

ERICK CREEK FISH PASSAGE PROJECT

ABERNATHY CREEK ROAD MILEPOST 5.37

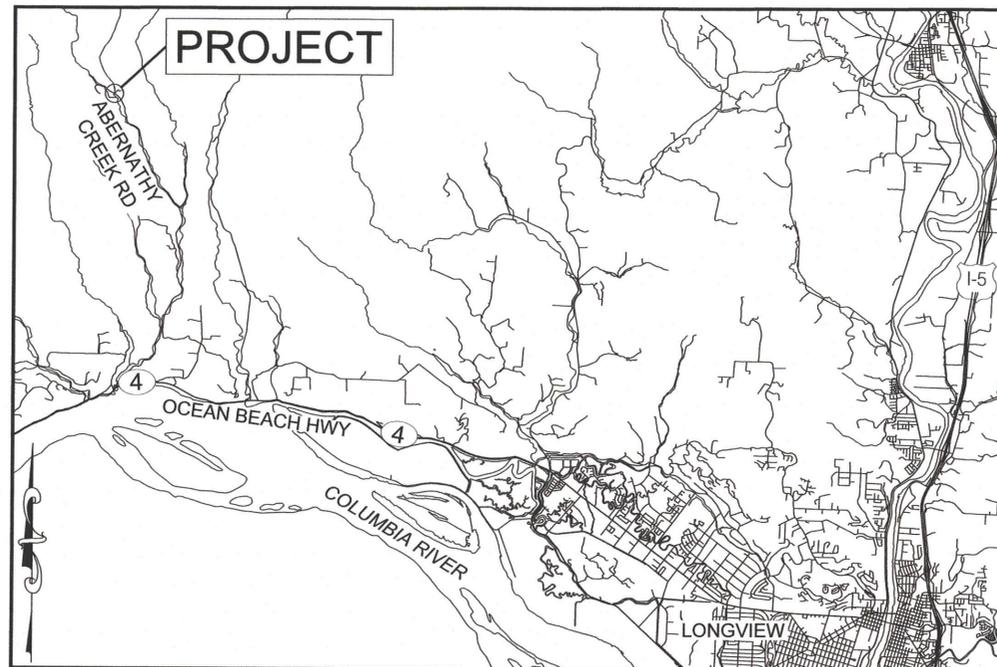
Section 15, Township 9N, Range 4W JULY 2023

ABBREVIATIONS	
ABBREV	DESCRIPTION
@	AT
Δ	DELTA
∅	DIAMETER
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS
ABBR	ABBREVIATION
ABUT	ABUTMENT
AC	ASPHALT CONCRETE
APPROX	APPROXIMATELY
AVG	AVERAGE
BOC	BACK OF CURB
BOT	BOTTOM
BRG	BEARING
BVCE	POINT OF VERTICAL CURVATURE - ELEVATION
BVCS	POINT OF VERTICAL CURVATURE - STATION
CL	CENTER LINE
CLR	CLEARANCE, CLEAR
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CONT	CONTINUOUS
CP	CONTROL POINT
CPE	CORRUGATED POLYETHYLENE PIPE
CULV	CULVERT
CY	CUBIC YARD
DIA	DIAMETER
DIR	DIRECTION
DTL	DETAIL
D/S	DOWNSTREAM
E	EAST, EASTING
EA	EACH
EC	EROSION CONTROL
EF	EACH FACE
EG	EXISTING GRADE
EL	ELEVATION
EOP	EDGE OF PAVEMENT
EQ	EQUAL
ESM	ENGINEERED STREAMBED MATERIAL
EVCE	POINT OF VERTICAL TANGENCY - ELEVATION
EVCS	POINT OF VERTICAL TANGENCY - STATION
EW	EACH WAY
EX(IST)	EXISTING
FF	FAIR FACE
FG	FINISH GRADE
FT	FEET, FOOT
FTG	FOOTING
FY	YIELD STRENGTH
HMA	HOT MIX ASPHALT
HORIZ	HORIZONTAL
HWY	HIGHWAY
IE	INVERT ELEVATION
IN	INCH
INCL	INCLUDE
K	KIP
L	LENGTH
LB(S)	POUND
LF	LINEAR FEET
LT	LEFT
MP	MILE POST
MAX	MAXIMUM
MGMT	MANAGEMENT
MIN	MINIMUM
MPH	MILES PER HOUR
N	NORTH, NORTHING
N-S	NORTH TO SOUTH
NAD83	NORTH AMERICAN DATUM OF 1983
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988
NE	NORTHEAST
NF	NEAR FACE
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
NW	NORTHWEST
OC	ON CENTER
OHW	ORDINARY HIGH WATER
PC	POINT OF CURVATURE
PCF	POUNDS PER CUBIC FOOT
PG	PERFORMANCE GRADE
PGL	PROFILE GRADE LINE
PI	POINT OF HORIZONTAL INTERSECTION
PSI	POUNDS PER SQUARE INCH
PT	POINT OF HORIZONTAL TANGENCY
PVI	POINT OF VERTICAL INTERSECTION
QTY	QUANTITY
R	RANGE, RADIUS
RAW	RIGHT OF WAY
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
REF	REFERENCE
REQ'D	REQUIRED
REINF	REINFORCING
ROW	RIGHT OF WAY
RT	RIGHT
S	SOUTH
SD	STORM DRAIN
SE	SOUTHEAST
SEC	SECTION
SHT	SHEET
SIM	SIMILAR
SPA	SPACE, SPACES, SPACING
SPEC	SPECIFICATION
SR	STATE ROUTE
STA	STATION
STD	STANDARD
SW	SOUTHWEST
SYMM	SYMMETRIC
T	TOWNSHIP, TANGENT
TBD	TO BE DETERMINED
TC	TRAFFIC CONTROL
THRU	THROUGH
TRANS	TRANSVERSE
TYP	TYPICAL
US	UPSTREAM
UNO	UNLESS NOTED OTHERWISE
VC	VERTICAL CURVE
V(ERT)	VERTICAL
W	WEST
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
W	WITH

STANDARD DRAWINGS	
DRAWING	DESCRIPTION
WSDOT:	LEFT
C-1b	BEAM GUARDRAIL POSTS AND BLOCKS
C-7a	THREE BEAM END SECTIONS
C-20.10	BEAM GUARDRAIL TYPE 31
C-20.11	BEAM GUARDRAIL TYPE 31 COMPONENTS
C-20.15	BEAM GUARDRAIL TYPE 31 PLACEMENT (CASES 4-31 & 5-31)
C-22.45	BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL (POSTED SPEED 45 MPH AND BELOW)
C-24.10	GUARDRAIL CONNECTION TO BRIDGE RAIL OR CONCRETE BARRIER
C-25.30	BEAM GUARDRAIL (TYPE 31) TRANSITION SECTION TYPE 24 (POSTED SPEED 45 MPH AND BELOW)
E-1	DATE NUMERAL PLACEMENT ON BRIDGE TRAFFIC BARRIER
I-30.30	WATTLE INSTALLATION ON SLOPE



INDEX OF DRAWINGS		
NUMBER	SHEET	DESCRIPTION
GENERAL		
1	G1.0	COVER
2	G2.0	GENERAL NOTES AND LEGEND
3	G3.1	CONSTRUCTION PLAN
4	G3.2	CONSTRUCTION PROFILES AND SECTIONS - SHEET 1
5	G3.3	CONSTRUCTION PROFILES AND SECTIONS - SHEET 2
6	G4.0	TRAFFIC CONTROL PLAN
CIVIL		
7	C1.0	EXISTING CONDITIONS AND DEMO PLAN
8	C2.0	STREAM GRADING PLAN AND PROFILE
9	C2.1	TYPICAL STREAM SECTIONS
10	C2.2	STREAM GRADING SECTIONS
11	C2.3	STREAMBED DETAILS
12	C3.0	ROADWAY TYPICAL SECTIONS
13	C3.1	ROADWAY PLAN AND PROFILE
STRUCTURAL		
14	S1.0	CULVERT PLAN AND PROFILE
15	S1.1	FOUNDATION LAYOUT
16	S2.0	FOUNDATION NOTES
17	S3.0	FOUNDATION SECTIONS AND DETAILS
18	S3.1	WALL 1 PLAN AND ELEVATION
19	S3.2	WALL 2 PLAN AND ELEVATION
20	S3.3	HEADWALL AND WINGWALL DETAILS - SHEET 1
21	S3.4	HEADWALL AND WINGWALL DETAILS - SHEET 2
EROSION CONTROL		
22	EC1.1	TEMPORARY STREAM DIVERSION AND EROSION CONTROL PLAN
23	EC2.1	TEMPORARY STREAM DIVERSION DETAILS
24	EC2.2	EROSION CONTROL DETAILS
25	EC3.0	PLANTING PLAN & PROFILE
26	EC3.1	PLANTING SCHEDULE AND DETAILS



VICINITY MAP

CONTACT INFORMATION

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HUNTER WHITE, PE

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TDB PROJECT MANAGER	8/29/23 DATE
JTH DRAWN BY	8/29/23 DATE
TDB CHECKED BY	8/29/23 DATE

HORIZ. SCALE: NONE	VERT. SCALE: NONE
PROJECT ID: 1617	ROAD NO.: 20930
COMPUTER FILE: 01_G1.0.dwg	



DEPARTMENT OF PUBLIC WORKS
1600 13TH AVENUE SOUTH
KELSO, WASHINGTON 98626

APPROVED BY:
Susan Eugenio
COUNTY ENGINEER

DATE: *March 6, 2024*



SEC 15 T 9 N R 4 W
CRP NO 801
FED. AID NO. PROTECT-2008(034)
FED. AID CONTRACT NO. TA-7638

ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON

COVER

BID SET

SHEET **G1.0**

1 OF 26

GENERAL NOTES

1. REFER TO HYDRAULIC PROJECT APPROVAL (HPA) FOR AUTHORIZED IN WATER WORK WINDOW.
2. HORIZONTAL DATUM: STATE PLANE COORDINATES, WASHINGTON SOUTH ZONE, NAD83, INTERNATIONAL FEET VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)
3. SITE TOPOGRAPHY BASED ON 2023 SURVEY CONDUCTED BY COWLITZ COUNTY.
4. CONTRACTOR IS RESPONSIBLE FOR MEETING ALL PERMIT REQUIREMENTS. ANY FINES INCURRED DUE TO PERMIT VIOLATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND OBSERVING SITE CONDITION IN ALL WORK AREAS PRIOR TO BIDDING.
6. ALL QUANTITY ESTIMATES ARE APPROXIMATE.

GENERAL REQUIREMENTS

1. THE CONTRACTOR SHALL VERIFY ALL FIELD DIMENSIONS, EXISTING CONDITIONS, AND NOTED ASSUMPTIONS. ANY DEVIATIONS SHALL BE COORDINATED WITH THE ENGINEER OF RECORD PRIOR TO PROCEEDING WITH THE RELATED WORK CONCERNING THE DEVIATION
2. THE (WSDOT) STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, AND MUNICIPAL CONSTRUCTION WAS USED IN PREPARING THESE DESIGN DOCUMENTS. ALL CONSTRUCTION SHALL CONFORM TO THIS CODE, EXCEPT AS MODIFIED IN THE SPECIAL PROVISIONS.
3. ALL DIMENSIONS TO TAKE PRECEDENCE OVER THE SCALE SHOWN ON THE PLANS, ELEVATIONS, SECTIONS, AND DETAILS.
4. THE CONTRACT DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE BRACING, SHORING, AND ALL OTHER NECESSARY METHODS REQUIRED TO COMPLETE CONSTRUCTION.

LINETYPE LEGEND	
LINETYPE	DESCRIPTION
	EXISTING DRAINAGE CULVERT
	ORDINARY HIGH WATER
	EXISTING CABLE TV UNDERGROUND LINE
	EXISTING ELECTRICAL POWER UNDERGROUND LINE
	EXISTING TELEPHONE UNDERGROUND LINE
	EXISTING ROAD / DRIVEWAY GRAVEL PAVEMENT
	DESIGN ALIGNMENT CENTERLINE
	DESIGN EDGE OF PAVEMENT
	DESIGN SHOULDER
	DESIGN STORM DRAINAGE
	DESIGN DAYLIGHT - CUT
	DESIGN DAYLIGHT - FILL
	EXISTING GROUND CENTERLINE PROFILE
	DESIGN CENTERLINE PROFILE
	RIGHT OF WAY LINE
	PROPOSED RIGHT OF WAY LINE
	TEMPORARY CONSTRUCTION EASEMENT LINE
	CONTOUR - EXISTING - INDEX
	CONTOUR - EXISTING - NORMAL
	CONTOUR - DESIGN - INDEX
	CONTOUR - DESIGN - NORMAL
	WORK AREA LIMIT LINE

SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	FENCE GATE POST - EXISTING
	MAIL BOX
	ELECTRIC JUNCTION
	TELEPHONE BOX
	SHRUB
	CONIFER TREE
	DECIDUOUS TREE
	TREE REMOVAL
	BORE HOLE
	QUARRY SPALLS

TDB PROJECT MANAGER	8/29/23
JTH DRAWN BY	8/29/23
TDB CHECKED BY	8/29/23

HORIZ. SCALE: NONE
VERT. SCALE: NONE
PROJECT ID: 1617
ROAD NO.: 20930
COMPUTER FILE: 01_G2.0.dwg



COWLITZ COUNTY
WASHINGTON

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STUART C. BENJUCK
STATE OF WASHINGTON
PROFESSIONAL ENGINEER
4178
2/14/2024

SEC 15 T 9 N R 4 W
CRP NO 801

FED. AID NO. PROTECT-2008(034)
FED. AID CONTRACT NO. TA-7638

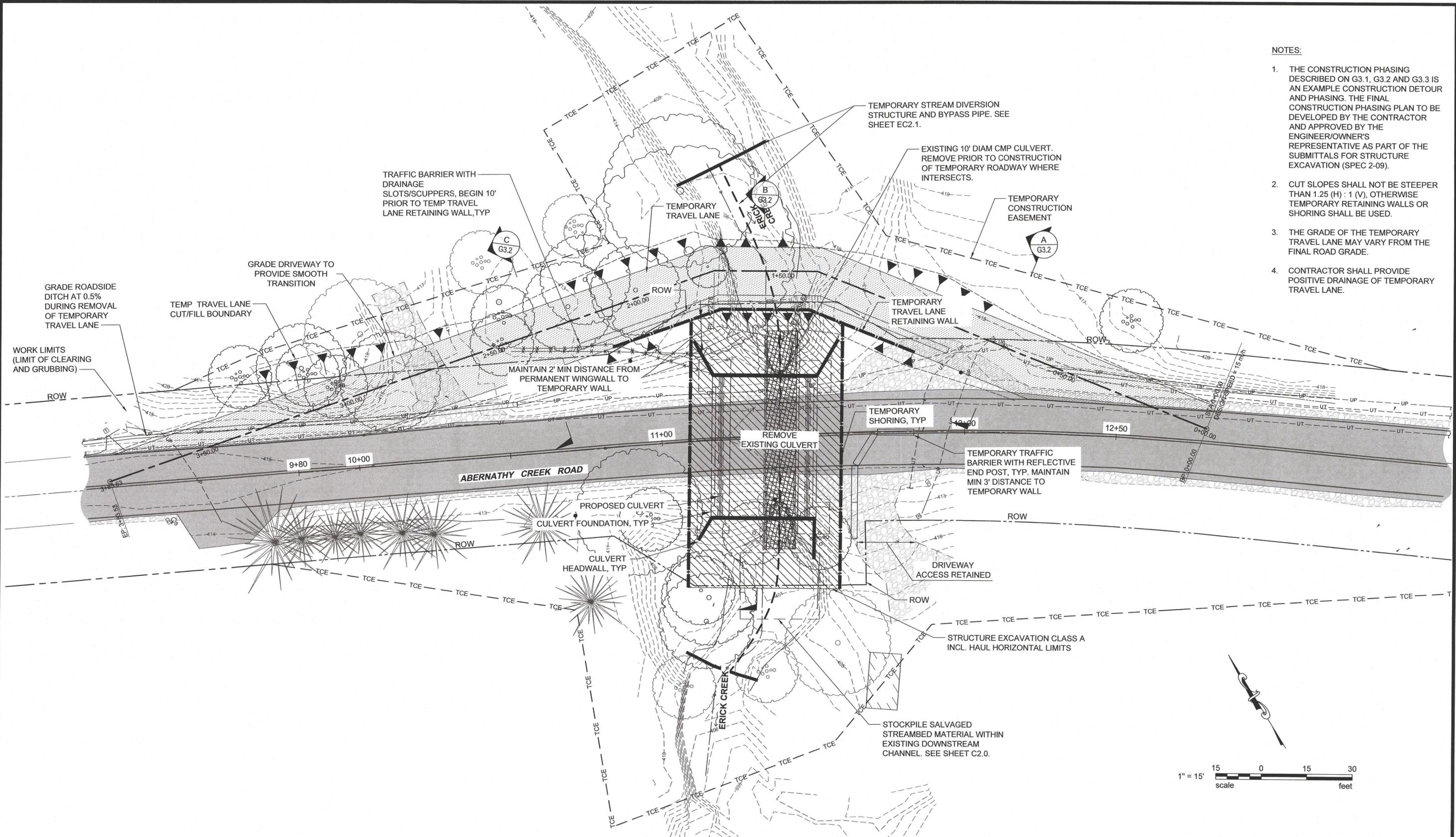
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COWLITZ COUNTY, WASHINGTON

GENERAL NOTES AND LEGEND

BID SET

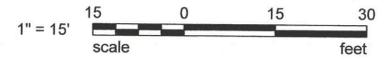
SHEET
G2.0

2 OF 26



- NOTES:**
1. THE CONSTRUCTION PHASING DESCRIBED ON G3.1, G3.2 AND G3.3 IS AN EXAMPLE CONSTRUCTION DETOUR AND PHASING. THE FINAL CONSTRUCTION PHASING PLAN TO BE DEVELOPED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER/OWNER'S REPRESENTATIVE AS PART OF THE SUBMITTALS FOR STRUCTURE EXCAVATION (SPEC 2-09).
 2. CUT SLOPES SHALL NOT BE STEEPER THAN 1.25 (H) : 1 (V), OTHERWISE TEMPORARY RETAINING WALLS OR SHORING SHALL BE USED.
 3. THE GRADE OF THE TEMPORARY TRAVEL LANE MAY VARY FROM THE FINAL ROAD GRADE.
 4. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE OF TEMPORARY TRAVEL LANE.

PLAN
 SCALE: 1" = 15'-0"



TDB PROJECT MANAGER	8/29/23 DATE
JTH DRAWN BY	8/29/23 DATE
TDB CHECKED BY	8/29/23 DATE

HORIZ. SCALE: 1" = 15'
VERT. SCALE: NONE
PROJECT ID: 1617
ROAD NO.: 20930
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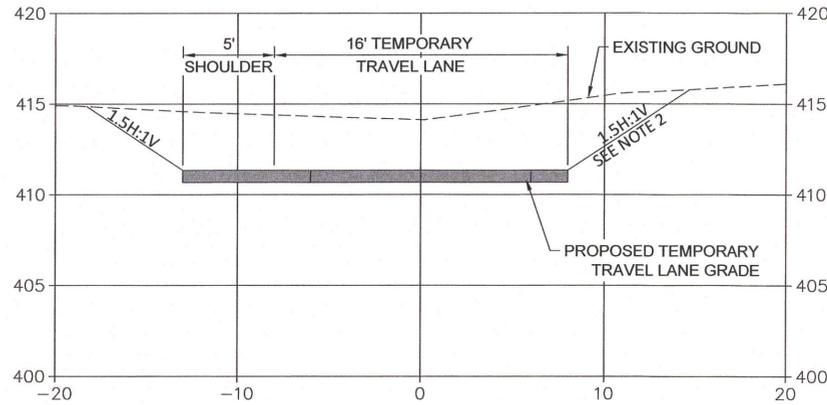
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ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON
CONSTRUCTION PLAN

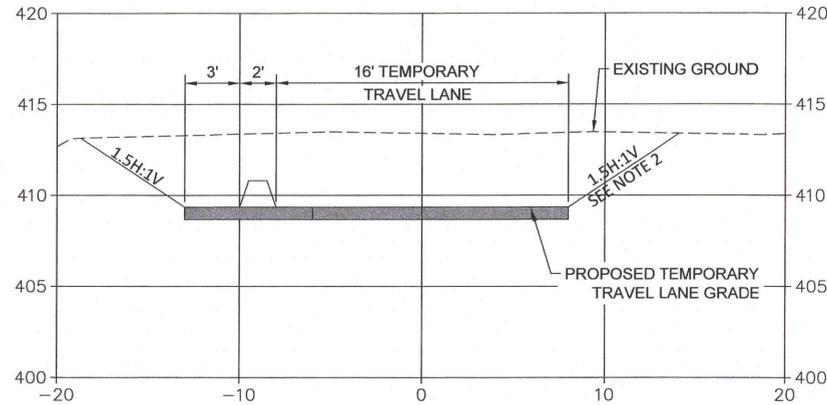
BID SET
 SHEET **G3.1**
3 OF 26

NOTES:

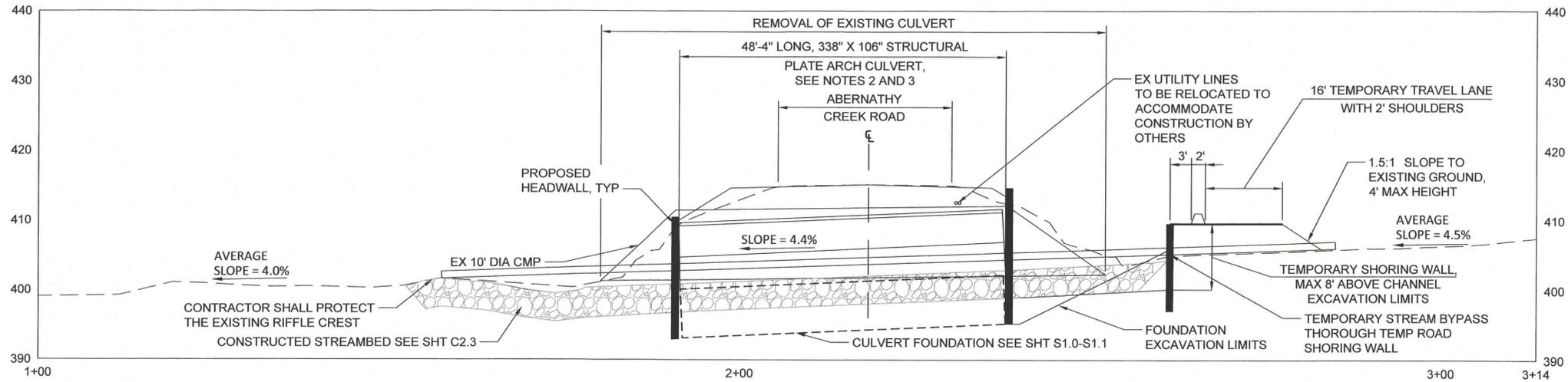
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3. THE GRADE OF THE TEMPORARY TRAVEL LANE MAY VARY FROM THE FINAL ROAD GRADE.



