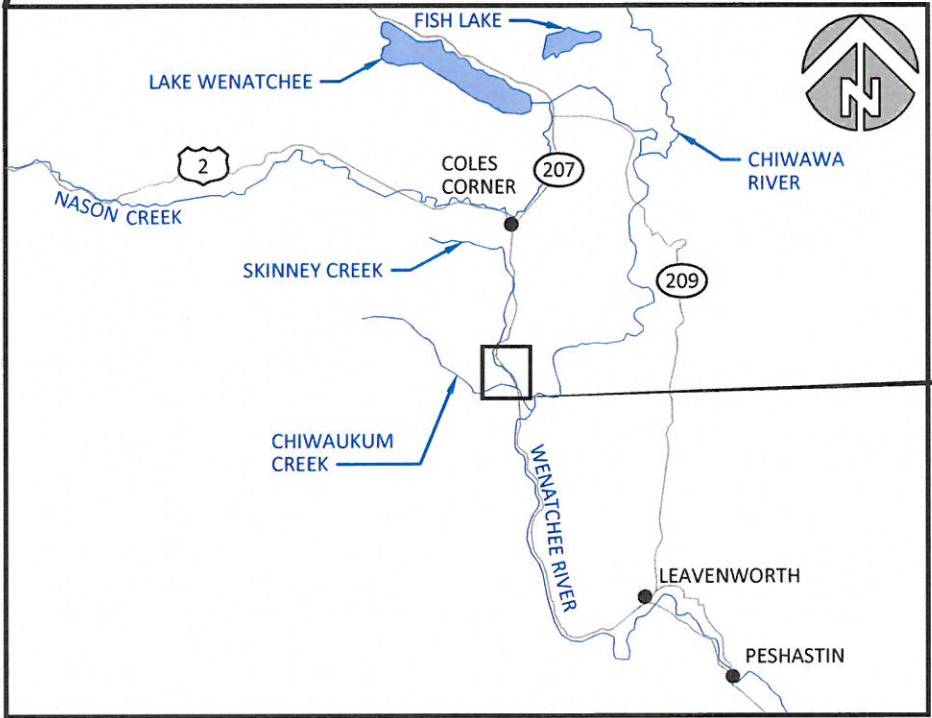
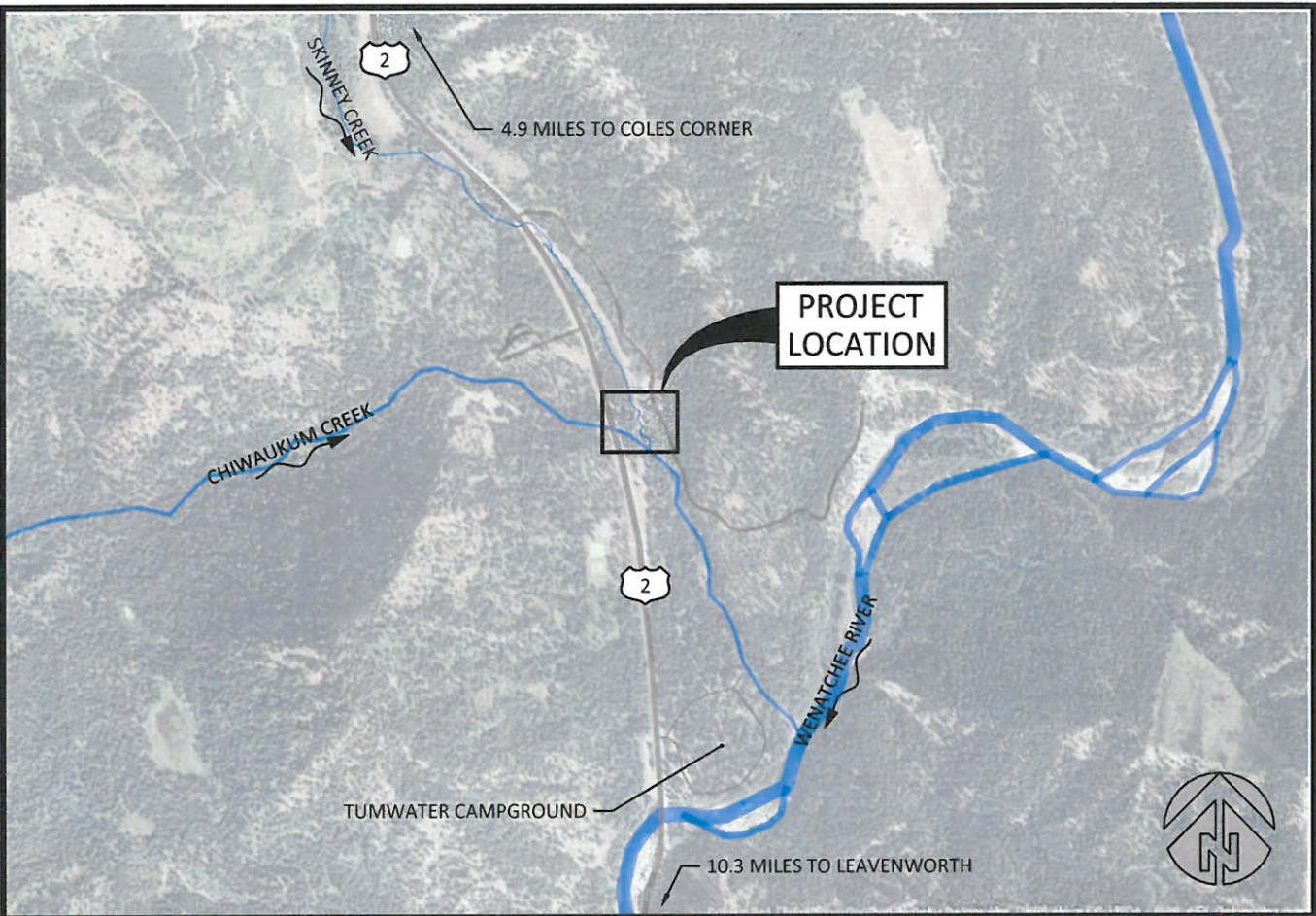


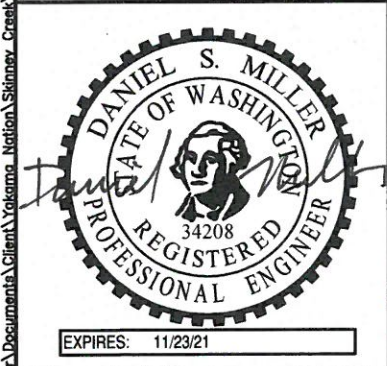
SKINNEY CREEK - WSDOT MITIGATION AREA  
FINAL DESIGN  
CHELAN COUNTY, WA



Sheet List Table

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COORDINATES:  
LATITUDE: 47°41'13" N  
LONGITUDE 120°44'6 W  
  
TOWNSHIP 25N, RANGE 17E, SECTION 4 & 5  
  
WATERBODY: SKINNEY CREEK  
TRIBUTARY OF: CHIWAUKUM CHREEK



NO.	BY	DATE	REVISION DESCRIPTION

NS, DM	DM	JP
DRAWN	DESIGNED	CHECKED
---	12/16/19	170232
APPROVED	DATE	PROJECT

YAKAMA NATION FISHERIES  
SKINNEY CREEK - WSDOT MITIGATION AREA  
FINAL DESIGN



501 Portway Avenue, Suite 101  
Hood River, OR 97031  
541.386.9003  
www.interfluve.com

COVER, SHEET INDEX AND  
VICINITY MAP

SHEET
1 OF 11

G:\Users\donmiller\Documents\Client\Yakama Nation\Skinney Creek\Drawings\2019-12\WSDOT\FL - Skinney WSDOT C.dwg -- 12/12/19

THE OWNER WILL PROVIDE A PRE-BID SITE TOUR. IT IS HIGHLY RECOMMENDED THE CONTRACTOR ATTEND THIS PRE-BID 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 PERIOD STATED IN THE HYDRAULIC PROJECT APPROVAL.

