

**Appendix D**  
**Mitigation Plan**

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# Water Resources Conceptual Mitigation Plan Union Pacific Railroad Second Mainline Track Project Wasco County, Oregon

PREPARED FOR: Union Pacific  
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## Introduction

This conceptual mitigation plan has been prepared in support of the *Wasco County National Scenic Area Development Review Application for the Union Pacific Railroad Second Mainline Track Project* (application), submitted to Wasco County. A detailed purpose and need statement and project description are included in the application narrative (see Sections 2 and 3, respectively). While a final mitigation strategy is still underway, specifically with regard to vegetated wetland mitigation, this document provides a summary of proposed mitigation strategies currently being examined. UPRR will submit a final mitigation plan consistent with the requirements of the National Scenic Area Land Use Development Ordinance (NSA-LUDO) prior to the completion of the National Scenic Area (NSA) Development Review process.

The purpose of this conceptual plan is to address unavoidable disturbance to water resources resulting from the construction of the UPRR Second Mainline Track Project (project) located in Wasco County, Oregon. The project will permanently disturb 0.41-acre of open water areas, 0.75 acre of vegetated wetlands, and 2.14 acres of designated riparian area buffers within the National Scenic Area (NSA)<sup>1</sup>. Disturbance to open water areas will be compensated for on-site through a culvert installation and fish habitat improvement project designed in coordination with National Marine Fisheries Service (NMFS) and Oregon Department of Fish and Wildlife. Vegetated wetland disturbance will be compensated for by third-party off-site wetland restoration, creation and/or enhancement or by off-site land acquisition for wetland restoration, creation and/or enhancement. Disturbance to buffers and riparian areas will be compensated for by rehabilitation of disturbed areas.

## Regulatory Requirements

The proposed project is located entirely within the Columbia Gorge National Scenic Area (NSA). The NSA is managed on a partnership basis by the Columbia Gorge counties, the states of Oregon and Washington, the U.S. Forest Service, and the Columbia River Gorge Commission (CRGC). The CRGC is a bi-state compact agency authorized by the National Scenic Area Act and created by Washington and Oregon legislation in 1987.

The NSA is categorized into three areas:

- **Special Management Areas** cover approximately 114,600 acres in which the U.S. Forest Service sets land management and determines federal consistency.
- **General Management Areas** cover approximately 149,400 acres and all of the Columbia River and contain a mix of land uses including farming, logging, cattle grazing, public recreation, and rural residential uses. Development of private lands is administered by the Gorge counties and the Gorge Commission. Five of the six Gorge counties, including Wasco County, implement ordinances under the Scenic Area Management Plan.

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<sup>1</sup> Excluding designated Urban Areas that are not under the jurisdiction of National Scenic Area Development Review.

- **Urban Areas.** Thirteen Urban Areas, including the City of Mosier, were designated by Congress as *not* subject to NSA regulation, but solely under the jurisdiction of the applicable city or county government.

All three of these management area categories occur within the proposed project area. Portions of the project located within designated Urban Areas are not discussed in this document.

Wasco County regulates development in the NSA in coordination with the agencies described above and the CRGC under the Wasco County NSA-LUDO (Wasco County, 2010). The NSA-LUDO addresses specific requirements for development in the General Management Areas (GMA) and Special Management Areas (SMA) as described below.

### General Management Areas

Section 14.600 of the NSA-LUDO addresses protection of natural resources in General Management Areas. Required actions for unavoidable disturbance to water resources are described in NSA-LUDO Section 14.600(A)(8) and Section 14.600(B)(7):

**Section 14.600 (A)(8)** requires preparation of a *Wetlands Compensation Plan* when a project applicant is required to restore, create, or enhance wetlands.

**Section 14.600 (B)(7)** requires preparation of *Rehabilitation and Enhancement Plans* when a project applicant is required to rehabilitate or enhance a stream, pond, lake, and/or buffer zone.

UPRR has provided a Rehabilitation and Enhancement Plan for buffer-related disturbance as Appendix K of the NSA Development Review application submitted to Wasco County.

### Special Management Areas

Section 14.610 of the NSA-LUDO (Wasco County, 2010) address protection of natural resources in Special Management Areas.

**Section 14.610 (E)** requires preparation of a *Mitigation Plan* for impacts to water resource buffers

### Water Resources Disturbance

As summarized below in Table 1, the project will permanently disturb 1.16-acres of aquatic resources (0.41-acre open water [e.g., lakes]; 0.75-acre of vegetated wetlands). No temporary impacts to vegetated wetlands or lake habitats will occur. The project will result in 8.75 acres of total permanent disturbance to all NSA-LUDO wetland and waterbody buffers within the GMA and SMA. Of this total permanent buffer disturbance, approximately 2.14 acres are classified riparian areas. Approximately 3.52 acres of total temporary buffer disturbance will occur, including 0.04 acre of riparian areas. A summary of buffer disturbance NSA-LUDO sensitive habitat type is included below in Table 1.

