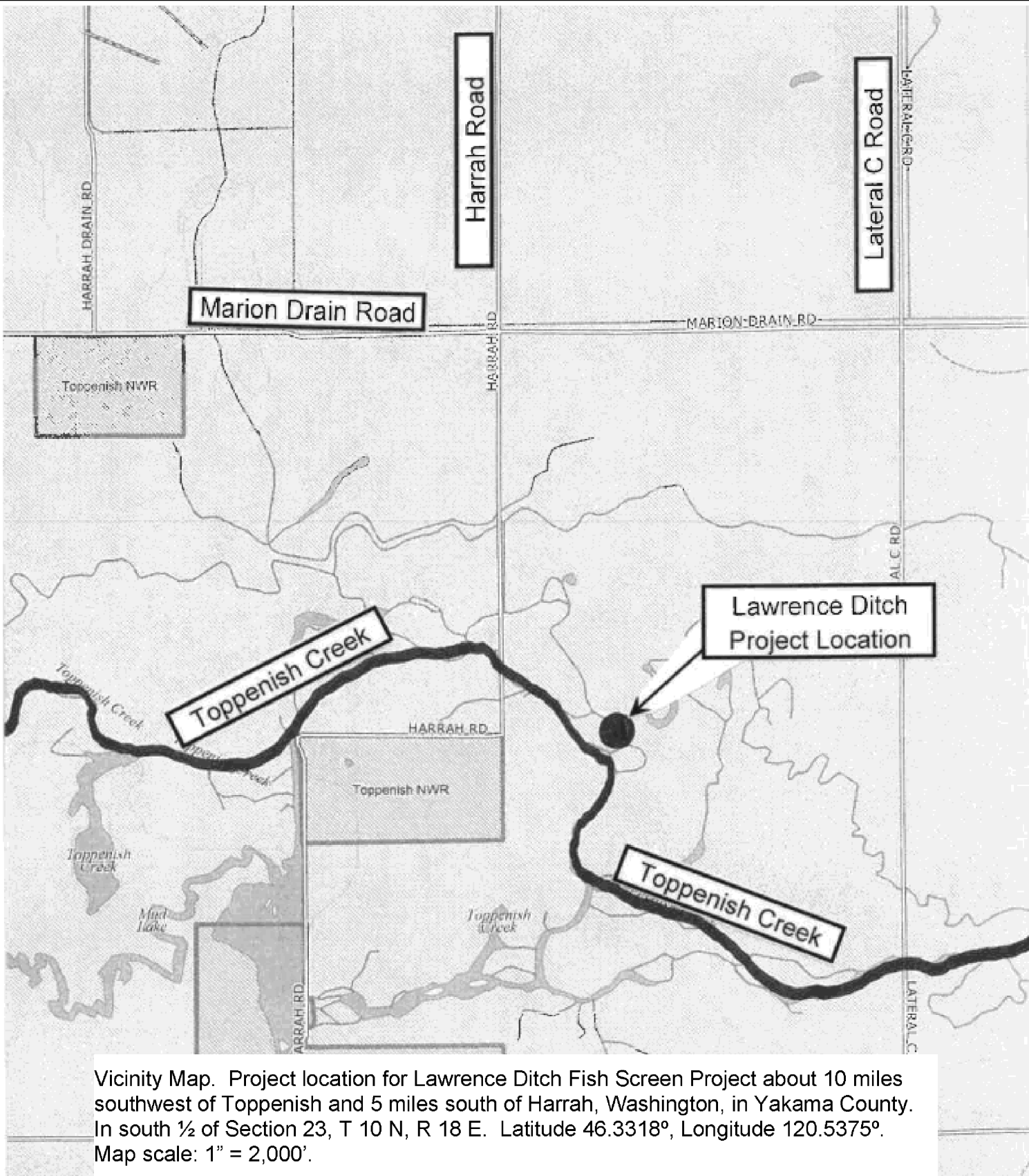




Lawrence Ditch Repair Project

Yakama Nation Fisheries
P.O. Box 151/401 Fort Road
Toppenish, WA 98948

Audrey Scott, Project Manager
509-790-8596 cell
scoa@yakamafish-nsn.gov

Drawing List

- C1 Project Location & Drawing List
- C2 Channel Repair Site Plan
- C3 Project Access & Preliminary Work
- C4 Wingwall Support Details
- C5 Channel Repair Sections
- C6 Basis-Of-Design & Project Quantities

- F1 Galvanized Steel Grating
- F2 Galvanized Steel Supports
- F3 Galvanized Steel Grating Installed

- S1 Reinforced Concrete Walls & Details

Summary of Fish Screen Repair Project

Substantial volumes of large rock will be placed around the Lawrence Ditch fish screen and bypass channel to restore the existing screen to full function, and also prevent additional washouts due to Toppenish Creek flooding. Small volumes of concrete will be poured under the sloped slabs of reinforced concrete wingwalls to prevent scour during peak flow events.

Two short reinforced concrete walls will be built along the screen structure centerline, then galvanized steel bar grating will be installed to cover most of the existing open screen structure area. Existing aluminum bar grating between the trashrack and damboard slots, aluminum grating downstream of slide gates, and aluminum grating for access to fish screen controls will remain as is.



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LAWRENCE DITCH REPAIR PROJECT
YAKAMA NATION

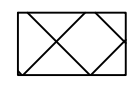
PROJECT LOCATION & DRAWING LIST



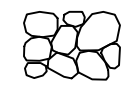
DATE	5/1/2026
DESIGNED	BT
DRAFTED	BT
DRAWING	C1

KEY FOR ROCK FILL AREAS:

