THE OWNER WILL PROVIDE A PRE-BID SITE TOUR. IT IS HIGHLY RECOMMENDED THE CONTRACTOR ATTEND THIS PRE-BID SITE TOUR FOR SITE FAMILIARIZATION AND TO POSE QUESTIONS TO THE OWNER AND OWNER'S REPRESENTATIVE.

THE SELECTED CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING WITH OWNER AND OWNER'S REPRESENTATIVE PRIOR TO MOBILIZING TO SITE AND BEGINNING CONSTRUCTION.

ALL WORK SHALL CONFORM TO THE CURRENT EDITIONS OF STANDARD PLANS AND SPECIFICATIONS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) AND LOCAL STANDARDS UNLESS INDICATED OTHERWISE BY THE CONTRACT DOCUMENTS. IN CASE OF A CONFLICT BETWEEN THE REGULATORY STANDARDS OR SPECIFICATIONS, THE MORE STRINGENT WILL PREVAIL.

WDFW IN-WATER WORK PERIODS

IN WATER WORK SHALL OCCUR DURING THE PERMITTED IN-WATER WORK PERIODS STATED IN THE HYDRAULIC PROJECT APPROVAL.

EXISTING DATA

TOPOGRAPHIC DATA WAS COLLECTED BY INTER-FLUX USING TOTAL STATION EQUIPMENT ON NOVEMBER 16, 2010. DATA ARE REFERENCED TO NAD 83, STATE PLANE, WASHINGTON NORTH, NAVD88, US SURVEY FEET.

HYDRAULIC MODELING BY INTER-FLUX USING USACE HEC-RAS 5.0.3.

LANDOWNERSHIP DATA OBTAINED FROM CHelan COUNTY GIS.

SOILS

SOILS WITHIN THE PROJECT AREA CONSIST PRIMARILY OF NARROW SANDY LOAM, 3 TO 30 PERCENT SLOPES; NATAPAC STONY SANDY LOAM, 3 TO 30 PERCENT SLOPES IS ALSO PRESENT, AS WELL AS RIC.

SOILS AVAILABLE FROM 2008 BOREHOLE DATA COLLECTED BY WSDOT ALONG THE NEW HIGHWAY 2 ALIGNMENT.

SITE IS LOCATED ON OR ADJACENT TO FORMER HIGHWAY ALIGNMENT. PRESENCE OR ABSENCE OF CONTAMINANTS HAS NOT BEEN ESTABLISHED.

CONTRACTOR SHALL CONDUCT OWN SOILS INVESTIGATIONS AS NEEDED.

UTILITIES

SITE IS LOCATED ON OR ADJACENT TO FORMER HIGHWAY ALIGNMENT. ACTIVE OR ABANDONED UTILITIES MAY BE PRESENT.

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR HAVING UTILITIES LOCATED PRIOR TO CONSTRUCTION ACTIVITIES.

THE CONTRACTOR SHALL CALL 800-424-5555 OR 811 FOR UTILITY LOCATIONS PRIOR TO CONSTRUCTION.

THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE AFFECTED UTILITY SERVICE TO REPORT ANY DAMAGED OR DESTROYED UTILITIES.

THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND LABOR TO AID THE AFFECTED UTILITY SERVICE IN REPAIRING DAMAGED OR DESTROYED UTILITIES AT NO ADDITIONAL COST.

CONSTRUCTION STAKING

ENGINEER WILL FLAG PROJECT FEATURES AND PLACE GRADE STAKES BASED ON PROJECT ELEVATION CONTROL POINTS. SOME FIELD ADJUSTMENTS TO THE LINES AND GRADING ARE TO BE EXPECTED.

THE CONTRACTOR SHALL REPLACE DAMAGED OR DESTROYED CONSTRUCTION STAKES AT NO ADDITIONAL COST.