A
G3.1 **TEMPORARY TRAVEL LANE EAST OF ERICK CREEK SECTION**
SCALE: 1"=5'-0"
VERT SCALE: 1"=5'-0"



C
G3.1 **TEMPORARY TRAVEL LANE WEST OF ERICK CREEK SECTION**
SCALE: 1"=5'-0"
VERT SCALE: 1"=5'-0"



B
G3.1 **TEMPORARY TRAVEL LANE AT ERICK CREEK SECTION**
SCALE: 1"=10'-0"
VERT SCALE: 1"=10'-0"



TDB PROJECT MANAGER	8/29/23
JTH DRAWN BY	8/29/23
TDB CHECKED BY	8/29/23

HORIZ. SCALE: AS SHOWN	VERT. SCALE: AS SHOWN
PROJECT ID: 1617	ROAD NO.: 20930
COMPUTER FILE: 01_G3.2.dwg	

COWLITZ COUNTY
WASHINGTON

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STUART C. BENNING
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SEC 15 T 9 N R 4 W
CRP NO 801

FED. AID NO. PROTECT-2008(034)
FED. AID CONTRACT NO. TA-7638

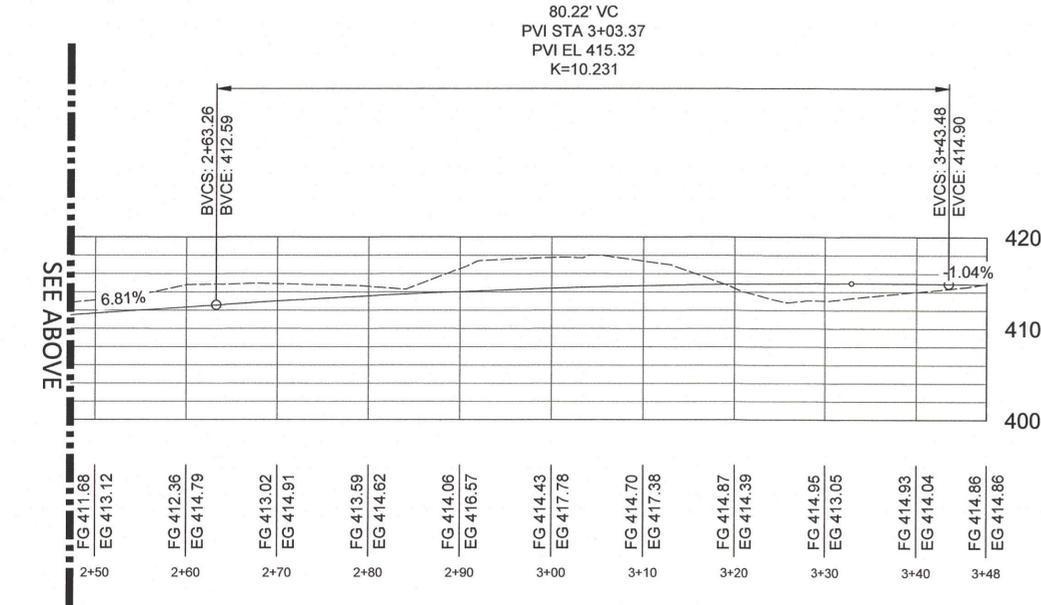
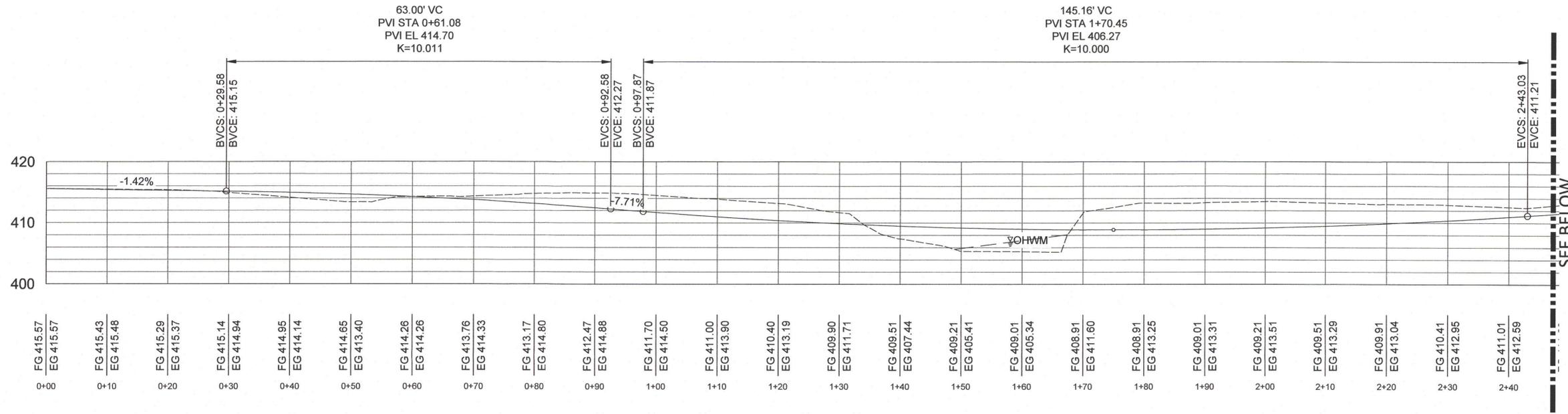
ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON

CONSTRUCTION PROFILES AND SECTIONS
- SHEET 1

BID SET

SHEET **G3.2**

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TEMPORARY ROAD PROFILE
 SCALE: 1" = 10'-0"

NOTES:

1. THE CONSTRUCTION PHASING DESCRIBED ON G3.1, G3.2 AND G3.3 IS AN EXAMPLE CONSTRUCTION DETOUR AND PHASING. THE FINAL CONSTRUCTION PHASING PLAN TO BE DEVELOPED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER/OWNERS REPRESENTATIVE AS PART OF THE SUBMITTALS FOR STRUCTURE EXCAVATION (SPEC 2-09).
2. CUT SLOPES SHALL NOT BE STEEPER THAN 1.25 (H) : 1 (V), OTHERWISE TEMPORARY RETAINING WALLS OR SHORING SHALL BE USED.
3. THE GRADE OF THE TEMPORARY TRAVEL LANE MAY VARY FROM THE FINAL ROAD GRADE.
4. CONTRACTOR TO PROVIDE TEMPORARY TRAVEL LANE WITH MIN K=10 FOR TRAVEL LANE WITH 15 MPH LIMIT IN ACCORDANCE WITH AASHTO GUIDELINES.



TDB PROJECT MANAGER	8/29/23
JTH DRAWN BY	8/29/23
TDB CHECKED BY	8/29/23

HORIZ. SCALE: 1" = 10'
 VERT. SCALE: 1" = 10'
 PROJECT ID: 1617
 ROAD NO. : 20930
 COMPUTER FILE: 01_G3.3.dwg



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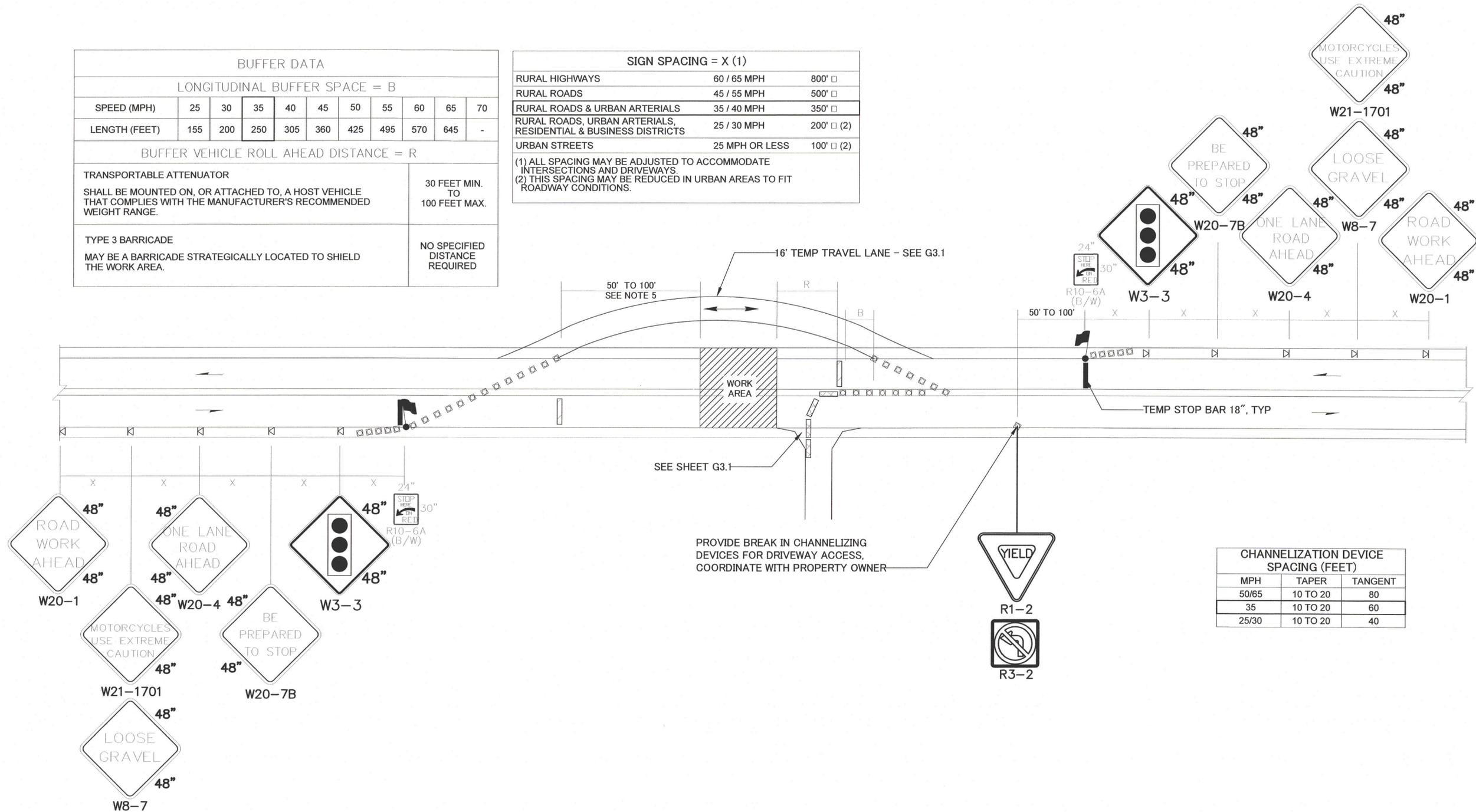
ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON
CONSTRUCTION PROFILES AND SECTIONS
- SHEET 2

BID SET
 SHEET **G3.3**
5 OF 26

BUFFER DATA										
LONGITUDINAL BUFFER SPACE = B										
SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (FEET)	155	200	250	305	360	425	495	570	645	-
BUFFER VEHICLE ROLL AHEAD DISTANCE = R										
TRANSPORTABLE ATTENUATOR SHALL BE MOUNTED ON, OR ATTACHED TO, A HOST VEHICLE THAT COMPLIES WITH THE MANUFACTURER'S RECOMMENDED WEIGHT RANGE.										30 FEET MIN. TO 100 FEET MAX.
TYPE 3 BARRICADE MAY BE A BARRICADE STRATEGICALLY LOCATED TO SHIELD THE WORK AREA.										NO SPECIFIED DISTANCE REQUIRED

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

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



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

- LEGEND**
- TEMPORARY TRAFFIC SIGNAL
 - TEMPORARY SIGN LOCATION
 - CHANNELIZING DEVICES
 - TYPE 3 BARRICADE - 10'
 - TEMPORARY TRAFFIC BARRIER

**ONE-LANE, TWO-WAY TRAFFIC CONTROL
WITH TEMPORARY TRAFFIC SIGNAL**
NOT TO SCALE

- NOTES:**
- ALL SIGNS ARE BLACK ON ORANGE.
 - EXTENDING THE CHANNELIZING DEVICE TAPER ACROSS SHOULDER IS RECOMMENDED.
 - SEE SPECIAL PROVISIONS FOR WORK HOUR RESTRICTIONS.
 - ROAD IS POSTED AT 35 MPH.
 - EXTEND CHANNELIZING DEVICES TO CONCRETE BARRIER.
 - PROVIDE ADDITIONAL TRAFFIC CONTROL FOR DRIVEWAY ACCESS AS SHOWN ON SHEET G3.1.
 - CONTRACTOR IS RESPONSIBLE FOR MEETING ALL STATE & COUNTY TRAFFIC SIGNAGE AND/OR FLAGGING REQUIREMENTS.

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JTH DRAWN BY	8/29/23 DATE
SCM CHECKED BY	8/29/23 DATE

HORIZ. SCALE: NONE	VERT. SCALE: NONE
PROJECT ID: 1617	ROAD NO.: 20930
COMPUTER FILE: 01_G4.0.dwg	

COWLITZ COUNTY
WASHINGTON

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KELSO, WASHINGTON 98626

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**SEC 15 T 9 N R 4 W
CRP NO 801**

**FED. AID NO. PROTECT-2008(034)
FED. AID CONTRACT NO. TA-7638**

**ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON**

TRAFFIC CONTROL PLAN

- NOTES:**
- ALL TREES IDENTIFIED FOR REMOVAL SHALL BE MARKED IN THE FIELD BY ENGINEER PRIOR TO REMOVAL.
 - REMOVE THE EXISTING KNOTWEED CLUMP USING THE FOLLOWING TECHNIQUES:
 - COMPLETE IN-WATER WORK ISOLATION AND DEWATERING PRIOR TO ANY CUTTING OR EXCAVATION FOR KNOTWEED REMOVAL.
 - CUT BACK SURROUNDING VEGETATION TO ENSURE A CLEAR VIEW OF THE KNOTWEED CLUMP.
 - IDENTIFY ALL STEMS AND STEM CLUSTERS AND MARK THEIR OUTER EXTENT WITH ORANGE PAINT.
 - MEASURE OUT 6 HORIZONTAL FEET FROM THE OUTER EDGE OF THE STEM CLUSTERS IN ALL DIRECTIONS.
 - MARK THE 6-FOOT DISTANCE USING ORANGE SPRAY PAINT.
 - EXCAVATE AND REMOVE THE ENTIRE KNOTWEED PLANT AND ALL SURROUNDING SOIL OUT TO AT LEAST THE 6-FOOT LINE.
 - EXCAVATION SHALL BE AT LEAST 6-FEET DEEP. DO NOT BREAK, SPLINTER, OR CUT ANY PART OF THE PLANT. DO NOT ALLOW ANY PIECES OF THE PLANT OR ROOTS TO ENTER ERICK CREEK.
 - DISPOSE OF THE SOIL AND PLANT AT COUNTY KNOTWEED QUARANTINE SITE ON COAL CREEK ROAD.
 - RELOCATION OF SATELLITE DISH TO BE COORDINATED WITH LAND OWNER.
 - PROTECT ALL TREES NOT LISTED TO BE REMOVED.

TREE REMOVAL TABLE

TREE #	DBH (IN)	SPECIES
1	32	MAPLE
2	36	MAPLE
3	6	ALDER
4	6	ALDER
5	12	ALDER
6	14	ALDER
7	16	ALDER
8	18	ALDER
9	6	MAPLE
10	8	MAPLE
11	8	MAPLE
12	6	MAPLE
13	52	MAPLE
14	36	MAPLE
15	14	ALDER
16	18	ALDER
17	18	ALDER
18	12	ALDER
19	12	MAPLE
20	8	MAPLE
21	16	MAPLE
22	8	MAPLE
23	8	MAPLE
24	16	MAPLE
25	8	MAPLE
26	8	MAPLE

SURVEY CONTROL TABLE

POINT No.	NORTHING	EASTING	ELEVATION	DESCRIPTION
5	348598.85	964697.59	411.17	NAIL SPIKE
6	348645.92	964805.71	413.93	NAIL SPIKE



TDB
PROJECT MANAGER
DATE 8/29/23

JTH
DRAWN BY
DATE 8/29/23

SCM
CHECKED BY
DATE 8/29/23

HORIZ. SCALE: 1" = 20'
 VERT. SCALE: NONE
 PROJECT ID: 1617
 ROAD NO.: 20930
 COMPUTER FILE: 02_C1.0.dwg



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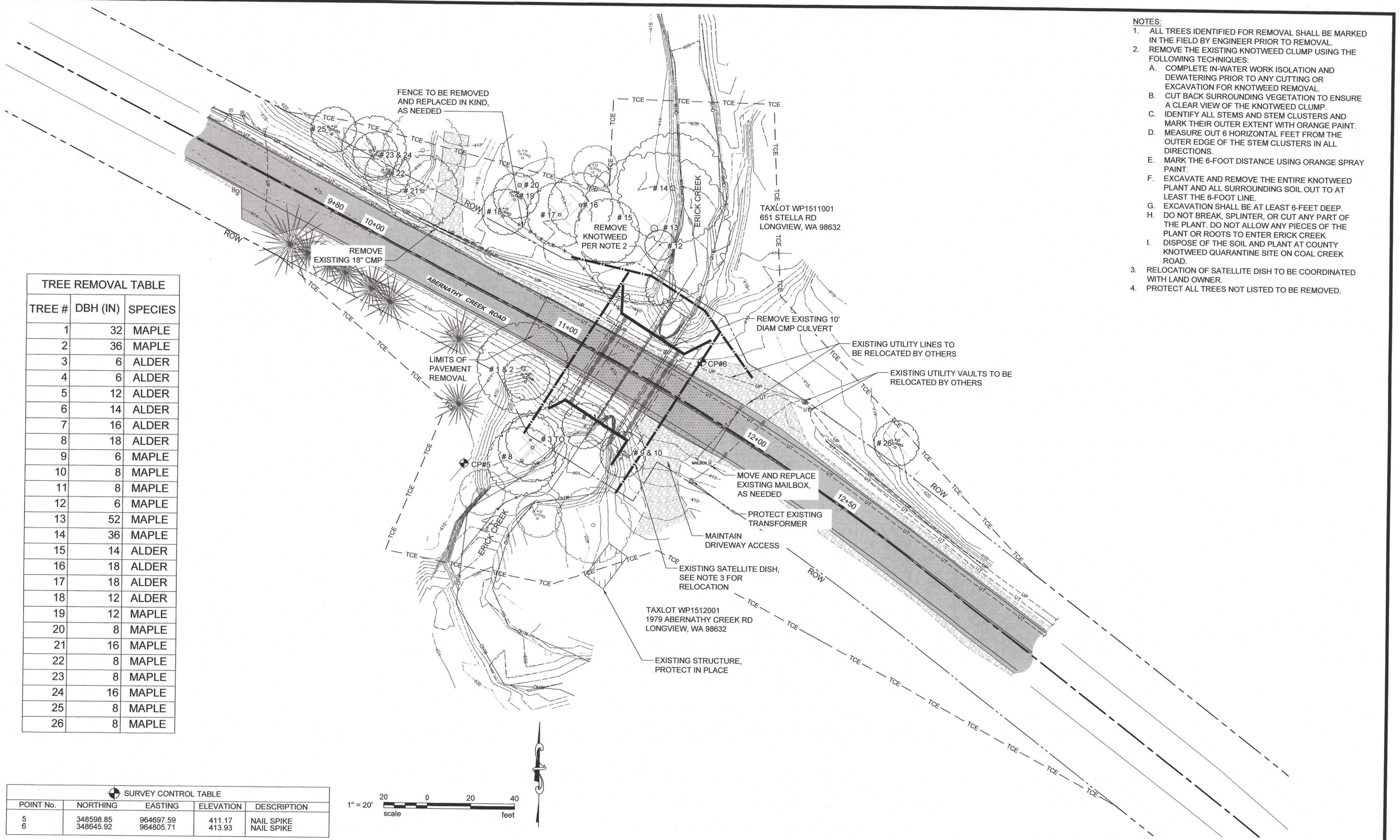
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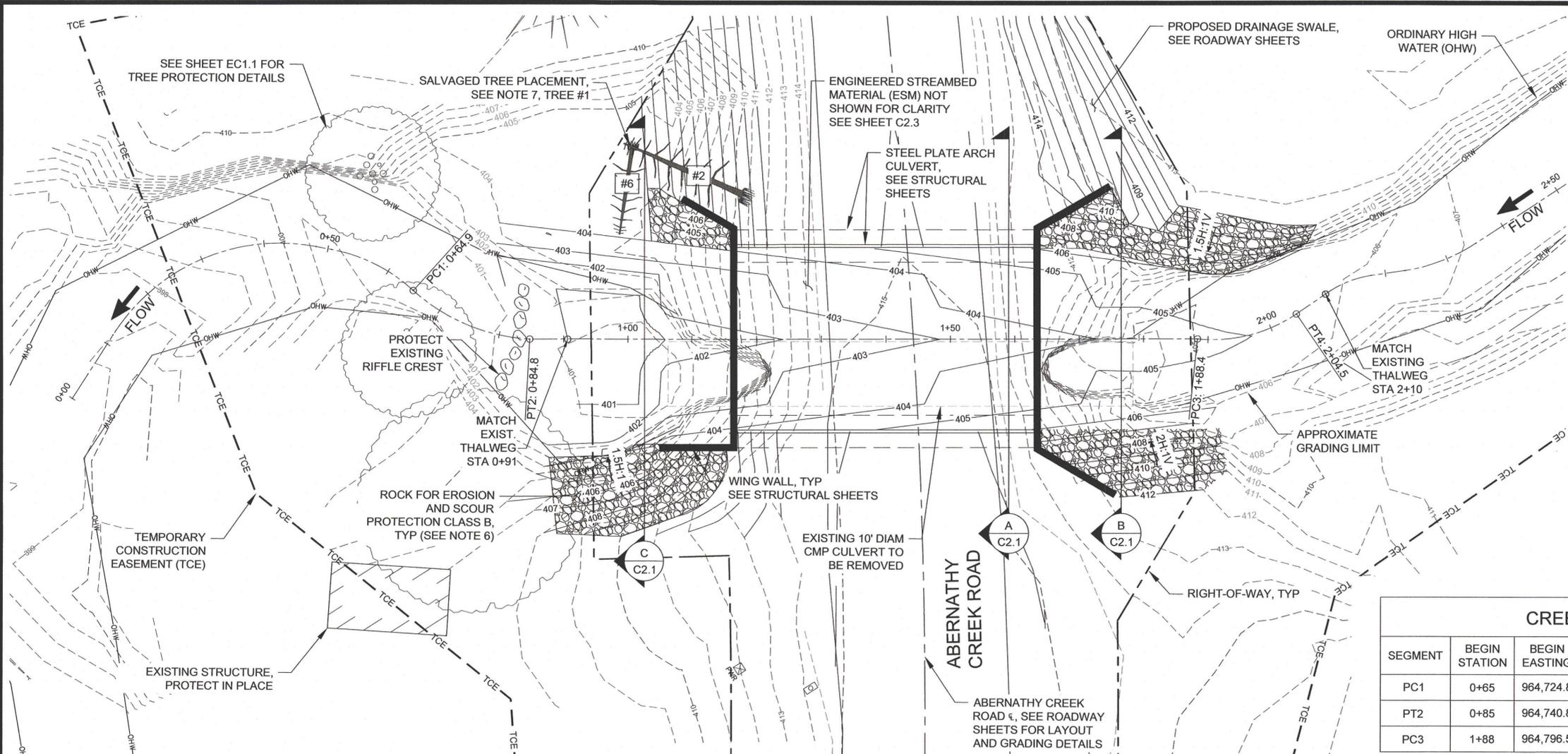


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 FED. AID CONTRACT NO. TA-7638

ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON
EXISTING CONDITIONS AND DEMO PLAN