Table 1

**Wetland and Water Body Disturbance**

Wetland ID	GMA/SMA	Approx. Milepost(s)	Total Wetland/ Waterbody Area (acres)	Open Water Permanent Impacts (acres)	Vegetated Wetland Permanent Impacts (acres)	Total Buffer Zone Impact (acres)
Wetland 1	SMA	71.82 – 71.97	0.61	0.00	0.24	
Lake 1/ Thompson Lake	SMA	71.82 – 71.92	1.59	0.24	0.00	1.61
Wetland 3	SMA	72.21 – 72.22	0.06	0	0	
Wetland 4	SMA	72.24	0.02	0	0	1.73 <sup>1</sup>
Wetland 5	SMA	72.24 – 72.25	0.06	0	0	
Wetland 6	SMA	72.25 – 72.33	0.24	0	0	

**Table 1  
Wetland and Water Body Disturbance**

Wetland ID	GMA/SMA	Approx. Milepost(s)	Total Wetland/ Waterbody Area (acres)	Open Water Permanent Impacts (acres)	Vegetated Wetland Permanent Impacts (acres)	Total Buffer Zone Impact (acres)
Wetland 7	SMA	72.28 – 72.34	0.17	0	0.17	
Wetland 9	SMA	71.46 – 71.51	0.24	0	0	1.59 <sup>1</sup>
Wetland 9B	SMA	71.47 – 71.51	1.78	0	0	
Wetland 11	GMA	70.72 – 70.95	1.15	0.00	0.25	
Lake 11	GMA	70.78 – 70.94	1.86	0.14	0.00	1.01 <sup>1</sup>
Wetland 12	GMA	70.69 – 70.72	0.14	0	0.03	
Wetland 17	GMA	68.55 – 68.57	0.08 <sup>2</sup>	0.00	0.06 <sup>2</sup>	
Wetland 18	GMA	68.56 – 68.58	0.09 <sup>2</sup>	0	0	0.20 <sup>1</sup>
Lake 18	GMA	68.56 – 68.58	1.21 <sup>3</sup>	0	0	
Wetland 20	GMA	66.97 – 67.12	0.15	0	0	0.55
Lake 20	GMA	66.97 – 67.12	1.66	0.02	0	
Columbia River/Bonneville Reservoir	GMA/SMA	North of project area for full project length	-	0.00 <sup>3</sup>	0	5.58 <sup>4</sup>
<b>Total Impacts to Wetlands, Waterbodies &amp; Buffers</b>				<b>0.41</b>	<b>0.75</b>	<b>Temp: 3.52 Perm: 8.75</b>

<sup>1</sup> The buffer zones of adjacent wetlands and/or waterbodies overlap in some cases, necessitating buffer disturbance to be reported as a combined acreage.

<sup>2</sup> A portion of Wetlands 17 and 18 are located within the NSA-designated Urban Area; the total wetland/waterbody and impact areas provided in this table constitute only the portions within the NSA and outside of the designated Urban Area.

<sup>3</sup> No permanent disturbance to the Columbia River/Bonneville Reservoir will result from the project; however, approximately 0.01 acres will be temporarily affected during the installation of two culverts proposed to mitigate for potential impacts to fish habitat.

<sup>4</sup> Acreage excludes Columbia River buffer impact areas that intersect with wetland buffers accounted for in above calculations.

## Conceptual Compensatory Mitigation

### Open Water Mitigation

UPRR proposes to install two 60-inch-diameter culverts at the western end of Lake 1 (Thompsons Lake) (see Attachment 1) with the objective of providing improvements to water quality and enhancements to fish passage for listed fish species that use the lake. Thompsons Lake was selected as the culvert installation site in consultation with NMFS and ODFW, and was selected because its relatively large size and deep depth provide a greater opportunity for enhanced fish passage and habitat improvement relative to the other off-channel ponds within the project area.

The new culverts are proposed to offset the 0.41 acre habitat loss from the proposed project in the off-channel ponds (Lakes 1, 11, and 20) connected to the Columbia River and used by listed fish species. The culverts will serve as enhancements to provide a functional and direct conduit to enhance fish passage from an existing lake to and from the Columbia River that will result in a net increase in aquatic resource functions and services. UPRR determined the design size and placement of the culverts in coordination with the NMFS and ODFW.

