

Jefferson County
Board of Commissioners
Agenda Request

To: Board of Commissioners
Mark McCauley, County Administrator

From: Monte Reinders, P.E., Public Works Director/County Engineer 

Agenda Date: January 22, 2024

Subject: Approval of Plans for Improvements to County Roads
AND Approval of the Call for Bids for the Naylor's Creek at West Valley Road and Gibbs Lake Road - Culvert Replacements Project, County Project No. 18020592, on West Valley Road (514109) at MP 2.6 and Gibbs Lake Road (517509) at MP 1.8

Statement of Issue: The Board is asked to approve the Contract Plans and the Call for Bids for the Naylor's Creek at West Valley Road and Gibbs Lake Road - Culvert Replacements, County Project No. 18020592.

Analysis/Strategic Goals/Pro's & Con's: Jefferson County has been awarded Federal Promoting Resilient Operations for Transformative, Efficient, and Cost-Savings Transportation (PROTECT) funding through WSDOT for a project to replace fish passage barrier culverts on Naylor's Creek at West Valley Road and Gibbs Lake Road. This Call for Bids is for construction of the project.

Fiscal Impact/Cost Benefit Analysis: The Engineer's Estimate is \$1,704,409. Construction will be funded at 100% by the federal PROTECT funding.

Recommendation: The Board is requested to sign the Call for Bids and the cover page of the Contract Plans, and return both to Public Works.

Department Contact: Bruce Patterson, P.E., Project Manager, 385-9169.

Reviewed By:



Mark McCauley, County Administrator



Date 1/16/24

**NOTICE TO CONTRACTORS
CALL FOR BIDS**

**NAYLORS CREEK AT WEST VALLEY ROAD AND GIBBS LAKE ROAD
CULVERT REPLACEMENTS**

County Project No. 18020592

Notice is hereby given that the Board of County Commissioners of Jefferson County, State of Washington, will receive sealed bids up until the hour of 2:00 PM. on Thursday February 22, 2024 at the Office of the County Commissioners, basement level of the Jefferson County Courthouse, 1820 Jefferson Street, P.O. Box 1220, Port Townsend, Washington, 98368, for construction of the Naylors Creek at West Valley Road and Gibbs Lake Road Culvert Replacements, County Project No. 18020592. Sealed bids will be opened and read publicly shortly after 2 p.m., in the Jefferson County Commissioners Chambers, basement level of the Jefferson County Courthouse. Interested persons can attend the bid opening.

This Contract provides for removing fish passage barrier culverts that carry Naylors Creek under West Valley Road and Gibbs Lake Road and replacing the culverts with larger precast concrete structures in Jefferson County, Washington. Work includes installation of a 50 foot long, 14 foot wide, 9.5 foot high three sided box culvert with four concrete wings at West Valley Road, and a 58 foot long, 12 foot wide, 7 foot high box culvert with two concrete block retaining walls at Gibbs Lake Road, regrading of 215 feet of stream channel at West Valley Road, project temporary traffic control, temporary erosion control, site restoration plantings and other work, all in accordance with the Contract Plans, Contract Provisions, and the Standard Specifications. The Engineer's Estimate is \$1,704,409.

Bid Documents: Bids must be submitted in accordance with the plans and specifications in the bid documents. All bid documents including bid forms, plans, specifications, addenda, and plan holders list, are available on the Builders Exchange of Washington website www.bxwa.com. Click "Posted Projects", "Public Works," "Jefferson County Public Works" "Projects Bidding," and "Project Bid Date." Bidders must "Register as a Bidder," to receive automatic e-mail notification of future addenda and to be placed on the "Bidders List." Call BXWA at (425) 258-1303 if you need assistance.

Each bid shall be accompanied by a surety bond, postal money order, cash, cashier's check or certified check payable to the Treasurer of Jefferson County in the sum of five (5%) percent of the bid amount, to be forfeited to Jefferson County by the successful bidder if he/she fails to enter into a contract and file an acceptable surety bond in the amount of 100% of the contract price within ten (10) calendar days of the award. The Board of County Commissioners reserves the right to reject any and all bids and to accept the bid deemed most advantageous to Jefferson County and to waive all informalities in the bidding.

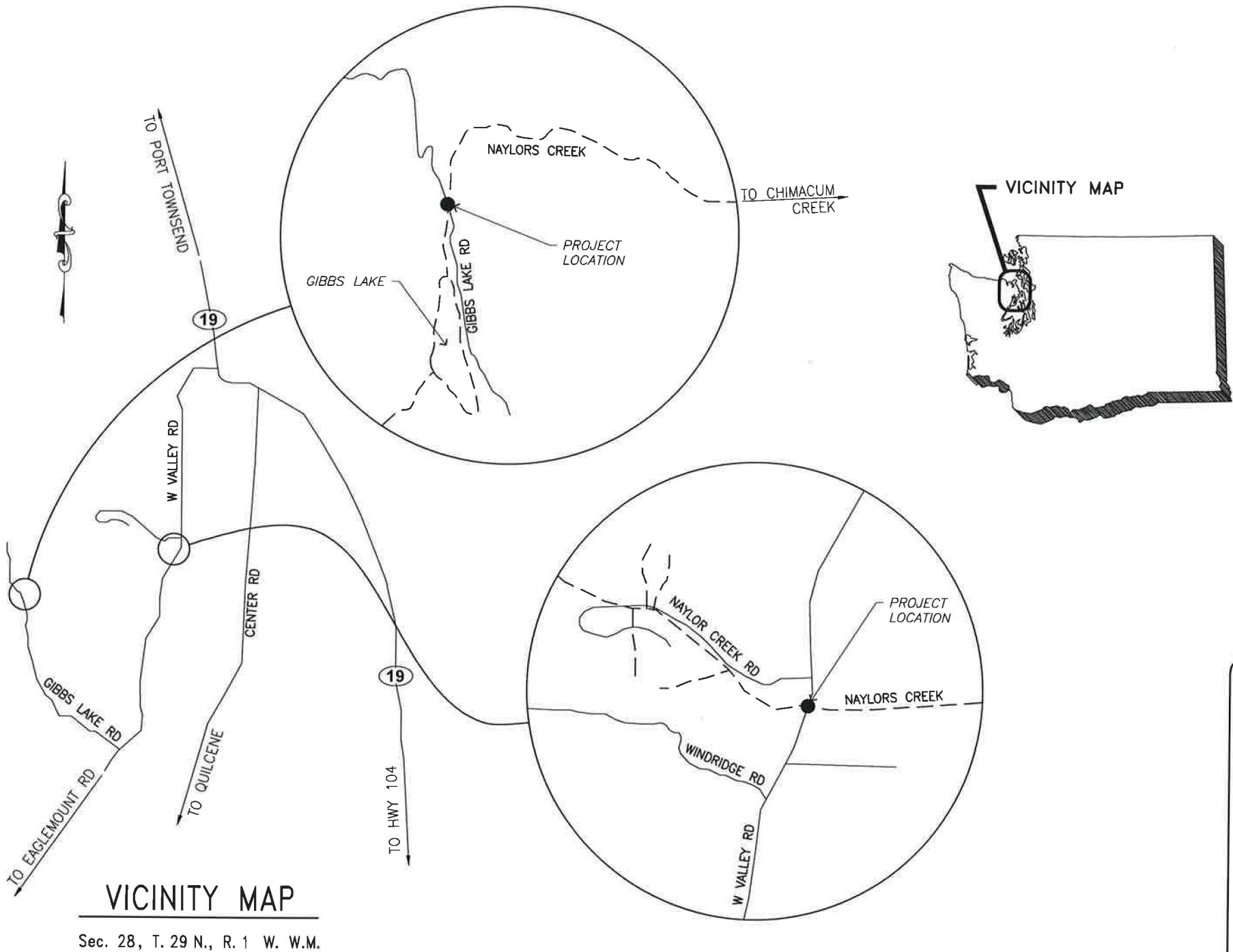
The Jefferson County Public Works, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

Dated this 16th day of January, 2024

BOARD OF JEFFERSON COUNTY COMMISSIONERS

Kate Dean, Chair

NAYLORS CREEK AT WEST VALLEY ROAD AND GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
COUNTY PROJECT #18020592 ~ FEDERAL AID #PROTECT-2016(029)



SHEET INDEX	
SHT. NO.	SHEET NAME
1	COVER SHEET
2	QUANTITIES
3	ROADWAY PLAN & PROFILE - WVR
4	CHANNEL PLAN & PROFILE - WVR
5	TYPICAL SECTIONS & DETAILS - WVR
6	CULVERT DETAILS - WVR
7	CULVERT LOADING DIAGRAM - WVR
8	CULVERT WINGWALLS 1 - WVR
9	CULVERT WINGWALLS 2 - WVR
10	CONCEPTUAL TESC PLAN - WVR
11	PLANTING PLAN - WVR
12	ROADWAY PLAN & PROFILE - GLR
13	ROADWAY PLAN - GLR
14	CULVERT PLAN & PROFILE - GLR
15	TYPICAL SECTIONS - GLR
16	CULVERT DETAILS - GLR
17	CULVERT LOADING DIAGRAM - GLR
18	RETAINING WALL DETAILS - GLR
19	BYPASS ROAD PLAN & PROFILE - GLR
20	CONCEPTUAL TESC PLAN - GLR
21	PLANTING PLAN - GLR
22	WEST VALLEY ROAD TRAFFIC CONTROL 1
23	WEST VALLEY ROAD TRAFFIC CONTROL 2
24	WEST VALLEY ROAD TRAFFIC CONTROL 3
25	GIBBS LAKE ROAD TRAFFIC CONTROL 4
R-1	WEST VALLEY ROAD RIGHT-OF-WAY PLAN



CHAIRMAN, JEFFERSON COUNTY COMMISSIONERS

COUNTY ENGINEER

APPROVAL DATE

APPROVAL DATE

Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318



NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
COVER SHEET

DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER:	J.S. Soward
ISSUED:	12/22/2023

SHEET
1
OF
26
SHEETS
SEI REF NO.
A19159.00

Plotted: Dec 22, 2023 -- 15:12 JessicaS B:\19Files\A19159.00 Naylors Creek Culvert Replacements\Combined Drawings\Cover_Quant.dwg Layout Name: 2 Quantities xrefs: Titlesht

SUMMARY OF QUANTITIES – WEST VALLEY ROAD				
ITEM NO.	TOTAL QUANTITY	STD. ITEM NO.	UNIT	ITEM
PREPARATION				
1	L.S.	0001	L.S.	MOBILIZATION
2	0.33	0025	ACRE	CLEARING AND GRUBBING
3	L.S.	0050	L.S.	REMOVAL OF STRUCTURES AND OBSTRUCTIONS
GRADING				
4	75	0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL
5	347	0421	C.Y.	GRAVEL BORROW INCL. HAUL
6	347	0470	C.Y.	EMBANKMENT COMPACTION
DRAINAGE				
7	319	1093	TON	STREAMBED SEDIMENT
8	106	0900	TON	STREAMBED COBBLES 4 IN.
9	52	1030	C.Y.	DITCH EXCAVATION INCL. HAUL
10	252	1040	C.Y.	CHANNEL EXCAVATION INCL. HAUL
11	12	1085	C.Y.	QUARRY SPALLS
12	L.S.	3075	L.S.	TEMPORARY STREAM DIVERSION
13	EST.	3076	EST.	FISH EXCLUSION ASSISTANCE
STRUCTURE				
14	L.S.	4335	L.S.	CONTRACTOR DESIGNED BURIED STRUCTURE NO. 1
SURFACING				
15	546	5100	TON	CRUSHED SURFACING BASE COURSE
HOT MIXED ASPHALT				
16	87	5767	TON	HMA CL. 1/2 IN. PG 58H-22
EROSION CONTROL AND ROADSIDE PLANTING				
17	0.26	6414	ACRE	SEEDING, FERTILIZING, AND MULCHING
18	L.S.	6488	L.S.	EROSION CONTROL AND WATER POLLUTION PREVENTION
19	50	6552	EACH	PSIPE RED ALDER, #2 CONT.
20	50	6552	EACH	PSIPE WESTERN RED CEDAR, #2 CONT.
21	50	6552	EACH	PSIPE BIGLEAF MAPLE, #2 CONT.
22	50	6552	EACH	PSIPE DOUGLAS FIR, #2 CONT.
23	50	6552	EACH	PSIPE HOOKER WILLOW, LIVE STAKES
24	50	6552	EACH	PSIPE PACIFIC WILLOW, LIVE STAKES
25	120	6552	EACH	PSIPE PACIFIC NINEBARK, #1 CONT.
26	120	6552	EACH	PSIPE SALMONBERRY, #1 CONT.
27	120	6552	EACH	PSIPE VINE MAPLE, #1 CONT.
28	120	6552	EACH	PSIPE BEAKED HAZELNUT, #1 CONT.
29	120	6552	EACH	PSIPE INDIAN PLUM, #1 CONT.
30	120	6552	EACH	PSIPE SWORD FERN, #1 CONT.
31	120	6552	EACH	PSIPE THIMBLEBERRY, #1 CONT.
32	360	6580	S.Y.	BARK OR WOOD CHIP MULCH
TRAFFIC				
33	2	6719	EACH	BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL
34	150	6757	L.F.	BEAM GUARDRAIL TYPE 31
35	2	6766	EACH	BEAM GUARDRAIL ANCHOR TYPE 11
36	630	6806	L.F.	PAINT LINE
37	L.S.	6971	L.S.	PROJECT TEMPORARY TRAFFIC CONTROL
38	EST.	7572	EST.	WORK ZONE SAFETY CONTINGENCY
OTHER				
39	L.S.	7490	L.S.	TRIMMING AND CLEANUP
40	200	7400	HR	TRAINING
41	L.S.	7736	L.S.	SPCC PLAN

SUMMARY OF QUANTITIES – GIBBS LAKE ROAD				
ITEM NO.	TOTAL QUANTITY	STD. ITEM NO.	UNIT	ITEM
PREPARATION				
42	L.S.	0001	L.S.	MOBILIZATION
43	0.20	0025	ACRE	CLEARING AND GRUBBING
44	L.S.	0050	L.S.	REMOVAL OF STRUCTURES AND OBSTRUCTIONS
GRADING				
45	127	0310	C.Y.	ROADWAY EXCAVATION INCL. HAUL
46	259	0421	C.Y.	GRAVEL BORROW INCL. HAUL
47	259	0470	C.Y.	EMBANKMENT COMPACTION
DRAINAGE				
48	192	1093	TON	STREAMBED SEDIMENT
49	4	0919	EACH	WOODY MATERIAL-LOG WITH ROOTWAD DBH 10"-12"
50	L.S.	3075	L.S.	TEMPORARY STREAM DIVERSION
51	EST.	3076	EST.	FISH EXCLUSION ASSISTANCE
STRUCTURE				
52	L.S.	4335	L.S.	CONTRACTOR DESIGNED BURIED STRUCTURE NO. 2
SURFACING				
53	349	5100	TON	CRUSHED SURFACING BASE COURSE
EROSION CONTROL AND ROADSIDE PLANTING				
54	0.15	6414	ACRE	SEEDING, FERTILIZING, AND MULCHING
55	L.S.	6488	L.S.	EROSION CONTROL AND WATER POLLUTION PREVENTION
56	40	6552	EACH	PSIPE RED ALDER, #2 CONT.
57	40	6552	EACH	PSIPE WESTERN RED CEDAR, #2 CONT.
58	40	6552	EACH	PSIPE BIGLEAF MAPLE, #2 CONT.
59	40	6552	EACH	PSIPE DOUGLAS FIR, #2 CONT.
60	40	6552	EACH	PSIPE HOOKER WILLOW, LIVE STAKES
61	40	6552	EACH	PSIPE PACIFIC WILLOW, LIVE STAKES
62	115	6552	EACH	PSIPE PACIFIC NINEBARK, #1 CONT.
63	115	6552	EACH	PSIPE SALMONBERRY, #1 CONT.
64	115	6552	EACH	PSIPE VINE MAPLE, #1 CONT.
65	115	6552	EACH	PSIPE BEAKED HAZELNUT, #1 CONT.
66	115	6552	EACH	PSIPE INDIAN PLUM, #1 CONT.
67	115	6552	EACH	PSIPE SWORD FERN, #1 CONT.
68	115	6552	EACH	PSIPE THIMBLEBERRY, #1 CONT.
69	285	6580	S.Y.	BARK OR WOOD CHIP MULCH
TRAFFIC				
70	2	6719	EACH	BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL
71	156	6757	L.F.	BEAM GUARDRAIL TYPE 31
72	2	6766	EACH	BEAM GUARDRAIL ANCHOR TYPE 11
73	L.S.	6913	L.S.	PORTABLE TEMPORARY TRAFFIC CONTROL SIGNAL
74	L.S.	6971	L.S.	PROJECT TEMPORARY TRAFFIC CONTROL
75	EST.	7572	EST.	WORK ZONE SAFETY CONTINGENCY
76	L.S.	---	L.S.	TEMPORARY BYPASS ROAD
OTHER				
77	79	7006	C.Y.	STRUCTURE EXCAVATION CLASS B INCL. HAUL
78	297	7008	S.F.	SHORING OR EXTRA EXCAVATION CLASS B
79	650	7164	S.F.	GRAVITY BLOCK WALL
80	L.S.	7490	L.S.	TRIMMING AND CLEANUP
81	200	7400	HR	TRAINING
82	L.S.	7736	L.S.	SPCC PLAN

Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



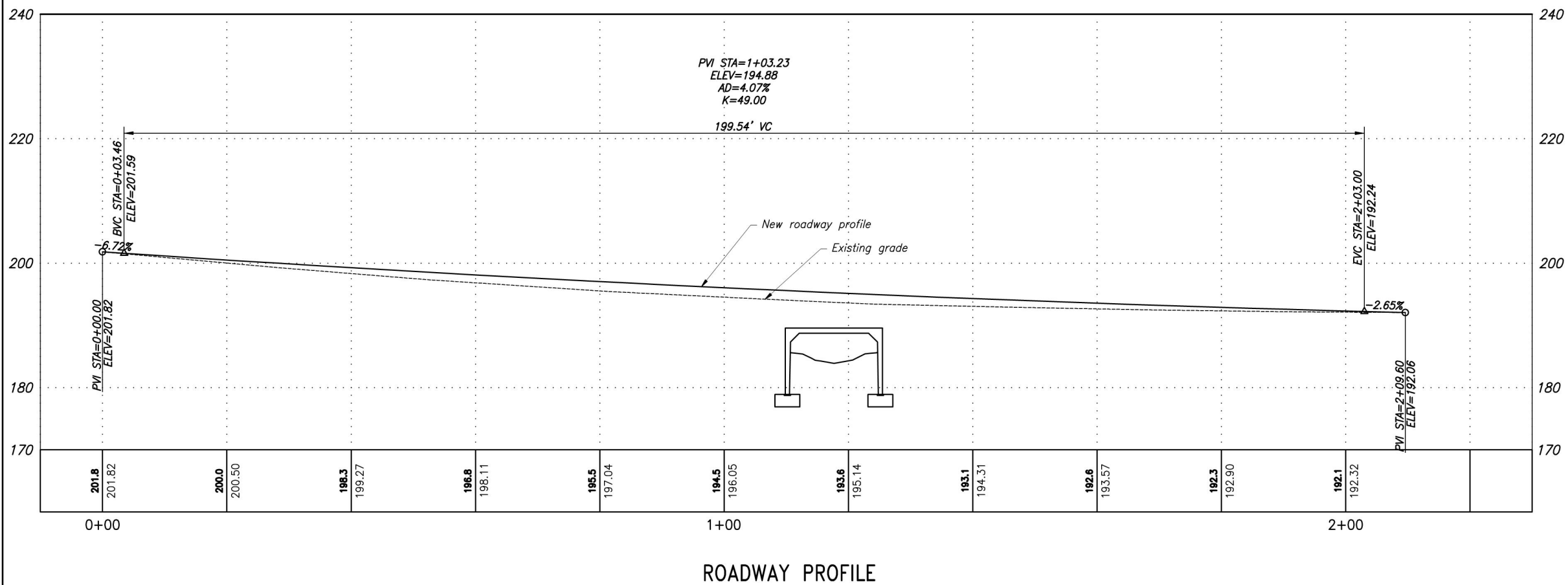
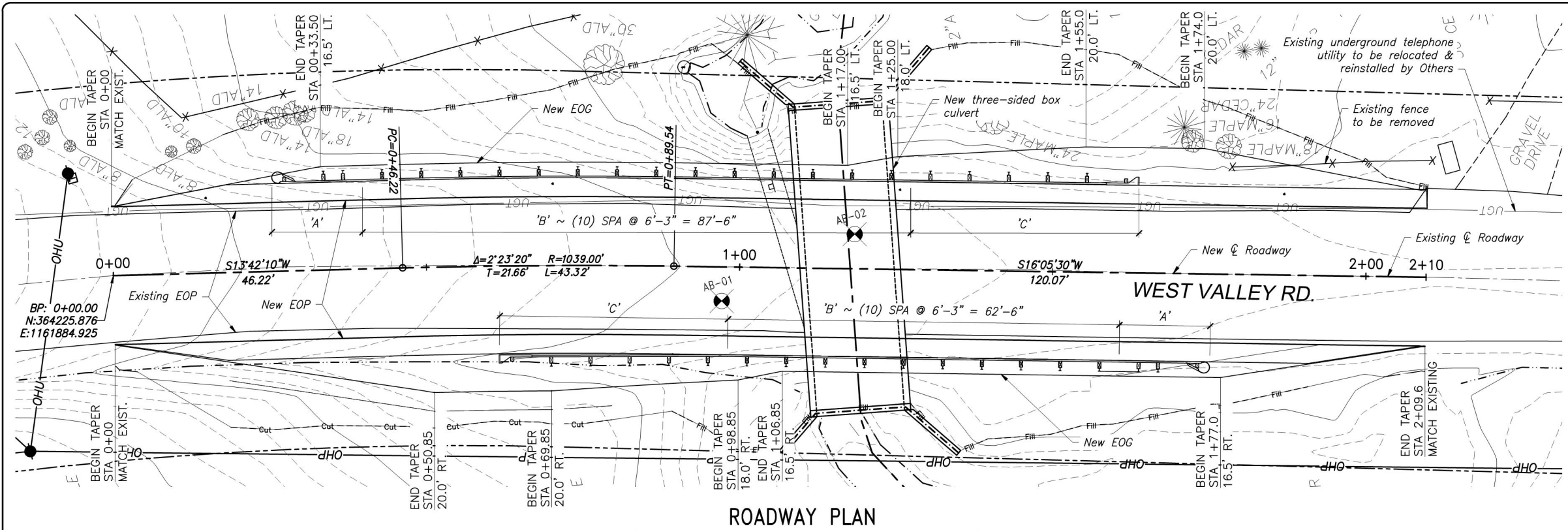
SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318



NAYLORS CREEK AT WEST VALLEY ROAD & GIBBS LAKE ROAD CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA	
QUANTITIES	

DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER	J.S. Soward
ISSUED:	12/22/2023

SHEET
2
OF
26
SHEETS
SEI REF NO.
A19159.00



GENERAL NOTES

THE LOCATION OF EXISTING UTILITIES SHOWN IN THESE PLANS IS BASED ON THE PROJECT SURVEY AND UTILITY RECORD MAPS. THIS INFORMATION SHALL NOT BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL VERIFY THE VERTICAL AND HORIZONTAL LOCATION OF THE UTILITIES PRIOR TO START OF CONSTRUCTION.