BID SET
 SHEET
C1.0
 7 OF 26



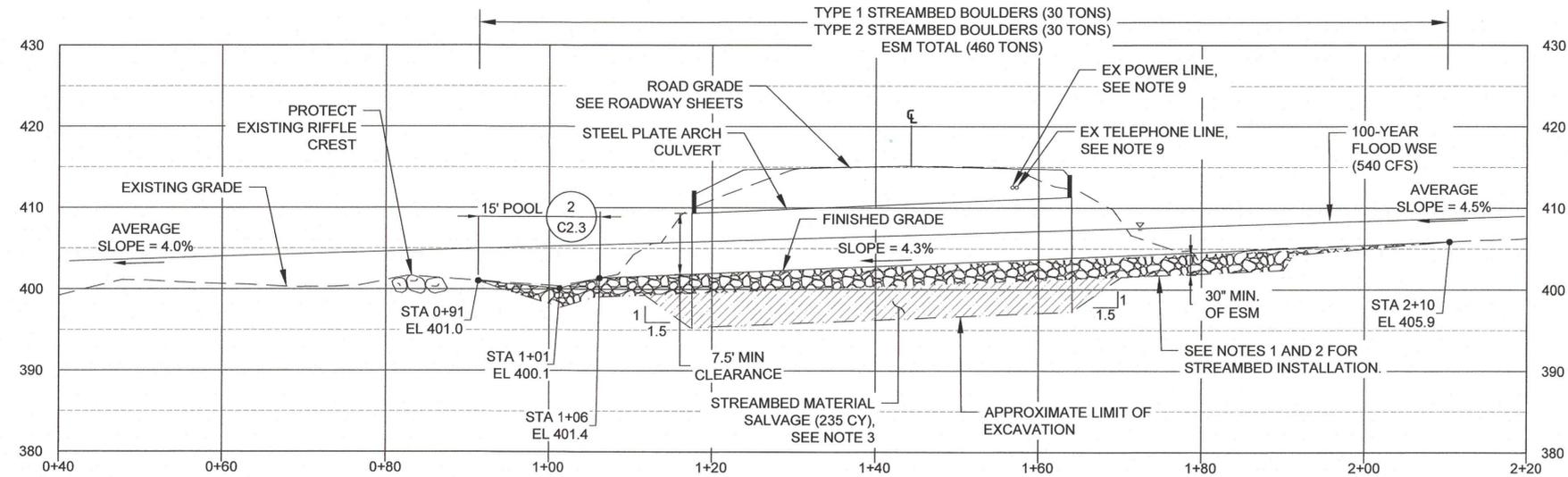


- ### NOTES
- SEE SHEETS C2.1 TO C2.3 FOR TYPICAL STREAM GRADING AND CULVERT SECTIONS AND FOR STREAMBED DETAILS AND INSTALLATION REQUIREMENTS.
 - THE CONTRACTOR SHALL PLACE STREAMBED SUBSTRATE FROM BOTTOM OF CULVERT FOOTINGS TO MEET FINISHED GRADE FOR THE STREAM CHANNEL.
 - THE CONTRACTOR SHALL STOCKPILE AND PLACE SALVAGED STREAMBED MATERIALS GENERATED FROM CHANNEL AND STRUCTURAL EXCAVATION. THE MATERIAL SHALL BE PLACED BELOW THE 30" MINIMUM THICKNESS FOR ENGINEERED STREAMBED MATERIAL, REQUIRED TO BE IMPORTED TO THE SITE. SEE SECTION 2-14 IN THE SPECIAL PROVISIONS FOR FURTHER REQUIREMENTS.
 - THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE OR DISTURBANCE OUTSIDE THE WORK LIMITS AND SHALL BEAR ALL COSTS FOR REPAIR OF STREAMBED AND BANKS IN-KIND.
 - WITHIN THE WORK LIMIT, THE PROJECT REPRESENTATIVE MAY DIRECT ADDITIONAL FIELD FIT GRADING TO RESTORE GROUND DISTURBED INCIDENTAL TO CONSTRUCTION.
 - THE CONTRACTOR SHALL INSTALL ROCK TO THE LIMITS SHOWN ON THIS SHEET. THE PROJECT REPRESENTATIVE MAY FIELD-DIRECT ROCK PLACEMENT AS NEEDED TO FIT FINISHED GRADE.
 - THE CONTRACTOR SHALL SALVAGE, STOCKPILE, AND PLACE TREES IN THE LOCATIONS AND QUANTITY INDICATED ON THIS SHEET. TREES WILL ONLY BE PLACED WITHIN THE RIGHT-OF-WAY. ADDITIONAL TREES MAY BE PLACED ON-SITE WITH APPROVAL BY THE PROJECT REPRESENTATIVE. TREES MAY BE REQUIRED TO BE TOPPED AND LIMBED FOR PLACEMENT.
 - TEMPORARY BYPASS NOT SHOWN FOR CLARITY; SEE SHEETS G3.1 TO G3.3 FOR DETAILS.
 - EXISTING UTILITIES TO BE RELOCATED BY OTHERS TO ACCOMMODATE CONSTRUCTION

CREEK ALIGNMENT CONTROL TABLE								
SEGMENT	BEGIN STATION	BEGIN EASTING	BEGIN NORTHING	LINE BEARING	LINE DISTANCE	CURVE DISTANCE	CURVE RADIUS	DELTA ANGLE
PC1	0+65	964,724.8	348,581.1	---	---	19.8	29.25	38° 52' 44"
PT2	0+85	964,740.8	348,592.2	N32° 32' 16"E	103.6	---	---	---
PC3	1+88	964,796.5	348,679.5	---	---	16.1	23.00	40° 11' 14"

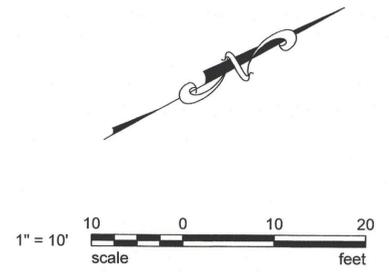
ERICK CREEK RESTORATION PLAN

SCALE: 1"=10'



ERICK CREEK PROFILE

SCALE: 1"=10'



GLW PROJECT MANAGER	7/14/2023 DATE
SW/AMF DRAWN BY	7/14/2023 DATE
GLW CHECKED BY	7/14/2023 DATE

HORIZ. SCALE: AS SHOWN
VERT. SCALE: NONE

PROJECT ID: 1617
ROAD NO.: 20930

COMPUTER FILE: C2.0.dwg

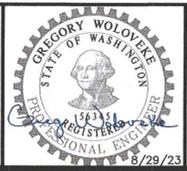


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CRP NO 801

FED. AID NO. PROTECT-2008(034)
FED. AID CONTRACT NO. TA-7638

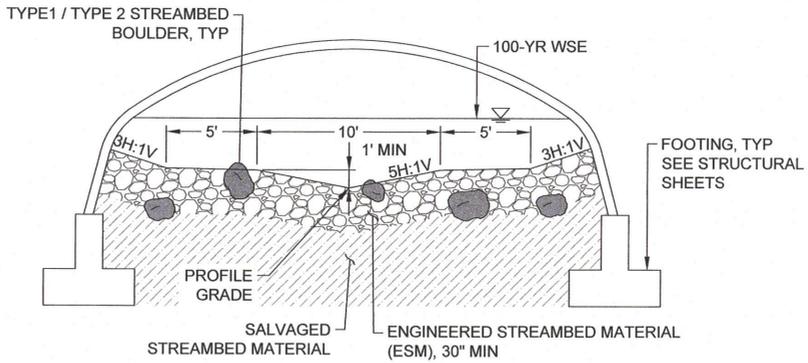
ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON

STREAM GRADING PLAN AND PROFILE

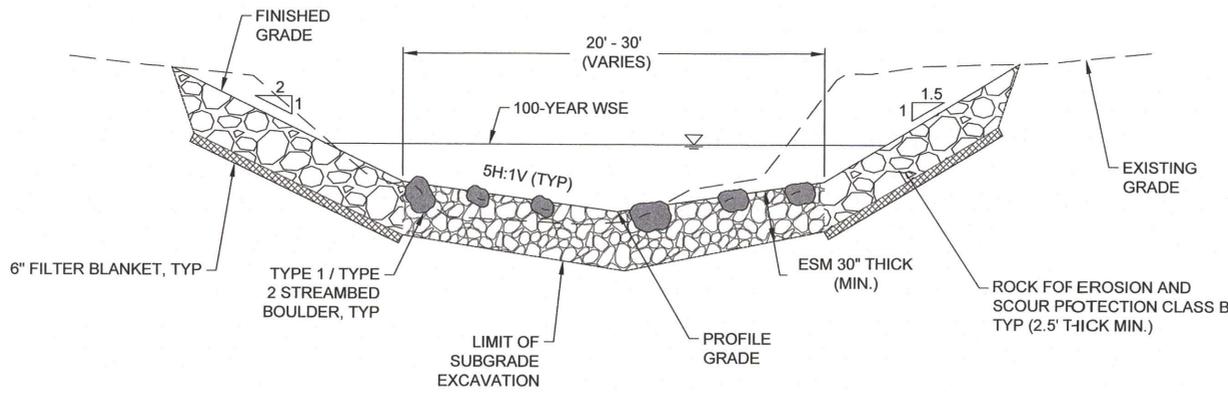
BID SET

SHEET **C2.0**

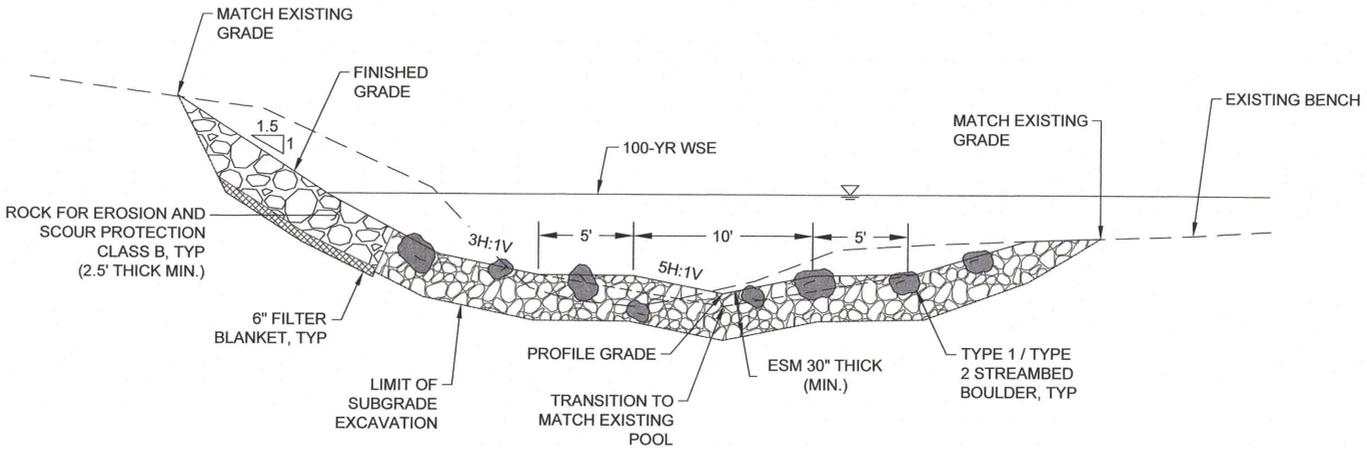
8 OF 26



A
C2.0
TYPICAL CULVERT SECTION
SCALE: 1"=5'



B
C2.0
TYPICAL UPSTREAM SECTION
SCALE: 1"=5'



C
C2.0
TYPICAL DOWNSTREAM SECTION
SCALE: 1"=5'

NOTES

1. SECTIONS ARE ORIENTED LOOKING DOWNSTREAM, LEFT TO RIGHT BANK.
2. TYPICAL SECTIONS DESCRIBE GENERAL CONSTRUCTION REQUIREMENTS. THE CONTRACTOR SHALL REFER TO SHEET C2.2 FOR STREAM GRADING SECTIONS.



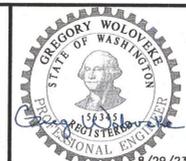
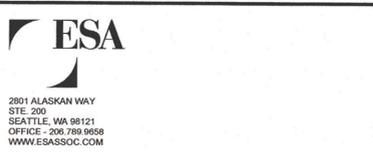
FINAL SUBMITTAL

GLW PROJECT MANAGER	7/14/2023 DATE
SW/AMF DRAWN BY	7/14/2023 DATE
GLW CHECKED BY	7/14/2023 DATE

HORIZ. SCALE: AS SHOWN
VERT. SCALE: NONE
PROJECT ID: 1617
ROAD NO.: 20930
COMPUTER FILE: C2.1.dwg



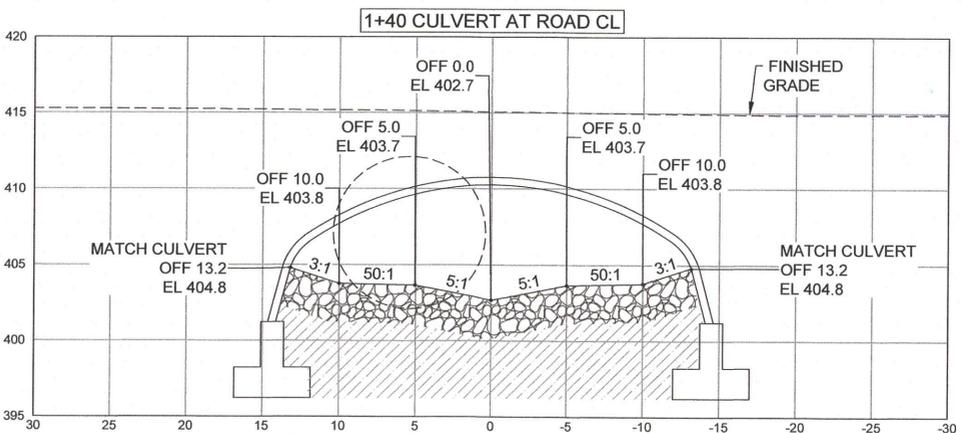
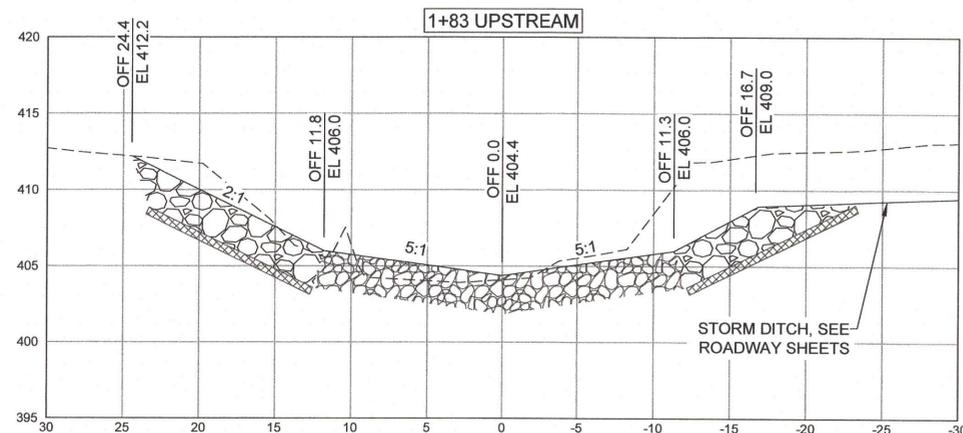
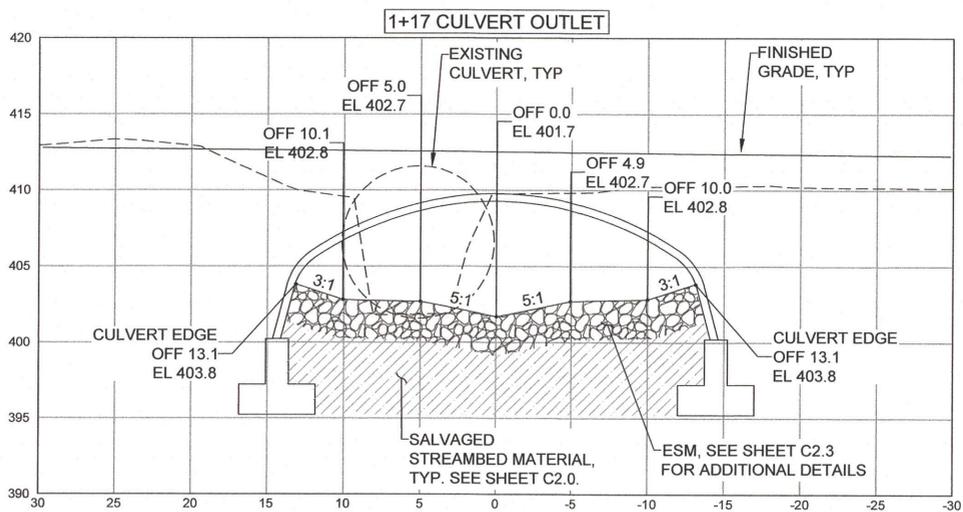
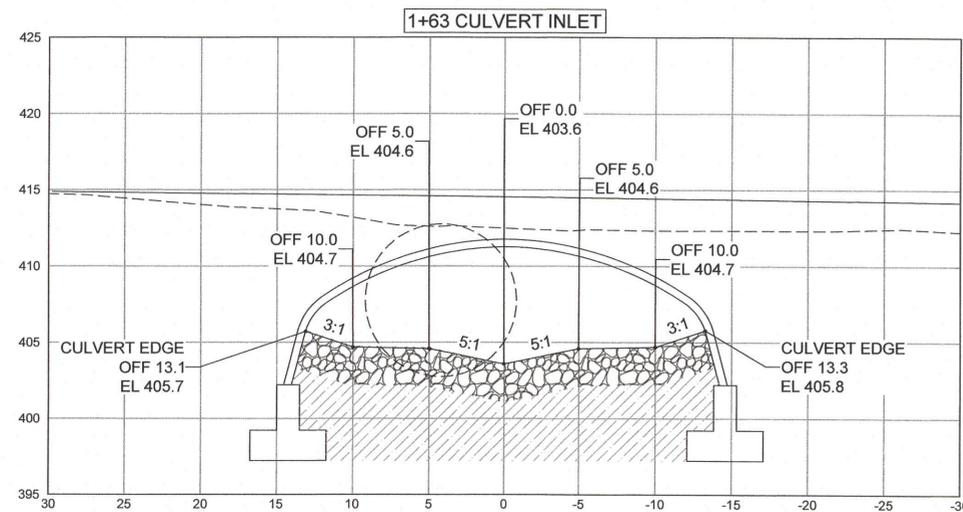
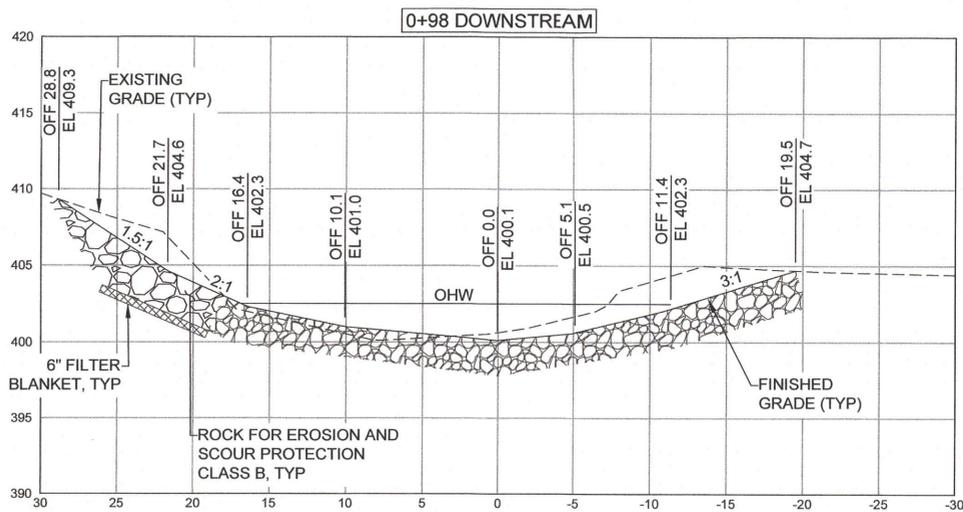
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CRP NO 801
FED. AID NO. PROTECT-2008(034)
FED. AID CONTRACT NO. TA-7638

ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON
TYPICAL STREAM SECTIONS

SHEET
C2.1
9 OF 26



NOTES

1. SECTIONS ARE ORIENTED LOOKING DOWNSTREAM, LEFT TO RIGHT BANK. STATIONING STARTS WITH DOWNSTREAM AT STA 0+00.
2. SECTIONS DEPICT FINISHED GRADE. THE CONTRACTOR SHALL OVER-EXCAVATE TO INSTALL ENGINEERED STREAMBED MATERIAL TO THE REQUIREMENTS OF SHEET C2.3.
3. SEE SHEET C2.1 FOR TYPICAL STREAM GRADING SECTIONS.
4. SCOUR PROTECTION ROCK SHALL NOT BE INSTALLED WITHIN ORDINARY HIGH WATER.
5. HEADWALL AND WINGWALLS NOT SHOWN FOR CLARITY. SEE STRUCTURAL SHEETS.