### EXISTING DATA

TOPOGRAPHIC DATA WAS COLLECTED BY INTER-FLUVE USING TOTAL STATION EQUIPMENT ON NOVEMBER 16, 2018. DATA ARE REFERENCED TO NAD 83, STATE PLANE, WASHINGTON NORTH, NAVD88, US SURVEY FEET.

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

LANDOWNERSHIP DATA OBTAINED FROM CHELAN COUNTY GIS.

### SOILS

SOILS WITHIN THE PROJECT AREA CONSIST PRIMARILY OF NARD SANDY LOAM, 3 TO 30 PERCENT SLOPES; NATAPOC STONY SANDY LOAM, 3 TO 30 PERCENT SLOPES IS ALSO PRESENT, AS MAPPED BY NRCS.

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

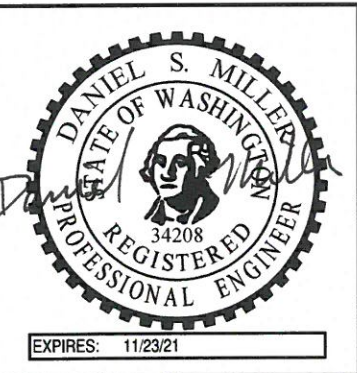
SITE IS LOCATED ON OR ADJACENT TO FORMER HIGHWAY ALIGNMENT. ACTIVE OR ABANDONED UTILITIES MAY BE PRESENT.

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 LOCATE PRIOR TO CONSTRUCTION

THE CONTRACTOR SHALL IMMEDIATELY CONTACT 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.



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### CONSTRUCTION STAKING

ENGINEER WILL FLAG PROJECT FEATURES AND PLACE GRADE STAKES BASED ON PROJECT ELEVATION CONTROL POINTS. SOME FIELD ADJUSTMENTS TO THE LINES AND GRADES 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 DIRECTION BY OWNER OR OWNER'S REPRESENTATIVE.

EXCAVATED MATERIAL NOT REUSED FOR CONSTRUCTION SHALL BE HAULED TO THE STAGING AREA.

ANY EXCESS CONSTRUCTION MATERIALS SHALL BE NEATLY STORED AT AN APPROVED STAGING LOCATION. UPON COMPLETION OF THE PROJECT ANY EXCESS MATERIALS, WITH THE EXCEPTION OF ANY LARGE WOODY MATERIAL (LWM), WILL BECOME THE PROPERTY OF THE CONTRACTOR AND HAULED OFFSITE IN A TIMELY MANNER AND LEGALLY DISPOSED OF.

UPON PROJECT COMPLETION, THE CONTRACTOR WILL BE RESPONSIBLE FOR HAULING ANY EXCESS LWM OFFSITE TO THE YAKAMA NATION'S APPROVED LONG-TERM WOOD STAGING AREA LOCATED AT YAKAMA NATION'S NATAPOC PROPERTY.

### 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, SIGNAGE AND FLAGGERS.

THE SITE HAS SOFT SOILS AND MITIGATION PLANTINGS. SPECIAL CARE IS REQUIRED TO MINIMIZE DISTURBANCE AND COMPACTION OF SOILS. MATS SHALL BE USED. LOW GROUND PRESSURE MACHINERY NO BIGGER THAN NEEDED TO EXECUTE WORK SHALL BE USED, SUCH AS JOHN DEERE 135 EXCAVATOR AND MOROOKA MST500 TRACKED DUMP TRUCK OR EQUIVALENT.

ALL SAPLINGS AND TREES TO BE TRANSPLANTED OR REMOVED SHALL BE CLEARLY MARKED AND APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE.

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.

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 CLEANED, GRADED, AND RESURFACED TO PRE-PROJECT CONDITION PER WASHINGTON DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION OR USFS 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 IS NOT LIMITED TO ANY GRADING/BLADING 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.

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

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

### SPILL POLLUTION AND PREVENTION PLAN (SPCC)

THE CONTRACTOR SHALL PREPARE AND IMPLEMENT A PROJECT-SPECIFIC SPILL PREVENTION, CONTROL, AND COUNTER MEASURES PLAN (SPCC PLAN) 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 SPCC PLAN FOR THE PROJECT.

### EROSION CONTROL

CONTRACTOR SHALL BE SOLELY RESPONSIBLE, AT OWN EXPENSE, FOR DEVELOPING EROSION AND SEDIMENT CONTROL PLAN, PROVIDING AND MAINTAINING ALL NECESSARY EROSION CONTROL FACILITIES TO COMPLY WITH APPLICABLE EROSION CONTROL REGULATIONS AND TO MAINTAIN CLEAN ACCESS ROUTES FOR DURATION OF PROJECT.

### 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 HEREIN WILL PROVIDE A GUIDELINE FOR THE CONTRACTOR TO DEVELOP AND IMPLEMENT AN ESC PLAN.

- THE IMPLEMENTATION OF AN ESC PLAN AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
- 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.
- 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 WATERS, THE DRAINAGE SYSTEM, OR VIOLATE APPLICABLE WATER STANDARDS.
- THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED AT NO ADDITIONAL COST FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
- THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
- 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 PER 24 HOUR PERIOD AND AFTER EVENTS EXCEEDING 2 HOURS DURATION.
- 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

WEEKLY REPORTS SUMMARIZING THE SCOPE OF INSPECTIONS, THE PERSONNEL CONDUCTING THE INSPECTION, THE DATE(S) OF THE INSPECTION, MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL PLAN, AND ACTIONS TAKEN AS A RESULT OF THESE INSPECTIONS SHALL BE PREPARED AND RETAINED ON SITE BY THE CONTRACTOR. IN ADDITION, A RECORD OF THE FOLLOWING DATES SHALL BE INCLUDED IN THE REPORTS:

- WHEN MAJOR GRADING ACTIVITIES OCCUR.
- DATES OF RAINFALL EVENTS EITHER EXCEEDING 2 HOURS DURATION OR MORE THAN 0.5 INCHES/24 HOURS.
- WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON SITE, OR ON A PORTION OF THE SITE.
- WHEN STABILIZATION MEASURES ARE INITIATED FOR PORTIONS OF THE SITE.

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.

## YAKAMA NATION FISHERIES SKINNEY CREEK - WSDOT MITIGATION AREA FINAL DESIGN



501 Portway Avenue, Suite 101  
Hood River, OR 97031  
541.386.9003  
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### GENERAL NOTES

SHEET

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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 FILL 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 (BMPs) ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED FROM THE SITE OR INCORPORATED INTO FINISHED GRADING. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.

RIVER DIVERSION

DEWATERING OF IN-CHANNEL WORK AREA(S) SHALL OCCUR CONCURRENT WITH FISH RESCUE. CONTRACTOR SHALL COORDINATE WITH THE YAKAMA NATION FISHERIES FOR FISH RESCUE. CONTRACTOR SHALL PROVIDE YAKAMA FISHERIES AMPLE TIME TO SCHEDULE FISH RESCUE. IF DIVERSION FAILS DUE TO CONTRACTOR NEGLIGENCE, FISH RESCUE SHALL BE REPEATED BY YAKAMA FISHERIES CREWS 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 SALMONIDS 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 STOCKPILED WITHIN LIMITS OF DISTURBANCE. STOCKPILED TREE/SLASH SHALL BE REINCORPORATED 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 ROOTWAD AND UTILIZED IN 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 AS 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 SHEET FLOW THROUGH EXISTING VEGETATION BEFORE INFILTRATING INTO THE GROUND. IF THIS METHOD IS NOT SUFFICIENT TO PREVENT RETURN OF TURBID WATER TO SURFACE WATERS AND FLOODPLAIN, A 'DIRT-BAG' OR SEDIMENT RETENTION STRUCTURE MAY BE REQUIRED AS NECESSARY TO COMPLY WITH LAWS AND PERMIT REQUIREMENTS AT NO ADDITIONAL COST.

CONTRACTOR WILL PROVIDE ANY PUMPS, HOSES AND FITTINGS NEEDED TO PERFORM THE DEWATERING. THE PUMP EQUIPMENT SELECTED BY THE CONTRACTOR SHALL BE SUFFICIENT TO DEWATER THE SITE THOROUGHLY.

