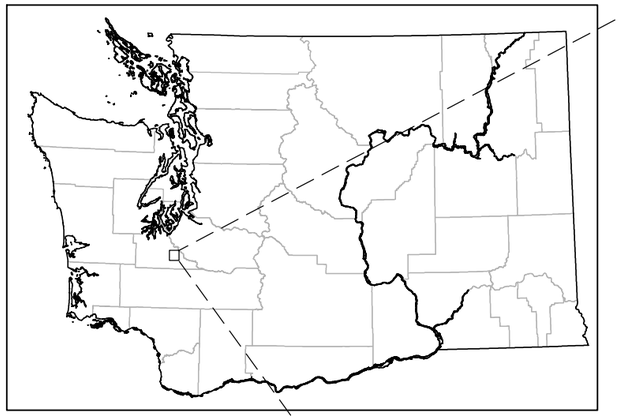
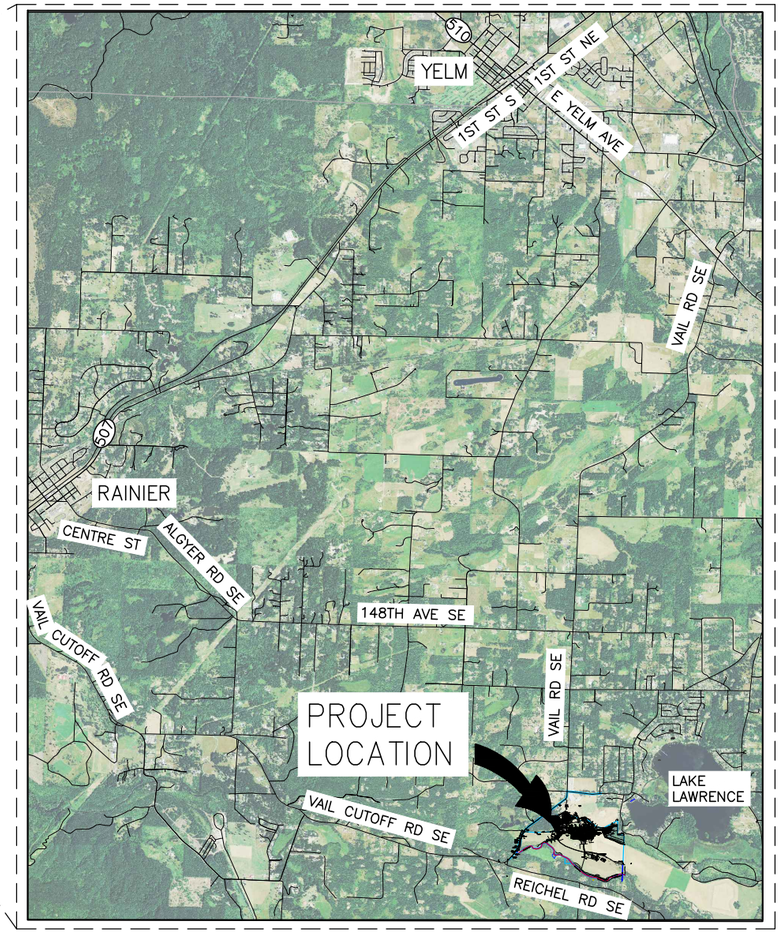
DESCHUTES RIVER HABITAT RESTORATION

CITIES OF OLYMPIA, LACEY, AND YELM



WASHINGTON STATE
SCALE: 1"=50 MILES



VICINITY MAP
SCALE: 1" = 3500'

SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	GENERAL NOTES
3	LOG SCHEDULE AND CONTROL POINTS
4	LEGEND
5	EXISTING CONDITIONS AND KEY PLAN
6	ACCESS, STAGING, AND TESC OVERALL PLAN
7	SITE 1 ACCESS, STAGING, AND TESC
8	SITE 2 ACCESS, STAGING, AND TESC
9	SITE 3 ACCESS, STAGING, AND TESC
10	SITE 4 ACCESS, STAGING, AND TESC
11	TESC DETAILS 1
12	TESC DETAILS 2
13	OVERALL RESTORATION PLAN
14	SITE 1 RESTORATION PLAN
15	SITE 2 RESTORATION PLAN
16	SITE 3 RESTORATION PLAN
17	SITE 4 RESTORATION PLAN
18	SITE 1 PLANTING PLAN
19	SITE 2 PLANTING PLAN
20	SITE 3 PLANTING PLAN
21	SITE 4 RIVERBANK STABILIZATION PLANTING
22	PROFILES
23	CROSS-SECTIONS
24	RIVERBANK STABILIZATION PLAN AND CROSS-SECTION
25	BANK STABILIZATION LAYERING PLANS 1
26	BANK STABILIZATION LAYERING PLANS 2
27	SPRING CHANNEL DETAILS
28	LAKE OUTLET CHANNEL DETAILS

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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	KA	LATITUDE	46°50'50"N
CHECKED	RH	LONGITUDE	122°35'24"W
DRAWN	GM	TN/SC/RG	T16N/S29/R2E
CHECKED	KA	DATE	-

DESCHUTES RIVER HABITAT RESTORATION

COVER SHEET

1

1 OF 28

Feb-13-2015 60% DESIGN

N:\PROJECTS\CONFLUENCE ENV - CHERRY CREEK\DESCHUTES RIVER WETLANDS 2013\DESIGN\CAD DWGS-CURRENT\COVER SHEET.DWG Gary 5/17/2013 9:26:19 AM

GENERAL NOTES

1. THESE PLANS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF THE CITIES OF OLYMPIA, LACEY, AND YELM; HEREAFTER COLLECTIVELY REFERRED TO AS "OWNER."
2. CONFLUENCE ENVIRONMENTAL COMPANY, NATURAL SYSTEMS DESIGN, AND SOUTH PUGET SOUND SALMON ENHANCEMENT GROUP; HEREAFTER COLLECTIVELY REFERRED TO AS "ENGINEER" ARE RESPONSIBLE FOR THE PREPARATION OF THESE ORIGINAL PLANS AND ASSOCIATED SPECIFICATIONS AND WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ANY USE WHICH INCLUDES ALTERATION, DELETION, OR EDITING OF THIS DOCUMENT WITHOUT EXPLICIT WRITTEN PERMISSION FROM THE ENGINEER, IS STRICTLY PROHIBITED. ANY OTHER UNAUTHORIZED USE OF THIS DOCUMENT IS PROHIBITED.
3. MINOR MODIFICATIONS ARE EXPECTED TO SUIT JOB SITE DIMENSIONS OR CONDITIONS. SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. THE OWNER, ENGINEER AND APPROPRIATE REGULATORY AGENCIES WILL BE NOTIFIED OF ANY OWNER–AUTHORIZED CHANGE RESULTING IN MORE THAN A 10% DESIGN CHANGE OF PROPOSED FOOTPRINT OR SIGNIFICANTLY AFFECTING THE INTENDED BENEFIT OR FUNCTION OF A PROJECT ELEMENT.
4. THE LOCATION OF ALL FEATURES SHOWN IS APPROXIMATE.
5. THE CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, AND FURTHER AGREES THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS IN ACCORDANCE WITH THE PROVISIONS OUTLINED BY THE PROJECT CONTRACT AND SPECIFICATIONS.
6. ALL IMPROVEMENTS SHALL BE ACCOMPLISHED UNDER THE APPROVAL, INSPECTION, AND TO THE SATISFACTION OF THE OWNER. IMPROVEMENT CONSTRUCTION SHALL COMPLY WITH THESE PLANS AND THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) STANDARD PLANS FOR CONSTRUCTION OF ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, CURRENT EDITION UNLESS NOTED OTHERWISE. ALL REFERENCES TO THE "STANDARD SPECIFICATIONS" SHALL MEAN THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION OF LOCAL STREETS AND ROADS, CURRENT EDITION. CONSTRUCTION NOT SPECIFIED ON THESE PLANS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR IS OBLIGATED TO BE FAMILIAR WITH APPLICABLE SECTIONS OF THE STANDARD SPECIFICATIONS NOT DISCUSSED IN THE GENERAL NOTES. THE CONTRACT SPECIAL PROVISIONS SHALL SUPERSEDE THOSE OF THE STANDARD SPECIFICATIONS WHERE DISCREPANCIES OCCUR.
7. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND HIS SUBCONTRACTOR(S) TO EXAMINE THE PROJECT SITE PRIOR TO THE OPENING OF BID PROPOSALS. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED, SUCH AS THE NATURE AND LOCATION OF THE WORK AND THE GENERAL AND LOCAL CONDITIONS, PARTICULARLY THOSE AFFECTING THE AVAILABILITY OF TRANSPORTATION, THE DISPOSAL, HANDLING, AND STORAGE OF MATERIALS, AVAILABILITY OF LABOR, WATER, ELECTRICITY, ROADS, THE UNCERTAINTIES OF WEATHER, THE CONDITIONS OF THE GROUND, SURFACE AND SUBSURFACE MATERIALS, GROUNDWATER, THE EQUIPMENT AND FACILITIES NEEDED FOR AND DURING THE PERFORMANCE OF THE WORK, AND THE COSTS THEREOF. ANY FAILURE BY THE CONTRACTOR AND SUBCONTRACTOR(S) TO ACQUAINT THEMSELVES WITH ALL THE AVAILABLE INFORMATION WILL NOT RELIEVE THE CONTRACTOR AND SUBCONTRACTOR(S) FROM RESPONSIBILITY FOR PROPERLY ESTIMATING THE DIFFICULTY AND COST OF SUCCESSFULLY PERFORMING THE WORK.
8. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE CONTRACT DOCUMENTS AND FOR ALL SUBMITTALS REQUIRED TO THE OWNER FOR REVIEW AND ACCEPTANCE.

PERMIT NOTES

1. EVERY REASONABLE EFFORT SHALL BE MADE TO CONDUCT THE ACTIVITIES SHOWN IN THESE PLANS, IN A MANNER THAT MINIMIZES THE ADVERSE IMPACT ON WATER QUALITY, FISH AND WILDLIFE, AND THE NATURAL ENVIRONMENT.
2. ALL WORK WILL BE IN COMPLIANCE WITH PERMIT CONDITIONS ISSUED BY VARIOUS REGULATORY AGENCIES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE COPIES OF ALL PERMITS ON THE JOB SITE, UNDERSTAND AND COMPLY WITH ALL PERMIT CONDITIONS.
3. ALL WORK THAT DISTURBS THE SUBSTRATE, BANK, OR SHORE OF A WATERS OF THE STATE THAT CONTAINS FISH LIFE SHALL BE CONDUCTED ONLY DURING THE WORK PERIOD FOR THAT WATERBODY AS INDICATED IN THE MOST RECENT ALLOWABLE WORK PERIODS FOR HYDRAULIC PROJECTS IN FRESHWATER FOR THE PROJECT AREA. THOSE PORTIONS OF THE PROJECT WORK THAT OCCUR OUTSIDE OR ABOVE THE ORDINARY HIGH WATER MARK (ABOVE THE CORPS JURISDICTIONAL LINE) ARE NOT SUBJECT TO THE WORK PERIODS DESCRIBED ABOVE UNLESS SPECIFIED IN THE RELEVANT PERMITS.
4. ALL ACTIVITIES THAT INVOLVE WORK ADJACENT TO OR WITHIN THE WETTED CHANNEL SHALL, AT ALL TIMES, REMAIN CONSISTENT WITH ALL APPLICABLE WATER QUALITY STANDARDS, EFFLUENT LIMITATION AND STANDARDS OF PERFORMANCE, PROHIBITIONS, PRETREATMENT STANDARDS, AND MANAGEMENT PRACTICES ESTABLISHED PURSUANT TO THE CLEAN WATER ACT OR PURSUANT TO APPLICABLE STATE AND LOCAL LAW.
5. IF AT ANY TIME, AS A RESULT OF PROJECT ACTIVITIES, FISH ARE OBSERVED IN DISTRESS, A FISH KILL OCCURS, OR WATER QUALITY PROBLEMS DEVELOP (INCLUDING EQUIPMENT LEAKS OR SPILLS), OPERATIONS SHALL CEASE AND THE OWNER SHALL BE NOTIFIED IMMEDIATELY.
6. IF, DURING CONSTRUCTION, ARCHAEOLOGICAL REMAINS ARE ENCOUNTERED, CONSTRUCTION IN THE VICINITY SHALL BE HALTED, AND THE STATE OFFICE OF HISTORIC PRESERVATION AND THE OWNER SHALL BE NOTIFIED IMMEDIATELY.
7. LOCATION OF OHWM WAS ESTIMATED BASED ON VEGETATIVE INDICATORS, HYDRAULIC MODEL OUTPUT, AND GEOMORPHIC INDICATORS.

