Mr. Zack Carter
Environmental Scientist III
Nonpoint Source Branch, Bureau of Water Quality Planning
Nevada Division of Environmental Protection (NDEP)
Email: zcarter@ndep.nv.gov
Phone: (775) 687-9456

Arcadis U.S., Inc.
630 Plaza Drive
Suite 200
Highlands Ranch
Colorado 80129
www.arcadis.com

Date: April 22, 2025
Our Ref: 30210118
Subject: Union Pacific Railroad Roseville Subdivision Mile Post 229.10 Culvert Replacement Project Clean Water Act Section 401 Water Quality Certification Application

Mr. Carter,

On behalf of Union Pacific Railroad (UPRR), Arcadis U.S., Inc. (Arcadis) is submitting the enclosed Clean Water Act (CWA) Section 401 Water Quality Certification (WQC) Application for the Roseville Subdivision Mile Post 229.10 Culvert Replacement Project (Project) in Washoe County, Nevada.

UPRR proposes to replace the existing culvert structure under two mainline tracks at Mile Post 229.10. The proposed activity would replace an existing 55-foot long, concrete arch culvert under two mainline tracks with a 72-inch diameter, 64-foot long, smooth steel pipe culvert. The existing culvert structure would be filled with controlled low strength material and abandoned in place. Cast-in-place concrete headwalls and riprap aprons would be installed at the new culvert inlet and outlet. An existing concrete wingwall would be partially removed at the existing culvert inlet. The existing culvert conveys an intermittent tributary to the Truckee River, designated as Water-1. Construction would occur within an existing UPRR right-of-way (ROW) extending 200 feet to both sides of Mainline 2 (400 feet total ROW width). The Project limits include the existing and proposed culvert structures, temporary workspaces, and an existing access route. Proposed access to the Project utilizes an existing access road within the UPRR ROW. Temporary workspaces would be located on all four sides of the existing structure within the Project limits. On the downstream (west) side of the Mainline 1 culvert outlet and access road, a bore pit would be temporarily excavated to place jack and bore equipment used to install the new culvert under Mainlines 1 and 2. The purpose of the proposed project is to continue and improve freight and passenger rail service in the region by replacing the existing structure that has outlived its useful life. Construction is planned to occur in 2026 and is anticipated to take 3 to 4 months to complete.

The proposed activity would result in minor permanent and temporary impacts to Water-1 associated with filling the existing culvert structure, installing riprap aprons, temporary staging areas, and temporary excavation for the bore pit and new structure. Permanent impacts to Water-1 associated with filling the existing culvert structure and installing riprap include 0.01 acre (58 linear feet) and 0.004 acre (20 linear feet) of permanent fill, respectively. Temporary impacts to Water-1 associated with the bore pit and new structure include 0.03 acre (74 linear feet) and <0.001 acre (4 linear feet) of temporary excavation, respectively. Temporary impacts to Water-1 associated with temporary staging areas include 0.01 acre (48 linear feet) of temporary fill. No wetland impacts would occur as a result of the proposed activity.

A Pre-Construction Notification (PCN) was submitted to the USACE on January 6, 2025. The Project was assigned to Ms. Shannon Morgan under File Number SPK-2025-00031. A pre-filing meeting with the NDEP was held on January 28, 2025.

Please contact me with enough advance notice as possible should access to the Project be required. UPRR railway safety protocol requires a UPRR safety escort for visitors on all UPRR property. Additional requirements apply for PPE and access within 25 feet of the railroad tracks.

Mr. Zack Carter
April 22, 2025

The documents attached for your review are presented below. Thank you for your assistance on this Project. Please do not hesitate to contact me if you have any questions.

The Project proponent hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief. The Project proponent hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.

Sincerely,
Arcadis U.S., Inc.

Jennifer McBride, Senior Ecologist
Agent on behalf of UPRR

Email: Jennifer.mcbride@arcadis.com
Phone: (719) 508-0070

Copies to:
Shannon Morgan, USACE
NDEP, ndep401@ndep.nv.gov

Figures

1. Project Vicinity
2. Plan View

Attachments

1. Section 401 WQC Application Form
2. Design Drawings
3. Aquatic Resource Delineation Report
4. Biological Resources Technical Memorandum
5. USACE Pre-Construction Notification Form
6. Dewatering and Diversion Plan

Clean Water Act Section 401 Water Quality Certification Application

Please refer to the "Clean Water Act Section 401 Water Quality Certification Application Guidance" document for assistance with completing this application.

A. Pre-Filing Meeting	
Please provide the date that a pre-filing meeting was requested from Nevada Division of Environmental Protection (NDEP) Bureau of Water Quality Planning (BWQP). *Note: If a pre-filing meeting has not been requested, please schedule a pre-filing meeting with NDEP BWQP.*	A pre-filing meeting was requested on January 8, 2025. The pre-filing meeting for the project was conducted on January 28, 2025.

B. Contact Information			
Project Proponent Information			
Company Name: Union Pacific Railroad (UPRR)		Address: 1400 Douglas Street, Stop 0910	
Applicant Name: Steve Cheney		City: Omaha	
Phone: (402) 544-3227	Fax:	State: Nebraska	
Email: slcheney@up.com		Zip Code: 68179	
Agent Information			
Company Name: Arcadis U.S. Inc		Address: 630 Plaza Drive, Suite 200	
Agent Name: Jennifer McBride		City: Highlands Ranch	
Phone: (719) 508-0070	Fax:	State: Colorado	
Email: jennifer.mcbride@arcadis.com		Zip Code: 80129	

C. Project General Information			
Project Location			
Project/Site Name: Roseville Subdivision Mile Post 229.10 Culvert Replacement		Name of receiving waterbody: Intermittent tributary to Truckee River (Water-1)	
Address: N/A - Refer to Figure 1 attached		Type of waterbody present at project location (*select all that apply*): ☐ Perennial River or Stream ☑ Intermittent River or Stream ☐ Ephemeral River or Stream ☐ Lake/Pond/Reservoir ☐ Wetland ☐ Other: _____	
City: Verdi			
County: Washoe County			
State: Nevada			
Zip Code: 89439			
Latitude (UTM or Dec/Deg): 39.502875		Longitude (UTM or Dec/Deg): -119.994087	
Township: 19 North	Range: 18 East	Section: 19	¼ Section: NE

Project Details		
Project purpose:	The purpose of the proposed project is to continue and improve freight and passenger rail service in the region by replacing the existing structure that has outlived its useful life.	
Describe current site conditions: Attachments can include, but are not limited to, relevant site data, photographs that represent current site conditions, or other relevant documentation.	The project site is located within an existing UPRR right-of-way. Refer to Attachment 3 - Aquatic Resource Delineation Report and Attachment 4 - Biological Resources Technical Memorandum for a description and photographs of site conditions.	
Describe the proposed activity including methodology of each project element:	Refer to Supplemental Information attachment	
Estimate the nature, specific location, and number of discharge(s) expected to be authorized by the proposed activity:	Refer to Supplemental Information attachment and Figure 2 - Plan View	
Provide the date(s) on which the proposed activity is planned to begin and end and the approximate date(s) when any discharge(s) may commence:	Construction is planned to occur in 2026 and is expected to last approximately 3 to 4 months.	
Provide a list of the federal permit(s) or license(s) required to conduct the activity which may result in a discharge into regulated waters (see mandatory attachments):	Clean Water Act Section 404 Nationwide Permit (NWP). A Pre-Construction Notification for coverage under NWP 14 (Linear Transportation Projects) was submitted to the USACE on 1/6/2025 (USACE File Number: SPK-2025-00031), included as Attachment 5.	
Provide a list of all other federal, state, interstate, tribal, territorial, or local agency authorizations required for the proposed activity and the current status of each authorization:	NDEP Working in Waters Permit (to be obtained). If the project will disturb one acre or more, UPRR's construction contractor will obtain Construction Stormwater General Permit coverage.	
Total area of impact to regulated waterbodies (acres):	Temporary Stream Impact: 0.01 acre (fill); 0.03 acre (excavation) Permanent Stream Impact: 0.01 acre (fill)	
Total distance of impact to regulated waterbodies (linear feet):	Temporary Stream Impact: 48 linear feet (fill); 78 linear feet (excavation) Permanent Stream Impact: 78 linear feet (fill)	
Amount excavation and/or fill discharged within regulated waters (acres, linear feet, and cubic yards): Refer to Supplemental Information attachment and Figure 2 - Plan View	Temporary: See attached	Permanent: See attached
Amount of dredge material discharged within regulated waters (acres, linear feet, and cubic yards):	Temporary: N/A	Permanent: N/A
Describe the reason(s) why avoidance of temporary fill in regulated waters is not practicable (if applicable):	The proposed culvert structure is required to be replaced in the same location as the existing culvert structure to convey Water-1. Project construction will avoid wetland impacts, and temporary stream impacts will be minimized to the extent possible but are not entirely avoidable due to the nature of the project and promixity of the proposed structure to Water-1.	

Describe the Best Management Practices (BMPs) to be implemented to avoid and/or minimize impacts to regulated waters: Examples include sediment and erosion control measures, habitat preservation, flow diversions, dewatering, hazardous materials management, water quality monitoring, equipment or plans to treat, control, or manage discharges, etc.	- Avoid wetland impacts; minimize stream impacts and ground disturbance. - Install and maintain sediment and erosion control measures and implement good housekeeping BMPs. - Restore temporary stream impacts to pre-construction condition and elevation. - Stabilize temporary disturbances as soon as possible following construction. - Heavy equipment, vehicles, and stockpiled materials will be restricted to the designated staging areas. Fueling, maintenance, or overnight parking of equipment will be done in an upland area. Refer to the Biological Resources Technical Memorandum (Attachment 4) and Pre-Construction Notification ENG 6082 Form (Attachment 5) for additional measures.
Describe how the activity has been designed to avoid and/or minimize adverse effects, both temporary and permanent, to regulated waters:	Project activities were designed to avoid wetland impacts entirely. Temporary stream impacts will be restored to pre-construction condition as soon as possible. Upland ground disturbance and vegetation removal will be minimized to the extent possible. Temporary stream impacts will be minimized by placing geotextile fabric underneath temporary fill to promote the complete removal of fill within Water-1. Where Water-1 is temporarily excavated for the bore pit and new culvert structure, temporarily excavated areas will be backfilled with clean fill material to existing elevation.
Describe any compensatory mitigation planned for this project (if applicable):	Compensatory mitigation is not proposed for the project because there are no anticipated wetland impacts and the permanent loss of stream would be less than 0.03 acre.

D. Signature

Name and Title (Print):	Phone Number:	Date:
Steve Cheney, UPRR Senior Director of Design & Environmental	(402) 544-3227	4/22/2025

X Steve Cheney
Signature of Responsible Official

Mandatory Attachments:

Federal Permit or License Application - A copy of the federal permit or license application and any readily available water quality-related materials that informed the development of the federal license or permit application.

Site Map - A map or diagram of the proposed project site including project boundaries in relation to regulated waters, local streets, roads, and highways.

Engineered Drawings - Engineered drawings are preferred to be submitted at the 70% design level. If only conceptual designs are available at the time of application, plans for construction should be submitted prior to the start of the project. Specific locations of the proposed activities and details of specific work elements planned for the project should be identified (e.g., staging areas, concrete washouts, perimeter controls, water diversions, or other BMPs).

Submit the completed application materials to NDEP (ndep401@ndep.nv.gov) with the appropriate U.S. Army Corps of Engineers Regulatory Office copied on the communication (http://www.spk.usace.army.mil/Missions/Regulatory/Contacts/Contact-Your-Local-Office/).

Water Quality Certification Application – Supplemental Information

Describe the proposed activity including the methodology of each project element:

- Biologists will perform the necessary pre-construction surveys (e.g., migratory bird nest clearance) and provide worker environmental awareness training.
- Contractor will install stormwater BMPs and perimeter fencing around sensitive resources/avoidance areas. BMPs will be maintained during all construction phases.
- Required vegetation trimming and/or removal will occur in planned staging areas and temporary workspaces.
- Areas for equipment staging, material stockpiling, fueling, and other environmentally sensitive activities will be established in upland areas. Contractor will establish sanitary facilities and an office trailer (if planned) in an upland location.
- Construction equipment will be mobilized to the site.
- The bore pit will be excavated. Jack and bore equipment and the new pipes will be placed within the bore pit. The excavated bore pit material will be stockpiled in an upland location and protected from washout using erosion and sediment control devices (e.g., protective cover, sediment barriers).
- In authorized temporary stream fill locations, geotextile fabric will be placed under temporary fill to mark the natural elevation and contours and promote the complete removal of fill following construction.
- The new pipes will be jack and bored under the railroad tracks adjacent to the existing structure. Existing concrete headwalls and wingwalls will be removed as needed for the new structure.
    - If surface water is present in Water-1, flow will be maintained through the existing culvert during installation of the new culvert.
    - If groundwater and/or surface water are present, dewatering will be performed to maintain a dry workspace. The contractor will be instructed to containerize, treat, and dispose of dewatered surface water/groundwater offsite. If dewatered to the land surface or surface waters, the contractor will obtain the applicable dewatering discharge permit(s).
- Once the new culvert is installed, cast-in-place concrete inlet and outlet headwalls will be placed. Wet concrete will be isolated from surface water and groundwater until cured.
- The bore pit will be backfilled to pre-construction elevation and contoured to convey Water-1.
- Water-1 will be redirected through the new structure. The existing structure will be filled with controlled low-strength material and abandoned in place.
- Temporary stream impacts will be restored to pre-construction elevation and condition. Temporarily disturbed upland areas will be graded and stabilized.
- Construction materials and debris will be removed from the site and equipment will be demobilized.
- Disturbed upland areas with potential to discharge to aquatic features will be seeded with a native seed mix. If hydroseeding methods are used, contractor will avoid contact between the hydroseed mixture and aquatic features using a physical barrier (e.g., silt fencing, berm) or by using mulch and/or tackifiers, as appropriate. The exposed banks of Water-1 will be temporarily stabilized using biodegradable erosion control blanket.

Estimate the nature, specific location, and number of discharges expected to be authorized by the proposed activity:

Refer to Table 1 below and Figure 2 – Plan View attached.

Table 1. Permanent and Temporary Impacts to Aquatic Features

Feature	Impact Type	Acres	Linear Feet	Cubic Yards	Material Type
Water-1	Temporary Impact – Fill	0.01	48	23	Clean gravel road base underlain by geotextile fabric (staging area).
Water-1	Temporary Impact – Excavation	0.03	78	47	Excavated areas will be backfilled to natural elevation using clean or native material. Surficial material will be similar in texture to the existing stream substrate.
Water-1	Permanent Impact – Fill	0.01	78	17	Controlled low-strength material (fill existing culvert structure and abandon in place); Class 2 riprap (riprap aprons).

Union Pacific Railroad

Aquatic Resource Delineation Report

Roseville Subdivision Mile Post 229.10 Culvert Replacement Project

Washoe County, NV

December 2024

Aquatic Resource Delineation Report

Roseville Subdivision Mile Post 229.10 Culvert Replacement Project

Washoe County, NV

December 2024

Prepared By:
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Phone: 720 344 3500
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Prepared For:
Union Pacific Railroad
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Our Ref:
30210118

Jennifer McBride, PWS, Certified Ecologist
Project Ecologist

Taylor Thomas
Ecologist

Contents

Tables

Appendices

Acronyms and Abbreviations

2023 Rule	Revised Definition of “Waters of the United States”
2023 Conforming Rule	Revised Definition of ‘Waters of the United States’; Conforming
Arcadis	Arcadis U.S., Inc.
APT	Antecedent Precipitation Tool
CFR	Code of Federal Regulations
Cowardin Classification	Classification of Wetlands and Deepwater Habitats of the U.S. (Cowardin et al.1979)
CWA	Clean Water Act
ESRI	Environmental Systems Research Institute
FEMA	Federal Emergency Management Agency
GIS	geographic information system
GPS	global positioning system
HUC	Hydrologic Unit Code
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OHWM	ordinary high water mark
PDSI	Palmer Drought Severity Index
Project	Roseville Subdivision Mile Post 229.10 Culvert Replacement Project
Project limits	existing and proposed culvert structures, temporary workspaces, and existing access route
Report	Aquatic Resource Delineation Report
RHA	Rivers and Harbors Act
ROW	right-of-way
UPRR	Union Pacific Railroad
U.S.	United States
USACE	U.S. Army Corps of Engineers
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WBD	Watershed Boundary Dataset

1 Introduction

At the request of Union Pacific Railroad (UPRR), Arcadis U.S., Inc. (Arcadis) has prepared this Aquatic Resource Delineation Report (Report) for the Roseville Subdivision Mile Post 229.10 Culvert Replacement Project (Project) located near Verdi in Washoe County, Nevada (**Appendix A, Figure 1**). This Report summarizes the potentially jurisdictional features that may be impacted by the proposed Project.

The proposed activity will replace an existing 55-foot long, concrete arch culvert under two mainline tracks with a 72-inch diameter, 64-foot long, smooth steel pipe culvert. Construction activities will occur within an existing UPRR right-of-way (ROW) extending 200 feet to both sides of the Mainline 2 alignment (400 feet total ROW width).

The purpose of the proposed Project is to continue and improve freight and passenger rail service in the region by replacing the existing culvert which has outlived its useful life.

The purpose of this Report is to identify and describe aquatic resources within the Project limits (6.92 acres; existing and proposed culvert structures, temporary workspaces, and existing access route). This Report facilitates efforts to provide background information and document aquatic resource boundaries for review by regulatory authorities.

1.1 Applicant/Property Owner Information

Union Pacific Railroad Company
1400 Douglas Street
Omaha, Nebraska 68179

1.2 Agent Information

Access to the UPRR ROW can be obtained by contacting the agent below. UPRR railway safety protocol requires a UPRR safety escort on all UPRR property. **Appendix B** provides the signed statement from the property owner(s) allowing access to the UPRR ROW when a safety escort is provided.

Ms. Jennifer McBride
Arcadis U.S., Inc.
630 Plaza Drive, Suite 200
Highlands Ranch, CO 80129
Email: Jennifer.Mcbride@arcadis.com
Phone: (719) 508-0070

2 Project Location

The existing structure is located on the UPRR Roseville Subdivision located southwest of Verdi in Washoe County, Nevada. The Project is located at latitude 39.502875º and longitude -119.994087º in Sections 19 and 20, Township 19 North, Range 18 East (**Appendix A, Figure 1**).

Driving directions to the Project limits from Reno are as follows: Take Interstate 80 West for approximately 9.7 miles, then take Exit 3. Make a left turn onto South Verdi Road and continue for approximately 0.2 mile to Crystal Park Road. Turn left onto Quilici Ranch Road and continue for approximately 0.5 miles to arrive at the existing Project culvert on the left.

3 Regulatory Framework

This section summarizes the regulatory framework for defining a water of the United States (U.S.). This Report is intended to document the existing aquatic features within the Project limits for the purposes of a permit application and to support a delineation concurrence by the U.S. Army Corps of Engineers (USACE) for the presence and extent of wetlands and non-wetland waters.

3.1 Waters of the United States

Under the authority of Section 404 of the Clean Water Act (CWA; 33 United States Code [USC] 1344), the USACE shares regulatory authority with the U.S. Environmental Protection Agency (USEPA) over waters of the U.S. The USACE also has regulatory authority for navigable waters as defined by Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 USC §403). Specifically, the discharge of dredged and fill material into all waters of the U.S., including wetlands and navigable waterways, is regulated.