CONTRACTOR SHALL PROVIDE VISQUEEN OR GEOTEXTILE LINER, PLYWOOD, OR METAL PLATING AS NECESSARY TO DISSIPATE PUMP DISCHARGE JET TO PREVENT EROSION.

WETLANDS AND WATERS OF THE US

SITE IS ENTIRELY WITHIN A PRIOR WSDOT MITIGATION SITE. INTER-FLUVE DID NOT CONDUCT A WETLANDS DELINEATION.

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

ABBREVIATIONS

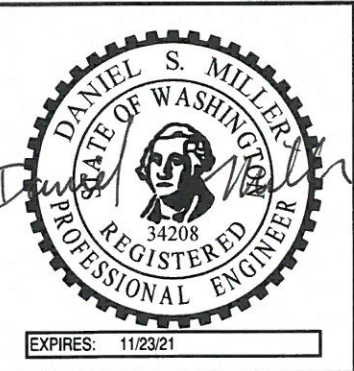
APPROX	APPROXIMATE
BMP	BEST MANAGEMENT PRACTICE
CY	CUBIC YARDS
°	DEGREE
DBH	DIAMETER AT BREAST HEIGHT
EA	EACH
ESC	EROSION AND SEDIMENT CONTROL
' or FT	FOOT
FES LIFT	FABRIC ENCAPSULATED SOIL LIFT
GIS	GEOGRAPHIC INFORMATION SYSTEM
HWY	HIGHWAY
" or IN	INCH
LWM	LARGE WOODY MATERIAL
MAX	MAXIMUM
MIN	MINIMUM
MSF	THOUSAND SQUARE FEET
NAD 83	NORTH AMERICAN DATUM OF 1983
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988
NRCS	NATURAL RESOURCES CONSERVATION SERVICE
OHW	ORDINARY HIGH WATER
%	PERCENT
LBS	POUNDS
RD	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
WDFW	WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

QUANTITIES ESTIMATE

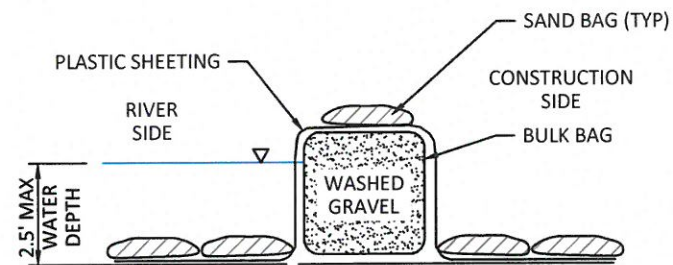
Item	Qty	Unit
Remove log weir	6	EA
Excavate to subgrade	250	CY
Install roughened channel	250	CY
Install fabric encapsulated soil lifts	80	LF
Erosion control fabric	100	SY
Place owner provided logs; including ballast	9	EA
Site restoration: seed and mulch	12.0	MSF

ABBREVIATIONS:  
CY = CUBIC YARDS  
EA = EACH  
LF = LINEAL FEET  
MSF = 1,000-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.



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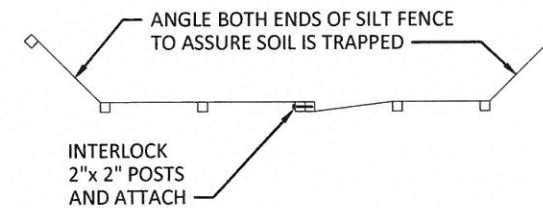
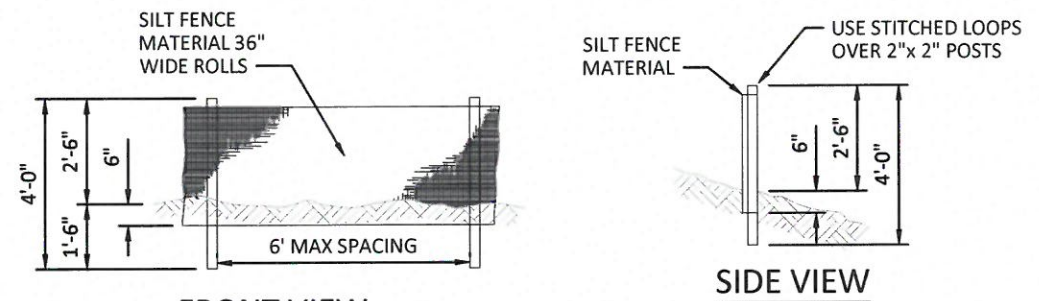


### TEMPORARY COFFERDAM DEPTHS LESS THAN 2.5'

#### 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 WDFW 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 CONSTRUCTION COFFERDAM TO BE STABLE FOR EXPECTED FLOWS.
4. COFFERDAM SHALL BE SEALED BY COVERING THE COFFERDAM WITH MINIMUM 6-MIL 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-MIL 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 OF ALL MATERIALS SHALL BE INCIDENTAL TO THE LUMP SUM ALL INCLUSIVE COST FOR DIVERSION AND DEWATERING.
11. ALTERNATE COFFERDAM MATERIALS AND CONFIGURATIONS MAY BE ALLOWED BUT SHALL NOT BE IMPLEMENTED WITHOUT REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND/OR VENDOR CUT SHEETS FOR SUBSTITUTIONS.

**1**  
**4** TYPICAL DETAIL - TEMPORARY COFFERDAM  
NOT TO SCALE



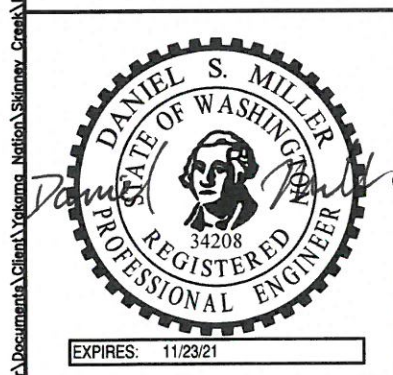
#### TOP VIEW

#### SILT FENCES:

1. THE SILT FENCE SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, SILT FENCE SHALL BE SPICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6 INCH 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 SILT FENCE IS TO BE INSTALLED ALONG THE DOWNHILL 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 SILT FENCE SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6 INCHES. ALL EXCAVATED MATERIAL FROM SILT FENCE INSTALLATION SHALL BE BACK-FILLED AND COMPACTED ALONG THE ENTIRE DISTURBED AREA.
4. STANDARD OR HEAVY DUTY SILT FENCE SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2 INCHES X 2 INCHES POST INSTALLATION.
5. SILT 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.

**2**  
**4** TYPICAL DETAIL - SILT FENCE  
NOT TO SCALE

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NO.	BY	DATE	REVISION DESCRIPTION

NS, DM	DM	JP
DRAWN	DESIGNED	CHECKED
--	12/16/19	170232
APPROVED	DATE	PROJECT

**YAKAMA NATION FISHERIES  
SKINNEY CREEK - WSDOT MITIGATION AREA  
FINAL DESIGN**



501 Portway Avenue, Suite 101  
Hood River, OR 97031  
541.386.9003  
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**EROSION AND SEDIMENT  
CONTROL DETAILS**

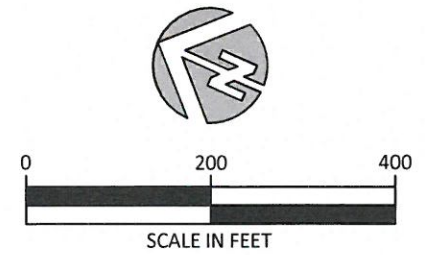
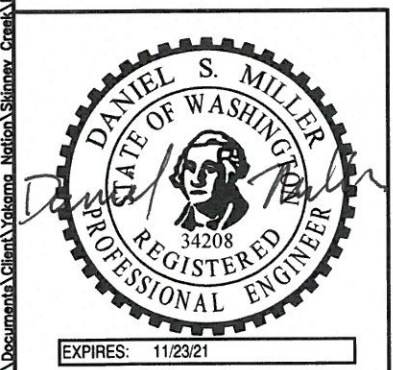
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LEGEND