Most of the off-channel ponds along the Columbia River can be described as having degraded water quality based on either the lack of exchange of water with the river (because of connections to the river via a single culvert or pipe under a roadway or railway), or they do not receive a substantial amount of water from upland sources, such as a stream.

The conditions at Thompsons Lake adhere to this general description. It is an isolated water body characterized by small drainage areas that limit or impede fish passage as a result of the minimal passage area for fish to move to and from the river. Therefore, these added culverts will improve water quality and habitat conditions for listed fish. The enhancements also are preferable measures to dredging Thompsons Lake, which would accomplish only compensating for the loss of habitat volume versus enhanced fish passage. The proposed conservation enhancement of culverts to improve fish passage will promote water exchange with the river, enhance water quality, and increase the area of fish passage into the off-channel habitat at Thompsons Lake.

### **Vegetated Wetland Mitigation**

UPRR has assessed wetland compensatory mitigation approaches including in-lieu fee mitigation, mitigation banking, onsite mitigation within and outside the UPRR ROW, offsite mitigation within the UPRR ROW, third-party mitigation both onsite and offsite, and land acquisition for mitigation offsite and outside the UPRR ROW. Potential opportunities have been identified for third-party offsite mitigation and for mitigation through offsite land acquisition.

**Third-party Wetland Mitigation.** Under this approach, UPRR would coordinate with a third-party, such as an agency or private entity to restore, create or enhance wetlands. UPRR is currently in discussions with the U.S. Forest Service (USFS) regarding the potential for partnering with USFS and Ash Creek Forest Management, LLC at the Sandy River Delta Restoration (Sandy) site or Horsetail Creek Floodplain Restoration (Horsetail) site.

UPRR identified the Sandy and Horsetail restoration sites as having adequate acreage, highly suitable restoration objectives, and containing similar off-channel riverine habitat that meet UPRR's mitigation needs. These sites are on USFS lands and provide mitigation opportunities for public and private sector entities seeking compensatory mitigation.

The restoration and enhancement activities currently underway at these sites provide floodplain and wetland restoration and enhancement on lands adjacent to the Columbia River and would directly benefit the same type of riverine habitat affected by the proposed infrastructure improvements. These aquatic resources provide multiple wetland functions, including fish and wildlife habitat that support juvenile salmonids, amphibians, and a variety of waterbirds. Negotiations between USFS and UPRR are underway for this effort.

**Land Acquisition for Offsite Wetland Mitigation.** UPRR has identified more than a dozen properties in the Middle Columbia-Hood watershed with the potential to provide mitigation through offsite wetland restoration, creation or enhancement. These properties include mapped hydric soils, potential onsite converted and existing wetland acreage, water sources (intermittent or perennial streams and/or rivers), and landform and existing habitat that may support wetland mitigation. Several of these off-site options are being actively pursued by UPRR.

Both the third-party and land acquisition approaches would provide adequate acreage to meet the required mitigation ratios in the NSA-LUDO.

