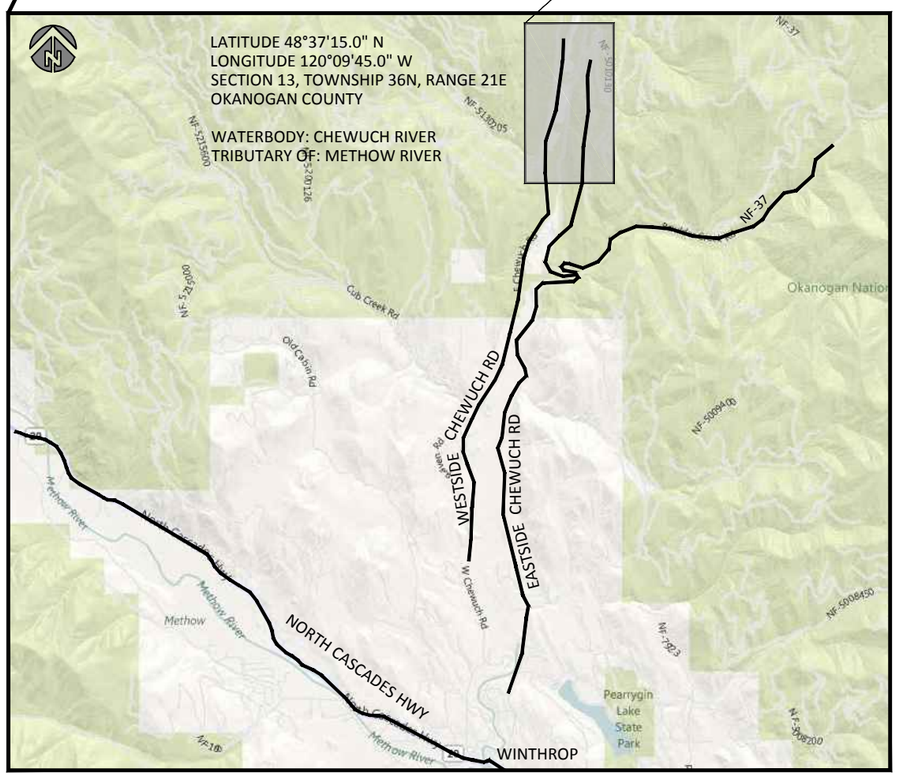
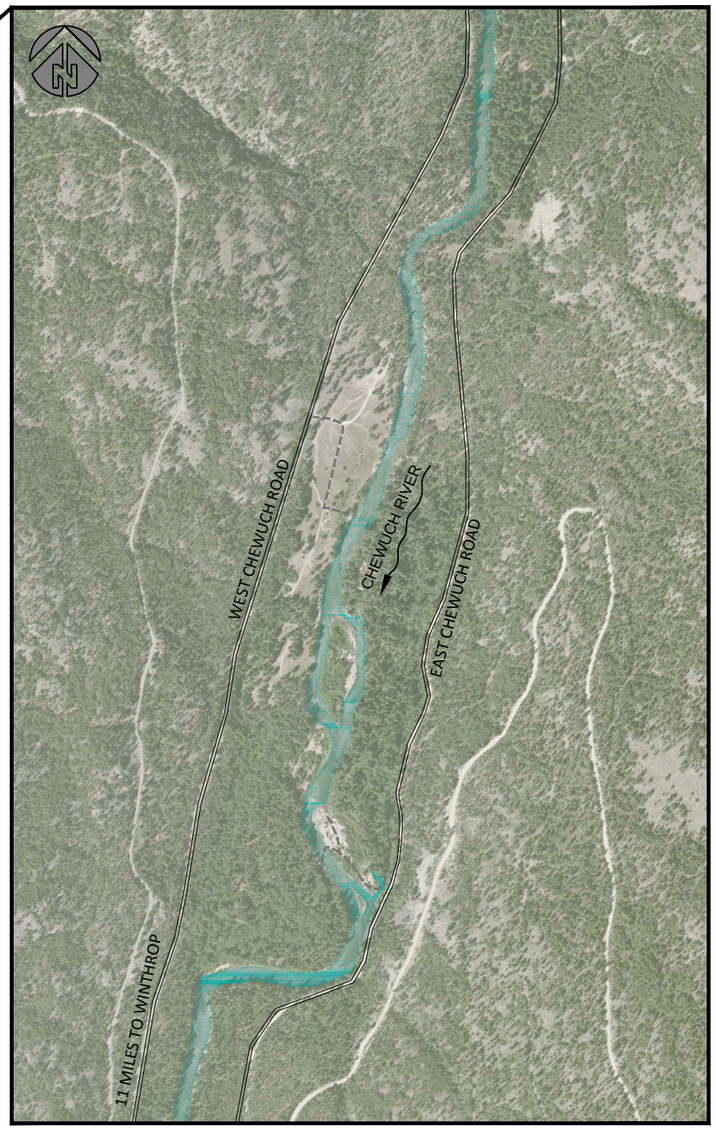
CHEWUCH CAMPGROUND
FISH HABITAT ENHANCEMENT PROJECT

60% DESIGN



VICINITY MAP

SCALE: NTS



LOCATION MAP

SCALE: 1" = 1000'

CONFEDERATED TRIBES AND BANDS
YAKAMA NATION
TREATY OF 1855

YAKAMA NATION FISHERIES
2 JOHNSON LANE
WINTHROP WA, 98862

SHEET INDEX

NO.	BY	DATE	REVISION DESCRIPTION

RP,DF,CP	MB,MM	MB,MM
DRAWN	DESIGNED	CHECKED
MM	1/30/15	
APPROVED	DATE	PROJECT

CONFEDERATED TRIBES AND BANDS OF THE YAKAMA NATION
CHEWUCH CAMPGROUND
60% DESIGN

inter·fluve
501 Portway Ave, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

TITLE, SHEET INDEX & MAPS

SHEET 1 OF 9

THE 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.

ALL WORK SHALL BE IN COMPLIANCE WITH REQUIREMENTS STATED IN PERMITS ISSUED FOR THIS PROJECT.

WDFW IN-WATER WORK PERIODS

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 RTK AND TOTAL STATION IN OCTOBER, 2010.

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

HYDROLOGY INFORMATION PROVIDED BY USBR.

HYDRAULIC MODELING BY INTER-FLUVE USING USACE HEC-RAS (4.1.0).

GIS DATA INCLUDING: AERIAL PHOTOGRAPHY, LIDAR, FISH USE, SURFACE SOILS INFORMATION, LAND OWNERSHIP, AND TRANSPORTATION ROUTES PROVIDED BY VARIOUS AGENCIES.

SOILS

SUBSURFACE SOILS ARE EXPECTED TO BE SAND, GRAVEL, COBBLES, BOULDERS. CONTRACTOR SHALL CONDUCT OWN INVESTIGATIONS IF ADDITIONAL DATA IS REQUIRED AT NO ADDITIONAL COST.

UTILITIES

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

THE CONTRACTOR SHALL CALL (800-424-5555) FOR UTILITY LOCATE PRIOR TO CONSTRUCTION

THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE EFFECTED UTILITY SERVICE TO REPORT ANY DAMAGED OR DESTROYED UTILITIES.