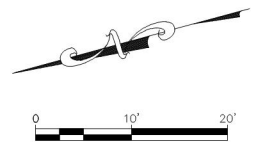
EXISTING UTILITIES SHALL BE PROTECTED FROM DAMAGE THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE TEMPORARY RELOCATION OR SUPPORT OF THE UTILITIES AS REQUIRED TO COMPLETE THE WORK.

GUARDRAIL NOTES

A = BEAM GUARDRAIL TYPE 31 ~ ANCHOR TYPE 11,
SEE STD. PLAN C-23.70-01

B = BEAM GUARDRAIL TYPE 31, 6 FT. STEEL POSTS,
SEE STD. PLAN C-20.10-09

C = BEAM GUARDRAIL TYPE 31, NON-FLARED
TERMINAL (POSTED SPEED 45 MPH AND BELOW),
SEE STD. PLAN C-22.45-06



WASHINGTON COORDINATE
SYSTEM GRID, NORTH ZONE,
NAD83/91

[illegible]

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



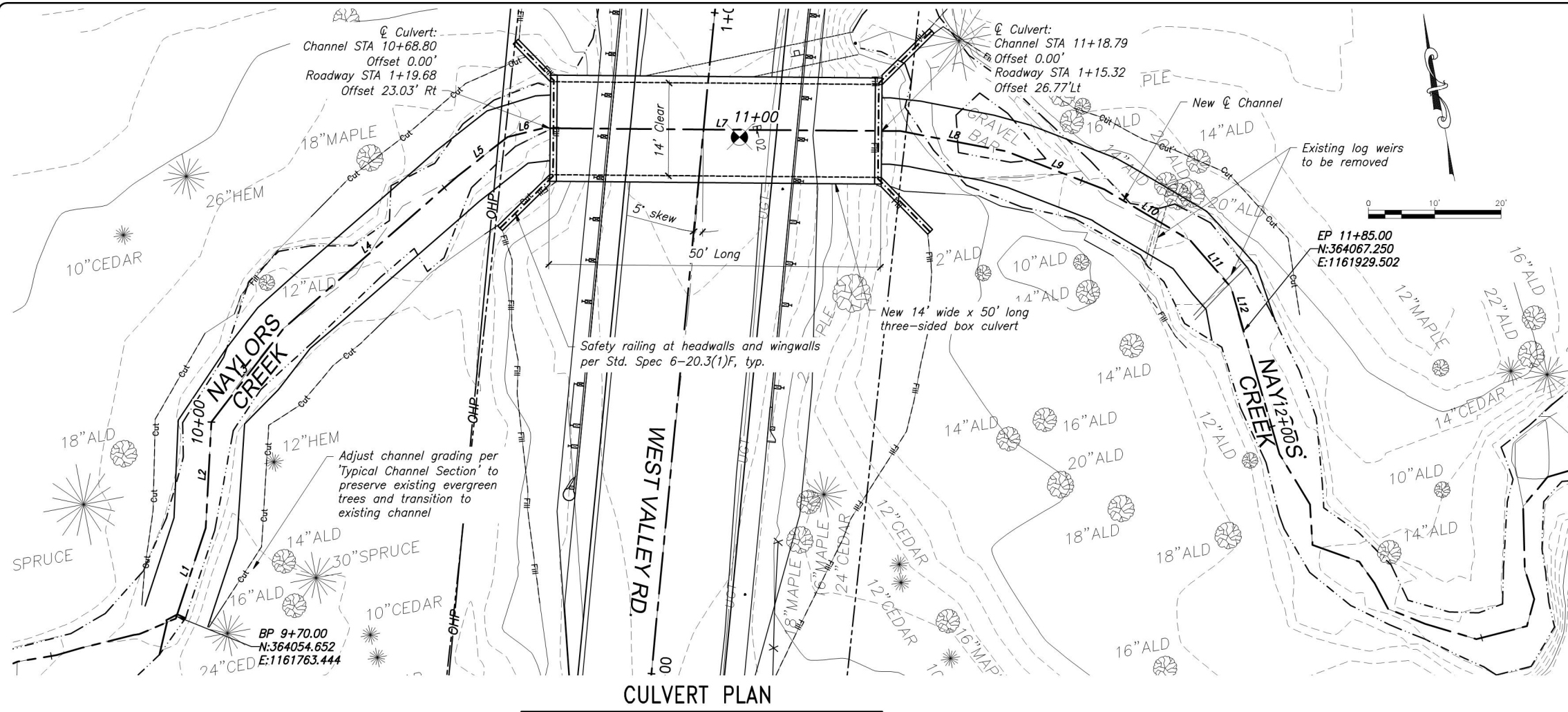
SARGENT
SARGENT ENGINEERS, INC.

320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318

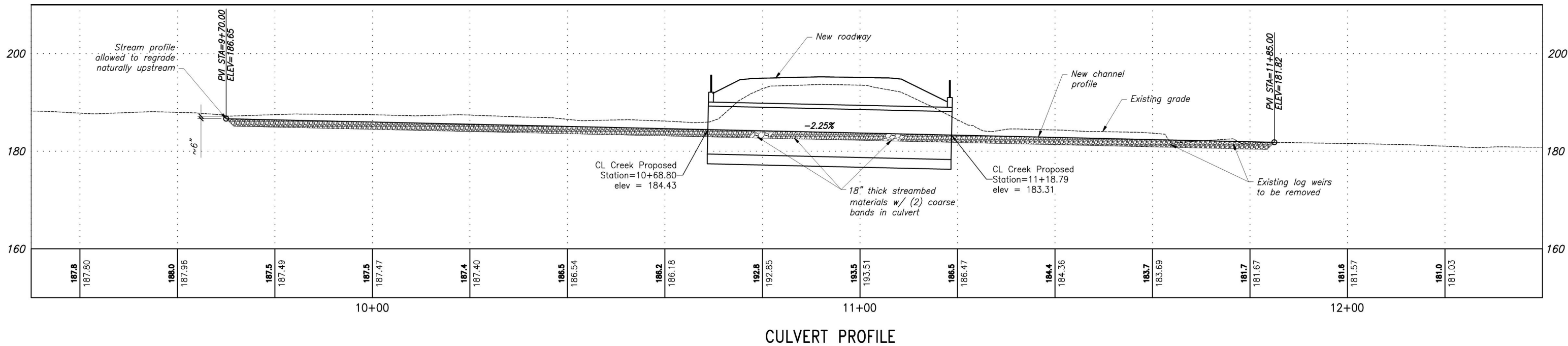
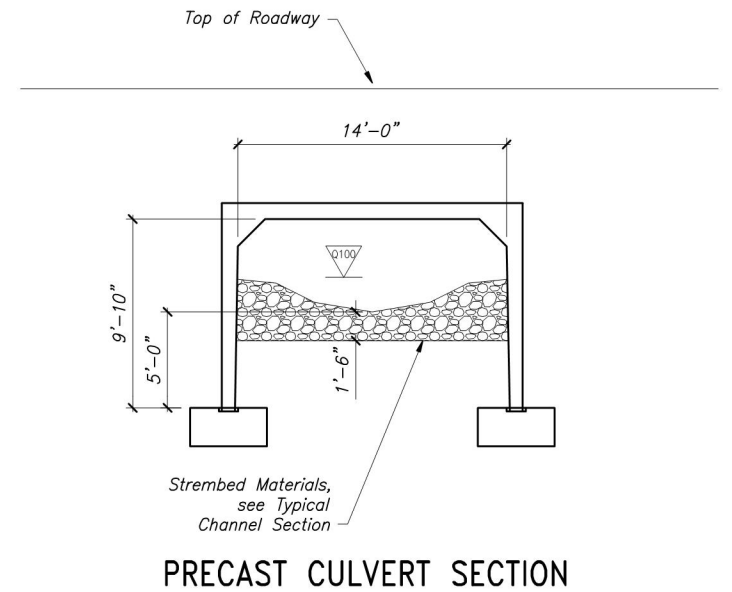


NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
ROADWAY PLAN & PROFILE - WVR

DESIGN TEAM		SHEET	
DESIGNED BY:	J.S. Soward	3	
CHECKED BY:	C.B. Kocan	OF	
PRJ. DRAFTER	J.S. Soward	26	
		SHEETS	
ISSUED:	12/22/2023	SEI REF NO.	
		A19159.00	



ALIGNMENT LINE DATA				ALIGNMENT LINE DATA			
LINE #	LENGTH	BEARING	START STA	LINE #	LENGTH	BEARING	START STA
L1	14.33	N28°55'12"E	9+69.66	L7	53.86	S78°54'21"E	10+67.79
L2	16.01	N13°44'01"E	9+83.99	L8	16.22	S68°34'07"E	11+21.64
L3	17.90	N48°18'36"E	10+00.00	L9	15.83	S58°14'42"E	11+37.87
L4	34.69	N59°28'58"E	10+17.90	L10	15.01	S48°44'42"E	11+53.69
L5	9.62	N62°25'55"E	10+52.60	L11	9.48	S30°17'41"E	11+68.71
L6	5.57	N86°49'18"E	10+62.22	L12	26.13	S5°37'00"E	11+78.19



Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318

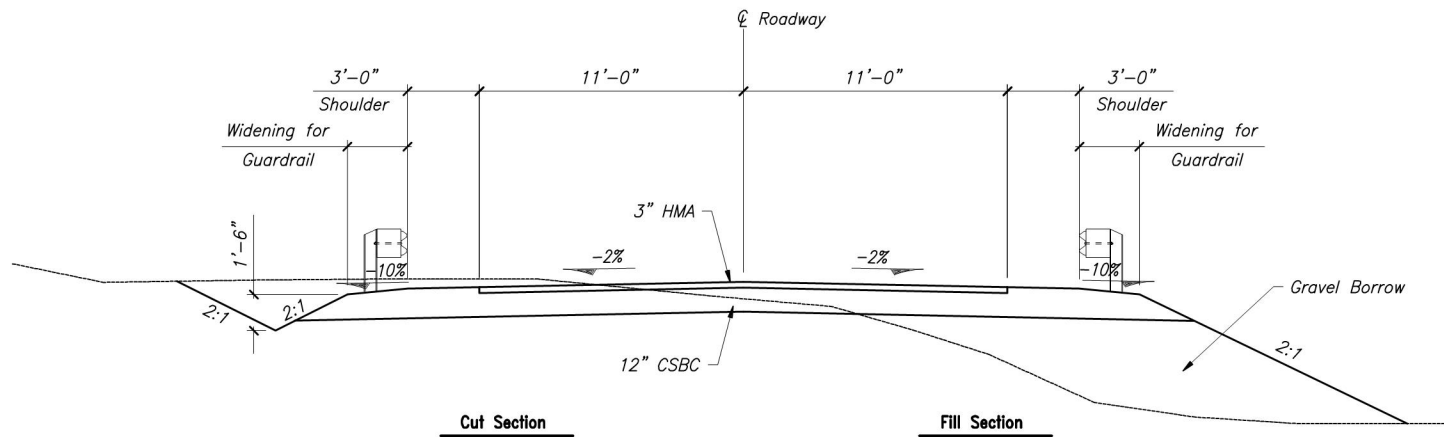


NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
CHANNEL PLAN & PROFILE - WVR

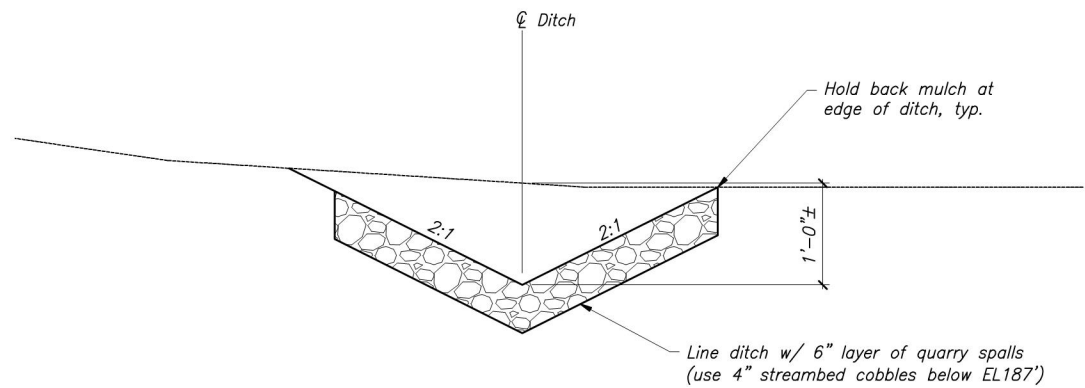
DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER	J.S. Soward
ISSUED:	12/22/2023

SHEET
4
OF
26
SHEETS
SEI REF NO.
A19159.00

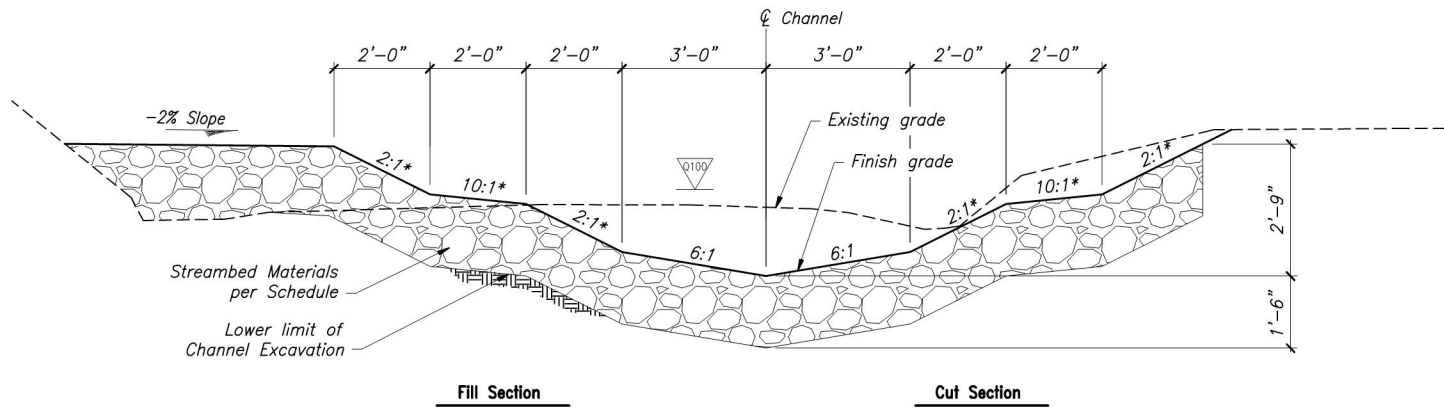
Plotted: Dec 22, 2023 -- 15:12 JessicaS B:\19Files\A19159.00 Naylors Creek Culvert Replacements\Combined Drawings\West Valley_5deg skew.dwg Layout Name: 5 Typical Sections & Details xrefs: Titlesht



TYPICAL ROADWAY SECTION



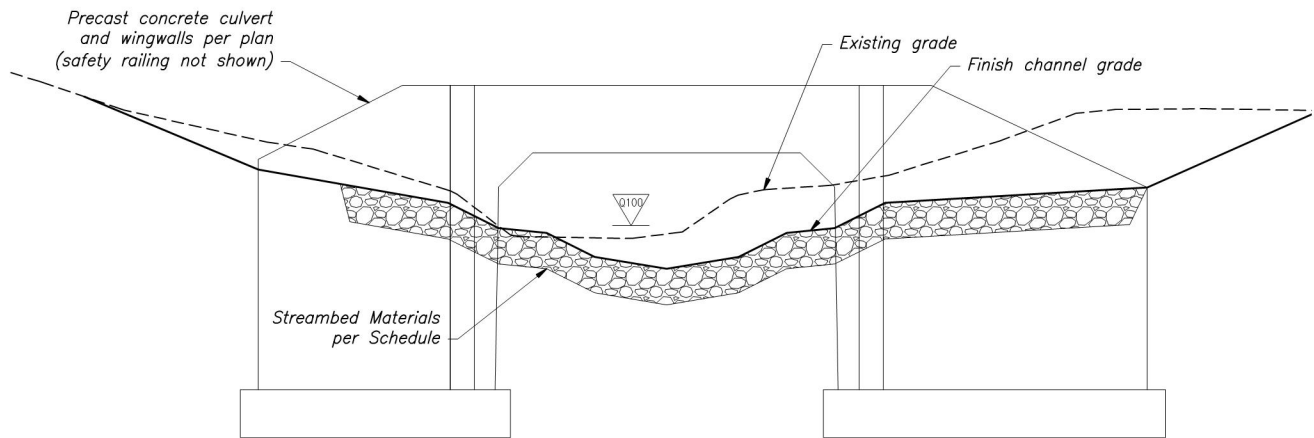
TYPICAL ROCK-LINED DITCH DETAIL



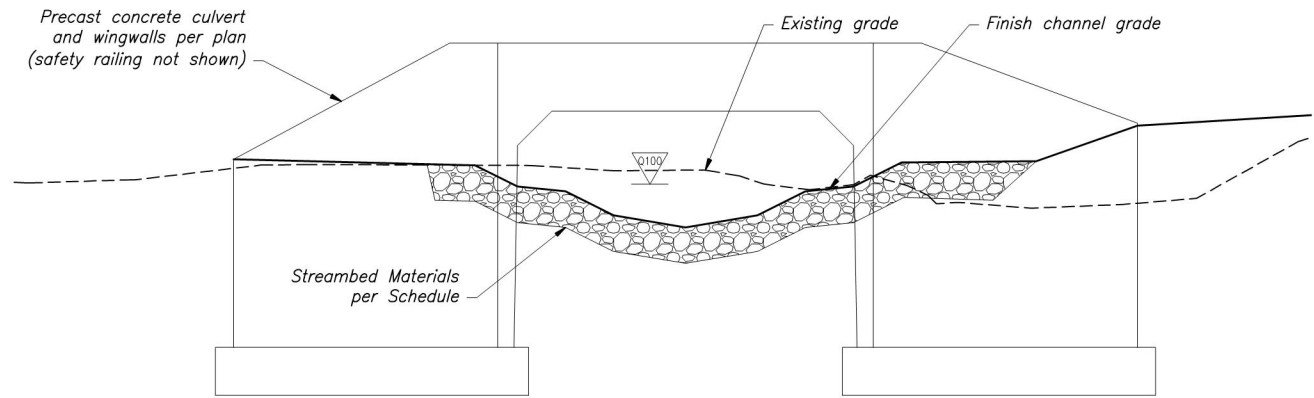
TYPICAL CHANNEL SECTION

* Eliminate 10:1 bench and steepen bank to transition to existing upstream channel from Sta. 9+70 - Sta. 9+75

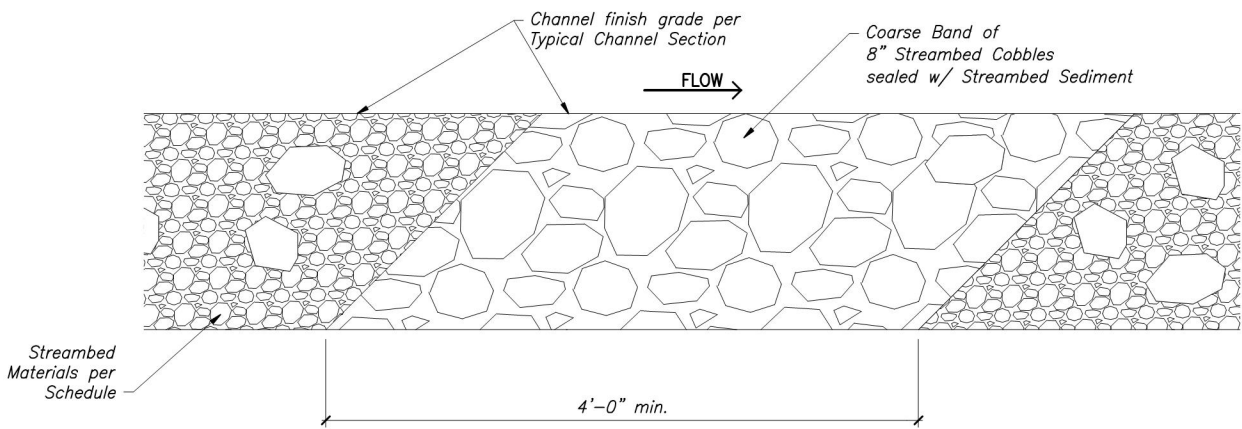
'Streambed Materials' Schedule	
WSDOT Mat'l Designation	Percent by Volume
Streambed Sediment	75
4" Streambed Cobbles	25



CULVERT INLET ELEVATION



CULVERT OUTLET ELEVATION



COARSE BAND DETAIL

Channel Sta. 10+78 & 11+08

Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318

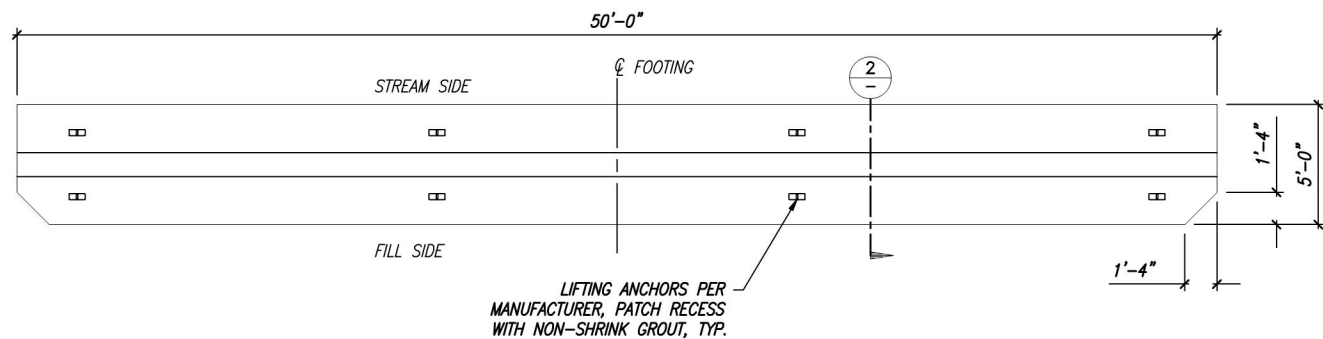
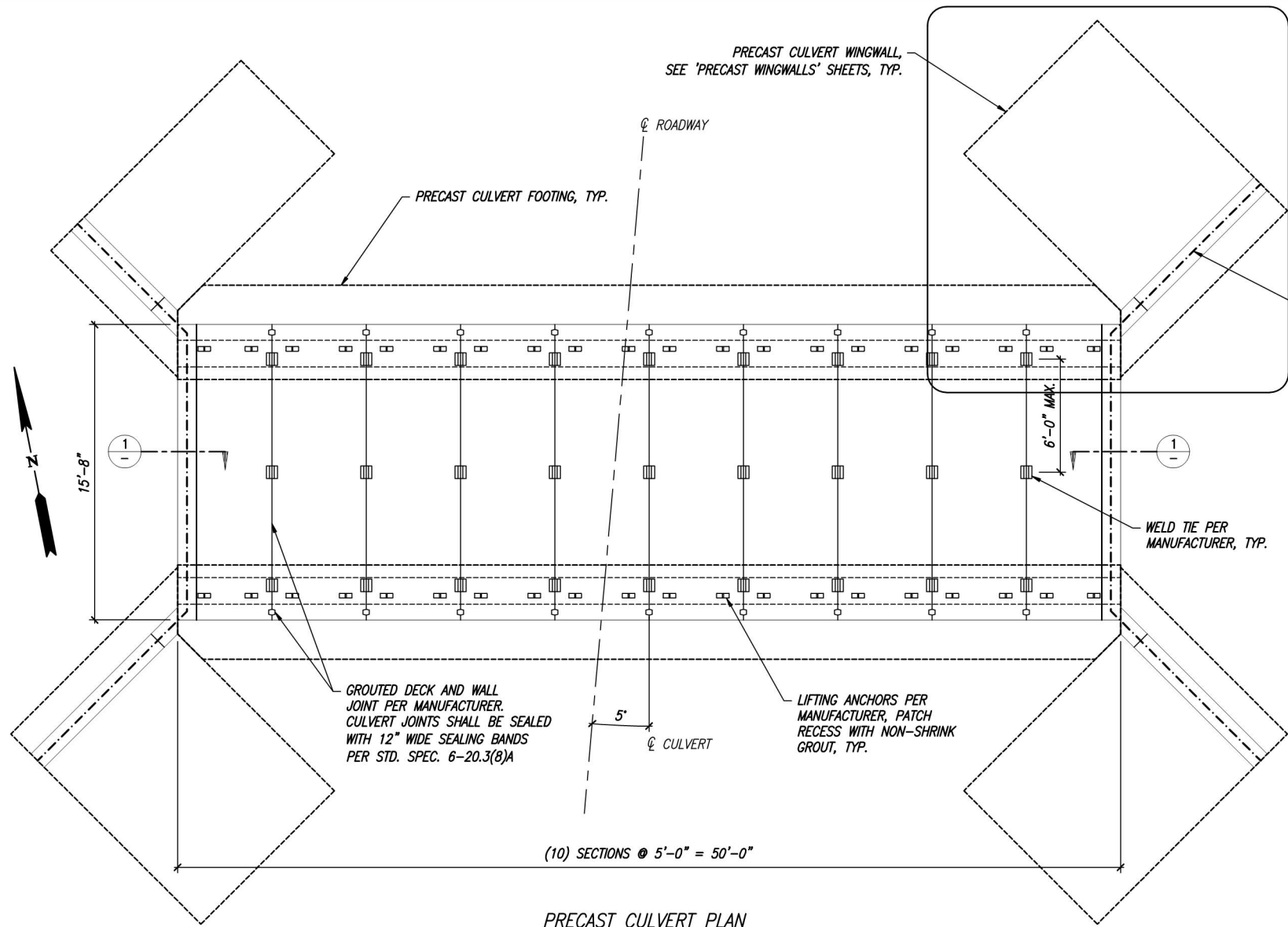


NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
TYPICAL SECTIONS & DETAILS - WVR

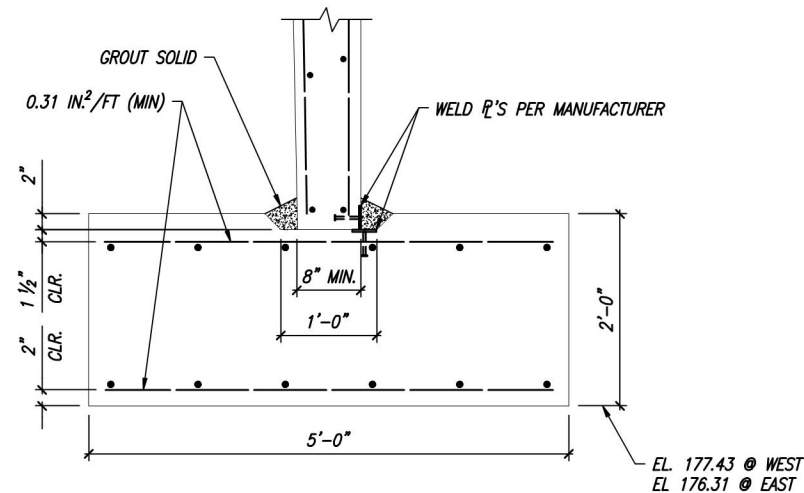
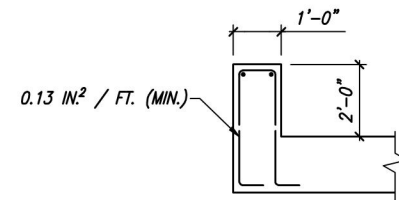
DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER	J.S. Soward
ISSUED:	12/22/2023

SHEET
5
OF
26
SHEETS
SEI REF NO.
A19159.00

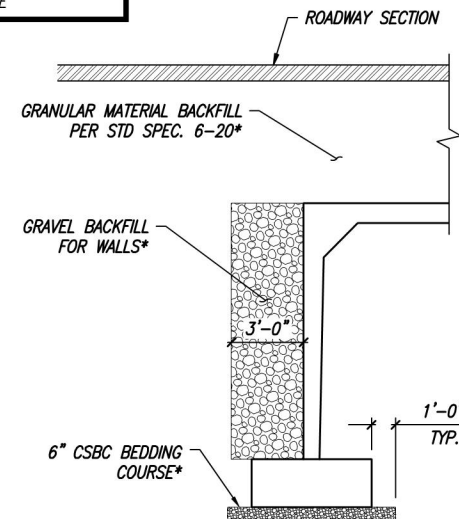
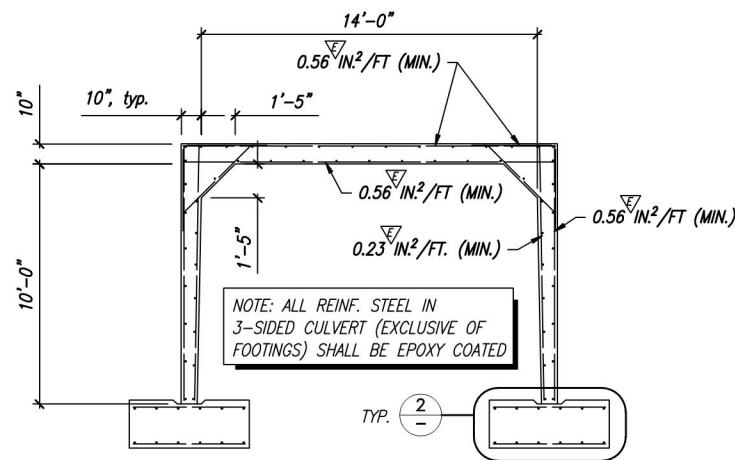
Plotted: Dec 22, 2023 -- 15:12 JessicaS B:\19Files\A19159.00 Naylors Creek Culvert Replacements\Combined Drawings\Foundations_WVR.dwg Layout Name: 6 Culvert Details xrefs: titlesht



NOTE: PRECAST CULVERT FOOTING MAY BE CAST IN MULTIPLE SEGMENTS AT CONTRACTOR'S OPTION. MANUFACTURER SHALL PROVIDE CONNECTION DETAILS.



* - CSBC BEDDING COURSE, GRAVEL BACKFILL FOR WALLS, AND GRANULAR MATERIAL BACKFILL PER STD. SPECS TO BE INCLUDED IN THE LUMP SUM COST FOR 'CONTRACTOR DESIGNED BURIED STRUCTURE'



Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318



NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
CULVERT DETAILS - WVR

DESIGN TEAM	SHEET
DESIGNED BY: J.S. Soward	6
CHECKED BY: C.B. Kocan	OF
PRJ. DRAFTER: J.S. Soward	26
	SHEETS
	SEI REF NO.
ISSUED: 12/22/2023	A19159.00

Plotted: Dec 22, 2023 -- 15:12 JessicaS B:\19Files\A19159.00 Naylors Creek Culvert Replacements\Combined Drawings\Foundations_WVR.dwg Layout Name: 7 Culvert Loading Diagram xrefs: titlesht

GENERAL NOTES:

ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, LATEST EDITION.

THE CULVERT MANUFACTURER SHALL PROVIDE A COMPLETE DESIGN OF THE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATIONS AS REQUIRED BY THE SPECIFICATIONS. THE FOUNDATION SIZES AND REINFORCEMENT DETAILS SHOWN IN THE PLANS SHALL BE TAKEN AS MINIMUM VALUES, AND SHALL BE VERIFIED OR INCREASED AS NECESSARY.

CULVERT DESIGN SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, LATEST EDITION. THE CULVERT SHALL BE DESIGNED FOR SCOUR PER THE HYDRAULIC REPORT. THE FABRICATOR SHALL DESIGN FOR LIFTING AND TRANSPORTING PER STD. SPEC. SECTION 7-02.3(6)A2.

THE PRECAST CONCRETE 3-SIDE CULVERT UNITS SHALL BE MANUFACTURED IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 6-20.3 WITH GROUTED SHEAR KEYS. ALL JOINTS SHALL BE WRAPPED WITH EXTERNAL SEALING BAND PER ASTM C 877.

ALL STEEL PLATES AND SHAPES SHALL BE ASTM A36 OR ASTM A 992. ALL BOLTS, NUTS AND WASHERS (UNLESS NOTED OTHERWISE) SHALL BE ASTM A 307 AND COMPLY WITH STD. SPEC. SECT. 9-16.3(4), AND RESIN BONDED ANCHORS SHALL BE ASTM A 193 GRADE B7, OR ASTM A 449. ALL STEEL PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111 AFTER FABRICATION. BOLTS AND HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232.

UNLESS OTHERWISE SHOWN ON THE PLANS, CONCRETE COVER SHALL BE MEASURED FROM THE FACE OF THE CONCRETE TO THE FACE OF ANY REINFORCING BAR. COVER SHALL BE A MINIMUM OF 1 1/2" AT THE BOTTOM OF THE CULVERT TOP SLAB AND INSIDE LEG OF CULVERT, AND 2" AT ALL OTHER LOCATIONS. THE MINIMUM COMPRESSIVE STRENGTH OF ALL STRUCTURAL CONCRETE SHALL BE 4000PSI

LOAD COMBINATIONS

THE BURIED STRUCTURES TO BE DESIGNED WITH THE LIMIT STATES SHOWN BELOW:

STRENGTH I = γ_p DC + γ_p DW+ 1.35/0.90 EH + 1.35/0.90 EV + 1.50/0.75 ES
+1.75 LS + 1.75 (L+I) + 0.50/1.20 TU

SERVICE = 1.00 DC + 1.00 DW + 1.00 EH + 1.00 EV + 1.00 ES + 1.0 LS + 1.00 (L+I)
+ 1.00/1.20 TU

EXTREME II = 1.00 DC + 1.00 DW + 1.00 EH + 1.00 EV + 1.00 ES + 1.00 LS + γ_{EQ} L

- DC = WEIGHT OF SUPERSTRUCTURE
- DW = WEIGHT OF WEARING SURFACE
- EH = EARTH PRESSURE
- EV = VERTICAL EARTH PRESSURE
- ES = EARTH SURCHARGE
- LS = LIVE LOAD SURCHARGE
- L+I = LIVE LOAD PLUS IMPACT

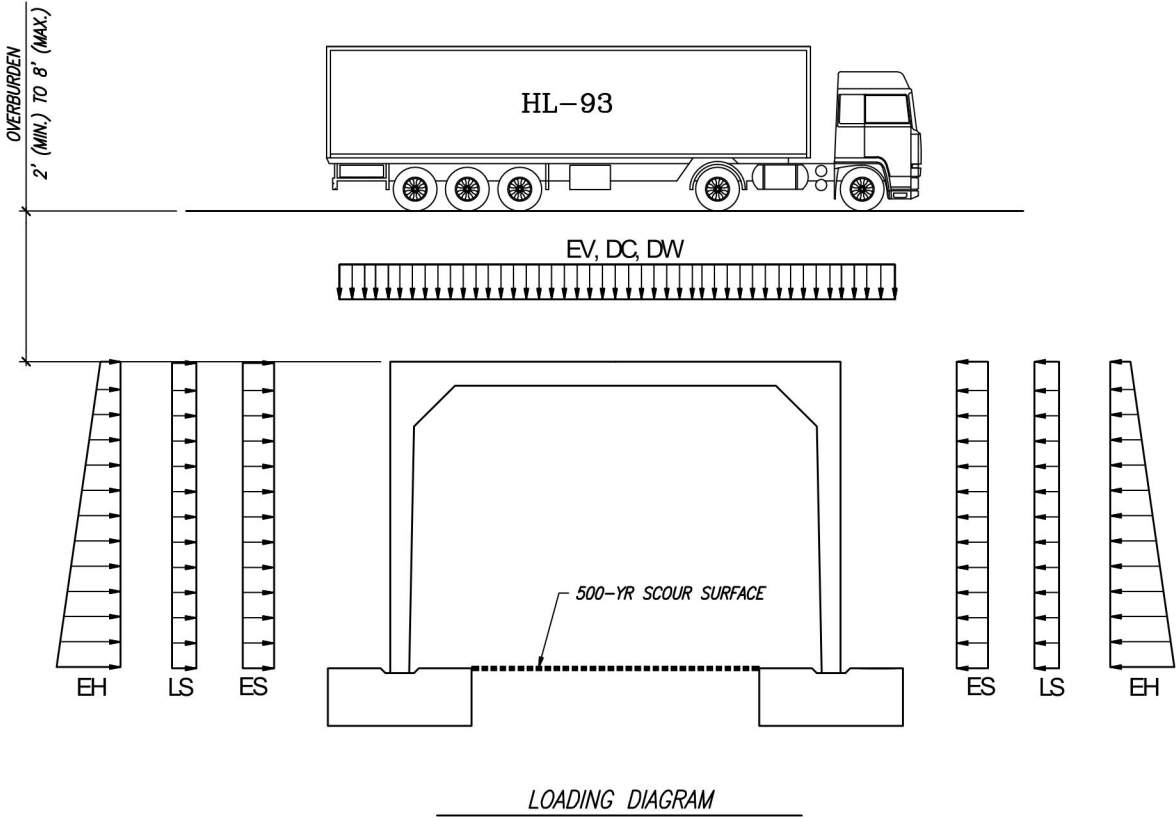
γ_p FOR DC = 1.25 MAX./0.90 MIN.

γ_p FOR DW = 1.50 MAX./0.65 MIN.

γ_{EQ} = 0.00

- ϕ = 1.00 FOR FLEXURE
- ϕ = 0.90 FOR SHEAR

Summary of Geotechnical Values*	
Bearing Resistance	PSF
Nominal	15,000
Service Limit State	7,000
Lateral Earth Pressures	PCF
Active (level backslope)	32
Active (2:1 backslope)	47
At-Rest	51
Passive	480
*See project geotechnical report for complete subsurface investigation results, soil design values and resistance factors	



Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318



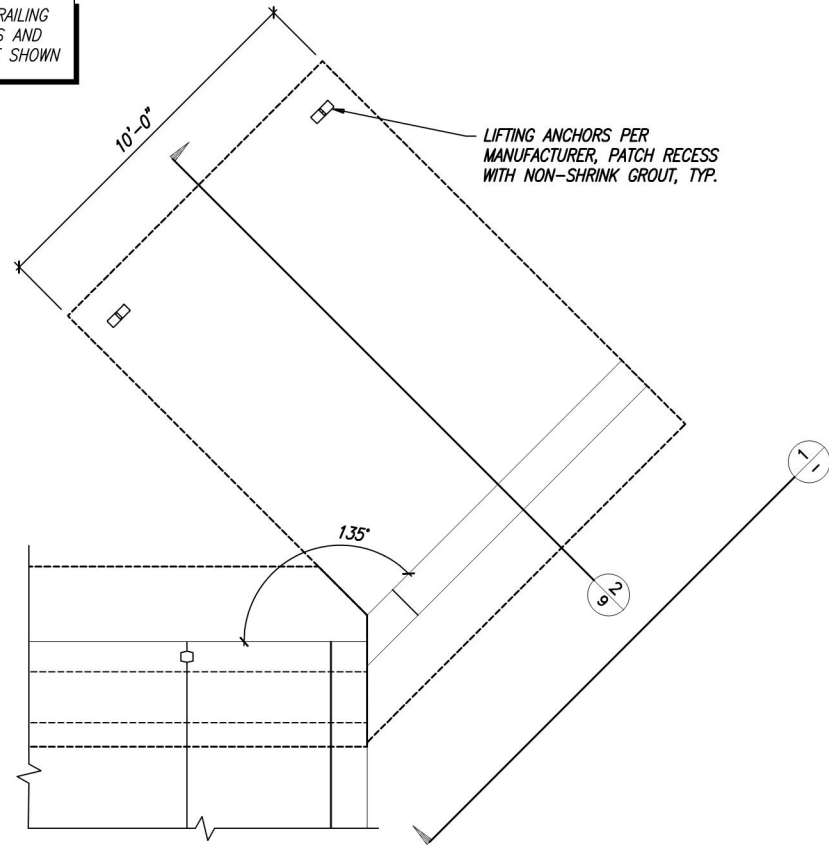
NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
CULVERT LOADING DIAGRAM - WVR

DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER	J.S. Soward
ISSUED:	12/22/2023

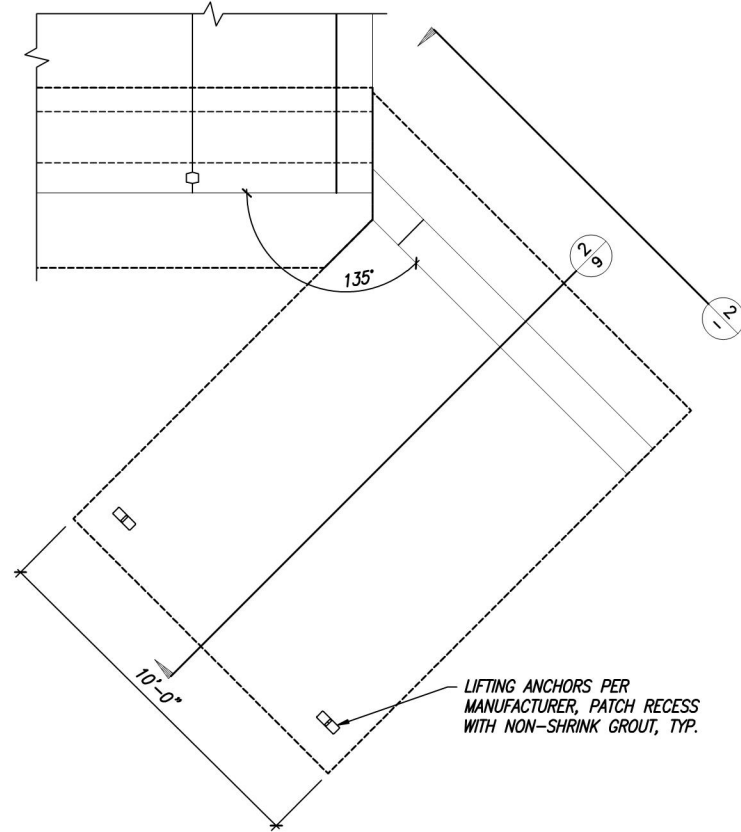
SHEET
7
OF
26
SHEETS
SEI REF NO.
A19159.00

Plotted: Dec 22, 2023 -- 15:12 JessicaS B:\19Files\A19159.00 Naylors Creek Culvert Replacements\Combined Drawings\Foundations_WVR.dwg Layout Name: 8 Culvert Wingwalls 1 xrefs: titlesht

