

OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT

WEBER RIVER - OGDEN, UT

October 2025

BID SET

SHEET INDEX

SHEET NO.	SHEET TITLE
G01	COVER SHEET
G02	BASE MAP & HORIZONTAL CONTROL PLAN
G03	DEMOLITION & PROTECT IN PLACE PLAN
G04	DEMOLITION & PROTECT IN PLACE SECTION & PROFILES
CW00	CARE OF WATER OVERVIEW & NOTES
CW01	CARE OF WATER ACCESS STAGE 1 PLAN
CW02	CARE OF WATER ACCESS STAGE 2 PLAN
CW03	CARE OF WATER ACCESS STAGE 3 PLAN
CW04	CARE OF WATER ACCESS STAGE 4 PLAN
CW05	CARE OF WATER STAGING AREA
CW06	CARE OF WATER DETAILS (1/2)
CW07	CARE OF WATER DETAILS (2/2)
CW08	EROSION CONTROL DETAILS
R00	PLAN VIEW, PROFILE & INDEX
R01	PLAN VIEW AND PROFILE SURF WAVE
R02	PLAN VIEW AND PROFILE FISH PASSAGE
R03	PLAN VIEW AND PROFILE ENGINEERED RIFFLE GRADE CONTROL
R04	PLAN VIEW AND PROFILE ACCESS RAMP
R05	PROFILE AND SECTIONS
R06	BANK RESTORATION TYPICAL SECTIONS
R07	OBERMEYER HYDRO INC, RUBBER & STEEL GATE LAYOUT
R08	RUBBER & STEEL GATES SURF WAVE PLAN VIEW
R09	RUBBER & STEEL GATES ENGINEERED RIFFLE PLAN VIEW
L00	SEEDING NOTES
L01	SEEDING PLAN
L02	EROSION CONTROL BLANKET INSTALLATION
D01	BOULDER TOE AND SLAB STONE BANK TERRACING DETAIL
D02	BOULDER TOE PROTECTION / SLAB STONE BANK TERRACING WITH 3:1 VEGETATED SLOPE DETAIL
D03	CONCRETE ACCESS RAMP DETAIL
D04	OBERMEYER HYDRO INC DETAILS
D05	OBERMEYER HYDRO INC DETAILS
D06	OBERMEYER HYDRO INC RUBBER ROCK DETAIL
D07	OBERMEYER HYDRO INC STEEL GATE DETAIL
D08	OGDEN CITY DETAILS - SURVEY MONUMENT
D09	OGDEN CITY DETAILS - CONCRETE BASE FOR CAMERA POLE
D10-12	CXT PRECAST PRODUCTS - 10.5' x 20' CONTROL BUILDING
D13	AIRLINE BEDDING DETAIL
S-001	GENERAL STRUCTURAL NOTES
S-002	GENERAL STRUCTURAL NOTES
S-100	OVERALL PLAN
S-101	SURF WAVE AREA AND RIFFLE
S-102	ACCESS RAMP
S-103	WINGWALL AND HEADWALL PLANS
S-201	HEADWALL AND WINGWALL ELEVATION
S-301	STRUCTURAL SECTIONS
S-302	STRUCTURAL SECTIONS
S-303	STRUCTURAL SECTIONS
S-304	STRUCTURAL SECTIONS
S-501	STRUCTURAL DETAILS
S-502	STRUCTURAL DETAILS
S-901	TYPICAL STRUCTURAL DETAILS

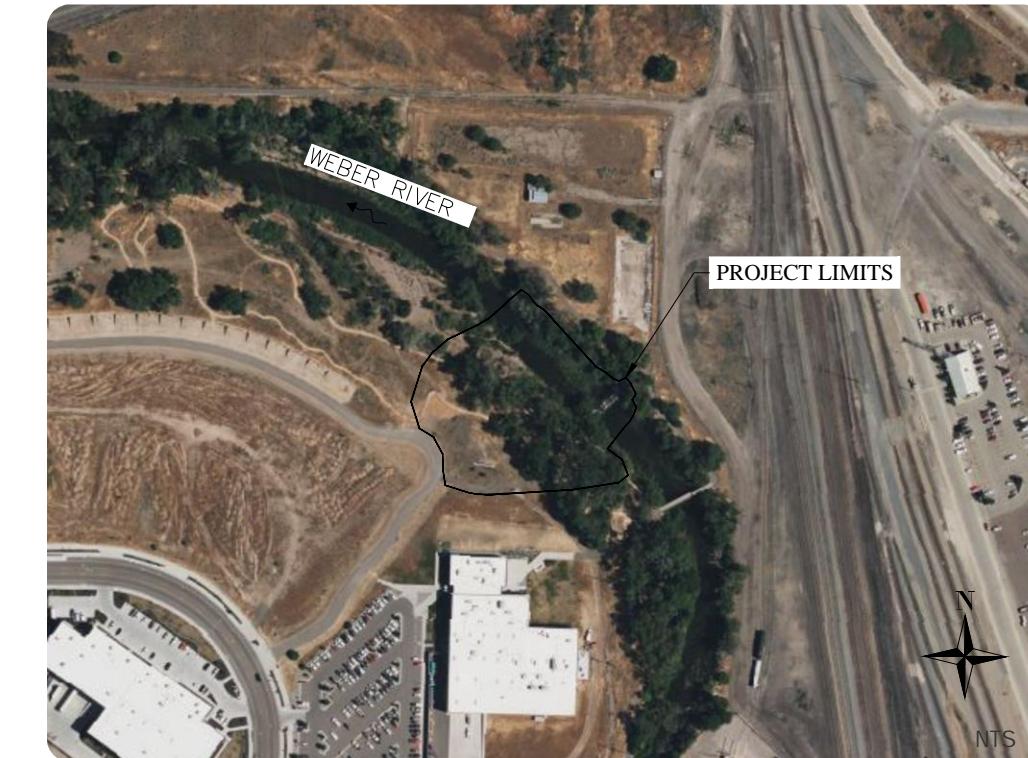
CONTACTS

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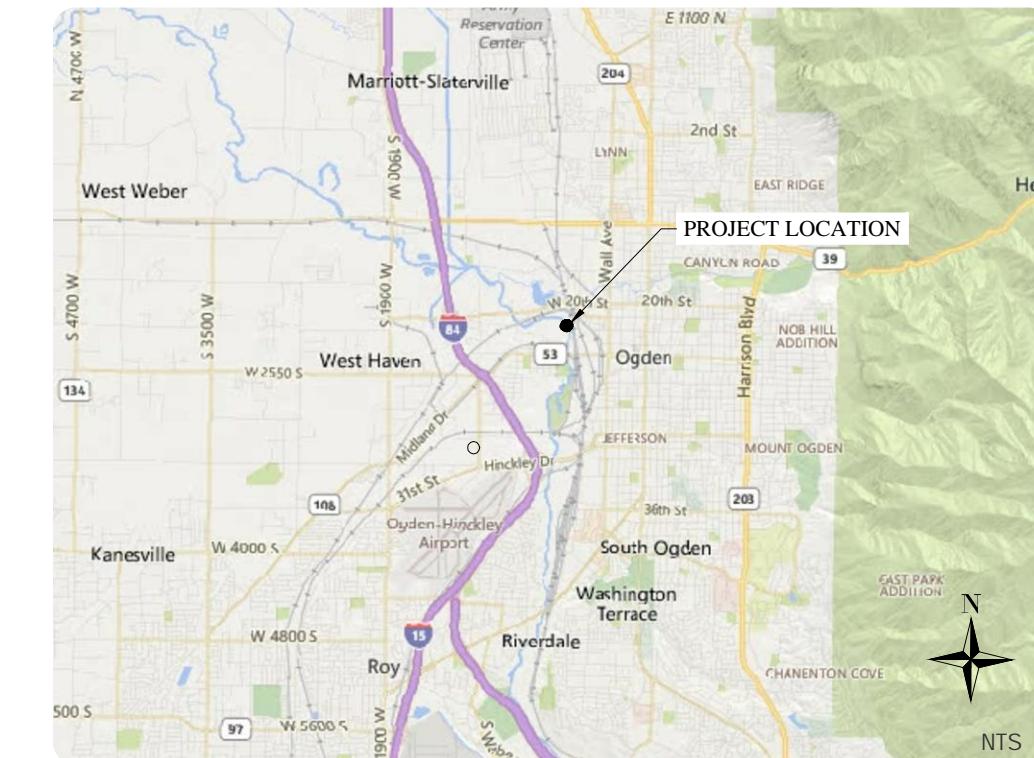
Mr. Francois Escorihuela
Lead Design Engineer
RiverRestoration.org, LLC.
(970) 947-9568

Mr. Jason Carey, P.E.
Project Manager
RiverRestoration.org, LLC.
(970) 947-9568

LOCATION MAP



VICINITY MAP



NOTE

Utilities shown on plans are approximate.
Contractor wholly responsible for field locating & protecting in place utilities

OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
COVER SHEET

No.	REVISION/UPDATE	Date
1	REVISION	12/2/25



Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401



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P.O. Box 248
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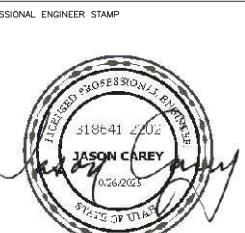
PROJECT NAME AND ADDRESS
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

Project	Sheet
45072	
Date	OCTOBER 2025
Scale	NTS

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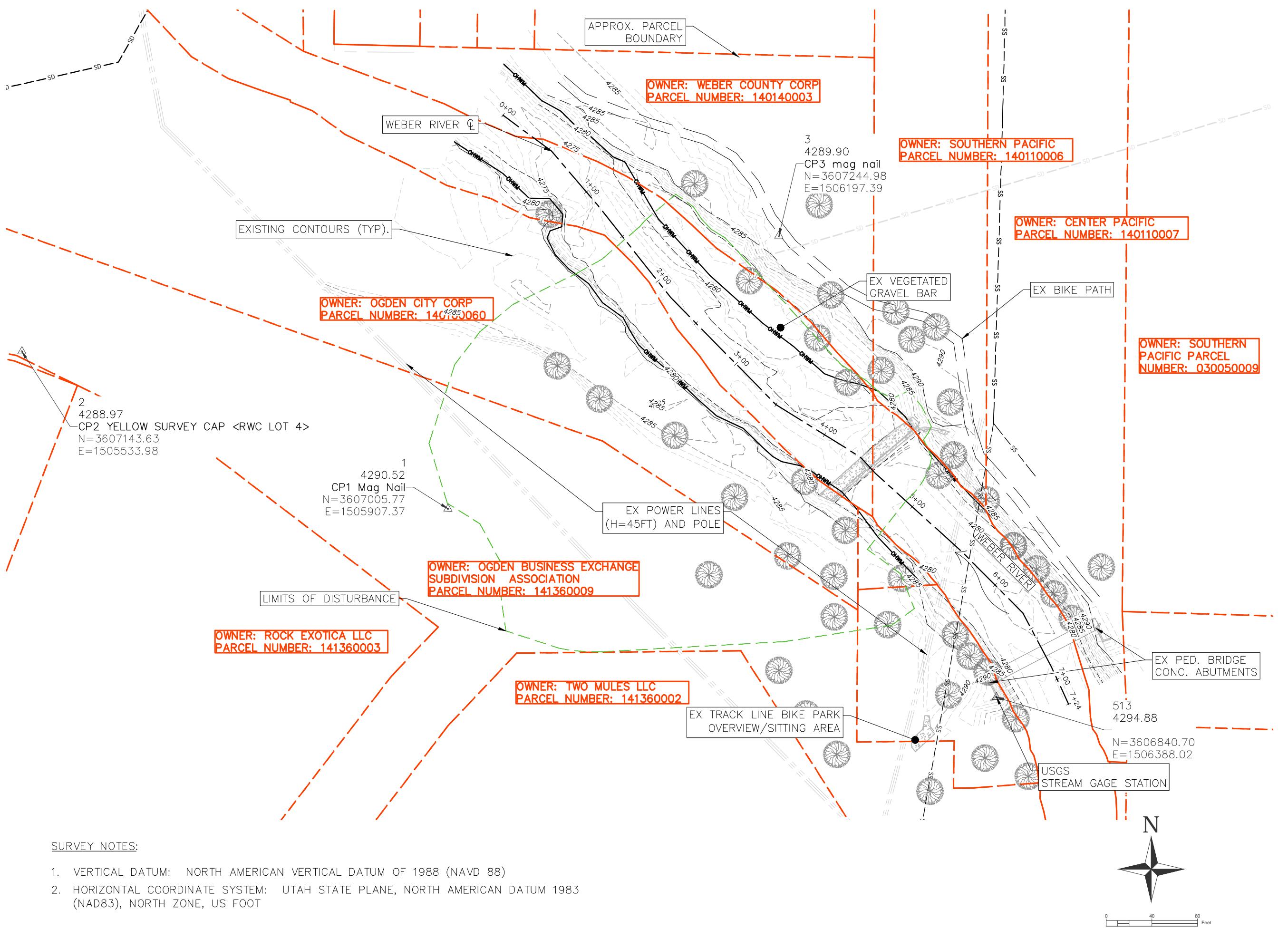
G01



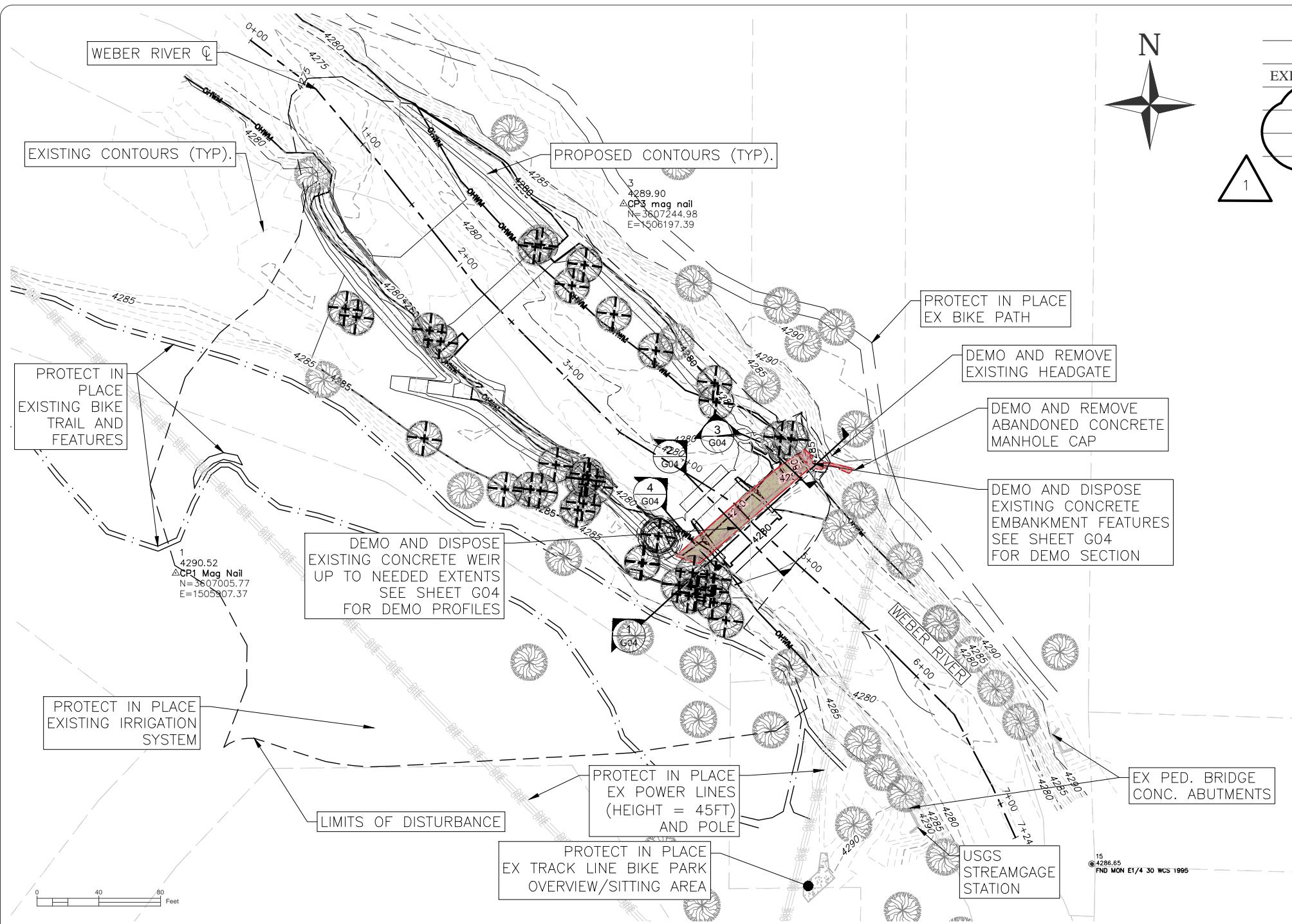


OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT BASE MAP & HORIZONTAL CONTROL PLAN

No.	REVISION/UPDATE	Date
CLIENT NAME AND ADDRESS		
 <p>Ogden City Corporation Engineering Division 2549 Washington Blvd Ogden, UT 84401</p>		
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 <p>River Restoration P.O. Box 248 Carbondale, CO 81623 www.RiverRestoration.org</p>		
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<p>Weber River Ogden, UT Ogden Business Exchange Surf Wave</p>		
Project	45072	Sheet
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Scale	1" = 40' (FULL SIZE)	G02



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1 EXISTING CONCRETE WEIR
G03



2 EXISTING CONCRETE WEIR & RIVER RIGHT EMBANKMENT
G03



3 RIVER RIGHT CONCRETE EMBANKMENT
(DETAIL)
G03

DEMO ITEMS		
GENERAL EXCAVATION & STOCKPILING (PROJECT TOTAL)	3980	CY
EXISTING CONCRETE DEMOLITION AND HAUL OFF AND DISPOSAL	186	CY
LARGE TREE (24"-32" DIA.)	1	EA
MEDIUM TREES (12"-23.9" DIA.)	8	EA
SMALL TREES (6"-11.9" DIA.)	30	EA

1



4 EXISTING ABANDONED CONCRETE MANHOLE CAP & ABANDONED HEADGATE
G03



5 EXISTING CONCRETE WEIR AND RIVER LEFT BANK VIEW
G03

- TO BE REMOVED
- TO PROTECT IN PLACE
- REMOVE AND DISPOSE EXISTING TREE

OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT DEMOLITION & PROTECT IN PLACE PLAN

No.	REVISION/UPDATE	Date
1	DEMO TREE UPDATES	11/21/25

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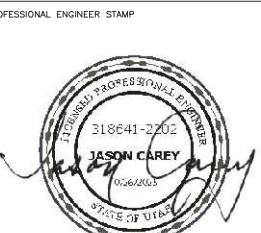


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Project	Sheet
45072	G03
Date	OCTOBER 2025
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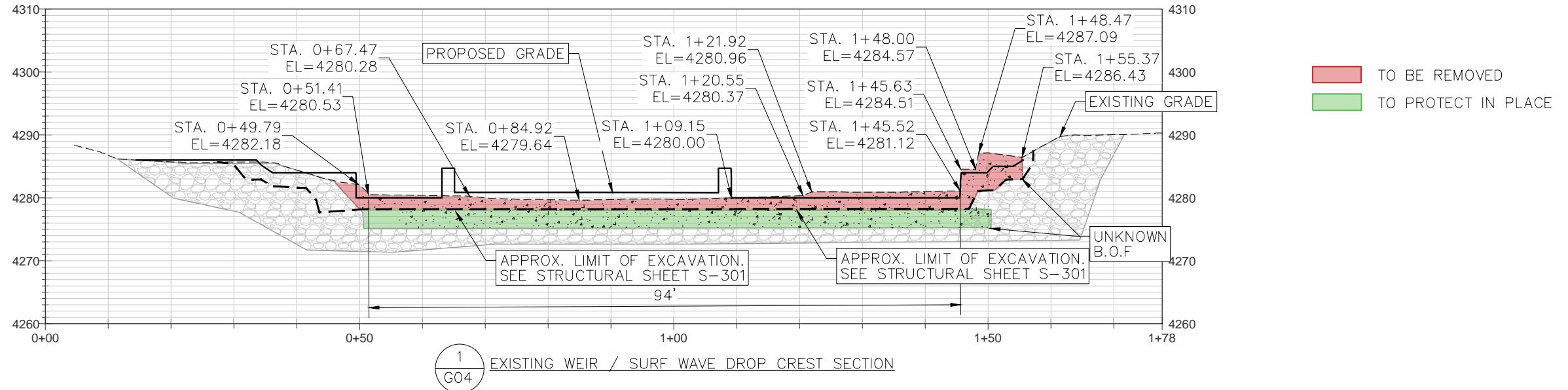
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OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT DEMOLITION & PROTECT SECTION AND PROFILES

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 Ogden Ogden City Corporation Engineering Division 2549 Washington Blvd Ogden, UT 84401		
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 RIVER RiverRestoration.org P.O. Box 248 Carbondale, CO 81623 www.RiverRestoration.org		
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Project	45072	Sheet
Date	OCTOBER 2025	
Scale	1" = 10' (FULL SIZE)	

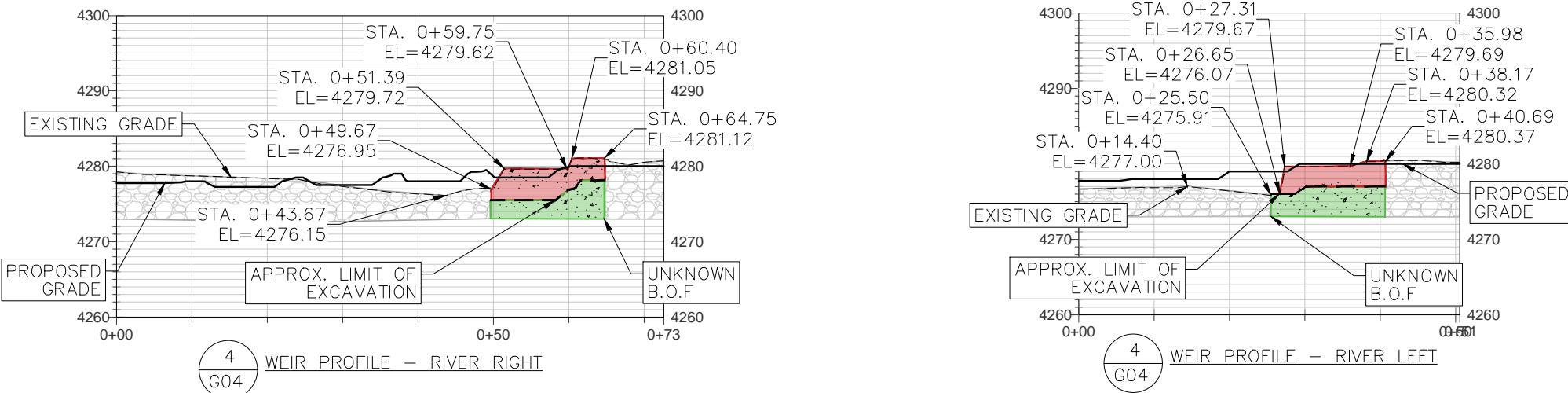
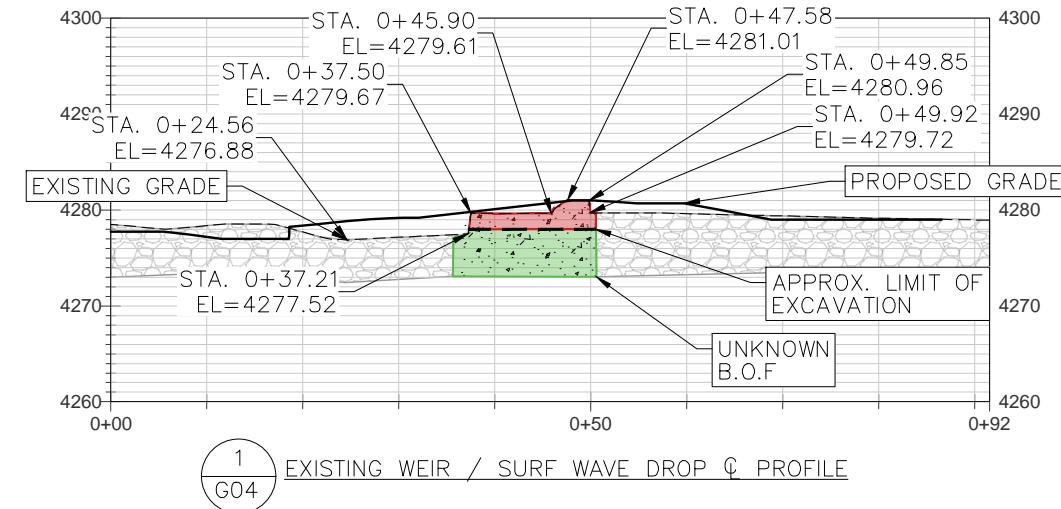
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NOTE:

ASSUMED TYPICAL EXCAVATION
RELATIVE TO PROPOSED GRADE,
UNLESS OTHERWISE NOTED, :

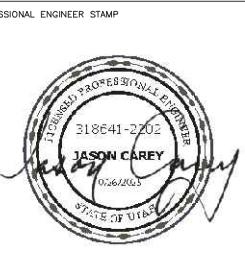
- 2' FOR CONCRETE
- 3' FOR BOULDER PLACEMENT
- FOUNDATION OF RIVER RIGHT
ABUTMENT WALL TO SEAT ON
EXISTING CONCRETE IF SUITABLE



0 10 20 Feet

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GO4



OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT CARE OF WATER OVERVIEW AND NOTES

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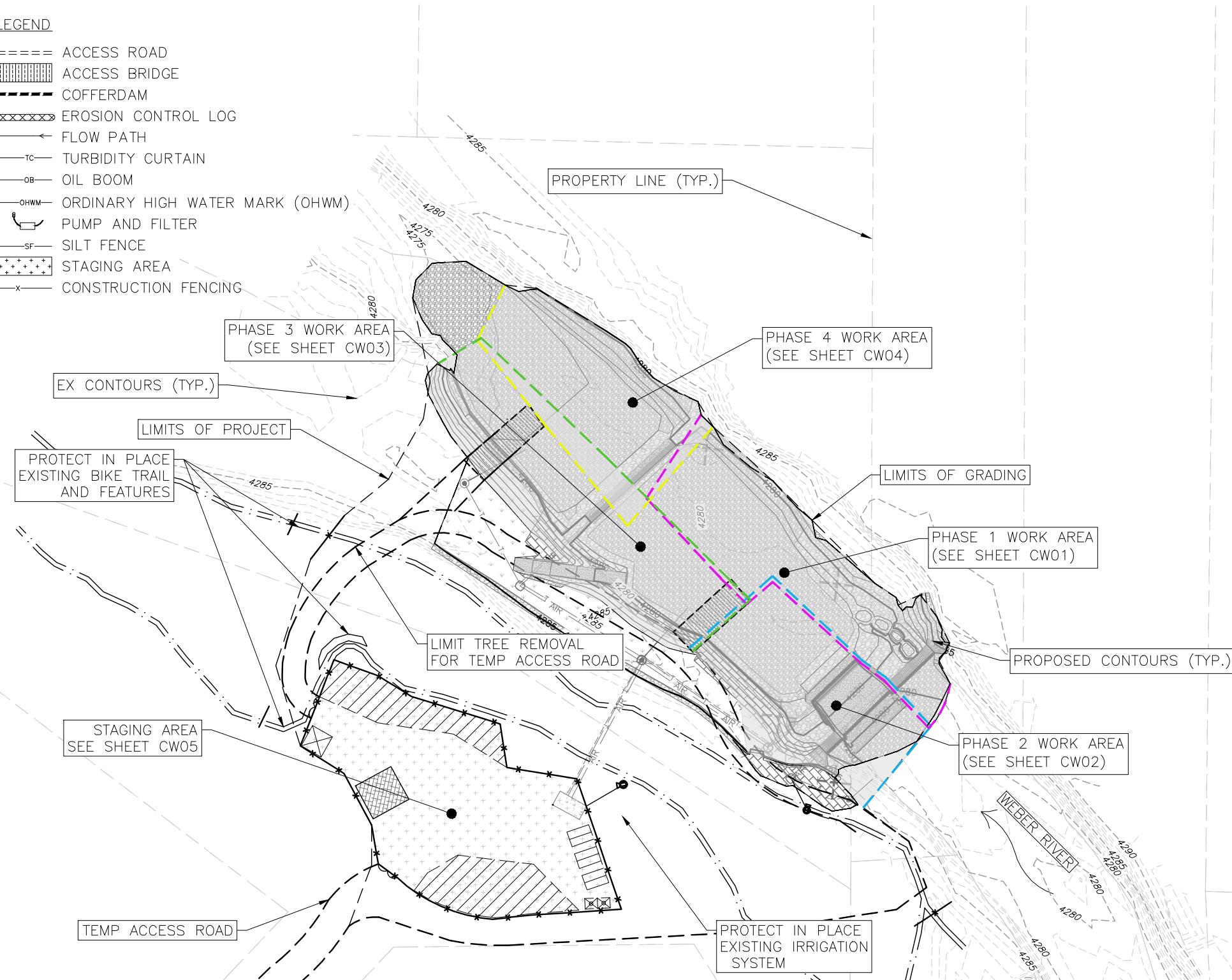
PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

Project	Sheet
45072	CW00
Date	OCTOBER 2025
Scale	1" = 40' (FULL SIZE)

