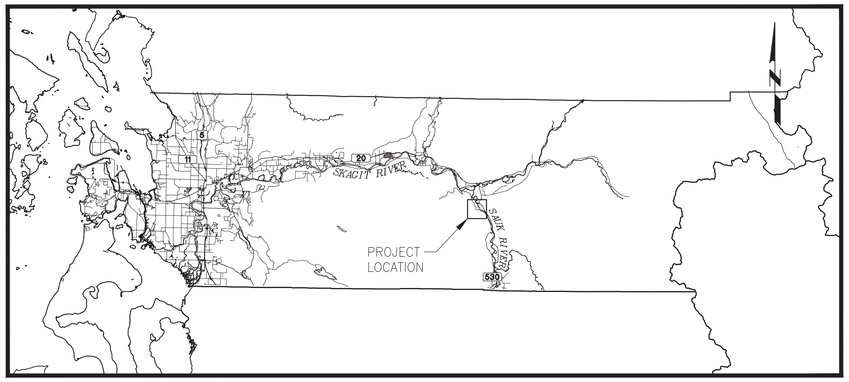
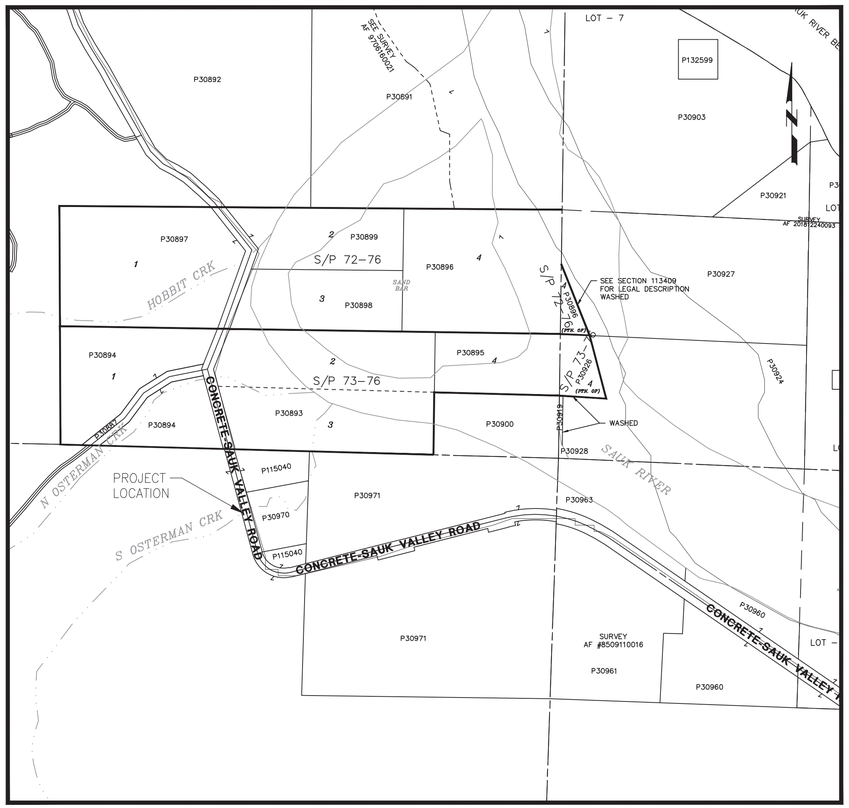
CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

EO214-5





VICINITY MAP NTS

SUMMARY OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
1	MOBILIZATION	L.S.	1
2	MINOR CHANGE	EST.	1
3	SPCC PLAN	L.S.	1
4	TYPE B PROGRESS SCHEDULE	L.S.	1
5	STRUCTURE SURVEYING	L.S.	1
6	ROADWAY SURVEYING	L.S.	1
7	CHANNEL SURVEYING	LS	1
8	PROJECT TEMPORARY TRAFFIC CONTROL	L.S.	1
9	WORK ZONE SAFETY CONTINGENCY	EST.	1
10	CONSTRUCTION SIGNS CLASS A	S.F.	420
11	PORTABLE CHANGEABLE MESSAGE SIGN	HR	2,016
12	PAINT LINE	L.F.	1,300
13	FISH EXCLUSION ASSISTANCE	EST.	1
14	FISH BLOCK NET MAINTENANCE	EST.	1
15	CLEARING AND GRUBBING	ACRE	1
16	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	L.S.	1
17	SAWCUTTING	IN-FT	150
18	ROADWAY EXCAVATION INCL. HAUL	C.Y.	450
19	CHANNEL EXCAVATION INCL. HAUL	CY	2,700
20	SLOPE STABILIZATION EXCAVATION INCL. HAUL	CY	530
21	SLOPE STABILIZATION FILL	CY	90
22	STRUCTURE EXCAVATION CLASS A INCL. HAUL	C.Y.	1,230
23	SHORING OR EXTRA EXCAVATION CL. A	L.S.	1
24	UNSUITABLE FOUNDATION EXCAVATION INCL. HAUL	C.Y.	90
25	TEMPORARY DEWATERING SYSTEM	L.S.	1
26	PERMEABLE BALLAST	TON	170
27	GRAVEL BORROW INCL. HAUL	TON	950
28	CRUSHED SURFACING TOP COURSE	TON	140
29	HMA CL. 1/2 IN. PG 58H-22	TON	170
30	GRAVEL BACKFILL FOR WALL	C.Y.	300
31	PRECAST REINF. CONC. SPLIT BOX CULVERT NO. 1	L.S.	1
32	TEMPORARY STREAM DIVERSION	LS	1
33	TIMBER HANDRAIL	LF	64
34	EROSION CONTROL AND WATER POLLUTION PREVENTION	L.S.	1
35	STABILIZED CONSTRUCTION ENTRANCE	S.Y.	525
36	WATTLE	L.F.	1,550
37	HIGH VISIBILITY FENCE	L.F.	1,220
38	SEEDING AND MULCHING	ACRE	0.7
39	ESC LEAD	DAY	12
40	PSIPE VINE MAPLE, 1 GAL	EACH	69
41	PSIPE BIGLEAF MAPLE, 1 GAL	EACH	28
42	PSIPE COMMON YARROW, 1 GAL	EACH	80
43	PSIPE RED ALDER, 1 GAL	EACH	12
44	PSIPE KINNIKINNICK, 4"	EACH	80
45	PSIPE TALL OREGONGRAPE, 1 GAL	EACH	99
46	PSIPE REDOSIER DOGWOOD, 1 GAL	EACH	90
47	PSIPE BEAKED HAZELNUT, 1 GAL	EACH	21
48	PSIPE BLACK HAWTHORN, 1 GAL	EACH	12
49	PSIPE OSOBERRY, 1 GAL	EACH	46
50	PSIPE WESTERN SWORDFERN, 1 GAL	EACH	177
51	PSIPE DOUGLAS-FIR, 1 GAL	EACH	48
52	PSIPE SPREADING GOOSEBERRY, 1 GAL	EACH	46
53	PSIPE THIMBLEBERRY, 1 GAL	EACH	46
54	PSIPE SALMONBERRY, 1 GAL	EACH	90
55	PSIPE PACIFIC WILLOW, 4' LIVE STAKE	EACH	161
56	PSIPE RED ELDERBERRY, 1 GAL	EACH	45
57	PSIPE SNOWBERRY, 1 GAL	EACH	112
58	PSIPE WESTERN RED CEDAR, 1 GAL	EACH	16
59	WOOD CHIP MULCH	C.Y.	60
60	BEAM GUARDRAIL TYPE 31 - 8 FT. LONG POST	L.F.	350
61	BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL	EACH	2
62	BEAM GUARDRAIL ANCHOR TYPE 11	EACH	2
63	BOX CULVERT GUARDRAIL STEEL POST TYPE 31	EACH	8
64	CABLE FENCE	L.F.	114
65	PERMANENT SIGNING	L.S.	1
66	STREAMBED COBBLES 12 IN.	TON	1,300
67	STREAMBED SEDIMENT	TON	1,130
68	BOULDER SILL	EACH	14
69	STREAMBED SAND	C.Y.	330
70	INSTREAM WOOD PLACEMENT - LOG TRIANGLE	EACH	8
71	INSTREAM WOOD PLACEMENT - BANK ROOTWAD	EACH	10
72	INSTREAM WOOD PLACEMENT - CHANNEL ROOTWAD - SHORT	EACH	9
73	INSTREAM WOOD PLACEMENT - CHANNEL ROOTWAD - LONG	EACH	5
74	INSTREAM WOOD PLACEMENT - SLASH WATTLE	EACH	23
75	CONSTRUCTION GEOTEXTILE FOR SOIL STABILIZATION	S.Y.	270
76	STREAMBED BOULDER TYPE 1	TON	530
77	STREAMBED BOULDER TYPE 2	TON	700
78	STREAMBED BOULDER TYPE 3	TON	480
79	STREAMBED BOULDER TYPE 4	TON	330
80	RECORD DRAWINGS	L.S.	1
81	APPRENTICESHIP INCENTIVE/PENALTY	EST.	1

FEDERAL AID NO. 4650DR-WA #674680

SKAGIT COUNTY OFFICIALS

BOARD OF COMMISSIONERS
- LISA JANICKI, CHAIR
- RON WESEN, COMMISSIONER
- PETER BROWNING, COMMISSIONER

PUBLIC WORKS
- MICHAEL SEE, DIRECTOR

APPROVED FOR CONSTRUCTION

THOMAS M. WELLER, P.E. COUNTY ENGINEER DATE

PLAN SHEET INDEX

DAVID EVANS AND ASSOCIATES INC.
1221 Fraser St., Suite E-3
Bellingham, WA, 98229
Phone: 564.565.3100

Natural Systems Design + Coastal Geologic Services

SURVEY NOTES:

HORIZONTAL DATUM: NAD83 WASHINGTON STATE PLANE NORTH ZONE
VERTICAL DATUM: NAVD88

Know what's **below** **Call** before you dig.
Determina lo que está **bajo tierra** **Llama** antes de excavar.

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

ENGINEER OF RECORD
WILLIAM OLF RAVEN
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
10-30-25
COUNTY ENGINEER

PROJECT NO.: EO214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: NT
DRAWN BY: DBS
CHECKED BY:
APPROVED BY:

PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

COVER

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET 1 OF 30

GENERAL NOTES:

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE A COPY OF THESE APPROVED PLANS PRESENT ON THE CONSTRUCTION SITE AT ALL TIMES.
2. THE CONTRACTOR SHALL ATTEND PRE-CONSTRUCTION CONFERENCE WITH SCPW PRIOR TO BEGINNING CONSTRUCTION.
3. ALL APPROVALS AND PERMITS REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT ARE AVAILABLE AS AN APPENDIX IN THE SPECIAL PROVISIONS, ALSO INCLUDED IS A LIST OF PERMITS THE CONTRACTOR IS RESPONSIBLE FOR PROCURING PRIOR TO CONSTRUCTION
4. ALL WORK SHALL CONFORM TO THE LATEST EDITION OF "STANDARD SPECIFICATIONS FOR ROAD BRIDGE AND MUNICIPAL CONSTRUCTION" CURRENT EDITION (WSDOT) AND THE "SKAGIT COUNTY ROAD STANDARDS" UNLESS INDICATED OTHERWISE BY THE CONTRACT DOCUMENTS. IN CASE OF A CONFLICT BETWEEN THE REGULATORY SPECIFICATIONS OR STANDARDS, THE MORE STRINGENT REQUIREMENT WILL PREVAIL. ALL REFERENCES TO "SPECIFICATION SECTIONS" REFER TO THE MOST CURRENT EDITION OF "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION" (WSDOT) UNLESS OTHERWISE NOTED.
5. THIS PROJECT MAY REQUIRE VARIOUS PERMITS AS OUTLINED IN THE PROJECT SPECIFICATION'S GENERAL PROVISIONS. ALL WORK SHALL BE PERFORMED IN A MANNER WHICH ENSURES CONFORMANCE WITH ANY PERMIT REQUIREMENTS.
6. UNDERGROUND UTILITIES ARE KNOWN TO EXIST IN THE AREA OF CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE UTILITY OWNERS FOR LOCATIONS AND TO NOTIFY THE ENGINEER PROMPTLY OF ANY CONFLICT. THE ONE-CALL NUMBER FOR UNDERGROUND UTILITIES IS: 1-800-424-5555.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF EXISTING UTILITIES AT ALL TIMES WHICH MAY INCLUDE, BUT ARE NOT LIMITED TO, POWER, TELEPHONE, CABLE TV, AND FIBER.
8. THE CONTRACTOR SHALL NOTIFY PROPERTY OWNERS 48 HOURS IN ADVANCE OF ANY WORK AFFECTING ACCESS OR SERVICE AND SHALL MINIMIZE INTERRUPTIONS TO DRIVEWAYS FOR PROPERTY OWNERES ADJACENT TO THE PROJECT.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) INCLUDING THE WASHINGTON STATE MODIFICATIONS TO THE MUTCD PRIOR TO DISRUPTION OF ANY TRAFFIC. THE CONTRACTOR MAY CHOOSE TO ADOPT THE TRAFFIC CONTROL PLANS PROVIDED IN THIS PLAN SET OR SUBMIT AN ALTERNATIVE TRAFFIC CONTROL PLAN. TRAFFIC CONTROL PLANS MUST BE APPROVED BY SCPW AND WSDOT FOR APPROVAL. THIS APPROVAL TAKES TIME AND NO WORK SHALL COMMENCE UNTIL PLANS ARE APPROVED AND ALL APPROVED TRAFFIC CONTROL IS IN PLACE.
10. PUBLIC RIGHTS-OF-WAY SHALL BE KEPT IN A CLEAN AND SERVICEABLE CONDITION AT ALL TIMES. IN THE EVENT MATERIALS ARE INADVERTENTLY DEPOSITED ON ROADWAYS, THE MATERIAL SHALL BE PROMPTLY REMOVED.
11. ALL LAWN AND VEGETATED AREAS OUTSIDE THE PROJECT LIMITS DISTURBED BY CONSTRUCTION EQUIPMENT, VEHICLES OR PERSONNEL SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER, AT THE CONTRACTOR'S EXPENSE.

CONSTRUCTION SWPPP NOTES:

1. APPROVAL OF THIS EROSION/SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G. SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES).
2. THE IMPLEMENTATION OF THIS TESC PLAN AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE TESC BMPS IS THE RESPONSIBILITY OF THE PERMIT HOLDER UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
3. CONTRACTOR SHALL CLEARLY FLAG THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
4. CONSTRUCT THE TESC BMPS SHOWN ON THIS PLAN 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.
5. THE TESC BMPS SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, UPGRADE THESE ESC BMPS AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
6. THE PERMIT HOLDER SHALL INSPECT THE ESC BMPS DAILY AND MAINTAIN THEM AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
7. INSPECT AND MAINTAIN THE TESC BMPS ON INACTIVE SITES A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A MAJOR STORM EVENT (I.E. A 24-HOUR STORM EVENT WITH A 10-YR OR GREATER RECURRENCE INTERVAL).
8. AT NO TIME SHALL THE SEDIMENT EXCEED 60-PERCENT OF THE SUMP DEPTH OR HAVE LESS THAN 6-INCHES OF CLEARANCE FROM THE SEDIMENT SURFACE TO THE INVERT OF THE LOWEST PIPE. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM.
9. INSTALL STABILIZED CONSTRUCTION ENTRANCES AT THE BEGINNING OF CONSTRUCTION AND MAINTAIN FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

ENVIRONMENTAL NOTES:

1. A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE PREPARED BY THE CONTRACTOR IN COMPLIANCE WITH THE DOE STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON ADDRESSING, AND THE WESTERN WASHINGTON HYDROLOGY MANUAL ADDRESSING ALL APPLICABLE MINIMUM REQUIREMENTS. THE AREAS OF NEW AND/OR REPLACED IMPERVIOUS SURFACE SHALL BE INCLUDED IN THE SWPPP. THE CONTRACTOR SHALL SUBMIT THE SWPPP FOR THE ENGINEER'S APPROVAL BEFORE ANY WORK BEGINS IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
2. THE CONTRACTOR SHALL PREPARE A SPILL PREVENTION, CONTROL AND COUNTER MEASURES (SPCC) PLAN THAT SATISFIES THE CURRENT WSDOT SPECIFICATION 1-07.15 (1) AND THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS. THE PLAN WILL BE REVIEWED AND APPROVED PRIOR TO COMMENCEMENT OF WORK.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTING, MAINTAINING, & REMOVING EROSION CONTROL MEASURES (SILT FENCE, ROCK CHECK DAMS, SILT PONDS, CATCH BASIN FILTERS, ETC.) THROUGHOUT THE DURATION OF THE PROJECT. ALL REMOVAL OF EROSION CONTROL WORK IS CONSIDERED INCIDENTAL TO THE ITEMS OF WORK IN THE CONTRACT FOR THIS PROJECT. REFER TO THE 'STORM WATER POLLUTION PREVENTION PLAN AND BID ITEMS NOTED IN THE CONTRACT PORTION OF THE PROJECT SPECIFICATIONS FOR SPECIFIC EROSION CONTROL NOTES.

ABBREVIATIONS

ABT	ABOUT
ALUM	ALUMINUM
AP	ANGLE POINT
ACZA	AMMONIACAL COPPER ZINC ARSENATE
BK	BACK
BMP	BEST MANAGEMENT PRACTICE
BRG	BEARING
BTWN	BETWEEN
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
CL	CLASS
C/L	CENTERLINE
CLR	CLEAR, CLEARANCE
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CONST	CONSTRUCTION
CSTC	CRUSHED SURFACING TOP COURSE
CSWGP	CONSTRUCTION STORMWATER GENERAL PERMIT
CY	CUBIC YARD
DIAM, ø	DIAMETER
DIP	DUCTILE IRON PIPE
DWG	DRAWING
DWL	DOWEL
DIAPH	DIAPHRAGM
E	EASTING
EA	EACH
EG	EXISTING GROUND
EL, ELEV	ELEVATION
ESC	EROSION & SEDIMENT CONTROL
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EX, EXIST	EXISTING
FDN	FOUNDATION
FF	FINISHED FLOOR
FIN	FINISH
FND	FOUND
FT	FEET
IE	INVERT ELEVATION
IN	INCH
INT	INTERIOR
HMA	HOT MIX ASPHALT
JT	JOINT
LB	POUND
LF	LINEAR FEET
LONGIT	LOGITUDINAL
LS	LUMP SUM, LOW SHRINKAGE
LT	LEFT
MAX	MAXIMUM
MATL	MATERIAL
MIN	MINIMUM
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
NO	NUMBER
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
OFF	ORANGE FLEXIBLE FENCING
OHWM	ORDINARY HIGH WATER MARK
OPP	OPPOSITE
PC	POINT OF CURVATURE
PCC	PORTLAND CONCRETE CEMENT
POB	POINT OF BEGINNING
POC	POINT ON CURVE
POE	POINT OF ENDING
PCF	POUNDS PER CUBIC FOOT
PK	PARKER-KALON
PNT	POINT
PRC	POINT OF REVERSE CURVE
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENT
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
RDWY	ROADWAY
RE	RIM ELEVATION
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
RP	RADIUS POINT
RR	RAILROAD
RT	RIGHT
R/W	RIGHT OF WAY
SCHED	SCHEDULE
SCPW	SKAGIT COUNTY PUBLIC WORKS
SF	SQUARE FEET
SHLD	SHOULDER
SHT	SHEET
SIM	SIMILAR
SSK HD	COUNTERSUNK HEAD
SLP	SLOPE
SPA	SPACE
SPCC	SPILL PREVENTION CONTROL COUNTERMEASURES
SPL	SPLICE
SQ	SQUARE
ST	STREET
STA	STATION
STD	STANDARD
SWPPP	STORMWATER POLLUTION PREVENTION PLAN
SY	SQUARE YARD
SYMM	SYMMETRICAL
TCE	TEMPORARY CONSTRUCTION EASEMENT
TEMP	TEMPORARY
TYP	TYPICAL
VC	VERTICAL CURVE
VER	VERTICAL
VPI	VERTICAL POINT OF INTERSECTION
USPS	UNITED STATES POSTAL SERVICE
W/	WITH
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
X-	CROSS
YR	YEAR

CONCRETE SAUK VALLEY ROAD ALIGNMENT TABLE

NO.	RADIUS	LENGTH	LINE/CHORD BEARING	DELTA	START STATION	END STATION	START COORDINATE	END COORDINATE
C1	190.00'	151.97'	N33°48'28"W	45°49'35"	100+00.00	101+51.97	N=526,242.9 E=1,454,214.5	N=526,365.8E=1,454,132.1
L1		248.03'	N12°16'16"W		101+51.97	104+00.00	N=526,365.8 E=1,454,132.1	N=526,608.2 E=1,454,079.4

S. OSTERMAN CREEK DESIGN ALIGNMENT TABLE

NO.	RADIUS	LENGTH	LINE/CHORD BEARING	DELTA	START STATION	END STATION	START COORDINATE	END COORDINATE
L2		26.21'	N39°26'56"E		220+00.00	219+73.79	N=526,310.5 E=1,453,997.5	N=526,330.7 E=1,454,014.2
C2	92.03'	60.45'	N58°16'06"E	37°38'20"	219+73.79	219+13.34	N=526,330.7 E=1,454,014.2	N=526,361.9E=1,454,064.7
L3		0.33'	N77°05'16"E		219+13.34	219+13.01	N=526,361.9 E=1,454,064.7	N=526,362.0 E=1,454,065.0
C3	22.15'	13.47'	N59°39'55"E	34°50'42"	219+13.01	218+99.54	N=526,362.0 E=1,454,065.0	N=526,368.7E=1,454,076.5
L4		29.95'	N42°14'34"E		218+99.54	218+69.58	N=526,368.7 E=1,454,076.5	N=526,390.9 E=1,454,096.6
C4	25.00'	15.48'	N59°59'10"E	35°29'11"	218+69.58	218+54.10	N=526,390.9 E=1,454,096.6	N=526,398.5E=1,454,109.8
L5		57.36'	N77°43'45"E		218+54.10	217+96.74	N=526,398.5 E=1,454,109.8	N=526,410.7 E=1,454,165.8
C5	51.38'	50.60'	N49°30'49"E	56°25'52"	217+96.74	217+46.14	N=526,410.7 E=1,454,165.8	N=526,442.2E=1,454,202.8
L6		1.85'	N21°17'53"E		217+46.14	217+44.29	N=526,442.2 E=1,454,202.8	N=526,443.9 E=1,454,203.5
C6	22.32'	5.42'	N28°15'18"E	13°54'49"	217+44.29	217+38.87	N=526,443.9 E=1,454,203.5	N=526,448.7E=1,454,206.0

S. OSTERMAN CREEK DESIGN ALIGNMENT TABLE (CONT.)

NO.	RADIUS	LENGTH	LINE/CHORD BEARING	DELTA	START STATION	END STATION	START COORDINATE	END COORDINATE
L7		1.20'	N35°12'42"E		217+38.87	217+37.68	N=526,448.7 E=1,454,206.0	N=526,449.7 E=1,454,206.7
C7	50.00'	69.82'	N75°12'53"E	80°00'21"	217+37.68	216+67.86	N=526,449.7 E=1,454,206.7	N=526,466.1E=1,454,268.9
L8		19.69'	S64°46'57"E		216+67.86	216+48.17	N=526,466.1 E=1,454,268.9	N=526,457.7 E=1,454,286.7
C8	61.07'	52.53'	S40°08'18"E	49°17'18"	216+48.17	215+95.63	N=526,457.7 E=1,454,286.7	N=526,418.8E=1,454,319.5
L9		3.43'	S15°29'39"E		215+95.63	215+92.20	N=526,418.8 E=1,454,319.5	N=526,415.5 E=1,454,320.4
C9	29.76'	33.69'	S47°55'26"E	64°51'33"	215+92.20	215+58.51	N=526,415.5 E=1,454,320.4	N=526,394.1E=1,454,344.1
L10		1.85'	S80°21'12"E		215+58.51	215+56.66	N=526,394.1 E=1,454,344.1	N=526,393.8 E=1,454,345.9
C10	20.00'	20.06'	N70°54'40"E	57°28'16"	215+56.66	215+36.60	N=526,393.8 E=1,454,345.9	N=526,400.0E=1,454,364.1
L11		46.71'	N42°10'32"E		215+36.60	214+89.89	N=526,400.0 E=1,454,364.1	N=526,434.7 E=1,454,395.5

DAVID EVANS AND ASSOCIATES INC.

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

DESIGN ENGINEER
WILLIAM R. WHITEHOLF
WASHINGTON
371437
REGISTERED PROFESSIONAL ENGINEER
9-29-25

ENGINEER OF RECORD

PROJECT NO.: E0214-5
FED. AID NO.: 4650(DR-WA #674680
DESIGNED BY: R.S.B. | DRAWN BY: R.S.B.
CHECKED BY: R.W. | APPROVED BY: R.W.

PROJECT LOCATED NEAR: CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

GENERAL NOTES & ABBREVIATIONS

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
2 OF 30

CONSTRUCTION STORMWATER POLLUTION PREVENTION (SWPPP) ELEMENTS:

ELEMENT 1 – PRESERVE VEGETATION/MARK CLEARING LIMITS

a. BEFORE BEGINNING LAND–DISTURBING ACTIVITIES, INCLUDING CLEARING AND GRADING, CLEARLY MARK ALL CLEARING LIMITS, SENSITIVE AREAS AND THEIR BUFFERS, AND TREES THAT ARE TO BE PRESERVED WITHIN THE CONSTRUCTION AREA.

b. RETAIN THE DUFF LAYER, NATIVE TOPSOIL, AND NATURAL VEGETATION IN AN UNDISTURBED STATE TO THE MAXIMUM DEGREE PRACTICABLE.

ELEMENT 2 – ESTABLISH CONSTRUCTION ACCESS

a. LIMIT CONSTRUCTION VEHICLE ACCESS AND EXIT TO ONE ROUTE, IF POSSIBLE.

b. STABILIZE ACCESS POINTS WITH A PAD OF QUARRY SPALLS, CRUSHED ROCK, OR OTHER EQUIVALENT BMPS, TO MINIMIZE TRACKING SEDIMENT ONTO PUBLIC ROADS.

c. LOCATE WHEEL WASH OR TIRE BATHS ON SITE, IF THE STABILIZED CONSTRUCTION ENTRANCE IS NOT EFFECTIVE IN PREVENTING TRACKING SEDIMENT ONTO PUBLIC ROADS.

d. IF SEDIMENT IS TRACKED OFF SITE, CLEAN THE AFFECTED ROADWAY THOROUGHLY AT THE END OF EACH DAY, OR MORE FREQUENTLY AS NECESSARY (FOR EXAMPLE, DURING WET WEATHER). REMOVE SEDIMENT FROM ROADS BY SHOVELING, SWEEPING, OR PICKUP AND TRANSPORT OF THE SEDIMENT TO A CONTROLLED SEDIMENT DISPOSAL AREA.

e. CONDUCT STREET WASHING ONLY AFTER SEDIMENT REMOVAL IN ACCORDANCE WITH 2.d ABOVE.

f. CONTROL STREET WASH WASTEWATER BY PUMPING BACK ON SITE OR OTHERWISE PREVENTING IT FROM DISCHARGING INTO SYSTEMS TRIBUTARY TO WATERS OF THE STATE.

ELEMENT 3 – CONTROL FLOW RATES

a. PROTECT PROPERTIES AND WATERWAYS DOWNSTREAM OF DEVELOPMENT SITES FROM EROSION AND THE ASSOCIATED DISCHARGE OF TURBID WATERS DUE TO INCREASES IN THE VELOCITY AND PEAK VOLUMETRIC FLOW RATE OF STORMWATER RUNOFF FROM THE PROJECT SITE, AS REQUIRED BY LOCAL PLAN APPROVAL AUTHORITY.

b. WHERE NECESSARY TO COMPLY WITH 3.a (ABOVE), CONSTRUCT STORMWATER INFLITRATION OR DETENTION BMPs AS ONE OF THE FIRST STEPS IN GRADING. ASSURE THAT DETENTION BMPs FUNCTION PROPERLY BEFORE CONSTRUCTING SITE IMPROVEMENTS (E.G., IMPERVIOUS SURFACES).

c. IF PERMANENT INFILTRATION PONDS ARE USED FOR FLOW CONTROL DURING CONSTRUCTION, PROTECT THESE FACILITIES FROM SILTATION DURING THE CONSTRUCTION PHASE.

ELEMENT 4 – INSTALL SEDIMENT CONTROLS

THE PERMITTEE MUST DESIGN, INSTALL AND MAINTAIN EFFECTIVE EROSION CONTROLS AND SEDIMENT CONTROLS TO MINIMIZE THE DISCHARGE OF POLLUTANTS. AT A MINIMUM, THE PERMITTEE MUST DESIGN, INSTALL AND MAINTAIN SUCH CONTROLS TO:

a. CONSTRUCT SEDIMENT CONTROL BMPS (SEDIMENT PONDS, TRAPS, FILTERS, INFILTRATION FACILITIES, ETC.) AS ONE OF THE FIRST STEPS IN GRADING. THESE BMPS MUST BE FUNCTIONAL BEFORE OTHER LAND DISTURBING ACTIVITIES TAKE PLACE.

b. MINIMIZE SEDIMENT DISCHARGES FROM THE SITE. THE DESIGN, INSTALLATION, AND MAINTENANCE OF EROSION AND SEDIMENT CONTROLS MUST ADDRESS FACTORS SUCH AS THE AMOUNT, FREQUENCY, INTENSITY AND DURATION OF PRECIPITATION, THE NATURE OF RESULTING STORMWATER RUNOFF, AND SOIL CHARACTERISTICS, INCLUDING THE RANGE OF SOIL PARTICLE SIZES EXPECTED TO BE PRESENT ON THE SITE.

c. DIRECT STORMWATER RUNOFF FROM DISTURBED AREAS THROUGH A SEDIMENT POND OR OTHER APPROPRIATE SEDIMENT REMOVAL BMP BEFORE THE RUNOFF LEAVES A CONSTRUCTION SITE OR BEFORE DISCHARGE TO AN INFILTRATION FACILITY. RUNOFF FROM FULLY STABILIZED AREAS MAY BE DISCHARGED WITHOUT A SEDIMENT REMOVAL BMP BUT MUST CONTROL FLOW RATES PER ELEMENT 3: CONTROL FLOW RATES.

d. LOCATE BMPS INTENDED TO TRAP SEDIMENT ON SITE IN A MANNER TO AVOID INTERFERENCE WITH THE MOVEMENT OF JUVENILE SALMONIDS ATTEMPTING TO ENTER OFF–CHANNEL AREAS OR DRAINAGES.

e. PROVIDE AND MAINTAIN NATURAL BUFFERS AROUND SURFACE WATERS, DIRECT STORMWATER TO VEGETATED AREAS TO INCREASE SEDIMENT REMOVAL AND MAXIMIZE STORMWATER INFILTRATION, UNLESS INFEASIBLE.

f. WHERE FEASIBLE, DESIGN OUTLET STRUCTURES THAT WITHDRAW IMPOUNDED STORMWATER FROM THE SURFACE TO AVOID DISCHARGING SEDIMENT THAT IS STILL SUSPENDED LOWER IN THE WATER COLUMN.