The regulatory framework that defines waters of the U.S. subject to jurisdiction under Section 404 of the CWA has undergone and continues to be subject to revision. The final "Revised Definition of Waters of the United States" rule (2023 Rule) was published in the Federal Register on January 18, 2023 (USACE and USEPA 2023a) and took effect on March 20, 2023. Following the Supreme Court's decision in the case of *Sackett v. Environmental Protection Agency* on May 26, 2023, the USACE and USEPA developed a rule that amends the 2023 Rule to conform to the *Sackett* decision. The USACE and USEPA issued a final revised rule, "Revised Definition of 'Waters of the United States'; Conforming" (2023 Conforming Rule), on August 29, 2023, which became effective on September 8, 2023 (USACE and USEPA 2023b). The Conforming Rule eliminates certain provisions of the 2023 Revised Definition of Waters of the U.S. inconsistent with the U.S. Supreme Court's May 25, 2023, decision in *Sackett v. USEPA*.

As a result of ongoing litigation on the 2023 Rule, the agencies are only implementing the 2023 Conforming Rule in certain states, including Nevada. In the remaining states, the 2023 Conforming Rule is currently not in effect, and the pre-2015 regulatory definition of waters of the U.S and the *Sackett* decision are being implemented instead. As of the date of this Report, the operative definition of waters of the U.S. in Nevada is consistent with the 2023 Conforming Rule (USEPA 2024a, USEPA 2024b).

4 Methodology

4.1 Desktop Review

Before performing the aquatic resource field survey, Arcadis conducted an environmental desktop assessment for preliminary identification of wetlands, streams, and other sensitive resources within the Project limits. The desktop review was conducted using Environmental Systems Research Institute's (ESRI) ArcMap geographic information system (GIS) software and available digital datasets.

Arcadis reviewed the following information prior to conducting the aquatic resource field survey:

- Aerial imagery (ESRI 2022)
- Federal Emergency Management Agency (FEMA) National Flood Hazard Layer Dataset (FEMA 2024)
- Natural Resources Conservation Service (NRCS) Web Soil Survey for Washoe County (NRCS 2024)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) (USFWS 2024)
- U.S. Geological Survey (USGS) 7.5 Minute Topographic Map, Mount Rose NW and Verdi Quadrangles (USGS 2021a, USGS 2021b)
- USGS National Hydrography Dataset (NHD) Flowlines and Waterbodies (USGS 2024)
- USGS Watershed Boundary Dataset (WBD) Hydrologic Unit Code 8 (HUC-8) Subbasins (USGS 2024)

The desktop review allowed for preliminary identification of potential aquatic resources within the Project limits and provided an understanding of the ecology, land use, and general physiography in the surrounding region. Digital formats of the preliminary desktop delineation results were migrated to field global positioning system (GPS) units using the ArcGIS Collector application to facilitate field delineation and verification of aquatic resources.

4.2 Antecedent Precipitation Tool

The USACE has developed the Antecedent Precipitation Tool (APT; USACE 2020a) to assist in determining the conditions of a typical year for a given location and date. The 2020 Navigable Waters Protection Rule defined the typical year as the period of time when precipitation and other climatic variables are within the normal periodic range for a geographic area based on a rolling thirty-year period (USACE and USEPA 2020). Although the 2020 Navigable Waters Protection Rule is no longer in effect, the APT remains a useful tool to identify the conditions during which a survey is conducted. For example, the results of the APT can assist in determining if "normal conditions" were present during the survey or if the geographic area was experiencing higher or lower than normal precipitation. Other resources, such as gage data, can also be utilized to define the conditions or provide context of a typical year for aquatic features. The APT draws on multiple publicly available resources and provides summarized outputs to use in determining the climatic conditions of the typical year.

A summary of the APT output is provided in **Section 5.1.6**. The APT output is included in **Appendix C**.

4.3 Wetlands

Field personnel collected data to evaluate the presence of wetlands in locations that visually exhibited surface indicators of potential wetland characteristics (e.g., presence of potentially hydrophytic vegetation indicative of wetlands, hydrology indicators present at the surface, or depressional areas exhibiting different characteristics from the surrounding uplands) and/or were included as an aquatic feature on NWI maps. Wetland areas were delineated using the multi-parameter approach (hydrophytic vegetation, hydric soils, and wetland hydrology) described in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE 2010). Paired wetland and upland data points were evaluated to delineate wetland boundaries. Wetland Determination Data Forms were completed at wetland and upland data point locations and are included in **Appendix D**.

Where potential wetlands were identified, sites were evaluated for representative vegetative, hydrologic, and soil characteristics. Each feature was classified using Classification of Wetlands and Deepwater Habitats of the United States (Cowardin Classification; Cowardin et al.1979). The 2022 Western Mountains, Valleys, and Coast Region Wetland Plant List (USACE 2023) was used to determine the wetland indicator status for plant species. A list of plant species identified within the Project limits, including wetland indicator status for each species, is included in **Appendix E**.

Data points and wetland boundaries were mapped in the field within the Project limits using a Juniper Geode GNS3 GPS unit capable of submeter accuracy.

4.4 Non-Wetland Waters

The ordinary high water mark (OHWM) is used to delineate non-tidal waters that are not wetlands (e.g., streams, open waterbodies). The OHWM may be indicated by the presence of a defined streambed with bank shelving, flow lines, sediment deposition or scour, mineral staining, salt deposits, deep or surficial cracking, or other indicators as outlined in guidance documents. Delineation of non-wetland waters was conducted in accordance with the OHWM Regulatory Guidance Letter No. 05-05 (USACE 2005) and A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast West Region of the United States (Mersel and Lichvar 2014). Field personnel collected data to delineate the OHWM in channelized areas that exhibited one or more OHWM indicators as observed during the field survey. OHWM indicators were mapped in the field within the Project limits using a Juniper Geode GNS3 GPS unit capable of submeter accuracy. OHWM Data Sheets are included in **Appendix F**.

Aerial imagery, digital topographic maps, field observations, and desktop resources were used to establish channelized surface connections outside of the Project limits to determine connectivity to other potentially jurisdictional waters.

5 Results

5.1 Desktop Review

5.1.1 Landscape Setting

The Project limits range from approximately 4,950 feet to 5,000 feet above mean sea level (USGS 2021a, USGS 2021b). Aerial imagery indicates that the surrounding land cover and use in the vicinity of the Project limits generally includes undeveloped land, residential and commercial development, Interstate 80, the Truckee River, and railway infrastructure.

The Project limits are located within the Sierra Nevada Level III Ecoregion, characterized by mountainous northwest forests consisting of pines and Sierra juniper on the east side, to fir and other conifers at the higher elevations. The Sierra Mountains casts a rain shadow over the eastern foothills and Northern and Central Basin (USEPA 2021).

5.1.2 Aquatic Features

Within the Project limits, the NWI identified a seasonally flooded, streambed, intermittent riverine feature (Cowardin Classification R4SBC) intersecting the railway near the existing culvert structure and two seasonally saturated, broad-leaved deciduous, palustrine scrub-shrub wetland features (Cowardin Classification PSSC) adjacent to the mapped riverine feature abutting the eastern Project limits boundary (USFWS 2024; **Appendix A, Figure 2**).

The NHD identified one unnamed ephemeral stream feature intersecting the railway near the existing culvert structure (USGS 2024). The NHD-mapped featured geographically coincides with the NWI-mapped intermittent riverine feature within the Project limits (**Appendix A, Figure 2**).

5.1.3 Flood Zones

According to the FEMA National Flood Hazard Layer, the Project limits are mapped entirely within an Area of Minimal Flood Hazard, designated as Zone X (FEMA 2024; **Appendix A, Figure 2**).

5.1.4 Watersheds

The USGS WBD defines the areal extent of surface water drainage to a discharge point formed by the terrain and other landscape characteristics. The Project limits are located within the Truckee (HUC-8 16050102) subbasin (USGS 2024).

5.1.5 Soils

According to the NRCS Web Soil Survey, the Project limits are comprised of five soil map units (NRCS 2024). A description of the soil map units is provided in **Table 1**, and the distribution of the mapped soil units are shown on **Appendix A, Figure 3.**

Table 1. Soil Map Unit Descriptions within the Project Limits

Map Unit Name	Landform	Hydrologic Soil Group [a]	Hydric Soil Rating	Natural Drainage Class
Holbrook cobbly loamy sand complex, 0 to 15 percent slopes	Alluvial fans	A	Non-hydric	Well drained
Springmeyer stony loam, 0 to 2 percent slopes	Fan remnants	C	Predominantly non-hydric	Well drained
Springmeyer stony loam, 2 to 4 percent slopes	Fan remnants	C	Predominantly non-hydric	Well drained
Oest bouldery sandy loam, 2 to 8 percent slopes	Fan remnants	B	Non-hydric	Well drained
Oest very bouldery sandy loam, 30 to 50 percent slopes	Fan remnants	B	Non-hydric	Well drained

Notes:
[a] Hydrologic soil group A includes soils that have a low runoff potential when thoroughly wet. Hydrologic soil group B includes soils that have a moderate runoff potential when thoroughly wet. Hydrologic soil group C includes soils that have a moderately high runoff potential when thoroughly wet. (NRCS 2007).
Source: NRCS 2024

5.1.6 Antecedent Precipitation Tool Output

The APT was run for the HUC-8 subbasin that encompasses the Project limits for the field survey on June 4, 2024 (USGS 2024) and is summarized in **Table 2**. The APT output is included in **Appendix C**.

Table 2. Antecedent Precipitation Tool Summary for Survey Completed within the Project Limits

HUC-8 Subbasin	Survey Date	Average Antecedent Precipitation Score	Preliminary Determination	Antecedent Precipitation Condition	WebWIMP H_20 Balance	Drought Index (PDSI)
16050102 (Truckee)	06-04-2024	8.49	Drier than Normal	Normal to Drier than Normal	Dry season	Incipient wetness to mild drought

Note: PDSI = Palmer Drought Severity Index

Source: USACE 2020a

5.2 Aquatic Resource Delineation

Arcadis' ecologists performed an aquatic resource delineation within the Project limits on June 4, 2024. Arcadis field staff delineated two wetlands (Wetland-1 and Wetland-2) and one intermittent stream (Water-1) within the Project limits. **Table 3** summarizes each of the features identified within the Project limits.

Table 3. Summary of Aquatic Features Delineated within the Project Limits

Aquatic Feature	Cowardin Classification [a]	Location (Lat/Long)	Area in Project Limits (acres)[b]	Length in Project Limits (linear feet)[b]
Wetland-1	PEM	39.503079, -119.993784	0.01	24
Wetland-2	PEM	39.49974, -119.993636	0.56	951
Water-1	R4SBC	39.502944, -119.993891	0.09	344

Notes:

[a] Cowardin Classification Codes (Cowardin et al. 1979):

PEM = Palustrine, emergent
R4SBC = Riverine, intermittent, streambed, seasonally flooded

[b] Wetland and stream area rounded to the nearest 0.01 acre; wetland and stream length rounded to the nearest linear foot.

The following sections describe the aquatic resources identified within the Project limits in more detail.

5.2.1 Wetlands

Two wetlands, designated as Wetland-1 and Wetland-2, were identified within the Project limits (**Appendix A, Figure 4**). The wetland features exhibited hydric soil characteristics, indicators of wetland hydrology, and hydrophytic vegetation.

Wetland-1 was identified as palustrine emergent (Cowardin Classification PEM) wetland located northeast of the existing rail culvert within the Project limits. Wetland vegetation consisted of Baltic rush (*Juncus balticus*), needle spikerush (*Eleocharis acicularis*), and willow herb (*Epilobium brachycarpum*). Wetland hydrology was evidenced by saturation (Indicator A3), surface soil cracks (Indicator B6), and FAC-neutral test (Indicator D5). At wetland data point W-1, soil from 0 to 6 inches below ground surface exhibited a 10YR 3/1 matrix color with loamy/clayey texture and 10 percent prominent redox concentrations along pore linings. Soils from 6 to 18 inches below ground surface exhibited a 10YR 2/1 matrix color with sandy texture and 10 percent prominent redox concentrations along pore linings. W-1 met the hydric soil indicator description for redox dark surface (Indicator F6), sandy redox (Indicator S5), and redox depressions (Indicator F8).

Wetland-2 was identified as a palustrine emergent (Cowardin Classification PEM) wetland located south of the existing rail culvert within the Project limits. Wetland vegetation was dominated by interwoven navarretia (*Navarretia intertexta*). Wetland hydrology was evidenced by water marks (Indicator B1), surface soil cracks (Indicator B6), and FAC-neutral test (Indicator D5). At wetland data point W-2, soil from 0 to 6 inches below ground surface exhibited a 5YR 3/1 matrix color with sandy texture and 10 percent prominent redox concentrations within the soil matrix. W-2 met the hydric soil indicator description for sandy redox (Indicator S6). A restrictive layer (i.e., hardpan) was encountered at 6 inches below ground surface.

Two additional data points (UP-1 and UP-2) were collected to verify upland conditions based on the apparent lack of wetland indicators. UP-1 and UP-2 lacked hydrophytic vegetation, hydric soil, and wetland hydrology, and therefore, were confirmed to be upland.

The Wetland Determination Data Forms for the wetland and upland data points are included in **Appendix D**. Photographs of the wetland features are included in **Appendix G**. Photograph locations are shown on **Figure 5** in **Appendix A**. A review of the potential jurisdictional status of Wetland-1 and Wetland-2 is included in **Section 5.3**.

5.2.2 Non-Wetland Waters

One intermittent stream, designated as Water-1, was identified within the Project limits. Water-1 geographically coincides with an NWI- and NHD-mapped features intersecting the existing culvert structure. Water-1 flows from the east to west through the rail culvert within the Project limits and exits the western Project limits through an existing culvert under Quilici Ranch Road. The Water-1 OHWM was indicated by break in bank slope, change in vegetation cover, and change in sediment texture. Upstream of the existing rail culvert, the OHWM of Water-1 was approximately 13 feet wide. Downgradient of the existing rail culvert, the OHWM of Water-1 was approximately 14 feet wide. Within the culvert, the OHWM was 4 feet wide. Vegetation associated with the upgradient reach of Water-1 within the Project limits consisted of Baltic rush, needle spikerush, willow herb, and big sagebrush (*Artemisia tridentata ssp. tridentata*). Vegetation associated with the downgradient reach of Water-1 consisted of silvery lupine (*Lupinus argenteus),* narrowleaf willow *(Salix exigua),* arroyo willow *(Salix lasiolepis),* and big sagebrush*.* The stream substrate consisted of cobbles, boulders, and gravel. At the time of the field survey, flowing surface water up to approximately 10 inches deep was present in Water-1.

Figure 4 in **Appendix A** shows the alignment and OHWM boundary of Water-1 within the Project limits. OHWM datasheets for Water-1 are provided in **Appendix F**. A photographic log of Water-1 is presented in **Appendix G**. Photograph locations are shown on **Figure 5** in **Appendix A**. A review of the potential jurisdictional status of Water-1 is included in **Section 5.3**.

5.3 Potential Jurisdictional Status Review

Arcadis reviewed the potential jurisdictional status of each of the aquatic features identified within the Project limits under the 2023 Conforming Rule.

Based on Arcadis' preliminary jurisdictional assessment, Water-1 is likely considered a jurisdictional water of the U.S. under the 2023 Conforming Rule. Water-1 appears to exhibit a relatively permanent flow regime and flows to the Truckee River. Truckee River is a traditional navigable water (USACE 2024).

Wetland-1 is likely considered a jurisdictional water of the U.S. under the 2023 Conforming Rule. Wetland-1 exhibits a continuous surface connection to Water-1 and meets the definition of "adjacent." Wetland-2 is surrounded by uplands and lacks a continuous surface connection to other aquatic features, and therefore is not likely considered a water of the U.S. under the 2023 Conforming Rule. In compliance with the request for a delineation concurrence, all wetlands and non-wetland waters within the Project limits are included.

None of the aquatic features within the Project limits are considered navigable waters under Section 10 of the RHA (USACE 2024).

5.4 Other Excluded Features

No aquatic features within the Project limits are excluded from this Report.

5.5 Sensitive Plants, Wildlife, and Historic Properties

The USACE Sacramento District recommends minimum standards for acceptance of aquatic resource delineation reports, including preliminary information on known sensitive species or cultural resources within the Project limits (USACE 2016). Arcadis conducted a review of the USFWS Information, Planning, and Consultation System to identify special-status species that are known to or have the potential to occur within the Project limits. A biological resource technical memorandum has been prepared under separate cover (Arcadis 2024a).

A cultural and historic resource review has been conducted, and a cultural resources technical report was prepared under separate cover (Arcadis 2024b).

6 Summary and Recommendations

In total, two wetlands (0.57 acre in total) and one intermittent stream (0.09 acre in total; 344 linear feet in total) were identified within the Project limits during the aquatic resource field delineation conducted by Arcadis on June 4, 2024. The intermittent stream (Water-1) and Wetland-1 are likely considered waters of the U.S. as defined by the 2023 Conforming Rule. Wetland-2 is not likely considered a jurisdictional water of the U.S. as defined by the 2023 Conforming Rule. None of the aquatic features identified within the Project limits are considered navigable under Section 10 of the RHA.

The preliminary jurisdictional status of the aquatic features identified within the Project limits was evaluated based on current regulations. The USACE and USEPA, under the authority of the CWA and RHA, have the authority to determine the location and extent of jurisdictional waters of the U.S. The jurisdictional status of the features discussed in this Report should be considered preliminary until concurrence from a regulatory agency is obtained.

7 References

Arcadis U.S., Inc. (Arcadis). 2024a. Biological Technical Memorandum, Roseville Subdivision Mile Post 229.10 Culvert Replacement Project. December 2024.

Arcadis. 2024b. Cultural Resources Technical Report, Roseville Subdivision Mile Post 229.10 Culvert Replacement Project. December 2024.

Cowardin, Lewis M., Virginia Carter, Francis C. Golet, and Edward T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service (USFWS), FWS/OBS-79/31.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-87-1 (on-line edition). Prepared for USACE, Washington, DC 20314-1000. January.

Environmental Systems Research Institute (ESRI). 2024. ArcGIS Online. Located at https://www.esri.com/en-us/arcgis/about-arcgis/overview. Accessed: December 2024.

Federal Emergency Management Agency (FEMA). 2024. FEMA National Flood Hazard Layer. [Online interactive mapper]. Available at https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd. Accessed: December 2024.

Lichvar, R.W., and S.M. McColley. 2014. A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States. ERDC/CRREL TR-14-13. August.

Natural Resources Conservation Service (NRCS). 2007. Chapter 7, Hydrologic Soil groups. Part 630 Hydrology, National Engineering Handbook. U.S. Department of Agriculture. Located at https://www.owp.csus.edu/lidtool/Content/PDF/SoilHydGrp.pdf. Accessed: November 2024.

NRCS. 2024. Web Soil Survey for Washoe County. U.S. Department of Agriculture. Located at https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed: December 2024.

U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (USEPA). 2020. Rule. “The Navigable Waters Protection Rule: Definition of ‘Waters of the United States.’” *Federal Register* 85, no. 77 (21 April 2020): 22250. Available at https://www.federalregister.gov/documents/2020/04/21/2020-02500/the-navigable-waters-protection-rule-definition-of-waters-of-the-united-states. Accessed: December 2024.

USACE and USEPA. 2023a. Final Rule. “Revised Definition of ‘Waters of the United States.’” Federal Register 88, no. 11 (18 January 2023): 3004. Located at https://www.epa.gov/system/files/documents/2023-01/Revised%20Definition%20of%20Waters%20of%20the%20United%20States%20FRN%20January%202023.pdf. Accessed: December 2024.

USACE and USEPA. 2023b. Final Rule. “Revised Definition of ‘Waters of the United States’; Conforming.” Federal Register 88, No. 173 (8 September 2023): 61964. Available at https://www.federalregister.gov/documents/2023/09/08/2023-18929/revised-definition-of-waters-of-the-united-states-conforming. Accessed: December 2024.