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

CONSTRUCTION STAKING

OWNER'S REPRESENTATIVE WILL PROVIDE STAKING OF PROJECT LIMITS, GRADE STAKES, AND ELEVATION CONTROL POINTS. SOME FIELD ADJUSTMENTS TO THE LINES AND GRADES ARE TO BE EXPECTED.

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.

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

CONSTRUCTION MATERIALS

ALL MATERIALS QUANTITIES ARE BASED ON IN-PLACE CONDITION DETERMINED BY A PRE-PROJECT CONDITION SURVEY COMPARED AGAINST A PROJECT CONDITION SURVEY

CONTRACTOR SHALL ALLOW FOR EXPANSION OF EXCAVATED MATERIAL AND COMPACTION OF PLACED MATERIAL AT NO ADDITIONAL MEASURE OR COST. MEASUREMENT AND PAYMENT SHALL NOT BE BASED ON WEIGHT TICKETS OR TRUCK MEASURE WITHOUT PRIOR WRITTEN APPROVAL.

LOCATION, ALIGNMENT, AND ELEVATION OF LOGS AND LOGS WITH ROOT WADS ARE SUBJECT TO ADJUSTMENT BASED ON FIELD CONDITIONS, AND MATERIAL SIZE.

ANY EXCESS MATERIAL SHALL BE STOCKPILED NEATLY IN AN APPROVED LOCATION OF THE STOCKPILE AND STAGING AREA. AT COMPLETION OF WORK, THE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE FOR LEGAL DISPOSAL.

CONSTRUCTION ACCESS/TRAFFIC CONTROL

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

PUBLIC ACCESS TO/ALONG ROADWAYS SHALL BE MAINTAINED AT ALL TIMES.

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.

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 NEAT 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.

ALL DISTURBED AREAS INCLUDING ROADS, DRIVEWAYS AND ACCESS ROUTES SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER AND RE-VEGETATED PER PLANS.

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

ANY FENCES REMOVED FOR ACCESS OR CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

STAGING AND STOCKPILE AREAS

STAGING AND STOCKPILE AREAS WILL BE FLAGGED BY THE OWNER.STAGING AREAS USED FOR CONSTRUCTION EQUIPMENT STORAGE, VEHICLE STORAGE, FUELING, SERVICING, AND HAZARDOUS MATERIAL STORAGE SHALL BE 150 FEET OR MORE FROM ANY NATURAL WATER BODY OR WETLAND. NATURAL MATERIALS MAY BE STOCKPILED NEAR INSTALLATION AREAS.

TREE SALVAGE

ALL TREES AND SLASH REMOVED FOR CONSTRUCTION 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. CONTRACTOR IS RESPONSIBLE FOR REMOVING SMALLER CLEARING AND GRUBBING DEBRIS FROM THE SITE AND DISPOSING AT A LEGAL LOCATION AT THE END OF THE PROJECT UNLESS DIRECTED BY THE OWNER'S REPRESENTATIVE.

ALL TREES REMOVED WITHIN CLEARING LIMITS SHALL BE REMOVED WHOLE WITH ROOT WAD AND UTILIZED IN THE STREAM CONSTRUCTION AS DIRECTED BY OWNER'S REPRESENTATIVE.

LIVE TREES

ALL TREES NOT MARKED FOR REMOVAL SHALL BE LEFT STANDING UNDISTURBED. AVOID THE DRIPLINE IF POSSIBLE. CONSTRUCTION ACTIVITY SHALL NOT DEBARK OR DAMAGE LIVE TREES.

FISH RESCUE

ALL FISH RESCUE EFFORTS SHALL BE SUPERVISED BY A YAKAMA NATION FISHERIES/AQUATIC BIOLOGIST EXPERIENCED WITH THE COLLECTION AND HANDLING OF SALMONID FISHES 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 INTO RIVER AT AREAS SELECTED BY A YNF BIOLOGIST.

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GENERAL NOTES

SHEET
2 OF 9

EROSION/SEDIMENTATION CONTROL (ESC) 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.

A. 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.

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, AND 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.

D. 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.

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

F. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A WEEK OR WITHIN THE 24 HOURS FOLLOWING A STORM EVENT.

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.

INSPECTION AND MAINTENANCE

ALL ESC FACILITIES SHALL BE INSPECTED, MAINTAINED, AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL ESC FACILITIES SHALL BE INSPECTED DAILY AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES OF RAIN PER 24 HOUR PERIOD AND AFTER EVENTS EXCEEDING 2 HOURS DURATION.

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:

1. WHEN MAJOR GRADING ACTIVITIES OCCUR.
2. DATES OF RAINFALL EVENTS EITHER EXCEEDING 2 HOURS DURATION OR MORE THAN 0.5 INCHES/24 HOURS.
3. WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON SITE, OR ON A PORTION OF THE 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.

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 THREE 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 STOCKPILINGS MUST BE STABILIZED AND PROTECTED WITH SEDIMENT TRAPPING MEASURES. HYDROSEED ALL DISTURBED AREAS AS SOON AS PRACTICAL NOT INDICATED IN THE CONTRACT DOCUMENTS FOR OTHER PERMANENT STABILIZATION MEASURES.

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 (BPMs) 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

CONSTRUCTION DEWATERING

TEMPORARY COFFERDAMS SHALL BE USED TO ISOLATE IN-CHANNEL EXCAVATION AREAS FROM THE RIVER.

DEWATERING OF 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 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.

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. (SEE CONSTRUCTION DEWATERING).

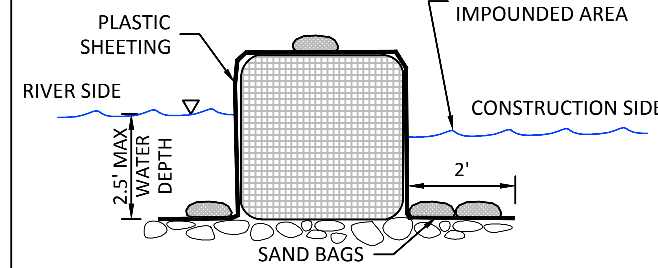
OWNER'S REPRESENTATIVE SHALL APPROVE DEWATERING DISCHARGE LOCATION PRIOR TO IMPLEMENTATION.

CONTRACTOR SHALL PERFORM CONSTRUCTION DEWATERING IN SUCH A MANNER AS TO AVOID THE RELEASE OF SEDIMENT-LADEN WATER TO 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 THE RIVER, A 'DIRT-BAG' OR SEDIMENT RETENTION STRUCTURE MAY BE REQUIRED AS NECESSARY TO COMPLY WITH LAWS AND PERMIT REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER.