CONTRACTOR SHALL MEET WITH THE OWNER AND OWNER'S REPRESENTATIVE TO DEFINE AND MARK LIMITS OF DISTURBANCE PRIOR TO MOBILIZATION OF EQUIPMENT OR MATERIALS ONTO THE SITE.

CONSTRUCTION MATERIALS

OWNER PROVIDED LARGE WOODY MATERIAL WILL BE LOCATED IN A DESIGNATED OFFSITE STOCKPILE/STAGING AREA.

LOCATION, ALIGNMENT, AND ELEVATION OF LARGE WOODY MATERIAL ARE SUBJECT TO ADJUSTMENT BASED ON FIELD CONDITIONS AND MATERIAL SIZE PER DIRECTOR BY OWNER OR OWNER'S REPRESENTATIVE.

ENCASED MATERIALS NOT USED FOR CONSTRUCTION SHALL BE HAULED TO THE STAGING AREA.

ANY EXCESS CONSTRUCTION MATERIALS SHALL BE NEATLY STORED AT AN APPROVED STAGING LOCATION AN UPON COMPLETION OF THE PROJECT ANY EXCESS MATERIALS, WITH THE EXCEPTION OF ANY BF. 5.0 WOODY MATERIAL [LUMBS], WILL BE REPLACED BY THE CONTRACTOR AND HAULED OFFSITE IN A TIMELY MANNER AND LEGALLY EXPOSED OF.

UPON PROJECT COMPLETION, THE CONTRACTOR WILL BE RESPONSIBLE FOR HAULING ANY EXCESS LF. 5.0 WOODY MATERIAL TO THE YAKAMONAT NATURAL WOODY MATERIAL STAGING AREA LOCATED AT YAKAMONAT NATURAL WOODY MATERIAL.

CONSTRUCTION ACCESS/TRAFFIC CONTROL

CONTRACTOR SHALL SUBMIT AN ACCESS, STAGING, AND STOCKPILE PLAN TO THE OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO MOBILIZATION.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING ANY REQUIRED TRAFFIC CONTROL OR ACCESS PERMITS.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING ANY REQUIRED TRAFFIC CONTROL INCLUDING, BUT NOT LIMITED TO, SIGNS AND MESSAGE BOARDS, TO PREVENT UNAUTHORIZED ACTIVITY ON THE SITE.

THE SITE HAS SOFT SOILS AND MITIGATION PLANNINGS. SPECIAL CARE IS REQUIRED TO MINIMIZE DISTURBANCE AND COMPACTION OF SOILS. MATES SHALL BE USED. LOW GROUND PRESSURE MACHINERY NO BIGGER THAN METRO TO EXECUTE WORK SHALL BE USED, SUCH AS JOHN DEERE 135 EXCAVATOR AND MORRIS MISTED TRACKED DUMP TRUCK OR EQUIVALENT.

ALL SAPLINGS AND TREES TO BE PLANTED OR TRANPLANTED OR REMOVED SHALL BE CLEARLY MARKED AND APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE PRIOR TO PERFORMANCE.

ALL EQUIPMENT, MATERIALS, AND PERSONNEL SHALL REMAIN WITHIN THE LIMITS OF DISTURBANCE.

THE CONTRACTOR SHALL KEEP THE WORK AREAS IN A NEAT AND SIGHTLY CONDITION FREE OF DEBRIS AND LITTER FOR THE DURATION OF THE PROJECT.

THE CONTRACTOR SHALL IMPLEMENT MEASURES TO CONTROL AND MINIMIZE WIND BLOWN DUST FROM THE SITE AND ACCESS ROUTES.

AT PROJECT COMPLETION, ROADS AND ACCESS ROUTES SHALL BE CLEARED, GRADED, AND RESURFACED TO PRE-PROJECT GRADE PER THE WSDOT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION OR LPS STANDARDS PER JURISDICTION. WORK SHALL BE INCIDENTAL TO MOBILIZATION/DEMOBILIZATION.