LEGEND

- ===== ACCESS ROAD
- ===== ACCESS BRIDGE
- COFFERDAM
- ~~~~~ EROSION CONTROL LOG
- FLOW PATH
- TC TURBIDITY CURTAIN
- OB OIL BOOM
- OHWM ORDINARY HIGH WATER MARK (OHWM)
- PUMP AND FILTER
- SF SILT FENCE
- ***** STAGING AREA
- CONSTRUCTION FENCING



EROSION CONTROL AND CARE OF WATER NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS AND BEST MANAGEMENT PRACTICES (BMP'S).
2. CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPMENT OF STAGING AREAS, ACCESS, AND CARE OF WATER DURING CONSTRUCTION.
3. IF ISOLATION FROM THE FLOWING RIVER IS DESIRED DURING CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION OF ISOLATION PLAN.
4. CONTRACTOR IS RESPONSIBLE FOR DEMOBILIZATION OF EQUIPMENT TO AVOID DESTABILIZATION OF EQUIPMENT AND PARTIALLY CONSTRUCTED FEATURES. SEE SPECIFICATIONS FOR REQUIREMENTS AND DETAILS.
5. UTILITY LOCATIONS SHOWN IN PLANS ARE APPROXIMATE, CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY LOCATES INCLUDING UTILITIES NOT SHOWN IN PLANS.
6. MINIMIZE TREE CUTTING IN MATURE FOREST WITHIN DISTURBANCE AREA. ANY TREES OUTSIDE THE ITEM NUMBER IN COST OPINION WILL NEED TO BE APPROVED BEFORE CUTTING

CARE OF WATER SEQUENCE:

COW PHASE 1 (CW01):

- 1.1 SALVAGE AND REMOVE ABANDONED CONCRETE MANHOLE CAP;
- 1.2 SALVAGE AND REMOVE EXISTING HEADGATE;
- 1.3 DEMO AND DISPOSE EX. CONCRETE EMBANKMENT FEATURES;
- 1.4 DEMO AND DISPOSE RIVER RIGHT SIDE OF EXISTING CONCRETE WEIR;
- 1.5 REBUILD BANK;
- 1.6 GRAVEL BAR EXCAVATION, AND POOL GRADING;
- 1.7 BOULDER PLACEMENT FOR RIVER RIGHT BANK TIE IN AND FISH PASSAGE CHANNEL;
- 1.8 POUR CREST CONCRETE SLAB AND INSTALL OHM GATE SYSTEM;

COW PHASE 2 (CW02):

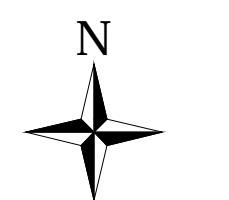
- 2.1 DEMO AND DISPOSE RIVER LEFT SIDE OF EX CONCRETE WEIR;
- 2.2 BUILD BANK AND RIVER LEFT WING;
- 2.3 POUR CREST CONCRETE SLAB AND INSTALL OHM GATE SYSTEM;
- 2.4 CAST AND POUR CONCRETE SLAB AND WALLS FOR SURF WAVE FEATURE; INSTALL OHM GATE SYSTEM;
- 2.6 SCOUR PAD, POOL AND RIVER LEFT UPSTREAM BANK IMPROVEMENTS (LAID BACK STEPS AND VIEWING PLATFORM).

COW PHASE 3 (CW03):

- 3.1 LEFT BANK AND BANK TOE RESTORATION;
- 3.2 ACCESS RAMP;
- 3.3 POOL GRADING;
- 3.4 DOWNSTREAM GRADE CONTROL STRUCTURE (G.C.S.), CONCRETE AND BOULDER PLACEMENT;
- 3.5 INSTALL OHM GATE SYSTEM;

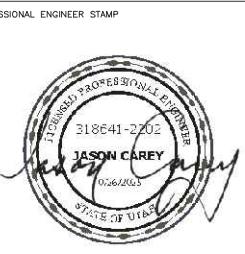
COW PHASE 4 (CW04):

- 4.1 DOWNSTREAM G.C.S & RIVER RIGHT BOULDER WING;
- 4.2 BANK TIE IN AND GRADING.



0 40 80 Feet

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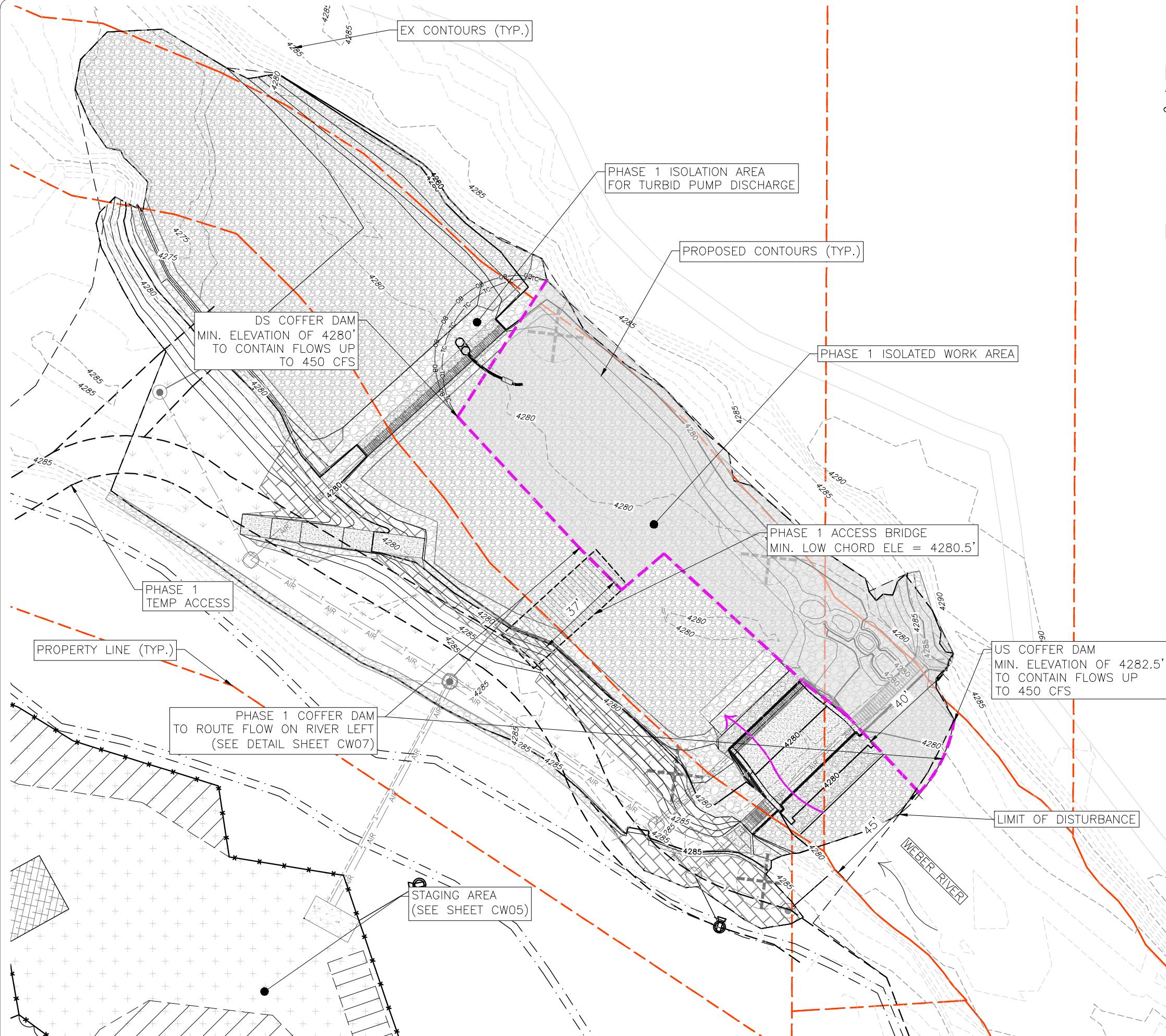
OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT CARE OF WATER PHASE 1

LEGEND

- ===== ACCESS ROAD
- ||||| ACCESS BRIDGE
- - - COFFERDAM
- xxxxxx EROSION CONTROL LOG
- Flow Path
- TC Turbidity Curtain
- OB Oil Boom
- OHWM Ordinary High Water Mark (OHWM)
- Pump and Filter
- SF Silt Fence
- Staging Area
- x Construction Fencing

CONSTRUCTION NOTES:

1. SEE SHEET CW00 AND TECHNICAL SPECIFICATIONS, SECTIONS 2 AND 3 FOR A DETAILED DESCRIPTION OF CONTRACTOR REQUIREMENTS CONCERNING EROSION CONTROL (NPDES) AND CARE OF WATER (USACE 404, UDWQ 401); & SECTION 12 FOR EXISTING PROJECT SITE HYDROLOGY AND TEMPORARY DIVERSION WATER SURFACE ELEVATIONS.
2. CARE OF WATER PLAN IS SHOWN FOR PERMITTING AND COST ESTIMATING PURPOSES ONLY. CONTRACTOR WILL BE RESPONSIBLE FOR DEVELOPING A CARE OF WATER PLAN TO MEET PERMITTING REQUIREMENTS AND CONSTRUCTION NEEDS. CONTRACTOR IS WHOLLY RESPONSIBLE FOR MONITORING RIVER LEVELS AND WEATHER FORECASTS AND MAKING ADJUSTMENTS TO THE PROJECT'S COFFER DAM SYSTEM OR DEMOBILIZING OUT OF THE RIVER IF FLOW CONDITIONS EXCEEDS OR IS PREDICTED TO REQUIRE SUBMERGENCE OF THE ISOLATION SYSTEM CAPACITY.



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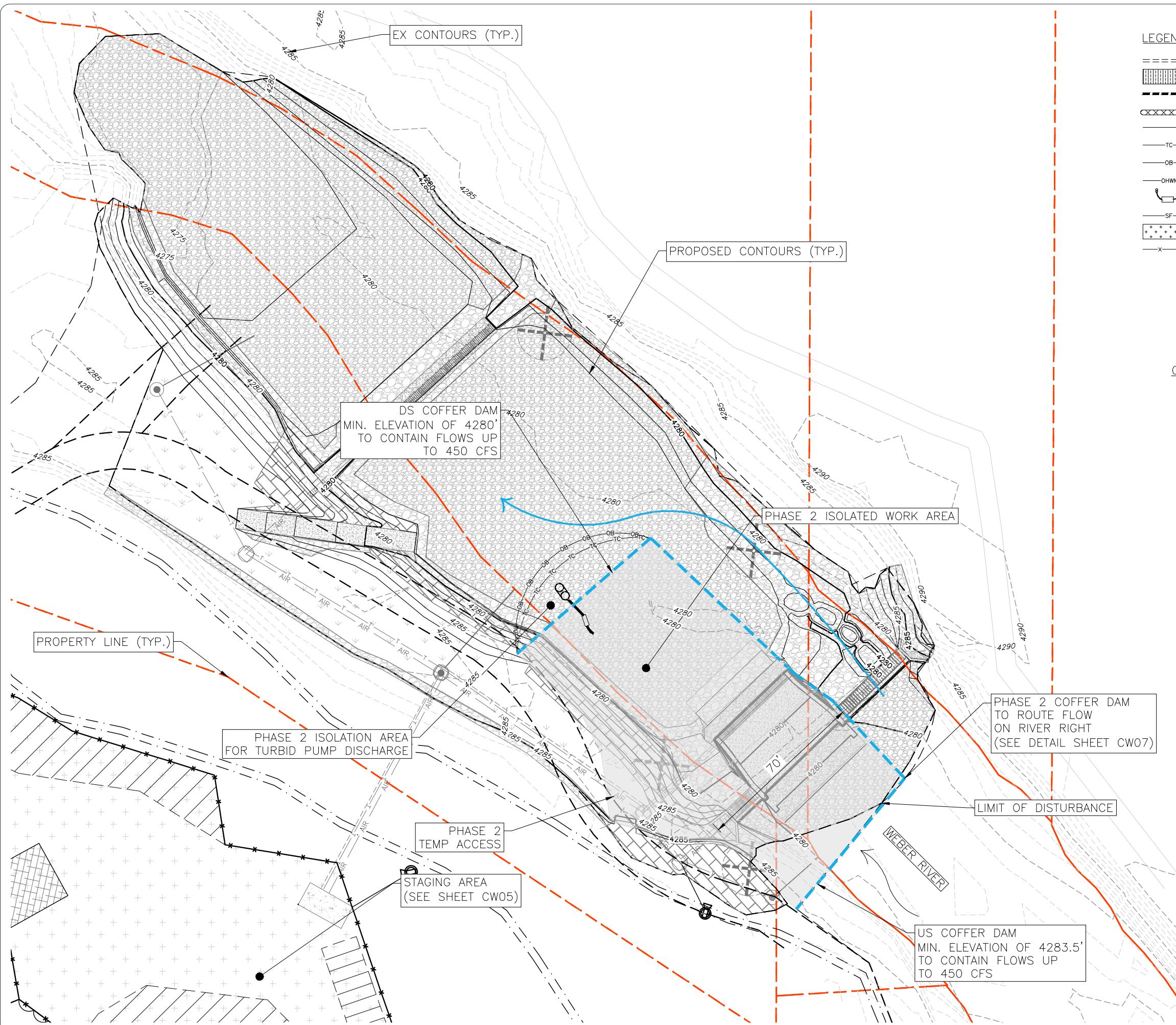


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www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

Project 45072	Sheet CW01
Date OCTOBER 2025	
Scale 1" = 20' (FULL SIZE)	



LEGEND

- ===== ACCESS ROAD
- ||||| ACCESS BRIDGE
- - - COFFERDAM
- xxxxxx EROSION CONTROL LOG
- FLOW PATH
- TC TURBIDITY CURTAIN
- OB OIL BOOM
- OHWM ORDINARY HIGH WATER MARK (OHWM)
- PUMP AND FILTER
- SF SILT FENCE
- STAGING AREA
- x CONSTRUCTION FENCING

CONSTRUCTION NOTES:

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OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT CARE OF WATER PHASE 2

No.	REVISION/UPDATE	Date



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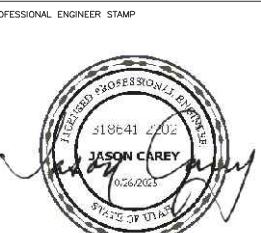


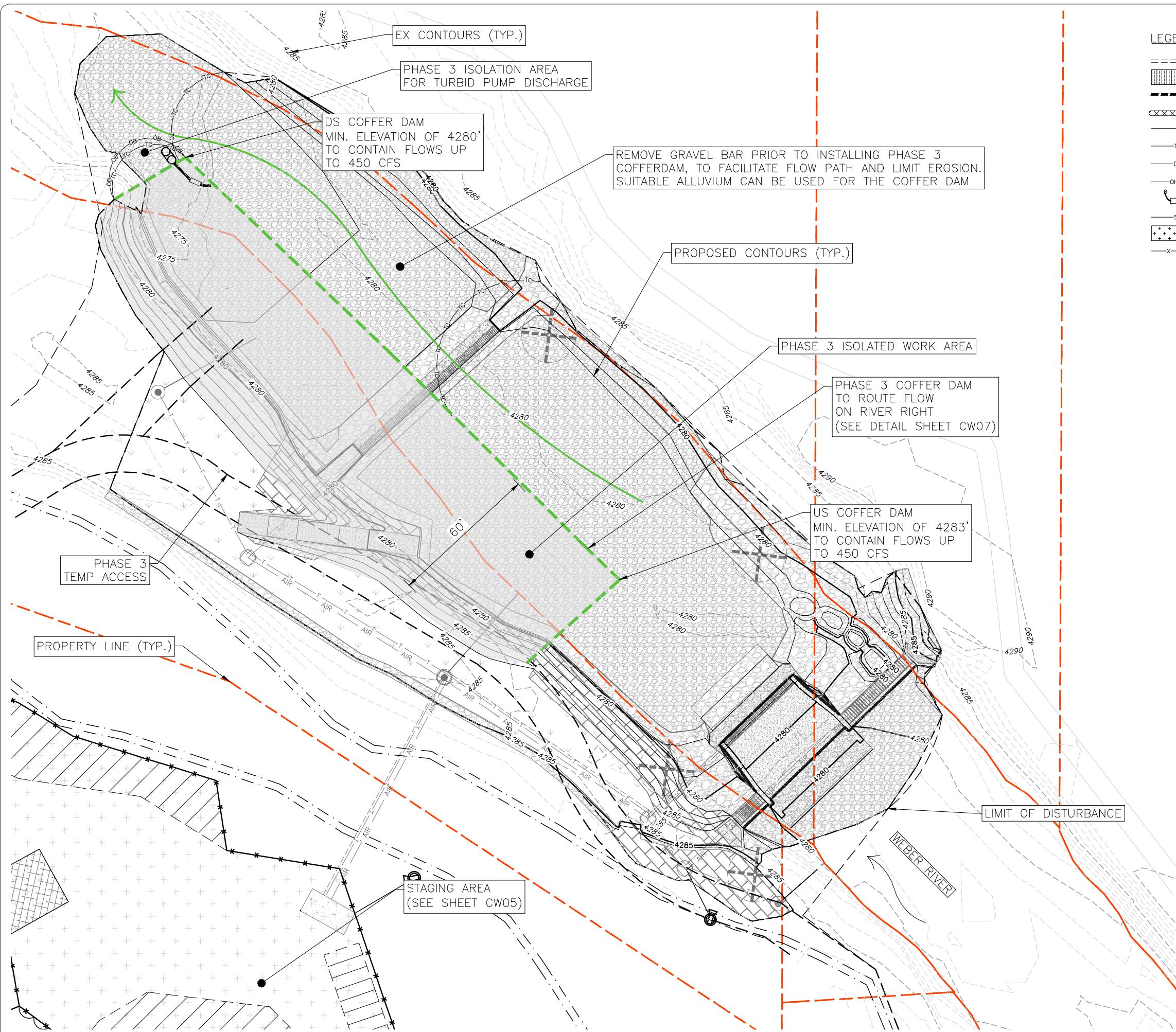
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Project	Sheet
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CONSTRUCTION NOTES:

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0 20 40 Feet

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OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
CARE OF WATER
PHASE 3

No.	REVISION/UPDATE	Date



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Ogden, UT 84401

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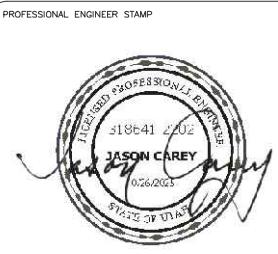


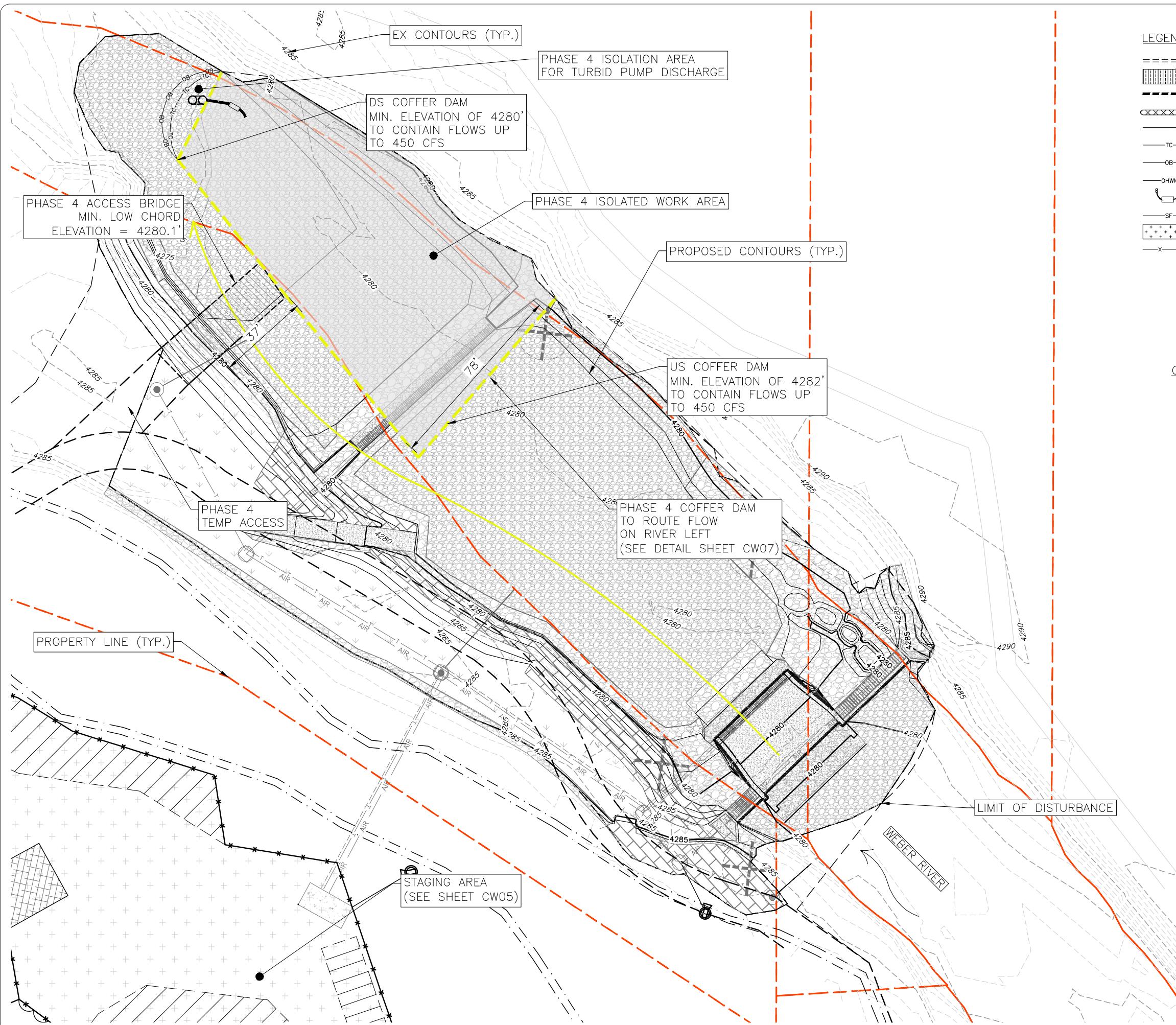
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Project	Sheet
45072	CW03
Date	OCTOBER 2025
Scale	1" = 20' (FULL SIZE)





LEGEND

- ===== ACCESS ROAD
- ||||| ACCESS BRIDGE
- - - COFFERDAM
- xxxxxx EROSION CONTROL LOG
- FLOW PATH
- TC TURBIDITY CURTAIN
- OB OIL BOOM
- OHWM ORDINARY HIGH WATER MARK (OHWM)
- PUMP AND FILTER
- SF SILT FENCE
- STAGING AREA
- CONSTRUCTION FENCING

CONSTRUCTION NOTES:

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OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT CARE OF WATER PHASE 4

No.	REVISION/UPDATE	Date

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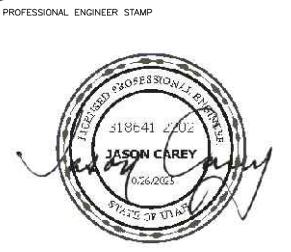
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Ogden, UT
Ogden Business Exchange Surf Wave

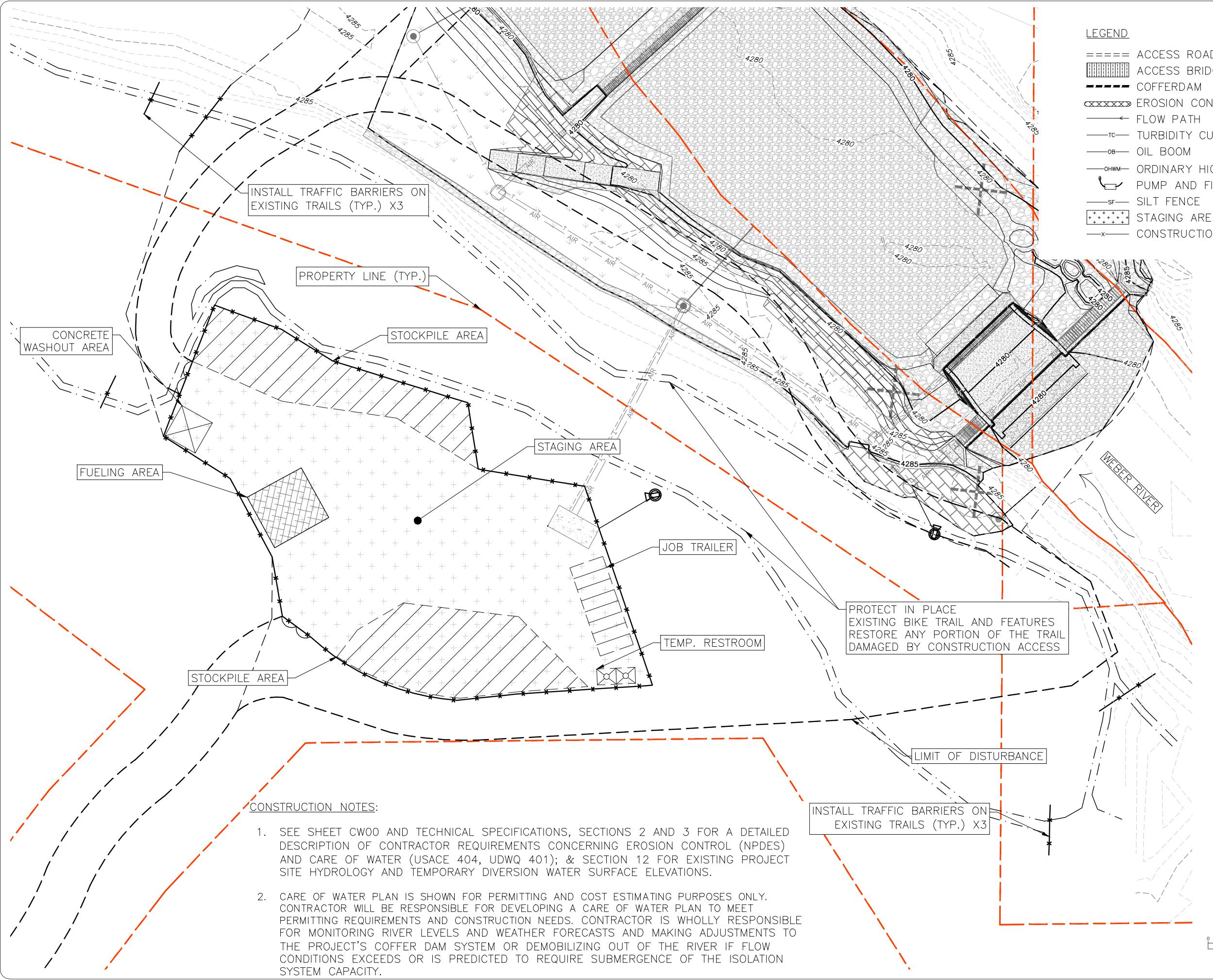
Project	Sheet
45072	CW04
Date	OCTOBER 2025
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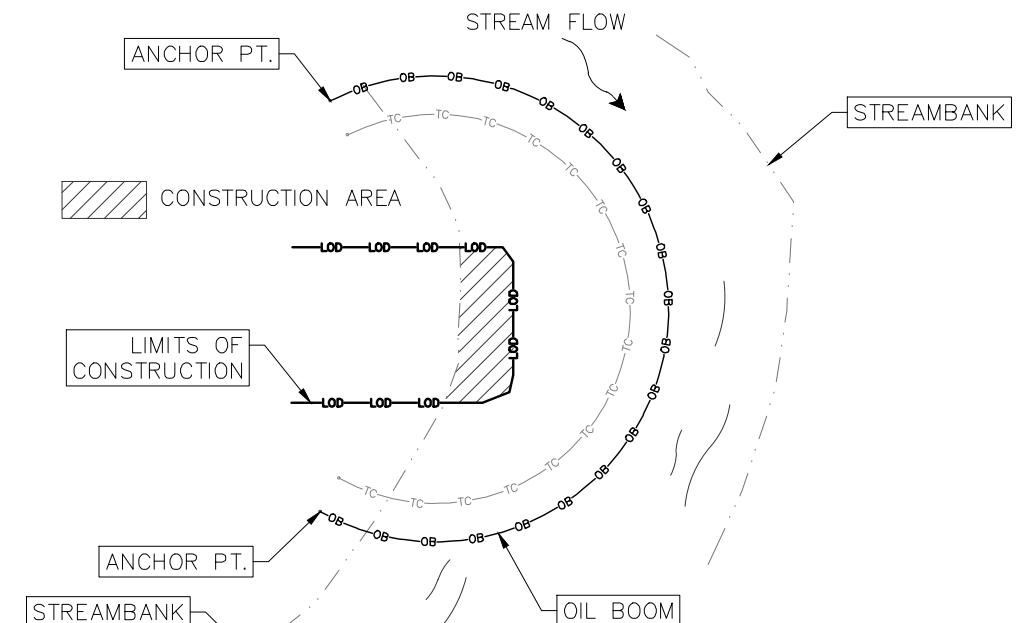
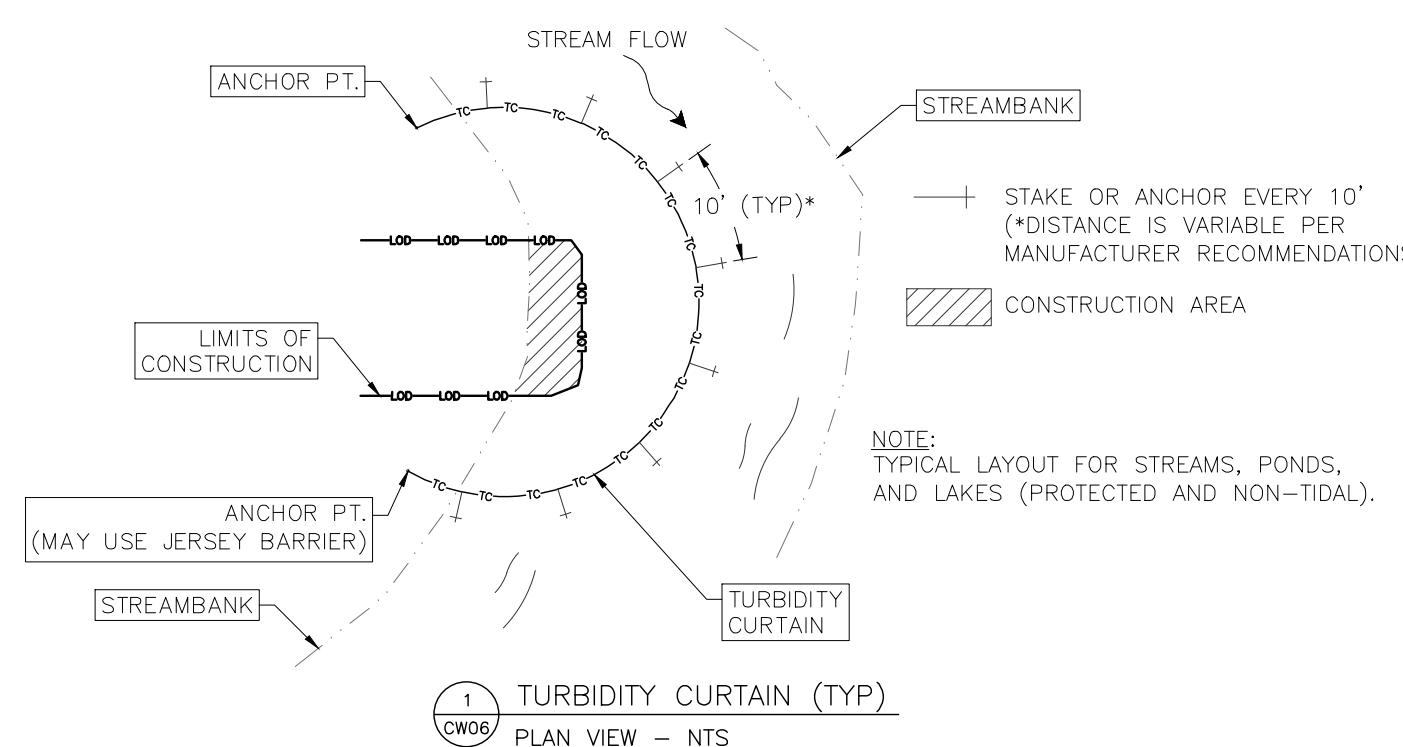
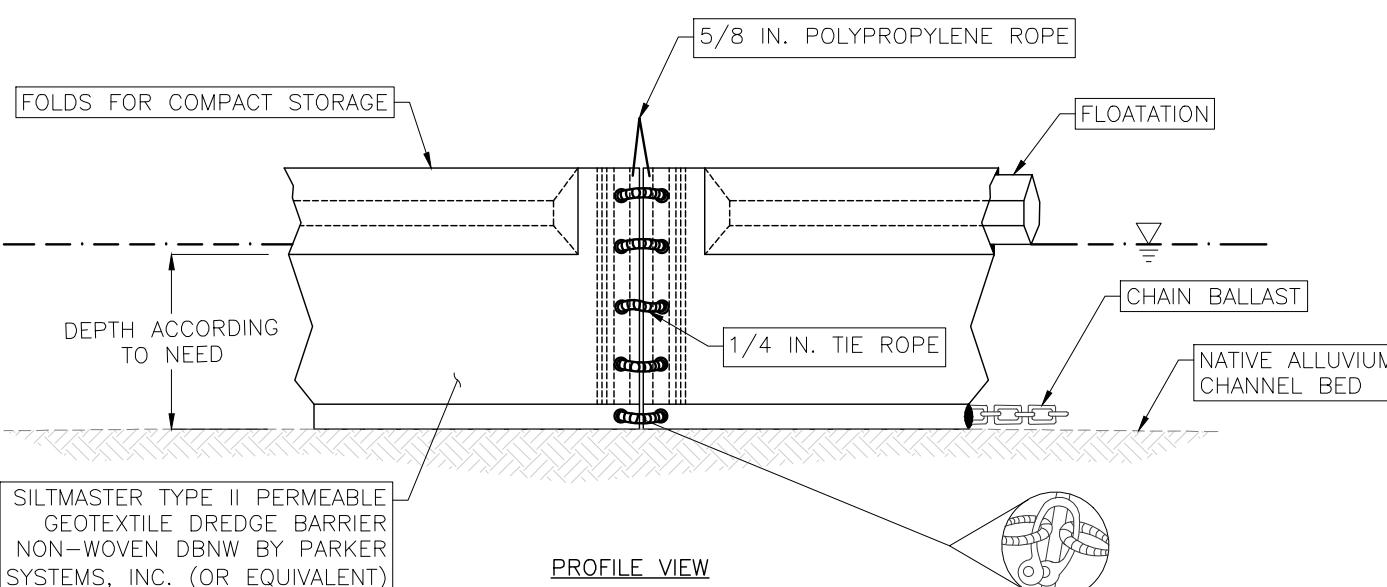
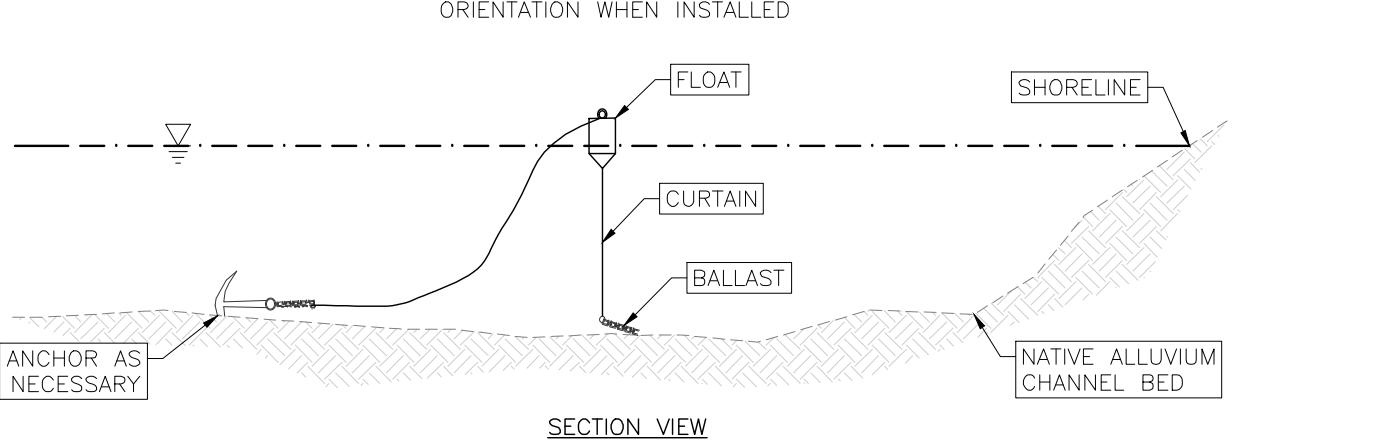
OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT CARE OF WATER STAGING AREA

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Project 45072	Sheet	CW05
Date OCTOBER 2025	Scale	1" = 20' (FULL SIZE)



CARE OF WATER DETAILS 1 OF 2

OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT



NOTE:
TYPICAL LAYOUT FOR STREAMS AND RIVERS.
OIL BOOM TO BE PLACED BEHIND
TURBIDITY CURTAIN AND DOWNSTREAM OF
ANY EQUIPMENT WORKING IN THE WET.

2
CW06 OIL BOOM (TYP)
PLAN VIEW - NTS

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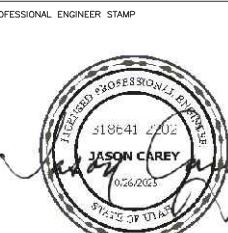
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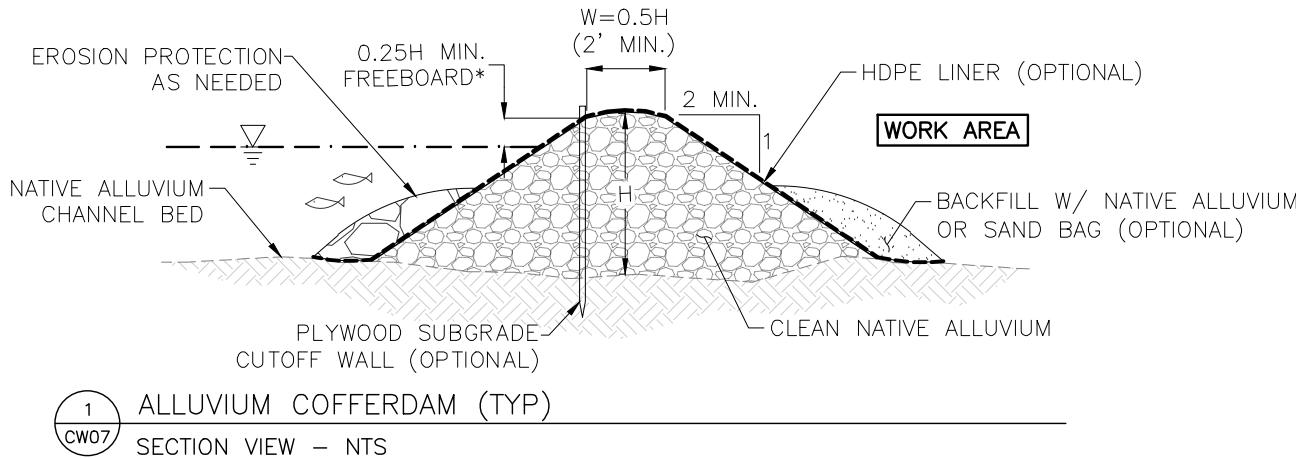
BID SET



OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT

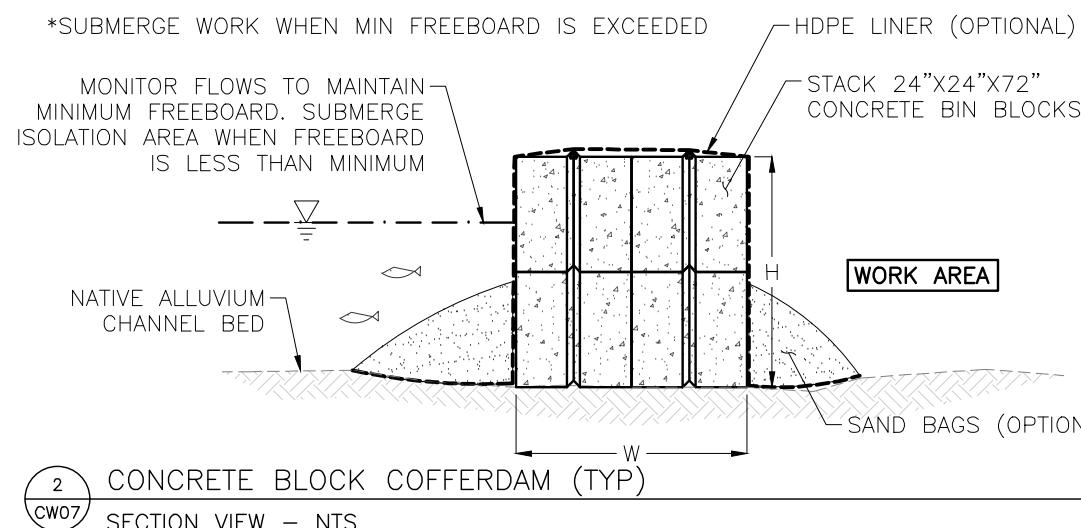
CARE OF WATER DETAILS 2 OF 2

NOTE:
 $H_{MAX}=8.0'$
 $W_{MIN}=0.5H$; $MIN\ FREEBOARD*=0.25H$; $MAX\ DEPTH=6'$
 *SUBMERGE WORK WHEN MIN FREEBOARD IS EXCEEDED

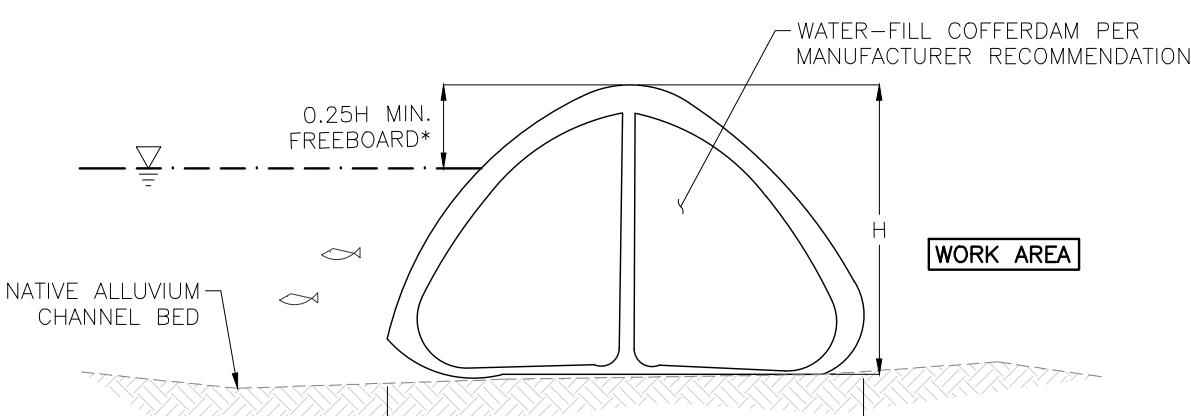


NOTE:
 $H_{MAX}=8.0'$
 $MAX\ H=W$; $MIN\ FREEBOARD*=0.25H$; $MAX\ DEPTH=0.75H$

*SUBMERGE WORK WHEN MIN FREEBOARD IS EXCEEDED



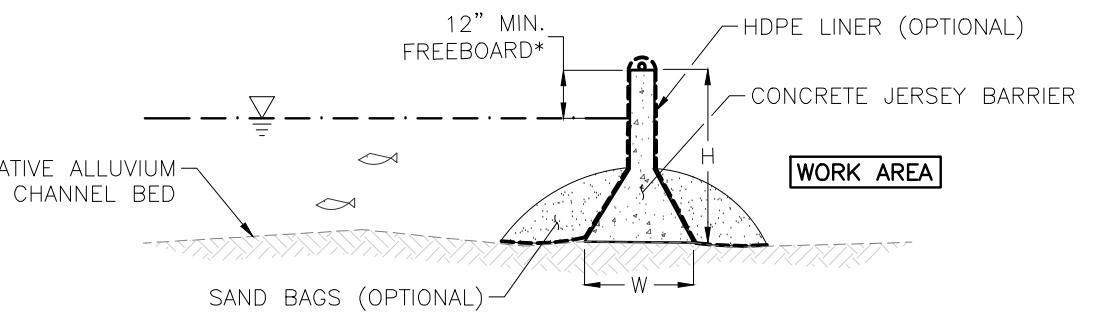
SECTION VIEW - NTS



SECTION VIEW - NTS

NOTE:
 $H_{MAX}=34"$ (TYP. JERSEY BARRIER HEIGHT)
 $W_{MIN}=23"$ (TYP. JERSEY BARRIER BASE WIDTH)
 $MIN\ FREEBOARD*=12"$
 $MAX\ DEPTH=0.75H$

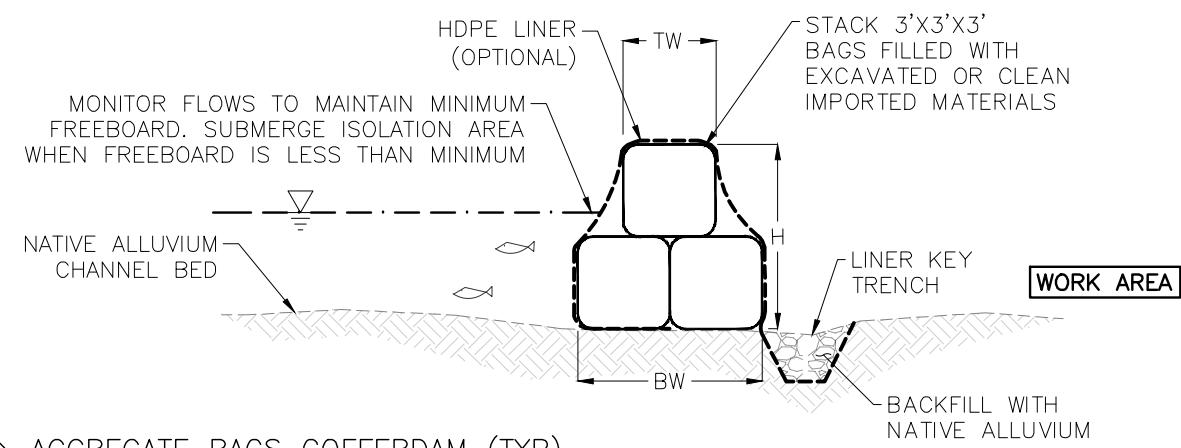
*SUBMERGE WORK WHEN MIN FREEBOARD IS EXCEEDED



SECTION VIEW - NTS

NOTE:
 $H_{MAX}=8.0'$
 $BW_{MIN}=H$
 $MIN\ FREEBOARD*=0.25H$
 $MAX\ DEPTH=0.75H$
 $TW=H/2$

*SUBMERGE WORK WHEN MIN FREEBOARD IS EXCEEDED



SECTION VIEW - NTS

NOTE:
 $H_{MAX}=$ PER MANUFACTURERS RECOMMENDATIONS.
 $W_{MIN}=$ PER MANUFACTURERS RECOMMENDATIONS.

*SUBMERGE WORK WHEN MINIMUM FREEBOARD IS EXCEEDED

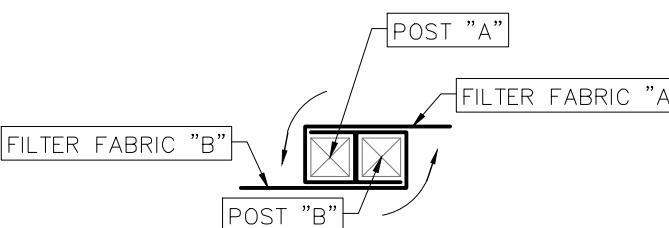
No.	REVISION/UPDATE	Date
CLIENT NAME AND ADDRESS		
 Ogden City Corporation Engineering Division 2549 Washington Blvd Ogden, UT 84401		
DESIGN FIRM NAME AND ADDRESS		
 RiverRestoration P.O. Box 248 Carbondale, CO 81623 www.RiverRestoration.org		
PROJECT NAME AND ADDRESS		
Weber River Ogden, UT Ogden Business Exchange Surf Wave		
Project	45072	Sheet
Date	OCTOBER 2025	
Scale	NTS	CW07
BID SET		

EROSION CONTROL DETAILS

OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT



No.	REVISION/UPDATE	Date
CLIENT NAME AND ADDRESS		
 Ogden Ogden City Corporation Engineering Division 2549 Washington Blvd Ogden, UT 84401		