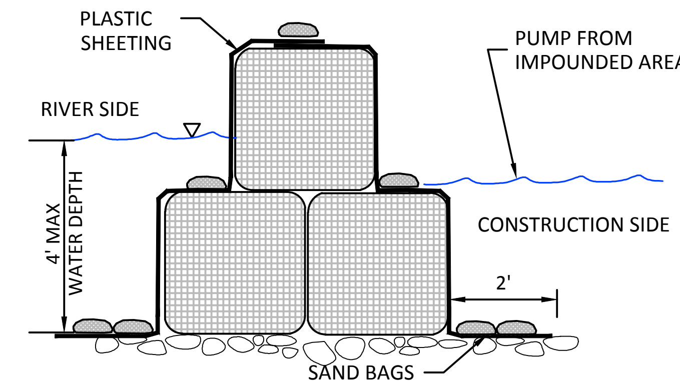
CONTRACTOR SHALL PROVIDE VISQUINE OR GEOTEXTILE LINER OR PLYWOOD OR METAL PLATING AS NECESSARY TO DISSIPATE PUMP DISCHARGE JET TO PREVENT EROSION.

EQUIPMENT

BIODEGRADABLE HYDRAULIC FLUID SHALL BE USED IN EACH EXCAVATOR WORKING WITHIN LIVE WATER. MECHANIZED EQUIPMENT AND VEHICLES SHALL BE INSPECTED DAILY FOR LEAKS, AND CLEANED THOROUGHLY BEFORE OPERATION NEAR WATER.



BULK BAG COFFERDAM
(WATER DEPTH LESS THAN 2.5')



STACKED BULK BAG COFFERDAM
(WATER DEPTH LESS THAN 4')

BULK BAG NOTES:

1. BULK BAG COFFERDAM SHALL BE CONSTRUCTED OF SEVERAL UNITS OF BULK BAGS FILLED WITH WASHED SPAWNING GRAVEL, AND ABUTTED SIDE BY SIDE TO CREATE A ROW THAT SEPARATES THE CONSTRUCTION SITE FROM THE RIVER.
2. IF WATER DEPTH EXCEEDS 85% OF THE BULK BAG HEIGHT, AN ADDITIONAL TOP ROW OF BULK BAGS SHALL BE INSTALLED, SUPPORTED BY TWO BOTTOM ROWS OF BULK BAGS.
3. BULK BAG COFFERDAM SHALL BE SEALED BY COVERING THE COFFERDAM WITH PLASTIC SHEETING HELD IN PLACE BY SANDBAGS FILLED WITH PEA GRAVEL. PLACED IN ROWS ON TOP OF COFFERDAM, AND AT TOE OF COFFERDAM. THE PLASTIC SHEETING SHALL BE DRAPED ALONG THE CHANNEL BOTTOM ON BOTH SIDES OF THE COFFERDAM WITH OUTWARD EDGE OF SHEETING MINIMUM 2-FEET FROM TOE OF COFFERDAM. THE DRAPED PORTION OF PLASTIC SHEETING SHALL BE PINNED TO THE CHANNEL BED BY MINIMUM TWO ROWS OF STANDARD SANDBAGS.
4. IF POSSIBLE, THE ENDS OF THE COFFERDAM SHALL BE EXTENDED ONTO A DRY GRAVEL BAR. IF THE END MUST BE TERMINATED AT A WET RIVERBANK, 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.
5. BULK BAGS SHALL BE WATERPROOF CUBE-SHAPED POLYPROPYLENE WOVEN FABRIC BAGS WITH FULLY OPEN TOP, FLAT BOTTOM, FOUR LOOPS, MINIMUM 2-TON WEIGHT CAPACITY, MINIMUM 5:1 SAFETY FACTOR.
6. PLASTIC SHEETING SHALL BE MINIMUM 6-MIL THICKNESS. ROLL LENGTH SHALL BE LONG ENOUGH TO ENSURE THAT ENTIRE LENGTH OF COFFERDAM WILL BE COVERED WITHOUT A SEAM. MINIMUM 12-FT WIDE ROLL SHALL BE USED FOR SINGLE LAYER BULK BAG COFFERDAM. TWO LENGTHS OF 12-FT WIDE ROLL SHALL BE USED FOR 2-LAYER STACKED BULK BAG COFFERDAM.
7. CONTRACTOR SHALL PROVIDE PUMPING SUFFICIENT TO LOWER WATER SURFACE IN THE IMPOUNDED AREA IN ORDER TO CAUSE ANY LEAKS UNDER THE COFFERDAM TO PASS WATER TOWARD THE WORK AREA INSTEAD OF FROM THE WORK AREA TO THE RIVER. DISCHARGE TURBID WATER TO UPLAND FLOODPLAIN.
8. BULK BAG COFFERDAM SHALL BE COMPLETELY REMOVED AFTER CONSTRUCTION IS COMPLETED AND TURBIDITY HAS BEEN REMOVED.
9. ALTERNATE COFFERDAM MATERIALS AND CONFIGURATIONS MAY BE ALLOWED BUT SHALL NOT BE IMPLEMENTED WITHOUT REVIEW AND APPROVAL BY THE OWNER. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND/OR VENDOR CUT SHEETS FOR SUBSTITUTIONS.
10. IF NECESSARY, GAPS BETWEEN BULK BAGS SHALL BE FILLED WITH WASHED GRAVEL TO SEAL AND IMPROVE COFFER DAM. DISPOSAL OF ROCK WASH SHALL BE DETERMINED BY OWNER.

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CHEWUCH CAMPGROUND
60% DESIGN

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541.386.9003
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EROSION CONTROL &
GENERAL NOTES

PARCEL: 9800740000
WA STATE DEPT OF WILDLIFE
600 N CAPITOL WAY
OLYMPIA, WA 98501

WEST CHEWUCH RD

SHEET 6

F

E

RM 13.5

SHEET 5

ENGINEERED LOG STRUCTURES

STAGING/STOCKPILE AREA

EAST CHEWUCH RD

STAGING/STOCKPILE AREA

TEMPORARY ACCESS

SHEET 7

K

LARGE WOOD COVER HABITAT

CHEWUCH RIVER

RM 14

LEGEND

- PROPERTY LINES
- TEMPORARY ACCESS
- LIMITS OF DISTURBANCE
- STAGING/STOCKPILE AREA
- LOG JAM CONSTRUCTION SITE AND POOL ENHANCEMENT
- (F) PROPOSED PROJECT AREA