ALL DISTURBED AREAS INCLUDING, BUT NOT LIMITED TO: ROADS, DRIVEWAYS, TEMPORARY ACCESS ROUTES, STAGING AREAS AND STRUCTURE LOCATIONS SHALL BE RESTORED TO PRE-PROJECT CONDITION OR BETTER. THIS WILL INCLUDE, BUT NOT LIMITED TO AT GRADE PLACING OF DISTURBED AREAS AS WELL AS REMOVAL OF ANY TRASH AND DEBRIS. THE OWNER'S REPRESENTATIVE WILL CONDUCT A FINAL WALK THROUGH WITH THE CONTRACTOR PRIOR TO DEMOBILIZATION.

THE CONTRACTOR SHALL SEED AND MULCH ALL DISTURBED SURFACES EXCEPT CHANNEL BETWEEN TOPS OF BANKS AND EXISTING GRAVEL ROADS.

ALL DISTURBED AREAS OUTSIDE THE LIMITS OF DISTURBANCE SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER AT NO ADDITIONAL COST.

SPLILL POLLUTION AND PREVENTION PLAN (SPCP)

THE CONTRACTOR SHALL PREPARE AND IMPLEMENT A PROJECT-SPECIFIC SPLILL PREVENTION, CONTROL, AND COUNTER MEASURES PLAN (SPCP) FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL SUBMIT THE PLAN TO THE OWNER'S REPRESENTATIVE NO LATER THAN THE DATE OF THE PRE-CONSTRUCTION CONFERENCE. NO ON-SITE CONSTRUCTION ACTIVITIES MAY COMMENCE UNTIL THE CONTRACTING AGENCY ACCEPTS AN SPCP PLAN FOR THE PROJECT.

EROSION CONTROL

CONTRACTOR SHALL BE SOLELY RESPONSIBLE, AT OWN EXPENSE, FOR DEVELOPING EROSION AND SEDIMENT CONTROL PLAN, PREVAILING BEST PRACTICES, ALL NEEDED EROSION CONTROL FACILITIES TO COMPLY WITH APPLICABLE EROSION CONTROL REGULATIONS AND TO MAINTAIN CLEAN ACCESS ROUTES DURING PERIOD OF CONSTRUCTION.

EROSION/SEDIMENTATION CONTROL PLAN

THE EROSION AND SEDIMENT CONTROL (ESC) PLAN PROVIDED IS FOR INFORMATIONAL PURPOSES ONLY, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING EROSION CONTROL MEASURES TO COMPLY WITH APPLICABLE REGULATIONS.

THE RECOMMENDATIONS FOR AN ESC PLAN INCLUDED HEREFOR PROVIDE A GUIDELINE FOR THE CONTRACTOR TO DEVELOP AND IMPLEMENT AN ESC PLAN.

A. THE IMPLEMENTATION OF AN ESC PLAN AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADE OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.

B. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED 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.

C. ESC FACILITIES, AS APPROXIMATELY SHOWN ON THIS PLAN, ARE TO BE CONSTRUCTED PRIOR TO CLEARING AND GRADING ACTIVITIES IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT ENTER SURFACE WATER. THE DRAINAGE SYSTEM, OR VIOLENT APPPLICABLE WATER STANDARDS.

D. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIRED FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED TO ADDRESS UNANTICIPATED SITE CONDITIONS.

E. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NEEDED TO ENSURE THEIR CONTINUED FUNCTIONING.

F. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 24 HOURS FOLLOWING A STORM EVENT GREATER THAN 0.5 INCHES OF RAIN OR 24 HOURS AFTER EVENTS EXCEEDING 2 HOURS DURATION.

G. STABILIZED CONSTRUCTION ENTRANCES AND ADDITIONAL MEASURES MAY BE REQUIRED AND SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT TO ENSURE ALL ACCESS ROADS ARE KEPT CLEAN AT NO ADDITIONAL COST.

