NOTICE OF NSA
OPPORTUNITY TO COMMENT

www.multco.us/landuse ▪ Email: land.use.planning@multco.us ▪ Phone: (503) 988-3043

Application for a National Scenic Area Site Review

CASE FILE:	T2-2025-0027	**APPLICANT**:	Terra Lingley, ODOT
LOCATION:	E Historic Columbia River Highway & adjacent to 1N4E36A Tax Lot 100		
BASE ZONE:	Gorge Special Open Space (GSO)		
OVERLAYS:	Geologic Hazard (GH)		
KEY VIEWING AREAS:	State Route – 14, Portland Women's Forum, Larch Mountain Road, Interstate – 84, Historic Columbia River Highway, Columbia River		
LANDSCAPE SETTING:	Coniferous Woodlands		
PROPOSAL:	Request for a National Scenic Area Site Review in response to an emergency. The applicant is proposing to excavate a failing retaining wall for the Historic Highway, repair the gabion basket mechanically stabilized earth wall, and install a new drainage system.		

❖ **COMMENT PERIOD**: Neighbors are invited to submit written comments for the proposal described above. Comments should be directed toward the approval criteria listed below. Any neighbor that submits comments will receive the County's complete decision. Written comments will be accepted at LUP-comments@multco.us if received by **4:00 pm on February 16, 2026**. Comments regarding Cultural Resources will be accepted until **4:00 pm on February 23, 2026**.

If you do not wish to submit comments, no response is necessary.

Further information regarding this application is available by contacting LUP-comments@multco.us. Paper copies of these materials may be purchased for $0.71/per page.

❖ **APPLICABLE APPROVAL CRITERIA** [Multnomah County Code (MCC)]:

General Provisions: MCC 38.0560 Code Compliance and Applications, MCC 38.0015 Definitions – Parcel, MCC 38.0110 Tribal Treaty Rights and Consultation

GSO Zone: MCC 38.2625 Review Uses, (4) Placement of structures necessary for continued public safety

NSA Site Review Criteria: MCC 38.7015 Application for NSA Site Review, MCC 38.7040 SMA Scenic Review Criteria, MCC 38.7050 SMA Cultural Resource Review Criteria, MCC 38.7075 SMA Natural Resource Review Criteria, MCC 38.7085 SMA Recreation Resource Review Criteria, MCC 38.7090 Responses to an Emergency/Disaster Event

Copies of the referenced Multnomah County Code sections can be obtained by visiting our website at https://multco.us/landuse/zoning-codes/ under the link **Chapter 38 – Columbia River Gorge National Scenic Area** or by contacting our office at (503) 988-3043.

Vicinity Map **N↑**

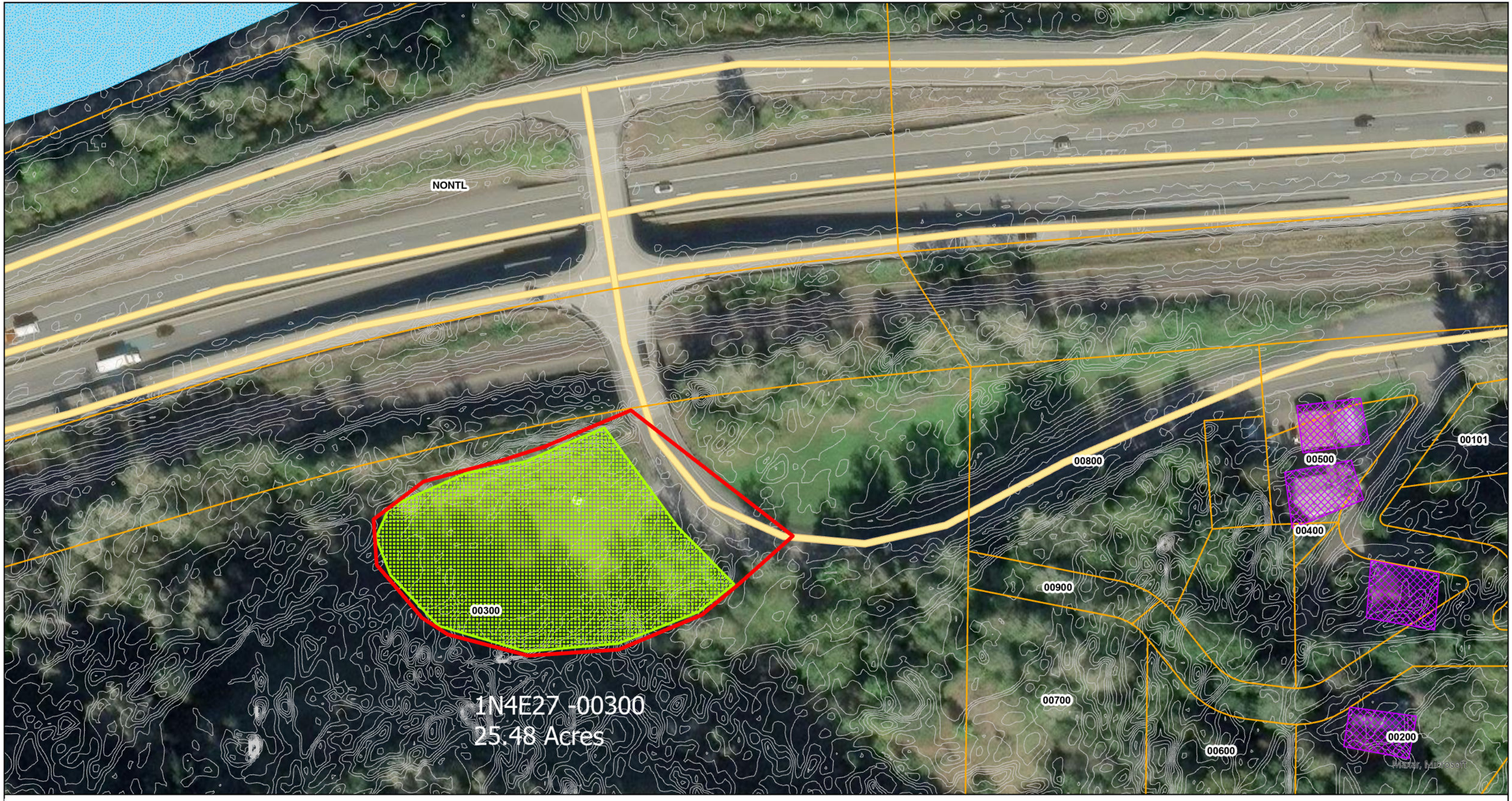
- **DECISION MAKING PROCESS**: The Planning Director will render a decision on this application after the comment period expires. Notice of the Director's decision will be mailed to the applicant, those who submitted written comment during the comment period, those who requested the decision in writing, and the Gorge Commission. The Planning Director's decision can be appealed. An explanation of the requirements for filing an appeal will be included in the notice of decision.

- **IMPORTANT NOTE**: Failure to raise an issue before the close of the public record in sufficient detail to afford the County and all parties an opportunity to respond may preclude appeal on that issue to the Columbia River Gorge Commission.

- **ENCLOSURES**:

  Site Plan
  Plan Set
  Natural Resources Memo

Notice to Mortgagee, Lien Holder, Vendor, or Seller:
ORS chapter 215 requires that if you receive this notice, it must promptly be forwarded to the purchaser.



Oregon State Department of Transportation

HCRH Larch Mountain Slide, MP 8.9, Emergency Repair.

N

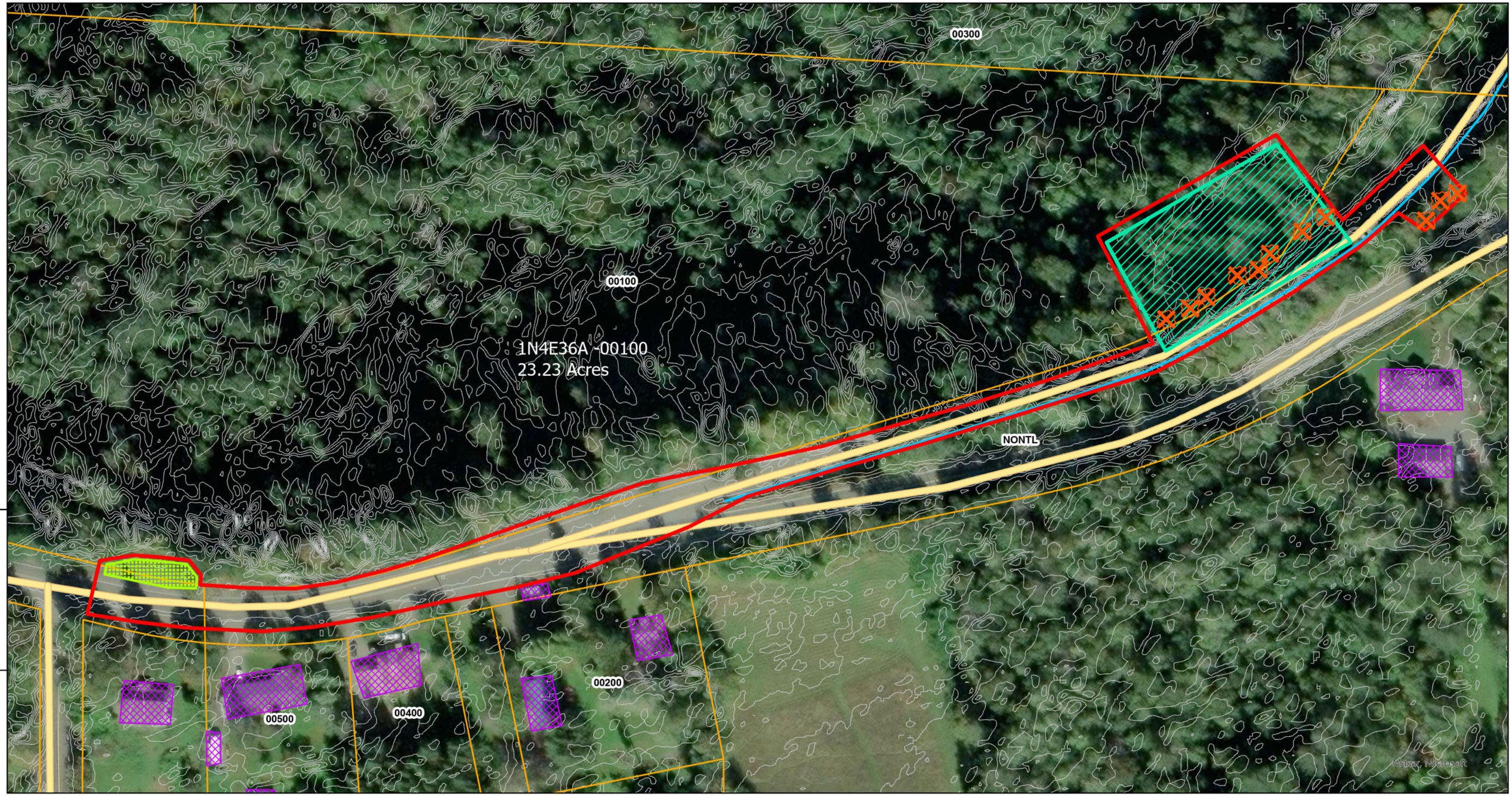
0 0.01 0.03 Miles

Accuracy within 1 meter

Waters may extend offsite

Legend

- taxlots_multnomah
- Water
- Contour
- Roads
- Structures
- RemovedTrees
- StagingYards
- APE
- Contour
- Ditch



Oregon State Department of Transportation

HCRH Larch Mountain Slide, MP 8.9, Emergency Repair.

N

0 0.01 0.03 Miles

Accuracy within 1 meter

Waters may extend offsite

Legend

- taxlots_multnomah
- Water
- Contour
- Roads
- Excavation Area
- Structures
- RemovedTrees
- StagingYards
- APE
- Contour
- Ditch

58V-063

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
A01	*Title Sheet*
A02	*Index Of Sheets Cont. & Std. Dwg. Nos.*
AD01	*Survey Control Data*

STATE OF OREGON

DEPARTMENT OF TRANSPORTATION

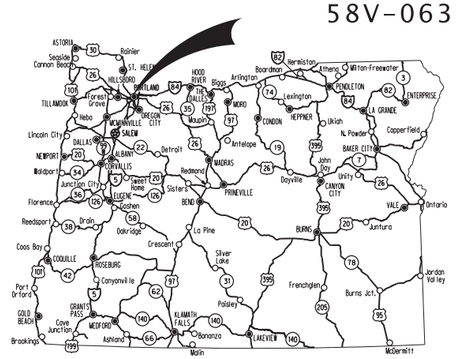
PLANS FOR PROPOSED PROJECT

STRUCTURES, PAVING, DRAINAGE AND STRIPING

HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

COLUMBIA RIVER HIGHWAY

MULTNOMAH COUNTY
JULY 2025

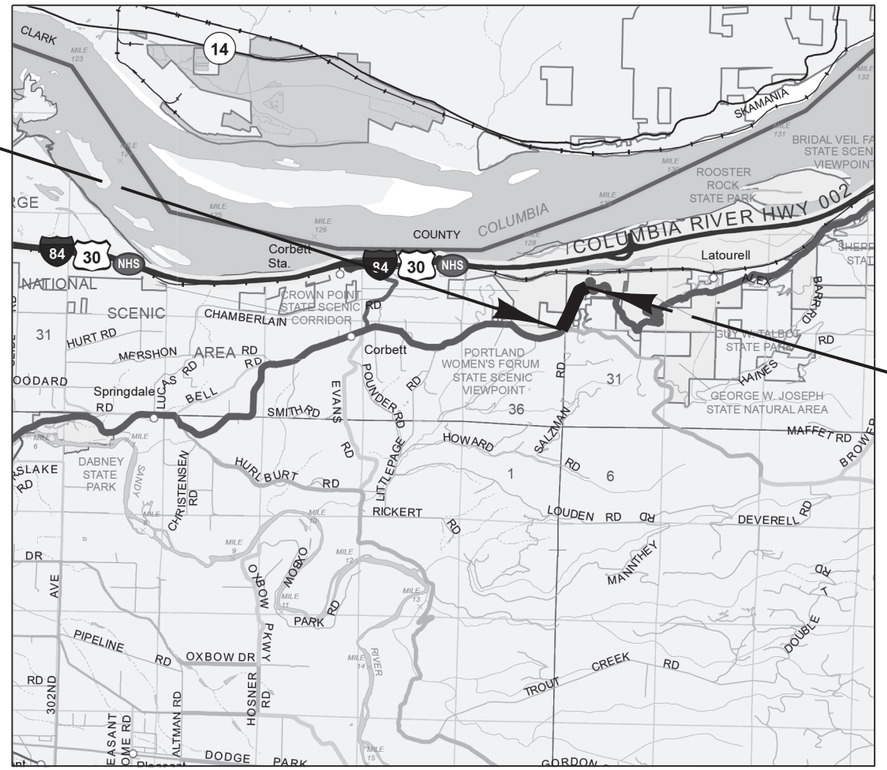


Overall Length Of Project – N/A Miles

ATTENTION:
Oregon Law Requires You To Follow Rules Adopted By The Oregon Utility Notification Center. Those Rules Are Set Forth In OAR 952-001-0001 Through OAR 952-001-0100. You May Obtain Copies Of The Rules By Calling The Center (Note: The Telephone Number For The Oregon Utility Notification Center Is (503) 232-1987).

SAFETY FIRST
LET'S ALL WORK TOGETHER TO MAKE THIS JOB SAFE

BEGINNING OF PROJECT
M.P. 8.79



END OF PROJECT
M.P. 9.45

N

T. 1N., R. 4E., W.M.
T. 1N., R. 5E., W.M.

OREGON DEPARTMENT OF TRANSPORTATION

HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT		
COLUMBIA RIVER HIGHWAY MULTNOMAH OUNTY		
FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	STATE	A01

EA 2251306-000

R_M25023_ts_01.dgn :: A01 5/15/2025 9:20:09 AM hwye11i

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

INDEX OF SHEETS, CONT.	
	ROADWAY DETAILS
SHEET NO.	DESCRIPTION
BA01	Typical Sections
BB01 & BB02	Details
BC01	Pipe Data sheet
C01	General Construction
C01A	Profile
C01B	Drainage and Utilities
C01C	Drainage and Utilities Notes
	EROSION CONTROL
FB01	Erosion and Sediment Control Plan
	GEOTECHNICAL
GB01	Retaining Wall Plan and Elevation
GB02	Typical Retaining Wall Cross Section
GB03	Retaining Wall Details
GB04	Geotechnical Data
GB05	Rockfall Mitigation Anchor Details
GB06	Rockfall Mitigation Wire Mesh / Anchor Details
	HYDRAULIC
HB01	Culvert Detail - 1
HB02	Culvert Detail - 2

List of Standard dwg. Nos

RD140 - Roadway Cross Slopes Superelevated Sections
RD150 - Slope Rounding
RD300 - Trench Backfill, Bedding, Pipe Zone and Multiple Installations
RD312 - Subsurface Drain
RD316 - Sloped Ends for Metal Pipe
RD317 - Culvert Embankment Protection and Riprap Pads
RD325 - Coupling Bands for Corrugated Metal Pipe
RD326 - Coupling Bands for Corrugated Metal Pipe
RD330 - Pipe Slope Anchors - Metal
RD336 - Standard Manhole Details
RD339 - Pipe To Structure Connections
RD363 - Gutter Transition At Inlet
RD364 - Concrete Inlets Type G-1, G-2, G-2M, & G-2MA
RD365 - Frames & Grates for Concrete Inlets
RD370 - Ditch Inlet Type D
RD380 - Fill Height Tables for Aluminum & Steel Corrugated Pipe
RD390 - Fill Height Table for Corrugated HDPE Pipe
RD398 - Culvert ID Marker
RD1030 - Sediment Barrier Type 2, 3 and 4
TM800 - Tables, Abrupt Edge and PCMS Details
TM810 - Temporary Pavement Markings
TM820 - Temporary Barricades
TM821 - Temporary Sign Supports
TM822 - Temporary Sign Supports
TM840 - Closure Details
TM855 - 2-Lane, 2-Way Roadway