ELEMENT 5 – STABILIZE SOILS

a. THE PERMITTEE MUST STABILIZE EXPOSED AND UNWORKED SOILS BY APPLICATION OF EFFECTIVE BMPS THAT PREVENT EROSION. APPLICABLE BMPS INCLUDE BUT ARE NOT LIMITED TO: TEMPORARY AND PERMANENT SEEDING, SODDING, MULCHING, PLASTIC COVERING, EROSION CONTROL FABRICS AND MATTING, SOIL APPLICATION OF POLYACRYLAMIDE (PAM), THE EARLY APPLICATION OF GRAVEL BASE ON AREAS TO BE PAVED, AND DUST CONTROL.

b. THE PERMITTEE MUST CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE SOIL EROSION.

c. THE PERMITTEE MUST CONTROL STORMWATER DISCHARGES, INCLUDING BOTH PEAK FLOW RATES AND TOTAL STORMWATER VOLUME, TO MINIMIZE EROSION AT OUTLETS AND TO MINIMIZE DOWNSTREAM CHANNEL AND STREAM BANK EROSION.

d. DEPENDING ON THE GEOGRAPHIC LOCATION OF THE PROJECT, THE PERMITTEE MUST NOT ALLOW SOILS TO REMAIN EXPOSED AND UNWORKED FOR MORE THAN THE TIME PERIODS SET FORTH BELOW TO PREVENT EROSION:

WEST OF THE CASCADE MOUNTAINS CREST
DURING THE DRY SEASON (MAY 1 – SEPTEMBER 30): 7 DAYS DURING THE WET SEASON (OCTOBER 1 – APRIL 30): 2 DAYS

EAST OF THE CASCADE MOUNTAINS CREST, EXCEPT FOR CENTRAL BASIN* DURING THE DRY SEASON (JULY 1 – SEPTEMBER 30): 10 DAYS
DURING THE WET SEASON (OCTOBER 1 – JUNE 30): 5 DAYS

THE CENTRAL BASIN*, EAST OF THE CASCADE MOUNTAINS CREST DURING THE DRY SEASON (JULY 1 – SEPTEMBER 30): 30 DAYS DURING THE WET SEASON (OCTOBER 1 – JUNE 30): 15 DAYS **NOTE** THE CENTRAL BASIN IS DEFINED AS THE PORTIONS OF EASTERN WASHINGTON WITH MEAN ANNUAL PRECIPITATION OF FEWER THAN 12 INCHES.

e. THE PERMITTEE MUST STABILIZE SOILS AT THE END OF THE SHIFT BEFORE A HOLIDAY OR WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST.

f. THE PERMITTEE MUST STABILIZE SOIL STOCKPILES FROM EROSION, PROTECTED WITH SEDIMENT TRAPPING MEASURES, AND WHERE POSSIBLE, BE LOCATED AWAY FROM STORM DRAIN INLETS, WATERWAYS, AND DRAINAGE CHANNELS.

g. THE PERMITTEE MUST MINIMIZE THE AMOUNT OF SOIL EXPOSED DURING CONSTRUCTION ACTIVITY.

h. THE PERMITTEE MUST MINIMIZE THE DISTURBANCE OF STEEP SLOPES.

i. THE PERMITTEE MUST MINIMIZE SOIL COMPACTION AND, UNLESS INFEASIBLE, PRESERVE TOPSOIL.

ELEMENT 6 – PROTECT SLOPES

a. THE PERMITTEE MUST DESIGN AND CONSTRUCT CUT–AND–FILL SLOPES IN A MANNER TO MINIMIZE EROSION. APPLICABLE PRACTICES INCLUDE, BUT ARE NOT LIMITED TO, REDUCING CONTINUOUS LENGTH OF SLOPE WITH TERRACING AND DIVERSIONS, REDUCING SLOPE STEEPNESS, AND ROUGHENING SLOPE SURFACES (FOR EXAMPLE, TRACK WALKING).

b. THE PERMITTEE MUST DIVERT OFF–SITE STORMWATER (RUN–ON) OR GROUNDWATER AWAY FROM SLOPES AND DISTURBED AREAS WITH INTERCEPTOR DIKES, PIPES, AND/OR SWALES. OFF–SITE STORMWATER SHOULD BE MANAGED SEPARATELY FROM STORMWATER GENERATED ON THE SITE.

c. AT THE TOP OF SLOPES, COLLECT DRAINAGE IN PIPE SLOPE DRAINS OR PROTECTED CHANNELS TO PREVENT EROSION.

i. WEST OF THE CASCADE MOUNTAINS CREST: TEMPORARY PIPE SLOPE DRAINS MUST HANDLE THE PEAK 10–MINUTE FLOW RATE FROM A TYPE 1A, 10–YEAR, 24–HOUR FREQUENCY STORM FOR THE DEVELOPED CONDITION. ALTERNATIVELY, THE 10–YEAR, 1–HOUR FLOW RATE PREDICTED BY AN APPROVED CONTINUOUS RUNOFF MODEL, INCREASED BY A FACTOR OF 1.6, MAY BE USED. THE HYDROLOGIC ANALYSIS MUST USE THE EXISTING LAND COVER CONDITION FOR PREDICTING FLOW RATES FROM TRIBUTARY AREAS OUTSIDE THE PROJECT LIMITS. FOR TRIBUTARY AREAS ON THE PROJECT SITE, THE ANALYSIS MUST USE THE TEMPORARY OR PERMANENT PROJECT LAND COVER CONDITION, WHICHEVER WILL PRODUCE THE HIGHEST FLOW RATES. IF USING THE WESTERN WASHINGTON HYDROLOGY MODEL (WWHM) TO PREDICT FLOWS, BARE SOIL AREAS SHOULD BE MODELED AS "LANDSCAPED AREA."

ii. EAST OF THE CASCADE MOUNTAINS CREST: TEMPORARY PIPE SLOPE DRAINS MUST HANDLE THE EXPECTED PEAK FLOW RATE FROM A 6–MONTH, 3–HOUR STORM FOR THE DEVELOPED CONDITION, REFERRED TO AS THE SHORT DURATION STORM.

i. PLACE EXCAVATED MATERIAL ON THE UPHILL SIDE OF TRENCHES, CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS.

j. PLACE CHECK DAMS AT REGULAR INTERVALS WITHIN CONSTRUCTED CHANNELS THAT ARE CUT DOWN A SLOPE.

ELEMENT 7 – PROTECT DRAIN INLETS

a. PROTECT ALL STORM DRAIN INLETS MADE OPERABLE DURING CONSTRUCTION SO THAT STORMWATER RUNOFF DOES NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR TREATED TO REMOVE SEDIMENT.

b. CLEAN OR REMOVE AND REPLACE INLET PROTECTION DEVICES WHEN SEDIMENT HAS FILLED ONE–THIRD OF THE AVAILABLE STORAGE (UNLESS A DIFFERENT STANDARD IS SPECIFIED BY THE PRODUCT MANUFACTURER).

ELEMENT 8 – STABILIZE CHANNELS AND OUTLETS

a. DESIGN, CONSTRUCT, AND STABILIZE ALL ON–SITE CONVEYANCE CHANNELS TO PREVENT EROSION FROM THE FOLLOWING EXPECTED PEAK FLOWS:

i. WEST OF THE CASCADE MOUNTAINS CREST: CHANNELS MUST HANDLE THE PEAK 10–MINUTE FLOW RATE FROM A TYPE 1A, 10–YEAR, 24–HOUR FREQUENCY STORM FOR THE DEVELOPED CONDITION. ALTERNATIVELY, THE 10–YEAR, 1–HOUR FLOW RATE INDICATED BY AN APPROVED CONTINUOUS RUNOFF MODEL, INCREASED BY A FACTOR OF 1.6, MAY BE USED. THE HYDROLOGIC ANALYSIS MUST USE THE EXISTING LAND COVER CONDITION FOR PREDICTING FLOW RATES FROM TRIBUTARY AREAS OUTSIDE THE PROJECT LIMITS. FOR TRIBUTARY AREAS ON THE PROJECT SITE, THE ANALYSIS MUST USE THE TEMPORARY OR PERMANENT PROJECT LAND COVER CONDITION, WHICHEVER WILL PRODUCE THE HIGHEST FLOW RATES. IF USING THE WWHM TO PREDICT FLOWS, BARE SOIL AREAS SHOULD BE MODELED AS "LANDSCAPED AREA."

ii. EAST OF THE CASCADE MOUNTAINS CREST: CHANNELS MUST HANDLE THE EXPECTED PEAK FLOW RATE FROM A 6–MONTH, 3–HOUR STORM FOR THE DEVELOPED CONDITION, REFERRED TO AS THE SHORT DURATION STORM.

b. PROVIDE STABILIZATION, INCLUDING ARMORING MATERIAL, ADEQUATE TO PREVENT EROSION OF OUTLETS, ADJACENT STREAM BANKS, SLOPES, AND DOWNSTREAM REACHES AT THE OUTLETS OF ALL CONVEYANCE SYSTEMS.

ELEMENT 9 – CONTROL POLLUTANTS

DESIGN, INSTALL, IMPLEMENT, AND MAINTAIN EFFECTIVE POLLUTION PREVENTION MEASURES TO MINIMIZE THE DISCHARGE OF POLLUTANTS. THE PERMITTEE MUST:

a. HANDLE AND DISPOSE OF ALL POLLUTANTS, INCLUDING WASTE MATERIALS AND DEMOLITION DEBRIS THAT OCCUR ON SITE IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORMWATER.

b. PROVIDE COVER, CONTAINMENT, AND PROTECTION FROM VANDALISM FOR ALL CHEMICALS, LIQUID PRODUCTS, PETROLEUM PRODUCTS, AND OTHER MATERIALS THAT HAVE THE POTENTIAL TO POSE A THREAT TO HUMAN HEALTH OR THE ENVIRONMENT. ON–SITE FUELING TANKS MUST INCLUDE SECONDARY CONTAINMENT. SECONDARY CONTAINMENT MEANS PLACING TANKS OR CONTAINERS WITHIN AN IMPERVIOUS STRUCTURE CAPABLE OF CONTAINING 110% OF THE VOLUME CONTAINED IN THE LARGEST TANK WITHIN THE CONTAINMENT STRUCTURE. DOUBLE– WALLED TANKS DO NOT REQUIRE ADDITIONAL SECONDARY CONTAINMENT.

c. CONDUCT MAINTENANCE, FUELING, AND REPAIR OF HEAVY EQUIPMENT AND VEHICLES USING SPILL PREVENTION AND CONTROL MEASURES. CLEAN CONTAMINATED SURFACES IMMEDIATELY FOLLOWING ANY SPILL INCIDENT.

d. DISCHARGE WHEEL WASH OR TIRE BATH WASTEWATER TO A SEPARATE ON–SITE TREATMENT SYSTEM THAT PREVENTS DISCHARGE TO SURFACE WATER, SUCH AS CLOSED–LOOP RECIRCULATION OR UPLAND LAND APPLICATION, OR TO THE SANITARY SEWER WITH LOCAL SEWER DISTRICT APPROVAL.

e. APPLY FERTILIZERS AND PESTICIDES IN A MANNER AND AT APPLICATION RATES THAT WILL NOT RESULT IN LOSS OF CHEMICAL TO STORMWATER RUNOFF. FOLLOW MANUFACTURERS' LABEL REQUIREMENTS FOR APPLICATION RATES AND PROCEDURES.

f. USE BMPS TO PREVENT CONTAMINATION OF STORMWATER RUNOFF BY pH–MODIFYING SOURCES. THE SOURCES FOR THIS CONTAMINATION INCLUDE, BUT ARE NOT LIMITED TO: BULK CEMENT, CEMENT KILN DUST, FLY ASH, NEW CONCRETE WASHING AND CURING WATERS, RECYCLED CONCRETE STOCKPILES, WASTE STREAMS GENERATED FROM CONCRETE GRINDING AND SAWING, EXPOSED AGGREGATE PROCESSES, DEWATERING CONCRETE VAULTS, CONCRETE PUMPING, AND MIXER WASHOUT WATERS.

g. ADJUST THE pH OF STORMWATER OR AUTHORIZED NON–STORMWATER IF NECESSARY TO PREVENT AN EXCEEDANCE OF GROUNDWATER AND/OR SURFACE WATER QUALITY STANDARDS.

h. ASSURE THAT WASHOUT OF CONCRETE TRUCKS IS PERFORMED OFF–SITE OR IN DESIGNATED CONCRETE WASHOUT AREAS ONLY. DO NOT WASH OUT CONCRETE TRUCK DRUMS OR CONCRETE HANDLING EQUIPMENT ONTO THE GROUND, OR INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS. WASHOUT OF CONCRETE HANDLING EQUIPMENT MAY BE DISPOSED OF IN A DESIGNATED CONCRETE WASHOUT AREA OR IN A FORMED AREA AWAITING CONCRETE WHERE IT WILL NOT CONTAMINATE SURFACE OR GROUNDWATER. DO NOT DUMP EXCESS CONCRETE ON SITE, EXCEPT IN DESIGNATED CONCRETE WASHOUT AREAS. CONCRETE SPILLAGE OR CONCRETE DISCHARGE DIRECTLY TO GROUNDWATER OR SURFACE WATERS OF THE STATE IS PROHIBITED. DO NOT WASH OUT TO FORMED AREAS AWAITING LID FACILITIES.

i. OBTAIN WRITTEN APPROVAL FROM ECOLOGY BEFORE USING ANY CHEMICAL TREATMENT, EXCEPT FOR CO2, DRY ICE, OR FOOD GRADE VINEGAR TO ADJUST pH.

j. UNCONTAMINATED WATER FROM WATER–ONLY BASED SHAFT DRILLING FOR CONSTRUCTION OF BUILDING, ROAD, AND BRIDGE FOUNDATIONS MAY BE INFILTRATED PROVIDED THE WASTEWATER IS MANAGED IN A WAY THAT PROHIBITS DISCHARGE TO SURFACE WATERS. PRIOR TO INFILTRATION, WATER FROM WATER–ONLY BASED SHAFT DRILLING THAT COMES INTO CONTACT WITH CURING CONCRETE MUST BE NEUTRALIZED UNTIL pH IS IN THE RANGE OF 6.5 TO 8.5 (SU).

ELEMENT 10 – CONTROL DEWATERING

a. PERMITTEES MUST DISCHARGE FOUNDATION, VAULT, AND TRENCH DEWATERING WATER, WHICH HAVE CHARACTERISTICS SIMILAR TO STORMWATER RUNOFF AT THE SITE, INTO A CONTROLLED CONVEYANCE SYSTEM BEFORE DISCHARGE TO A SEDIMENT TRAP OR SEDIMENT POND.

b. PERMITTEES MAY DISCHARGE CLEAN, NON–TURBID DEWATERING WATER, SUCH AS WELL–POINT GROUNDWATER, TO SYSTEMS TRIBUTARY TO, OR DIRECTLY INTO SURFACE WATERS OF THE STATE, AS SPECIFIED IN ELEMENT 8: STABILIZE CHANNELS AND OUTLETS, PROVIDED THE DEWATERING FLOW DOES NOT CAUSE EROSION OR FLOODING OF RECEIVING WATERS. DO NOT ROUTE CLEAN DEWATERING WATER THROUGH STORMWATER SEDIMENT PONDS. NOTE THAT "SURFACE WATERS OF THE STATE" MAY EXIST ON A CONSTRUCTION SITE AS WELL AS OFF SITE; FOR EXAMPLE, A CREEK RUNNING THROUGH A SITE.

c. OTHER DEWATERING TREATMENT OR DISPOSAL OPTIONS MAY INCLUDE:
   i. INFILTRATION
   ii. TRANSPORT OFF SITE IN A VEHICLE, SUCH AS A VACUUM FLUSH TRUCK, FOR LEGAL DISPOSAL IN A MANNER THAT DOES NOT POLLUTE STATE WATERS.
   iii. ECOLOGY–APPROVED ON–SITE CHEMICAL TREATMENT OR OTHER SUITABLE TREATMENT TECHNOLOGIES.
   iv. SANITARY OR COMBINED SEWER DISCHARGE WITH LOCAL SEWER DISTRICT APPROVAL, IF THERE IS NO OTHER OPTION.
   v. USE OF A SEDIMENTATION BAG WITH DISCHARGE TO A DITCH OR SWALE FOR SMALL VOLUMES OF LOCALIZED DEWATERING.
   vi. PERMITTEES MUST HANDLE HIGHLY TURBID OR CONTAMINATED DEWATERING WATER SEPARATELY FROM STORMWATER.

ELEMENT 11 – MAINTAIN BMPS

a. PERMITTEES MUST MAINTAIN AND REPAIR ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMPS AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION IN ACCORDANCE WITH BMP SPECIFICATIONS.
b. PERMITTEES MUST REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPS WITHIN 30 DAYS AFTER ACHIEVING FINAL SITE STABILIZATION OR AFTER THE TEMPORARY BMPS ARE NO LONGER NEEDED.

ELEMENT 12 – MANAGE THE PROJECT

a. PHASE DEVELOPMENT PROJECTS TO THE MAXIMUM DEGREE PRACTICABLE AND TAKE INTO ACCOUNT SEASONAL WORK LIMITATIONS.

b. INSPECTION AND MONITORING – INSPECT, MAINTAIN AND REPAIR ALL BMPS AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. PROJECTS REGULATED UNDER THE CONSTRUCTION STORMWATER GENERAL PERMIT (CSWGP) MUST CONDUCT SITE INSPECTIONS AND MONITORING IN ACCORDANCE WITH SPECIAL CONDITION S4 OF THE CSWGP.

c. MAINTAINING AN UPDATED CONSTRUCTION SWPPP.

ELEMENT 13 – PROTECT LOW IMPACT DEVELOPMENT (LID) BMPS

a. THE PRIMARY PURPOSE OF LID BMPS/ON–SITE LID STORMWATER MANAGEMENT BMPS IS TO REDUCE THE DISRUPTION OF THE NATURAL SITE HYDROLOGY. LID BMPS ARE PERMANENT FACILITIES.

b. PERMITTEES MUST PROTECT ALL BIORETENTION AND RAIN GARDEN FACILITIES FROM SEDIMENTATION THROUGH INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL BMPS ON PORTIONS OF THE SITE THAT DRAIN INTO THE BIORETENTION AND/OR RAIN GARDEN FACILITIES. RESTORE THE FACILITIES TO THEIR FULLY FUNCTIONING CONDITION IF THEY ACCUMULATE SEDIMENT DURING CONSTRUCTION. RESTORING THE FACILITY MUST INCLUDE REMOVAL OF SEDIMENT AND ANY SEDIMENT–LADEN BIORETENTION/RAIN GARDEN SOILS, AND REPLACING THE REMOVED SOILS WITH SOILS MEETING THE DESIGN SPECIFICATION.

c. PERMITTEES MUST MAINTAIN THE INFILTRATION CAPABILITIES OF BIORETENTION AND RAIN GARDEN FACILITIES BY PROTECTING AGAINST COMPACTION BY CONSTRUCTION EQUIPMENT AND FOOT TRAFFIC. PROTECT COMPLETE LAWN AND LANDSCAPED AREAS FROM COMPACTION DUE TO CONSTRUCTION EQUIPMENT.

d. PERMITTEES MUST CONTROL EROSION AND AVOID INTRODUCING SEDIMENT FROM SURROUNDING LAND USES ONTO PERMEABLE PAVEMENTS. DO NOT ALLOW MUDDY CONSTRUCTION EQUIPMENT ON THE BASE MATERIAL OR PAVEMENT. DO NOT ALLOW SEDIMENT–LADEN RUNOFF ONTO PERMEABLE PAVEMENTS.

e. PERMITTEES MUST CLEAN PERMEABLE PAVEMENTS FOULED WITH SEDIMENTS OR NO LONGER PASSING AN INITIAL INFILTRATION TEST USING LOCAL STORMWATER MANUAL METHODOLOGY OR THE MANUFACTURER'S PROCEDURES.

f. PERMITTEES MUST KEEP ALL HEAVY EQUIPMENT OFF EXISTING SOILS UNDER LID FACILITIES THAT HAVE BEEN EXCAVATED TO FINAL GRADE TO RETAIN THE INFILTRATION RATE OF THE SOILS.

DAVID EVANS AND ASSOCIATES INC.

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

DESIGN ENGINEER
WILLIAM R. WHITEHOUSE
STATE OF WASHINGTON
37437
REGISTERED PROFESSIONAL ENGINEER
9-29-25

ENGINEER OF RECORD

PROJECT NO.: EO214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: R.S.B. | DRAWN BY: R.S.B.
CHECKED BY: R.W. | APPROVED BY: R.W.

PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

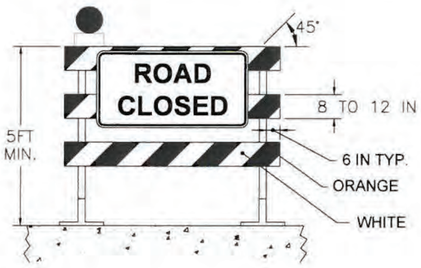
TESC NOTES & SWPPP ELEMENTS

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

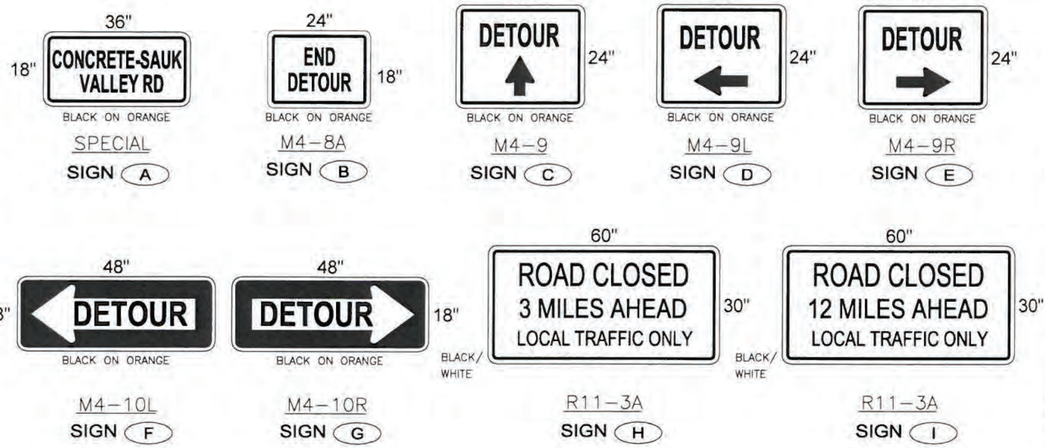
SHEET
3 OF 30

TEMPORARY TRAFFIC CONTROL NOTES:

1. THE DETOUR PROPOSED AS PART OF THIS TEMPORARY TRAFFIC CONTROL PLAN IS EXPECTED TO LAST 60 WORKING DAYS, OR THREE MONTHS. SUBSTANTIAL COMPLETION OF THE WORK SHOULD BE DONE BY THE CLOSING OF THE FISH WINDOW IN LATE SEPTEMBER 2026.
2. ALL TEMPORARY TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SECTION 6 AND THE WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION.
3. ALL SIGNS SHALL BE PER WSDOT SIGN FABRICATION MANUAL, UNLESS OTHERWISE SPECIFIED. DIAMOND SHAPED SIGNS WITHIN WSDOT ROW SHALL BE 48IN X 48IN. SIGNS OUTSIDE OF WSDOT ROW MAY BE 36IN X 36IN.
4. REMOVE CONFLICTING EXISTING PAVEMENT MARKINGS AND SECURELY COVER CONFLICTING EXISTING SIGNS.
5. A MINIMUM OF 5 CHANNELIZATION DEVICES SHALL BE USED ON TAPERS. TYPE C STEADY BURNING LIGHTS ARE REQUIRED ON ALL CHANNELIZING DEVICES USED DURING HOURS OF DARKNESS.
6. THE CONTRACTOR SHALL INSTALL AND REMOVE UPON COMPLETION OF WORK ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNAGE, AS NOTED ON THESE PLANS.
7. NOTIFY THE FOLLOWING ENTITIES 14 DAYS PRIOR TO ANY LANE CLOSURE OR ACCESS CHANGES:
   - SKAGIT COUNTY PUBLIC WORKS DEPARTMENT
   - SKAGIT COUNTY FIRE DISTRICT 10
   - SKAGIT COUNTY SHERIFF DEPARTMENT
   - WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
   - CONCRETE SCHOOL DISTRICT
   - WASTE MANAGEMENT OF WASHINGTON INC.
   - UNITED STATES POSTAL SERVICE
   - SNOHOMISH COUNTY PUBLIC WORKS DEPARTMENT
8. DEVICES SHALL NOT ENCROACH INTO ADJACENT VEHICLE LANES OR DRIVEWAYS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE IN PROVIDING SIGNS AT ALL TIMES DURING CONSTRUCTION. ANY DAMAGE TO ROADS OR PROPERTY ALONG CONCRETE-SAUK VALLEY RD, CAUSED BY CONTRACTOR ACTIVITIES SHALL BE ALL FIXED AT CONTRACTOR'S COST.
10. CONCRETE-SAUK VALLEY RD SOUTH OF SAUK RIVER PARK RD AND NORTH OF FINNEY CREEK RD AND SHALL REMAIN OPEN TO PUBLIC ACCESS DURING CONSTRUCTION.



TYPE 3 BARRICADE DETAIL (1/5) N.T.S.



CHANNELIZING DEVICE SPACING

POSTED SPEED MPH)	IN TAPER (FEET)	IN TANGENT (FEET)
50 / 60	50	100
35 / 45	40	80
25 / 30	20	40

MINIMUM TAPER LENGTH = L (FEET)

LANE WIDTH (FEET)	25	30	35	40	45	50	55	60
10	105	150	205	270	450	500	550	-
11	115	165	225	294	495	550	605	660
12	125	180	245	320	540	600	650	720

MEANING OF LETTER CODES ON APPLICATION DIAGRAM

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (LOW SPEED)	100	100	100
URBAN (HIGH SPEED)	350	350	350
RURAL	500	500	500

PCMS

PANEL 1	PANEL 2
CSV RD	STARTING
CLOSED	MM/DD/YY
AT MP 13	
2 SEC	2 SEC

SCENARIO "A"

PCMS

PANEL 1	PANEL 2
CSV RD	FOLLOW
CLOSED	DETOUR
AT MP 13	ROUTE
2 SEC	2 SEC

SCENARIO "B"

PORTABLE CHANGEABLE MESSAGE SIGN DETAIL (2/5) N.T.S.

WSDOT Notes on Sheet 5 of 30.

APPROVAL EXPIRES 6 MONTHS AFTER DATE SIGNED

ACCEPTED AS NOTED
11/07/2025
WSDOT TRAFFIC OPERATIONS
Within WSDOT Right-of-Way/Limited Access Only
LOCAL AGENCY Shall Also Accept

EXHIBIT "B"
Sheet 1 of 4

DAVID EVANS AND ASSOCIATES INC.

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

DESIGN ENGINEER: RAYNA WHITEWOLF, WASHINGTON, 37437, REGISTERED PROFESSIONAL ENGINEER
ENGINEER OF RECORD
11-5-2025

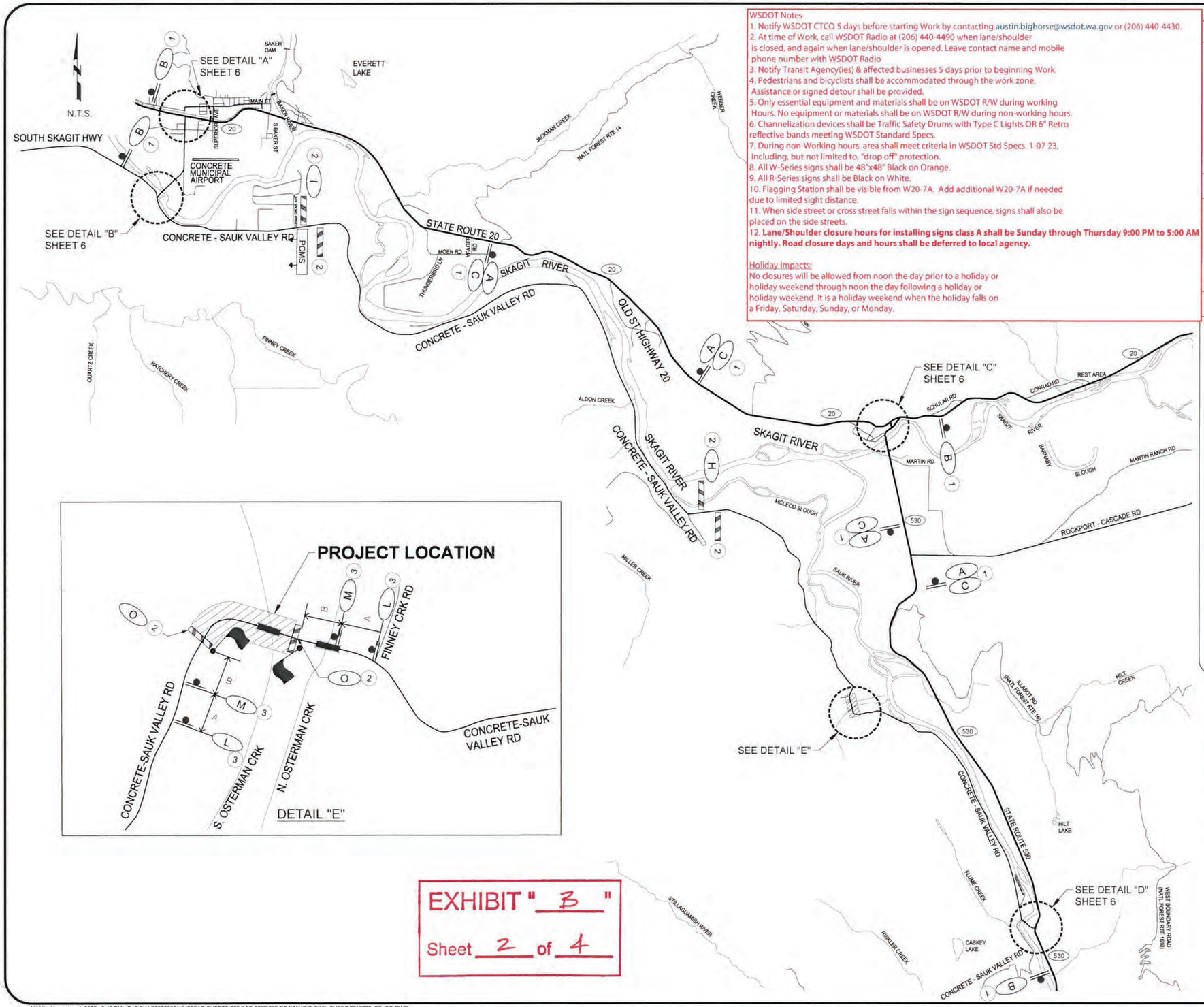
PROJECT NO.: EO2145
FED AID NO.: 4650DR; WA #674680
DESIGNED BY: —
DRAWN BY: —
CHECKED BY: R.W.
APPROVED BY: R.W.
PROJECT LOCATED NEAR: CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD FISH PASSAGE PROJECT - SOUTH OSTERMAN CREEK

TEMPORARY TRAFFIC CONTROL PLAN (1 OF 4)

1 INCH SCALE BAR ADJUST SCALE ACCORDINGLY

SHEET 4 OF 30



WSDOT Notes:

1. Notify WSDOT CTCO 5 days before starting Work by contacting austin.bighorse@wsdot.wa.gov or (206) 440-4430.
2. At time of Work, call WSDOT Radio at (206) 440-4490 when lane/shoulder is closed, and again when lane/shoulder is opened. Leave contact name and mobile phone number with WSDOT Radio
3. Notify Transit Agency(ies) & affected businesses 5 days prior to beginning Work.
4. Pedestrians and bicyclists shall be accommodated through the work zone. Assistance or signed detour shall be provided.
5. Only essential equipment and materials shall be on WSDOT R/W during working Hours. No equipment or materials shall be on WSDOT R/W during non-working hours.
6. Channelization devices shall be Traffic Safety Drums with Type C Lights OR 6" Retro reflective bands meeting WSDOT Standard Specs.
7. During non-Working hours, area shall meet criteria in WSDOT Std Specs. 1-07.23, Including, but not limited to, "drop off" protection.
8. All W-Series signs shall be 48"x48" Black on Orange.
9. All R-Series signs shall be Black on White.
10. Flagging Station shall be visible from W20-7A. Add additional W20-7A if needed due to limited sight distance.
11. When side street or cross street falls within the sign sequence, signs shall also be placed on the side streets.
12. **Lane/Shoulder closure hours for installing signs class A shall be Sunday through Thursday 9:00 PM to 5:00 AM nightly. Road closure days and hours shall be deferred to local agency.**

Holiday Impacts:
No closures will be allowed from noon the day prior to a holiday or holiday weekend through noon the day following a holiday or holiday weekend. It is a holiday weekend when the holiday falls on a Friday, Saturday, Sunday, or Monday.