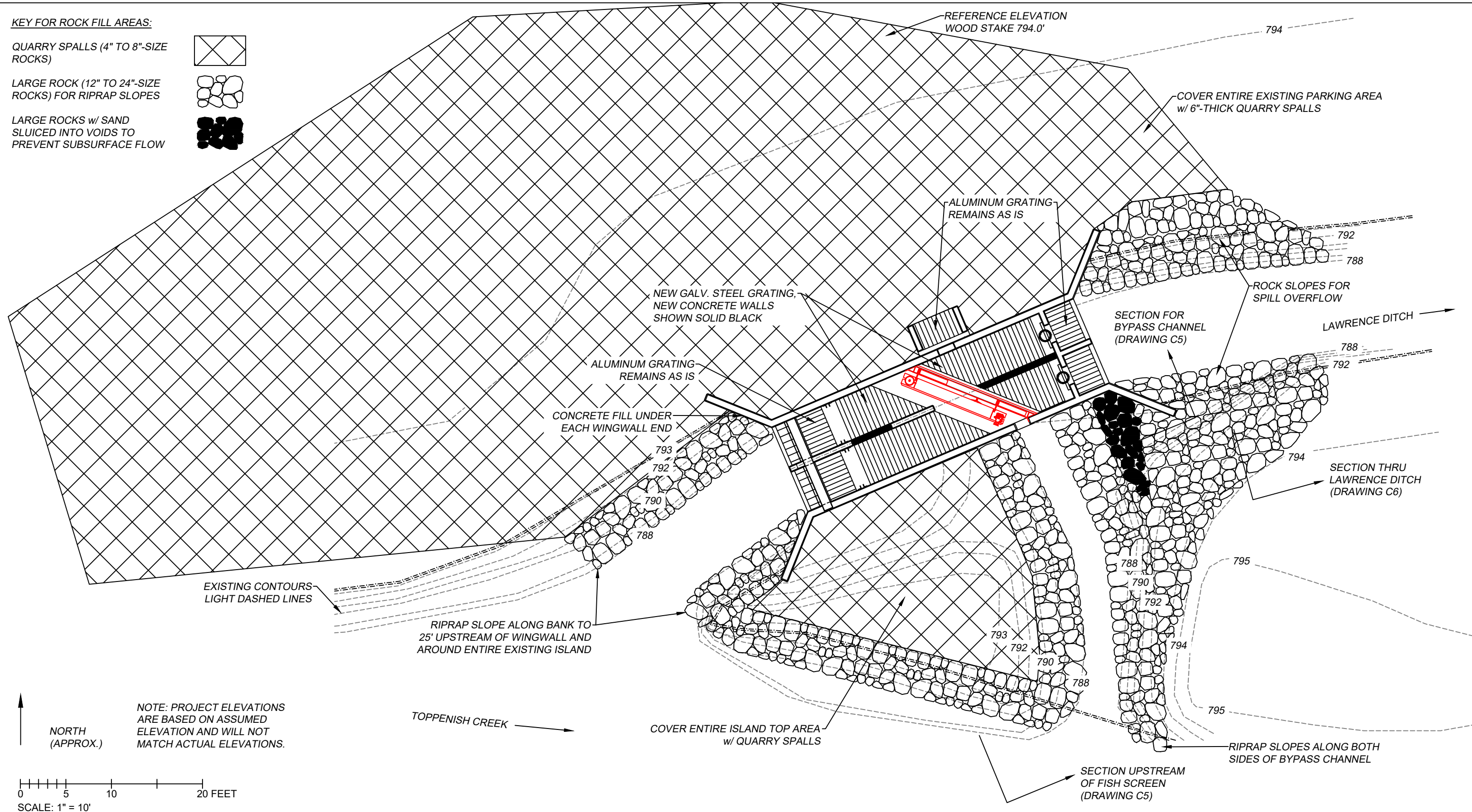
QUARRY SPALLS (4" TO 8"-SIZE ROCKS)



LARGE ROCK (12" TO 24"-SIZE ROCKS) FOR RIPRAP SLOPES

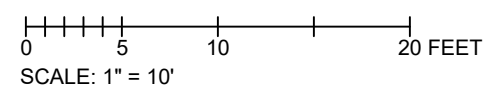


LARGE ROCKS w/ SAND SLUICED INTO VOIDS TO PREVENT SUBSURFACE FLOW



NORTH (APPROX.)

NOTE: PROJECT ELEVATIONS ARE BASED ON ASSUMED ELEVATION AND WILL NOT MATCH ACTUAL ELEVATIONS.

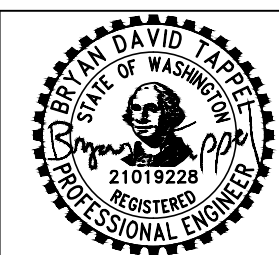


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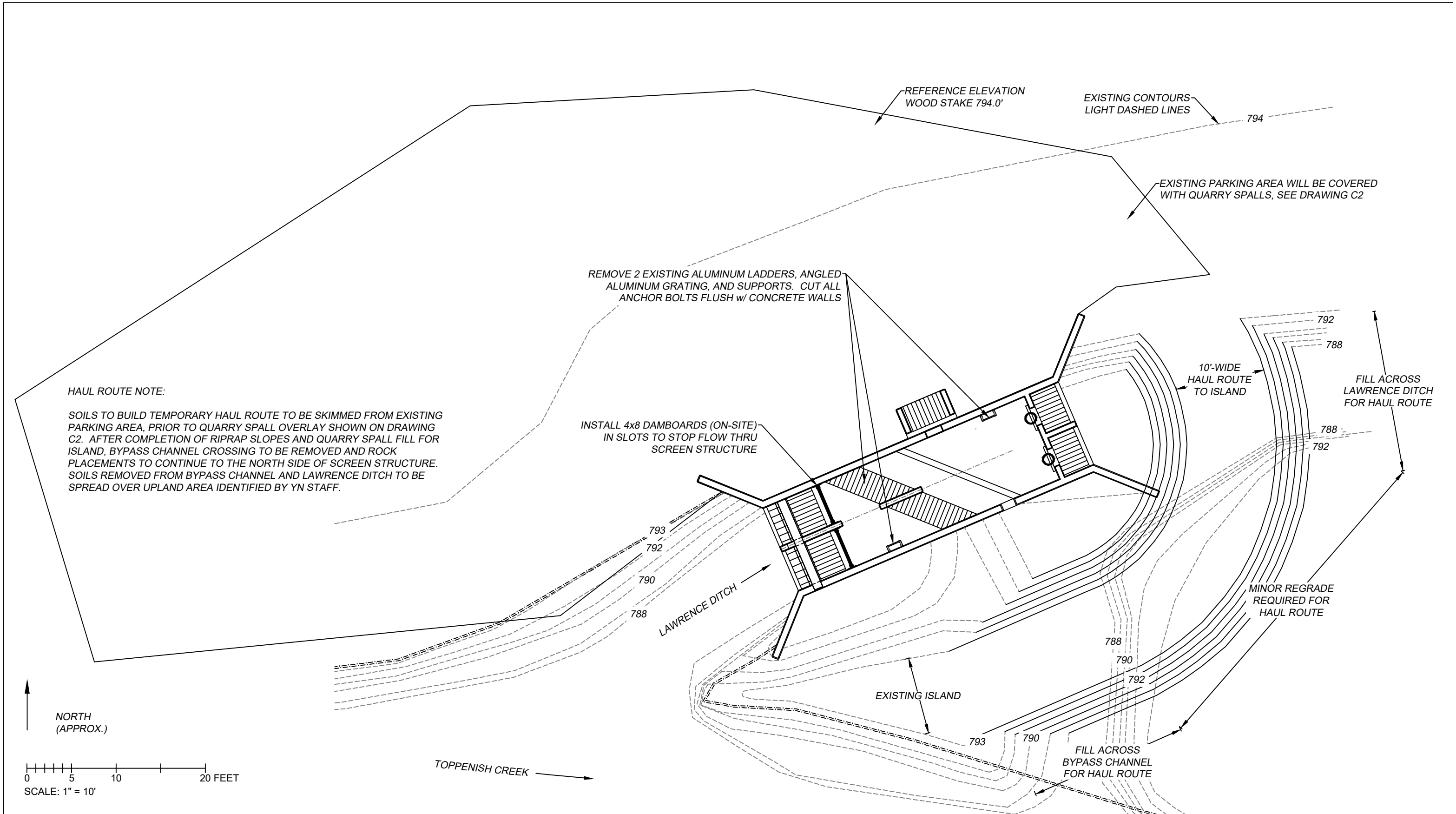
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LAWRENCE DITCH REPAIR PROJECT
YAKAMA NATION
CHANNEL REPAIR SITE PLAN