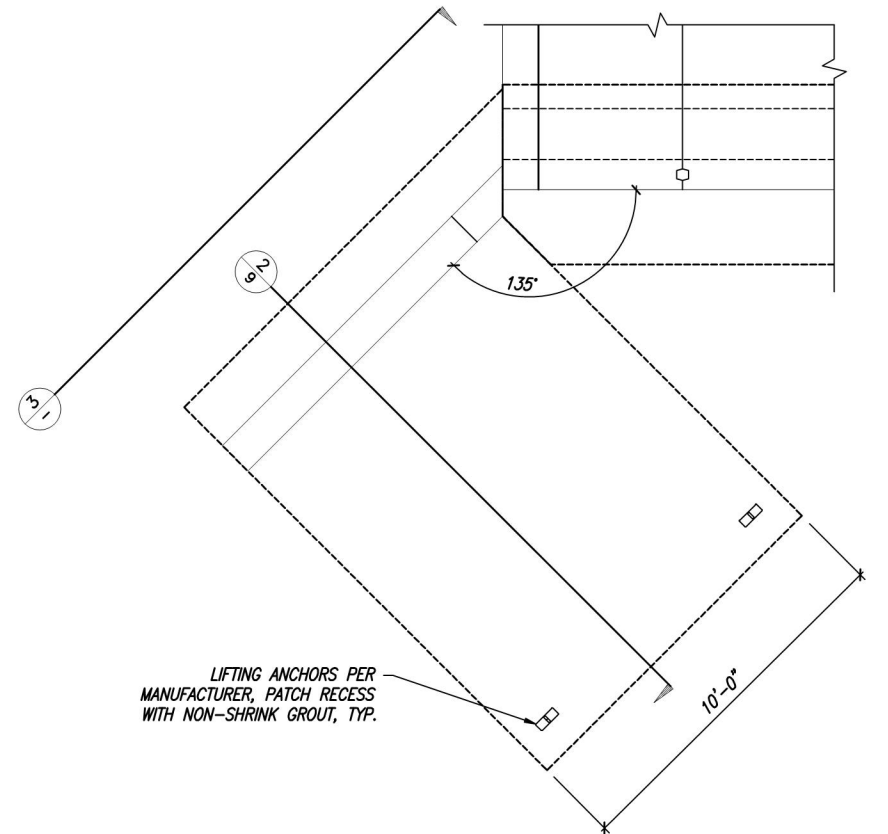
NOTE: SAFETY RAILING
FOR HEADWALLS AND
WINGWALLS NOT SHOWN



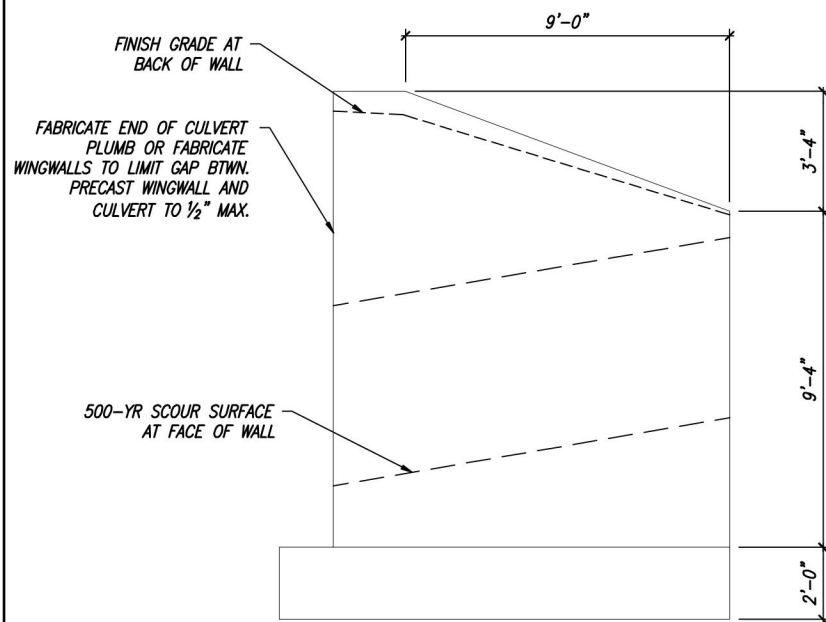
PRECAST WINGWALL FOOTING PLAN - NE



PRECAST WINGWALL FOOTING PLAN - SE

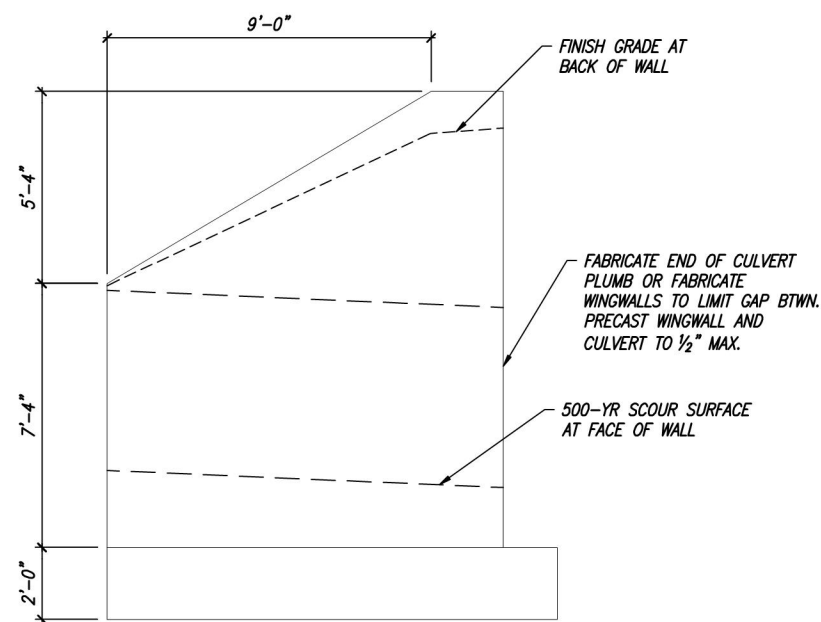


PRECAST WINGWALL FOOTING PLAN - SW



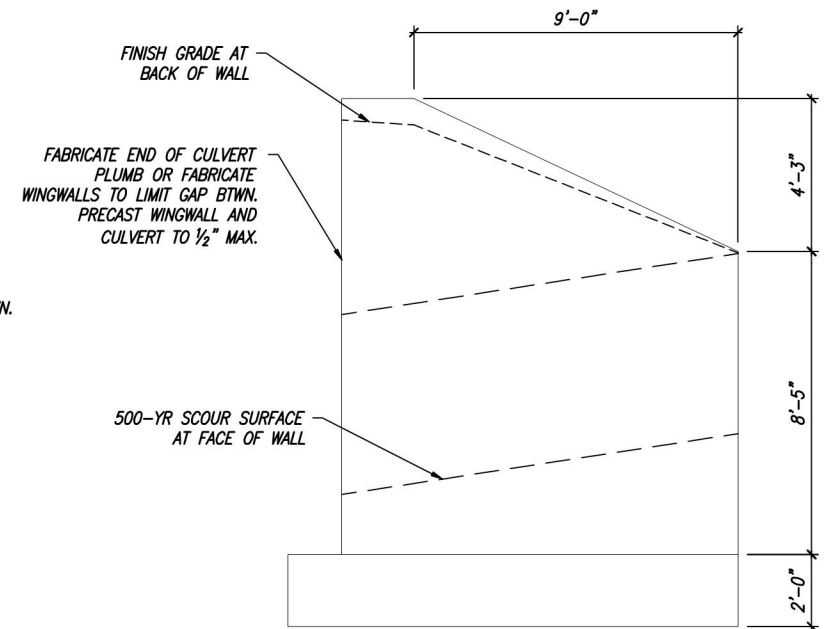
WINGWALL ELEVATION - NE

1



WINGWALL ELEVATION - SE

2



WINGWALL ELEVATION - SW

3

Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318



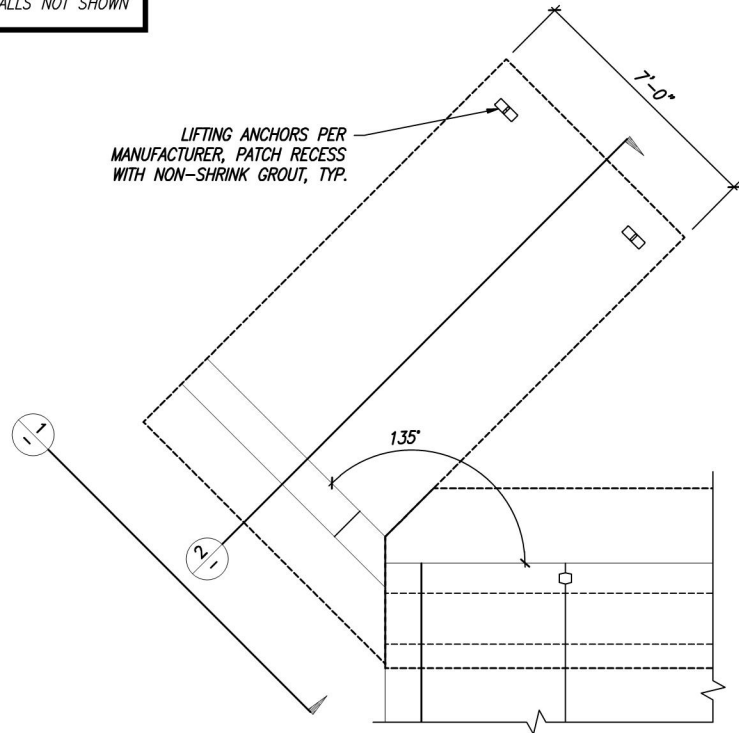
NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
CULVERT WINGWALLS 1 - WVR

DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER	J.S. Soward
ISSUED:	12/22/2023

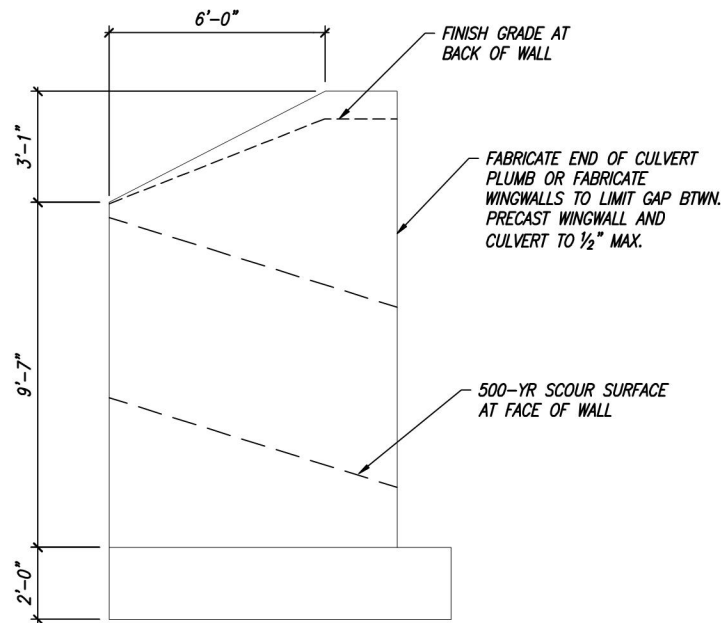
SHEET
8
OF
26
SHEETS
SEI REF NO.
A19159.00

Plotted: Dec 22, 2023 -- 15:12 JessicaS B:\19Files\A19159.00 Naylors Creek Culvert Replacements\Combined Drawings\Foundations_WVR.dwg Layout Name: 9 Culvert Wingwalls 2 xrefs: titlesht

NOTE: SAFETY RAILING
FOR HEADWALLS AND
WINGWALLS NOT SHOWN

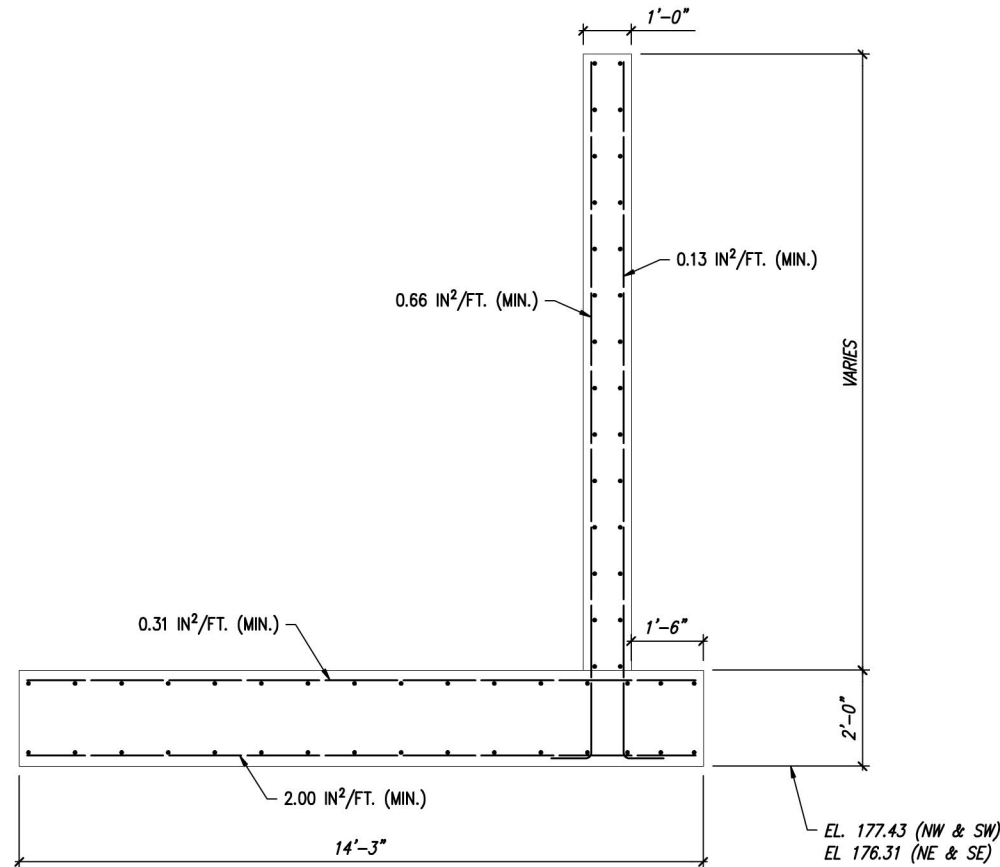


PRECAST WINGWALL FOOTING PLAN - NW



WINGWALL ELEVATION - NW

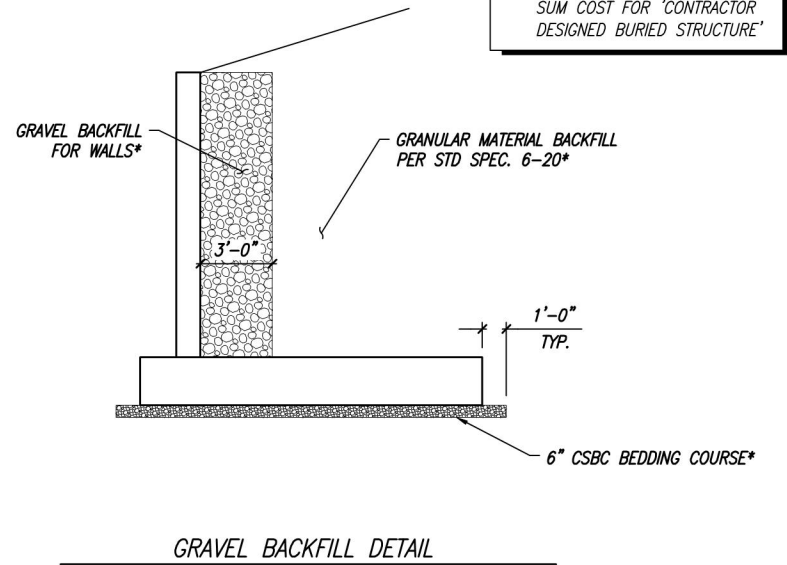
1
—



PRECAST WINGWALL & FOOTING

2
—

* - CSBC BEDDING COURSE,
GRAVEL BACKFILL FOR WALLS,
AND GRANULAR MATERIAL
BACKFILL PER STD. SPECS TO
BE INCLUDED IN THE LUMP
SUM COST FOR 'CONTRACTOR
DESIGNED BURIED STRUCTURE'



GRAVEL BACKFILL DETAIL

Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
—
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318

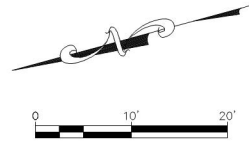
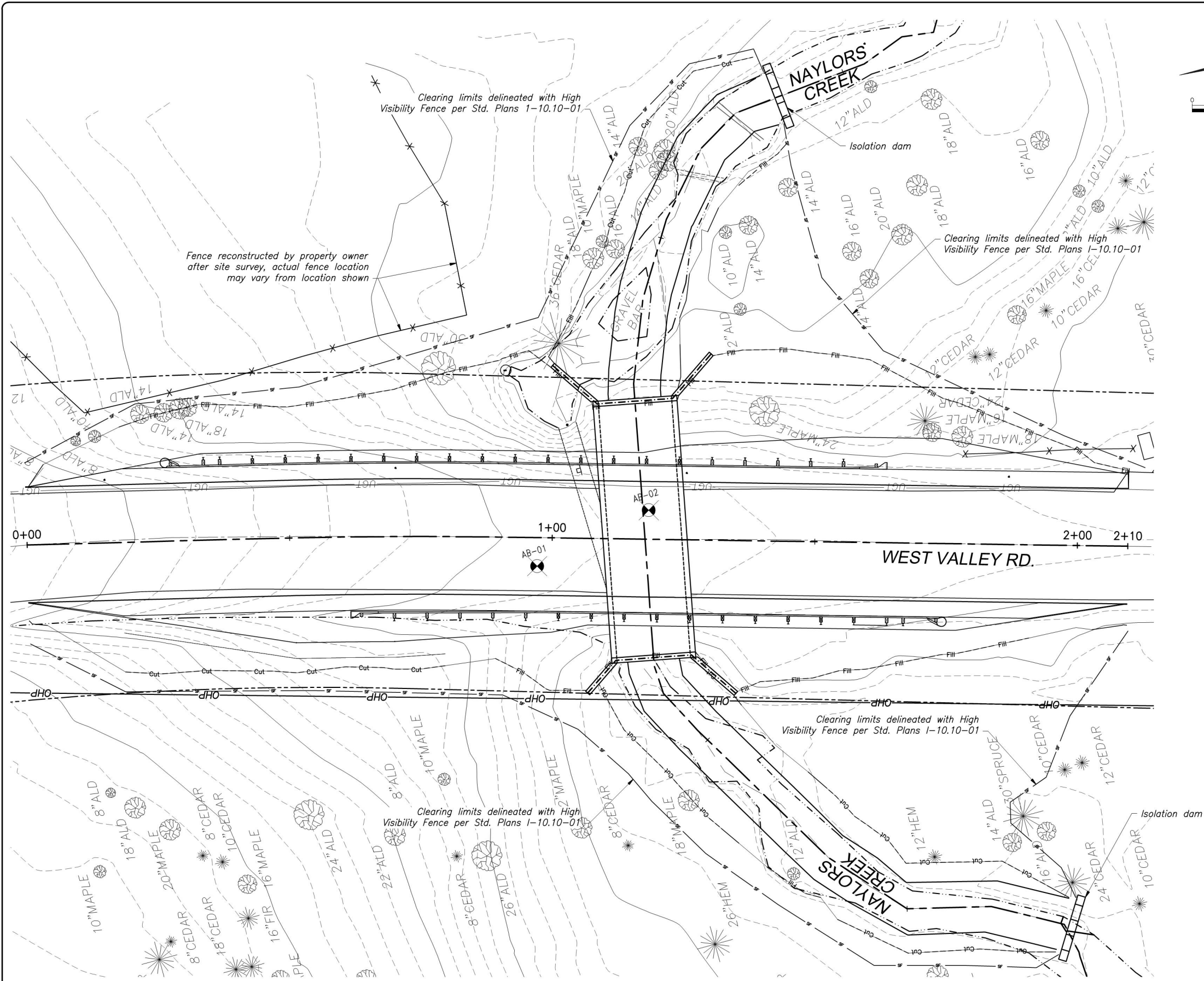


NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
CULVERT WINGWALL DETAILS 2 - WVR

DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER	J.S. Soward
ISSUED:	12/22/2023

SHEET
9
OF
26
SHEETS
SEI REF NO.
A19159.00

Plotted: Dec 22, 2023 -- 15:12 JessicaS B:\19Files\A19159.00 Naylors Creek Culvert Replacements\Combined Drawings\West Valley_5deg skew.dwg Layout Name: 10 Conceptual TESC Plan xrefs: Titlesht



GENERAL NOTES

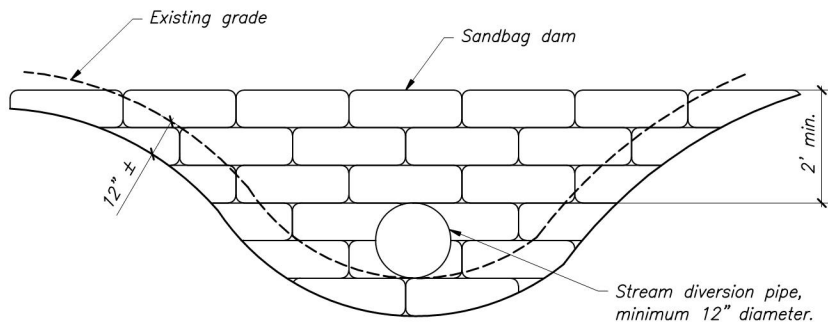
THE CONTRACTOR SHALL DELINEATE THE CLEARING LIMITS WITH HIGH VISIBILITY FENCE PRIOR TO THE START OF CONSTRUCTION. THE FENCING SHALL BE MAINTAINED FOR THE DURATION OF CONSTRUCTION. NO DISTURBANCE WILL BE PERMITTED OUTSIDE THE CLEARING LIMITS. DISTURBANCE TO EXISTING VEGETATION SHALL BE MINIMIZED TO THE EXTENT PRACTICAL.

ALL ACTIVE WORK AREAS SHALL BE DEWATERED BY APPROVED METHODS PRIOR TO BEGINNING WORK IN THAT AREA. PRIOR TO DEWATERING THE WORK AREAS, THE STREAM SHALL BE ISOLATED AND DEFISHED IN ACCORDANCE WITH PROJECT PERMIT REQUIREMENTS. WATER FROM DEWATERING OPERATIONS AND RUNOFF FROM DISTURBED AREAS SHALL NOT BE ALLOWED TO ENTER THE STREAM UNTIL TURBIDITY HAS BEEN REDUCED TO ACCEPTABLE LEVELS. ENERGY DISSIPATION SHALL BE PROVIDED AT THE OUTFALL OF THE BYPASS SYSTEM TO PREVENT LOCALIZED SCOURING OF THE BED AND BANKS.

TEMPORARY EROSION CONTROL MEASURES SHALL BE IN PLACE AT ALL DISTURBED AREAS AT THE END OF EACH WORK DAY. THE IMPLEMENTATION OF THE APPROVED TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) PLAN AND THE CONSTRUCTION, MAINTENANCE, AND UPGRADING OF THESE FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND VEGETATION IS ESTABLISHED, AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL REMOVE ALL TESC MEASURES UPON COMPLETION OF THE PROJECT.

MATERIAL STOCKPILES SHALL BE STABILIZED AND PROTECTED WITH SEDIMENT-TRAPPING MEASURES. SOIL EXPOSURE SHALL BE MINIMIZED THROUGH THE USE OF GROUND COVER AND STABILIZATION BMP'S. EXPOSED DUST-PRODUCING SURFACES SHALL BE SPRINKLED DAILY UNTIL WET WHILE AVOIDING RUNOFF PRODUCTION. PAVED STREETS SHALL BE SWEEPED DAILY FOLLOWING CONSTRUCTION ACTIVITIES.

THE TESC MEASURES MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE. THE TESC FACILITIES SHALL BE INSPECTED DAILY AND MAINTAINED OR AUGMENTED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.



CHANNEL ISOLATION DAM

Sandbags to be filled with clean stream gravel with waterproof sheeting covering the upstream side of the sandbags to prevent leaks.

Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318

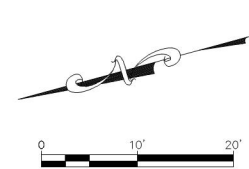
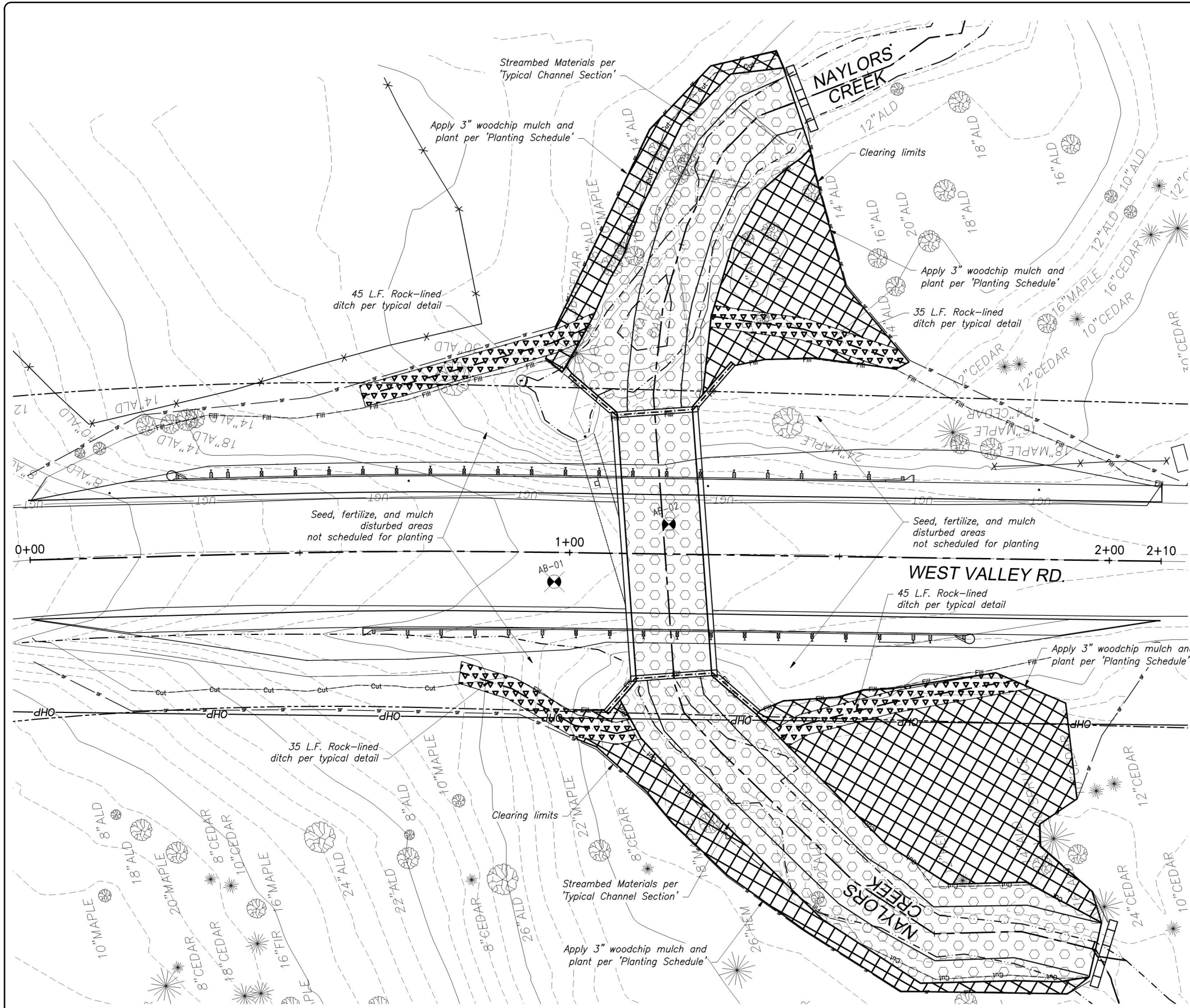


NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
CONCEPTUAL TESC PLAN - WVR

DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER	J.S. Soward
ISSUED:	12/22/2023

SHEET
10
OF
26
SHEETS
SEI REF NO.
A19159.00

Plotted: Dec 22, 2023 -- 15:12 JessicaS B:\19Files\A19159.00 Naylors Creek Culvert Replacements\Combined Drawings\West Valley_5deg skew.dwg Layout Name: 11 Planting Plan xrefs: Titlesht



LEGEND	
	Area to be mulched and planted per 'Planting Schedule'
	Area to be covered with Streambed Material per 'Typical Channel Section'
	Rock-lined ditch per 'Typical Rock-Lined Ditch Detail'

PLANTING SCHEDULE					
STRATUM	COMMON NAME	LATIN NAME	FORM ^{1,2}	SPACING (ON-CENTER)	QUANTITY (3,205 SF)
TREE	RED ALDER	<i>Alnus rubra</i>	CONTAINER-GROWN	30	50
	WESTERN REDCEDAR	<i>Thuja plicata</i>	CONTAINER-GROWN	30	50
	BIGLEAF MAPLE	<i>Acer macrophyllum</i>	CONTAINER-GROWN	30	50
	DOUGLAS FIR	<i>Pseudotsuga menziesii</i>	CONTAINER-GROWN	30	50
SHRUB	HOOKEER WILLOW	<i>Salix hookeriana</i>	LIVE STAKES	30	50
	PACIFIC WILLOW	<i>Salix lucida</i> var. <i>lasianдра</i>	LIVE STAKES	30	50
	PACIFIC NINEBARK	<i>Physocarpus capitatus</i>	CONTAINER-GROWN	18	120
	SALMONBERRY	<i>Rubus spectabilis</i>	CONTAINER-GROWN	18	120
	VINE MAPLE	<i>Acer circinatum</i>	CONTAINER-GROWN	18	120
	BEAKED HAZELNUT	<i>Corylus cornuta</i>	CONTAINER-GROWN	18	120
	INDIAN PLUM	<i>Oemleria cerasiformis</i>	CONTAINER-GROWN	18	120
GROUND-COVER	SWORD FERN	<i>Polystichum munitum</i>	CONTAINER-GROWN	18	120
	THIMBLEBERRY	<i>Rubus parviflorus</i>	CONTAINER-GROWN	18	120

1. CONTAINER-GROWN PLANT MATERIAL STOCK SHOULD BE AT LEAST 2-GALLON SIZE FOR TREES AND AT LEAST 1-GALLON SIZE FOR SHRUBS AND GROUND-COVER SPECIES; WILLOW LIVE STAKES SHOULD BE 36 TO 48 INCHES IN LENGTH.
2. BARE ROOT PLANT MATERIAL STOCK CAN BE SUBSTITUTED FOR CONTAINER-GROWN STOCK, BUT INCREASED MORTALITY AND SUBSEQUENT PLANT REPLACEMENT COSTS SHOULD BE ANTICIPATED AND CONSIDERED.

Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



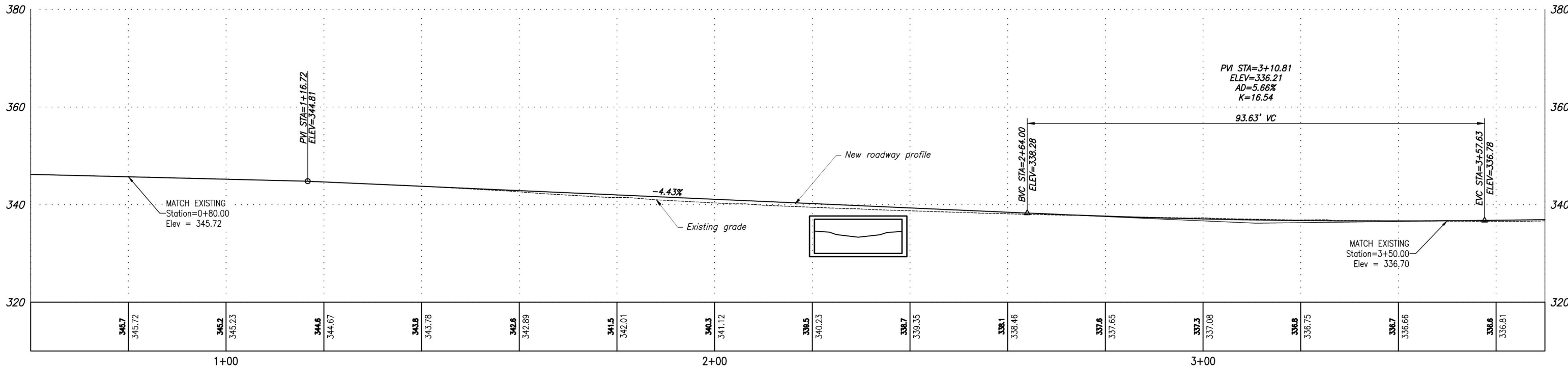
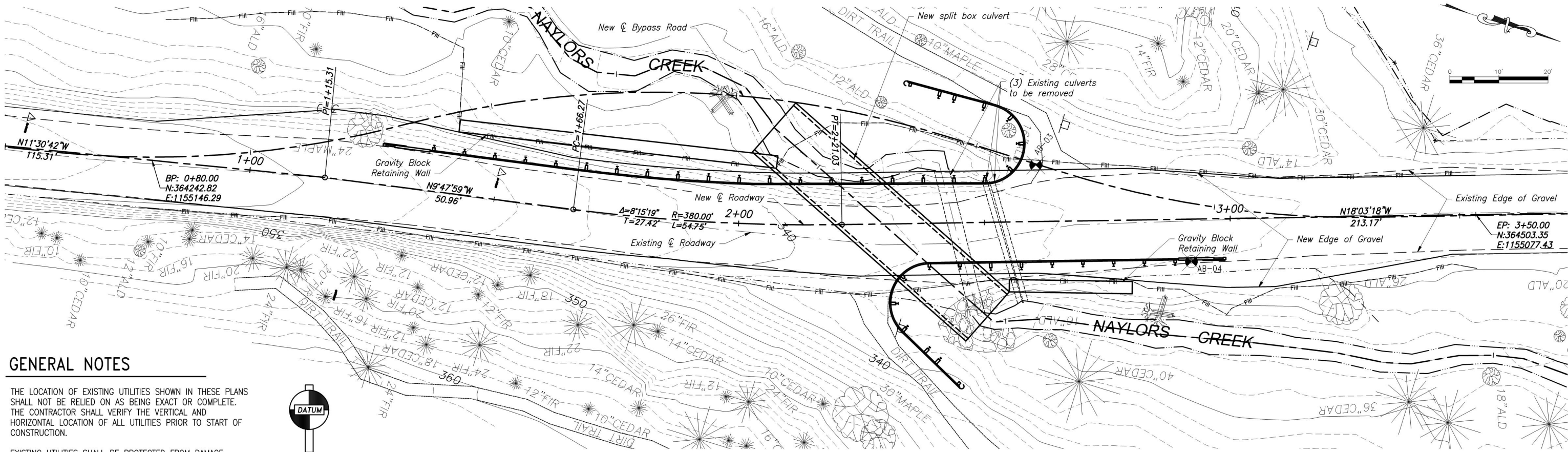
SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318



NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
PLANTING PLAN - WVR

DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER	J.S. Soward
ISSUED:	12/22/2023

SHEET
11
OF
26
SHEETS
SEI REF NO.
A19159.00



Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)

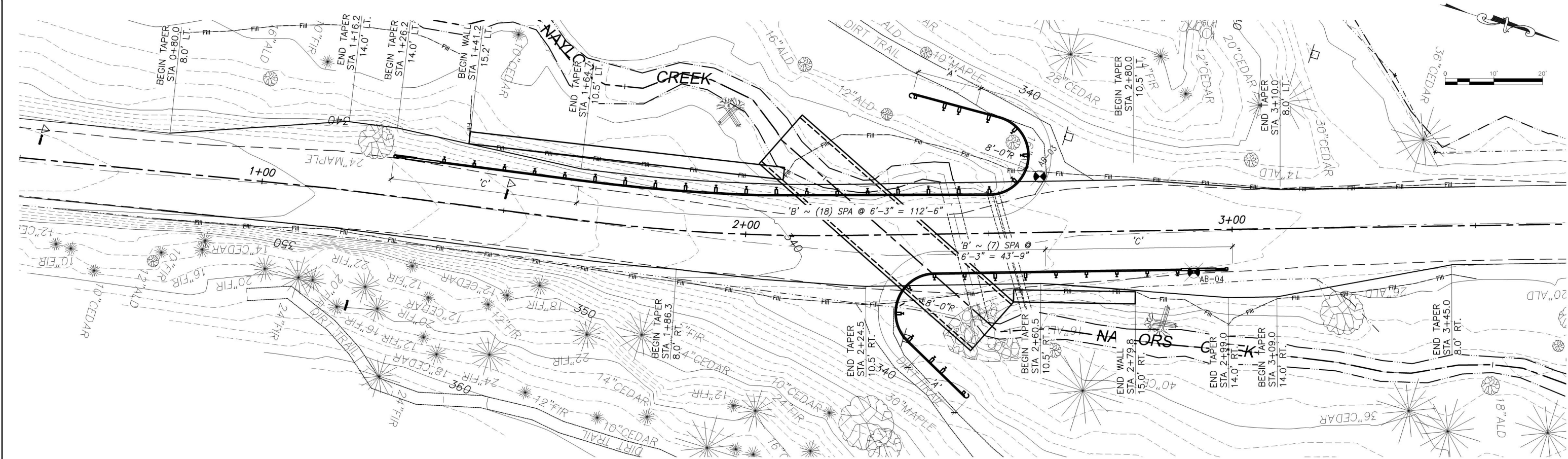


SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318

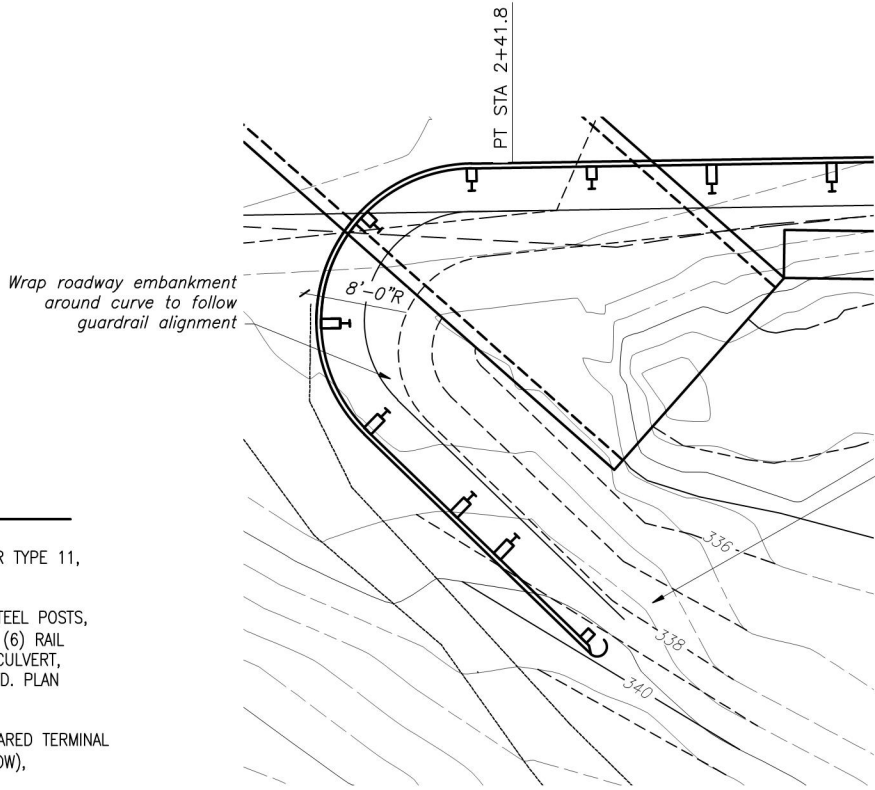


NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
ROADWAY PLAN & PROFILE - GLR

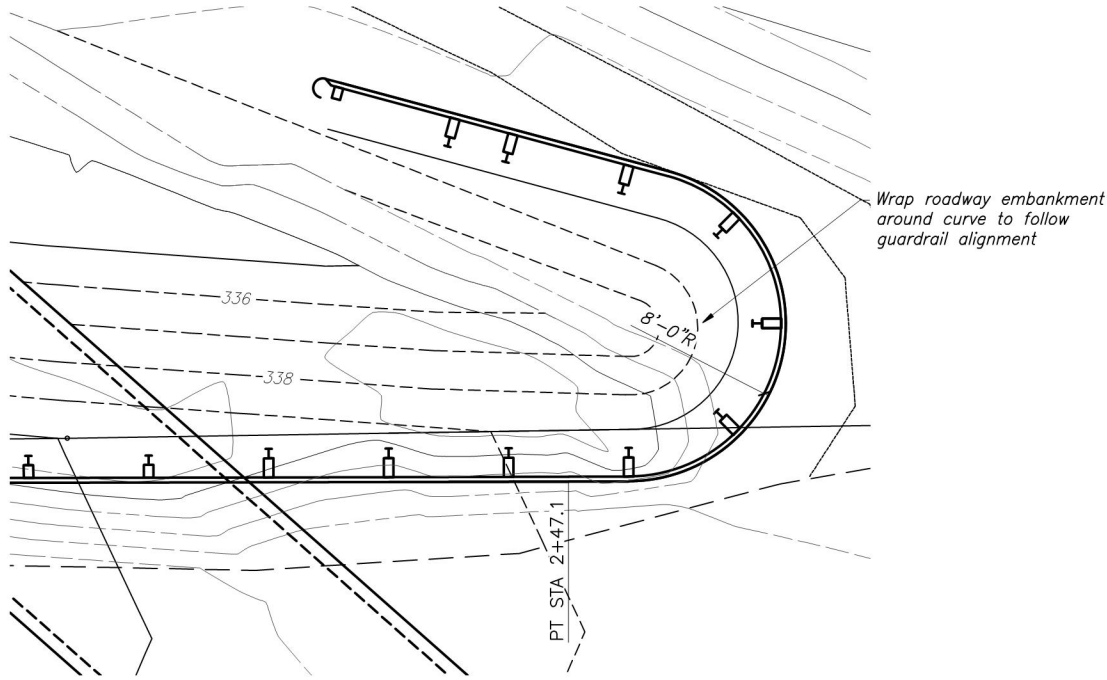
DESIGN TEAM			SHEET
DESIGNED BY:	J.S. Soward		12
CHECKED BY:	C.B. Kocan		OF
PRJ. DRAFTER	J.S. Soward		26
			SHEETS
			SEI REF NO.
ISSUED:	12/22/2023		A19159.00



ROADWAY PLAN



SE GUARDRAIL DETAIL



NW GUARDRAIL DETAIL

GUARDRAIL NOTES

- A = BEAM GUARDRAIL (TYPE 31) ANCHOR TYPE 11, SEE STD. PLAN C-23.70-01
- B = BEAM GUARDRAIL TYPE 31, 6 FT. STEEL POSTS, SEE STD. PLAN C-20.10-09. FOR (6) RAIL POSTS OVER THE CONCRETE BOX CULVERT, PROVIDE ANCHORED POSTS PER STD. PLAN C-20.41-04.
- C = BEAM GUARDRAIL TYPE 31, NON-FLARED TERMINAL (POSTED SPEED 45 MPH AND BELOW), SEE STD. PLAN C-22.45-06

Steepen finish grade to meet existing slope, 1.5:1 slope max.

Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318

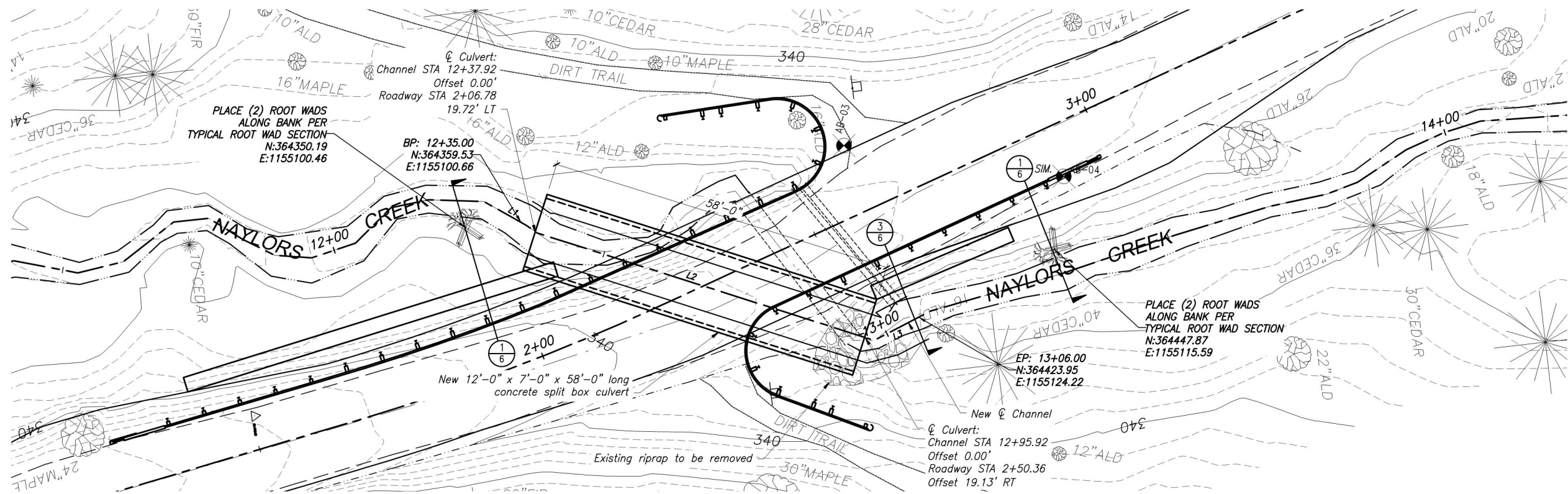


NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
ROADWAY PLAN - GLR

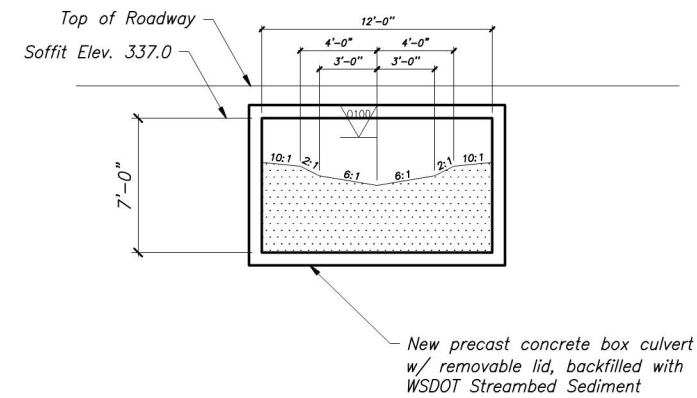
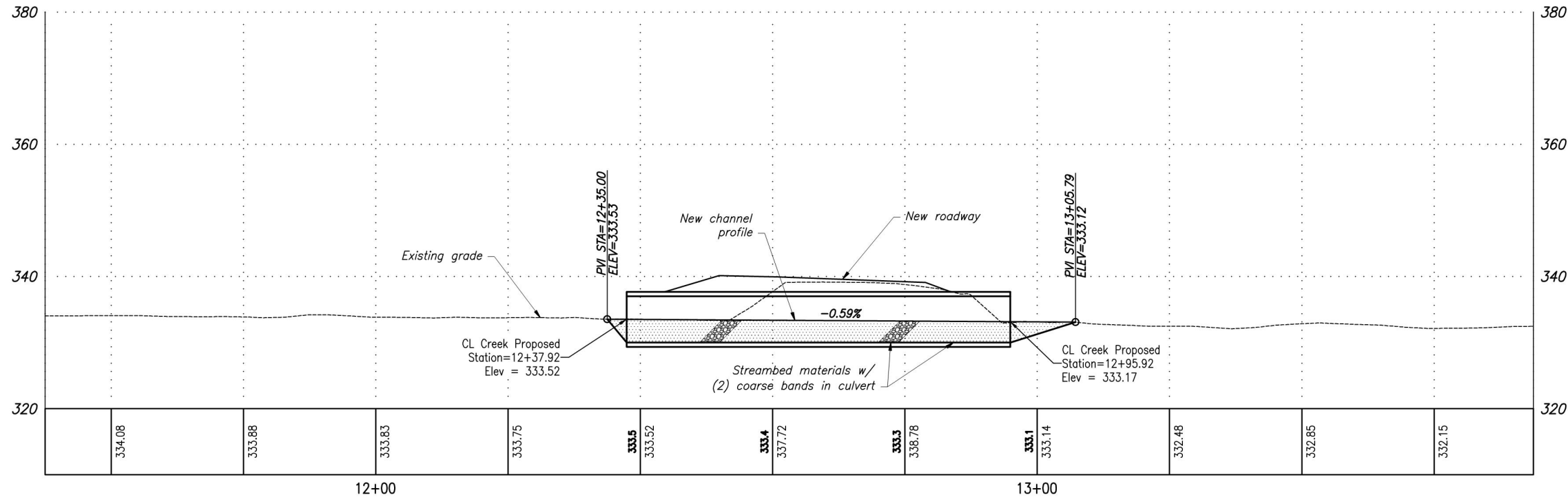
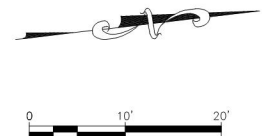
DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER	J.S. Soward
ISSUED:	12/22/2023

SHEET
13
OF
26
SHEETS
SEI REF NO.
A19159.00

Plotted: Dec 22, 2023 -- 15:12 JessicaS B:\19Files\A19159.00 Naylor Creek Culvert Replacements\Combined Drawings\Gibbs Lake Concrete Box Culvert Rev.dwg Layout Name: 14 Culvert Plan & Profile xrefs: Titlesht



ALIGNMENT LINE DATA			
LINE #	LENGTH	BEARING	START STA
L1	8.08	N35°55'08"E	12+27.90
L2	59.34	N24°20'11"E	12+38.25
L3	10.70	N20°42'47"W	12+97.58



Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



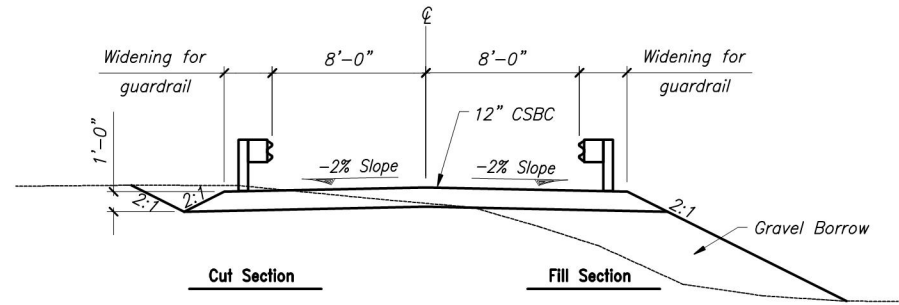
SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318



NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
CULVERT PLAN & PROFILE - GLR

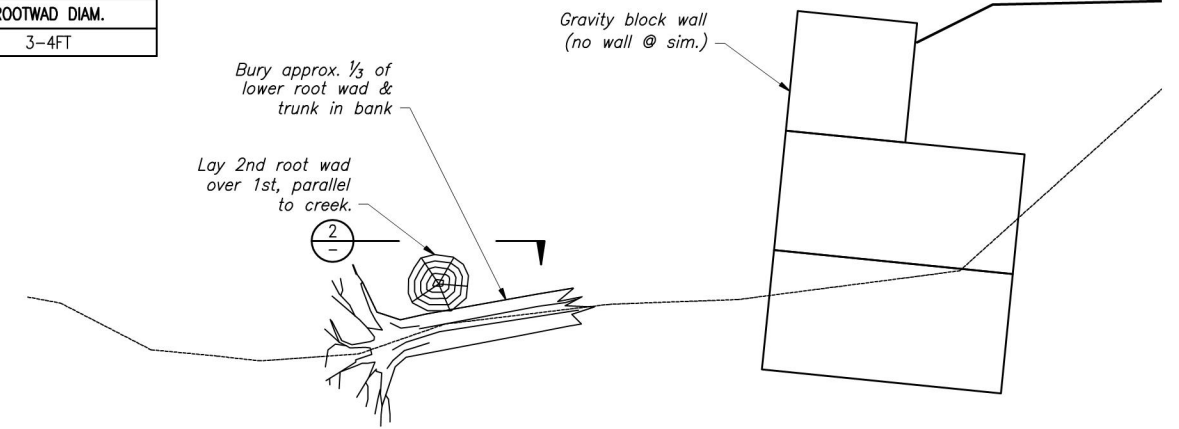
DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER	J.S. Soward
ISSUED:	12/22/2023

SHEET
14
OF
26
SHEETS
SEI REF NO.
A19159.00



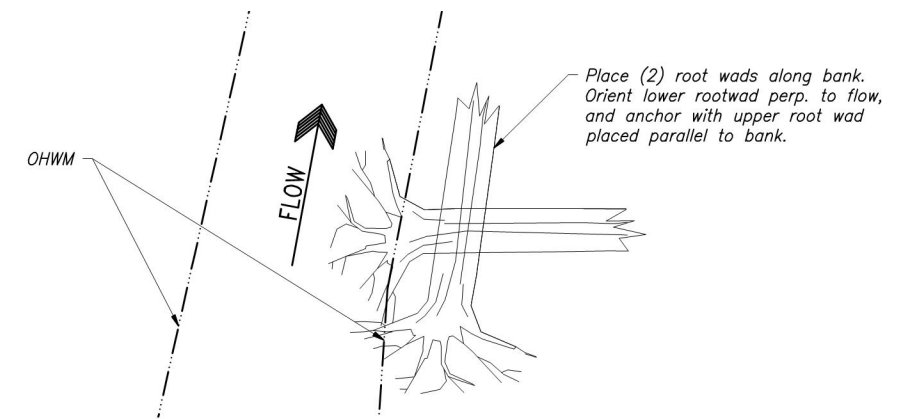
TYPICAL ROADWAY SECTION

ROOT WAD SCHEDULE		
TRUNK DIAMETER (DBH)	TRUNK LENGTH	ROOTWAD DIAM.
10-12"	4-5FT	3-4FT



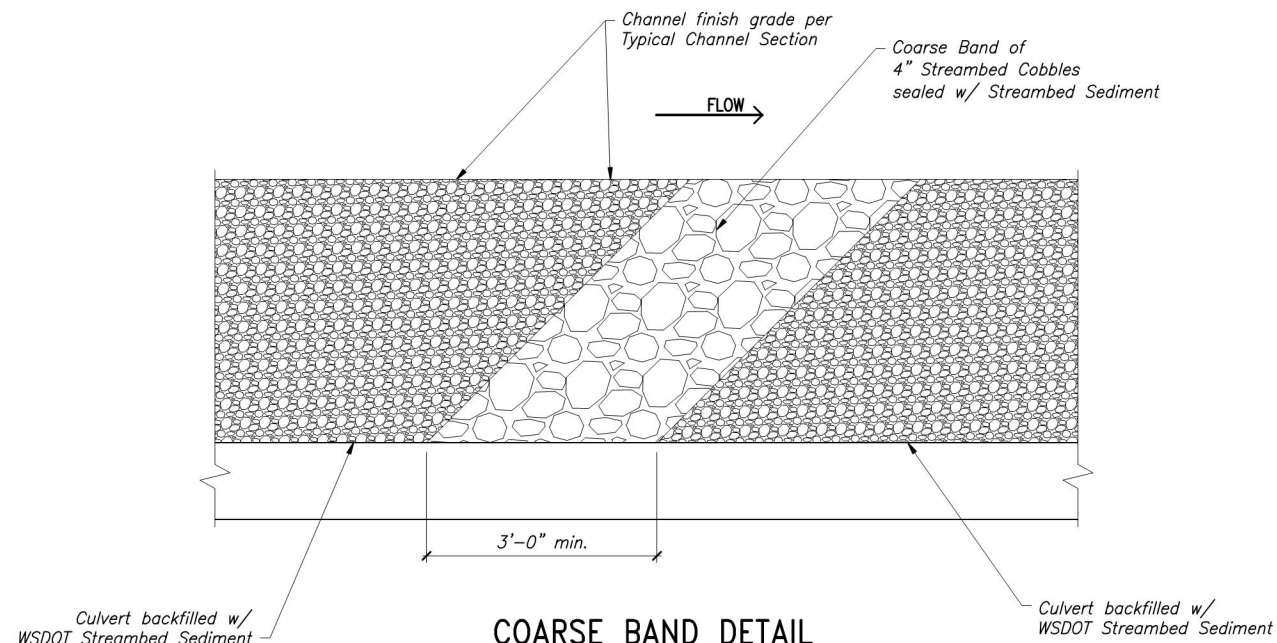
TYPICAL ROOT WAD SECTION

1



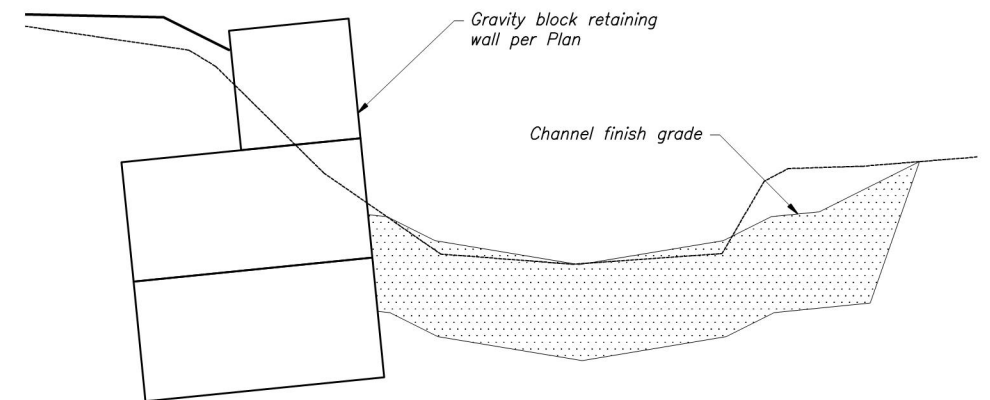
TYPICAL ROOT WAD DETAIL

2



COARSE BAND DETAIL

Channel Sta. 12+46 & 12+88



SECTION @ D/S RETAINING WALL

3

Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318

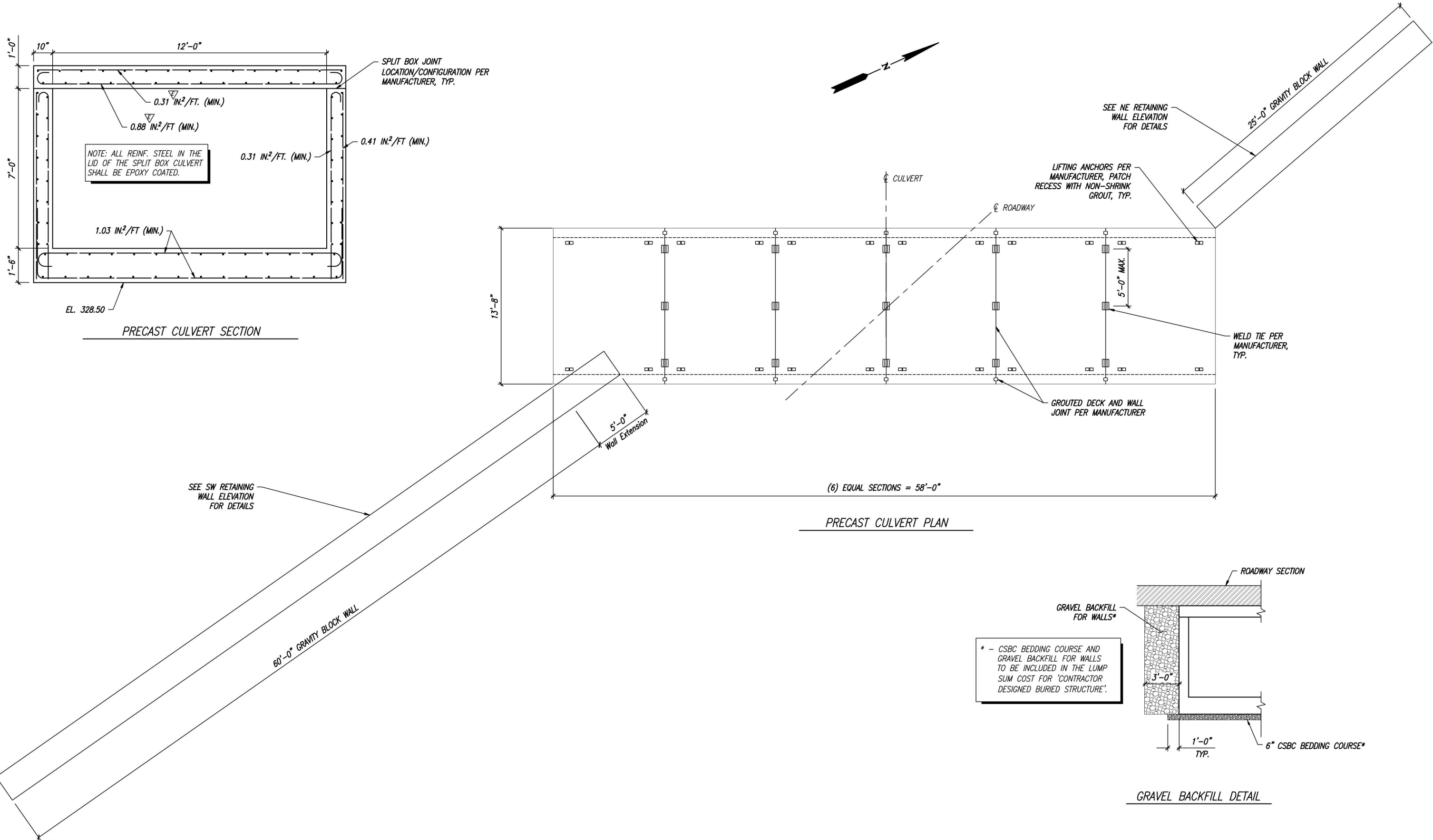


NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
TYPICAL SECTIONS AND DETAILS - GLR

DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER	J.S. Soward
ISSUED:	12/22/2023

SHEET
15
OF
26
SHEETS
SEI REF NO.
A19159.00

Plotted: Dec 22, 2023 -- 15:12 JessicaS B:\19Files\A19159.00 Naylors Creek Culvert Replacements\Combined Drawings\Foundations_GLR.dwg Layout Name: 16 Culvert Details xrefs: titlesht



Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318



NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
CULVERT DETAILS - GLR

DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER	J.S. Soward
ISSUED:	12/22/2023

SHEET
16
OF
26
SHEETS
SEI REF NO.
A19159.00

GENERAL NOTES:

ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, LATEST EDITION.

THE CULVERT MANUFACTURER SHALL PROVIDE A COMPLETE DESIGN OF THE CULVERT AS REQUIRED BY THE SPECIFICATIONS. THE MEMBER SIZES AND REINFORCEMENT DETAILS SHOWN IN THE PLANS SHALL BE TAKEN AS MINIMUM VALUES, AND SHALL BE VERIFIED OR INCREASED AS NECESSARY.

CULVERT DESIGN SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, LATEST EDITION. THE CULVERT SHALL BE DESIGNED FOR SCOUR PER THE HYDRAULIC REPORT. THE FABRICATOR SHALL DESIGN FOR LIFTING AND TRANSPORTING PER STD. SPEC. SECTION 7-02.3(6)A2.

THE PRECAST CONCRETE CULVERT UNITS SHALL BE MANUFACTURED IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 6-20.3 WITH GROUTED SHEAR KEYS. ALL JOINTS SHALL BE WRAPPED WITH EXTERNAL SEALING BAND PER ASTM C 877.

ALL STEEL PLATES AND SHAPES SHALL BE ASTM A36 OR ASTM A 992. ALL BOLTS, NUTS AND WASHERS (UNLESS NOTED OTHERWISE) SHALL BE ASTM A 307 AND COMPLY WITH STD. SPEC. SECT. 9-16.3(4), AND RESIN BONDED ANCHORS SHALL BE ASTM A 193 GRADE B7, OR ASTM A 449. ALL STEEL PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111 AFTER FABRICATION. BOLTS AND HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 232.

UNLESS OTHERWISE SHOWN ON THE PLANS, CONCRETE COVER SHALL BE MEASURED FROM THE FACE OF THE CONCRETE TO THE FACE OF ANY REINFORCING BAR. COVER SHALL BE A MINIMUM OF 1 1/2" AT THE BOTTOM OF THE CULVERT TOP SLAB AND INSIDE LEG OF CULVERT, AND 2" AT ALL OTHER LOCATIONS. THE MINIMUM COMPRESSIVE STRENGTH OF ALL STRUCTURAL CONCRETE SHALL BE 4000PSI

LOAD COMBINATIONS

THE BURIED STRUCTURES TO BE DESIGNED WITH THE LIMIT STATES SHOWN BELOW:

STRENGTH I = γ_p DC + γ_p DW+ 1.35/0.90 EH + 1.35/0.90 EV + 1.50/0.75 ES
+1.75 LS + 1.75 (L+I) + 0.50/1.20 TU

SERVICE = 1.00 DC + 1.00 DW + 1.00 EH + 1.00 EV + 1.00 ES + 1.0 LS + 1.00 (L+I)
+ 1.00/1.20 TU

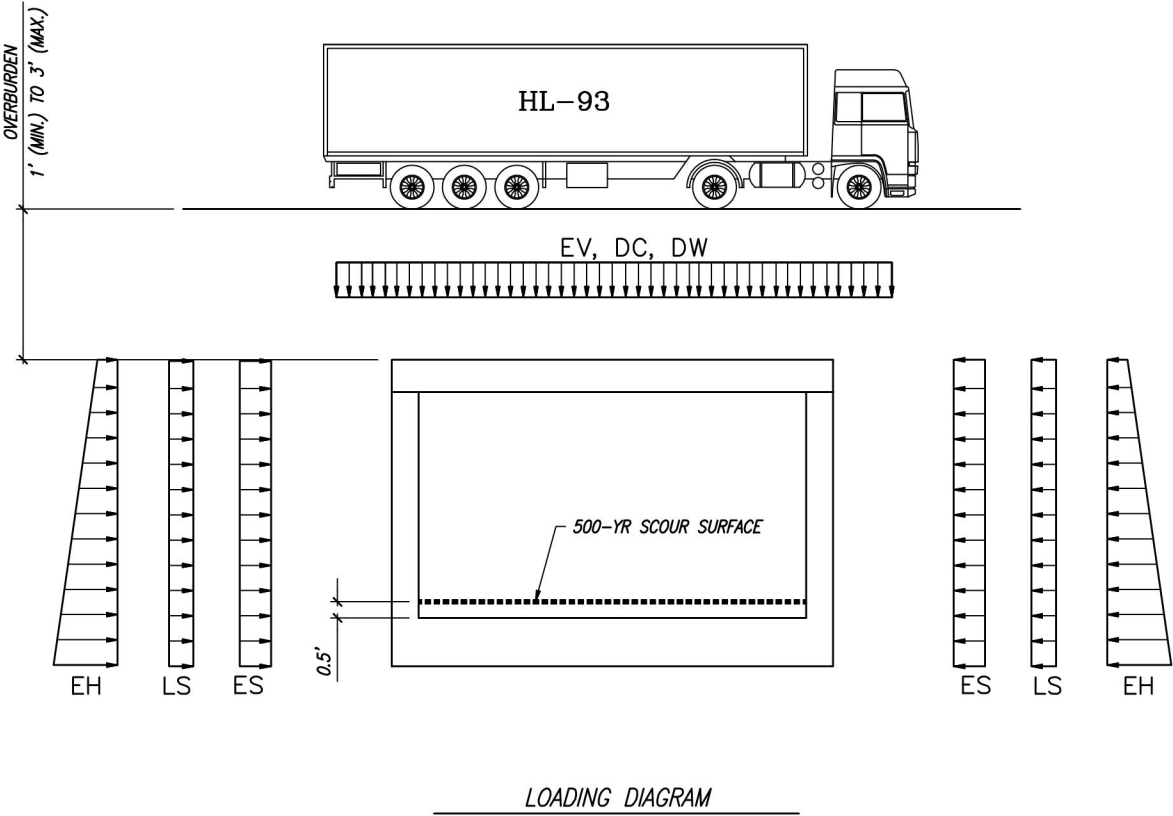
EXTREME II = 1.00 DC + 1.00 DW + 1.00 EH + 1.00 EV + 1.00 ES + 1.00 LS + γ_{EQ} L

- DC = WEIGHT OF SUPERSTRUCTURE
- DW = WEIGHT OF WEARING SURFACE
- EH = EARTH PRESSURE
- EV = VERTICAL EARTH PRESSURE
- ES = EARTH SURCHARGE
- LS = LIVE LOAD SURCHARGE
- L+I = LIVE LOAD PLUS IMPACT

γ_p FOR DC = 1.25 MAX./0.90 MIN.
 γ_p FOR DW = 1.50 MAX./0.65 MIN.
 γ_{EQ} = 0.00

- ϕ = 1.00 FOR FLEXURE
- ϕ = 0.90 FOR SHEAR

Summary of Geotechnical Values*	
Bearing Resistance	PSF
Nominal	6,000
Service Limit State	3,500
Lateral Earth Pressures	PCF
Active (level backslope)	32
Active (2:1 backslope)	47
At-Rest	51
Passive	480
*See project geotechnical report for complete subsurface investigation results, soil design values and resistance factors	



Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318

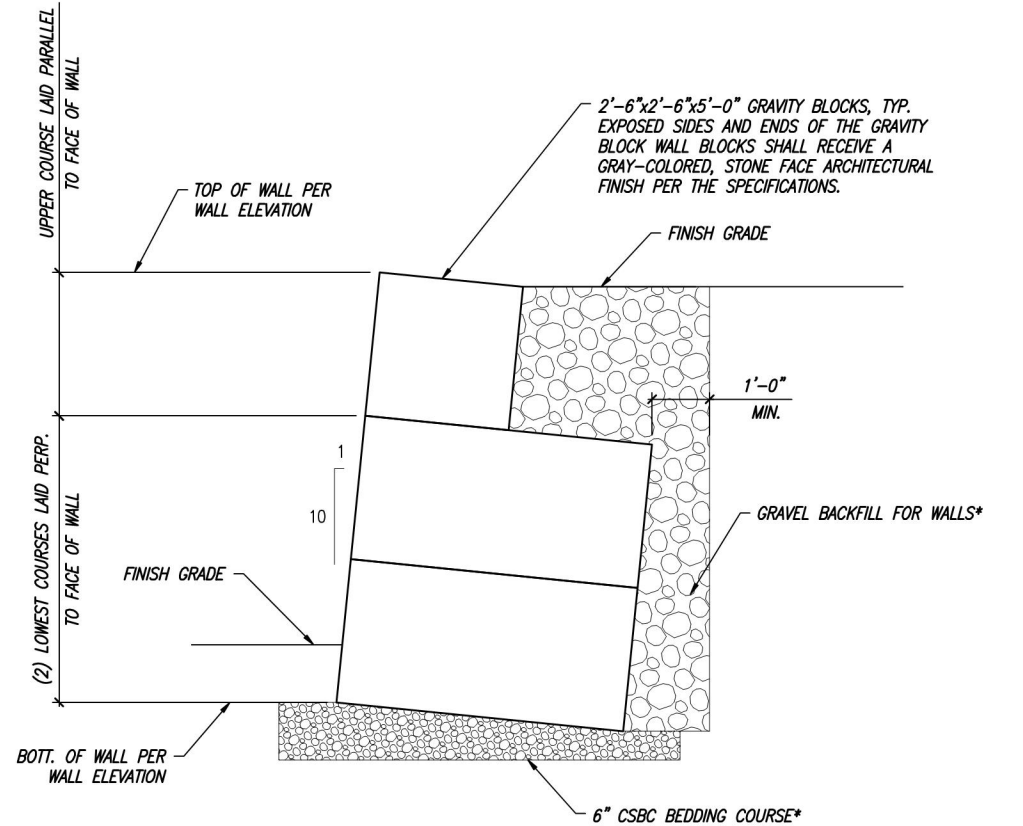
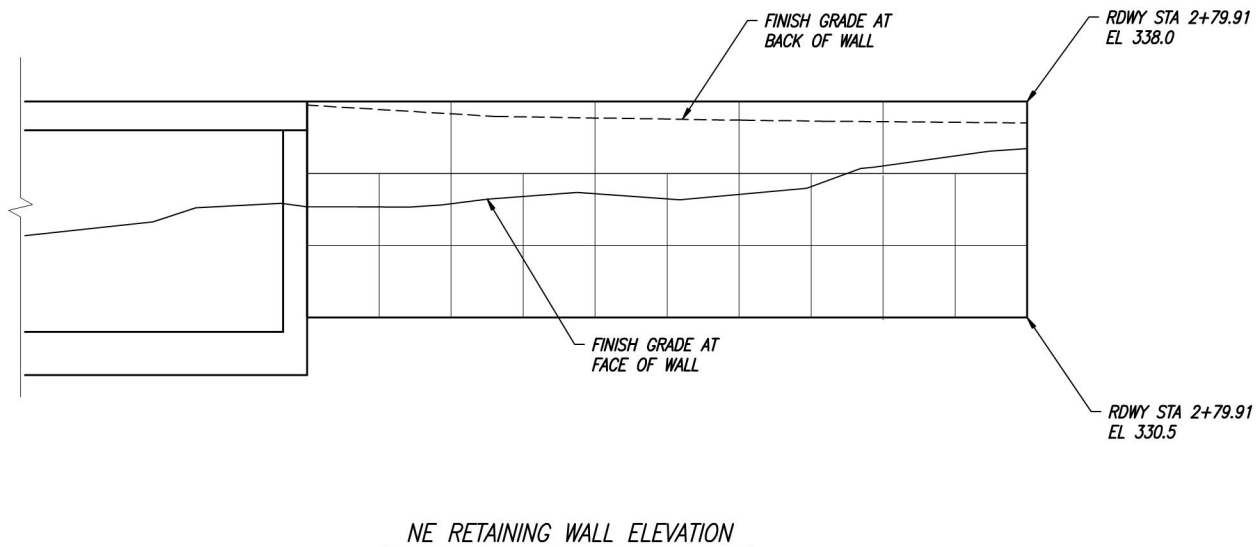
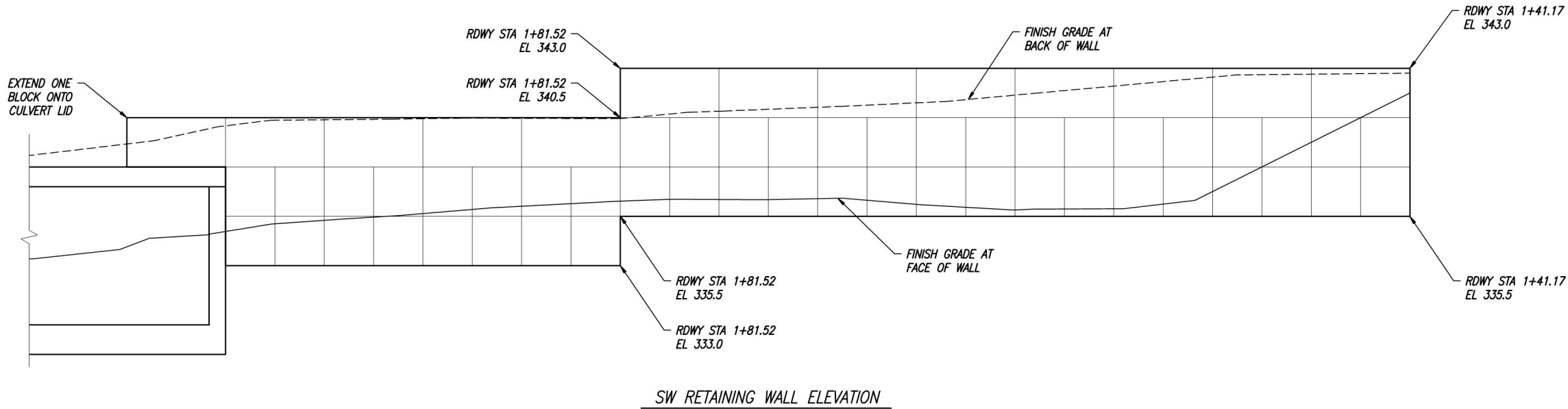


NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
CULVERT LOADING DIAGRAM - GLR

DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER	J.S. Soward
ISSUED:	12/22/2023

SHEET
17
OF
26
SHEETS
SEI REF NO.
A19159.00

Plotted: Dec 22, 2023 -- 15:12 JessicaS B:\19Files\A19159.00 Naylors Creek Culvert Replacements\Combined Drawings\Foundations_GLR.dwg Layout Name: 18 Retaining Wall Details xrefs: titlesht



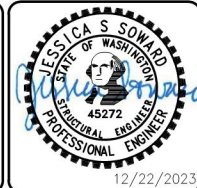
* - CSBC BEDDING COURSE AND GRAVEL BACKFILL FOR WALLS TO BE INCLUDED IN THE UNIT PRICE FOR 'GRAVITY BLOCK RETAINING WALL'.

Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



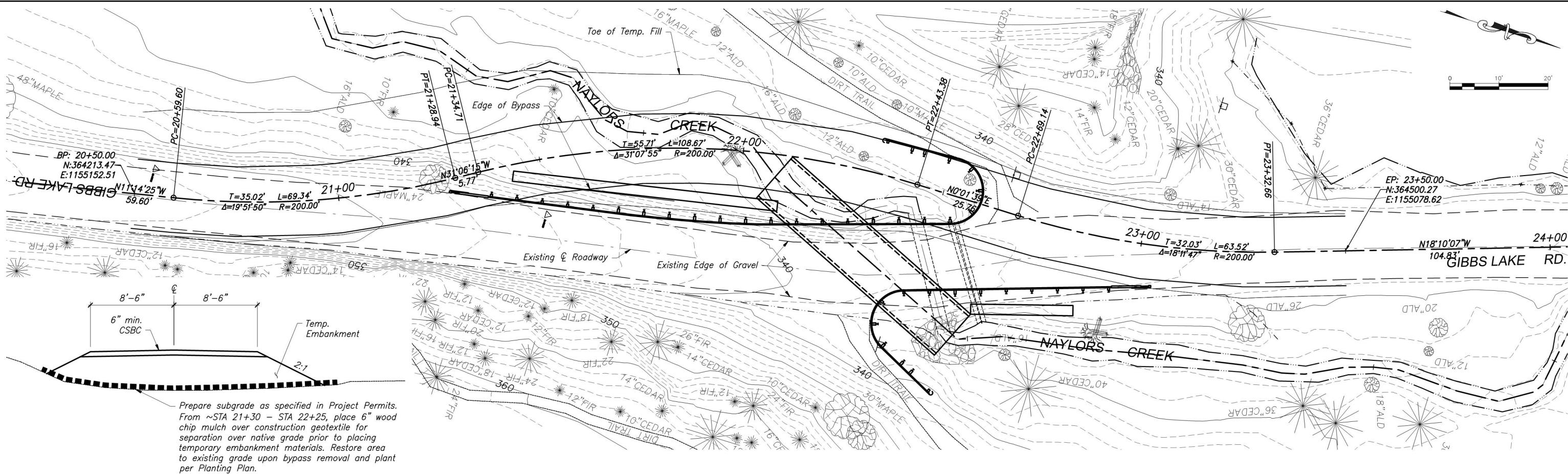
SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318



NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
RETAINING WALL DETAILS - GLR

DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER	J.S. Soward
ISSUED:	12/22/2023

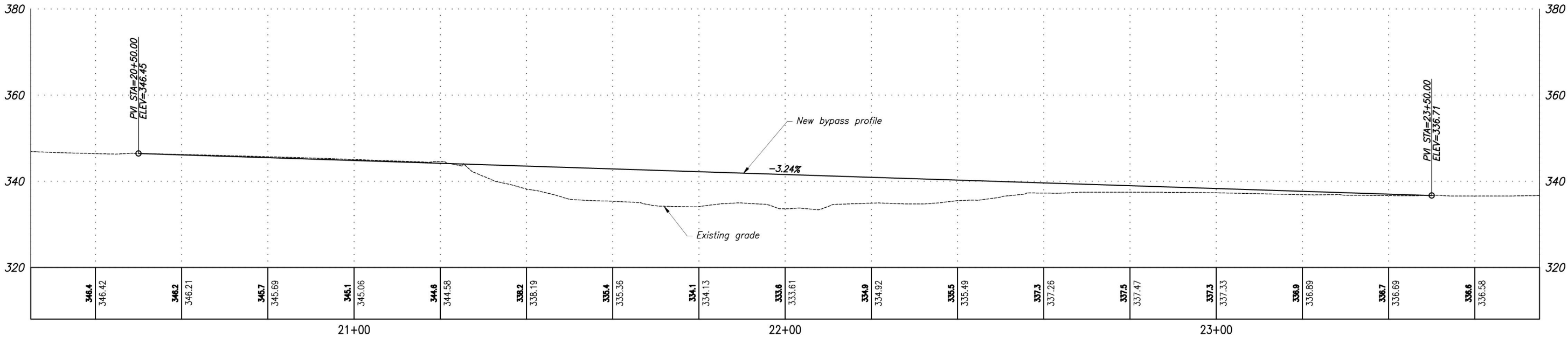
SHEET
18
OF
26
SHEETS
SEI REF NO.
A19159.00



BYPASS SECTION

BYPASS PLAN

Note: Install (2) upstream culvert units and gravity block wall before bypass road construction, or after bypass road removal, as determined by Contractor's construction sequence.



BYPASS PROFILE

Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



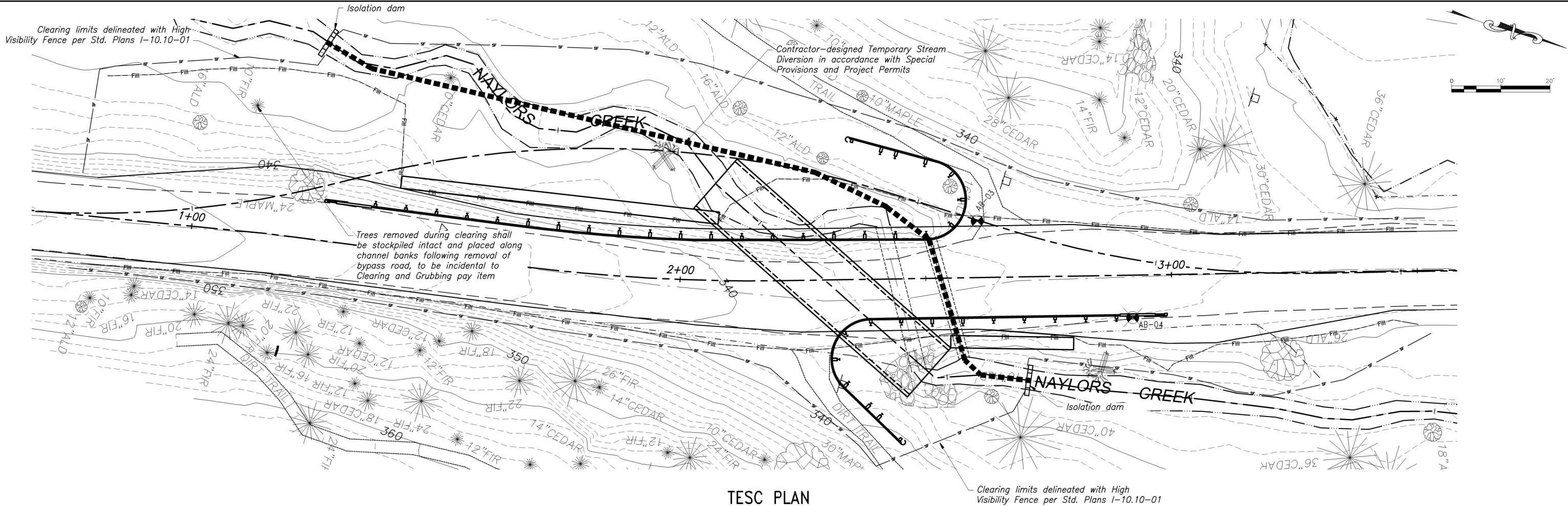
SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318



NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
BYPASS ROAD PLAN & PROFILE - GLR

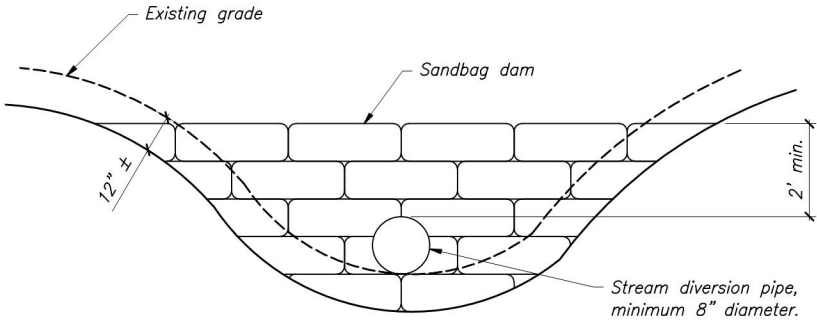
DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER	J.S. Soward
ISSUED:	12/22/2023

SHEET
19
OF
26
SHEETS
SEI REF NO.
A19159.00



GENERAL NOTES

- THE CONTRACTOR SHALL DELINEATE THE CLEARING LIMITS WITH HIGH VISIBILITY FENCE PRIOR TO THE START OF CONSTRUCTION. THE FENCING SHALL BE MAINTAINED FOR THE DURATION OF CONSTRUCTION. NO DISTURBANCE WILL BE PERMITTED OUTSIDE THE CLEARING LIMITS. DISTURBANCE TO EXISTING VEGETATION SHALL BE MINIMIZED TO THE EXTENT PRACTICAL.
- ALL ACTIVE WORK AREAS SHALL BE DEWATERED BY APPROVED METHODS PRIOR TO BEGINNING WORK IN THAT AREA. PRIOR TO DEWATERING THE WORK AREAS, THE STREAM SHALL BE ISOLATED AND DEFISHED IN ACCORDANCE WITH PROJECT PERMIT REQUIREMENTS. WATER FROM DEWATERING OPERATIONS AND RUNOFF FROM DISTURBED AREAS SHALL NOT BE ALLOWED TO ENTER THE STREAM UNTIL TURBIDITY HAS BEEN REDUCED TO ACCEPTABLE LEVELS. ENERGY DISSIPATION SHALL BE PROVIDED AT THE OUTFALL OF THE BYPASS SYSTEM TO PREVENT LOCALIZED SCOURING OF THE BED AND BANKS.
- TEMPORARY EROSION CONTROL MEASURES SHALL BE IN PLACE AT ALL DISTURBED AREAS AT THE END OF EACH WORK DAY. THE IMPLEMENTATION OF THE APPROVED TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) PLAN AND THE CONSTRUCTION, MAINTENANCE, AND UPGRADING OF THESE FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND VEGETATION IS ESTABLISHED, AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL REMOVE ALL TESC MEASURES UPON COMPLETION OF THE PROJECT.
- MATERIAL STOCKPILES SHALL BE STABILIZED AND PROTECTED WITH SEDIMENT-TRAPPING MEASURES. SOIL EXPOSURE SHALL BE MINIMIZED THROUGH THE USE OF GROUND COVER AND STABILIZATION BMP'S. EXPOSED DUST-PRODUCING SURFACES SHALL BE SPRINKLED DAILY UNTIL WET WHILE AVOIDING RUNOFF PRODUCTION. PAVED STREETS SHALL BE SWEEPED DAILY FOLLOWING CONSTRUCTION ACTIVITIES.
- THE TESC MEASURES MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE. THE TESC FACILITIES SHALL BE INSPECTED DAILY AND MAINTAINED OR AUGMENTED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.



CHANNEL ISOLATION DAM

Sandbags to be filled with clean stream gravel with waterproof sheeting covering the upstream side of the sandbags to prevent leaks.

Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



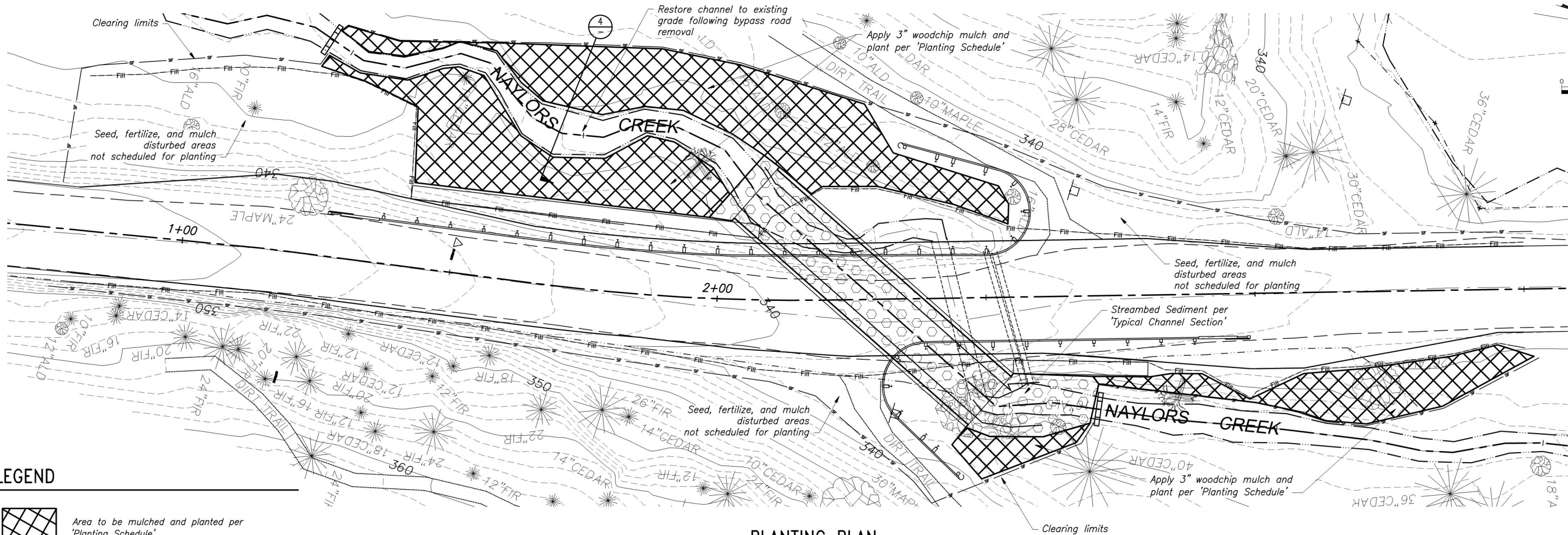
SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318



NAYLORS CREEK AT WEST VALLEY ROAD & GIBBS LAKE ROAD CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA	
CONCEPTUAL TESC PLAN - GLR	

DESIGN TEAM	
DESIGNED BY:	J.S. Soward
CHECKED BY:	C.B. Kocan
PRJ. DRAFTER	J.S. Soward
ISSUED:	12/22/2023

SHEET
20
OF
26
SHEETS
SEI REF NO.
A19159.00



LEGEND



Area to be mulched and planted per 'Planting Schedule'



Area to be covered with Streambed Material per 'Typical Channel Section'

PLANTING PLAN

Remove temporary embankment, stream diversion, wood chip mulch, and construction geotextile to native grade

Temporary bypass road

Mulch and planting per Plan

Existing grade

CHANNEL RESTORATION DETAIL

4

PLANTING SCHEDULE					
STRATUM	COMMON NAME	LATIN NAME	FORM ^{1,2}	SPACING (INCHES)	QUANTITY (2,550 SF)
TREE	RED ALDER	<i>Alnus rubra</i>	CONTAINER-GROWN	30	40
	WESTERN REDCEDAR	<i>Thuja plicata</i>	CONTAINER-GROWN	30	40
	BIGLEAF MAPLE	<i>Acer macrophyllum</i>	CONTAINER-GROWN	30	40
	DOUGLAS FIR	<i>Pseudotsuga menziesii</i>	CONTAINER-GROWN	30	40
	HOOKEER WILLOW	<i>Salix hookeriana</i>	LIVE STAKES	30	40
	PACIFIC WILLOW	<i>Salix lucida</i> var. <i>lasianдра</i>	LIVE STAKES	30	40
SHRUB	PACIFIC NINEBARK	<i>Physocarpus capitatus</i>	CONTAINER-GROWN	18	115
	SALMONBERRY	<i>Rubus spectabilis</i>	CONTAINER-GROWN	18	115
	VINE MAPLE	<i>Acer circinatum</i>	CONTAINER-GROWN	18	115
	BEAKED HAZELNUT	<i>Corylus cornuta</i>	CONTAINER-GROWN	18	115
	INDIAN PLUM	<i>Oemleria cerasiformis</i>	CONTAINER-GROWN	18	115
GROUND-COVER	SWORD FERN	<i>Polystichum munitum</i>	CONTAINER-GROWN	18	115
	THIMBLEBERRY	<i>Rubus parviflorus</i>	CONTAINER-GROWN	18	115

1. CONTAINER-GROWN PLANT MATERIAL STOCK SHOULD BE AT LEAST 2-GALLON SIZE FOR TREES AND AT LEAST 1-GALLON SIZE FOR SHRUBS AND GROUND-COVER SPECIES; WILLOW LIVE STAKES SHOULD BE 36 TO 48 INCHES IN LENGTH.
2. BARE ROOT PLANT MATERIAL STOCK CAN BE SUBSTITUTED FOR CONTAINER-GROWN STOCK, BUT INCREASED MORTALITY AND SUBSEQUENT PLANT REPLACEMENT COSTS SHOULD BE ANTICIPATED AND CONSIDERED.

Rev.	Date	By	Revision

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
-
COUNTY PROJECT #18020592
FEDERAL AID #PROTECT-2016(029)



SARGENT
SARGENT ENGINEERS, INC.
320 Ronlee Lane NW • Olympia, WA 98502
Tel. 360 867-9284 • Fax 360 867-9318

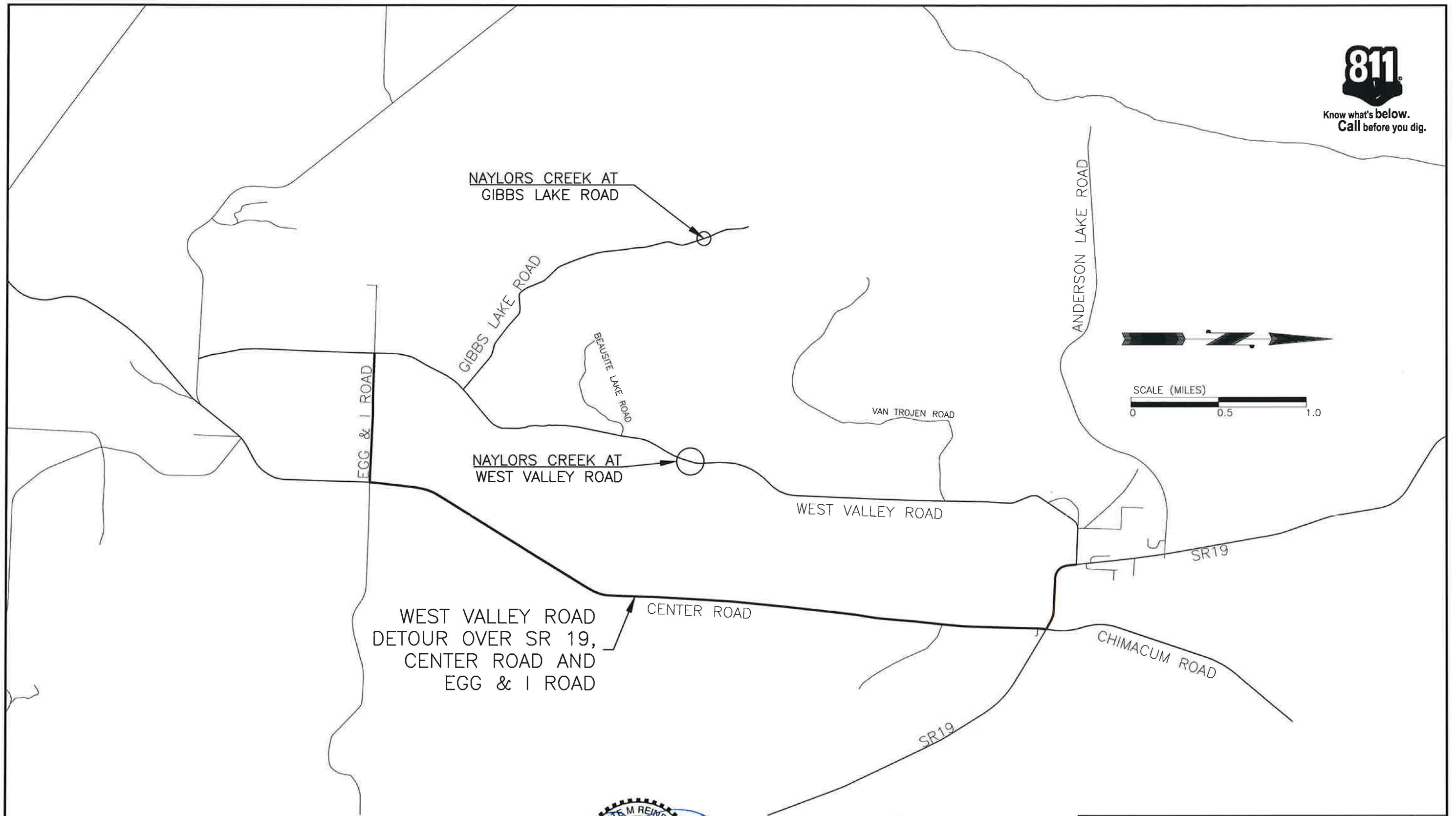


NAYLORS CREEK AT
WEST VALLEY ROAD & GIBBS LAKE ROAD
CULVERT REPLACEMENTS ~ JEFFERSON COUNTY, WA
PLANTING PLAN - GLR

DESIGN TEAM		SHEET
DESIGNED BY:	J.S. Soward	21
CHECKED BY:	C.B. Kocan	OF
PRJ. DRAFTER	J.S. Soward	26
		SHEETS
ISSUED:	12/22/2023	SEI REF NO.
		A19159.00



Know what's below.
Call before you dig.



