

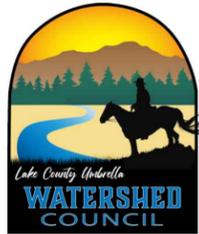
# DEEP CREEK - STARVEOUT DIVERSION

## DIVERSION CANAL FISH SCREEN DESIGN

ADEL, OR

80% DESIGN

### PROJECT PARTNERS



ADEL WATER IMPROVEMENT DISTRICT

### PROJECT DESCRIPTION

THE PROJECT PARTNERS COMPLETED A FISH PASSAGE PROJECT ON DEEP CREEK AT THE STARVEOUT DIVERSION IN 2020. THE PROJECT INCLUDED BUILDING TWO ROUGHENED CHANNELS AND A SEDIMENT SLUICeway ADJACENT TO THE EASTERN ROUGHENED CHANNEL. THE ENCLOSED PLANS INCLUDE 80% DESIGNS PREPARED BY SWCA ENVIRONMENTAL CONSULTANTS. THE CONE SCREEN DESIGN IS INTENDED TO MEET AWID IRRIGATION WATER NEEDS AND MINIMIZE THE POTENTIAL FOR FUTURE WARNER SUCKER AND WARNER LAKES REDBAND TROUT ENTRAINMENT INTO THE STARVEOUT DIVERSION IRRIGATION NETWORK. THIS DESIGN WILL INSTALL A 14 FT DIAMETER CONE SCREEN AND REPLACE EXISTING INTAKE INFRASTRUCTURE INCLUDING THE CONCRETE VAULT, DIVERSION PIPE, AND OTHER WATER CONTROL INFRASTRUCTURE. SWCA, AWID, AND THE OTHER PROJECT PARTNERS WILL REVIEW AND CONTINUE TO REFINE THE DESIGN

### SPATIAL REFERENCE

SURVEY CONTROL USED FOR THE PROJECT IS PROVIDED ON DRAWING 2.0 AND COORDINATES CORRESPOND TO THE TOP CENTER OF CONTROL MARKERS.

LIDAR, GPS RTK, AND TOTAL STATION:

HORIZONTAL PROJECTION: OREGON STATE PLANE SOUTH  
 HRZ DATUM: NAD83  
 VRT DATUM: NAVD88

SURVEY DATE: 8/20/2024, 4/17/2024  
 LIDAR COLLECTED: N/A

### STANDARD OF PRACTICE

SWCA EMPLOYS THE MOST CURRENT AND ACCEPTED PRACTICES AVAILABLE FOR PLANNING AND DESIGN OF FISH PASSAGE, SCREENING, RESTORATION AND CHANNEL ENHANCEMENT PROJECTS. THE ANALYSIS FOR THIS WORK RELIED ON A COLLABORATIVE DATA COLLECTION EFFORT AND CURRENT FISH PASSAGE CRITERIA FROM ODFW AND NMFS/NOAA. ALL WORK WAS PERFORMED OR DIRECTED BY A REGISTERED PROFESSIONAL ENGINEER WITH RELEVANT EXPERIENCE

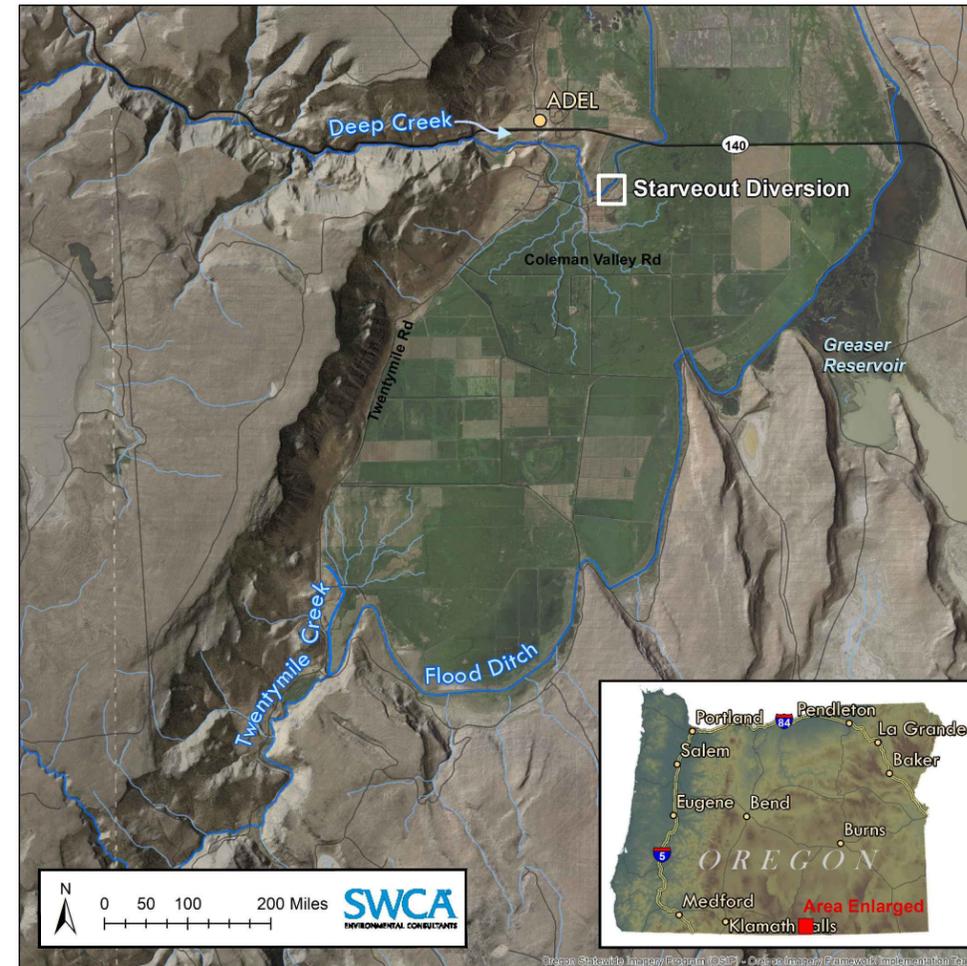
### REUSE OF DRAWINGS

THESE DRAWINGS, THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF SWCA INC. AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF SWCA. LIKEWISE, THESE DRAWINGS MAY NOT BE ALTERED OR MODIFIED WITHOUT AUTHORIZATION OF SWCA. DRAWING DUPLICATION IS ALLOWED IF THE ORIGINAL CONTENT IS NOT MODIFIED.