R/W Map No. 2B-25-24

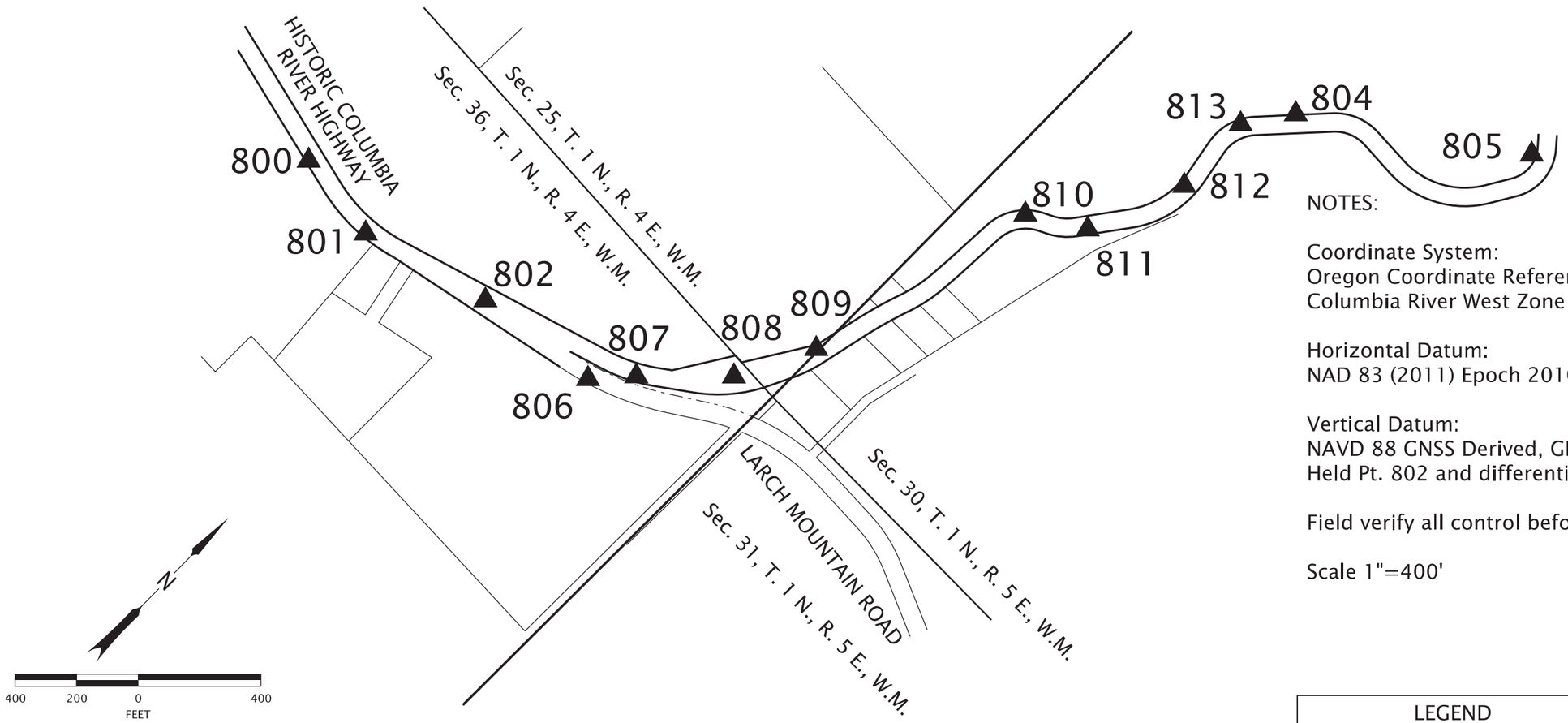
Standard Drawings located on the web at:
http://www.oregon.gov/ODOT/Engineering/Pages/Standards.aspx

HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

FEDERAL HIGHWAY ADMINISTRATION	PROJECT NUMBER	SHEET NO.
OREGON DIVISION	SEE SHEET A01	A02

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST



NOTES:

Coordinate System:
Oregon Coordinate Reference System (OCRS)
Columbia River West Zone

Horizontal Datum:
NAD 83 (2011) Epoch 2010.00

Vertical Datum:
NAVD 88 GNSS Derived, GEOID12A
Held Pt. 802 and differential leveled through all control

Field verify all control before use!

Scale 1"=400'

CONTROL POINT TABLE – OCRS COLUMBIA RIVER WEST; NAD 83 (2011) EPOCH 2010.00

POINT	NORTHING	EASTING	ELEVATION (NAVD 88)	DATE SET	DESCRIPTION
800	*469568.04*	*742953.36*	*893.28*	*3/24/2025*	*SET HUB AND PK NAIL W/ WASHER*
801	*469534.99*	*743252.26*	*896.79*	*3/24/2025*	*SET HUB AND PK NAIL W/ WASHER*
802	*469660.65*	*743680.68*	*896.90*	*3/24/2025*	*SET 5/8" IRON ROD W/ CONTROL CAP*
804	*471967.51*	*745096.22*	*782.79*	*3/20/2025*	*SET PK NAIL IN AC*
805	*472423.48*	*745727.73*	*743.83*	*3/20/2025*	*SET HUB AND PK NAIL*
806	*469719.58*	*744097.06*	*924.61*	*3/26/2025*	*SET HUB AND TACK*
807	*469837.64*	*744201.00*	*889.89*	*3/26/2025*	*SET HUB AND TACK*
808	*470064.31*	*744423.83*	*860.27*	*3/26/2025*	*SET HUB AND TACK*
809	*470318.37*	*744548.14*	*849.35*	*3/26/2025*	*SET HUB AND TACK*
810	*471110.62*	*744712.75*	*833.99*	*3/26/2025*	*SET HUB AND TACK*
811	*471221.56*	*744889.18*	*823.34*	*3/26/2025*	*SET HUB AND TACK*
812	*471545.26*	*745008.45*	*805.94*	*3/26/2025*	*SET MAG NAIL*
813	*471816.33*	*744993.58*	*792.59*	*3/26/2025*	*SET MAG NAIL*

LEGEND

- ▲ NETWORK POINT
- RIGHT-OF-WAY
- PROPERTY LINE

REGISTERED PROFESSIONAL LAND SURVEYOR

Digitally Signed 2025.05.15 10:18:04 -07'00'

OREGON
SEPTEMBER 14, 2021
JOHN KARL
#90989PLS

RENEWS: 06-03-2025

OREGON DEPARTMENT OF TRANSPORTATION

HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

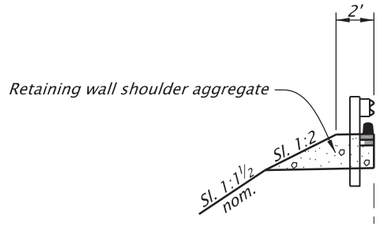
COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

Senior Surveyor: John Karl Survey Manager: Chris Pucci
Drafter: John Karl Checker: James Wasch

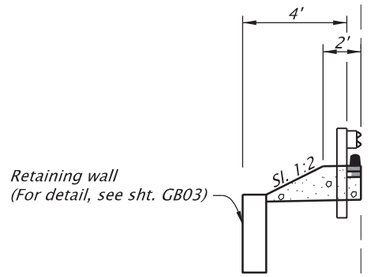
SURVEY CONTROL DATA

SHEET NO. AD01

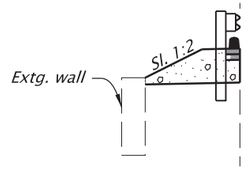
FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST



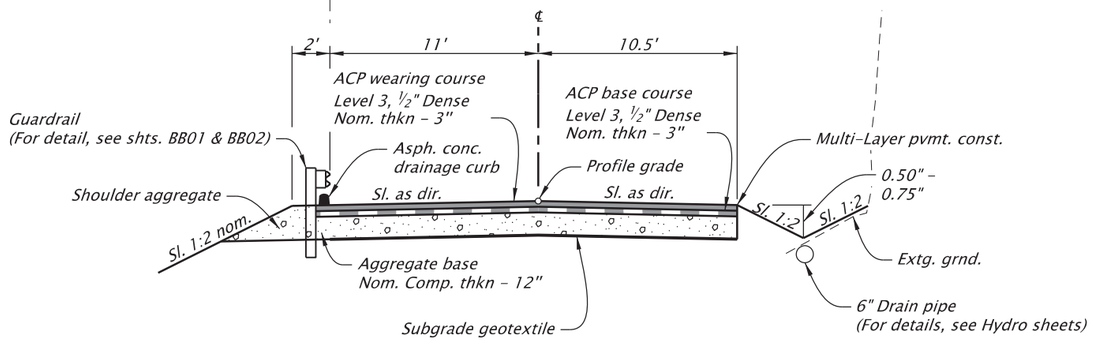
STA. "CL_Main" 337+40.00 To STA. "CL_Main" 337+64.00



STA. "CL_Main" 336+80.00 To STA. "CL_Main" 337+40.00



STA. "CL_Main" 336+29.75 To STA. "CL_Main" 336+80.00



STA. "CL_Main" 336+29.75 To STA. "CL_Main" 338+36.00

NOTE:
1. Side-slopes are shown as vert. to horiz.
2. For standard superelevation, see dwg. no. RD140.
3. For slope rounding, see dwg. no. RD150.

REGISTERED PROFESSIONAL ENGINEER
19731PE
Digitally Signed Date: 2025.05.15 10:29:56-07'00'
OREGON
MAY 05, 1998
CHIVANNA T. POT
RENEWS: 12-31-2026

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

OREGON DEPARTMENT OF TRANSPORTATION

HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

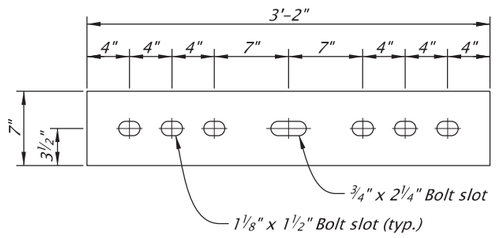
COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

Designer: Chivanna Pot	Reviewer: Chivanna Pot
CADD Tech: Sue Cross	Checker: Anitha Vazrala

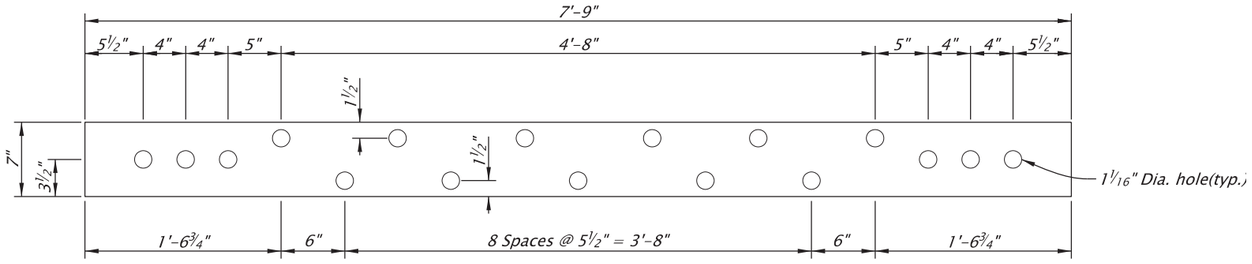
TYPICAL SECTIONS

SHEET NO. BA01

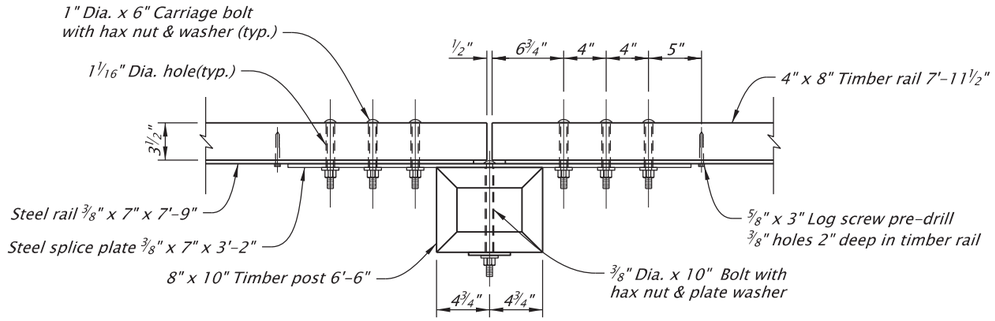
TWO RAIL STEEL BACKED TIMBER GUARD RAIL



STEEL SPLICE PLATE
SCALE: NTS



STEEL RAIL DETAIL
SCALE: NTS



POST CONNECTION PLAN
SCALE: NTS

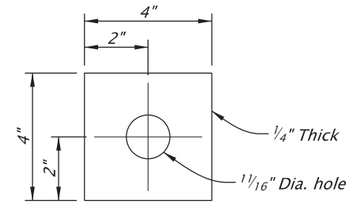
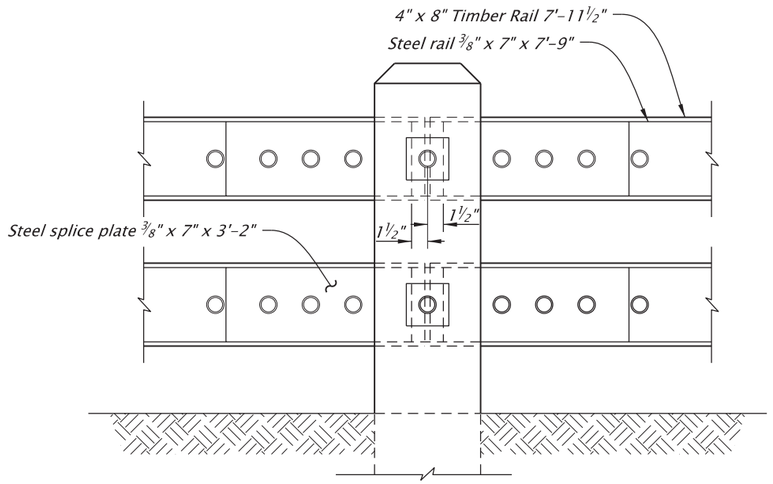
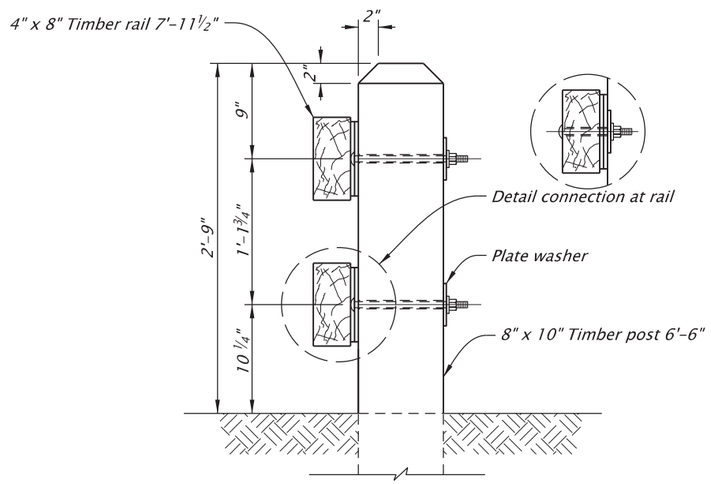


PLATE WASHER
SCALE: NTS



POST CONNECTION ELEVATION
SCALE: NTS



POST CONNECTION SIDE ELEVATION
SCALE: NTS

General Notes;

1. *All structural steel shall be galvanized according to AASHTO M111 (ASTM A123) ans shall conform to AASHTO M223 grade 345 (ASTM A572 Grade 345)*
2. *All fastener hardware shall be galvanized according to AASHTO M111 and manufactured from steel conforming to AASHTO M164 (ASTM A325)*
3. *Timber rail and timber posts shall be treated. (See special provisions)*
4. *Timber species and grade shall be as shown in the spacial provisions. Minimum allowable bending stress shall be 1550 psi.*
5. *Steel splice plate not required on end posts.*

REGISTERED PROFESSIONAL ENGINEER
19731PE
Digitally Signed Date: 2025.05.15 10:30:52-07'00'
OREGON MAY 05, 1998 CHIVANNA T. POT
RENEWS: 12-31-2026

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

OREGON DEPARTMENT OF TRANSPORTATION

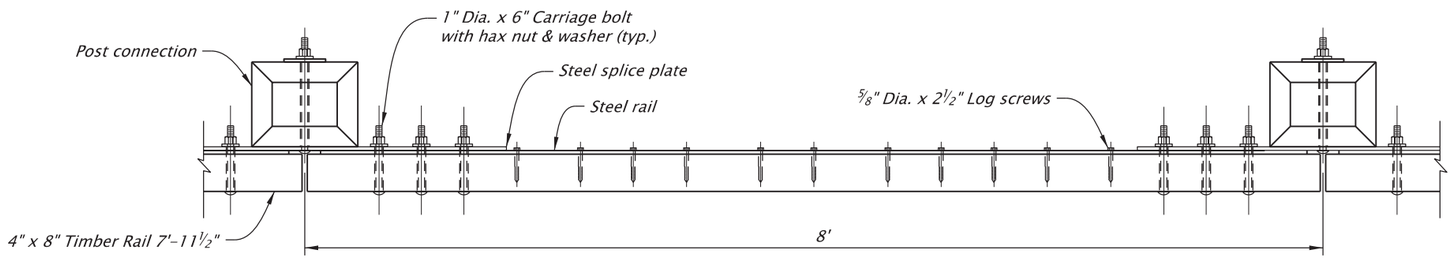
HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

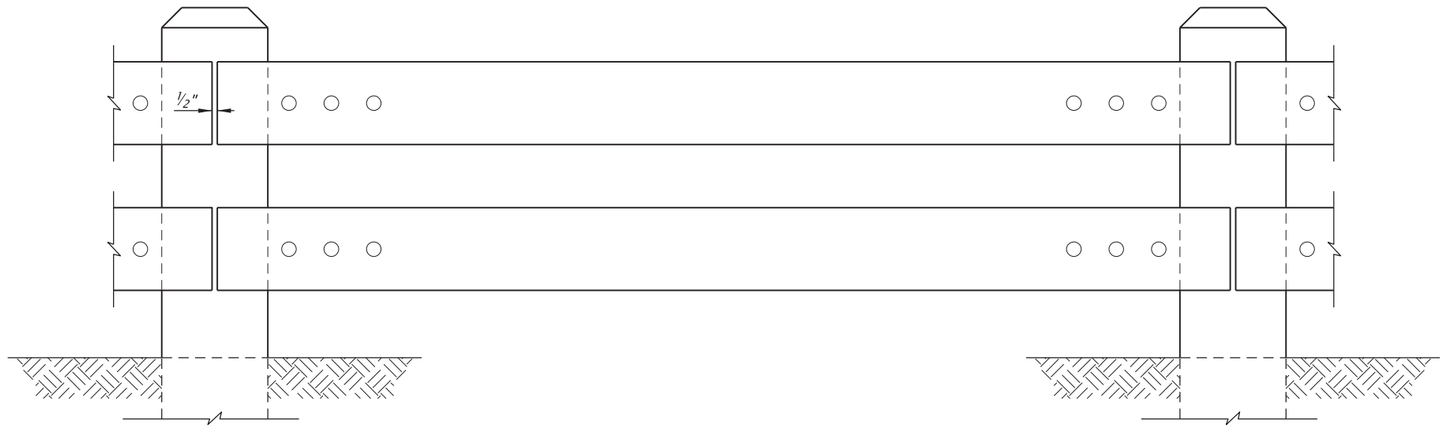
Designer: Chivanna Pot	Reviewer: Chivanna Pot
CADD Tech: Sue Cross	Checker: Anitha Vazrala