WEST VALLEY ROAD
DETOUR OVER SR 19,
CENTER ROAD AND
EGG & I ROAD

DESIGNED BY: BRUCE D PATTERSON	9/5/23			REG.NO.	STATE	FED.AID PROJ. NO.
DRAFTED BY: BRUCE D PATTERSON	9/5/23			BDP	10	WASH
CHECKED BY:				BDP		
					PROJECT NO.	PROTECT-2016(029)
					18020592	
					CONTRACT NO.	
	DATE	DATE	REVISION	BY		



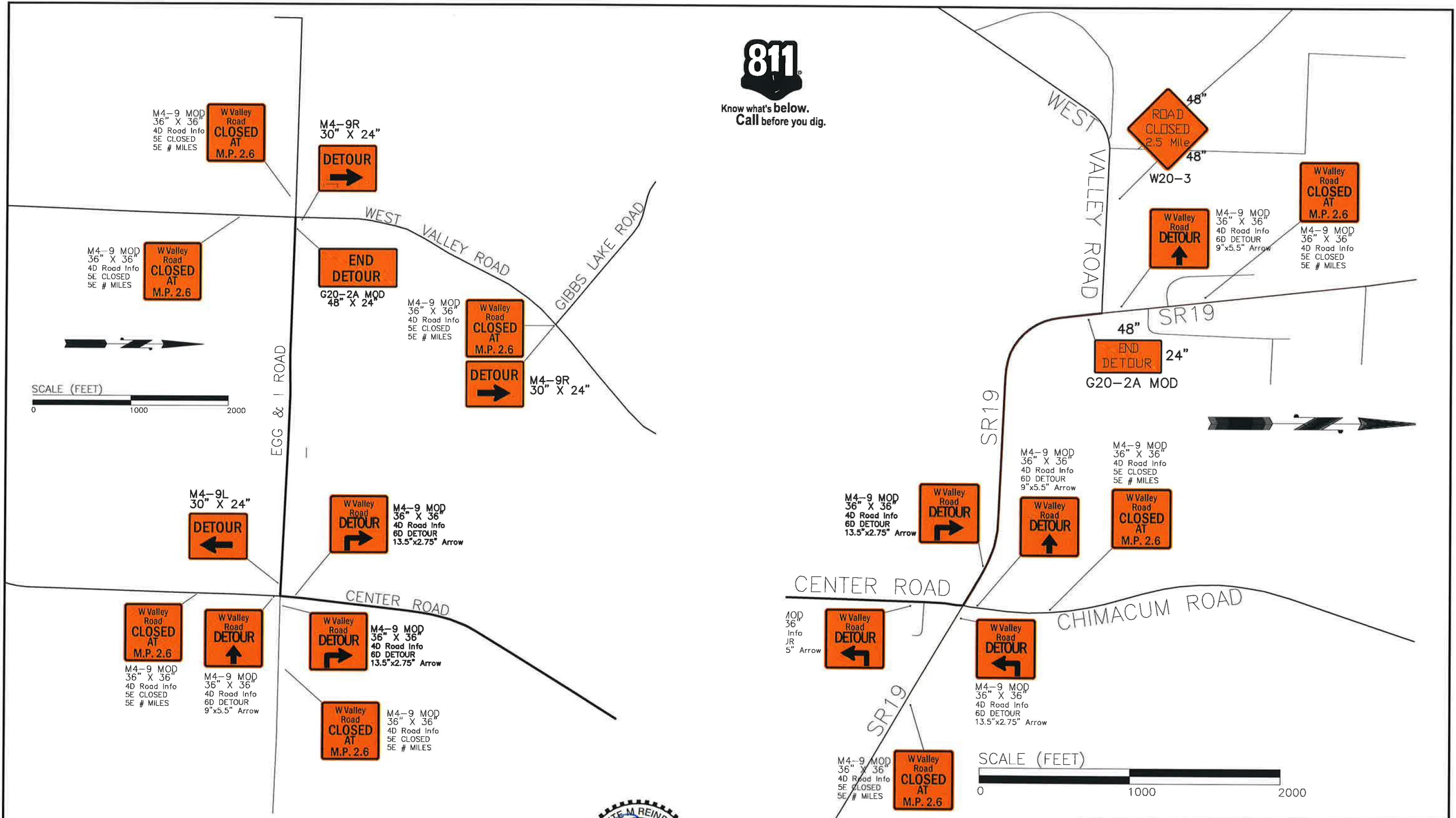
JEFFERSON COUNTY ENGINEER

12.28.23
APPROVAL DATE



JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS

NAYLORS CREEK AT WEST VALLEY ROAD AND GIBBS LAKE ROAD	TC1
COUNTY PROJECT NO. 18020592 JEFFERSON COUNTY, WASHINGTON	SHEET 22 OF 26 SHEETS
WEST VALLEY ROAD - TRAFFIC CONTROL 1	



				REG.NO.	STATE	FED.AID
DESIGNED BY:	BRUCE D. PATTERSON	6/4/23		BDP	10	WASH
DRAFTED BY:	BRUCE D. PATTERSON	6/4/23		BDP		
CHECKED BY:						
				PROJECT NO.	PROTECT-2016(029)	
				18020592		
				CONTRACT NO.		
	DATE	DATE	REVISION	BY		



12.26.23
APPROVAL DATE



JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS

NAYLORS CREEK AT WEST VALLEY ROAD
AND GIBBS LAKE ROAD

COUNTY PROJECT NO. 18020592
JEFFERSON COUNTY, WASHINGTON

WEST VALLEY ROAD – TRAFFIC CONTROL 2

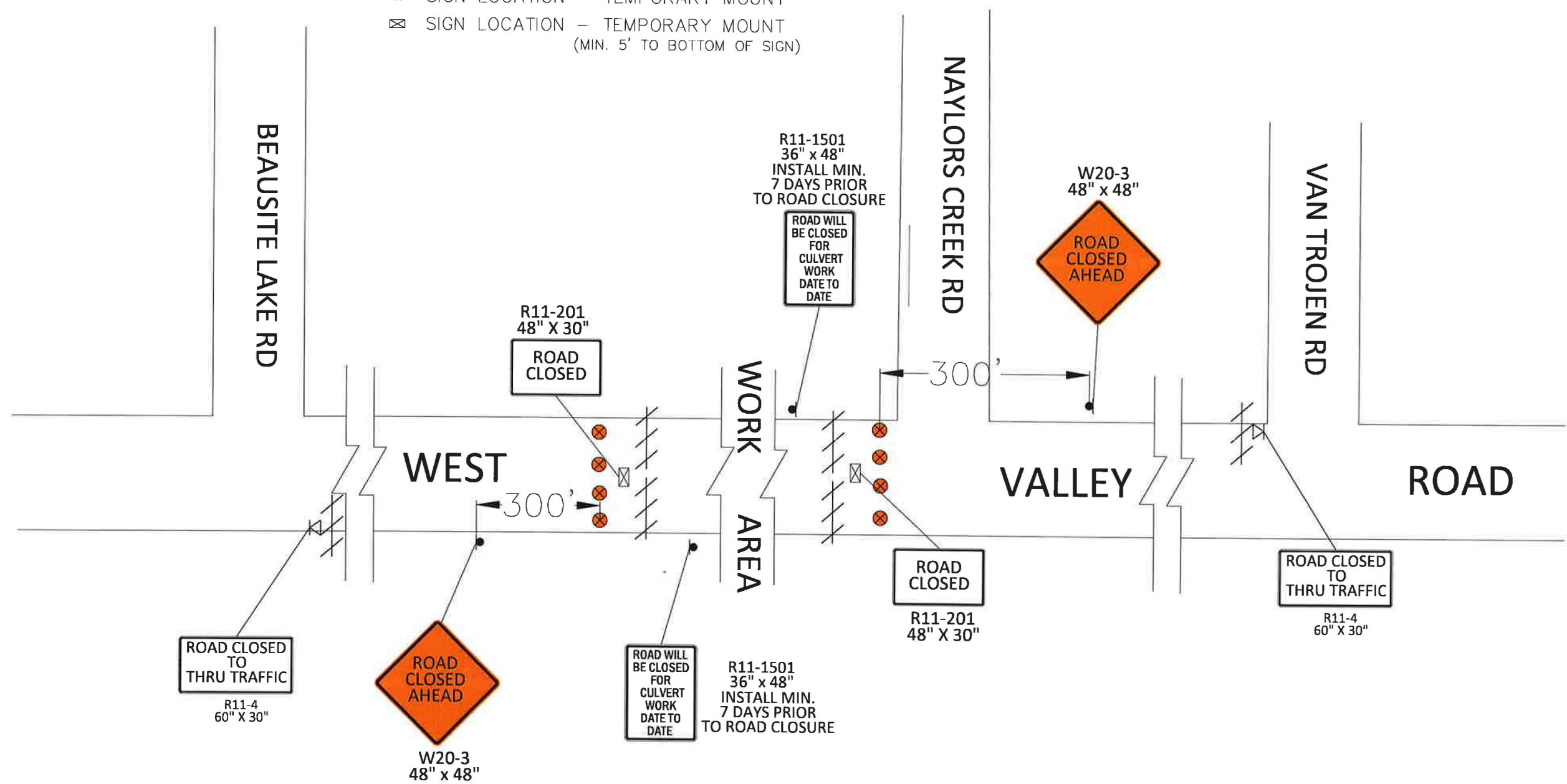
TC2

SHEET
23
OF
26
SHEETS

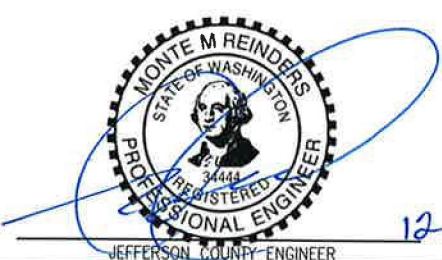


LEGEND

- /// TYPE 3 BARRICADE
- SIGN LOCATION – POST MOUNT
- ⊗ TRAFFIC SAFETY DRUM
- ⋈ SIGN LOCATION – TEMPORARY MOUNT
- ⊠ SIGN LOCATION – TEMPORARY MOUNT (MIN. 5' TO BOTTOM OF SIGN)



				REG. NO.	STATE	FED. AID PROJ. NO.
DESIGNED BY:	BRUCE D. PATTERSON	6/4/23		BDP	10 WASH	
DRAFTED BY:	BRUCE D. PATTERSON	6/4/23		BDP		
CHECKED BY:						
				PROJECT NO.	PROTECT-2016(029)	
				18020592		
				CONTRACT NO.		
	DATE	DATE	REVISION	BY		



JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS

NAYLORS CREEK AT WEST VALLEY ROAD AND GIBBS LAKE ROAD	TC3
COUNTY PROJECT NO. 18020592 JEFFERSON COUNTY, WASHINGTON	
WEST VALLEY ROAD TRAFFIC CONTROL 3	

SHEET
24
OF
26
SHEETS



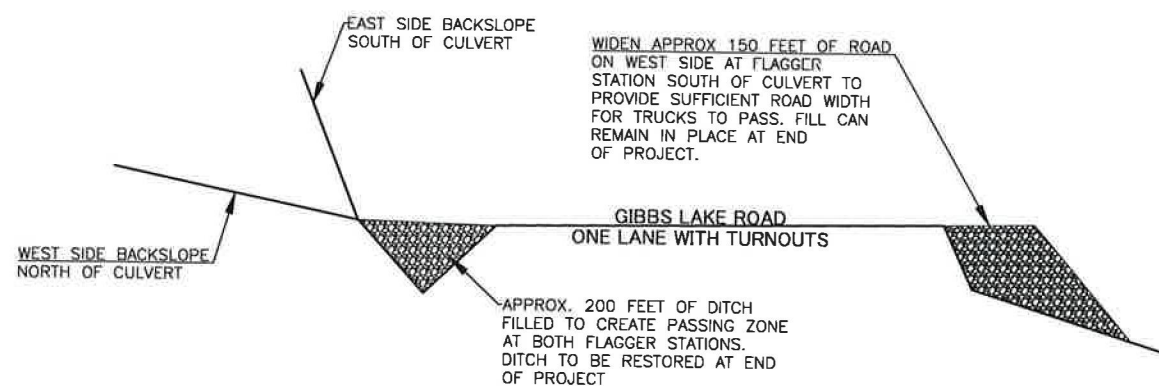
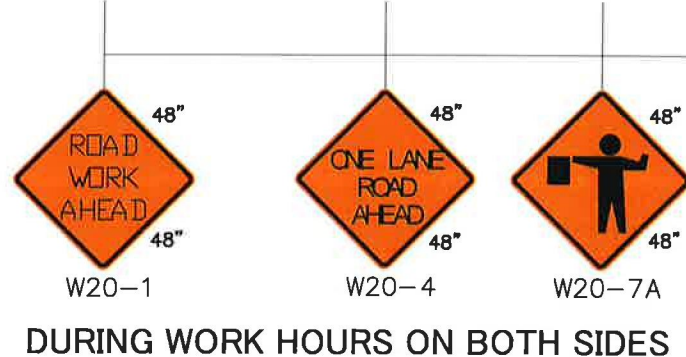
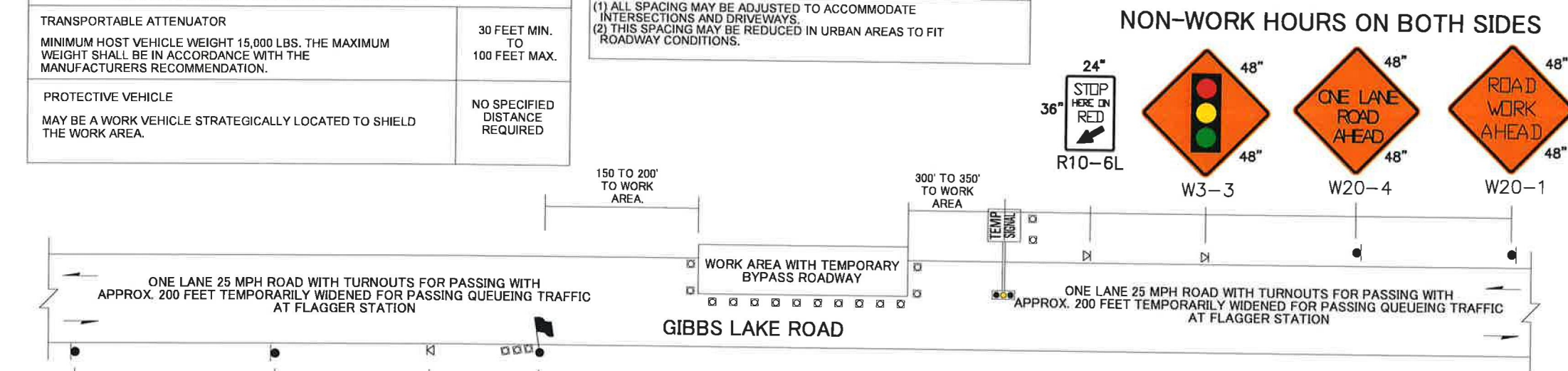
Know what's below.
Call before you dig.

BUFFER DATA										
LONGITUDINAL BUFFER SPACE = B										
SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (FEET)	155	200	250	305	360	425	495	570	645	-
BUFFER VEHICLE ROLL AHEAD DISTANCE = B										
TRANSPORTABLE ATTENUATOR MINIMUM HOST VEHICLE WEIGHT 15,000 LBS. THE MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION.									30 FEET MIN. TO 100 FEET MAX.	
PROTECTIVE VEHICLE MAY BE A WORK VEHICLE STRATEGICALLY LOCATED TO SHIELD THE WORK AREA.									NO SPECIFIED DISTANCE REQUIRED	

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' ?
RURAL ROADS	45 / 55 MPH	500' ?
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' ?
RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS	25 / 30 MPH	200' ? (2)
URBAN STREETS	25 MPH OR LESS	100' ? (2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS.
(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

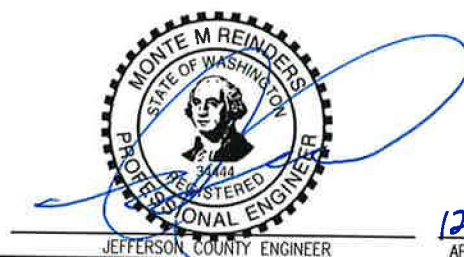
CHANNELIZATION DEVICE SPACING (FEET)		
MPH	TAPER	TANGENT
50/65	10 TO 20	80
35/45	10 TO 20	60
25/30	10 TO 20	40



LEGEND

- TYPE 3 BARRICADE
- SIGN LOCATION - POST MOUNT
- TRAFFIC SAFETY DRUM
- SIGN LOCATION - TEMPORARY MOUNT
- SIGN LOCATION - TEMPORARY MOUNT (MIN. 5' TO BOTTOM OF SIGN)
- PORTABLE TRAFFIC SIGNAL
- FLAGGING STATION
- CHANNELIZATION DEVICE

DESIGNED BY:	BRUCE D PATTERSON	9/5/23	REG. NO.	10	STATE	WASH	FED. AID PROJ. NO.	
DRAFTED BY:	BRUCE D PATTERSON	9/5/23	PROJECT NO.	18020592	CONTRACT NO.	PROTECT-2016(029)		
CHECKED BY:			DATE		DATE		REVISION	BY



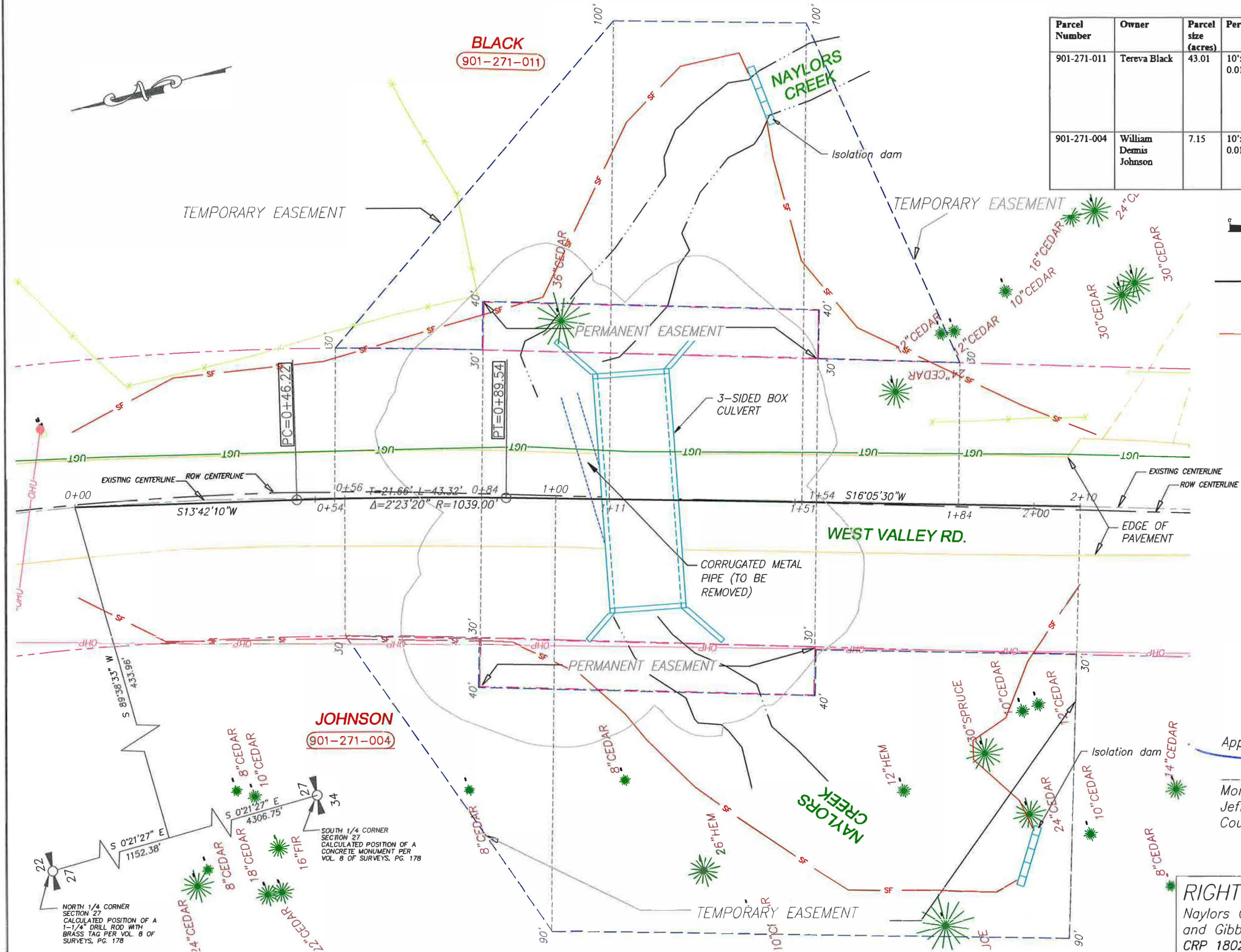
12.20.23
APPROVAL DATE



JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS

NAYLORS CREEK AT WEST VALLEY ROAD AND GIBBS LAKE ROAD		TC
COUNTY PROJECT NO. 18020592 JEFFERSON COUNTY, WASHINGTON		
GIBBS LAKE ROAD ROAD — TRAFFIC CONTROL 4		SHEET 25 OF 26

Parcel Number	Owner	Parcel size (acres)	Permanent Easement	Temporary Construction Easement	Remainder Area (acres)
901-271-011	Tereva Black	43.01	10'x70' = 700 sqft = 0.016 acres	(0.5x70'x57') + (40'x70') + (0.5x70'x33') = 5950sqft - 700 sqft = 5250 sqft = 0.121 acres	43.01
901-271-004	William Demis Johnson	7.15	10'x70' = 700 sqft = 0.016 acres	(0.5x60'x44') + (60'x110') = 7920 sqft - 700 sqft = 7220 sqft = 0.166 acres	7.15



CONSTRUCTION CENTERLINE

CLEARING LIMITS DELINEATED WITH HIGH VISIBILITY FENCE PER STD. PLANS 1-10.10-01

PERMANENT EASEMENT AREA

TEMPORARY EASEMENT AREA

MAXIMUM EXCAVATION AREA

OFFSETS FROM CENTERLINE



Approved/Date: 2.23
Monte Reinders
Jefferson County Public Works Director
County Engineer

RIGHT-OF-WAY PLAN
Naylor's Creek at West Valley Road
and Gibbs Lake Road
CRP 18020590

R-1