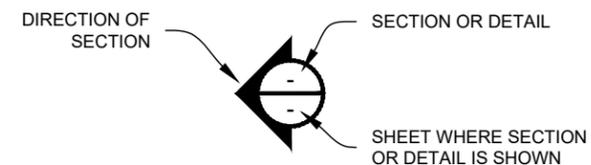
### DRAWING INDEX

1.0	COVER SHEET AND NOTES
2.0	EXISTING CONDITIONS OVERVIEW
3.0	DESIGN OVERVIEW
3.1	CONE SCREEN & CANAL INTAKE - PLAN & PROFILE
3.2	SCREEN INTAKE CONCEPT ISOMETRIC
3.3	VAULT DETAILS
4.0	LATERAL #3 INTAKE REPLACEMENT
4.1	SECONDARY WEIR STRUCTURE REPLACEMENT

### PROJECT VICINITY MAP



SE 1/4 OF THE SW 1/4 OF SECTION 22, T.39S., R.24E.  
 WILLAMETTE MERIDIAN  
 LAKE COUNTY, OREGON  
 USGS QUADRANGLE: ADEL, OR



CROSS-SECTION SHEET REFERENCE

**SWCA**  
 ENVIRONMENTAL CONSULTANTS  
 236 Wisconsin Avenue  
 Whitefish, MT 59937  
 406.862.4927

311 SW Jefferson Avenue  
 Corvallis, OR 97333  
 541.738.2920

### COVER SHEET AND NOTES

DEEP CREEK - STARVEOUT DIVERSION  
 ADEL, OR

NO.	DATE	BY	DESCRIPTION	CHK
*	3/12/26	LC	80% DESIGN	GV

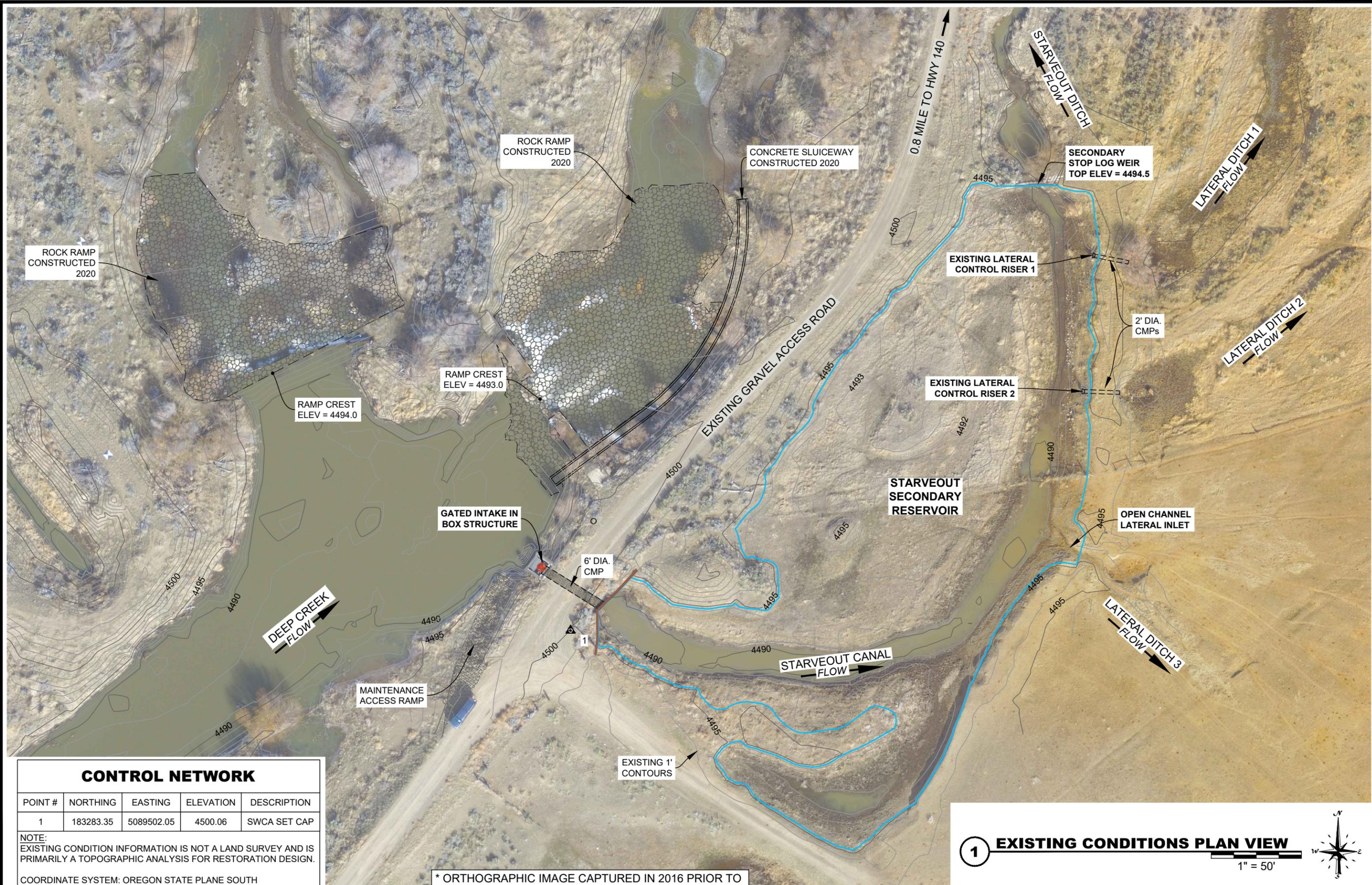
PROJECT NUMBER  
 91494-000-CRB

DRAWING NUMBER

1.0

Drawing 1 of 8

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### CONTROL NETWORK

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	183283.35	5089502.05	4500.06	SWCA SET CAP

NOTE:  
EXISTING CONDITION INFORMATION IS NOT A LAND SURVEY AND IS  
PRIMARILY A TOPOGRAPHIC ANALYSIS FOR RESTORATION DESIGN.

