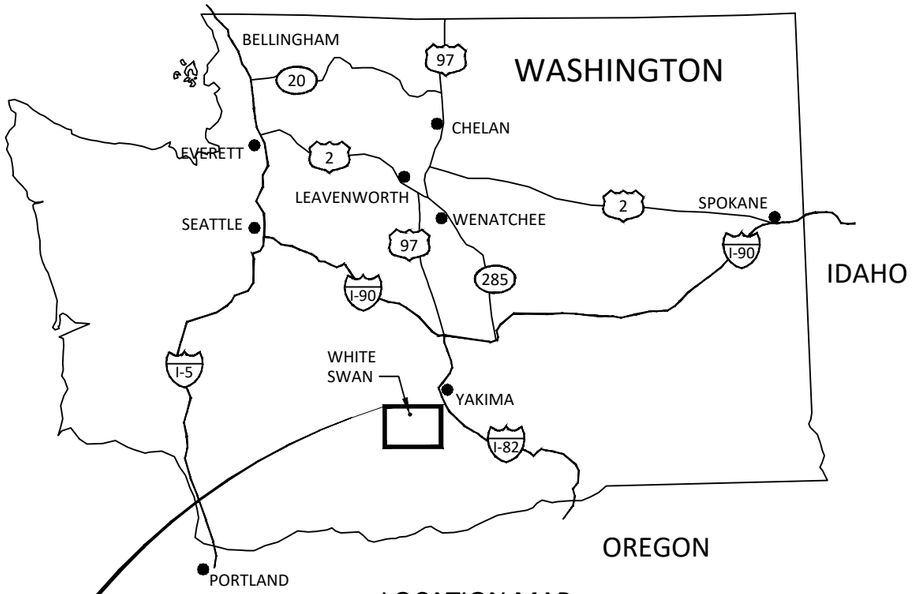
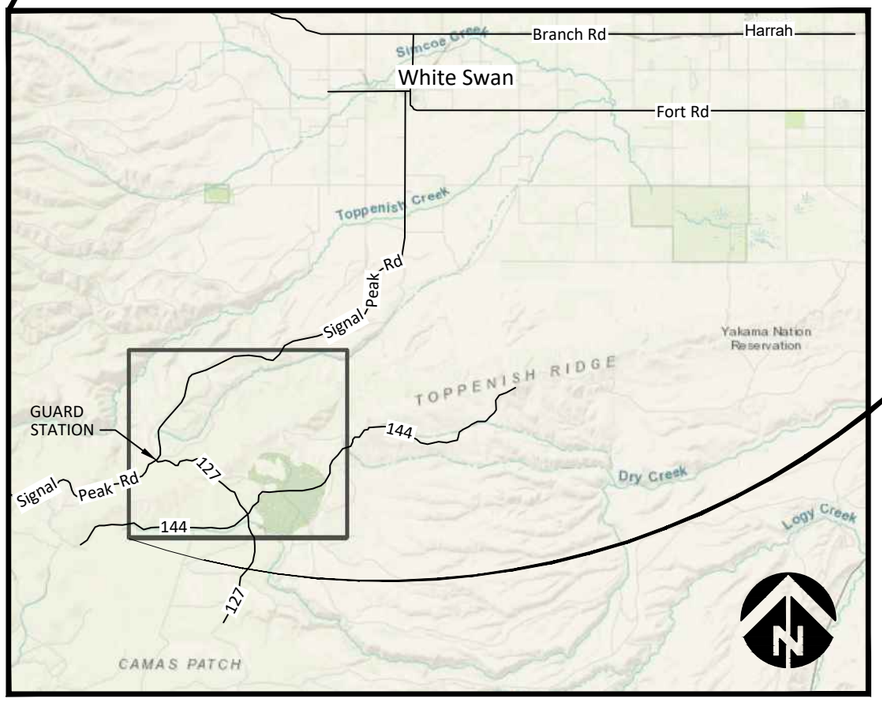
STARVATION FLATS UPPER NW MEADOW FINAL DESIGN