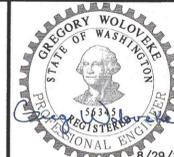


GLW PROJECT MANAGER 7/14/2023 DATE
 SWAMF DRAWN BY 7/14/2023 DATE
 GLW CHECKED BY 7/14/2023 DATE

HORIZ. SCALE: AS SHOWN
 VERT. SCALE: NONE
 PROJECT ID: 1617
 ROAD NO.: 20930
 COMPUTER FILE: C2.1.dwg



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SEC 15 T 9 N R 4 W
 CRP NO 801
 FED. AID NO. PROTECT-2008(034)
 FED. AID CONTRACT NO. TA-7638

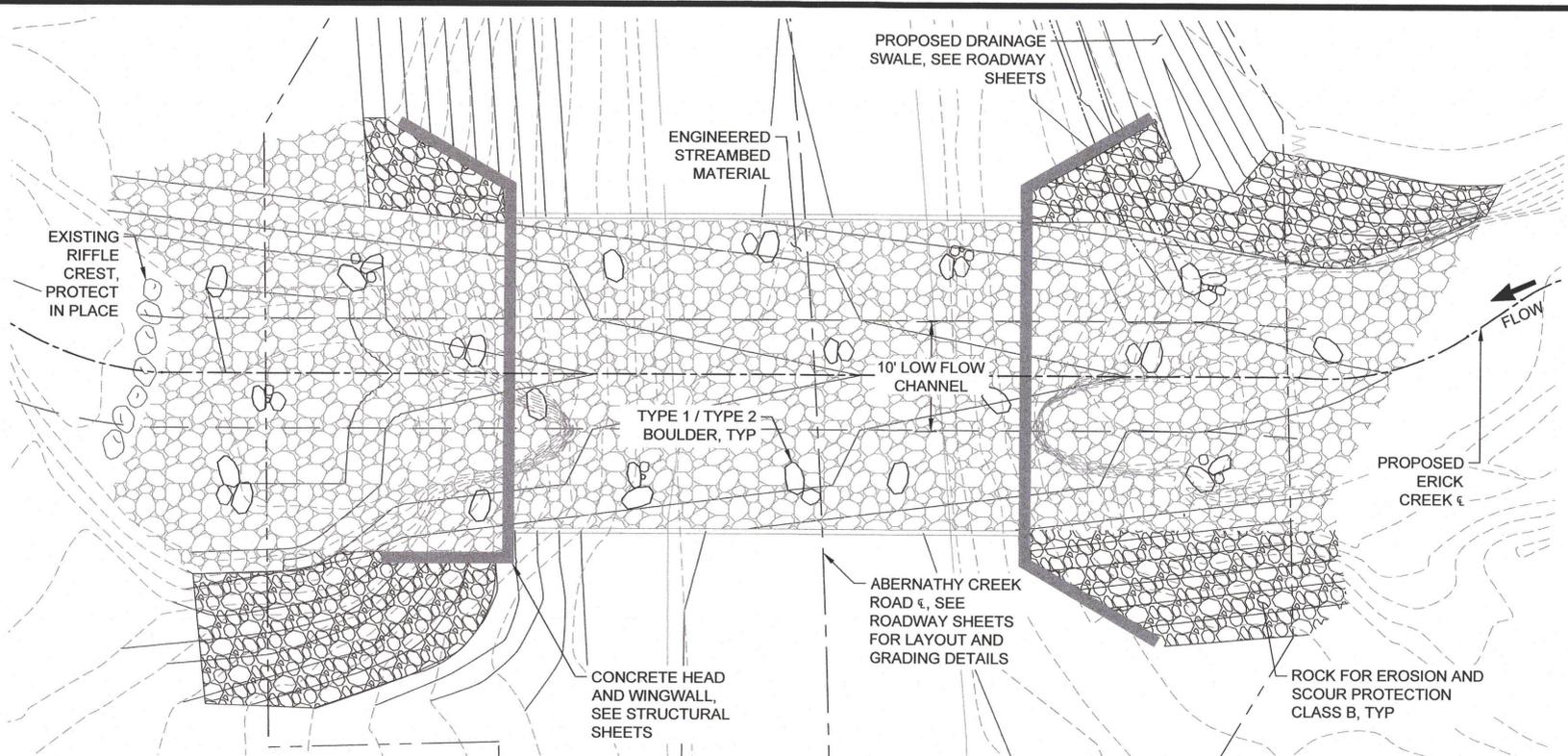
ERICK CREEK FISH PASSAGE PROJECT
 COWLITZ COUNTY, WASHINGTON

STREAM GRADING SECTIONS

BID SET

SHEET C2.2

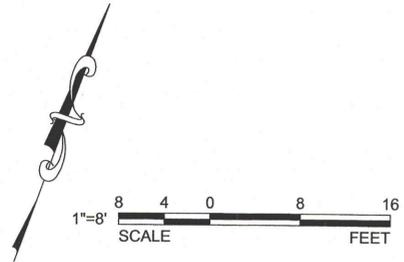
10 OF 26



1 CONSTRUCTED STREAMBED PLAN
SCALE: 1"=8'

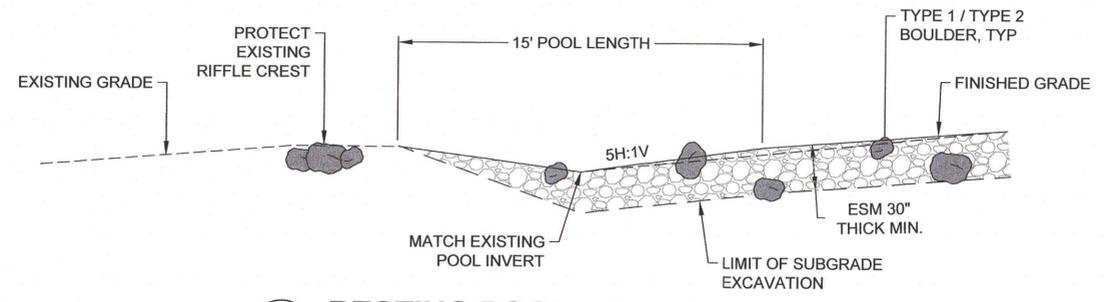
STREAMBED INSTALLATION NOTES

- ALL IMPORTED STREAMBED MATERIALS SHALL BE INSPECTED AND APPROVED BY THE ENGINEER AT THE OFFSITE SOURCE, BEFORE DELIVERY TO THE PROJECT SITE. THE ENGINEER SHALL VISUALLY INSPECT THE MATERIAL AND MAY REQUIRE THE CONTRACTOR TO DUMP INDIVIDUAL LOADS ONTO A FLAT SURFACE FOR MEASUREMENT AND APPROVAL.
- COBBLES AND SEDIMENT SHALL BE MIXED INTO A SINGLE STOCKPILE PRIOR TO INSTALLATION USING THE RATIOS PROVIDED ON THIS SHEET AND THE CONTRACT SPECIFICATIONS. THE ENGINEER MAY REQUIRE THE RE-MIX OF THE MATERIAL. MIXING SHALL NOT OCCUR UNTIL AFTER THE ENGINEER APPROVES THE MATERIALS.
- STREAMBED BOULDERS SHALL BE INDIVIDUALLY PLACED AND BACKFILLED WITH ADDITIONAL STREAMBED SEDIMENT. THE ENGINEER MAY DIRECT THE CONTRACTOR TO MAKE ADJUSTMENTS TO BOULDER PLACEMENT.
- STREAMBED BOULDERS MAY PROTRUDE ABOVE THE FINISHED GRADE UP TO 50% THEIR DIAMETER.
- STREAMBED MATERIALS SHALL BE INSTALLED IN 10-INCH LIFTS, PER DETAIL 4 (THIS SHEET), TO THE DIMENSIONS AND THICKNESS SHOWN IN THESE PLANS. THICKNESS IS MEASURED PERPENDICULAR TO FINISHED GRADE.
- AFTER EACH LIFT IS PLACED, THE CONTRACTOR SHALL USE LOW-PRESSURE WATER TO WASH 'STREAMBED SAND' INTO THE VOID SPACES TO CREATE A SEALED BED. THE LIFT SHALL BE CONSIDERED SEALED ONCE THE PROJECT REPRESENTATIVE VISUALLY APPROVES WATER REMAINS ON THE SURFACE.
- STREAMBED SAND SHALL BE STOCKPILED SEPARATELY.
- DO NOT ALLOW STREAMBED SEDIMENT TO ACCUMULATE SUCH THAT A SUBSEQUENT LIFTS REST ON THE FINE SEDIMENT ACCUMULATION.
- AFTER FINAL LIFT IS PLACED, STREAM FLOW WILL BE GRADUALLY REINTRODUCED AND OBSERVED SO THAT WATER FLOWS OVER THE TOP OF THE CONSTRUCTED STREAMBED (NOT SUBSURFACE) UPON COMPLETION. IF WATER FLOWS SUBSURFACE, THE ENGINEER MAY REQUIRE ADDITIONAL HAND WORKING OR WASHING OF STREAMBED SAND INTO VOID SPACES AT NO ADDITIONAL COST TO THE CONTRACTING AGENCY.



ENGINEERED STREAMBED MATERIAL (ESM) - MATERIAL SCHEDULE		
FILL MATERIAL	DIAMETER RANGE (IN)	PERCENT BY WEIGHT
10-INCH MINUS STREAMBED COBBLE	0.75" - 10"	30%
4-INCH MINUS STREAMBED COBBLE	0.75" - 4"	30%
STREAMBED SEDIMENT	NO. 200 - 2.5"	40%

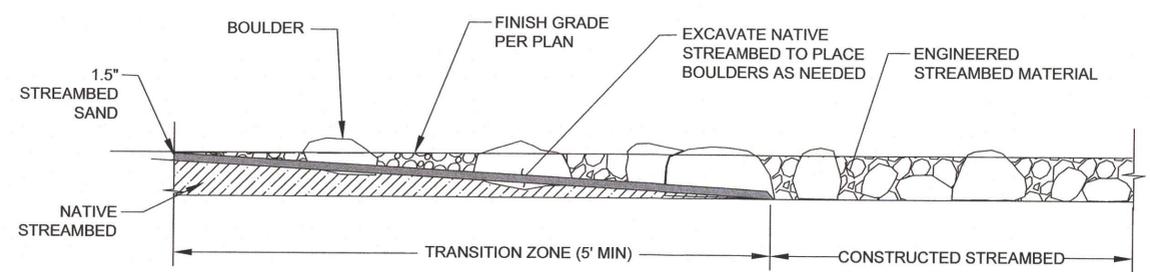
* ADDITIONAL TYPE 1 AND TYPE 2 STREAMBED BOULDERS ARE PLACED AS PART OF STREAMBED CONSTRUCTION. BOULDERS SHALL BE STOCKPILED SEPARATELY AND INDIVIDUALLY PLACED.



2 RESTING POOL
SCALE: NTS

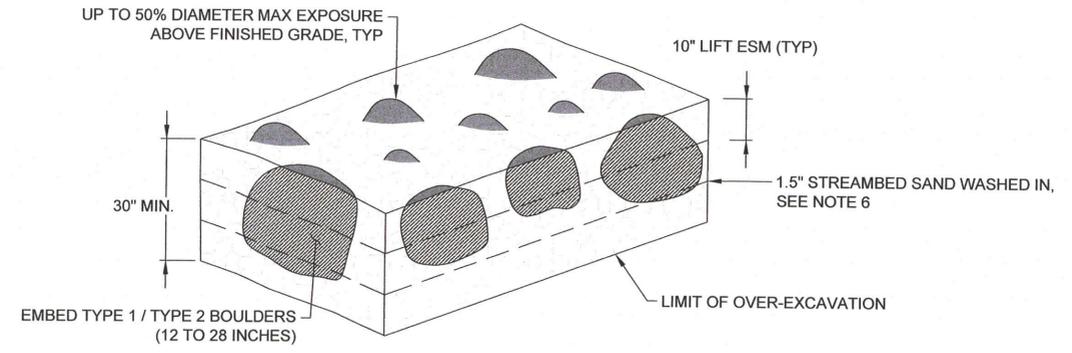
ROCK FOR EROSION AND SCOUR PROTECTION CLASS B - GRADATION	
APPROXIMATE SIZE (IN)	PERCENT PASSING (SMALLER)
30"	100%
28"	80% TO 95%
22"	50% TO 80%
16"	15% TO 50%
10"	15% MAX

* DIAMETER MEASURED ALONG INTERMEDIATE AXIS OF BOULDERS, COBBLE AND GRAVEL.



NOTE: TRANSITION LINE EXTENDS FROM THE PROPOSED GRADE OF STREAMBED CONSTRUCTION TO NATIVE GROUND OVER TRANSITION LENGTH PER PLAN. TRANSITIONS CAN ALSO OCCUR FROM CUT SECTIONS TO NATIVE.

3 CONSTRUCTED STREAMBED TRANSITION
SCALE: NTS



4 STREAMBED INSTALLATION
NOT TO SCALE

GLW PROJECT MANAGER	7/14/2023 DATE
SWAMF DRAWN BY	7/14/2023 DATE
GLW CHECKED BY	7/14/2023 DATE

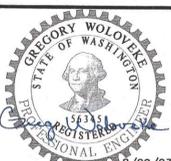
HORIZ. SCALE: AS SHOWN
VERT. SCALE: NONE
PROJECT ID: 1617
ROAD NO.: 20930
COMPUTER FILE: ERICK CREEK STREAM DETAIL.dwg



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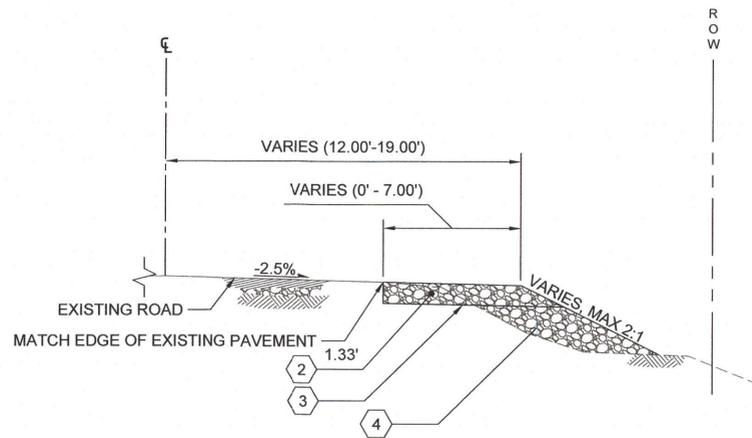
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CRP NO 801
FED. AID NO. PROTECT-2008(034)
FED. AID CONTRACT NO. TA-7638

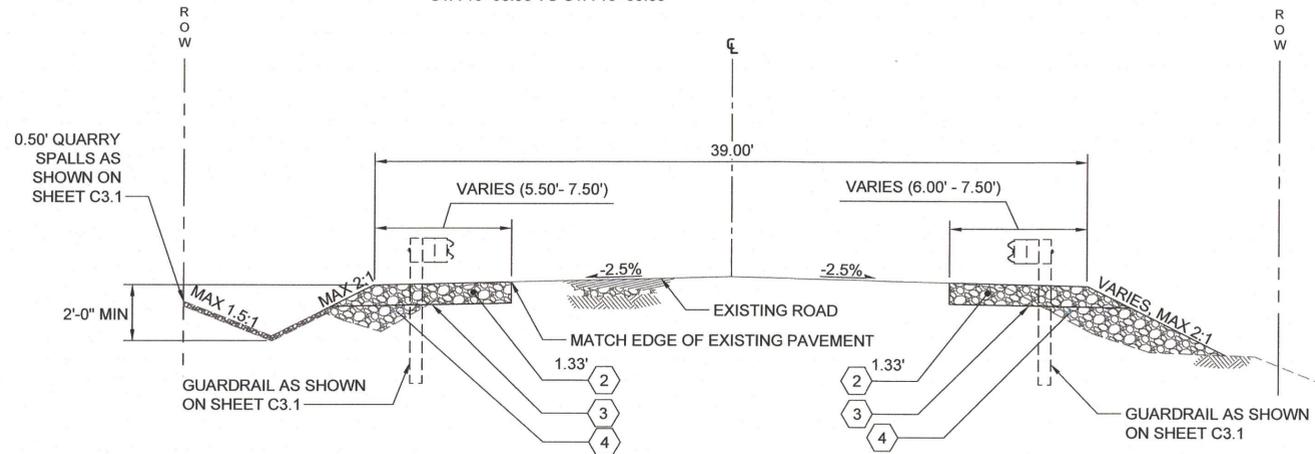
ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON
STREAMBED DETAILS

BID SET
SHEET **C2.3**
11 OF 26



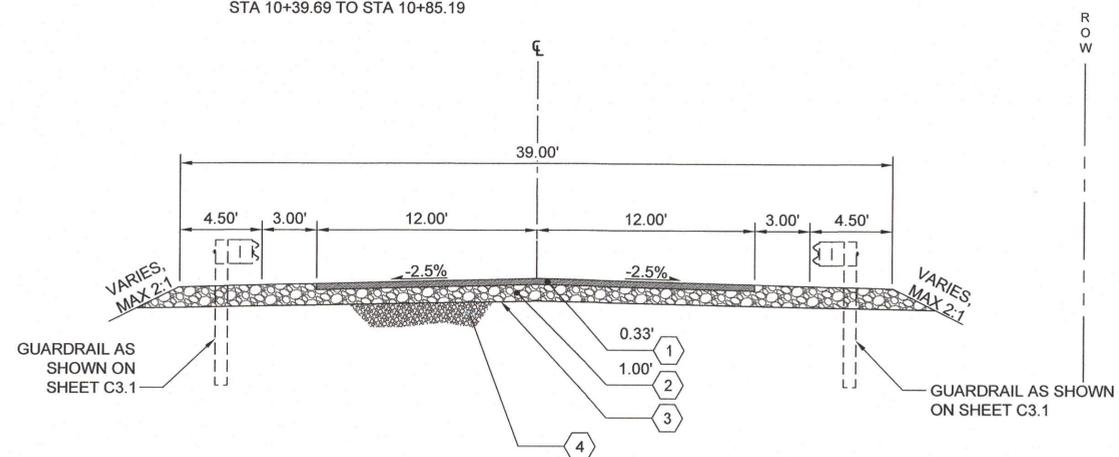
TYPICAL SECTION - ABERNATHY CREEK ROAD

SCALE: NOT TO SCALE
STA 10+03.96 TO STA 10+39.69



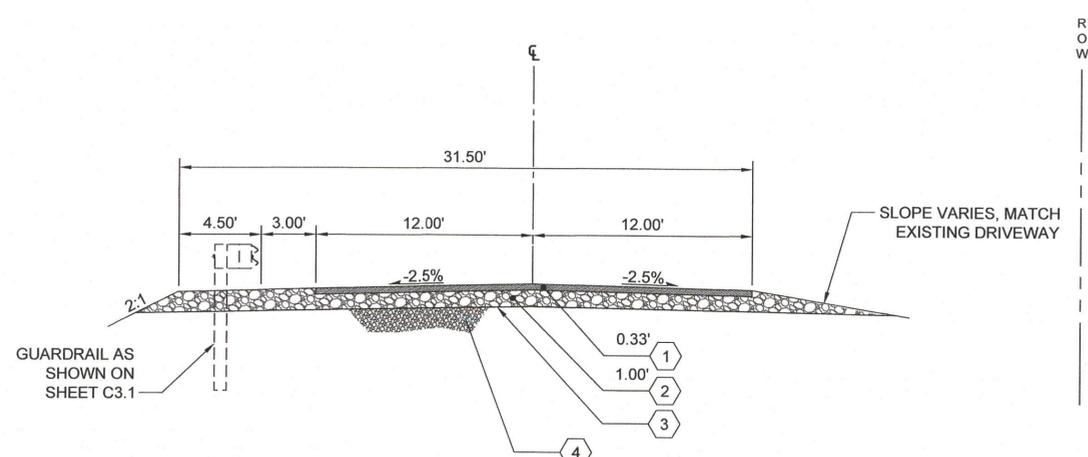
TYPICAL SECTION - ABERNATHY CREEK ROAD

SCALE: NOT TO SCALE
STA 10+39.69 TO STA 10+85.19



TYPICAL SECTION - ABERNATHY CREEK ROAD

SCALE: NOT TO SCALE
STA 10+85.19 TO STA 11+60.82



TYPICAL SECTION - ABERNATHY CREEK ROAD

SCALE: NOT TO SCALE
STA 11+60.82 TO STA 11+85.82

GENERAL NOTES:

1. ALL DEPTHS SPECIFIED ARE FULL COMPACTED DEPTHS.
2. REFERENCE WSDOT STD PLANS C-20.10-08, FOR GUARDRAIL PLACEMENT AND DETAILS.

KEY NOTES:

- 1 HMA CL 3/8 IN. PG 58H-22
- 2 CRUSHED SURFACING BASE COURSE
- 3 CONSTRUCTION GEOTEXTILE FOR SEPARATION
- 4 STRUCTURAL FILL

TDB PROJECT MANAGER	8/29/23 DATE
JTH DRAWN BY	8/29/23 DATE
SCM CHECKED BY	8/29/23 DATE

HORIZ. SCALE: NONE
VERT. SCALE: NONE
PROJECT ID: 1617
ROAD NO.: 20930
COMPUTER FILE: 03_C3.0.dwg



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WSP USA Inc.
1300 SW 5TH AVE,
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Portland, OR 97201
TEL: 503-872-4100



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CRP NO 801
FED. AID NO. PROTECT-2008(034)
FED. AID CONTRACT NO. TA-7638

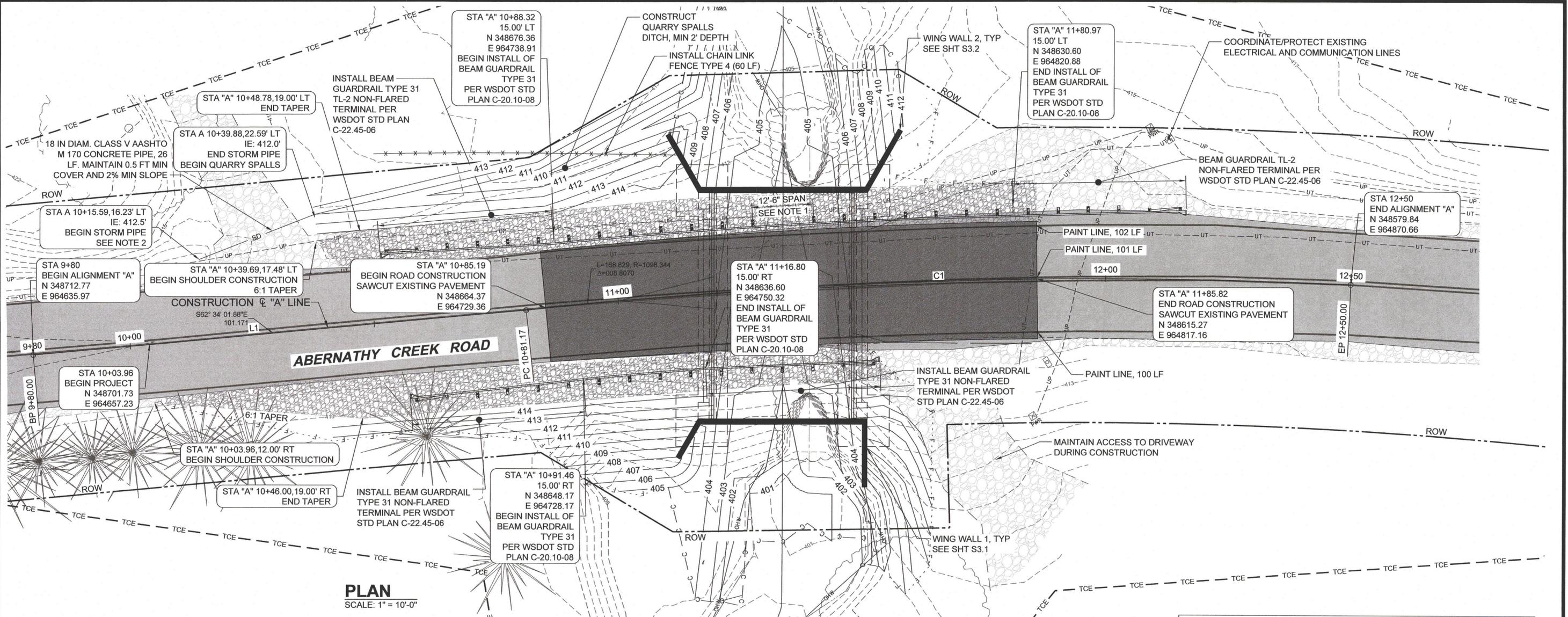
ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON

ROADWAY TYPICAL SECTIONS

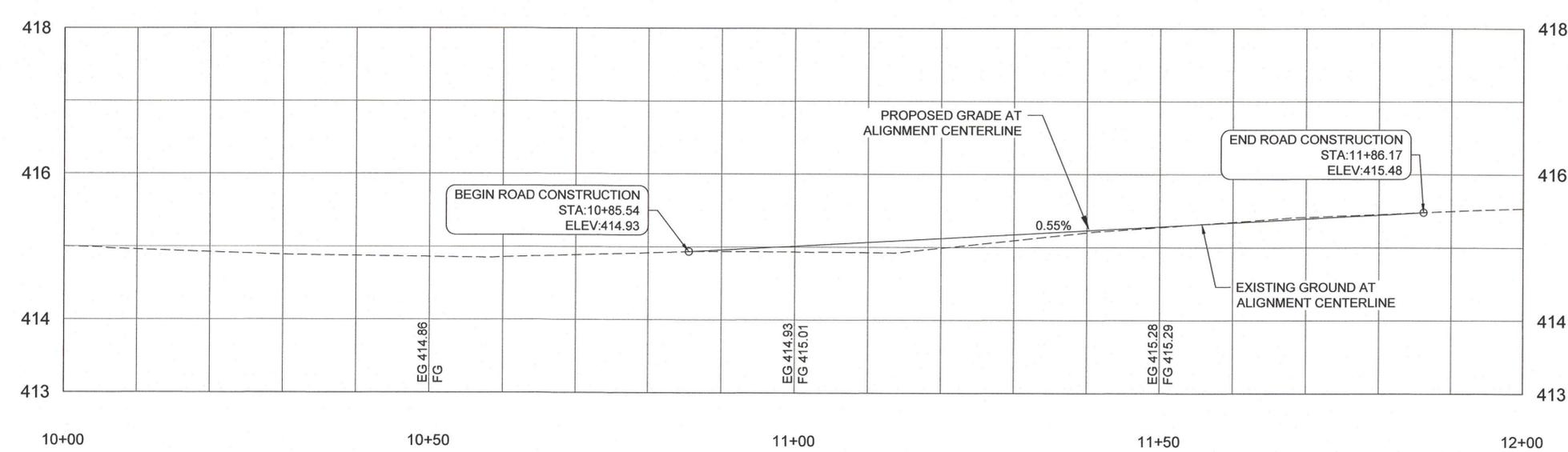
BID SET

SHEET
C3.0

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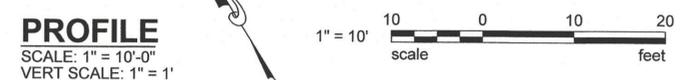


PLAN
SCALE: 1" = 10'-0"



CONSTRUCTION 'A' LINE ALIGNMENT GEOMETRY TABLE						
NUMBER	LENGTH	BEARING	RADIUS	DELTA	TANGENT	POINTS
L1	81.17'	S62° 34' 02"E				START = N:348703.56, E:964653.72 END = N:348666.16, E:964725.76
C1	168.83'		1098.34'	8.81	84.58	PI = N:348628.58, E:964801.5342

- GENERAL NOTES:**
- SEE WSDOT STD PLAN C20.40-09. HAND AUGER CRT POSTS 3 AND 4. PROVIDE MIN 6" CLEARANCE TO TOP OF CULVERT.
 - FLEXIBLE GUIDE POSTS SHALL BE INSTALLED EVERY THIRD SECTION OF GUARDRAIL INCLUDING TERMINALS AND TRANSITIONS, AT A SPACING NOT TO EXCEED 37.5'. GUIDE POSTS SHOULD BE ATTACHED TO GUARDRAIL POSTS. SEE STD M-40.10-03.