COORDINATE SYSTEM: OREGON STATE PLANE SOUTH  
HORIZ DATUM: NAD83  
VERT DATUM: NAVD88  
UNITS: US SURVEY FEET

\* ORTHOGRAPHIC IMAGE CAPTURED IN 2016 PRIOR TO  
2020 CONSTRUCTION OF ROCK RAMPS AND SLUICWAY

### 1 EXISTING CONDITIONS PLAN VIEW

1" = 50'



## EXISTING CONDITIONS OVERVIEW

DEEP CREEK - STARVEOUT DIVERSION  
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PROJECT NUMBER  
91494-000-CRB

DRAWING NUMBER  
**2.0**

Drawing 2 of 8

DEEP CREEK  
FLOW

**DRAFT**

INSTALL 14' DIA. SOLAR POWER BRUSHED CONE SCREEN AND PRECAST CONCRETE INTAKE VAULT PER DWG 3.1 & 3.2

EXISTING MAINTENANCE ACCESS ROAD

INSTALL NEW 6' DIA. CMP CULVERT

EXISTING SHEET PILE AND TIMBER HEADWALL DISASSEMBLE AS NECESSARY & REBUILD

EXISTING SHEET PILE AND TIMBER HEADWALL DISASSEMBLE AS NECESSARY & REBUILD

SECONDARY RESERVOIR @ WSEL = 4494.5

RECONSTRUCT STOP LOG WEIR w/ PRECAST CONCRETE STRUCTURE

EXISTING LATERAL CONTROL RISER (PRESERVE)

EXISTING LATERAL CONTROL RISER (PRESERVE)

CONSTRUCT CAST-IN-PLACE CONCRETE HEADWALL w/ GATED 2' RISE x 3' SPAN CMP CULVERT

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**DESIGN OVERVIEW**

DEEP CREEK - STARVEOUT DIVERSION  
ADEL, OR

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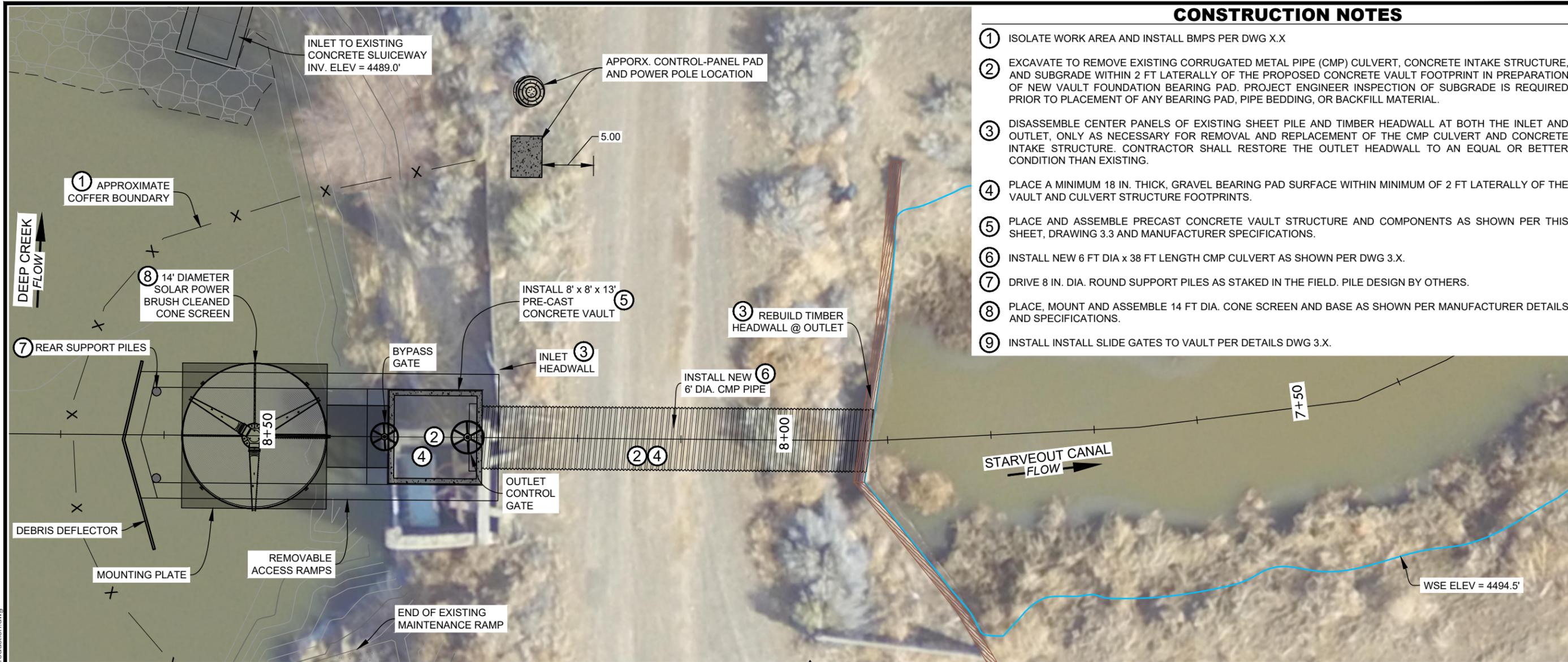
**3.0**

Drawing 3 of 8

**1 PROJECT OVERVIEW**

1" = 30'