YAKAMA NATION FISHERIES PROGRAM

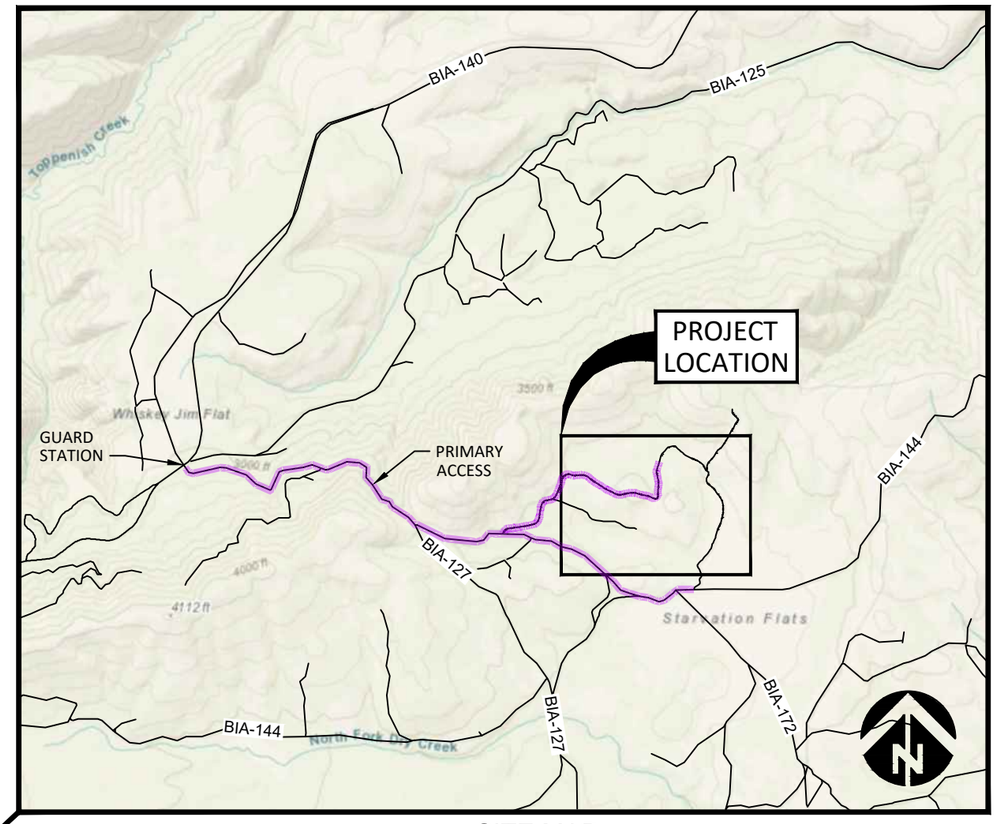
Design sheets for work completed in previous phases have been edited out. JUNE 28, 2021



LOCATION MAP
STATE OF WASHINGTON
NOT TO SCALE



VICINITY MAP
SCALE: 1/4" = 1 mi.



SITE MAP
SCALE: 1" = 1 mi.