- ACCESS
- STOCKPILE/STAGING AREA
- SURVEY CONTROL POINT

Point	Northing	Easting	Elevation	Description
100	252,276.02	1,663,869.94	1810.03	TBM
101	251,999.32	1,663,930.29	1811.22	TBM
102	251,972.58	1,664,054.64	1806.87	TBM
103	251,743.16	1,664,210.58	1800.32	TBM
200	250,936.52	1,664,617.76	1779.09	TBM
201	250,991.05	1,664,697.82	1781.71	TBM
202	251,085.75	1,664,531.14	1784.01	TBM
203	250,791.83	1,664,571.62	1775.56	TBM
204	250,524.70	1,664,665.17	1762.31	TBM
205	250,369.00	1,664,739.62	1755.02	TBM



NO.	BY	DATE	REVISION DESCRIPTION

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---	12/16/19	170232
APPROVED	DATE	PROJECT

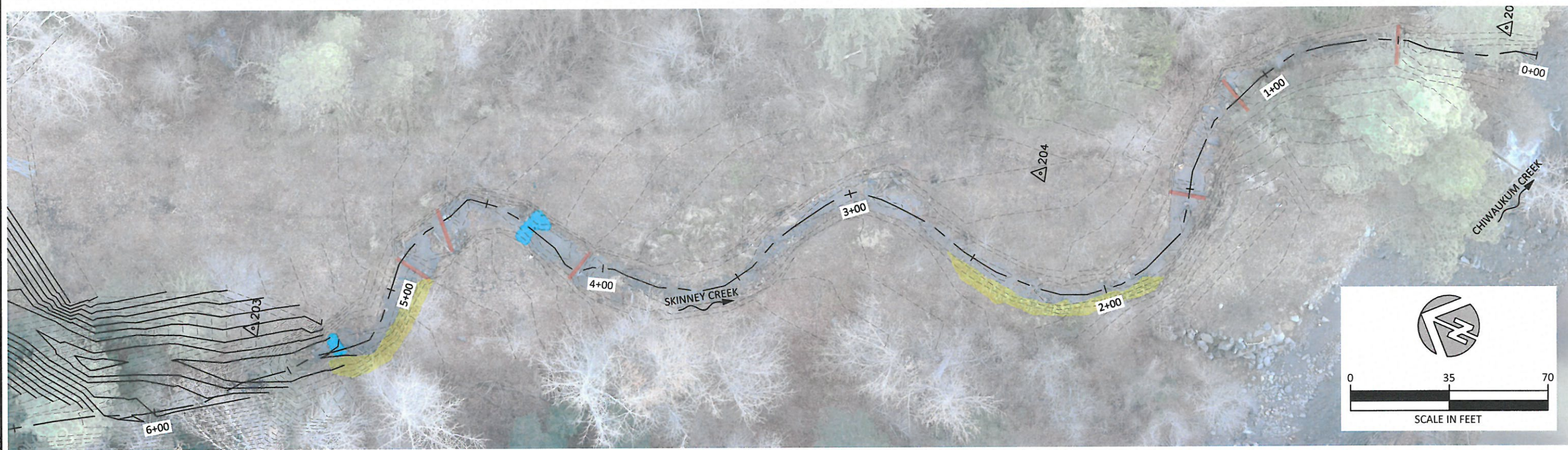
YAKAMA NATION FISHERIES  
SKINNEY CREEK - WSDOT MITIGATION AREA  
FINAL DESIGN



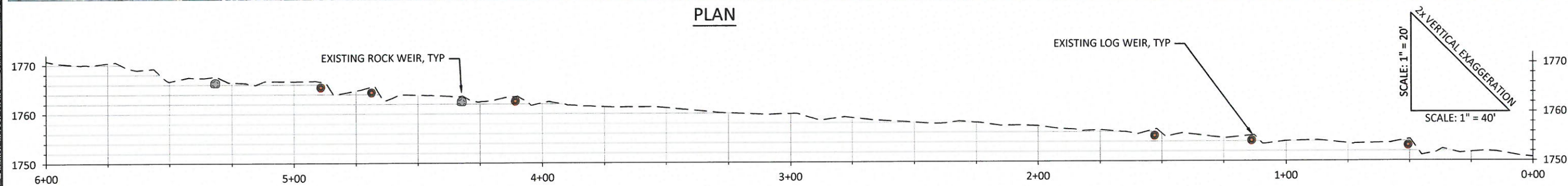
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PROJECT REACH

G:\Users\denmiller\Documents\Clients\Yakama Nation\Skinney Creek\Drawings\2019-12\WSDOT\19\_Skinney\_WSDOT\_C.dwg - denmiller - 12/12/19



PLAN



PROFILE

LEGEND

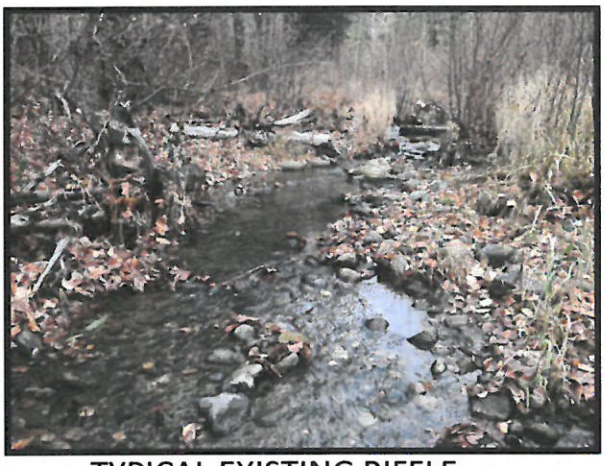
- 2+00 --- EXISTING CONTOUR (1 FT)
- 1 — EXISTING ALIGNMENT AND STATIONING
- EXISTING RIPRAP
- EXISTING LOG WEIR
- EXISTING ROCK WEIR
- △ 202 SURVEY CONTROL POINT