**CONSTRUCTION NOTES**

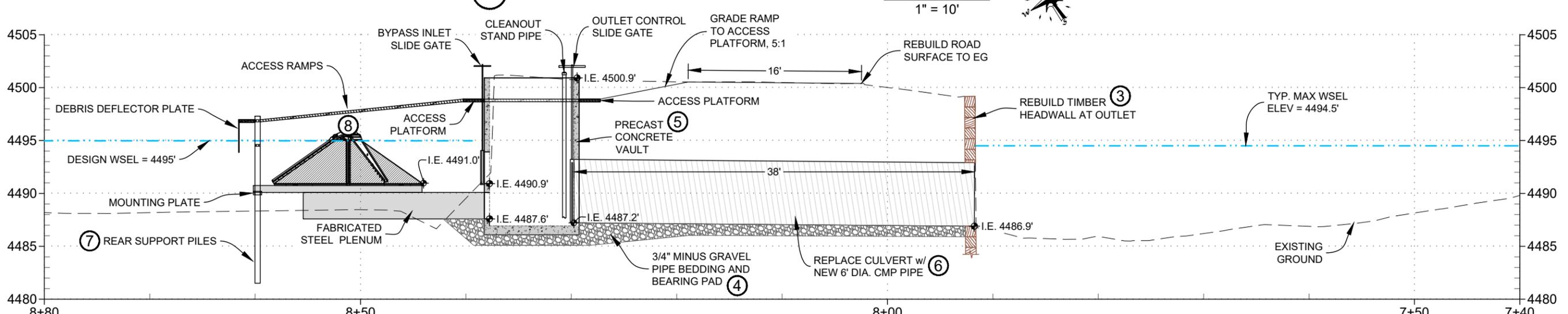
- ① ISOLATE WORK AREA AND INSTALL BMPS PER DWG X.X
- ② EXCAVATE TO REMOVE EXISTING CORRUGATED METAL PIPE (CMP) CULVERT, CONCRETE INTAKE STRUCTURE, AND SUBGRADE WITHIN 2 FT LATERALLY OF THE PROPOSED CONCRETE VAULT FOOTPRINT IN PREPARATION OF NEW VAULT FOUNDATION BEARING PAD. PROJECT ENGINEER INSPECTION OF SUBGRADE IS REQUIRED PRIOR TO PLACEMENT OF ANY BEARING PAD, PIPE BEDDING, OR BACKFILL MATERIAL.
- ③ DISASSEMBLE CENTER PANELS OF EXISTING SHEET PILE AND TIMBER HEADWALL AT BOTH THE INLET AND OUTLET, ONLY AS NECESSARY FOR REMOVAL AND REPLACEMENT OF THE CMP CULVERT AND CONCRETE INTAKE STRUCTURE. CONTRACTOR SHALL RESTORE THE OUTLET HEADWALL TO AN EQUAL OR BETTER CONDITION THAN EXISTING.
- ④ PLACE A MINIMUM 18 IN. THICK, GRAVEL BEARING PAD SURFACE WITHIN MINIMUM OF 2 FT LATERALLY OF THE VAULT AND CULVERT STRUCTURE FOOTPRINTS.
- ⑤ PLACE AND ASSEMBLE PRECAST CONCRETE VAULT STRUCTURE AND COMPONENTS AS SHOWN PER THIS SHEET, DRAWING 3.3 AND MANUFACTURER SPECIFICATIONS.
- ⑥ INSTALL NEW 6 FT DIA x 38 FT LENGTH CMP CULVERT AS SHOWN PER DWG 3.X.
- ⑦ DRIVE 8 IN. DIA. ROUND SUPPORT PILES AS STAKED IN THE FIELD. PILE DESIGN BY OTHERS.
- ⑧ PLACE, MOUNT AND ASSEMBLE 14 FT DIA. CONE SCREEN AND BASE AS SHOWN PER MANUFACTURER DETAILS AND SPECIFICATIONS.
- ⑨ INSTALL SLIDE GATES TO VAULT PER DETAILS DWG 3.X.

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**CONE SCREEN & CANAL INTAKE - PLAN & PROFILE**  
 DEEP CREEK - STARVEOUT DIVERSION  
 ADEL, OR

**1 PROPOSED INTAKE REPLACEMENT - PLAN VIEW**



**2 PROPOSED INTAKE REPLACEMENT - PROFILE VIEW**

**DRAFT**

CHK	DESCRIPTION	BY	DATE	NO.
GV	80% DESIGN	LC	3/12/26	*

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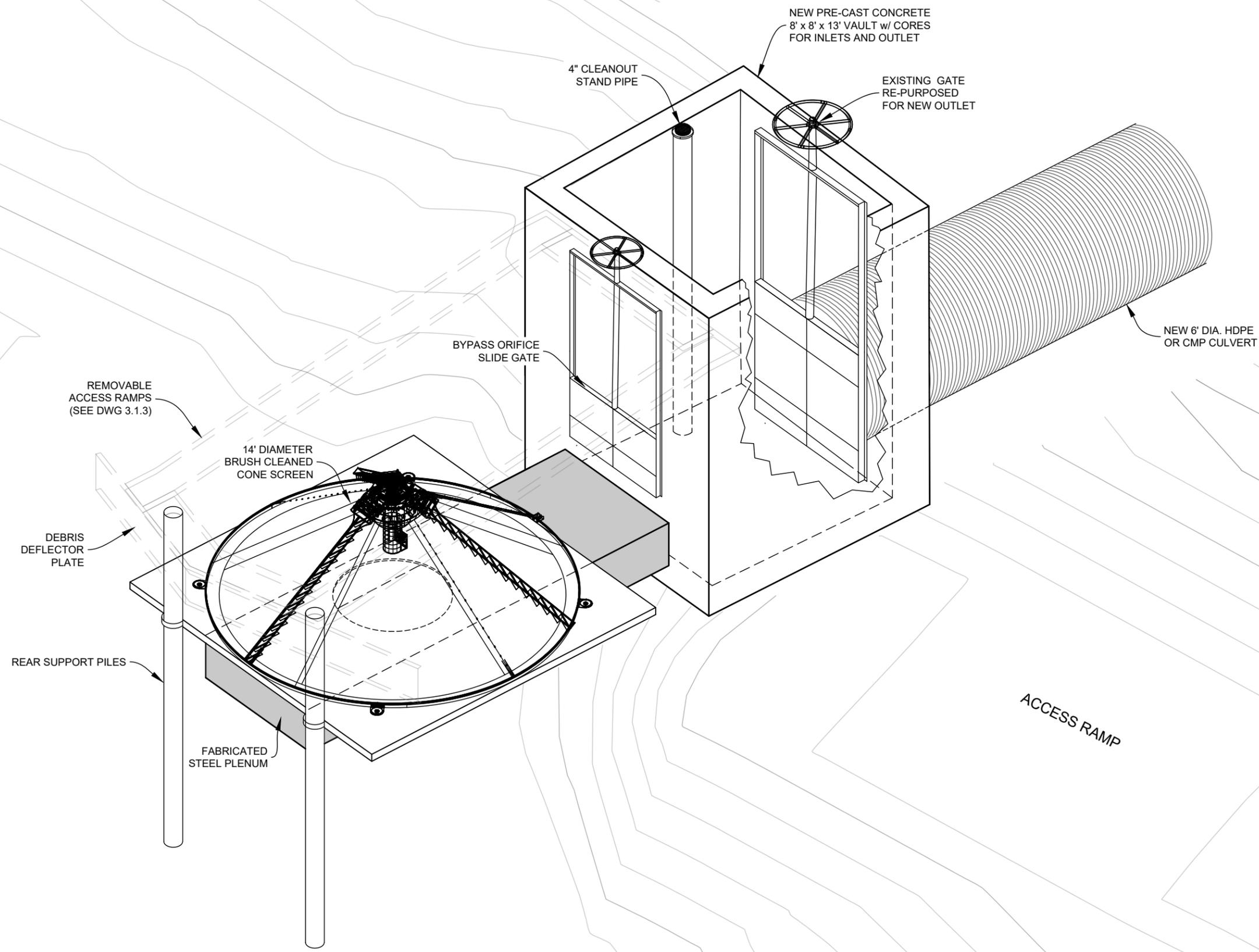
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**3.1**