DETAILS — SHEET NO. BB01

TWO RAIL STEEL BACKED TIMBER GUARD RAIL



PLAN
SCALE: NTS



ELEVATION
SCALE: NTS

REGISTERED PROFESSIONAL ENGINEER
19731PE
Digitally Signed Date: 2025.05.15 10:31:56-07'00'
OREGON
MAY 05, 1998
CHIVANNA T. POT
RENEWS: 12-31-2026

OREGON DEPARTMENT OF TRANSPORTATION

HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

Designer: Chivanna Pot	Reviewer: Chivanna Pot
CADD Tech: Sue Cross	Checker: Anitha Vazrala

DETAILS | SHEET NO. BB02

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

58V-063

PIPE

SHEET NUMBER	NOTE No. ON PLANS	DESIGN HEIGHT OF COVER (FEET) ①	CIRCULAR OR ELLIPTICAL SIZE IN (Inches) 6 — LENGTH IN FEET	12	18				PIPE - ARCH HELICAL Riveted Welded or Lock Seam EQUIV. RND SIZE (Inches)	LENGTH (FEET)	CROSS - SECTIONAL DIMENSIONS ② SPAN (Feet-Inches)	RISE (Feet-Inches)	CORNER RADII (Inches)
C01B	1		68										
	2	1.0		26									
	3	1.0		13									
	4			127									
	5			6									
	6		102										
	7	1.0		27									
	8	1.0		12									
	9			120									
	10			7									
	11		20										
	11	1.0		40									
	12				10								
	13			5									
	14			111									
	15			7									

USE / INSTALLATION CRITERIA — TERMINAL TREATMENT

NOTE No.	DRAIN (PERFORATED)	CULVERT (ROAD APPROACH)	CULVERT (CONDUIT)	CULVERT	IRRIGATION	SIPHON	STORM SEWER	SANITARY SEWER	OTHERS (SEE REMARKS)	WATERTIGHT JOINTS	SLOPE ANCHORS	IMPERFECT TRENCH	pH	RESISTIVITY (HUNDREDS)	SLOPED ENDS LT. / RT. (Not for Conc. Pipe Over 60" Dia.)	SKEW NUMBER	PAVED END SLOPES No.
1	✓									✓							
2				✓						✓							
3				✓						✓	✓						
4				✓						✓	✓						
5				✓						✓	✓						
6	✓									✓							
7				✓						✓							
8				✓						✓	✓						
9				✓						✓	✓						
10				✓						✓	✓						
11	✓									✓							
11				✓						✓	✓						
12				✓						✓	✓						
13				✓						✓	✓						
14				✓						✓	✓						
15				✓						✓	✓						

ALTERNATE MATERIALS — HELICAL CORRUGATED METAL — ALUMINUM (SIZE OF CORRUGATIONS)

NOTE No.	RIVETED, WELDED OR LOCK SEAM 1 1/2" x 1/4" PLATE THKN. (Inches)	CROSS SECTION ③	2 2/3" x 1/2" PLATE THKN. (Inches)	CROSS SECTION ③	3" x 1" PLATE THKN. (Inches)	CROSS SECTION ③	COATING ④	LOCK SEAM SMOOTH WALL SPIRAL RIB $^3/_4$" x $^3/_4$" @ 7 $^1/_2$" O.C. Or $^3/_4$" x 1" @ 11 $^1/_2$" O.C. PLATE THKN. (Inches)	CROSS SECTION ③	COATING ④
1										
2			0.075	R						
3			0.075	R			Ep			
4			0.075	R			Ep			
5			0.075	R			Ep			
6										
7			0.075	R						
8			0.075	R			Ep			
9			0.075	R			Ep			
10			0.075	R			Ep			
11										
11			0.075	R			Ep			
12										
13			0.075	R			Ep			
14			0.075	R			Ep			
15			0.075	R			Ep			

ALTERNATE MATERIALS — HELICAL CORRUGATED METAL — ALUMINIZED OR GALVANIZED IRON AND STEEL (SIZE OF CORRUGATIONS)

NOTE No.	RIVETED, WELDED OR LOCK SEAM 1 1/2" x 1/4" PLATE THKN. (Inches)	CROSS SECTION ③	2 2/3" x 1/2" PLATE THKN. (Inches)	CROSS SECTION ③	3" x 1" PLATE THKN. (Inches)	CROSS SECTION ③	COATING GALVANIZED ④	COATING ALUMINIZED ④	LOCK SEAM SMOOTH WALL SPIRAL RIB $^3/_4$" x $^3/_4$" @ 7 $^1/_2$" O.C. Or $^3/_4$" x 1" @ 11 $^1/_2$" O.C. PLATE THKN. (Inches)	CROSS SECTION ③	COATING GALVANIZED ④	COATING ALUMINIZED ④
1												
2			0.079	R			✓	✓				
3			0.079	R			✓	✓				
4			0.079	R			✓	✓				
5			0.079	R			✓	✓				
6												
7			0.079	R			✓	✓				
8			0.079	R			✓	✓				
9			0.079	R			✓	✓				
10			0.079	R			✓	✓				
11												
11			0.079	R			✓	✓				
12												
13			0.079	R			✓	✓				
14			0.079	R			✓	✓				
15			0.079	R			✓	✓				

RIGID / PLASTIC & IRON / APPURTENANCES / EXTENSION / REMARKS

NOTE No.	RIGID PRE-CAST CONCRETE REINF. III	IV	V	CORRUGATED HDPE	SOLID WALL HDPE	REINFORCED HDPE	PVC - PSI STIFFNESS	POLYPROPYLENE, DOUBLE WALL	POLYPROPYLENE, TRIPLE WALL	DUCTILE IRON - PIPE CLASS	MANHOLES DEPTH, TOP OF COVER TO INVERT (Feet)	DIAMETER OF LARGEST PIPE IN BASE (In.)	CONC. PRECAST	CAST-IN-PLACE	DROP MANHOLE	SPECIAL	INLETS TYPE Type D Modified (Number Required)	Type G-2				EXTENSION LEFT (Feet)	RIGHT (Feet)	EXTG. PIPE MATERIAL ⑤	REMARKS
1				✓													✓								
2																		✓							
3																									*Inst. 3 piece elbow & slip joint*
4																									*Inst. 3 piece elbow*
5																									
6				✓													✓								
7																		✓							
8																									*Inst. 3 piece elbow & slip joint*
9																									*Inst. 3 piece elbow*
10																									
11				✓													✓								
11																									*Inst. Tee w/ cleanout*
12				✓																					*Pipe Casing*
13																									*Inst. 3 piece elbow & slip joint*
14																									*Inst. 3 piece elbow*
15																									

GENERAL NOTES:

1. A check (✓) indicates column heading applies.
2. A new pipe culvert installation shall be of like material throughout.
3. Extension of existing metal culverts may be of unlike metal or corrugations. For connecting details, see Std. Dwg. No. RD326.
4. Dimensions shown are nominal.
5. All pipes shall conform to the AASHTO specification applicable for the type of material and the diameter of the pipe involved. column heading applies.

FOOTNOTES:

① Design height of cover is the critical design height used to select pipe materials. The height of cover for any given run of pipe may vary. Design height of cover shall be measured to subgrade.

② Cross-sectional dimensions may vary with different materials. When galvanized iron or steel and aluminum are acceptable alternates use a separate line for each type of material.

③ Cross-sectional shape of pipe normal to longitudinal axis, prior to loading
- A = Pipe - Arch
- R = Round
- E = Elliptical (5% nominal elongation)

④ Abbreviations for protective coatings for metal pipe
- PM = Polymeric, 10 Mil. thkn. coated both sides
- PO = Polyethylene inside lining, polymeric outside
- U = Uncoated
- CIM = Chevron industrial membrane
- Ep = Epoxy coated

⑤ Abbreviations for existing pipe materials
- AB = Asbestos cement
- Al = Corrugated aluminum
- Co = Concrete
- Pl = Plastic
- St = Corrugated steel
- X = Other material, see remarks column

- [x] RD300 Trench Backfill, Bedding, Pipe Zone And Multiple Installations
- [ ] RD302 Street Cut
- [ ] RD304 Arch Pipe Backfill/Compaction
- [ ] RD306 Concrete Encasement, Cradle, and Cap Details
- [ ] RD308 Bore Casing Detail
- [ ] RD310 Shallow/Deep Trench Service Connection, Blocking and Markers
- [x] RD312 Subsurface Drain
- [x] RD316 Sloped Ends For Metal Pipe
- [x] RD317 Culvert Embankment Protection And Riprap Pads
- [ ] RD318 Sloped Ends For Concrete Pipe
- [ ] RD319 Miscellaneous Culvert Details
- [ ] RD320 Paved End Slope For Culverts 60" Maximum Pipe Size
- [ ] RD321 Paved End Slope With Removable Safety Bar(s)
- [ ] RD322 Safety End Section For Metal Pipe
- [ ] RD324 Safety End Section For Concrete, PVC, HDPE & Polypropylene Pipe
- [x] RD325 Coupling Bands For Corrugated Metal Pipe
- [x] RD326 Coupling Bands For Corrugated Metal Pipe
- [ ] RD327 Coupling Bands For Corrugated Metal Pipe
- [ ] RD328 Slotted CMP Drain Details
- [x] RD330 Pipe Slope Anchors - Metal
- [ ] RD332 Pipe Slope Anchors - Concrete
- [ ] RD334 Locator Post
- [ ] RD335 Standard Storm Sewer Manhole
- [x] RD336 Standard Manhole Details
- [ ] RD338 Standard Sanitary Sewer Manhole
- [x] RD339 Pipe To Structure Connections
- [ ] RD340 Storm Sewer Pollution Control Manhole
- [ ] RD342 Shallow Manholes
- [ ] RD343 24" Manholes
- [ ] RD344 Standard Manhole Base Section
- [ ] RD345 Pipe To Manhole Connections
- [ ] RD346 Large Precast Manhole
- [ ] RD348 Manhole With Inlet
- [ ] RD350 Sanitary Sewer Piped Inside Drop Connection for Manholes
- [ ] RD352 Outside Drop Manholes
- [ ] RD354 Carry Through Manhole - Storm
- [ ] RD356 Manhole Covers And Frames
- [ ] RD358 Manhole Slope Protectors
- [ ] RD360 Manhole Frame Adjustment
- [ ] RD362 Sanitary Cleanout
- [x] RD363 Gutter Transition At Inlet
- [x] RD364 Concrete Inlets Type G-1, G-2, G-2M, and G-2MA
- [x] RD365 Frames & Grates For Concrete Inlets
- [ ] RD366 Concrete Inlets Type CG-1, CG-2
- [ ] RD367 Curb Inlet Channel
- [ ] RD368 Concrete Inlets Type M-E, M-O, B And B-SL
- [x] RD370 Ditch Inlet Type D
- [ ] RD371 Concrete Inlet Base Type CG-3
- [ ] RD372 Concrete Inlet Top, Option 1 Type CG-3
- [ ] RD373 Concrete Inlet Top, Option 2 Type CG-3
- [ ] RD374 Area Drainage Basin Or Field Inlet
- [ ] RD376 Miscellaneous Drainage Structures Siphon Box, Inlet Cap & Inlet Adjustment
- [ ] RD378 Type "3" Catch Basin, Frame and Grate
- [x] RD380 Fill Height Tables For Aluminum & Steel Corrugated Pipe
- [ ] RD382 Fill Height Tables For Aluminum & Steel Arch Pipe
- [ ] RD384 Fill Height Tables For Aluminum & Steel Spiral Rib Pipe
- [ ] RD386 Fill Height Table For Circular Concrete Pipe
- [ ] RD388 Fill Height Tables For PVC Pipe
- [x] RD390 Fill Height Table For Corrugated HDPE Pipe
- [ ] RD391 Fill Height Table For Steel Reinforced HDPE Pipe
- [ ] RD393 Fill Height Tables For Polypropylene Pipe
- [x] RD398 Culvert ID Marker
- [ ] RD399 Stormwater Treatment and Storage Facility Field Markers

REGISTERED PROFESSIONAL ENGINEER
93,567
Digitally Signed 2025.05.15 10:26:41 -07'00'
OREGON
MAY 8, 2018
WILLIAM A. BABICKY
RENEWS: 12-31-2025

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

OREGON DEPARTMENT OF TRANSPORTATION

HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

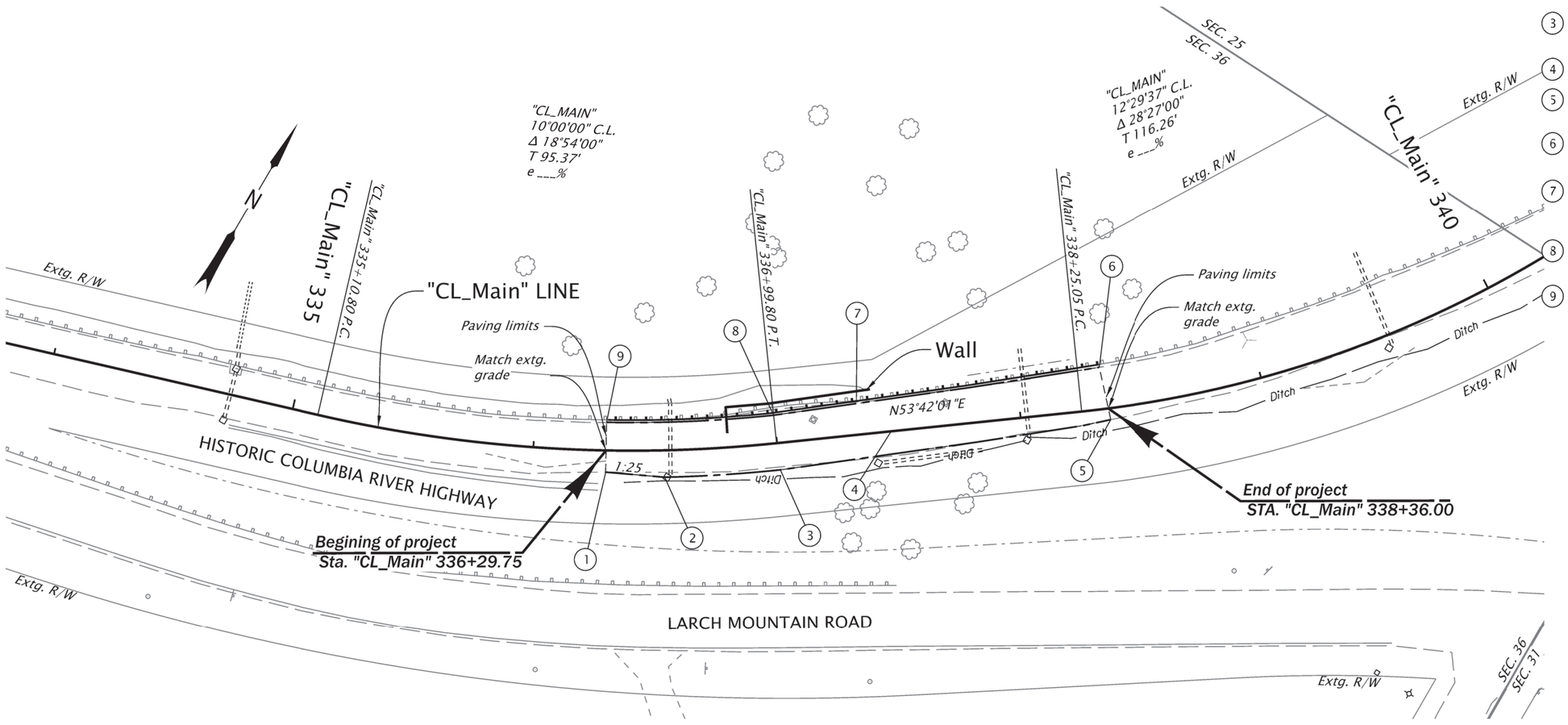
COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

Designer: William A. Babicky | Reviewer: David L. McDonald
CADD Tech: Rhonda L. Freeman | Checker: Zoe A. Keve

PIPE DATA SHEET

SHEET NO. BC01

Sec. 36, T. 1 N., R. 4 E., W.M.
Sec. 25, T. 1 N., R. 5 E., W.M.