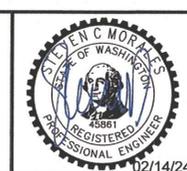
TDB PROJECT MANAGER	8/29/23
JTH DRAWN BY	8/29/23
SCM CHECKED BY	8/29/23

HORIZ. SCALE: 1" = 10'
VERT. SCALE: 1" = 1'
PROJECT ID: 1617
ROAD NO.: 20930
COMPUTER FILE: 03_C3.1.dwg

COWLITZ COUNTY
WASHINGTON

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KELSO, WASHINGTON 98626

WSP
WSP USA, Inc.
1300 SW 5TH AVE,
Suite 3100
Portland, OR 97201
TEL: 503-872-4100

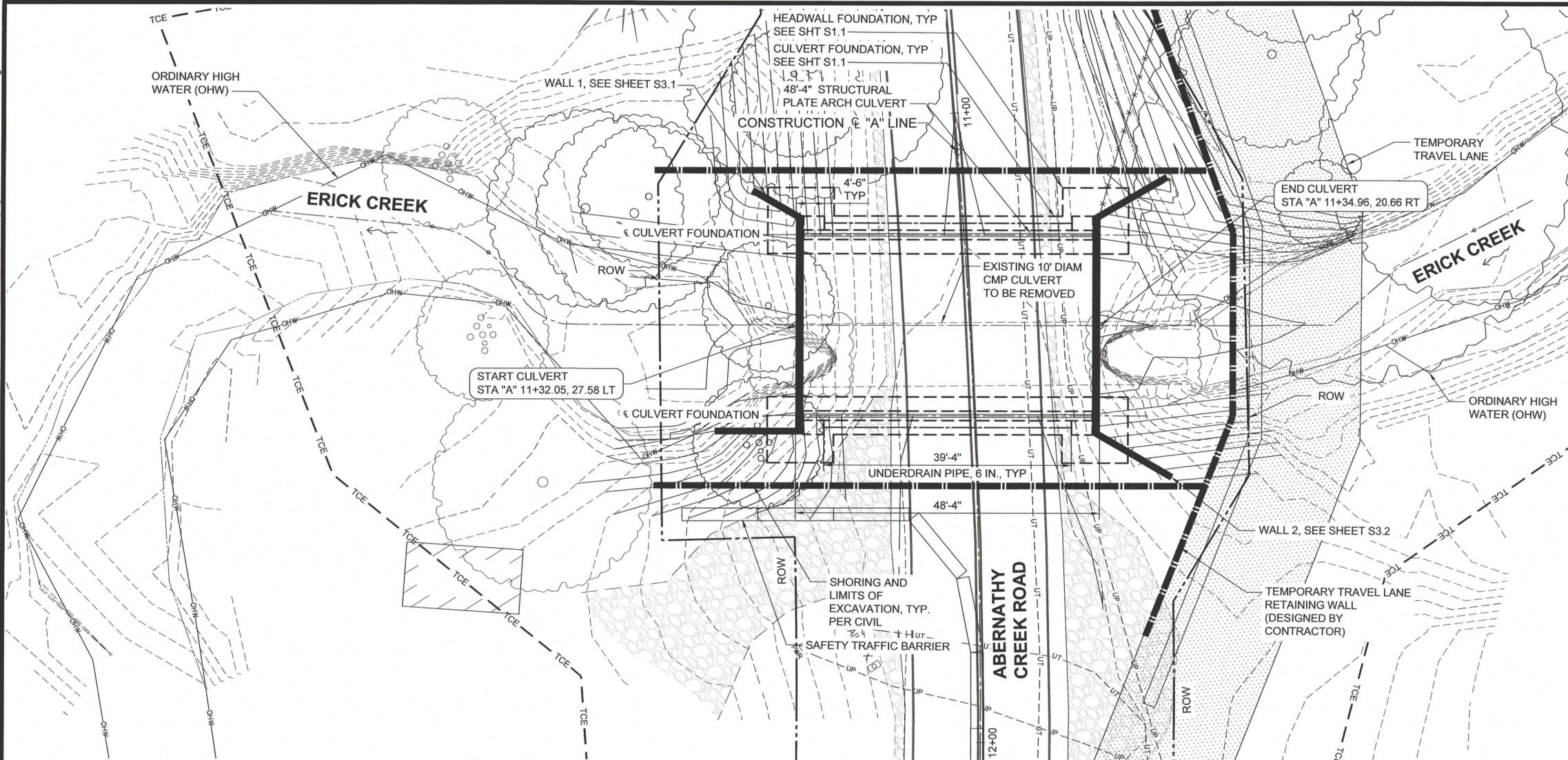


SEC 15 T 9 N R 4 W
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FED. AID NO. PROTECT-2008(034)
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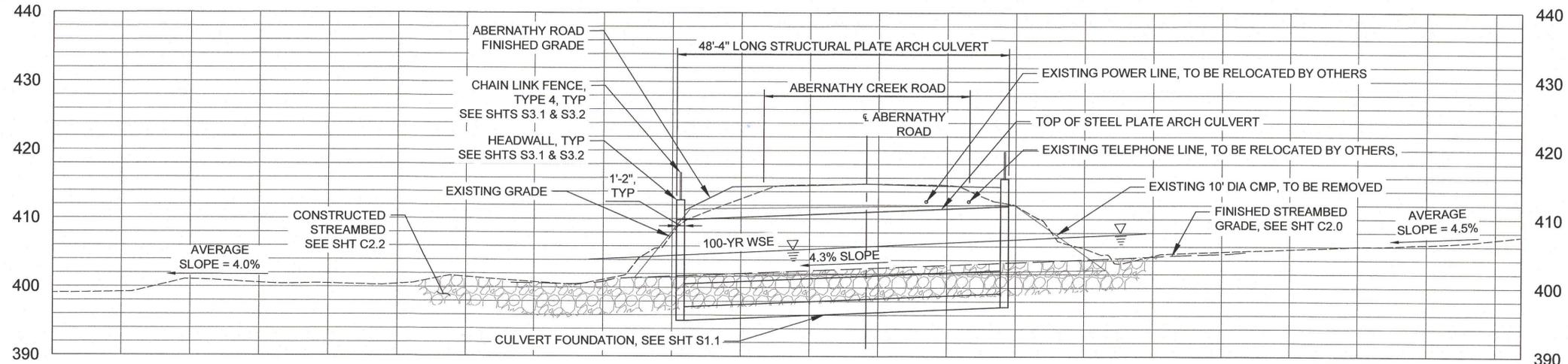
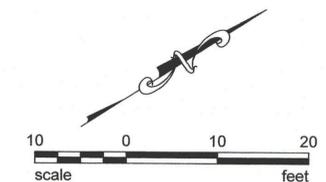
ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON

ROADWAY PLAN AND PROFILE

BID SET
SHEET **C3.1**
13 OF 26



PLAN
SCALE: 1" = 10'-0"



PROFILE
SCALE: 1" = 10'-0"

Last Saved by: USJH713255 on: Feb 14, 2024 10:30 AM File: C:\Users\USJH713255\WSP 0385\Portland CADD Projects - PDX CADD Projects\0301\892\02\05\CADD\Drawings\04_S1.0.dwg

TDB PROJECT MANAGER	8/29/23 DATE
JGH DRAWN BY	8/29/23 DATE
SCB CHECKED BY	8/29/23 DATE

HORIZ. SCALE: 1" = 10'
VERT. SCALE: 1" = 10'
PROJECT ID: 1617
ROAD NO. : 20930
COMPUTER FILE: 04_S1.0.dwg



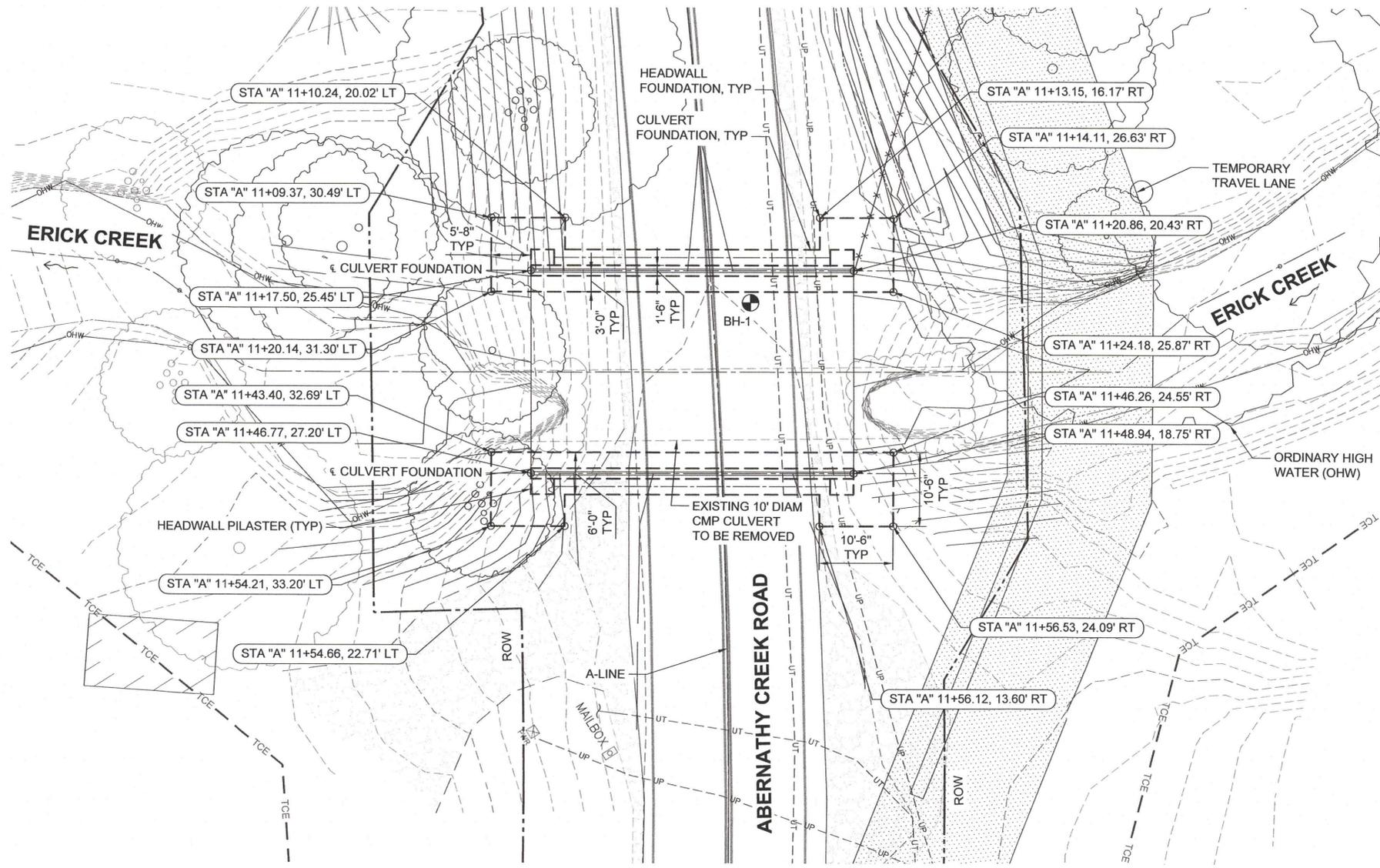
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1600 13TH AVENUE SOUTH
KELSO, WASHINGTON 98626



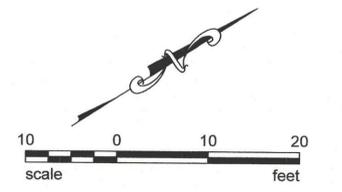
SEC 15 T 9 N R 4 W
CRP NO 801
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ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON
CULVERT PLAN AND PROFILE

BID SET
SHEET **S1.0**
14 OF 26



FOUNDATION PLAN
SCALE: 1" = 10'-0"



TDB	8/29/23
PROJECT MANAGER	DATE
JGH	8/29/23
DRAWN BY	DATE
SCB	8/29/23
CHECKED BY	DATE

HORIZ. SCALE: 1" = 10'
VERT. SCALE: NONE
PROJECT ID: 1617
ROAD NO. : 20930
COMPUTER FILE: 04_S1.1.dwg

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WASHINGTON

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ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON

FOUNDATION LAYOUT

BID SET
SHEET **S1.1**
15 OF 26

CODES AND REFERENCES:

1. 2023 STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, WASHINGTON STATE DEPARTMENT OF TRANSPORTATION.
2. GEOTECHNICAL REPORT, PREPARED BY FOUNDATION ENGINEERING, INC. DATED AUGUST 25th, 2016, PROJECT #2162019.
3. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 9TH EDITION, 2020
4. ASSUMED LOADING:
A. HL-93 LOADING

CONSTRUCTION NOTES

1. ALL CONCRETE FOOTINGS SHALL BEAR ON AND BE A SMOOTH AND UNDISTURBED OR COMPACTED NATIVE SAND SURFACE PER GEOTECHNICAL REPORT.
2. THE GEOTECHNICAL ENGINEER SHALL REVIEW THE EXCAVATION PRIOR TO THE PLACEMENT OF STRUCTURAL CONCRETE.

CONCRETE AND REINFORCING STEEL

1. CONCRETE STRENGTH (28 DAY) 5 KSI
A. REINFORCING INSPECTION ALONG WITH CYLINDER TESTS ARE REQUIRED PER 6-02 OF WSDOT SPECIFICATIONS.
B. THE CONTRACTOR SHALL PROVIDE A MIX DESIGN PER 6-02.3(2)A OF WSDOT SPECIFICATIONS.
2. REINFORCING STEEL
A. #3 AND SMALLER (ASTM A615, GRADE 40) Fy=40,000 psi
B. #4 AND LARGER (ASTM A615, GRADE 60) Fy=60,000 psi
3. MAKE HORIZONTAL BARS CONTINUOUS AROUND CORNERS OR PROVIDE CORNER BARS.
4. PROVIDE COVER FOR REINFORCING AS SPECIFIED AS FOLLOWS:
A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3 IN.
B. CONCRETE EXPOSED TO EARTH AND WEATHER 2IN.
5. WHERE SPLICES IN REINFORCING ARE REQUIRED, THEY SHALL BE LAPPED AND STAGGERED SUCH THAT NO MORE THAN ONE-HALF OF THE BARS ARE LAP SPLICED WITHIN A REQUIRED LAP LENGTH. THESE SHALL MEET THE REQUIREMENTS OF A CLASS "B" SPLICE, GRADE 60 AND BE AS FOLLOWS:

BAR SIZE	TOP BARS*	OTHER BARS
#3 THROUGH #5	USE 22"	USE 18"
#6	USE 26"	USE 20"
#7	USE 38"	USE 30"
#8	USE 42"	USE 34"
#9	USE 54"	USE 42"
#10	USE 68"	USE 52"

* TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.

6. CHAMFER ALL EXPOSED CONCRETE EDGES 3/4" UNLESS NOTED OTHERWISE.

STRUCTURAL PLATE ARCH CULVERT

1. CONTRACTOR SHALL SUBMIT PLATE ARCH SHOP DRAWINGS AND DESIGN CALCULATIONS FOR REVIEW. STRUCTURAL PLATE ARCH SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL BEAR THE SEAL AND SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF WASHINGTON, PERTAINING TO THE PLATE ARCH STRUCTURE AND ITS CONNECTIONS.
2. DRAWINGS SHALL CLEARLY SHOW THE DIMENSIONS OF ALL COMPONENTS, MATERIALS, THICKNESS AND SPECIAL DETAILS. DRAWINGS SHALL ALSO DETAIL THE ASSEMBLY PROCEDURE, BACKFILL SPECIFICATIONS AND BACKFILL PROCEDURES TO BE FOLLOWED. PLATE ARCH MANUFACTURER SHALL PROVIDE THEIR CORRUGATED STANDARD LENGTH TO OBTAIN MINIMUM CULVERT LENGTH.
3. THE CULVERT GEOMETRY PRESENTED IN THE PLANS IS BASED ON THE CONTECH BRIDGECOR BOX CULVERT 28'-2" SPAN X 8'-10" RISE STEEL PLATE CULVERT. AN EQUIVALENT PRODUCT MAY BE SUBMITTED FOR ENGINEER'S APPROVAL AT THE CONTRACTOR'S OPTION.
4. DESIGN CALCULATIONS SHALL BE BASED ON HL-93 TRUCK LOADING, 5'-2" FEET OF COVER AT CROWN, AND CONFORMING TO WSDOT SPECIFICATIONS AND PROJECT SPECIAL PROVISIONS.
5. GAUGE OF STEEL SHALL BE AT LEAST ONE STANDARD GAUGE THICKER THAN THE MINIMUM THICKNESS REQUIRED BY DESIGN.
6. DESIGN UNIT WEIGHT OF STRUCTURAL FILL SHALL BE 135 PCF.
7. ALL STRUCTURAL PLATE SHALL BE ZINC COATED AFTER FABRICATION.

STRUCTURAL PLATE ARCH CULVERT FOUNDATIONS

1. PLATE ARCH STEM WALL AND FOUNDATION HAS BEEN DESIGNED TO SUPPORT THE FOLLOWING UNFACTORED LOADS:

VERTICAL DEAD = 11.4 K/FT
LIVE = 5.3 K/FT

HORIZONTAL DEAD = 3.0 K/FT
LIVE = 1.4 K/FT

(NOTE: HORIZONTAL LOAD REPRESENTS THRUST DIRECTED AWAY FROM CL OF THE CULVERT)

2. CONCRETE FOUNDATION SHALL BE BROOM FINISHED.

TDB	8/29/23
PROJECT MANAGER	DATE
JGH	8/29/23
DRAWN BY	DATE
SCB	8/29/23
CHECKED BY	DATE

HORIZ. SCALE: NONE
VERT. SCALE: NONE
PROJECT ID: 1617
ROAD NO. : 20930
COMPUTER FILE: 04_S2.0.dwg



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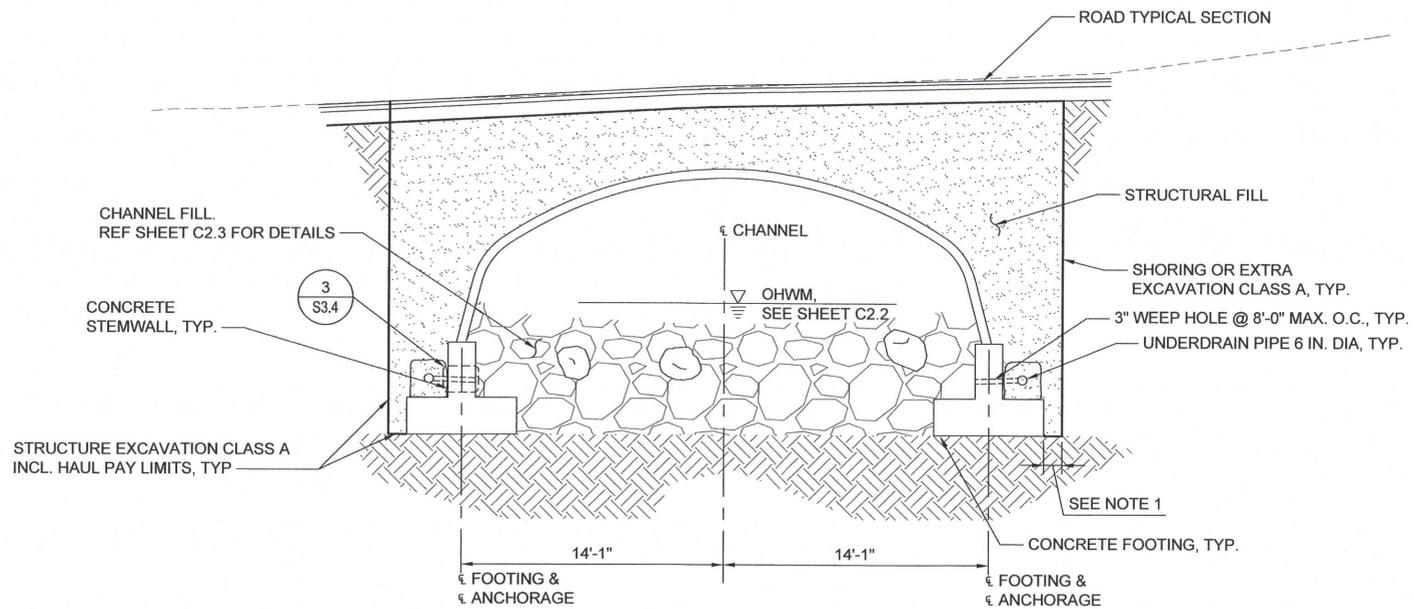


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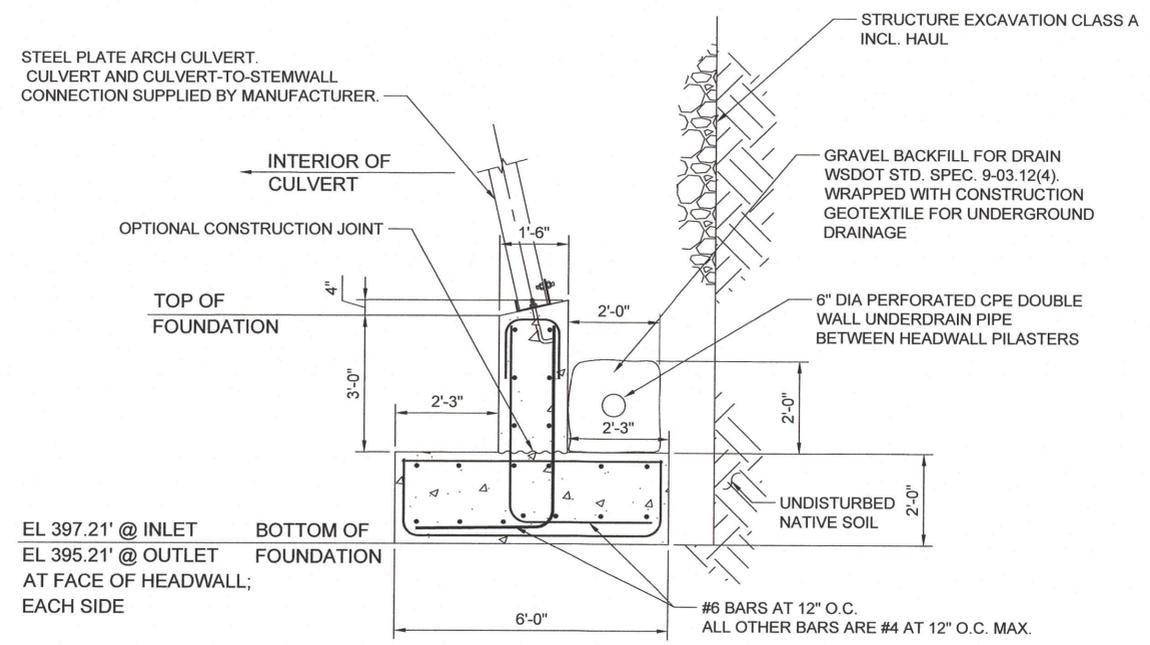
SEC 15 T 9 N R 4 W
CRP NO 801
FED. AID NO. PROTECT-2008(034)
FED. AID CONTRACT NO. TA-7638

ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON
FOUNDATION NOTES



TYPICAL SECTION
SCALE: NOT TO SCALE

- NOTES:
1. STRUCTURAL SHORING HORIZONTAL MEASUREMENT AND PLY LIMITS ARE ASSUMED TO BE PLACED 1'-0" OUTSIDE FURTHEST EDGE OF EACH SIDE OF WALL 2 AND RUNNING PARALLEL TO CENTERLINE OF CHANNEL.