USACE. 2005. Regulatory Guidance Letter No. 05-05. Ordinary High Water Mark Identification. December 7, 2005.

USACE. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) ERDC/EL TR-10-3. May 2010.

USACE. 2016. Sacramento District. Minimum Standards for Acceptance of Aquatic Resources Delineation Report. Accessed: December 2024.

USACE. 2020a. Antecedent Precipitation Tool. Available at https://github.com/jDeters-USACE/Antecedent-Precipitation-Tool. Accessed: December 2024.

USACE. 2023. National Wetland Plant List –Western Mountains, Valleys, and Coast Region. Available at: https://nwpl.sec.usace.army.mil/static/reports/NWPL%20Cover%20Page%20WMVC_v3.pdf. Accessed: November 2024.

USACE. 2024. Navigable Waterways and Traditionally Navigable Waters in the Sacramento District. Available at: https://www.spk.usace.army.mil/Missions/Regulatory/Jurisdiction/Navigable-Waters-of-the-US/. Accessed: November 2024.

USEPA. 2021. Level III and IV Ecoregions of the Continental United States. Located at https://www.epa.gov/eco-research/level-iii-and-iv-ecoregions-continental-united-states. Accessed: December 2024.

USEPA. 2024a. Current Implementation of Waters of the United States. Available at: https://www.epa.gov/wotus/current-implementation-waters-united-states. Accessed: November 2024.

USEPA. 2024b. Definition of “Waters of the United States”: Rule Status and Litigation Update. Available at: https://www.epa.gov/wotus/definition-waters-united-states-rule-status-and-litigation-update. Accessed: November 2024.

USFWS. 2024. Wetlands Mapper. National Wetlands Inventory (NWI). Available at: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed: December 2024.

U.S. Geological Survey (USGS). 2021a. Mount Rose NW Quadrangle. 7.5-minute series topographic map (map scale 1:24,000). Weston, Virginia. U.S. Department of the Interior.

USGS. 2021b. Verdi Quadrangle. 7.5-minute series topographic map (map scale 1:24,000). Weston, Virginia. U.S. Department of the Interior.

USGS. 2024. National Map. Interactive map. Available at: https://apps.nationalmap.gov/viewer/. Accessed: December 2024.

Appendix A

Figures

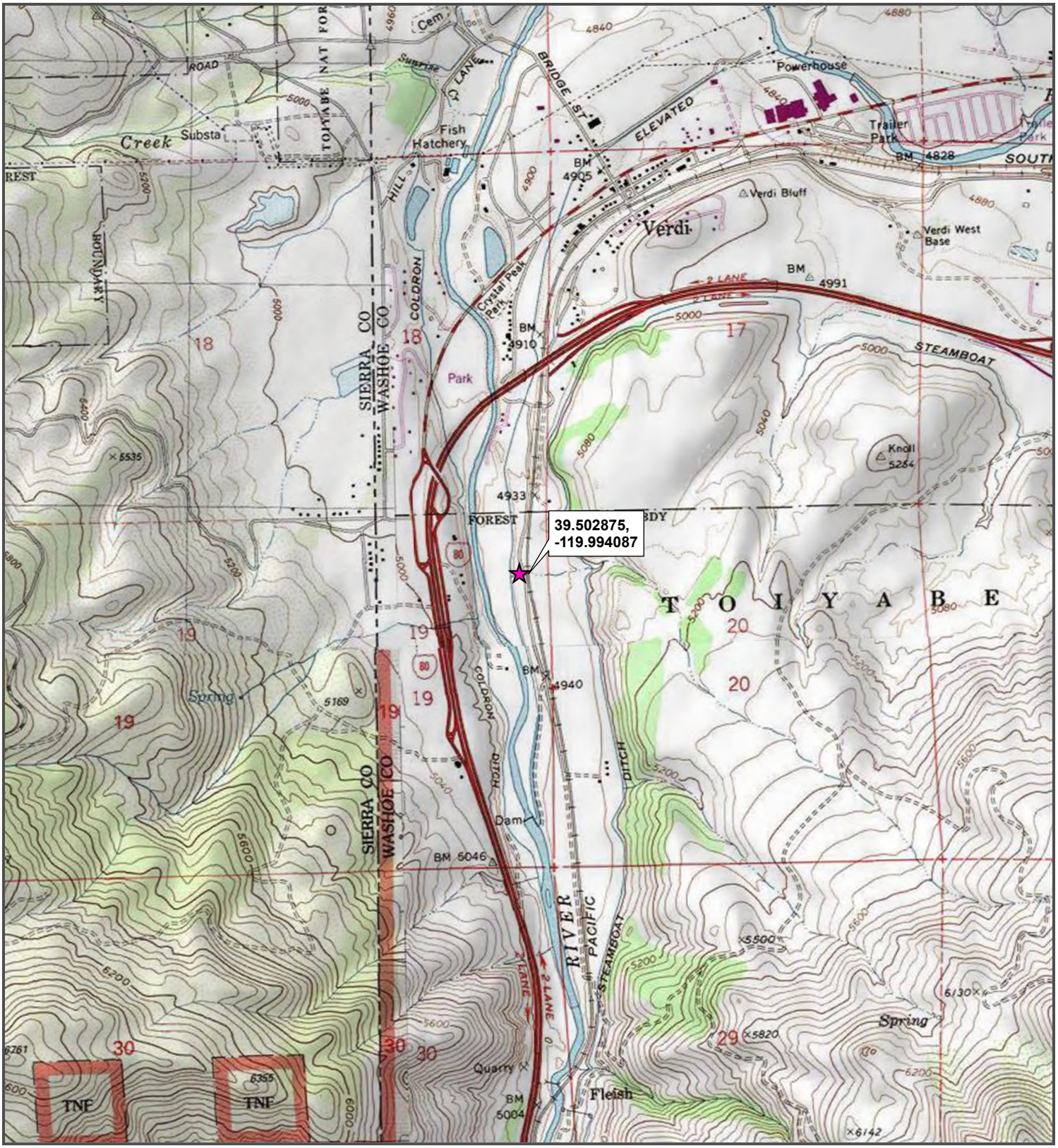


FIGURE 1
PROJECT VICINITY
Union Pacific Railroad
Roseville Sub MP 229.10
Washoe County, Nevada

Legend
Project Location

Notes:
1. USGS Topographic Quadrangle For Verdi, NV obtained through ArcGIS Online Streaming Service

0 1,000 2,000 ft
0 250 500 m

ARCADIS

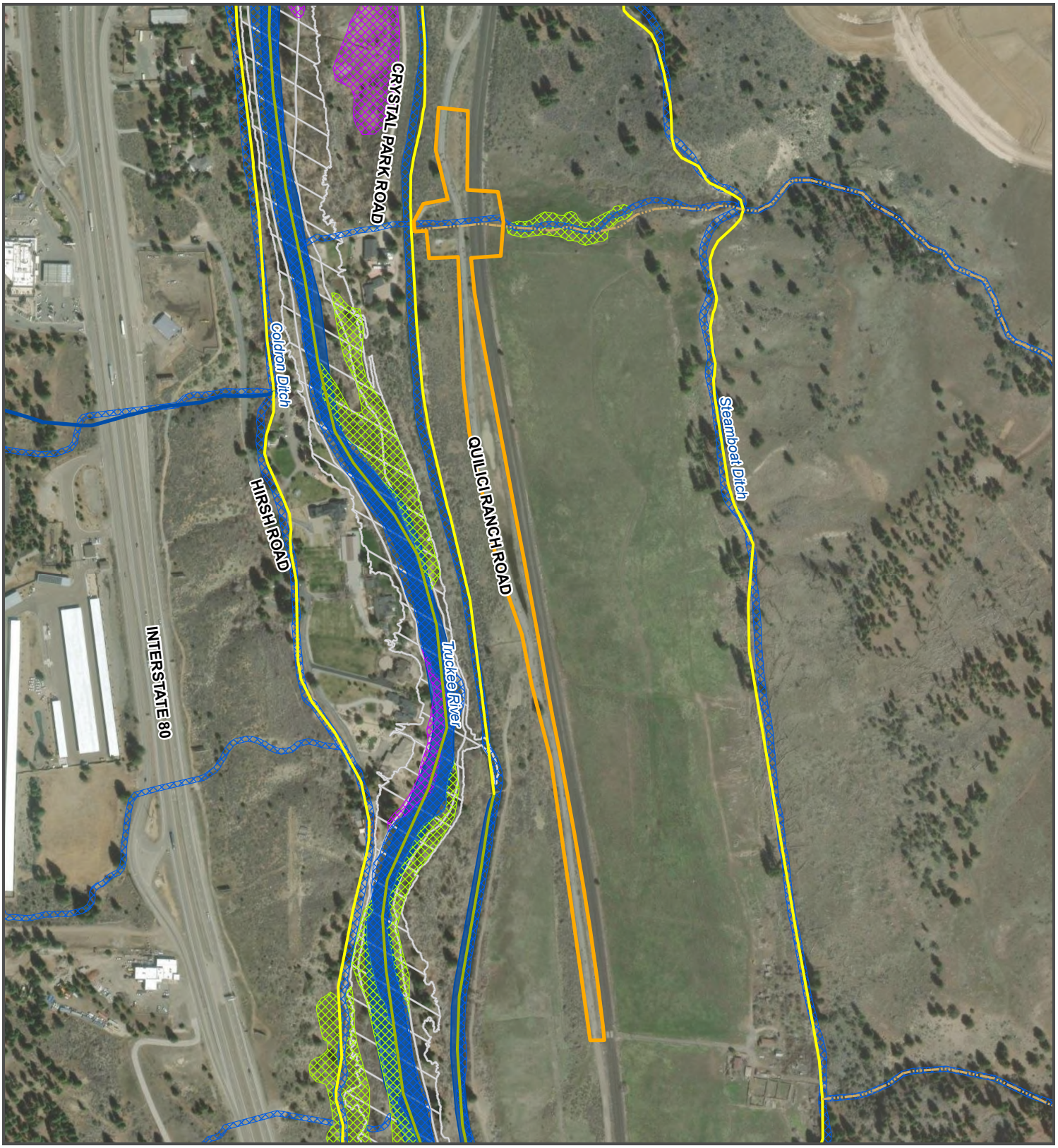


FIGURE 2
NHD/NWI/FEMA MAP

Union Pacific Railroad
Roseville Sub MP 229.10
Washoe County, Nevada

Legend

- FEMA Flood Zone AE
- NWI Freshwater Emergent Wetland
- NWI Freshwater Forested/Shrub Wetland
- NWI Freshwater Pond/ Riverine Wetland
- NHD Perennial Stream
- NHD Ephemeral Stream
- NHD Artificial Path
- NHD Canal/Ditch
- NHD Perennial Stream Area
- Project Limits (6.92 acres)

Notes:
1. April 2024 Aerial Imagery obtained from ESRI Image Service.
2. National Wetlands Inventory (NWI) data, updated February 2024, streamed from the US Fish and Wildlife Service through ESRI feature service at: https://services.arcgis.com/P3ePLMYs2RVChkJx/ArcGIS/rest/services/USA_Wetlands/FeatureServer
3. National Hydrography Dataset (NHD), March 2024, obtained from the United States Geological Survey through ESRI feature service at https://services.arcgis.com/P3ePLMYs2RVChkJx/arcgis/rest/services/NHDPlus_High_Resolution_9March2023_view/FeatureServer
4. Floodplain data, dated April 2024, obtained from the FEMA Floodplain Service Center at https://msc.fema.gov
Unshaded area located in Zone X, Area of Minimal Flood Hazard.

0 250 500 ft
0 100 200 m

ARCADIS

FIGURE 3
NRCS SOILS MAP

Union Pacific Railroad
Roseville Sub MP 229.10
Washoe County, Nevada

Notes:
1. April 2024 Aerial Imagery obtained from ESRI Image Service.
2. Natural Resource Conservation Service (NRCS) Soil data, June 2023, streamed through ESRI web service.

0 250 500 ft
0 100 200 m

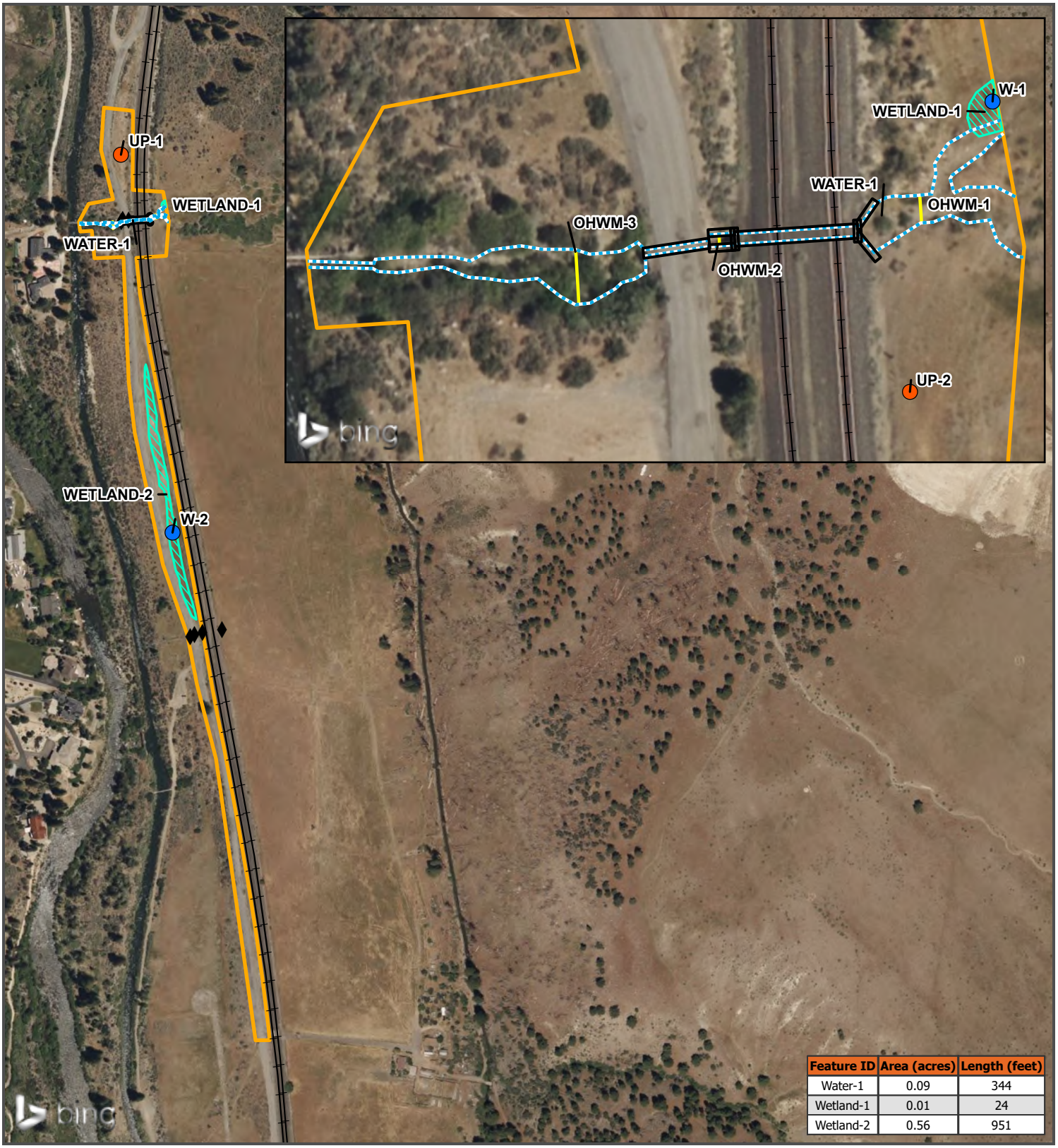
Legend

Project Limits (6.92 acres)

Soil Class Boundary

Soil ID	Soil Description	Hydric Rating
590	Springmeyer stony loam, 0 to 2 percent slopes	Predominantly Nonhydric (1-33%)
591	Springmeyer stony loam, 2 to 4 percent slopes	Predominantly Nonhydric (1-33%)
668	Oest very bouldery sandy loam, 30 to 50 percent slopes	Nonhydric (0%)
661	Oest bouldery sandy loam, 2 to 8 percent slopes	Nonhydric (0%)
482	Holbrook cobbly loamy sand complex, 0 to 15 percent slopes	Nonhydric (0%)

ARCADIS



Feature ID	Area (acres)	Length (feet)
Water-1	0.09	344
Wetland-1	0.01	24
Wetland-2	0.56	951

FIGURE 4
DELINEATED FEATURES MAP

Union Pacific Railroad
Roseville Sub MP 229.10
Washoe County, Nevada

Legend

- Upland Data Point
- Wetland Data Point
- Existing Culvert
- Delineated Intermittent Stream OHWM
- Railroad Centerline
- Existing Culvert Structure
- Delineated Wetland
- Project Limits (6.92 acres)
- OHWM Cross Section

Notes:
1. April 2024 Aerial Imagery obtained from ESRI Image Service.
Inset imagery streamed through Bing Image Service.

0 250 500 ft
0 50 100 m

ARCADIS

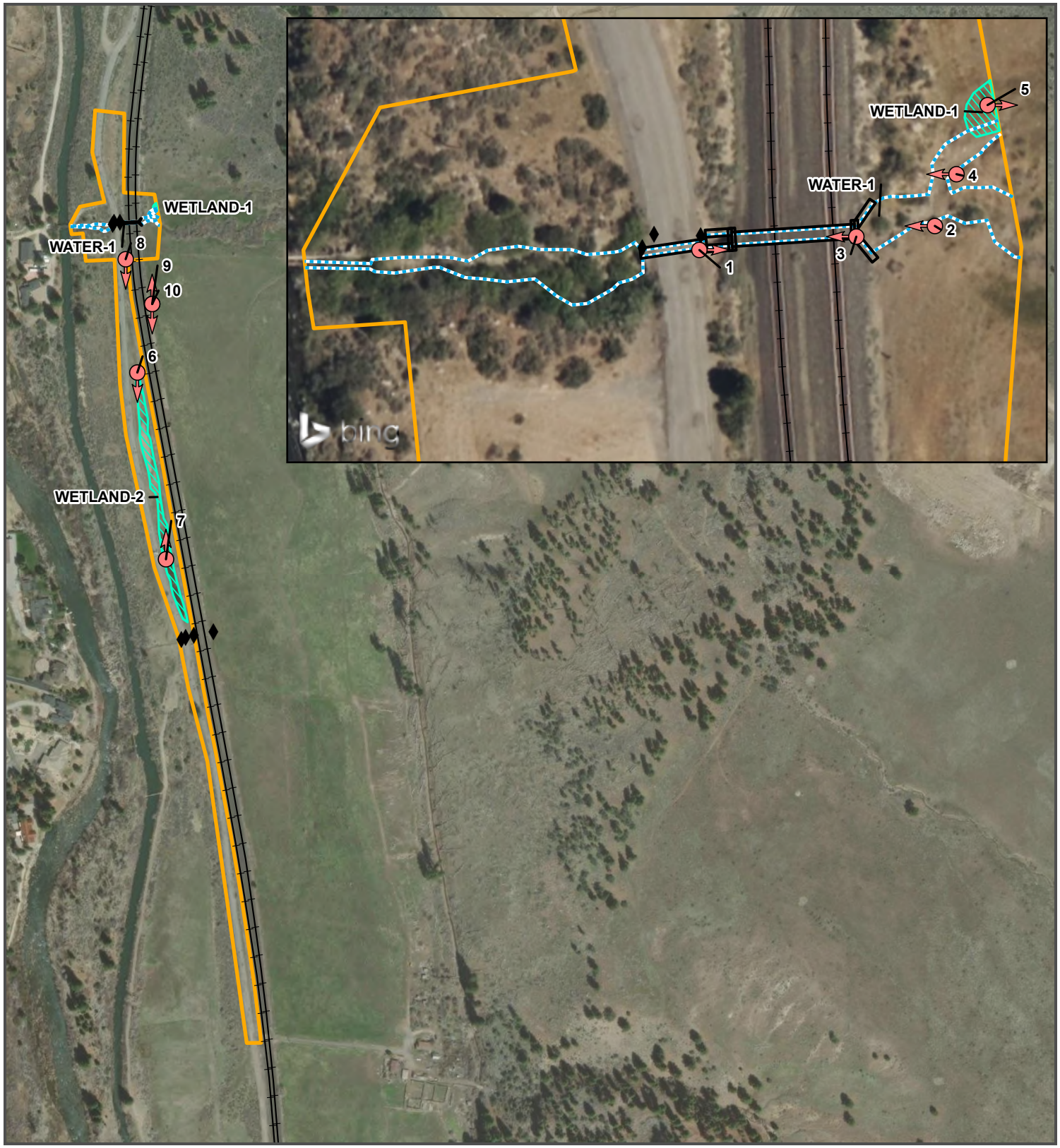


FIGURE 5
PHOTOGRAPH LOCATIONS
Union Pacific Railroad
Roseville Sub MP 229.10
Washoe County, Nevada

Legend

- Photograph Location and Direction
- Existing Culvert
- Delineated Intermittent Stream OHWM
- Railroad Centerline
- Delineated Wetland
- Project Limits (6.92 acres)

Notes:
1. April 2024 Aerial Imagery obtained from ESRI Image Service.
Inset imagery streamed through Bing Image Service.