SURVEY NOTES

1. UNLESS NOTED OTHERWISE ON THE PLANS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SURVEY MONUMENTS AND OTHER SURVEY MARKERS DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL MAINTAIN A SET OF PLANS ON THE JOB SHOWING "AS–CONSTRUCTED" CHANGES MADE TO DATE. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUPPLY TO OWNER A SET OF PLANS, MARKED UP TO THE SATISFACTION OF THE OWNER, REFLECTING THE AS–CONSTRUCTED MODIFICATIONS.
3. ELEVATIONS SHOWN ON THE PLANS FOR PIPE INVERTS, TOPS OF BANKS, THALWEG, GRADE CONTROLS, ETC., ARE BASED UPON THE TOPOGRAPHIC INFORMATION SHOWN ON THE PLANS. THE CONTRACTOR SHALL VERIFY ALL NECESSARY SURFACE ELEVATIONS IN THE FIELD AND NOTIFY THE OWNER OF ANY DISCREPANCIES, WHICH MIGHT AFFECT PROPER OPERATION OF THE NEW FACILITIES BEFORE BREAKING GROUND AND PRIOR TO FACILITY INSTALLATION. THE OWNER SHALL BE CONTACTED IN THE EVENT ELEVATIONS ARE INCORRECT SO THAT THE PROPER ADJUSTMENTS CAN BE MADE BY ENGINEER PRIOR TO THE INSTALLATION OF THE FACILITIES, AS SET FORTH IN THE SPECIAL PROVISIONS.
4. SURVEY DATA WAS OBTAINED FROM A TOPOGRAPHIC SURVEY PERFORMED BY THE CITY OF LACEY IN 2012. LIDAR DATA WAS OBTAINED FROM PUGET SOUND LIDAR CONSORTIUM AND IS REPRESENTATIVE OF 2011 CONDITIONS. ALL DATA IS ON A HORIZONTAL DATUM OF NAD83 WASHINGTON STATE PLAN SOUTH (FT) AND A VERTICAL DATUM OF NGVD29 (FT).
5. THE FOLLOWING IS A DESCRIPTION OF THE PROPERTY BOUNDARY ALONG THE DESCHUTES RIVER PROVIDED BY LAWRENCE J HOLT, WA PLS 11958, ON NOVEMBER 2010 SITE MAP.

"Deschutes River - The Deschutes River forms the majority of the southern boundary of Parcel 'B' shown on this survey. I have considered that the Deschutes River in this area is not navigable based on the following:

The Washington Department of Natural Resources (DNR) has not asserted ownership of the bed of the Deschutes River.

The 1873 GLO survey of T16N R2E did not meander the river, and shows roads in the vicinity.

The State Court of Appeals, Div 2, in Knutson v. Reichel (10 Wn. App. 293), considered the Deschutes River non-navigable. (Note: Washington DNR was not a party to this case)

Therefore, the thalweg as surveyed in August 2010 is shown as the southern boundary of Parcel 'B' and is used for acreage calculation. Since the river is a dynamic boundary, the bearings and distances are not included in the description."

EROSION, SEDIMENT CONTROL AND WATER MANAGEMENT NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING ALL TEMPORARY EROSION CONTROL MEASURES. THE EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND PERFORMANCE OF THE TEMPORARY EROSION CONTROL MEASURES THROUGHOUT THE DURATION OF THE PROJECT.
2. A SEDIMENT AND EROSION CONTROL PLAN WILL BE DEVELOPED BY THE CONTRACTOR AND SUBMITTED FOR APPROVAL BY OWNER AND/OR THE ENGINEER BEFORE ANY CONSTRUCTION MAY BEGIN. THE SEDIMENT AND EROSION CONTROL PLAN WILL IDENTIFY BEST MANAGEMENT PRACTICES TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS MINIMIZED. THE PLAN SHALL BE IN COMPLIANCE WITH AND REFER TO THE MOST RECENT VERSION OF DEPARTMENT OF ECOLOGY STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON AND/OR WSDOT STANDARD PLANS MANUAL EROSION CONTROL DETAILS.
3. ACTIVITIES SHALL BE DESIGNED AND CONSTRUCTED TO AVOID AND MINIMIZE ADVERSE IMPACTS TO WATERS OF THE UNITED STATES TO THE MAXIMUM EXTENT PRACTICAL THROUGH THE USE OF PRACTICAL ALTERNATIVES. ALTERNATIVES THAT SHALL BE CONSIDERED INCLUDE THOSE THAT MINIMIZE THE NUMBER AND EXTENT OF IN–WATER WORK AND EQUIPMENT CROSSINGS OF WETTED CHANNELS OR WETLAND AREAS.
4. AT NO TIME SHALL SEDIMENT–LADEN WATER BE DISCHARGED OR PUMPED DIRECTLY INTO THE SUBJECT RIVER, STREAM, OR WETLAND. WATER SHALL BE DISCHARGED IN ACCORDANCE WITH REQUIREMENTS SET FORTH IN THE PROJECT PERMITS AND / OR SPECIFICATIONS.
5. IF HIGH WATER LEVEL CONDITIONS THAT CAUSE SILTATION OR EROSION ARE ENCOUNTERED DURING CONSTRUCTION, WORK SHALL STOP UNTIL THE WATER LEVEL SUBSIDES.
6. PERMIT CONDITIONS CONTAIN SPECIFIC REQUIREMENTS FOR THE CONTROL OF EROSION AND TURBIDITY FROM PROJECT OPERATIONS. TURBIDITY WILL BE MONITORED ON A FREQUENT BASIS BY THE PROJECT MANAGEMENT AND INSPECTION STAFF ON–SITE. TURBIDITY AMOUNTS IN EXCESS OF THE PERMITTED CONCENTRATIONS AND/OR DURATIONS WILL CAUSE WORK TO BE STOPPED UNTIL IMPROVED PRACTICES ARE IN EFFECT AND THE PROBLEMS CONTROLLED. THE CONTRACTOR IS COMPLETELY RESPONSIBLE FOR ANY PROJECT DELAYS THAT OCCUR BY NATURE OF THIS FAILURE TO ADEQUATELY CONTAIN SEDIMENT ON–SITE.
7. CONTRACTOR SHALL LIMIT MACHINERY MOVEMENT TO CONSTRUCTION AREAS DEFINED ON SITE PLAN OR IDENTIFIED AS ACCEPTABLE BY THE ENGINEER OR OWNER.
8. ALL EXTERNAL GREASE AND OIL SHALL BE PRESSURE–WASHED OFF THE EQUIPMENT PRIOR TO TRANSPORT TO THE SITE.
9. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT NO PETROLEUM PRODUCTS, HYDRAULIC FLUID, SEDIMENTS, SEDIMENT–LADEN WATER, CHEMICALS, OR ANY OTHER TOXIC OR DELETERIOUS MATERIALS ARE ALLOWED TO ENTER OR LEACH INTO THE SUBJECT RIVER, STREAM, OR WETLAND.
10. THE CONTRACTOR SHALL HAVE AN EMERGENCY SPILL KIT ONSITE AT ALL TIMES.
11. NO TREES OR WETLAND VEGETATION SHALL BE REMOVED UNLESS THEY ARE SHOWN AND NOTED TO BE REMOVED ON THE PLANS OR AS DIRECTLY SPECIFIED ON–SITE BY THE PROJECT MANAGEMENT STAFF. ALL TREES CONFLICTING WITH GRADING SHALL BE REMOVED. NO GRADING SHALL TAKE PLACE WITHIN THE DRIP LINE OF TREES NOT TO BE REMOVED UNLESS OTHERWISE APPROVED.
12. FOLLOWING CONSTRUCTION, SITE RESTORATION WILL INCLUDE ESTABLISHING LONG–TERM EROSION PROTECTION MEASURES. THESE MEASURES WILL INCLUDE PLANTINGS, EROSION CONTROL FABRIC, SEED, AND MULCH. EQUIPMENT AND EXCESS SUPPLIES WILL BE REMOVED AND THE WORK AREA WILL BE CLEANED. MAINTENANCE ACTIVITIES FOR THE NEWLY CONSTRUCTED RESTORATION PROJECTS ARE ANTICIPATED TO OCCUR PERIODICALLY.
13. REMOVE ALL FENCING WITHIN CONSTRUCTION LIMIT BOUNDARY.

CONSTRUCTION NOTES

1. CONTRACT DOCUMENTS REFER TO THESE PLANS.
2. CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO COMPLETE ALL WORK AS INDICATED IN THE CONTRACT DOCUMENTS.
3. CONSTRUCTION HOURS SHALL BE WEEKDAYS BETWEEN 7:00 A.M. AND 6:30 P.M. UNLESS PRIOR APPROVAL IS RECEIVED FROM THE OWNER.
4. ACCESS GATE TO CONSTRUCTION SITE SHALL BE LOCKED OUTSIDE OF CONSTRUCTION HOURS.
5. SOILS AT THE SITE CONTAIN SOFT SILT, CLAY AND HIGH GROUNDWATER AND MAY REQUIRE EQUIPMENT MATS TO SUPPORT CONSTRUCTION EQUIPMENT. CONSOLIDATION OF THE GROUND SURFACE SHOULD BE EXPECTED. CONTRACTOR IS RESPONSIBLE FOR DETERMINING NEED FOR, DESIGNING, PROCURING, INSTALLING, USING AND REMOVING ANY EQUIPMENT MATS NEEDED TO ALLOW FOR EQUIPMENT OPERATION SUFFICIENT TO CONSTRUCT THE PROJECT.
6. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER PRIOR TO PROCEEDING WITH THE WORK.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE BY THE OWNER OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
8. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE BEST SKILLS AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THIS CONTRACT.
10. THE CONTRACTOR SHALL MAKE ALL NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, ROADWAY, DRAINAGE WAYS, PRIVATE BRIDGE, CULVERTS, AND VEGETATION UNTIL SUCH ITEMS ARE TO BE DISTURBED OR REMOVED AS INDICATED ON THE CONTRACT DOCUMENTS.
11. THE CONTRACTOR SHALL KEEP THE JOB SITE CLEAN AND HAZARD FREE. CONTRACTOR SHALL DISPOSE OF ALL DIRT, DEBRIS, AND RUBBISH FOR THE DURATION OF THE WORK. UPON COMPLETION OF WORK, CONTRACTOR SHALL REMOVE ALL MATERIAL AND EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY.
12. SANITARY FACILITIES SHALL BE LOCATED AT LEAST 50 FEET FROM ANY STREAM BANK.
13. NOTES AND DETAILS ON THE PLANS SHALL TAKE PRECEDENCE OVER GENERAL NOTES HEREIN.
14. DIMENSIONS CALLOUTS SHALL TAKE PRECEDENCE OVER SCALES SHOWN ON THE PLANS.
15. THE PLANS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF ALL CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURES, WORKS, AND THE PUBLIC DURING CONSTRUCTION.
16. MATERIAL SHALL NOT BE STORED OUTSIDE OF IDENTIFIED STAGING AREAS. THE CONTRACTOR SHALL USE ONLY DESIGNATED SPECIFIC SITES FOR STORAGE OF EQUIPMENT AND MATERIALS AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SECURITY OF ALL EQUIPMENT AND MATERIALS.

LOG SCHEDULE

TYPE	LENGTH (FT)	DBH* (IN)	ROOTWAD (Y/N) **	LOCATION AND QUANTITY										TOTAL QUANTITY	NOTES
				RESTORED SPRING CHANNEL	LAKE OUTLET CHANNEL	LAKE OUTLET SIDE DITCH	BANK STABILIZATION LAYER								
							1	2	3	4	5	6	7	8	
A	30	24	Y					1		1					2	
B	40	24	Y					7	7						14	
C	40	24	N									12		8	20	
D	30' MIN		Y		3										3	
E	12' MIN	12" MIN	N	13											13	
P	25	16	N				16								16	
R	30	12	N			6				40		20			66	
TW	60' MIN	18"+	Y								4		4		8	WHOLE TREES HARVESTED FROM SMITH RANCH.
TT	30' MIN	10" MIN	N	5	2										7	TREETOPS CUT FROM MIN 60' WHOLE TREE HARVESTED FROM SMITH RANCH SHALL BE MIN 30' LONG, BUTT DIAMETER 10" MIN, WITH 75% BRANCHES RETAINED UNBROKEN WHEN INSTALLED IN THE CHANNEL
TB			Y	2	5										7	TREE BOTTOM CUT FROM 60' MIN WHOLE TREE HARVESTED FROM SMITH RANCH.