PLAN
Scale: 1"=50'-0"

CONSTRUCTION NOTES

1. *Sta. "CL_Main" 336+29.75, 8.75' Rt. Angle point*
2. *Sta. "CL_Main" 336+53.47, 11.00' Rt. Angle point*
3. *Sta. "CL_Main" 337+00.22, 11.00' Rt. Angle point*
4. *Remove pvmt., shown thus:*
5. *Sta. "CL_Main" 338+36.41, 4.66' Rt. Angle point*
6. *Sta. "CL_Main" 338+34.42, 17.16' Lt. Angle point*
7. *Sta. "CL_Main" 336+29.76 to Sta. "CL_Main" 338+34.37 Remove and reinstall historic guardrail - 206.25' (For details, see sht. BB01)*
8. *Sta. "CL_Main" 336+99.80, 11.50' Lt. Angle point*
9. *Sta. "CL_Main" 336+29.76, 11.50' Lt. Angle point*

REGISTERED PROFESSIONAL ENGINEER
19731PE
Digitally Signed Date: 2025.05.15 10:32:56-07'00'
OREGON
MAY 05, 1998
CHIVANNA T. POT
RENEWS: 12-31-2026
FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

OREGON DEPARTMENT OF TRANSPORTATION

HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

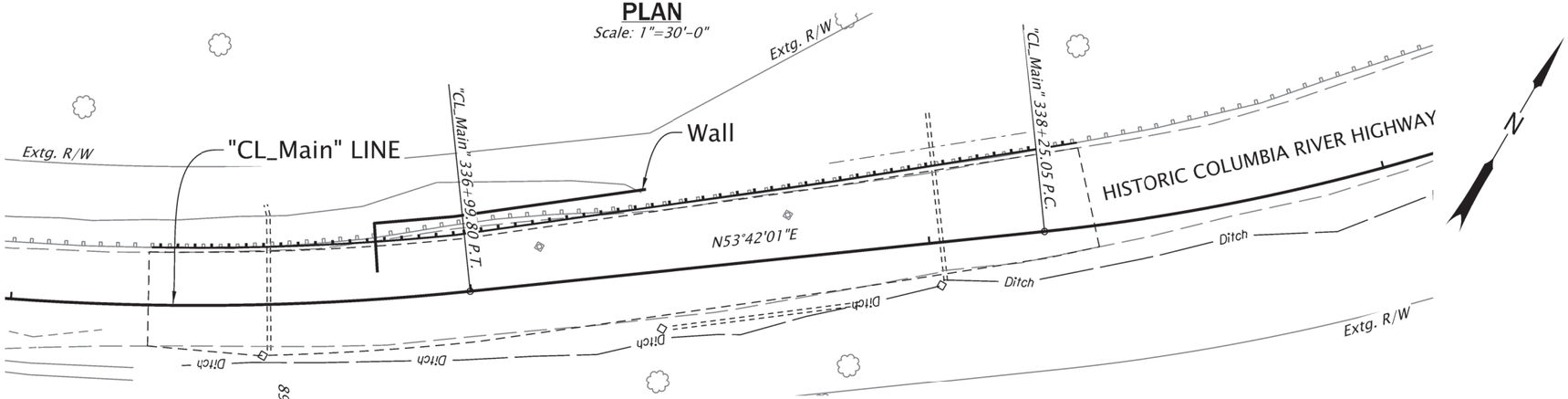
COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

Designer: Chivanna Pot	Reviewer: Chivanna Pot
CADD Tech: Anitha Vazrala	Checker: Sue Cross

GENERAL CONSTRUCTION — SHEET NO. C01

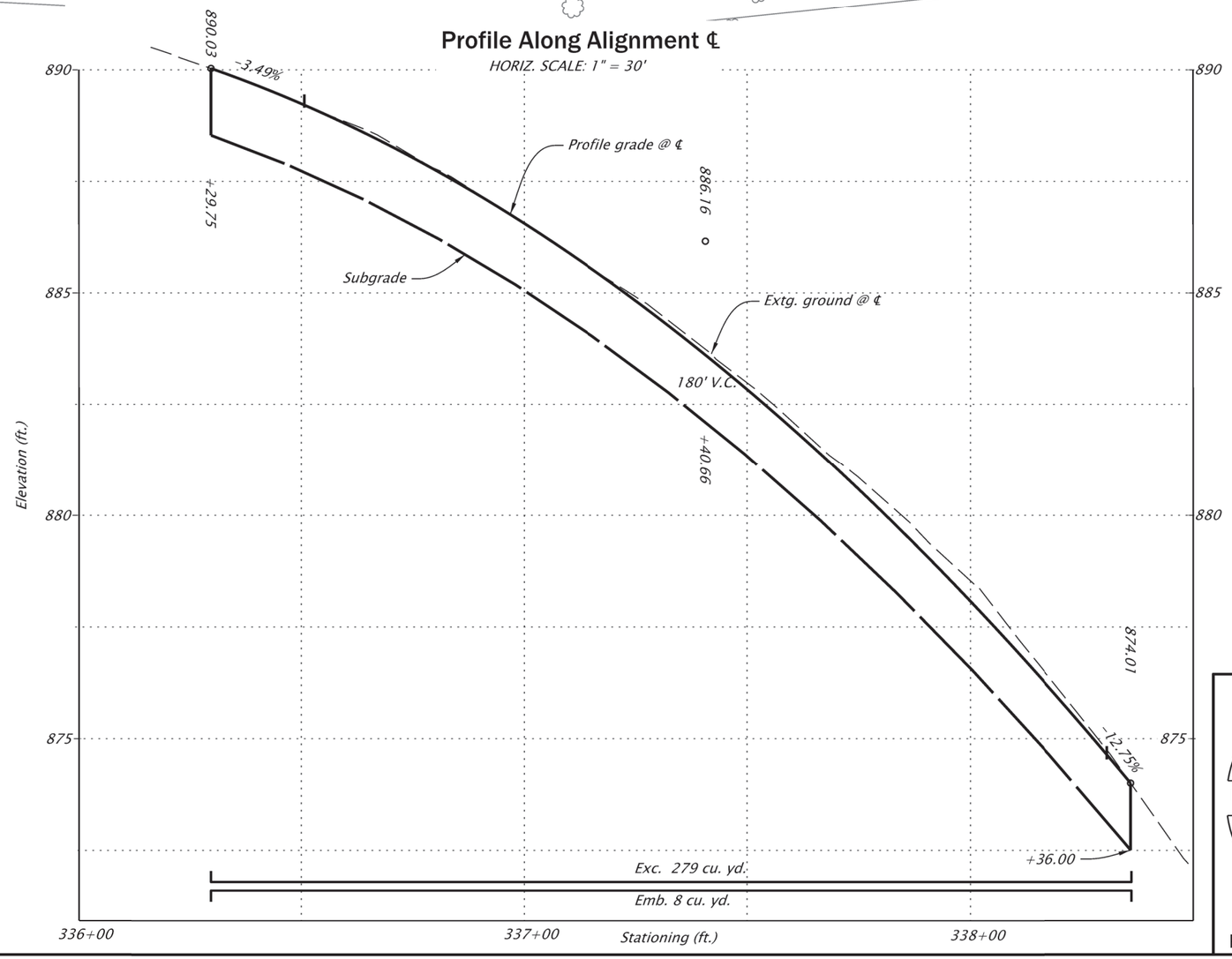
PLAN

Scale: 1"=30'-0"



Profile Along Alignment ℄

HORIZ. SCALE: 1" = 30'



REGISTERED PROFESSIONAL ENGINEER
19731PE
Digitally Signed Date: 2025.05.15 10:33:33-07'00'
OREGON
MAY 05, 1998
CHIVANNA T. POT
RENEWS: 12-31-2026

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

OREGON DEPARTMENT OF TRANSPORTATION

HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

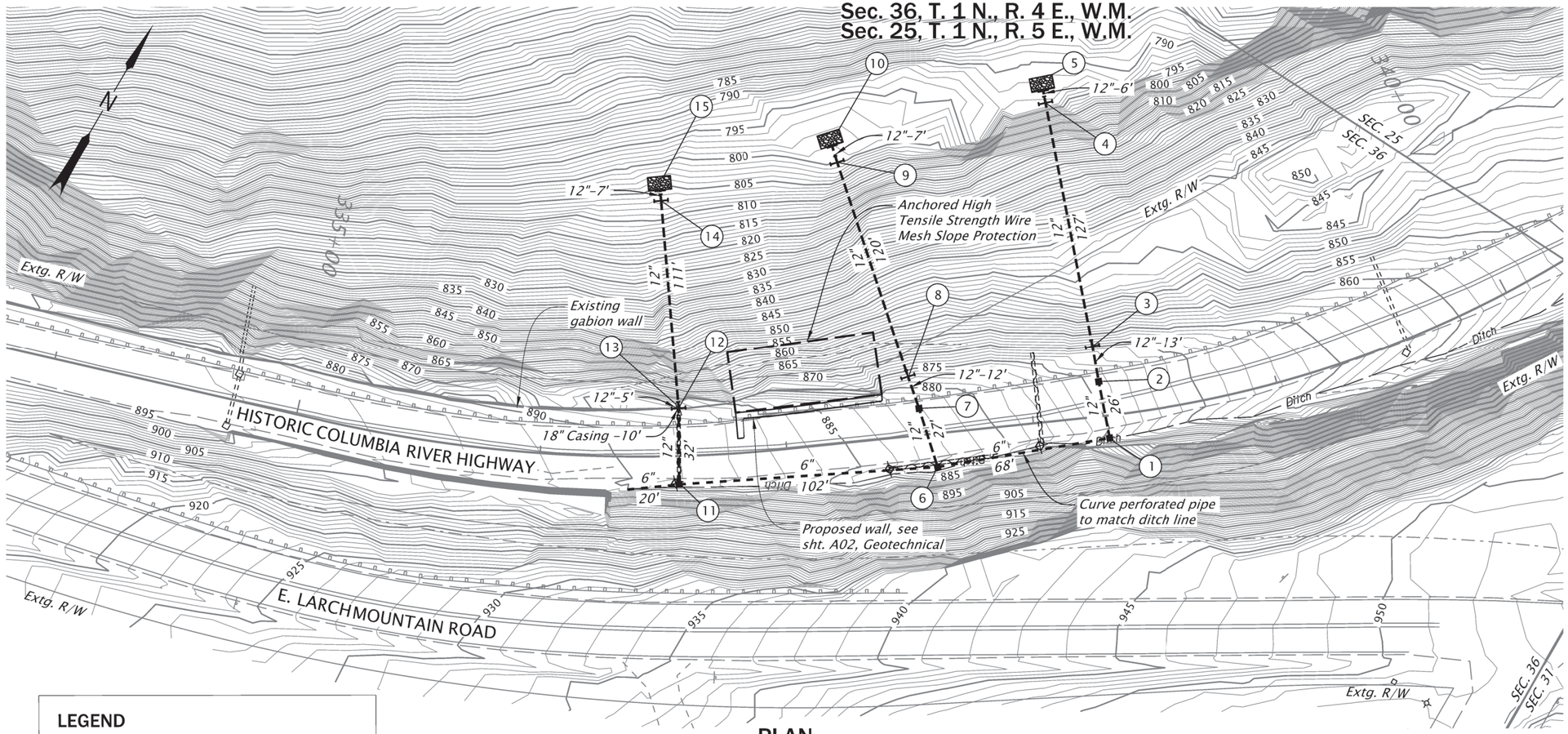
COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

Designer: Chivanna Pot	Reviewer: Chivanna Pot
CADD Tech: Anitha Vazrala	Checker: Sue Cross

PROFILE

SHEET NO. C01A

See sht. C01C for construction notes.



PLAN
Scale: 1"=50'-0"

LEGEND

(Items in legend may not appear on plans)

- *Remove manhole:*
- *Adjust manhole:*
- *Const. manhole:*
- *Remove inlet:*
- *Adjust inlet:*
- *Const. inlet*
- *Const. manhole with inlet:*
- *Cap. manhole / inlet:*
- *Const. tee/elbow transition:*
- *Const. pipe:*
- *Const. perf. drain pipe:*
- *Remove pipe:*
- *Inst. paved culvert end slope:*
- *Inst. stormwater ID marker:*
- *Inst. rock riprap:*
- *Ditch:*
- *No work area:*
- *Regulated work area:*
- *Wetland boundary:*
- *Ordinary high water*

NOTES:

1. Confirm drainage structure rim elevations with roadway ditch flowline finish grade surface elevation prior to installation.

2. For all exposed metal pipe and fittings, coat as specified in 00445.11.

REGISTERED PROFESSIONAL ENGINEER
93,567
Digitally Signed 2025.05.15 10:23:22 -07'00'
OREGON
MAY 8, 2018
WILLIAM A. BABICKY
RENEWS: 12-31-2025

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

OREGON DEPARTMENT OF TRANSPORTATION

HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

Designer: William A. Babicky
Reviewer: David L. McDonald
CADD Tech: Rhonda L. Freeman
Checker: Zoe A. Keve

DRAINAGE AND UTILITIES

SHEET NO. C01B

CONSTRUCTION NOTES

1. *Sta. "CL_Main" 338+30, 9.5' Rt.*
   Remove pipe - 38'
   Remove inlet
   Const. type D modified inlet
   Rim elev. - ditch FL
   Inst. 6" perforated drain pipe - 68'
   FL in 872.9 , FL out 871.0
   Inst. subsurface drain outlet
   Inst. drainage geotextile, type 1 - 30 sq. yd.
   Inst. culvert drainage marker, Type 2
   (DFI No. D30993, MP 8.96)
   (See dwgs. nos. RD312, RD339, RD365 & RD398)
   (For details, see sht. HB01 & HB02)

2. *Sta. "CL_Main" 338+28, Lt.*
   Const. type G-2 inlet
   FL in 870.3, FL out 870.2
   Inst. 12" storm sew. pipe - 26'
   5' depth, sl. 3.0%
   (See dwg. nos. RD300, RD325, RD326,
   RD364 & RD380)
   (For details, see shts. HB01 & HB02)

3. *Sta. "CL_Main" 338+27, 29' Lt.*
   Inst. 3 piece 12 " elbow - 3 (as needed)
   FL in 870.0
   Inst. 12" storm sew. pipe - 13'
   5' depth, sl. 3.0%
   Inst. slip joint
   (For details, see shts. HB01 & HB02)

4. *Sta. "CL_Main" 338+18, 131' Lt.*
   Inst. 3 piece 12 " elbow - 3 (as needed)
   FL in 793.0
   Inst. 12" storm sew. pipe - 127'
   Anchor CMP to surface every 20 ft.
   (See dwg. no. RD330)
   (For details, see shts. HB01 & HB02)

5. *Sta. "CL_Main" 338+18, 133' Lt.*
   Inst. 12" storm sew. pipe - 6'
   Anchor CMP to surface, FL out 791.5
   Const. loose riprap (Class 50) - 2 cu. yd.
   (See dwg. no. RD317)
   (For details, see shts. HB01 & HB02)

6. *Sta. "CL_Main" 337+60, 13.5' Rt.*
   Remove pipe - 45'
   Remove inlet
   Const. type D modified inlet
   Rim elev. - ditch FL
   Inst. 6" perforated drain pipe - 102'
   FL in 879.9 , FL out 878.0
   Inst. subsurface drain outlet
   Inst. drainage geotextile, type 1 - 45 sqyds.
   Inst. Culvert drainage marker, type 2
   (DFI No. D30834, MP 8.95)
   (For details, see shts. HB01 & HB02)

7. *Sta. "CL_Main" 337+54, Lt.*
   Const. type G-2 inlet
   FL in 877.3, FL out 877.2
   Inst. 12" storm sew. pipe - 27'
   5' depth, sl. 3.0%
   (For details, see shts. HB01 & HB02)

8. *Sta. "CL_Main" 337+52, 24.0' Lt.*
   Inst. 3 piece 12 " elbow - 1
   FL in 877.0
   Inst. 12" storm sew. pipe - 12'
   5' depth, sl. 3.0%
   Inst. slip joint
   (For details, see shts. HB01 & HB02)

9. *Sta. "CL_Main" 337+32, 116.5' Lt.*
   Inst. 3 piece 12 " elbow - 3 (as needed)
   FL in 800.0
   Inst. 12" storm sew. pipe - 120'
   Anchor CMP to surface every 20 ft.
   (For details, see shts. HB01 & HB02)

10. *Sta. "CL_Main" 337+31, 120' Lt.*
    Inst. 12" storm sew. pipe - 7.0'
    Anchor CMP to surface, FL out 799.0
    Const. loose riprap (Class 50) - 2 cu. yd.
    (For details, see shts. HB01 & HB02)

11. *Sta. "CL_Main" 336+56, 13' Rt.*
    Remove pipe - 37'
    Remove inlet
    Const. type D modified inlet
    Rim elev. - ditch FL
    Inst. 6" perforated drain pipe - 20'
    FL in 886.7 , FL out 885.0
    Inst. subsurface drain outlet
    Inst. drainage geotextile, type 1 - 10 sqyds.
    Inst. culvert drainage marker, Type 2
    (DFI No. D30833, MP 8.93)
    (For details, see shts. HB01 & HB02)

12. *Sta. "CL_Main" 336+57, 20' Lt.*
    Inst. 3 piece 12" tee w/ cleanout - 1
    FL in 883.5
    Inst. 12" storm sew. pipe - 32'
    5' depth, sl. 5.0%
    Inst. 18" HDPE casing pipe - 10'
    (For details, see shts. HB01 & HB02)

13. *Sta. "CL_Main" 336+57, 20' Lt.*
    Inst. 3 piece 12" elbow - 3 (as needed)
    FL in 878.0
    Inst. 12" storm sew. pipe - 5'
    (For details, see shts. HB01 & HB02)

14. *Sta. "CL_Main" 336+51, 106' Lt.*
    Inst. 3 piece 12" elbow - 3
    FL in 807.0
    Inst. 12" storm sew. pipe - 111'
    Anchor CMP to surface every 20 ft.
    Inst. slip joint
    (For details, see shts. HB01 & HB02)

15. *Sta. "CL_Main" 336+50, 108' Lt.*
    Inst. 12" storm sew. pipe - 7'
    Anchor CMP to surface, FL out 805.7
    Const. loose riprap (Class 50) - 2 cu. yd.
    (For details, see shts. HB01 & HB02)

NOTES:
1. Confirm drainage structure rim elevations with roadway ditch flowline finish grade surface elevation prior to installation.

2. For all exposed metal pipe and fittings, coat as specified in 00445.11.

REGISTERED PROFESSIONAL ENGINEER
93,567
Digitally Signed 2025.05.15 10:25:29 -07'00'
OREGON
MAY 8, 2018
WILLIAM A. BABICKY
RENEWS: 12-31-2025
FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

OREGON DEPARTMENT OF TRANSPORTATION

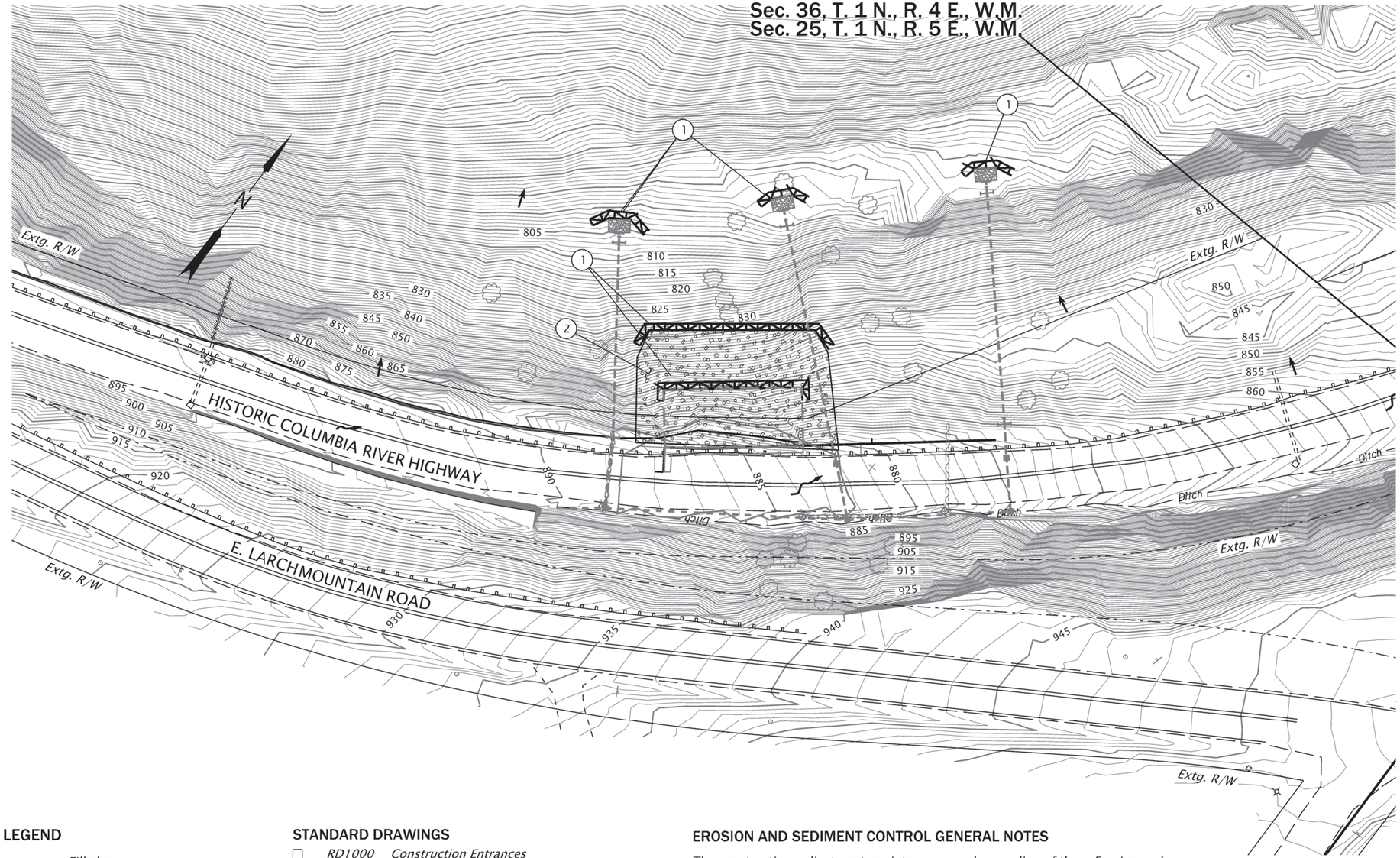
HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