0 250 500 ft
0 50 100 m

ARCADIS

Appendix B

Access Statement

Access Statement for Union Pacific Railroad
Roseville Subdivision Mile Post 229.10 Culvert Replacement Project

Per the U.S. Army Corps of Engineers Sacramento District (District), this Access Statement is required under the District's Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (ARDRs; January 2016) for the Roseville Subdivision Mile Post 229.10 Culvert Replacement Project (Project) in Washoe County, Nevada.

I grant permission for entry and the collection of samples within the Union Pacific Railroad (UPRR) right-of-way (ROW) for evaluation of the Project's ARDR with the understanding the District will contact the agent listed below and arrange a safety escort prior to entering the UPRR ROW. UPRR railway safety protocol requires a UPRR safety escort for visitors on all UPRR property. The agent listed below will arrange a safety escort and access to the UPRR ROW.

Agent for UPRR:

Ms. Jennifer McBride
Arcadis U.S., Inc.
630 Plaza Drive, Suite 200
Highland Ranch, CO 80129
Email: jennifer.mcbride@arcadis.com
Phone: (719) 508-0070

Steve Cherry
Signature of Applicant

12/24/2024
Date

Appendix C

Antecedent Precipitation Tool Output

Antecedent Precipitation Tool v1.0 - Watershed Sampling Summary

Generated on 2024-07-11

User Inputs

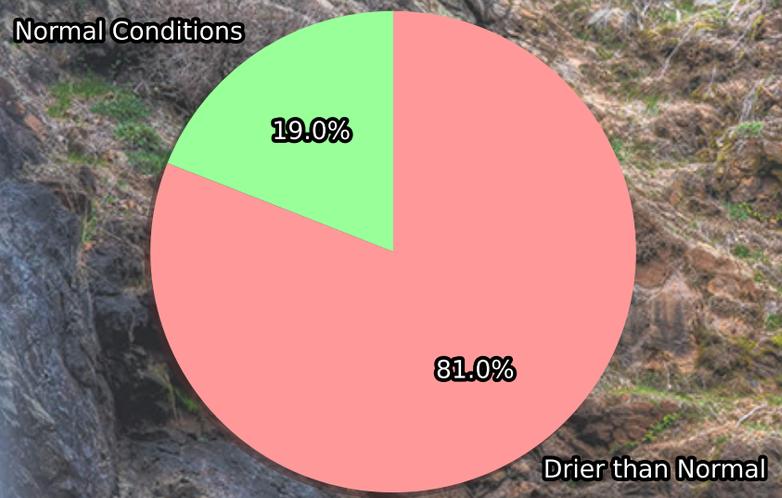
Coordinates	39.50288, -119.9941
Date	2024-06-04
Geographic Scope	HUC8

Intermediate Data

Hydrologic Unit Code	16050102
Watershed Size	1217.21 mi^2
# Random Sampling Points	69

Preliminary Result

Average Antecedent Precipitation Score	8.49
Preliminary Determination	Drier than Normal



Sampling Point Breakdown

Antecedent Precipitation Score	Antecedent Precipitation Condition	WebWIMP H_2O Balance	Drought Index (PDSI)	# of Points
10	Normal Conditions	Dry Season	Mild drought	1
10	Normal Conditions	Dry Season	Incipient wetness	12
9	Drier than Normal	Dry Season	Mild drought	10
9	Drier than Normal	Dry Season	Incipient wetness	14
8	Drier than Normal	Dry Season	Incipient wetness	16
7	Drier than Normal	Dry Season	Mild drought	10
7	Drier than Normal	Dry Season	Incipient drought	1
7	Drier than Normal	Dry Season	Incipient wetness	5

Appendix D

Wetland Determination Data Forms

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Roseville 229.10 City/County: Verdi/Washoe County Sampling Date: 06/04/2024

Applicant/Owner: Union Pacific Railroad State: NV Sampling Point: W-1

Investigator(s): T. Thomas and T. Poitras Section, Township, Range: 19 and 20, 19N, 18E

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 0-4

Subregion (LRR/MLRA): LRR D, MLRA 22A Lat: 39.503083 Long: -119.993778 Datum: NAD83

Soil Map Unit Name: Oest very bouldery sandy loam, 30 to 50 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
The area meets all three wetland criteria. Conditions are drier than normal.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Juncus balticus*	60	Yes	FACW
2. *Eleocharis acicularis*	30	Yes	OBL
3. *Epilobium brachcarpum*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	60	x 2 =	120
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		180 (B)

Prevalence Index = B/A = 1.80

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
The hydrophytic vegetation criteria is met.

SOIL

Sampling Point: W-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/1	90	10YR 4/6	10	C	PL	Loamy/Clayey	Prominent redox concentrations
6-18	10YR 2/1	90	10YR 4/6	10	C	PL	Sandy	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Hydric soil criteria is met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 6

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology criteria is met.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Roseville 229.10 City/County: Verdi/Washoe County Sampling Date: 06/04/2024

Applicant/Owner: Union Pacific Railroad State: NV Sampling Point: W-2

Investigator(s): T. Thomas and T. Poitras Section, Township, Range: 19 19N 18E

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0-4

Subregion (LRR/MLRA): LRR D, MLRA 22A Lat: 39.499757 Long: -119.993614 Datum: NAD83

Soil Map Unit Name: Oest very bouldery sandy loam, 30 to 50 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
The area meets all the three wetland criteria. Conditions are drier than normal.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Navarretia intertexta*	60	Yes	FACW
2. *Convolvulus arvensis*	10	No	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 30

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	10	x 5 =	50
Column Totals:	70 (A)		170 (B)

Prevalence Index = B/A = 2.43

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
The area meets the hydrophytic vegetation criteria.

SOIL

Sampling Point: W-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	5YR 3/1	90	5YR 4/6	10	C	PL	Sandy	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Hardpan

Depth (inches): 6

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Hydric soil criteria is met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology criteria is met.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Roseville 229.10 City/County: Verdi/Washoe County Sampling Date: 06/04/2024

Applicant/Owner: Union Pacific Railroad State: NV Sampling Point: UP-01

Investigator(s): T. Thomas and T. Poitras Section, Township, Range: 19 and 20, 19N 18E

Landform (hillside, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 0-4

Subregion (LRR/MLRA): LRR D, MLRA 22A Lat: 39.503574 Long: -119.994365 Datum: NAD83

Soil Map Unit Name: Oest very bouldery sandy loam, 30 to 50 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No X

Hydric Soil Present? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
The area does not meet the three wetland criteria and is, therefore, not a wetland. Conditions are drier than normal.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Eriogonum elatum*	15	Yes	UPL
2. *Wyethia mollis*	5	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 80

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	20	x 5 =	100
Column Totals:	20 (A)		100 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:
The area does not meet the hydrophytic vegetation criteria.

SOIL

Sampling Point: UP-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/4	100					Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 4

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
Hydric soil criteria is not met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology criteria is not met.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region

See ERDC/EL TR-10-3; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Roseville 229.10 City/County: Verdi/Washoe County Sampling Date: 06/04/2024

Applicant/Owner: Union Pacific Railroad State: NV Sampling Point: UP-02

Investigator(s): T. Thomas and T. Poitras Section, Township, Range: 19 and 20, 19N 18E

Landform (hillside, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 0-4

Subregion (LRR/MLRA): LRR D, MLRA 22A Lat: 39.502719 Long: -119.993908 Datum: NAD83

Soil Map Unit Name: Oest very bouldery sandy loam, 30 to 50 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No X

Hydric Soil Present? Yes ____ No X

Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
The area does not meet the three wetland criteria and is, therefore, not a wetland. Conditions are drier than normal.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Eriogonum elatum*	15	Yes	UPL
2. *Wyethia mollis*	5	No	UPL
3. *Poa bulbosa*	30	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 50

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	30	x 4 =	120
UPL species	20	x 5 =	100
Column Totals:	50 (A)		220 (B)

Prevalence Index = B/A = 4.40

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ 5 - Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks:
The area does not meet the hydrophytic vegetation criteria.

SOIL

Sampling Point: UP-02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/4	100					Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ 1 cm Muck (A9) **(LRR D, G)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR A, E)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Hydric soil criteria is not met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology criteria is not met.

Appendix E

Plant List

Plant List
Union Pacific Railroad
Roseville Subdivision Mile Post 299.10 Culvert Replacement Project
Washoe County, Nevada

Scientific Name	Common Name	Wetland Indicator Status[a]
Trees		
Pinus jeffreyi	Jeffrey pine	NOL
Shrubs, Saplings, and Woody Vines		
Artemisia tridentata ssp. tridentata	Big sagebrush	NOL
Purshia tridentata	Antelope bush	NOL
Salix exigua	Narrowleaf willow	FACW
Salix lasiolepis	Arroyo willow	FACW
Herbaceous		
Achillea millefolium	Common yarrow	FACU
Conium maculatum	Poison hemlock	FAC
Convolvulus arvensis	Field bindweed	NOL
Elymus caput-medusae	Medusa head	NOL
Lupinus argenteus	Silvery lupine	NOL
Poa bulbosa	Bulbous blue grass	FACU
Wyethia mollis	Woolly mule ears	NOL
Phacelia heterophylla	Variable-leaf scorpion-weed	FACU
Eriogonum elatum	Tall buckwheat	NOL
Juncus balticus	Baltic rush	FACW
Eleocharis acicularis	Needle spikerush	OBL
Poa pratensis	Kentucky blue grass	FAC
Epilobium brachycarpum	Willow herb	FAC
Navarretia intertexta	Interwoven navarretia	FACW

Notes:
Wetland Indicator Status
FAC = Facultative
FACU = Facultative Upland
FACW = Facultative Wetland
OBL = Obligate
UPL = Upland
NOL = Not on List

[a] Source: USACE. 2023. 2022 National Wetland Plant List - Western Mountains, Valleys, and Coast Region. [Web page]. Located at: https://nwpl.sec.usace.army.mil/static/reports/NWPL%20Cover%20Page%20WMVC_v3.pdf. Accessed: December 2024.

Appendix F

OHWM Data Sheets

OHWM Delineation Cover Sheet

Project: Roseville 229.10 **Date:** 06/04/2024

Location: 39.502951, -119.993895 (OHWM-1) **Investigator(s):** T. Thomas and T. Poitras

Project Description:

Replacement of an existing railroad culvert spanning a unnamed intermittent stream. OHWM-1 represents the upper reach of the unnamed intermittent within the Project limits.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Within the Project limits, the stream exhibits intermittent flow regime and OHWM indicators. An existing railroad culvert spans the unnamed intermittent stream.

Off-site Information

Remotely sensed image(s) acquired? ☒ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

ESRI, Google Earth

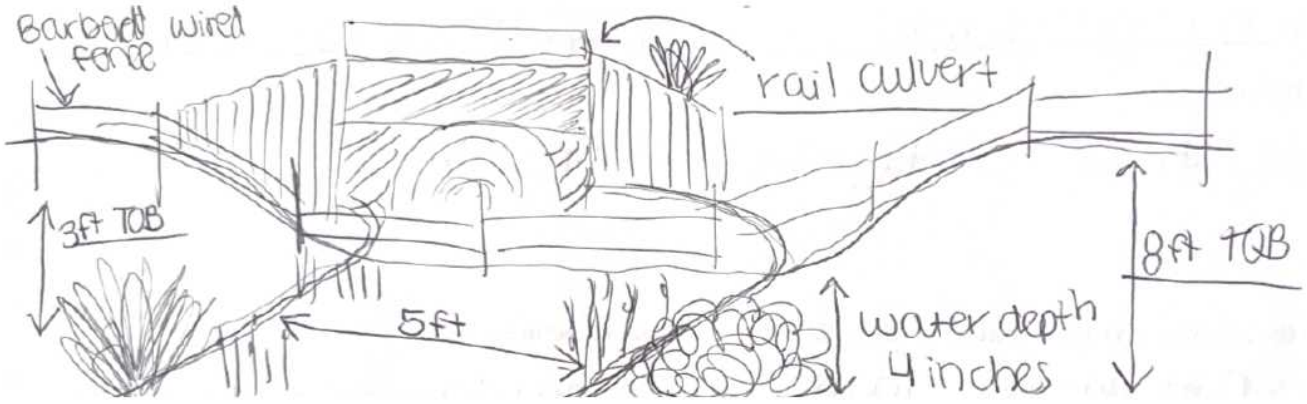
Hydrologic/hydraulic information acquired? ☒ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

USGWS Watershed Boundary Dataset - Dog Creek-Truckee River and Bull Ranch Creek - Truckee River Watershed HUC12 - 160501020504
National Wetlands Inventory (NWI), National Hydrography Dataset (NHD)

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☒ Sharp (> 60°) | ☐ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	40	25	10	20	5	N
Below OHWM	30	20	20	20	10	N

Notes/Description:

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	0	40	30	30
Below OHWM	0	35	45	10

Notes/Description:

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM indicators include break in slope, change in vegetation cover and change in sediment composition.

OHWM Delineation Cover Sheet

Project: Roseville 229.10 **Date:** 06/04/2024

Location: 39.502888, -119.994222 (OHWM-2) **Investigator(s):** T. Thomas and T. Poitras

Project Description:

Replacement of an existing railroad culvert spanning a unnamed intermittent stream. OHWM-2 represents the mid reach of the unnamed intermittent between the access road and railroad tracks within the Project limits.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Within the Project limits, the stream exhibits intermittent flow regime and OHWM indicators. An existing railroad culvert spans the unnamed intermittent stream.

Off-site Information

Remotely sensed image(s) acquired? ☒ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

ESRI, Google Earth

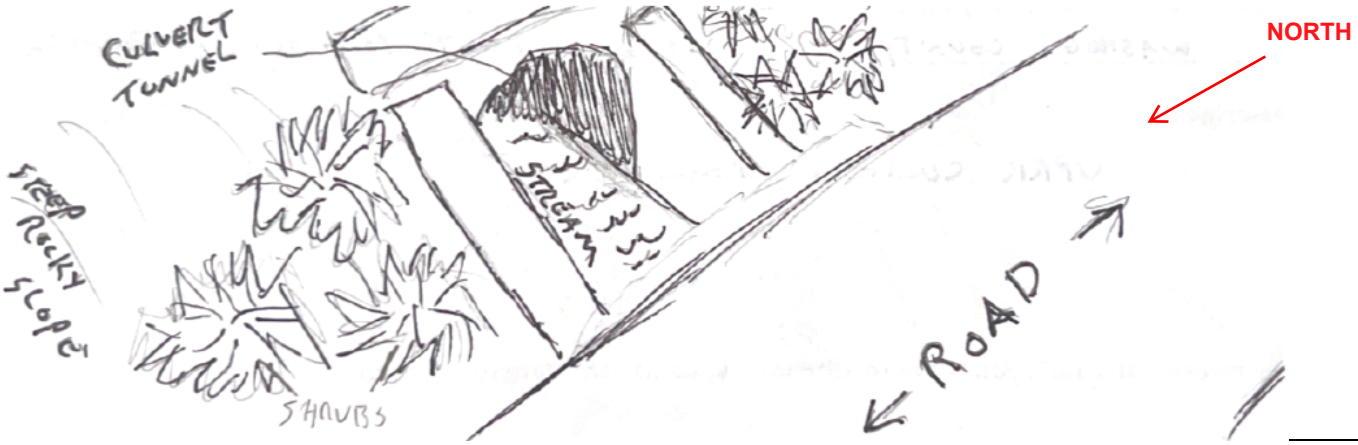
Hydrologic/hydraulic information acquired? ☒ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

USGWS Watershed Boundary Dataset - Dog Creek-Truckee River and Bull Ranch Creek - Truckee River Watershed HUC12 - 160501020504
National Wetlands Inventory (NWI), National Hydrography Dataset (NHD)

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance: label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☒ Sharp (> 60°) | ☐ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	0	10	30	40	20	N
Below OHWM	10	0	5	20	5	N

Notes/Description:

Stream bed very rocky.

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	0	30	40	40
Below OHWM	0	0	0	100

Notes/Description:

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

OHWM indicators include break in slope, change in vegetation cover and change in sediment composition.

OHWM Delineation Cover Sheet

Project: Roseville 229.10 **Date:** 6/4/2024

Location: (39.5028647, -119.9944547) (OHWM-3) **Investigator(s):** T. Thomas and T. Poitras

Project Description:

Replacement of an existing railroad culvert spanning a unnamed intermittent stream. OHWM-3 represents the lower reach of the unnamed intermittent stream downstream of the access road within the Project limits.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Within the Project limits, the stream exhibits intermittent flow regime and OHWM indicators. An existing railroad culvert spans the unnamed intermittent stream.

Off-site Information

Remotely sensed image(s) acquired? ☒ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

ESRI, Google Earth

Hydrologic/hydraulic information acquired? ☒ **Yes** ☐ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

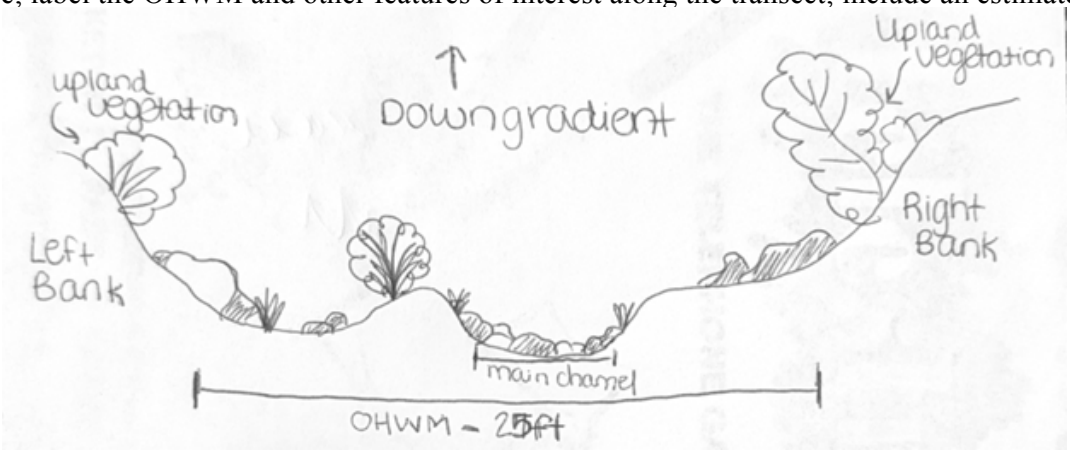
USGWS Watershed Boundary Dataset - Dog Creek-Truckee River and Bull Ranch Creek - Truckee River Watershed HUC12 - 160501020504

National Wetlands Inventory (NWI), National Hydrography Dataset (NHD)

List and describe any other supporting information received/acquired:

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☒ Sharp (> 60°) | ☐ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	20	60	10	5	20	N
Below OHWM	10	0	5	40	45	N

Notes/Description:

Stream bed very rocky.