DESIGN FIRM NAME AND ADDRESS		
 RIVER RESTORATION.ORG RiverRestoration P.O. Box 248 Carbondale, CO 81623 www.RiverRestoration.org		
PROJECT NAME AND ADDRESS		
Weber River Ogden, UT Ogden Business Exchange Surf Wave		
Project	45072	Sheet
Date	OCTOBER 2025	
Scale	NTS	
BID SET	CW08	



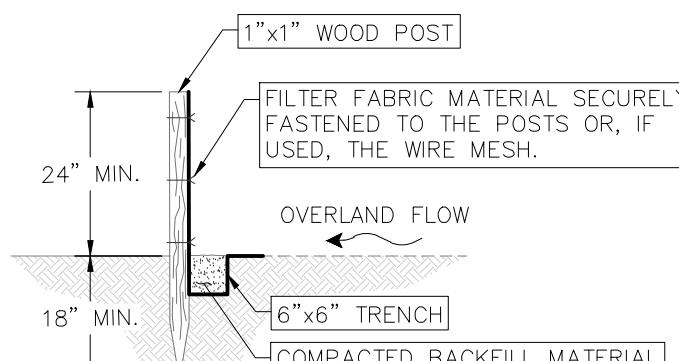
JOINING SECTION DETAIL (PLAN VIEW)

SILT FENCE JOINING NOTES:

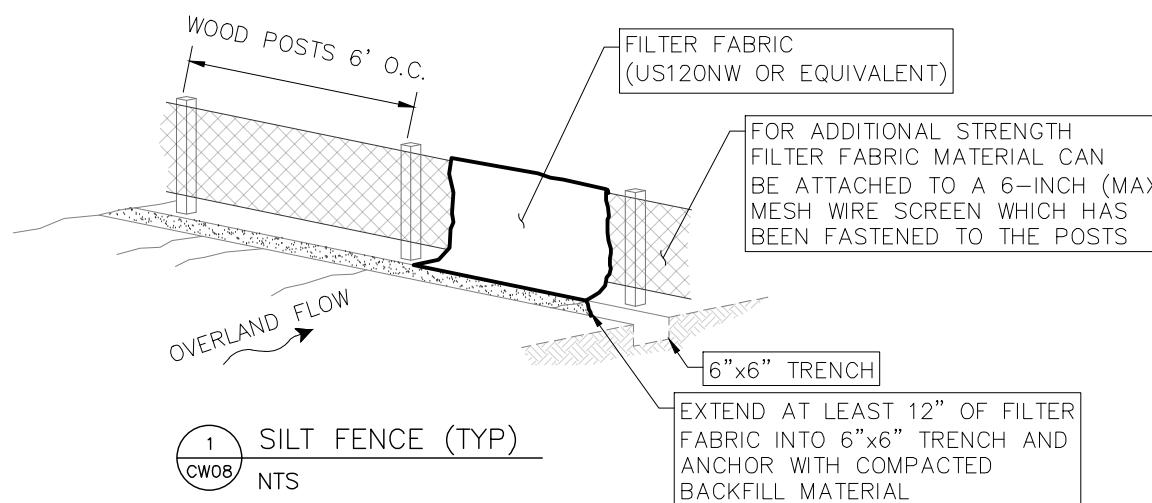
1. WRAP APPROXIMATELY 6" OF FILTER FABRIC OF EACH END AROUND A WOODEN POST ONE FULL TURN, THEN SECURED ALONG THE POST WITH HEAVY DUTY WIRE STAPLES AT LEAST 1" LONG.
2. POST SHALL BE TIGHTLY ABUTTED WITH NO GAPS TO PREVENT POTENTIAL FLOW-THROUGH OF SEDIMENT AT JOINT.



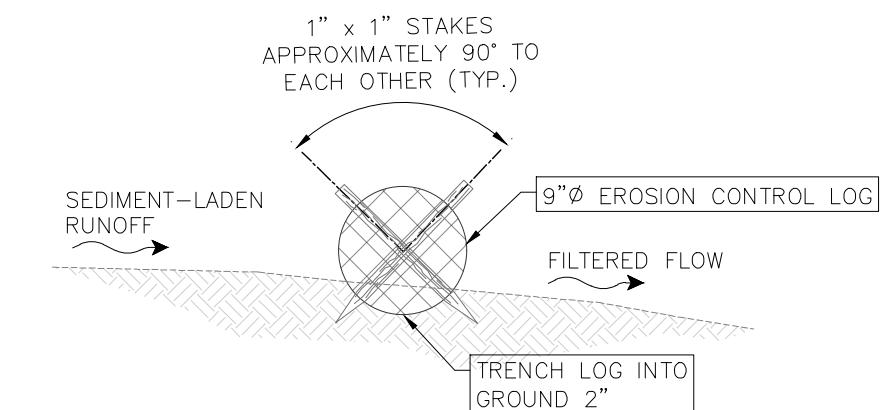
END SECTION DETAIL (PLAN VIEW)



SECTION VIEW



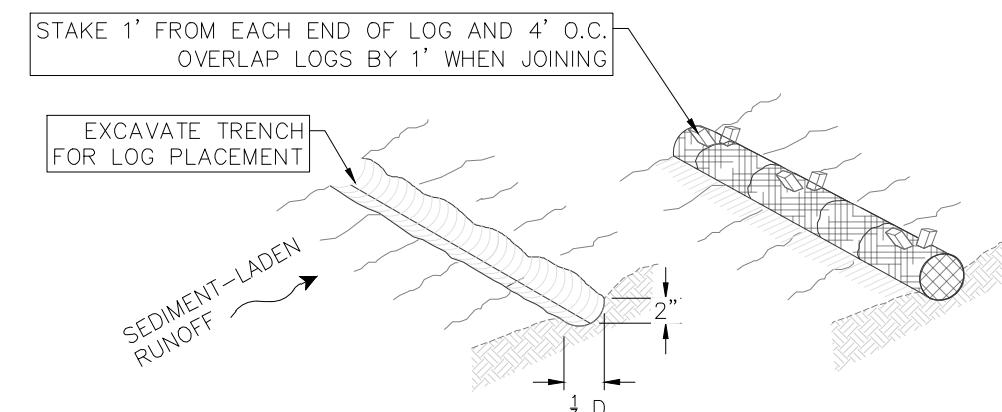
1 CW08 SILT FENCE (TYP)
NTS



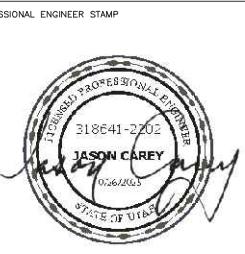
SECTION VIEW

EROSION CONTROL LOG INSTALLATION NOTES:

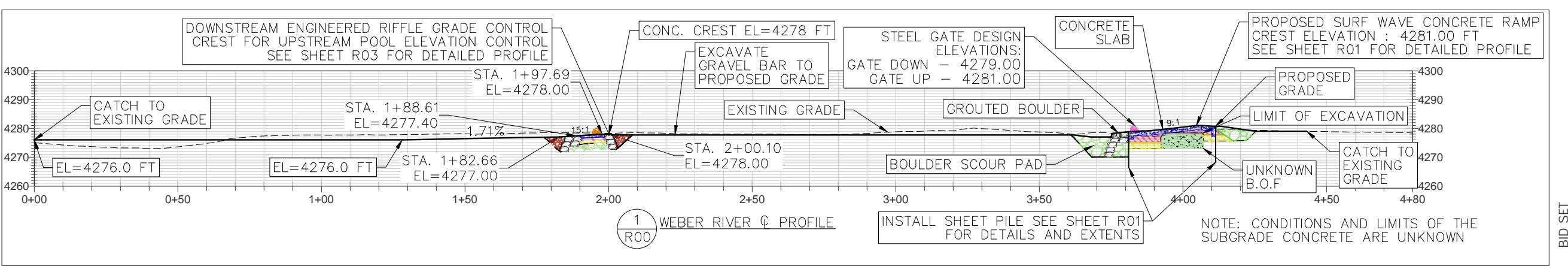
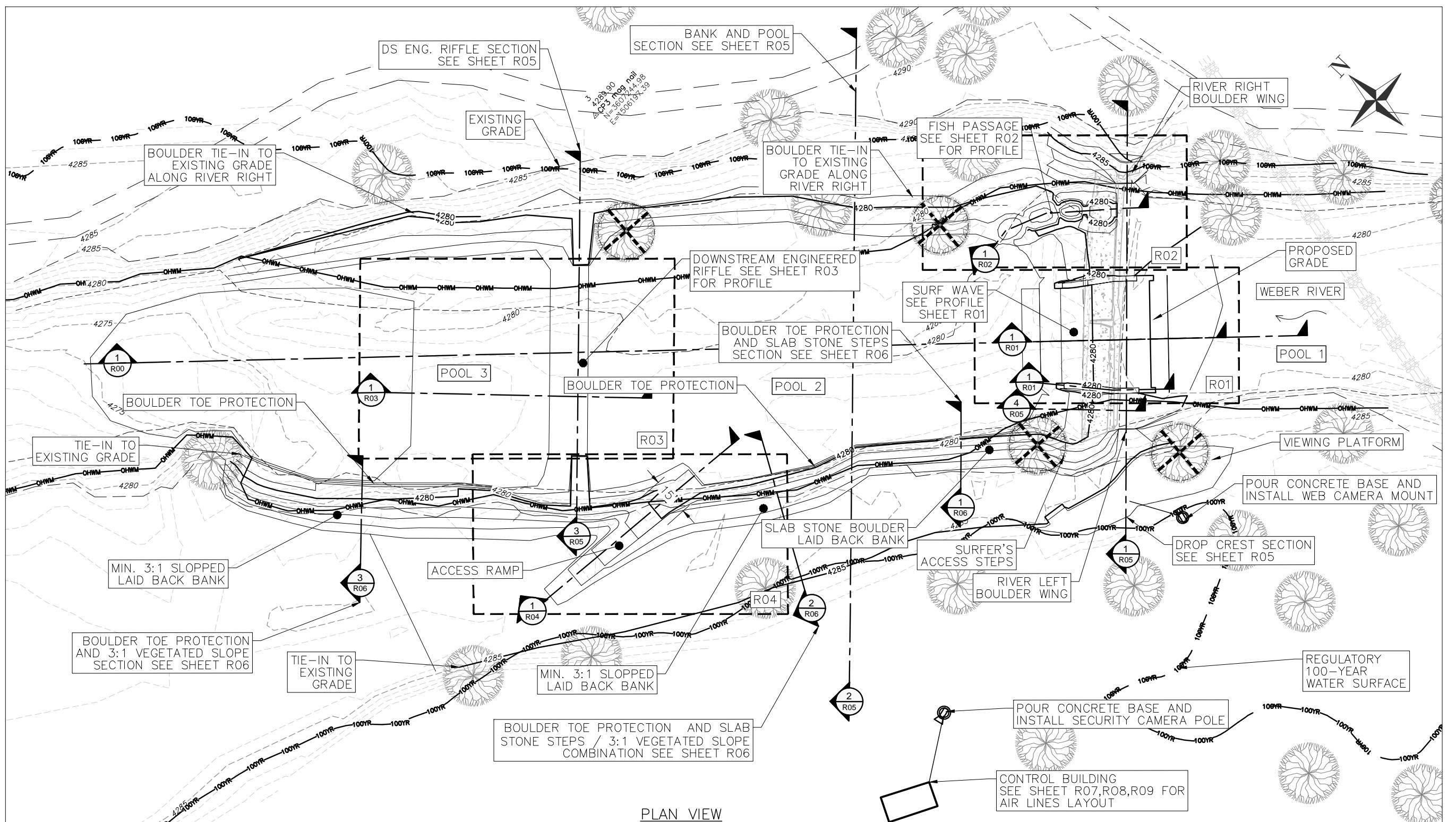
1. EXCAVATE TRENCH 2".
2. PLACE AND STAKE EROSION CONTROL LOG.
3. PLACE SPOILS UP-SLOPE FROM LOG, KNIFE-IN AND COMPACT.



2 CW08 EROSION CONTROL LOG INSTALLATION (TYP)
NTS



OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT PLAN VIEW, PROFILE AND INDEX



No.	REVISION/UPDATE	Date

CLIENT NAME AND ADDRESS



Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS

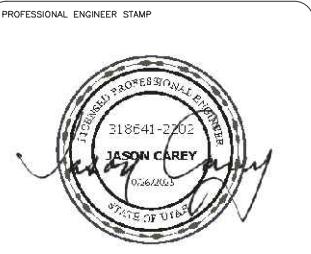


RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

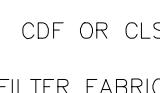
Project	Sheet
45072	
Date	OCTOBER 2025
Scale	1" = 20' (FULL SIZE)



OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT

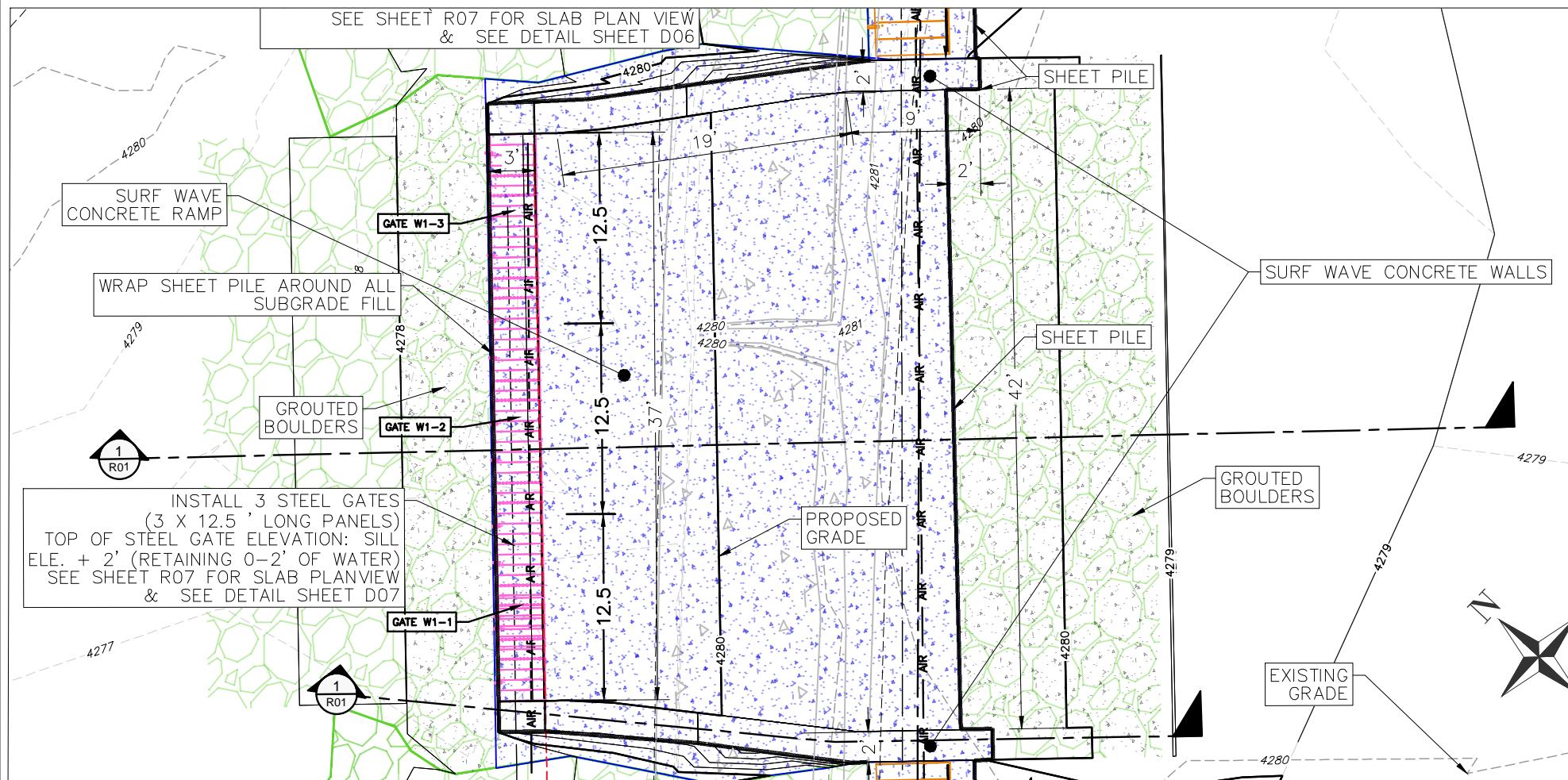
PLAN VIEW AND PROFILE SURF WAVE

LEG

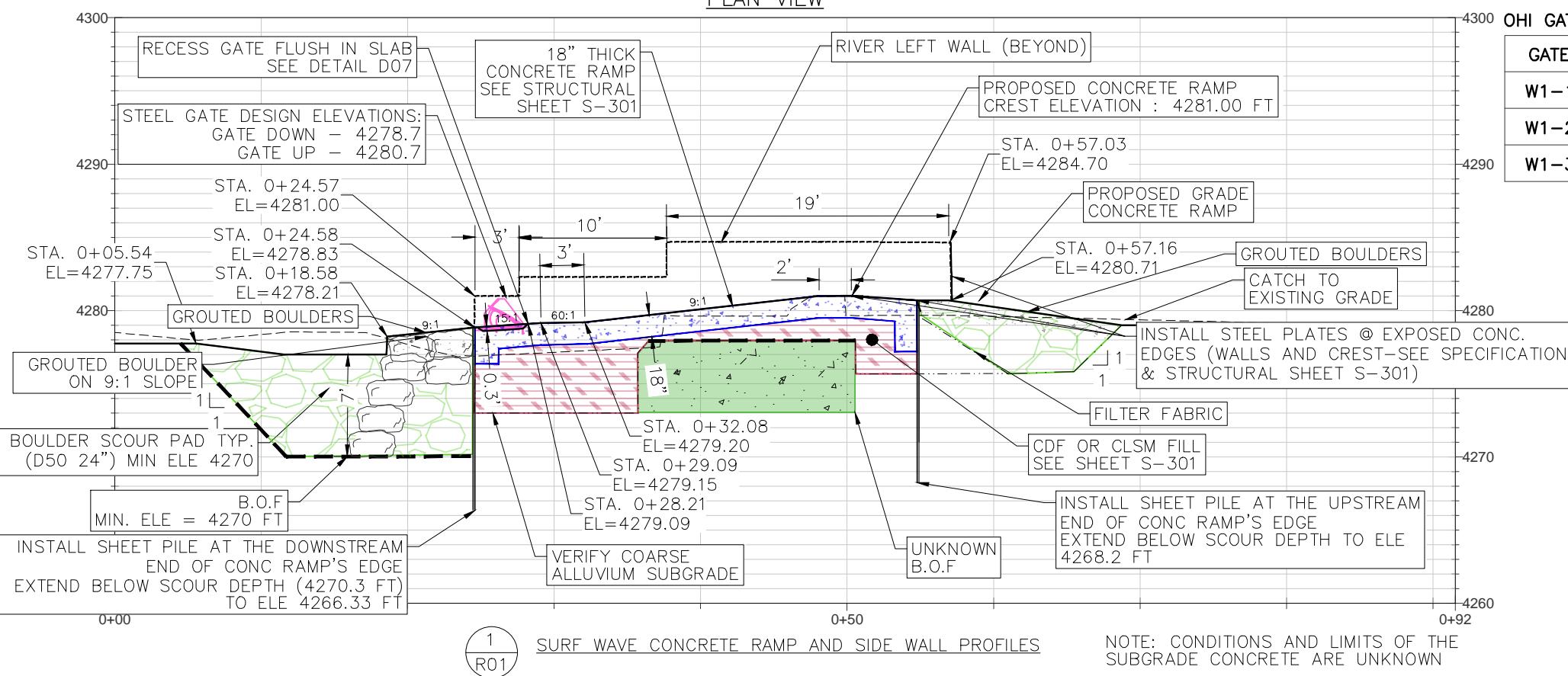
	CONCRETE		TOPSOIL
	BOULDERS		GROUT
	ALLUVIAL SUBSTRATE		SLABSTONE STEPS
	TO PROTECT IN PLACE		
	CDF OR CLSM FILL		
—	FILTER FABRIC		
—	SHEET PILE		
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			
			

NOT

NOTES.
1. BOULDERS, OTHERWISE
SPECIFIED, SHALL CONSIST
OF MIN. 36" B-AXIS.
SELECT BOULDERS.



PLAN VIEW

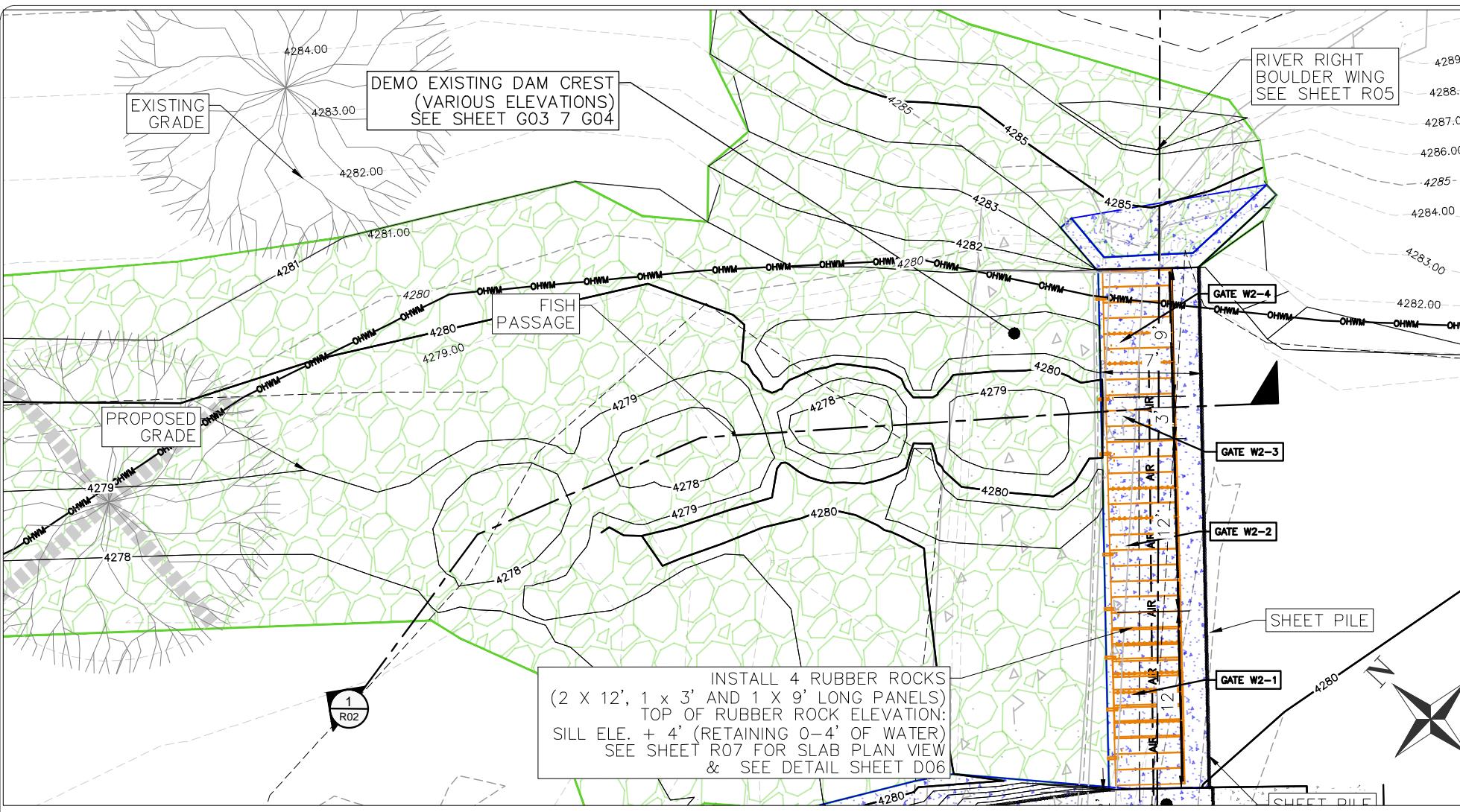


4300 OHI GATE ELEVATIONS				
	GATE	GATE DOWN ELEVATION	GATE UP ELEVATION	Δ
	W1-1	4278.7	4280.7	2.0
	W1-2	4278.7	4280.7	2.0
4290	W1-3	4278.7	4280.7	2.0

No.	REVISION/UPDATE	Date

PROJECT NAME AND ADDRESS
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

Project 45072	Sheet
Date OCTOBER 2025	RO1
Scale 1" = 5' (FULL SIZE)	



PLAN VIEW

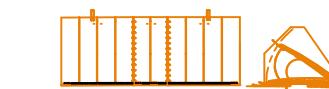
LEGEND:

CONCRETE	TOPSOIL
BOULDERS	GROUT
ALLUVIAL SUBSTRATE	SLABSTONE STEP
TO PROTECT IN PLACE	

— FILTER FABRIC

— CDF OR CLSM FILL

— SHEET PILE



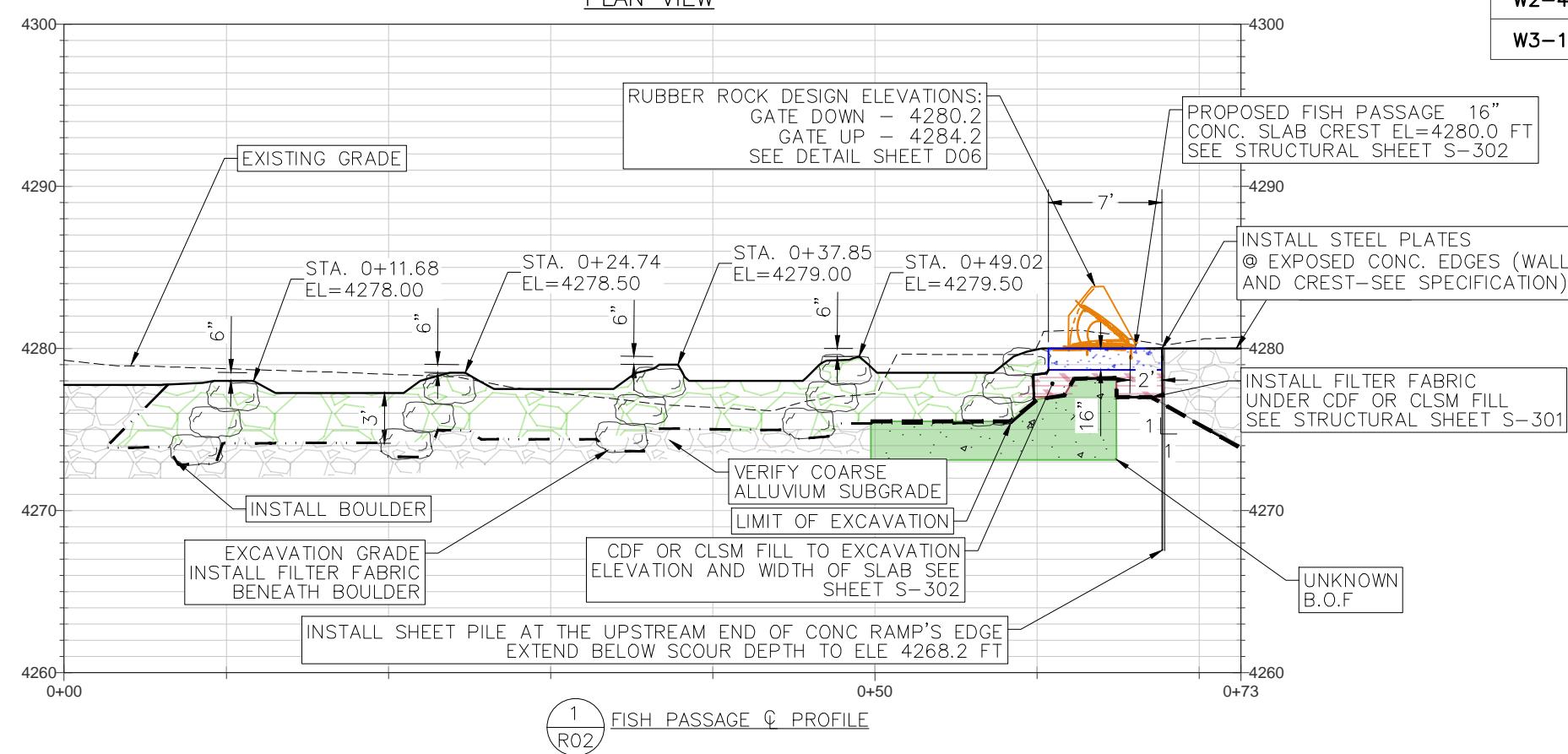
OBERMEYER HYDRO INC.
(OHI) RUBBER ROCK

NOTES:

1. BOULDERS SHALL CONSIST OF MIN. 36" B-AXIS. SELECT BOULDERS

OHI GATE ELEVATIONS

GATE	GATE DOWN ELEVATION	GATE UP ELEVATION	Δ
W2-1	4280.2	4284.2	4.0
W2-2	4280.2	4284.2	4.0
W2-3	4280.2	4284.2	4.0
W2-4	4280.2	4284.2	4.0
W3-1	4280.2	4284.2	4.0



BID SET

45072
OCTOBER 2025
1" = 5' (FULL SIZE)

OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
PLAN VIEW AND PROFILE
FISH PASSAGE

No.	REVISION/UPDATE	Date

CLIENT NAME AND ADDRESS



Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

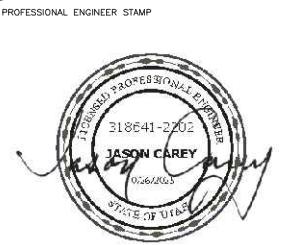
DESIGN FIRM NAME AND ADDRESS



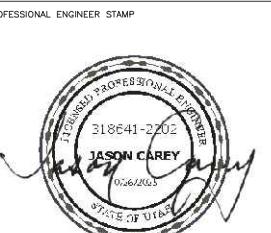
RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

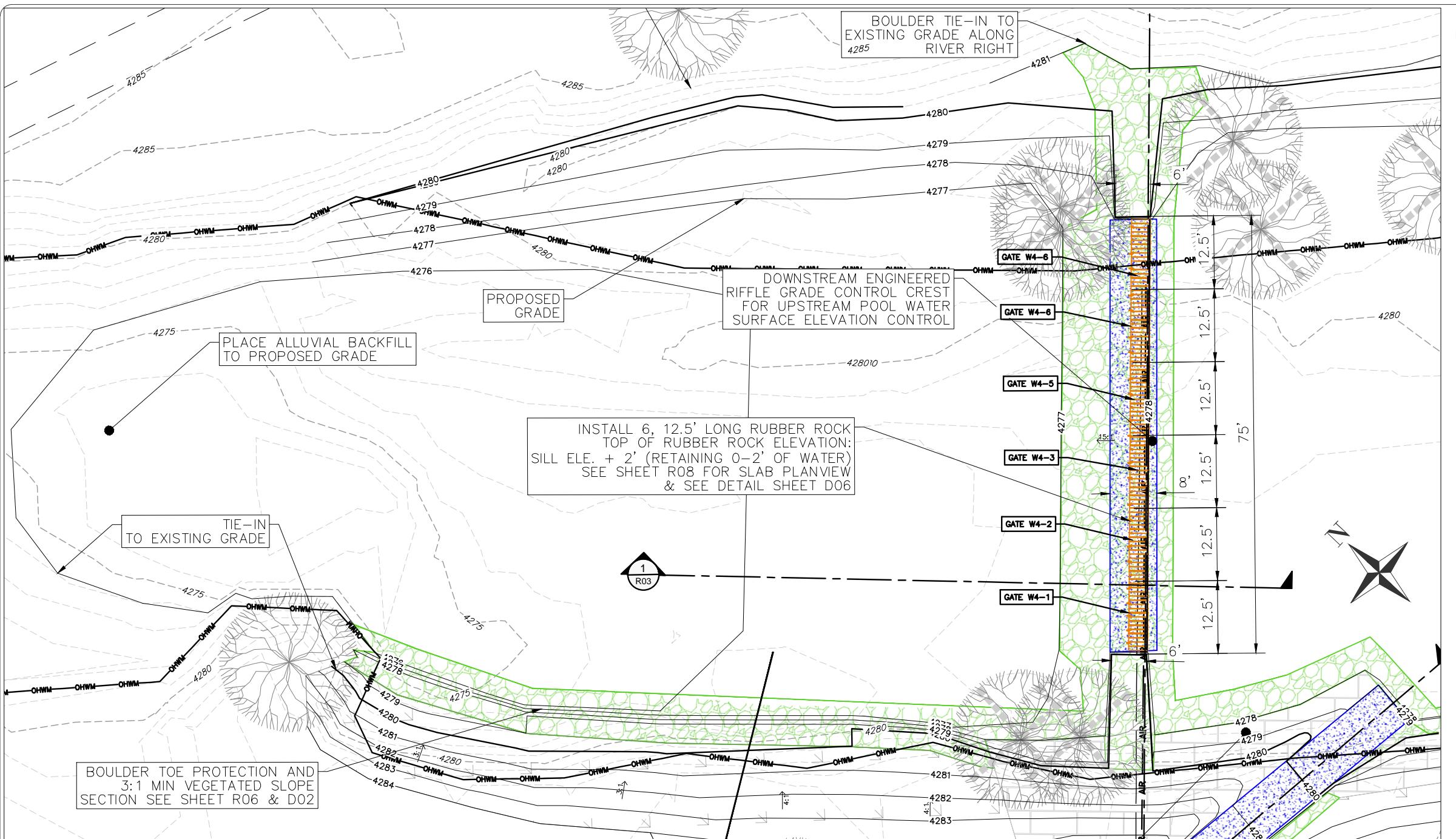
0 5 10 Feet



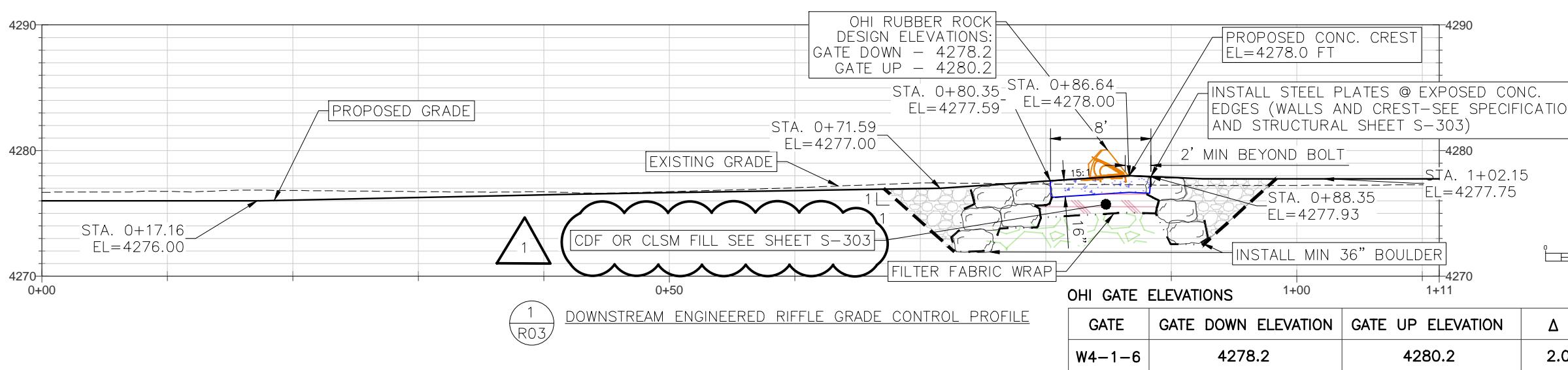
RO2



OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT PLAN VIEW AND PROFILE ENGINEERED RIFFLE GRADE CONTROL



PLAN VIEW



BID SET

No.	REVISION/UPDATE	Date
1	CDF OR CLSM FILL TO REPLACE COMPACTED STRUCTURAL FILL	11/21/25

CLIENT NAME AND ADDRESS



Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS



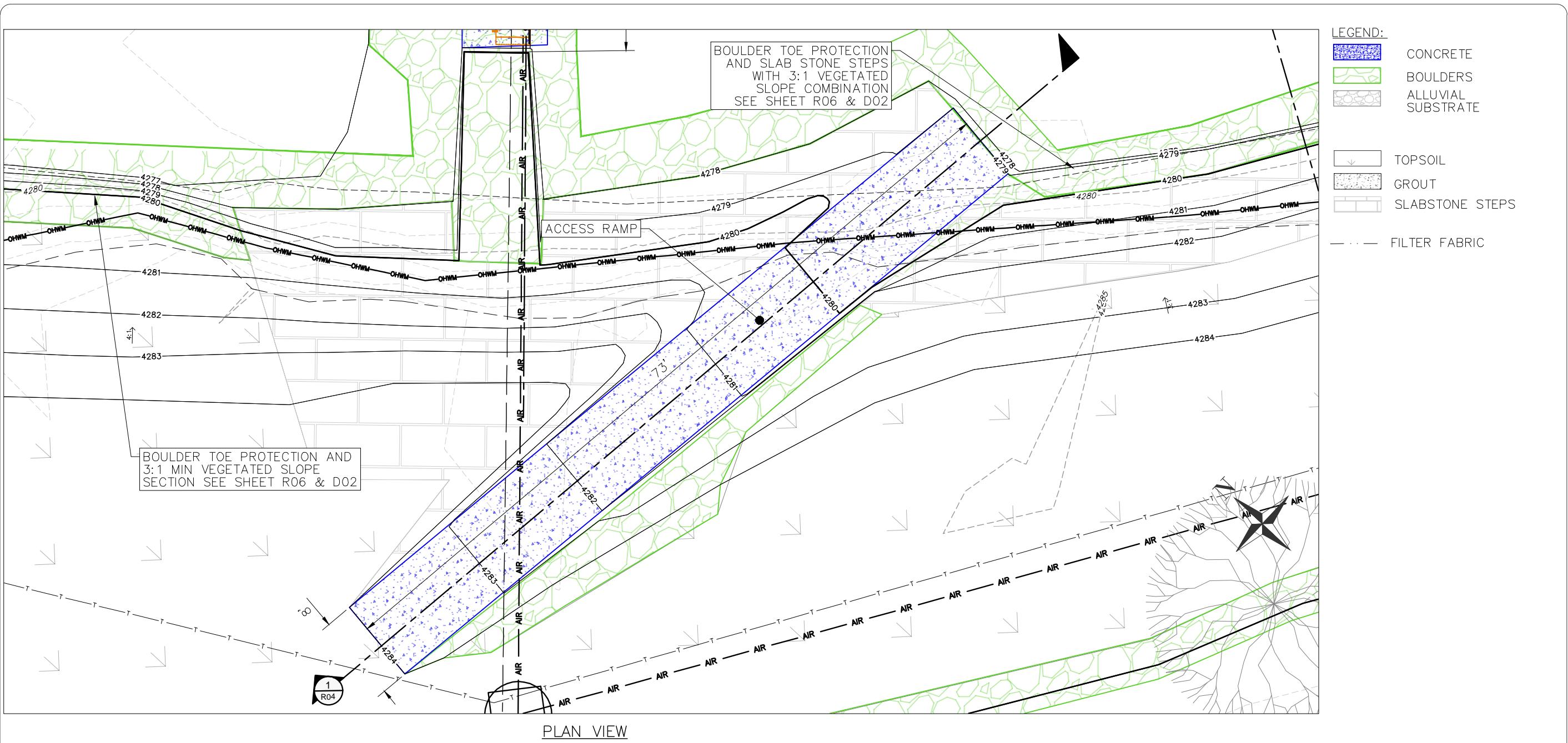
RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS

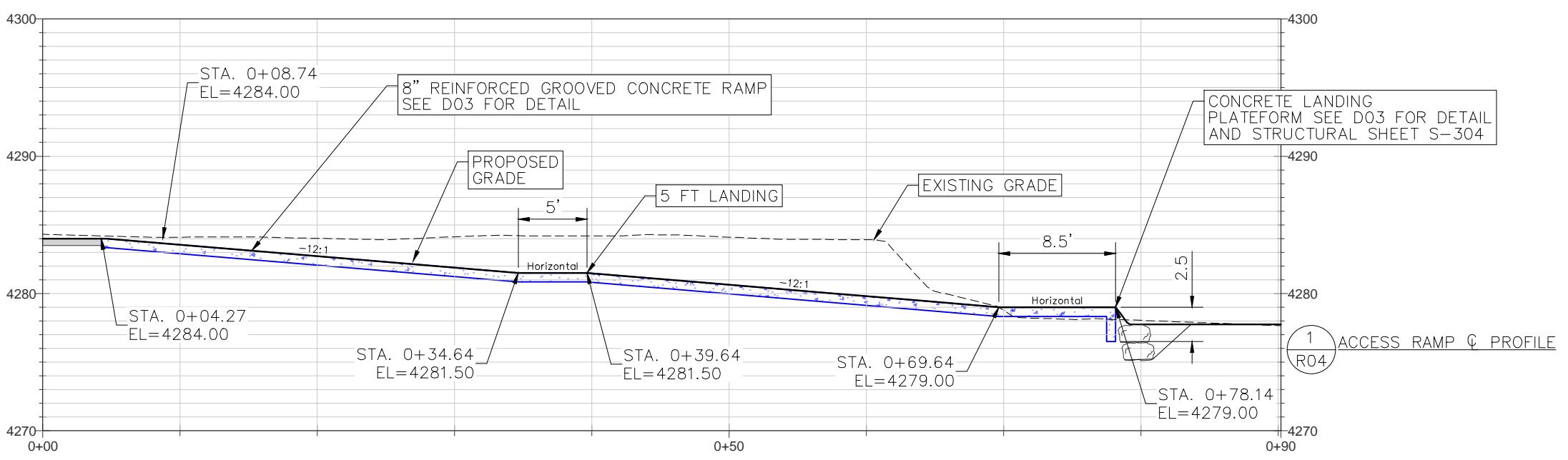
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

Project	Sheet
45072	
Date	
NOVEMBER 2025	
Scale	1" = 10' (PLAN VIEW) 1" = 5' (PROFILE)

R03



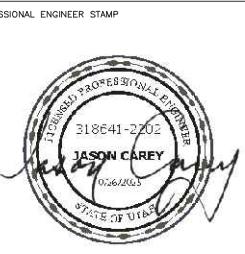
PLAN VIEW



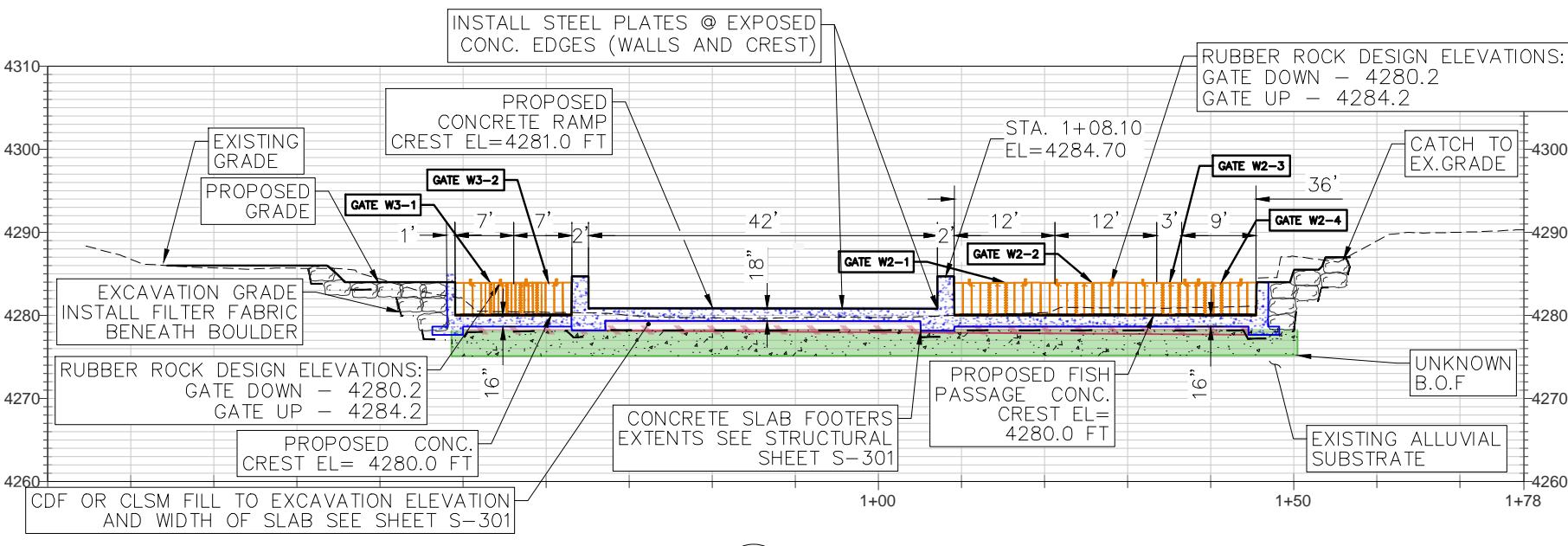
BID SET

No.	REVISION/UPDATE	Date
CLIENT NAME AND ADDRESS		
 <p>Ogden City Corporation Engineering Division 2549 Washington Blvd Ogden, UT 84401</p>		
DESIGN FIRM NAME AND ADDRESS		
 <p>RIVER RESTORATION.ORG</p> <p>RiverRestoration P.O. Box 248 Carbondale, CO 81623 www.RiverRestoration.org</p>		
PROJECT NAME AND ADDRESS		
<p>Weber River Ogden, UT Ogden Business Exchange Surf Wave</p>		
Project	45072	Sheet
Date	OCTOBER 2025	
Scale	1" = 5' (FULL SIZE)	

RO4



OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT PROFILE AND SECTIONS

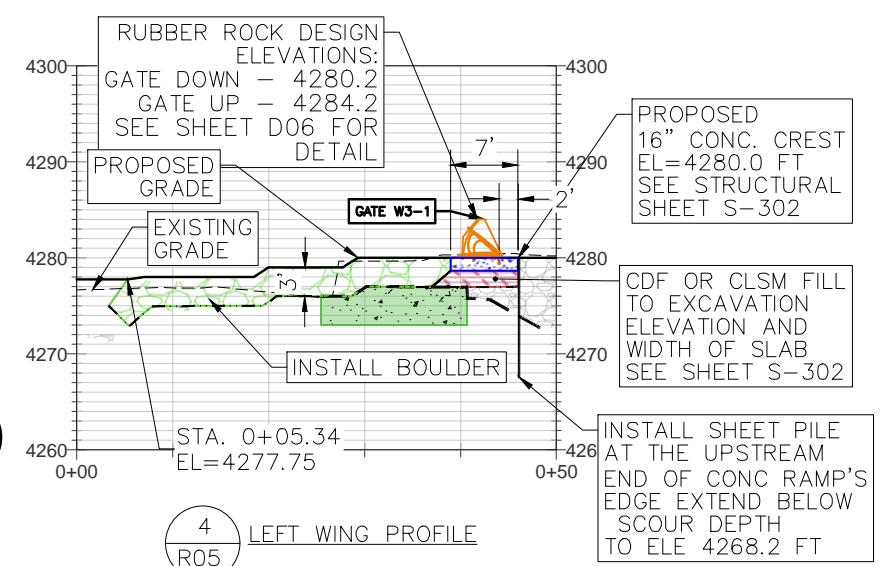
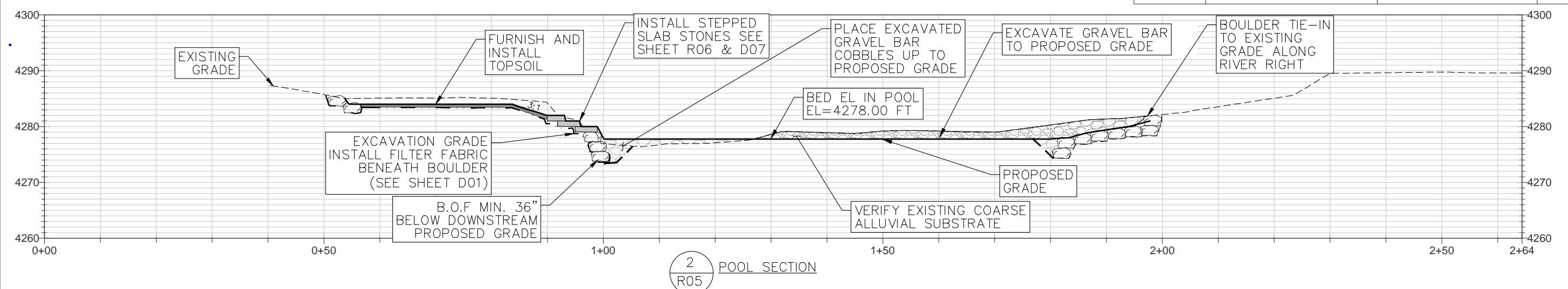


LEGEND:

	CONCRETE		BOULDERS
	BOULDERS/SLABSTONE		TO PROTECT IN PLACE
	ALLUVIAL SUBSTRATE		CDF OR CLSM FILL
	TOPSOIL		SHEET PILE
	FILTER FABRIC		
	OBERMEYER HYDRO INC. (OHI) RUBBER ROCK		

OHI GATE ELEVATIONS

GATE	GATE DOWN ELEVATION	GATE UP ELEVATION	Δ
W2-1	4280.20	4284.20	4.0
W2-2	4280.20	4284.20	4.0
W2-3	4280.20	4284.20	4.0
W2-4	4280.20	4284.20	4.0
W3-1	4280.20	4284.20	4.0
W3-2	4280.20	4284.20	4.0



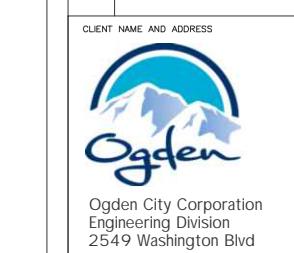
OHI GATE ELEVATIONS

GATE	GATE DOWN ELEVATION	GATE UP ELEVATION	Δ
W4-1-6	4278.20	4280.20	2.0

4 (R05) LEFT WING PROFILE

BID SET

R05



Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401



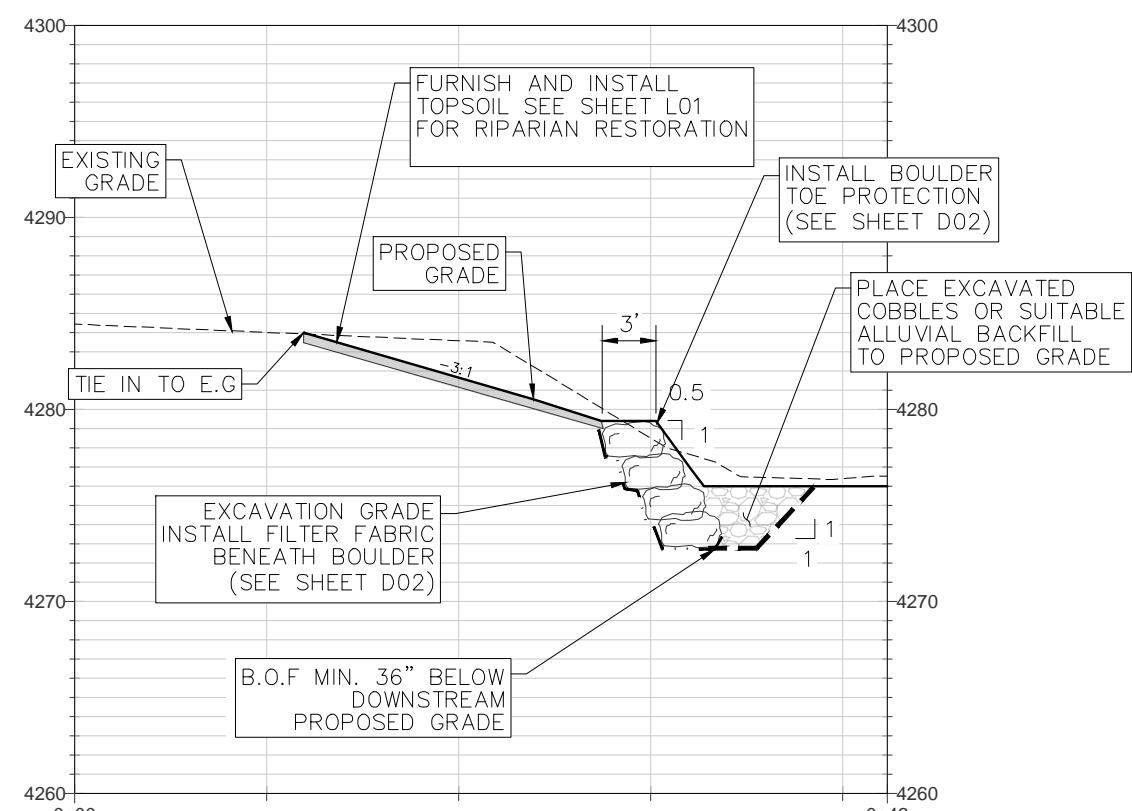
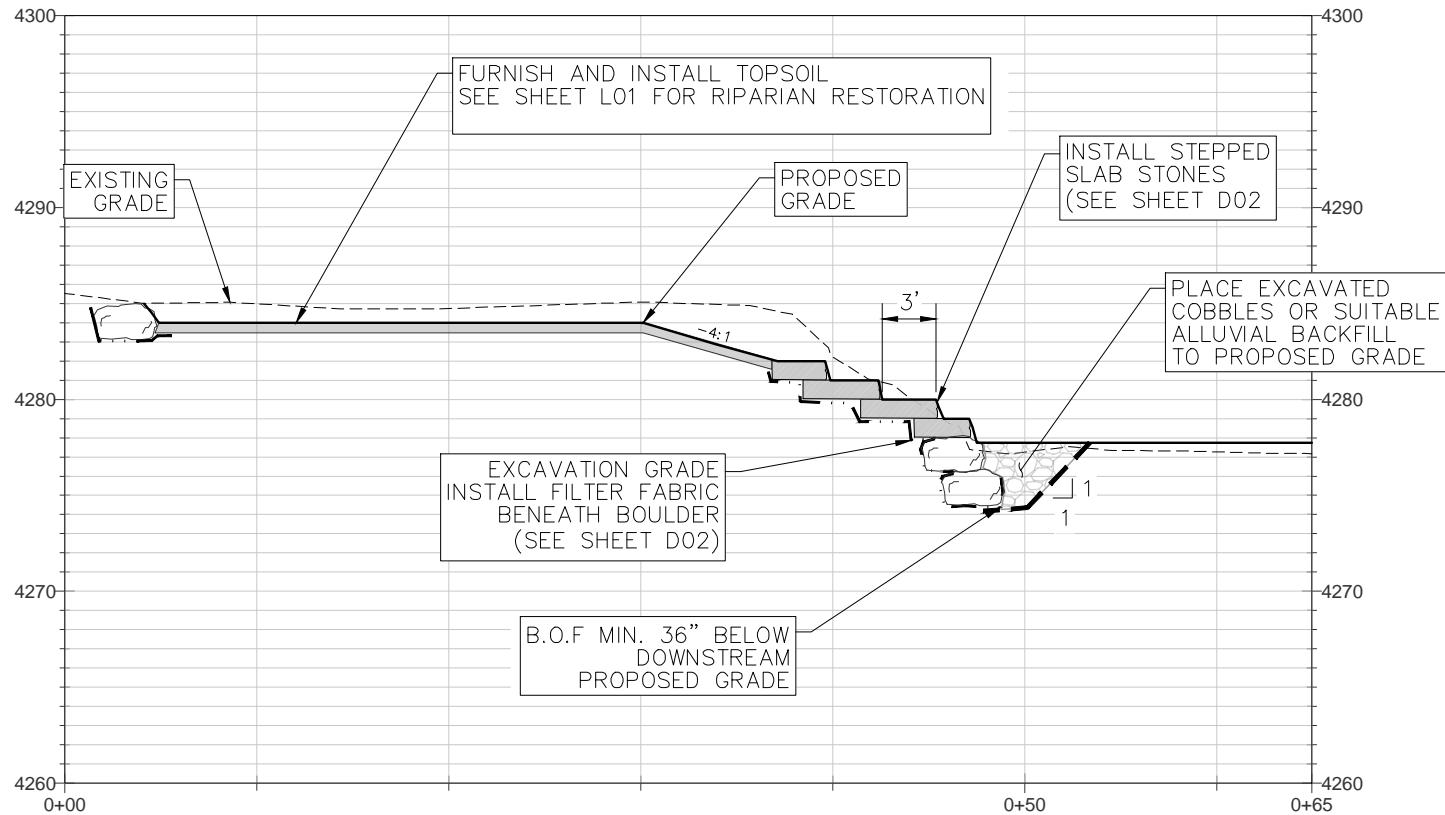
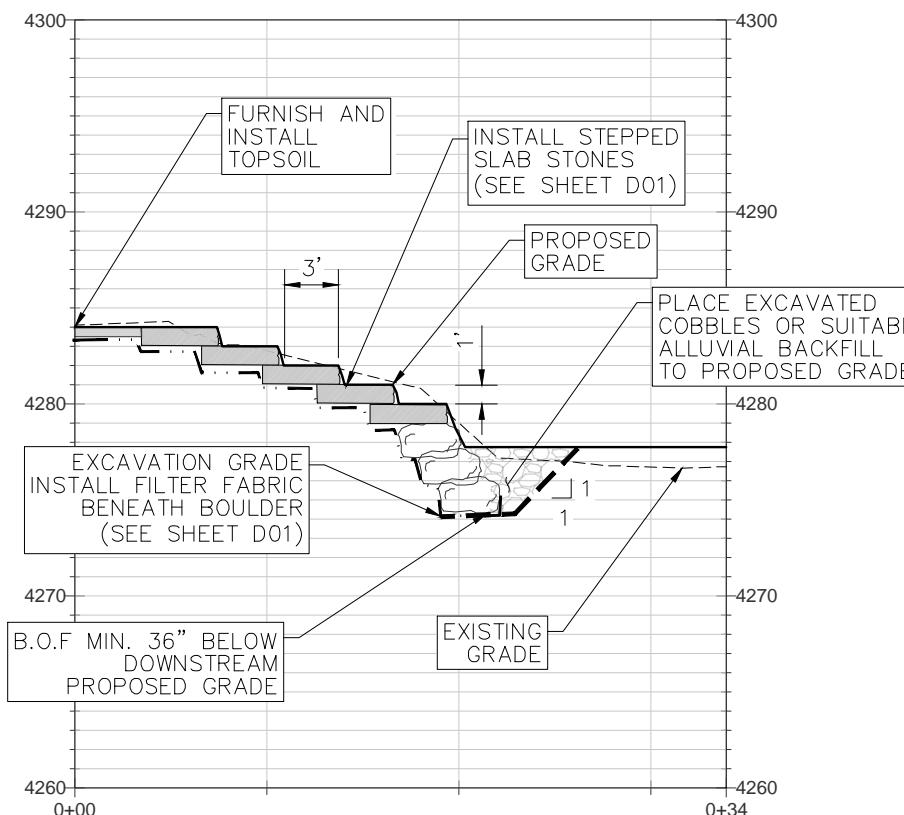
RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

Project Name and Address
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

Project
45072
Date
NOVEMBER 2025
Scale
1" = 10' (FULL SIZE)

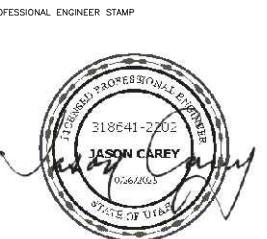
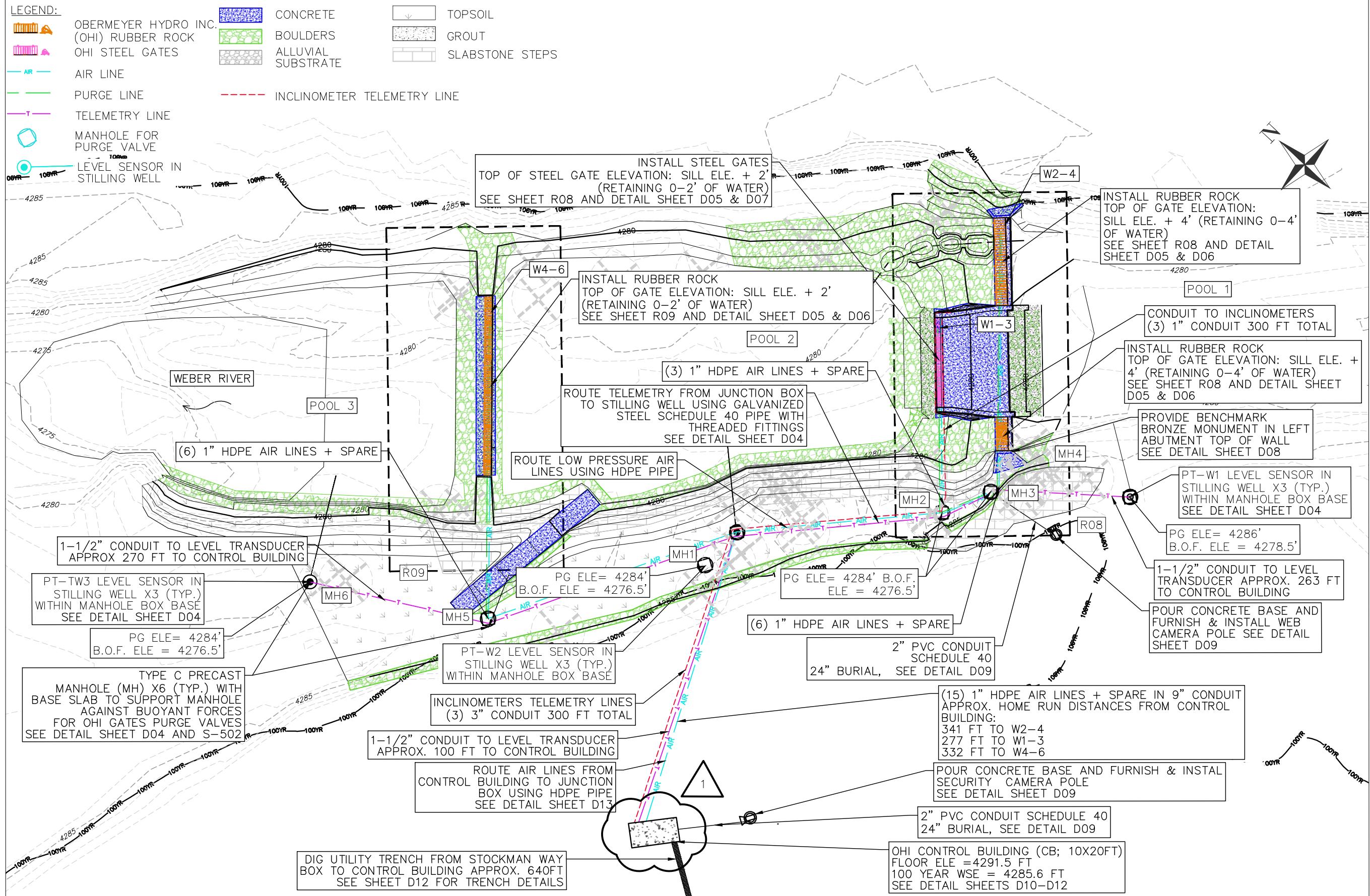


**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
BANK RESTORATION
TYPICAL SECTIONS**



No.	REVISION/UPDATE	Date
CLIENT NAME AND ADDRESS		
 Ogden Ogden City Corporation Engineering Division 2549 Washington Blvd Ogden, UT 84401		
DESIGN FIRM NAME AND ADDRESS		
 RIVER RiverRestoration P.O. Box 248 Carbondale, CO 81623 www.RiverRestoration.org		
PROJECT NAME AND ADDRESS		
Weber River Ogden, UT Ogden Business Exchange Surf Wave		
Project	45072	Sheet
Date	OCTOBER 2025	
Scale	1" = 5' (FULL SIZE)	

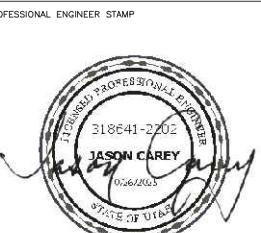
OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT LAYOUT PLAN



No.	REVISION/UPDATE	Date
1	CONTROL BUILDING AND AIRLINES UPDATES	11/21/25
CLIENT NAME AND ADDRESS		
 Ogden Ogden City Corporation Engineering Division 2549 Washington Blvd Ogden, UT 84401		
DESIGN FIRM NAME AND ADDRESS		
 RIVER RiverRestoration.org P.O. Box 248 Carbondale, CO 81623 www.RiverRestoration.org		
PROJECT NAME AND ADDRESS		
Weber River Ogden, UT Ogden Business Exchange Surf Wave		
Project	45072	Sheet
Date	OCTOBER 2025	
Scale	1" = 20' (FULL SIZE)	

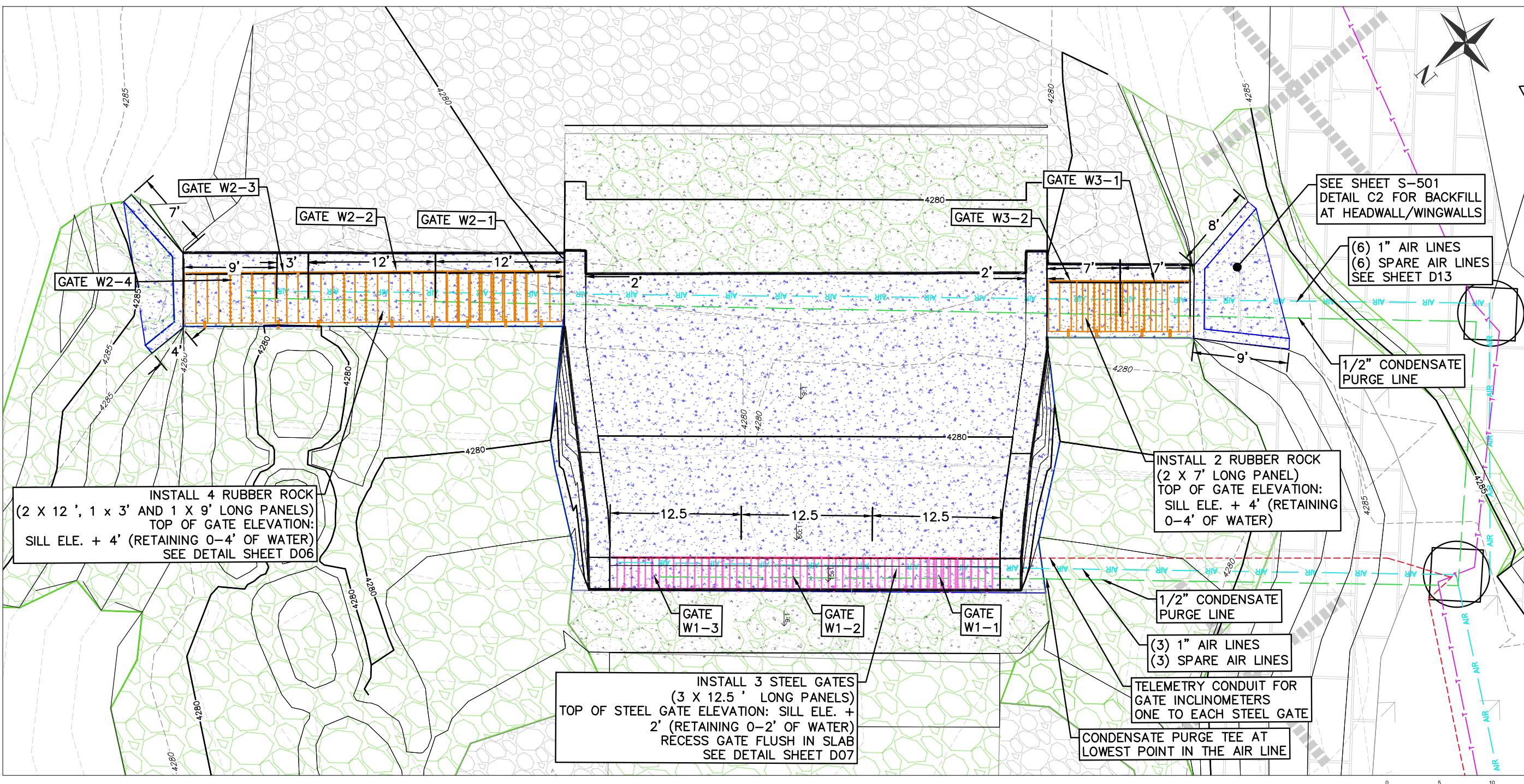
BID SET

R07



OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
RUBBER & STEEL GATE
SURF WAVE PLAN VIEW

No.	REVISION/UPDATE	Date
CLIENT NAME AND ADDRESS		
 Ogden Ogden City Corporation Engineering Division 2549 Washington Blvd Ogden, UT 84401		
DESIGN FIRM NAME AND ADDRESS		
 RIVER RESTORATION.ORG RiverRestoration P.O. Box 248 Carbondale, CO 81623 www.RiverRestoration.org		
PROJECT NAME AND ADDRESS		
Weber River Ogden, UT Ogden Business Exchange Surf Wave		
Project	45072	Sheet
Date	OCTOBER 2025	
Scale	1" = 5' (FULL SIZE)	
BID SET	R08	



-  AIR LINE
-  PURGE LINE
-  TELEMETRY LINE
-  MANHOLE FOR PURGE VALVE
-  LEVEL SENSOR IN STILLING WELL
-  INCLINOMETER TELEMETRY LINE

MAXIMUM WATER PRESSURE DIFFERENTIAL IN FEET OF WATER

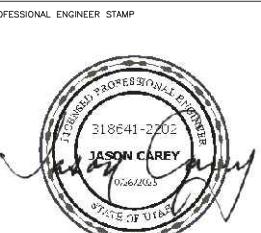
WHITEWATER COURSE FLOW	UPSTREAM W.S.E	DOWNTREAM W.S.E.	HEAD PRESSURE
150 CFS	4282.0	4278.7	3.3
1500 CFS	4285.3	4282.2	3.2

100 YEAR WATER PRESSURE DIFFERENTIAL IN FEET OF WATER

WHITEWATER COURSE FLOW	UPSTREAM W.S.E	DOWNTREAM W.S.E.	HEAD PRESSURE
6205 CFS	4286.91	4285.64	1.27

OHI GATE ELEVATIONS

GATE	GATE DOWN ELEVATION	GATE UP ELEVATION	Δ
W1-1	4278.7	4280.7	2.0
W1-2	4278.7	4280.7	2.0
W1-3	4278.7	4280.7	2.0
W2-1	4280.2	4284.2	4.0
W2-2	4280.2	4284.2	4.0
W2-3	4280.2	4284.2	4.0
W2-4	4280.2	4284.2	4.0
W3-1	4280.2	4284.2	4.0
W3-2	4280.2	4284.2	4.0



OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT RUBBER & STEEL GATE ENGINEERED RIFFLE PLAN VIEW

No.	REVISION/UPDATE	Date



Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS



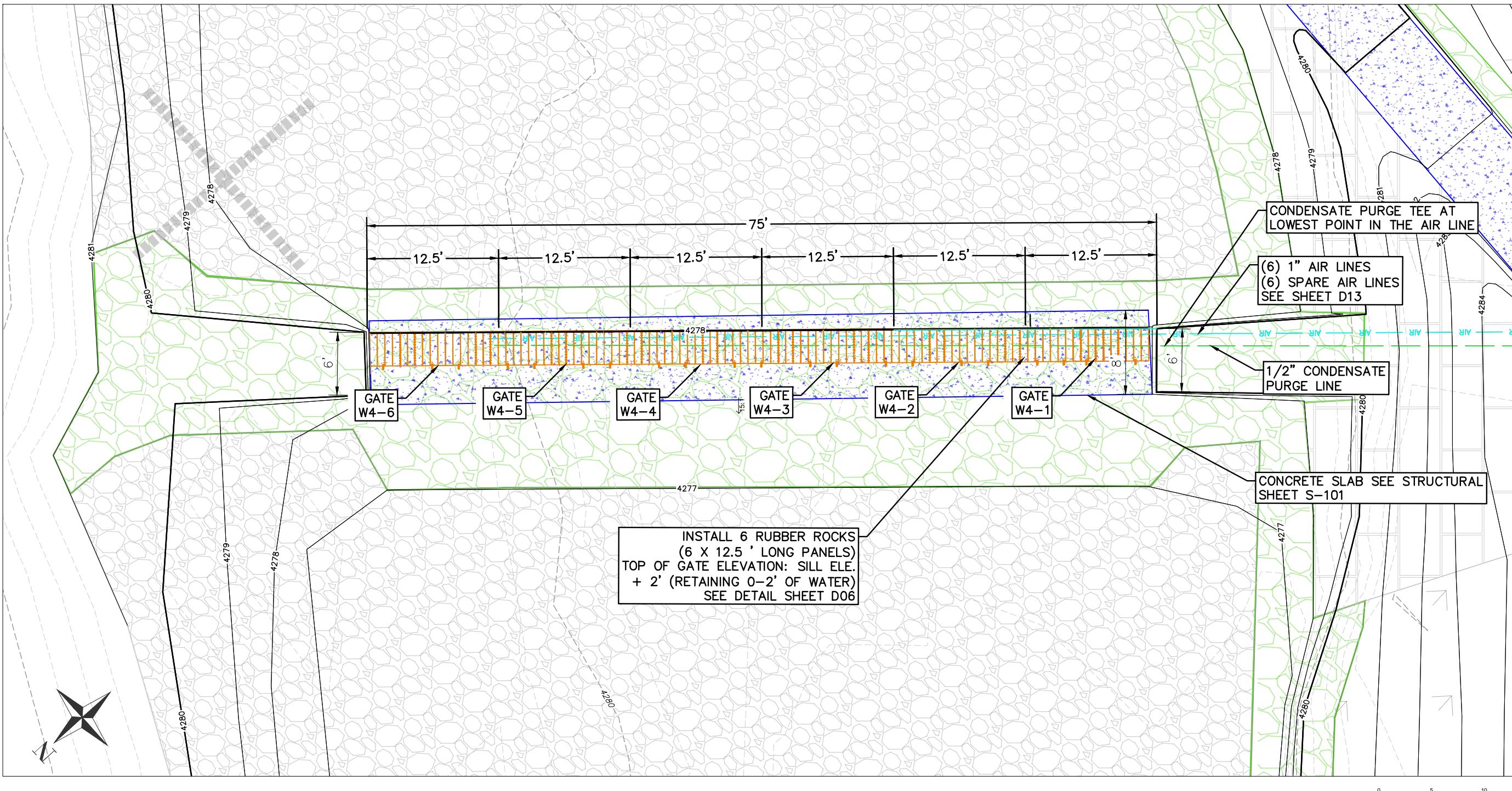
RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

Project
45072
Date
OCTOBER 2025
Scale
1" = 5' (FULL SIZE)

BID SET

Sheet
R09



- AIR
- PURGE LINE
- TELEMETRY LINE
- MANHOLE FOR PURGE VALVE
- LEVEL SENSOR IN STILLING WELL

- CONCRETE
- BOULDERS
- ALLUVIAL SUBSTRATE
- TOPSOIL
- GROUT
- SLABSTONE STE



OBERMEYER HYDRO INC.
(OHI) RUBBER ROCK

WHITEWATER COURSE FLOW	UPSTREAM W.S.E	DOWNSTREAM W.S.E.	HEAD PRESSURE
150 CFS (all gates up for tailwater control)	4280.6	4278.0	2.70

OHI GATE ELEVATIONS

GATE	GATE DOWN ELEVATION	GATE UP ELEVATION	Δ
W4-1	4278.2	4280.2	2.0
W4-2	4278.2	4280.2	2.0
W4-3	4278.2	4280.2	2.0
W4-4	4278.2	4280.2	2.0
W4-5	4278.2	4280.2	2.0
W4-6	4278.2	4280.2	2.0

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO APPLICABLE LOCAL, COUNTY AND/OR STATE CODES, REGULATIONS AND RULES.
2. ALL WORK SHALL BE PERFORMED BY A UTAH LICENSED CONTRACTOR.
3. CONTRACTOR SHALL OBTAIN, COORDINATE, AND PAY FOR ANY AND ALL PERMITS AND AGENCY INSPECTIONS AS REQUIRED.
4. CONTRACTOR SHALL CARRY ALL WORKER' COMPENSATION, PUBLIC LIABILITY, PROPERTY DAMAGE INSURANCE AS REQUIRED BY ALL APPLICABLE CODES AND REGULATIONS AND BY THE OWNER'S REPRESENTATIVE.
5. PROPERTY LINES SHOWN ARE APPROXIMATE, BASED ON PLATTED INFORMATION, CONTRACTOR TO PROTECT INDIVIDUAL PROPERTY PINS FOUND IN FIELD.
6. CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. CALL FOR UTILITY LOCATES.
7. ALL SURFACE DRAINAGE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION PERIOD.
8. CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH APPLICABLE WATER QUALITY & CONTROL REGULATIONS.
9. CONTRACTOR TO BE RESPONSIBLE FOR ALL TRAFFIC CONTROL FOR THE UTILITY CONSTRUCTION.

SITE PREPARATION NOTES

1. CONSTRUCTION FENCING TO BE PUT UP ALONG LIMITS OF WORK TO PREVENT TRAMPLING BY PEDESTRIANS. ALL CONSTRUCTION FENCE SHALL BE GREEN PLASTIC AND SUPPORTED AT ADEQUATE INTERVALS TO BE STRAIGHT AND FULL HEIGHT.
2. CONTRACTOR SHALL NOT DISTURB INTERSECTING WALKS, STAIRS, OR HANDRAILS. IF AFFECTED, CONTRACTOR IS RESPONSIBLE FOR REPAIRING TO ORIGINAL CONDITION.
3. DUE TO SITE ACCESS RESTRICTIONS, USE ALL ACCESS/STAGING AND PARKING INDICATED ON PLANS.

SEEDING ZONE A

Upland Mix Application

Common Name	Scientific Name	pls/acre*
Sand dropseed	<i>Sporobolus cryptandrus</i>	1%
Blanket flower	<i>Gaillardia aristata</i>	6.4%
Rocky Mountain beeplant	<i>Cleome serrulata</i>	19.2%
Scarlet globemallow	<i>Sphaeralcea coccinea</i>	3.2%
Alkali sacaton	<i>Sporobolus airoides</i>	3.2%
Great Basin wildrye	<i>Leymus cinereus</i>	25.5%
Western wheatgrass	<i>Pascopyrum smithii</i>	25.5%
Sandberg bluegrass	<i>Poa secunda ssp. Sandbergii</i>	6.4%
Inland saltgrass	<i>Distichlis spicata</i>	3.2%
Lewis blue flax	<i>Linum lewisii</i>	6.4%
*Broadcast Application=60 lbs/acre		100%

SELLING ZONE B

Emergent Riparian Mix Application

Common Name	Scientific Name	pls/acre*
Inland saltgrass	<i>Distichlis spicata</i>	25%
Creeping spikebrush	<i>Eleocharis palustris</i>	25%
Spike muhly	<i>Muhlenbergia wrightii</i>	25%
Nuttal's alkaligrass	<i>Puccinellia nuttalliana</i>	25%
*Broadcast Application=15 lbs/acre		100%



OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT SEEDING NOTES

No.	REVISION/UPDATE	Date



Ogden City Corporation
Engineering Division
549 Washington Blvd
Ogden, UT 84401



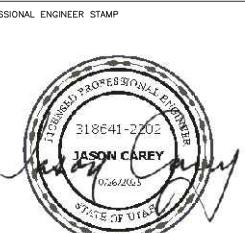
RiverRestoration
O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

JECT NAME AND ADDRESS

ject 45072 e OCTOBER 2025 le " = 20' (FULL SIZE)	Sheet L
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OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT EROSION CONTROL BLANKET INSTALLATION

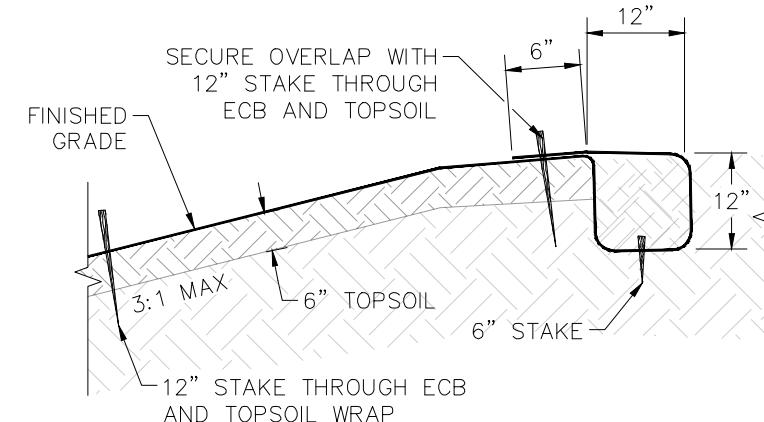


FIGURE A: SECURE ECB AT TOP OF BANK - NTS

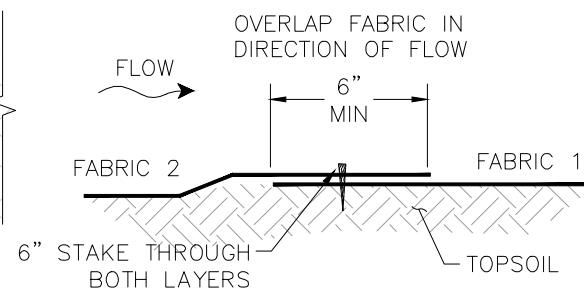


FIGURE B: CROSS SECTION VIEW OF OVERLAP - NTS

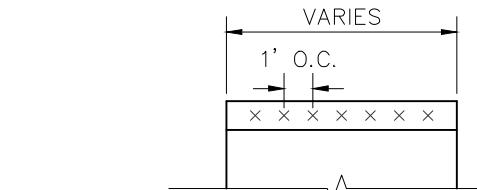


FIGURE C: TOB STAKE SPACING PLAN VIEW - NTS

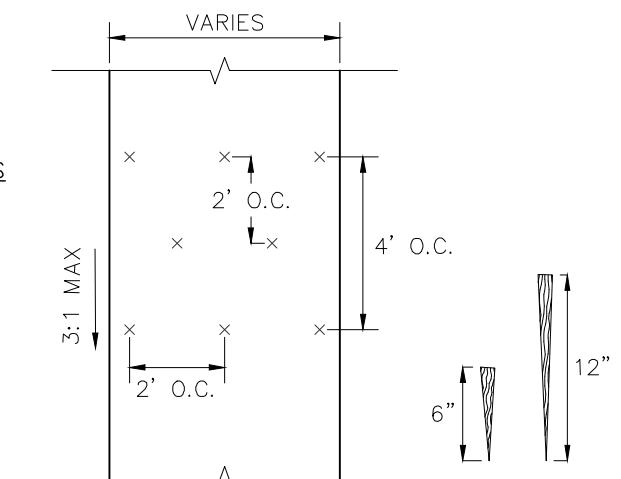


FIGURE D: STAKE SPACING PLAN VIEW - NTS

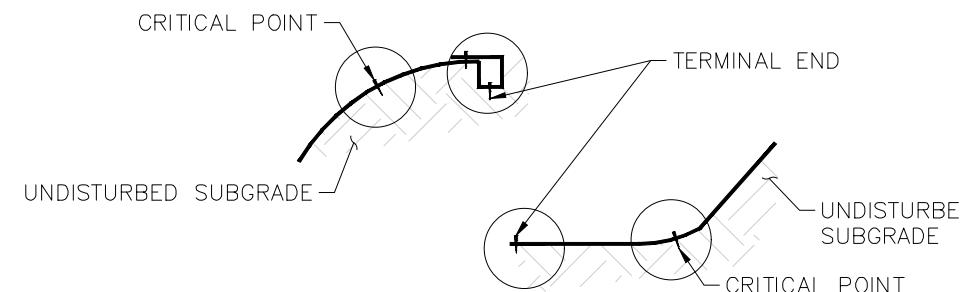
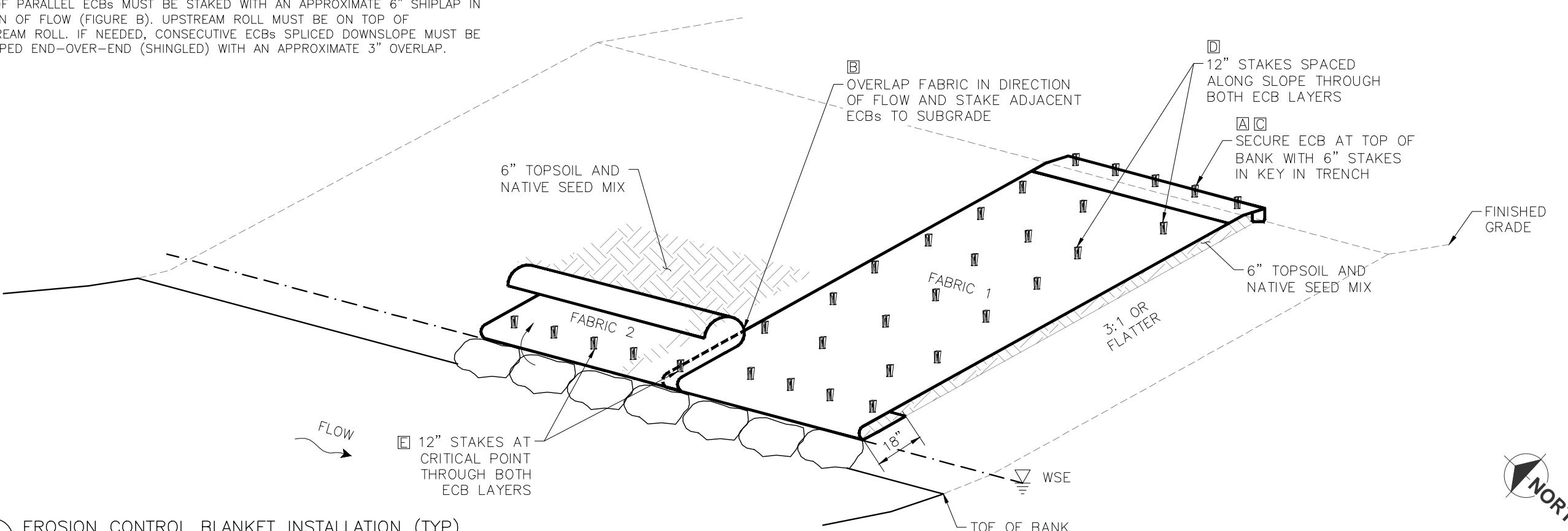


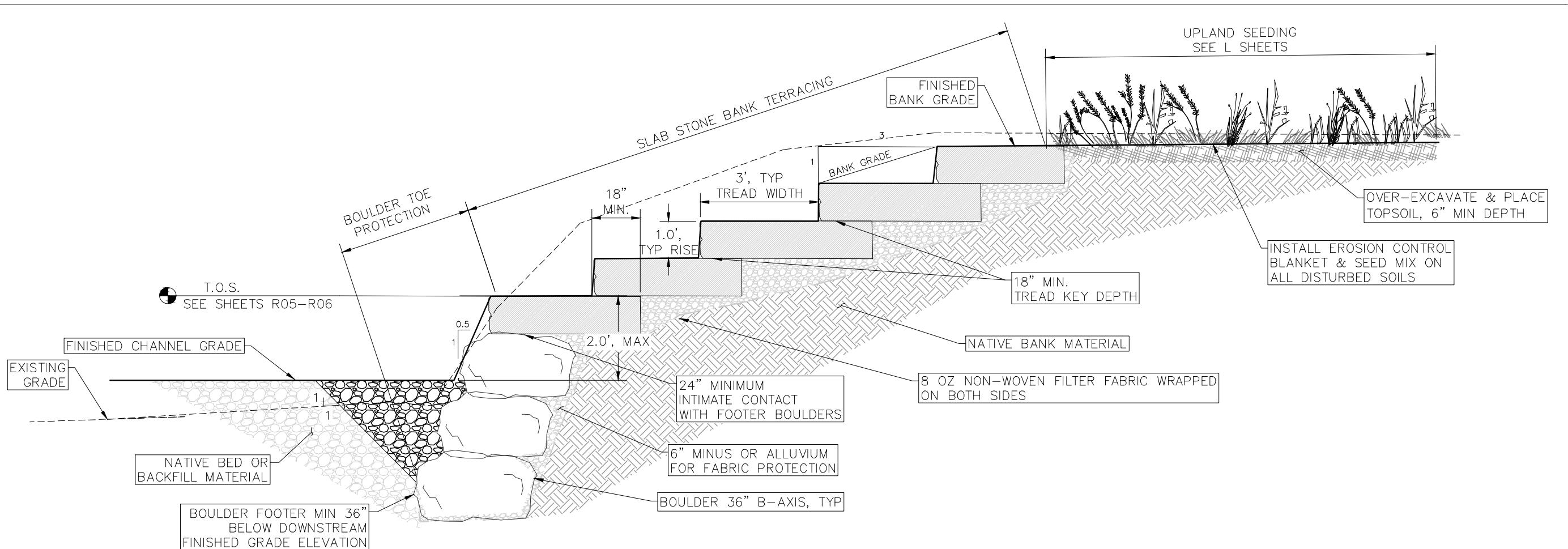
FIGURE E: CRITICAL POINT SECURING - NTS

X DENOTES STAKE LOCATION
(APPROXIMATELY 6 STAPLES PER SY)

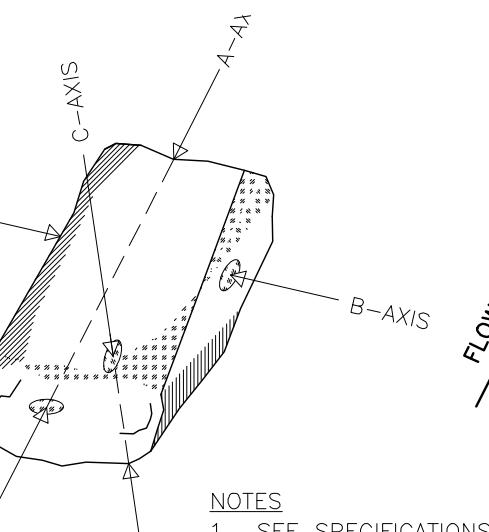


1
L02
EROSION CONTROL BLANKET INSTALLATION (TYP)

No.	REVISION/UPDATE	Date
CLIENT NAME AND ADDRESS		
 Ogden City Corporation Engineering Division 2549 Washington Blvd Ogden, UT 84401		
DESIGN FIRM NAME AND ADDRESS		
 RiverRestoration P.O. Box 248 Carbondale, CO 81623 www.RiverRestoration.org		
PROJECT NAME AND ADDRESS		
Weber River Ogden, UT Ogden Business Exchange Surf Wave		
Project	45072	Sheet
Date	OCTOBER 2025	
Scale	1" = 20' (FULL SIZE)	
BID SET	L02	



1 D01 BOULDER TOE PROTECTION WITH SLAB STONE BANK TERRACING, TYP.
NTS



2 D01 BOULDER AXIAL PLACEMENT (TYP)
NTS

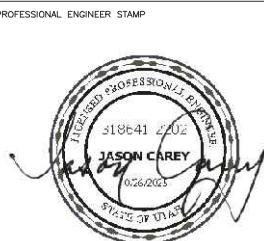
SLAB STONE NOTES

1. CONTRACTOR SHALL LEVEL, FIT, AND STACK INDIVIDUAL SLABS TO MAXIMIZE AESTHETIC VALUE OF FINISHED STEPS AND TERRACING. REFER TO TECHNICAL SPECIFICATIONS FOR MATERIAL AND CONSTRUCTION REQUIREMENTS.

BOULDER NOTES:

1. CONSTRUCTION OF BOULDER BANK SHALL INCLUDE SELECTION, ROTATION, PLACEMENT, AND ADJUSTMENT OF EACH INDIVIDUAL BOULDER TO MINIMIZE VOID SPACE AND MAXIMIZE INTIMATE CONTACT BETWEEN BOULDERS.
2. SEE SPECIFICATIONS FOR ACCEPTABLE AS-BUILT VARIANCES ON ELEVATIONS OF BOULDER AND ALLUVIAL BACKFILL.
3. HORIZONTAL CONTROL INFORMATION, INCLUDING COORDINATES OF ALIGNMENTS AND CROSS SECTIONS WILL BE PROVIDED ELECTRONICALLY.

OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT BOULDER TOE - SLAB STONE BANK TERRACING DETAIL



No.	REVISION/UPDATE	Date

CLIENT NAME AND ADDRESS



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Engineering Division
2549 Washington Blvd
Ogden, UT 84401

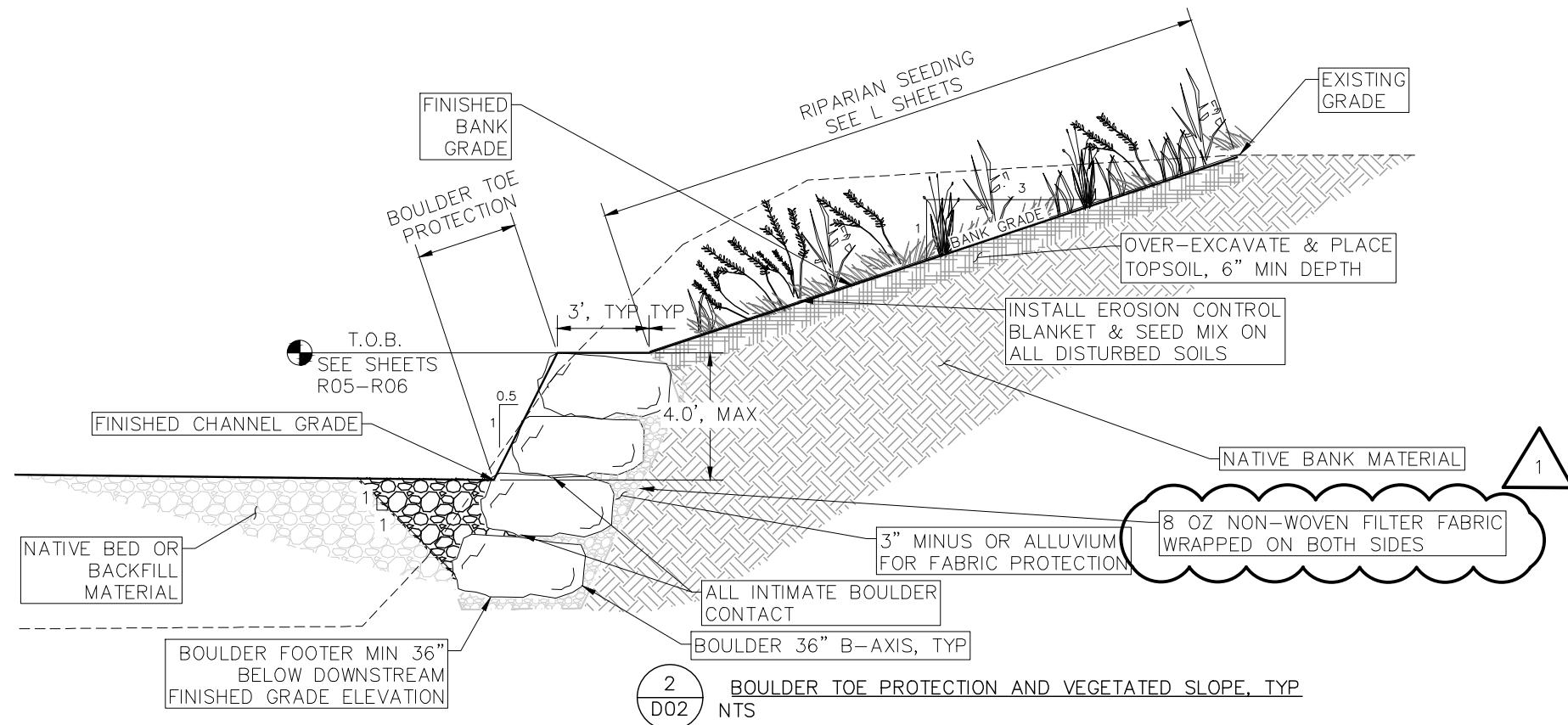
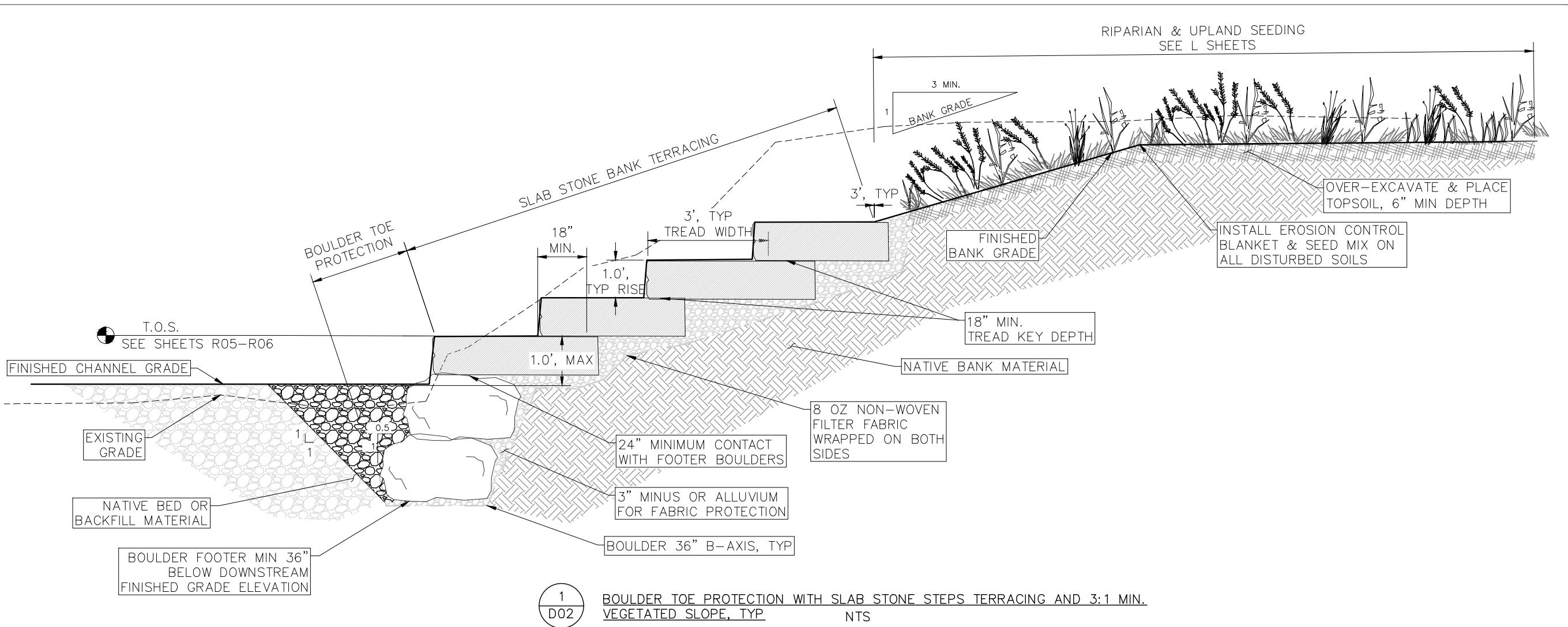
DESIGN FIRM NAME AND ADDRESS



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PROJECT NAME AND ADDRESS
Weber River Ogden, UT Ogden Business Exchange Surf Wave

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Date	
OCTOBER 2025	
Scale	
NTS	



OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT BOULDER TOE PROTECTION / SLAB STONE BANK TERRACING 3:1 VEGETATED SLOPE DETAIL

No.	REVISION/UPDATE	Date
1	CALL OUT UPDATE ON 2 D02	11/21/25

CLIENT NAME AND ADDRESS

Ogden
 Ogden City Corporation
 Engineering Division
 2549 Washington Blvd
 Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS

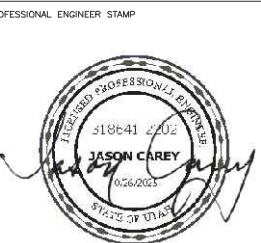
RIVER
 RESTORATION.ORG
 RiverRestoration
 P.O. Box 248
 Carbondale, CO 81623
 www.RiverRestoration.org

PROJECT NAME AND ADDRESS
 Weber River
 Ogden, UT
 Ogden Business Exchange Surf Wave

Project
 45072
 Date
 NOVEMBER 2025
 Scale
 NTS

BID SET

Sheet
D02



OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
CONCRETE ACCESS
RAMP DETAIL

No.	REVISION/UPDATE	Date

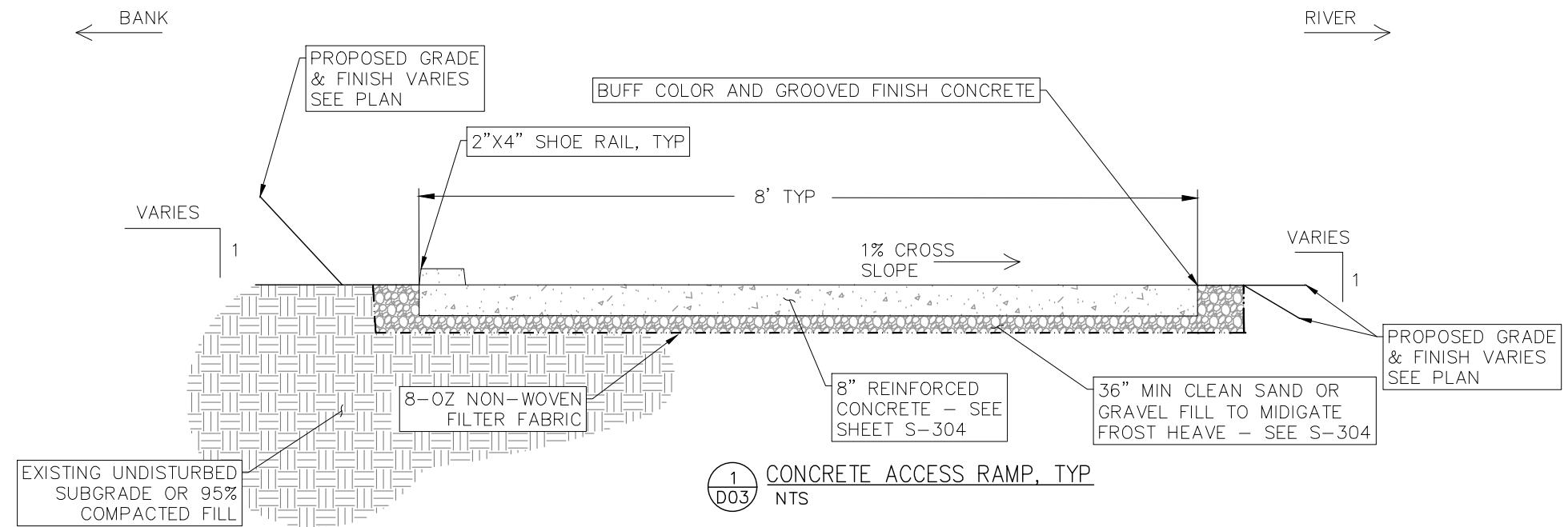


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Engineering Division
2549 Washington Blvd
Ogden, UT 84401

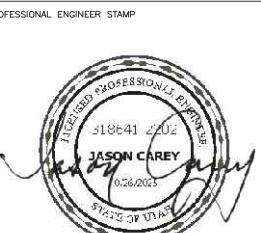


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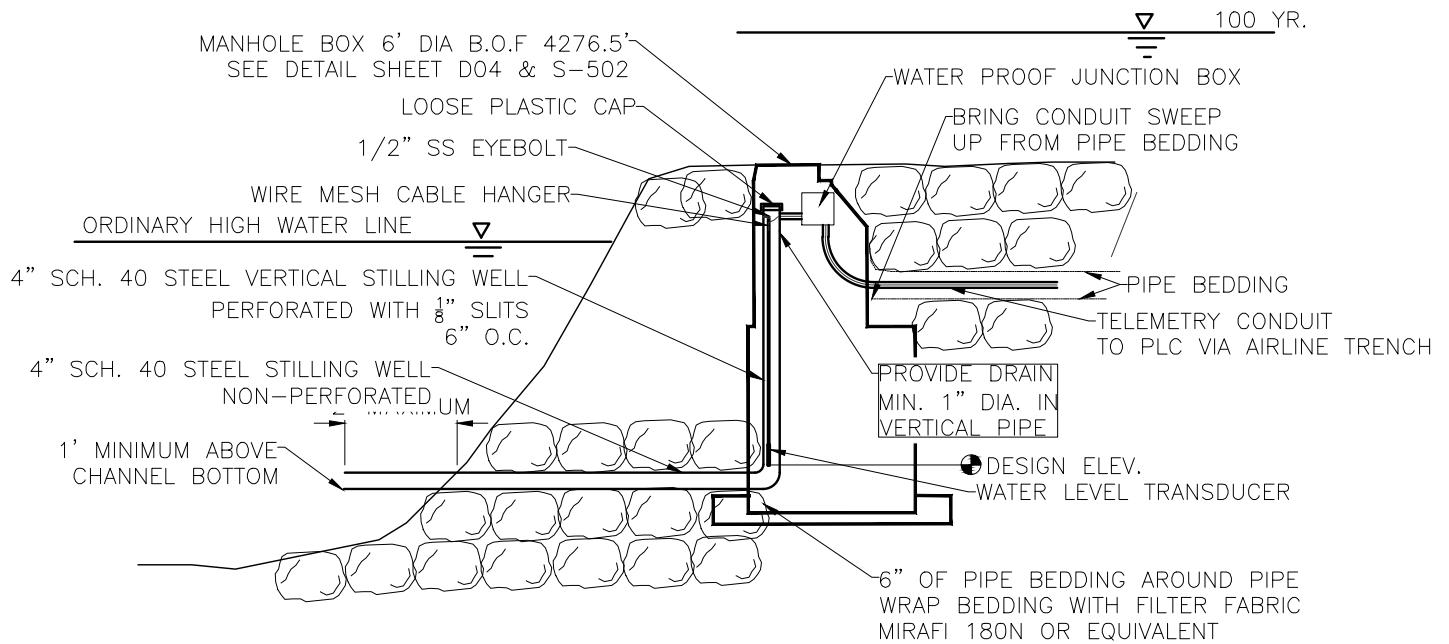
PROJECT NAME AND ADDRESS	Project	Sheet
Weber River	45072	
Ogden	Date	OCTOBER 2025
Ogden Business Exchange Surf Wave	Scale	NTS



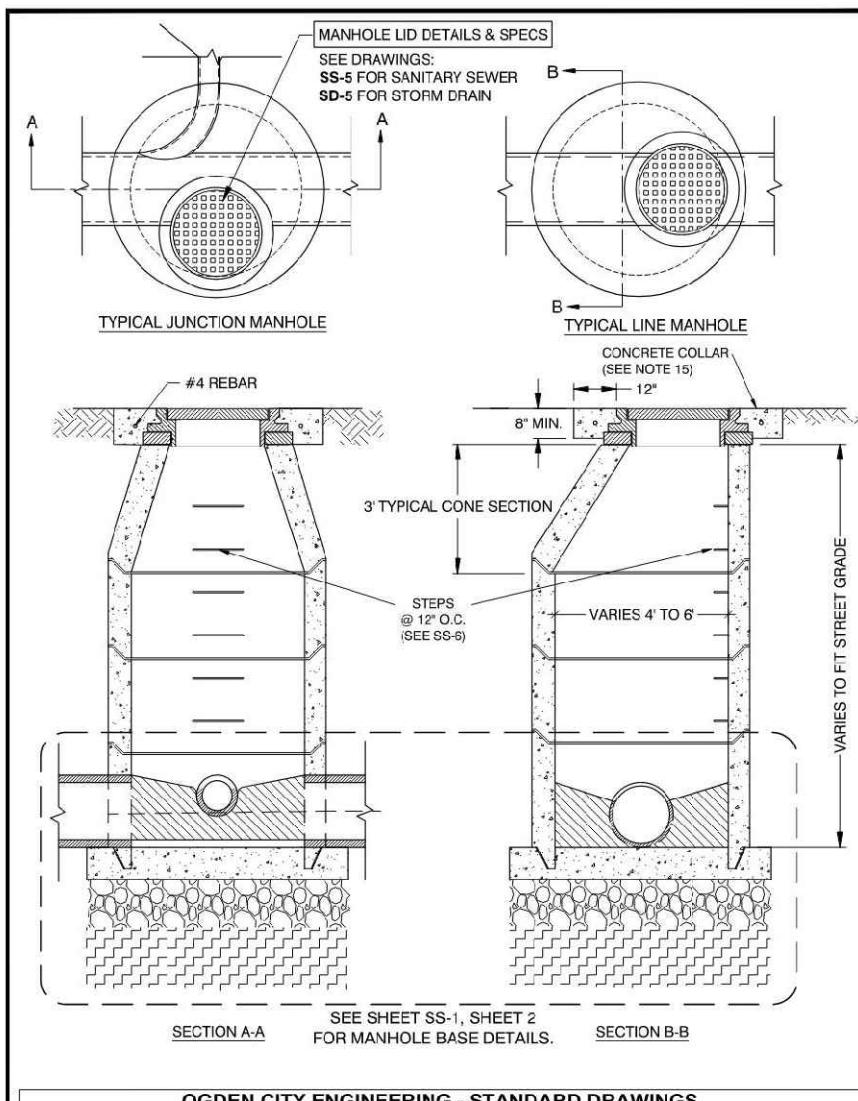
BID SET



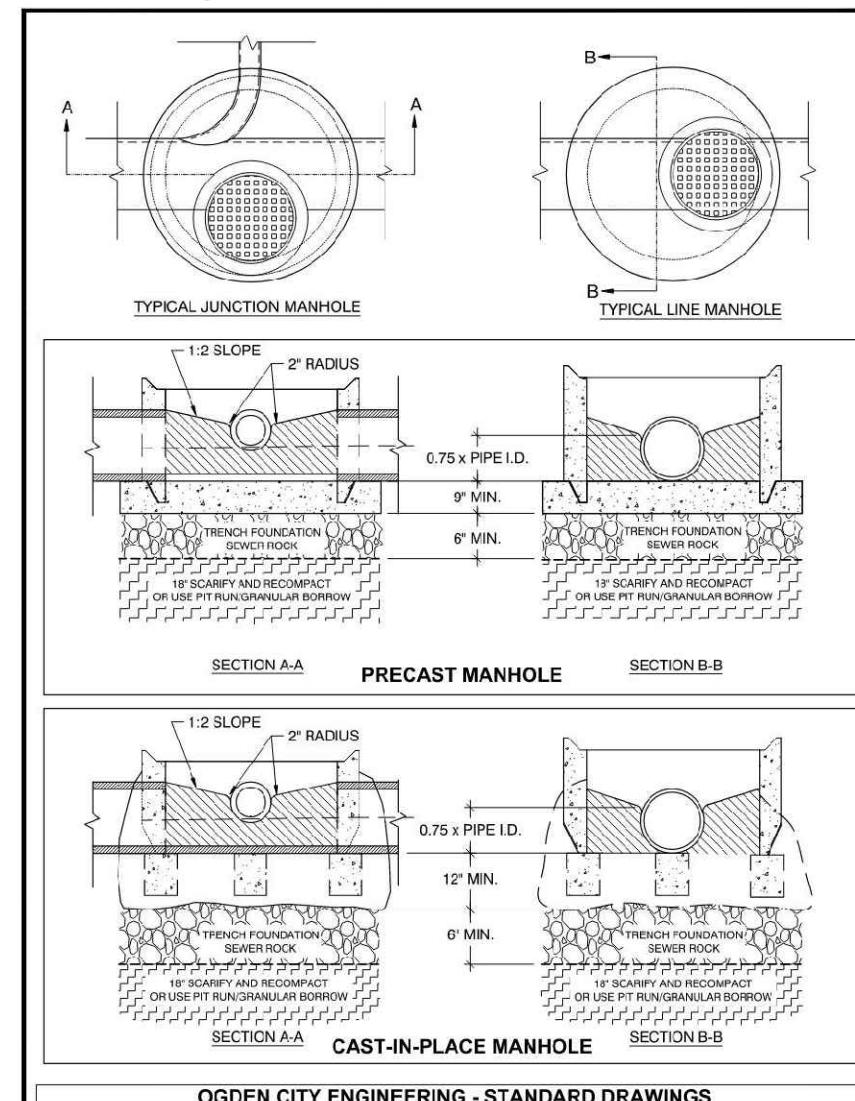
OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT OBERMEYER HYDRO INC DETAIL



1 D04 TYPICAL WATER LEVEL TRANSDUCER INSTALLATION DETAIL
NTS (PROVIDE SHOP DRAWINGS)

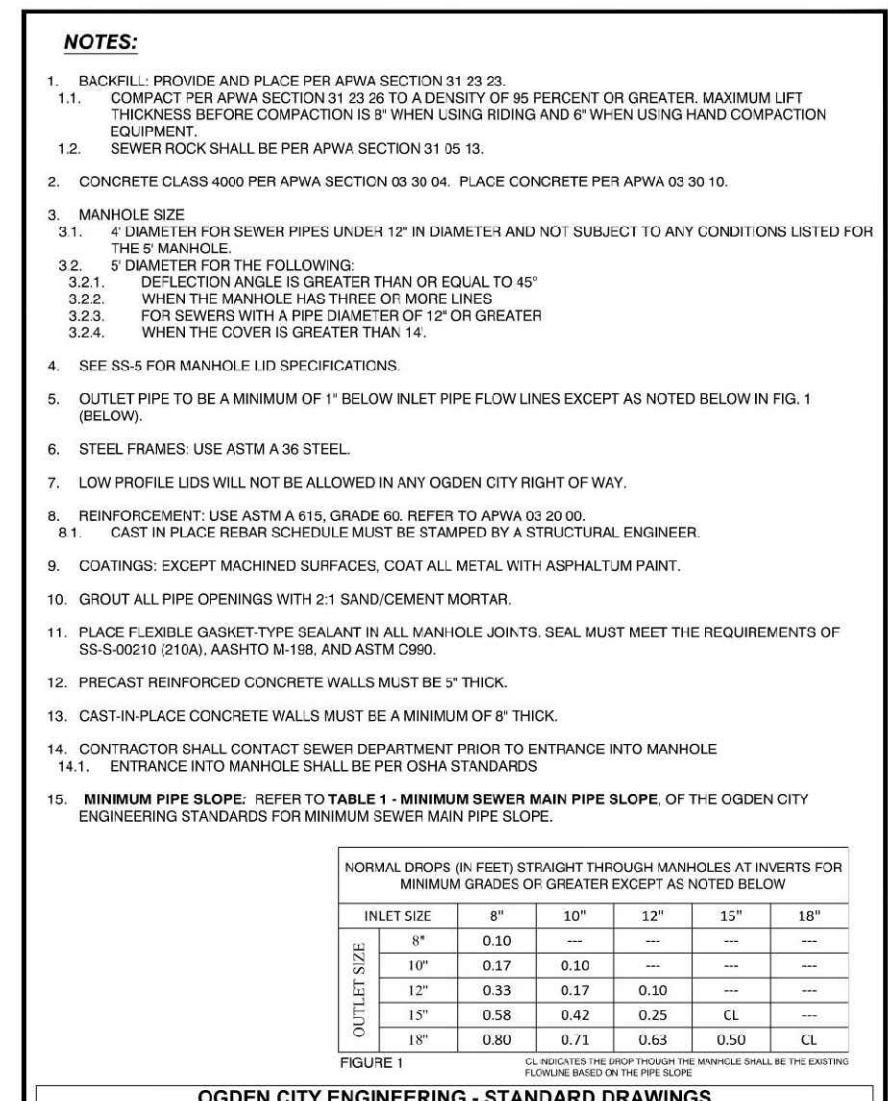


OGDEN CITY ENGINEERING - STANDARD DRAWINGS
Ogden UTAH Still Untamed™ TYPICAL SEWER MANHOLE SS-1
JUSTIN ANDERSON, CITY ENGINEER SHEET 1 OF 4



OGDEN CITY ENGINEERING - STANDARD DRAWINGS
Ogden UTAH Still Untamed™ SEWER MANHOLE BASE DETAILS SS-1
JUSTIN ANDERSON, CITY ENGINEER SHEET 2 OF 4

2 D04 MANHOLE (TELEMETRY - AIRLINES - TYP.)
SEE SHEET S-502 FOR PRECAST MANHOLE FOOTING DETAIL



OGDEN CITY ENGINEERING - STANDARD DRAWINGS
Ogden UTAH Still Untamed™ SEWER MANHOLE SS-1
JUSTIN ANDERSON, CITY ENGINEER SHEET 3 OF 4

No. REVISION/UPDATE Date
CLIENT NAME AND ADDRESS
 Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS
 RIVER RESTORATION.ORG
RiverRestoration
P.O. Box 248
Carbondale, CO 81623
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PROJECT NAME AND ADDRESS
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

Project 45072 Sheet D04
Date OCTOBER 2025
Scale NTS

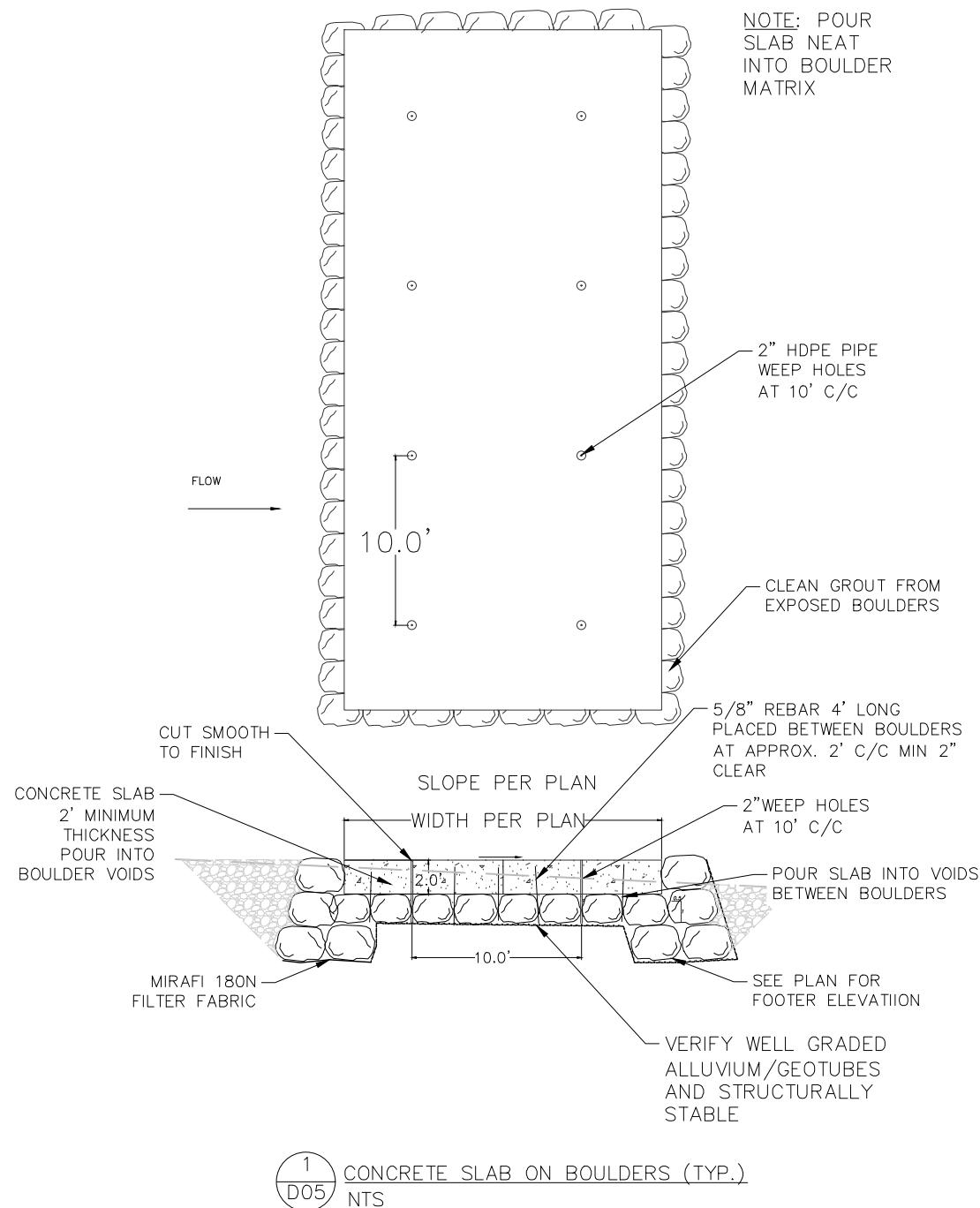