DATE	5/1/2026
DESIGNED	BT
DRAFTED	BT
DRAWING	C2





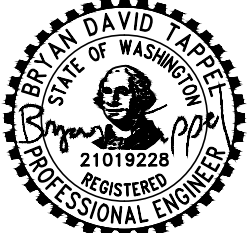
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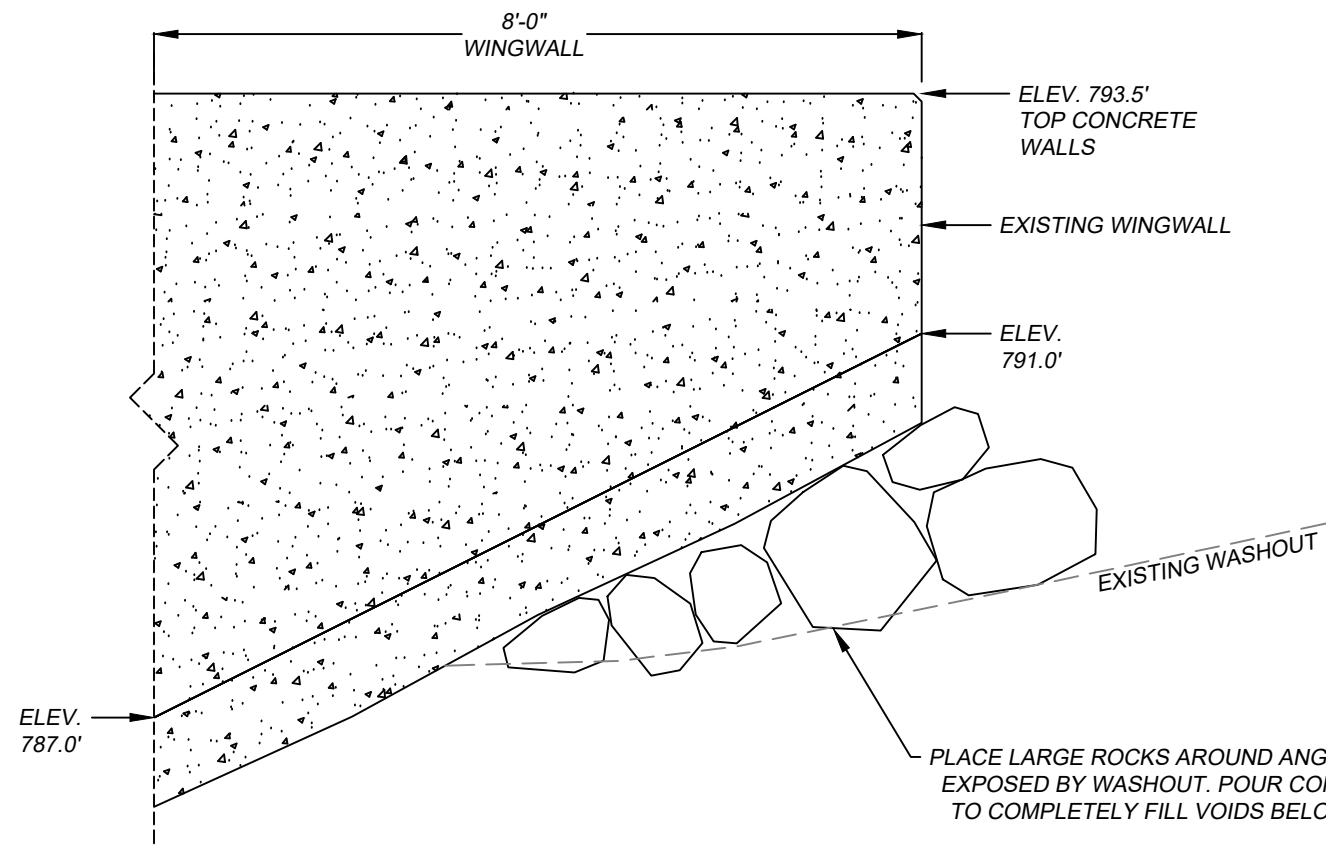
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LAWRENCE DITCH REPAIR PROJECT
YAKAMA NATION

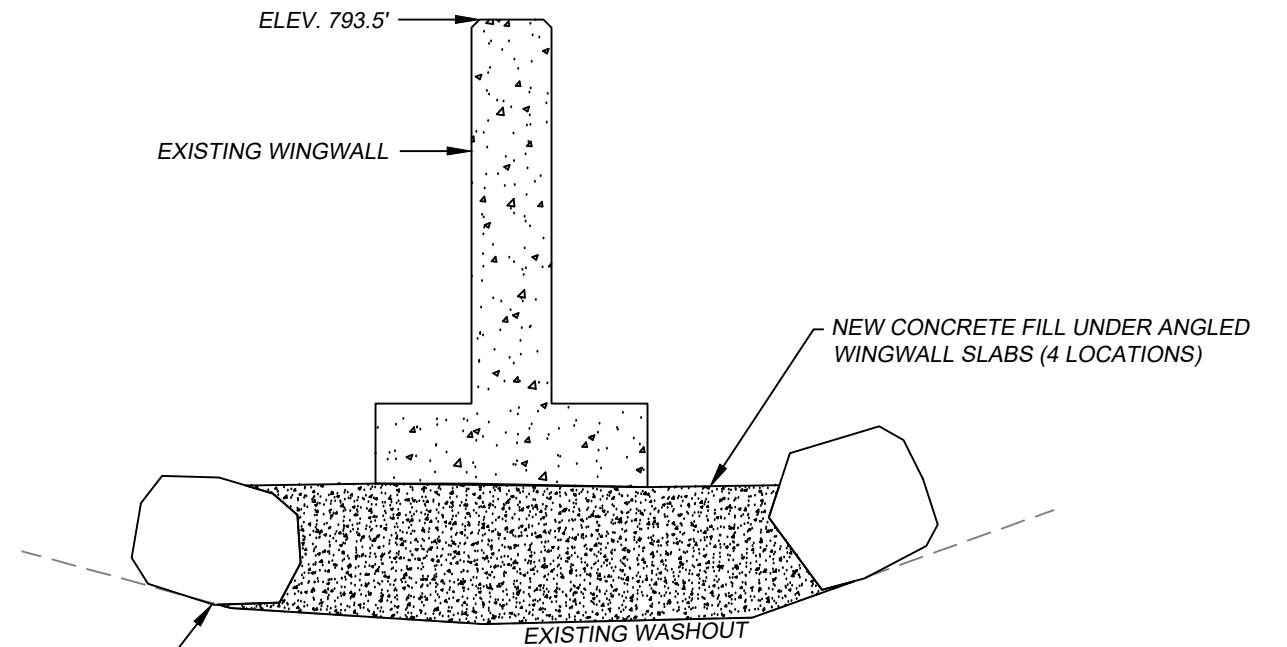
PROJECT ACCESS & PRELIMINARY WORK



DATE	5/1/2026
DESIGNED	BT
DRAFTED	BT
DRAWING	C3

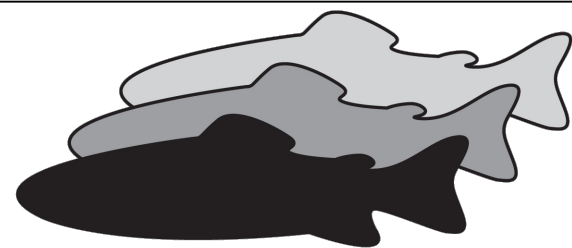


TYPICAL WINGWALL ELEVATION



WINGWALL SECTION

0 12 24 48 INCHES
SCALE: 1/2" = 1'-0"