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	0	30	40	40
Below OHWM	0	0	5	95

OHWM indicators include break in slope, change in vegetation cover and change in sediment composition.

Appendix G

Photograph Log

Photograph Log

Union Pacific Railroad
Roseville Subdivision Mile Post 229.10 Culvert Replacement Project
Washoe County, Nevada

Photograph: 1

Description:
Condition of Water-1 and existing rail culvert, facing upstream (east) from Quilici Ranch Road.

Location:

39.502896°, -119.994250°

Date: 6/4/2024

Photograph: 2

Description:
View of Water-1 and existing rail culvert, facing west from upgradient of the structure.

Location:

39.502931°, -119.993866°

Date: 6/4/2024

Photograph Log

Union Pacific Railroad
Roseville Subdivision Mile Post 229.10 Culvert Replacement Project
Washoe County, Nevada

Photograph: 3

Description:
View of Water-1 within the existing culvert, facing downstream (west).

Location:

39.502916°, -119.993994°

Date: 6/4/2024

Photograph: 4

Description:
Condition of Water-1 upgradient from existing rail culvert, facing west.

Location:

39.502997°, -119.993832°

Date: 6/4/2024

Photograph Log

Union Pacific Railroad
Roseville Subdivision Mile Post 229.10 Culvert Replacement Project
Washoe County, Nevada

Photograph: 5

Description:
View of W-1 data point and Wetland-1 in the northeast portion of the Project limits, facing east.

Location:

39.503085°, -119.993783°

Date: 6/4/2024

Photograph: 6

Description:
View of Wetland-2 located in the central portion of the Project limits, facing south.

Location:

39.501399°, -119.99399°

Date: 6/4/2024

Photograph Log

Union Pacific Railroad
Roseville Subdivision Mile Post 229.10 Culvert Replacement Project
Washoe County, Nevada

Photograph: 7

Description:
View of Wetland-2 south of existing rail culvert within the Project limits, facing north.

Location:

39.499513°, -119.993577°

Date: 6/4/2024

Photograph: 8

Description:
Photograph depicts the Project limits and Quilici Road along the west side of ROW, facing south.

Location:

39.502544°, -119.994165°

Date: 6/4/2024

Photograph Log

Union Pacific Railroad
Roseville Subdivision Mile Post 229.10 Culvert Replacement Project
Washoe County, Nevada

Photograph: 9

Description:
Overview of Project limits along east side of railroad ROW, facing north.

Location:

39.502095°, -119.993810°

Date: 6/4/2024

Photograph: 10

Description:
Overview of Project limits along west side of railroad ROW, facing south.

Location:

39.502095°, -119.993810°

Date: 6/4/2024

Arcadis U.S., Inc.
630 Plaza Drive, Suite 200
Highlands Ranch
Colorado 80129
Phone: 720 344 3500
Fax: 720 344 3535
www.arcadis.com

Memo

SUBJECT
Union Pacific Railroad
Roseville Subdivision Mile Post 229.10 Culvert Replacement
Washoe County, Nevada
Dewatering and Diversion Plan

DATE
April 21, 2025

TO
Nevada Division of Environmental Protection
Bureau of Water Quality Planning

OUR REF
30210118

NAME
Jennifer McBride
Senior Ecologist, Arcadis

On behalf of Union Pacific Railroad (UPRR), Arcadis U.S., Inc. (Arcadis) has prepared this Dewatering and Diversion Plan (Plan) as part of the Clean Water Act Section 401 Water Quality Certification Application for the UPRR Roseville Subdivision Mile Post 229.10 Culvert Replacement Project (Project) in Washoe County, Nevada. The proposed Project would consist of replacing an existing culvert structure under two mainline tracks that conveys an intermittent stream, designated as Water-1. This Plan outlines the dewatering and diversion procedures that would be implemented during construction.

Project Description

The proposed activity would replace an existing 55-foot long, concrete arch culvert with a 72-inch diameter, 64-foot long, smooth steel pipe culvert. The existing culvert structure would be filled with controlled low strength material and abandoned in place. Cast-in-place concrete headwalls and riprap aprons would be installed at the new culvert inlet and outlet. An existing concrete wingwall would be partially removed at the existing culvert inlet. On the downstream (west) side of the Mainline 1 culvert outlet and access road, a bore pit would be temporarily excavated to place jack and bore equipment used to install the new culvert under Mainlines 1 and 2.

Dewatering and Diversion Procedures

Due to the intermittent flow duration of Water-1, the presence of surface water during construction is unknown. If surface water is present in Water-1 during construction, surface flows will be maintained through the existing culvert structure until installation of the replacement culvert structure is completed. Erosion and sediment controls will be implemented during construction to prevent construction-related pollutants from entering Water-1. Once the new culvert is installed, the temporarily disturbed areas upgradient and downgradient of the structure will be restored to pre-construction elevations and condition and contoured to convey Water-1. Water-1 will be redirected through the new culvert structure, and the existing culvert will be filled with controlled low-strength material and abandoned in place.

If surface water is present and/or groundwater is encountered, mechanical dewatering will be performed to remove excess water, maintain a dry workspace, and minimize water quality impacts. UPRR's contractor will be instructed to containerize, treat, and dispose of dewatered surface water and/or groundwater offsite. If the contractor selects to discharge dewatered surface water and/or groundwater to the land surface or surface waters, the contractor will obtain the applicable dewatering discharge permit coverage prior to discharging (e.g., General De minimis Discharge Permit). The final dewatering and diversion procedures are subject to change based on the construction contractor's means and methods and site conditions at the time of construction.

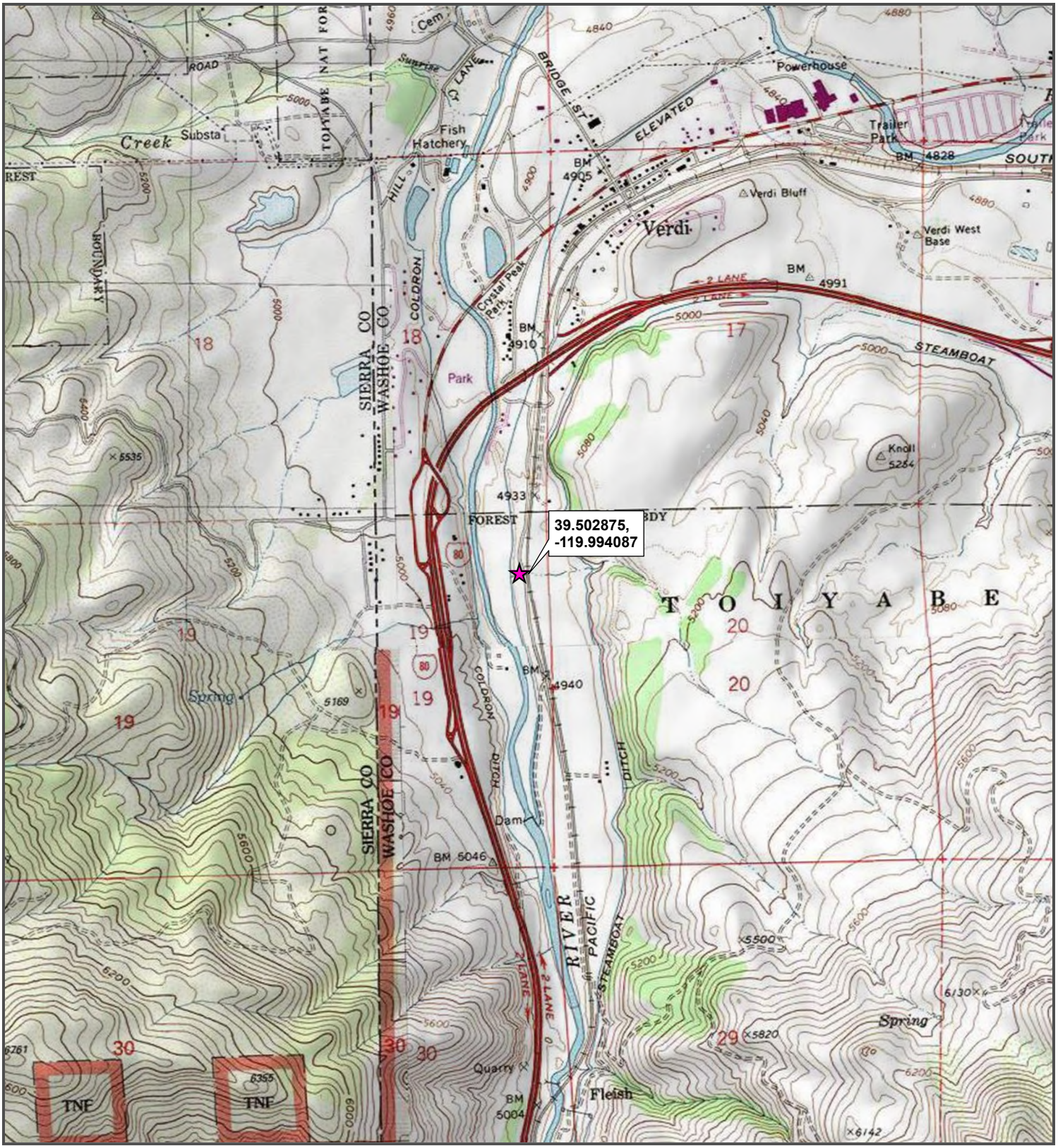


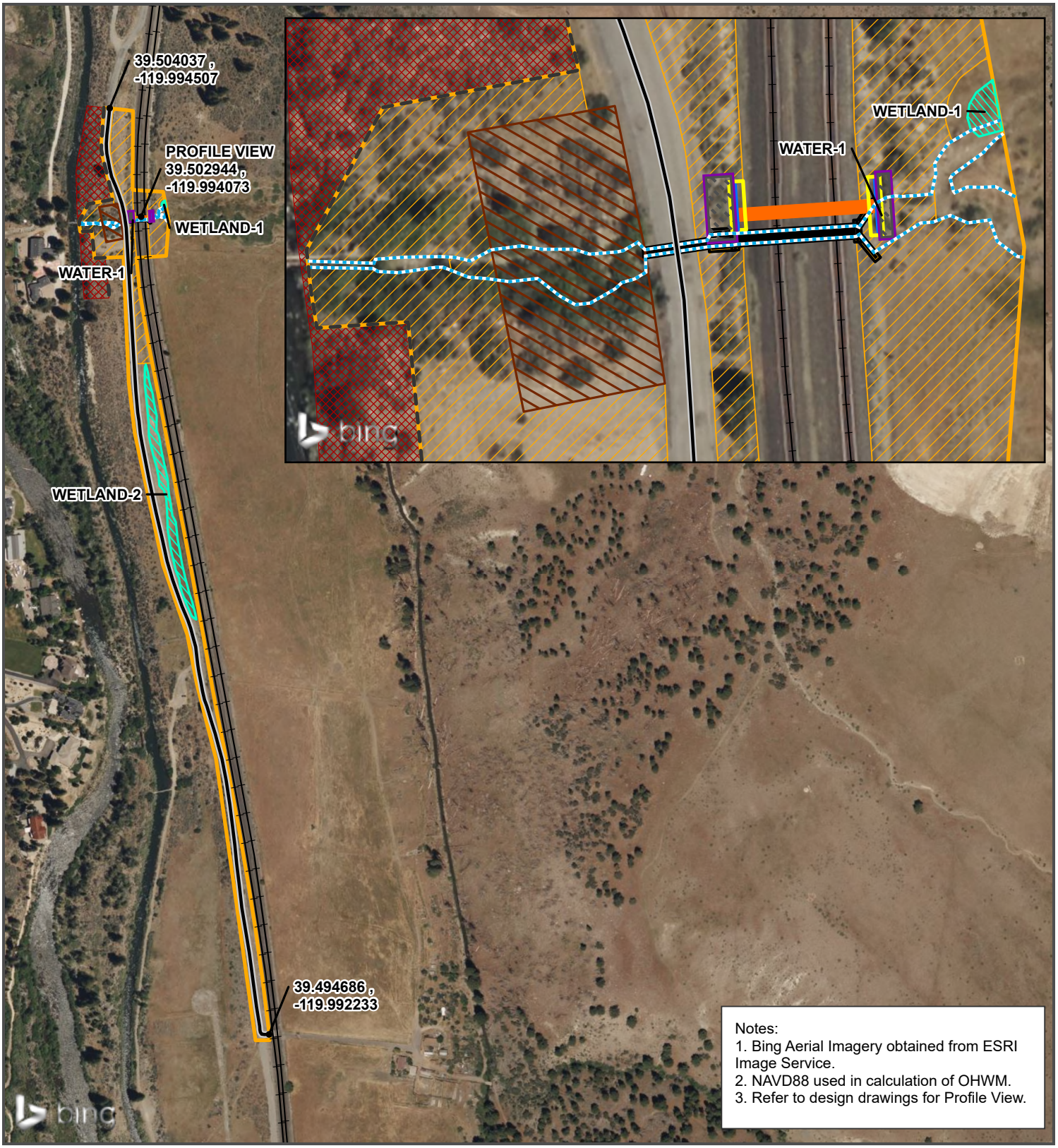
FIGURE 1
PROJECT VICINITY
Union Pacific Railroad
Roseville Sub MP 229.10
Washoe County, Nevada

Legend
★ Project Location

Notes:
1. USGS Topographic Quadrangle For Verdi, NV obtained through ArcGIS Online Streaming Service

0 1,000 2,000 ft
0 250 500 m

ARCADIS



Notes:
1. Bing Aerial Imagery obtained from ESRI Image Service.
2. NAVD88 used in calculation of OHWM.
3. Refer to design drawings for Profile View.

FIGURE 2
PLAN VIEW
Union Pacific Railroad
Roseville Sub MP 229.10
Washoe County, Nevada

Legend

- Railroad Centerline
- Delineated Intermittent Stream OHWM
- Cultural Exclusion Fence
- Access Centerline
- Existing Culvert Structure: Permanent Fill Impact to Water-1 (58 LF, 11 CY, 0.007 acre)
- Delineated Wetland
- Staging Area: Temporary Fill Impact to Water-1 (48 LF, 23 CY, 0.01 acre)
- Project Limits (6.92 acres)
- Cultural Exclusion Zone
- Bore Pit: Temporary Excavation Impact to Water-1 (74 LF, 46 CY, 0.03 acre)
- Proposed Culvert
- Excavation: Temporary Excavation Impact to Water-1 (4 LF, 1 CY, <0.001 acre)
- Proposed Headwall
- Permanent Rip Rap: Permanent Fill Impact to Water-1 (20 LF, 6 CY, 0.004 acre)

0 250 500 ft
0 50 100 m

ARCADIS

U.S. Army Corps of Engineers (USACE)

NATIONWIDE PERMIT PRE-CONSTRUCTION NOTIFICATION (PCN)

33 CFR 330. The proponent agency is CECW-CO-R.

Form Approved -
OMB No. 0710-0003
Expires: 02-28-2022

DATA REQUIRED BY THE PRIVACY ACT OF 1974

Authority	Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Regulatory Program of the Corps of Engineers (Corps); Final Rule 33 CFR 320-332.
Principal Purpose	Information provided on this form will be used in evaluating the nationwide permit pre-construction notification.
Routine Uses	This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of the agency coordination process.
Disclosure	Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued.

The public reporting burden for this collection of information, 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

PLEASE DO NOT RETURN YOUR RESPONSE TO THE ABOVE EMAIL.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (*see sample drawings and/or instructions*) and be submitted to the district engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (*agent is not required*)
First - Steve Middle - Last - Cheney	First - Jennifer Middle - Last - McBride
Company - Union Pacific Railroad (UPRR)	Company - Arcadis U.S., Inc.
Company Title - Senior Director Design & Environmental	E-mail Address - jennifer.mcbride@arcadis.com
E-mail Address - slcheney@up.com	
6. APPLICANT'S ADDRESS	**9. AGENT'S ADDRESS**
Address- 1400 Douglas Street, Stop 0910	Address- 630 Plaza Drive, Suite 200
City - Omaha State - NE Zip - 68179 Country - US	City - Highlands Ranch State - CO Zip - 80129 Country - US
7. APPLICANT'S PHONE NOs. with AREA CODE	**10. AGENT'S PHONE NOs. with AREA CODE**
a. Residence b. Business c. Fax d. Mobile	a. Residence b. Business c. Fax d. Mobile
402-544-3227	719-508-0070

STATEMENT OF AUTHORIZATION

11. I hereby authorize, Jennifer McBride to act in my behalf as my agent in the processing of this nationwide permit pre-construction notification and to furnish, upon request, supplemental information in support of this nationwide permit pre-construction notification.

Steve Cheney — SIGNATURE OF APPLICANT

12/24/2024 — DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME or TITLE (*see instructions*)

UPRR Roseville Subdivision Mile Post 229.10 Culvert Replacement Project

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

13. NAME OF WATERBODY, IF KNOWN (*if applicable*)
Intermittent Tributary to Truckee River (Water-1)

14. PROPOSED ACTIVITY STREET ADDRESS (*if applicable*)
N/A

15. LOCATION OF PROPOSED ACTIVITY (*see instructions*)

Latitude	°N	Longitude	°W
39.502875	Center	-119.994087	Center

City: State: Zip:

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (*see instructions*)

State Tax Parcel ID

Municipality

Section	Township	Range
19 and 20	19 North	18 East

17. DIRECTIONS TO THE SITE
From Reno: Take Interstate 80 West for approximately 9.7 miles, then take Exit 3. Make a left turn onto South Verdi Road and continue for approximately 0.2 mile to Crystal Park Road. Turn left onto Quilici Ranch Road and continue for approximately 0.5 miles to arrive at the existing Project culvert on the left.

18. IDENTIFY THE SPECIFIC NATIONWIDE PERMIT(S) YOU PROPOSE TO USE
Nationwide Permit 14 - Linear Transportation Projects

19. DESCRIPTION OF PROPOSED NATIONWIDE PERMIT ACTIVITY (*see instructions*)
UPRR proposes to replace the existing culvert structure under two mainline tracks at Mile Post 229.10. The proposed activity would replace an existing 55-foot long, concrete arch culvert under two mainline tracks with a 72-inch diameter, 64-foot long, smooth steel pipe culvert. The existing culvert structure would be filled with controlled low strength material and abandoned in place. Cast-in-place concrete headwalls and riprap aprons would be installed at the new culvert inlet and outlet. An existing concrete wingwall would be partially removed at the existing culvert inlet. The existing culvert conveys an intermittent tributary to the Truckee River, designated as Water-1. Construction would occur within an existing UPRR right-of-way (ROW) extending 200 feet to both sides of Mainline 2 (400 feet total ROW width). The Project limits include the existing and proposed culvert structures, temporary workspaces, and an existing access route. Proposed access to the Project utilizes an existing access road within the UPRR ROW. Temporary workspaces would be located on all four sides of the existing structure within the Project limits. On the downstream (west) side of the Mainline 1 culvert outlet and access road, a bore pit would be temporarily excavated to place jack and bore equipment used to install the new culvert under Mainlines 1 and 2. Refer to Attachment 3 - Design Drawings and Attachment 4 - Aquatic Resource Delineation Report for additional details.