### **Buffer Area Mitigation**

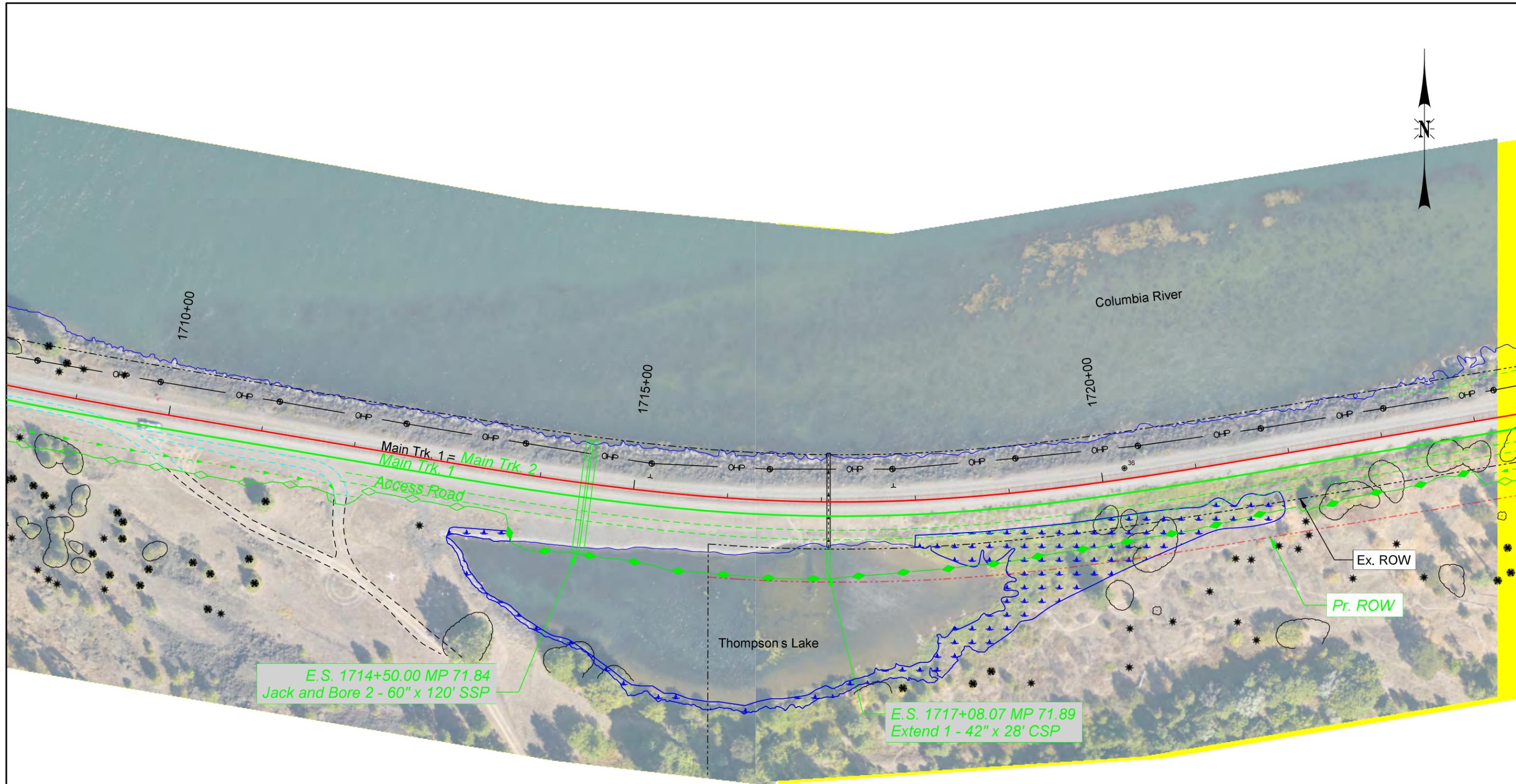
Mitigation for buffer area impacts, including impacts to riparian areas, will be provided as described in the *Sensitive Species and Wildlife Habitat Protection and Rehabilitation Plan* (Appendix K).