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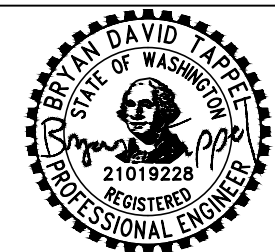
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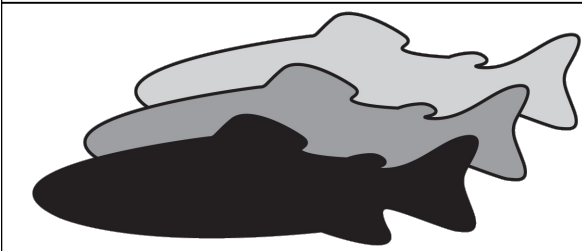
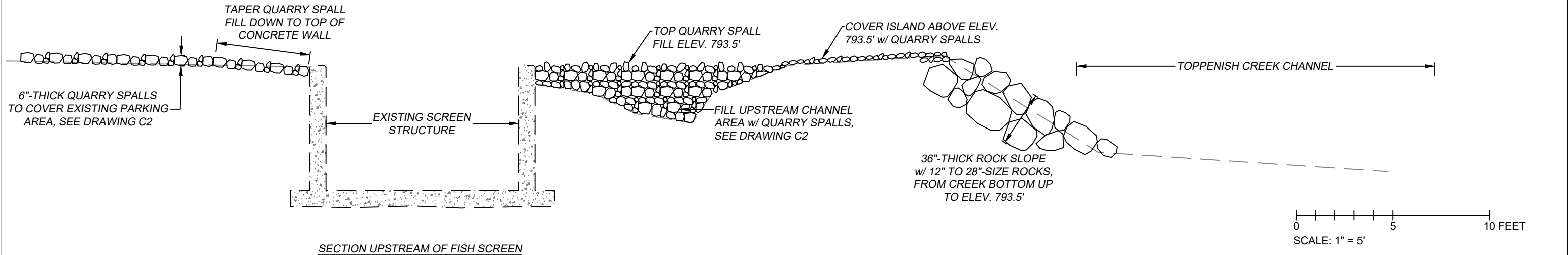
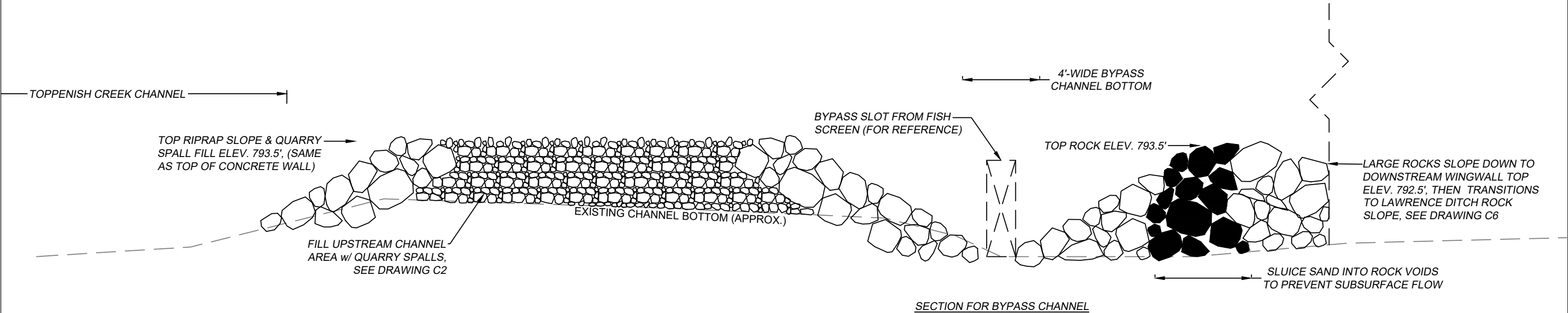
LAWRENCE DITCH REPAIR PROJECT

YAKAMA NATION

WINGWALL SUPPORT DETAILS



DATE	5/1/2026
DESIGNED	BT
DRAFTED	BT
DRAWING	C4

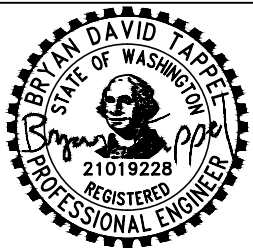


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LAWRENCE DITCH REPAIR PROJECT YAKAMA NATION CHANNEL REPAIR SECTIONS



DATE	5/1/2026
DESIGNED	BT
DRAFTED	BT
DRAWING	C5

Basis Of Design & Construction Sequence

Introduction

A minor flood in December 2025 carved a new channel from Toppenish Creek to Lawrence Ditch, along the south side of the recently completed Lawrence Ditch Fish Screen. Almost all channel erosion occurred thru soils that had been excavated for fish screen construction; undisturbed native soils near the fish screen were not eroded. The channel repair project shown with multiple drawings will fill eroded channel areas with rock to re-establish full operations of the Lawrence Ditch Fish Screen and bypass channel. Quarry spall and large rock fill will also prevent similar channel erosion during future floods, including floods that will exceed the December 2025 event.

Minor Improvements for Access Road

There are several soft soil sections of the existing access road that will need to be reinforced for project construction, for example concrete redi-mix truck. The Contractor shall supply and place 2" to 4"-size broken rock as needed for access road reinforcement. These same materials shall be spread over part of the parking area at the fish screen to cover a 12'-wide roadway over quarry spall fill, and to construct a hammerhead turnaround near the existing fish screen.

Build Haul Route to Island

The first phase of on-site project construction (Drawing C3) shows temporary fill to provide an equipment and haul route to the existing island south of the screen structure. These fill materials will be removed after reinforcement of the existing island, screen bypass channel and Lawrence Ditch banks downstream of the existing screen structure.

Fill Over Existing Parking Area

The next phase of project construction will be to import and spread 140 tons of Quarry Spalls (4" to 8"-size broken rock) to overlay the entire existing parking and staging area north of the Lawrence Ditch Fish Screen (see Drawing C2). Minor excavation will be required along the north wall of the screen structure to taper the quarry spall fill down to the top of the concrete wall, see Drawing C5.