N

0 200 400

SCALE IN FEET

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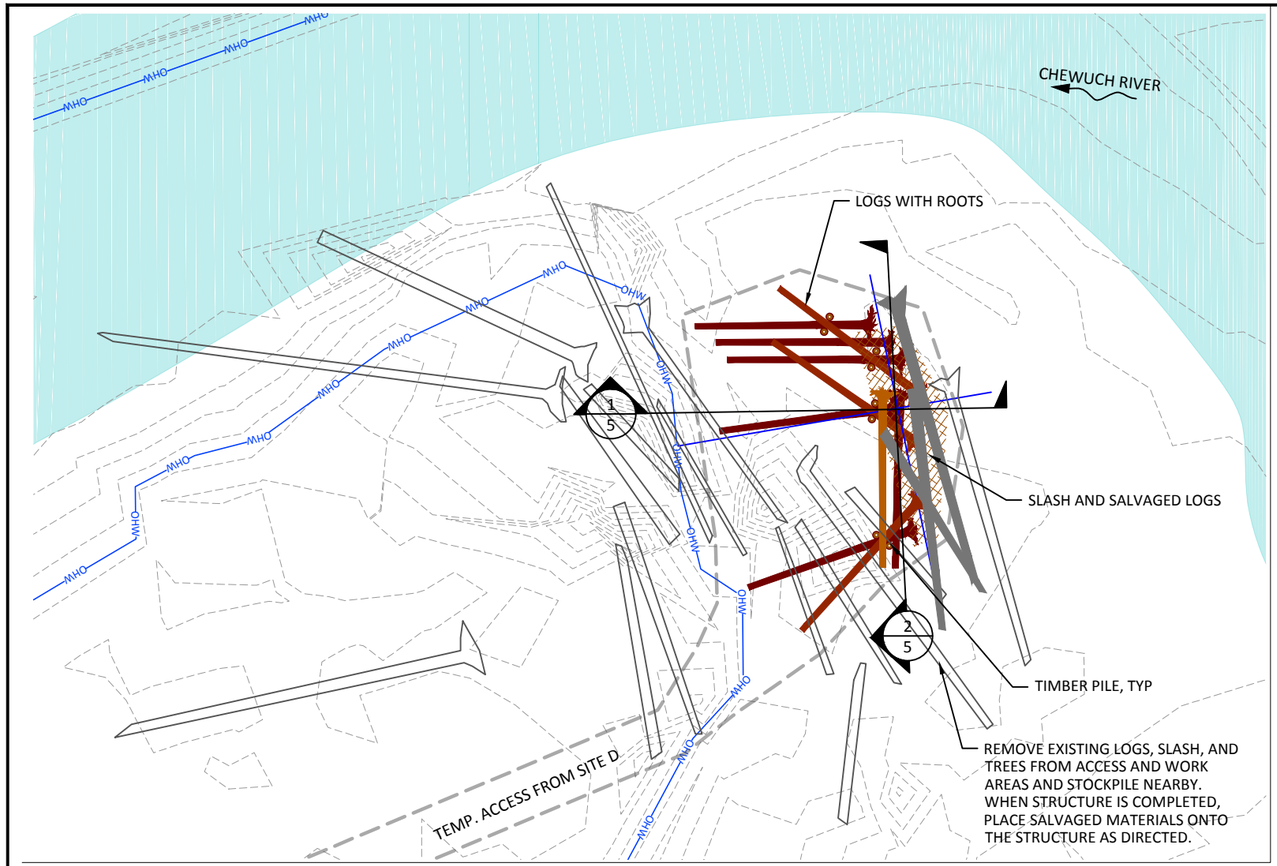
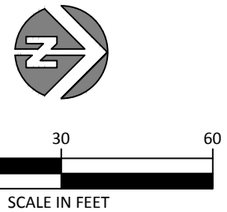
SITE PLAN SHOWING ACCESS & PROPOSED PROJECT AREAS

SHEET 4 OF 9



SITE PLAN E



LEGEND

- EXISTING 1 FT CONTOURS
- PROPOSED 1 FT CONTOURS
- LIMITS OF DISTURBANCE
- EXISTING ORDINARY HIGH WATER (OHW)
- EXISTING LOW WATER APPROX.
- PROPOSED SALVAGED SLASH

CONSTRUCTION QUANTITIES

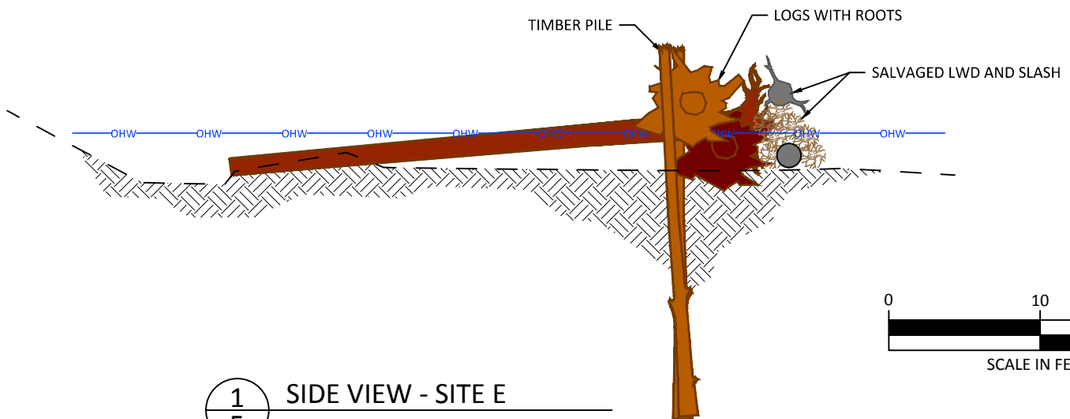
ITEM	QUANTITY
18" DBH x 40' LONG, LOG WITH ROOTWAD	10 EA
18" DBH x 40' LONG, LOG WITHOUT ROOTWAD	8 EA

QUANTITIES NOTES:

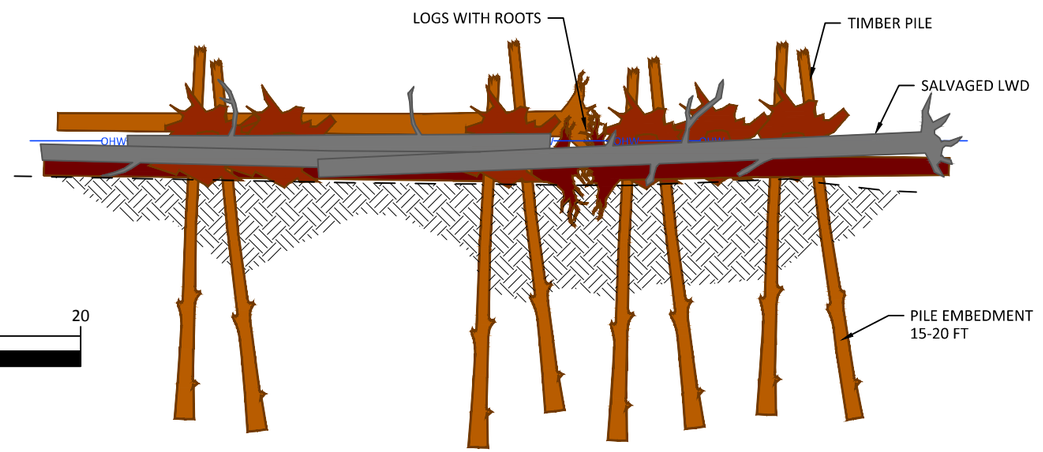
1. ALL MATERIALS QUANTITIES ARE BASED ON IN-PLACE CONDITION DETERMINED BY THE PRE-PROJECT CONDITION COMPARED AGAINST THE PROJECT FINAL CONDITION.
2. CONTRACTOR SHALL ALLOW FOR EXPANSION OF EXCAVATED MATERIAL AND COMPACTION OF PLACED MATERIAL AT NO ADDITIONAL MEASURE OR COST TO THE OWNER.
3. MEASUREMENTS BY WEIGHT OR TRUCK MEASUREMENT SHALL NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL.