* DIAMETER AT BREAST HEIGHT

** TOTAL LENGTH INCLUDING ROOTWAD

N:\PROJECTS\CONFLUENCE ENV. - CHERRY CREEK\DESCHUTES RIVER WETLANDS 2013\DESIGN\CAD DWGS-CURRENT\LOG SCHEDULE AND CONTROL POINTS.DWG Gary 5/1/2013 9:26:19 AM

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South Puget Sound Salmon Enhancement Group

Confluence Environmental Company

Natural Systems Design

NAME OR INITIALS AND DATE	
DESIGNED	
CHECKED	
DRAWN	
CHECKED	

GEOGRAPHIC INFORMATION	
LATITUDE	46°50'50"N
LONGITUDE	122°35'24"W
TN/SC/RG	T16N/S29/R2E
DATE	-

DESCHUTES RIVER HABITAT RESTORATION

LOG SCHEDULE AND CONTROL POINTS

3

3 OF 28

Feb-13-2015 60% DESIGN

LEGEND

- PROPERTY LINE
- EXISTING ROAD
- PROPOSED ACCESS ROAD
- CL — CL — CONSTRUCTION LIMIT
- GL — GL — GRADING LIMIT
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 5 — PROPOSED MAJOR CONTOUR
- 1 — PROPOSED MINOR CONTOUR
- OHWM — EXISTING OHWM
- OHWM — PROPOSED OHWM
- MHHW — MEAN HIGHER HIGH WATER
- MHW — MHW — MEAN HIGH WATER
- MLLW — MEAN LOWER LOW WATER
- 2–YR — 2–YEAR FLOOD BOUNDARY
- PROPOSED STREAM BYPASS
- SD — SD — EXISTING STORM SEWER
- SS — SS — EXISTING SANITARY SEWER
- WL — WL — EXISTING WETLAND
- WL — WL — PROPOSED WETLAND
- W — W — W — EXISTING WATER
- W — W — W — PROPOSED WATER
- DEMOLITION/REMOVAL AREA
- EXISTING FENCE
- EXISTING FLOW
- GRADING AREA

- RACKING AND SLASH MATERIAL
- LARGE WOOD PIECE
- NATIVE ALLUVIUM
- COBBLE/GRAVEL MIX
- GRADING AREA
- COBBLE/ GRAVEL MIX
- LARGE WOODY MATERIAL
- SPRING CHANNEL
- EXISTING WETLAND

PLANTING LEGEND

- EMERGENT
- EMERGENT–SCRUB SHRUB
- EMERGENT–WET PRAIRIE
- FOREST
- FOREST–SCRUB SHRUB
- NATIVE SEED MIX
- UPLAND WOODY SPECIES
- UPPER BANK RIPARIAN
- LOWER BANK RIPARIAN

RESTORATION LEGEND

- FILL SLOPE LINE
- EXCAVATION SLOPE LINE

TEMPORARY EROSION CONTROL LEGEND

- SB — SB — SILT BOOM
- BN — BN — FISH BLOCK NETS (4/11)
- SF — SF — SILT FENCE (1/12)
- SW — SW — STRAW WATTLE
- CB — CB — COMPOST BERM (3/12)
- PROPOSED STREAM BYPASS
- PROPOSED STAGING AREA
- BULK BAG COFFERDAM (6/11)
- TEMPORARY ACCESS ROAD
- PUMP OUTLET LOCATION
- PI — STREAM BYPASS PUMP INTAKE (1/11)
- D — DEWATERING SUMP (2/11)
- SAND BAG COFFERDAM (5/11)
- O — OUTFALL ENERGY DISSIPATOR (3/11)
- PUMP — STREAM BYPASS PUMP
- VS — VS — VEGETATED STRIP (234)

DETAIL AND SECTION REFERENCING

- (1) — NOTE REFERENCING NUMBER
- 4/6 — DETAIL REFERENCE NUMBER; SHEET ON WHICH DETAIL APPEARS
- 4/2 — DETAIL REFERENCE NUMBER; SHEET ON WHICH DETAIL APPEARS
- (TYP) — SPECIFIES THAT DETAIL IS UNIFORMLY TYPICAL THROUGHOUT PROJECT EXCEPT WHERE OTHERWISE NOTED
- (VAR) — SPECIFIES THAT DETAIL WAS TAKEN FROM SEVERAL SHEETS
- A / A32 — SECTION A–A IS SHOWN ON SHEET 32

SECTION A–A 32
SCALE: NTS

SECTION A–A IS SHOWN ON SHEET 32

N:\PROJECTS\CONFLUENCE ENV – CHERRY CREEK\DESCHUTES RIVER WETLANDS 2013\DESIGN\CAD DWGS–CURRENT\NOTES AND LEGEND.DWG Gary 5/1/2013 9:26:19 AM

Feb–13–2015 **60% DESIGN**

0 1
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South Puget Sound Salmon Enhancement Group

Confluence Environmental Company

Natural Systems Design

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
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DRAWN	GM	TN/SC/RG	T16N/S29/R2E
CHECKED	KA	DATE	–

DESCHUTES RIVER HABITAT RESTORATION

LEGEND

4

4 OF 28

LAKE LAWRENCE

VAIL RD SE

LAKE OUTLET CHANNEL

DESCHUTES RIVER

REICHEL RD SE

SITE 1
SEE SHEETS 7,14,18

SITE 2
SEE SHEETS 9,15,19

SITE 3
SEE SHEETS 8,16,20

SITE 4
SEE SHEETS 10,17,21

N

200' 100' 0 200' 400'
SCALE: 1"=200'-0"

LEGEND

EXISTING WETLAND

0 1
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DESCHUTES RIVER HABITAT RESTORATION

EXISTING CONDITIONS AND KEY PLAN

5

5 OF 28

60% DESIGN

Feb-13-2015

N:\PROJECTS\CONFLUENCE ENV - CHERRY CREEK\DESCHUTES RIVER WETLANDS 2013\DESIGN\CAD DWGS-CURRENT\KEY PLAN.DWG Gary 5/1/2013 9:26:19 AM

SITE 1 ACCESS, STAGING, AND TESC

SEE SHEET 7

SITE 2 ACCESS, STAGING, AND TESC

SEE SHEET 8

SITE 3 ACCESS, STAGING, AND TESC

SEE SHEET 9

SITE 4 ACCESS, STAGING, AND TESC

SEE SHEET 10

15 TREES TO BE HARVESTED FROM THIS AREA

EXISTING SPRING CHANNEL

LAKE OUTLET

LAKE LAWRENCE

VAIL RD SE

BMP C105 – STABILIZED CONSTRUCTION ENTRANCE (2/12)

200'

200'

DESCHUTES RIVER

REICHEL RD SE

DESCHUTES RIVER

N

200' 100' 0 200' 400'

SCALE: 1"=200'–0"

LEGEND

ACCESS ROUTE

EXISTING WETLAND

0 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

South Puget Sound Salmon Enhancement Group

Confluence Environmental Company

Natural Systems Design

NAME OR INITIALS AND DATE	
DESIGNED	KA
CHECKED	RH
DRAWN	GM
CHECKED	KA

GEOGRAPHIC INFORMATION	
LATITUDE	46°50'50"N
LONGITUDE	122°35'24"W
TN/SC/RG	T16N/S29/R2E
DATE	–

DESCHUTES RIVER HABITAT RESTORATION

ACCESS, STAGING, AND TESC OVERALL PLAN

6

6 OF 28

Feb–13–2015 60% DESIGN

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MATCHLINE – SEE SHEET 8

STREAM BYPASS #1

PUMP

EXISTING SPRING CHANNEL

REMOVE CULVERT AND RETAIN FILL

FILL UPSTREAM END OF CULVERT

STREAM BYPASS #2

PUMP

PI

0

N

40' 20' 0 40' 80'

SCALE: 1"=40'-0"

LEGEND

ACCESS ROUTE

EXISTING WETLAND

0 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

South Puget Sound Salmon Enhancement Group

Confluence Environmental Company

Natural Systems Design

NAME OR INITIALS AND DATE		GEOGRAPHIC INFORMATION	
DESIGNED	KA	LATITUDE	46°50'50"N
CHECKED	RH	LONGITUDE	122°35'24"W
DRAWN	GM	TN/SC/RG	T16N/S29/R2E
CHECKED	KA	DATE	–

DESCHUTES RIVER HABITAT RESTORATION

SITE 1 ACCESS, STAGING, AND TESC

7

7 OF 28

Feb-13-2015 60% DESIGN

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MATCHLINE – SEE SHEET 9

REMOVE CULVERT

GRAVEL ROAD

S20° 57' 37"E
285.89'

N72° 37' 37"E
272.49'

S49° 44'E

S89° 32' 59"E
1347.59'

N

40' 20' 0 40' 80'

SCALE: 1"=40'-0"

MATCHLINE – SEE SHEET 7

LEGEND

ACCESS ROUTE

EXISTING WETLAND

0 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

South Puget Sound Salmon Enhancement Group

Confluence Environmental Company

Natural Systems Design

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DRAWN	GM	TN/SC/RG	T16N/S29/R2E
CHECKED	KA	DATE	–

DESCHUTES RIVER HABITAT RESTORATION

SITE 2 ACCESS, STAGING, AND TESC

8

Feb-13-2015 **60% DESIGN**

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PUMP

STREAM BYPASS #3

REMOVE CULVERT

MATCHLINE – SEE SHEET 8

40' 20' 0 40' 80'
SCALE: 1"=40'-0"

LEGEND
ACCESS ROUTE
EXISTING WETLAND

0 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

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Confluence Environmental Company

Natural Systems Design

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CHECKED	KA	DATE	–

DESCHUTES RIVER HABITAT RESTORATION

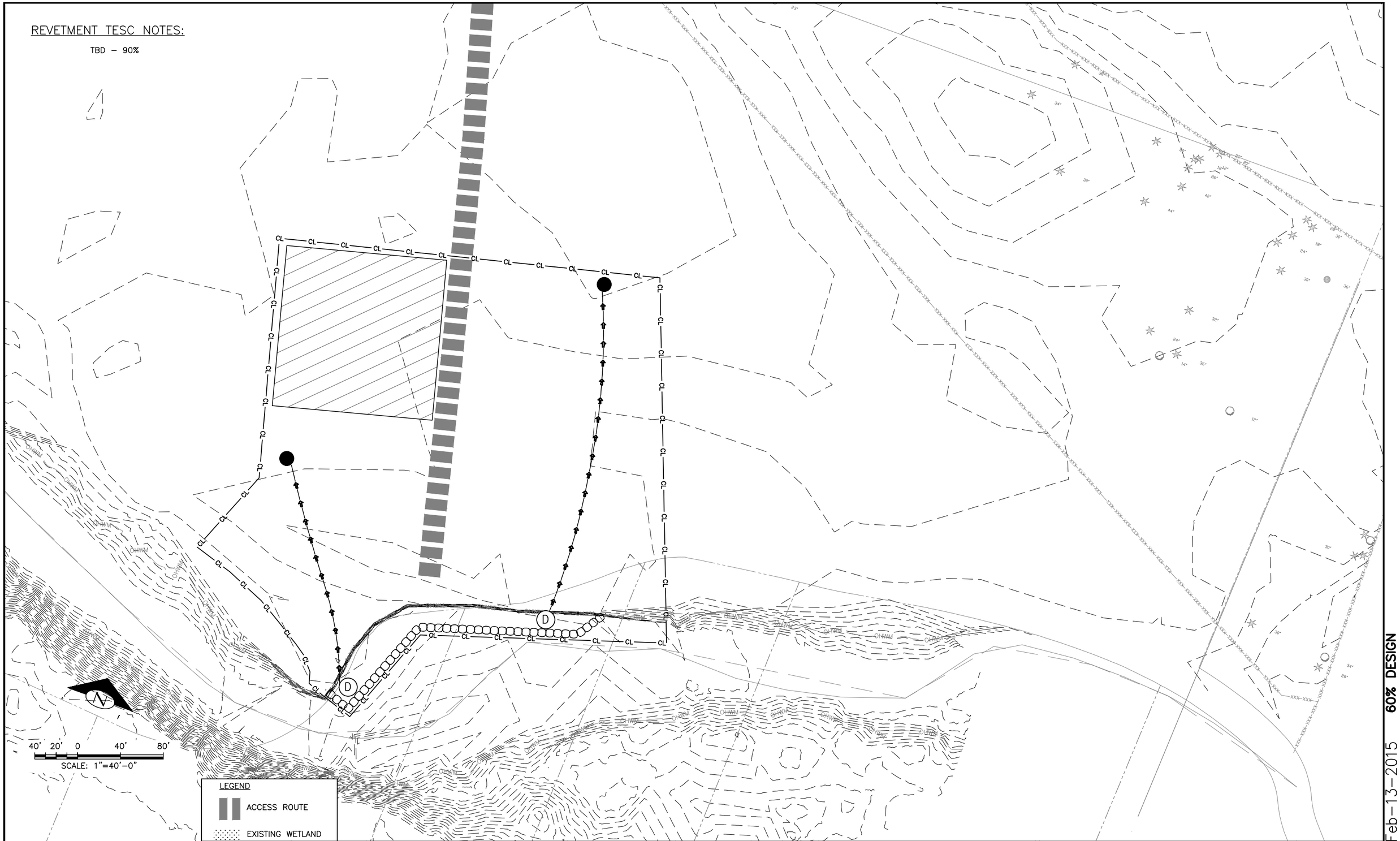
SITE 3 ACCESS, STAGING, AND TESC

9

Feb-13-2015 60% DESIGN

REVETMENT TESC NOTES:

TBD – 90%



0 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

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CHECKED	KA	DATE	–

DESCHUTES RIVER HABITAT RESTORATION

SITE 4 ACCESS, STAGING, AND TESC

10

Feb–13–2015 **60% DESIGN**

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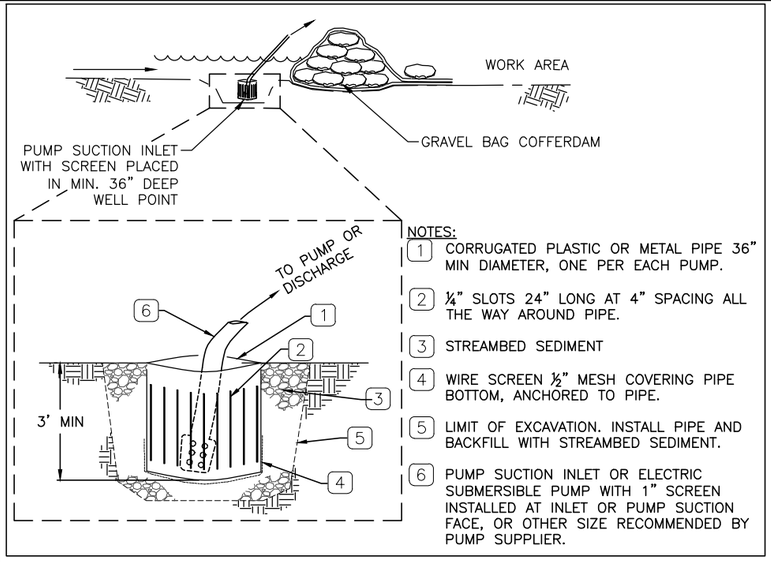
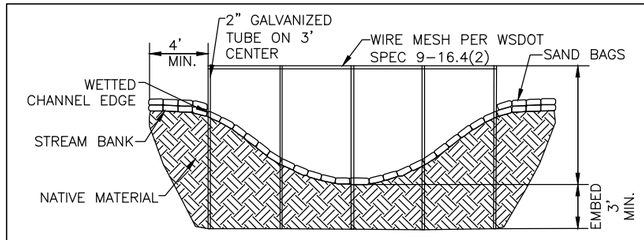


NOTES:

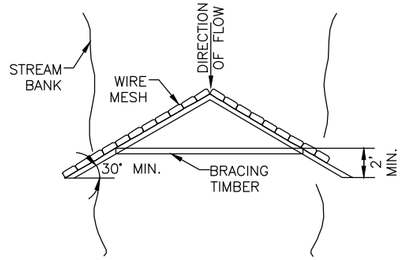
1. CORRUGATED PLASTIC OR METAL PIPE 36" MIN DIAMETER, ONE PER EACH PUMP.
2. ¼" SLOTS 24" LONG AT 4" SPACING ALL THE WAY AROUND PIPE.
3. STREAMBED SEDIMENT
4. WIRE SCREEN ½" MESH COVERING PIPE BOTTOM, ANCHORED TO PIPE.
5. LIMIT OF EXCAVATION. INSTALL PIPE AND BACKFILL WITH STREAMBED SEDIMENT.
6. PUMP SUCTION INLET OR ELECTRIC SUBMERSIBLE PUMP WITH 1" SCREEN INSTALLED AT INLET OR PUMP SUCTION FACE, OR OTHER SIZE RECOMMENDED BY PUMP SUPPLIER.