Quarry Spall fill over the parking area will provide a durable access pad for screen maintenance as well as an excellent staging area for the subject repair project. Long-term, the Quarry Spall overlay combined with downstream rock slope to Lawrence Ditch will prevent possible future channel erosion along the north side of the screen.

Concrete Fill Under Wingwalls

Contractor to supply and place large rocks around each end of existing concrete wingwall slabs, to form semi-circular perimeters in which to pour concrete for additional support of sloped wingwall slabs. Class 3000 concrete to be poured into these small spaces up to the bottom of existing wingwall slabs; details are shown on Drawing C4.

Concrete Walls and Grating for Screen Structure

On-site damboards need to be inserted into the existing screen structure to stop water flow down Lawrence Ditch. Then, new concrete walls along the screen structure centerline can be formed up and poured prior to the rock and quarry spall fill operations. Grating support angles and the galvanized steel grating panels can be completed after sufficient cure of the new concrete walls.

Construction Quantities

Estimated construction quantities are listed in the Bid Form shown on this drawing.

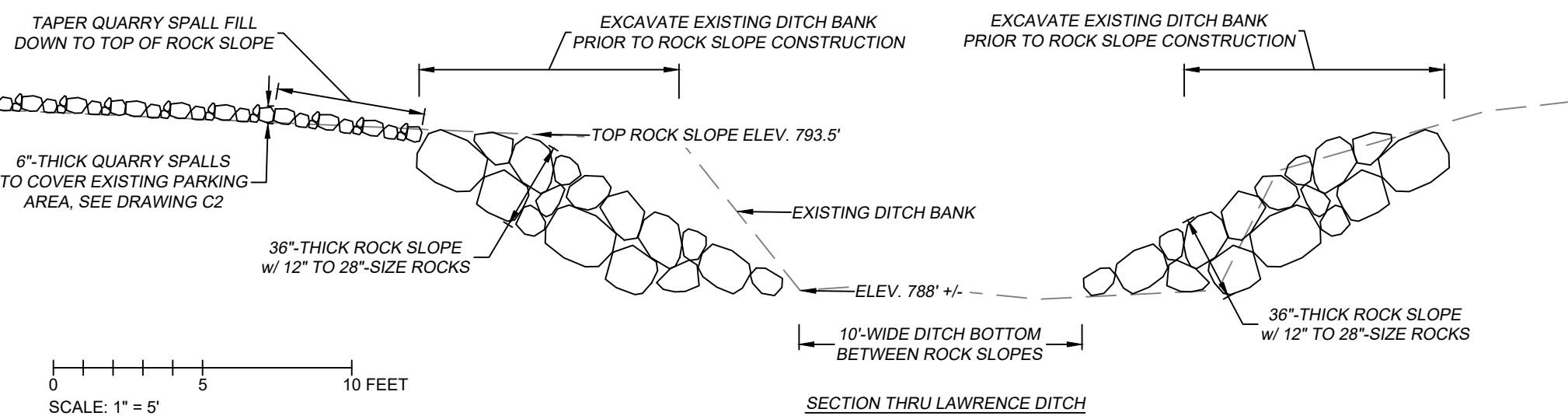
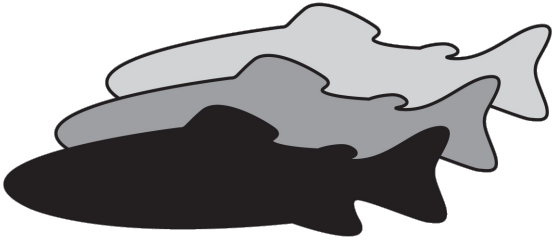


		Exhibit B			
Bid Form					
Lawrence Ditch Repair Project					
Contractor:				Date:	
Item					
No.	Spec.	Item	Qty	Unit	Total Cost
1	1-09	Mobilization	1	LS	
2	1-50	Surveying (most will be done by engineer)	1	LS	
3	2-01	Clearing (only req'd for riprap slopes)	1	LS	
4	2-02	Remove Existing Walkway, Supports & Ladders	1	LS	
5	2-09	Excavation & Backfill (haul route to island)	160	CY	
6	6-02	Concrete (Class 3000) Wingwall Repair	6	CY	
7	6-02	Rebar Dowels (3/4"-dia. x 24"-long w/ epoxy)	36	EA	
8	6-02	Reinforced Concrete Walls (Class 4000)	2	CY	
9	8-60	Galvanized Steel Fabrication & Install	750	LB	
10	8-60	Galvanized Steel Grating (includes clips & bolts)	154	SF	
11	8-70	Stainless Steel Bolts for Channels (1/2"-dia. x 6")	8	EA	
12	8-70	Stainless Steel Anchor Bolts (1/2"-dia. x 5"-long)	68	EA	
13	8-90	Staff Gauge Removal & Relocation	1	LS	
14	9-03	Washed Sand (limited sluice into rock voids)	30	TN	
15	9-13	Broken Rock (2" to 4"-size for access road)	120	TN	
16	9-13	Quarry Spalls (4" to 8"-size)	170	TN	
17	9-13	Riprap (12" to 28"-size)	300	TN	
Construction Total (Bid):					
CY = cubic yard		LB = pound		SF = square foot	
EA = each		LS = lump sum		TN = ton	
Printed Name				Signature	
Title					