The proposed activity would result in minor permanent and temporary impacts to Water-1 associated with filling the existing culvert structure, installing riprap aprons, temporary staging areas, and temporary excavation for the bore pit and new structure. Permanent impacts to Water-1 associated with filling the existing culvert structure and installing riprap include 0.01 acre (58 linear feet) and 0.004 acre (20 linear feet) of permanent fill, respectively. Temporary impacts to Water-1 associated with the bore pit and new structure include 0.03 acre (74 linear feet) and <0.001 acre (4 linear feet) of temporary excavation, respectively. Temporary impacts to Water-1 associated with temporary staging areas include 0.01 acre (48 linear feet) of temporary fill. No wetland impacts would occur as a result of the proposed activity.

20. DESCRIPTION OF PROPOSED MITIGATION MEASURES (*see instructions*)
- Permitted areas of disturbance will be clearly marked with construction fencing or similar product prior to construction through the completion of construction.
- All construction workers are required to participate in environmental awareness training to educate workers on special-status species that may occur, procedures in the event a special-status species is observed, and the penalties for non-compliance.
- Removal and trimming of vegetation will be avoided to the maximum extent practicable.
- Heavy equipment, vehicles, and stockpiled materials will be restricted to the designated staging areas. Fueling, maintenance, or overnight parking of equipment will be done in an upland area at least 300 feet from any aquatic resources.
- Sediment and erosion control measures will be implemented to reduce turbidity and sediment transport from the Project limits.
- Wetland impacts will be avoided during construction.
- Temporary impacts will be minimized by placing geotextile fabric underneath temporary fill to promote the complete removal of temporary fill below the Water-1 OHWM. Temporary fill material within aquatic features will be removed following construction.
- Where Water-1 is temporarily excavated for the bore pit and new culvert structure, temporarily excavated areas will be backfilled with clean fill material to existing elevation, and Water-1 will be restored.
- Pre-construction nest survey for Migratory Bird Treaty Act species if construction or vegetation removal occur during the nesting season (February 1 to September 15).

21. PURPOSE OF NATIONWIDE PERMIT ACTIVITY (*Describe the reason or purpose of the project, see instructions*)

The purpose of the proposed project is to continue and improve freight and passenger rail service in the region by replacing the existing structure that has outlived its useful life. Construction is planned to occur in 2026 and is expected to last approximately 3 to 4 months.

22. QUANTITY OF WETLANDS, STREAMS, OR OTHER TYPES OF WATERS DIRECTLY AFFECTED BY PROPOSED NATIONWIDE PERMIT ACTIVITY (*see instructions*)

Acres	Linear Feet	Cubic Yards Dredged or Discharged
See attached	See attached	See attached

Each PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site.

23. List any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. (*see instructions*)

N/A

24. If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and requires pre-construction notification, explain how the compensatory mitigation requirement in paragraph (c) of general condition 23 will be satisfied, or explain why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required for the proposed activity.

Compensatory mitigation is not proposed for the project because there are no anticipated wetland impacts and the permanent loss of stream would be less than 0.03 acre.

25. Is any portion of the nationwide permit activity already complete? ☐ Yes ☒ No If Yes, describe the completed work:

26. List the name(s) of any species listed as endangered or threatened under the Endangered Species Act that might be affected by the proposed NWP activity or utilize the designated critical habitat that might be affected by the proposed NWP activity. (*see instructions*)

Webber's ivesia (Ivesia webberi; Threatened) was determined to have a low potential to occur within the Project limits. No critical habitat would be affected by the proposed activity. Refer to Attachment 5 - Biological Resources Technical Memorandum for additional details.

27. List any historic properties that have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic property or properties. (*see instructions*)

Refer to Attachment 6 - Cultural Resources Technical Report

28. For a proposed NWP activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, identify the Wild and Scenic River or the "study river":

N/A

29. If the proposed NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, have you submitted a written request for section 408 permission from the Corps district having jurisdiction over that project? ☐ Yes ☐ No

If "yes", please provide the date your request was submitted to the Corps district: N/A

30. If the terms of the NWP(s) you want to use require additional information to be included in the PCN, please include that information in this space or provide it on an additional sheet of paper marked Block 30. (*see instructions*)

N/A

31. Pre-construction notification is hereby made for one or more nationwide permit(s) to authorize the work described in this notification. I certify that the information in this pre-construction notification is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

Steve Cherry	12/24/2024	Jennifer McBride	1/6/2024
SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE

The pre-construction notification must be signed by the person who desires to undertake the proposed activity (applicant) and, if the statement in Block 11 has been filled out and signed, the authorized agent.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

UPRR Roseville Subdivision Mile Post 229.10 Culvert Replacement - PCN Block 22

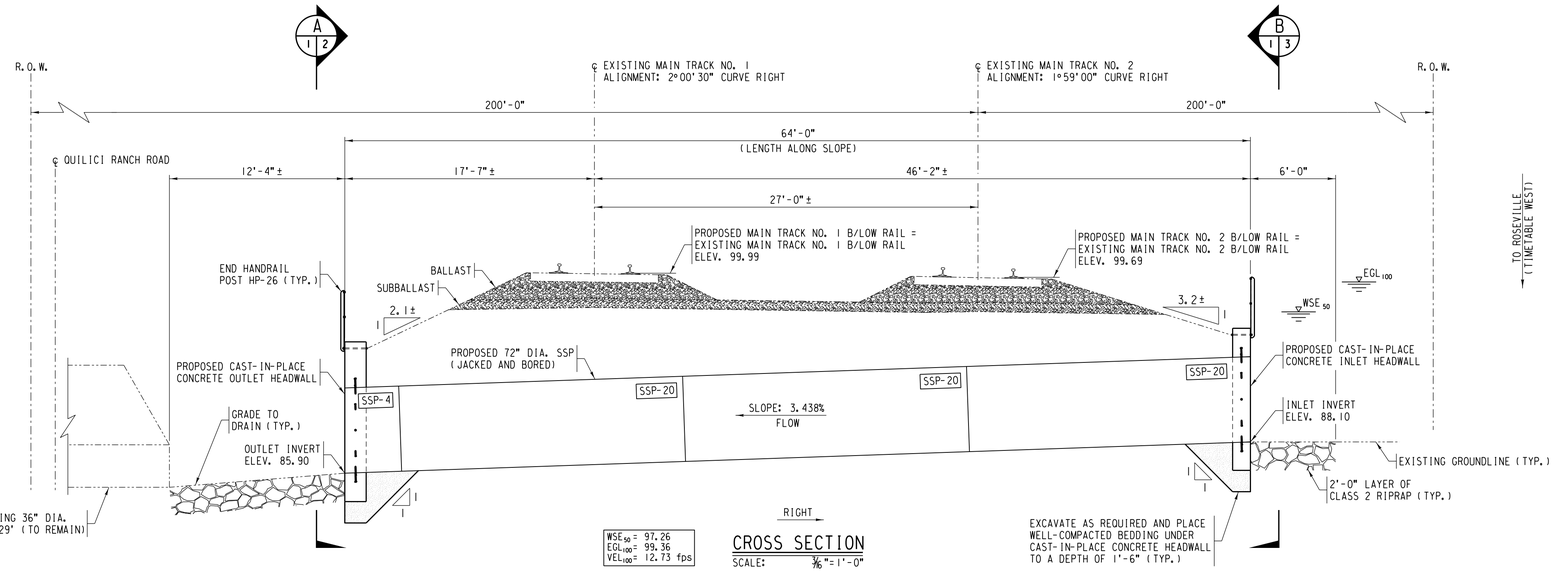
Temporary Impacts (Fill)	Acres	Linear Feet	Cubic Yards	Material Type
Water-1	0.01	48	23	Clean gravel road base underlain by geotextile fabric (staging area).

Temporary Impacts (Excavation)	Acres	Linear Feet	Cubic Yards	Material Type
Water-1	0.03	78	47	Excavated areas will be backfilled to natural elevation using clean or native material. Surficial material will be similar in texture to the existing stream substrate.

Permanent Impacts (Fill)	Acres	Linear Feet	Cubic Yards	Material Type
Water-1	0.01	78	17	Controlled low-strength material (fill existing culvert structure and abandon in place); Class 2 riprap (riprap aprons).

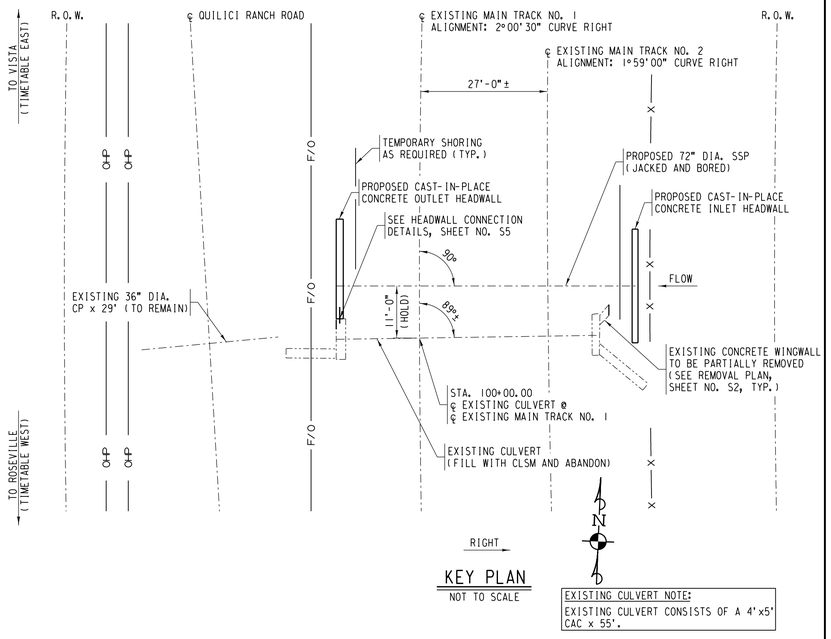
DESIGN SHEET

SHEET SIZE 22x34



CROSS SECTION

SCALE: 3/16"=1'-0"



KEY PLAN

NOT TO SCALE

EXISTING CULVERT NOTE:
EXISTING CULVERT CONSISTS OF A 4'x5' CAC x 55'.

DRAWING SCHEDULE

SHEET NO.	PLAN NO.	DESCRIPTION	TYPE
S1	123675	GENERAL ARRANGEMENT	DESIGN
S2	123675	TYPICAL SECTIONS AND CONSTRUCTION DETAILS (SHEET 1 OF 2)	DESIGN
S3	123675	TYPICAL SECTIONS AND CONSTRUCTION DETAILS (SHEET 2 OF 2)	DESIGN
S4	123675	CAST-IN-PLACE CONCRETE INLET HEADWALL DETAILS	DESIGN
S5	123675	CAST-IN-PLACE CONCRETE OUTLET HEADWALL DETAILS	DESIGN
2	680000	DETAILS FOR ROUND STEEL PIPE CULVERTS	STANDARD
3	680000	GENERAL NOTES FOR ROUND STEEL PIPE CULVERTS	STANDARD
1	680010	CONSTRUCTION NOTES AND TABLES FOR SMOOTH STEEL PIPE CULVERTS	STANDARD
T3	531100	PIECE FABRICATION NOTES	STANDARD
H1	680160	HANDRAIL LAYOUT AND DETAILS	STANDARD

BILL OF MATERIAL

Ver 0

TOTAL	UNIT	DESCRIPTION	ITEM NO	ORDERED BY
3	EA	CULVERT, SMOOTH STEEL PIPE 72" DIA. X 7/8" WALL X 20' LONG, ASTM A139, GR. B OR ASTM A252, GR. 3 (PER STD PLAN NO. 680010)	510-3054	MBP
1	EA	CULVERT, SMOOTH STEEL PIPE 72" DIA. X 7/8" WALL X 4' LONG, ASTM A139, GR. B OR ASTM A252, GR. 3 (PER STD PLAN NO. 680010)	123675-01	
24	EA	3/4" DIA. X 8" WELDED STUD (PER NOTES, STD. DWG. 531100, SHT. T3 AND DETAILS, SHEET NO. S4 & S5)	123675-02	
4	EA	HANDRAIL POST GALVANIZED HP-26 (PER STD. PLAN NO. 680160)	513-2080	
4	EA	HANDRAIL POST GALVANIZED HP-27 (PER STD. PLAN NO. 680160)	513-2085	
120	LF	3/8" NOMINAL DIAMETER WIRE ROPE, 7 WIRE, GALVANIZED STEEL STRAND, SIEMENS MARTINS GRADE, A-COATING	050-5394	
11	EA	3/8" EYE TYPE STRANDVISE CABLE GRIP CARTRIDGE (MACLEAN POWER PRODUCTS NO. 5102)	098-6081	
11	EA	1/2" DIA. EYEBOLT, 2" LONG SHANK WITH 1" I.D. EYE, PLAIN PATTERN GALVANIZED DROP FORGED STEEL (ASTM A489), WITH ZINC PLATED HEX NYLON INSERT LOCKNUT (ASTM A563) AND ZINC PLATED FLAT CIRCULAR WASHER (ASTM F436)	130-0370	
11	EA	GALVANIZED MALLEABLE IRON U-BOLT WITH 2 ELASTIC LOCKNUTS (MIL-N-25027), ZINC PLATED, FOR 3/8" DIA. WIRE ROPE	050-6370	
10	EA	3/4" DIA. X 20" A307 HEAVY HEX BOLT, TYPE 1 WITH HEAVY ELASTIC LOCK NUT (MIL-N-25027) AND FLAT CIRCULAR WASHER (ASTM F436), EACH COMPONENT HOT DIP OR MECHANICALLY ZINC COATED	123675-03	
6	EA	3/4" DIA. X 26" A307 HEAVY HEX BOLT (FULLY THREADED), TYPE 1 WITH HEAVY ELASTIC LOCK NUT (MIL-N-25027) AND FLAT CIRCULAR WASHER (ASTM F436), EACH COMPONENT HOT DIP OR MECHANICALLY ZINC COATED	123675-04	
13	EA	3/4" DIA. X 17" A307 HEAVY HEX BOLT, TYPE 1 WITH HEAVY ELASTIC LOCK NUT (MIL-N-25027) AND FLAT CIRCULAR WASHER (ASTM F436), EACH COMPONENT HOT DIP OR MECHANICALLY ZINC COATED	134-6656	
1	EA	RED HEAD A7+ QUICK CURE 280Z EPOXY INJECTION CARTRIDGE, PART NO. A7P-28, USE GUNS A102-V3(M) OR A200(P)	412-5570	
2	EA	HIGH FLOW MIXING NOZZLE FOR RED HEAD C6P-30 OR A7P-28, PART NO. S75, 5/8" HOLES MIN.	410-2149	
1	LOT	REINFORCING STEEL FOR CONCRETE INLET HEADWALL (PER NOTES, STD. DWG. 531100, SHT. NO. T3 AND SCHEDULE, SHEET NO. S4)		CONSTRUCTOR
9.8	CU. YD.	4000 PSI CONCRETE FOR CONCRETE INLET HEADWALL (PER NOTES, STD. DWG. 531100, SHT. NO. T3 AND DETAILS, SHEET NO. S4)		
1	LOT	REINFORCING STEEL FOR CONCRETE OUTLET HEADWALL (PER NOTES, STD. DWG. 531100, SHT. NO. T3 AND SCHEDULE, SHEET NO. S5)		
11.6	CU. YD.	4000 PSI CONCRETE FOR CONCRETE OUTLET HEADWALL (PER NOTES, STD. DWG. 531100, SHT. NO. T3 AND DETAILS, SHEET NO. S5)		
1	LOT	TEMPORARY SHORING		
1	QT	ZRC COLD GALVANIZING COMPOUND OR APPROVED ALTERNATIVE	513-3960	
15	TON	PIPE BEDDING (PER STD. DWG. 680000 SHT. 2-3)		
45	CU. YD.	CONTROLLED LOW-STRENGTH MATERIAL (CLSM) (PER STD. DWG. 680000 SHT. 2-3)		
45	TON	FILL MATERIAL (PER STD. DWG. 680000 SHT. 2-3)		
70	TON	RIPRAP, CLASS 2 (PER NOTES, STD. PLAN NO. 531190, SHT. R1 OR R2)	562-3430	
1	GAL.	EPOGRIP MULTIPURPOSE STRUCTURAL BONDING AND GROUTING EPOXY ADHESIVE OR APPROVED ALTERNATE		

CLSM MAY BE SUBSTITUTED FOR FILL MATERIAL.
BULK QUANTITIES ARE ESTIMATED.

DESIGN NOTES

LAYOUT

1. Stationing: Sta. 100+00.00, centerline of existing Culvert No. 229.10 at centerline of existing Main Track No. 1.
2. Elevation Datum: Elev. 100.00, base of South rail of existing Main Track No. 1, Sta. 100+00.00. To convert to NAVD 1988 datum, add 4,840.91' to elevations.
3. Temporary Benchmarks:
   TBM 1: Elev. 98.12, established by chiseled "X" in top of Northeast corner of concrete headwall of existing Main Track No. 2 Culvert No. 229.10, 37.83' right of existing Main Track No. 1 centerline, Sta. 100+05.13.

   TBM 2: Elev. 98.36, established by 3/8" rebar in ground Southwest of existing Main Track No. 1 Culvert No. 229.10, 18.89' left of existing Main Track No. 1 centerline, Sta. 99+65.52.
4. Profile: No change in rail elevation.
5. Alignment: Existing Main Track No. 1: 2°00'30" curve right.
   Existing Main Track No. 2: 1°59'00" curve right.
6. Information used to prepare this drawing in addition to reference drawings:

   Location survey prepared by Olsson, dated 03/22/2024.

DESIGN

1. The proposed cast-in-place concrete headwalls have been designed in accordance with the AREMA Manual for Railway Engineering, Chapter 8: Concrete Structures and Foundations. The proposed cast-in-place concrete headwalls have been designed for railroad surcharge, lateral earth pressure and a construction surcharge of 250 psf.
2. The SSP culvert has been designed for Cooper E80 Live Load with impact and cover depth ranging from 1'-6" to 18'-0".

F/O = FIBER OPTIC LINE
OHP = OVERHEAD POWER LINE
X = FENCE LINE

NOTES:
1. VISIT www.UP.com/CBUD TO CREATE A DIG TICKET FOR FIBER OPTIC UTILITY LOCATES. THIS DIG TICKET MUST BE ISSUED NO LESS THAN 2 BUSINESS DAYS BEFORE EXCAVATION CAN BEGIN. REPORT EMERGENCY FIBER OPTIC ISSUES TO 1-800-336-9193.
2. LOCATION OF KNOWN UTILITIES IS APPROXIMATE. LOCATION SHALL BE VERIFIED PRIOR TO CONSTRUCTION. NOTIFY MCI, 1-800-227-2600, QWEST COMMUNICATIONS, 1-800-283-4237, AND UNDERGROUND SERVICE ALERT OF NORTHERN CALIFORNIA AND NEVADA, 1-800-642-2444, AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.

POSTCONSTRUCTION COMPLIANCE

Constructor in charge of construction to provide to the office of the Senior Manager Structures Design as-built drawings confirming that the project was constructed in compliance with the plans and indicating any construction variances.