Drawing 4 of 8

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**1 PROPOSED CONE SCREEN & NEW INTAKE VAULT - ISOMETRIC VIEW**  
 N.T.S

**DRAFT**

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**SCREEN INTAKE CONCEPT  
 ISOMETRIC**  
 DEEP CREEK - STARVEOUT DIVERSION  
 ADEL, OR

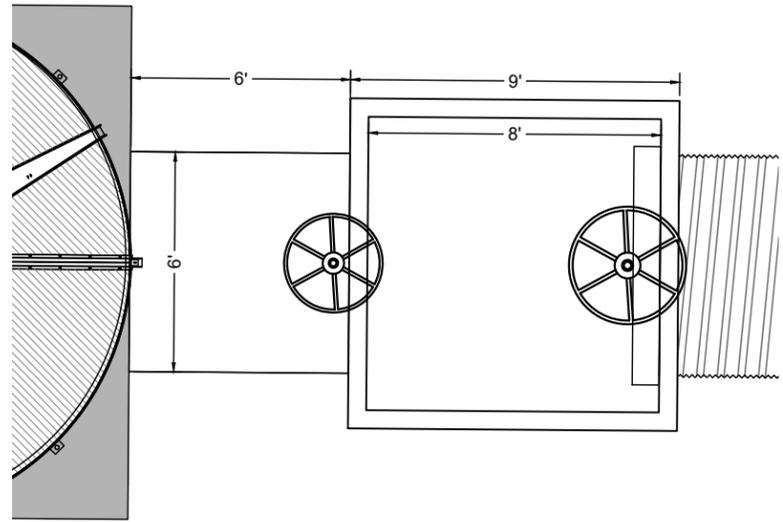
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PROJECT NUMBER  
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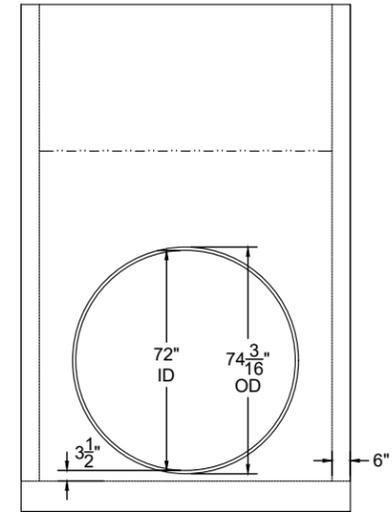
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Drawing 5 of 8

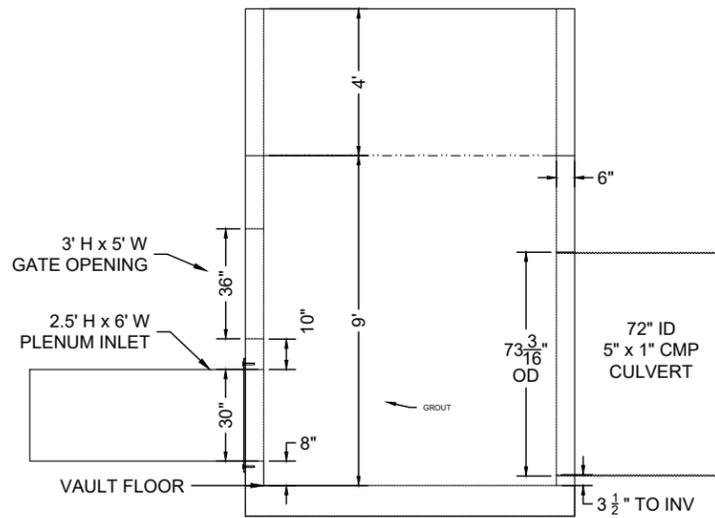
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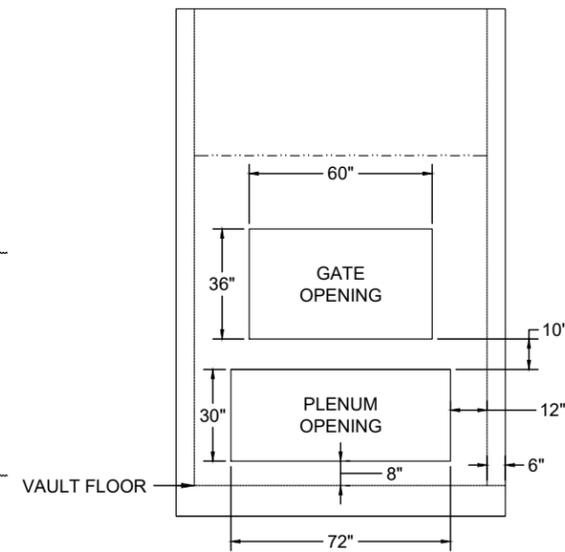
**PLAN**



**OUTLET FACE**



**PROFILE**



**INLET FACE**

**1 CANAL INTAKE VAULT STRUCTURE DETAILS**

1" = 10'