Designer: William A. Babicky | Reviewer: David L. McDonald
CADD Tech: Rhonda L. Freeman | Checker: Zoe A. Keve

DRAINAGE AND UTILITIES NOTES

SHEET NO. C01C



CONSTRUCTION NOTES

1. *Inst. sediment barrier, Type 3 (See dwg. RD1030)*
2. *Apply seeding and mulching*

LEGEND

- *Fill slope*
- *Cut slope*
- *Sediment fence*
- *Seeding and mulching*
- *Flow direction*
- *Slope direction*

STANDARD DRAWINGS

☐	RD1000	Construction Entrances
☐	RD1005	Check Dams Type 1, 3 and 4
☐	RD1006	Check Dams Type 2 and 6
☐	RD1010	Inlet Protection Type 2, 3, 6, 7 10 and 11
☐	RD1015	Inlet Protection Type 4
■	RD1030	Sediment Barrier Type 2, 3 and 4
☐	RD1031	Sediment Barrier Type 5 and 6
☐	RD1032	Sediment Barrier Type 8
☐	RD1033	Sediment Barrier Type 9
☐	RD1040	Sediment Fence
☐	RD1045	Temporary Slope Drain With Energy Dissipator
☐	RD1050	Temporary Scour Basin / Energy Dissipator
☐	RD1055	Slope and Channel Matting
☐	RD1060	Tire Wash Facility Type 1 and 2
☐	RD1065	Sediment Trap
☐	RD1070	Concrete Truck Wash Out

EROSION AND SEDIMENT CONTROL GENERAL NOTES

The construction, adjustment, maintenance, and upgrading of these Erosion and Sediment Control measures is the responsibility of the contractor for the duration of the project to comply with Section 00280 of the Oregon Standard Specifications for construction and, when applicable, the NPDES 1200-CA permit.

Erosion and Sediment Control measures shown on this plan are for anticipated site conditions. Adjust or upgrade these measures for unexpected storm events to ensure that sediment and sediment-laden water does not leave the site.

Develop a revised plan of the Erosion and Sediment Control measures shown as required by Section 00280, Oregon Standard Specifications for Construction. Implement this plan for all clearing and grading activities and in segments applicable to each staging phase. Construct in such a manner so as to ensure that sediment and sediment-ladenwater does not enter the roadway or drainage system, or violate applicable water standards.

Install measures within the right-of-way unless directed otherwise.

REGISTERED
424
Digitally Signed 2025.05.16 07:53:05 -07'00'
Magnus P. Bernhardt
OREGON
05/14/99
LANDSCAPE ARCHITECT
EXPIRES: 05.31.2025

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

OREGON DEPARTMENT OF TRANSPORTATION

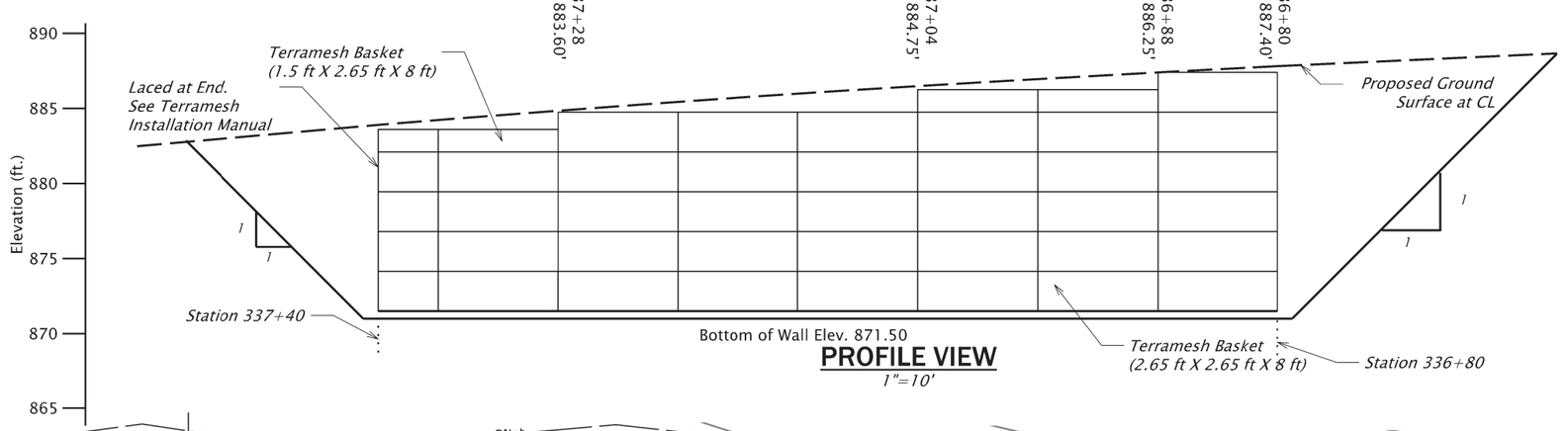
HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

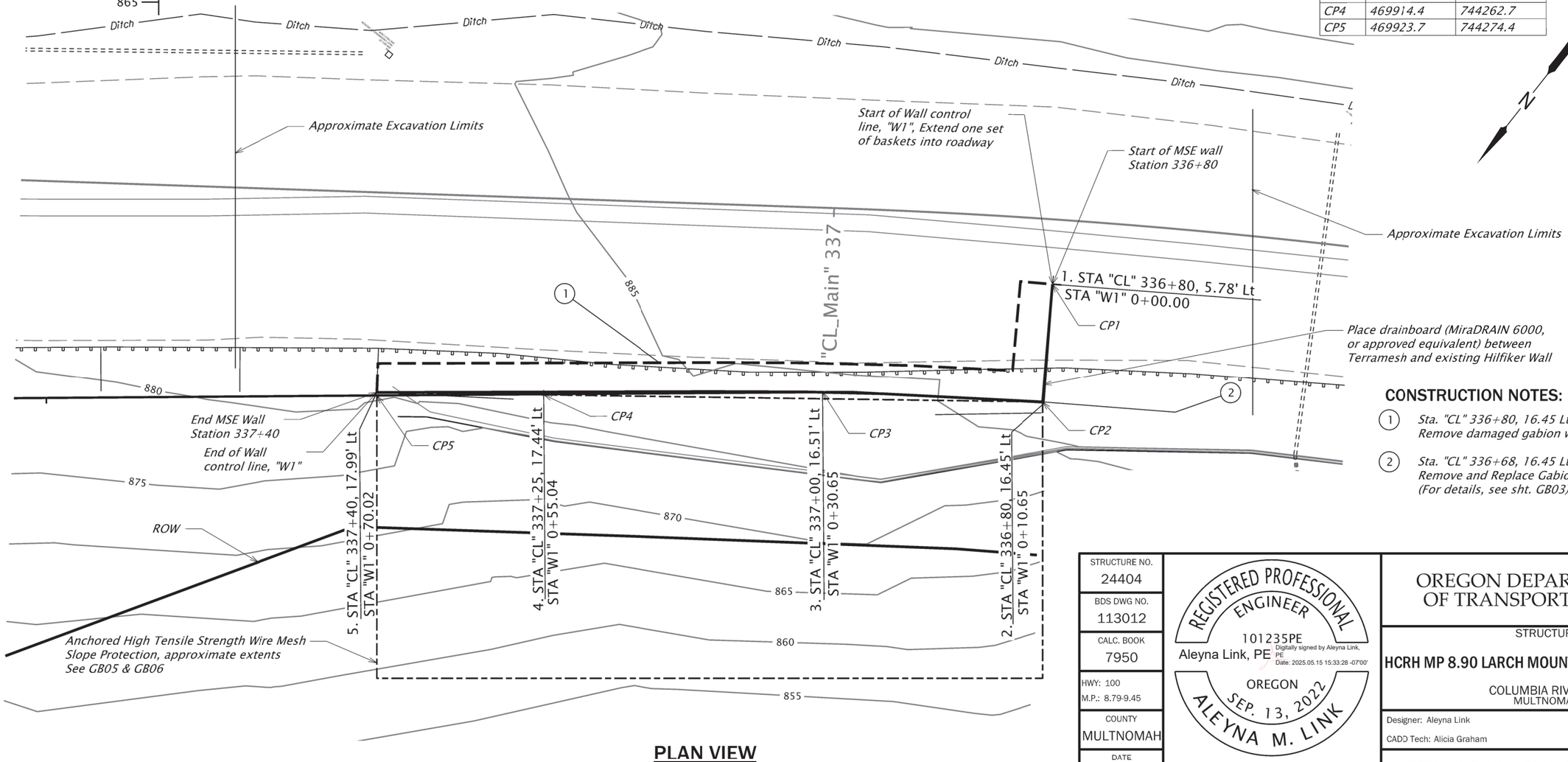
Designer: Magnus P. Bernhardt
Reviewer: Robert R. Marshall
CADD Tech: Rhonda L. Freeman
Checker: Anitha R. Vasrala

EROSION AND SEDIMENT CONTROL PLAN

SHEET NO. FB01



PROFILE VIEW
1"=10'



PLAN VIEW
1"=10'

NOTES:

1. *See sht. GB02 for Retaining Wall Section and sht. GB03 for Retaining Wall Details.*
2. *Elevations shown are based on North American Vertical Datum 1988 (NAVD88)*
3. *See Terramesh Installation manual for basket installation details.*
4. *Provide all materials not listed on GB03 and perform all work according to the "Oregon Standard Specifications for Construction (2024)" and the Project Special Provisions.*
5. *Field fit wall ends at the direction of the engineer.*

Wall Alignment Control Points		
Point	Northing	Easting
CP1	469878.7	744233.2
CP2	469887.6	744227.3
CP3	469898.8	744243.0
CP4	469914.4	744262.7
CP5	469923.7	744274.4

CONSTRUCTION NOTES:

1. *Sta. "CL" 336+80, 16.45 Lt to Sta. "CL" 337+40, 17.97 Lt Remove damaged gabion wall. 40 cu. yd.*
2. *Sta. "CL" 336+68, 16.45 Lt to Sta. "CL" 336+80, 16.45 Lt Remove and Replace Gabion Retaining Wall. 20 cu. yd. (For details, see sht. GB03)*

STRUCTURE NO.	24404
BDS DWG NO.	113012
CALC. BOOK	7950
HWY: 100	M.P.: 8.79-9.45
COUNTY	MULTNOMAH
DATE	May. 2025

REGISTERED PROFESSIONAL ENGINEER
101235PE
Aleyna Link, PE
Digitally signed by Aleyna Link, PE
Date: 2025.05.15 15:33:28 -07'00'
OREGON
SEP. 13, 2022
ALEYNA M. LINK
RENEWS: 12-31-2026

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME

HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

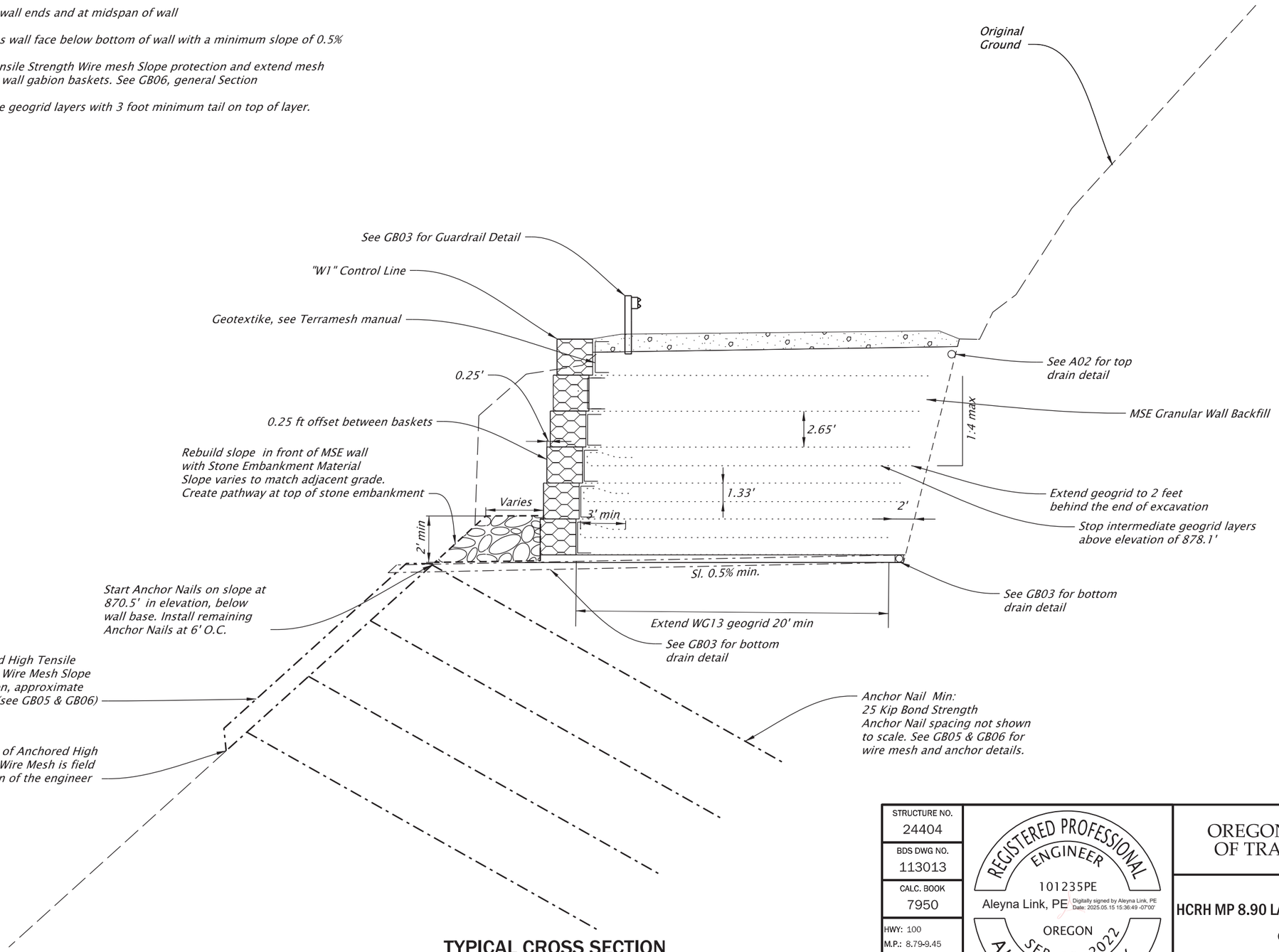
Designer: Aleyna Link | Reviewer: Tom Braibish
CADD Tech: Alicia Graham | Checker: XXX

RETAINING WALL PLAN AND PROFILE

SHEET NO. GB01

NOTES:

1. *Construct drain pipes at wall ends and at midspan of wall*
2. *Slope drain pipes to cross wall face below bottom of wall with a minimum slope of 0.5%*
3. *Install Anchored High Tensile Strength Wire mesh Slope protection and extend mesh below base of remaining wall gabion baskets. See GB06, general Section*
4. *Wrap face of intermediate geogrid layers with 3 foot minimum tail on top of layer.*



TYPICAL CROSS SECTION
No scale

STRUCTURE NO.	24404
BDS DWG NO.	113013
CALC. BOOK	7950
HWY: 100 M.P.: 8.79-9.45	
COUNTY	MULTNOMAH
DATE	May. 2025

REGISTERED PROFESSIONAL ENGINEER
101235PE
Aleyna Link, PE
Digitally signed by Aleyna Link, PE Date: 2025.05.15 15:36:49 -07'00'
OREGON
SEP. 13, 2022
ALEYNA M. LINK
RENEWS: 12-31-2026

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

OREGON DEPARTMENT OF TRANSPORTATION

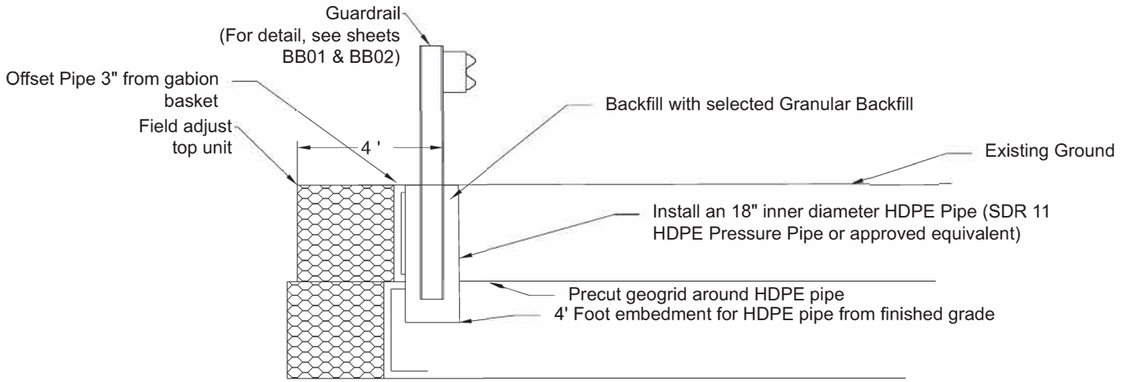
STRUCTURE NAME

HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

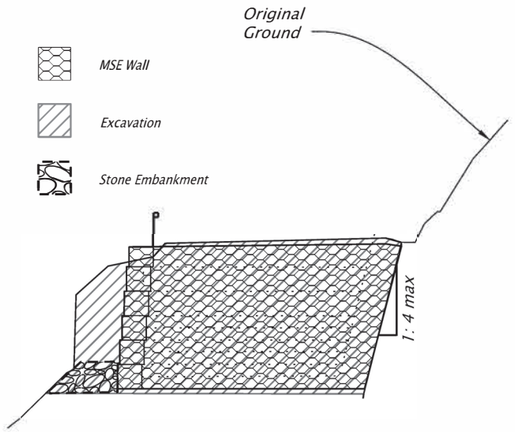
COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