TYPICAL CULVERT FOUNDATION SECTION
SCALE: NOT TO SCALE

TDB PROJECT MANAGER	8/29/23
JTH DRAWN BY	8/29/23
SCB CHECKED BY	8/29/23

HORIZ. SCALE: NONE
VERT. SCALE: NONE
PROJECT ID: 1617
ROAD NO. : 20930
COMPUTER FILE: 04_S3.0.dwg

COWLITZ COUNTY
WASHINGTON

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KELSO, WASHINGTON 98626

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STUART C. BENNING
STATE OF WASHINGTON
4178
PROFESSIONAL ENGINEER

SEC 15 T 9 N R 4 W
CRP NO 801

FED. AID NO. PROTECT-2008(034)
FED. AID CONTRACT NO. TA-7638

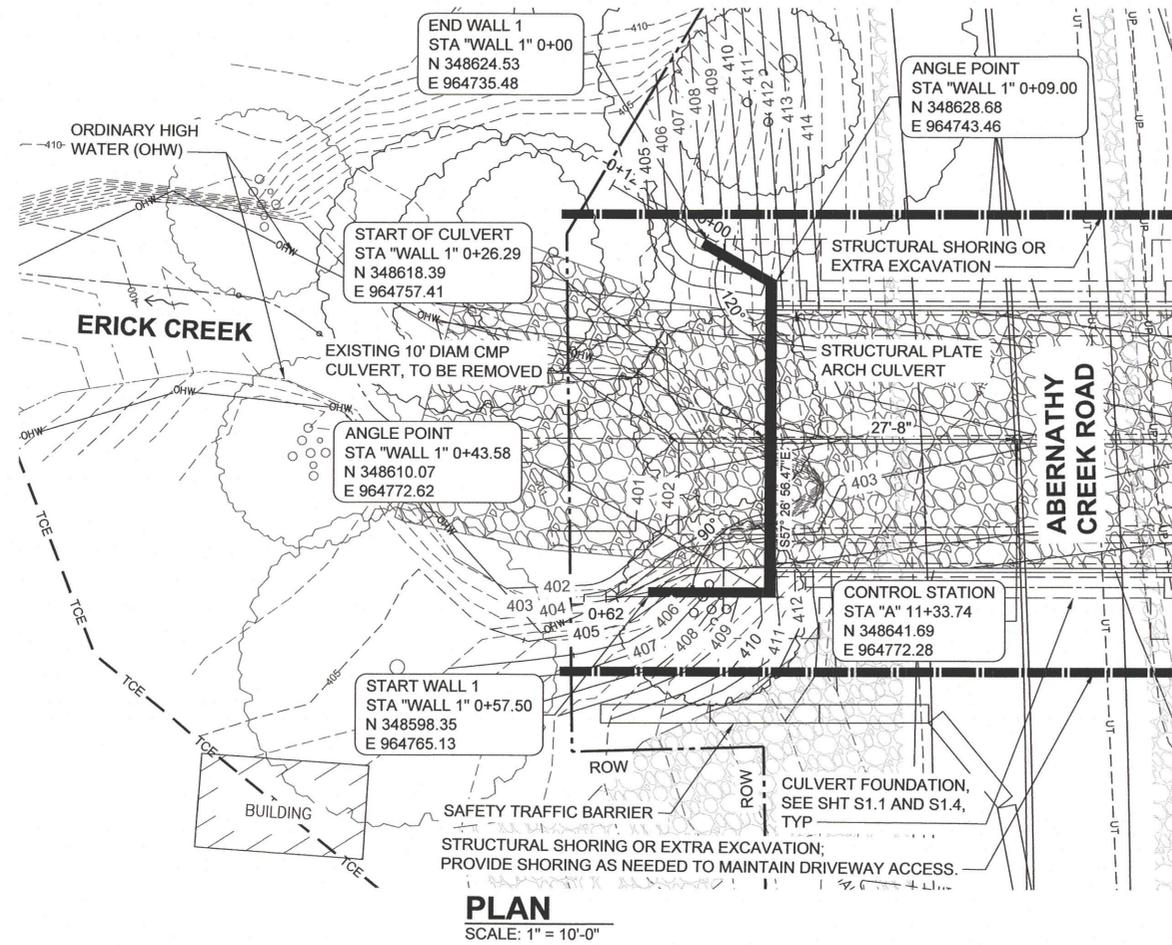
ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON

FOUNDATION SECTIONS AND DETAILS

BID SET

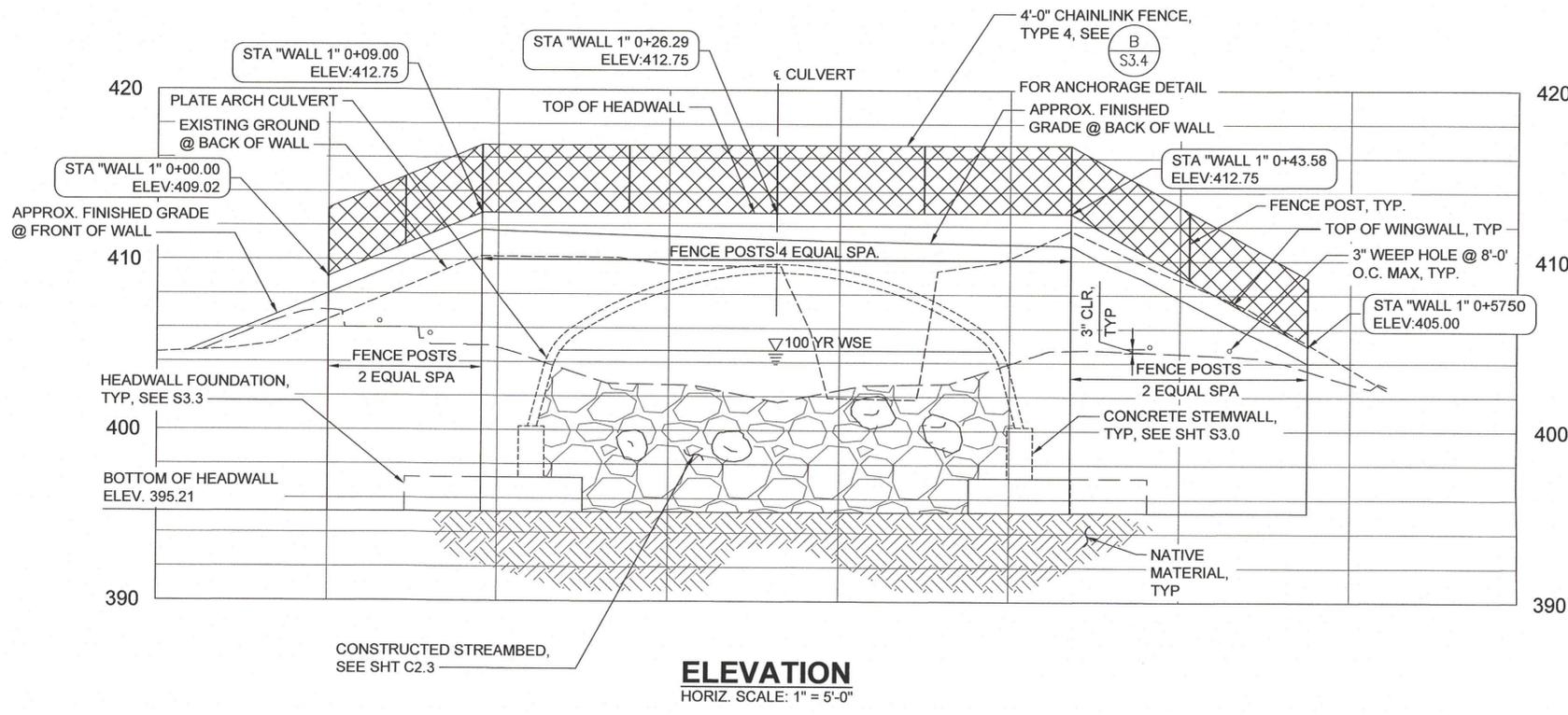
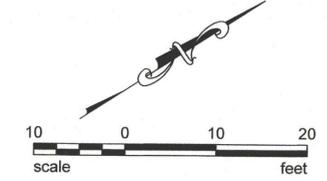
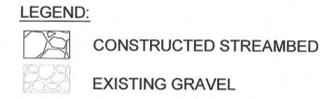
SHEET **S3.0**

17 OF 26



PLAN
SCALE: 1" = 10'-0"

- NOTES:**
1. CONTRACTOR TO CONSTRUCT STREAMBED CHANNEL WITHIN CULVERT PER SHEETS C2.0 THROUGH C2.3.
 2. REFER TO EC SHEETS FOR WORK AREA ISOLATION PLAN AND DETAILS.
 3. REFER TO SHEETS G3.1 THROUGH G3.3 FOR CONSTRUCTION PHASING.
 4. SEE CULVERT INLET AND OUTLET ELEVATION DETAILS SHEET C2.2.



ELEVATION
HORIZ. SCALE: 1" = 5'-0"

TDB PROJECT MANAGER	8/29/23 DATE
JGH DRAWN BY	8/29/23 DATE
SCB CHECKED BY	8/29/23 DATE

HORIZ. SCALE: AS SHOWN
VERT. SCALE: 1" = 5'
PROJECT ID: 1617
ROAD NO.: 20930
COMPUTER FILE: 04_S3.1.dwg



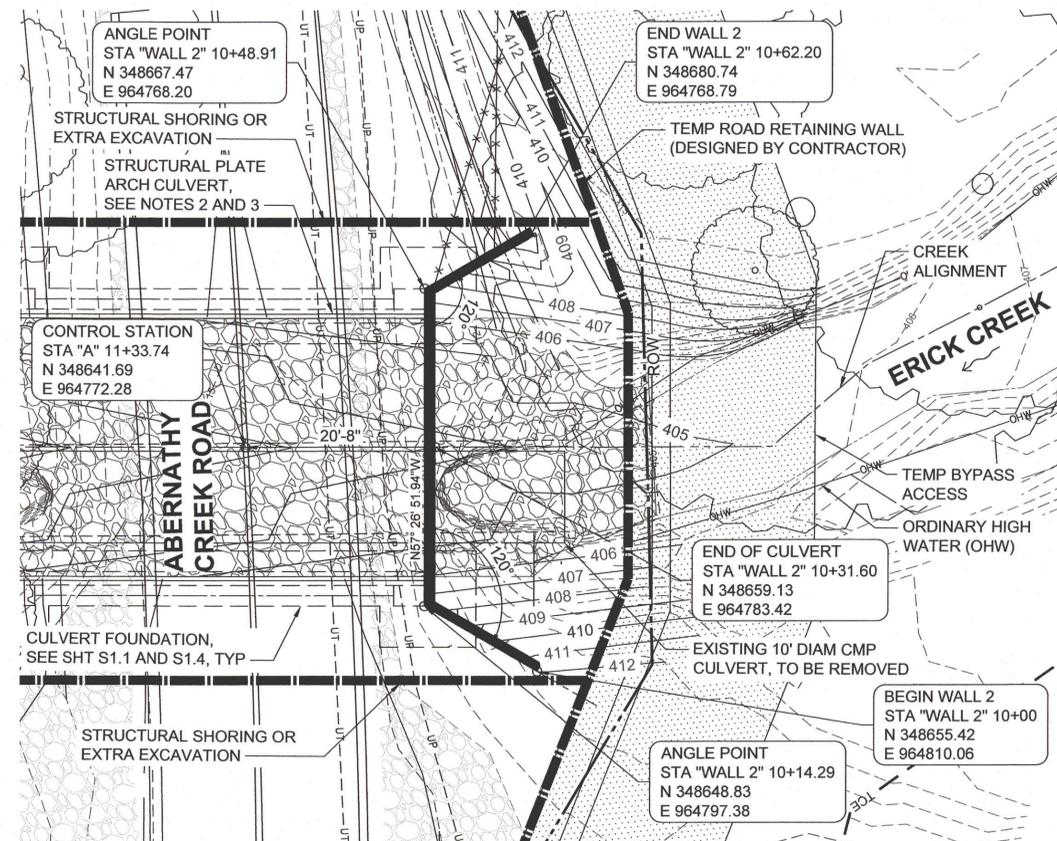
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CRP NO 801
FED. AID NO. PROTECT-2008(034)
FED. AID CONTRACT NO. TA-7638

ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON
WALL 1 PLAN AND ELEVATION

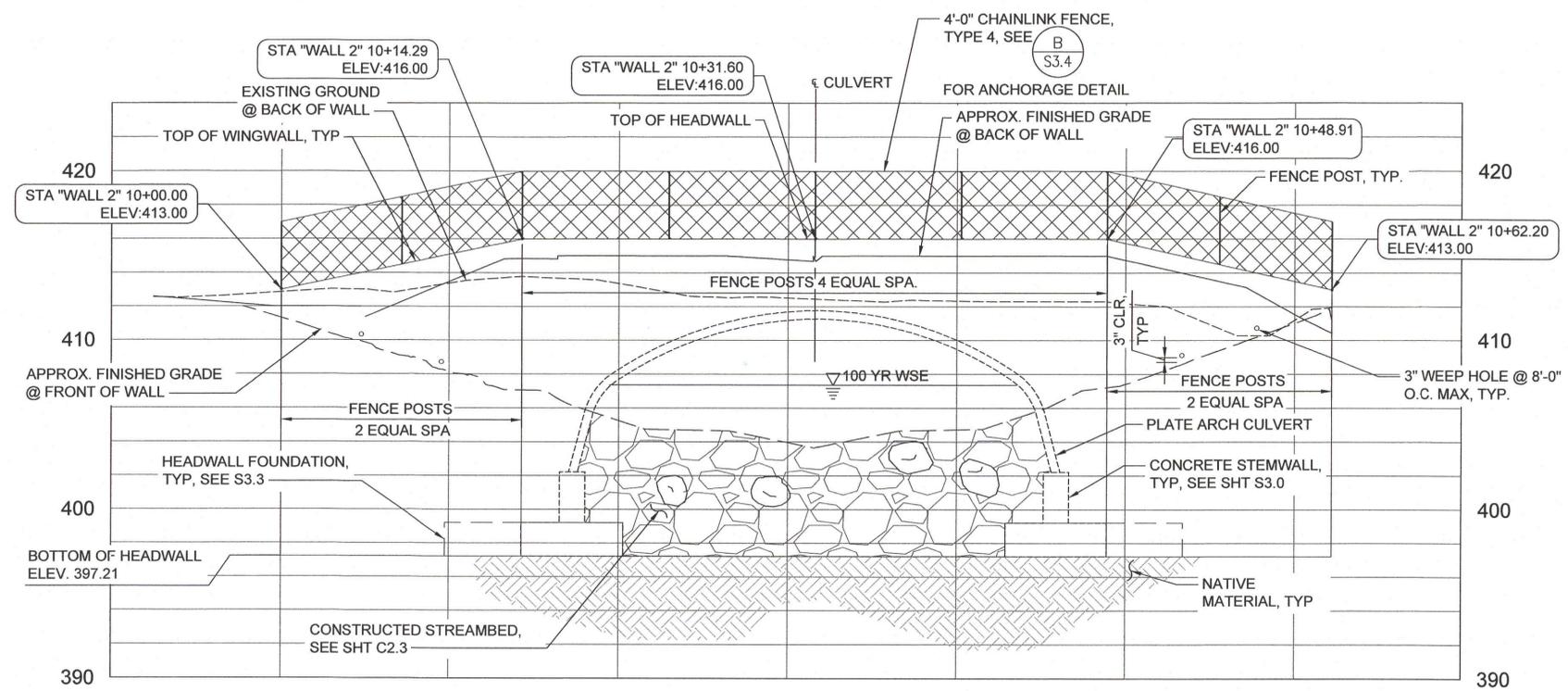
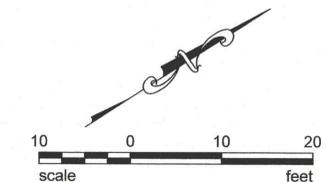
BID SET
SHEET **S3.1**
18 OF 26



PLAN
SCALE: 1" = 10'-0"

- NOTES:**
1. CONTRACTOR TO CONSTRUCT STREAMBED CHANNEL WITHIN CULVERT PER SHEETS C2.0 THROUGH C2.3.
 2. REFER TO EC SHEETS FOR WORK AREA ISOLATION PLAN AND DETAILS.
 3. REFER TO SHEETS G3.1 THROUGH G3.3 FOR CONSTRUCTION PHASING.
 4. SEE CULVERT INLET AND OUTLET ELEVATION DETAILS SHEET C2.2.

- LEGEND:**
- CONSTRUCTED STREAMBED
 - EXISTING GRAVEL



ELEVATION
HORIZ. SCALE: 1" = 5'-0"

TDB PROJECT MANAGER	8/29/23 DATE
JGH DRAWN BY	8/29/23 DATE
SCB CHECKED BY	8/29/23 DATE

HORIZ. SCALE: AS SHOWN
VERT. SCALE: 1" = 5'
PROJECT ID: 1617
ROAD NO.: 20930
COMPUTER FILE: 04_S3.2.dwg



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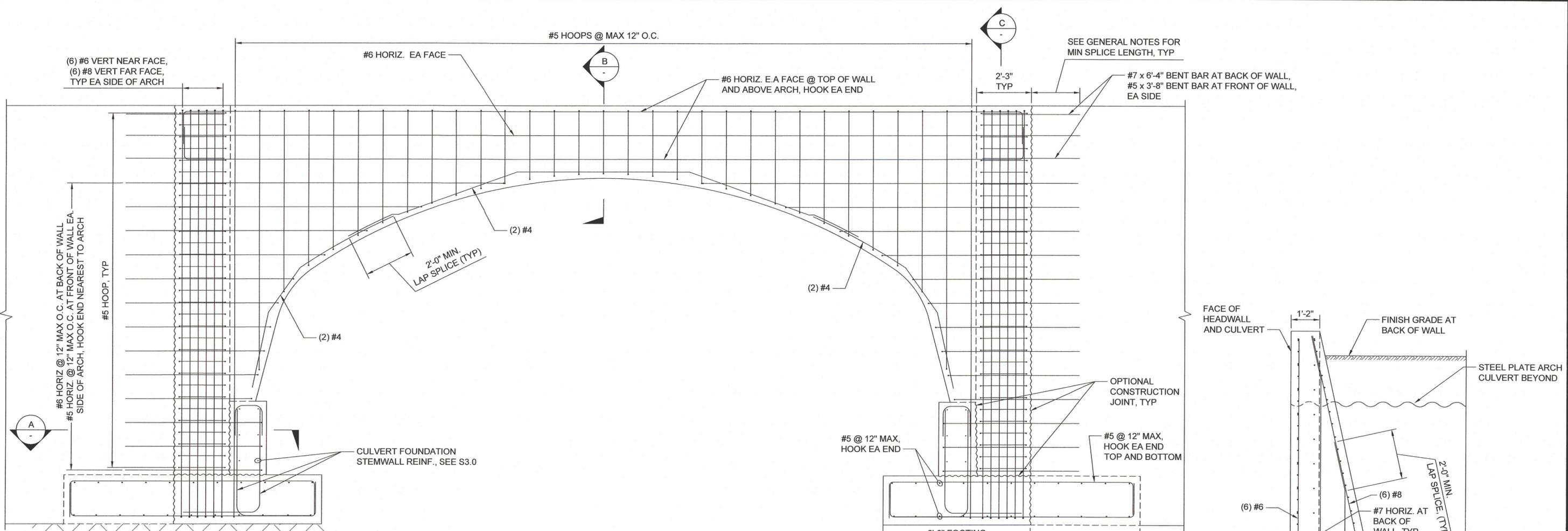
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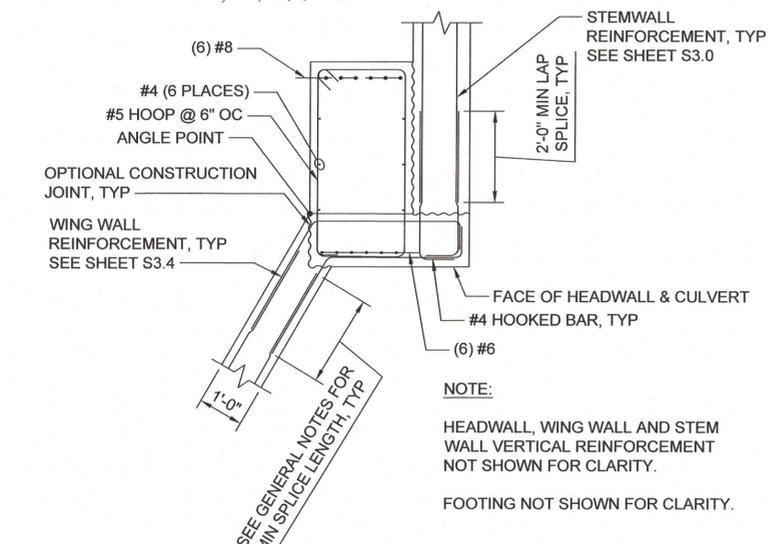
ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON
WALL 2 PLAN AND ELEVATION

BID SET
SHEET
S3.2
19 OF 26



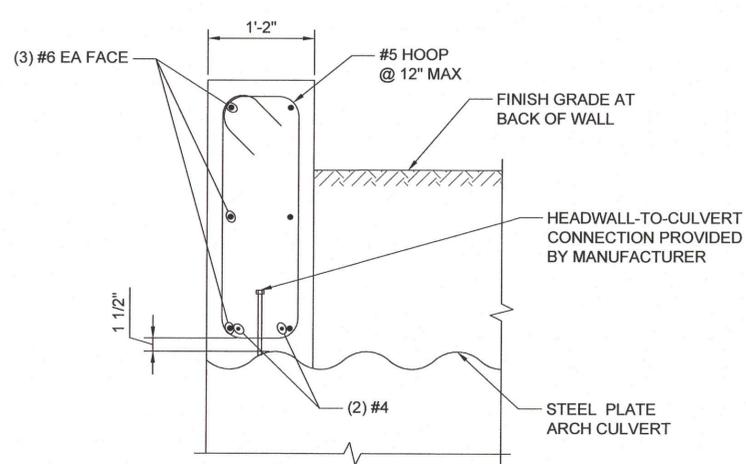
ELEVATION - TYPICAL HEADWALL

PIPE, ANCHORS, AND FENCE NOT SHOWN FOR CLARITY.
 SCALE: 1" = 2'