STREAM BYPASS PUMP INTAKE 1/11

SCALE: NTS



FRONT VIEW



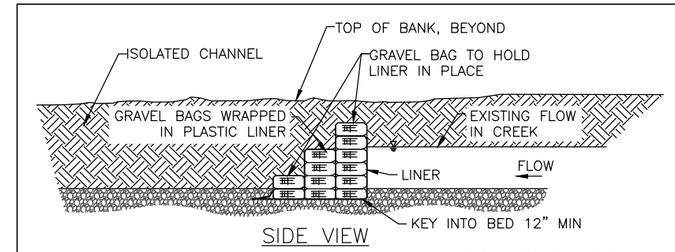
PLAN VIEW

CONSTRUCTION SEQUENCE

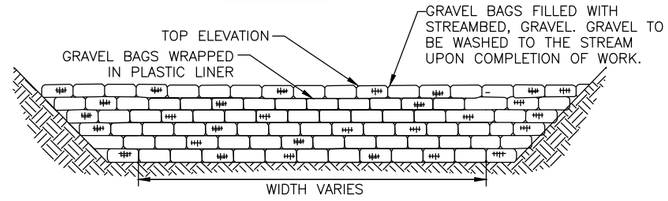
1. INSTALL 2" GALVANIZED TUBES ON 3' CENTERS.
2. SECURE WIRE MESH TO 2" GALVANIZED TUBES WITH WIRE FASTENER.
3. SECURE 1/4" MAX. FISH NYLON NET TO UPSTREAM SIDE OF WIRE MESH WITH WIRE FASTENER.
4. SECURE NYLON FISH NET TO STREAM BOTTOM WITH SAND BAGS.
5. EXTEND SAND BAGS 4' MIN. PAST WETTED CHANNEL EDGE.
6. ADD BRACING TIMBER AS NEEDED TO SUPPORT THE SCREEN
7. REMOVE DEBRIS FROM THE UPSTREAM SIDE OF FENCE AS NECESSARY TO PREVENT CLOGGING.

FISH BLOCK NET 4/11

SCALE: NTS



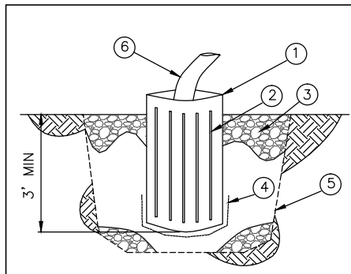
SIDE VIEW



FRONT VIEW

SAND BAG COFFERDAM 5/11

SCALE: NTS

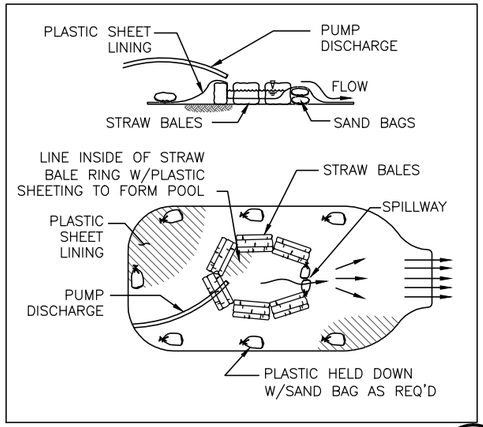


KEY NOTES:

1. CORRUGATED PIPE. 24" MIN DIAMETER.
2. 1/4" SLOTS AT 3" SPACING ALL THE WAY AROUND THE PIPE.
3. STREAMBED GRAVEL.
4. WIRE SCREEN 1/2" MESH, COVERING PIPE BOTTOM, ANCHORED TO PIPE.
5. LIMIT OF EXCAVATION
6. INSTALL ELECTRIC SUBMERSIBLE PUMP, ROUTE DISCHARGE TO APPROVED LOCATION.

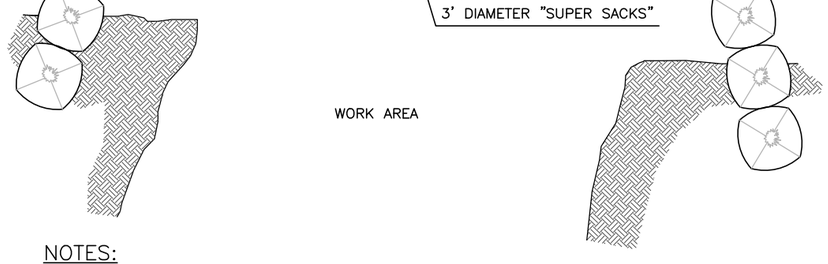
DEWATERING SUMP 2/11

SCALE: NTS



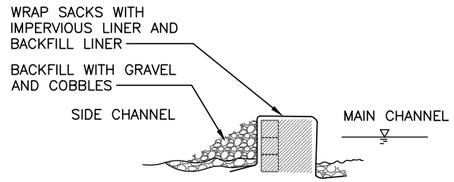
OUTFALL ENERGY DISSIPATOR 3/11

SCALE: NTS



NOTES:

1. WRAP "SUPER SACKS" WITH IMPERVIOUS PLASTIC LINER TO PREVENT SEEPAGE.
2. BACKFILL THE LANDWARD SIDE COFFER DAM WITH NATIVE, ADJACENT ALLUVIUM.
3. USE "SUPER SACKS" AS BUTTRESSES AS REQUIRED.
4. BULK BAG COFFERDAMS ARE INTENDED TO TO FULLY ISOLATE WORK AREA FROM FLOWING WATER AND MINIMIZE TURBIDITY OUTSIDE OF WORK AREA. IF HIGH TURBIDITY IS OBSERVED AT ANY TIME, BULK BAG COFFERDAM SHALL BE INSPECTED FOR LEAKS AND A DEWATERING PUMP MAY BE NEEDED IN WORK AREA TO REDUCE TURBIDITY TO ACCEPTABLE LEVEL.
5. BULK BAG COFFERDAM SHALL BE PLACED TO MAXIMUM EXTENT POSSIBLE FROM SHORE.



SECTION A–A

BULK BAG COFFERDAM 6/11

SCALE: NTS

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

South Puget Sound Salmon Enhancement Group

Confluence Environmental Company

Natural Systems Design

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DRAWN	GM	TN/SC/RG	T16N/S29/R2E
CHECKED	KA	DATE	–

DESCHUTES RIVER HABITAT RESTORATION

TESC DETAILS 1

11

11 OF 28

Feb–13–2015 60% DESIGN

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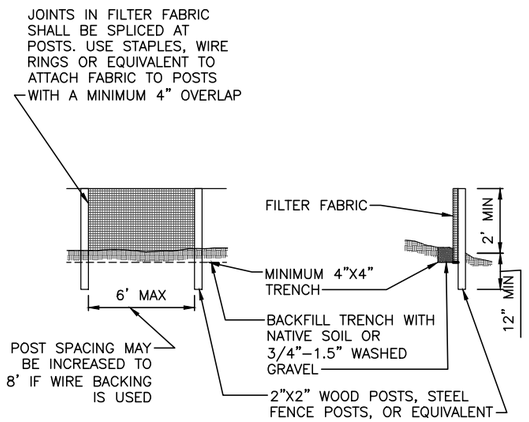
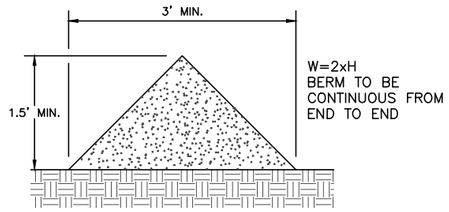


REFERENCE; WASHINGTON STATE DEPARTMENT OF ECOLOGY STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON (FIGURE 4–19)

BMP C233 – SILT FENCE 1/12

SCALE: NTS

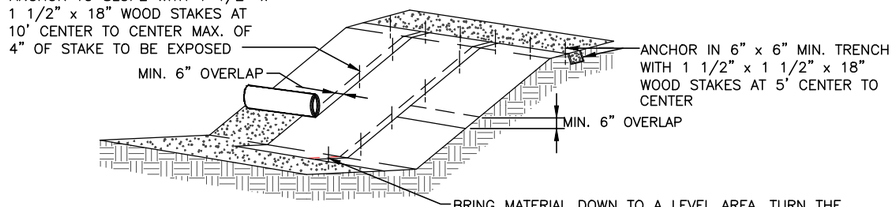


COMPOST BERM 3/11

SCALE: NTS

SLOPE SURFACE SHALL BE SMOOTH BEFORE PLACEMENT FOR PROPER SOIL CONTACT

IF THERE IS A BERM AT THE TOP OF SLOPE, ANCHOR UPSLOPE OF THE BERM



DO NOT STRETCH BLANKETS/MATTINGS TIGHT – ALLOW THE ROLLS TO MOLD TO ANY IRREGULARITIES

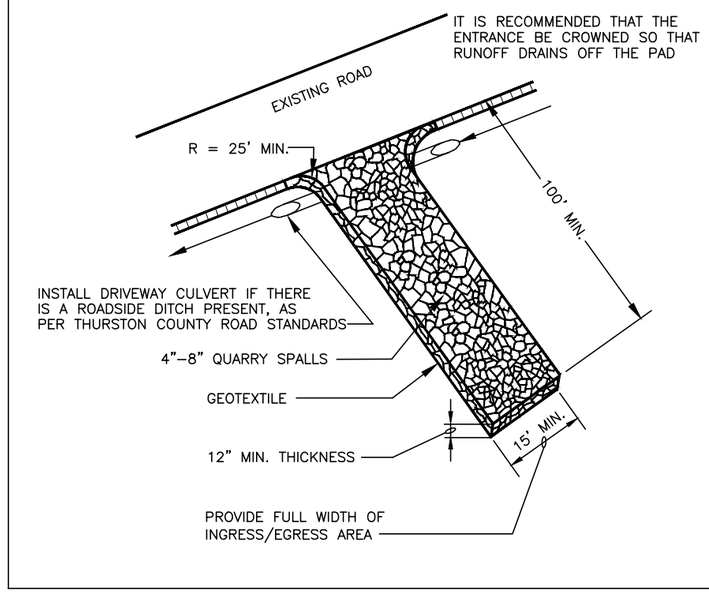
FOR SLOPES LESS THAN 3H:1V, ROLLS MAY BE PLACED IN HORIZONTAL STRIPS

BRING MATERIAL DOWN TO A LEVEL AREA, TURN THE END UNDER 4" AND ANCHOR WITH 1 1/2" x 1 1/2" x 12" WOOD STAKES AT 10' CENTER TO CENTER

FERTILIZE AND SEED BEFORE INSTALLATION. PLANTING OF SHRUBS, TREES, ETC. SHOULD BE PERFORMED AFTER INSTALLATION.