WATERBODY IMPACTS (WITHIN OHW)

ACTIVITY	WATERBODY NAME	IMPACT LOCATION	DURATION OF IMPACT	VOLUME OF MATERIAL PLACED OR REMOVED	AREA (SF) OR LENGTH (LF) OF IMPACT
WOOD PLACEMENT	CHEWUCH RIVER	RIVER	PERMANENT	47 CY	2,000 SF



1/5 SIDE VIEW - SITE E



2/5 FACE VIEW - SITE E

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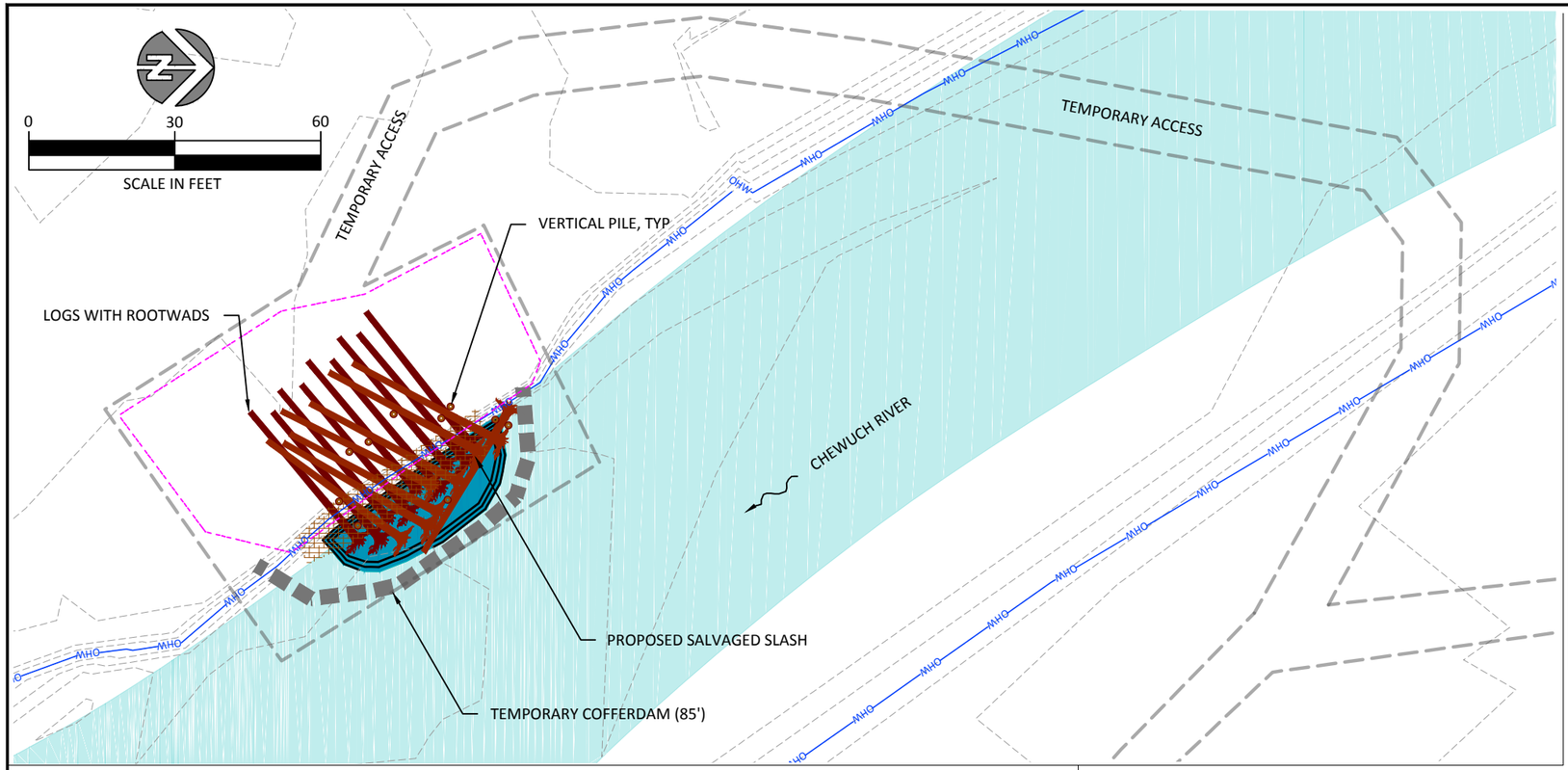
PLAN VIEW SHOWING SITE E
PROPOSED PROJECT AREA
WDFW PROPERTY

SHEET 5 OF 9



LEGEND

- EXISTING 1 FT CONTOURS
- PROPOSED 1 FT CONTOURS
- LIMITS OF DISTURBANCE
- CLEARING LIMITS
- EXISTING ORDINARY HIGH WATER (OHW)
- EXISTING LOW WATER APPROX.
- PROPOSED SALVAGED SLASH

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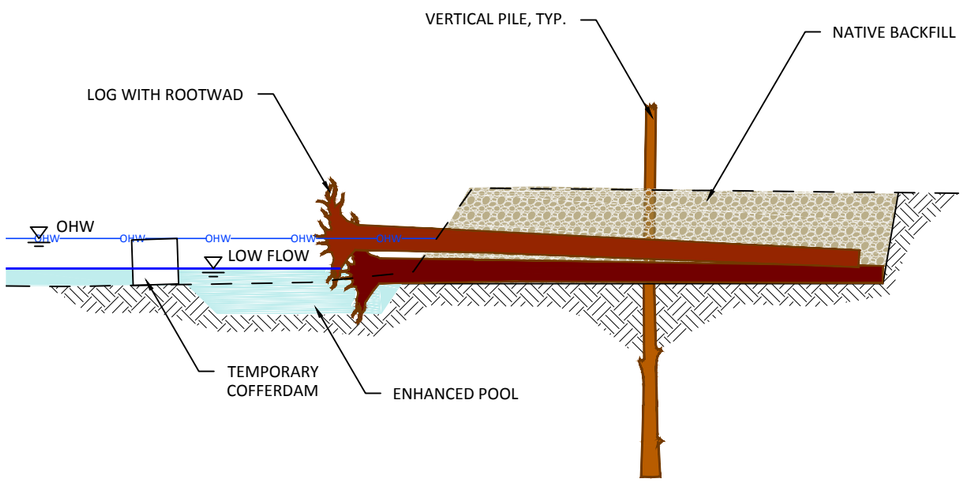
3. MEASUREMENTS BY WEIGHT OR TRUCK MEASUREMENT SHALL NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL.