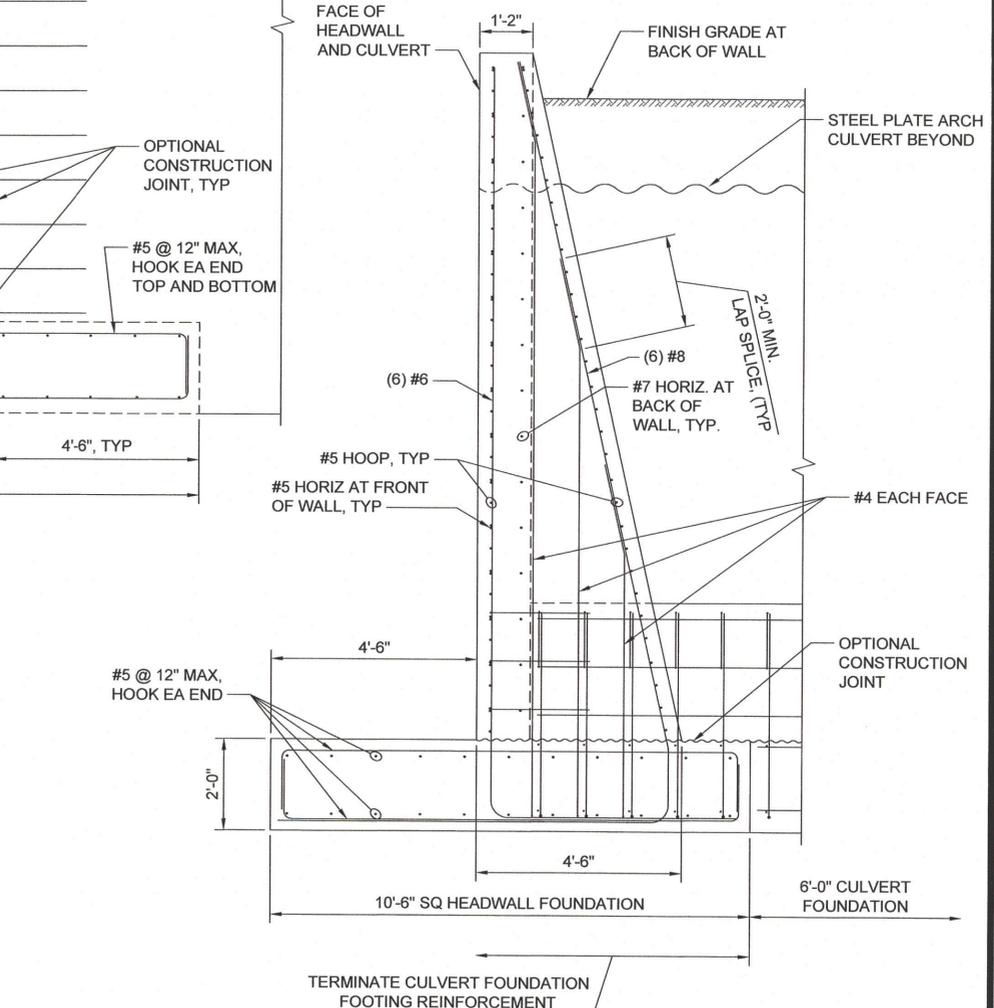
SECTION - HEADWALL PILASTER

SCALE: 1" = 2'



SECTION - HEADWALL BEAM

SCALE: 1" = 1'



SECTION - HEADWALL PILASTER AND FOOTING

SCALE: 1" = 2'

TDB PROJECT MANAGER	8/29/23
JGH DRAWN BY	8/29/23
SCB CHECKED BY	8/29/23

HORIZ. SCALE: AS SHOWN
VERT. SCALE: NONE
PROJECT ID: 1617
ROAD NO.: 20930
COMPUTER FILE: 04_S3.3.dwg



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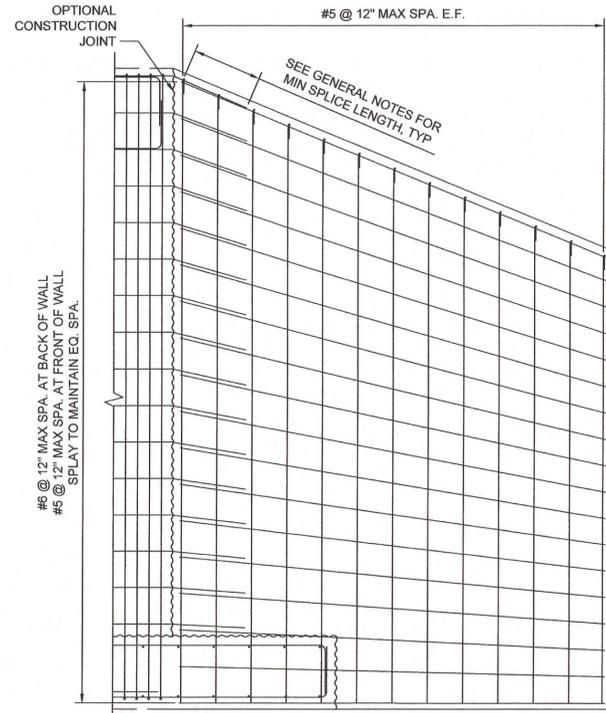
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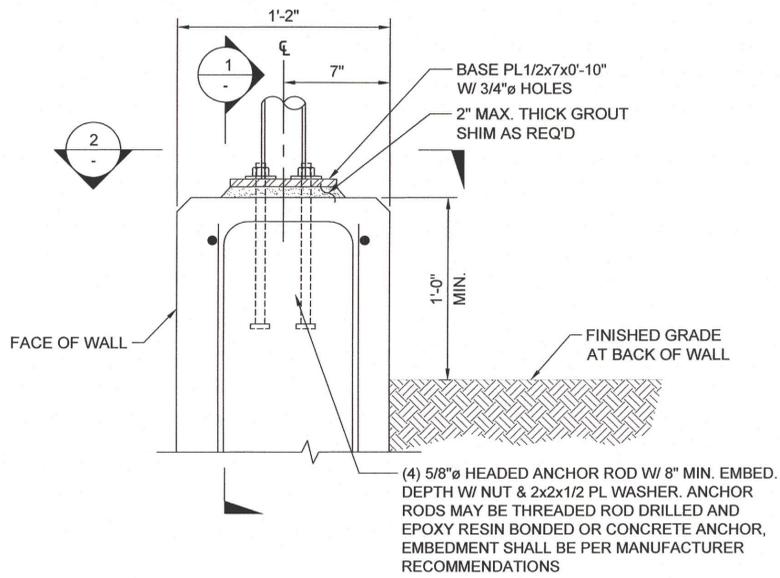
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 CRP NO 801
 FED. AID NO. PROTECT-2008(034)
 FED. AID CONTRACT NO. TA-7638

ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON
HEADWALL AND WINGWALL DETAILS - SHEET 1

BID SET
 SHEET **S3.3**
 20 OF 26

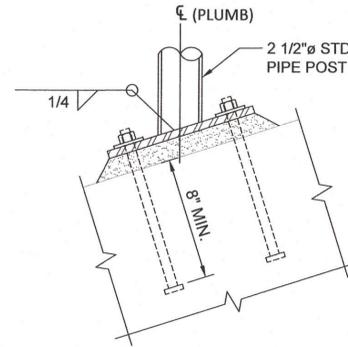


A DEVELOPED ELEVATION - TYPICAL WINGWALL
SCALE: 1" = 2'

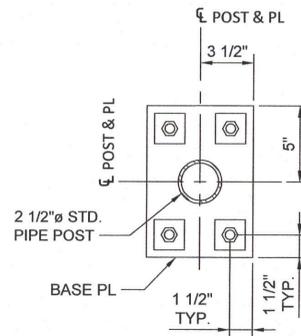


B SECTION - FENCE POST ANCHORAGE
SCALE: 2" = 1'

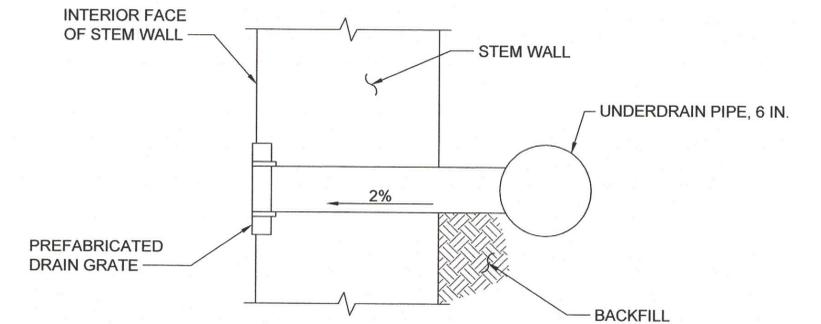
S3.1, S3.2



1 VIEW - FENCE POST ANCHORAGE
SCALE: 2" = 1'



2 DETAIL - BASE PLATE
SCALE: 2" = 1'



3 DETAIL - WEEP HOLE DRAIN
SCALE: 2" = 1'
NOTE: UNDERDRAIN WEEP HOLE DETAIL SHOWN, WINGWALL WEEP HOLE SIMILAR

TDB PROJECT MANAGER	8/29/23 DATE
JGH DRAWN BY	8/29/23 DATE
SCB CHECKED BY	8/29/23 DATE

HORIZ. SCALE: AS SHOWN
VERT. SCALE: NONE
PROJECT ID: 1617
ROAD NO.: 20930
COMPUTER FILE: 04_S3.4.dwg



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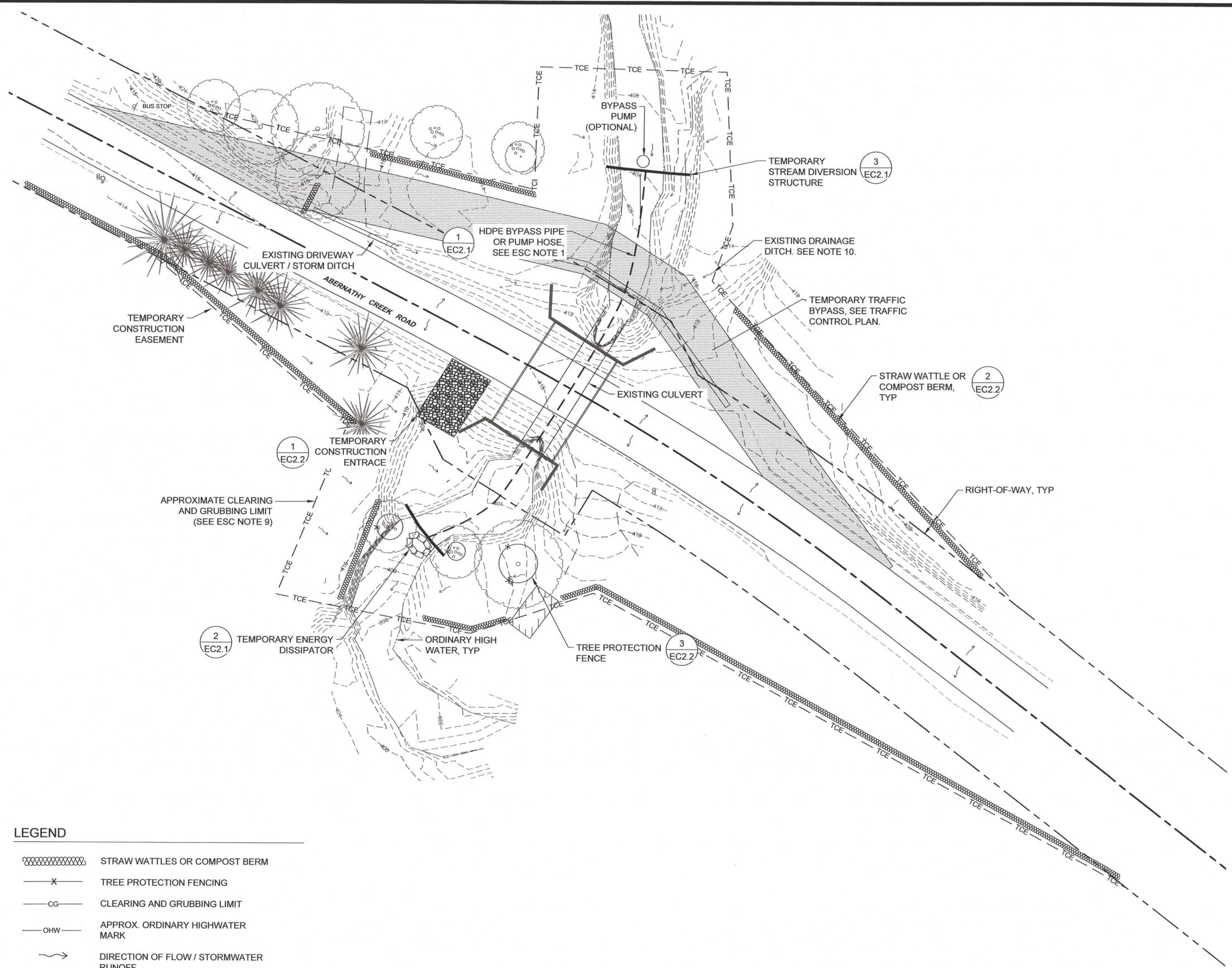
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FED. AID CONTRACT NO. TA-7638

ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON
HEADWALL AND WINGWALL DETAILS - SHEET 2

BID SET
SHEET **S3.4**
21 OF 26

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CONSTRUCTION NOTES

1. DEVELOP WORK AREA ISOLATION PLAN PER SPECIFICATIONS.
2. INSTALL TREE PROTECTION PER DETAIL ON SHEET EC2.2.
3. INSTALL WATTLES PER WSDOT STANDARD PLAN I-30.30-02.
4. REMOVE ALL CONSTRUCTION ENTRANCES AND STAGING AREA MATERIALS AFTER CONSTRUCTION IS COMPLETE.
5. SCARIFY SOILS IN ALL DISTURBED AREAS TO A 12-INCH DEPTH. HYDROSEED AND MULCH (UNLESS OTHERWISE NOTED) THESE AREAS PER SPECIFICATIONS.
6. DEWATER WITHIN WORK AREA PER DETAILS, SHEET EC2.1.

EROSION AND SEDIMENT CONTROL (ESC) NOTES

1. THIS DRAWING IS FOR GENERAL GUIDANCE ONLY. IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DOES NOT LEAVE THE SITE. THE CONTRACTOR SHALL USE ALL AVAILABLE MEANS TO ACHIEVE THAT RESULT.
2. CONTRACTOR SHALL SUBMIT TO THE OWNER'S REPRESENTATIVE A TESC PLAN FOR APPROVAL. APPROVAL OF TESC PLAN DOES NOT CONSTITUTE APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN.
3. THE TESC FACILITIES AND LIMITS SHOWN PERTAIN TO THE NEW CULVERT INSTALLATION AND THE IMMEDIATE AREA ADJACENT. THE CONTRACTOR SHALL REFER TO THE ROADWAY AND CIVIL SHEETS FOR ADDITIONAL REQUIREMENTS.
4. THE IMPLEMENTATION OF THE TESC PLAN AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT AND UPGRADING OF THE TESC PLAN FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION LANDSCAPING IS ESTABLISHED.
5. THE TESC PLAN FACILITIES SHOWN ON THIS SHEET MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS OR VIOLATE APPLICABLE WATER STANDARDS.
6. THE TESC PLAN FACILITIES SHOWN ON THIS SHEET ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE TESC PLAN FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
7. THE TESC PLAN FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTION.
8. AS NEEDED, PLACE STRAW WATTLES WITHIN EXCAVATED CHANNEL AREAS TO STABILIZE SLOPES, THE EXTENT OF WHICH IS NOT SHOWN ON THESE PLANS FOR CLARITY.
9. NO MEASUREMENT FOR CLEARING AND GRUBBING WILL BE MADE WITHIN ORDINARY HIGH WATER OR EXISTING ASPHALT.
10. THE CONTRACTOR SHALL MONITOR EXISTING DRAINAGE DITCH AND MANAGE WATER AS NEEDED DURING CONSTRUCTION.

LEGEND

- STRAW WATTLES OR COMPOST BERM
- TREE PROTECTION FENCING
- CLEARING AND GRUBBING LIMIT
- APPROX. ORDINARY HIGH WATER MARK
- DIRECTION OF FLOW / STORMWATER RUNOFF

GLW PROJECT MANAGER	7/14/2023 DATE
SW/AMF DRAWN BY	7/14/2023 DATE
GLW CHECKED BY	7/14/2023 DATE

HORIZ. SCALE: AS SHOWN
VERT. SCALE: NONE

PROJECT ID: 1617
ROAD NO.: 20930
COMPUTER FILE: EC1.1.dwg

DEPARTMENT OF PUBLIC WORKS

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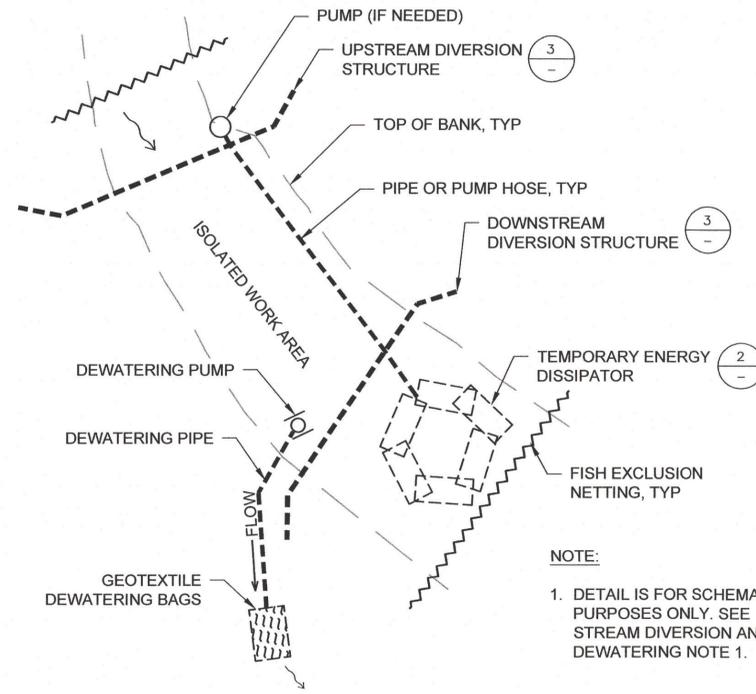
ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON

TEMPORARY STREAM DIVERSION AND EROSION CONTROL PLAN

BID SET

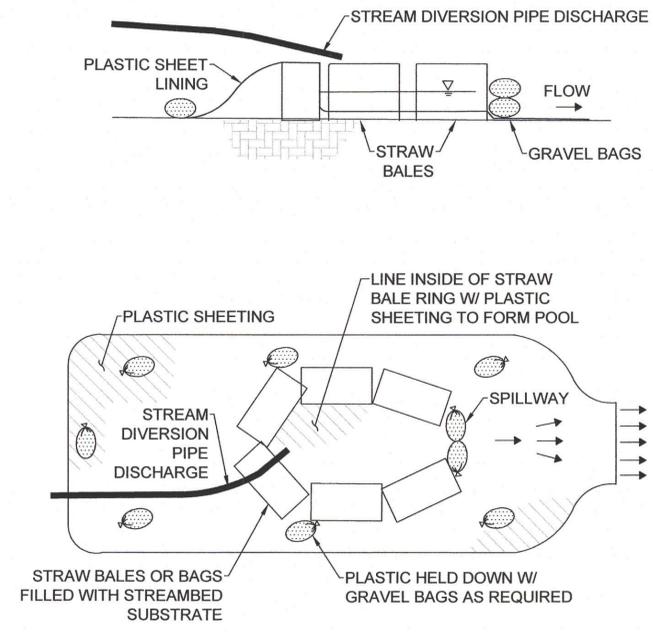
SHEET
EC1.1

22 OF 26



NOTE:
1. DETAIL IS FOR SCHEMATIC PURPOSES ONLY. SEE STREAM DIVERSION AND DEWATERING NOTE 1.

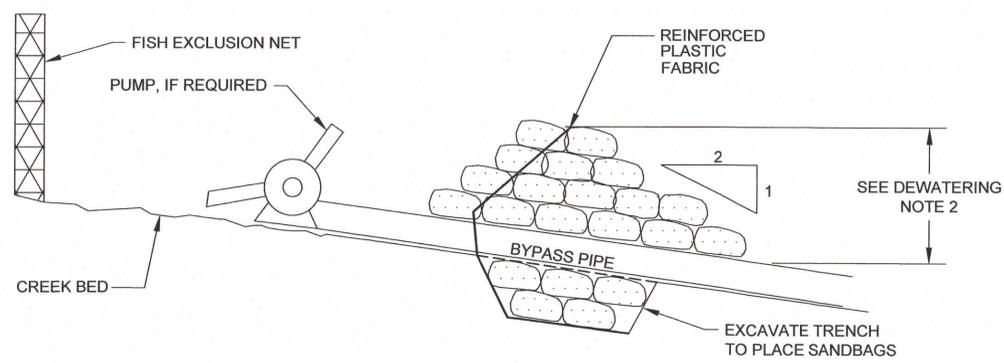
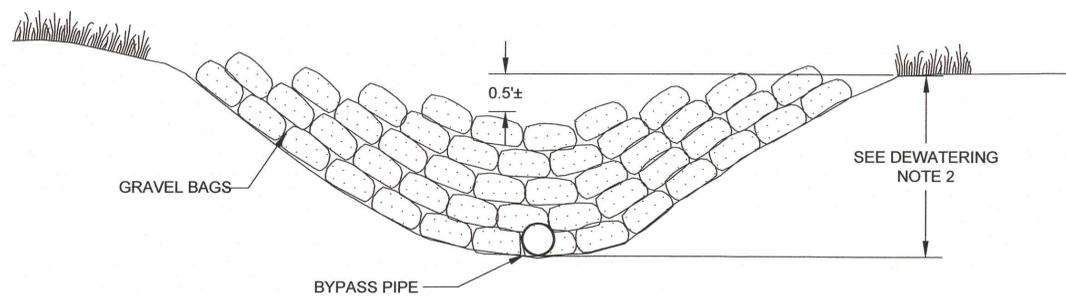
TEMPORARY STREAM DIVERSION PLAN 1
Scale: NTS EC1.1



TEMPORARY ENERGY DISSIPATOR 2
Scale: NTS EC1.1

STREAM DIVERSION AND DEWATERING NOTES

1. THE STREAM DIVERSION AND DEWATERING PLAN SHOWN IS SUGGESTED ONLY. THE CONTRACTOR SHALL PREPARE AND SUBMIT A TEMPORARY STREAM DIVERSION PLAN PER THE CONTRACT SPECIFICATIONS FOR REVIEW BY THE ENGINEER. THE CONTRACTOR SHALL NOT WORK WITHIN THE OHW OF ERICK CREEK WITHOUT AN APPROVED TEMPORARY STREAM DIVERSION PLAN.
2. THE DIVERSION STRUCTURES SHALL BE HIGH ENOUGH TO PREVENT OVERTOPPING AND ALLOW ENOUGH FREEBOARD FOR INCLEMENT WATER CONDITIONS. STRUCTURE HEIGHTS AND MATERIALS SHALL BE INCLUDED IN THE CONTRACTORS TEMPORARY STREAM DIVERSION PLAN. GRAVEL BAGS USED IN DIVERSION STRUCTURES SHALL BE FILLED WITH ROUNDED AGGREGATE INSTEAD OF SAND.
3. THE DIVERSION SYSTEM SHALL BE CAPABLE OF HANDLING THE 2-YEAR RETURN PERIOD FLOW IN ERICK CREEK DURING THE CONSTRUCTION PERIOD, ANTICIPATED JULY TO SEPTEMBER. A FLOW SUMMARY TABLE IS PROVIDED ON THIS SHEET FOR TYPICAL CONDITIONS THAT MAY BE EXPECTED DURING THIS PERIOD. THE 2-YEAR PEAK FLOW HAS NOT BEEN DETERMINED AND THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING THE SYSTEM TO HANDLE PEAK FLOW, AS DESCRIBED IN PROJECT PERMITS. PROBABLE DISCHARGE VALUES PROVIDED ARE BASED ON LOCAL ECOLOGY FLOW GAGING ON ABERNATHY CREEK, BUT CONDITIONS WILL VARY.
4. ALL DEWATERING PUMPS SHALL HAVE WDFW-APPROVED FISH SCREENS INSTALLED AND MAINTAINED PER RCW 77.57.010 AND RCW 77.57.070. ADDITIONALLY, FISH EXCLUSION NETTING SHALL BE INSTALLED UPSTREAM AND DOWNSTREAM OF THE ISOLATED WORK AREA. THE MINIMUM OPEN AREA FOR ALL TYPES OF FISH SCREENS IS 27%. THE SCREENED INTAKE FACILITY MUST HAVE ENOUGH SURFACE AREA TO ENSURE THAT THE VELOCITY THROUGH THE SCREEN IS LESS THAN 0.4 FEET PER SECOND.
5. FISH AND AQUATIC ORGANISM REMOVAL SHALL BE CONDUCTED PRIOR TO DEWATERING THE WORK AREA. FISH AND AQUATIC ORGANISMS WILL BE TEMPORARILY RELOCATED AS DIRECTED BY THE PROJECT REPRESENTATIVE.
6. ALL WORK WITHIN ORDINARY HIGH WATER OF ERICK CREEK SHALL OCCUR DURING THE APPROVED IN-WATER WORK WINDOW PER PERMIT.
7. TURBIDITY LEVELS AT DISCHARGE MUST MEET ALL APPLICABLE PERMIT REQUIREMENTS. TURBIDITY TREATMENT SHALL BE CONTRACTOR DESIGNED AND DETAILED IN THE CONTRACTOR'S TEMPORARY STREAM DIVERSION PLAN. DEWATERING WATER MAY NOT BE DISCHARGED TO STORM OR SANITARY SEWERS SYSTEMS WITHOUT APPROPRIATE PERMITS. NO AREAS SUITABLE FOR INFILTRATION ARE PRESENT ON SITE.
8. THE CONTRACTOR SHALL GRADUALLY INTRODUCE WATER TO THE NEW STREAM CHANNEL SECTION AND TRAP SEDIMENTS UNTIL THE STREAM SECTION IS FULLY REWATERED. REWATERING SHALL OCCUR AT A RATE TO AVOID LOSS OF SURFACE WATER DOWNSTREAM WHILE THE NEW CHANNEL IS REWATERED.