GENERAL NOTES

1. SIGN SPACING SHALL BE ADJUSTED TO FIT INTERSECTIONS AND DRIVEWAYS.
2. CONTRACTOR SHALL STAGE WORK TO MINIMIZE DISRUPTION TO LOCAL RESIDENTS & EMERGENCY SERVICES.
3. FOR INSTALLING AND REMOVING SIGNS ALONG SR20 AND ANY OTHER ROUTES WITH NARROW SHOULDERS, USE THE SINGLE LANE CLOSURE DETAIL TCP 1 ON PAGE 7. FOR ALL OTHER ROUTES USE THE SHOULDER CLOSURE DETAIL TCP 10.

CONSTRUCTION NOTES

1. INSTALL SIGN(S) ON 4IN X 4IN WOOD POST WHERE APPROPRIATE, PER WSDOT STD PLAN G-22.10.
2. INSTALL TYPE 3 BARRICADES AND SIGN(S) PER WSDOT STANDARDS.
3. INSTALL SIGN ON STEEL TRIPOD SECURED WITH SANDBAGS WHERE APPROPRIATE.

LEGEND

- (#) CONSTRUCTION NOTE
- (#) SIGN NUMBER
- WORK ZONE
- TYPE 3 BARRICADES AS NECESSARY TO BLOCK ROAD
- CLASS "A" CONSTRUCTION SIGN
- CLASS "B" CONSTRUCTION SIGN
- DIRECTION OF TRAFFIC FLOW
- CHANNELIZATION DEVICE
- PCMS PORTABLE CHANGEABLE MESSAGE SIGN
- FLAGGER STATION

APPROVAL EXPIRES 6 MONTHS AFTER DATE SIGNED

ACCEPTED AS NOTED
11/07/2025
WSDOT TRAFFIC OPERATIONS
Within WSDOT Right-of-Way/Limited Access Only
LOCAL AGENCY **Shall Also Accept**

DATUM
NAVD 88

SCALE:
1" = N/A
1" = N/A

DAVID EVANS AND ASSOCIATES INC.

EXHIBIT "B"
Sheet 2 of 4

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

DESIGN ENGINEER
WHITEHOUSE, BENJAMIN, 37437, REGISTERED PROFESSIONAL ENGINEER, STATE OF WASHINGTON
11-5-2025
ENGINEER OF RECORD

PROJECT NO.: EO214-5
FED AID NO.: 4650(DR-)WA #674680
DESIGNED BY: -
DRAWN BY: -
CHECKED BY: R.W.
APPROVED BY: R.W.
PROJECT LOCATED NEAR: CONCRETE, WA
S 14 T 34 N R 9 E

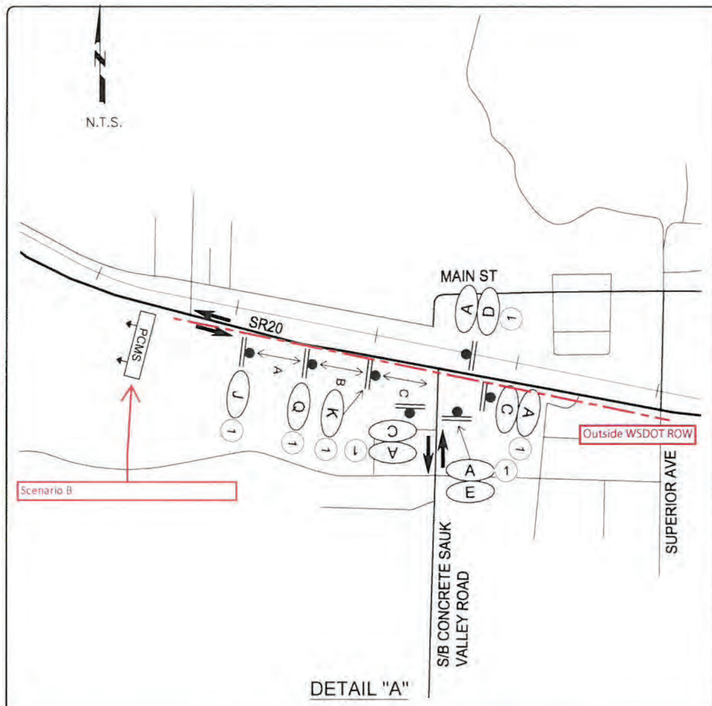
CONCRETE SAUK VALLEY ROAD FISH PASSAGE PROJECT - SOUTH OSTERMAN CREEK

TEMPORARY TRAFFIC CONTROL PLAN (2 OF 4)

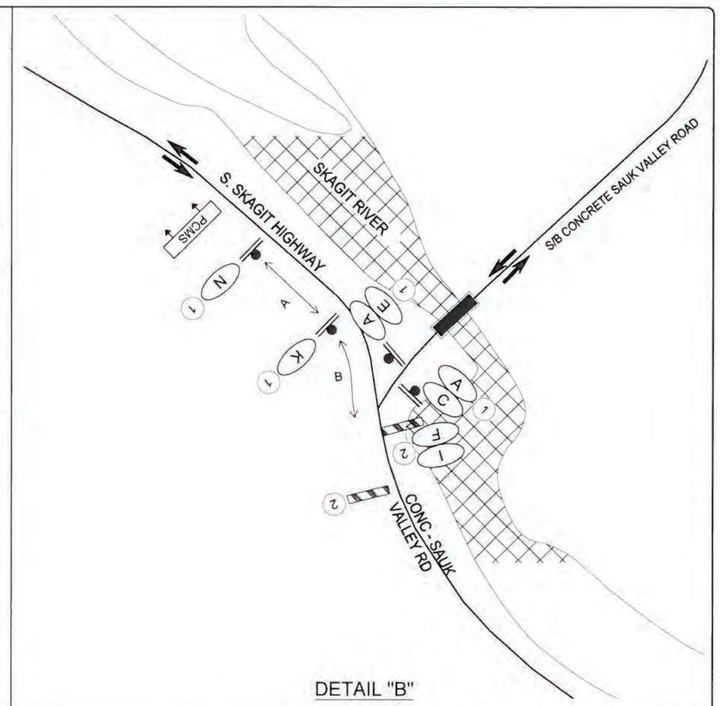
1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET 5 OF 30

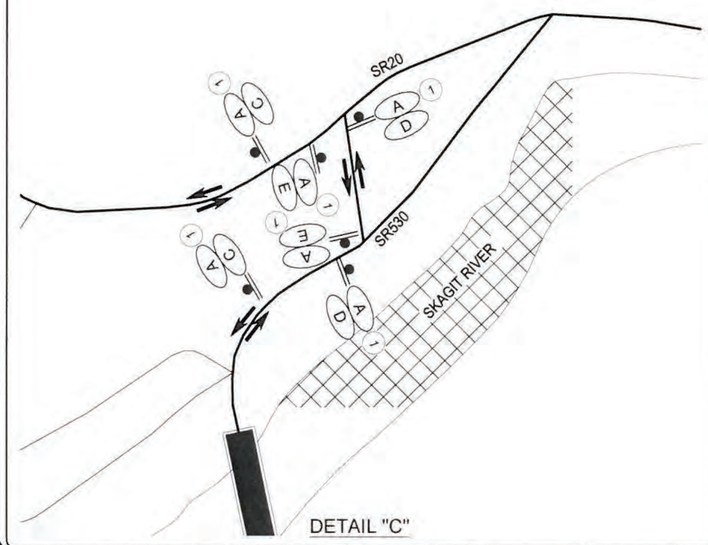
WSDOT Notes on Sheet 5 of 30.



DETAIL "A"



DETAIL "B"



DETAIL "C"

DETAIL "D"

GENERAL NOTES

1. SIGN SPACING SHALL BE ADJUSTED TO FIT INTERSECTIONS AND DRIVEWAYS.
2. CONTRACTOR SHALL STAGE WORK TO MINIMIZE DISRUPTION TO LOCAL RESIDENTS & EMERGENCY SERVICES.
3. FOR INSTALLING AND REMOVING SIGNS ALONG SR20 AND ANY OTHER ROUTES WITH NARROW SHOULDERS, USE THE SINGLE LANE CLOSURE DETAIL TCP 1 ON PAGE 7. FOR ALL OTHER ROUTES USE THE SHOULDER CLOSURE DETAIL TCP 10

CONSTRUCTION NOTES

1. INSTALL SIGN(S) ON 4IN X 4IN WOOD POST WHERE APPROPRIATE, PER WSDOT STD PLAN G-22.10.
2. INSTALL TYPE 3 BARRICADES AND SIGN(S) PER WSDOT STANDARDS
3. INSTALL SIGN ON STEEL TRIPOD SECURED WITH SANDBAGS WHERE APPROPRIATE.

LEGEND

- (#) CONSTRUCTION NOTE
- (#) SIGN NUMBER
- WORK ZONE
- TYPE 3 BARRICADES AS NECESSARY TO BLOCK ROAD
- CLASS "A" CONSTRUCTION SIGN
- CLASS "B" CONSTRUCTION SIGN
- DIRECTION OF TRAFFIC FLOW
- CHANNELIZATION DEVICE
- PCMS PORTABLE CHANGEABLE MESSAGE SIGN
- FLAGGER STATION

APPROVAL EXPIRES 6 MONTHS AFTER DATE SIGNED

ACCEPTED AS NOTED
11/07/2025
WSDOT TRAFFIC OPERATIONS
Within WSDOT Right-of-Way/Limited Access Only
LOCAL AGENCY **Shall Also Accept**

DATUM
NAVD 88

SCALE:
1" = N/A
1" = N/A

DAVID EVANS AND ASSOCIATES INC.

EXHIBIT "B"
Sheet 3 of 4

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

DESIGN ENGINEER: WHITEHOLT, 37437, REGISTERED PROFESSIONAL ENGINEER, STATE OF WASHINGTON
ENGINEER OF RECORD

11-5-2025

PROJECT NO.: EO214-5
FED AID NO.: 4650DR-WA #674680
DESIGNED BY: -
DRAWN BY: -
CHECKED BY: R.W.
APPROVED BY: R.W.

PROJECT LOCATED NEAR: CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD FISH PASSAGE PROJECT - SOUTH OSTERMAN CREEK

TEMPORARY TRAFFIC CONTROL PLAN (3 OF 4)

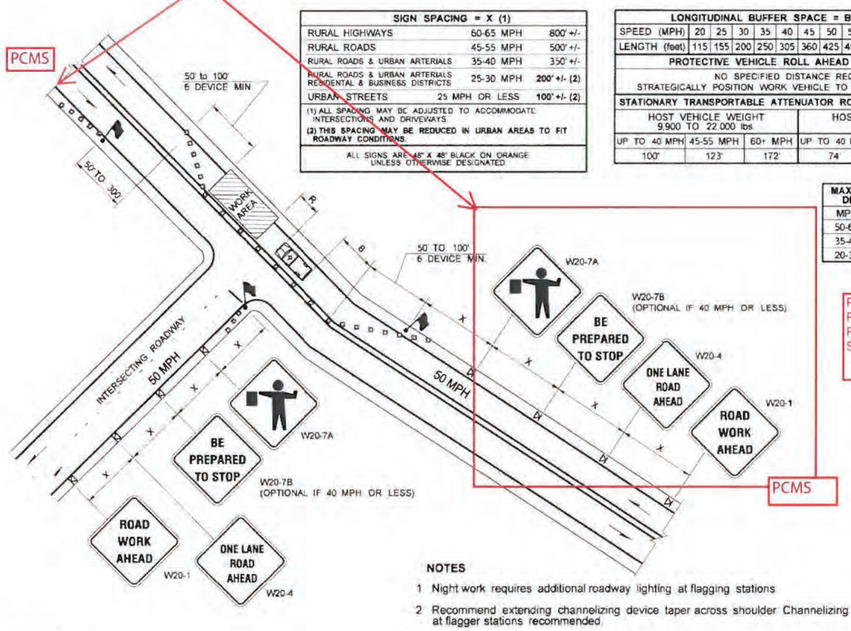
1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
6 OF 30

Accommodate same warning sign sequence and spacing X before flagging station

WSDOT Notes on Sheet 5 of 30.

PCMS



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.

ALL SIGNS ARE 48" X 48" BLACK ON ORANGE UNLESS OTHERWISE DESIGNATED

LONGITUDINAL BUFFER SPACE = B										
SPEED (MPH)	20	25	30	35	40	45	50	55	60	65
LENGTH (feet)	115	155	200	250	305	360	425	495	570	645

PROTECTIVE VEHICLE ROLL AHEAD DISTANCE = R
NO SPECIFIED DISTANCE REQUIRED
STRATEGICALLY POSITION WORK VEHICLE TO PROTECT WORK CREW.

STATIONARY TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R					
HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.			HOST VEHICLE WEIGHT 22,001+ lbs.		
UP TO 40 MPH	45-55 MPH	60+ MPH	UP TO 40 MPH	45-55 MPH	60+ MPH
100'	123'	172'	74'	100'	150'

MAXIMUM CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50-65	20	80
35-45	20	60
20-30	20	40

PCMS
Phase 1 - Road Work Ahead
Phase 2- Be Prepared to Stop

PCMS

NOTES

1. Night work requires additional roadway lighting at flagging stations.
2. Recommend extending channelizing device taper across shoulder. Channelizing devices at flagger stations recommended.
3. Protective Vehicle recommended and may be a work vehicle strategically located to shield the work area.
4. For low-volume roadways with short-duration work zones on straight roadways where the flagger is visible to road users approaching from both directions a single flagger, positioned to be visible from both directions may be used.
5. Extend the buffer space to locate the flagger station in advance of a curve, if necessary.
6. Flaggers shall provide control and direction for pedestrians.
7. Sign sequence is the same for both directions of travel on the roadway.

LEGEND

- FLAGGING STATION
- SIGN LOCATION
- CHANNELIZING DEVICES
- PROTECTIVE VEHICLE

TYPICAL ONE-LANE, TWO-WAY TRAFFIC CONTROL WITH FLAGGERS

APPLICABLE FOR CLASS "A" SIGN INSTALL AT THE INTERSECTION OF:
SR20 & SR530
SR20 & CONCRETE SAUK VALLEY ROAD
SR530 & CONCRETE SAUK VALLEY ROAD
SOUTH SKAGIT HIGHWAY & CONCRETE SAUK VALLEY ROAD

SIGN SPACING = X (1)		
FREEWAYS & EXPRESSWAYS	50-75 MPH	1500' +/-
RURAL HIGHWAYS	60-65 MPH	800' +/-
RURAL ROADS	45-55 MPH	500' +/-

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS AT-GRADE INTERSECTIONS AND DRIVEWAYS.

ALL SIGNS ARE 48" X 48" BLACK ON ORANGE UNLESS OTHERWISE DESIGNATED

SHOULDER CLOSURE TAPER LENGTH = L/3								
SHOULDER WIDTH (feet)	SPEED (MPH)	45	50	55	60	65	70	75
6	L/3 (feet)	90	120	120	120	160	160	160
10		150	200	200	200	240	240	280

FOR SHOULDERS LESS THAN 6, USE 3 DEVICES MINIMUM

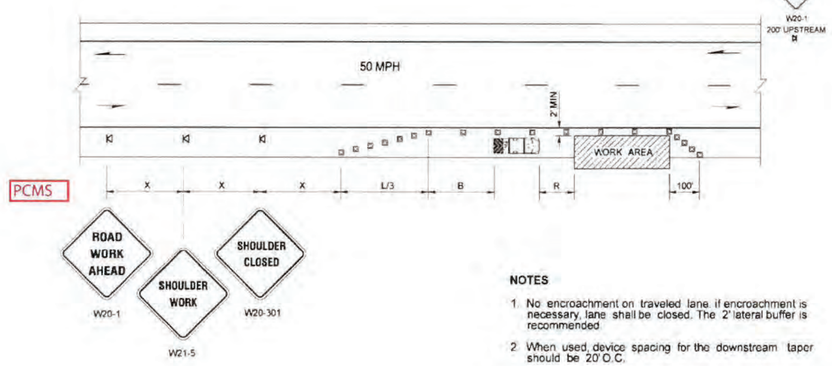
MAXIMUM CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50-75	40	80
35-45	30	60

LONGITUDINAL BUFFER SPACE = B								
SPEED (MPH)	45	50	55	60	65	70	75	
LENGTH (feet)	350	425	495	570	645	730	820	

STATIONARY TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R			
HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.		HOST VEHICLE WEIGHT 22,001+ lbs.	
45-55 MPH	60+ MPH	45-55 MPH	60+ MPH
123'	172'	100'	150'

PROTECTIVE VEHICLE ROLL AHEAD DISTANCE = R
NO SPECIFIED DISTANCE REQUIRED
STRATEGICALLY POSITION WORK VEHICLE TO PROTECT WORK CREW.

PCMS
Phase 1 -Shoulder work
Phase 2 - 1 mile ahead



NOTES

1. No encroachment on traveled lane. If encroachment is necessary, lane shall be closed. The 2' lateral buffer is recommended.
2. When used, device spacing for the downstream taper should be 20' O.C.
3. If shoulder is used for traveled lanes at certian times, use full L taper and TMA.
4. TMA required for freeways.

LEGEND

- SIGN LOCATION
- CHANNELIZING DEVICES
- TMA

TYPICAL SHOULDER CLOSURE - HIGH SPEED (45 MPH OR HIGHER)

APPLICABLE FOR CLASS "A" SIGN INSTALL ON:
SR20 MP88 - MP98
SR530 MP61 - MP68
CONCRETE SAUK VALLEY ROAD MP0 - MP16
SOUTH SKAGIT HIGHWAY MP23 - MP24

An 8-foot paved shoulder is required to implement a shoulder closure only. The truck mounted attenuator (TA) must be parked on full-width pavement to ensure crash-worthiness. If the location lacks an 8-foot shoulder, a flagging operation must be used instead

APPROVAL EXPIRES 6 MONTHS AFTER DATE SIGNED

ACCEPTED AS NOTED
11/07/2025
WSDOT TRAFFIC OPERATIONS
Within WSDOT Right-of-Way/Limited Access Only
LOCAL AGENCY Shall Also Accept

EXHIBIT "B"
Sheet 4 of 4

DAVID EVANS AND ASSOCIATES INC.

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

DESIGN ENGINEER: NATHAN WHITEHOLF, 37437, REGISTERED PROFESSIONAL ENGINEER, STATE OF WASHINGTON
ENGINEER OF RECORD
11-5-2025

PROJECT NO.: EO2145
FED AID NO.: 4650DR-WA #674680
DESIGNED BY: -
DRAWN BY: -
CHECKED BY: -
APPROVED BY: -
PROJECT LOCATED NEAR: CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD
FISH PASSAGE PROJECT - SOUTH OSTERMAN CREEK

TEMPORARY TRAFFIC CONTROL PLAN (4 OF 4)

1 INCH SCALE BAR ADJUST SCALE ACCORDINGLY

SHEET 7 OF 30

MAMI - November 4, 2025 - 9:43 PM - P:\S\SKAG00000031\0400CAD\SHEETS\000 CAD-2020\010 DRAWING\B-CIVIL SHEET\2017028_TC_SO.DWG

0 20 40
SCALE IN FEET

PROJECT LIMIT
STA. 219+18.75
N.526324.546
E.1454009.140

REFER TO SHEETS 17 AND 27
FOR ALIGNMENT INFORMATION

PROJECT LIMIT
STA. 104+00.00
N. 526608.175
E. 1454079.430

PROJECT LIMIT
STA. 100+00
N.526242.861
E.1454214.466

PROJECT LIMIT
STA. 215+71.93
N.526401.299
E.1454329.180

CONCRETE SAUK VALLEY RD

S. OSTERMAN CREEK

CONST C/L

EX. R/W

30.00 R/W

PROPOSED TEMPORARY CONSTRUCTION EASEMENT ACQUISITION

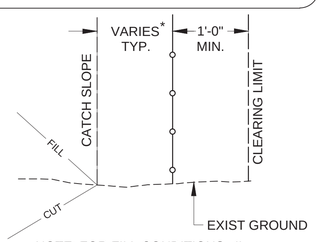
PARCEL ID	PARCEL #	PROPERTY OWNER(S)	OWNER MAILING ADDRESS	LOT AREA (SQ FT)	TEMPORARY CONSTRUCTION EASEMENT (SQ FT)	REMAINING AREA (SQ FT)
1	P30970	LORI D. MANNING	17705 67TH AVE E, PUYALLUP, WA 98375	±99,317	±33,394	±65,923
2	P30972	SIERRA PACIFIC LAND & TIMBER CO.	PO BOX 496028, REDDING, CA 96049	±2,592,383	±19,755	±2,572,628

XX EROSION CONTROL KEYNOTES

1. PRESERVING NATURAL VEGETATION (BMP C101).
2. SITE REVEGETATION SHALL CONFORM TO THE SPECIAL PROVISIONS AND SHEETS 25 & 26
3. MATERIALS DELIVERY, STORAGE & CONTAINMENT (BMP C153)
4. STREET CLEANING (BMP C107)
5. DUST CONTROL (BMP C140)
6. SURFACE ROUGHENING (BMP C130)
7. MAINTAIN ACCESS DURING CONSTRUCTION.
8. SEEDING & MULCHING (BMP C120 & C121). MULCHING SHALL BE "LONG-TERM MULCH" MEETING THE SPECIFICATIONS OF 9-14,5(2)A OF THE STANDARD SPECIFICATIONS.
9. DRIVEWAY LOCATION NOT SURVEYED BY LICENSED SURVEYOR. CONTRACTOR TO FIELD VERIFY LOCATION.

LEGEND

- HIGH VISIBILITY FENCE (BMP C103)
- SAW-CUTTING LIMITS (BMP C152)
- STABILIZED CONSTRUCTION ENTRANCE (C105)
- WATTLES (BMP C235)
- LIMITS OF VEGETATION REMOVAL
- DITCH
- TRAINGULAR SILT DIKE (BMP C208)
- DRAINAGE FLOW DIRECTION ARROWS (SHEET FLOW, OR SHALLOW CHANNEL FLOW) ON ROADWAY.
- DRAINAGE FLOW DIRECTION ARROWS (SHEET FLOW, OR SHALLOW CHANNEL FLOW) OFF ROADWAY.



* NOTE: FOR FILL CONDITIONS 4'.
FOR CUT CONDITIONS 4' TO 9'

DETAIL "A" HVF INSTALLATION (TYP)
N.T.S

DATUM
NAVD 88

SCALE:
1" = 20' HOR
1" = N/A

DAVID EVANS AND ASSOCIATES INC.

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

DESIGN ENGINEER
WHITEHOLF
REGISTERED PROFESSIONAL ENGINEER
STATE OF WASHINGTON
37437
9-29-25

ENGINEER OF RECORD

PROJECT NO.: EO214-5
FED. AID NO.: 4659DR-WA #674680
DESIGNED BY: R.S.B.
DRAWN BY: R.S.B.
CHECKED BY: T.M.W
APPROVED BY: T.M.W

PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

TESC PLAN

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
8 OF 30

0 20 40
SCALE IN FEET

PROJECT LIMIT
STA. 219+18.75
N.526324.546
E.1454009.140

C & G STAKING POINTS.	
NORTHING	EASTING
526272.060	1454124.852
526282.256	1454240.310
526298.074	1454226.442
526298.166	1454114.129
526309.929	1454016.185
526317.747	1454211.112
526318.850	1454030.684
526321.211	1454104.437
526332.457	1453999.070
526333.675	1454050.241

C & G STAKING POINTS.	
NORTHING	EASTING
526338.094	1454196.585
526351.158	1454099.215
526351.316	1454001.240
526354.703	1454179.606
526368.883	1454010.862
526373.939	1454336.818
526381.807	1454024.100
526386.627	1454192.776
526389.423	1454304.959
526391.155	1454217.278

C & G STAKING POINTS.	
NORTHING	EASTING
526393.595	1454049.942
526402.856	1454351.948
526404.894	1454286.963
526406.470	1454235.351
526422.540	1454057.830
526424.765	1454274.595
526439.352	1454242.175
526447.467	1454074.794
526455.784	1454171.324
526455.963	1454355.241

GENERAL NOTES

1. REMOVAL OF ALL EXIST DRAINAGE FEATURES SHALL BE COORDIANTED WITH THE TEMPORARY EROSION CONTROL PLANS AND SITE ISOLATION & DEWATERING PLANS.

XX SITE PREPARATION NOTES

1. PRESERVE & PROTECT EXIST BURIED POWER & TELECOM UTILITY.
2. PRESERVE & PROTECT EXIST SIGN & POST.
3. PRESERVE EXIST TREE.
4. PRESERVE EXIST CHANNELIZATION MARKINGS.
5. MAINTAIN HOMEOWNER ACCESS THROUGHOUT CONSTRUCTION. SEE TRAFFIC CONTROL PLANS.
6. REMOVE & DISPOSE OF EXIST CULVERT AS PART OF STRUCTURE EXCAVATION CLASS A.
7. REMOVE & SALVAGE EXIST SIGN & POST.
8. REMOVE & SALVAGE EXIST TREE FOR FUTURE USE.
9. CLEAR & GRUB TO LIMITS OF THE TABLES SHOWN. NO SIGNIFICANT TREES (6 INCHES DBH) SHALL BE REMOVED BEYOND CLEARING LIMITS. REUSE WOODY MATERIAL GENERATED THROUGH CLEARING NON-INVASIVE SPECIES AS REQUIRED IN THE SPECIAL PROVISIONS.
10. SAWCUT EX. PVMT PER SEC. 2-03. EXIST PVMT THICKNESS UNKNOWN. ESTIMATED TO BE 3 INCHES ±.

LEGEND

- LIMITS OF ASPHALT REMOVAL
- LIMITS OF CLEARING & GRUBBING (C&G)
- LIMITS OF TEMPORARY CONSTRUCTION EASEMENT

CONST C/L
CONCRETE SAUK VALLEY RD
S. OSTERMAN CREEK
EX. R/W
30.00 R/W
100+00
101+00
102+00
103+00
104+00
217+00
218+00
219+00
220+00

PROJECT LIMIT
STA. 100+00
N.526242.861
E.1454214.466

PROJECT LIMIT
STA. 104+00.00
N. 526608.175
E. 1454079.430

REMOVE EXISTING EMBANKMENT STABILIZATION MEASURES

PROJECT LIMIT
STA. 215+71.93
N.526401.299
E.1454329.180

C & G STAKING POINTS.	
NORTHING	EASTING
526463.909	1454150.667
526475.406	1454066.943
526478.338	1454344.089
526487.517	1454146.752
526488.278	1454186.700
526492.513	1454331.209
526495.887	1454298.168
526504.552	1454140.509
526504.629	1454059.973
526508.266	1454292.254

C & G STAKING POINTS.	
NORTHING	EASTING
526513.575	1454204.572
526519.313	1454224.306
526520.795	1454269.789
526521.986	1454256.553
526522.088	1454245.800
526533.793	1454053.188
526562.637	1454044.742
526598.392	1454041.235

SCALE:
1" = 20' HOR
1" = N/A

DATUM:
NAVD 88

DAVID EVANS AND ASSOCIATES INC.

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

DESIGN ENGINEER
WHITEWOLF
RYAN
REGISTERED PROFESSIONAL ENGINEER
37437
9-29-25

ENGINEER OF RECORD

PROJECT NO.: EO214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: R.S.B.
DRAWN BY: R.S.B.
CHECKED BY: T.M.W
APPROVED BY: T.M.W

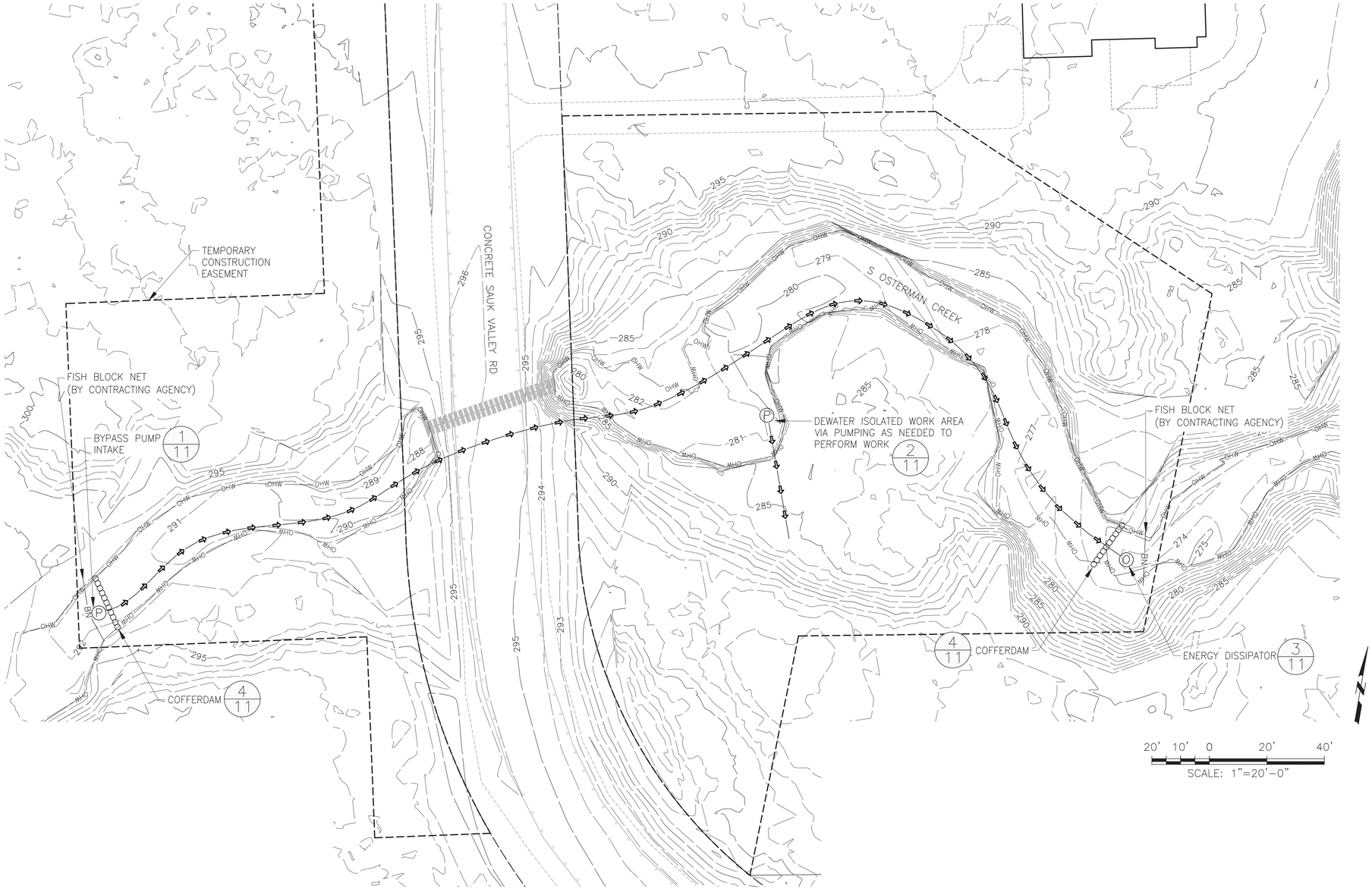
PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

SITE PREPARATION PLAN

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
9 OF **30**



NOTES:

1. ALL GRADING AND CHANNEL WORK BELOW THE ORDINARY HIGH WATER MARK SHALL BE ISOLATED FROM ACTIVELY FLOWING SURFACE WATERS.
2. THE TEMPORARY STREAM DIVERSION APPROACH SHOWN ON THIS SHEET IS ONE EXAMPLE OF AN ACCEPTABLE APPROACH FOR DIVERTING WATER AROUND THE WORK AREA. THE CONTRACTOR SHALL SUBMIT A TEMPORARY STREAM DIVERSION PLAN FOR REVIEW AS REQUIRED IN SECTION 8-31 OF THE STANDARD SPECIFICATIONS.
3. THE CONTRACTOR SHALL CLOSELY COORDINATE WITH THE ENGINEER REGARDING SCHEDULE AND IMPLEMENTATION OF TEMPORARY STREAM DIVERSION ELEMENTS AS REQUIRED IN SECTION 8-31 OF THE STANDARD SPECIFICATIONS AND ALLOW FOR SCHEDULING OF FISH REMOVAL. NO WORK SHALL BE PERFORMED WITHIN THE ISOLATED WORK AREA, INCLUSIVE OF DEWATERING, UNTIL FISH REMOVAL HAS BEEN COMPLETED.
4. THE CONTRACTOR IS REQUIRED TO DESIGN A CONTINGENCY TEMPORARY STREAM DIVERSION AS REQUIRED IN SECTION 8-31 OF THE SPECIAL PROVISIONS (NOT ILLUSTRATED ON THIS SHEET).
5. IN ADDITION TO TEMPORARY STREAM DIVERSION, THE CONTRACTOR IS ALSO RESPONSIBLE FOR DESIGNING AND IMPLEMENTING A TEMPORARY DEWATERING SYSTEM AS REQUIRED IN SECTION 6-20 OF THE SPECIAL PROVISIONS. THE DEWATERING PUMP SHOWN ON THIS SHEET IS INCLUDED FOR ILLUSTRATION PURPOSES ONLY; THE CONTRACTOR SHALL IMPLEMENT ELEMENTS OF THE DEWATERING SYSTEM AS DESIGNED BY THE CONTRACTOR ONCE THE DEWATERING SYSTEM WORKING DRAWINGS HAVE BEEN APPROVED BY THE ENGINEER.