**VAULT DETAILS**

DEEP CREEK - STARVEOUT DIVERSION  
ADEL, OR

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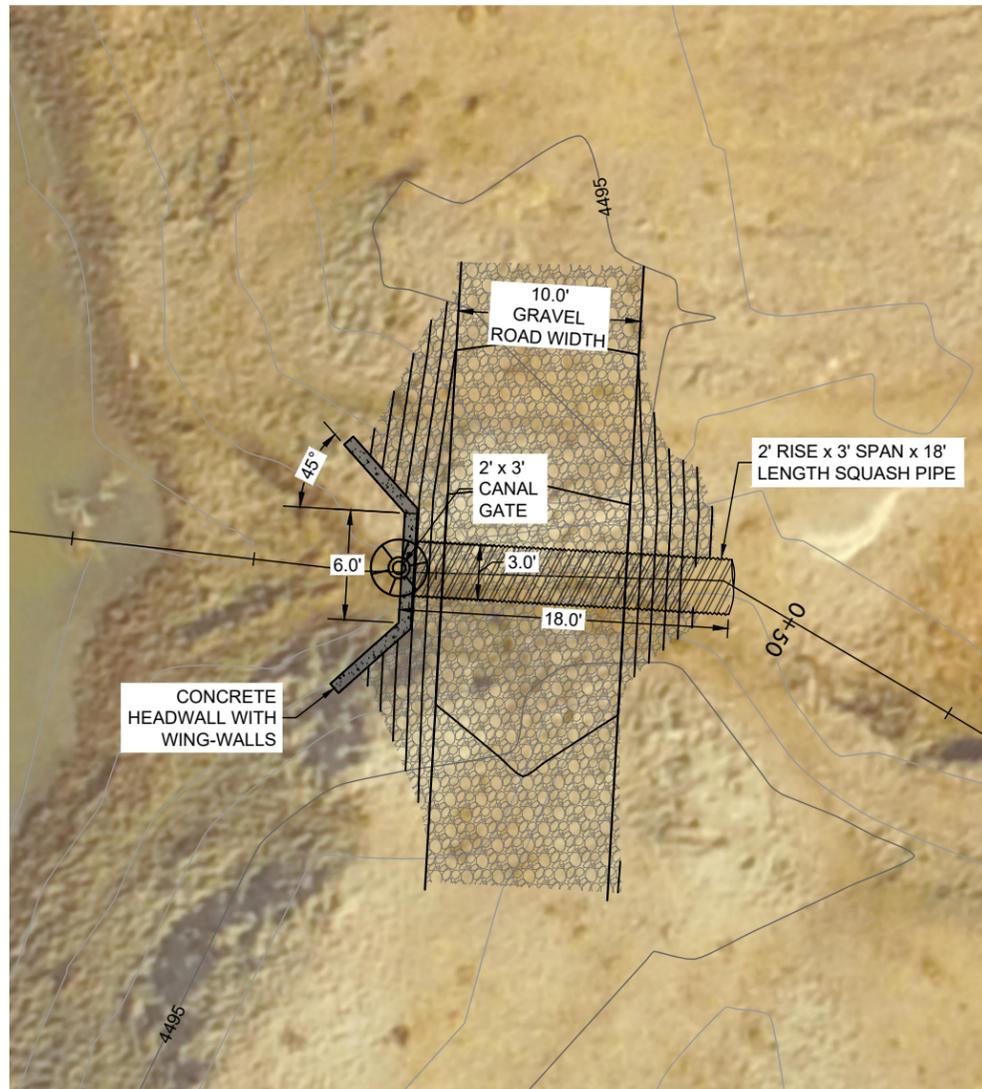
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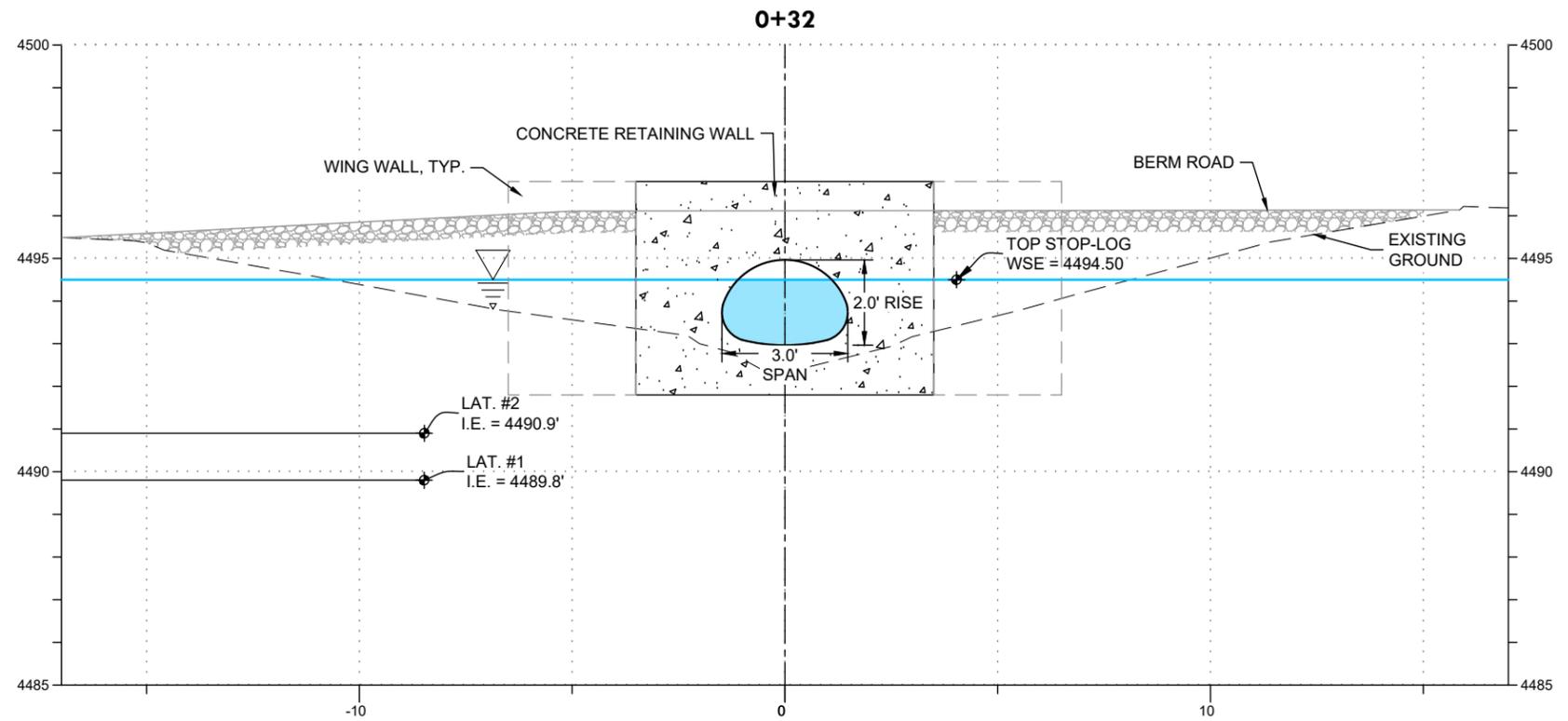
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Drawing 6 of 8