SIGNED

In Charge of Construction — Date

LETTER SERIES
SHEET NO. CUT ON — SHEET NO. SHOWN ON

SECTION DESIGNATION

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS
07/10/2024 — DATE

olsson

APPROVED FOR UNION PACIFIC RAILROAD BY:
KYLIE A. STEEL, PE — DESIGN ENGINEER OF RECORD
05/30/2024 — DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
131787	73285	123675

LATITUDE: 39.50288°N LONGITUDE: 119.99410°W

DSN/CHK BY:	JAS/MJH
DRAWN/CHK BY:	JAS/KAS
UPRR ENGINEER:	DGW
SHT NO.:	S1 of S5

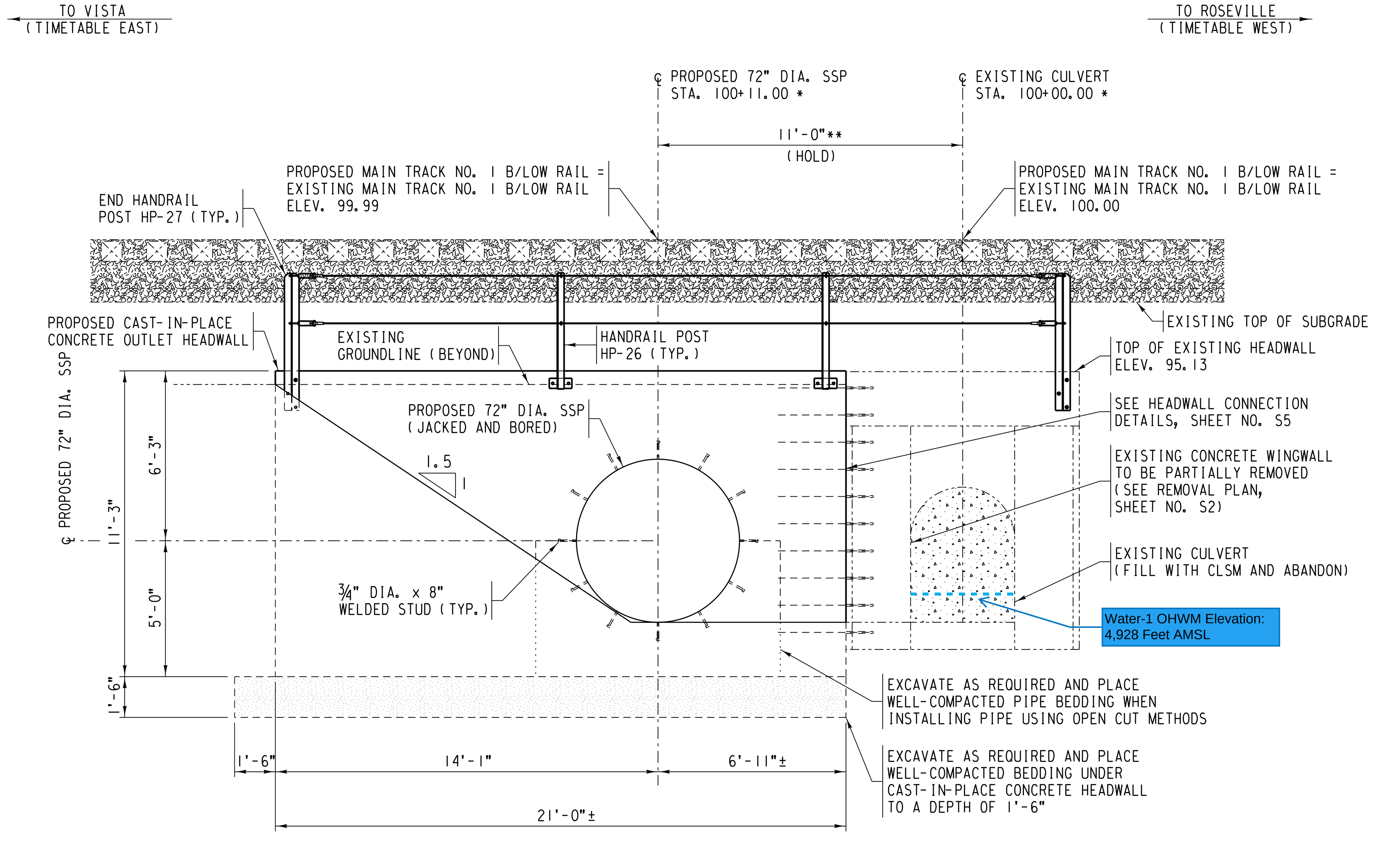
UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION:
BRIDGE 229.10, ROSEVILLE SUB
1 - 72" DIA. SSP x 64' REPLACING 4'x5' CAC x 55'

SHEET TITLE:
GENERAL ARRANGEMENT

FILE NAME: F:\2025\08001-08500\08023-08187\40-Design\Microstation_RAIL\ros229.10_gnv.dgn

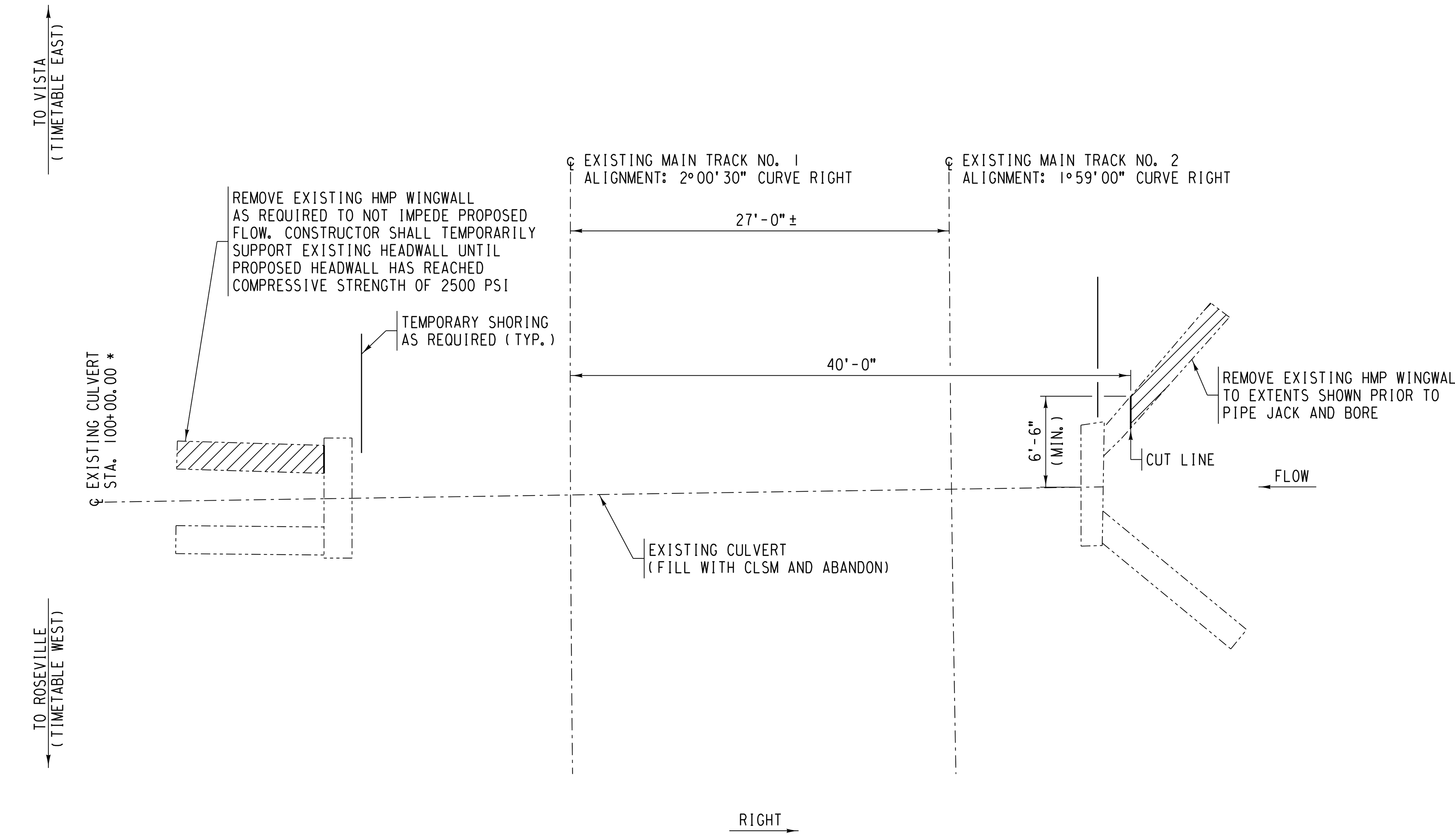
PLOTTED: 7/10/2024 3:31:17 PM



VIEW A (1/2)

SCALE: ¼"=1'-0"

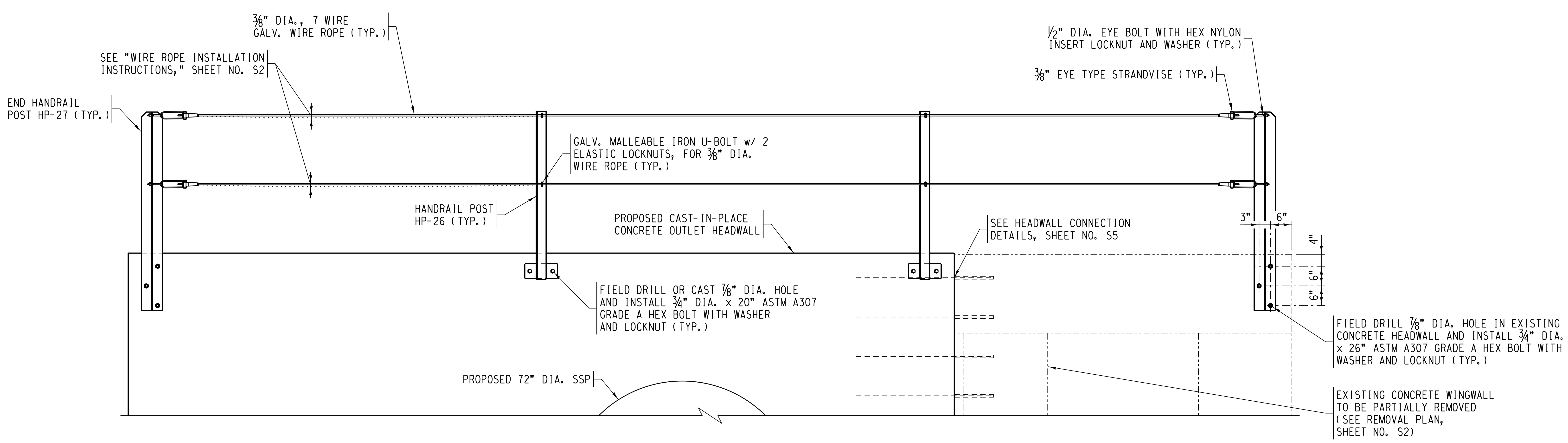
NOTE:
PROPOSED RIPRAP NOT SHOWN FOR CLARITY.



REMOVAL PLAN

SCALE: ⅛"=1'-0"

LIMITS OF REMOVAL



OUTLET HEADWALL HANDRAIL DETAIL

SCALE: ½"=1'-0"

WIRE ROPE INSTALLATION INSTRUCTIONS:

1. THREAD WIRE ROPE THROUGH ALL CLIPS AND STRANDVISES.
2. STRETCH WIRE ROPE, HANG A MINIMUM OF 10 LB. ON CABLE BETWEEN TWO POSTS AND REMOVE ALL SAG TO A MAXIMUM OF 2 INCHES.
3. TIGHTEN EYEBOLTS AT END HANDRAIL POSTS.
4. REMOVE WEIGHTS.
5. TIGHTEN CLIPS AT INTERMEDIATE POSTS.
6. CUT AND REMOVE EXCESS WIRE ROPE.
7. COAT CUT ENDS WITH ZRC COLD-GALVANIZING COMPOUND OR APPROVED EQUIVALENT.

NOTES:

1. * = STATIONING IS TAKEN ALONG CENTERLINE EXISTING MAIN TRACK NO. 1.
2. ** = MEASURED ALONG CENTERLINE OF EXISTING MAIN TRACK NO. 1.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS: FINAL — 07/10/2024
STATUS — DATE

olsson

APPROVED FOR UNION PACIFIC RAILROAD BY:

KYLIE A. STEEL, PE — 05/30/2024
DESIGN ENGINEER OF RECORD — DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
131787	73285	123675

LATITUDE: 39.50288°N LONGITUDE: 119.99410°W

DSN/CHK BY: JAS/MJH
DRAWN/CHK BY: JAS/KAS
UPRR ENGINEER: DGW
SHT NO.: S2 of S5

UNION PACIFIC RAILROAD

Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 229.10, ROSEVILLE SUB

1 - 72" DIA. SSP x 64' REPLACING 4'x5' CAC x 55'

SHEET TITLE: TYPICAL SECTIONS AND CONSTRUCTION DETAILS (SHEET 1 OF 2)

DESIGN SHEET

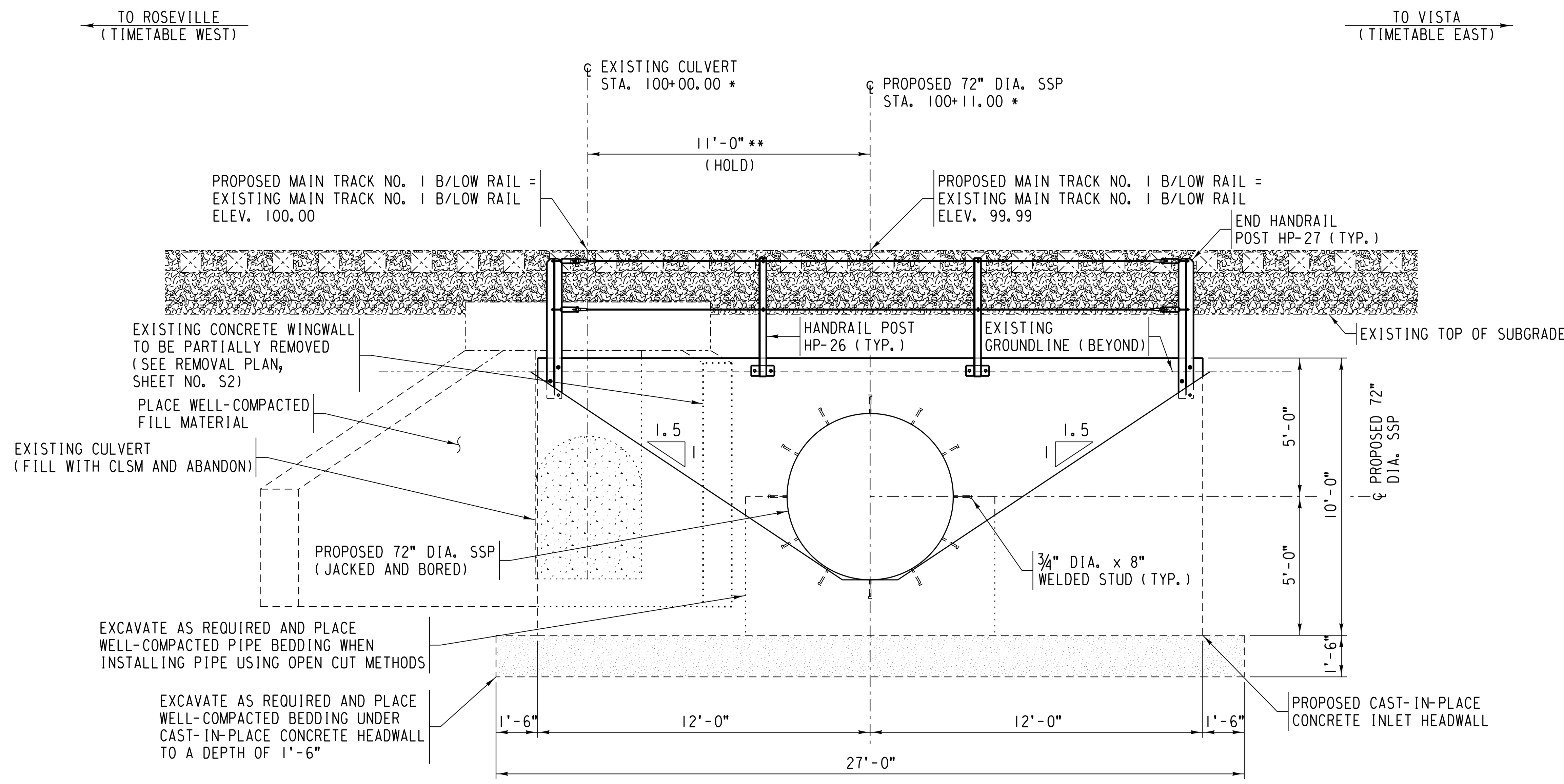
SHEET SIZE 22x34

FILE NAME: F:\2023\08001-08500\023-08167\40-Design\Microstation_RAIL\rss22910_cmv.dgn

PLOTTED: 7/10/2024 3:31:17 PM

DESIGN SHEET

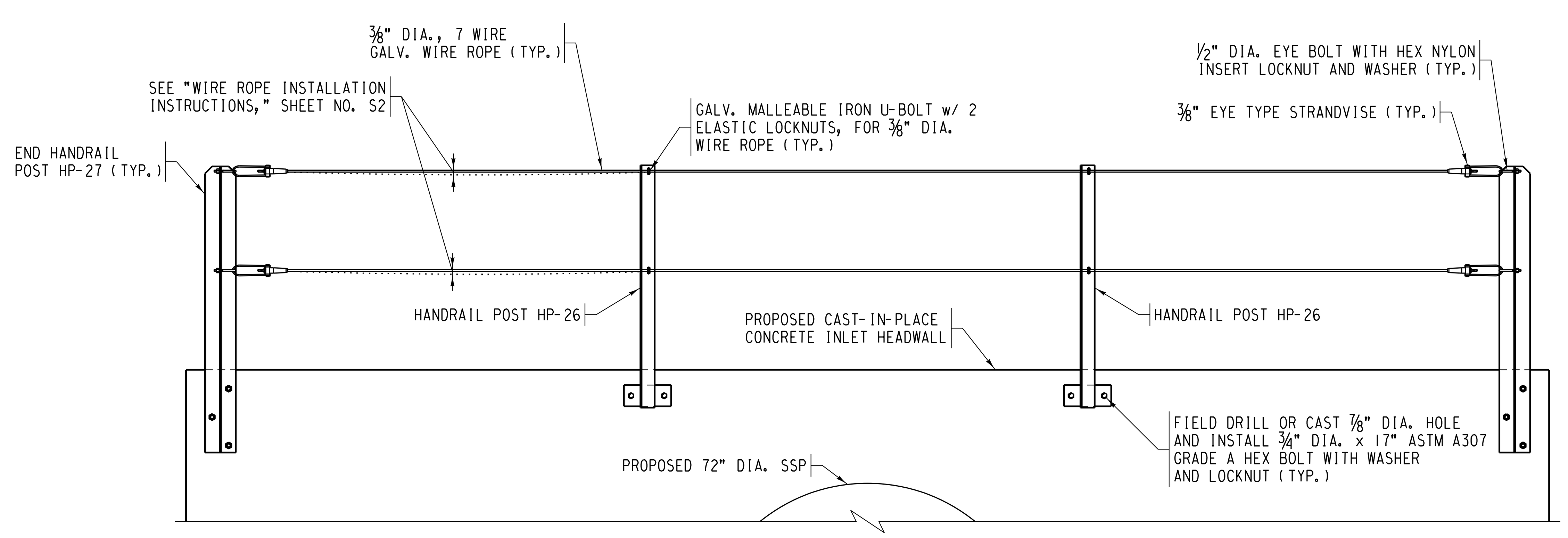
SHEET SIZE 22x34



VIEW (B / 1 | 3)

SCALE: 1/4"=1'-0"

NOTE:
PROPOSED RIPRAP NOT SHOWN FOR CLARITY.