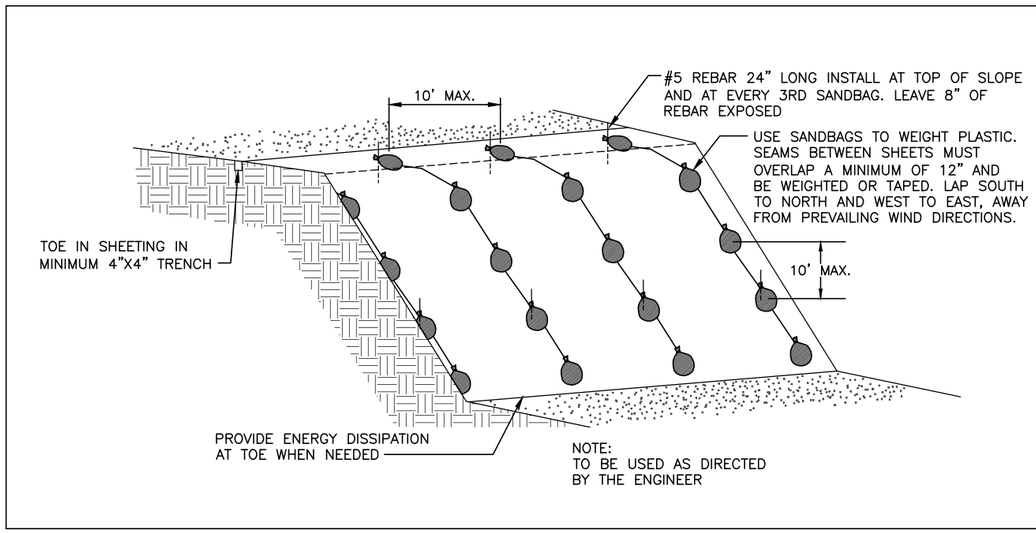
BMP C122 – COIR FABRIC 4/12

SCALE: NTS



BMP C105 – STABILIZED CONSTRUCTION ENTRANCE 2/12

SCALE: NTS



BMP C123 – PLASTIC COVERING 5/12

SCALE: NTS

0 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

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CHECKED	KA	DATE	–

DESCHUTES RIVER HABITAT RESTORATION

TESC DETAILS 2

12

12 OF 28

Feb–13–2015 60% DESIGN

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LEGEND

- CL — CONSTRUCTION LIMIT
- GRADING AREA
- WETLAND REHABILITATION AREA
- WL — EXISTING WETLAND

RESTORED SPRING CHANNEL

WETLAND GRADING AREA (CUT OF DISENGAGED FLOODPLAIN AND FILL OF ADJACENT DRAINAGE DITCHES)

VAIL RD SE

TREE HARVESTING AREA

AREA OF WETLAND REHABILITATION

DESCHUTES RIVER

REICHEL RD SE

RIVERBANK STABILIZATION

SITE 1
SEE SHEETS 14, 18

SITE 2
SEE SHEETS 15, 19

SITE 3
SEE SHEETS 16, 20

SITE 4
SEE SHEETS 17, 21

N

200' 100' 0 200' 400'
SCALE: 1"=200'-0"

0 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

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DESCHUTES RIVER HABITAT RESTORATION

OVERALL RESTORATION PLAN

13

13 OF 28

Feb-13-2015 60% DESIGN

N:\PROJECTS\CONFLUENCE_ENV — CHERRY_CREEK\DESCHUTES_RIVER_WETLANDS_2013\DESIGN\CAD_DWGS—CURRENT\PROPOSED_PLANS.DWG Gary 5/1/2013 9:26:19 AM

STREAM RESTORATION PARAMETERS		
	EXISTING	PROPOSED
STREAM LENGTH (FT)	748	1761
VALLEY LENGTH (FT)	748	813
SINUOSITY	1.00	2.17
GRADE	0.4%	0.2%

EDGE OF SHEET 15

CROSS SECTION B-B', SEE SHEET 23

OUTLET CHANNEL FULL-SPAN CROSSING LWD (1/28)

LAKE OUTLET CHANNEL

UPSTREAM ELEVATION EL 412 FT

APEX EL 409.5'

OUTLET THALWEG EL 408 FT

POOL CROSS-SECTION (TYP) (2/27)

TYPICAL SPRING CHANNEL CROSS-SECTION (1/27)

ROUGHENED CHANNEL SECTION (1/22)

SPRING CHANNEL

LOWER SPRING CHANNEL BED LOGS (3/27)

LEGEND

- GRADING AREA
- COBBLE/ GRAVEL MIX
- LARGE WOODY MATERIAL
- SPRING CHANNEL
- EXISTING WETLAND

40' 20' 0 40' 80'

SCALE: 1"=40'-0"

0 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

Salmon Enhancement Group | Confluence Environmental Company | Natural Systems Design

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CHECKED	KA	DATE	–

DESCHUTES RIVER HABITAT RESTORATION

SITE 1 RESTORATION PLAN

14

14 OF 28

Feb-13-2015 60% DESIGN

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EDGE OF SHEET 16

OUTLET CHANNEL LWD

2/28

LAKE OUTLET CHANNEL

LAKE OUTLET CHANNEL SIDE DITCH

CROSS SECTION B-B', SEE SHEET 23

EDGE OF SHEET 14

GRAVEL ROAD

N

40' 20' 0 40' 80'

SCALE: 1"=40'-0"

LEGEND

GRADING AREA

LARGE WOODY MATERIAL

EXISTING WETLAND

60% DESIGN

Feb-13-2015

0 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

SOUTH PUGET SOUND Salmon ENHANCEMENT GROUP

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DESCHUTES RIVER HABITAT RESTORATION

SITE 2 RESTORATION PLAN

15

15 OF 28

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60% DESIGN

Feb-13-2015

0 1

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SOUTH PUGET SOUND Salmon ENHANCEMENT GROUP

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CHECKED	KA	DATE	–

DESCHUTES RIVER HABITAT RESTORATION

SITE 3 RESTORATION PLAN

16

NOTES: SEE SHEET 24 FOR STRUCTURE DETAILS.

DESCHUTES RIVER

PARCEL BOUNDARY "B"
(2010 SURVEY OF THALWEG)

FLOW

DESCHUTES RIVER

N

40' 20' 0 40' 80'
SCALE: 1"=40'-0"

LEGEND

- GRADING AREA
- LARGE WOODY MATERIAL
- STAGING AREA
- EXISTING WETLAND

60% DESIGN
Feb-13-2015

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0 1
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DRAWN	GM	TN/SC/RG	T16N/S29/R2E
CHECKED	KA	DATE	–

DESCHUTES RIVER HABITAT RESTORATION

SITE 4 RESTORATION PLAN

17

EDGE OF SHEET 19

25 FT RIPARIAN BUFFER

25 FT RIPARIAN BUFFER

PLANTING LEGEND

- EMERGENT
- EMERGENT–SCRUB SHRUB
- EMERGENT–WET PRAIRIE
- FOREST
- FOREST–SCRUB SHRUB

LEGEND

- GRADING AREA
- COBBLE/ GRAVEL MIX
- LARGE WOODY MATERIAL
- SPRING CHANNEL

N

40' 20' 0 40' 80'

SCALE: 1"=40'–0"

0 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

South Puget Sound Salmon Enhancement Group

Confluence Environmental Company

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DRAWN	GM	TN/SC/RG	T18N/S29/R2E
CHECKED	KA	DATE	–

DESCHUTES RIVER HABITAT RESTORATION

SITE 1 PLANTING PLAN

18

18 OF 28

Feb–13–2015 60% DESIGN

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PLANTING LEGEND

- EMERGENT
- EMERGENT–SCRUB SHRUB
- EMERGENT–WET PRAIRIE
- FOREST
- FOREST–SCRUB SHRUB
- GRADING AREA

N

40' 20' 0 40' 80'

SCALE: 1"=40'–0"

GRAVEL ROAD

EDGE OF SHEET 20

EDGE OF SHEET 18

0 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

South Puget Sound Salmon Enhancement Group

Confluence Environmental Company

Natural Systems Design

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DESIGNED	KA	LATITUDE	46°50'50"N
CHECKED	RH	LONGITUDE	122°35'24"W
DRAWN	GM	TN/SC/RG	T16N/S29/R2E
CHECKED	KA	DATE	–

DESCHUTES RIVER HABITAT RESTORATION

SITE 2 PLANTING PLAN

19

19 OF 28

Feb–13–2015

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PLANTING LEGEND

- EMERGENT
- EMERGENT–SCRUB SHRUB
- EMERGENT–WET PRAIRIE
- FOREST
- FOREST–SCRUB SHRUB
- GRADING AREA

N

40' 20' 0 40' 80'

SCALE: 1"=40'–0"

EDGE OF SHEET 19

0 1

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SOUTH PUGET SOUND Salmon ENHANCEMENT GROUP

CONFLUENCE ENVIRONMENTAL COMPANY

Natural Systems Design

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DESCHUTES RIVER HABITAT RESTORATION

SITE 3 PLANTING PLAN

20

20 OF 28

Feb–13–2015 **60% DESIGN**

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LEGEND

- NATIVE SEED MIX
- UPLAND WOODY SPECIES
- UPPER BANK RIPARIAN
- LOWER BANK RIPARIAN
- GRADING AREA

40' 20' 0 40' 80'

SCALE: 1"=40'-0"

NOTES:

1. PLANT LOWER BANK RIPARIAN SPECIES ON TOP OF BANK STRUCTURE AND A MINIMUM OF 2 VERTICAL FEET OF THE LOWER BANK TOE.
2. APPLY A NATIVE SEED MIX TO THE EXTENT OF ALL DISTURBED SOILS.

200 FT RIPARIAN PLANTING BUFFER

50 FT RIPARIAN PLANTING BUFFER

DESCHUTES RIVER

FLOW

OHWM

CL

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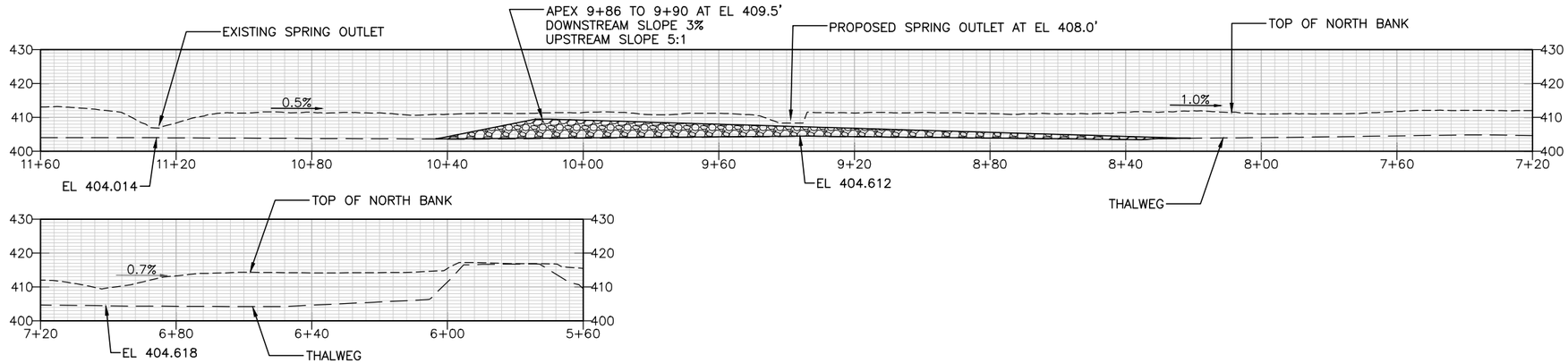
DESCHUTES RIVER HABITAT RESTORATION

SITE 4 RIVERBANK STABILIZATION PLANTING

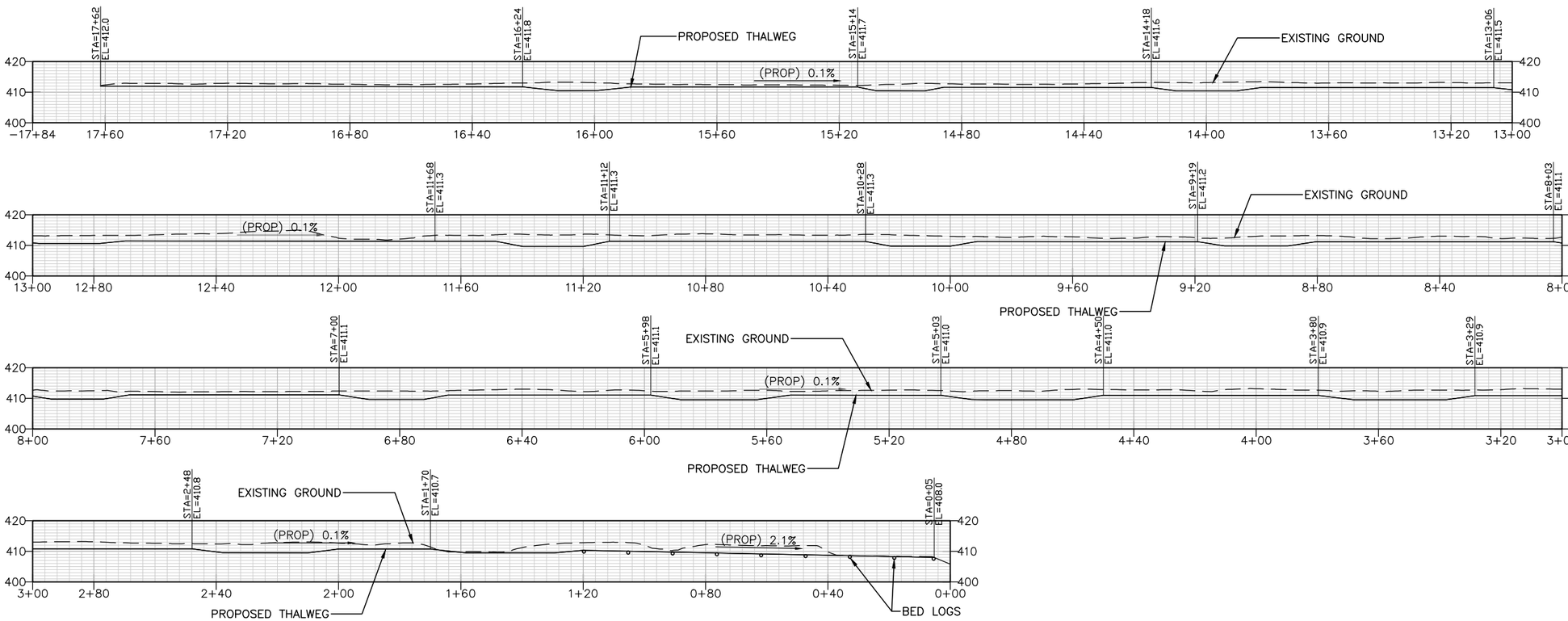
21

21 OF 28



LAKE OUTLET PROFILE (1) 14,15,16

SCALE: 1" = 20'



SPRING CHANNEL PROFILE (2) 14

SCALE: 1" = 20'

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT PLOTTED TO ORIGINAL SCALE.