Natural Systems Design
+ Coastal Geologic Services

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

COUNTY ENGINEER

ENGINEER OF RECORD
JON TRUSCOTT
STATE OF WASHINGTON
PROFESSIONAL ENGINEER
9/24/25

PROJECT NO.: EO214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: NT
DRAWN BY: DBS
CHECKED BY:
APPROVED BY:

PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

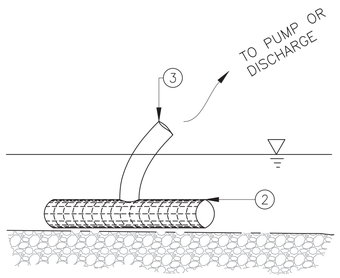
CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

SITE ISOLATION & DEWATERING

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
10 OF 30

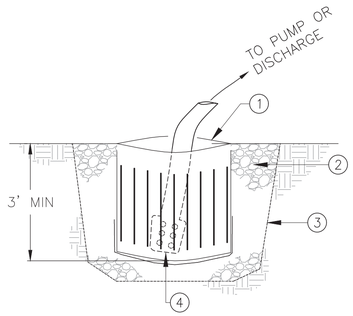
NIC - September 25, 2025 - 2:38 PM - P:\A_GIDAVID EVANS AND ASSOCIATES\SOUTH_OSTERMAN_CONSTRUCTION_SUPPORT_DEA-017\DESIGN\CAD DWGS\DEWATER-PLAN.DWG



NOTES:

1. STREAM BYPASS INTAKE SHALL REST ON EXISTING STREAMBED.
2. PUMP INTAKE SHALL BE FITTED WITH FISH SCREEN MEETING APPLICABLE RCW SECTIONS (RCW 77.57.010 AND 77.57.070), AS WELL AS NMFS CRITERIA. SEE SECTION 7-06 FOR MORE INFORMATION.
3. PUMP CAPACITY SHALL BE SIZED TO CONVEY THE ENTIRETY OF STREAMFLOW WITHOUT DEWATERING THE CHANNEL OUTSIDE THE ISOLATED WORK AREA. VARIABLE PUMPING MAY BE REQUIRED. SEE PROJECT PERMITS AND SECTION 8-31 FOR MORE INFORMATION.

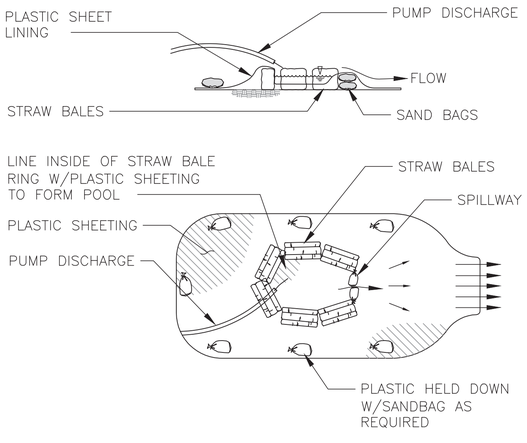
BYPASS PUMP INTAKE 1/11
NOT TO SCALE



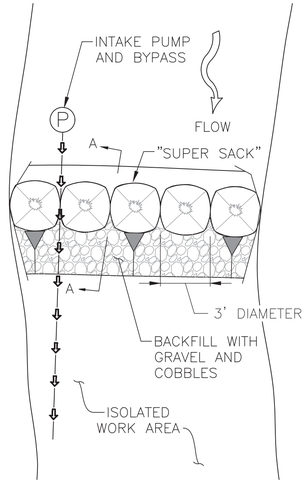
NOTES:

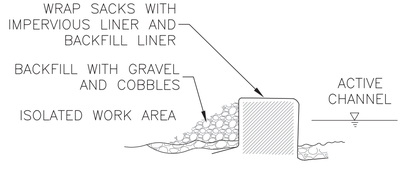
1. CORRUGATED PLASTIC OR METAL PIPE 36" MIN DIAMETER PERFORATED PIPE, ONE PER EACH PUMP.
2. STREAMBED SEDIMENT.
3. LIMIT OF EXCAVATION. INSTALL PIPE AND BACKFILL WITH STREAMBED SEDIMENT.
4. PUMP INTAKE SHALL BE FITTED WITH FISH SCREEN MEETING RCW 77.57.010 AND RCW 77.57.070.
5. THE INTENT OF DEWATERING PUMPS IS TO REMOVE GROUNDWATER OR SURFACE WATER WHICH SEEPS INTO THE ISOLATED WORK AREA. DEWATERING PUMPS ARE OPTIONAL; IF USED, DEWATERING PUMPS SHALL BE OPERATED IN SUCH A WAY THAT NO PORTION OF THE STREAMBED OUTSIDE THE ISOLATED WORK AREA BECOMES DEWATERED.
6. THE DEWATERING PUMP INTAKE SHOWN ON THIS SHEET IS ONE EXAMPLE OF AN ELEMENT TO BE INCLUDED IN THE DEWATERING PLAN; ADDITIONAL ELEMENTS MAY BE REQUIRED TO DEWATER THE SITE AS REQUIRED IN THE SPECIAL PROVISIONS.
7. DIVERSION OF SURFACE FLOWS AND ALL DEWATERING SHALL BE CLOSELY COORDINATED AND TIMED WITH FISH EXCLUSION EFFORTS. DIVERSION OF SURFACE FLOWS AND/OR DEWATERING SHALL NOT OCCUR UNTIL FISH EXCLUSION EFFORTS HAVE BEEN COMPLETED.

DEWATERING PUMP INTAKE 2/11
NOT TO SCALE



ENERGY DISSIPATOR 3/11
NOT TO SCALE





SECTION A-A

COFFERDAM 4/11
NOT TO SCALE

NSD CGS Natural Systems Design + Coastal Geologic Services

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

ENGINEER OF RECORD
JON TRUSCOTT
STATE OF WASHINGTON
PROFESSIONAL ENGINEER

COUNTY ENGINEER

PROJECT NO.: EO214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: NT
DRAWN BY: DBS
CHECKED BY:
APPROVED BY:

PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

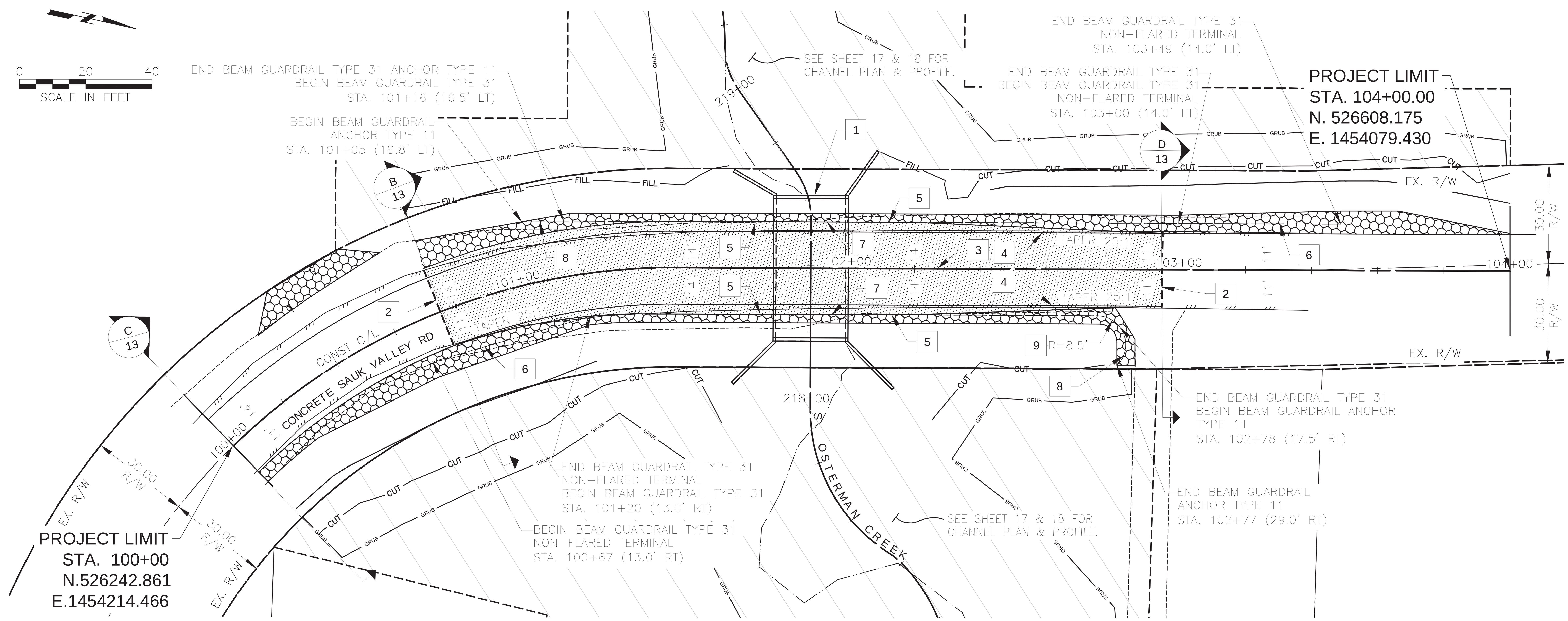
CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

SITE ISOLATION & DEWATERING DETAILS

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET 11 OF 30

NIC - September 25, 2025 - 2:38 PM - P:\A_GIDAVID EVANS AND ASSOCIATES\SOUTH_OSTERMAN_CONSTRUCTION_SUPPORT_DEA-017\DESIGN\CAD DWGS\TESC DETAILS.DWG



GENERAL SHEET NOTES

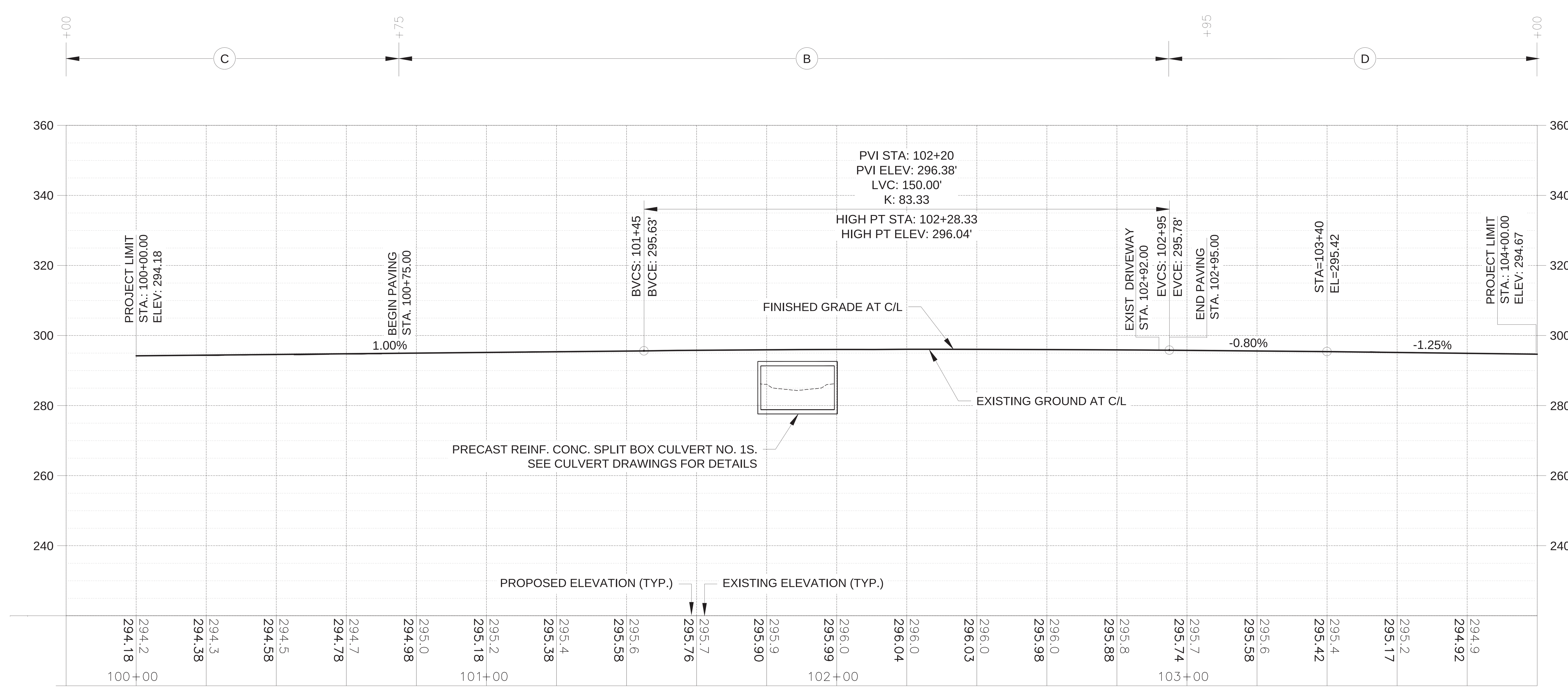
1. FOR CREEK DESIGN, SEE STREAM DRAWINGS ON SHEETS 17-26.
2. FOR ROAD SUPERELEVATION DIAGRAM, SEE SHEET 13.
3. REFER TO FINAL GEOTECH REPORT DATED 10/11/2021 FOR COMPACTION & MATERIAL REQUIREMENTS.

XX CONSTRUCTION NOTES

1. PRECAST REINF. CONC. SPLIT BOX CULVERT NO. 1S. SEE CULVERT SHEETS FOR DESIGN DETAILS.
2. PAVING LIMITS. MATCH EXIST GRADE & SEAL ALL BUTT JOINTS. SEE DETAIL E ON SHEET 13.
3. INSTALL PAINTED YELLOW DOUBLE CENTERLINE PER WSDOT STD PLAN M-20.10.
4. INSTALL PAINTED WHITE EDGE LINE PER WSDOT STD PLAN M-20.10.
5. INSTALL BEAM GUARDRAIL TYPE 31 PER WSDOT STD PLAN C-20.10.
6. INSTALL BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL PER WSDOT STD. PLAN C-22.40-11.
7. INSTALL BEAM GUARDRAIL TYPE 31 W/ BOX CULVERT GUARDRAIL STEEL POST TYPE 31 PER WSDOT STD PLAN C-20.41
8. INSTALL BEAM GUARDRAIL ANCHOR TYPE 11 TERMINAL PER WSDOT STD PLAN C-23.70-01.
9. INSTALL BEAM GUARDRAIL PLACEMENT STRONG POST TYPE 31 PER WSDOT STD PLAN C-20.44.

LEGEND

- DITCH
- LIMITS OF HMA CL 1\2 IN. PG 58H-22 SURFACING
- LIMITS OF GRAVEL SHOULDER SURFACING



DATUM
NAVD 88

SCALE:
1" = 20' HOR
1" = 20' VER

DAVID EVANS AND ASSOCIATES INC.

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

REVISIONS | NO. | DATE

DESIGN ENGINEER
ENGINEER OF RECORD
10-17-25

PROJECT NO.: E0214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: R.S.B. DRAWN BY: R.S.B.
CHECKED BY: R.W. APPROVED BY: R.W.

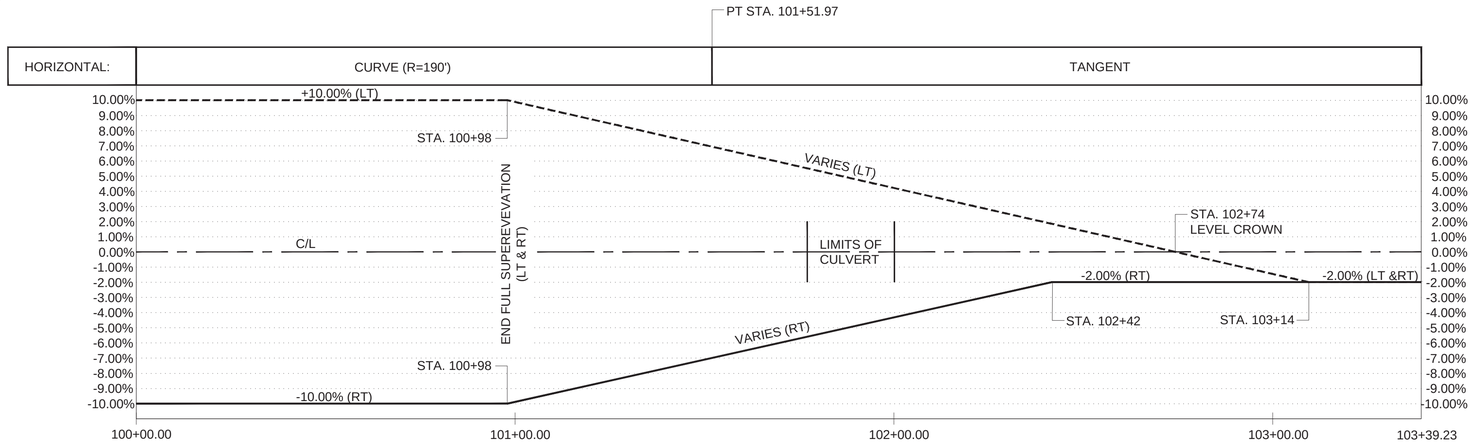
PROJECT LOCATED NEAR: CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD FISH PASSAGE PROJECT - SOUTH OSTERMAN CREEK

ROAD PLAN & PROFILE

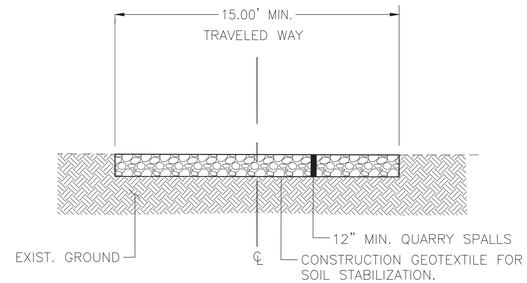
1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

JAJE - October 17, 2025 - 12:44 PM - P:\S\SKAG00000031\0400CAD\SHEETS\000 CAD-2020\010 DRAWING\B-CIVIL SHEET\2017028_PP_SO.DWG

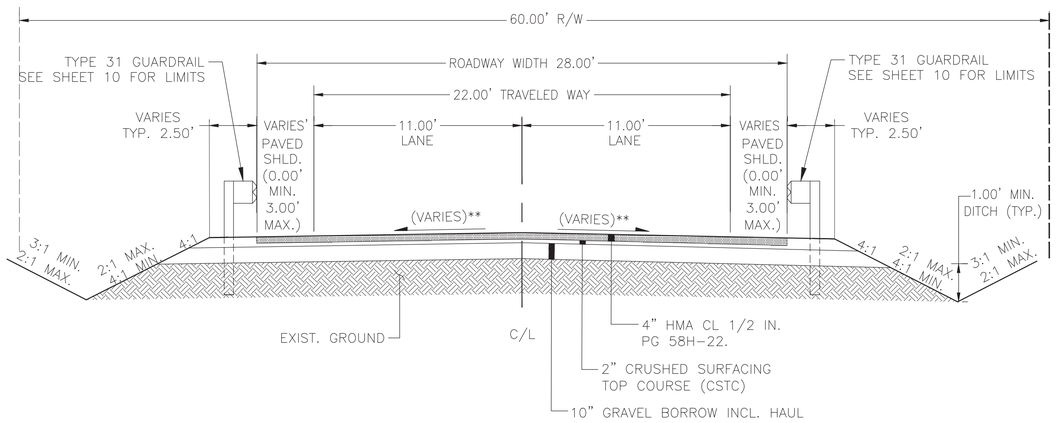


SUPEREVELVATION DIAGRAM - CONCRETE SAUK VALLEY ROAD

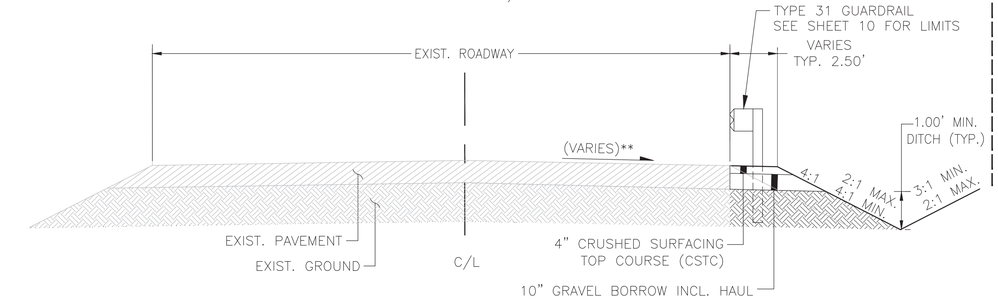
SCALE:
1" = 20' HOR
1" = 4' VER



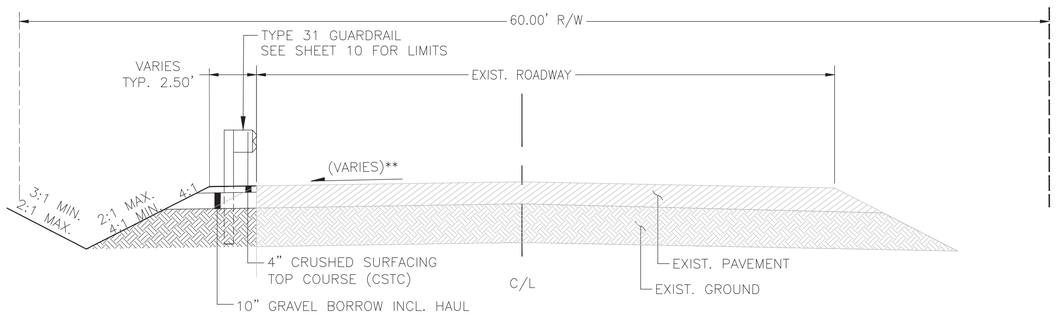
A ROADWAY SECTION FOR STABILIZED CONSTRUCTION ENTRANCE
Scale: 1" = 4'



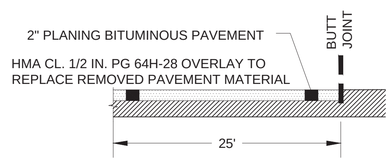
B ROAD TYPICAL SECTION FOR CONCRETE SAUK VALLEY RD (STA. 100+75.00 TO STA. 102+95.00)
Scale: 1" = 4'
** REFER TO SUPERELEVATION DIAGRAM ABOVE



C ROAD TYPICAL SECTION FOR CONCRETE SAUK VALLEY RD (STA. 100+00.00 TO STA. 100+75.00)
Scale: 1" = 4'
** REFER TO SUPERELEVATION DIAGRAM ABOVE



D ROAD TYPICAL SECTION FOR CONCRETE SAUK VALLEY RD (STA. 102+95.00 TO STA. 104+00.00)
Scale: 1" = 4'
** REFER TO SUPERELEVATION DIAGRAM ABOVE



E LONGITUDINAL BUTT-JOINT PLANING DETAIL
NTS

DAVID EVANS AND ASSOCIATES INC.

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

DESIGN ENGINEER
WHITEHOUSE
STATE OF WASHINGTON
37437
REGISTERED PROFESSIONAL ENGINEER
9-29-25

ENGINEER OF RECORD

PROJECT NO.: E0214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: R.S.B.
DRAWN BY: R.S.B.
CHECKED BY: R.W.
APPROVED BY: R.W.

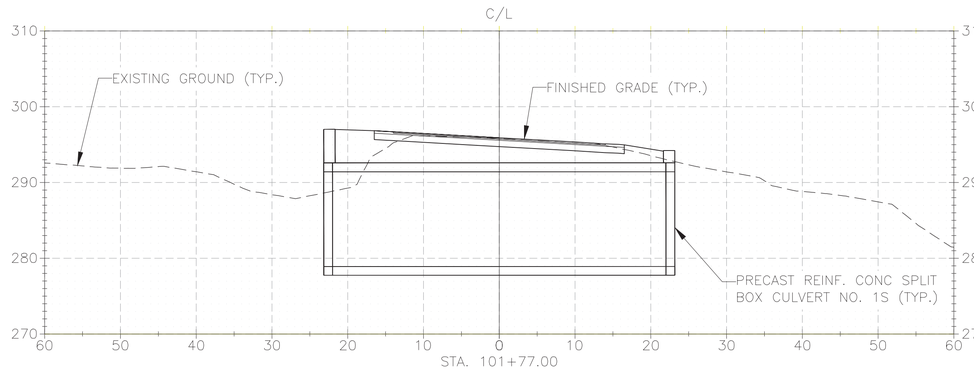
PROJECT LOCATED NEAR: CONCRETE, WA
S 14 T 34 N R 9 E

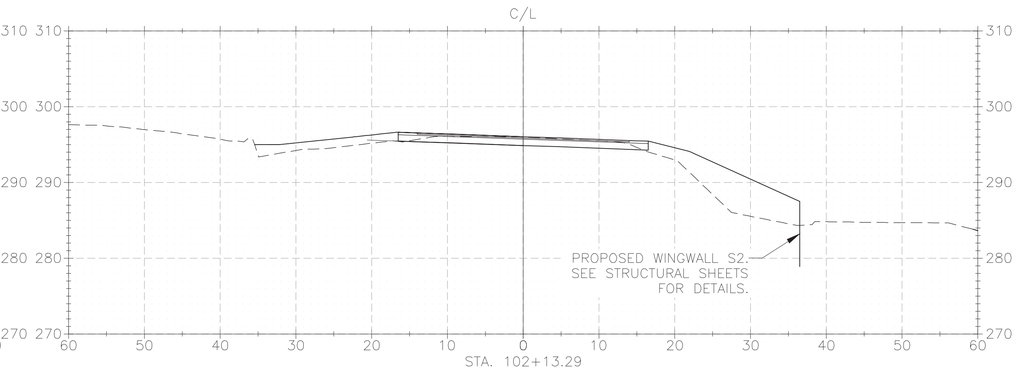
CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

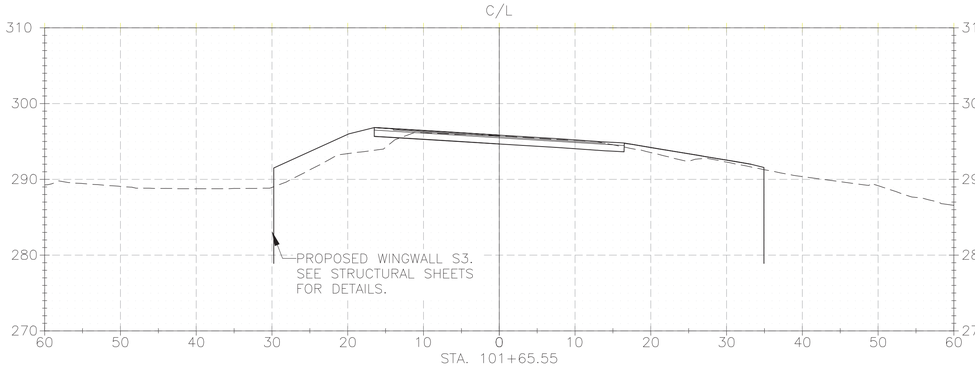
SUPERELEVATION DIAGRAM & TYPICAL SECTIONS

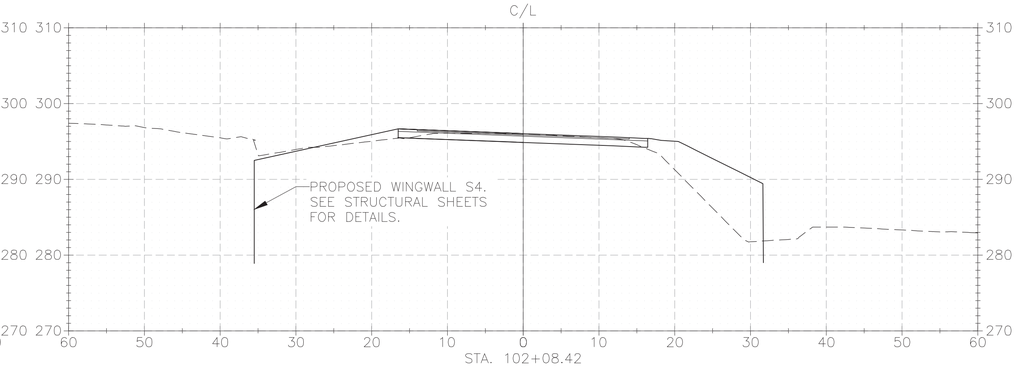
1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

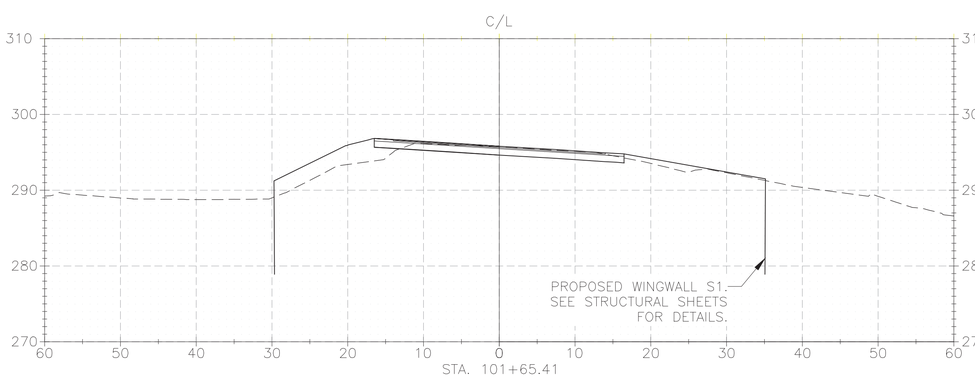
SHEET
13 OF 30

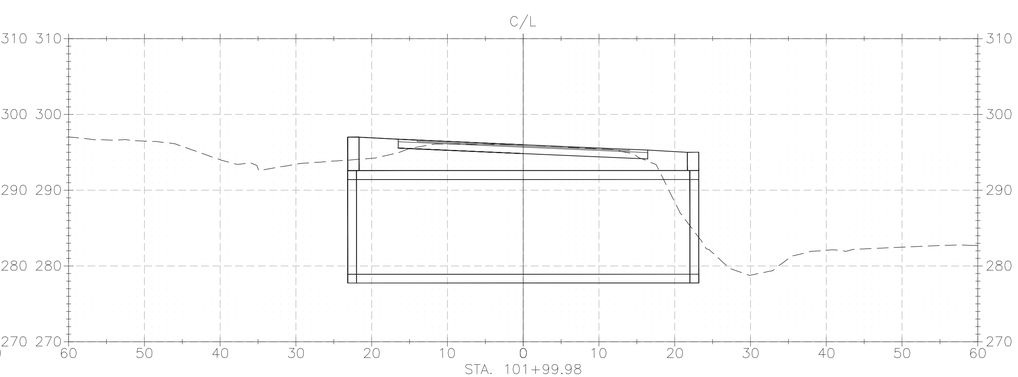












SCALE:
1" = 10' HOR
1" = 10' VER

DATUM
NAVD 88

DAVID EVANS AND ASSOCIATES INC.