CONTRACTOR'S ESC RECORD


1. WHEN MAJOR GRADING ACTIVITIES OCCUR
2. DAYS OF RAINFALL EVENTS EITHER EXCEEDING 2 HOURS DURATION OR MORE THAN 0.5 INCHES OF RAIN
3. WHEN CONSTRUCTION ACTIVITIES TEMPORARY OR PERMANENTLY CEASE ON SITE
4. WHEN STABILIZATION MEASURES ARE INITIATED FOR PORTIONS OF THE SITE
5. ESC RECORDS SHALL BE MADE AVAILABLE TO THE OWNER AND OWNER'S REPRESENTATIVE ON REQUEST AND SHALL BE PROVIDED FOR REVIEW AND APPROVAL PRIOR TO APPLICATION FOR PAYMENT.

YAKAMONAT NATION FISHERIES
SKINNEY CREEK - WSDOT MITIGATION AREA A FINAL DESIGN

GENERAL NOTES
STABILIZE SOILS AND PROTECT SLOPES

FROM MAY 1 THROUGH SEPTEMBER 30, ALL EXPOSED SOILS SHALL BE PROTECTED FROM EROSION BY MULCHING, HYDROSEED COVERING, OR OTHER APPROVED MEASURES WITHIN 3 DAYS OF GRADING. FROM OCTOBER 1 THROUGH APRIL 30, ALL EXPOSED SOILS MUST BE PROTECTED WITHIN 2 DAYS OF GRADING. SOILS SHALL BE STABILIZED BEFORE A WORK SHUTDOWN, HOLIDAY OR WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST. SOIL STOCKPILES MUST BE STABILIZED AND PROTECTED WITH SEDIMENT TRAPPING MEASURES. HYDROSEED ALL DISTURBED AREAS NOT INDICATED IN THE CONTRACT DOCUMENTS FOR OTHER PERMANENT STABILIZATION MEASURES AS SOON AS PRACTICAL.

DESIGN, CONSTRUCT, AND PHASE CUT AND FALL SLOPES IN A MANNER THAT WILL MINIMIZE EROSION, REDUCE SLOPE VELOCITIES ON DISTURBED SLOPES BY PROVIDING TEMPORARY BARRIERS. STORMWATER FROM OFF SITE SHOULD BE HANDLED SEPARATELY FROM STORMWATER GENERATED ON SITE.

AFTER FINAL SITE STABILIZATION

ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BEST MANAGEMENT PRACTICES (BMP) ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED FROM THE SITE OR INCORPORATED INTO FINISHED GRADE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.

RIVER DIVERSION

DEWATERING IN-CHANNEL WORK AREAS SHALL OCCUR CONCURRENT WITH FISH RESCUE. CONTRACTOR SHALL COORDINATE WITH THE YAKAMA NATION FISHERIES FOR FISH RESCUE. CONTRACTOR SHALL PROVIDE YAKAMA NATION FISHERIES AMple TIME TO SCHEDULE FISH RESCUE. IF DIVERSION FAILS DUE TO CONTRACTOR NEGLIGENCE, FISH RESCUE SHALL BE REPLACED AT CONTRACTOR’S EXPENSE.

FISH RESCUE

ALL FISH RESCUE EFFORTS SHALL BE PERFORMED BY A YAKAMA NATION FISHERIES/AQUATIC BIOLoGIST EXPERIENCED WITH THE COLLECTION AND HANDLING OF SAUMONOUS FROM CONSTRUCTION SITES.

ALL FISH TRAPPED IN RESIDUAL POOLS WITHIN THE PROJECT AREA WILL BE CAREFULLY COLLECTED BY SEINE AND/OR DIP NETS AND PLACED IN CLEAN TRANSFER CONTAINERS WITH ADEQUATE VOLUME OF FRESH RIVER WATER. CAPTURED FISH SHALL BE IMMEDIATELY RELEASED DOWNSTREAM OF PROJECT AREA.