BID SET

OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT DETAIL

PROFESSIONAL ENGINEER STAMP

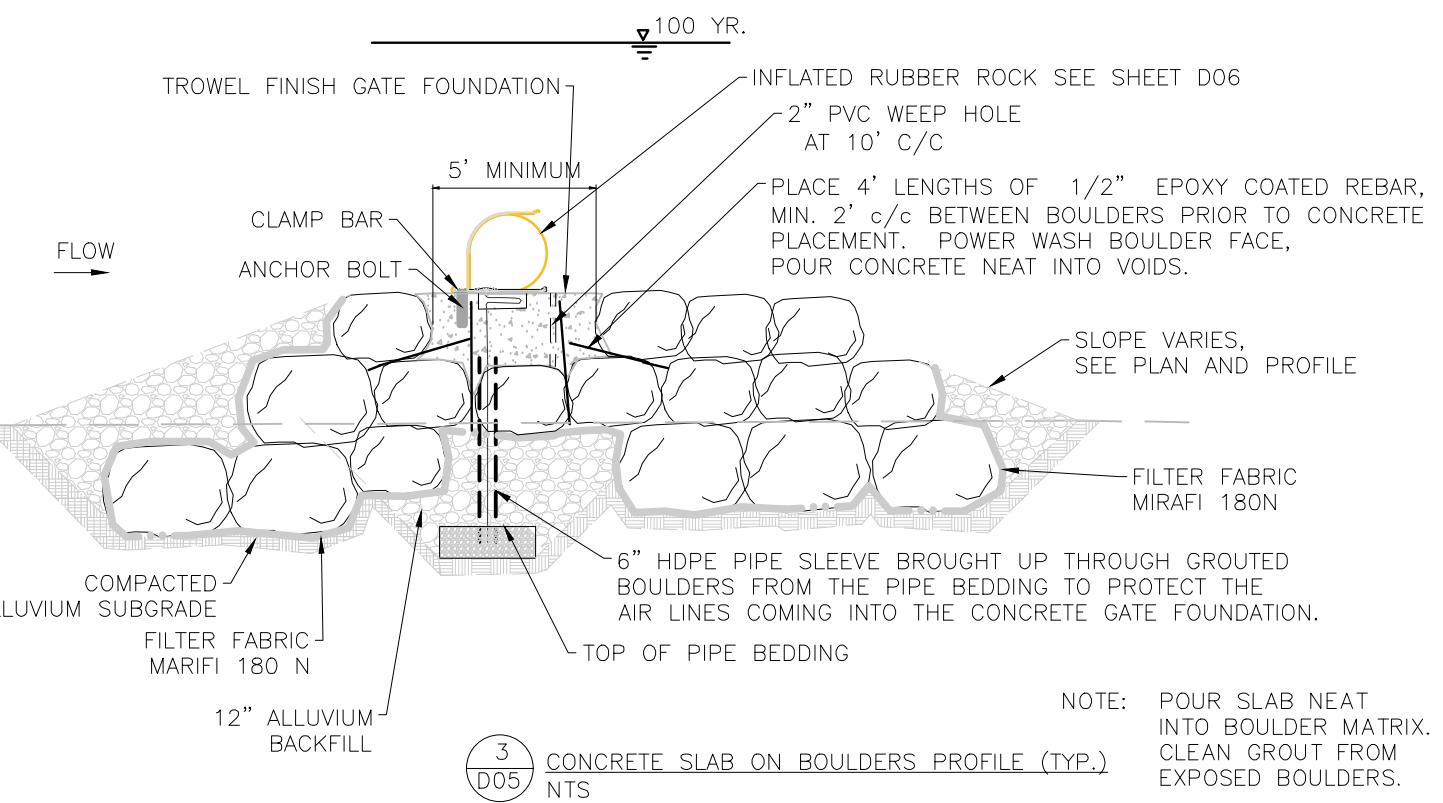
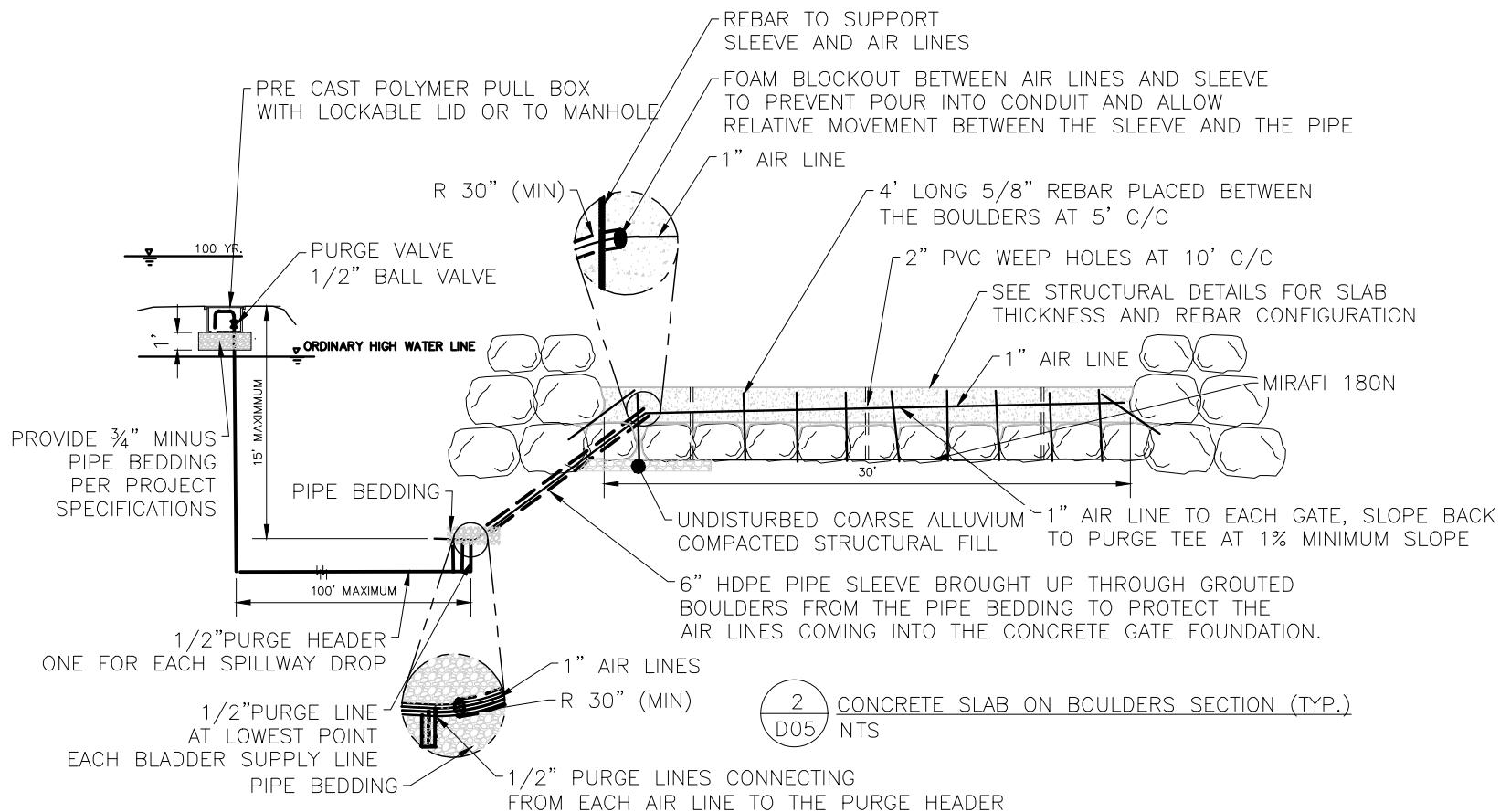


OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT

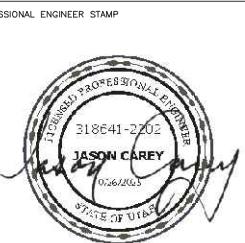


NOTES:

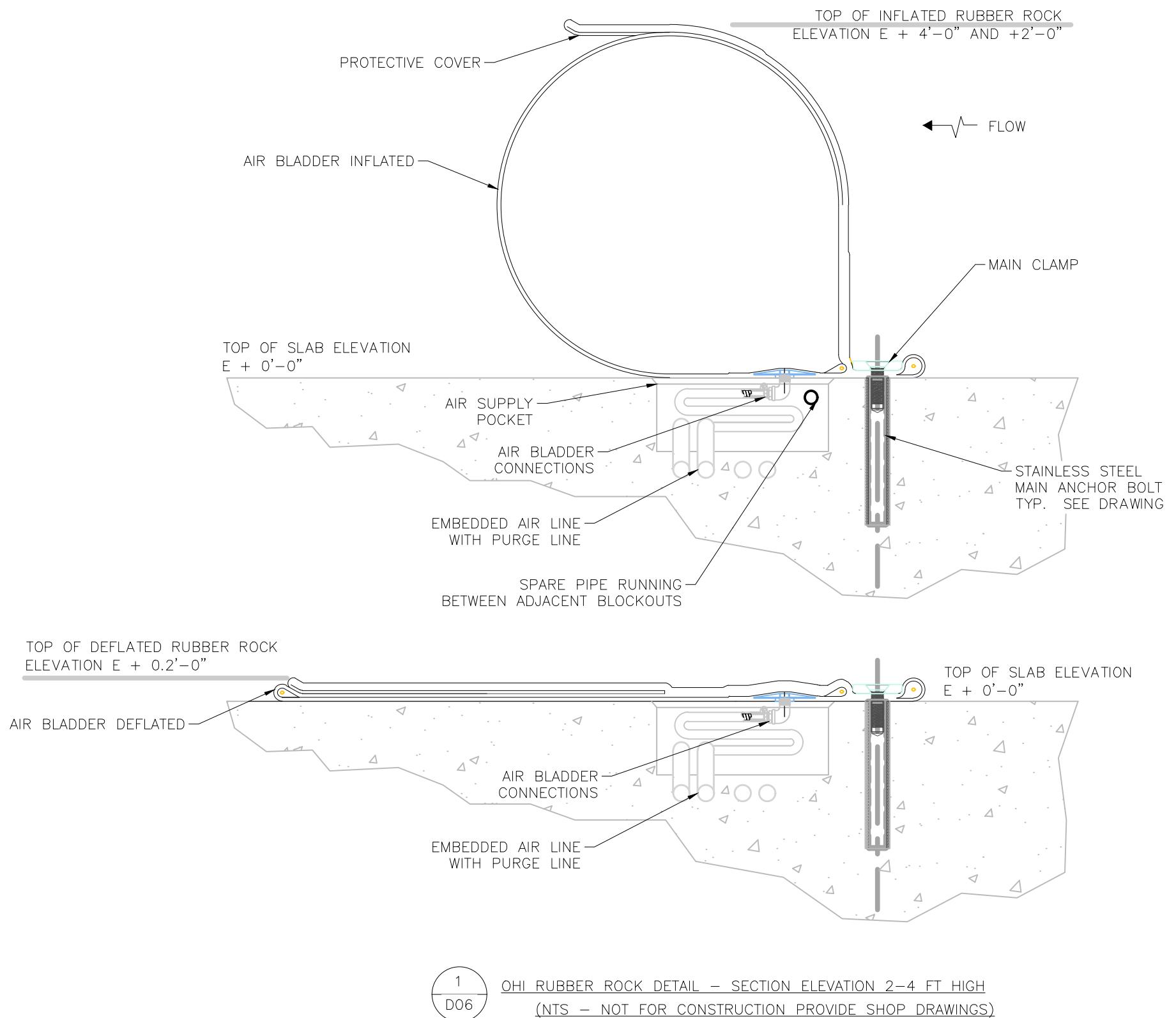
1. CONCRETE UNDER GATE SYSTEM, GRIND HIGH SPOTS FLUSH AND FILL VOIDS. SURFACE SHOULD BE FREE FROM ANY SHARP SURFACES AND SHOULD BE LEVEL WITHIN 1/4".
2. ALL DIMENSIONS TO WITHIN $\pm 1/8"$ OF TRUE POSITION UNLESS OTHERWISE DIMENSIONED OR NOTED ON PART DRAWING.
3. ANCHOR BOLTS TO BE PERPENDICULAR TO WITHIN $\pm 1/8"$ OVER LENGTH OF ANCHOR BOLTS AS COMPARED TO THE HORIZONTAL CONCRETE CLAMPING SURFACE.
4. CONTRACTOR RESPONSIBLE FOR ALL CONCRETE CUTTING, GROUTING, GROUT, AIR PIPE, AIR PIPE FITTINGS/WELDING, VALVING, ELECTRICAL CONDUIT, CONDUIT FITTINGS, ASSOCIATED TOOLS, REBAR, ANCHORING AND SURFACE EPOXY, AND ANYTHING ELSE PERTAINING TO COMPONENTS NOT SUPPLIED BY OBERMEYER HYDRO, INC. OR OUTLINED IN THE OBERMEYER BILL OF MATERIAL.
5. ALL DIMENSIONS IN FEET UNLESS OTHERWISE NOTED.



No.	REVISION/UPDATE	Date
CLIENT NAME AND ADDRESS		
 Ogden Ogden City Corporation Engineering Division 2549 Washington Blvd Ogden, UT 84401		
DESIGN FIRM NAME AND ADDRESS		
 RIVER RiverRestoration.org P.O. Box 248 Carbondale, CO 81623 www.RiverRestoration.org		
PROJECT NAME AND ADDRESS		
Weber River Ogden, UT Ogden Business Exchange Surf Wave		
Project	45072	Sheet
Date	OCTOBER 2025	
Scale	NTS	
BID SET		D05



OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
OBERMEYER HYDRO INC
RUBBER ROCK DETAIL



No.	REVISION/UPDATE	Date

CLIENT NAME AND ADDRESS



Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS



RiverRestoration
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www.RiverRestoration.org

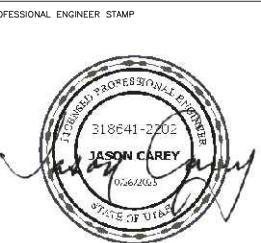
PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

Project	Sheet
45072	
Date	OCTOBER 2025
Scale	NTS

BID SET

D06



OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
OBERMEYER HYDRO INC
STEEL GATE DETAIL

No.	REVISION/UPDATE	Date

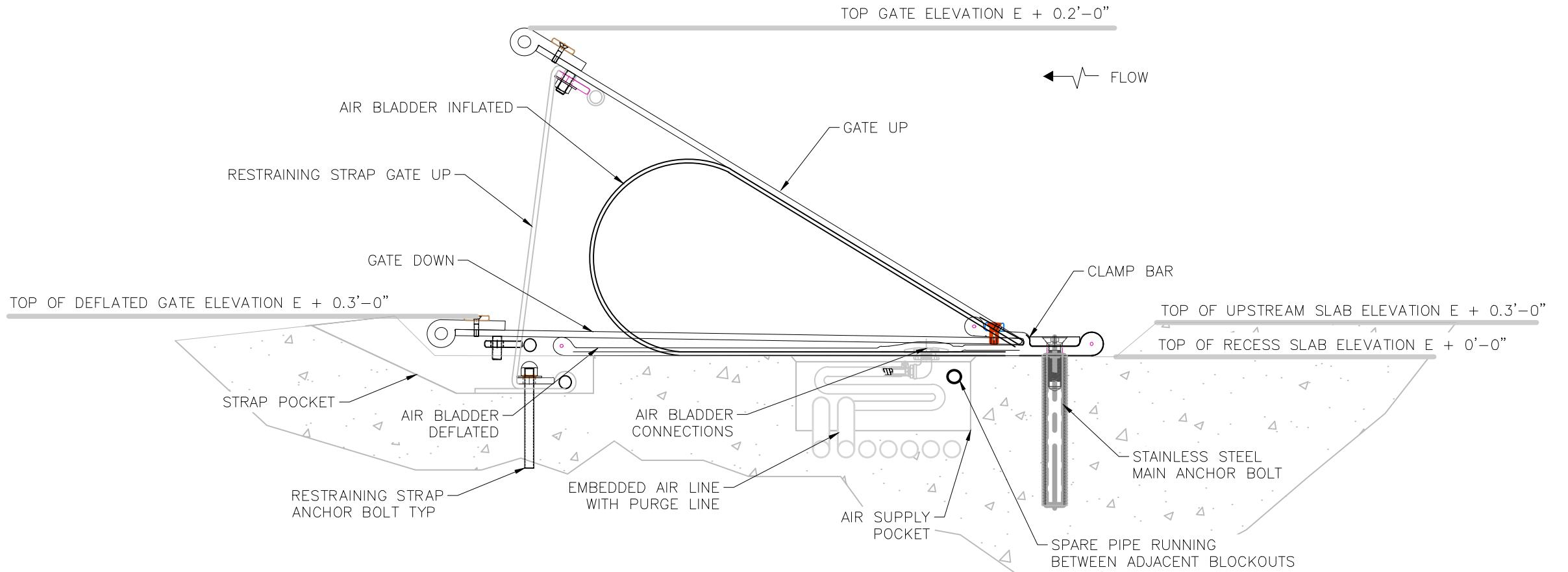


Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401



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PROJECT NAME AND ADDRESS	
Weber River	
Ogden, UT	
Ogden Business Exchange Surf Wave	
Project 45072	Sheet
Date OCTOBER 2025	
Scale NTS	

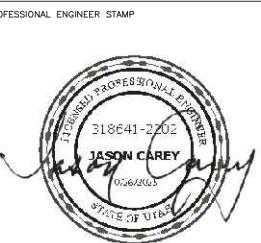


1
D07

OHI STEEL GATE DETAIL – SECTION ELEVATION 2.0 FT HIGH
(NTS – NOT FOR CONSTRUCTION PROVIDE SHOP DRAWINGS)

BID SET

D07



**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
OGDEN CITY DETAILS -
SURVEY MONUMENT**

No.	REVISION/UPDATE	Date



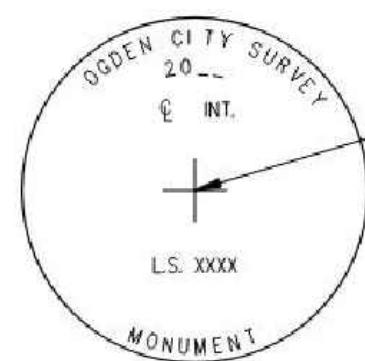
Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401



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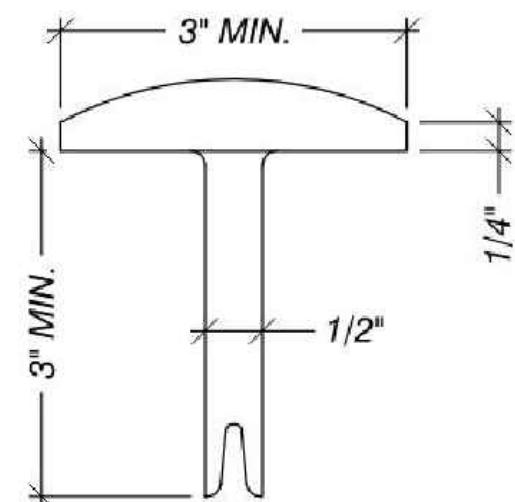
PROJECT NAME AND ADDRESS
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

Project	Sheet
45072	
Date	OCTOBER 2025
Scale	NTS



CAP PLAN

CAP CAN BE PURCHASED FROM
ENGINEERS OFFICE



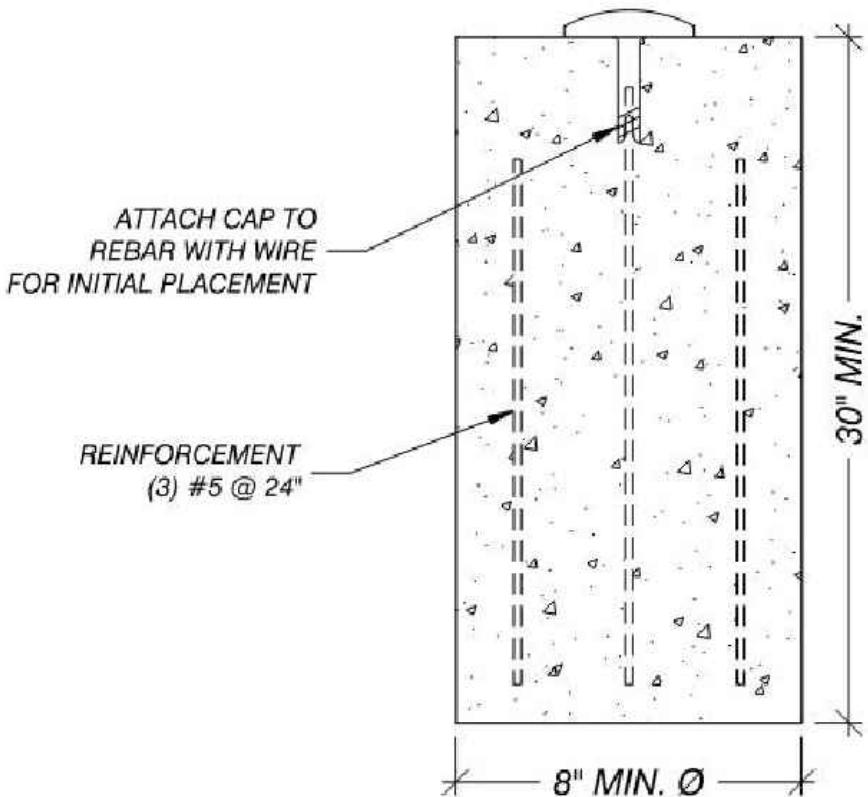
CAP SECTION

NOTES:

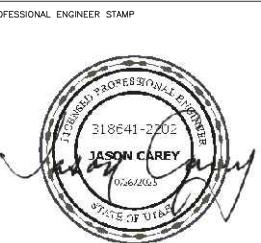
1. DATE: SHOW MONTH, DAY, AND YEAR WHEN CAP WAS MARKED.
2. LICENCE: SHOW LICENCE NUMBER OF LAND SURVEYOR WHO MARKED THE CAP.
3. CONCRETE: CLASS 4000 PER APWA SECTION 03 30 04.
4. REINFORCEMENT: ASTM A 615, GRADE 60, DEFORMED STEEL REBAR.

ABBREVIATIONS:

INT - INTERSECTION
 ML INT - MONUMENT LINE INTERSECTION
 P.C. - POINT OF CURVATURE
 P.C.C. - POINT OF COMPOUND CURVATURE
 P.I. - POINT OF INTERSECTION
 P.O.C. - POINT ON CURVE
 P.O.T. - POINT ON TANGENT
 P.R.C. - POINT OF REVERSE CURVE
 P.T. - POINT OF TANGENCY
 S.C. - SECTION CORNER
 W.C. - WITNESS CORNER



SECTION OF BASE
(TYPICAL SETTING)



OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT OGDEN CITY DETAILS - CONCRETE BASE FOR CAMERA POLE

No.	REVISION/UPDATE	Date



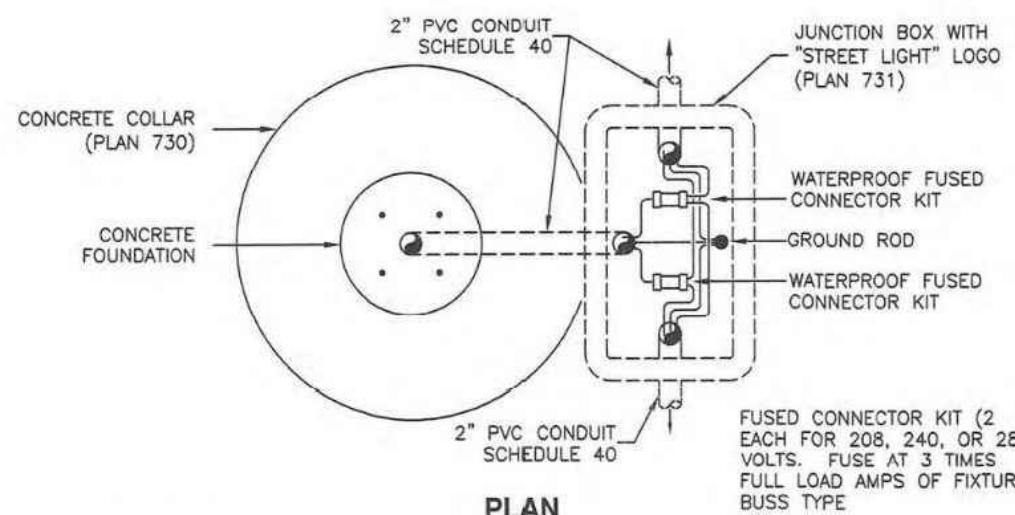
Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401



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Project 45072	Sheet D09
Date OCTOBER 2025	
Scale NTS	



Concrete base for street light pole

1. GENERAL

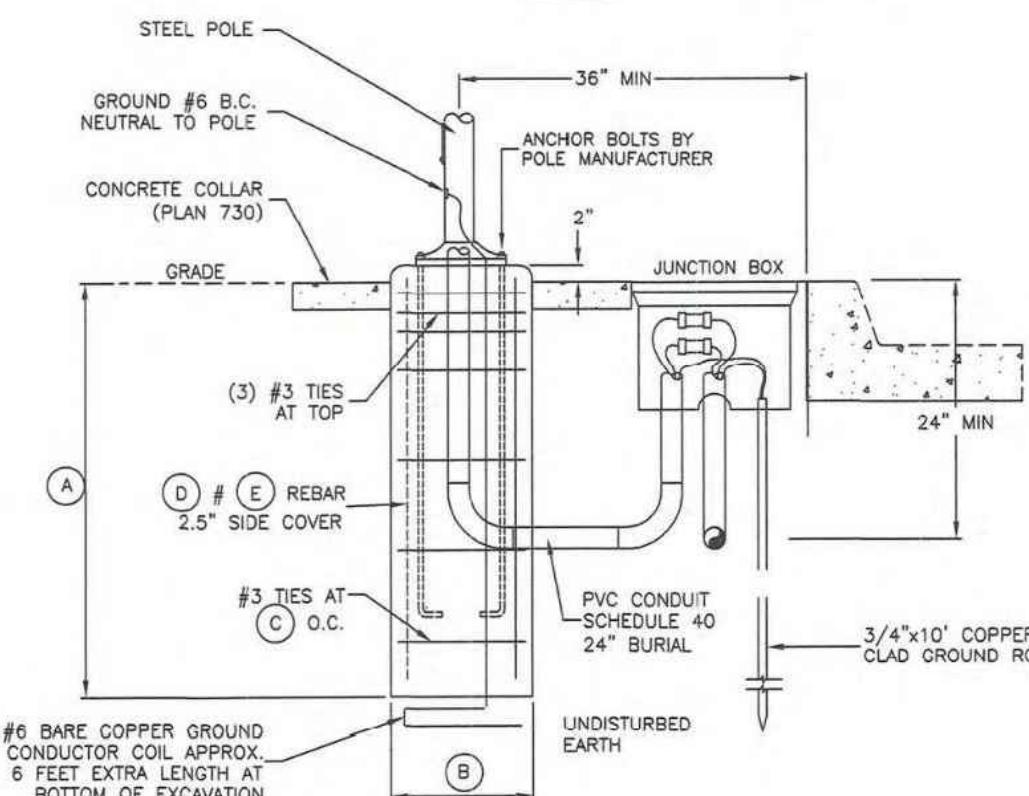
- A. Match longitudinal grades of foundation cap with top of existing curb.
- B. Establish grade from which foundation elevation is measured.
 - 1) Existing Curb and No Sidewalk: Grade is 1/4-inch per foot sloped upward from the top of the back of curb.
 - 2) Existing Curb and Sidewalk: Straight grade from top back of curb to near edge of sidewalk.
 - 3) Inside of Existing Median. Straight grade between top of back of one curb to top of back of other curb.
- C. When foundation cap is located in an area to be paved, the cap is to be placed below grade with bolts extending above top of cap to accommodate paving surface.

2. PRODUCTS

- A. Reinforcement: Galvanized or epoxy coated, deformed, 60 ksi yield grade steel, ASTM A615.
- B. Anchor Bolt: Galvanized steel with galvanized washer and nut, APWA Section 05 05 23.
- C. Concrete: Class 4000, APWA Section 03 30 04.

3. EXECUTION

- A. Keyhole to verify pole placement and protect utilities, APWA Section 31 23 16.
- B. Excavation. Use vacuum extraction or excavate by hand if utilities are in the site vicinity.
- C. Formwork: Use a circular form for the top 18-inches of foundation. If ground water is encountered, excavate additional depth and install sewer rock. Pump out water and provide a circular form for full length of foundation.
- D. Before Concrete Placement:
 - 1) Do not weld reinforcing steel, anchor bolts, or galvanized steel conduit.
 - 2) Place all conduits in same trench.
 - 3) Use a template to hold anchor bolts in the proper positions and to the proper heights until concrete is placed and sets.
 - 4) Protect conduits from plugging by sealing conduit ends before concrete placement.
- E. Concrete Placement: APWA Section 03 30 10. Provide 1/2-inch radius edges. Cure concrete for 7 days before erecting pole.



ELEVATION

Concrete base for street light pole

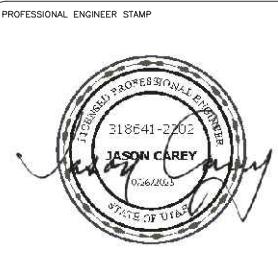
POLE LENGTH	DEPTH (A)	DIAMETER (B)	REBAR (C)	VIRTUAL (D)	REBAR (E)
10'-15'	4'-0"	18"	1 1/4"	8.6"	14
16'-25'	6'-0"	24"	1"	8.6"	14
26'-50'	9'-0"	30"	1"	6.6"	12

The logo for the APWA Utah Chapter. It features the letters "APWA" in a large, bold, italicized font. Above "APWA", the words "AMERICAN PUBLIC WORKS ASSOCIATION" are written in a smaller, all-caps font. Below "APWA", the words "Utah Chapter" are written in a smaller, italicized font.

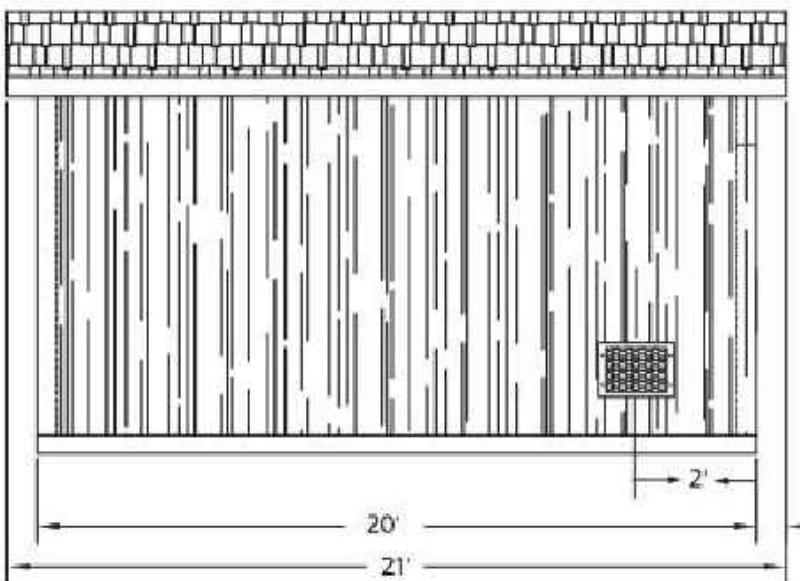
Plan
743
January 2011

743

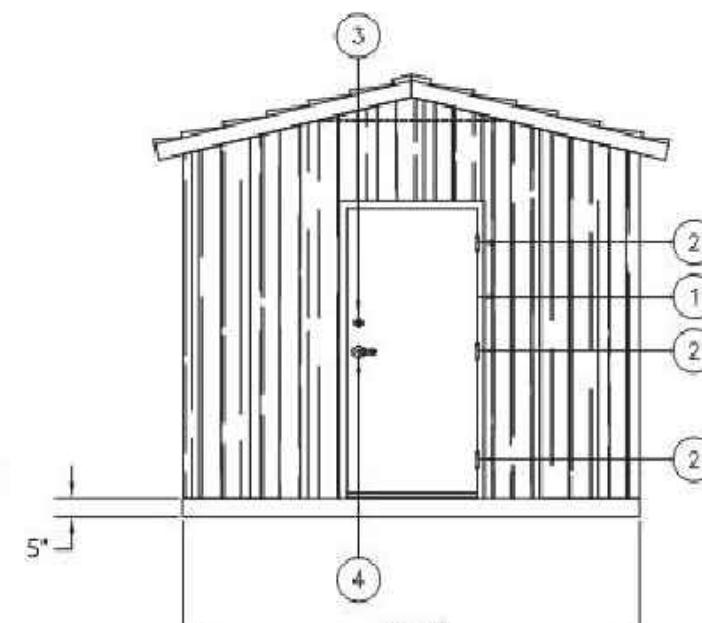
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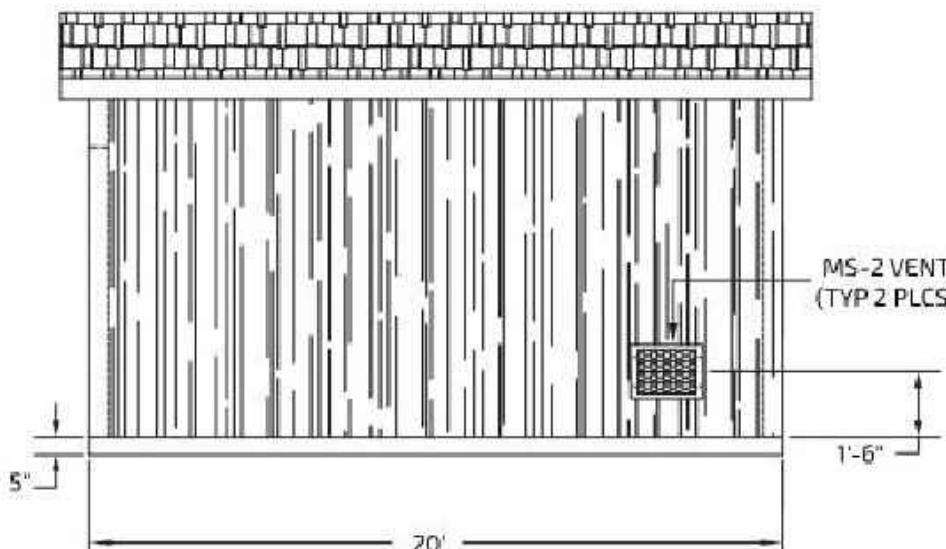
**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
CXT Precast Products
10.5' x 20' CONTROL BUILDING**



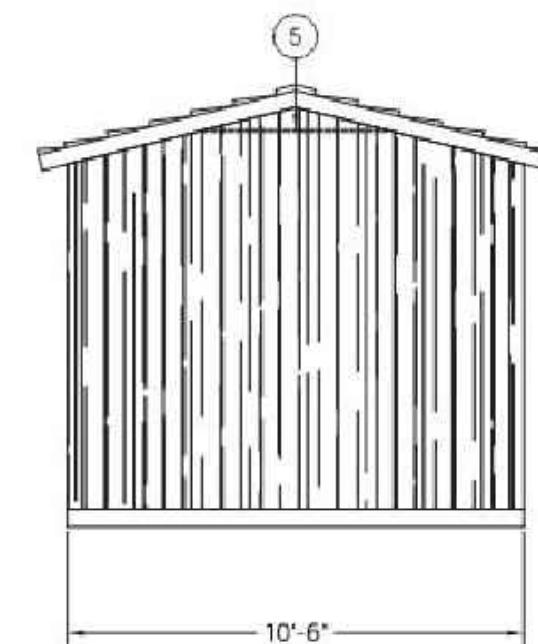
LH SIDE ELEVATION



FRONT ELEVATION



RH SIDE ELEVATION



REAR ELEVATION

DESIGN CRITERIA:

GENERAL NOTES APPLY TO ALL PANELS
UNLESS SPECIFICALLY NOTED OTHERWISE

1997 UBC

LOADS:

WIND: 120 MPH EXP D
SEISMIC: ZONE 4
SNOW: 250 PSF ROOF LOAD
FLOOR LIVE LOAD: 400 PSF

MATERIALS:

CONCRETE: $F'ci = 2500$ PSI
 $F'c = 5000$ PSI

STEEL:

REBAR=ASTM A615 GRADE 60
WELDING NOT ALLOWED
MIN LAP SPLICE IS 40 DIAMETERS
ALL MESH IS 4x4xW8xW8
MIN. MESH LAP IS TWO SQUARES
MESH IS TO BE CENTERED IN PANEL
PLATES & BARS=ASTM A36 $F_y=36$ KSI

PANEL THICKNESS:

FLOOR = 5"
WALLS = 4"
ROOF = 4 1/2"

COLOR: SEE MI

TEXTURE: WALLS - BARNWOOD
ROOF - CEDAR SHAKE

BILL OF MATERIALS		
ITEM	QTY	DESCRIPTION
1	1	3068 DOOR ASSEMBLY
		PREP FOR DEAD BOLT
		OPENS OUT
		AUTOMATIC DOOR BTM
		J THRESHOLD
2	3	SPRING HINGE 4.5 x 4.5
3	1	SOHOLAGE DEAD BOLT LOCK
4	1	GLASS ROOM LEVER
5	3	FLAT BAR 1/2" x 5H x 4'-2"
		APPROXIMATE WEIGHT



Precast Products

PROJECT TITLE
10.5' x 20' SCHWEITZER
CXT STANDARD BUILDING

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CASTING TOLERANCES:			
OVERALL LENGTH OR WIDTH			
10 FT OR UNDER	$\pm 1/8"$		
10 TO 20 FT	$\pm 1/8", -3/16"$		
20 TO 40 FT	$\pm 1/4"$		
TOTAL THICKNESS	$\pm 1/8", \pm 1/4"$		
VARIATION FROM SQUARE	$\pm 1/8$ IN 6 FT OF DIAGONAL		
LOCAL SMOOTHNESS	$\pm 1/4"$ IN 10 FT		
SWEEP	$\pm 1/8"$		
POSITION OF TENDONS	$\pm 1/4"$		
POSITION OF BLOCKOUTS	$\pm 1/4"$		
SIZE OF BLOCKOUTS	$\pm 1/4"$		
POSITION OF EMBEWS	$\pm 1/4"$		
TIPPING AND FLUSHNESS OF PLATES	$\pm 1/8", -1/4"$		
BOWING	LENGTH/360		
END SQUARNESS	$\pm 1/8"$		

REV.	DESCRIPTION	APPROVAL	DATE
SCALE	1/4"=1'-0"	DATE	06-05-06