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

DESIGN ENGINEER
REGISTERED PROFESSIONAL ENGINEER
STATE OF WASHINGTON
37437
WHITEHOUSE
9-29-25

ENGINEER OF RECORD

PROJECT NO.: EO214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: R.S.B.
DRAWN BY: R.S.B.
CHECKED BY: R.W.
APPROVED BY: R.W.

PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

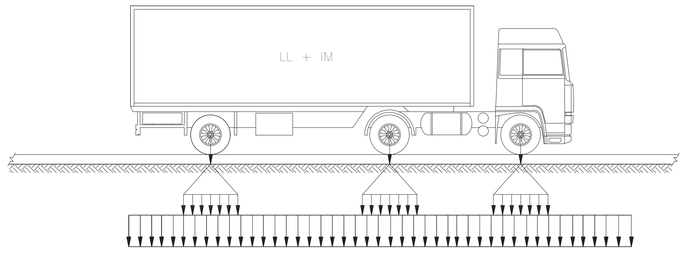
ROAD X-SECTIONS

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
14 OF 30

STRUCTURAL NOTES

1. ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF WSDOT'S MOST CURRENT EDITION OF "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION."
2. THE CULVERTS SHALL BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO'S LRFD BRIDGE DESIGN SPECIFICATIONS 10TH EDITION 2024.
3. THE SEISMIC PEAK GROUND ACCELERATION OF 0.26 AND SITE CLASS E SHALL BE USED FOR THE SEISMIC DESIGN.
4. LIVE LOAD (LL) AASHTO HL-93 + IM AS SHOWN.
5. THE PRECAST CONCRETE SHALL BE CLASS 5000, 6000 OR 7000 SELF CONSOLIDATING CONCRETE (SCC). OTHER CONCRETE SHALL BE CLASS 4000.
6. STEEL REINFORCING SHALL CONFORM TO ASTM A615 GRADE 60.
7. SEGMENTAL PRECAST CONCRETE BOX CULVERT UNITS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE ASTM C 786 AND WSDOT STANDARD SPECIFICATION SECTION 6-02.3(20). ALL JOINTS SHALL BE TONGUE AND GROOVE AND SEALED WITH JOINT SEALANT PER ASTM C990 AND WRAPPED WITH EXTERNAL SEALING BAND PER ASTM C877.
8. ALL STEEL PLATES AND SHAPES SHALL BE ASTM A36 OR ASTM A 992. ALL BOLTS, NUTS AN WASHERS (UNLESS NOTED OTHERWISE) SHALL BE ASTM A 307 AND COMPLY WITH WSDOT STANDARD SPECIFICATION 9-16.3(4) AND RESIN BONDED ANCHORS SHALL BE ASTM A 193 GRADE 87, OR ASTM A449. ALL STEEL PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 AFTER FABRICATION. BOLTS AND HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASHTO M 232.
9. UNLESS OTHERWISE SHOWN IN THE PLANS, CONCRETE COVER MEASURED FROM THE FACE OF CONCRETE TO THE FACE OF ANY REINFORCING STEEL SHALL BE 2" AT THE TOP OF THE ROOF DECK, 1½" AT THE BOTTOM OF THE ROOF DECK, 3" AT THE BOTTOM OF FOOTINGS, AND 2" AT ALL OTHER LOCATIONS.
10. THE BACKFILL AT BOTH SIDES OF THE CULVERT TO BE PLACED IN IN ACCORDANCE TO WSDOT STANDARD SPECIFICATION 2-09.3(1)E. THE MAXIMUM FIELD HEIGHT DIFFERENCE MEASURED FROM SIDE TO SIDE SHALL BE NO MORE 2'-0". THE MAXIMUM FIELD HEIGHT DIFFERENCE MEASURED FROM SIDE TO SIDE SHALL NOT BE MORE THAN 2'-0".
11. A FOUNDATION MATERIAL LAYER SHALL BE PLACED CONSISTING OF A MINIMUM OF 12 INCHES CRUSHED ROCK PRODUCT OR PERMEABLE BALLAST PER WSDOT STANDARD SPECIFICATION 9.03.9(2) AND CONFORMING TO THE REQUIREMENTS OF THE GEOTECHNICAL REPORT.
12. ADDITIONAL OVER-EXCAVATION OF 1 TO 2 FEET MAY BE REQUIRED TO PROPERLY SUPPORT THE PLANNED STRUCTURES IF EXCESSIVELY SOFT, ORGANIC, OR OTHERWISE UNSUITABLE SOILS ARE ENCOUNTERED AT THE SUBGRADE ELEVATION.
13. CONTRACTOR MAY ENCOUNTER GROUNDWATER DURING CULVERT EXCAVATION OF AND SHALL PROVIDE DEWATERING OF EXCAVATIONS AND PROPERLY DISPOSE OF THIS WATER PER THE SPECIAL PROVISIONS.
14. ALL GEOTECHNICAL RECOMMENDATIONS ARE INCLUDED IN THE REPORT BY GEOENGINEERS DATED 10/11/2021 MADE PART OF THESE CONTRACT DOCUMENTS.



LOADING DIAGRAM

DAVID EVANS AND ASSOCIATES INC.

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

DESIGN ENGINEER
STATE OF WASHINGTON
PETER S. SMITH
REGISTERED PROFESSIONAL ENGINEER
25583
11/3/25

ENGINEER OF RECORD

PROJECT NO.: EO214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: P.S.S.
CHECKED BY: T.M.W
DRAWN BY: D.J.J.
APPROVED BY: T.M.W

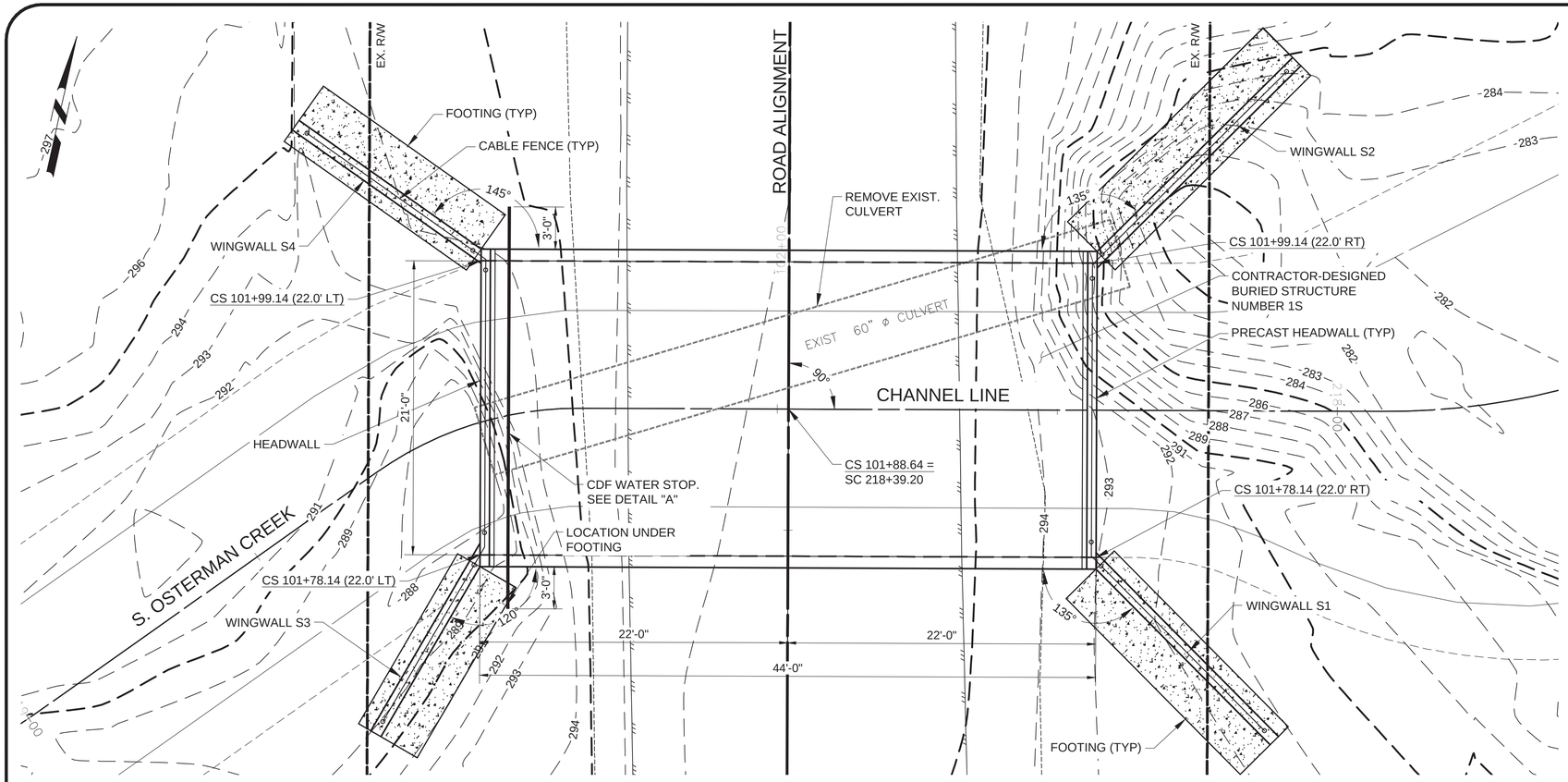
PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

STRUCTURAL NOTES

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
15 OF 30



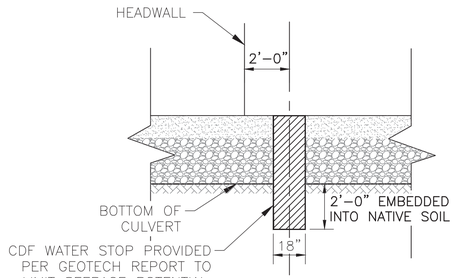
CULVERT PLAN

GENERAL SHEET NOTES

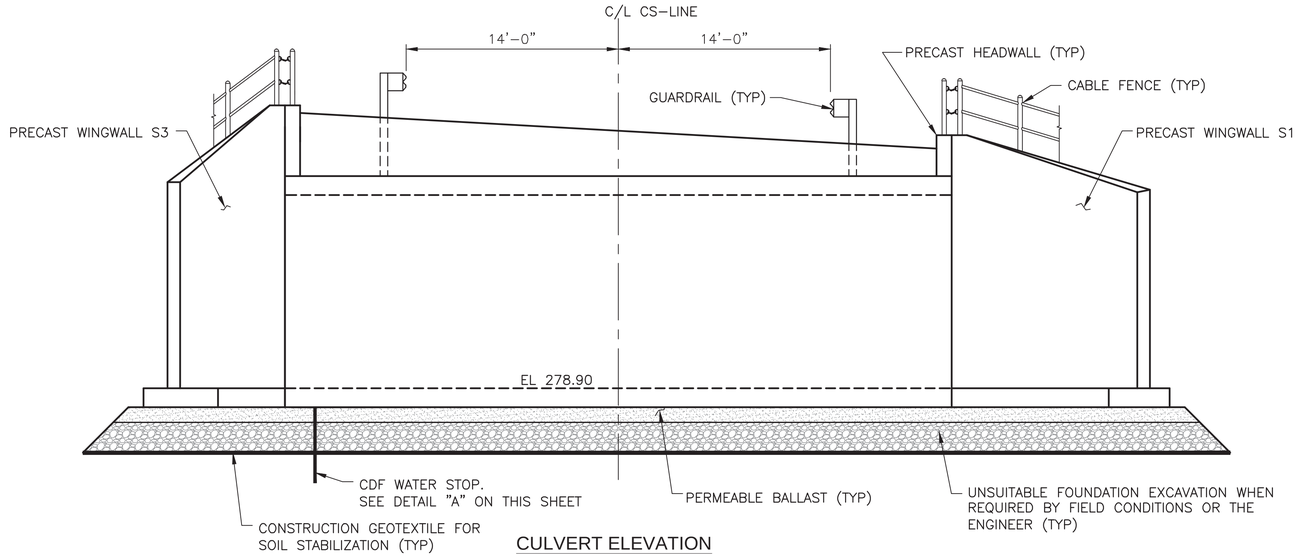
1. CABLE FENCE MOUNTED ON TOP OF ALL HEADWALLS AND WING WALLS TO BE CONSTRUCTED PER WSDOT STANDARD DETAILS 8.1–A6–2, 8.1–A6–3, 8.1–A6–4, & 8.1–A6–5.

LEGEND

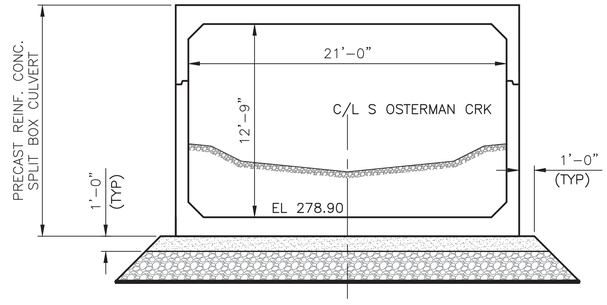
- INDEX CONTOUR
- INTERMEDIATE CONTOUR
- PRECAST WINGWALL
- PERMEABLE BALLAST
- UNSUITABLE FOUNDATION EXCAVATION INCL. HAUL



DETAIL "A"
N.T.S.



CULVERT ELEVATION
LOOKING AHEAD ON STATION



TYPICAL SECTION

SCALE:
1" = 5' HOR
1" = N/A

DATUM
NAVD 88

DAVID EVANS AND ASSOCIATES INC.

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

DESIGN ENGINEER
PETER S. SMITH — STATE OF WASHINGTON — 25583 — REGISTERED PROFESSIONAL ENGINEER — 11/3/25

ENGINEER OF RECORD

PROJECT NO.: EO214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: P.S.S
DRAWN BY: D.J.J.
CHECKED BY: T.M.W
APPROVED BY: T.M.W

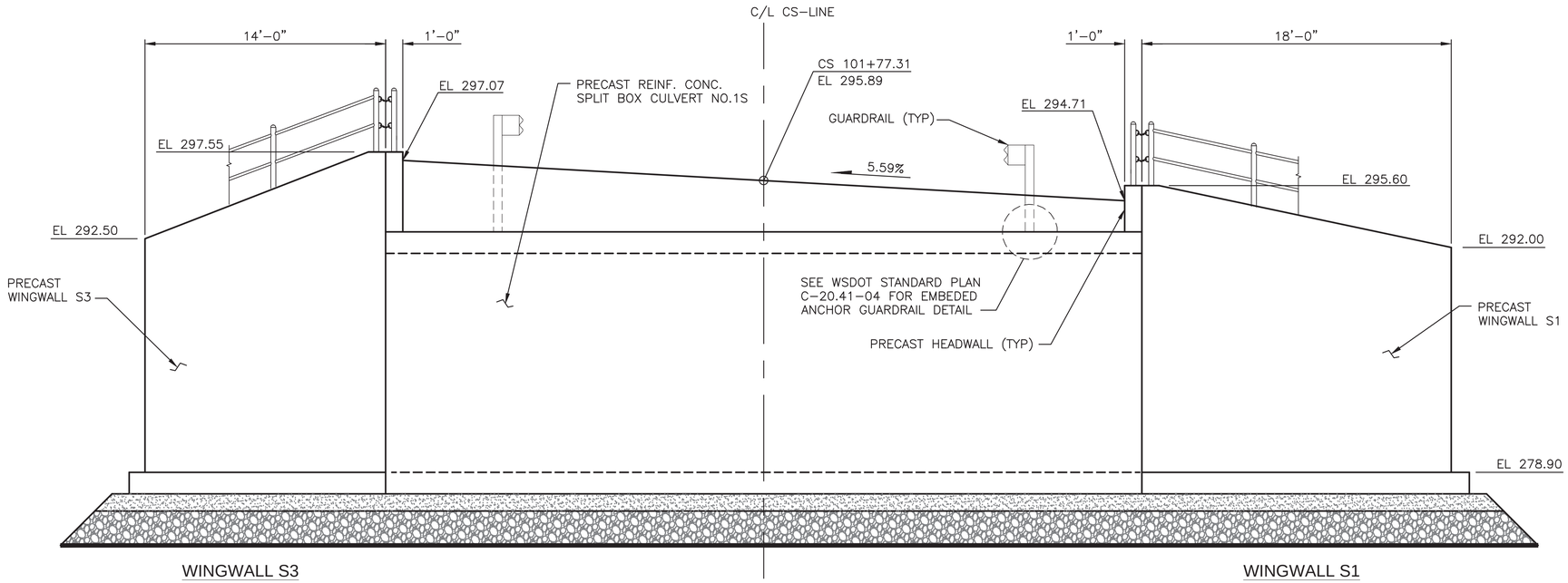
PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

CULVERT PLAN & ELEVATION

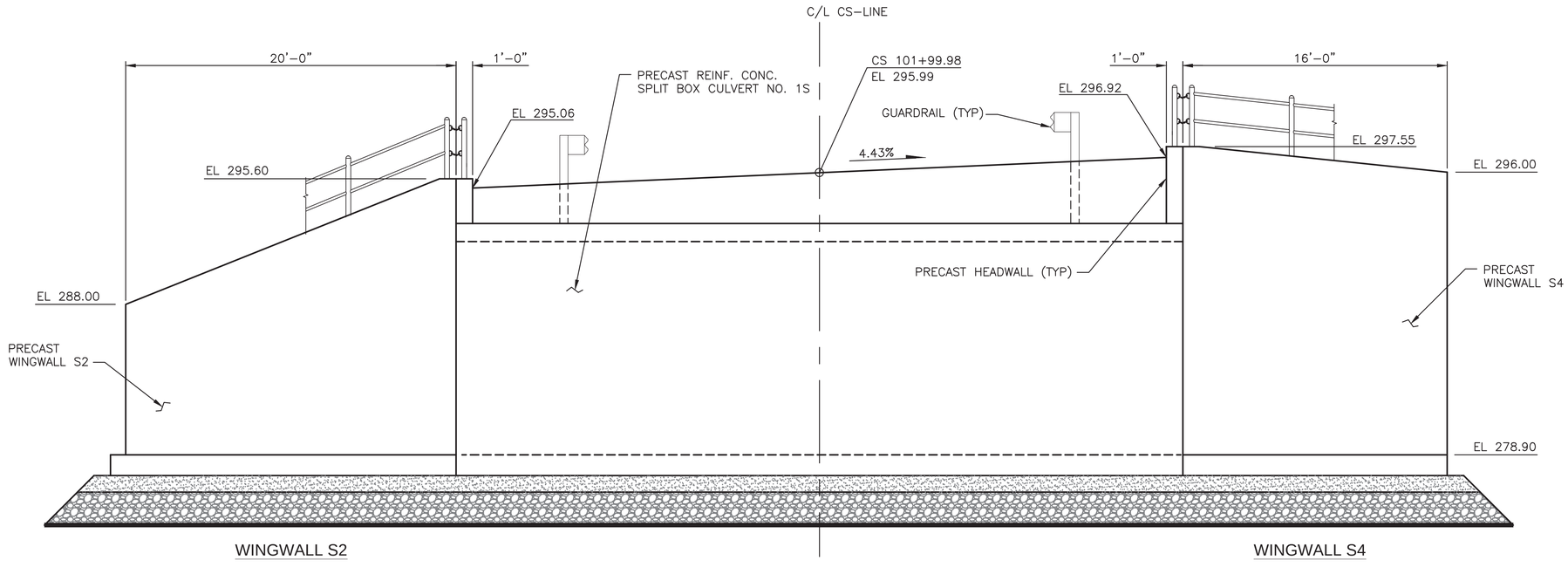
1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
16 OF 30



WINGWALL LAYOUT

LOOKING AHEAD ON STATION



WINGWALL LAYOUT

LOOKING BACK ON STATION

DAVID EVANS AND ASSOCIATES INC.

SKAGIT COUNTY PUBLIC WORKS

1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
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DESIGN ENGINEER

PETER S. SMITH — STATE OF WASHINGTON — 25583 — REGISTERED PROFESSIONAL ENGINEER — 11/3/25

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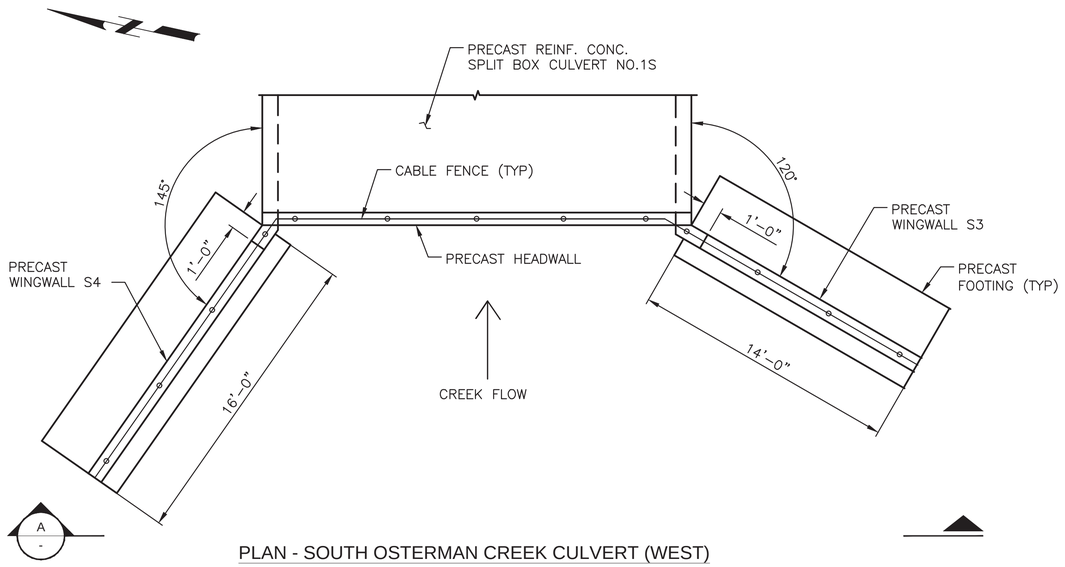
PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

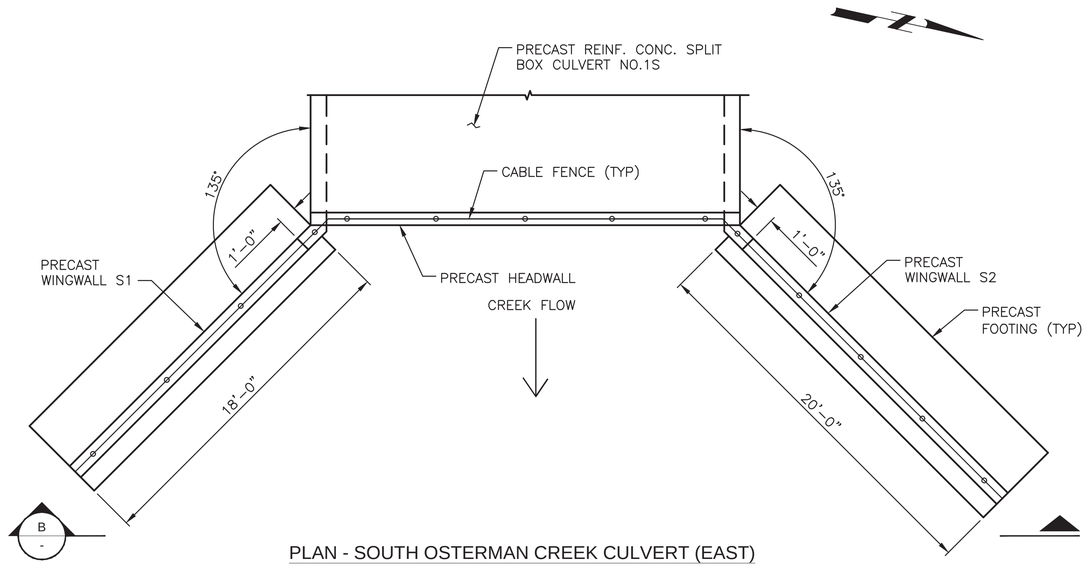
CULVERT WINGWALL LAYOUTS

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

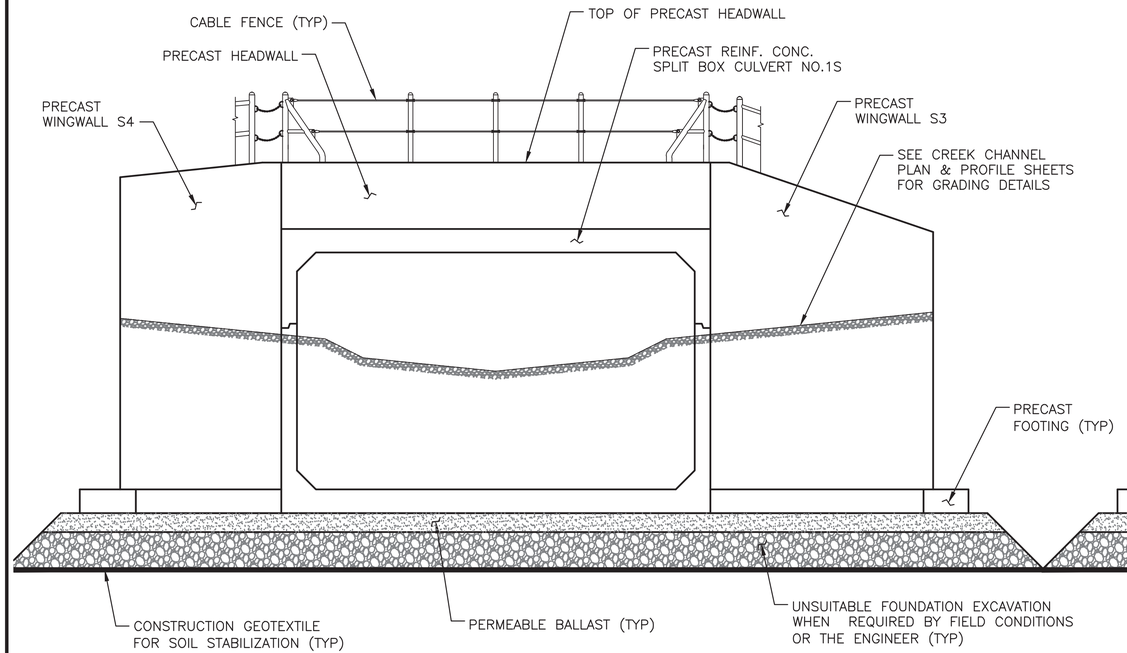
SHEET
17 OF 30



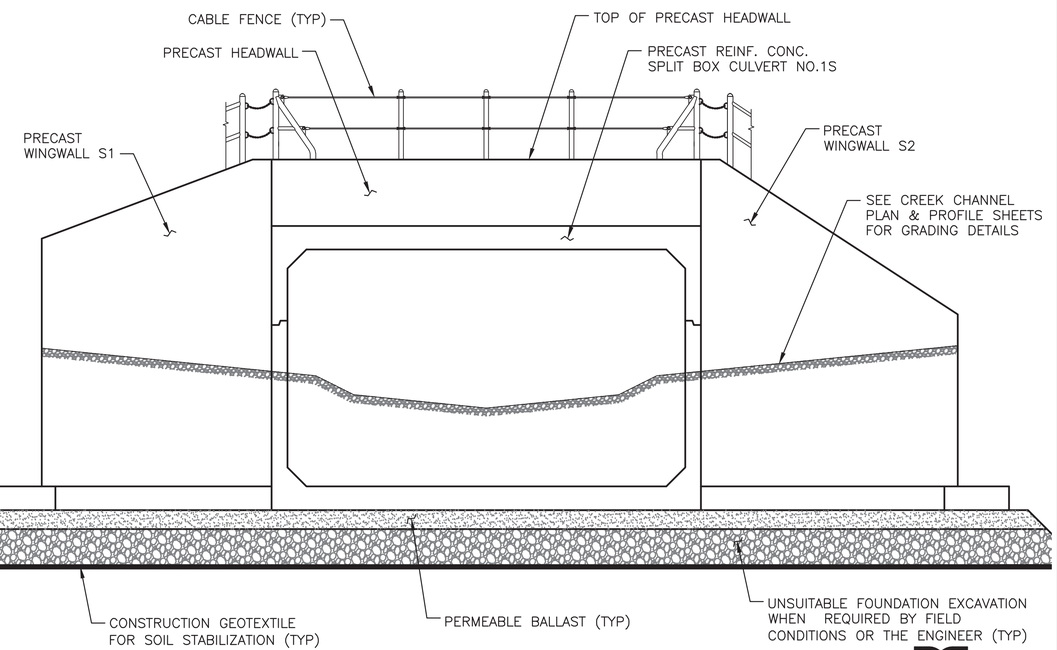
PLAN - SOUTH OSTERMAN CREEK CULVERT (WEST)



PLAN - SOUTH OSTERMAN CREEK CULVERT (EAST)



VIEW A - SOUTH OSTERMAN CREEK CULVERT (WEST)



VIEW B - SOUTH OSTERMAN CREEK CULVERT (EAST)

DAVID EVANS AND ASSOCIATES INC.

