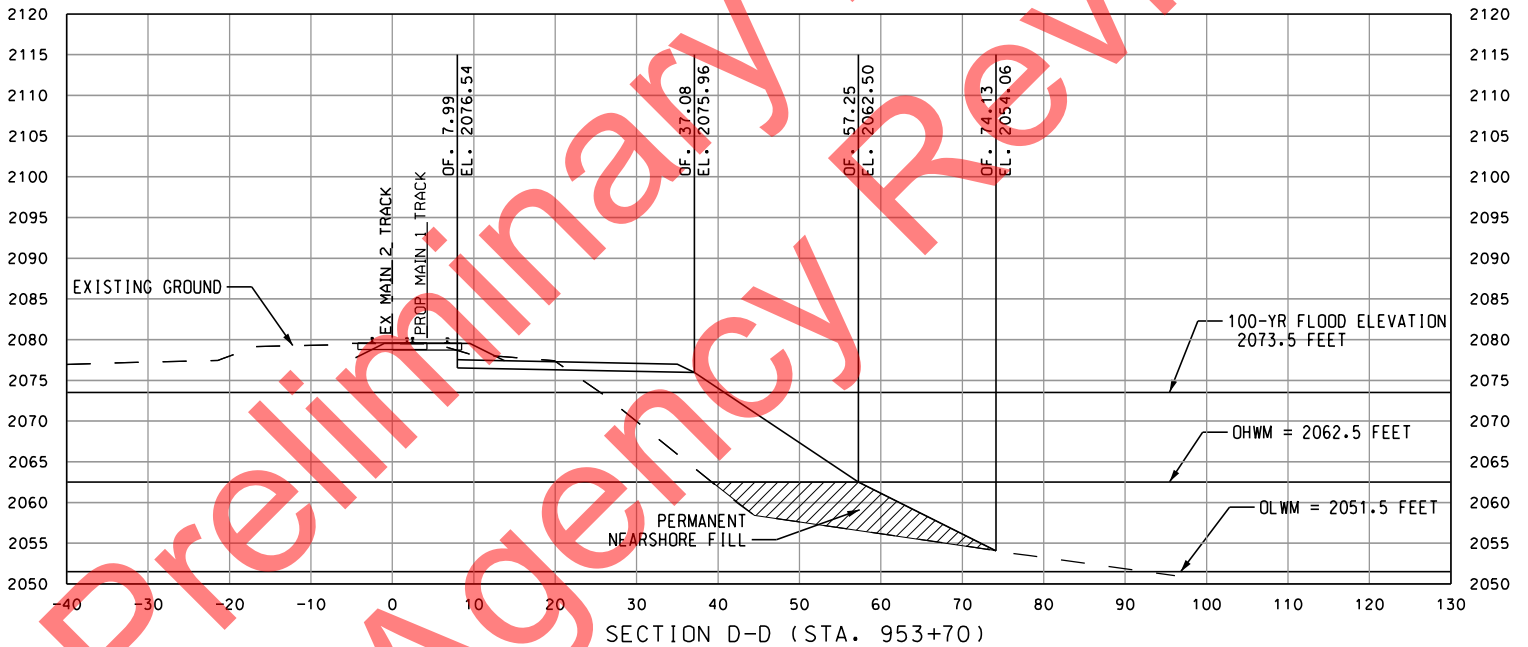
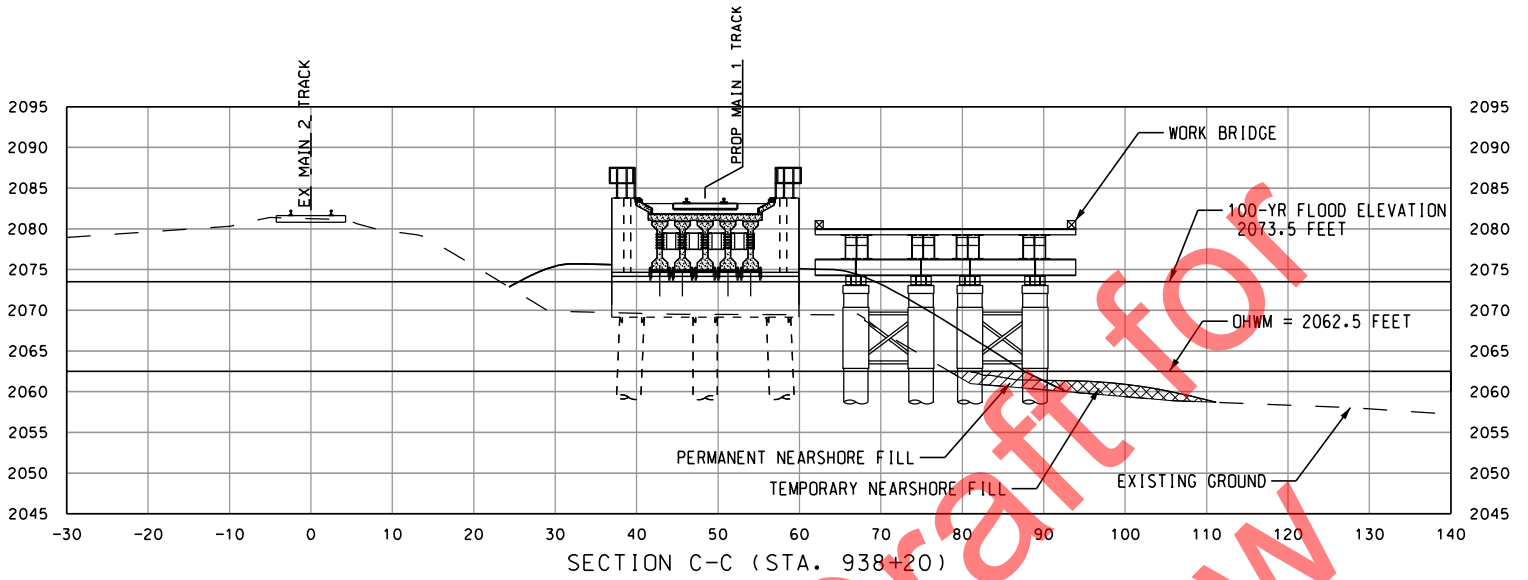