DRAWN	DBRESSLER	FILE NO.	PD-SW01
CHECKED		PILOT	48

BUILDING ELEVATIONS

DWG NO.	SHEET	REV.
10.520-01		

No.	REVISION/UPDATE	Date



Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

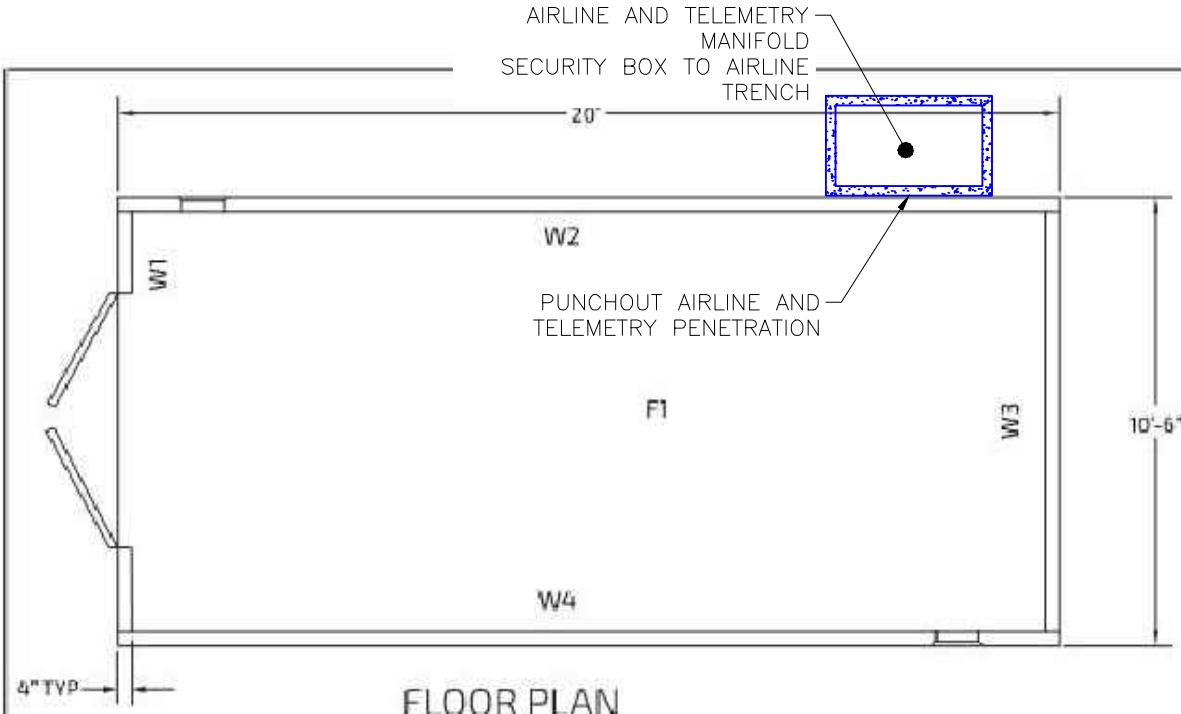


RiverRestoration
P.O. Box 248
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www.RiverRestoration.org

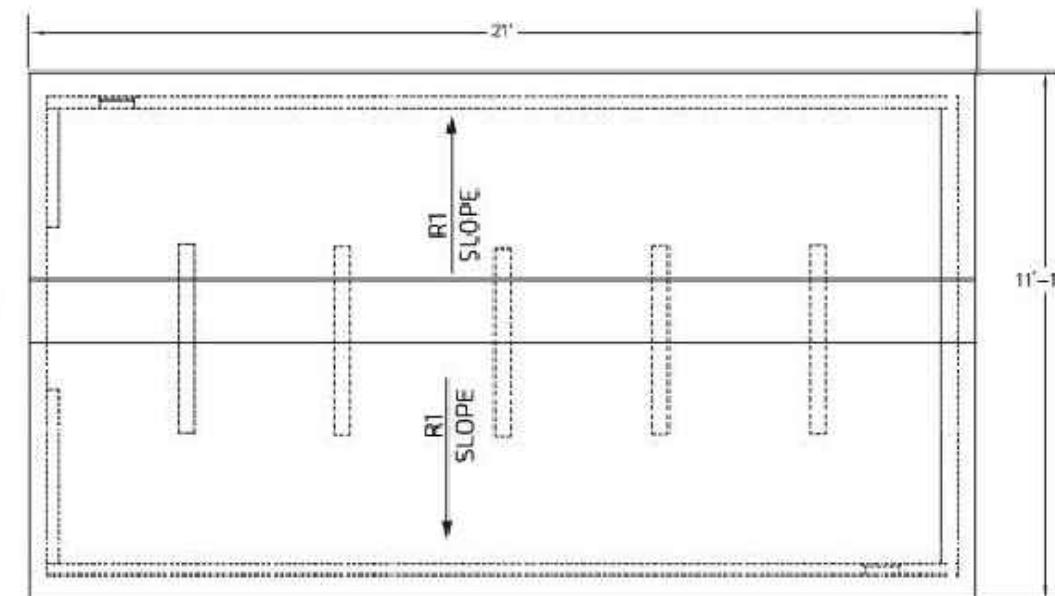
PROJECT NAME AND ADDRESS
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

Project	Sheet
45072	
Date	OCTOBER 2025
Scale	NTS

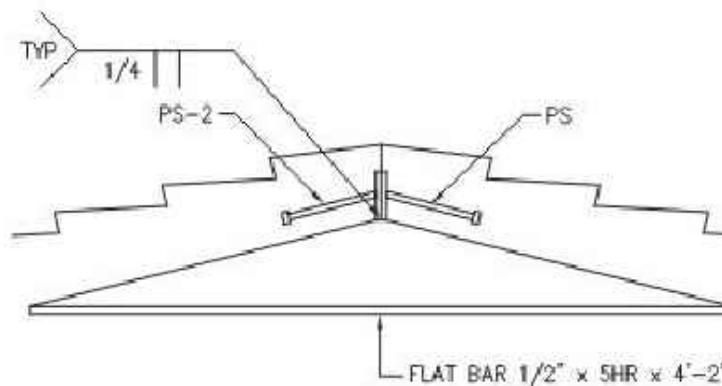
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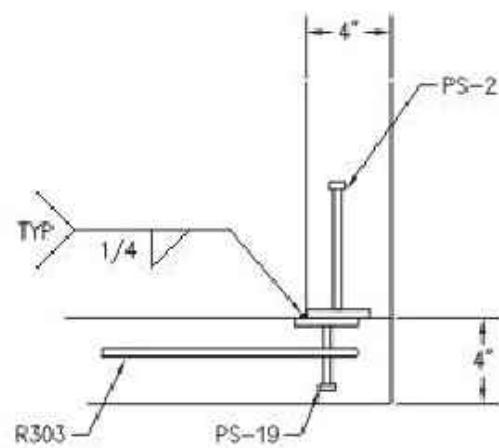
FLOOR PLAN



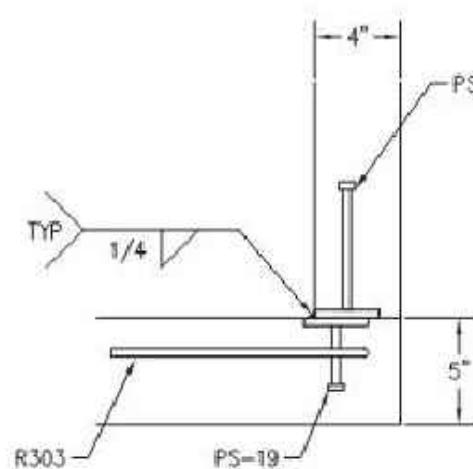
ROOF PLAN



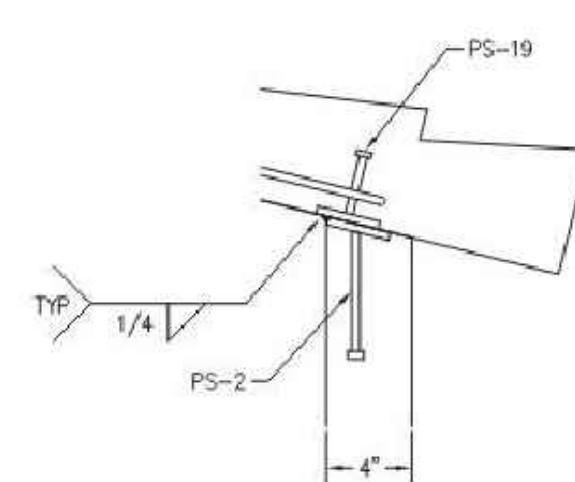
RIDGE CONNECTION



WALL TO WALL CONNECTION



WALL TO FLOOR CONNECTION



WALL TO ROOF CONNECTION



Precast Products

PROJECT TITLE
10.5' x 20' SCHWEITZER
CXT STANDARD BUILDING

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REF.	DESCRIPTION	APPROVAL	DATE
SCALE	1/4" = 1'-0"	DATE	06-05-06
DRAWN	DIBRESSLER	FILE NO.	PD-SW02
CHECKED		PLOT	48

PLAN VIEW

DWG NO.	SHEET	REV.
10.520-02		

BID SET

OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
CXT Precast Products
10.5' x 20' CONTROL BUILDING

No.	REVISION/UPDATE	Date



Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS



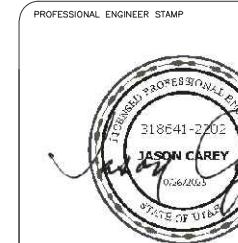
RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

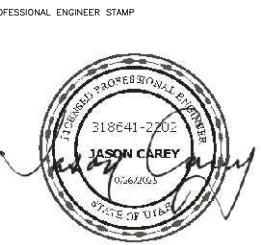
PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

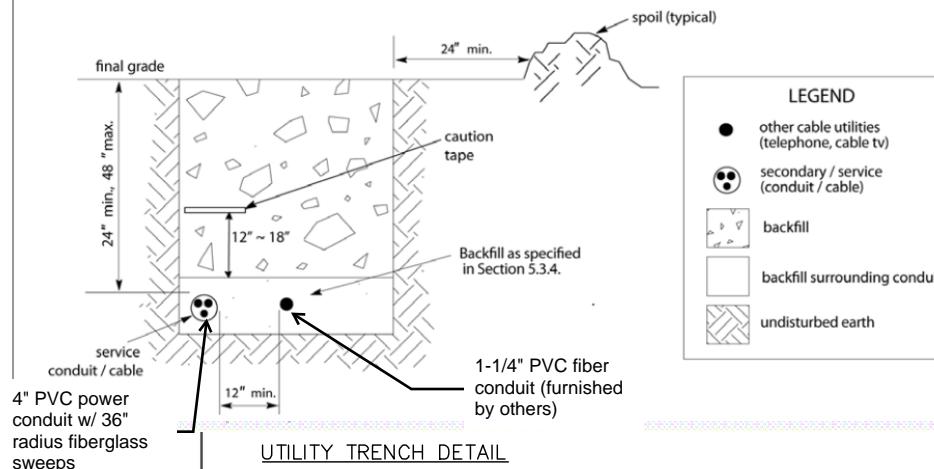
Project 45072	Sheet
Date OCTOBER 2025	
Scale NTS	

D11





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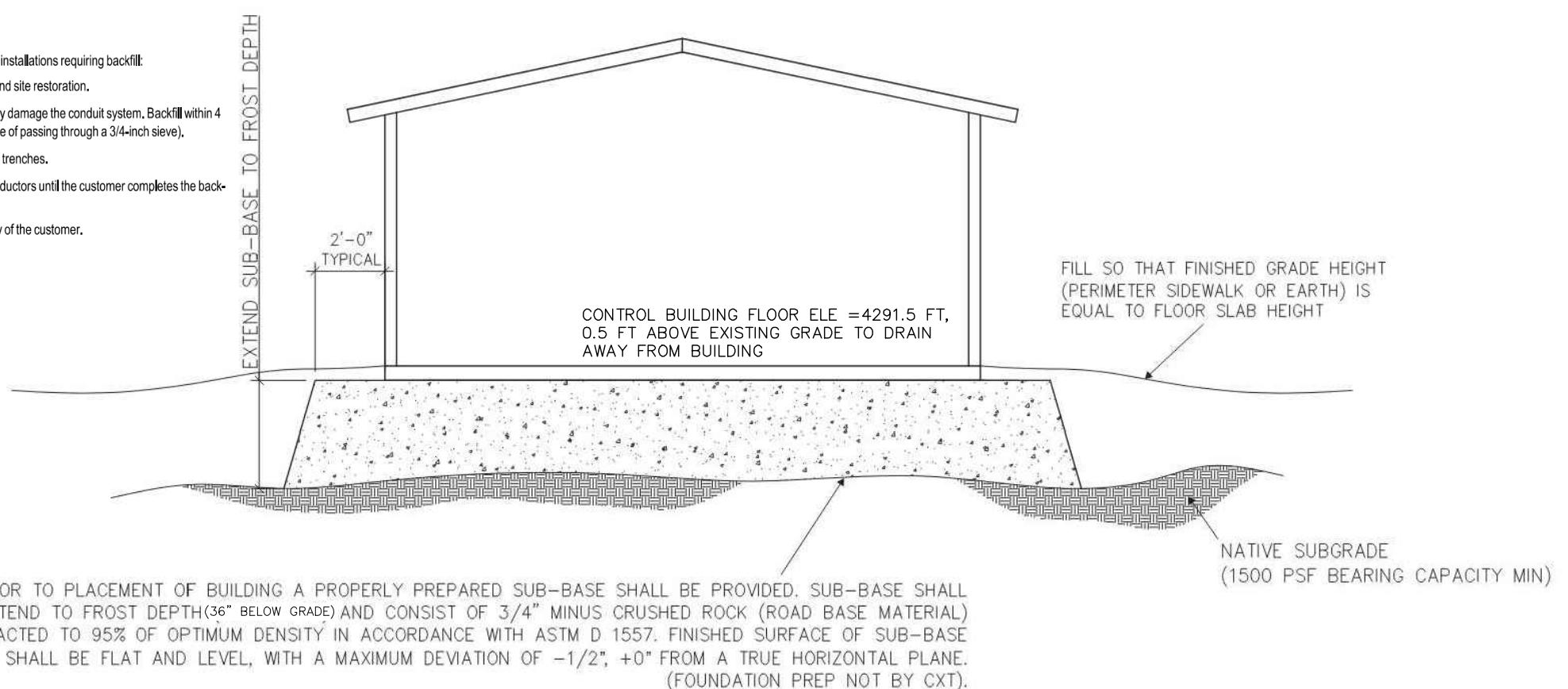


5.3.4 Backfill Requirements

The following list of requirements applies to all installations requiring backfill:

1. The customer shall provide trench backfill and site restoration.
2. All backfill shall be free of materials that may damage the conduit system. Backfill within 4 inches of the conduit shall be select (capable of passing through a 3/4-inch sieve).
3. Extra caution should be taken when refilling trenches.
4. The Power Company may not energize conductors until the customer completes the backfill to Power Company satisfaction.

The cost to repair a conduit is the responsibility of the customer.



6707 E. Flamingo Ave, Bldg 300, Nampa, ID 83687
901 N. Highway 77 Hillsboro, TX 76645
362 Waverly Road Williamson, WV 26187

PROJECT TITLE
XXXX
BUILDING NUMBER XXXX

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REV.	DESCRIPTION	APPROVAL	DATE
SCALE	1/4"=1'-0"	-	-
DRAWN	M. TOLMAN	FILE NO.	-
CHECKED	N. PENNER	PLOT	48

FOUNDATION DETAIL

DWG. NO.	SHEET	REV.
-	-	0
	24	

OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
CXT Precast Products
10.5' x 20' CONTROL BUILDING

No.	REVISION/UPDATE	Date

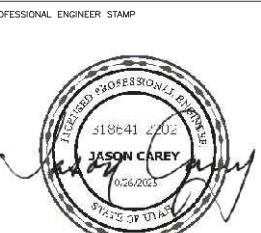


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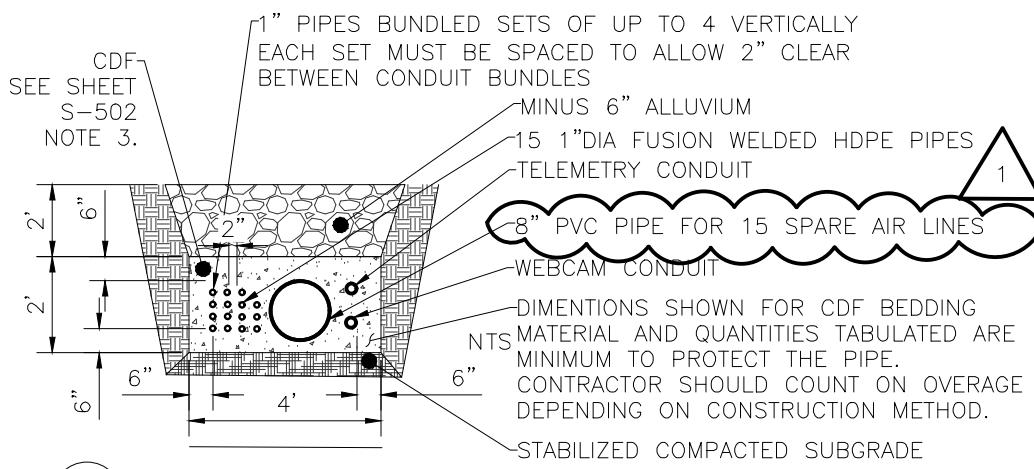
RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

Project	Sheet
45072	
Date	OCTOBER 2025
Scale	NTS

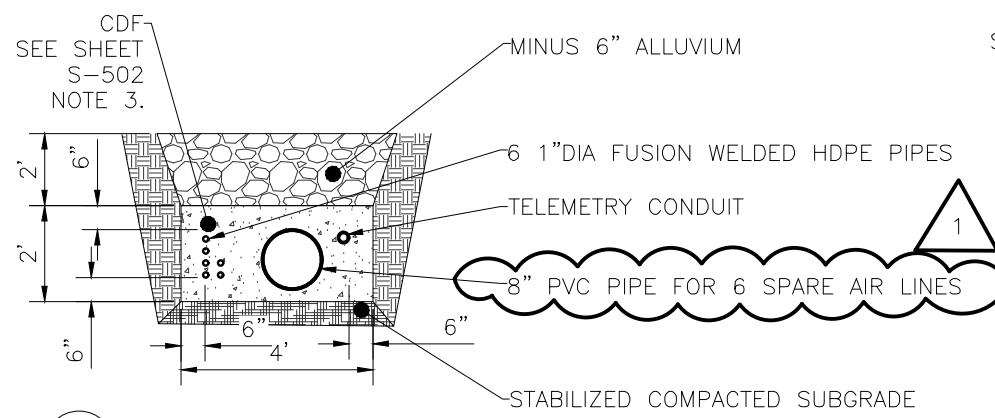


OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT

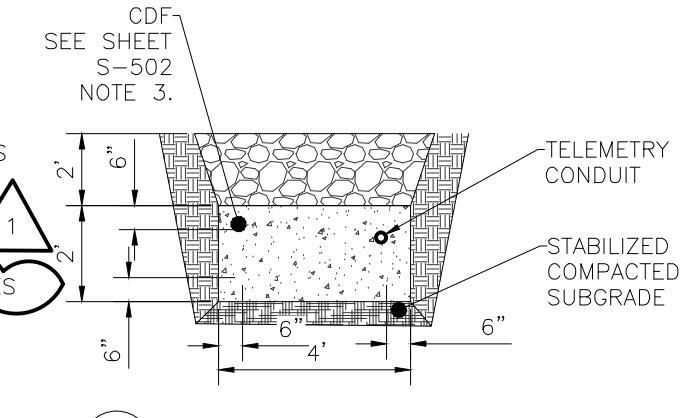
AIR LINE BEDDING DETAIL



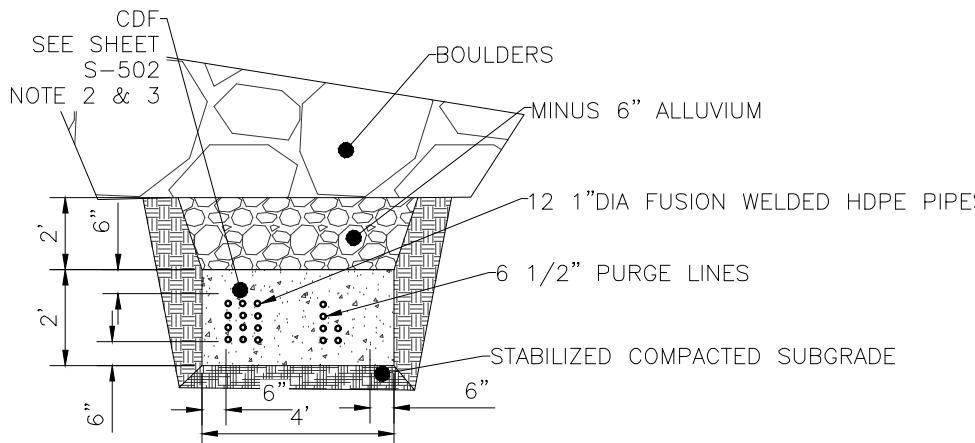
1 AIR LINE BEDDING DETAIL (CB TO MH1)
D13



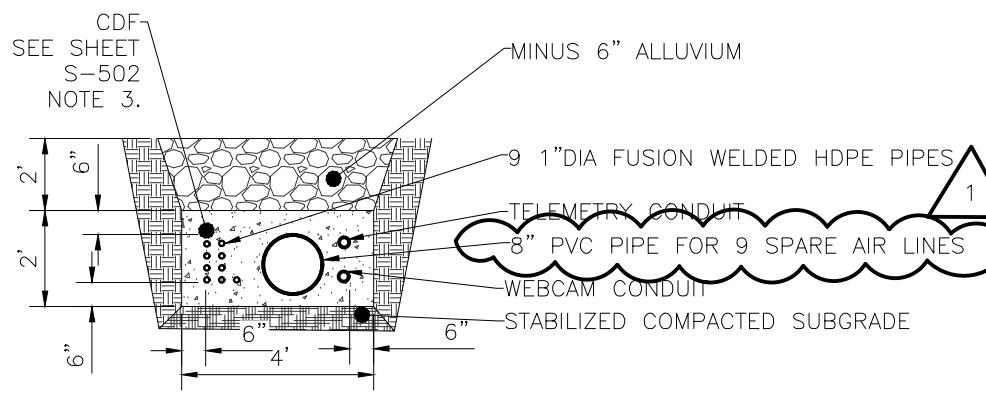
2 AIR LINE BEDDING DETAIL (MH1 TO MH5)
D13 NTS



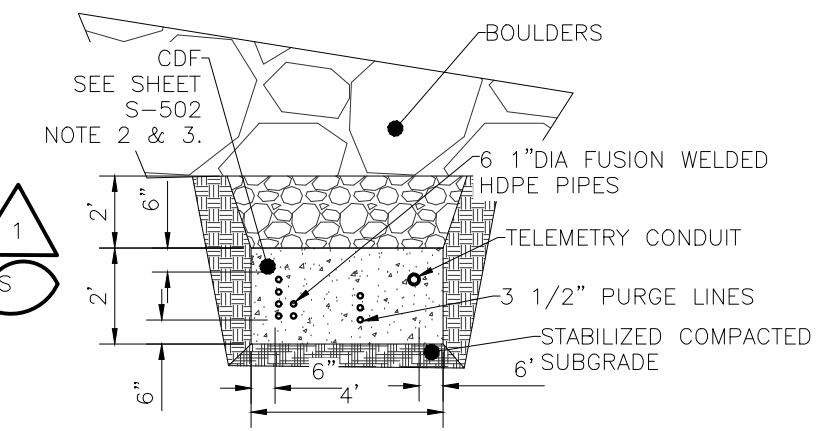
3 AIR LINE BEDDING DETAIL (MH5 TO MH6)
D13 NTS



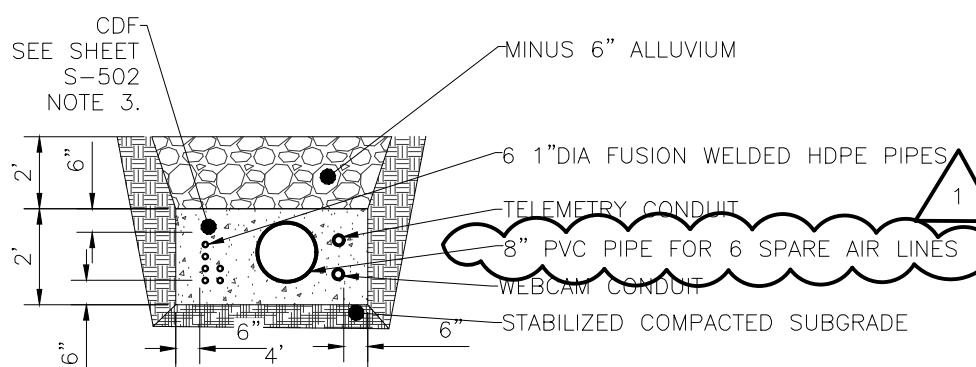
4 AIR LINE BEDDING DETAIL (MH5 TO W4 GATES)
D13
NTS - SEE DETAIL A1 SHEET S-502 NOTE 2 FOR REINFORCED CONCRETE
CONDUIT ENCASEMENT WHEN PLACED UNDER CONCRETE STRUCTURES



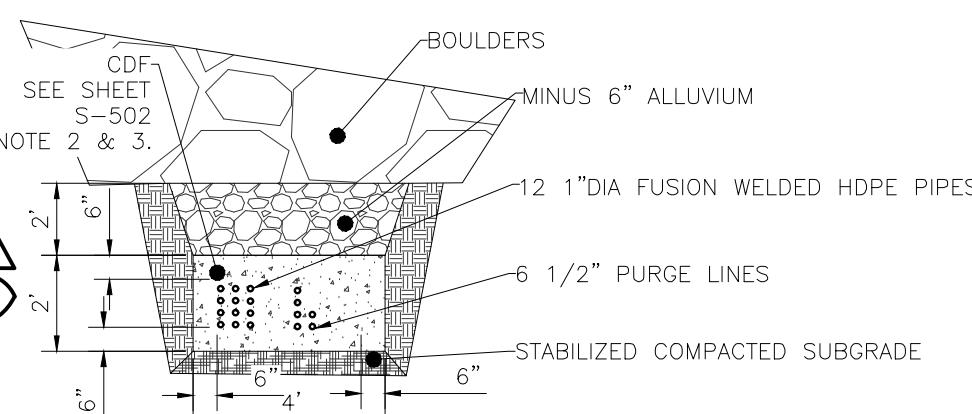
5 AIR LINE BEDDING DETAIL (MH1 TO MH2)
D13 NTS



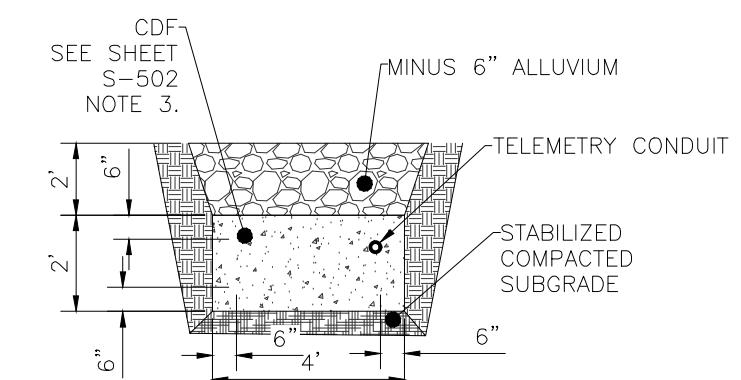
6 AIR LINE BEDDING DETAIL (MH2 TO W1 GATES)
D13
NTS - SEE DETAIL A1 S-502 NOTE 2 FOR
REINFORCED CONCRETE CONDUIT ENCASEMENT
WHEN PLACED UNDER CONCRETE STRUCTURES



7 AIR LINE BEDDING DETAIL (MH2 TO MH3)
D13
NTS



8 AIR LINE BEDDING DETAIL (MH5 TO W2-W3 GATES)
D13
NTS - SEE DETAIL A1 SHEET S-502 NOTE 2 FOR REINFORCED CONCRETE
CONDUIT ENCASEMENT WHEN PLACED UNDER CONCRETE STRUCTURES



9 AIR LINE BEDDING DETAIL (MH5 TO MH6)
D13
NTS

NOTE:

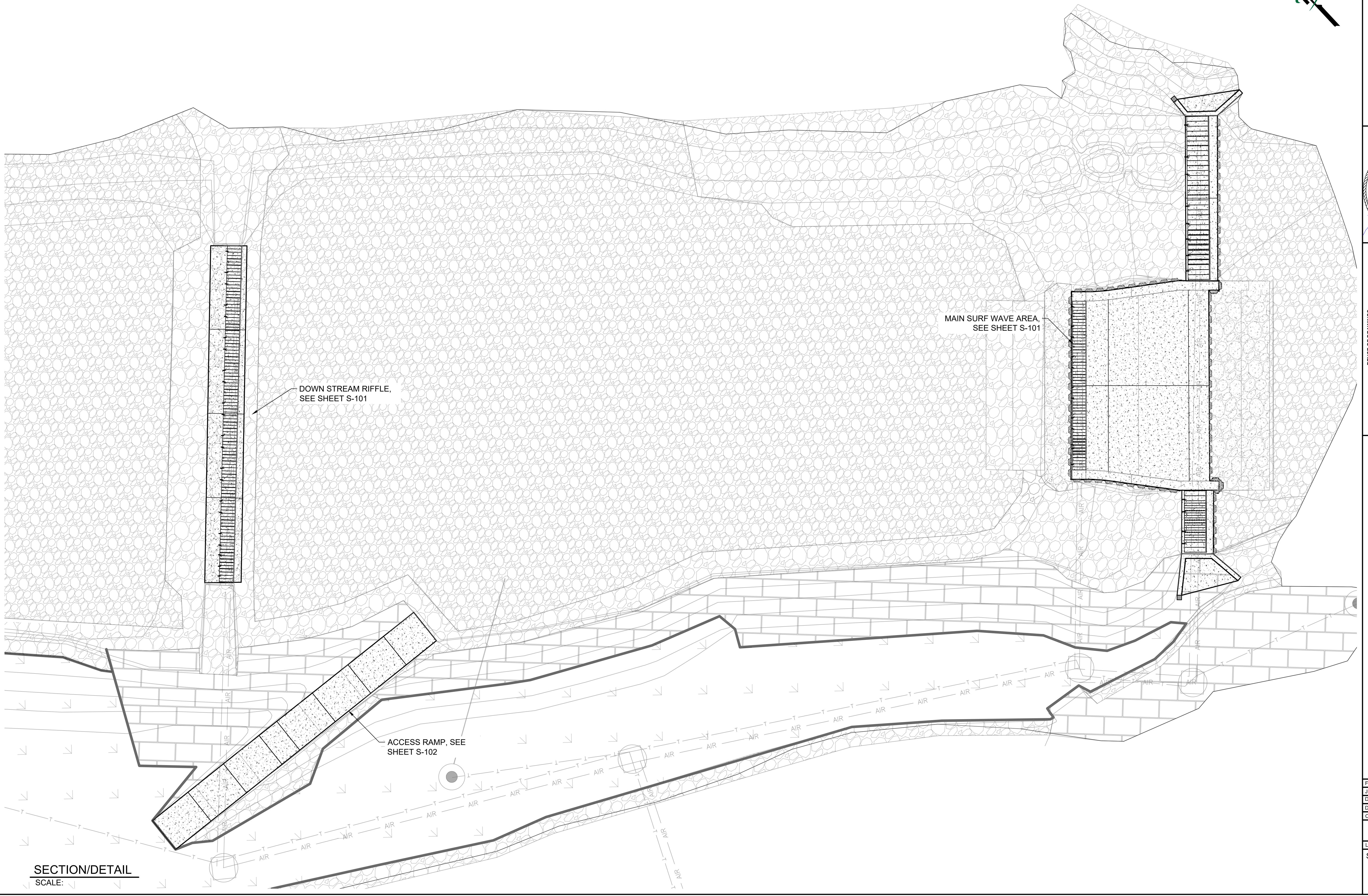
- THE USE OF STRUCTURAL CONCRETE WITH REINFORCEMENT IS REQUIRED FOR ALL CONDUIT ENCASEMENT PASSING UNDER CONCRETE STRUCTURES. SEE STRUCTURAL DETAILS.
- USE CDF FOR ALL OTHER TRENCH LOCATIONS.
- JUNCTION AT MANHOLE,
- CAP AND SWEEP REDUNDANT LINES IN MANHOLE AND AT BLOCK-OUT
- SPACING BETWEEN AIRLINES = 1" PIPES BUNDLED SETS OF UP TO 4 VERTICALLY SPACED AT 2" O.C HORIZONTAL

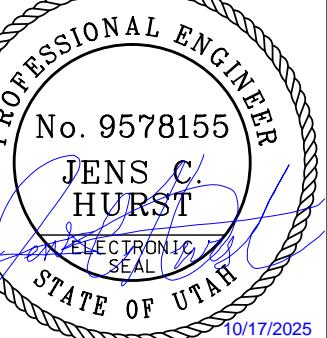
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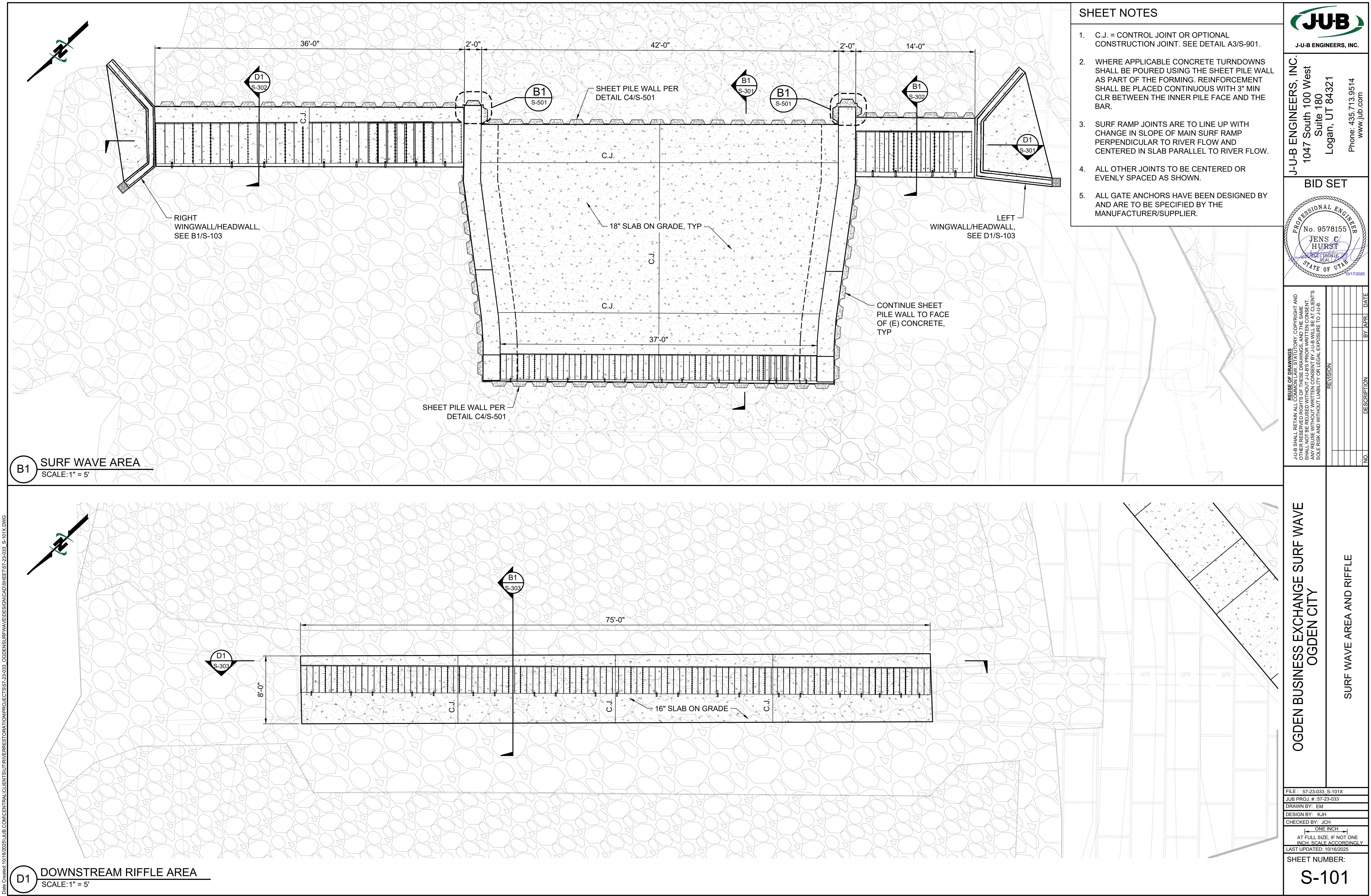
No.	REVISION/UPDATE	Date
1	8" PVC PIPE UPDATE	11/21/25
CLIENT NAME AND ADDRESS		
 Ogden City Corporation Engineering Division 2549 Washington Blvd Ogden, UT 84401		
DESIGN FIRM NAME AND ADDRESS		
 RiverRestoration.org P.O. Box 248 Carbondale, CO 81623 www.RiverRestoration.org		
PROJECT NAME AND ADDRESS		
Weber River Ogden, UT Ogden Business Exchange Surf Wave		
Project	45072	Sheet
Date	NOVEMBER 2025	
Scale	NTS	

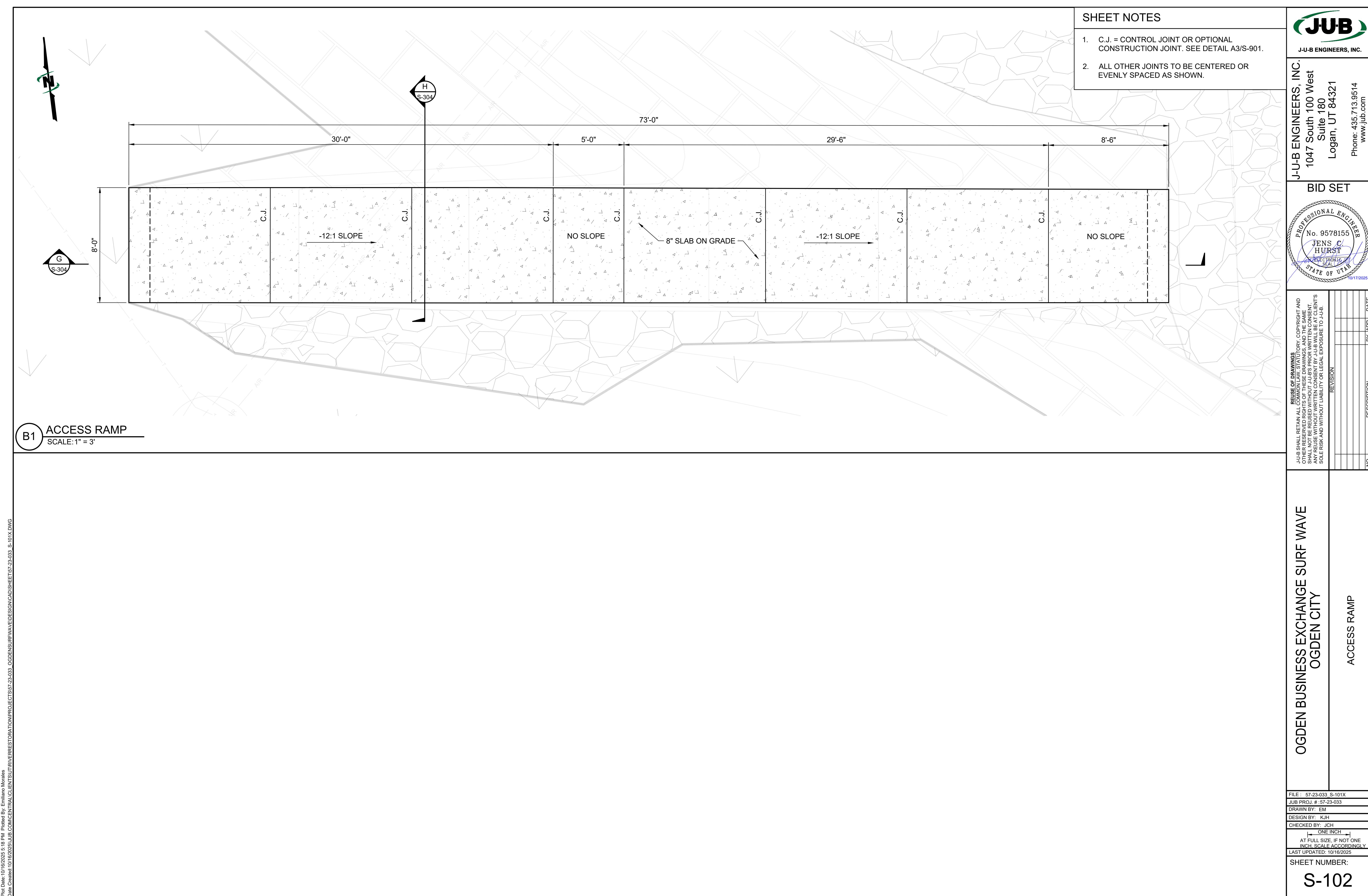
D13

<p>ADHESIVE ANCHORS</p> <p>CONCRETE QUALITY AND DETAILS</p> <p>DETAILS OF REINFORCEMENT</p>	<p>A. MATERIALS</p> <p>i THE ADHESIVE ANCHOR SYSTEM USED FOR POST-INSTALLED ANCHORAGE TO CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF THE MOST RECENTLY PUBLISHED ACI 355.4, QUALIFICATION OF POST-INSTALLED ADHESIVE ANCHORS IN CONCRETE AND COMMENTARY. THE ANCHOR SYSTEM SHALL BE ONE OF THE FOLLOWING:</p> <ul style="list-style-type: none"> (i) SIMPSON SET-3G (ii) HILTI HIT-HY 200-R V3 (iii) APPROVED EQUAL MEETING ACI 355.4 AND THE FOLLOWING MINIMUM STRESS VALUES. <ol style="list-style-type: none"> 1. CRACKED CONCRETE BOND STRESS, $T_{cr} = 760$ PSI FOR 0.75-INCH DIAMETER THREADED ROD ANCHOR. 2. UNCRACKED CONCRETE BOND STRESS, $T_{uncr} = 1,710$ PSI FOR 0.75-INCH DIAMETER THREADED ROD ANCHOR. <p>ii ANCHOR ROD TYPE AND MATERIAL SHALL BE AS SPECIFIED.</p> <p>iii NUTS, WASHERS, AND OTHER HARDWARE USED WITH AN ALL-THREADED BAR ADHESIVE ANCHOR SYSTEM SHALL HAVE A MATERIAL OR AN ALLOY DESIGNATION THAT MATCHES THE ALL-THREAD MATERIAL OR ALLOY. GALVANIZED ASSEMBLIES SHALL BE HOT-DIPPED IN ACCORDANCE WITH ASTM A153 CLASS C.</p> <p>B. GENERAL INSTALLATION GUIDELINES.</p> <p>i CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT THE TIME OF ADHESIVE ANCHOR INSTALLATION.</p> <p>ii CONCRETE TEMPERATURE AT THE TIME OF ADHESIVE ANCHOR INSTALLATION SHALL BE AT LEAST 50-DEGREES F.</p> <p>iii EMBEDMENT DEPTH AND ANCHOR PROJECTION FROM THE CONCRETE SURFACE SHALL BE AS SHOWN ON THE DRAWINGS OR DETAILS OR AS NECESSARY FOR THE PARTICULAR ANCHOR OR GROUP OF ANCHORS BEING INSTALLED.</p> <p>C. INSTALLATION TECHNIQUES.</p> <p>i ADHESIVE ANCHORS SHALL BE INSTALLED BY QUALIFIED PERSONNEL TRAINED TO INSTALL ADHESIVE ANCHORS IN ACCORDANCE WITH THE SPECIFICATIONS. POST-INSTALLED ADHESIVE ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS (MPI).</p> <p>ii INSTALLATION OF ADHESIVE ANCHORS HORIZONTALLY OR UPWARDLY INCLINED SHALL BE PERFORMED BY PERSONNEL CERTIFIED BY THE ACI/CIRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM. THE INSTALLER'S QUALIFICATIONS SHALL BE SUBMITTED AND APPROVED BY THE LICENSED DESIGN PROFESSIONAL.</p> <p>iii ANCHORS SHALL BE INSTALLED IN HOLES DRILLED WITH A ROTARY IMPACT HAMMER DRILL OR ROCK DRILL.</p> <p>iv ANCHOR HOLES SHALL BE THOROUGHLY CLEANED PRIOR TO ADHESIVE INJECTION, AS REQUIRED BY MPI.</p> <p>v ANCHORS TO BE INSTALLED IN ADHESIVE SHALL BE CLEAN, OIL-FREE AND FREE OF LOOSE RUST, PAINT OR OTHER COATING.</p> <p>D. FIELD QUALITY CONTROL.</p> <p>i ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS SHALL BE CONTINUOUSLY INSPECTED DURING INSTALLATION BY AN INSPECTOR SPECIFICALLY APPROVED FOR THE PURPOSE BY THE BUILDING OFFICIAL.</p> <p>ii ADHESIVE ANCHORS SHALL BE PROOF TESTED AS FOLLOWS:</p> <ul style="list-style-type: none"> (a) A MINIMUM OF 10 PERCENT OF THE HORIZONTALLY OR UPWARDLY INCLINED INSTALLED ADHESIVE ANCHORS SHALL BE PROOF TESTED IN TENSION BY AN INDEPENDENT TESTING LABORATORY. (b) TENSION TESTING SHALL BE PERFORMED IN ACCORDANCE WITH ASTM E488. (c) THE ADHESIVE ANCHORS SHALL BE TENSION PROOF TESTED TO THE FOLLOWING LOADS: <ul style="list-style-type: none"> (i) 0.75-INCH DIAMETER ANCHOR WITH 9-INCH EMBEDMENT, $P_t = 50$ KIPS. (ii) 1.00-INCH DIAMETER ANCHOR WITH 12-INCH EMBEDMENT, $P_t = 75$ KIPS. <p>iii ANCHORS SHALL HAVE NO VISIBLE INDICATIONS OF DISPLACEMENT OR DAMAGE DURING OR AFTER PROOF LOAD APPLICATION. CONCRETE CRACKING IN THE VICINITY OF THE ANCHOR AFTER LOADING SHALL BE CONSIDERED A FAILURE.