INLET HEADWALL HANDRAIL DETAIL

SCALE: 1/2"=1'-0"

NOTES:
1. * = STATIONING IS TAKEN ALONG CENTERLINE EXISTING MAIN TRACK NO. 1.
2. ** = MEASURED ALONG CENTERLINE OF EXISTING MAIN TRACK NO. 1.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS: FINAL — 07/10/2024
STATUS / DATE

olsson

APPROVED FOR UNION PACIFIC RAILROAD BY:

KYLIE A. STEEL, PE — 05/30/2024
DESIGN ENGINEER OF RECORD / DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
131787	73285	123675

LATITUDE: 39.50288°N LONGITUDE: 119.99410°W

UNION PACIFIC

DSN/CHK BY: JAS/MJH	**UNION PACIFIC RAILROAD** Office of Director Structures Design
DRAWN/CHK BY: JAS/KAS	LOCATION & DESCRIPTION: BRIDGE 229.10, ROSEVILLE SUB
UPRR ENGINEER: DGW	1 - 72" DIA. SSP x 64' REPLACING 4'x5' CAC x 55'
SHT NO.: S3 of S5	SHEET TITLE: TYPICAL SECTIONS AND CONSTRUCTION DETAILS (SHEET 2 OF 2)

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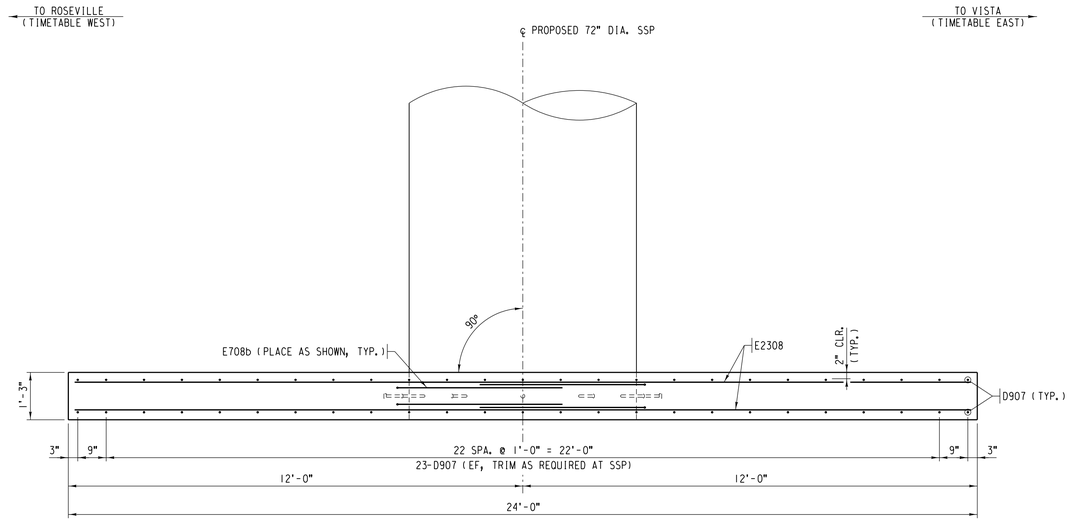
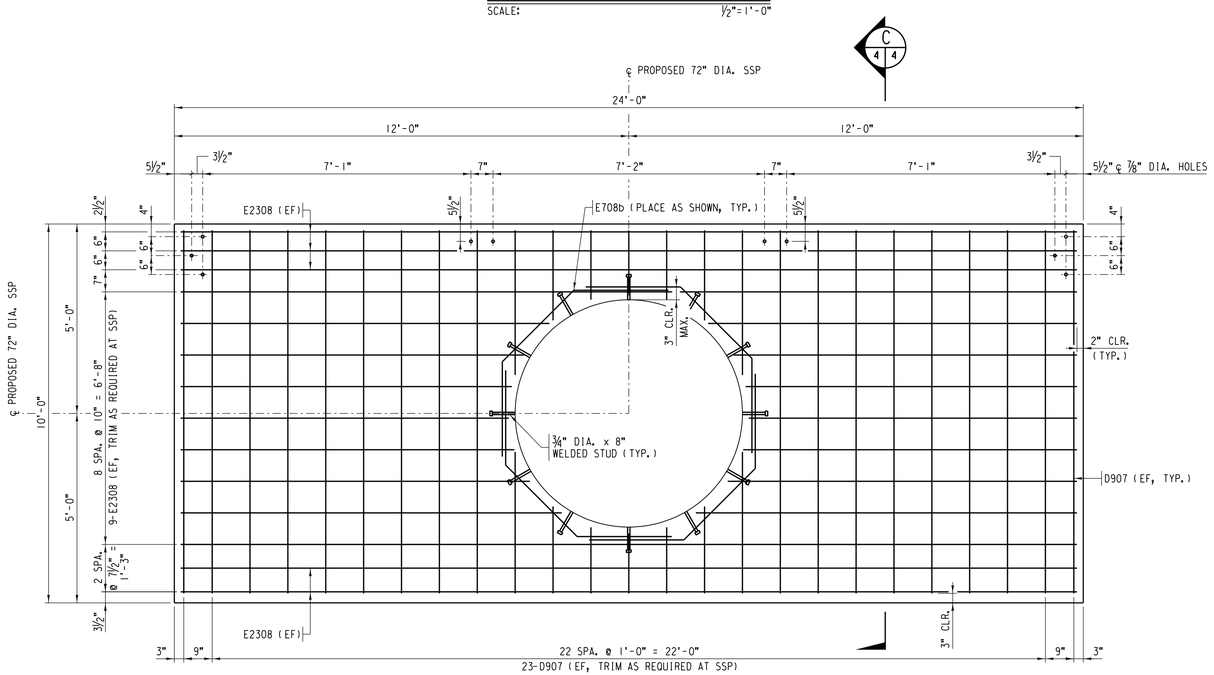
DESIGN SHEET

SHEET SIZE 22x34



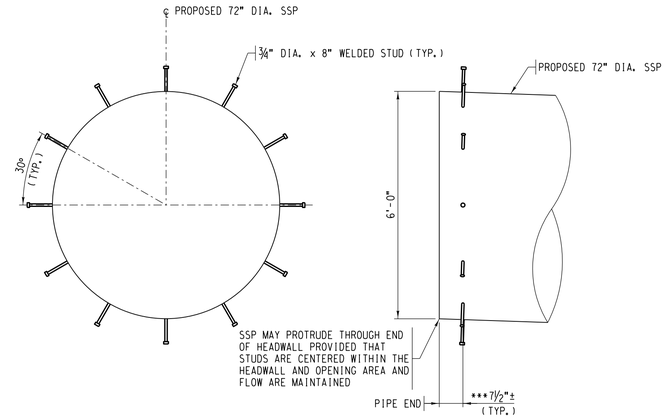
FRAMING AND REINFORCING PLAN

SCALE: ½"=1'-0"



FRAMING AND REINFORCING ELEVATION

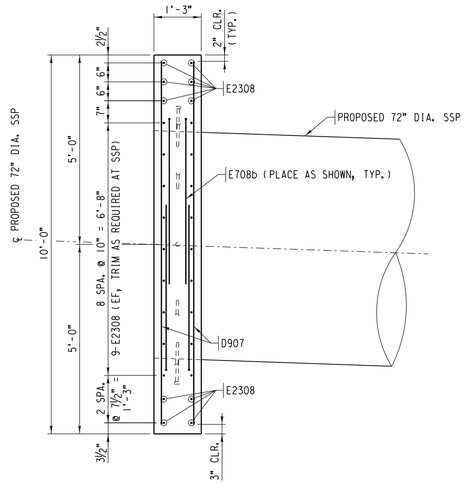
SCALE: ½"=1'-0"



NOTES:
1. INSTALL STUDS AFTER PIPE IS IN PLACE.
2. *** MINIMALLY ADJUST OFFSET FROM PIPE END AS REQUIRED SUCH THAT WELDED STUDS ARE CENTERED WITHIN THE PROPOSED HEADWALL. 4" (MIN.) CLEARANCE TO HEADWALL FACE (EACH WAY) SHALL BE MAINTAINED.
3. STUDS SHALL BE C1015, C1017 OR C1020 COLD DRAWN STEEL WHICH CONFORMS TO ASTM A108 SPECIFICATIONS.

INLET ANCHOR LOCATION DETAIL

SCALE: ½"=1'-0"



SECTION C 4 4

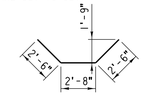
SCALE: ½"=1'-0"

REINFORCING SCHEDULE

TOTAL	MARK	SIZE	LENGTH	SHAPE
50	D907	#5	9'-7"	——
8	E708b	#6	7'-8"	◡
28	E2308	#6	23'-8"	——

BENDING DIAGRAM

(DIMENSIONS ARE OUT TO OUT)



E708b

NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

EST. WT. OF REINFORCING STEEL = 1,590 LB.

NOTES:
1. FOR CAST-IN-PLACE CONCRETE NOTES, SEE STD. DWG. 531100, SHT. NO. T3.
2. EF = EACH FACE

CONCRETE PLACEMENT QUANTITIES

ITEM	UNIT	QTY.
INLET HEADWALL	CU. YD.	9.8

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL — STATUS — 07/10/2024 DATE

olsson

APPROVED FOR UNION PACIFIC RAILROAD BY:

KYLIE A. STEEL, PE — DESIGN ENGINEER OF RECORD — 05/30/2024 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
131787	73285	123675

LATITUDE: 39.50288°N LONGITUDE: 119.99410°W

DSN/CHK BY:	JAS/MJH
DRAWN/CHK BY:	JAS/KAS
UPRR ENGINEER:	DGW
SHT NO.:	S4 of S5

UNION PACIFIC RAILROAD

Office of Director Structures Design

LOCATION & DESCRIPTION:

BRIDGE 229.10, ROSEVILLE SUB

1 - 72" DIA. SSP x 64' REPLACING 4'x5' CAC x 55'

SHEET TITLE:

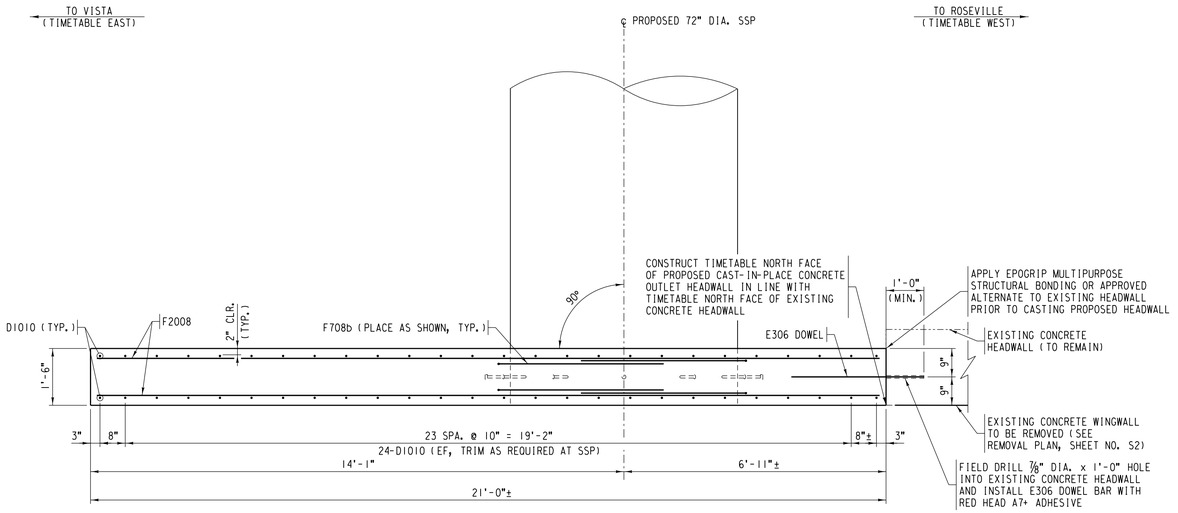
CAST-IN-PLACE CONCRETE INLET HEADWALL DETAILS

PLOTTED: 7/10/2024 3:31:18 PM

FILE NAME: F:\2023\30501-08500\023-08187\40-Design\Microstation_RAIL\oss229110_cnv.dgn

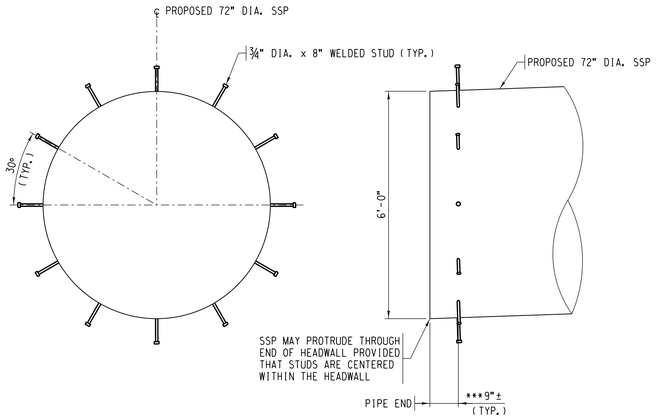
DESIGN SHEET

SHEET SIZE 22x34



FRAMING AND REINFORCING PLAN

SCALE: ½"=1'-0"



NOTES:
1. INSTALL STUDS AFTER PIPE IS IN PLACE.
2. *** MINIMALLY ADJUST OFFSET FROM PIPE END AS REQUIRED SUCH THAT WELDED STUDS ARE CENTERED WITHIN THE PROPOSED HEADWALL. 4" (MIN.) CLEARANCE TO HEADWALL FACE (EACH WAY) SHALL BE MAINTAINED.
3. STUDS SHALL BE C1015, C1017 OR C1020 COLD DRAWN STEEL WHICH CONFORMS TO ASTM A108 SPECIFICATIONS.

OUTLET ANCHOR LOCATION DETAIL

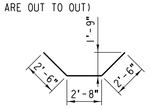
SCALE: ½"=1'-0"

REINFORCING SCHEDULE

	TOTAL	MARK	SIZE	LENGTH	SHAPE
	52	D10I0	#5	10'-10"	——
DOWELS	10	E306	#6	3'-6"	——
	8	F708b	#7	7'-8"	◡
	34	F2008	#7	20'-8"	——

BENDING DIAGRAM

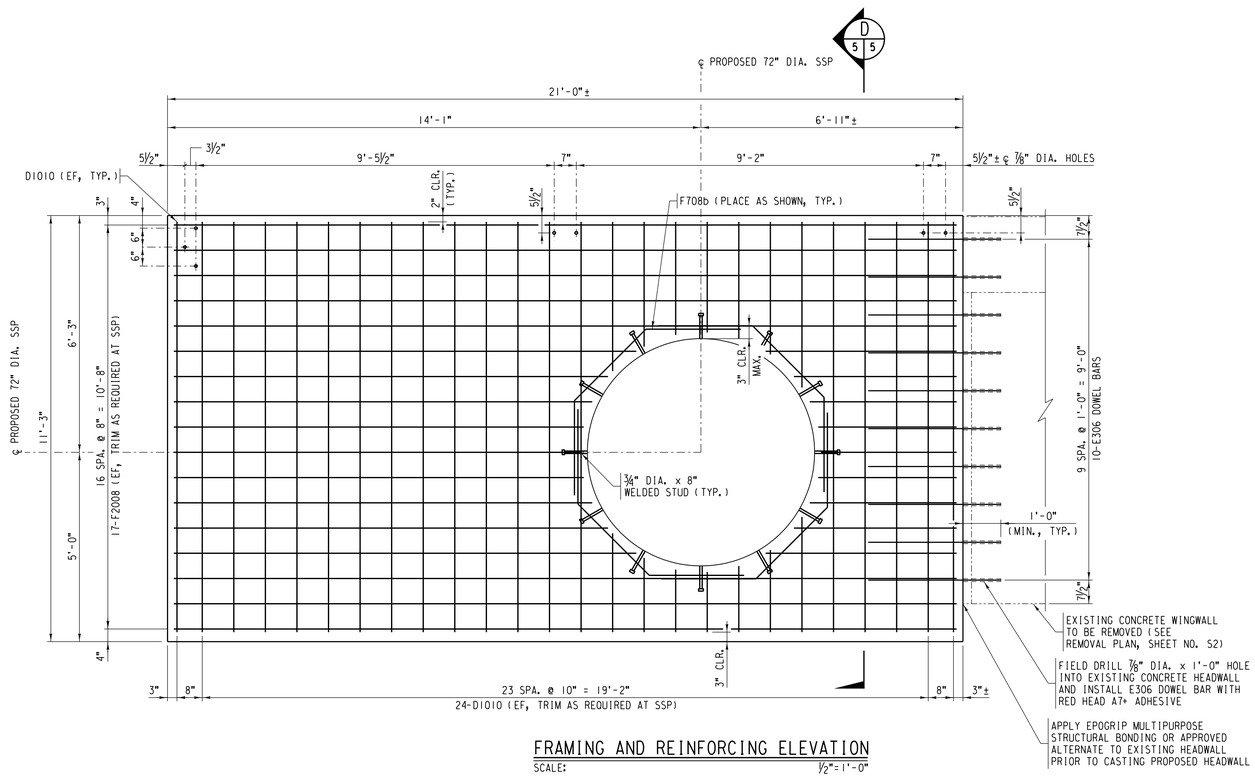
(DIMENSIONS ARE OUT TO OUT)



F708b

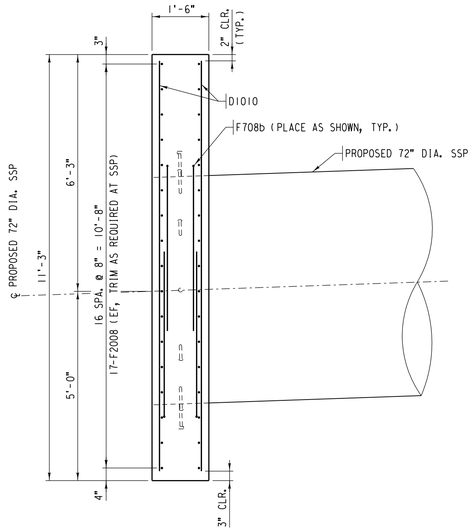
NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

EST. WT. OF REINFORCING STEEL = 2,205 LB.



FRAMING AND REINFORCING ELEVATION

SCALE: ½"=1'-0"



SECTION D 5 5

SCALE: ½"=1'-0"

NOTES:
1. FOR CAST-IN-PLACE CONCRETE NOTES, SEE STD. DWG. 531100, SHT. NO. T3.
2. EF = EACH FACE

CONCRETE PLACEMENT QUANTITIES

ITEM	UNIT	QTY.
OUTLET HEADWALL	CU. YD.	11.6

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS
07/10/2024 — DATE

olsson

APPROVED FOR UNION PACIFIC RAILROAD BY:
KYLIE A. STEEL, PE — DESIGN ENGINEER OF RECORD
05/30/2024 — DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
131787	73285	123675

LATITUDE: 39.50288°N LONGITUDE: 119.99410°W

DSN/CHK BY:	JAS/MJH
DRAWN/CHK BY:	JAS/KAS
UPRR ENGINEER:	DGW
SHT NO.:	S5 of S5

UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION:
BRIDGE 229.10, ROSEVILLE SUB
1 - 72" DIA. SSP x 64' REPLACING 4'x5' CAC x 55'

SHEET TITLE:
CAST-IN-PLACE CONCRETE OUTLET HEADWALL DETAILS

FILE NAME: P:\2023\08001-08500\023-08187-NI-Design\Microstation_RAIL\ros22910_cnv.dgn

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