TREE SALVAGE

ALL APPROPRIATE TREE SPECIES WITHIN CLEARING LIMITS REMOVED FOR CONSTRUCTION, AS APPROVED BY THE OWNER’S REPRESENTATIVE, SHALL TEMPORARILY BE STOCKPIED WITHIN LIMITS OF DISTURBANCE. STOCKPILED TREE(S) SHALL BE REIMBURSED INTO FINISHED PROJECT. ANY REMOVED VEGETATION GREATER THAN 6 INCHES DIAMETER AND 15 FEET LONG SHALL BE INCORPORATED INTO LOG STRUCTURES. SMALLER DEBRIS SHALL BE PLACED IN LOG STRUCTURES OR ON DISTURBED SURFACES AS APPROVED BY THE OWNER OR OWNER’S REPRESENTATIVE.

ALL TREES REMOVED WITHIN CLEARING LIMITS SHALL BE REMOVED WHOLE WITH ROOTBALL AND UTILIZED ON THE PROJECT CONSTRUCTION AS DIRECTED BY OWNER’S REPRESENTATIVE.

LIVE TREES

ALL TREES NOT MARKED FOR REMOVAL SHALL BE LEFT STANDING UNDISTURBED. CONSTRUCTION ACTIVITY SHALL NOT DEBARK OR DAMAGE LIVE TREES.

KEEP OUT OF DRIp LINE OF EXISTING TREES.

CONSTRUCTION DEWATERING

IF ADDITIONAL PUMPING IS REQUIRED TO Dewater DURING CONSTRUCTION, PUMPED DISCHARGE SHALL RELEASE SEDIMENT-LADEN WATER AT AN UPLAND DISCHARGE LOCATION IN A MANNER THAT DOES NOT CAUSE EROSION, CONTAMINATION, OR INCREASE TURBIDITY OF SURFACE WATERS.

OWNER’S REPRESENTATIVE SHALL APPROVE DEWATERING DISCHARGE LOCATION PRIOR TO IMPLEMENTATION.

CONTRACTOR SHALL PERFORM CONSTRUCTION DEWATERING IN SUCH A MANNER TO AVOID THE RELEASE OF TURBID OR SEDIMENT-LADEN WATER IN ORDER TO PREVENT CONTAMINATION OR INCREASE TURBIDITY OF SURFACE WATERS. SEDIMENT-LADEN WATER MAY BE PUMPED TO AN UPLAND DISCHARGE LOCATION AND ALLOWED TO SLOW FLOW THROUGH EXISTING VEGETATION BEFORE INFILTRATING INTO THE GROUND. IF THIS METHOD IS NOT SUITABLE TO PREVENT RETURN OF TURBID WATER TO SURFACE WATERS AND FLOODPLAINS, A TURBID-MAT OR SEDIMENT RETENTION STRUCTURE MAY BE REQUIRED AS NECESSARY TO COMPly WITH LAWS AND PERMIT REQUIREMENTS AT NO ADDITIONAL COST.

CONTRACTOR WILL PROVIDE ALL PUMPS, HOSES AND FITTINGS NEEDED TO PERFORMANCE DEWATERING. THE PUMP EQUIPMENT SELECTED BY THE CONTRACTOR SHALL BE SUFFICIENT TO Dewater THE SITE THOROUGHLY.

WETLANDS AND WATERS OF THE US

SITE IS ENTIRELY WITHIN A PRIOR WSDOT MITIGATION SITE. INTER-FLUTE DID NOT CONDUCT A WETLANDS DEJURATION.

WITHIN THE STATE OF WASHINGTON, THE ARMY CORPS OF ENGINEERS AND THE DEPARTMENT OF ECOLOGY HAVE THE FINAL AUTHORITY IN DETERMINING WATERS AND WETLANDS BOUNDARIES AND REGULATIONS.