</p> <p>iv IF MORE THAN 15 PERCENT OF THE TESTED ADHESIVE ANCHORS FAIL TO ACHIEVE THE SPECIFIED PROOF LOAD WITHIN THE LIMITS DEFINED ON THESE DRAWINGS, 100 PERCENT OF THE SAME DIAMETER AND TYPE AS THE FAILED ANCHOR SHALL BE PROOF TESTED, UNLESS OTHERWISE DIRECTED BY THE LICENSED DESIGN PROFESSIONAL.</p>	<p>A. PLACEMENT OF ALL REINFORCING STEEL WITHIN CONCRETE STRUCTURES SHALL BE IN CONFORMANCE WITH ACI 318/350.</p> <p>B. REINFORCING STEEL HOOKS, BENDS, TIES, SPLICES AND OTHER REINFORCEMENT DETAILS SHALL BE IN ACCORDANCE WITH ACI 315, GUIDE TO PRESENTING REINFORCING STEEL DESIGN DETAILS.</p> <p>C. SPACING LIMITS FOR REINFORCEMENT SHALL BE IN CONFORMANCE WITH ACI 318/350.</p> <p>D. CONCRETE PROTECTION FOR REINFORCEMENT. UNLESS NOTED ELSEWHERE ON THE DRAWINGS, ALL REINFORCING STEEL SHALL HAVE THE FOLLOWING CONCRETE COVER:</p> <ul style="list-style-type: none"> i FOR NON-LIQUID CONTAINING OR OUT-OF-RIVER CONCRETE STRUCTURES; PER ACI 318: <ul style="list-style-type: none"> (a) CONCRETE CAST AGAINST EARTH: 3.00 INCH (b) CONCRETE EXPOSED TO EARTH OR WEATHER: <ul style="list-style-type: none"> • NO. 5 OR SMALLER BARS: 1.50-INCH • NO. 6 OR LARGER BARS: 2.00-INCH (c) CONCRETE NOT EXPOSED TO EARTH OR WEATHER: <ul style="list-style-type: none"> • NO. 11 OR SMALLER BARS: 0.75-INCH • NO. 14 OR LARGER BARS: 1.50-INCH (d) BEAMS AND COLUMNS: <ul style="list-style-type: none"> • PRIMARY REINFORCEMENT, TIES, STIRRUPS, OR SPIRALS: 1.50-INCH ii FOR LIQUID CONTAINING OR IN-RIVER CONCRETE STRUCTURES; PER ACI 350: <ul style="list-style-type: none"> (a) CONCRETE CAST AGAINST EARTH: 3.00 INCH (b) CONCRETE EXPOSED TO EARTH, LIQUID OR WEATHER: <ul style="list-style-type: none"> • SLABS AND JOINTS: 3.00-INCH • WALLS: 3.00-INCH (c) BEAMS AND COLUMNS: <ul style="list-style-type: none"> • TIES, STIRRUPS, OR SPIRALS: 3.00-INCH • PRIMARY REINFORCEMENT: 3.00-INCH (d) FOOTINGS AND BASE SLABS: <ul style="list-style-type: none"> • FORMED SURFACES: 3.00-INCH • TOP OF FOOTINGS AND BASE SLABS: 3.00-INCH <p>E. HORIZONTAL JOINTS IN REINFORCED CONCRETE WALLS:</p> <ul style="list-style-type: none"> i PROVIDE A LAYER OF SLURRY CONCRETE IN THE BOTTOM OF ALL HORIZONTAL WALL JOINTS, 1-INCH MINIMUM TO 2-INCH MAXIMUM THICKNESS. THOROUGHLY VIBRATE TO MIX CONCRETE & SLURRY TOGETHER. ii HORIZONTAL CONSTRUCTION JOINTS CONTAINING WATER-STOP. <ul style="list-style-type: none"> i UNLESS OTHERWISE SPECIFICALLY DIRECTED, IN ALL HORIZONTAL CONSTRUCTION JOINTS IN NEW CONCRETE CONSTRUCTION CONTAINING WATER-STOPS, PROVIDE AN INITIAL LAYER OF SLURRY MIX TO AIR IN CONSOLIDATION OF FRESHLY PLACED CONCRETE AT THE JOINT INTERFACE. ii SLURRY MIX SHALL BE A MIXTURE OF 3/8-INCH MAXIMUM AGGREGATE, SAND, CEMENT AND WATER. PLACE SLURRY MIX 2-INCH MINIMUM TO 4-INCH MAXIMUM IN THICKNESS. iii PLACE WITH BUCKETS OR OTHER MEANS PERMITTING VISUAL VERIFICATION THAT ONLY ENOUGH SLURRY MIX IS DEPOSITED IN THE VICINITY OF THE CONCRETE POUR TO MEET THE THICKNESS REQUIREMENTS. iv PLACE CONCRETE OVER SLURRY MIX WHILE SLURRY MIX IS STILL FLOWABLE. v LIMIT INITIAL CONCRETE PLACEMENT ON TOP OF SLURRY MIX TO 12-INCHES IN THICKNESS. THOROUGHLY VIBRATE AND CONSOLIDATE CONCRETE AND SLURRY MIX TOGETHER. vi CONCRETE CURING. CONCRETE SHALL BE MAINTAINED ABOVE 50-DEGREES F AND IN A MOIST CONDITION FOR AT LEAST 7 DAYS AFTER PLACEMENT, EXCEPT WHEN CURED IN ACCORDANCE WITH ACI 308 GUIDE TO EXTERNAL CURING OF CONCRETE. <p>F. COLD WEATHER REQUIREMENTS. ADEQUATE EQUIPMENT SHALL BE PROVIDED FOR HEATING CONCRETE MATERIALS AND PROTECTING CONCRETE DURING FREEZING OR NEAR-FREEZING WEATHER. THE RECOMMENDED PROCEDURES LISTED IN ACI 306, COLD WEATHER CONCRETING SHALL BE FOLLOWED.</p> <ul style="list-style-type: none"> i COLD WEATHER IS DEFINED AS A PERIOD WHEN, FOR MORE THAN 3 CONSECUTIVE DAYS, THE FOLLOWING CONDITIONS EXIST: <ul style="list-style-type: none"> (a) THE AVERAGE DAILY AIR TEMPERATURE IS LESS THAN 40-DEGREES F AND (b) THE AIR TEMPERATURE IS NOT GREATER THAN 50-DEGREES F FOR MORE THAN ONE-HALF OF ANY 24-HOUR PERIOD. j. HOT WEATHER REQUIREMENTS. DURING HOT WEATHER, PROPER ATTENTION SHALL BE GIVEN TO INGREDIENTS, PRODUCTION METHODS, HANDLING, PLACING, PROTECTION, AND CURING TO PREVENT EXCESSIVE CONCRETE TEMPERATURES OR WATER EVAPORATION THAT COULD IMPAIR REQUIRED STRENGTH OR SERVICEABILITY OF THE MEMBER OR STRUCTURE. THE RECOMMENDED PROCEDURES LISTED IN ACI 305, HOT WEATHER CONCRETING SHALL BE FOLLOWED. i HOT WEATHER IS ANY COMBINATION OF THE FOLLOWING CONDITIONS THAT TENDS TO IMPAIR THE QUALITY OF FRESHLY MIXED OR HARDENED CONCRETE BY ACCELERATING THE RATE OF MOISTURE LOSS AND RATE OF CEMENT HYDRATION, OR OTHERWISE CAUSING DETRIMENTAL RESULTS: <ul style="list-style-type: none"> (a) HIGH AMBIENT TEMPERATURE. (b) HIGH CONCRETE TEMPERATURE. (c) LOW RELATIVE HUMIDITY. (d) WIND SPEED. (e) SOLAR RADIATION. k. ALL IN RIVER CONCRETE SHALL BE WET CURED ACCORDING TO ACI 301 AND ACI 308. THE PREFERRED METHOD TO KEEPING THE CONCRETE SURFACE MOIST IS WET BURLAP OR A MOISTURE-RETAINING COVER. 	<p>J-U-B ENGINEERS, INC.</p> <p>1047 South 100 West Suite 180 Logan, UT 84321 Phone: 435/713-9514 www.jub.com</p>
<p>FORMWORK</p>	<p>CONCRETE FLOORS AND SLABS</p>	<p>GENERAL STRUCTURAL NOTES</p>	
<p>Plot Date: 10/16/2025 5:17 PM Printed by: Emilio Arellano Date Created: 10/16/2025 J-U-B CONSULTING ENGINEERS PROJECTS 57-23-033 S-001X.DWG SHEET 57-23-033 S-001X.DWG ODGEN SURFACE RESTORATION PROJECT</p>	<p>CONCRETE FLOORS AND SLABS</p> <p>WATER-RETAINING CONCRETE STRUCTURES</p> <p>A. CONCRETE FLOORS AND SLABS</p> <p>SHALL BE CONSTRUCTED IN ACCORDANCE WITH ACI 302, CONCRETE FLOOR AND SLAB CONSTRUCTION. PROVIDE THE FOLLOWING CLASS CONCRETE FLOOR SLABS UNLESS OTHERWISE NOTED ON THE DRAWINGS:</p> <ul style="list-style-type: none"> i INTERIOR OFFICES, LABORATORY SPACES AND OTHER AREAS RECEIVING ONLY LIGHT FOOT TRAFFIC: CLASS 1 OR 2 FLOOR DEPENDING ON FINAL FLOOR COVERING. ii INTERIOR GARAGE, INDUSTRIAL OR WORK AREAS SUBJECT TO EQUIPMENT OR TRAFFIC LOADS: CLASS 6 FLOOR WITH A SPECIAL METALLIC OR MINERAL AGGREGATE SURFACE HARDENER. iii EXTERIOR STRUCTURAL FLOOR SLABS SUBJECT TO FOOT AND MAINTENANCE TRAFFIC LOADS: CLASS 4 OR 5 FLOOR. PROVIDE A NONSLIP FINISH TO ALL WALKING SURFACES. <p>B. PLACING, CONSOLIDATING, AND FINISHING. FOLLOW THE RECOMMENDATIONS GIVEN IN ACI 302.</p> <p>WATER-RETAINING CONCRETE STRUCTURES</p> <p>A. CONCRETE TANKS, VAULTS, WELLS AND OTHER STRUCTURES INTENDED TO RETAIN AND HOLD WATER OR OTHER LIQUIDS SHALL BE WATER-TIGHT STRUCTURES. THE WATER-RESISTING WALLS AND FLOOR SLABS SHALL BE OF MONOLITHIC CONCRETE CONSTRUCTION WITH WATER-TIGHT JOINTS. CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE PROJECT ENGINEER. WATER-RESISTING WALLS AND FLOORS SHALL BE UNIFORM IN FINISHED CONSTRUCTION FREE OF SPALLS, POCKETS, BLEMISHES AND OR CRACKS THAT MAY WEEP OR LEAK.</p> <p>B. CRACKS FOUND IN WATER-RESISTING WALLS, FLOORS AND/OR FOUNDATION SLABS THAT MAY WEEP OR LEAK SHALL BE REPAIRED AND/OR SEALED PER THE PROJECT SPECIFICATIONS, NOTES OR AS APPROVED BY THE PROJECT ENGINEER.</p> <p>F. CONSTRUCTION JOINTS.</p> <p>i CONSTRUCTION JOINTS SHALL ONLY BE PLACED WHERE INDICATED ON THE PROJECT DRAWINGS OR AS APPROVED BY THE PROJECT ENGINEER.</p> <p>ii CONSTRUCTION JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ACI 318/350.</p>	<p>BID SET</p> <p>PROFESSIONAL ENGINEER'S SIGNATURE No. 9578155 JENS C. HURST ELECTRONIC SEAL STATE OF UTAH 10/17/2025</p> <p>REUSE OF DRAWINGS J-U-B SHALL RETAIN ALL COMMON LAW, STATUTORY, COPYRIGHT AND OTHER RESERVED RIGHTS OF THESE DRAWINGS AND THE SAME SHALL NOT BE REUSED WITHOUT J-U-B'S PRIOR WRITTEN CONSENT, ANYWHERE WITHOUT WRITTEN CONSENT BY J-U-B, OR LEGAL EXPOSURE TO J-U-B. REVISION</p> <p>GENERAL STRUCTURAL NOTES</p> <p>FILE #: 57-23-033 S-001X JUB PROJ. #: 57-23-033 DRAWN BY: EM DESIGN BY: KJH CHECKED BY: JCH ONE INCH AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY LAST UPDATED: 10/16/2025 SHEET NUMBER: S-002</p>	



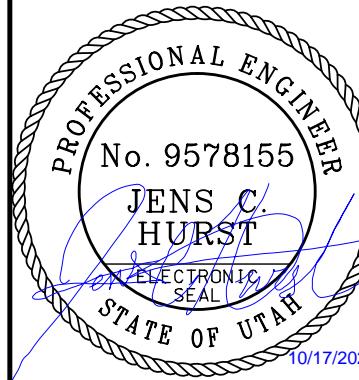
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Phone: 435/713-9514	www.jub.com
BID SET	
	
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	BY API/ DATE
OGDEN BUSINESS EXCHANGE SURF WAVE OGDEN CITY	
OVERALL PLAN	





SHEET NOTES:

1. CONTRACTOR TO COORDINATE & VERIFY ALL DIMENSIONS & ELEVATIONS WITH CIVIL SHEETS.
2. SEE SHEETS S-001 - S-002 FOR GENERAL STRUCTURAL NOTES REQUIREMENTS.