TYPICAL EXISTING LOG WEIR



TYPICAL EXISTING ROCK WEIR




TYPICAL EXISTING RIFFLE

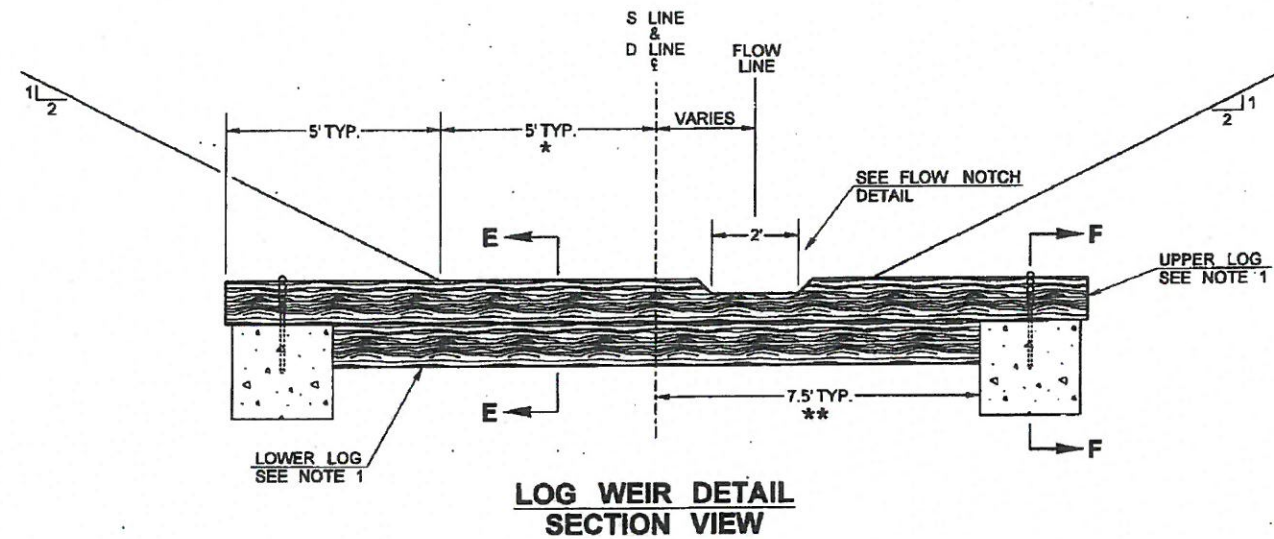
NO.	BY	DATE	REVISION DESCRIPTION

NS, DM	DM	JP
DRAWN	DESIGNED	CHECKED
---	12/16/19	170232
APPROVED	DATE	PROJECT

YAKAMA NATION FISHERIES  
SKINNEY CREEK - WSDOT MITIGATION AREA  
FINAL DESIGN

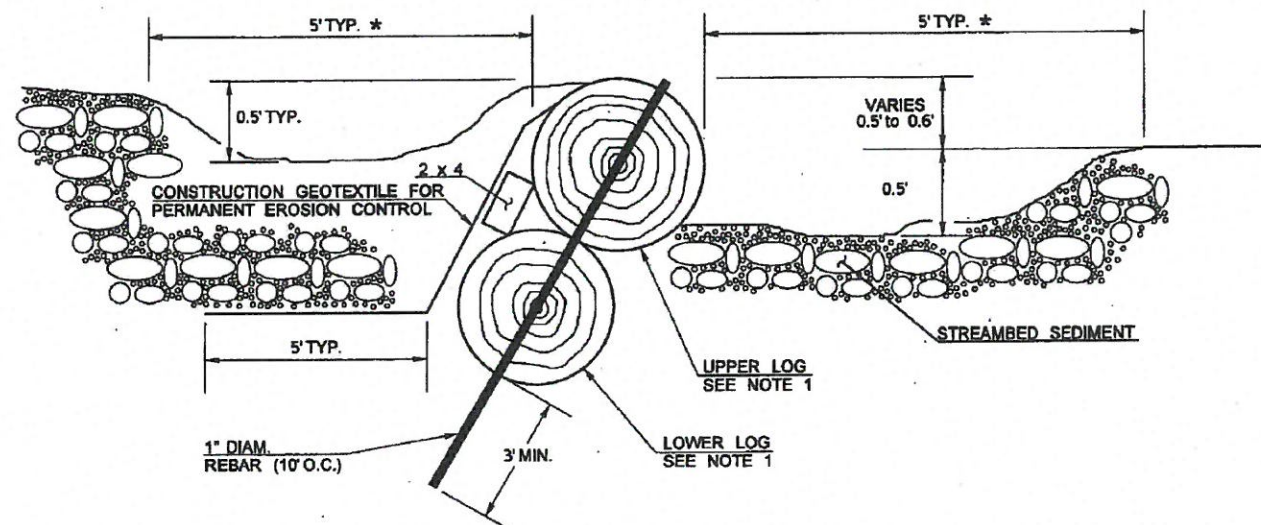
 501 Portway Avenue, Suite 101  
Hood River, OR 97031  
541.386.9003  
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EXISTING CONDITIONS - PLAN  
AND PROFILE



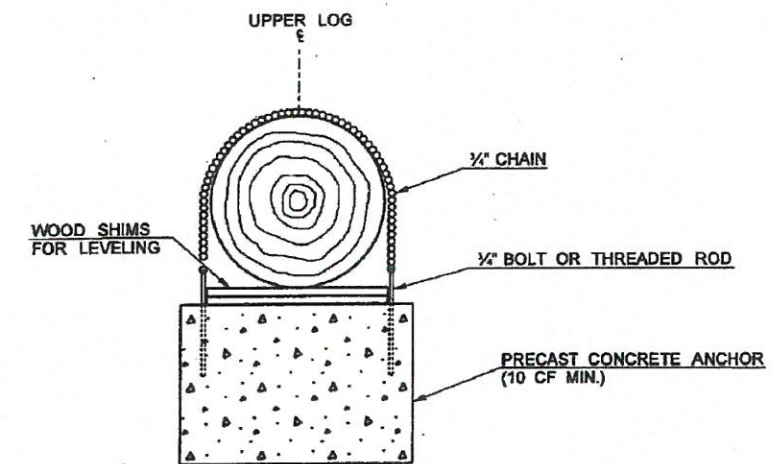
**LOG WEIR DETAIL  
SECTION VIEW**

FLOW LINE STATION  
 S 65+90 (0' LT.)  
 S 66+07 (1' RT.)  
 S 66+78 (2' RT.)  
 S 67+10 (1' LT.)  
 S 67+80 (2' LT.)  
 S 70+45 (2' RT.)  
 S 70+90 (1' LT.)  
 S 71+35 (2' LT.)  
 D 2+00 (1' RT.)

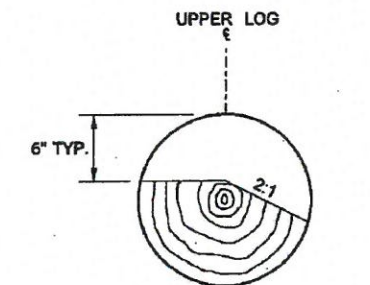


**LOG WEIR DETAIL  
SECTION E-E**

NOT TO SCALE



**LOG WEIR DETAIL  
SECTION F-F**



**FLOW NOTCH DETAIL**

**NOTES**

- LOGS SHALL BE PROCURED FROM TREES REMOVED DURING CLEARING AND GRUBBING WITHIN THE PROJECT LIMITS. DIAMETER SHALL BE 1" MIN. AND 1.5" MAX.
- ALL METAL COMPONENTS SHALL BE GALVANIZED STEEL OR STAINLESS STEEL. GALVANIZED COMPONENTS SHALL BE GALVANIZED PRIOR TO INSTALLATION.
- UNLESS SPECIFIED OTHERWISE IN THE PLANS, CONSTRUCTION GEOTEXTILE FOR PERMANENT EROSION CONTROL APPLICATIONS SHALL BE "HIGH SURVIVABILITY" AND "DRAINAGE CLASS C".

\* = 3' TYPICAL WIDTH FOR D-LINE

\*\* = 5.5' TYPICAL WIDTH FOR D-LINE

FILE NAME	G:\Engineering\PE2011\Projects\US 2\US2 Tumwater Canyon Bridge Replacement\Ad\CADD\XL2793_PS SKINNEY CREEK.dgn
TIME	2:01:02 PM
DATE	4/11/2011
PLOTTED BY	stacyhe
DESIGNED BY	S. HONEYCUTT
ENTERED BY	M. ROY
CHECKED BY	S. HONEYCUTT
PROJ. ENGR.	R. ROMINE
REGION NO.	10
STATE	WASH
FED. AID PROJ. NO.	11B015
CONTRACT NO.	
LOCATION NO.	XL2793