ABBREVIATIONS

MENT APPROXIMATE
BMP BEST MANAGEMENT PRACTICE
CY CUBIC YARDS
° DEGREE
DBH DIAMETER AT BREAST HEIGHT
EA EACH
ESC EROSION AND SEDIMENT CONTROL
enet FOOT
FESU FT FABRIC ENCAPSULATED SOIL SUSTAIN
GIS GEOGRAPHIC INFORMATION SYSTEM
Hwy HIGHWAY
* or IN INCH
IUM LARGE WOODY MATERIAL
MAX MAXIMUM
MIN MINIMUM
MSF THOUSAND SQUARE FEET
NAD83 NORTH AMERICAN DATUM OF 1983
NAVD88 NORTH AMERICAN VERTICAL DATUM OF 1988
NRCs NATURAL RESOURCES CONSERVATION SERVICE
OWH ORDINARY HIGH WATER
% PERCENT
lbs POUNDS
RF ROAD
RTK GPS REAL TIME KINEMATIC GLOBAL POSITIONING SYSTEM
sta STATION
TBM TEMPORARY BENCHMARK
typ TYPICAL
US UNITED STATES
USACE UNITED STATES ARMY CORPS OF ENGINEERS
USFS UNITED STATES FOREST SERVICE
WSDOT WASHINGTON DEPARTMENT OF TRANSPORTATION

QUANTITIES ESTIMATE

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove log weir</td>
<td>6</td>
<td>EA</td>
</tr>
<tr>
<td>Excavate to subgrade</td>
<td>250</td>
<td>CY</td>
</tr>
<tr>
<td>Install roughened channel</td>
<td>250</td>
<td>CY</td>
</tr>
<tr>
<td>Install fabric encapsulated soil lifts</td>
<td>80</td>
<td>LF</td>
</tr>
<tr>
<td>Erosion control fabric</td>
<td>100</td>
<td>SY</td>
</tr>
<tr>
<td>Place owner provided logs; including ballast</td>
<td>9</td>
<td>EA</td>
</tr>
<tr>
<td>Site restoration: seed and mulch</td>
<td>12.0</td>
<td>MSF</td>
</tr>
</tbody>
</table>

ABBREVIATIONS:

CY = CUBIC YARDS
EA = EACH
LF = LINEAR FEET
MSF = THOUSAND SQUARE FEET
SY = SQUARE YARDS

NOTE:

ESTIMATED MATERIAL VOLUMES ARE IN-PLACE QUANTITIES AND NOT FACTORED FOR EXPANSION OF EXCAVATED MATERIAL OR COMPACTION OF PLACED MATERIAL. MEASUREMENT AND PAYMENT SHALL NOT BE BASED ON WEIGHT TICKETS OR TRUCK MEASURE WITHOUT PRIOR WRITTEN APPROVAL.
**TEMPORARY COFFERDAM**

**DEPTHS LESS THAN 2.5 feet**

**BULK BAG NOTES:**

1. For low flow conditions, sand bags may be used in place of bulk bags to form cofferdam.

2. Cofferdam shall be constructed of several units of sand bags or bulk bags filled with WSDOT-approved 3" minus washed gravel, and abutted side by side to create a row that isolates the construction site.

3. Cofferdam height shall contain water to depth no greater than 80% of the cofferdam height. Contractor shall construct cofferdam to be stable for expected flows.

4. Cofferdam shall be sealed by covering the cofferdam with minimum 6-ml thickness plastic sheeting held in place by standard sandbags.

5. The plastic sheeting shall be draped over the sand bags or bulk bag cofferdam and along the channel bottom on both sides of the cofferdam with outward edge of sheeting pinned to the channel bed by standard sandbags.

6. The cofferdam shall be tightly sealed to the ground by plastic sheeting and standard sandbags. Multiple layers of sheeting and sandbags may be required to form a watertight seal.

7. Bulk bags shall be cube-shaped polypropylene woven fabric bags with fully open top, flat bottom, four loops, minimum 2-ton weight capacity, minimum 5.1 safety factor.

8. Plastic sheeting shall be minimum 6-ml thickness. Roll length and width shall cover the entire cofferdam without seams.

9. Cofferdam shall be completely removed after construction is completed and turbidity has been removed. Bags, sheeting, and gravel will be hauled offsite.