Designer: Aleyna Link | Reviewer: Tom Braibish
CADD Tech: Alicia Graham | Checker: XXX

TYPICAL RETAINING WALL CROSS SECTION | SHEET NO. GB02



GUARDRAIL DETAIL
No Scale



PAY AREA DIAGRAM
No Scale

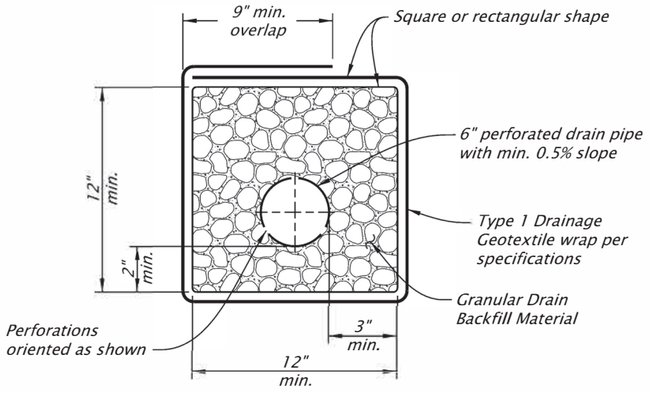
NOTES:

1. *Design MSE wall to meet the minimum reinforcement lengths of 20 feet.*

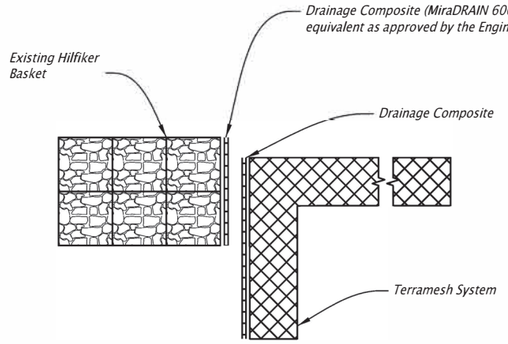
2. *Provide all materials not listed below and perform all work according to the "Oregon Standard Specifications for Construction (2024)" and the Project Special Provisions.*

3. *Agency Furnished Materials include:*

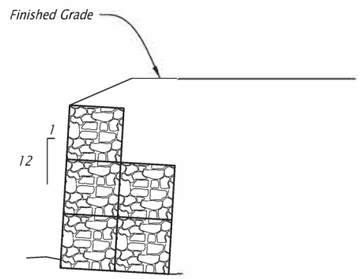
Item	Unit	Amount
Maccaferri Terramesh Unit (6' x 8' x 2.65")	ea	51
Maccaferri Terramesh Unit (6' x 8' x 1.5")	ea	7
Geogrid Reinforcement - MacGrid WG (12' x 150")	rolls	11
MacTex N47.1 - Filter Fabric Rolls (5' x 300')	rolls	3
SS HogRings (1600/box)	box	6
MacDrain Q1032 6.56' x 164" 119.5 SY/roll	rolls	1
Galvanized Domestic ArtWeld Gabions (6'x3'x3')	ea	10
High Tensile Strength Steel Wire Mesh - TECCO© G65/3 - roll size 12.8'x96.4' (1,260 ft²)	rolls	2
Connection Clips - T3 clips	included w/ mesh	1
Boundary Rope & Clips - Wire Rope 1/2", 6*19 IWRC, WRCs 1/2" (T2 clips), galvanized	lump	1
Spike Plates - P33-40N Spike Plate	each	72



DRAIN PIPE DETAIL
No Scale



PLAN VIEW OF INTERFACE BETWEEN EXISTING GRAVITY WALL AND NEW MSE WALL
No Scale



GABION WALL REPAIR DETAIL
No Scale

STRUCTURE NO.	24404
BDS DWG NO.	113014
CALC. BOOK	7950
HWY: 100	M.P.: 8.79-9.45
COUNTY	MULTNOMAH
DATE	May. 2025

REGISTERED PROFESSIONAL ENGINEER
101235PE
Aleyna Link, PE
Digitally signed by Aleyna Link, PE
Date: 2025.05.15 15:38:44 -07'00'
OREGON
SEP. 13, 2022
ALEYNA M. LINK
RENEWS: 12-31-2026

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME

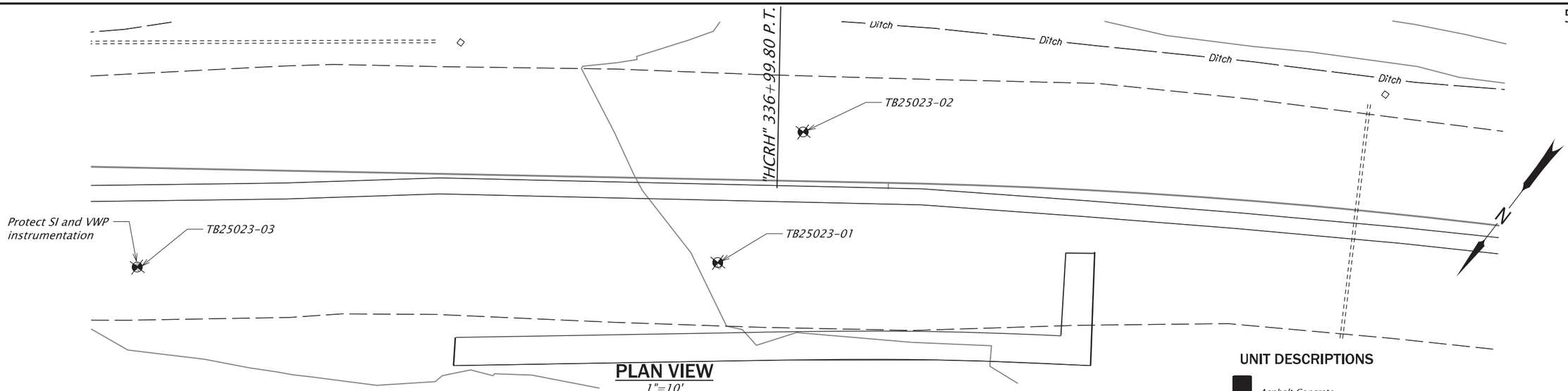
HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

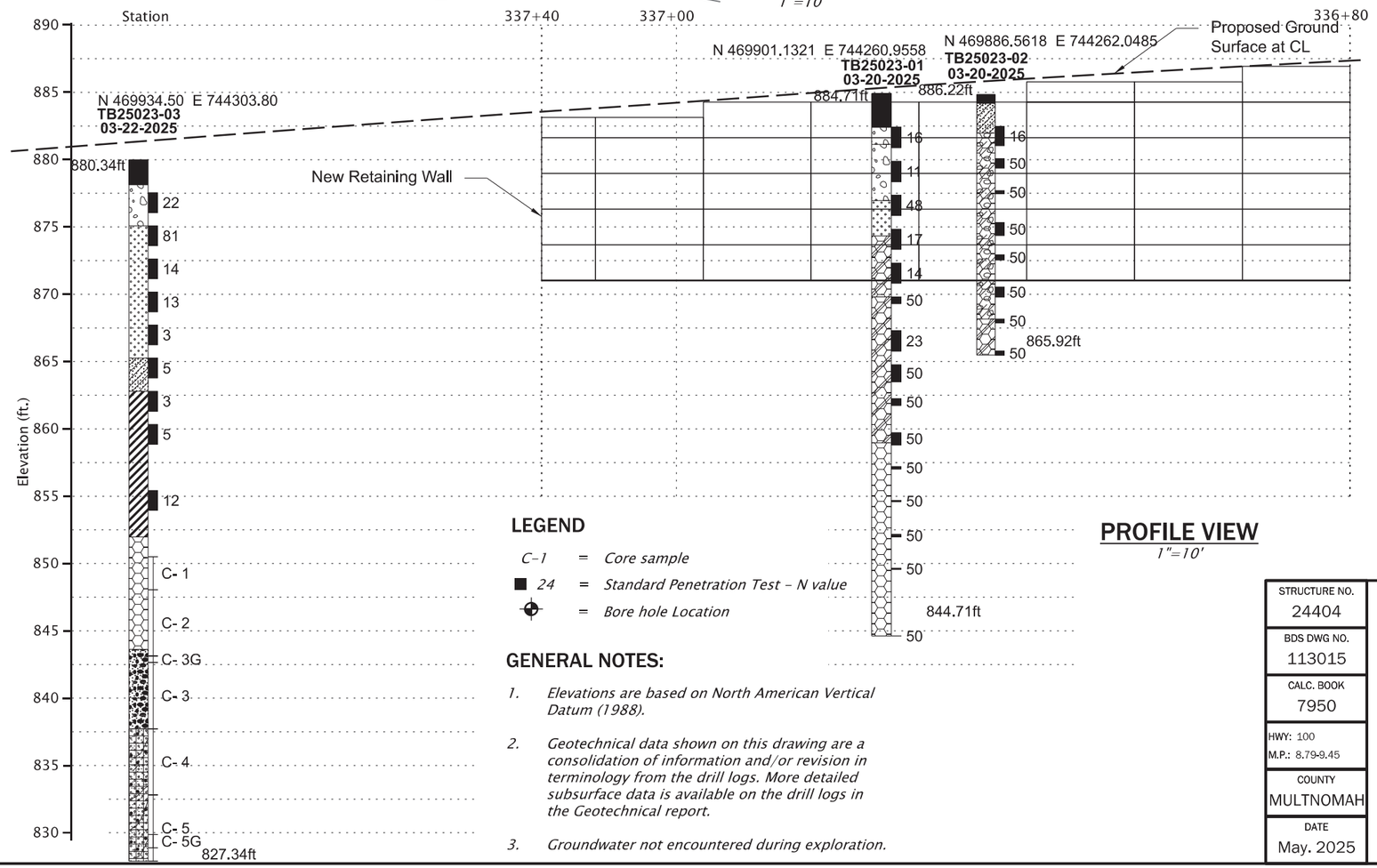
Designer: Aleyna Link | Reviewer: Tom Braibish
CADD Tech: Alicia Graham | Checker: XXX

RETAINING WALL DETAILS

SHEET NO. GB03



PLAN VIEW
1"=10'



PROFILE VIEW
1"=10'

LEGEND

C-1	=	Core sample
24	=	Standard Penetration Test - N value
	=	Bore hole Location

GENERAL NOTES:

1. *Elevations are based on North American Vertical Datum (1988).*
2. *Geotechnical data shown on this drawing are a consolidation of information and/or revision in terminology from the drill logs. More detailed subsurface data is available on the drill logs in the Geotechnical report.*
3. *Groundwater not encountered during exploration.*

UNIT DESCRIPTIONS

Asphalt Concrete.

Sandy GRAVEL with trace silt, GP-GM; gray, wet, medium dense, fine to coarse sand and gravel, angular to subangular. (Base course)

SAND with trace gravel, SW; dark brown, moist, medium dense to dense, fine to coarse sand, subangular to subrounded. (Fill)

Sandy CLAY with trace to some gravel, CH; Brown and gray medium to high plasticity; moist to wet; soft to stiff; fine to coarse sand and gravel (when present), subrounded to subangular sand and gravel of basalt, andesite, and weathered sandstone. (Landslide Debris)

Clayey SAND with trace gravel to gravelly SAND with some clay, SC to SP-SC; brown to gray-brown, medium to high plasticity, moist to wet, medium dense to very dense, fine to coarse sand and gravel, including fragments of basalt and weathered sandstone. (Predominately Decomposed Sandstone)

SANDSTONE, black, red, gray, and brown, moderately weathered, extremely weak (R0), fine to coarse, subangular to rounded sand and occasional fine to coarse, subrounded basalt gravel. (Moderately Weathered Sandstone)

COBBLE CONGLOMERATE, gray and brown, moderately to predominantly weathered, matrix largely washed out during coring, rounded to subrounded, cobble-sized clasts of moderately weathered, medium strong (R3) sandstone and slightly to moderately weathered, strong (R4) basalt. (Moderately Weathered Conglomerate)

Gravelly SAND with some clay, SP-SC; brown and gray, low to medium plasticity, moist to wet, medium dense to very dense, fine to coarse sand and gravel, subangular basalt gravel. (Decomposed Basalt)

Gravelly SAND with some clay, SP-SC; brown and dark gray, medium plasticity, moist to wet, very dense, fine to coarse sand and gravel, angular to subangular basalt gravel. (Predominately Decomposed Basalt)

BASALT, gray to dark gray, fresh to slightly weathered, strong to very strong (R4-R5), aphanitic to fine grained, very close to close, horizontal to diagonal, predominately clean joints, with orange-brown clay coating increasing with depth. GSI = 60-70. (Basalt)

STRUCTURE NO.	24404
BDS DWG NO.	113015
CALC. BOOK	7950
HWY: 100	M.P.: 8.79-9.45
COUNTY	MULTNOMAH
DATE	May. 2025

CERTIFIED OREGON ENGINEERING GEOLOGIST
JEFFREY A. JONES
Digitally Signed JONES Jeff 2025.05.15 11:26:43 -07'00'
E2235
RENEWS: 01-01-2026

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME

HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

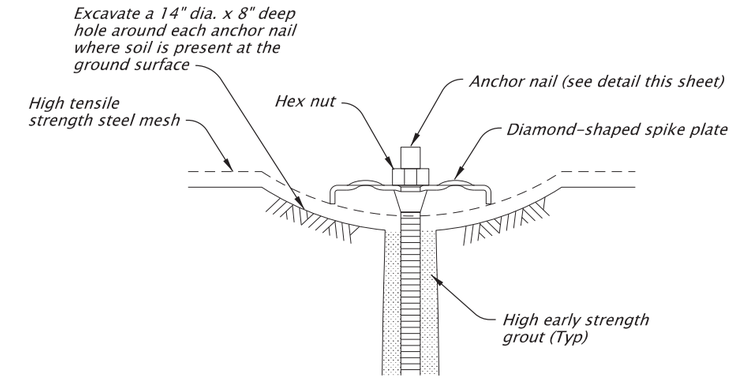
COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

Designer: Jeff Jones | Reviewer: Michael Zimmerman
CADD Tech: Alicia Graham | Checker: XXX

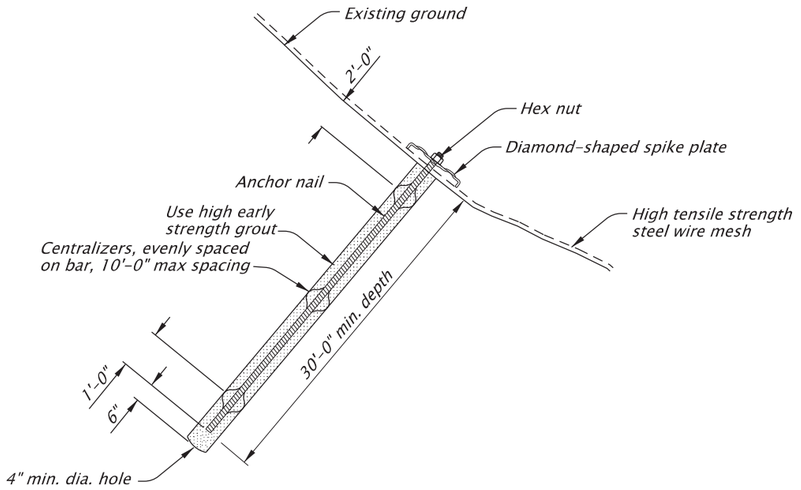
GEOTECHNICAL DATA | SHEET NO. GB04

WIRE MESH ANCHORS

58V-063



SPIKE PLATE INSTALLATION



ANCHOR NAIL DETAIL

NOTES:

1. *Minimum dimension. If solid rock is encountered before these dimensions are obtained, install the remaining length of the anchors into solid rock as shown for rock anchors.*
2. *Wire rope anchor minimum working load is 20 kips.*
3. *Anchor nail design load is 25 kips.*
4. *Anchor nail hex nut lock-off load is 9 kips.*
5. *Anchor nail minimum depth assumes up to 15 feet of soil over weathered rock. Establish bond zone length in weathered rock as needed to achieve design load.*
6. *ODOT-Furnished materials are outlined on sheet GB03.*

STRUCTURE NO.	24404
BDS DWG NO.	113016
CALC. BOOK	7950
HWY: 100	M.P.: 8.79-9.45
COUNTY	MULTNOMAH
DATE	May. 2025

CERTIFIED OREGON JEFFREY A. JONES Digitally Signed JONES Jeff 2025.05.15 11:29:18 -07'00' E2235 ENGINEERING GEOLOGIST

RENEWS: 01-01-2026

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME

HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

Designer: Jeff Jones | Reviewer: Michael Zimmerman
CADD Tech: Alicia Graham | Checker: XXX

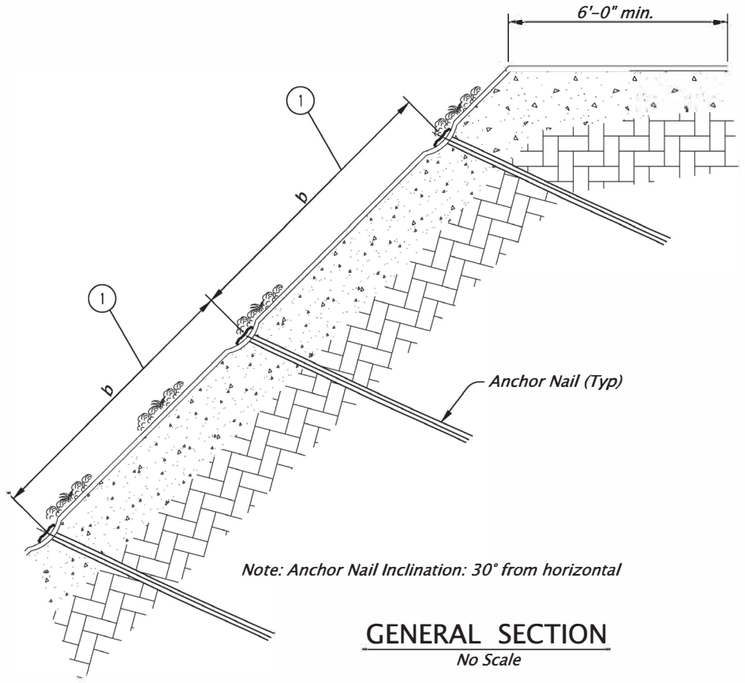
ROCKFALL MITIGATION ANCHOR DETAILS

SHEET NO. GB05

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

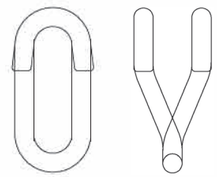
WIRE MESH ANCHORS

Extend mesh below the wall as needed to extend a minimum of 3' behind the front face of retaining wall gabion baskets