**US 2  
TUMWATER CANYON  
BRIDGE REPLACEMENTS**

**CHANNEL DETAILS**

Plot 9  
 PLAN REF NO  
**SDCD1**  
 SHEET  
 64  
 OF  
 228  
 SHEETS

NO.	BY	DATE	REVISION DESCRIPTION

NS, DM	DM	JP
DRAWN	DESIGNED	CHECKED
---	12/16/19	170232
APPROVED	DATE	PROJECT

**YAKAMA NATION FISHERIES  
SKINNEY CREEK - WSDOT MITIGATION AREA  
FINAL DESIGN**

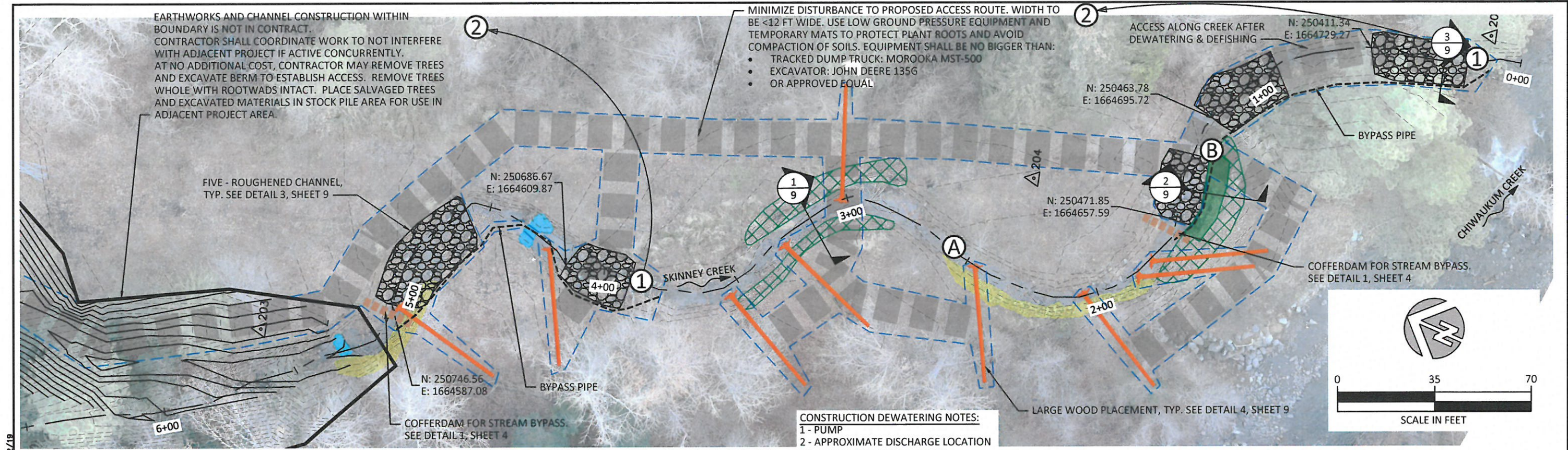


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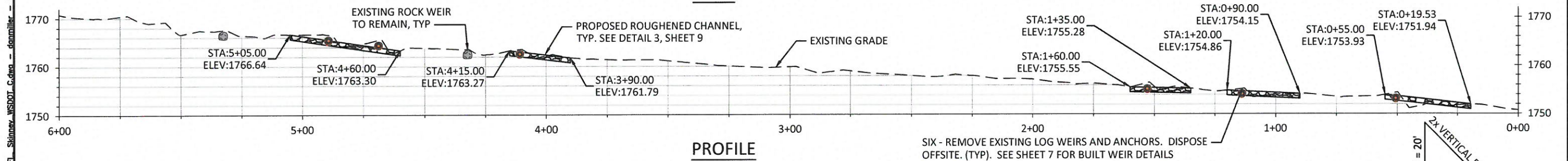
**EXISTING WSDOT LOG WEIR  
DETAILS**

SHEET  
 7 OF 11

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PLAN



PROFILE

LEGEND

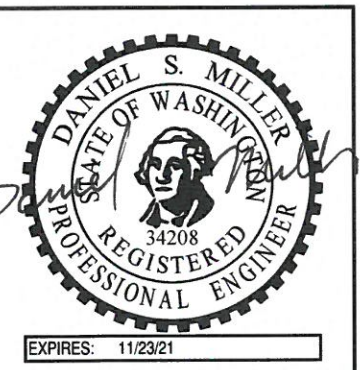
- 2+00
- EXISTING CONTOUR (1 FT)
- EXISTING ALIGNMENT AND STATIONING
- LIMITS OF DISTURBANCE
- ACCESS
- EXISTING RIPRAP
- EXISTING ROCK WEIR
- PROPOSED ROUGHENED CHANNEL
- PROPOSED BANK TREATMENT
- NATIVE RIPARIAN LIVE CUTTING ZONE
- 202
- SURVEY CONTROL POINT



ANALOG RIFFLE



BANK TO BE GRADED AND VEGETATED



NO.	BY	DATE	REVISION DESCRIPTION

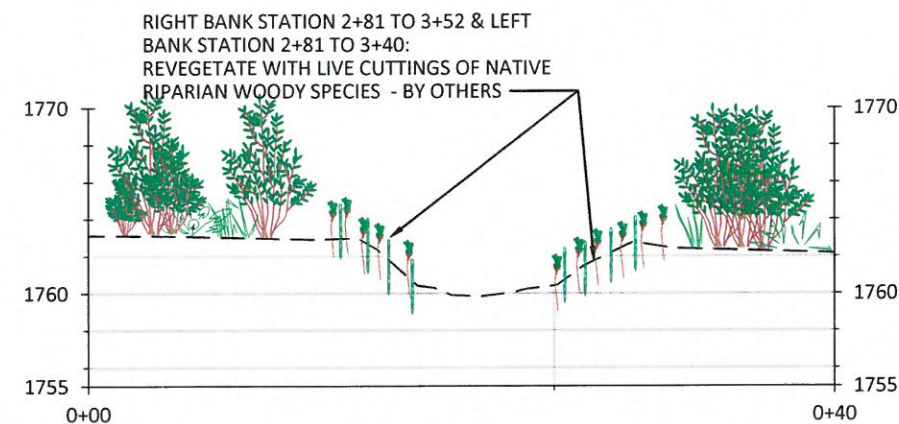
NS, DM	DM	JP
DRAWN	DESIGNED	CHECKED
---	12/16/19	170232
APPROVED	DATE	PROJECT

YAKAMA NATION FISHERIES  
SKINNEY CREEK - WSDOT MITIGATION AREA  
FINAL DESIGN

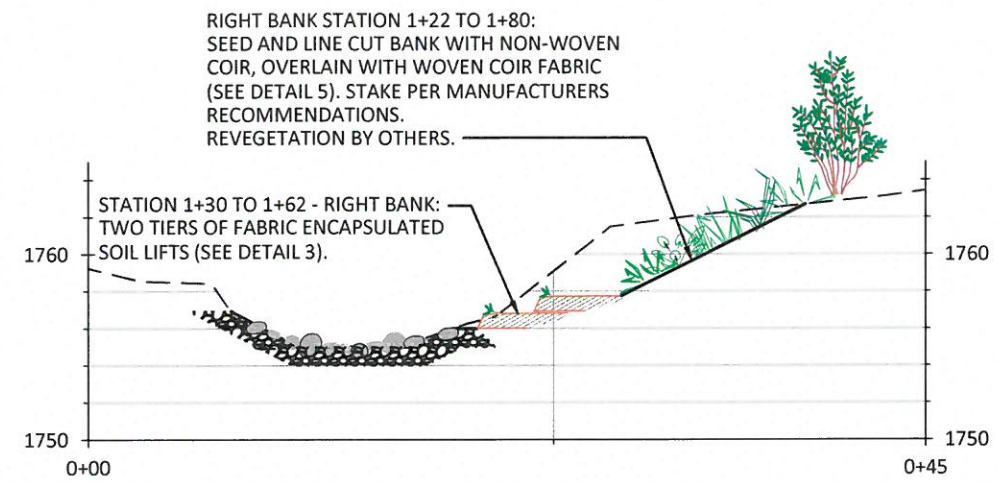
501 Portway Avenue, Suite 101  
Hood River, OR 97031  
541.386.9003  
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PROPOSED CONDITIONS -  
PLAN AND PROFILE