WATERBODY IMPACTS (WITHIN OHW)

ACTIVITY	WATERBODY NAME	IMPACT LOCATION	DURATION OF IMPACT	VOLUME OF MATERIAL PLACED OR REMOVED	AREA (SF) OR LENGTH (LF) OF IMPACT
COFFERDAM IMPOUNDMENT	CHEWUCH RIVER	RIVER	3 DAYS	N/A	970 SF
EXCAVATION	CHEWUCH RIVER	RIVER	PERMANENT	46 CY	640 SF
WOOD (FILL)	CHEWUCH RIVER	RIVER	PERMANENT	13 CY	450 SF
BACKFILL	CHEWUCH RIVER	RIVER	PERMANENT	6 CY	90 SF

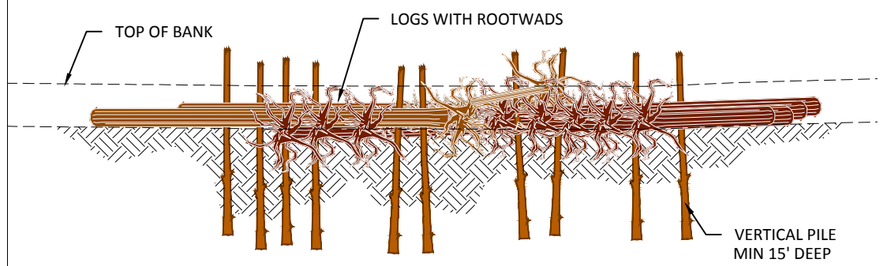
CONSTRUCTION QUANTITIES

ITEM	QUANTITY
EXCAVATION	440CY
BACKFILL	400 CY
SOIL DISPLACED BY LWD	40 CY
18" DBH x 40' LONG LOG WITH ROOTWAD	17 EA
18" DBH x 40' LONG LOG	10 EA



1/6 SIDE VIEW - SITE F

0 10 20
SCALE IN FEET



2/6 FACE VIEW - SITE F
NOT TO SCALE

0 20 40
SCALE IN FEET

NO.	BY	DATE	REVISION DESCRIPTION

RP,DF,CP	MB,MM	MB,MM
DRAWN	DESIGNED	CHECKED
MM	1/30/15	
APPROVED	DATE	PROJECT

CONFEDERATED TRIBES AND BANDS OF THE YAKAMA NATION
CHEWUCH CAMPGROUND
60% DESIGN

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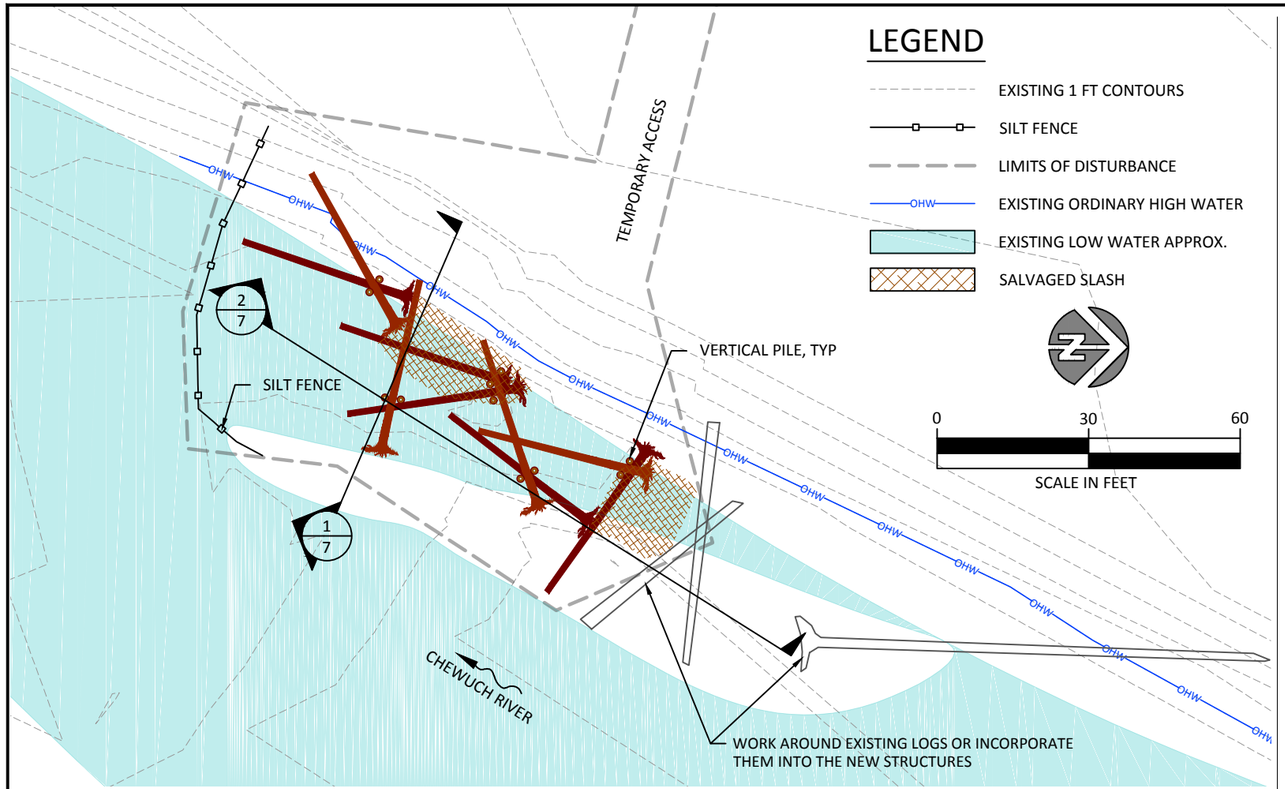
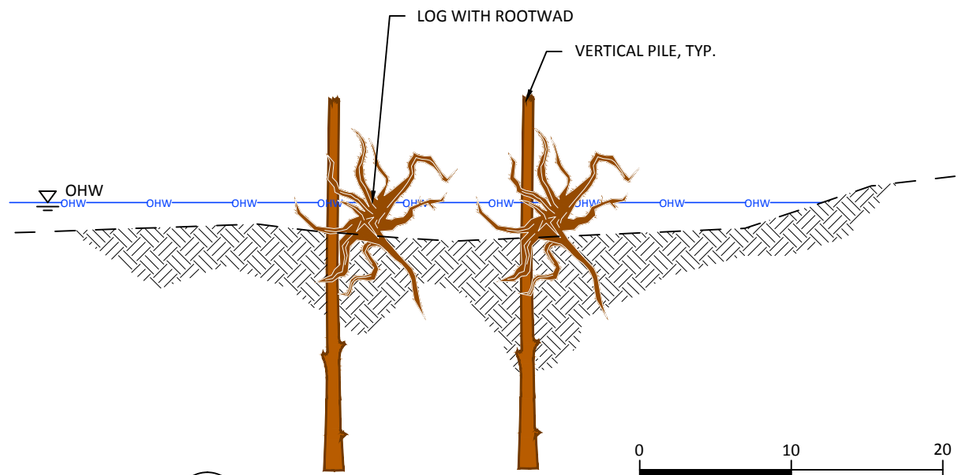
Hood River, OR 97031
541.386.9003
www.interfluve.com

PLAN VIEW SHOWING SITE F
PROPOSED PROJECT AREA
WDFW PROPERTY

SHEET 6 OF 9





1/7 SIDE VIEW - SITE K

SCALE: 1" = 10'

CONSTRUCTION QUANTITIES

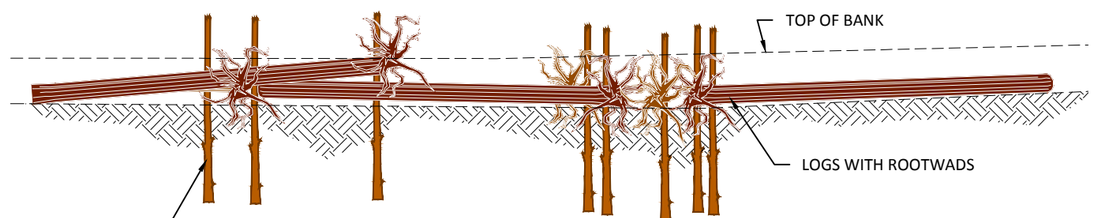
ITEM	QUANTITY
EXCAVATION	N/A
BACKFILL	N/A
SOIL DISPLACED BY LWD	N/A
18" DBH x 40' LONG LOG WITH ROOTWAD	9 EA
18" DBH x 40' LONG LOG	11 EA

QUANTITIES NOTES:

1. ALL MATERIALS QUANTITIES ARE BASED ON IN-PLACE CONDITION DETERMINED BY THE PRE-PROJECT CONDITION COMPARED AGAINST THE PROJECT FINAL CONDITION.
2. CONTRACTOR SHALL ALLOW FOR EXPANSION OF EXCAVATED MATERIAL AND COMPACTION OF PLACED MATERIAL AT NO ADDITIONAL MEASURE OR COST TO THE OWNER.
3. MEASUREMENTS BY WEIGHT OR TRUCK MEASUREMENT SHALL NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL.