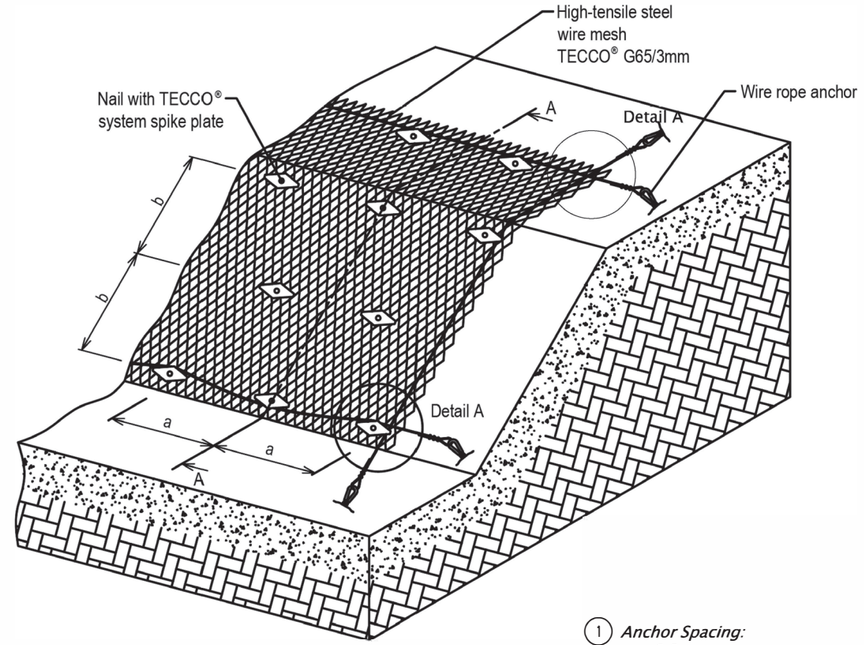


Note: Anchor Nail Inclination: 30° from horizontal

GENERAL SECTION
No Scale

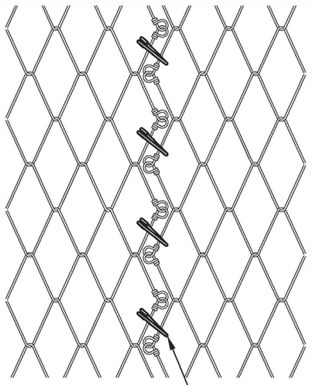


PRESS CLAW TYPE 2
No Scale



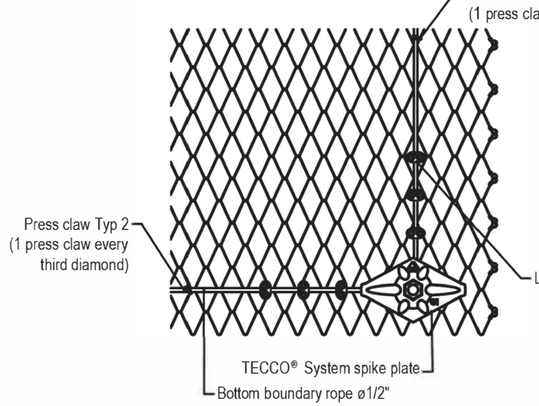
(1) *Anchor Spacing:*
a = 6 ft.
b = 6 ft.

GENERAL NAIL ARRANGEMENT
No Scale

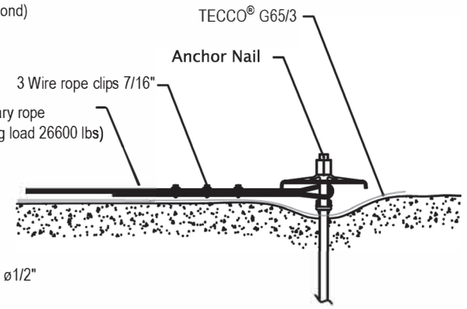


Connection clip T3 (1 clip per mesh)

TECCO MESH CONNECTION VERTICAL NORMALLY WITHOUT OVERLAP
No Scale



BOUNDARY ROPE ARRANGEMENT – DETAIL 'A'
No Scale



STRUCTURE NO.	24404
BDS DWG NO.	113017
CALC. BOOK	7950
HWY: 100 M.P.: 8.79-9.45	
COUNTY	MULTNOMAH
DATE	May. 2025

CERTIFIED OREGON JEFFREY A. JONES
Digitally Signed JONES Jeff 2025.05.15 11:30:47 -07'00'
E2235 ENGINEERING GEOLOGIST

RENEWS: 01-01-2026

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

OREGON DEPARTMENT OF TRANSPORTATION

STRUCTURE NAME

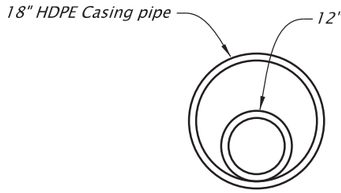
HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

Designer: Jeff Jones
Reviewer: Michael Zimmerman
CADD Tech: Alicia Graham
Checker: XXX

ROCKFALL MITIGATION
WIRE MESH/ANCHOR DETAILS

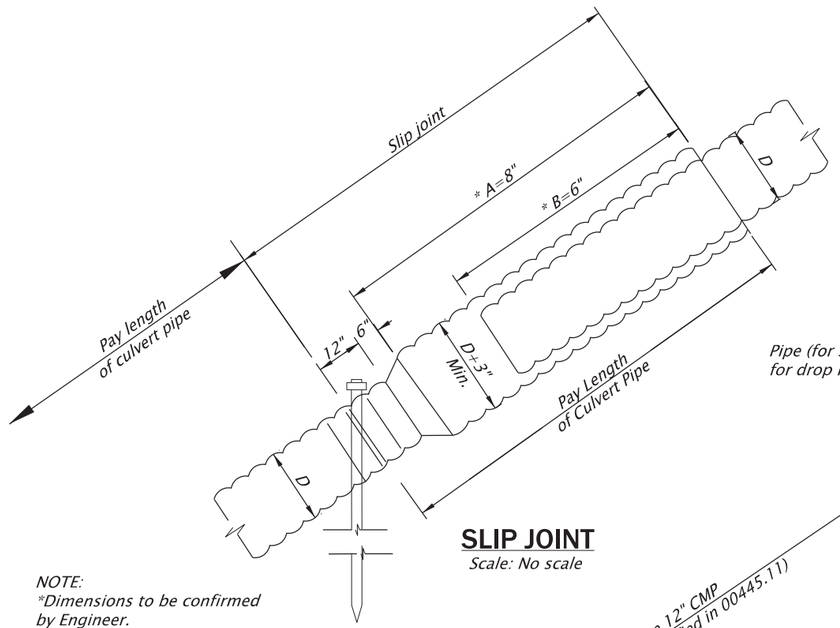
SHEET NO. GB06



NOTE:
Pipe configuration;
Carrier pipe rests on casing pipe

SECTION A-A

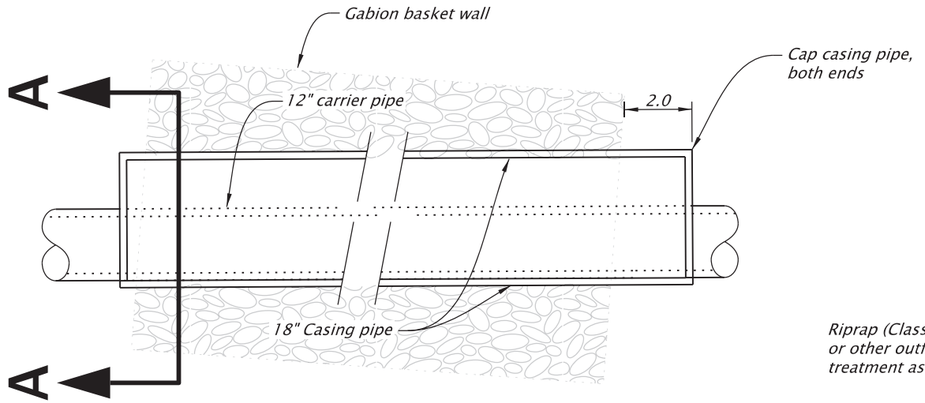
Scale: Not to scale



SLIP JOINT

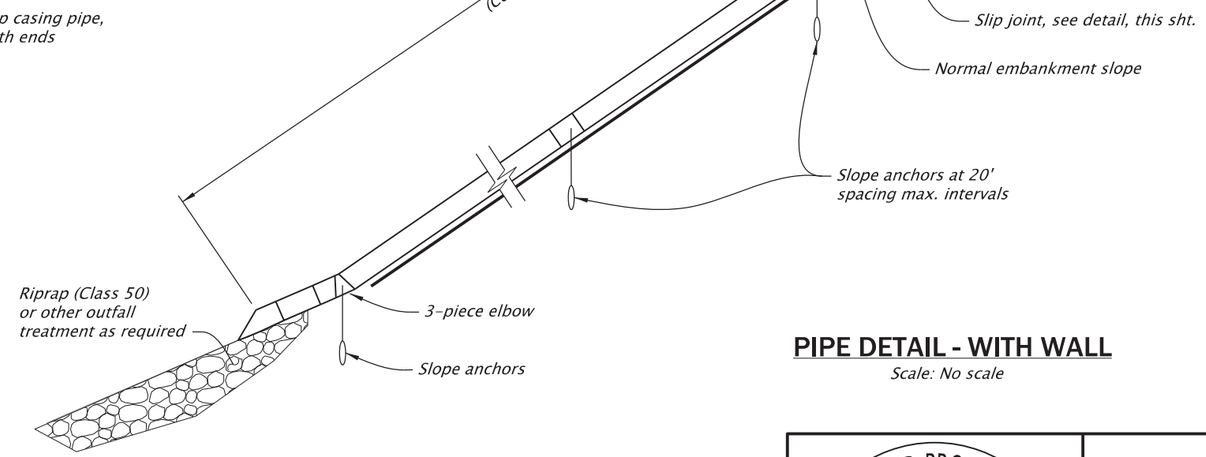
Scale: No scale

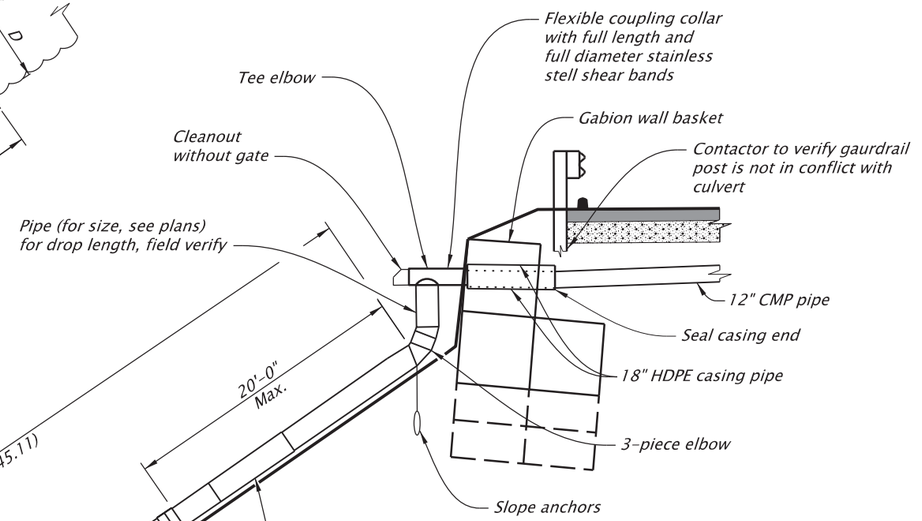
NOTE:
*Dimensions to be confirmed
by Engineer.



PIPE CASING DETAIL

Scale: Not to scale





PIPE DETAIL - WITH WALL

Scale: No scale

GENERAL NOTES

1. The slip joint are used where indicated in the plans.
2. The dimensions A & B are dependent upon the type of embankment to be placed. Nominal measurements are A+8" & B+6'. This should be discussed when determining the need for a slip joint.
3. For all exposed metal pipe and fittings, coat as specified in 00445.11.

REGISTERED PROFESSIONAL ENGINEER
93,567
Digitally Signed 2025.05.15 10:27:26 -07'00'
OREGON
MAY 8, 2018
WILLIAM A. BABICKY
RENEWS: 12-31-2025

FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

OREGON DEPARTMENT OF TRANSPORTATION

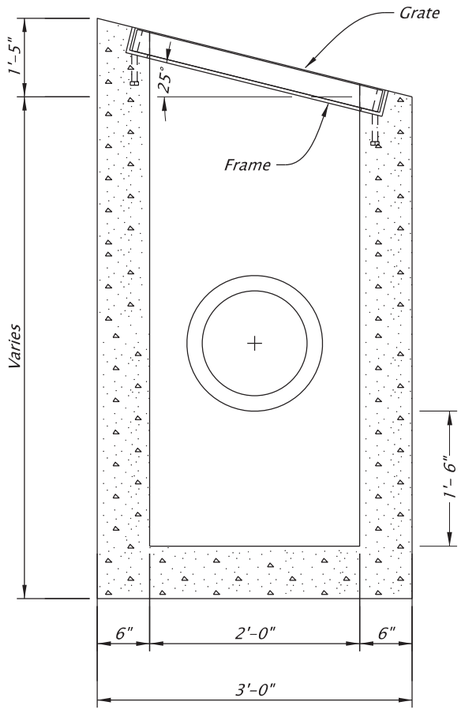
HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

Designer: William A. Babicky
Reviewer: David L. McDonald
CADD Tech: Rhonda L. Freeman
Checker: Zoe A. Keve

CULVERT DETAIL - 1

SHEET NO.
HB01

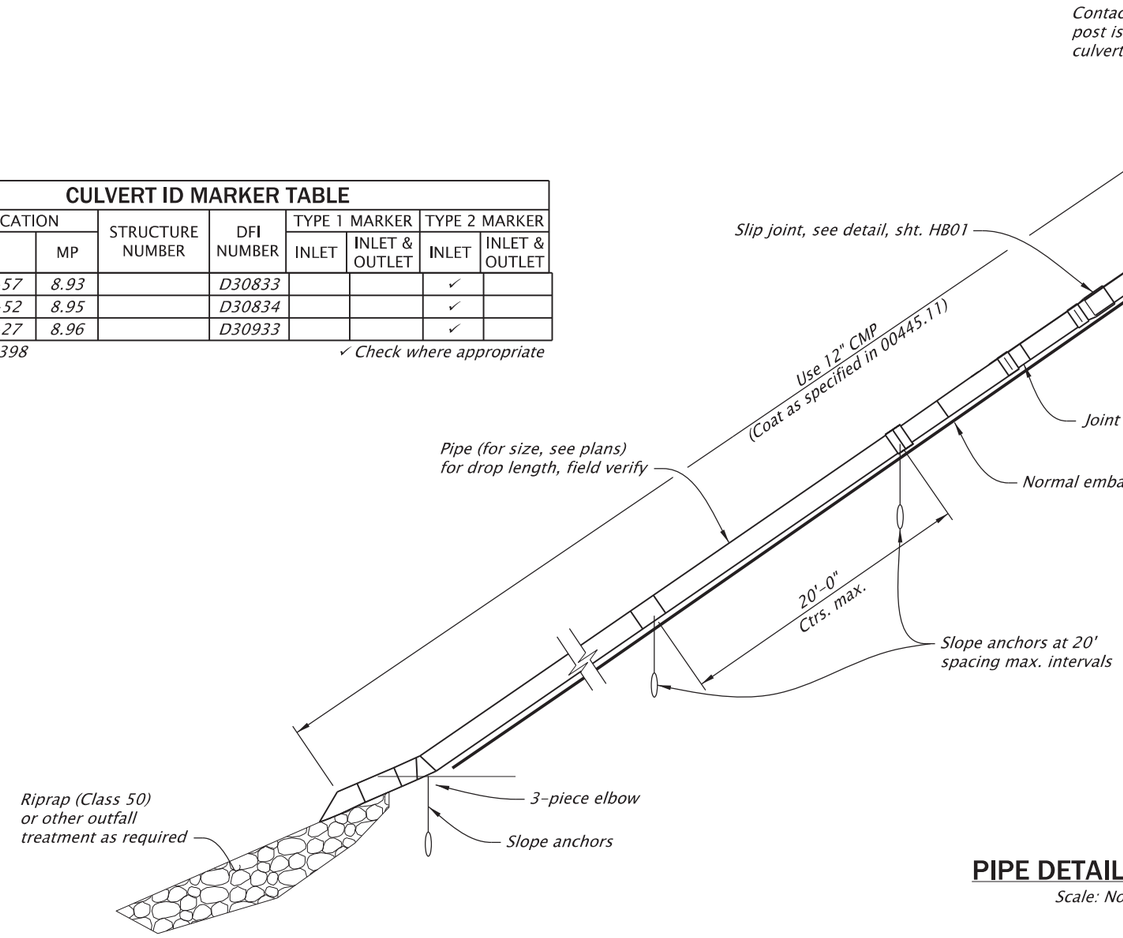


DITCH INLET TYPE D MODIFIED

(For details not shown see dwg. RD370)

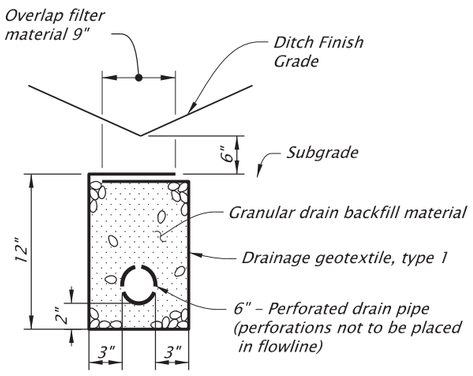
CULVERT ID MARKER TABLE							
CULVERT LOCATION		STRUCTURE NUMBER	DFI NUMBER	TYPE 1 MARKER		TYPE 2 MARKER	
STATION	MP			INLET	INLET & OUTLET	INLET	INLET & OUTLET
"CL_Main" 336+57	*8.93*		*D30833*			✓	
"CL_Main" 337+52	*8.95*		*D30834*			✓	
"CL_Main" 338+27	*8.96*		*D30933*			✓	

See Dwg. No. RD398 ✓ *Check where appropriate*



PIPE DETAIL - NO WALL

Scale: No scale



SECTION

PERFORATED DRAIN PIPE DETAIL

GENERAL NOTES

1. *The slip joint are used where indicated in the plans.*
2. *For all exposed metal pipe and fittings, coat as specified in 00445.11.*

REGISTERED PROFESSIONAL ENGINEER
93,567
Digitally Signed 2025.05.15 10:28:14 -07'00'
OREGON
MAY 8, 2018
WILLIAM A. BABICKY
RENEWS: 12-31-2025

FINAL ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST

OREGON DEPARTMENT OF TRANSPORTATION

HCRH MP 8.90 LARCH MOUNTAIN SLIDE REPAIR PROJECT

COLUMBIA RIVER HIGHWAY
MULTNOMAH OUNTY

Designer: William A. Babicky | Reviewer: David L. McDonald
CADD Tech: Rhonda L. Freeman | Checker: Zoe A. Keve

CULVERT DETAIL - 2

SHEET NO. HB02

M25023
Historic Columbia River Highway at Larch Mountain Road Emergency Repair
Biological Resources Memo
4/30/2025

Introduction:

In early March 2025 ODOT maintenance observed a crack on the surface of the Historic Columbia River Highway (Historic Highway) immediately east of the Larch Mountain Road junction (Figure 1). The road was closed to traffic on March 12th and ODOT deployed geologists to assess the road condition. This section of the Historic Highway has experienced slumping in the past and undergone similar emergency repair work. The steep vegetated slopes over a bedrock layer of erodible basalt are conducive to this type of settling and land movement. Road repairs in response to slumping, settling, or sliding is common along the Historic Highway in the Gorge. ODOT conducted geotechnical drilling in late March to determine the scope and scale of the subsidence. ODOT has used this information to inform the proposed design for the repair and stabilization of the road. ODOT is hoping to have a final design ready for bid in early summer, with the repair work occurring over July, August and September of 2025.