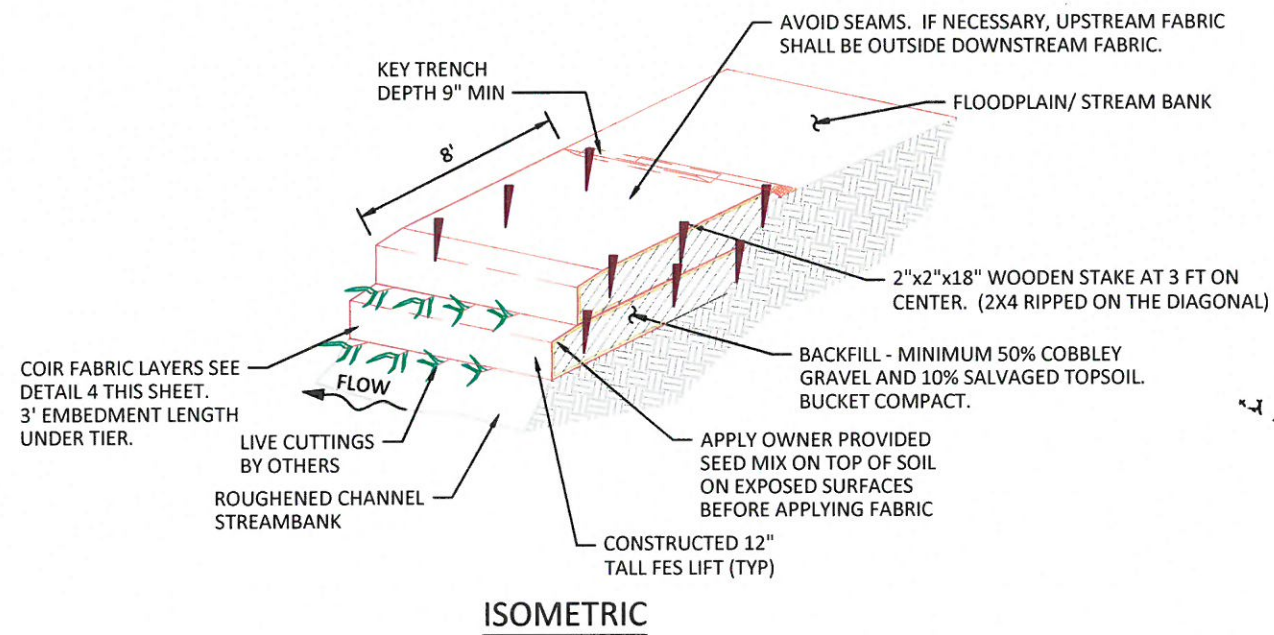
C:\Users\donmiller\Documents\Yakama Nation\Skinney Creek\Drawings\2019-12\WSDOT\Final\Skinney WSDOT C.dwg - donmiller - 12/12/19



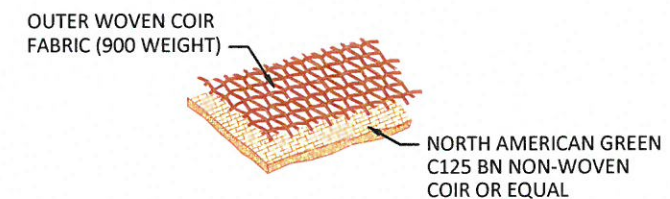
1  
9  
TYPICAL CROSS-SECTION  
1" = 10'



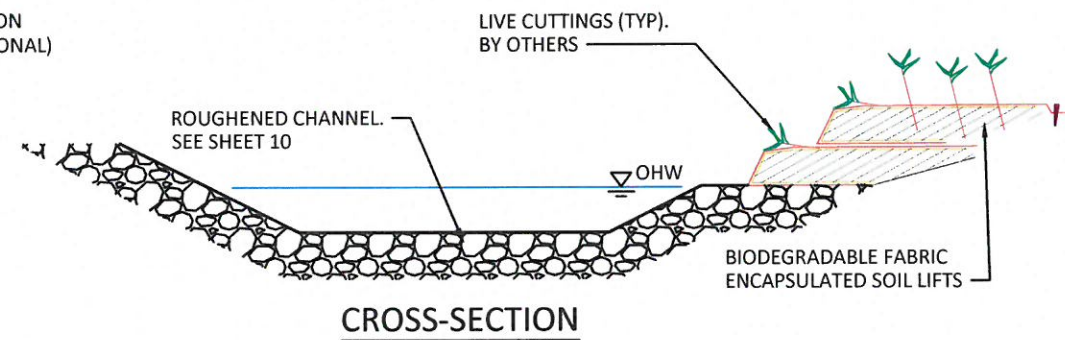
2  
9  
TYPICAL CROSS-SECTION  
1" = 10'



3  
9  
FABRIC ENCAPSULATED SOIL LIFT (FES LIFT, FESL)  
NOT TO SCALE



4  
9  
TYPICAL DETAIL - FABRIC LAYERING  
NOT TO SCALE



EXPIRES: 11/23/21

NO.	BY	DATE	REVISION DESCRIPTION

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---	12/16/19	170232
APPROVED	DATE	PROJECT

YAKAMA NATION FISHERIES  
SKINNEY CREEK - WSDOT MITIGATION AREA  
FINAL DESIGN



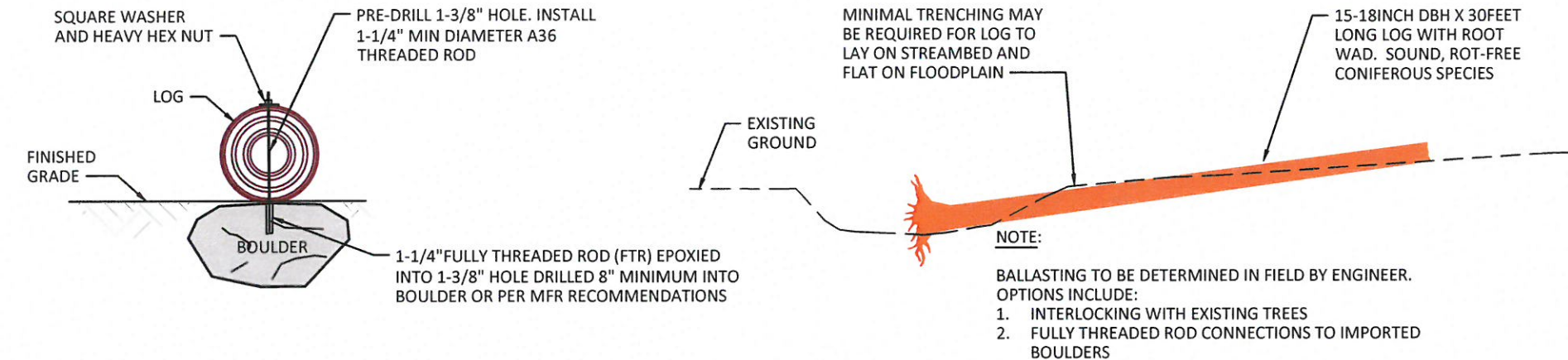
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TYPICAL DETAILS - SECTIONS  
AND FESL

SHEET

9 OF 11

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**MATERIALS**  
TWO 36 IN EQUIVALENT DIAMETER BOULDERS PER LOG.

BOULDERS SHALL BE NON-FRACTURED BASALT WITH A MINIMUM SPECIFIC GRAVITY OF 2.65.

EPOXY FOR ANCHORING SHALL BE HILTI HIT RE 500 ADHESIVE OR APPROVED EQUAL.

**CONSTRUCTION**  
DRILL HOLES IN SOLID ROCK AND AVOID ANY CRACKS OR FRACTURES. CLEAN DRILL HOLES

CLEAN FTR WITH ACETONE. FILL DRILL HOLES WITH EPOXY. FULLY INSERT FTR IN HOLE, ROTATE TO FILL THREADS WITH EPOXY.

INSTALL WASHER AND NUT. CHISEL OR DEFORM THREADS TO CAPTURE NUT. REMOVE SHARP EDGES.

## 2 TYPICAL LARGE WOOD PLACEMENT

1" = 10'