EXISTING CONDITIONS / PROPOSED WORK

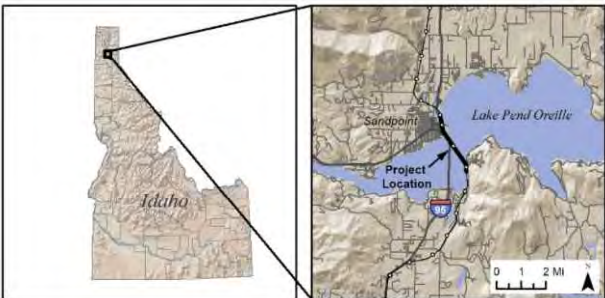
AGENCY REF. NO.:
PROJECT: BNSF / SANDPOINT JUNCTION CONNECTOR
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DATE: DECEMBER 2017

DRAWN BY: J. SIEMENS
 CHECKED BY: S. PADELFORD
 APPROVED BY: P. BORDENAVE

NEARSHORE FILL CROSS SECTIONS



BASED ON: HANSON PRELIMINARY PLANS (30%, NOV. 2017). ELEVATIONS ARE RELATIVE TO NAVD88.



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DATE: DECEMBER 2017

DRAWN BY: J. SIEMENS
 CHECKED BY: S. PADEFORD
 APPROVED BY: P. BORDENAVE

DRAWING NO. XS-2 PAGE NO. 13 OF 13 SCALE AS SHOWN

**Appendix B
Site Photographs**

Preliminary Draft for
Agency Review



Photo 1:
Bridge 3.9 – View of Bridge from West side looking Southeast



Photo 2:
Bridge 3.9 – Close-up view of South end of Bridge



Photo 3:
Bridge 3.9 – Close-up view of North end of Bridge



Photo 4:
Bridge 3.9 – View of Bridge from East side looking South



Photo 5:
Bridge 3.1 – View of Bridge from the West side looking East



Photo 6:
Bridge 3.1 – View of Bridge from East side looking West



Photo 7:
Bridge 3.0 – View of Bridge from West side looking East



Photo 8:
Bridge 3.9 – Conceptual Rendering



Photo 9:
Bridge 3.1 – Conceptual Rendering



Photo 10:
Bridge 3.0 – Conceptual Rendering

Preliminary Draft
Agency Review

Appendix C
Geographic Resource Plan

Preliminary Draft for
Agency Review