Salmon Enhancement Group — South Puget Sound

Confluence Environmental Company

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DESCHUTES RIVER HABITAT RESTORATION

PROFILES

22

22 OF 28

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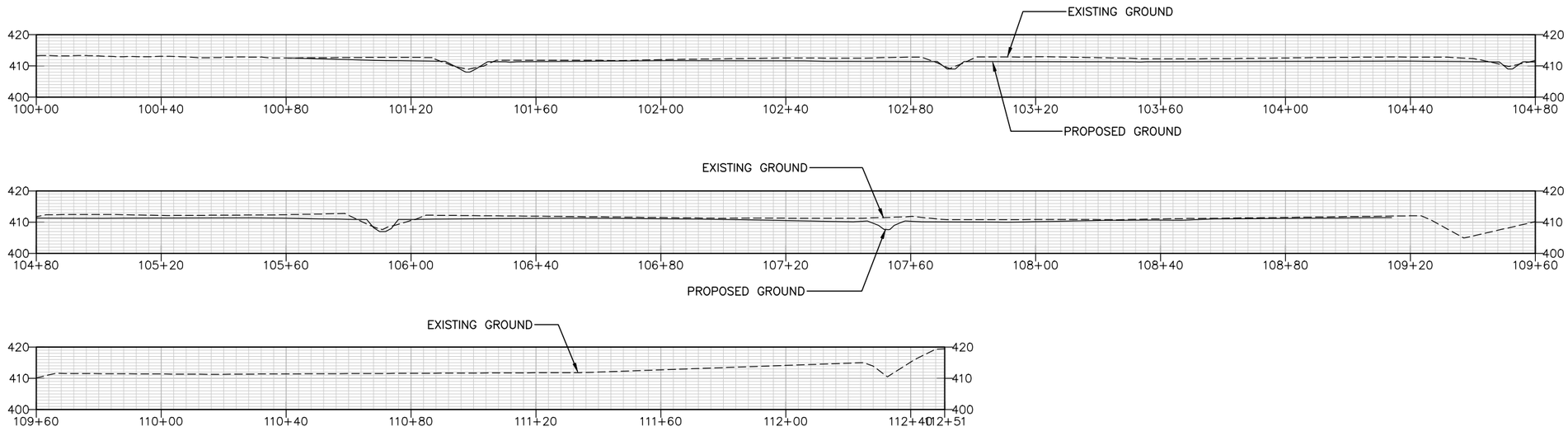
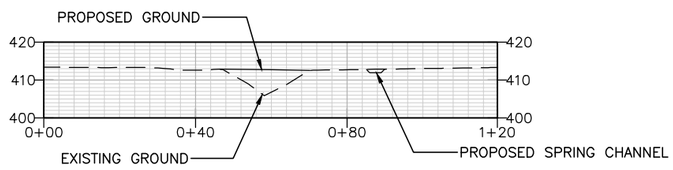
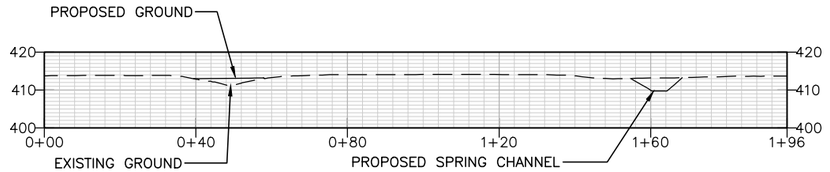


CROSS–SECTION B–B'
SCALE: 1" = 20'

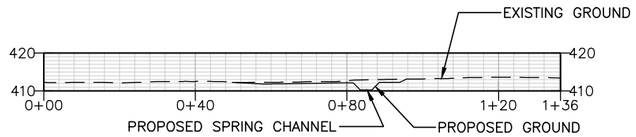
1
14,15,16



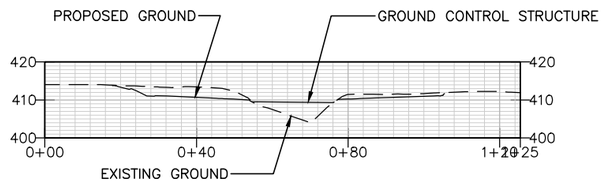
CROSS–SECTION C–C'
SCALE: 1" = 20'



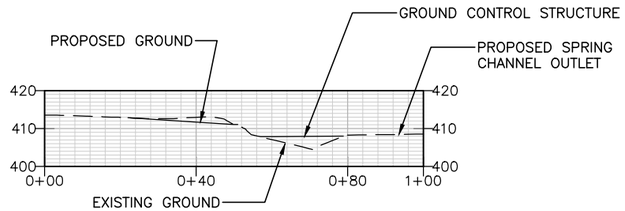
CROSS–SECTION D–D'
SCALE: 1" = 20'



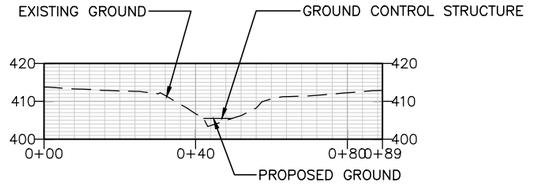
CROSS–SECTION E–E'
SCALE: 1" = 20'



CROSS–SECTION F–F'
SCALE: 1" = 20'



CROSS–SECTION G–G'
SCALE: 1" = 20'



CROSS–SECTION H–H'
SCALE: 1" = 20'

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0 1
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South Puget Sound Salmon Enhancement Group

Confluence Environmental Company

Natural Systems Design

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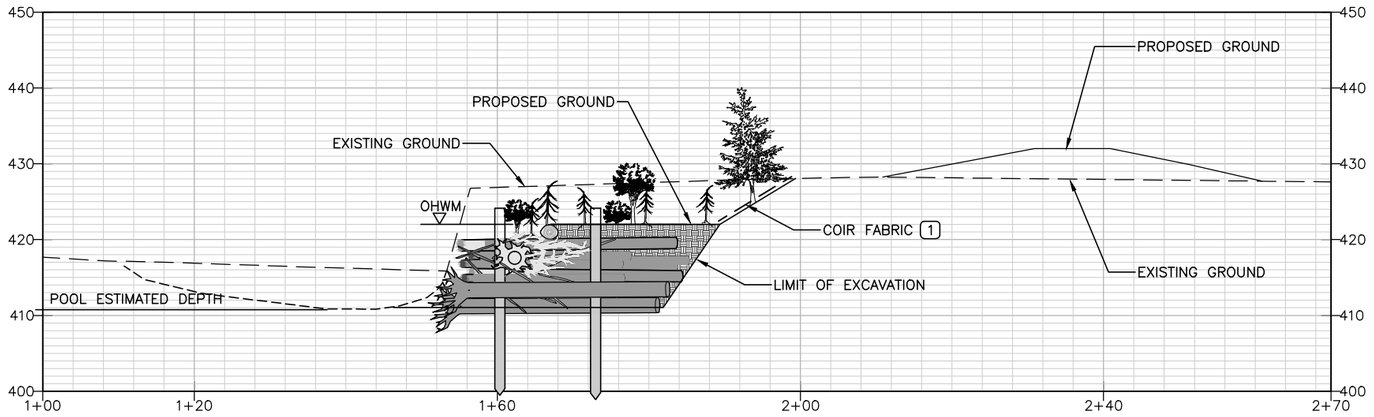
DESCHUTES RIVER HABITAT RESTORATION

CROSS–SECTIONS

23

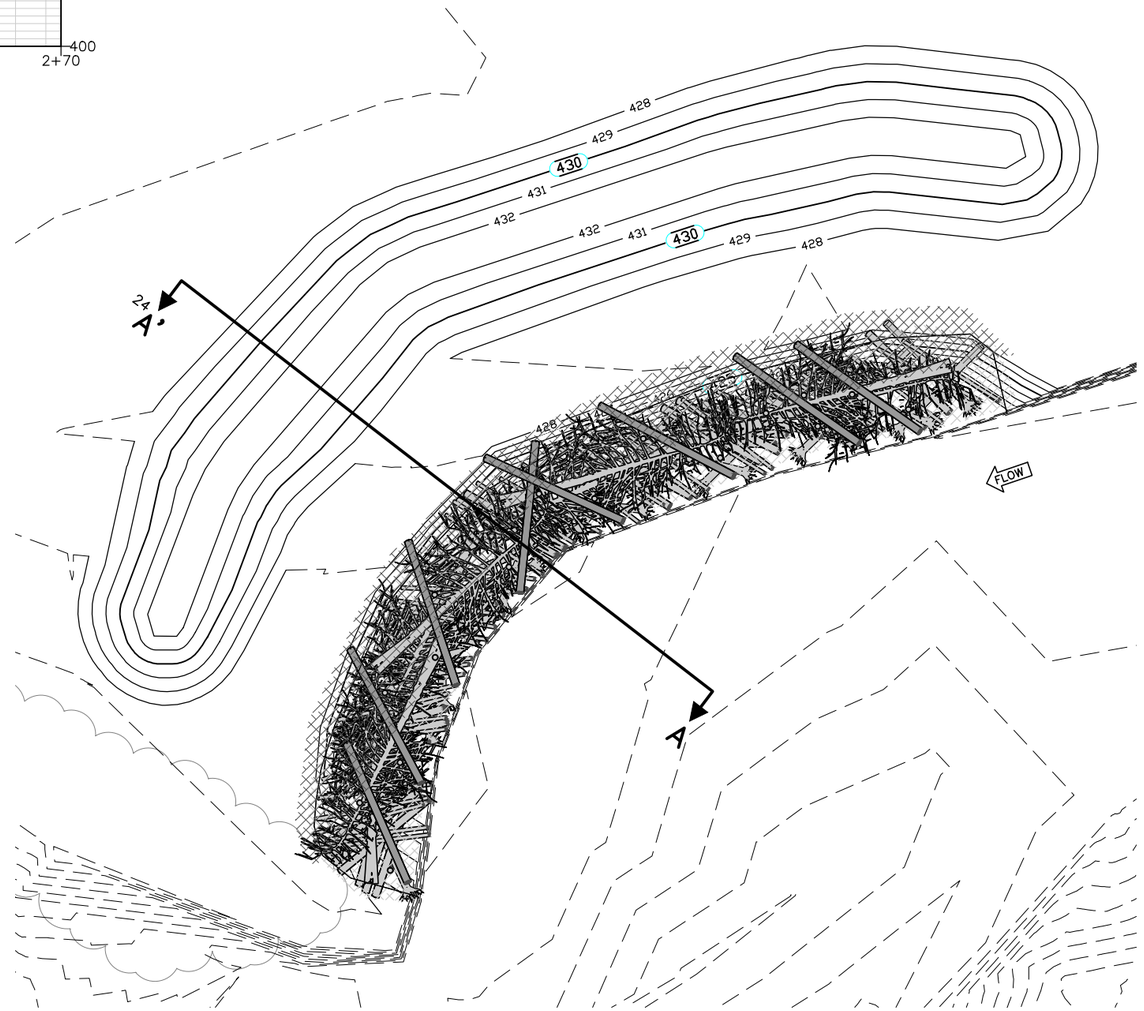


BANK CROSS SECTION A–A' (1/24)

SCALE: 1" = 10'

NOTES:

1. COIR FABRIC SHALL BE INSTALLED PER DETAIL (4/12).



RIVERBANK PLAN

SCALE: 1" = 20'

(2/24)

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CHECKED	KA	DATE	–

0 1

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South Puget Sound Salmon Enhancement Group

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DESCHUTES RIVER HABITAT RESTORATION