**Attachment 1**  
**Proposed Culvert Installation Plan**

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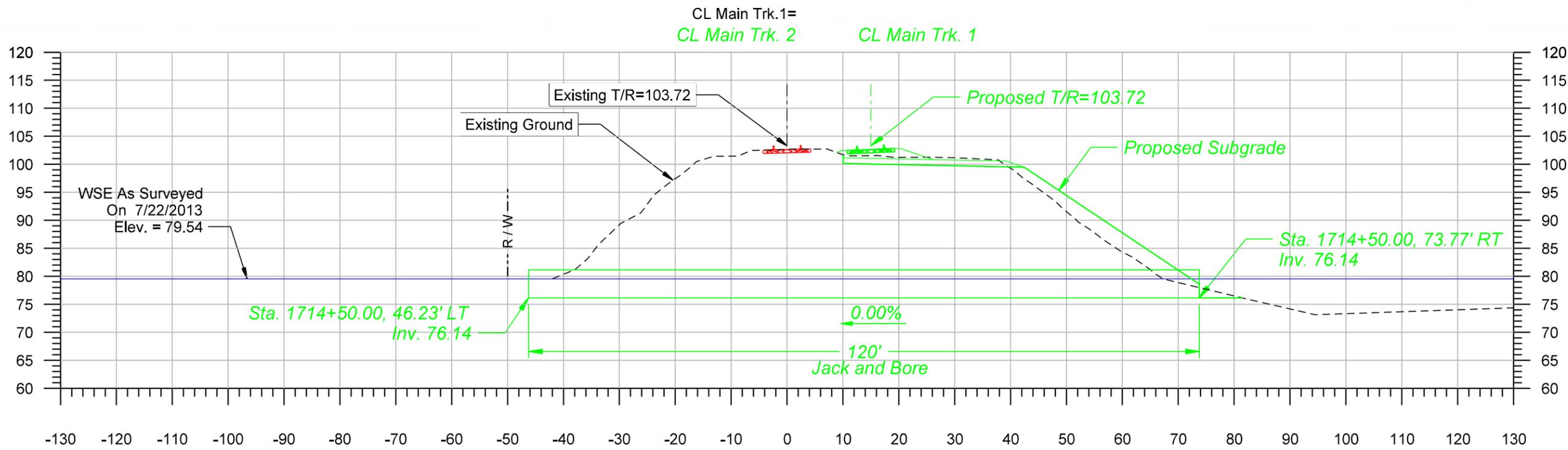
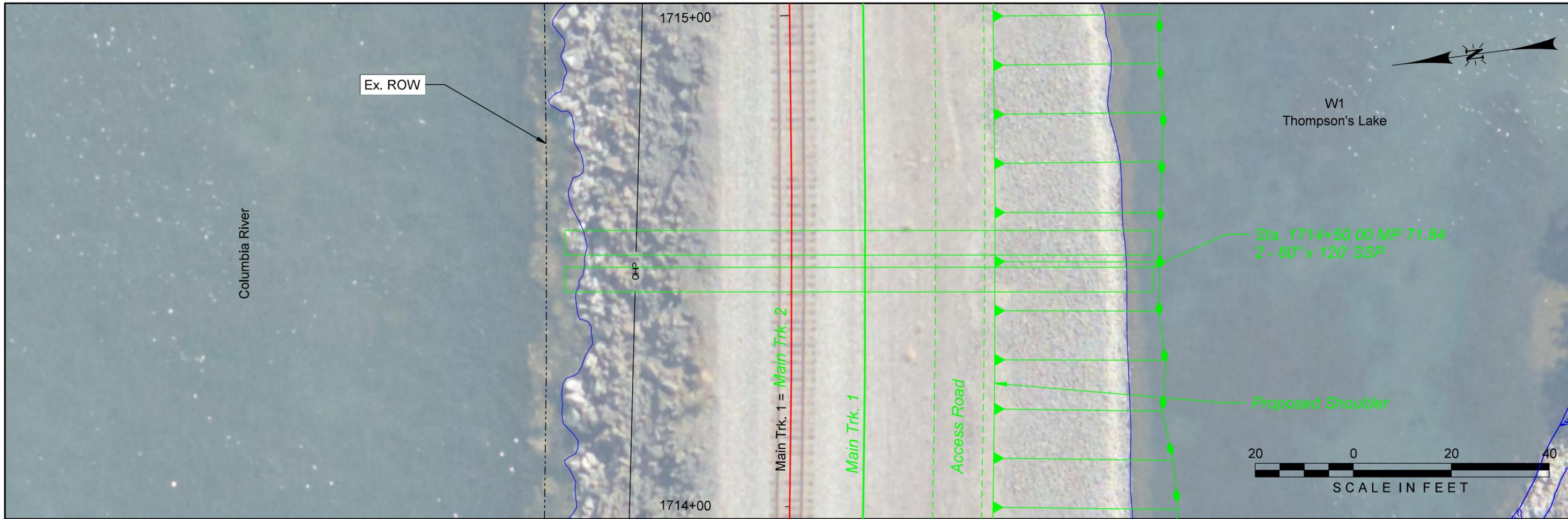
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DRAWN BY:	BWG
CHECKED BY:	RCK
DATE:	7/23/2014
SHEET NUMBER:	
EX001 of 002	

<b>UNION PACIFIC RAILROAD</b>	Office of Assistant Vice President Engineering Design/Construction
	LOCATION & DESCRIPTION: Mosier, Oregon Portland Subdivision MP 66.98 to MP 72.35 Construct Second Mainline
SHEET TITLE: <b>EXHIBIT - CULVERT STA. 1714+50 - INSTALL 2 - 60" SSP</b>	



*Note: Invert elevation provides 12" water depth in the culvert at the 95% exceedance water surface elevation based on Bonneville forebay historical data and river gradient between the culvert and Bonneville forebay.*

Install 2 - 60" SSP - Sta. 1714+50 - MP 71.84

		DRAWN BY: BWG	<b>UNION PACIFIC RAILROAD</b> Office of Assistant Vice President Engineering Design/Construction
		CHECKED BY: RCK	
2111 South 67th Street, Suite 200 Omaha, NE 68116-2910 TEL: 402.341.1118 FAX: 402.341.5855 www.molssonassociates.com		DATE: 7/23/2014	LOCATION & DESCRIPTION: Mosier, Oregon Portland Subdivision MP 66.98 to MP 72.35 Construct Second Mainline
		SHEET NUMBER: EX002 of 002	SHEET TITLE: EXHIBIT - CULVERT STA. 1714+50 - INSTALL 2 - 60" SSP

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