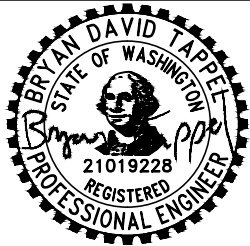


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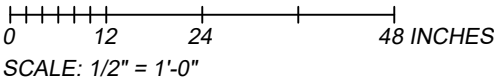
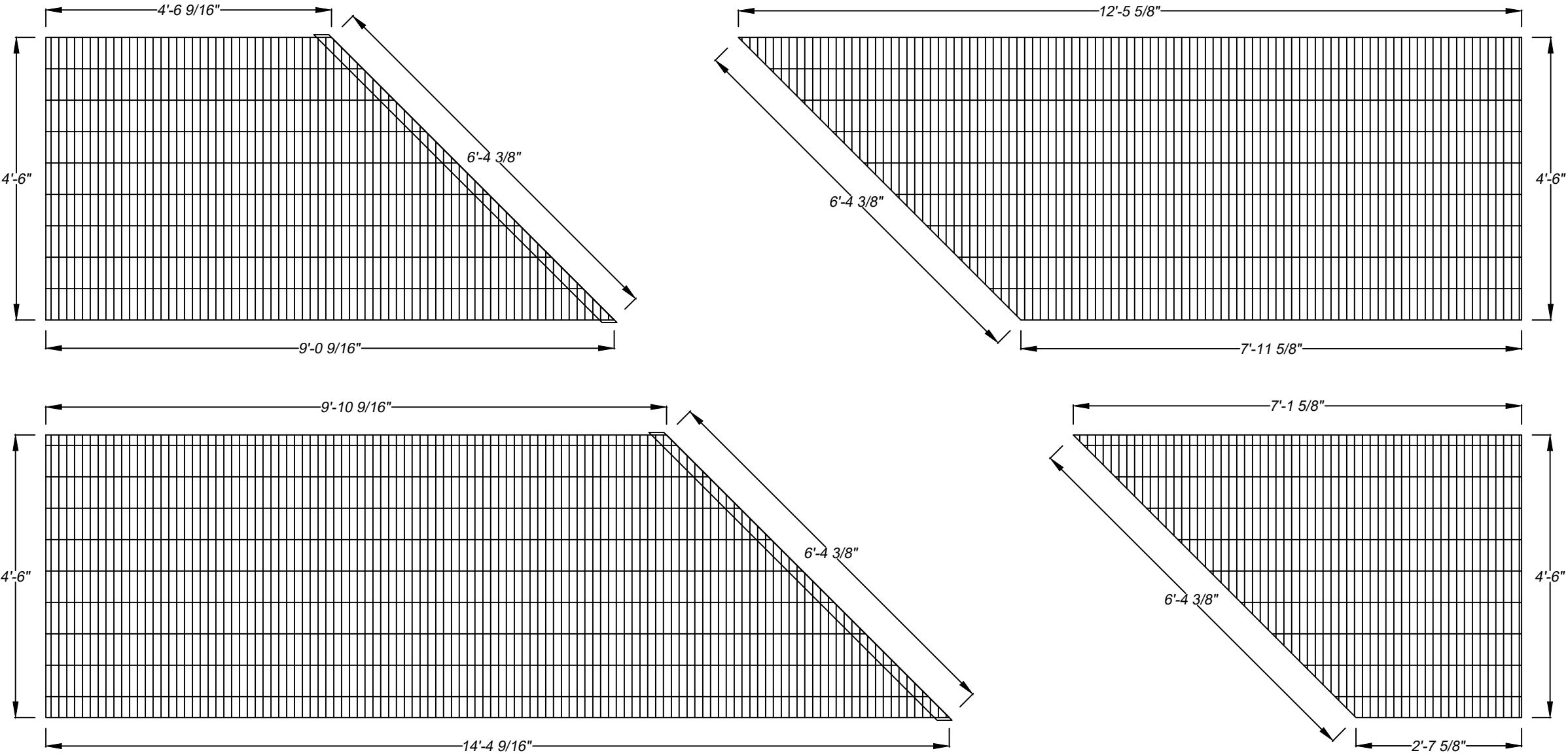
LAWRENCE DITCH REPAIR PROJECT
YAKAMA NATION
BASIS-OF-DESIGN & PROJECT QUANTITIES



DATE	5/19/2026
DESIGNED	BT
DRAFTED	BT
DRAWING	C6

Galvanized Steel Grating Notes

- 1. All grating to be fabricated into panels as shown this drawing, using stock lengths cut and banded along all cut ends of bearing bars. All fabricated panels to be hot-dipped galvanized after fabrication.
- 2. Grating stock to be 19-W-4 with 2" x 3/16" bearing bars and serrated tops. Dimensions listed on this drawing are outside dimensions for all grating areas, including banding.
- 3. Banding to be 1/4" x 2" steel bar. Welding for banding bars to be at least 1/8"-thick continuous fillet weld on one side of every third bearing bar.
- 4. Grating to be supported with galvanized steel angles and channel shown on Drawing F2.
- 5. Galvanized steel saddle clips to be supplied by grating company (100 clips required). Saddle clips to be installed near outside corners each grating panel and at no more than 24" on-center spacing along banded edges to be attached to galvanized steel supports. Use 1/4"-dia. x 2 1/2"-long galvanized steel bolts to attach grating to galvanized steel supports. Drill steel angles and channels on site for saddle clip attachments.
- 6. Top of all grating to be at same elevation as top of concrete walls.



GRATING PANELS FOR SCREEN STRUCTURE
COVER (1 OF EACH PANEL REQUIRED)



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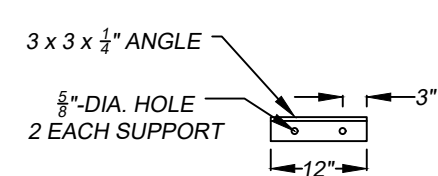
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LAWRENCE DITCH REPAIR PROJECT
YAKAMA NATION
GALVANIZED STEEL GRATING



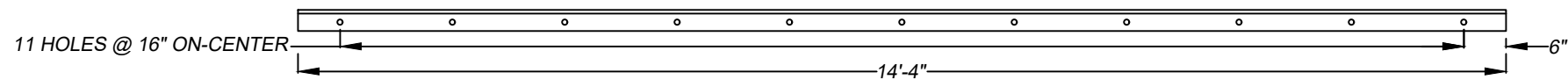
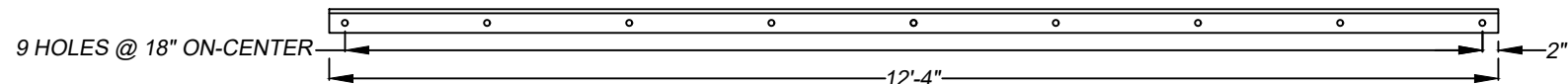
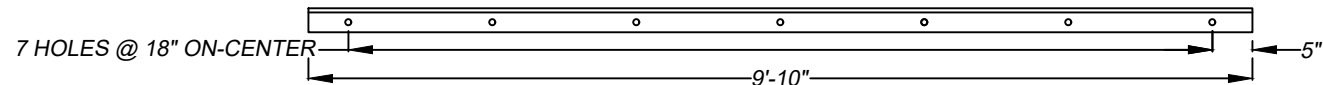
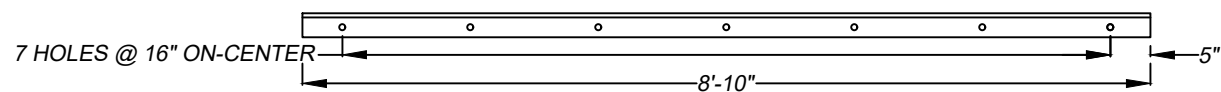
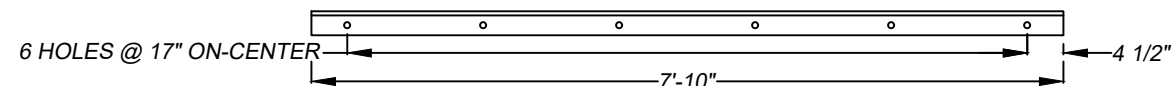
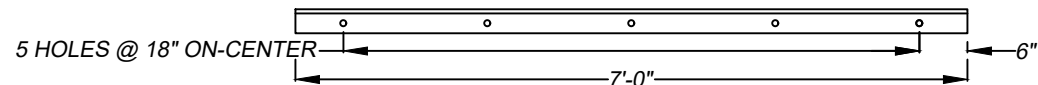
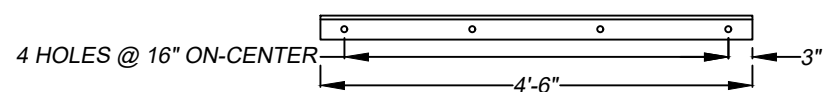
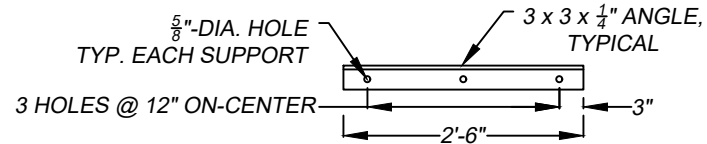
DATE	5/1/2026
DESIGNED	BT
DRAFTED	BT
DRAWING	F1