The site does not have any sensitive biological resources or habitat types within the project vicinity and impacts to sensitive natural resources will be avoided to the greatest extent practicable. ODOT biologists visited the site on March 21, 2025, and conducted field surveys for biological resources within the project vicinity. Additionally, remote survey of the area was completed to check for documented presence of State, or Federally listed plant and animal species with 1000ft of the project limits. ODOT surveyed for special resources and habitat types identified in the Columbia River Gorge National Scenic Area Management Plan within 1,000ft of the project.

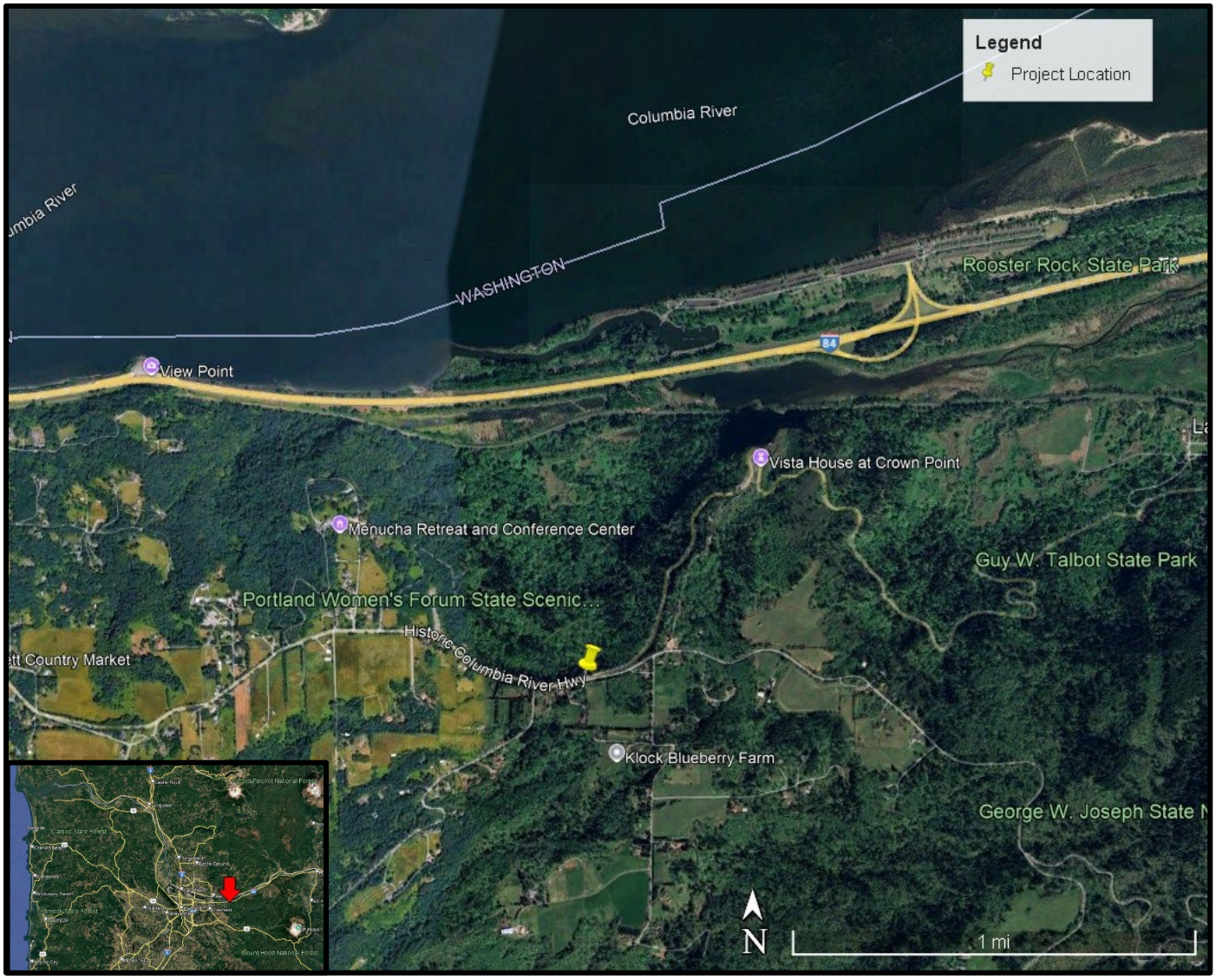


Figure 1: Vicinity Map

Existing Conditions:

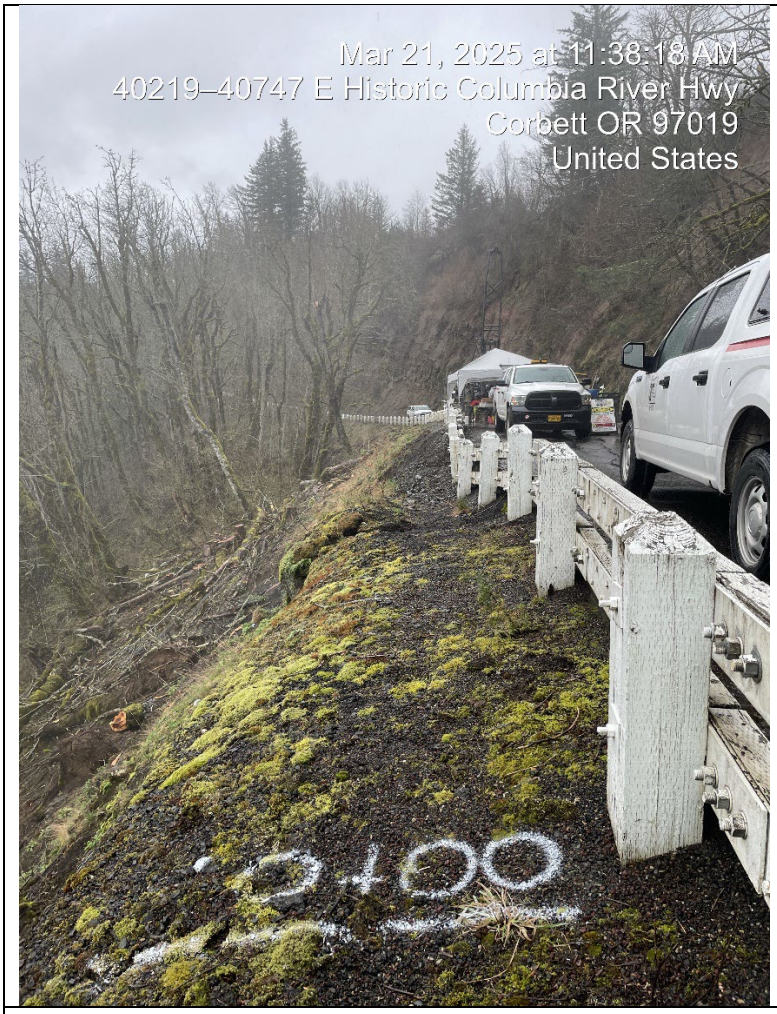
The project area is typified of steep, wooded hillslopes with rocky outcroppings and steep embankments along the road cuts. Soils are typically well drained with eroded basalt as the primary parent material. Geology in this section of the Gorge is driven by erosive factors of wind and water that erode layers of ancient lava flows and flood deposits left behind by the Missoula floods. Landslides are common and many of the steep slopes are unstable or actively moving. Pictures 1 and 2 show the on-site conditions at the work area.

The vegetative community consists of mixed coniferous and deciduous forest, with the dominant species being big leaf maple (*acer macrophyllum*), Douglas fir (*pseudotsuga menziesii*), and red alder (*Alnus rubra*). The understory is a mix of grasses and forbs, with

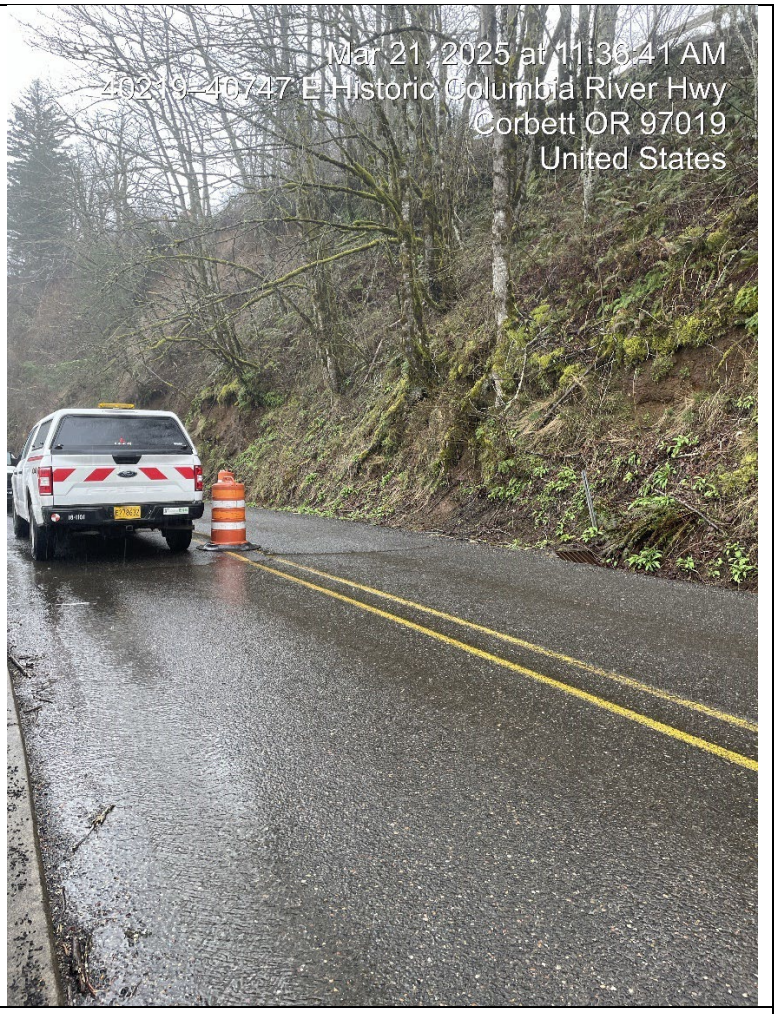
sword fern (*polystichum munitum*), snowberry (symphoricarpos *albus*), Indian plum (*oemleria cerasiformis*), and serviceberry (*amelanchier sp*.).

Wetlands and Waterways:

There are no wetlands or waterways within the project area and impacts to these resources are not anticipated. The south side of the road has an existing drainage ditch that passes under the highway through a small culvert. The outfall of this culvert empties below the road on the north side where it infiltrates into the existing native soils. This ditch was impacted by the slumping and will need to be adjusted. The outfall conditions will stay the same with discharge onto the slope where the water will infiltrate into the ground naturally.



Picture 1: Work site where section of road has slumped.



Picture 2: Adjacent road embankment on south side of Historic Highway

Biological Resources:

A preliminary desktop survey of the surrounding area indicated that there were no known occurrences of rare or endangered species within 1,000ft of the project area. The nearest ORBIC occurrence to the project is one population of *delphinium nuttallii* located on the north side of the road approximately 1,100 ft away from the project site (Figure 2). This species is considered locally common, and is not a State, or Federally listed species. Additionally, this is not one of the species of special concern that is listed in the Management Plan. ODOT will avoid impacting this population. No other sensitive or rare plant or animal species were found to be present within or near a 1,000ft radius of the project area.

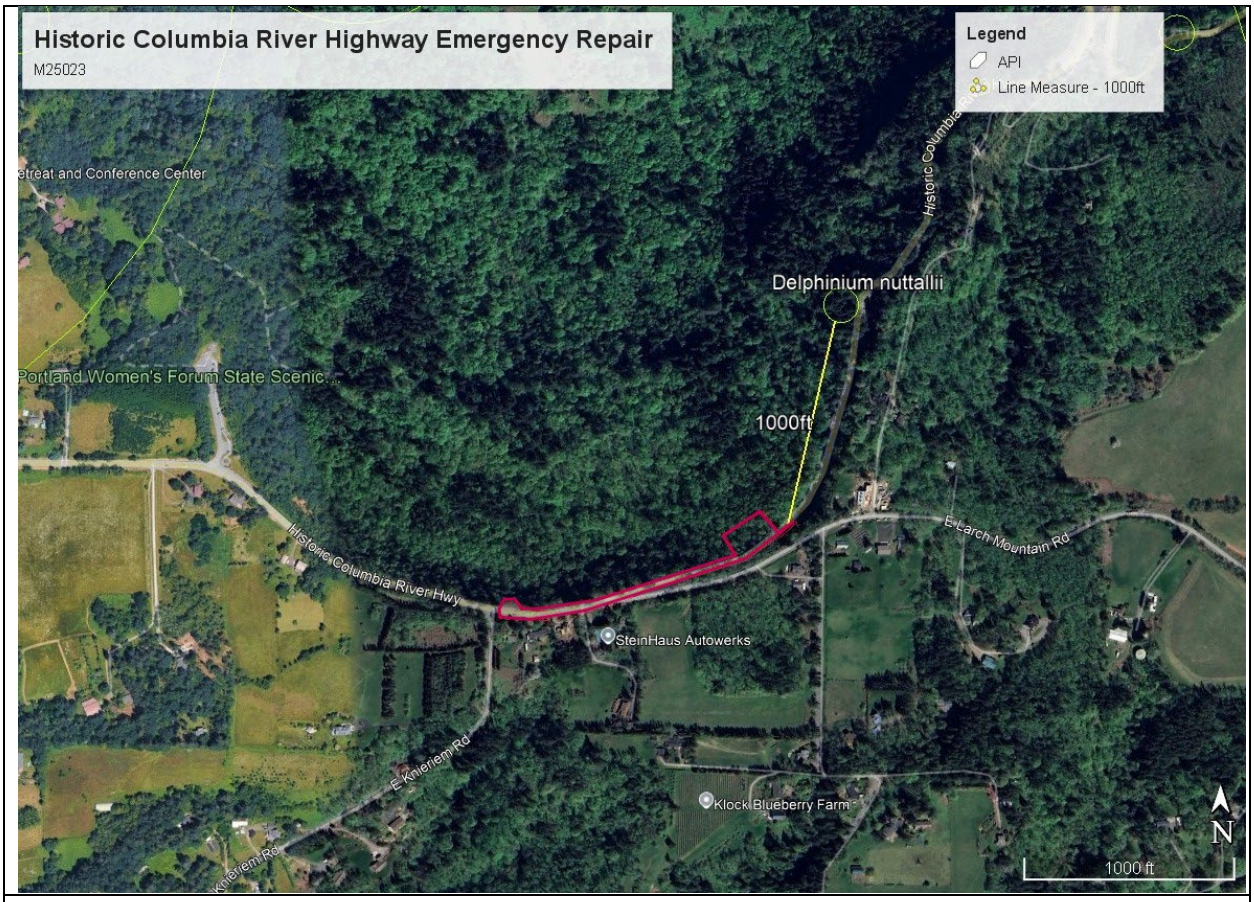


Figure 2: Project API with nearest observed population of *delphinium nuttallii* shown.

The project area does not contain any of the priority habitat types listed in table 1 of the Management Plan (included below). ODOT surveyed these habitat types within 0.25 miles of the project using: LIDAR, soil maps, State and Federal wetland databases, Oregon Department of State Lands and US Army Corps of Engineers streams and waterways maps, and Google Earth. Adjacent to the project, there are some rocky outcroppings that protrude

out from the road cut (Picture 3). These do not represent high quality habitat and are not considered part of the “Cliffs” habitat type because of their unnatural formation and poor condition.

Picture 3: Rocky outcroppings formed by the road cut, east of project location.

Table 1 - Priority Habitats

Priority Habitats	**Criteria**
Aspen stands	High fish and wildlife species diversity, limited availability, high vulnerability to habitat alteration.
Caves	Significant wildlife breeding habitat, limited availability, dependent species.
Old-growth forest	High fish and wildlife density, species diversity, breeding habitat, seasonal ranges, and limited and declining availability, high vulnerability.
Oregon white oak woodlands	Comparatively high fish and wildlife density, species diversity, declining availability, high vulnerability

Priority Habitats	Criteria
Prairies and steppe	Comparatively high fish and wildlife density, species diversity, important breeding habitat, declining and limited availability, high vulnerability.
Riparian	High fish and wildlife density, species diversity, breeding habitat, movement corridor, high vulnerability, dependent species.
Wetlands	High species density, high species diversity, important breeding habitat and seasonal ranges, limited availability, high vulnerability.
Snags and logs	High fish and wildlife density, species diversity, limited availability, high vulnerability, dependent species.
Talus	Limited availability, unique and dependent species, high vulnerability.
Cliffs	Significant breeding habitat, limited availability, dependent species.
Dunes	Unique species habitat, limited availability, high vulnerability, dependent species.
Winter Range	Provides important wintering habitat for deer and elk.

Conclusion:

The proposed repair to the highway will not cause any adverse impacts to sensitive or rare plant or animal species or their populations. The project area is not within 1,000ft of any known rare or protected species and no listed species were found during field surveys. Available habitat is generally low quality, and none of the special identified habitat types are found within the project API or in the vicinity. Direct impacts to sensitive species and habitats will be avoided. ODOT biologists and environmental personnel will be available during construction in the unlikely event that a previously unidentified resource is found within the project limits. ODOT will also deploy best management practices in accordance with established protocols to minimize impacts during construction and prevent indirect environmental impacts to the greatest possible extent.