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

DESIGN ENGINEER
PETER S. SMITH
STATE OF WASHINGTON
REGISTERED
PROFESSIONAL ENGINEER
25583
11/2/25

ENGINEER OF RECORD

PROJECT NO.: EO214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: P.S.S
CHECKED BY: T.M.W
DRAWN BY: D.J.J.
APPROVED BY: T.M.W

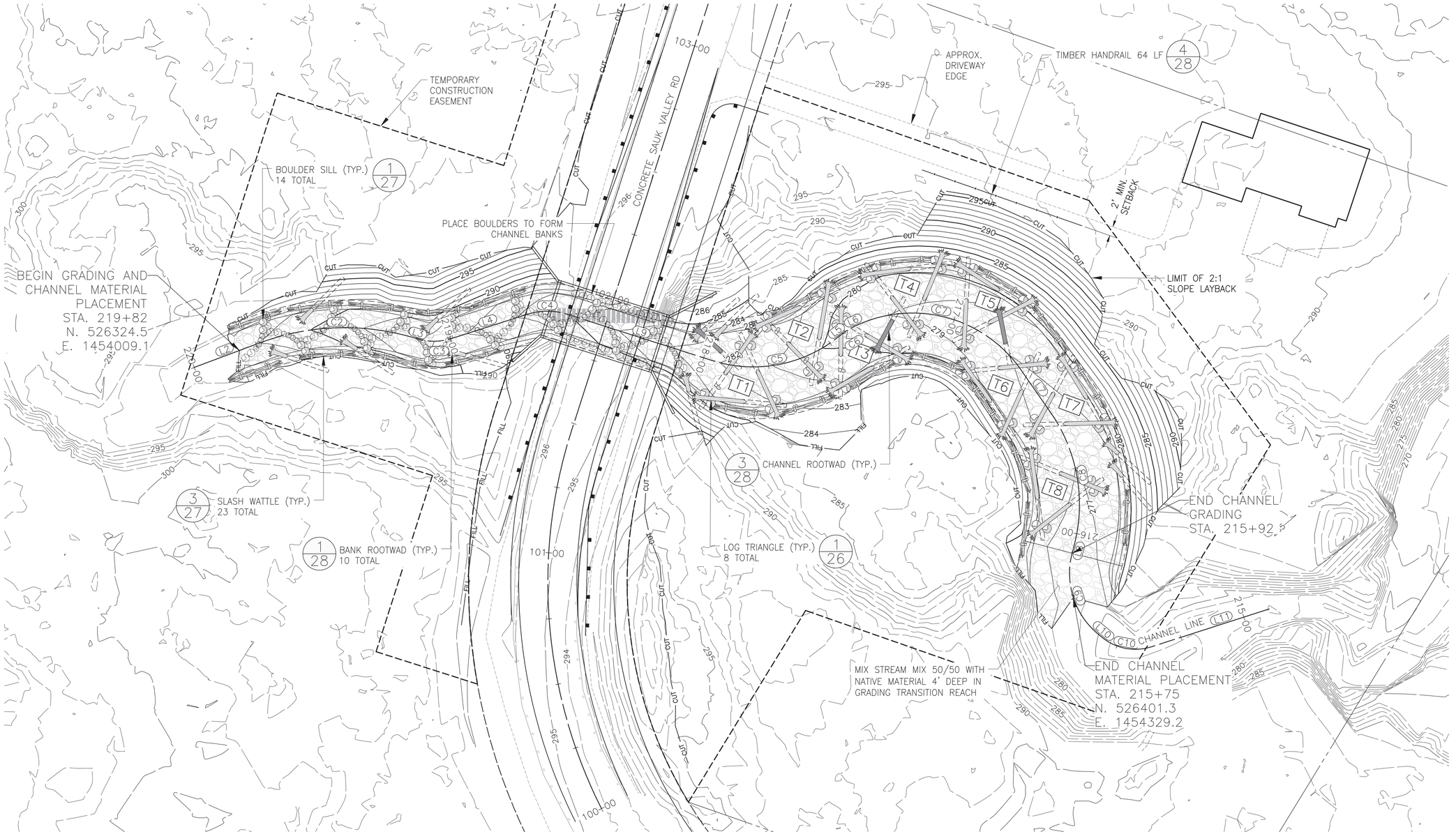
PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

CULVERT HEADWALL LAYOUTS

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
18 OF 30



CHANNEL PLAN

NOTES:

1. CHANNEL PLAN PRESENTED ON THIS SHEET REPRESENTS NEATLINE ELEVATIONS FOR CONSTRUCTION. ACTUAL FINISH GRADE WILL INCLUDE SIGNIFICANT VARIABILITY DUE TO LOGS, RACKING, AND STREAMBED BOULDERS AND COBBLES.
2. SEE SHEET 21 FOR TYPICAL CHANNEL SECTIONS AND STREAMBED MIX.
3. SEE SHEETS 26 THROUGH 28 FOR CHANNEL STRUCTURE DETAILS.
4. LOCATION OF DRIVEWAY IS APPROXIMATE. STAKEOUT AND APPROVAL OF GRADING LIMITS AND TIMBER HANDRAIL LOCATION IS REQUIRED PRIOR TO STARTING WORK.

20' 10' 0 20' 40'
SCALE: 1"=20'-0"

NSD CGS Natural Systems Design + Coastal Geologic Services

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

COUNTY ENGINEER

ENGINEER OF RECORD
JON TRUSCOTT
STATE OF WASHINGTON
PROFESSIONAL ENGINEER
5/1/25

PROJECT NO.: EO214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: NT | DRAWN BY: DBS
CHECKED BY: | APPROVED BY:

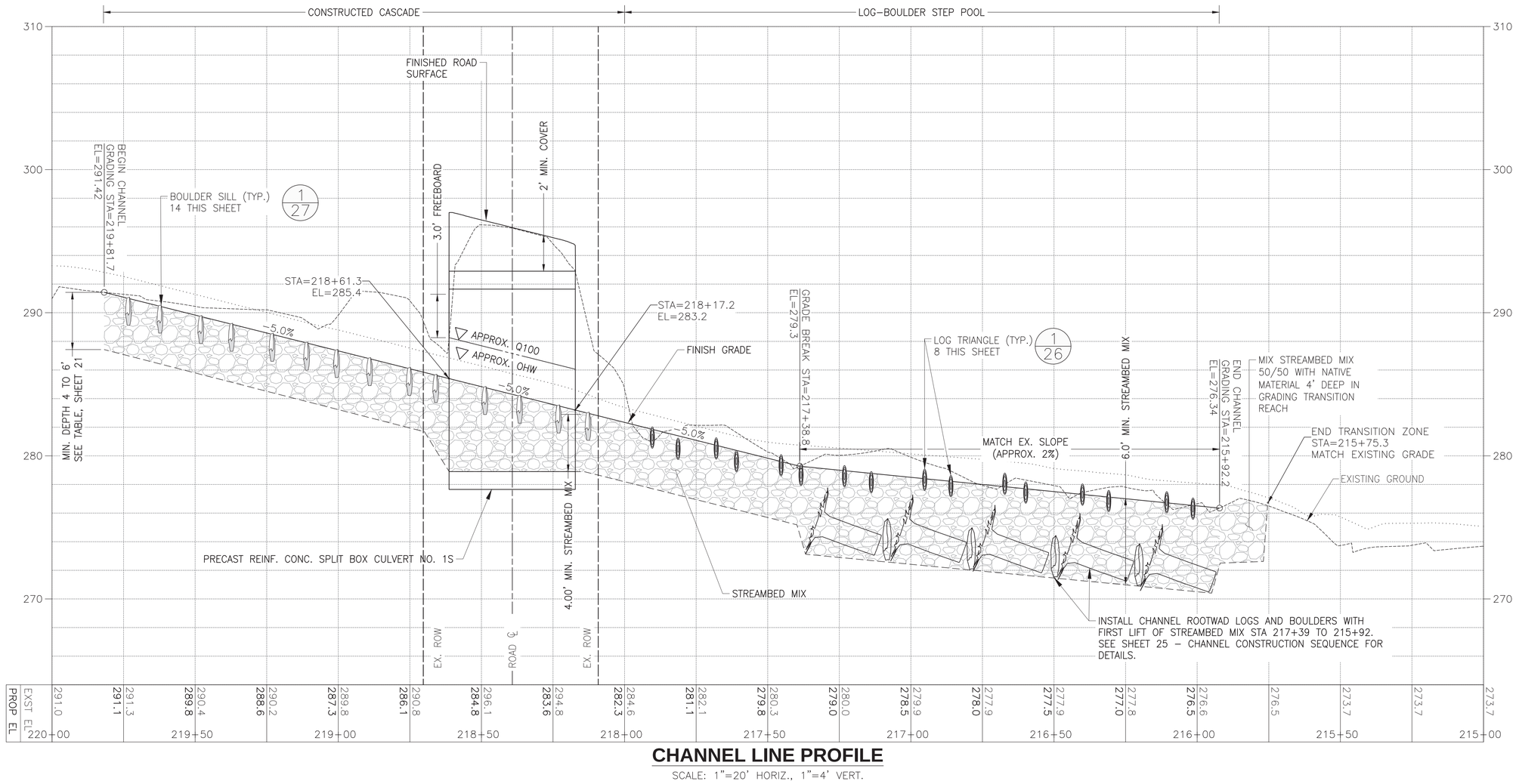
PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

CHANNEL PLAN

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
19 OF 30



CHANNEL LINE PROFILE

SCALE: 1"=20' HORIZ., 1"=4' VERT.

NOTES:

1. CHANNEL PROFILE PRESENTED ON THIS SHEET REPRESENT NEATLINE ELEVATIONS FOR CONSTRUCTION. ACTUAL FINISH GRADE WILL INCLUDE SIGNIFICANT VARIABILITY DUE TO LOGS, RACKING, AND STREAMBED BOULDERS AND COBBLES.
2. SEE SHEET 21 FOR TYPICAL CHANNEL SECTIONS AND STREAMBED MIX.
3. SEE SHEETS 26 THROUGH 28 FOR CHANNEL STRUCTURE DETAILS.

NSD CGS Natural Systems Design + Coastal Geologic Services

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1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

ENGINEER OF RECORD
JON TRUSCOTT
STATE OF WASHINGTON
NICHOLAS
PROFESSIONAL ENGINEER
COUNTY ENGINEER

PROJECT NO.: EO214-5
FED. AID NO.: 4650(DR-WA #674880
DESIGNED BY: NT
CHECKED BY:
DRAWN BY: DBS
APPROVED BY:

PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

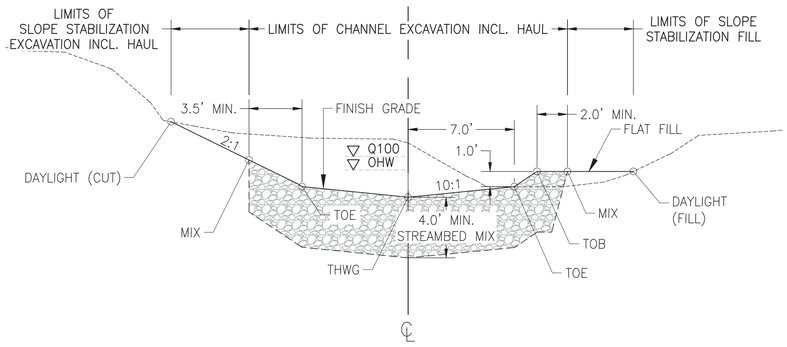
CHANNEL PROFILE

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
20 OF **30**

CHANNEL STAKEOUT

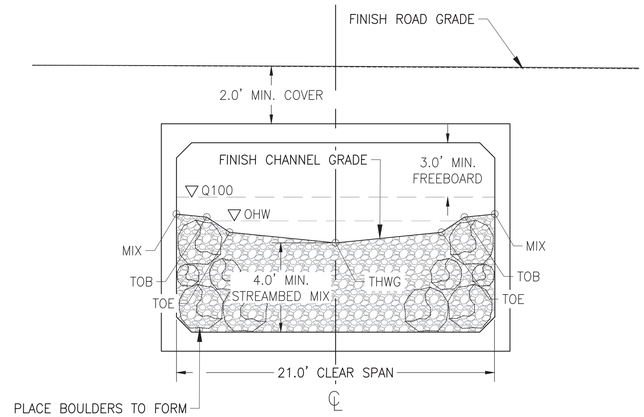
STATION	LEFT									℄		RIGHT								
	DAYLIGHT			MIX		TOB		TOE		THWG		TOE		TOB		MIX		DAYLIGHT		
	OFFSET	ELEV.	C/F	OFFSET	ELEV.	OFFSET	ELEV.	OFFSET	ELEV.	OFFSET	ELEV.	OFFSET	ELEV.	OFFSET	ELEV.	OFFSET	ELEV.	OFFSET	ELEV.	C/F
219+81.8	10.7 L	293.2	CUT	10.5 L	293.1	8.5 L	293.1	7.0 L	292.1	0.0	291.4	7.0 R	292.1	8.5 R	293.1	10.5 R	293.1	12.4 R	293.1	FILL
219+75	11.3 L	293.2	CUT	10.5 L	292.8	8.5 L	292.8	7.0 L	291.8	0.0	291.1	7.0 R	291.8	8.5 R	292.8	10.5 R	292.8	11.6 R	292.8	FILL
219+50	14.1 L	293.3	CUT	10.5 L	291.5	8.5 L	291.5	7.0 L	290.5	0.0	289.8	7.0 R	290.5	8.5 R	291.5	10.5 R	292.5	10.6 R	292.6	CUT
219+25	20.8 R	296.4	CUT	10.5 L	291.3	8.5 L	290.3	7.0 L	289.3	0.0	288.6	7.0 R	289.3	8.5 R	290.3	10.5 R	291.3	12.1 R	292.1	CUT
219+00	26.3 R	298.0	CUT	10.5 L	290.0	8.5 L	289.0	7.0 L	288.0	0.0	287.3	7.0 R	288.0	8.5 R	289.0	10.5 R	290.0	13.7 R	290.0	FILL
218+75	25.9 L	296.5	CUT	10.5 L	288.8	8.5 L	287.8	7.0 L	286.8	0.0	286.1	7.0 R	286.8	8.5 R	287.8	10.5 R	288.8	12.4 R	289.7	FILL
CULVERT 0+00				10.5 L	288.3	7.7 L	287.0	6.2 L	286.0	1.0	285.4	8.5 R	286.3	10.1 R	287.3	10.5 R	287.5			
218+50				10.5 L	286.7	8.5 L	286.5	7.0 L	285.5	0.0	284.8	7.0 R	285.5	8.5 R	286.5	10.5 R	286.7			
218+25				10.5 L	285.5	8.5 L	285.3	7.0 L	284.3	0.0	283.6	7.0 R	284.3	8.5 R	285.3	10.5 R	285.5			
218+17.2				10.5 L	285.1	8.5 L	284.9	7.0 L	283.9	0.0	283.2	7.0 R	283.9	8.5 R	284.9	10.5 R	285.1			
218+00	30.3 L	287.1	FILL	13.7 L	284.6	11.7 L	284.2	9.0 L	283.2	0.0	282.3	11.4 R	283.4	12.9 R	284.5	14.9 R	285.5	25.4 R	290.8	CUT
217+88	34.2 L	286.5	FILL	17.9 L	284.1	15.9 L	283.7	13.3 L	282.6	0.0	281.7	14.8 R	282.8	16.7 R	284.0	18.7 R	285.0	22.8 R	287.0	CUT
217+75	20.0 L	284.0	FILL	19.5 L	283.7	17.5 L	283.3	15.0 L	282.1	0.0	281.1	15.0 R	282.1	17.5 R	283.3	19.5 R	283.5	25.1 R	284.1	FILL
217+60	21.3 L	284.5	CUT	19.5 L	283.6	17.5 L	282.6	15.0 L	281.3	0.0	280.3	15.0 R	281.3	17.5 R	282.6	19.5 R	282.8	36.5 R	284.0	FILL
217+50	22.4 L	284.5	CUT	19.5 L	283.1	17.5 L	282.1	15.0 L	280.8	0.0	279.8	15.0 R	280.8	17.5 R	282.1	19.5 R	282.3	21.2 R	283.9	CUT
217+38.8	25.8 L	285.7	CUT	19.5 L	282.5	17.5 L	281.5	15.0 L	280.3	0.0	279.3	15.0 R	280.3	17.5 R	281.5	19.5 R	282.5	24.0 R	284.8	CUT
217+25	28.5 L	286.8	CUT	19.5 L	282.3	17.5 L	281.3	15.0 L	280.0	0.0	279.0	15.0 R	280.0	17.5 R	281.3	19.5 R	282.3	23.9 R	284.5	CUT
217+15	29.3 L	287.0	CUT	19.5 L	282.1	17.5 L	281.1	15.0 L	279.8	0.0	278.8	15.0 R	279.8	17.5 R	281.1	19.5 R	282.1	23.8 R	284.2	CUT
217+00	46.1 L	295.1	CUT	19.5 L	281.8	17.5 L	280.8	15.0 L	279.5	0.0	278.5	15.0 R	279.5	17.5 R	280.8	19.5 R	281.8	23.9 R	283.9	CUT
216+75	42.6 L	292.8	CUT	19.5 L	281.3	17.5 L	280.3	15.0 L	279.0	0.0	278.0	15.0 R	279.0	17.5 R	280.3	19.5 R	281.3	25.2 R	284.1	CUT
216+50	29.0 L	285.5	CUT	19.5 L	280.8	17.5 L	279.8	15.0 L	278.5	0.0	277.5	15.0 R	278.5	17.5 R	279.8	19.5 R	280.8	23.4 R	282.7	CUT
216+25	41.4 L	291.2	CUT	19.5 L	280.3	17.5 L	279.3	15.0 L	278.0	0.0	277.0	15.0 R	278.0	17.5 R	279.3	19.5 R	280.3	23.7 R	282.4	CUT
216+00	25.7 L	282.9	CUT	19.5 L	279.8	17.5 L	278.8	15.0 L	277.5	0.0	276.5	15.0 R	277.5	17.5 R	278.8	19.5 R	279.8	21.5 R	280.8	CUT
215+92.4	23.7 L	281.7	CUT	19.5 L	279.6	17.5 L	278.6	15.0 L	277.4	0.0	276.4	15.0 R	277.4	17.5 R	278.6	19.5 R	279.6	25.4 R	280.5	FILL



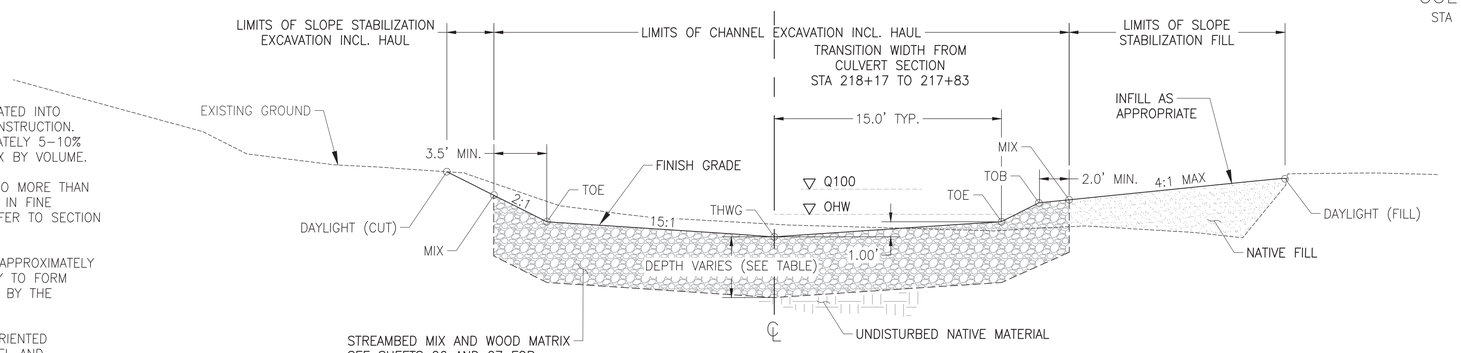
UPSTREAM CHANNEL SECTION
STA 219+82 TO 218+61 SCALE
SCALE 1" = 5'

STREAMBED MIX	
PERCENT PASSING	PARTICLE SIZE (IN)
100	48
84	26–30
50	7–11
16	0.75–1.5
10	0.25–0.5
5 MIN.	NO. 200 SIEVE

STREAMBED MIX DEPTH	
STATION RANGE	DEPTH
219+82 TO 218+61	4'–0"
218+61 TO 218+17	4'–0" MIN.
218+17 TO 217+39	4'–0"
217+39 TO 215+92	6'–0"
215+92 TO 215+75	5% MIX TO 4'–0" DEPTH



CULVERT SECTION
STA 218+61 TO 218+17
SCALE 1" = 5'



DOWNSTREAM CHANNEL SECTION
STA 218+17 TO 215+89
SCALE 1" = 5'

NOTES:

1. SLASH MATERIAL SHALL BE INCORPORATED INTO STREAMBED MIX DURING CHANNEL CONSTRUCTION. SLASH MATERIAL SHALL BE APPROXIMATELY 5–10% OF THE CONSTRUCTED STREAMBED MIX BY VOLUME.
2. PLACE STREAMBED MIX IN LIFTS OF NO MORE THAN 2 FEET. SEAL EACH LIFT BY WASHING IN FINE MATERIALS AND STREAMBED SAND, REFER TO SECTION 8–30 OF THE SPECIAL PROVISIONS.
3. INDIVIDUAL PARTICLES GREATER THAN APPROXIMATELY 24 INCHES SHALL BE USED PRIMARILY TO FORM CHANNEL BANKS; PLACE AS DIRECTED BY THE ENGINEER.
4. SECTION VIEWS AND STAKEOUT ARE ORIENTED LOOKING DOWNSTREAM IN THE CHANNEL AND DOWN–STATION RELATIVE TO THE ALIGNMENT.
5. WOOD NOT SHOWN FOR CLARITY.

CHANNEL STAKEOUT POINTS	
THWG	LOWEST POINT OF CHANNEL SECTION, ON CENTERLINE
TOE	TOE OF CHANNEL BANK
TOB	TOP OF CHANNEL BANK
MIX	LIMIT OF STREAMBED MIX PLACEMENT
DAYLIGHT (CUT/FILL)	LIMIT OF EXCAVATION OR FILL PLACEMENT

NSD CGS Natural Systems Design + Coastal Geologic Services

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

ENGINEER OF RECORD
JON TRUSCOTT
WASHINGTON
STATE OF
PROFESSIONAL ENGINEER
COUNTY ENGINEER

PROJECT NO.: EO214-5
FED. AID NO.: 4650(DR-WA #674880
DESIGNED BY: NT
DRAWN BY: DBS
CHECKED BY:
APPROVED BY:

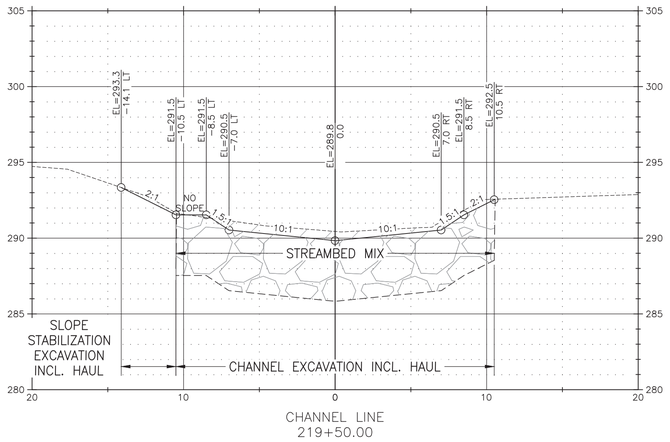
PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

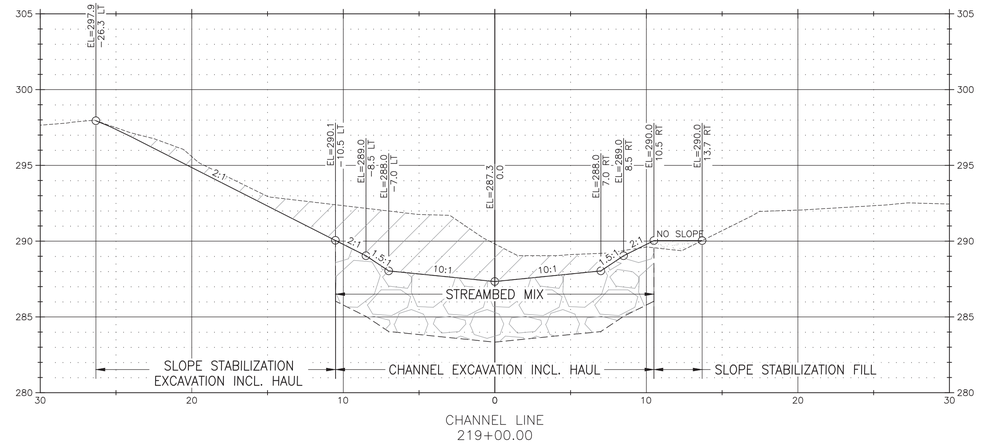
TYPICAL CHANNEL SECTIONS

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

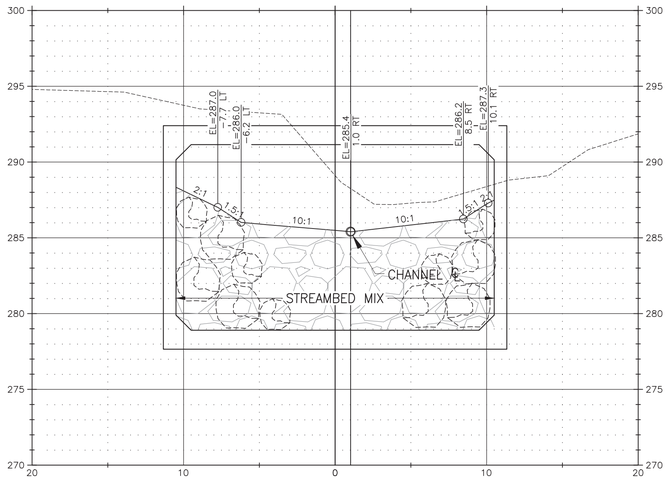
SHEET
21 OF 30



CHANNEL LINE
219+50.00



CHANNEL LINE
219+00.00



CUVLERT
0+00.00

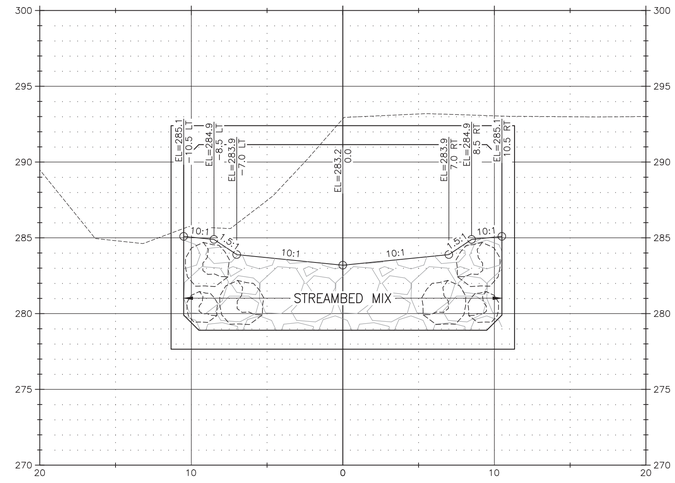
*NOTE: SECTION SHOWN ON CULVERT ℄ AT UPSTREAM FACE, NOT ALONG CHANNEL ℄

NOTES
1. ALL SECTION VIEWS ARE ORIENTED LOOKING DOWNSTREAM IN THE CHANNEL AND DOWN–STATION RELATIVE TO THE ALIGNMENT.
2. WOOD NOT SHOWN FOR CLARITY.

EXCAVATION

NATIVE FILL

STREAMBED MIX



CULVERT
218+17.20

Natural Systems Design
+ Coastal Geologic Services

SKAGIT COUNTY
PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

ENGINEER OF RECORD
JON TRUSCOTT
STATE OF WASHINGTON
NICHOLAS
PROFESSIONAL ENGINEER
COUNTY ENGINEER

PROJECT NO.: EO214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: NT
DRAWN BY: DBS
CHECKED BY:
APPROVED BY:

PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

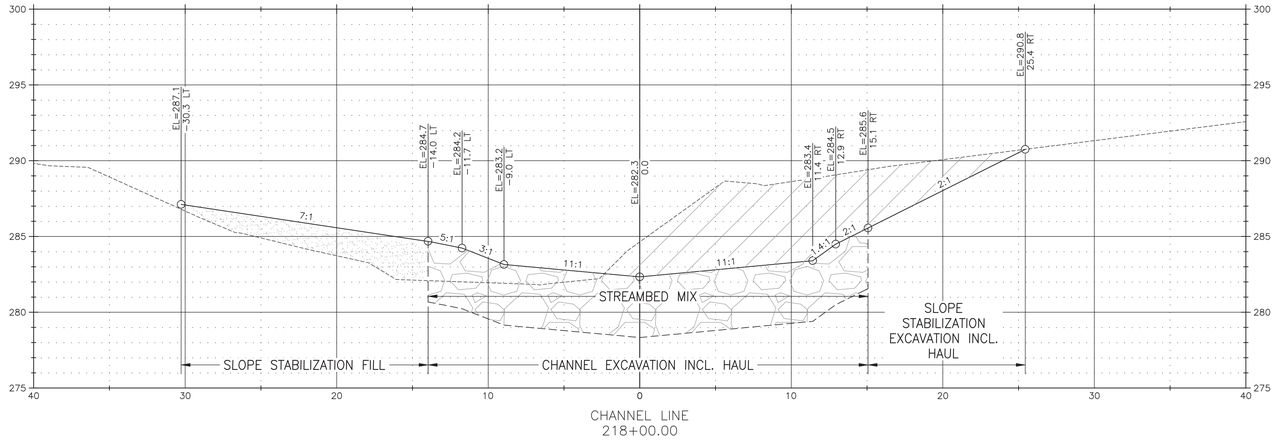
CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

CHANNEL SECTIONS (1 OF 3)

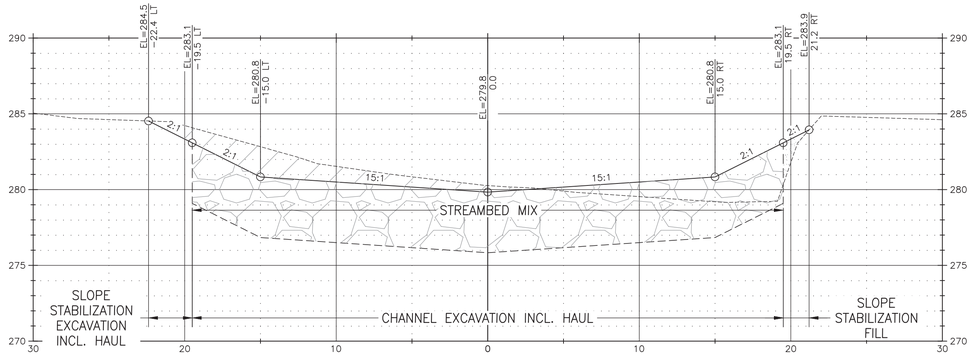
1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
22 OF 30

LAURA - September 25, 2025 - 2:41 PM - P:\A_G\DAVID EVANS AND ASSOCIATES\SOUTH_OSTERMAN_CONSTRUCTION_SUPPORT_DEA-017\DESIGN\CAD DWGS\PC_SECTIONS.DWG



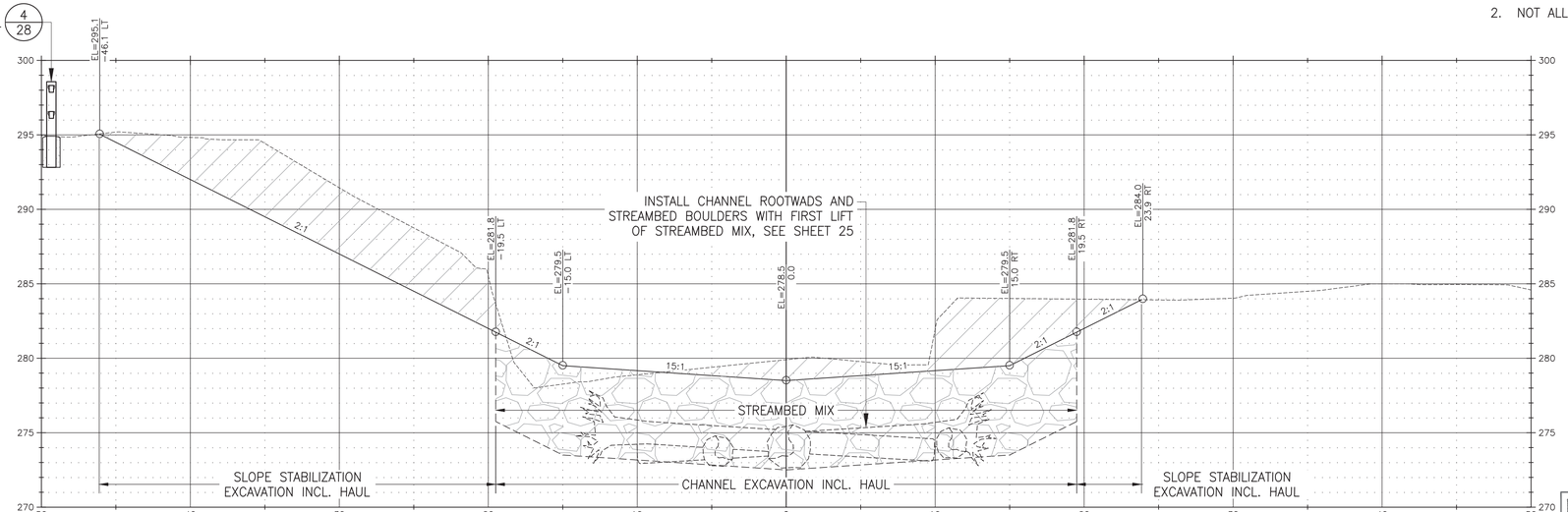
CHANNEL LINE
218+00.00



CHANNEL LINE
217+50.00

NOTES
1. ALL SECTION VIEWS ARE ORIENTED LOOKING DOWNSTREAM IN THE CHANNEL AND DOWN-STATION RELATIVE TO THE ALIGNMENT.
2. NOT ALL WOOD IS SHOWN FOR CLARITY.