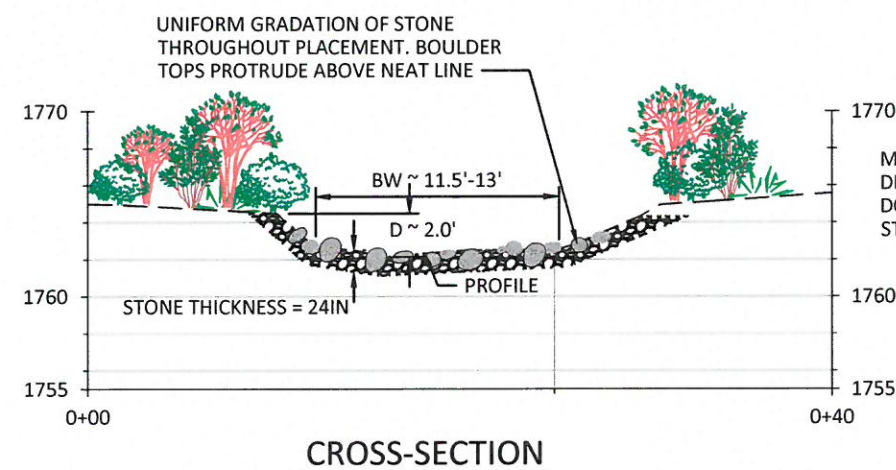
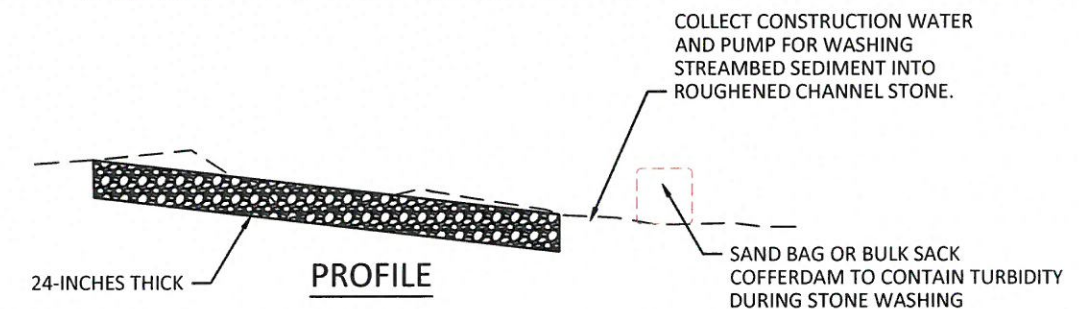
ROUGHENED CHANNEL STONE GRADATION	
PERCENT FINER BY WEIGHT	STONE SIZE (IN)
100	18 - 20
84	15 - 17
50	12 - 14
15	4 - 7

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

9-03.11(3) STREAMBED BOULDERS  
9-03.11(2) 4 IN TO 12 IN STREAMBED COBBLES

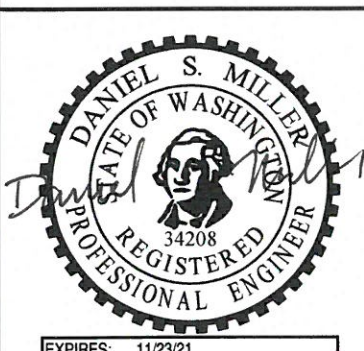
GRADATION SHALL BE CONTINUOUSLY AMENDED WITH ADDITIONAL INCIDENTAL 30% BY VOLUME WSDOT 9-03.11(1) STREAMBED SEDIMENT. STREAMBED SEDIMENT SHALL BE CONTINUOUSLY WASHED INTO GRADATION WITH 2 IN PUMP FOR COMPACT PLACEMENT AND FOR ENGINEER TO EVALUATE PERMEABILITY OF PLACED STONE. ADJUSTMENTS TO STONE MIXTURE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

GRADATION AND AMENDMENT SHALL BE PLACED IN HOMOGENEOUS MIXTURE.



## 1 TYPICAL ROUGHENED CHANNEL

NOT TO SCALE



EXPIRES: 11/23/21

NO.	BY	DATE	REVISION DESCRIPTION

NS, DM	DM	JP
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---	12/16/19	170232
APPROVED	DATE	PROJECT

YAKAMA NATION FISHERIES  
SKINNEY CREEK - WSDOT MITIGATION AREA  
FINAL DESIGN



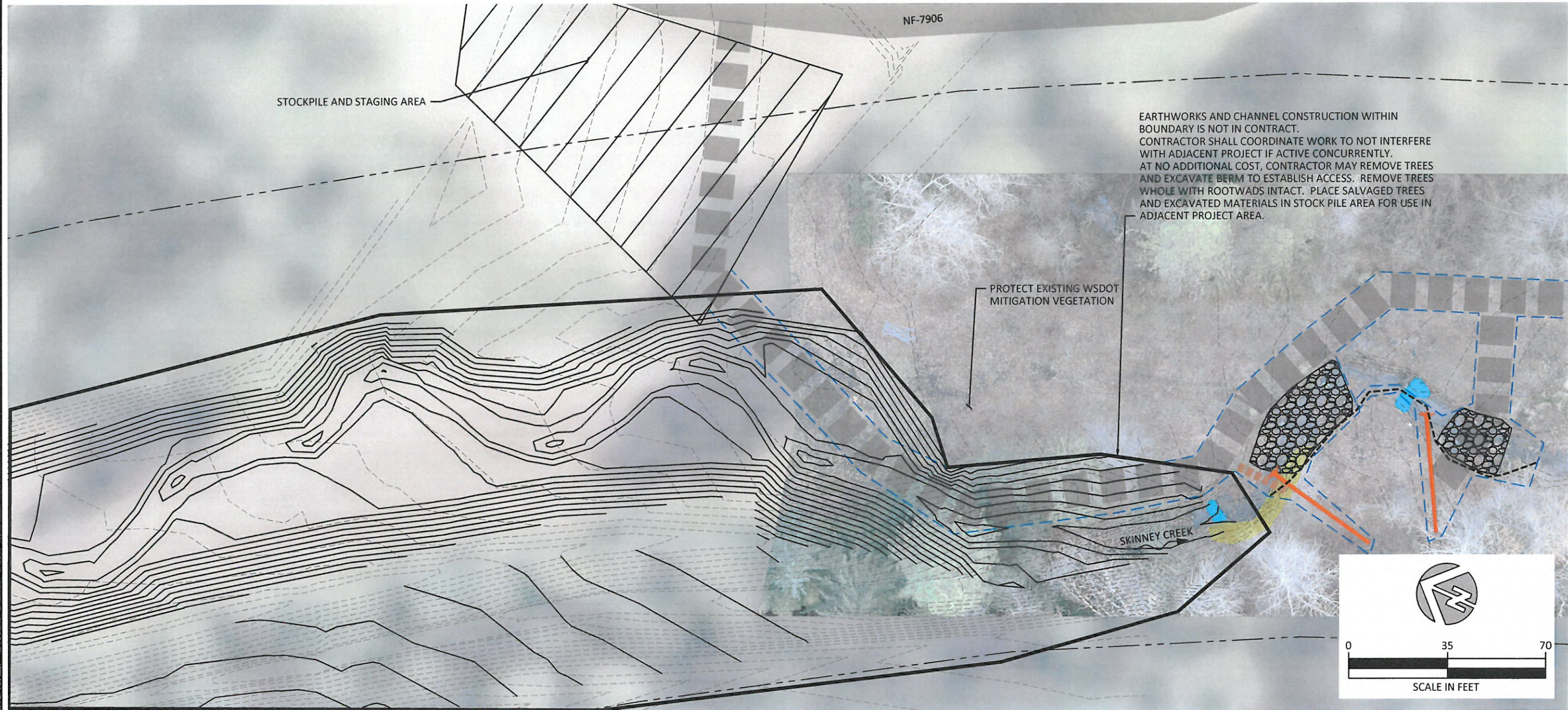
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Hood River, OR 97031  
541.386.9003  
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TYPICAL DETAILS -  
ROUGHENED CHANNEL & LWM

SHEET

10 OF 11

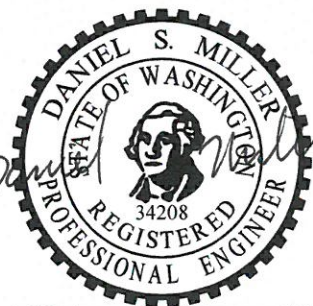
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PLAN

LEGEND

- |   |   |
|---|---|
| --- EXISTING CONTOUR (1 FT)                   | STOCKPILE/STAGING AREA                                |
| --- PROPOSED CONTOURS (1 FT)                  | EXISTING RIPRAP                                       |
| 2+00<br>--- PROPOSED ALIGNMENT AND STATIONING | EXISTING ROCK WEIR                                    |
| --- LIMITS OF DISTURBANCE                     | PROPOSED ROUGHENED CHANNEL (SEE DETAIL 3, SHEET 10)   |
| --- ACCESS                                    | PROPOSED LARGE WOOD PLACEMENT (SEE DETAIL 4, SHEET 9) |



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PROPOSED CONNECTION TO  
UPSTREAM PROJECT

SHEET  
11 OF 11