3. ENSURE SPECIFIED SLAB THICKNESS IS MAINTAINED AS THE MINIMUM.

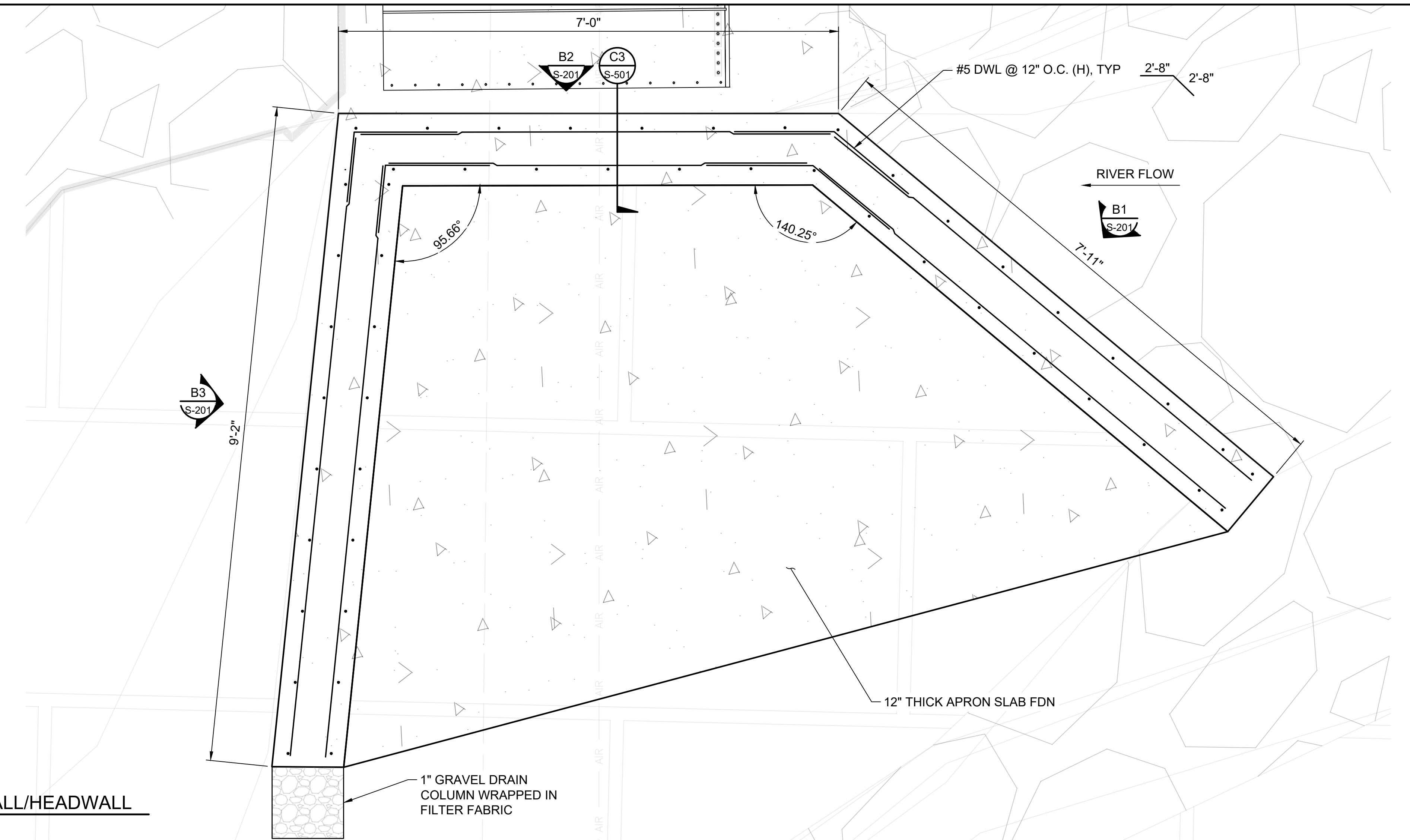
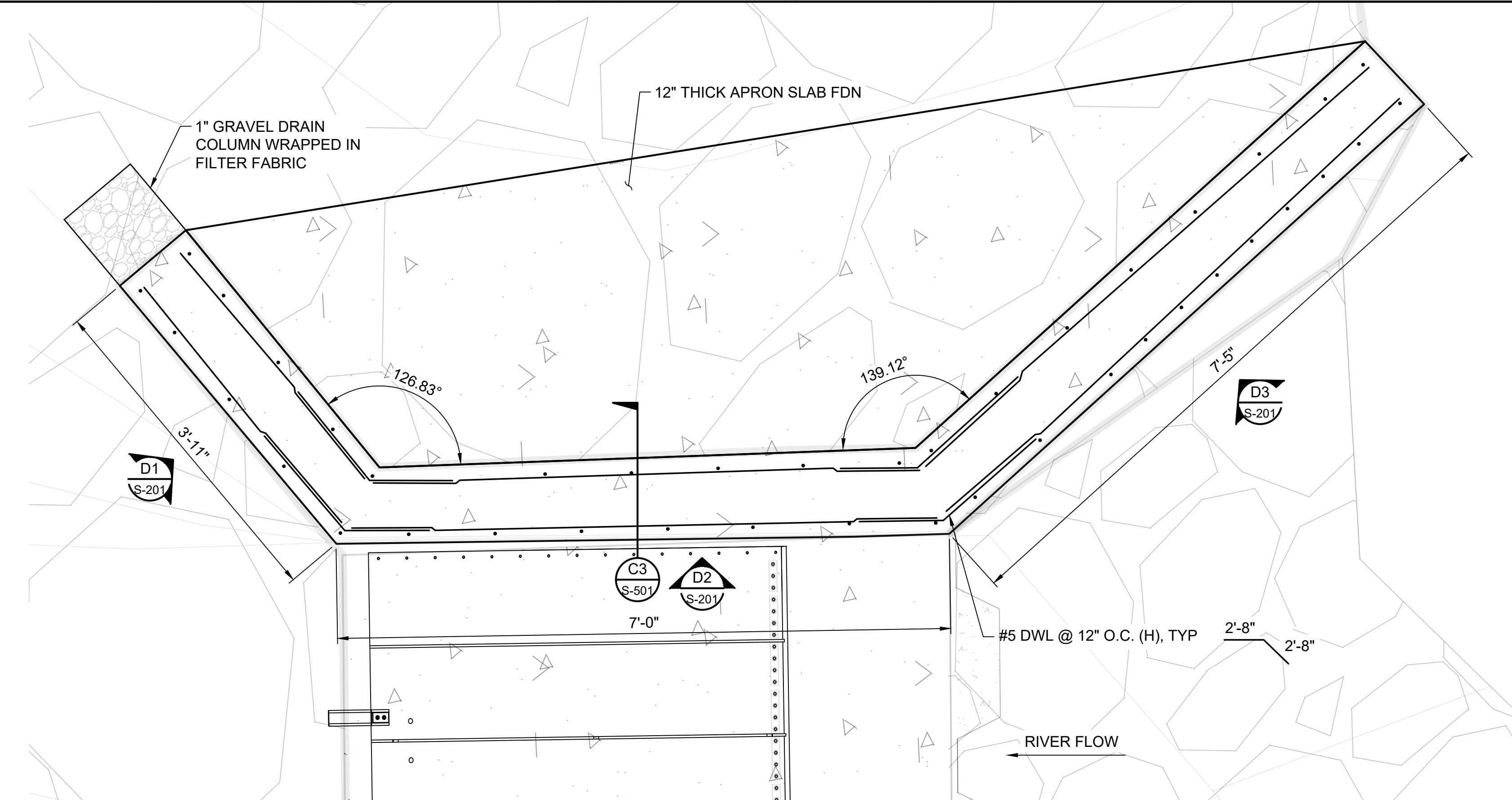
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NO.	DESCRIPTION	BY API	DATE

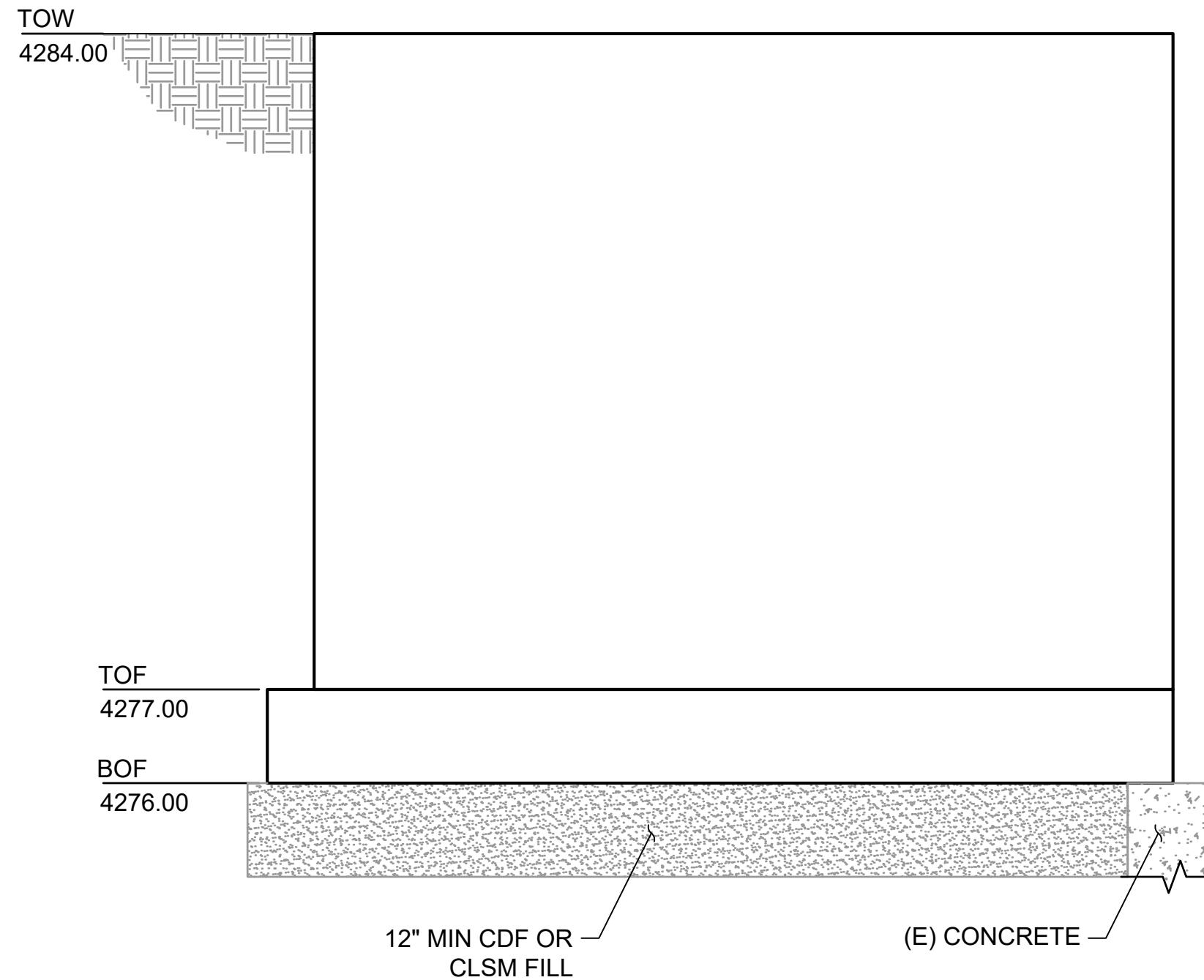
**OGDEN BUSINESS EXCHANGE SURF WAVE
OGDEN CITY**

WINGWALL & HEADWALL PLANS

FILE #:	57-23-033 S-101X
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DRAWN BY:	EM
DESIGN BY:	KJH
CHECKED BY:	JCH
ONE INCH	AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY.
LAST UPDATED:	10/16/2025
SHEET NUMBER:	S-103

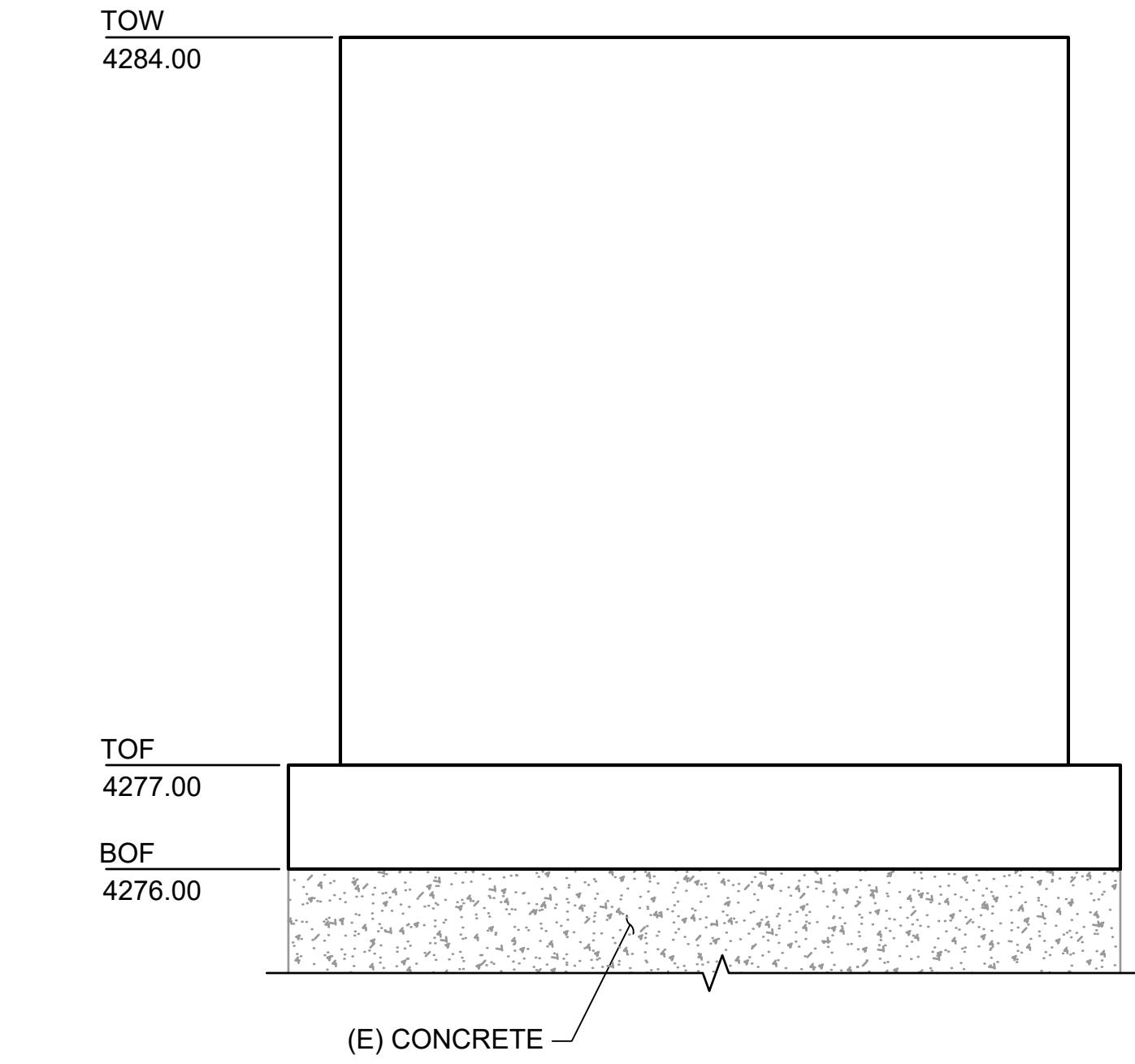

B1 LEFT WINGWALL/HEADWALL
 SCALE: 1" = 1'

D1 RIGHT WINGWALL/HEADWALL
 SCALE: 1" = 1'

NOTE:
PRIOR TO FORMING NEW CONCRETE
FOUNDATION, EXISTING CONCRETE SHALL BE
ROUGHENED TO 1/4" DEPTH FOR BETTER
BONDING OF NEW AND EXISTING CONCRETE.



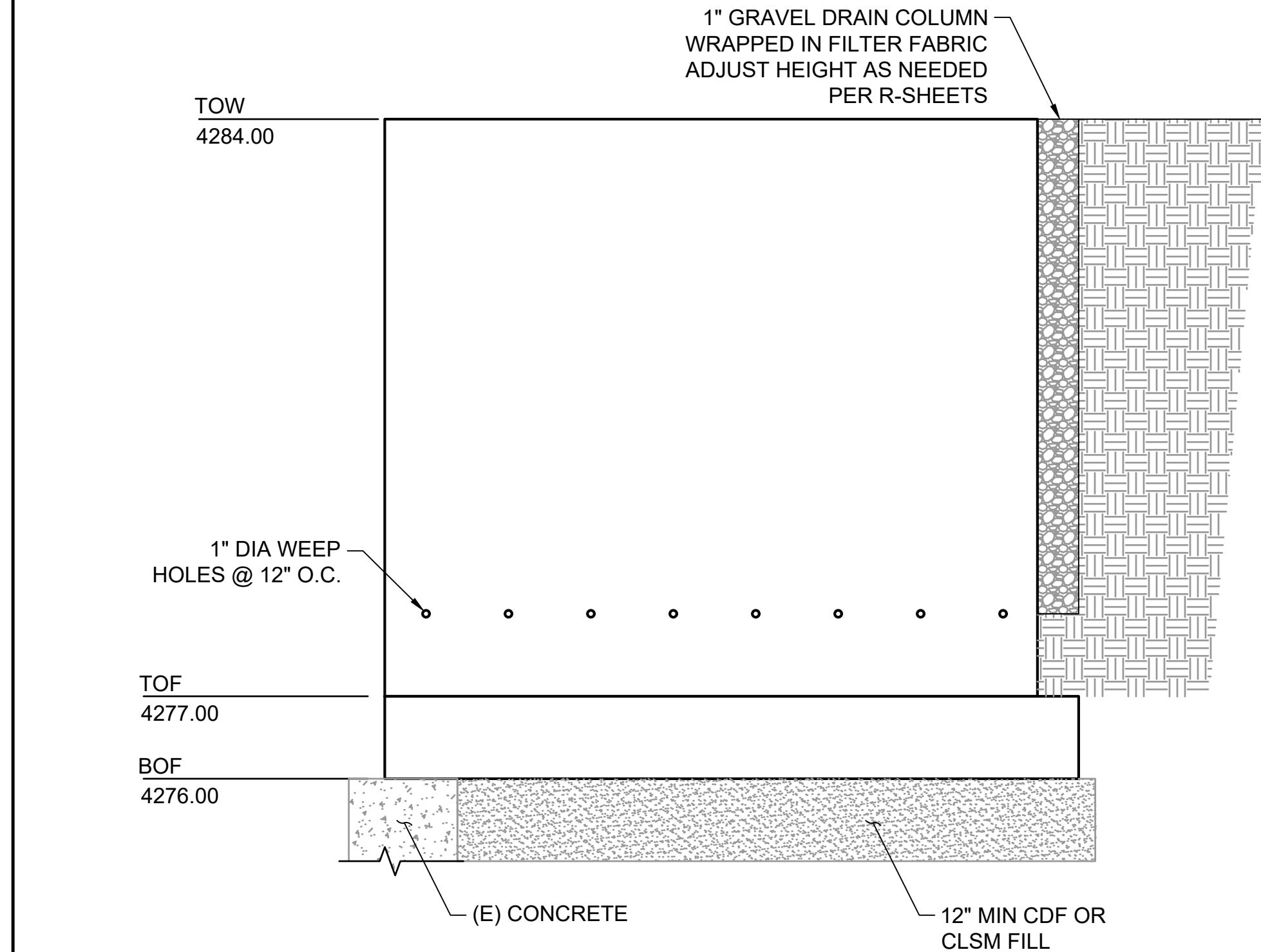
B1 RIVER LEFT UPSTREAM WINGWALL
SCALE: 1 1/2" = 1'-0"

NOTE:
PRIOR TO FORMING NEW CONCRETE
FOUNDATION, EXISTING CONCRETE SHALL BE
ROUGHENED TO 1/4" DEPTH FOR BETTER
BONDING OF NEW AND EXISTING CONCRETE.



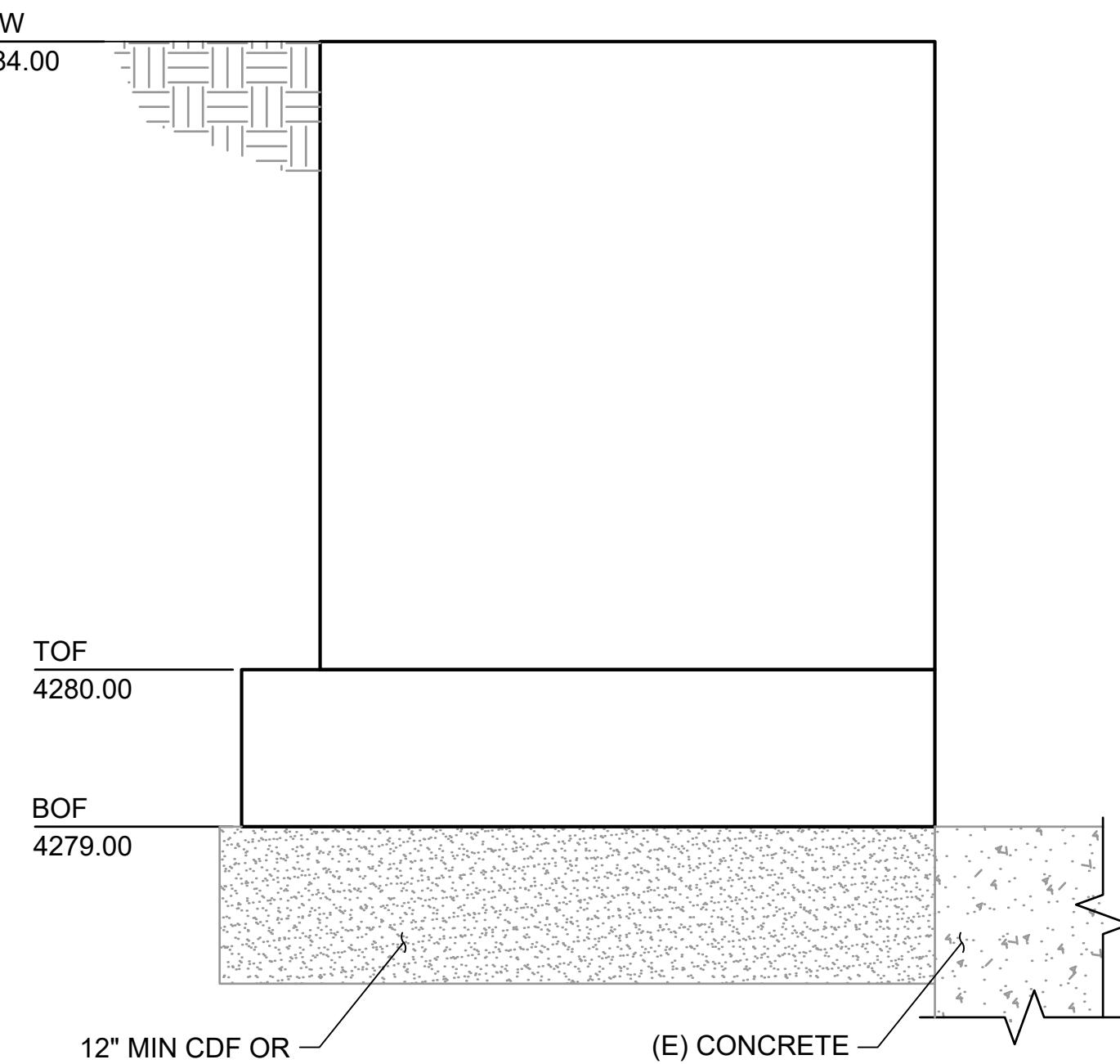
B2 RIVER LEFT HEADWALL
SCALE: 1 1/2" = 1'-0"

NOTE:
PRIOR TO FORMING NEW CONCRETE
FOUNDATION, EXISTING CONCRETE SHALL BE
ROUGHENED TO 1/4" DEPTH FOR BETTER
BONDING OF NEW AND EXISTING CONCRETE.



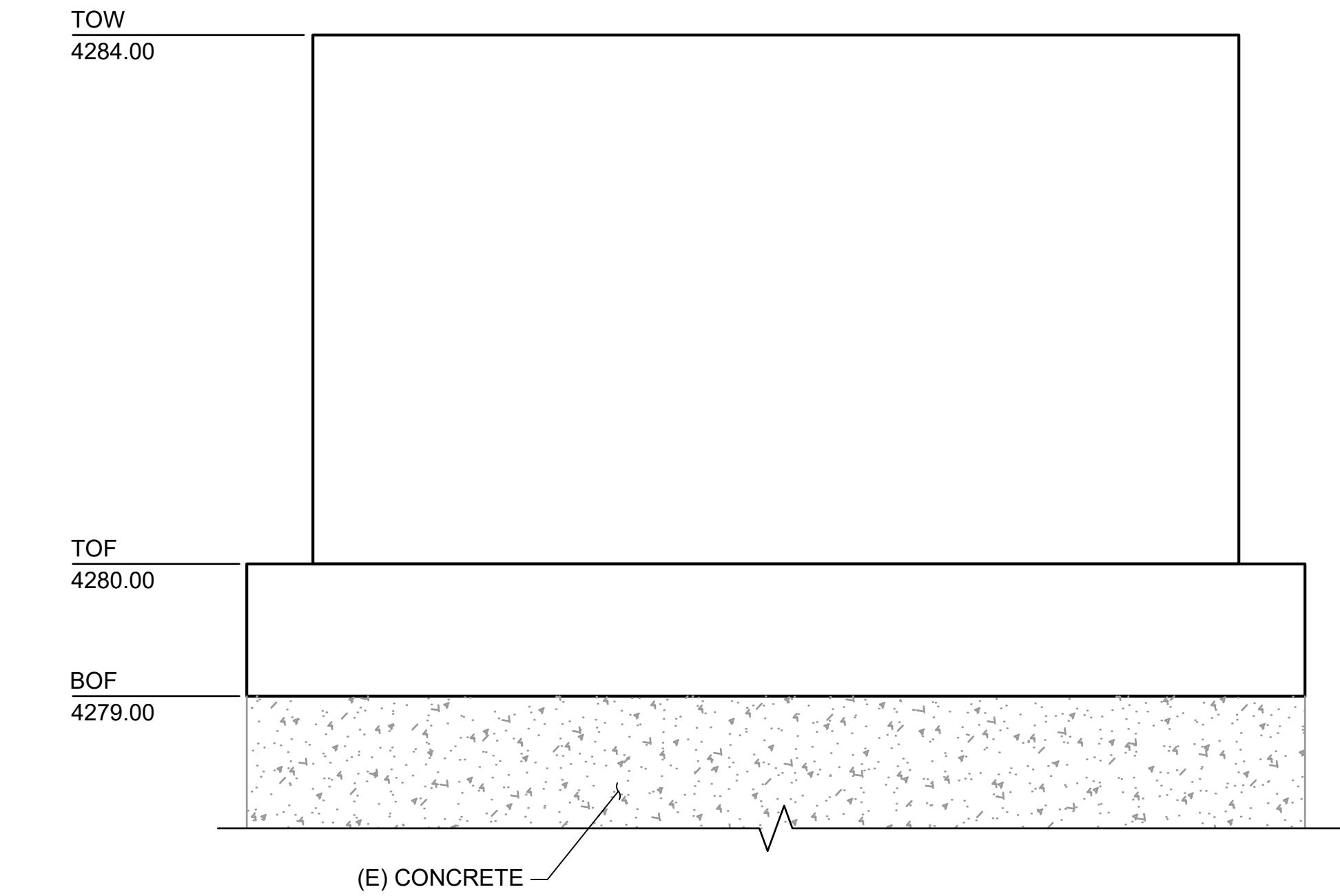
B3 RIVER LEFT DOWNSTREAM WINGWALL
SCALE: 1 1/2" = 1'-0"

NOTE:
PRIOR TO FORMING NEW CONCRETE
FOUNDATION, EXISTING CONCRETE SHALL BE
ROUGHENED TO 1/4" DEPTH FOR BETTER
BONDING OF NEW AND EXISTING CONCRETE.



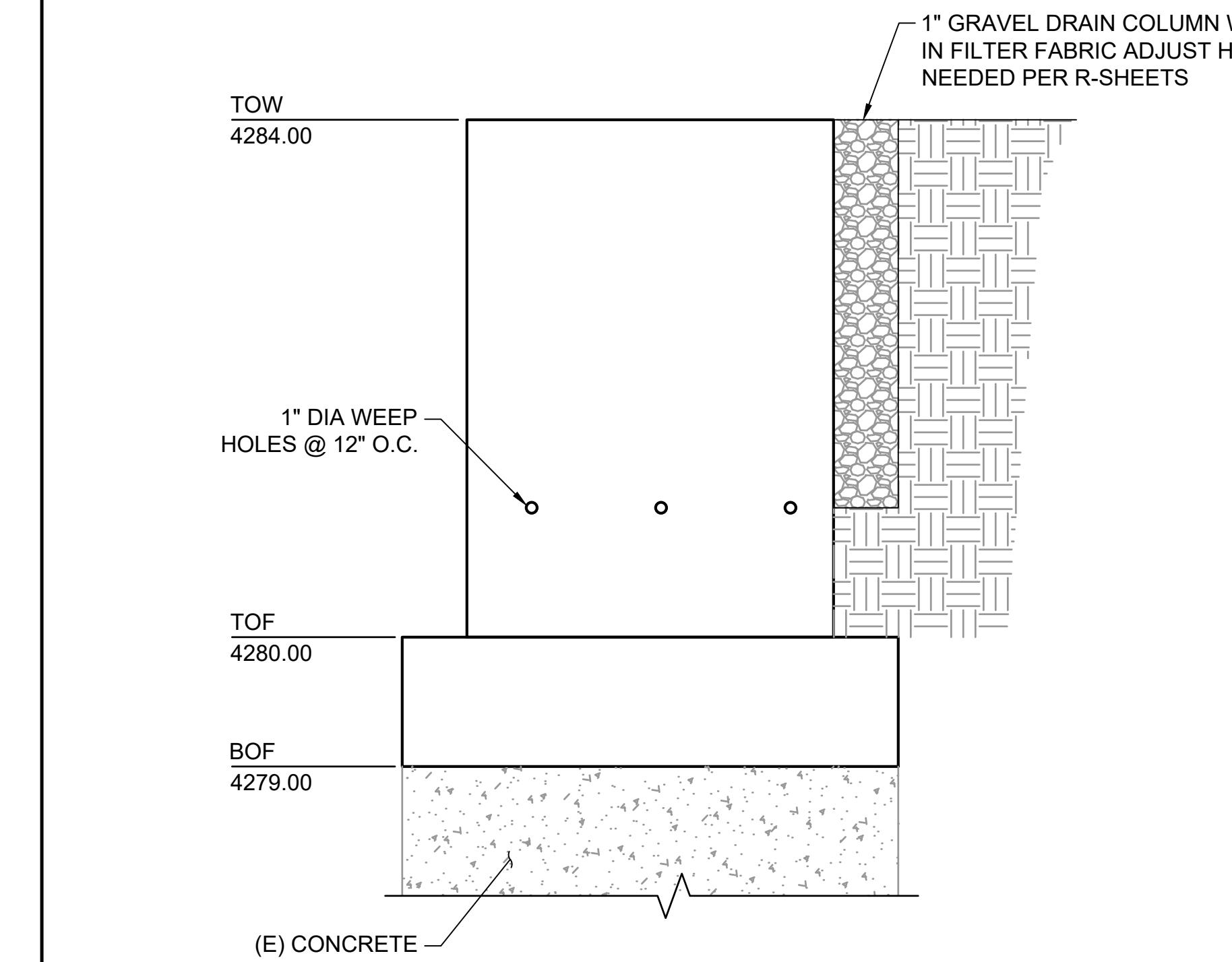
D1 RIVER RIGHT UPSTREAM WINGWALL
SCALE: 1" = 1'

NOTE:
PRIOR TO FORMING NEW CONCRETE
FOUNDATION, EXISTING CONCRETE SHALL BE
ROUGHENED TO 1/4" DEPTH FOR BETTER
BONDING OF NEW AND EXISTING CONCRETE.



D2 RIVER RIGHT HEADWALL
SCALE: 1" = 1"

NOTE:
PRIOR TO FORMING NEW CONCRETE
FOUNDATION, EXISTING CONCRETE SHALL BE
ROUGHENED TO 1/4" DEPTH FOR BETTER
BONDING OF NEW AND EXISTING CONCRETE.



D3 RIVER RIGHT DOWNSTREAM WINGWALL
SCALE: 1" = 1'

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JUB PROJ. #: 57-23-033
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INCH, SCALE ACCORDINGLY
LAST UPDATED: 10/16/2025
SHEET NUMBER:
S-201

**OGDEN BUSINESS EXCHANGE SURF WAVE
OGDEN CITY**

HEADWALL & WINGWALL ELEVATIONS

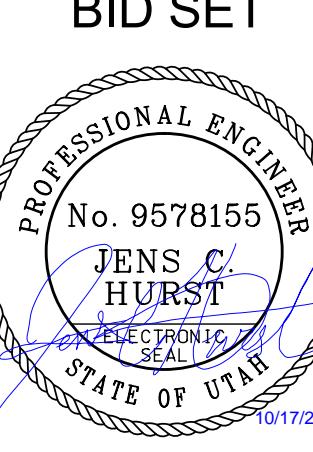
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SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO JUB.
REVISION
BY/APR. DATE

J-U-B
J-U-B ENGINEERS, INC.

SHEET NOTES:

1. CONTRACTOR TO COORDINATE & VERIFY ALL DIMENSIONS & ELEVATIONS WITH CIVIL SHEETS.
2. SEE SHEETS S-001 - S-002 FOR GENERAL STRUCTURAL NOTES REQUIREMENTS.
3. SEE RIVER RESTORATION SHEET R01 FOR SLOPE REQUIREMENTS. ENSURE SPECIFIED SLAB THICKNESS IS MAINTAINED AS THE MINIMUM.
4. GATE SHOWN IN B1 IS OHI 2FT STEEL GATE, AND GATE(S) SHOWN IN D1 IS OHI 4FT RUBBER ROCK GATE INSTALL PER MFR RECOMMENDATIONS
5. GATE FOUNDATION REINFORCEMENT:
 - a. LONGITUDINAL BARS: #6 @ 8" O.C., TOP & BOTTOM
 - a. TRANSVERSE BARS: #6 @ 6" O.C., TOP & BOTTOM
6. RAMP REINFORCEMENT:
 - a. LONGITUDINAL BARS: #6 @ 6" O.C., TOP & BOTTOM
 - b. TRANSVERSE BARS: #6 @ 6" O.C., TOP & BOTTOM
7. DOWELS SHALL BE USED WHERE CONCRETE SLOPE CHANGES. ENSURE ALL DOWELS ARE LAPPED WITH CONTINUOUS REINFORCEMENT PER DETAIL A1/S-901.
8. ALL IN-RIVER CONCRETE STRUCTURES SHALL HAVE 3" CLEAR COVER FOR ADDITIONAL WEAR PROTECTION FOR THE TOP REINFORCEMENT MAT.
9. PRIOR TO FORMING NEW CONCRETE FOUNDATION, EXISTING CONCRETE SHALL BE ROUGHENED TO 1/4" DEPTH FOR BETTER BONDING OF NEW AND EXISTING CONCRETE.
10. APPLY FILL OVER & AROUND EXISTING CONCRETE STRUCTURE AND IN AREA BETWEEN SHEET PILE WALLS. EXTEND TO EXCAVATION DEPTH AS QR'D BY DEMO PLAN.
11. SHEET PILE WALL TO FRAME IN END OF TURNDOWN.



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REVISION

NO. DATE

DESCRIPTION

BY APR. DATE

RELEASER

J-U-B

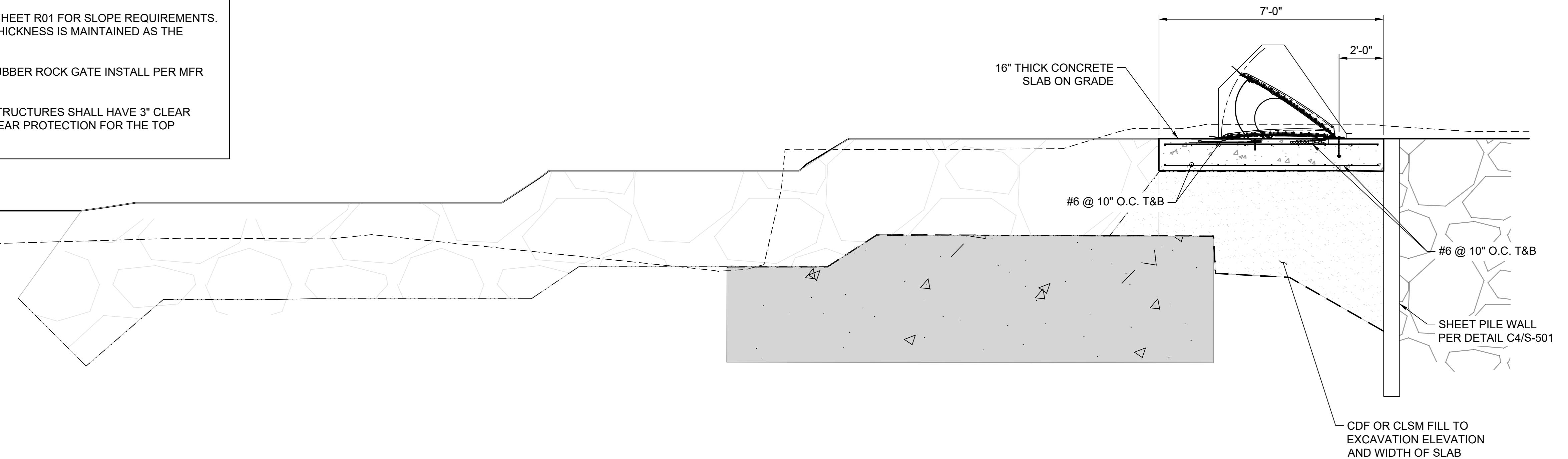
RELEASER

SHEET NOTES:

1. CONTRACTOR TO COORDINATE & VERIFY ALL DIMENSIONS & ELEVATIONS WITH CIVIL SHEETS.
2. SEE SHEETS S-001 - S-002 FOR GENERAL STRUCTURAL NOTES REQUIREMENTS.
3. SEE RIVER RESTORATION SHEET R01 FOR SLOPE REQUIREMENTS. ENSURE SPECIFIED SLAB THICKNESS IS MAINTAINED AS THE MINIMUM.
4. GATE SHOWN IS OHI 4FT RUBBER ROCK GATE INSTALL PER MFR RECOMMENDATIONS.
5. ALL IN-RIVER CONCRETE STRUCTURES SHALL HAVE 3" CLEAR COVER FOR ADDITIONAL WEAR PROTECTION FOR THE TOP REINFORCEMENT MAT.

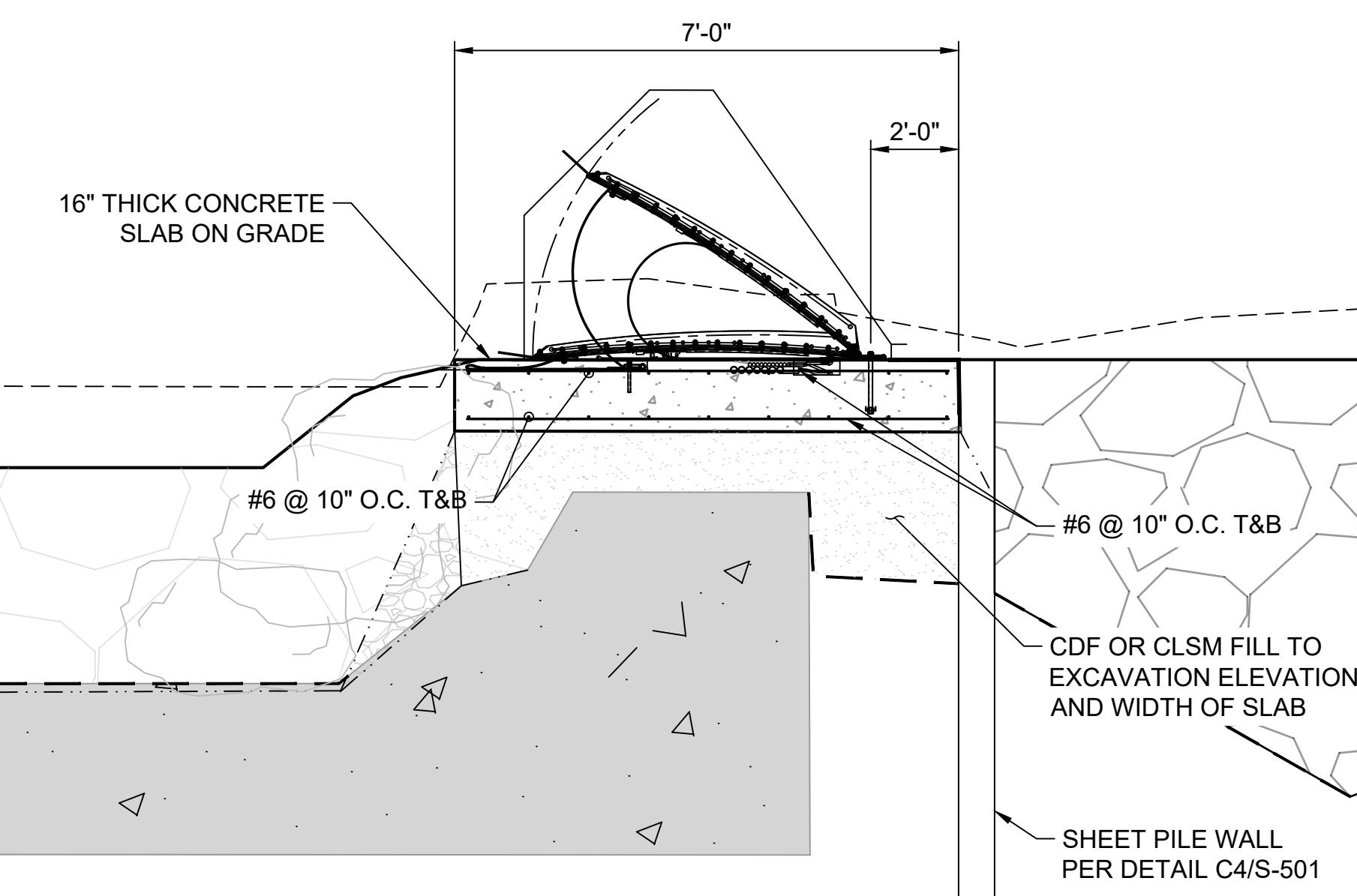
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B1 LEFT WING SECTION

SCALE: 1" = 2"



D1 RIGHT WING SECTION

SCALE: 1" = 2"

SHEET NOTES:

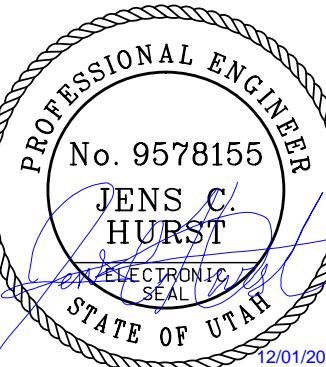
1. CONTRACTOR TO COORDINATE & VERIFY ALL DIMENSIONS & ELEVATIONS WITH CIVIL SHEETS.
2. SEE SHEETS S-001 - S-002 FOR GENERAL STRUCTURAL NOTES REQUIREMENTS.
3. SEE RIVER RESTORATION SHEET R03 FOR SLOPE REQUIREMENTS. ENSURE SPECIFIED SLAB THICKNESS IS MAINTAINED AS THE MINIMUM.
4. GATE SHOWN IS OHI 4FT RUBBER ROCK GATE INSTALL PER MFR RECOMMENDATIONS.
8. ALL IN-RIVER CONCRETE STRUCTURES SHALL HAVE 3" CLEAR COVER FOR ADDITIONAL WEAR PROTECTION FOR THE TOP REINFORCEMENT MAT.

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R MFR
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• B ENGINEERS, INC.
1047 South 100 West

Phone: 435.713.9514
www.iuh.com
Suite 180
Logan, UT 84321

BID SET



OGDEN BUSINESS EXCHANGE SURF WAVE OGDEN CITY

23-033_S-101X
: 57-23-033
/: EM
/: KJH
BY: JCH
ONE INCH →
ULL SIZE, IF NOT ONE
SCALE ACCORDINGLY

NUMBER:

Technical cross-section diagram of a bridge pier foundation. The diagram shows a 16" thick concrete slab on grade with a 15:1 slope. Below the slab is a 2'-0" thick filter fabric layer. The foundation is supported by a 2'-0" min CDF or CLSM fill layer. The pier has a 2' diameter and is surrounded by filter fabric. A circular label A1 S-501 is located on the pier. The diagram includes dimensions: 8'-0" width, 2'-0" min beyond bolt, and 15:1 slope. Filter fabric is also indicated at the bottom of the diagram.

B1 DOWNSTREAM RIFFLE SECTION
SCALE 1" = 2'

B1 SCALE 1" = 2

Plot Date:12/1/2025 1:35 PM Plotted By: E.Emilio Morales
Date Created:10/16/2025\JUB.COM\CENTRAL\CLIENTS\UTRIVERRESTORATION\PROJECTS\57-23-033_OGDENSURFWAVEDESIGN\CADSHEET57-23-033_S-101X.DWG

75'-0"

(2) #5 CONT. BARS, TYP

#5 DWL @ 10" O.C., E.F., TYP 2'-6"

2'-0" MIN CDF OR CLSM FILL

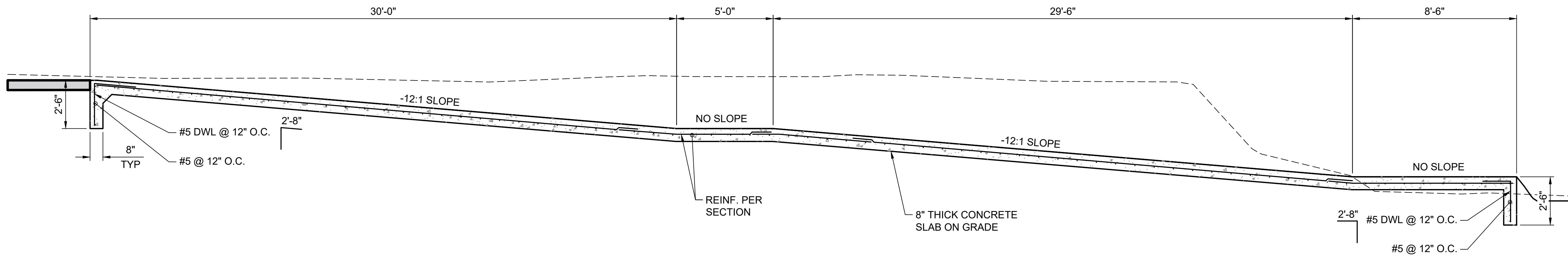
16" THICK CONCRETE SLAB ON GRADE, REINF. PER B1 THIS SHEET

1

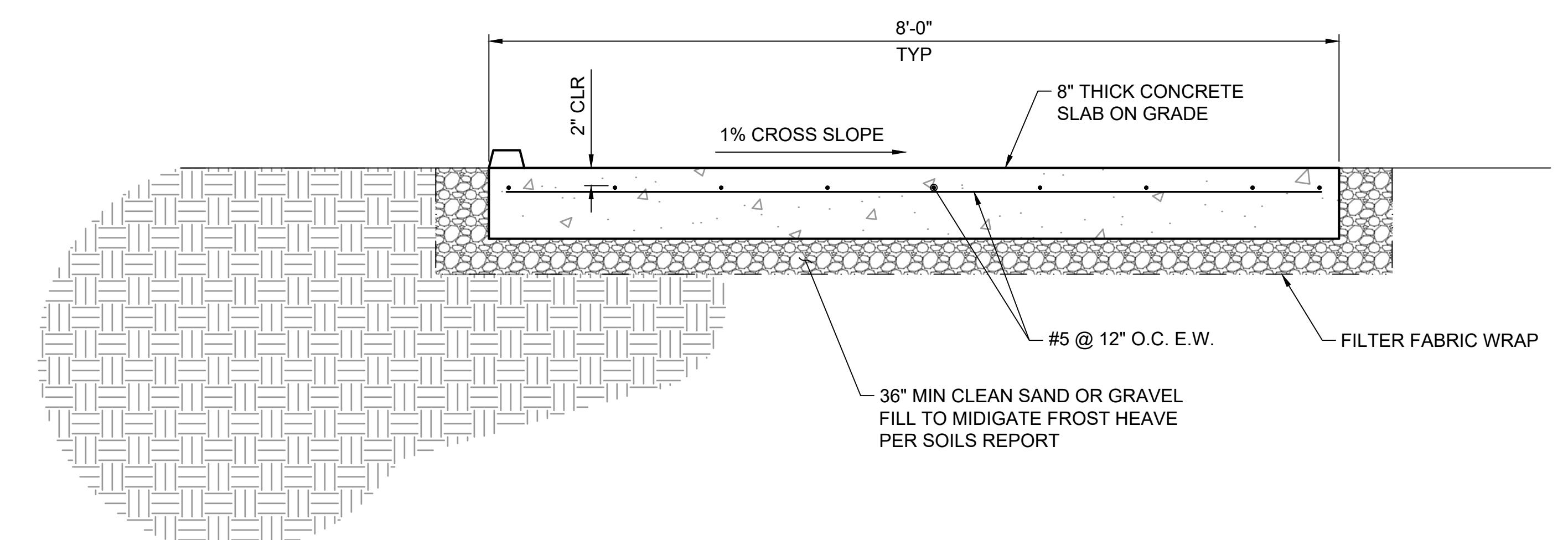
D1 **DOWNSTREAM RIFFLE SECTION**
SCALE 1" = 5'

SCALE: 1" = 5'

G ACCESS RAMP SECTION
SCALE: 1" = 3'



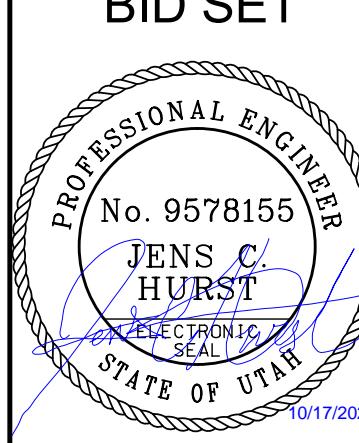
H ACCESS RAMP SECTION
SCALE: 1" = 1'



SHEET NOTES:

1. CONTRACTOR TO COORDINATE & VERIFY ALL DIMENSIONS & ELEVATIONS WITH CIVIL SHEETS.
2. SEE SHEETS S-001 - S-002 FOR GENERAL STRUCTURAL NOTES REQUIREMENTS.
3. ENSURE SPECIFIED SLAB THICKNESS IS MAINTAINED AS THE MINIMUM.

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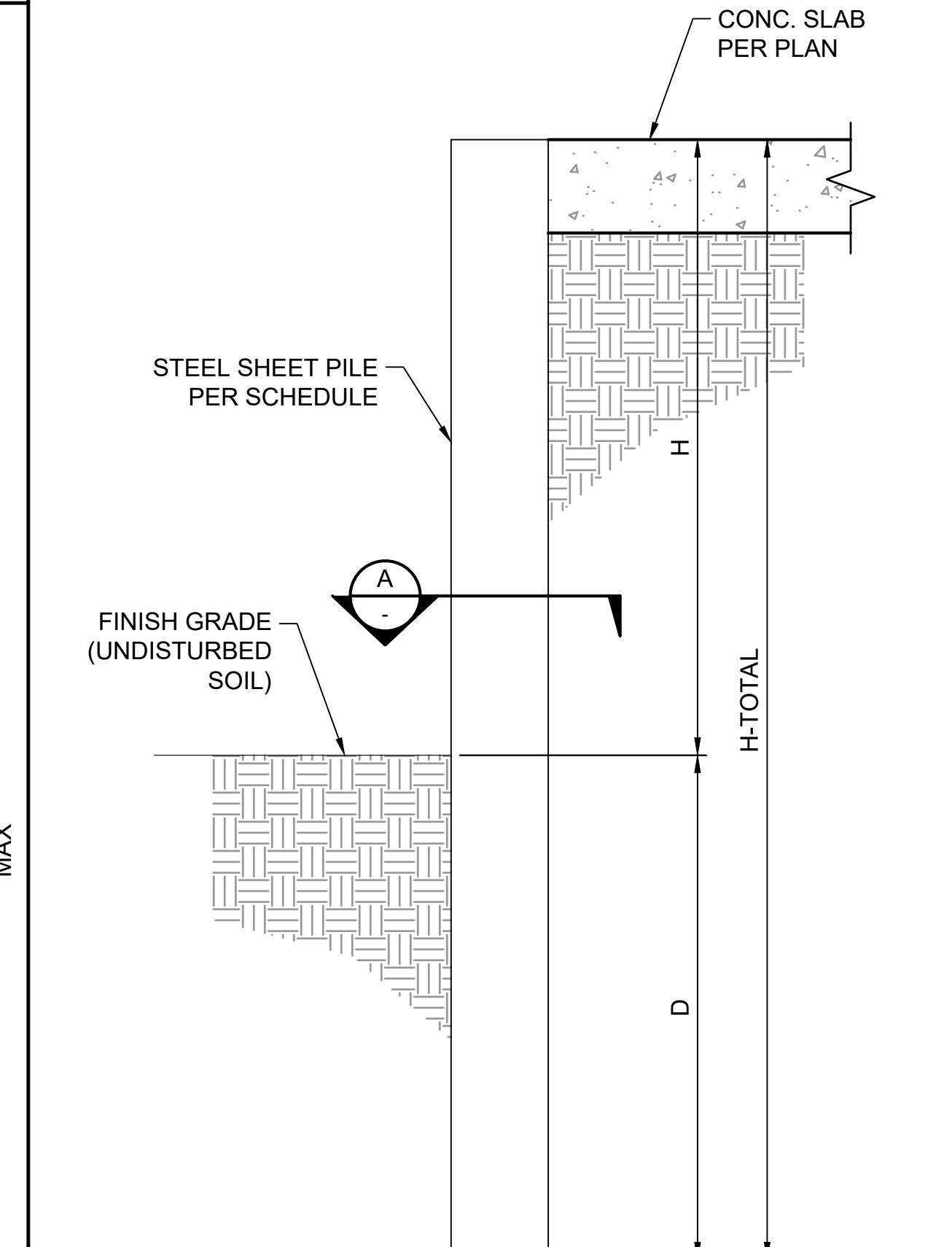
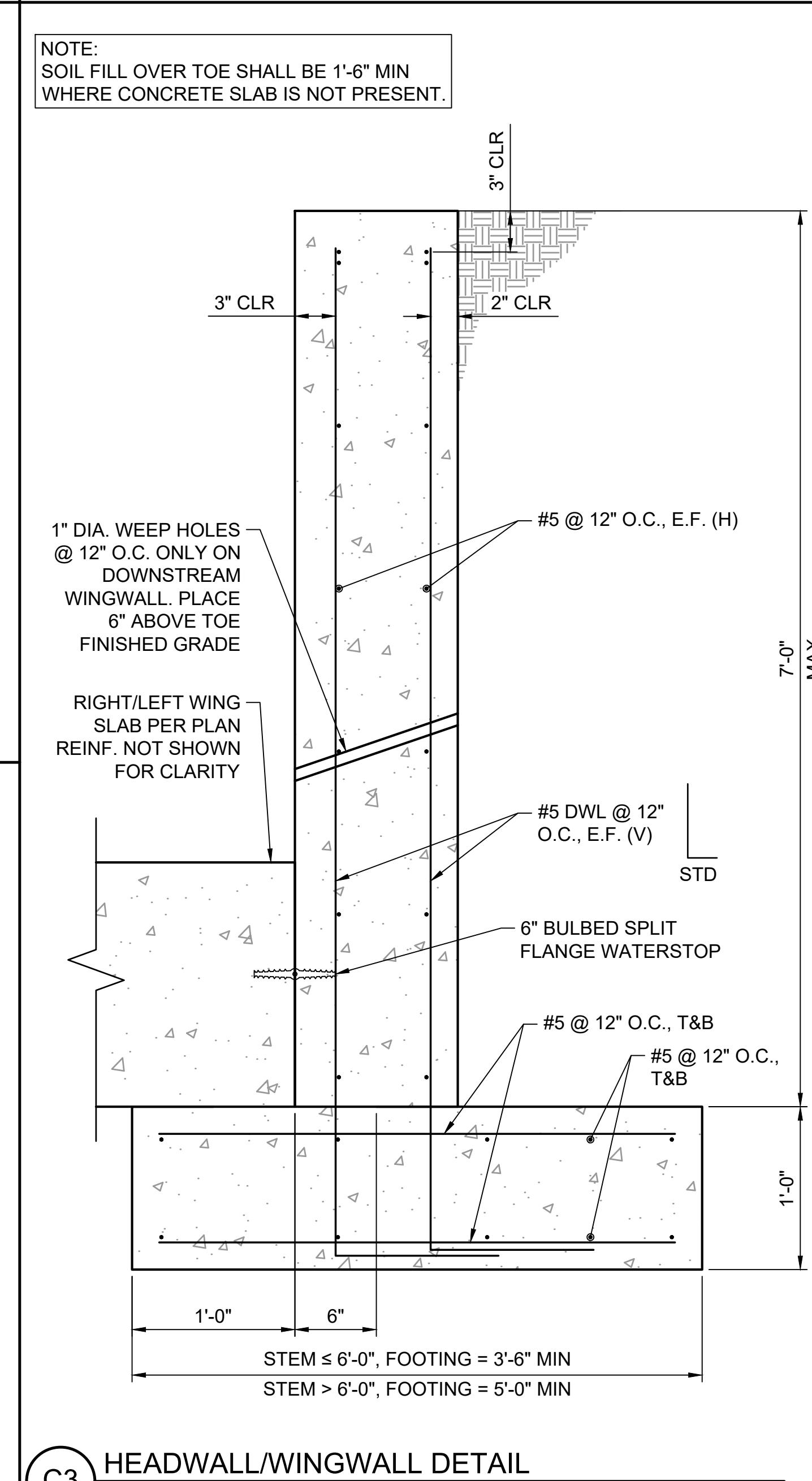
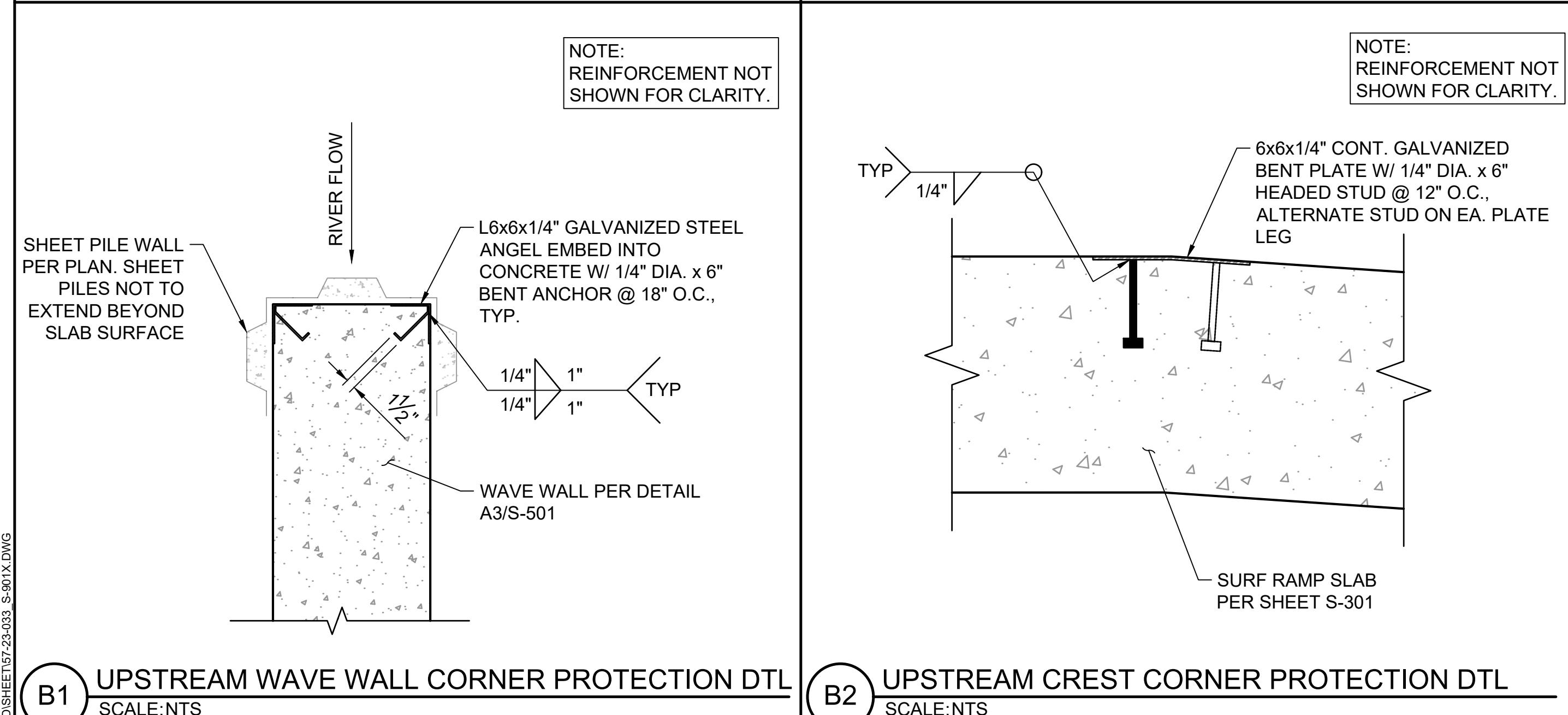
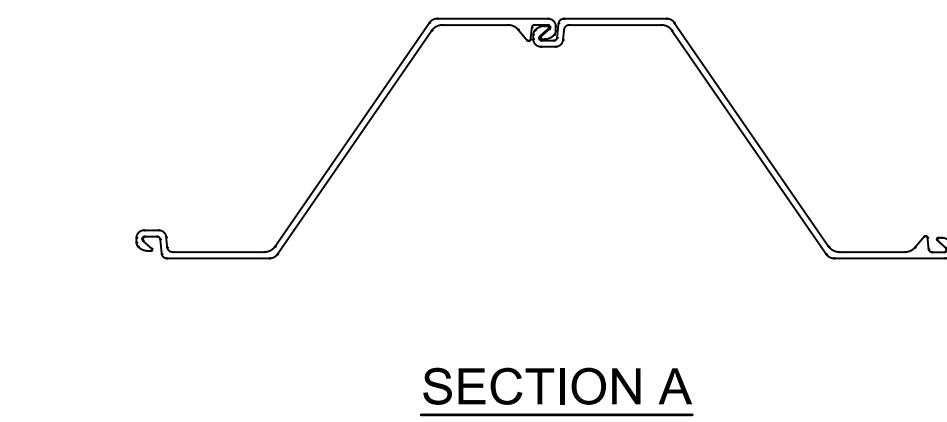
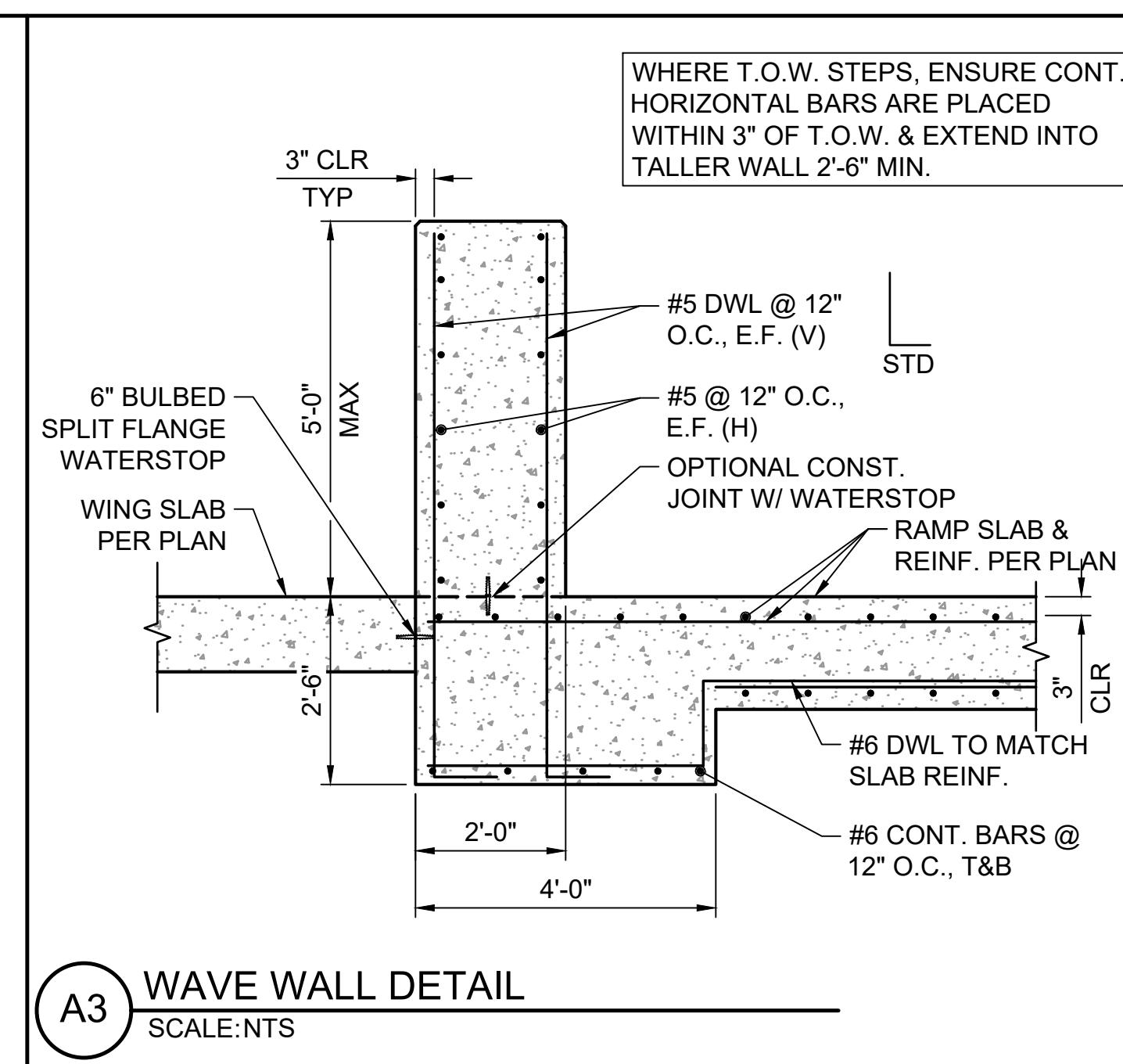
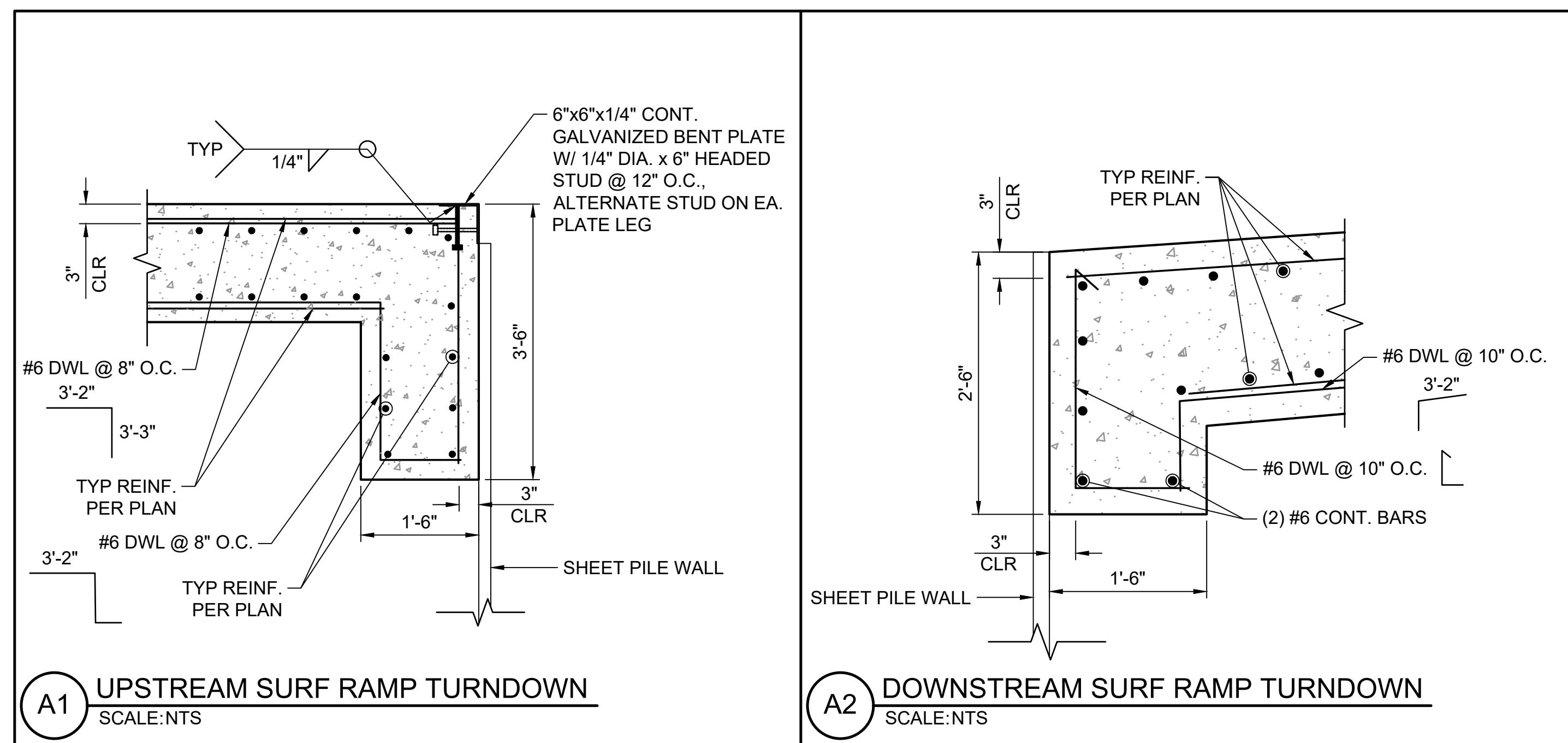


NO.	DESCRIPTION	BY APR. DATE

**OGDEN BUSINESS EXCHANGE SURF WAVE
OGDEN CITY**

STRUCTURAL SECTIONS

FILE #: 57-23-033 S-101X
JUB PROJ. #: 57-23-033
DRAWN BY: EM
DESIGN BY: KJH
CHECKED BY: JCH
ONE INCH
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LAST UPDATED: 10/16/2025
SHEET NUMBER:
S-304



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SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO J-U-B.
REVISION

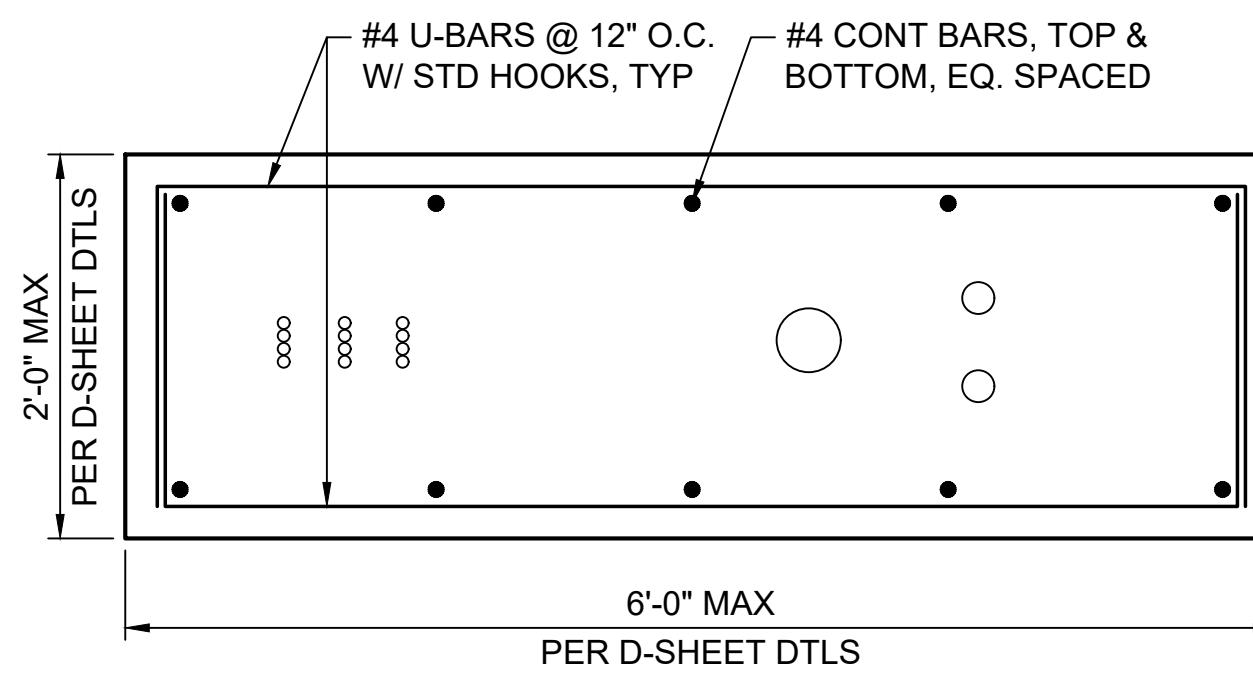
OGDEN BUSINESS EXCHANGE SURF WAVE
OGDEN CITY

STRUCTURAL DETAILS

FILE: 57-23-033 S-901X
 JUB PROJ. #: 57-23-033
 DRAWN BY: EM
 DESIGN BY: KJH
 CHECKED BY: JCH
 ONE INCH
 AT FULL SIZE, IF NOT ONE
 INCH, SCALE ACCORDINGLY
 LAST UPDATED: 10/16/2025
 SHEET NUMBER:
S-501

NOTES:

1. LAYOUT OF CONDUIT IS REPRESENTATIVE. REFER TO D-SHEETS FOR ACTUAL LAYOUTS.
2. M-3000-UTL MIX SHALL BE USED WHEN PLACED UNDER CONCRETE STRUCTURES AND SHALL CONTAIN REINFORCEMENT AS DETAILED.
3. M-CDF WITH MAXIMUM COARSE AGGREGATE OF 0.5" SHALL BE USED IN ALL OTHER LOCATIONS. NO REINFORCEMENT REQUIRED.
4. 1" DIA. CONDUIT MAY BE BUNDLED IN STRAIGHT ROWS OF UP TO 4 CONDUITS. EACH SET MUST BE SPACED TO ALLOW FOR 2" CLEAR BETWEEN CONDUIT BUNDLES.



A1 CONDUIT ENCASEMENT DETAIL
SCALE:NTS