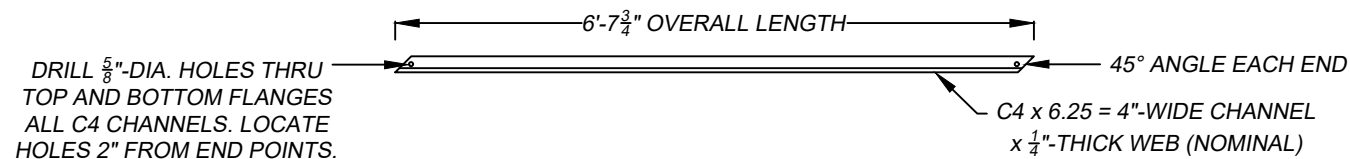
GALVANIZED STEEL ANGLE TO SUPPORT
DIAGONAL CHANNEL BEAMS
(8 REQ'D). ATTACH TO CONCRETE
WALLS w/ $\frac{1}{2}$ "-DIA. x 5"-LONG STAINLESS
STEEL ANCHOR BOLTS (16 REQ'D)

NOTE:

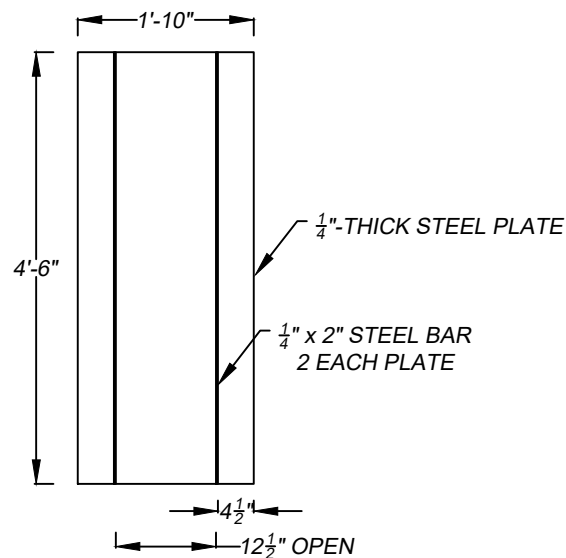
ATTACH CHANNEL SUPPORTS w/ 45° ENDS TO
ANGLE SUPPORTS w/ $\frac{1}{2}$ "-DIA. x 6"-LONG
STAINLESS STEEL BOLTS (w/ NUT & WASHER).
8 BOLT ASSEMBLIES REQ'D. 12"-LONG ANGLE
SUPPORTS TO BE DRILLED ON SITE FOR
CHANNEL SUPPORT ATTACHMENT.



GALVANIZED STEEL ANGLES FOR WALKWAY SUPPORTS ALONG
INTERIOR WALLS (1 OF EACH REQ'D). ATTACH TO CONCRETE WALLS
w/ $\frac{1}{2}$ "-DIA. x 5"-LONG STAINLESS STEEL ANCHOR BOLTS (52 REQ'D)



TOP VIEW OF GALVANIZED STEEL
CHANNEL FOR DIAGONAL WALKWAY
SUPPORTS (4 REQ'D). ATTACH TO
12"-LONG ANGLE SUPPORTS

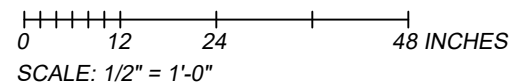


BOTTOM VIEW



TYPICAL SECTION

GALVANIZED STEEL PLATE TO COVER
DAMBOARD SLOTS (2 PLATES REQ'D)



Galvanized Steel Notes

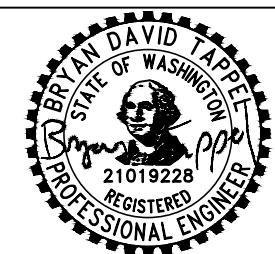
1. Use A36 steel. For damboard cover plates, attach bar to plate with $\frac{1}{8}$ " skip fillet welds (1"-long weld x 4" skip).
2. All steel materials shown this drawing to be hot-dip galvanized after fabrication.

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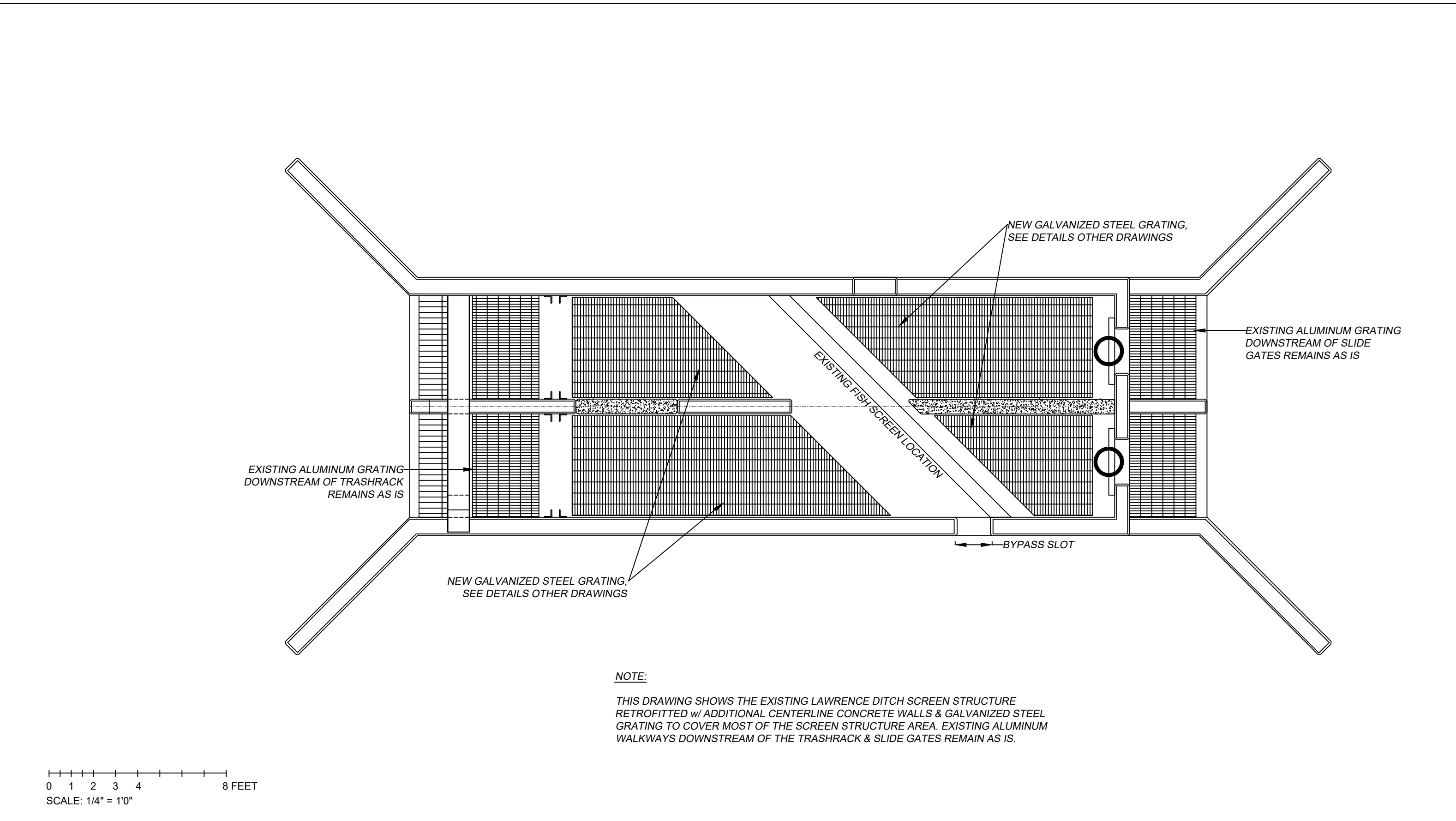
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LAWRENCE DITCH REPAIR PROJECT
YAKAMA NATION
GALVANIZED STEEL SUPPORTS