RIVERBANK STABILIZATION PLAN AND CROSS–SECTION

24

24 OF 28

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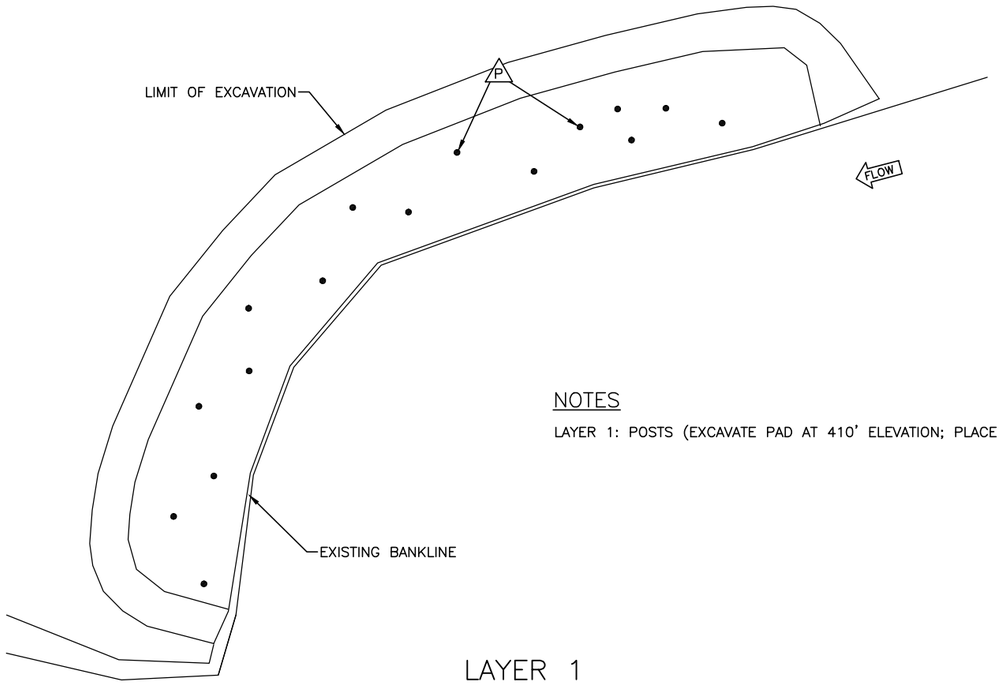
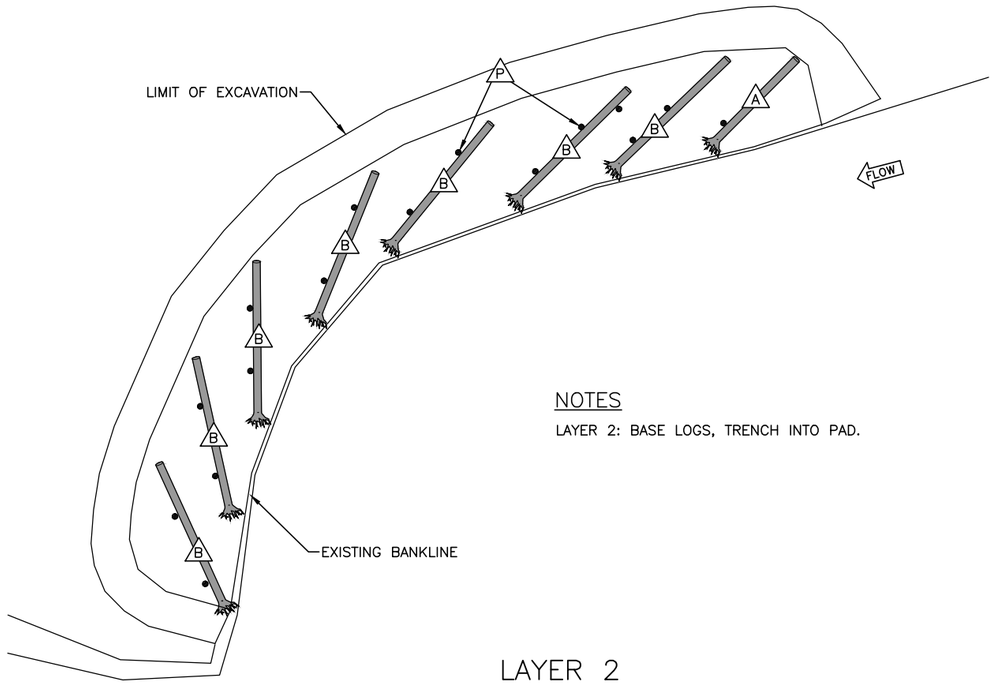


NOTES

LAYER 1: POSTS (EXCAVATE PAD AT 410' ELEVATION; PLACE POSTS).

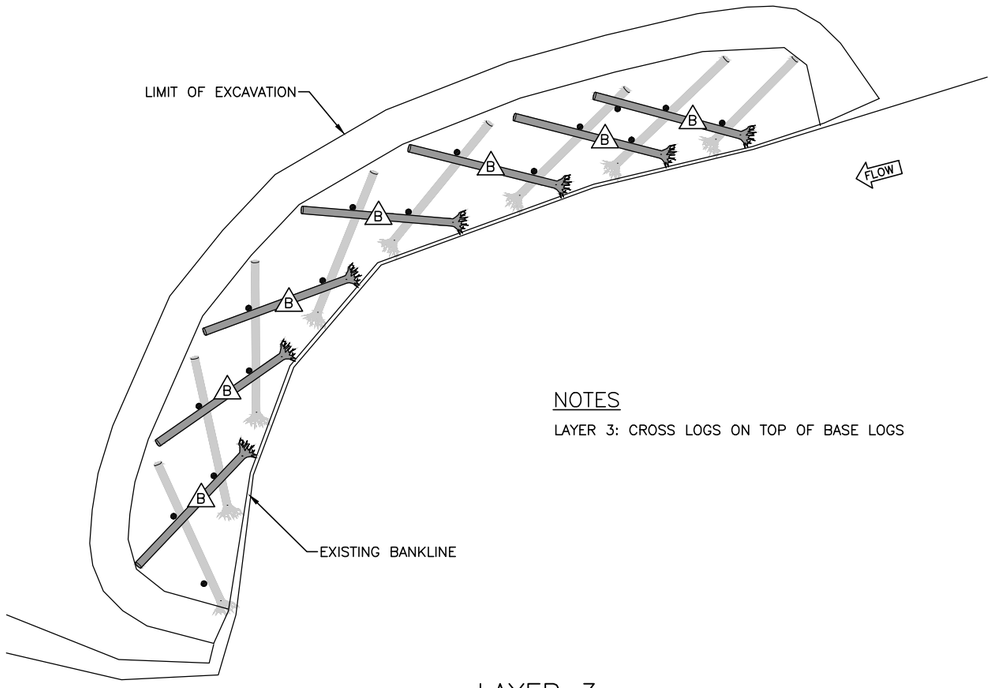
LAYER 1



NOTES

LAYER 2: BASE LOGS, TRENCH INTO PAD.

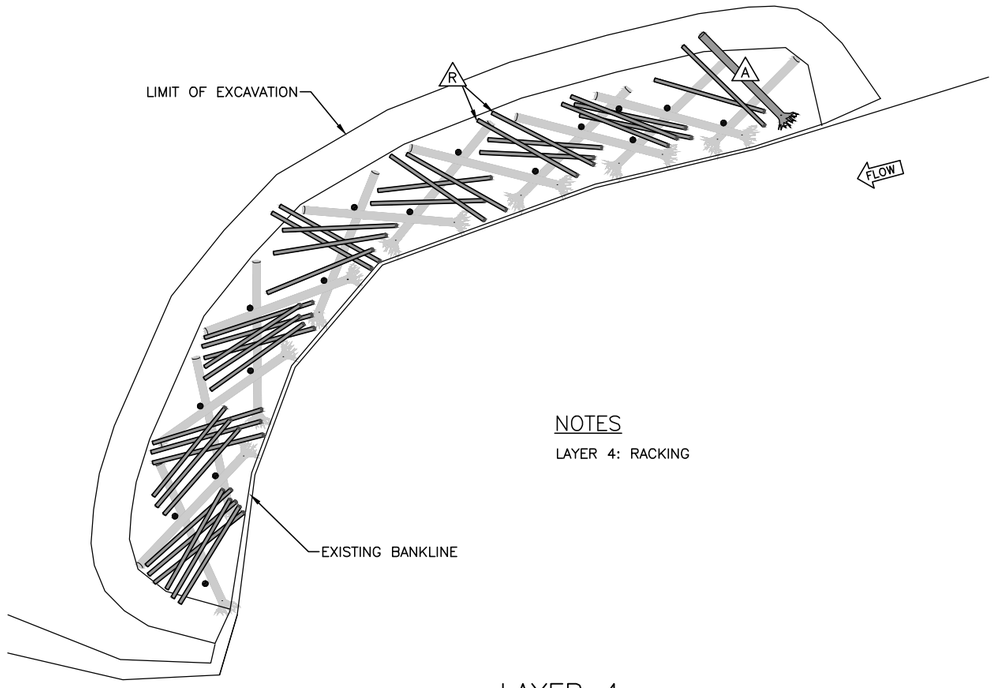
LAYER 2



NOTES

LAYER 3: CROSS LOGS ON TOP OF BASE LOGS

LAYER 3



NOTES

LAYER 4: RACKING

LAYER 4

0 1

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DESCHUTES RIVER HABITAT RESTORATION

BANK STABILIZATION LAYERING PLANS 1

25

25 OF 28

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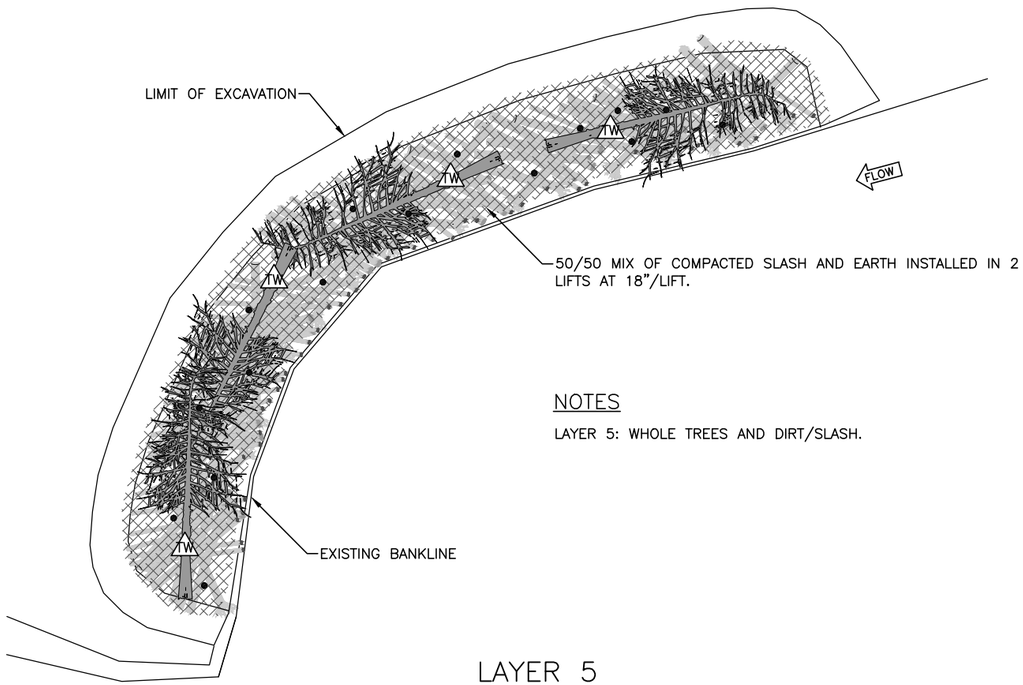
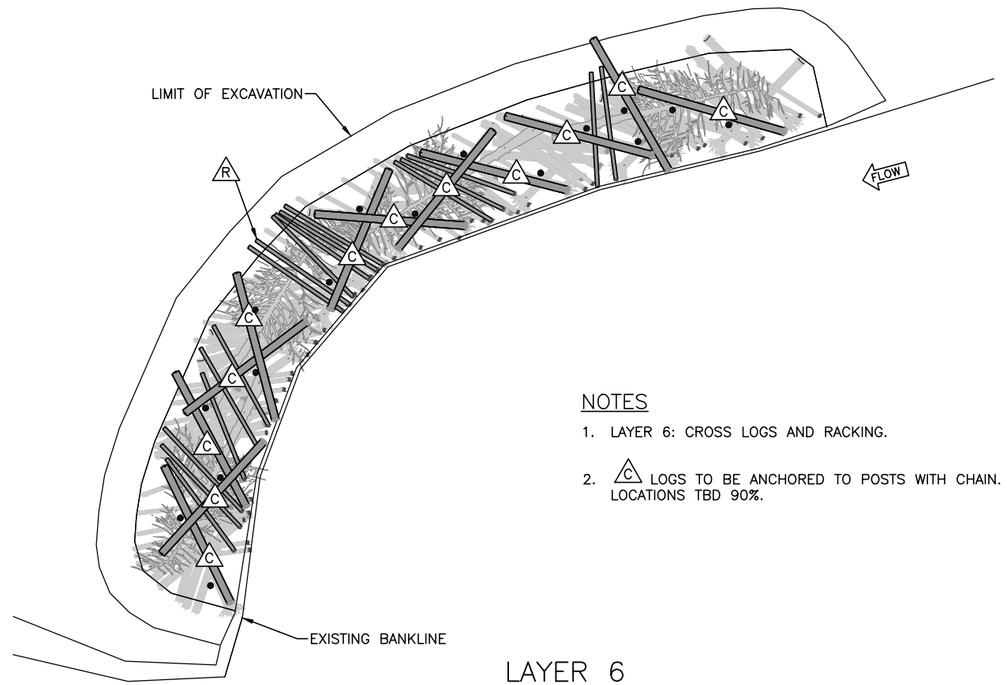


NOTES

LAYER 5: WHOLE TREES AND DIRT/SLASH.