TIMBER HANDRAIL 4/28



CHANNEL LINE
217+00.00

EXCAVATION

NATIVE FILL

STREAMBED MIX

NSD CGS Natural Systems Design + Coastal Geologic Services

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

ENGINEER OF RECORD
JON TRUSCOTT
STATE OF WASHINGTON
NICHOLAS
PROFESSIONAL ENGINEER
9/25/25

COUNTY ENGINEER

PROJECT NO.: E0214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: NT
DRAWN BY: DBS
CHECKED BY:
APPROVED BY:

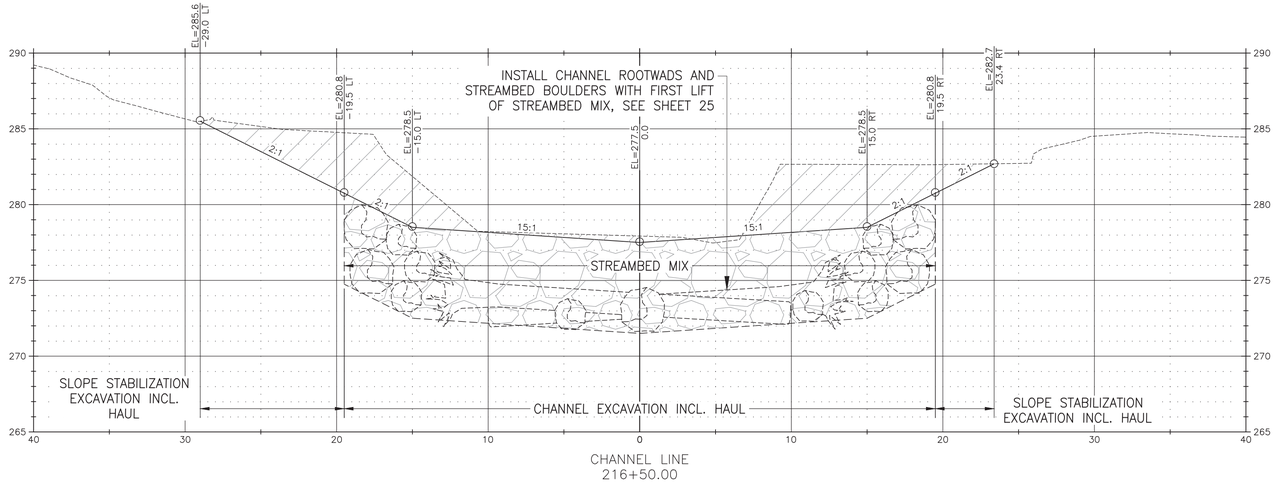
PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

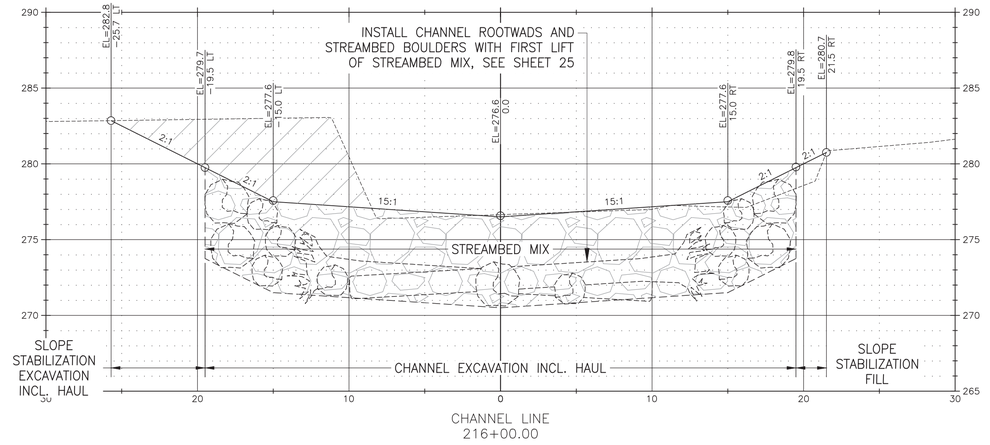
CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

CHANNEL SECTIONS (2 OF 3)

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
23 OF **30**





NOTES
1. ALL SECTION VIEWS ARE ORIENTED LOOKING DOWNSTREAM IN THE CHANNEL AND DOWN–STATION RELATIVE TO THE ALIGNMENT.
2. NOT ALL WOOD IS SHOWN FOR CLARITY.

EXCAVATION

NATIVE FILL

STREAMBED MIX

NSD CGS Natural Systems Design + Coastal Geologic Services

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PUBLIC WORKS
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MOUNT VERNON, WA 98273-5625
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NO.	REVISIONS	DATE

ENGINEER OF RECORD
NICHOLAS JON TRUSCOTT
STATE OF WASHINGTON
PROFESSIONAL ENGINEER
5/1/25

COUNTY ENGINEER

PROJECT NO.: EO214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: NT
CHECKED BY:
DRAWN BY: DBS
APPROVED BY:

PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

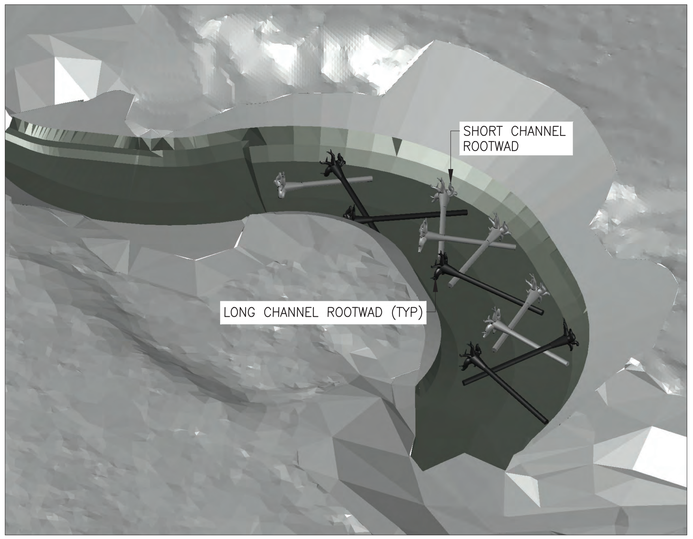
CHANNEL SECTIONS (3 OF 3)

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
24 OF **30**

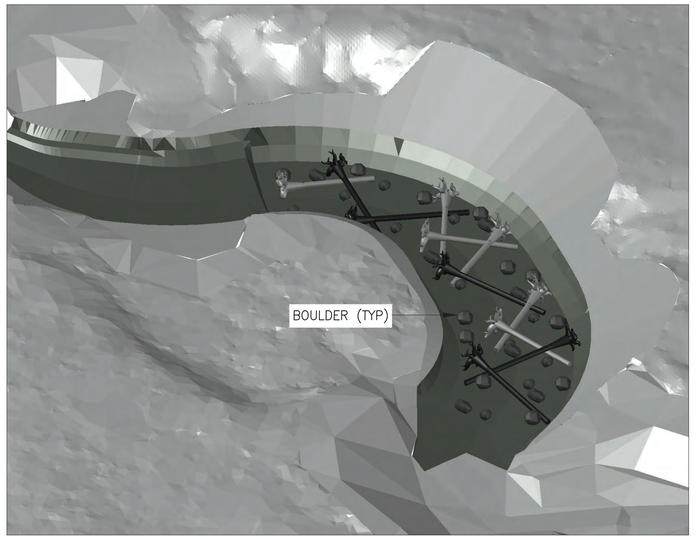
NOTES

1. THE CHANNEL CONSTRUCTION SEQUENCE SHOWN ON THIS SHEET IS A RECOMMENDATION ONLY. ALTERNATE SEQUENCES ARE ACCEPTABLE PROVIDED ALL PROJECT ELEMENTS SHOWN ON THESE PLANS AS DESCRIBED IN THE SPECIAL PROVISIONS.



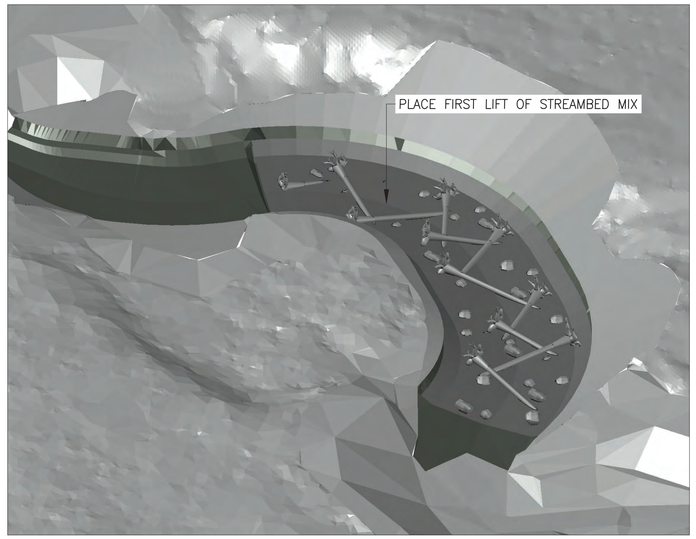
STEP 1

1. EXCAVATE CHANNEL TO STREAMBED FOUNDATION.
2. PLACE FIVE (5) LONG CHANNEL ROOTWADS AND SIX (6) SHORT CHANNEL ROOTWADS.



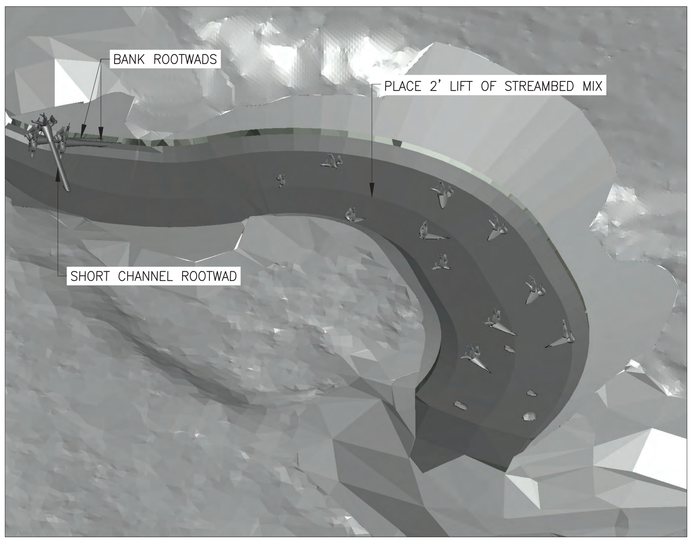
STEP 2

1. PLACE APPROXIMATELY 40 TYPE 3 AND TYPE 4 STREAMBED BOULDERS ON STREAMBED FOUNDATION AS DIRECTED BY ENGINEER.



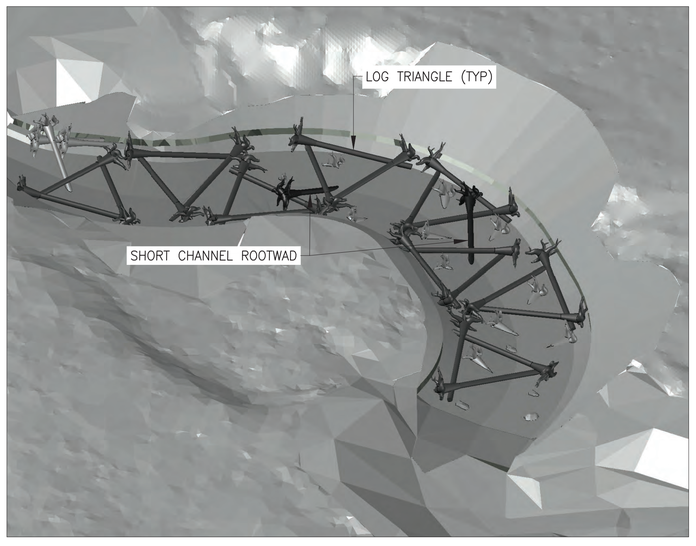
STEP 3

1. PLACE 2' LIFT OF STREAMBED MIX IN CHANNEL, INCORPORATING SLASH MATERIAL.
2. SEAL LIFT BY WASHING IN STREAMBED SAND.



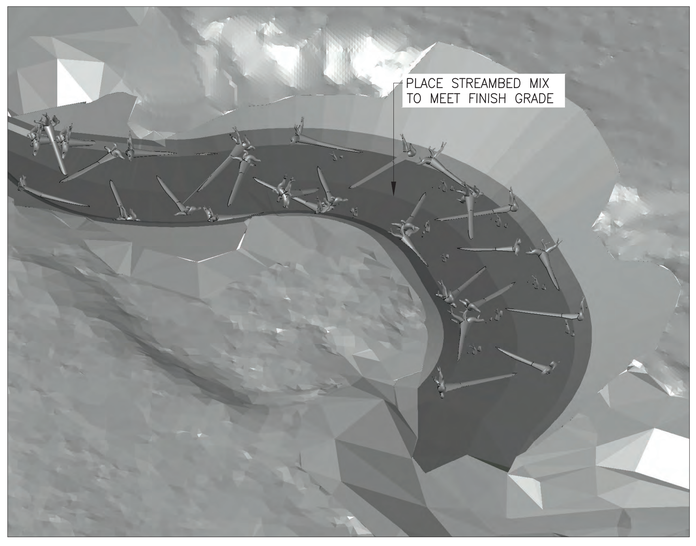
STEP 4

1. INSTALL TWO (2) BANK ROOTWADS.
2. PLACE ONE (1) SHORT CHANNEL ROOTWAD.
3. PLACE 2' LIFT OF STREAMBED MIX ALONG FULL LENGTH OF CHANNEL BED, INCORPORATING SLASH MATERIAL.
4. SEAL LIFT BY WASHING IN STREAMBED SAND.



STEP 5

1. CONSTRUCT LOG TRIANGLES PER DETAIL ON SHEET 26 (RACKING MATERIAL, PILES, AND BOULDER COLLARS NOT SHOWN FOR CLARITY).
2. INSTALL TWO (2) SHORT CHANNEL ROOTWADS.



STEP 6

1. PLACE FINAL LIFT OF STREAMBED MIX, INCORPORATING SLASH MATERIAL, TO MEET FINISH GRADE.
2. SEAL FINAL LIFT BY WASHING IN STREAMBED SAND.
3. INSTALL REMAINING SLASH WATTLES AND BANK ROOTWADS (NOT SHOWN FOR CLARITY) AS REQUIRED IN PLANS.

CHANNEL CONSTRUCTION SEQUENCE

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

ENGINEER OF RECORD
JON TRUSCOTT
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
5/1/25

COUNTY ENGINEER

PROJECT NO.: EO214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: NT
DRAWN BY: DBS
CHECKED BY:
APPROVED BY:

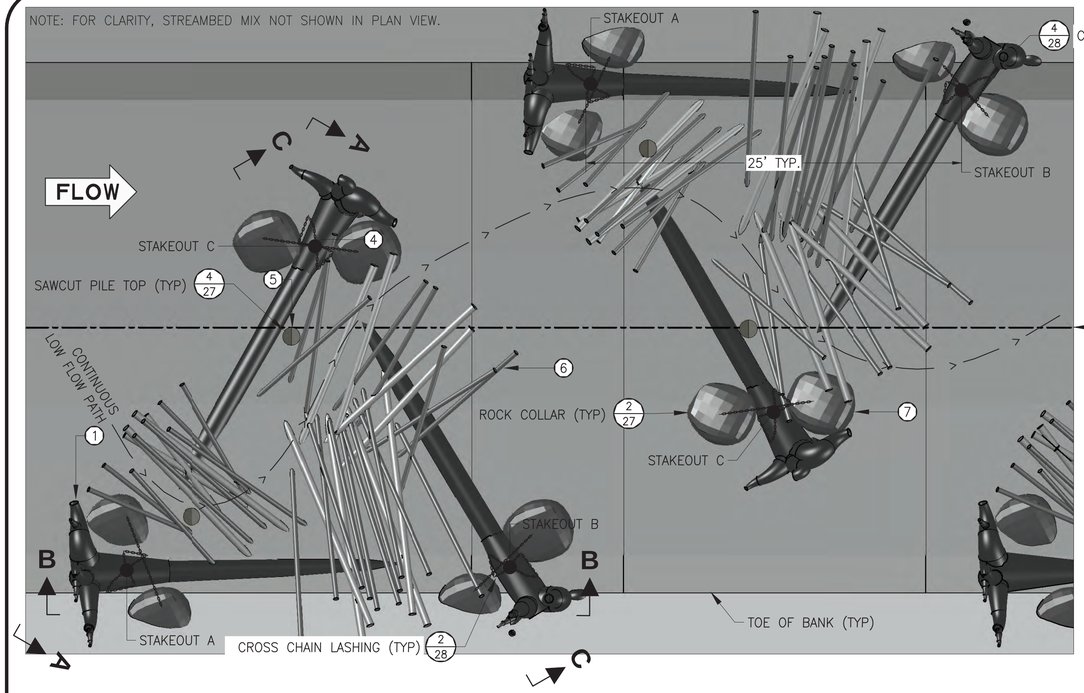
PROJECT LOCATED NEAR:
CONCRETE, WA
S14 T34N R9E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

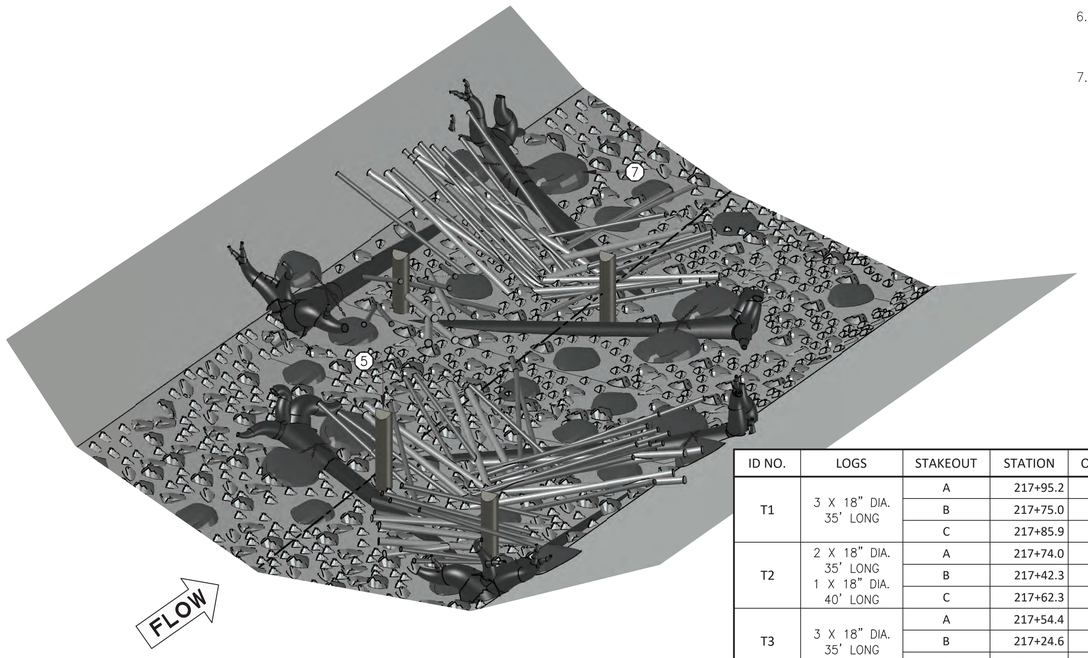
CHANNEL CONSTRUCTION SEQUENCE

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
25 OF 30

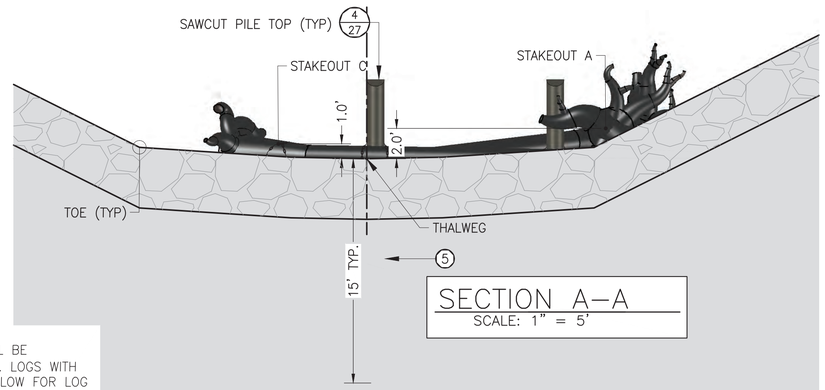


LOG TRIANGLE PLAN
SCALE: 1" = 5'



LOG TRIANGLE – ISOMETRIC
NTS

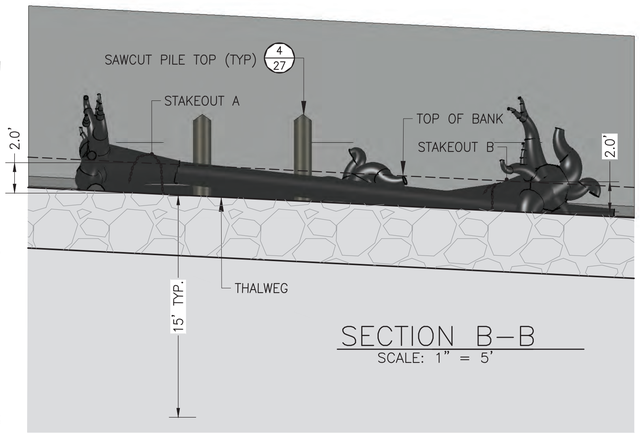
NOTE: FOR CLARITY, RACKING MATERIALS NOT SHOWN IN SECTION VIEWS.



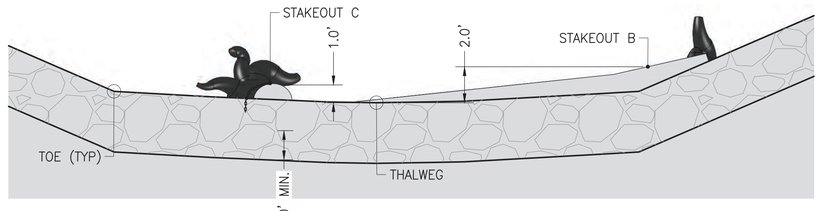
SECTION A–A
SCALE: 1" = 5'

LOG TRIANGLE NOTES

1. LOG TRIANGLE STRUCTURES SHALL BE CONSTRUCTED OF THREE 18" DIA. LOGS WITH INTACT ROOTWADS. SEE TABLE BELOW FOR LOG LENGTH.
2. MEMBER LOGS SHALL BE JOINED BY CROSS CHAIN LASHING AT OVERLAPPING CORNERS. SEE DETAIL SHEET 28.
3. STRUCTURES SHALL BE CONSTRUCTED TO MATCH STAKEOUT LOCATIONS AND ELEVATIONS AT TOP OF CROSSING LOGS, AS INDICATED ON TABLE.
4. DRIVE TWO 14" DIA. 25' LONG (PE–25) VERTICAL PILES AS SHOWN.
5. RACKING MATERIAL (4–10" DIA. X 10–30' LOGS) AND SLASH MATERIAL SHALL BE INTERTWINED WITH LOGS AS STRUCTURES ARE ASSEMBLED. PLACE 15–20 PIECES OF RACKING AND 5 CY OF SLASH PER TRIANGLE. RACKING MATERIAL SHALL BE COVERED AND VOIDS FILLED WITH STREAMBED MIX TO NEATLINES SHOWN ON THESE PLANS.
6. INSTALL ROCK COLLAR WITH TWO TYPE 4 STREAMBED BOULDERS AT EACH CORNER OF STRUCTURE. SEE DETAIL ON SHEET 27.
7. ROCK COLLARS SHALL BE PLACED SUCH THAT THE CONNECTING CHAIN IS TAUT AND IN CONTACT WITH LOGS FORMING TRIANGLE; CONTRACTOR SHALL COUNTERSINK BOULDERS AS NECESSARY TO ACHIEVE INSTALLATION IN THIS MANNER.



SECTION B–B
SCALE: 1" = 5'



SECTION C–C
SCALE: 1" = 5'

ID NO.	LOGS	STAKEOUT	STATION	OFFSET	ELEVATION
T1	3 X 18" DIA. 35' LONG	A	217+95.2	13.1 R	283.7
		B	217+75.0	12.4 R	282.3
		C	217+85.9	10.1 L	282.4
T2	2 X 18" DIA. 35' LONG 1 X 18" DIA. 40' LONG	A	217+74.0	14.8 L	282.6
		B	217+42.3	13.1 L	281.1
		C	217+62.3	7.1 R	281.3
T3	3 X 18" DIA. 35' LONG	A	217+54.4	15.2 R	281.9
		B	217+24.6	13.3 R	280.5
		C	217+42.4	5.8 L	280.7
T4	3 X 18" DIA. 35' LONG	A	217+27.6	16.0 L	280.6
		B	217+08.4	14.5 L	280.1
		C	217+19.7	7.6 R	279.8

ID NO.	LOGS	STAKEOUT	STATION	OFFSET	ELEVATION
T5	3 X 18" DIA. 35' LONG	A	217+00.0	16.0 L	280.0
		B	216+80.7	14.4 L	279.5
		C	216+92.1	7.6 R	279.2
T6	3 X 18" DIA. 35' LONG	A	216+82.0	14.2 R	279.3
		B	216+53.0	12.6 R	278.8
		C	216+68.1	7.4 L	278.5
T7	3 X 18" DIA. 35' LONG	A	216+58.6	15.3 L	279.1
		B	216+36.4	14.8 L	278.6
		C	216+47.7	7.2 R	278.3
T8	3 X 18" DIA. 35' LONG	A	216+33.7	13.4 R	278.6
		B	216+01.4	13.1 R	278.1
		C	216+17.7	6.7 L	277.8

LOG TRIANGLE DETAIL 1/26
SCALE: AS NOTED

NSD CGS Natural Systems Design + Coastal Geologic Services

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

ENGINEER OF RECORD
JON TRUSCOTT
STATE OF WASHINGTON
NICHOLAS
PROFESSIONAL ENGINEER
5/1/26

COUNTY ENGINEER

PROJECT NO.: EO214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: NT
DRAWN BY: DBS
CHECKED BY:
APPROVED BY:

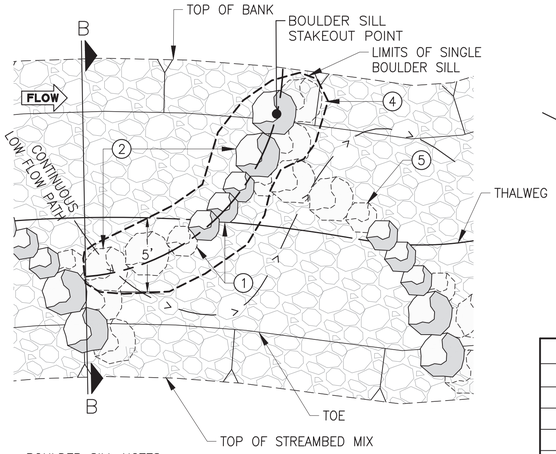
PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

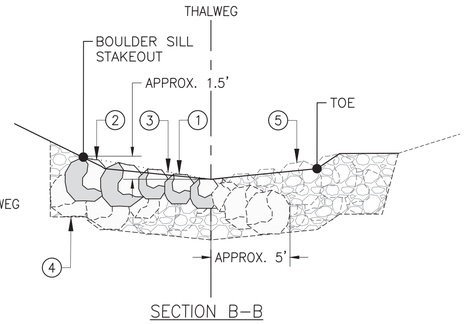
CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

CHANNEL STRUCTURE DETAILS (1 OF 3)

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET 26 OF 30





SECTION B–B

BOULDER SILL NOTES

1. TYPE TWO STREAMBED BOULDER. FIVE PER STRUCTURE.
2. TYPE THREE STREAMBED BOULDER. SIX PER STRUCTURE.
3. DASHED LINES INDICATE TOP OF BOULDER IS BURIED BENEATH FINISHED STREAMBED ELEVATION.
4. SET SILL BOULDERS AT SLOPE FROM TOP OF BANK TO THALWEG AND BELOW. INFILL BEHIND SILLS WITH STREAMBED MIX.
5. BANKWARD $\frac{1}{3}$ OF EACH SILL INCLUDES TWO (2) TYPE THREE AND ONE (1) TYPE TWO STREAMBED BOULDERS PLACED BELOW AND DOWNSTREAM OF THE SILL BOULDERS.
6. DOWNSTREAM BOULDER SILL. BOULDER SILLS ALTERNATE RIGHT/LEFT ORIENTATION.
7. STREAMBED BOULDERS SHALL BE PLACED IN CONTACT WITH ONE ANOTHER AND WITH THE DOWNSTREAM BOULDER SILL.

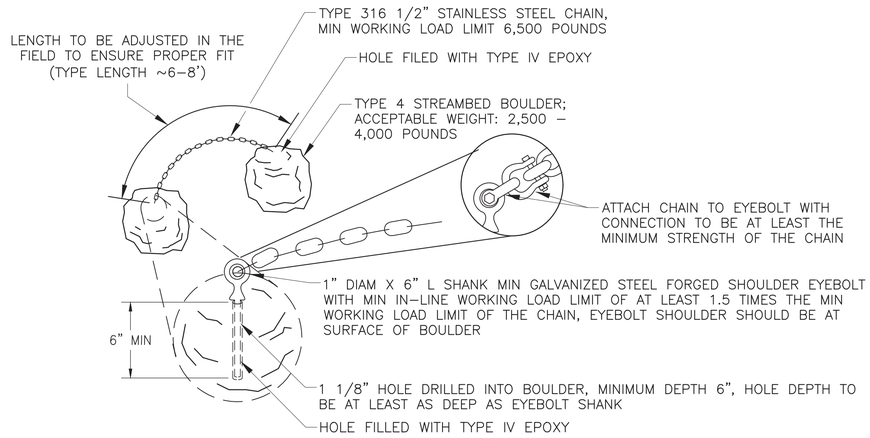
BOULDER SILL STAKEOUT

SILL	STATION	OFFSET	ELEV.
1	219+70.0	8.5 L	292.5
2	219+56.7	8.5 R	291.9
3	219+45.0	8.5 L	291.3
4	219+31.4	8.5 R	290.6
5	219+20.0	8.5 L	290.0
6	219+08.0	8.5 R	289.4
7	218+97.2	8.5 L	288.9
8	218+85.0	8.5 R	288.3
9	218+72.3	8.5 L	287.7
10	218+55.9	8.5 R	286.8
11	218+45.0	8.5 L	286.3
12	218+32.3	8.5 R	285.7
13	218+20.2	8.5 L	285.1
14	218+08.0	9.5 R	284.6

BOULDER SILL MATERIALS

MATERIAL	COUNT
TYPE TWO STREAMBED BOULDER	5
TYPE THREE STREAMBED BOULDER	6

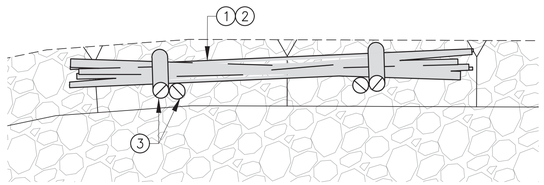
BOULDER SILL DETAIL 1/27
SCALE: 1" = 5'



ROCK COLLAR NOTES

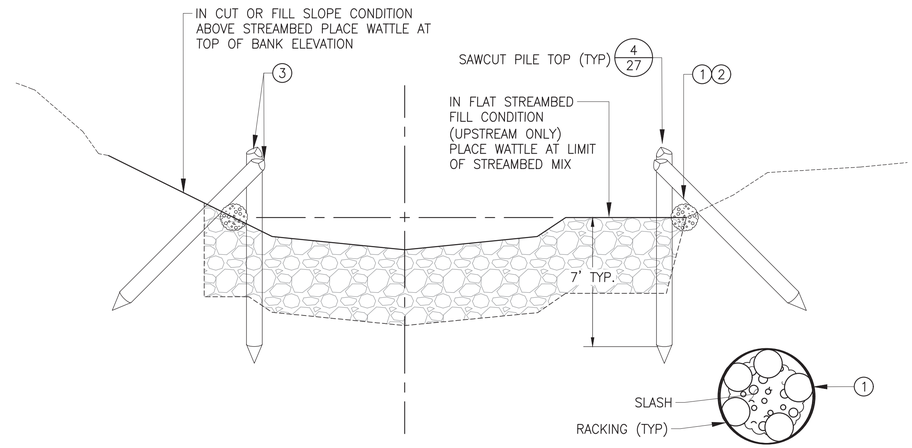
1. THOROUGHLY CLEAN DRILL HOLE AND ALL BONDING SURFACES PRIOR TO APPLICATION OF EPOXY.
2. THE DRILL HOLE SHALL BE FILLED WITH RESIN SUCH THAT WHEN THE EYEBOLT IS INSERTED, A SMALL AMOUNT OF RESIN WILL OOZE OUT OF THE TOP OF THE HOLE. ONCE THE EYEBOLT IS INSERTED IN THE HOLE, IT SHALL NOT BE DISTURBED UNTIL RESIN HAS CURED.
3. BOULDER DIAMETER AVERAGE DIMENSIONS SHOULD TYPICALLY RANGE FROM 3–4 FEET; INDIVIDUAL BOULDER WEIGHT SHALL BE BETWEEN 2,500–4,000 POUNDS.
4. BOULDERS USED TO CONSTRUCT A COLLAR SHALL BE PAIRED AS CLOSELY IN WEIGHT AS POSSIBLE.
5. EACH FULLY CONSTRUCTED COLLAR SHALL BE TESTED TO ENSURE PROPER BONDING BY PICKING UP ONE ROCK ON THE COLLAR AND SUSPENDING THE OTHER. ALL ROCK COLLARS SHALL BE WEIGHED AND FLAGGED WITH WEIGHT.
6. THE LENGTH OF CHAIN SHALL BE DETERMINED IN THE FIELD; LENGTHS ARE ANTICIPATED TO RANGE FROM 4–8 FEET.
7. COMPLETED ROCK COLLAR SHALL HAVE A MINIMUM WEIGHT OF 6,000 POUNDS.