10. Measurement and payment for cofferdam, sand bags, plastic sheeting, washed gravel placement, maintenance and removal, and all materials shall be incidental to the lump sum all-inclusive cost for diversion and de-watering.

11. Alternate cofferdam materials and configurations may be allowed but shall not be implemented without prior review and approval by the owner's representative. Contractor shall provide shop drawings and/or vendor cut sheets for substitutions.

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**TYPICAL DETAIL - TEMPORARY COFFERDAM**

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**TYPICAL DETAIL - SILT FENCE**

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**SILT FENCES:**

1. The silf fence shall be purchased in a continuous roll cut to the length of the barrier to avoid use of joints. When joints are necessary, silf fence shall be spliced together only at a support post, with a minimum 6" overlap, and both ends securely fastened to the post. Alternatively, overlap and interlock two posts with attached fabric as required to meet applicable regulations.

2. The silf fence is to be installed along the downstream perimeter of construction areas as required to meet regulations and permit requirements. The fence posts shall be spaced a maximum of 6 feet apart and driven securely into the ground a minimum of 24 inches.

3. The silf fence shall have a minimum vertical burial of 6 inches. All excavated material from silf fence installation shall be back-filled and compacted along the entire disturbed area.

4. Standard or heavy duty silf fence shall have manufactured stitched loops for 2 inches x 2 inches post installation.

5. Silf fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently protected and stabilized, or as directed by owner's representative.
TYPICAL CROSS-SECTION

1

2

3

4

5

6

7

8

9

TYPICAL CROSS-SECTION

TYPICAL CROSS-SECTION

TYPICAL CROSS-SECTION

TYPICAL DETAIL - FABRIC LAYERING

TYPICAL DETAILS - SECTIONS AND FESL

YAKAMA NATION FISHERIES
SKINNEY CREEK - WSDOT MITIGATION AREA
FINAL DESIGN

FABRIC ENCAPSULATED SOIL LIFT (FES LIFT, FESL)

NOT TO SCALE
ROUGHENED CHANNEL STONE GRADATION

PERCENT FINER BY WEIGHT | STONE SIZE (IN)
--- | ---
100 | 18 - 20
84 | 15 - 17
50 | 12 - 14
15 | 8 - 12

ROUGHENED CHANNEL STONE GRADATION SHALL BE COMPRISED OF WSDOT STANDARD SPECIFICATIONS 9-03.11 STREAMBED AGGREGATES, INCLUDING:

9-03.11(1) STREAMBED BOULDERS
9-03.11(2) 4IN TO 12IN STREAMBED COBBLES

GRADATION SHALL BE CONTINUOUSLY AMENDED WITH ADDITIONAL INCIDENTAL 30% BY VOLUME WSDOT 9-03.11(1) STREAMBED AGGREGATE. STREAMBED SEDIMENT SHALL BE CONTINUOUSLY WASHED INTO GRADATION WITH 2IN PUMP FOR COMPACT PLACEMENT AND FOR ENGINEER TO EVALUATE PERMEABILITY OF PLACED STONE. ADJUSTMENTS TO STONE MIXTURE MAY BE REQUIRED BY THE ENGINEER.

GRADATION AND AMENDMENT SHALL BE PLACED IN HOMOGENEOUS MIXTURE.

PROFILE

MATCH ROUGHENED CHANNEL CROSS SECTION DIMENSIONS TO EXISTING CHANNEL AT UPSTREAM AND DOWNSTREAM ENDS, AND TRANSITION THROUGH STRUCTURE.

COLLECT CONSTRUCTION WATER AND PUMP FOR WASHING STREAMBED SEDIMENT INTO ROUGHENED CHANNEL STONE.

SAND BAG OR BULK SACK CONFERRED TO CONTAIN TURBIDITY DURING STONE WASHING.

TYPICAL LARGE WOOD PLACEMENT

2:10

TYPICAL ROUGHENED CHANNEL

NOT TO SCALE