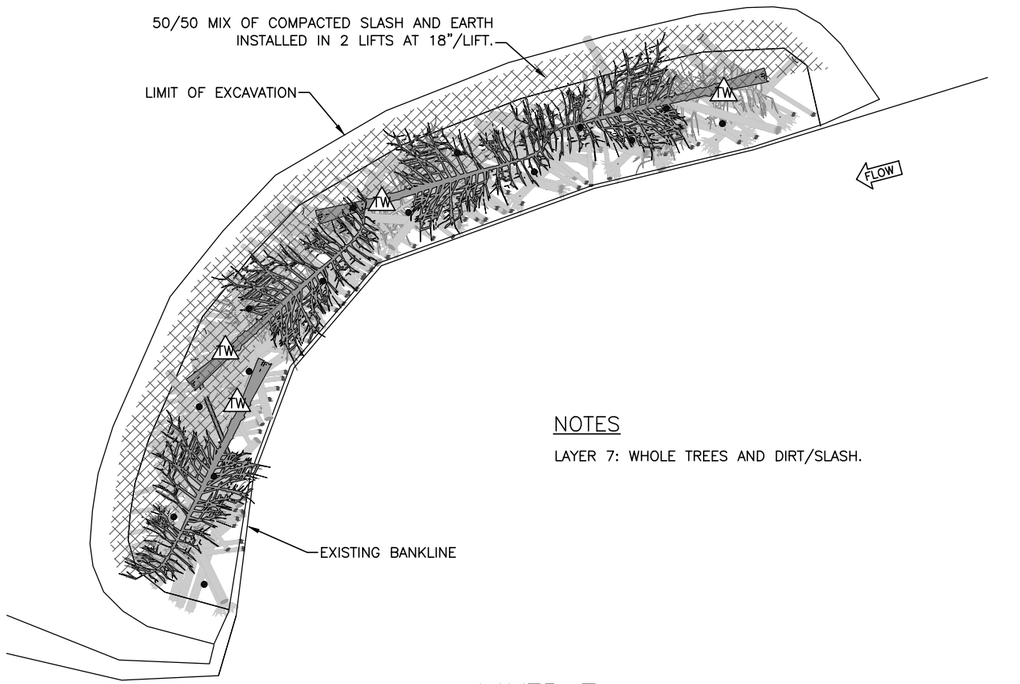
LAYER 5



NOTES

1. LAYER 6: CROSS LOGS AND RACKING.
2. C LOGS TO BE ANCHORED TO POSTS WITH CHAIN. LOCATIONS TBD 90%.

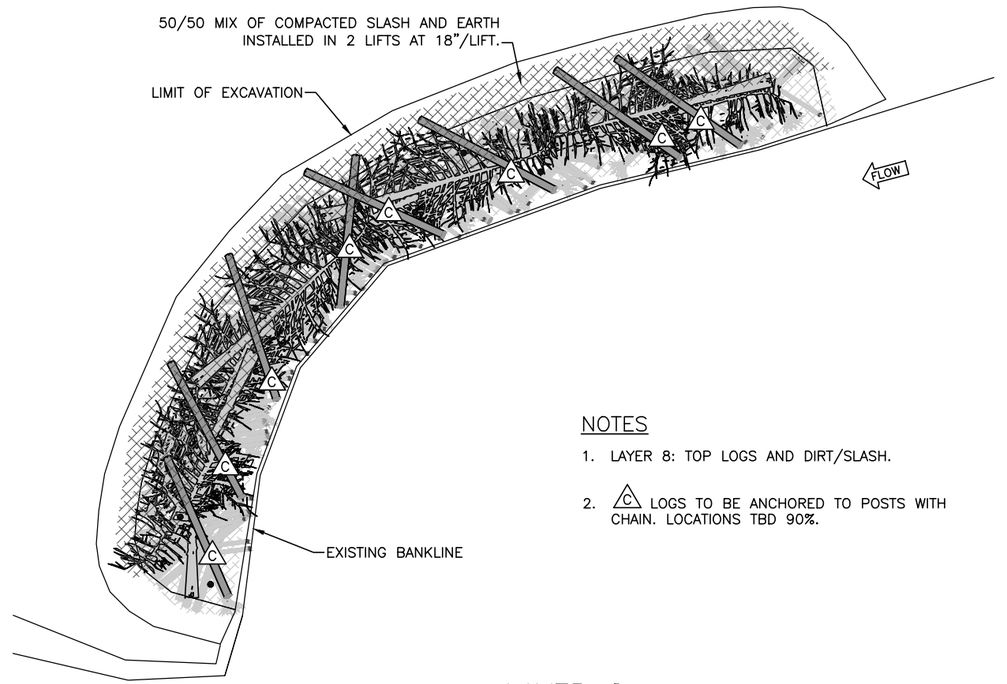
LAYER 6



NOTES

LAYER 7: WHOLE TREES AND DIRT/SLASH.

LAYER 7



NOTES

1. LAYER 8: TOP LOGS AND DIRT/SLASH.
2. C LOGS TO BE ANCHORED TO POSTS WITH CHAIN. LOCATIONS TBD 90%.

LAYER 8

0 1

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DESCHUTES RIVER HABITAT RESTORATION

BANK STABILIZATION LAYERING PLANS 2

26

26 OF 28

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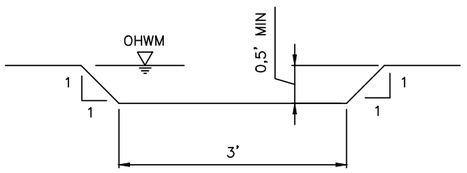
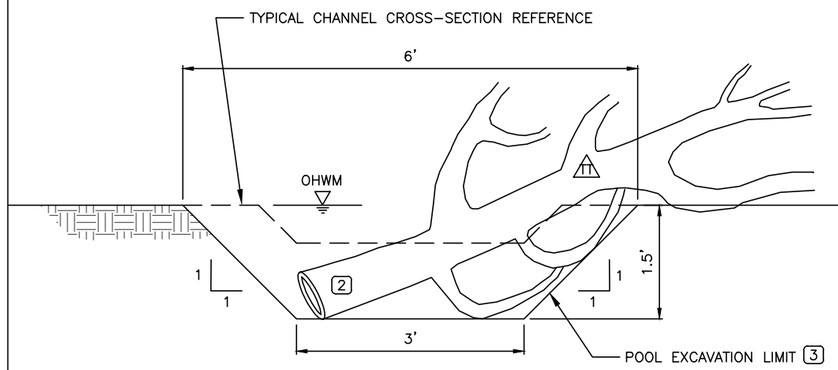


NOTES:

1. THALWEG ELEVATION SHALL BE AS SHOWN ON THE PROFILE SHEET.
2. TOP OF BANK ELEVATION WILL VARY AS NEEDED TO MATCH EXISTING GROUND.

TYPICAL SPRING CHANNEL CROSS-SECTION 1/14

SCALE: 1" = 1'-0"

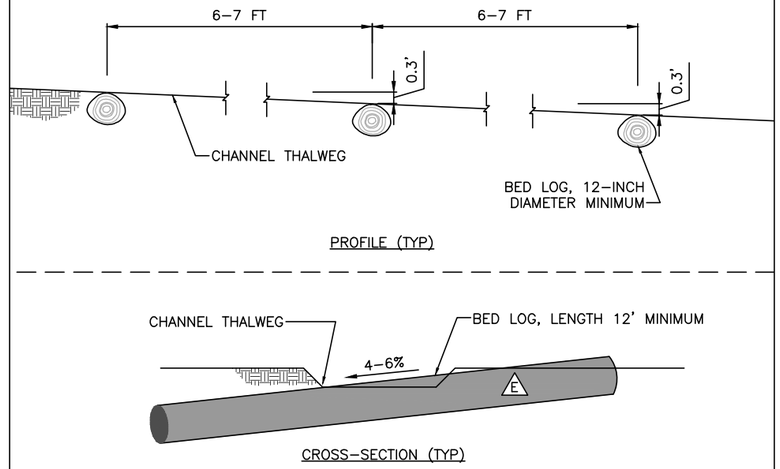


NOTES

1. THALWEG ELEVATION SHALL BE AS SHOWN ON THE PROFILE SHEET.
2. PLACE TREETOPS IN THE POOLS AS DIRECTED BY ENGINEER. TREETOPS SHALL BE MIN 30' LONG, BUTT DIAMETER 10" MIN, WITH MIN 75% BRANCHES RETAINED UNBROKEN WHEN INSTALLED IN THE CHANNEL.
3. POOL AREA SHALL VARY LENGTHWISE ALONG CHANNEL BY 20-30 FT.

POOL CROSS-SECTION (TYP) 2/14

SCALE: 1" = 1'-0"



NOTES:

1. INSTALL 13 BED LOGS, SPACING AS SHOWN, FROM STA 0+00 TO STA 1+20.
2. ALTERNATE THE SLOPE OF ADJACENT LOGS.

LOWER SPRING CHANNEL BED LOGS 3/14

SCALE: 1" = 2'-0"

0 1

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Confluence Environmental Company

Natural Systems Design

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DRAWN	GM
CHECKED	KA

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DESCHUTES RIVER HABITAT RESTORATION

SPRING CHANNEL DETAILS

27

27 OF 28

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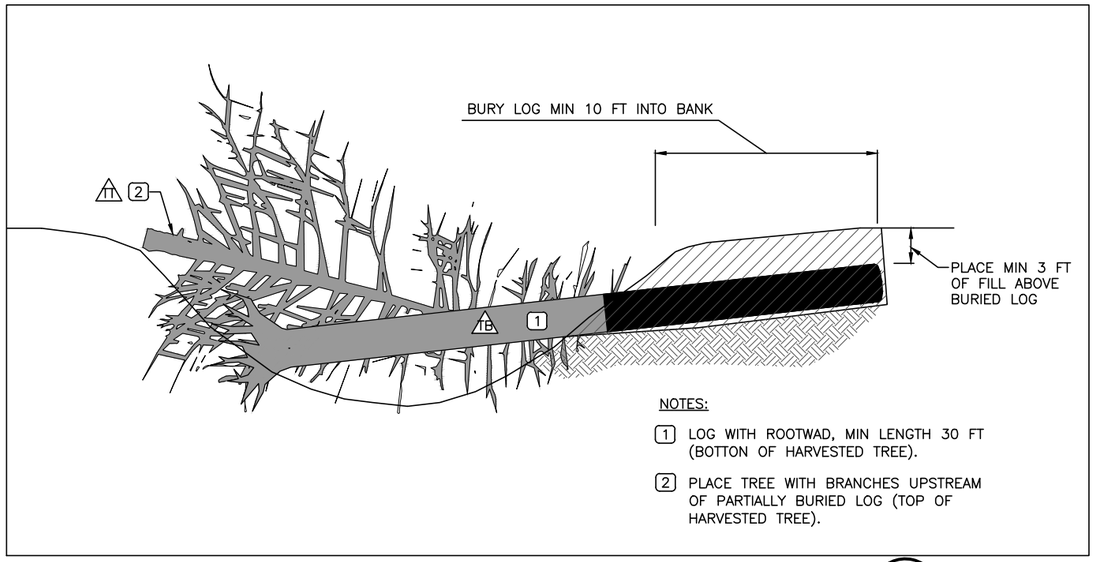
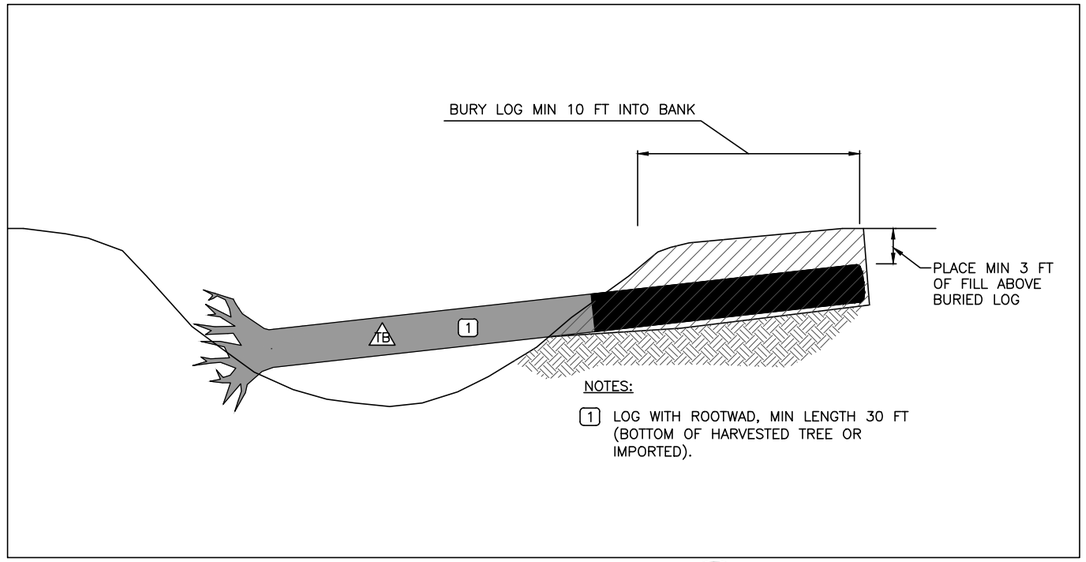


OUTLET CHANNEL FULL-SPAN CROSSING LWD (1/14)

NOT TO SCALE



OUTLET CHANNEL LWD (2/15,16)

NOT TO SCALE

0 1

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South Puget Sound Salmon Enhancement Group

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CHECKED	KA

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DATE	–

DESCHUTES RIVER HABITAT RESTORATION

LAKE OUTLET CHANNEL DETAILS

28

28 OF 28

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