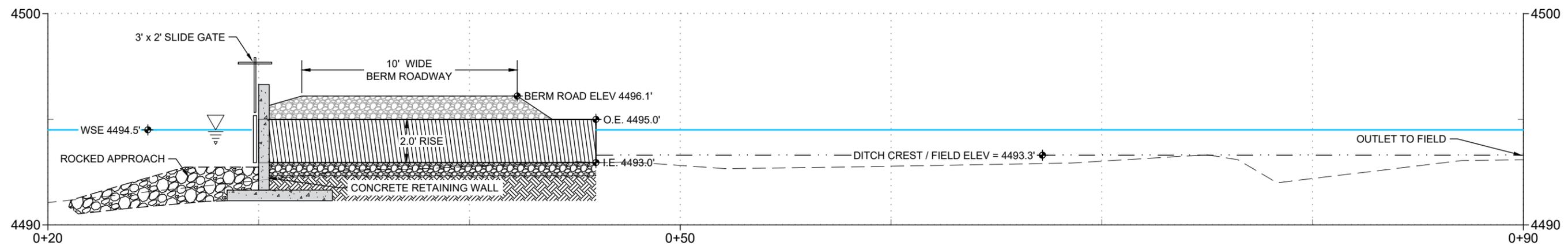
**DRAFT**



**1 PROPOSED LATERAL #3 CONTROL INTAKE - PLAN VIEW**  
1" = 5'



**2 PROPOSED LATERAL #3 CONTROL INTAKE - SECTION VIEW**  
1" = 4'



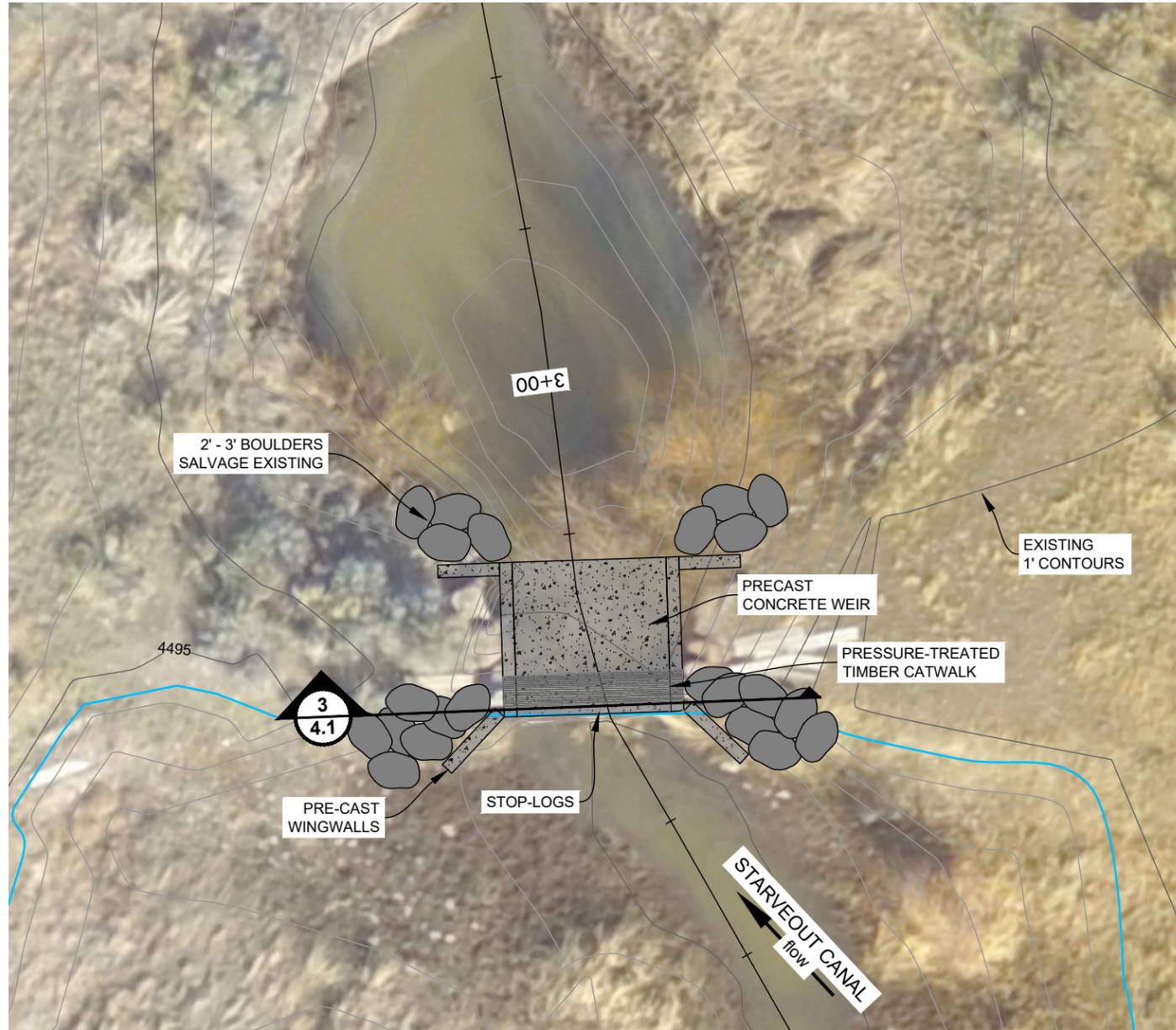
**3 PROPOSED LATERAL #3 CONTROL INTAKE - PROFILE VIEW**  
1" = 5'

CHK	DESCRIPTION	BY	DATE	NO.
GV	80% DESIGN	LC	3/12/26	*

PROJECT NUMBER	91494-000-CRB
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Drawing 7 of 8	