ROCK COLLAR DETAIL 2/27
SCALE: 1" = 5'



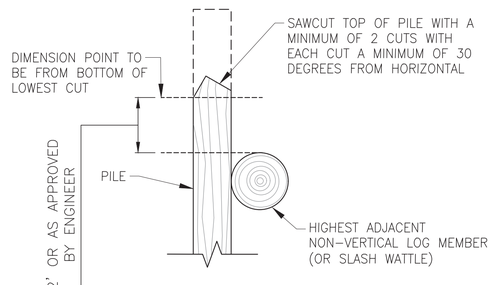
SLASH WATTLE NOTES

1. CONSTRUCT SLASH WATTLES AS 16–24" DIA. 20' LONG BUNDLES OF RACKING AND SLASH MATERIAL (APPROX. 2–3 CY OF SLASH). SURROUND SLASH WITH 4–6 PIECES OF 4–8" DIA. RACKING MATERIAL AND SECURE SLASH WATTLES WITH A DOUBLE WRAP OF MANILLA ROPE AS NEEDED TO MAINTAIN SHAPE DURING INSTALLATION.
2. PLACE SLASH WATTLES EMBEDDED HALF THE DIAMETER OF THE WATTLE AND ALIGNED PARALLEL WITH THE TOP OF THE CHANNEL BANK. APPROXIMATE LOCATIONS ARE SHOWN ON THE PLANS; THE ENGINEER WILL DETERMINE AND STAKE FINAL LOCATIONS IN THE FIELD.
3. ANCHOR SLASH WATTLES WITH TWO PAIRS OF 10" DIA., 15' LONG (PG–15) PILES WITH A PAIR POSITIONED APPROXIMATELY 5' FROM EACH END (FOUR PILES TOTAL). INSTALL ONE PILE VERTICALLY AT THE FACE OF THE WATTLE. INSTALL A SECOND BATTER PILE NEXT TO THE VERTICAL PILE AND AGAINST THE TOP OF THE WATTLE.



SLASH WATTLE SECTION DETAIL

SLASH WATTLE DETAIL 3/27
SCALE: 1" = 4'



SAWCUT PILE TOP DETAIL 4/27
NTS

Natural Systems Design
+ Coastal Geologic Services

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

ENGINEER OF RECORD
JON TRUSCOTT
STATE OF WASHINGTON
PROFESSIONAL ENGINEER
5/1/25

COUNTY ENGINEER

PROJECT NO.: E0214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: NT
DRAWN BY: DBS
CHECKED BY:
APPROVED BY:

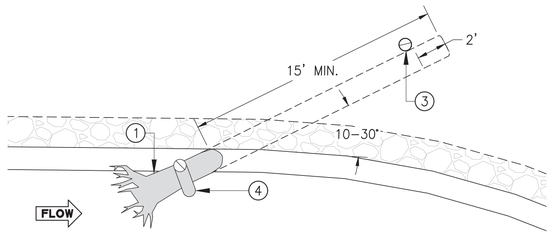
PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

CHANNEL STRUCTURE DETAILS (2 OF 3)

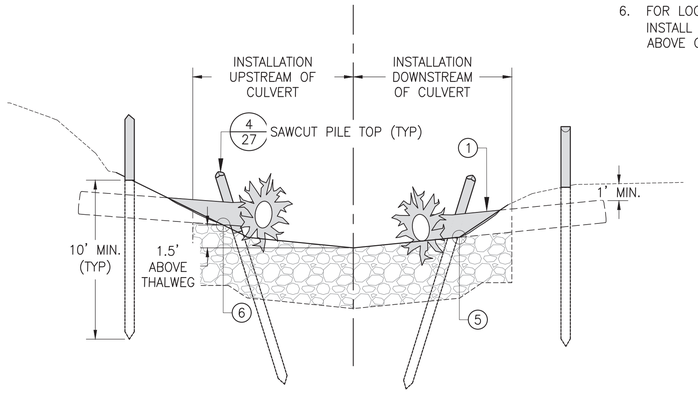
1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
27 OF 30

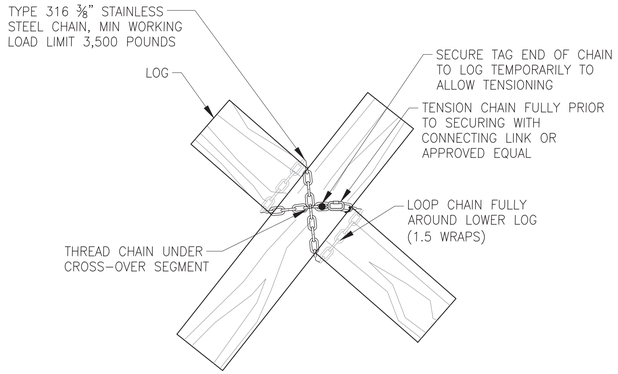


BANK ROOTWAD NOTES

1. BANK ROOTWAD LOCATIONS WILL BE STAKED BY THE ENGINEER.
2. INSTALL 18" DIA 20' LONG LOG WITH ROOTWAD INTO CHANNEL BANK WITH ROOTWAD PROJECTING INTO CHANNEL.
3. INSTALL 12" DIA., 20' LONG (PF-20) VERTICAL PILE INTO BANK ADJACENT TO LOG ON UPSTREAM SIDE.
4. INSTALL 12" DIA., 20' LONG (PF-20) PILE ON A BATTER ON DOWNSTREAM SIDE OF LOG AS DIRECTED BY ENGINEER TO PIN LOG IN PLACE.
5. FOR LOGS DOWNSTREAM OF THE CULVERT, INSTALL LOGS WITH BOTTOM OF LOGS SITTING AT THE TOE OF THE CONSTRUCTED CHANNEL.
6. FOR LOGS UPSTREAM OF THE CULVERT, INSTALL LOGS WITH BOTTOM OF LOG 1.5' ABOVE CHANNEL THALWEG.



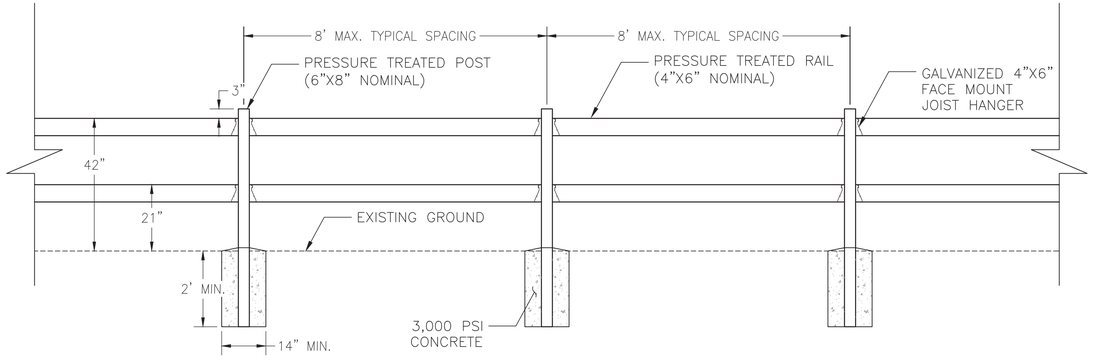
BANK ROOTWAD DETAIL 1/28
NTS

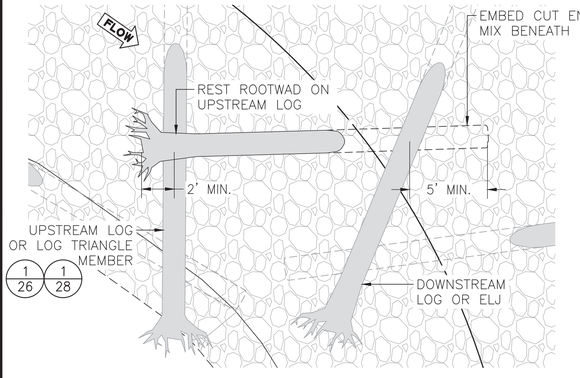


CROSS CHAIN LASHING NOTES

1. SECURE TAG END OF CHAIN TO TOP LOG TEMPORARILY USING A RAILROAD SPIKE, LARGE FENCING NAIL, OR SIMILAR.
2. WRAP THE CHAIN FULLY AROUND THE BOTTOM LOG THEN ANOTHER HALF WRAP AROUND THE UNDERSIDE OF THE BOTTOM LOG. THEN CROSS OVER THE TOP LOG DIAGONALLY.
3. WRAP CHAIN FULLY AROUND THE BOTTOM LOG THEN ANOTHER HALF WRAP AROUND THE UNDERSIDE OF THE BOTTOM LOG.
4. PULL CHAIN BACK TO THE TAG END SECURED TO THE TOP LOG.
5. SQUARE UP ALL WRAPS AND LOOPS TO REMOVE SLACK PRIOR TO TENSIONING.
6. APPLY TENSION TO THE CHAIN USING MECHANICAL MEANS (CHAIN BINDER, OR SIMILAR); WHILE CHAIN IS FULLY TENSIONED, APPLY QUICK LINK TO CHAIN WHILE TENSIONED THEN SLOWLY RELEASE TENSION.
7. TRIM EXCESS CHAIN.

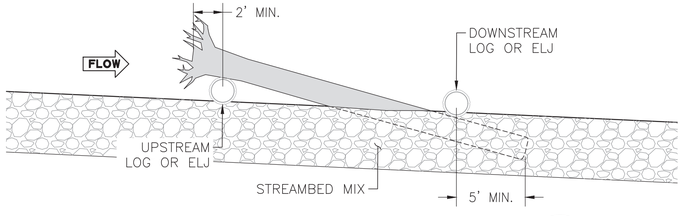
CROSS CHAIN LASHING DETAIL 2/28
NTS



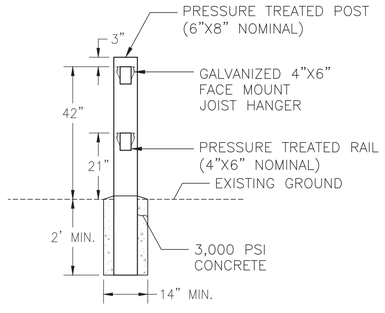


CHANNEL ROOTWAD NOTES

1. INSTALL 18" DIA LOG WITH ROOTWAD EMBEDDED INTO CONSTRUCTED CHANNEL BED. LOCATION AND ORIENTATION TO BE IDENTIFIED IN THE FIELD BY THE ENGINEER. SHORT CHANNEL ROOTWADS SHALL BE 25' LONG AND LONG CHANNEL ROOTWADS SHALL BE 40' LONG.
2. CHANNEL ROOTWAD LOG SHALL BE ORIENTED WITH ROOTWAD FACING UPSTREAM. ROOTWAD END SHALL REST ON TOP OF OTHER LOG. CUT LOG END SHALL BE ORIENTED DOWNSTREAM AND EMBEDDED IN STREAMBED MIX BENEATH OTHER LOG AS SHOWN.
3. INCORPORATE SLASH (2-3 CY) INTO BACKFILL OF PARTIALLY EXPOSED CHANNEL ROOTWADS AS DIRECTED BY ENGINEER.



CHANNEL ROOTWAD DETAIL 3/28
NTS



TIMBER HANDRAIL NOTES:

1. TIMBER HANDRAIL SHALL BE CONSTRUCTED FROM PRESSURE TREATED (GROUND CONTACT RATED) NOMINAL LUMBER.
2. EMBED TIMBER POSTS A MINIMUM OF 2 FEET BELOW THE EXISTING GROUND SURFACE.
3. PITS FOR POSTS SHALL BE NEATLY CREATED, FREE OF DEBRIS AND WATER, AND SHALL MEET THE MINIMUM DIMENSIONS SHOWN ON THIS SHEET.
4. BACKFILL PITS FOR POSTS WITH CONCRETE (MINIMUM 3,000 PSI COMPRESSIVE STRENGTH) AND SHALL HAVE A SLOPING MINIMUM OF 1" ABOVE GROUND.
5. ALLOW CONCRETE TO CURE A MINIMUM OF 24 HOURS PRIOR TO ATTACHING RAILS.
6. CONNECT RAILS TO POSTS WITH GALVANIZED FACE MOUNTED JOIST HANGERS AND MANUFACTURER RECOMMENDED NAILS OR SCREWS.
7. ALL POSTS AND RAILS SHALL BE SIMILAR IN APPEARANCE.

TIMBER HANDRAIL DETAIL 4/28
NTS

NSD CGS Natural Systems Design + Coastal Geologic Services

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

NO.	REVISIONS	DATE

ENGINEER OF RECORD
JON TRUSCOTT
STATE OF WASHINGTON
PROFESSIONAL ENGINEER

COUNTY ENGINEER

PROJECT NO.: EO214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: NT
DRAWN BY: DBS
CHECKED BY:
APPROVED BY:

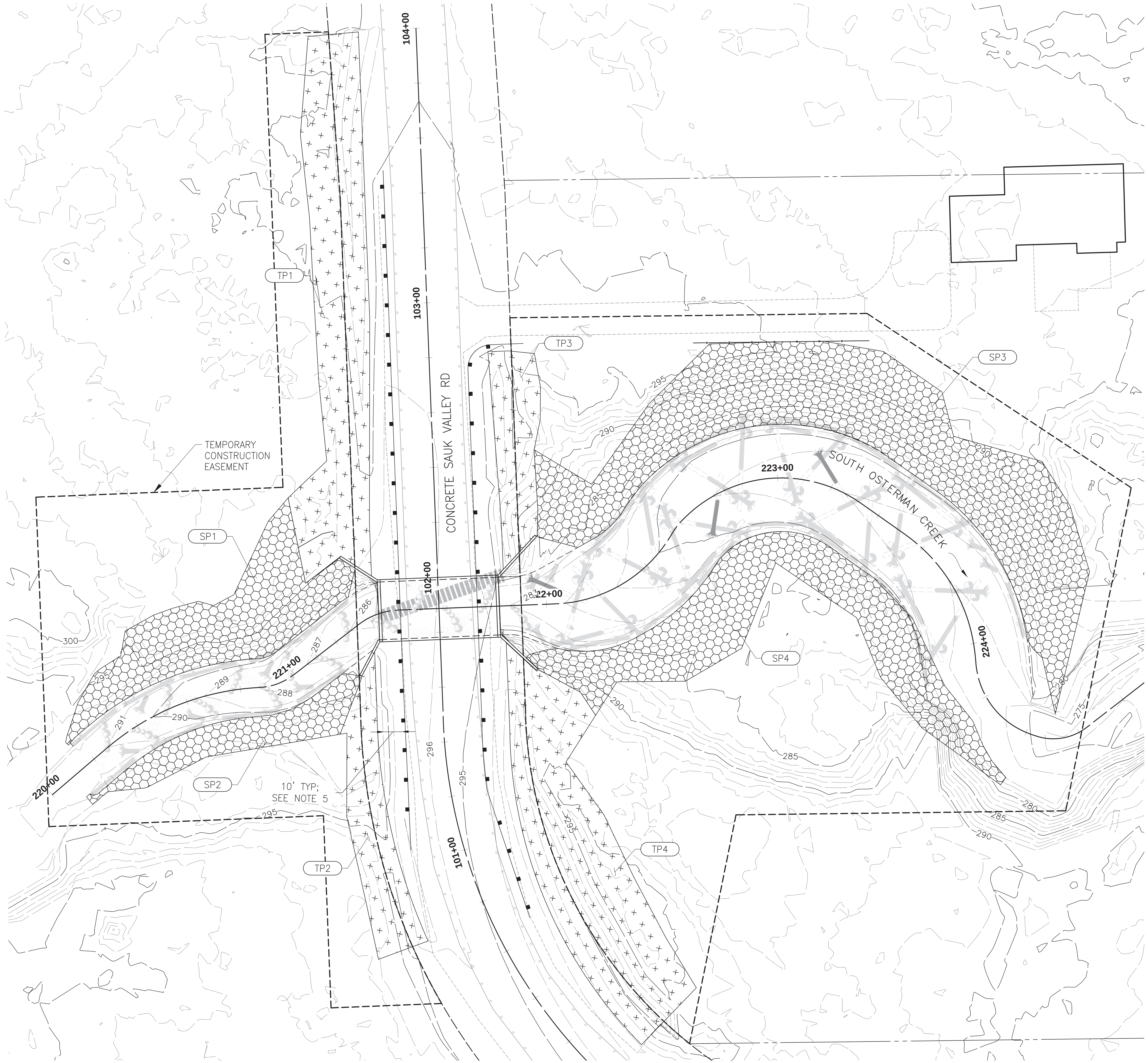
PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

CHANNEL STRUCTURE DETAILS (3 OF 3)

1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SHEET
28 OF **30**



20' 10' 0 20' 40'

SCALE: 1"=20'-0"

PLANTING AREA LEGEND

SLOPE PLANTING AREA (SP)

TERRACE PLANTING AREA (TP)

NOTES:

1. FOLLOWING COMPLETION OF EARTHWORK AND STRUCTURE PLACEMENT, ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED ACCORDING TO SHEET 8.
2. PLANTING SHALL OCCUR FOLLOWING SEEDING ACCORDING TO THE AREAS SHOWN THIS SHEET AND THE SCHEDULES LISTED ON SHEET 30.
3. PLANTING BOUNDARIES SHOWN ON THIS SHEET ARE THE EXPECTED LIMITS OF DISTURBANCE RESULTING FROM THE SOUTH OSTERMAN CREEK PROJECT AND MAY VARY AT THE TIME OF PLANTING. PLANTING BOUNDARIES AND LAYOUT SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF WORK.
4. PLANTING SHALL OCCUR AROUND EXISTING STRAW WATTLES, PLACED AS SHOWN ON SHEET 8. STRAW WATTLES SHALL REMAIN.
5. NO PLANTING SHALL OCCUR WITHIN 10' OF THE FINISHED EDGE OF PAVEMENT.

NSD CGS Natural Systems Design + Coastal Geologic Services

SKAGIT COUNTY PUBLIC WORKS
1800 CONTINENTAL PLACE
MOUNT VERNON, WA 98273-5625
(360) 416-1400

REVISIONS | NO. | DATE

ENGINEER OF RECORD

COUNTY ENGINEER

PROJECT NO.: E0214-5
FED. AID NO.: 4650DR-WA #674680
DESIGNED BY: NT | DRAWN BY: DBS
CHECKED BY: | APPROVED BY:

PROJECT LOCATED NEAR:
CONCRETE, WA
S 14 T 34 N R 9 E

CONCRETE SAUK VALLEY ROAD CULVERT REPAIR PROJECT - SOUTH OSTERMAN CREEK

PLANTING PLAN

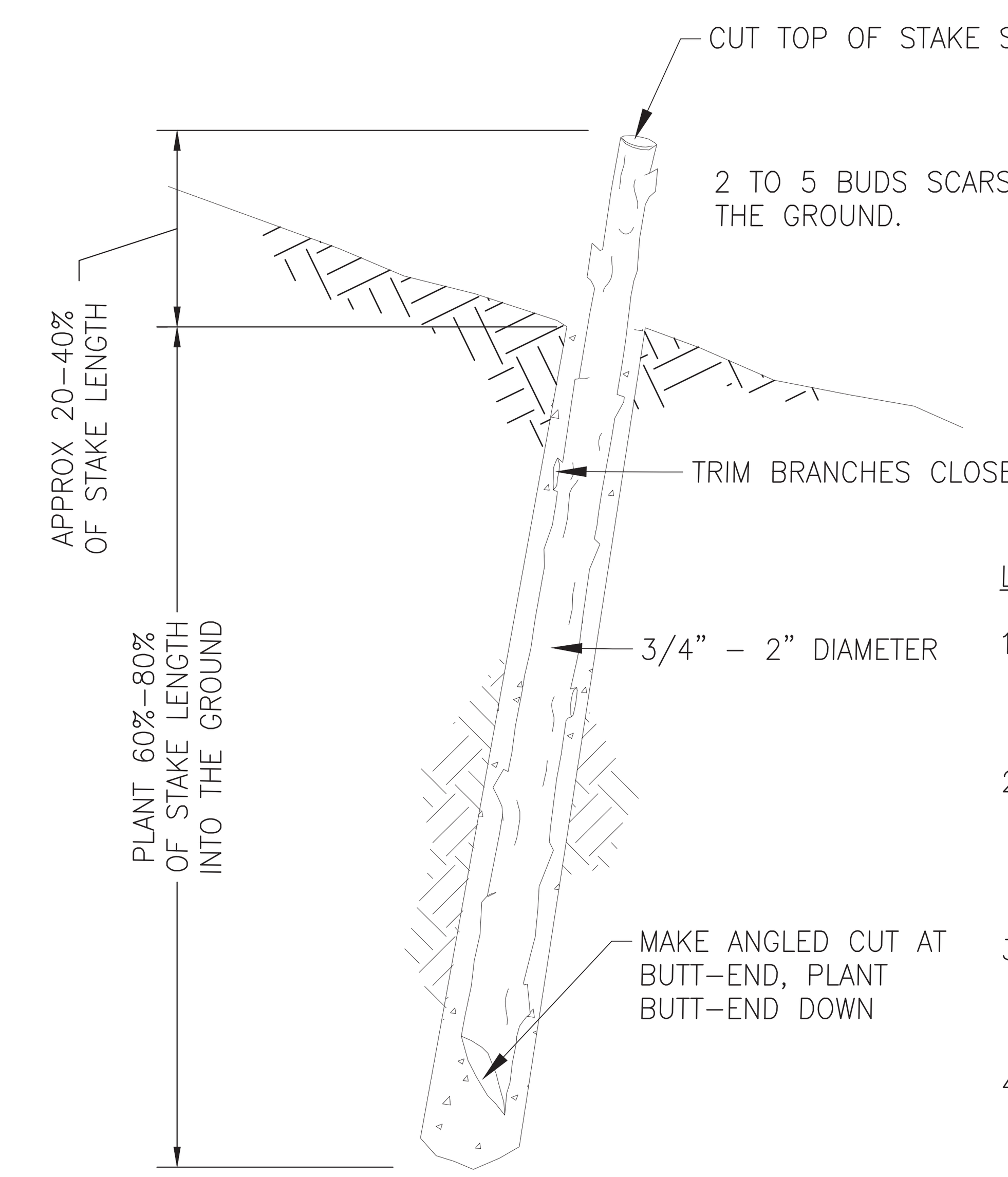
1 INCH SCALE BAR
ADJUST SCALE ACCORDINGLY

SLOPE PLANT SCHEDULE							AREA QUANTITIES			
PLANT TYPE	ID	SPECIES NAME	COMMON NAME	TYP. SPACING	SIZE	TOTAL QUANTITY 0.33 AC	SP1 2584 SF	SP2 1136 SF	SP3 7060 SF	SP4 3725 SF
TREE										
	ACMA	ACER MACROPHYLLUM	BIGLEAF MAPLE	8'	1 GAL	12	2	1	6	3
	ALRU	ALNUS RUBRA	RED ALDER	8'	1 GAL	12	2	1	6	3
	CRDO	CRATAEGUS DOUGLASII	BLACK HAWTHORN	8'	1 GAL	12	2	1	6	3
	PSME	PSEUDOTSUGA MENZIESII	DOUGLAS-FIR	8'	1 GAL	23	4	2	11	6
	SALA	SALIX LASIANDRA	PACIFIC WILLOW	3'	4' LIVE STAKE	161	29	13	78	41
SHRUB										
	ACCI	ACER CIRCINATUM	VINE MAPLE	6'	1 GAL	40	7	3	20	10
	COCO	CORYLUS CORNUTA	BEAKED HAZELNUT	6'	1 GAL	21	4	2	10	5
	COSE	CORNUS SERICEA	REDOSIER DOGWOOD	4'	1 GAL	90	16	7	44	23
	OECE	OEMLERIA CERASIFORMIS	OSOBERRY	4'	1 GAL	46	8	4	22	12
	RIDI	RIBES DIVARICATUM	SPREADING GOOSEBERRY	4'	1 GAL	46	8	4	22	12
	RUPA	RUBUS PARVIFLORUS	THIMBLEBERRY	4'	1 GAL	46	8	4	22	12
	RUSP	RUBUS SPECTABILIS	SALMONBERRY	4'	1 GAL	90	16	7	44	23
	SYAL	SYMPHORICARPOS ALBUS	SNOWBERRY	4'	1 GAL	46	8	4	22	12
GROUND										
	ARUV	ARCTOSTAPHYLOS UVA-URSI	KINNIKINNICK	3'	4"	80	14	6	39	21
	ACMI	ACHILLEA MILLEFOLIUM	COMMON YARROW	3'	1 GAL	80	14	6	39	21
					TOTAL QUANTITIES	805	142	65	391	207

TERRACE PLANT SCHEDULE							AREA QUANTITIES			
PLANT TYPE	ID	SPECIES NAME	COMMON NAME	TYP. SPACING	SIZE	TOTAL QUANTITY 0.24 AC	TP1 4073 SF	TP2 1411 SF	TP3 1101 SF	TP4 4037 SF
TREE										
	ACMA	ACER MACROPHYLLUM	BIGLEAF MAPLE	8'	1 GAL	16	6	2	2	6
	PSME	PSEUDOTSUGA MENZIESII	DOUGLAS-FIR	8'	1 GAL	25	10	3	3	9
	THPL	THUJA PLICATA	WESTERN RED CEDAR	8'	1 GAL	16	6	2	2	6
SHRUB										
	ACCI	ACER CIRCINATUM	VINE MAPLE	6'	1 GAL	29	11	4	3	11
	SARA	SAMBUCUS RACEMOSA	RED ELDERBERRY	6'	1 GAL	45	17	6	5	17
	SYAL	SYMPHORICARPOS ALBUS	SNOWBERRY	4'	1 GAL	66	25	9	7	25
GROUND										
	MAAQ	BERBERIS AQUIFOLIUM	TALL OREGONGRAPE	4'	1 GAL	99	38	13	10	38
	POMU	POLYSTICHUM MUNITUM	WESTERN SWORDFERN	3'	1 GAL	177	68	24	18	67
					TOTAL QUANTITIES	473	181	63	50	179

GENERAL NOTES:

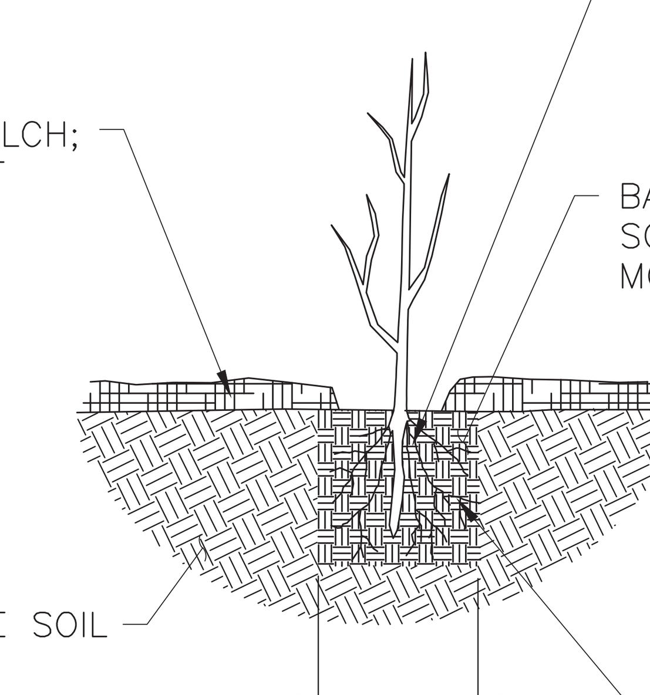
1. SEE SHEET 29 FOR PLANTING AREA LOCATIONS.
2. TYPICAL SPACING INDICATES MINIMUM PLANTING DISTANCE BETWEEN LIKE SPECIES. PLANTS SHALL BE EVENLY SPACED ACROSS THE PLANTING AREA SUCH THAT ALL PLANTING AREAS ARE EVENLY COVERED.
3. IF SUFFICIENT QUANTITIES OF PLANT MATERIALS ARE NOT AVAILABLE IN THE SIZES SPECIFIED, THE CONTRACTOR MAY SUBSTITUTE MATERIAL IN EQUIVALENT OR GREATER SIZE, AS APPROVED BY THE ENGINEER.
4. LIVE STAKES SHALL BE PLANTED LANDWARD OF THE CREEK, WITHIN 5' OF THE CONSTRUCTED TOP OF BANK.
5. EXISTING WOOD CHIP MULCH SHALL BE REFRESHED FOLLOWING PLANTING ACTIVITIES, AS DIRECTED BY THE ENGINEER, FINISHED MULCH PLACEMENT SHALL BE MIN. 3" DEPTH AND SHALL NOT EXCEED 6" DEPTH. TAPER MULCH NEAR BASE OF EACH PLANT TO ENSURE MULCH DOES NOT MAKE CONTACT WITH PLANT STEMS. WOOD CHIP MULCH SHALL NOT BE PLACED WITHIN 3" OF THE PLANT STEM.



LIVE STAKE NOTES:

1. USE HEALTHY, STRAIGHT AND LIVE WOOD AT LEAST 1 YEAR OLD, AND 4' IN LENGTH.
2. INSTALL LIVE STAKES TO ENSURE BURIAL OF A MINIMUM OF 60% OF TOTAL STAKE LENGTH IS ACHEIVED.
3. MAKE CLEAN CUTS AND DO NOT DAMAGE STAKES OR SPLIT ENDS DURING INSTALLATION.
4. TAMP THE SOIL AROUND THE STAKE.

LIVE STAKE DETAIL 1/30
NOT TO SCALE



BARE ROOT AND CONTAINER PLANTING DETAIL 2/30
NOT TO SCALE

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PLANT SCHEDULES & DETAILS

1 INCH SCALE BAR
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