DATE	5/1/2026
DESIGNED	BT
DRAFTED	BT
DRAWING	F2



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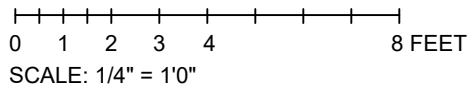
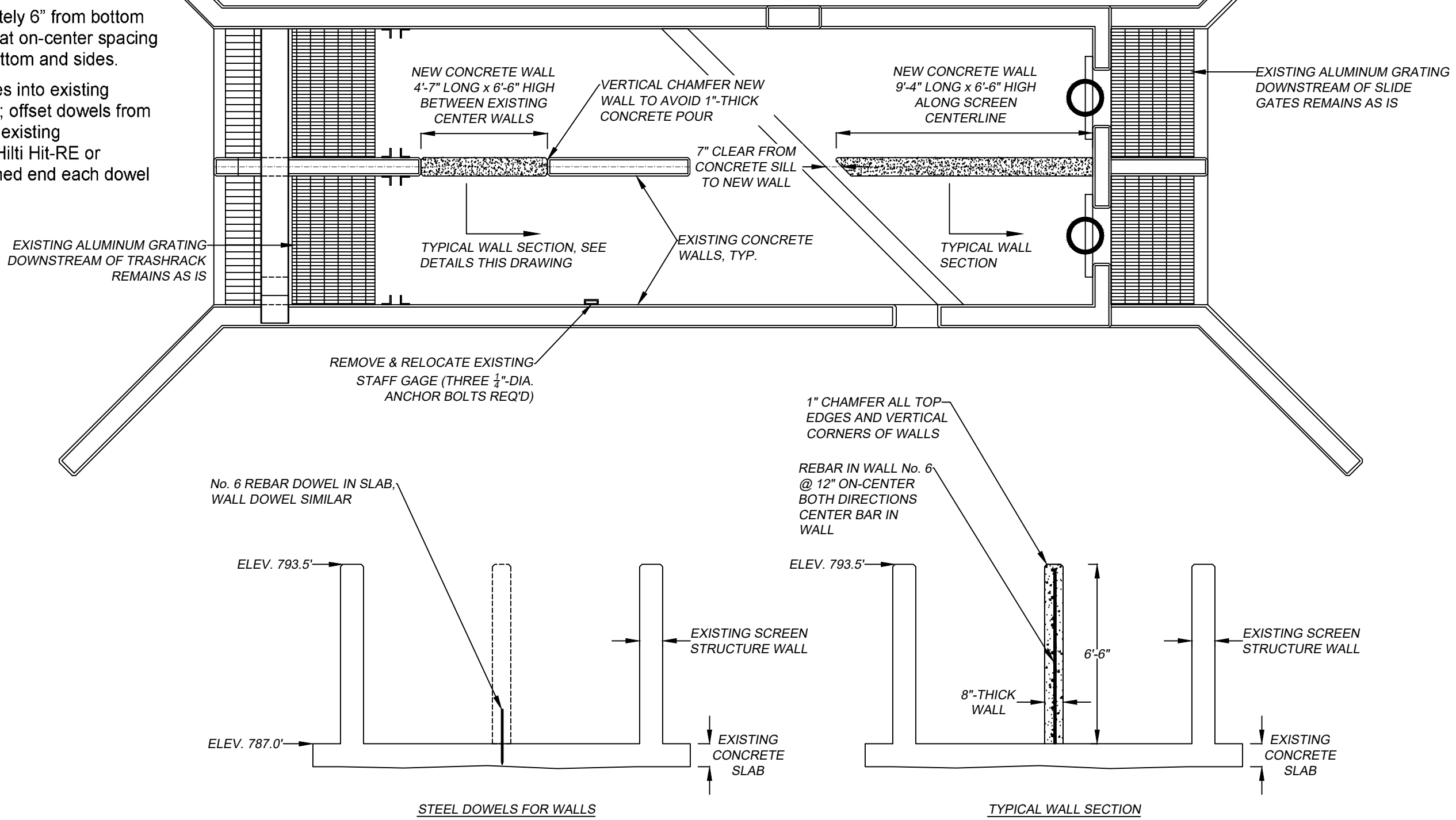
LAWRENCE DITCH REPAIR PROJECT
YAKAMA NATION
GALVANIZED STEEL GRATING INSTALLED



DATE	5/1/2026
DESIGNED	BT
DRAFTED	BT
DRAWING	F3

Rebar Dowel Notes

- 1. No. 6 rebar x 24"-long to be imbedded 9" into existing slab and walls prior to formwork for new reinforced concrete walls. Sharpen one end each rebar piece.
- 2. Dowels to be placed approximately 6" from bottom and top ends of new walls, and at on-center spacing approximately 12" along wall bottom and sides.
- 3. Drill 7/8"-diameter x 9"-deep holes into existing concrete at each dowel location; offset dowels from center of existing walls to avoid existing reinforcement. Spread epoxy (Hilti Hit-RE or Simpson SET-3G) over sharpened end each dowel and insert into drilled hole.



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LAWRENCE DITCH REPAIR PROJECT
YAKAMA NATION
REINFORCED CONCRETE WALLS & DETAILS



DATE	5/19/2026
DESIGNED	BT
DRAFTED	BT
DRAWING	S1