WATERBODY IMPACTS (WITHIN OHW)

ACTIVITY	WATERBODY NAME	IMPACT LOCATION	DURATION OF IMPACT	VOLUME OF MATERIAL PLACED OR REMOVED	AREA (SF) OR LENGTH (LF) OF IMPACT
WOOD PLACEMENT	CHEWUCH RIVER	RIVER	PERMANENT	38 CY	1,600 SF



2/7 FACE VIEW - SITE K

NOT TO SCALE

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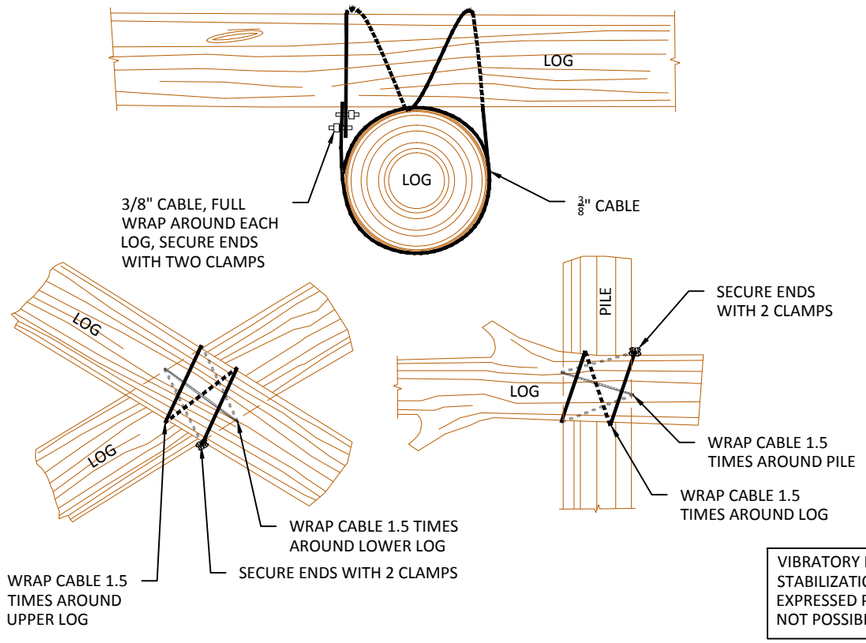
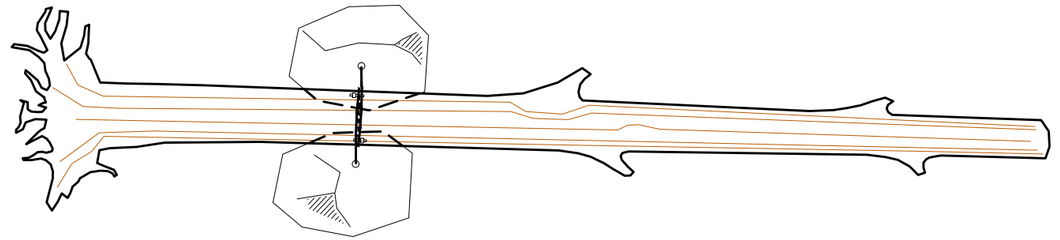
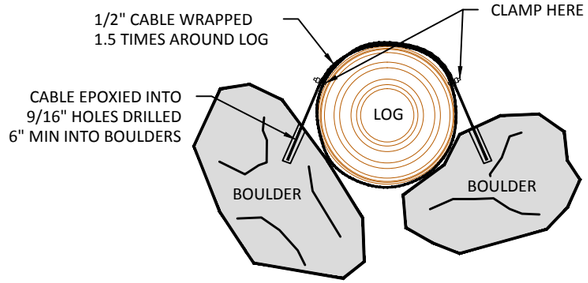
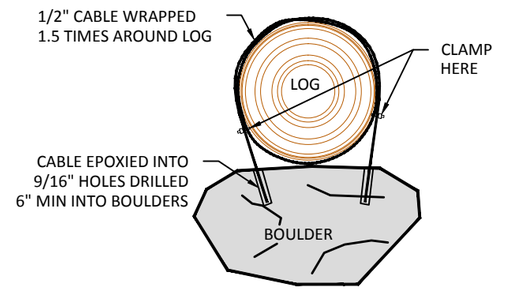
PLAN VIEW SHOWING SITE K
PROPOSED PROJECT AREA
WDFW PROPERTY

SHEET 7 OF 9









VIBRATORY PILE DRIVING SHALL BE THE PRIMARY METHOD OF STABILIZATION. BOULDER BALLAST SHALL ONLY BE USED AFTER EXPRESSED PERMISSION FROM THE OWNER IF PILE DRIVING IS NOT POSSIBLE.

LOG CABLING

DESCRIPTION

THIS WORK CONSISTS OF ANCHORING LARGE WOOD WITH CABLE AND PILES AS REQUIRED TO PROVIDE ADEQUATE BALLAST FOR STRUCTURAL STABILITY.

MATERIALS

CABLE SHALL BE 3/8 INCH GALVANIZED, STEEL CORE WIRE ROPE.

CLAMPS SHALL BE CROSBY CLIPS, G-450, OR APPROVED EQUAL. MINIMUM OF 2 CLAMPS PER CONNECTION.

CONSTRUCTION

FINAL POSITIONING OF THE ANCHORED STRUCTURES SHALL BE IN THE APPROXIMATE LOCATION AS SHOWN ON THE PLANS.

LOGS SHALL BE TOUCHING. CABLE SHALL BE WRAPPED ONE FULL WRAP AROUND EACH LOG. PULL TIGHT AND INSTALL CLAMPS. CLAMPS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED CLAMP SIZE AND SPACING FOR THE SIZE AND LOAD RATING OF THE CABLE BEING USED.

VIBRATORY PILE DRIVING

DESCRIPTION

THIS WORK CONSISTS OF INSTALLING LOGS VERTICALLY AS WOODEN PILES WHERE SHOWN ON THE PLANS. INSTALLATION SHALL BE WITH VIBRATORY PILE DRIVER.

MATERIALS

LOG PILES SHALL BE 12-18" DIAMETER AT BUTT END AND MINIMUM 10" DIAMETER AT SCALED END. EACH LOG PILE SHALL BE MINIMUM 30' LONG.