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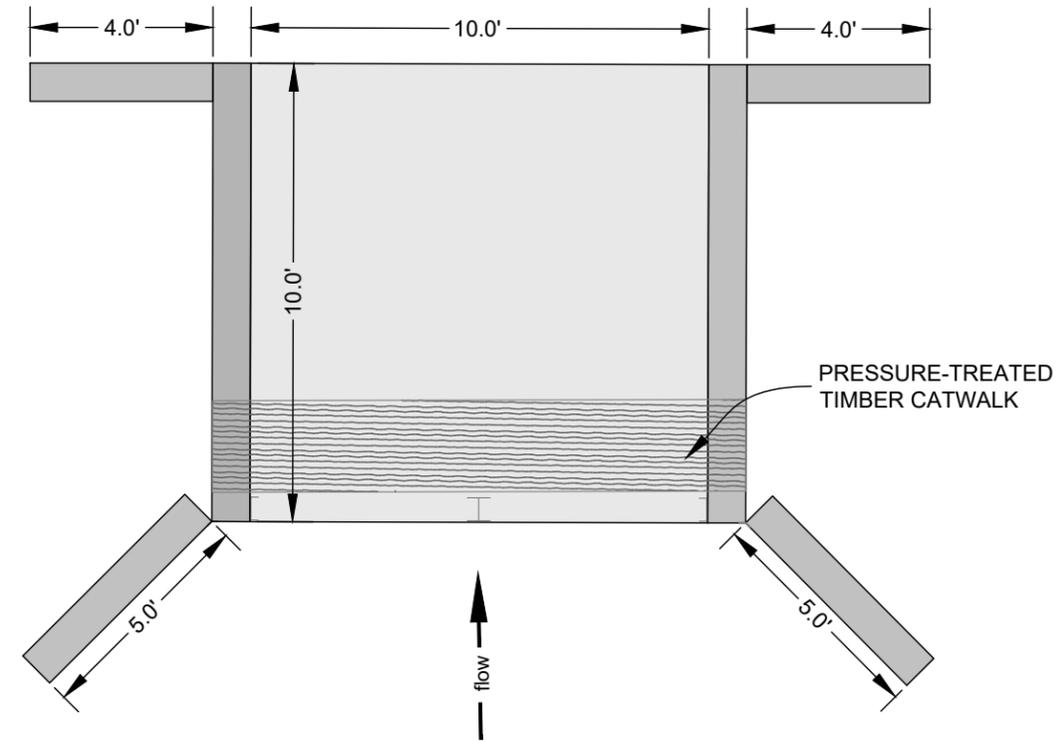
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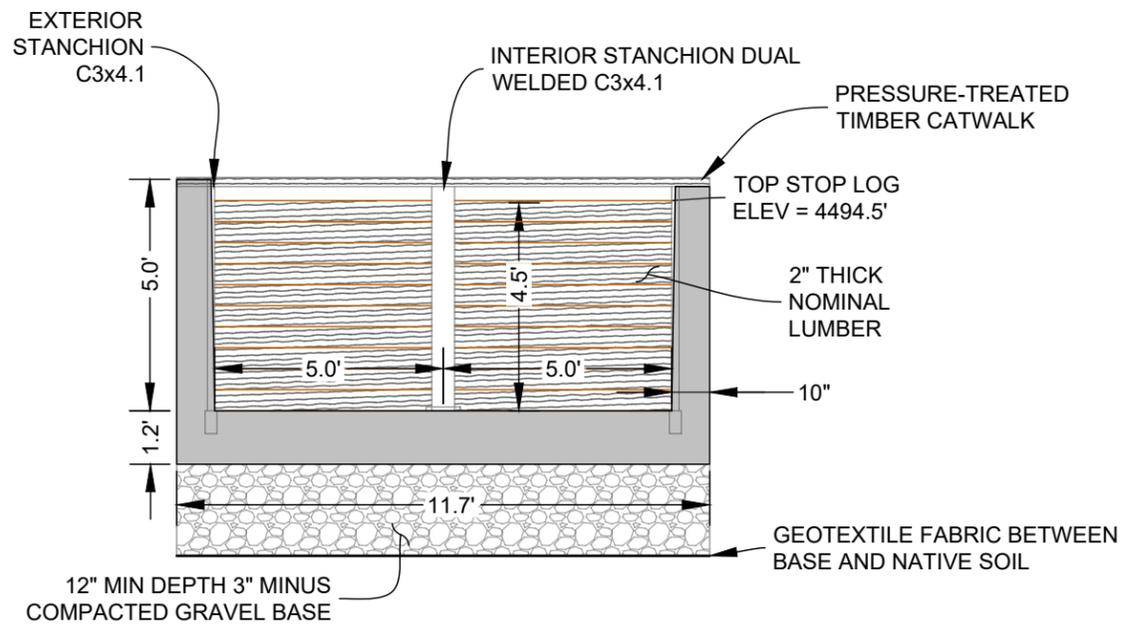
**1 SECONDARY WEIR REPLACEMENT PLAN VIEW**  
1" = 10'

**CONSTRUCTION NOTES**

- 1 INSTALL BMPS TO ISOLATE WORK AREA. AVOID ALL VEGETATION UNLESS OTHERWISE DIRECTED BY PROJECT ENGINEER.
- 2 SALVAGED MATERIALS ARE TO BE STOCKPILED IN AN UPLAND AREA OUTSIDE OF THE IMMEDIATE CONSTRUCTION AREA.
- 3 CUT AND REMOVE EXISTING WEIR SHEET PILES TO FIT NEW STRUCTURE.
- 4 EXCAVATE TO REMOVE ALL DELETERIOUS MATERIAL AND PREPARE SUBGRADE.
- 5 PLACE GEOTEXTILE FABRIC (NONWOVEN, NEEDLE PUNCHED, 8 OZ/SY AOS 70).
- 6 PLACE 3/4"-MINUS LEVELING COURSE OVER 12" THICK 3"-MINUS COMPACTED GRAVEL.
- 7 PLACE PRE-CAST CONCRETE WEIR PIECES PER MANUFACTURER'S RECOMMENDATIONS.
- 8 INSTALL STANCHIONS AND PREPARE STOP-LOG WEIR BOARDS TO LENGTHS SHOWN.
- 9 BACKFILL WITH 3/4"-MINUS GRAVEL PER MANUFACTURER'S RECOMMENDATIONS. COMPLETE BACKFILL TO GRADE WITH NATIVE MATERIAL, COMPACT IN 6 INCH LIFTS. CONTOUR BACKFILL TO ADJACENT NATIVE TOPOGRAPHY.



**2 WEIR PLAN DETAIL**  
1" = 4'



**3 WEIR SECTION DETAIL**  
HORIZ 1" = 5'  
VERT 1" = 5'

**SECONDARY WEIR STRUCTURE  
REPLACEMENT**  
DEEP CREEK - STARVEOUT DIVERSION  
ADEL, OR

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*	3/12/26	LC	80% DESIGN	GV

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DRAWING NUMBER

**4.1**

Drawing 8 of 8

**DRAFT**

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