TEMPORARY STREAM DIVERSION STRUCTURE 3
Scale: NTS EC1.1

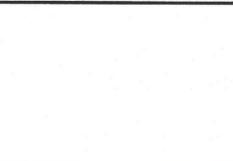
ERICK CREEK	
% CHANCE FLOW EXCEEDANCE (JULY - SEPT. FISH WINDOW)	FLOW (CFS)
1% DAILY	7
10%	3
50%	1

GLW PROJECT MANAGER	7/14/2023 DATE
SW/AMF DRAWN BY	7/14/2023 DATE
GLW CHECKED BY	7/14/2023 DATE

HORIZ. SCALE: AS SHOWN
VERT. SCALE: NONE
PROJECT ID: 1617
ROAD NO.: 20930
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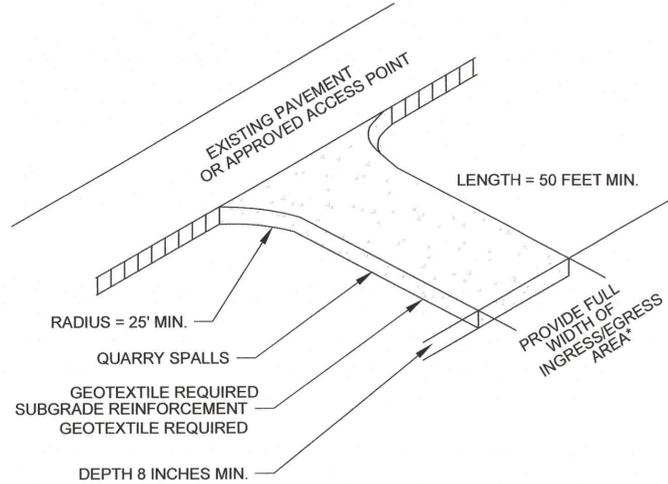
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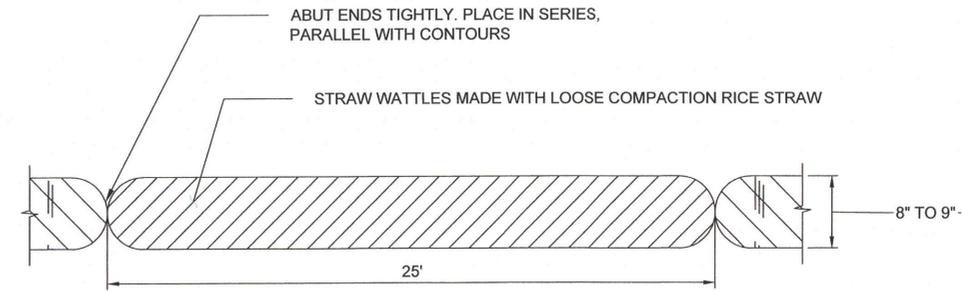
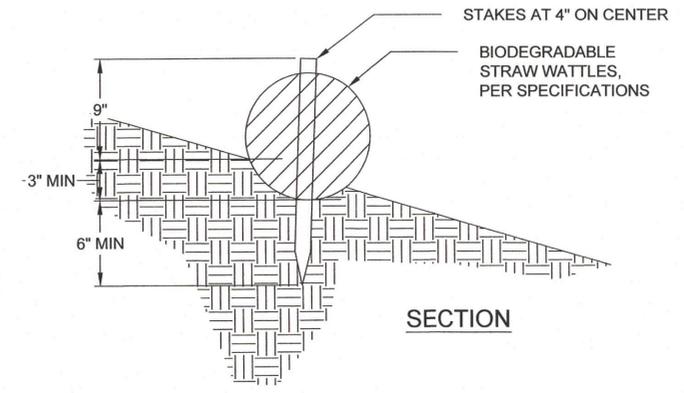
SEC 15 T 9 N R 4 W
CRP NO 801
FED. AID NO. PROTECT-2008(034)
FED. AID CONTRACT NO. TA-7638

ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON
TEMPORARY STREAM DIVERSION DETAILS

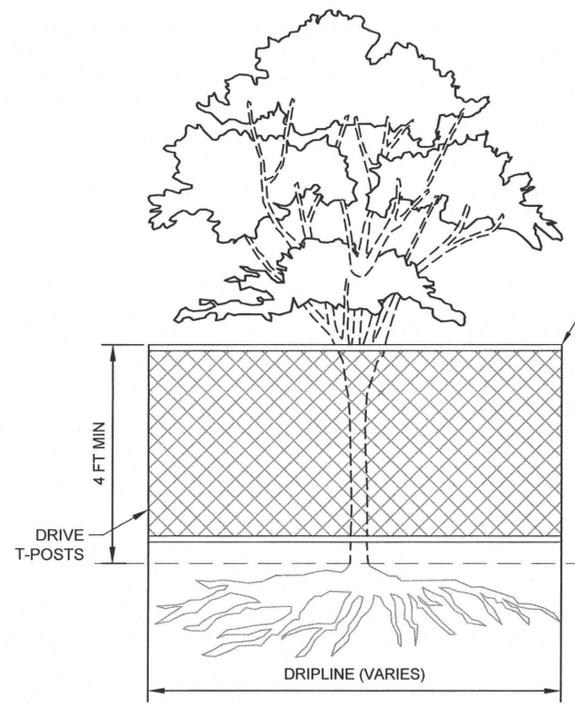
FINAL SUBMITTAL
SHEET **EC2.1**
23 OF 26



CONSTRUCTION ENTRANCE 1
Scale: NTS **EC1.1**



STRAW WATTLES 2
Scale: NTS **EC1.1**



NOTES:

1. HIGH VISIBILITY FENCE SHALL BE PLACED AT THE DRIPLINE OF ANY TREE TO BE SAVED WITHIN OR ADJACENT TO THE LIMITS OF GRADING. FENCE SHALL COMPLETELY ENCIRCLE THE TREE(S). AVOID DRIVING POSTS OR STAKES INTO MAJOR ROOTS.
2. FOR ROOTS AND BRANCHES OVER 1-IN DIAMETER THAT ARE DAMAGED DURING CONSTRUCTION, MAKE A CLEAN, STRAIGHT CUT TO REMOVE THE DAMAGED PORTION. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING AND SHALL BE COVERED WITH SOIL AS SOON AS POSSIBLE.
3. WORK WITHIN PROTECTION FENCE SHALL BE DONE MANUALLY. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING.
4. TREE PROTECTION AND PRESERVATION WILL BE PAID UNDER EROSION AND SEDIMENT CONTROL.

TREE TO PROTECT AND PRESERVE 3
Scale: NTS **EC1.1**

GLW PROJECT MANAGER	7/14/2023 DATE
SW/AMF DRAWN BY	7/14/2023 DATE
GLW CHECKED BY	7/14/2023 DATE

HORIZ SCALE: AS SHOWN
VERT. SCALE: NONE

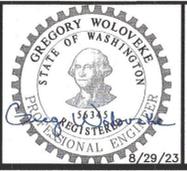
PROJECT ID: 1617
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COMPUTER FILE: EC2.2.dwg



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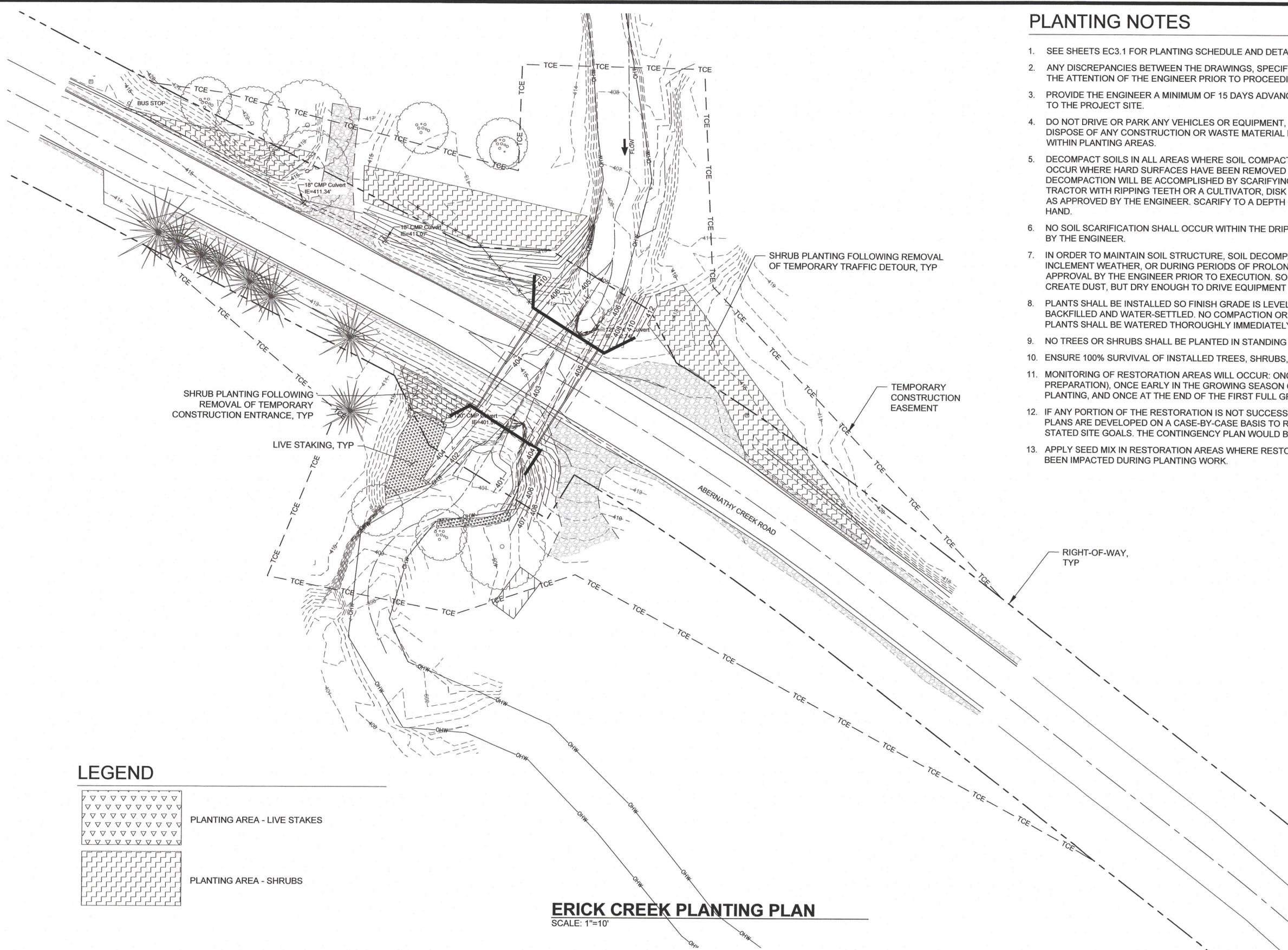


SEC 15 T 9 N R 4 W
CRP NO 801

FED. AID NO. PROTECT-2008(034)
FED. AID CONTRACT NO. TA-7638

**ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON**

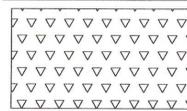
EROSION CONTROL DETAILS



PLANTING NOTES

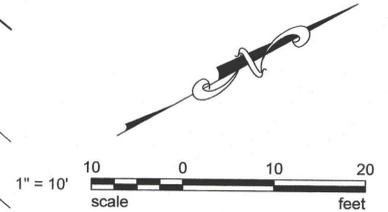
- SEE SHEETS EC3.1 FOR PLANTING SCHEDULE AND DETAILS.
- ANY DISCREPANCIES BETWEEN THE DRAWINGS, SPECIFICATIONS, AND SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDINGS WITH CONSTRUCTION.
- PROVIDE THE ENGINEER A MINIMUM OF 15 DAYS ADVANCE NOTICE WHEN REQUESTING PLANT MATERIAL DELIVERY TO THE PROJECT SITE.
- DO NOT DRIVE OR PARK ANY VEHICLES OR EQUIPMENT, STORE MATERIALS, STOCKPILE SOIL OR GRAVEL, OR DISPOSE OF ANY CONSTRUCTION OR WASTE MATERIAL NEAR NEWLY INSTALLED PLANTS. RESTRICT FOOT TRAFFIC WITHIN PLANTING AREAS.
- DECOMPACT SOILS IN ALL AREAS WHERE SOIL COMPACTION HAS OCCURRED. AT MINIMUM, DECOMPACTION MUST OCCUR WHERE HARD SURFACES HAVE BEEN REMOVED AND STAGING AREAS HAVE BEEN CLEARED. DECOMPACTION WILL BE ACCOMPLISHED BY SCARIFYING THE SOIL SURFACE WITH A BACKHOE, A BOBCAT, OR TRACTOR WITH RIPPING TEETH OR A CULTIVATOR, DISK HARROW, OR OTHER PIECE OF AGRICULTURAL MACHINERY AS APPROVED BY THE ENGINEER. SCARIFY TO A DEPTH OF AT LEAST 12 INCHES SO THAT SOIL IS EASY TO DIG BY HAND.
- NO SOIL SCARIFICATION SHALL OCCUR WITHIN THE DRIP LINE OF VEGETATION TO BE RETAINED UNLESS APPROVED BY THE ENGINEER.
- IN ORDER TO MAINTAIN SOIL STRUCTURE, SOIL DECOMPACTION IN WET SOILS AT ANY TIME OF THE YEAR, DURING INCLEMENT WEATHER, OR DURING PERIODS OF PROLONGED DRY OR HOT WEATHER IS NOT ALLOWED WITHOUT APPROVAL BY THE ENGINEER PRIOR TO EXECUTION. SOIL SHOULD BE MOIST ENOUGH THAT DIGGING DOESN'T CREATE DUST, BUT DRY ENOUGH TO DRIVE EQUIPMENT WITHOUT CREATING RUTS.
- PLANTS SHALL BE INSTALLED SO FINISH GRADE IS LEVEL WITH THE TOP OF ROOT BALL. PLANTS SHALL BE BACKFILLED AND WATER-SETTLED. NO COMPACTION OR ADDITIONAL BACKFILL IS TO OCCUR AROUND PLANT. ALL PLANTS SHALL BE WATERED THOROUGHLY IMMEDIATELY FOLLOWING INSTALLATION.
- NO TREES OR SHRUBS SHALL BE PLANTED IN STANDING WATER.
- ENSURE 100% SURVIVAL OF INSTALLED TREES, SHRUBS, AND SEED SPECIES WITHIN ONE YEAR OF INSTALLATION.
- MONITORING OF RESTORATION AREAS WILL OCCUR: ONCE 30 DAYS AFTER PLANTING (STEM COUNT AND AS-BUILT PREPARATION), ONCE EARLY IN THE GROWING SEASON OF THE FIRST FULL GROWING SEASON FOLLOWING PLANTING, AND ONCE AT THE END OF THE FIRST FULL GROWING SEASON.
- IF ANY PORTION OF THE RESTORATION IS NOT SUCCESSFUL, A CONTINGENCY PLAN WILL BE IMPLEMENTED. SUCH PLANS ARE DEVELOPED ON A CASE-BY-CASE BASIS TO REMEDY ASPECTS OF RESTORATION THAT DO NOT MEET STATED SITE GOALS. THE CONTINGENCY PLAN WOULD BE DEVELOPED IN COOPERATION WITH THE ENGINEER.
- APPLY SEED MIX IN RESTORATION AREAS WHERE RESTORATION PLANTING HAS NOT BEEN LOCATED BUT SITE HAS BEEN IMPACTED DURING PLANTING WORK.

LEGEND

-  PLANTING AREA - LIVE STAKES
-  PLANTING AREA - SHRUBS

ERICK CREEK PLANTING PLAN

SCALE: 1"=10'

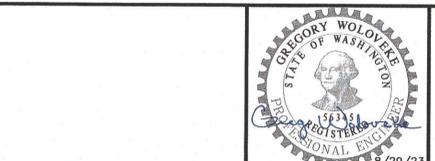


GLW PROJECT MANAGER	7/14/2023 DATE
SWAMF DRAWN BY	7/14/2023 DATE
GLW CHECKED BY	7/14/2023 DATE

HORIZ. SCALE: AS SHOWN
 VERT. SCALE: NONE
 PROJECT ID: 1617
 ROAD NO.: 20930
 COMPUTER FILE: PLANTING PLAN & PROFILE.dwg



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ERICK CREEK FISH PASSAGE PROJECT
 COWLITZ COUNTY, WASHINGTON
 PLANTING PLAN

BID SET
 SHEET EC3.0
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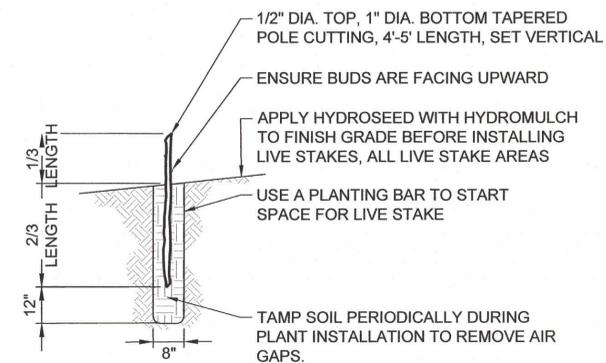
PLANTING SCHEDULE

SYMBOL	BOTANICAL NAME	COMMON NAME	TYPE	SIZE	SPACING	QUANTITY
SHRUBS:						
	ACER CIRCINATUM	VINE MAPLE	CONTAINER	1 GAL	5' O.C.	35
	CORYLUS CORNUTA	BEAKED HAZELNUT	CONTAINER	1 GAL	5' O.C.	35
	LONICERA INVOLUCRATA	BLACK TWINBERRY	CONTAINER	1 GAL	5' O.C.	35
	PHYSOCARPUS CAPITATUS	PACIFIC NINEBARK	CONTAINER	1 GAL	5' O.C.	35
	POLYSTICHUM MUNITUM	SWORD FERN	CONTAINER	1 GAL	5' O.C.	35
	SAMBUCUS RACEMOSA	RED ELDERBERRY	CONTAINER	1 GAL	5' O.C.	35
LIVE STAKES:						
	CORNUS SERICEA	RED OSIER DOGWOOD	LIVE STAKE	1" DIA	4' O.C.	11
	SALIX HOOKERIANA	HOOKE'S WILLOW	LIVE STAKE	1" DIA	4' O.C.	11
	SALIX LASIANDRA	PACIFIC WILLOW	LIVE STAKE	1" DIA	4' O.C.	11
	SALIX SITCHENSIS	SITKA WILLOW	LIVE STAKE	1" DIA	4' O.C.	11

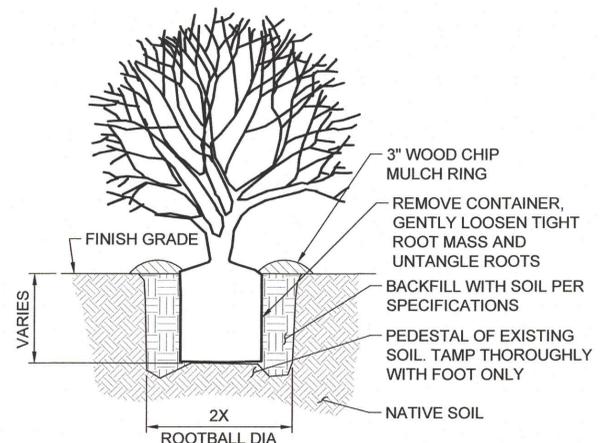
SEED SCHEDULE

BOTANICAL NAME	COMMON NAME	POUNDS PURE LIVE SEED (PLS) PER ACRE
ELYMUS GLAUCUS	BLUE WILD RYE	34.43
DESCHAPSIA ELONGATA	SLENDER HAIRGRASS	0.32
FESTUCA IDAHONENSIS	IDAHO FESCUE	5.61
FESTUCA OVINA	SHEEP FESCUE	0.93
HORDEUM BRACHYANTHERUM	MEADOW BARLEY	29.71
KOELER CRISTATA	PRAIRIE JUNEGRASS	0.27
LOLIUM MULTIFLORUM	ANNUAL RYEGRASS	8.73

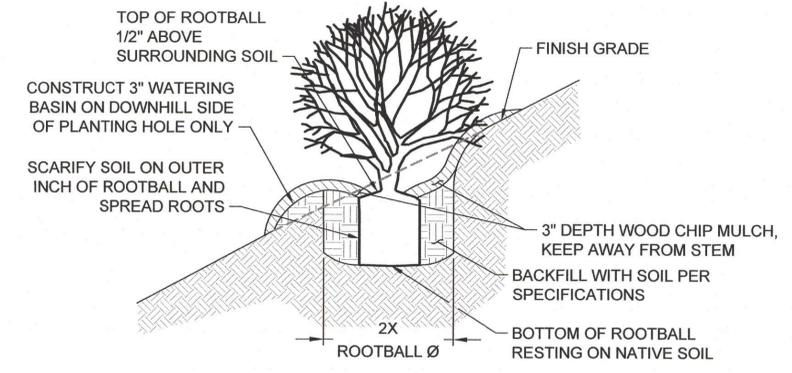
TOTAL POUNDS PURE LIVE SEED (PLS) PER ACRE: 80



LIVE STAKE PLANTING
Scale: NTS



CONTAINER PLANTING
Scale: NTS



CONTAINER PLANTING ON SLOPE
Scale: NTS

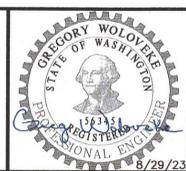
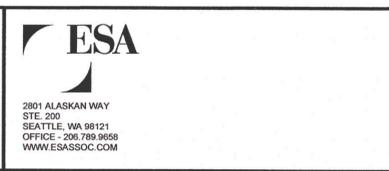
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GLW PROJECT MANAGER	7/14/2023 DATE
SWAMF DRAWN BY	7/14/2023 DATE
GLW CHECKED BY	7/14/2023 DATE

HORIZ. SCALE: AS SHOWN
VERT. SCALE: NONE
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COMPUTER FILE: EN-11 PLANTING SCHEDULE & DETAILS.dwg



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ERICK CREEK FISH PASSAGE PROJECT
COWLITZ COUNTY, WASHINGTON
PLANTING SCHEDULE & DETAILS

BID SET
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EC3.1
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