CONSTRUCTION

FINAL POSITIONING OF LOG PILES SHALL BE IN THE APPROXIMATE LOCATIONS SHOWN ON THE PLANS.

EACH PILE SHALL BE INSTALLED BY VINRATORY PILE DRIVER TO A DEPTH EXCEEDING 15' BELOW GROUND SURFACE. IF PILES CANNOT MEET THE DEPTH REQUIREMENT, BOULDERS SHALL BE USED IN LIEU OF PILES.

BOULDER BALLAST

DESCRIPTION

THIS WORK CONSISTS OF ANCHORING LARGE WOOD WITH CABLE AND BOULDERS AS REQUIRED TO PROVIDE ADEQUATE BALLAST FOR STRUCTURAL STABILITY.

MATERIALS

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

CABLE SHALL BE 1/2 INCH GALVANIZED, STEEL CORE,WIRE ROPE.

CLAMPS SHALL BE CROSBY CLIPS, G-450, OR APPROVED EQUAL. MINIMUM OF 2 CLAMPS PER CONNECTION.

EPOXY FOR ANCHORING SHALL BE HILTI HIT RE 500 ADHESIVE OR APPROVED EQUAL IF SUBMERGED DURING INSTALLATION, OR HILTI HIT-HY150 OR APPROVED EQUAL IF DRY INSTALLATION.

CONSTRUCTION

DRILL HOLES IN SOLID ROCK AND AVOID ANY CRACKS OR FRACTURES. HOLES SHALL BE 9/16 INCH IN DIAMETER. HOLES SHALL BE DRILLED 6 INCHES, MINIMUM, INTO ROCK.

HOLES SHALL BE CLEANED OF LOOSE ROCK FRAGMENTS AND DUST WITH A BRUSH AND AIR BLASTS. INSTALL EPOXY PER MANUFACTURER'S RECOMMENDATIONS.

CABLE SHALL BE WRAPPED ONE FULL WRAP AROUND LOG BEFORE ENDS ARE INSERTED INTO THE DRILLED HOLES FILLED WITH EPOXY. DIP CABLE INTO ACETONE AND WIPE CABLE WITH CLEAN RAG TO REMOVE OIL AND RESIDUE. ALLOW ACETONE TO AIR-DRY PRIOR TO INSERTION INTO EPOXY FILLED HOLE. FILL HOLES WITH ENOUGH EPOXY TO ENSURE COMPLETE COVERAGE WITH EPOXY. INSERT CABLE INTO HOLE SO THAT END OF CABLE HITS THE BOTTOM OF THE HOLE. AS AN INDICATOR THAT ENBOUGH EPOXY WAS INJECTED, A SMALL AMOUNT OF EXCESS EPOXY SHALL BE PUSHED OUT OF THE TOP OF THE HOLE AS CABLE IS SEATED IN HOLE.

LOGS AND BOULDERS SHALL BE TOUCHING. PULL CABLE TIGHT AND INSTALL CLAMPS. CLAMPS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED CLAMP SIZE AND SPACING FOR THE SIZE AND LOAD RATING OF THE CABLE BEING USED.

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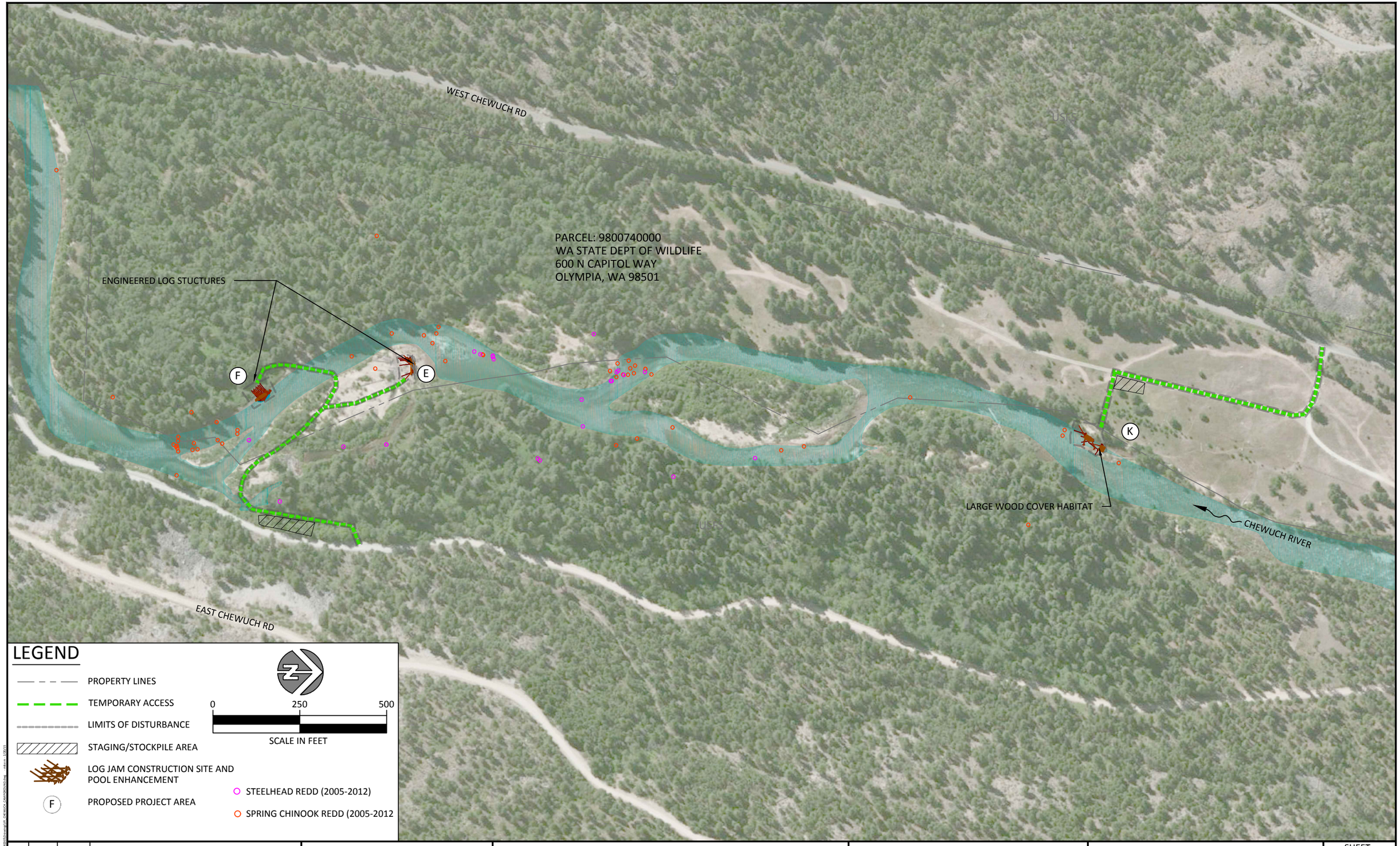
TYPICAL LOG & BOULDER CABLING DETAILS

SHEET 8 OF 9



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PROPOSED PROJECT AREAS IN RELATION TO SPAWNING SURVEY

SHEET 9 OF 9