UPSTREAM COORDINATES:
LATITUDE 46° 14' 33.25" N
LONGITUDE 120° 48' 41.78" W

DOWNSTREAM COORDINATES:
LATITUDE 46° 13' 51.82" N
LONGITUDE 120° 48' 09.66" W

SECTION 33, TOWNSHIP 9N, RANGE 16E

WATERBODY: DRY CREEK
TRIBUTARY OF: YAKIMA RIVER

SHEET LIST

1 COVER SHEET, LOCATION, AND SHEET LIST
2 GENERAL NOTES, LEGEND, AND ESTIMATED QUANTITIES
3 GENERAL NOTES
4 EXISTING CONDITIONS, SITE ACCESS, AND STAGING
5 CONSERVATION BMPS AND TESC MEASURES (1 OF 2)
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~~8 PROPOSED CONDITIONS PLAN (1 OF 6)~~
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~~10 PROPOSED CONDITIONS PLAN (3 OF 6)~~
~~11 PROPOSED CONDITIONS PLAN (4 OF 6)~~
12 PROPOSED CONDITIONS PLAN (5 OF 6)
13 PROPOSED CONDITIONS PLAN (6 OF 6)
~~14 BANK LAYBACK TYPICAL DETAILS~~
~~15 VALLEY GRADE CONTROL STA 12+00 PLAN AND DETAILS~~
16 VALLEY GRADE CONTROL STA 70+00 PLAN AND DETAILS
17 VALLEY GRADE CONTROL TYPICAL DETAILS
~~18 PLUG AND POND TYPICAL DETAILS~~
~~19 HEADCUT REVETMENT TYPICAL DETAILS~~
20 DITCH FILL AND MEADOW ROUGHNESS TYPICAL DETAILS
21 DITCH PLUG AND RELIEF TYPICAL DETAILS
22 SURFACE FABRIC TREATMENT TYPICAL DETAILS
23 ROAD IMPROVEMENTS AND DECOMMISSIONING
~~24 REVEGETATION PLAN (1 OF 2)~~
25 REVEGETATION PLAN (2 OF 2)
26 REVEGETATION TYPICAL DETAILS
27 SPECIFICATIONS (1 of 6)
28 SPECIFICATIONS (2 of 6)
29 SPECIFICATIONS (3 of 6)
30 SPECIFICATIONS (4 of 6)
31 SPECIFICATIONS (5 of 6)
32 SPECIFICATIONS (6 of 6)

Sheets not in Phase 3.

JOHN R. GAFFNEY
STATE OF WASHINGTON
51075
REGISTERED
PROFESSIONAL ENGINEER
4-20-21

NO.	BY	DATE	REVISION DESCRIPTION

DF	PL,JG	GJ
DRAWN	DESIGNED	CHECKED
JG	6/28/2021	
APPROVED	DATE	PROJECT

YAKAMA NATION FISHERIES PROGRAM
YAKAMA RESERVATION
STARVATION FLATS UPPER NW MEADOW FINAL DESIGN

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

COVER SHEET, LOCATION, AND SHEET LIST

SHEET
1 OF 32

1. SAFETY

1.1. CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR JOB SITE SAFETY DURING CONSTRUCTION. CONSTRUCTION MEANS AND METHODS SHALL BE IN CONFORMANCE WITH THE WASHINGTON STATE SAFETY STANDARDS FOR CONSTRUCTION WORK PER CHAPTER 296-155 OF THE WASHINGTON ADMINISTRATIVE CODE (WAC) AND APPLICABLE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS. CONTRACTOR SHALL PROVIDE APPROPRIATE SAFETY ORIENTATIONS FOR PERSONS ON-SITE AND HOLD REGULAR ON-SITE SAFETY MEETINGS.

2. MEETINGS

2.1. THE CONTRACTOR SHALL ATTEND A MANDATORY PRE-BID SITE MEETING. THE PRE-BID MEETING DATE SHALL BE AS DETERMINED BY THE OWNER.

2.2. THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING WITH OWNER AND ENGINEER PRIOR TO BEGINNING CONSTRUCTION. THE PRE-CONSTRUCTION MEETING DATE SHALL BE AS DETERMINED BY THE OWNER.

2.3. CONTRACTOR'S PROJECT MANAGER SHALL ATTEND REGULARLY SCHEDULED ON-SITE MEETINGS WITH THE OWNERS REPRESENTATIVE DURING CONSTRUCTION. THESE MEETINGS SHALL BE NO LONGER THAN 2 HOURS EACH AND NO MORE FREQUENT THAN ONCE PER WEEK.

3. PLANS AND SPECIFICATIONS

3.1. CONTRACT DOCUMENTS INCLUDE THESE PROJECT PLANS AND THE PROJECT'S AMENDMENTS AND SPECIAL PROVISIONS TO THE WSDOT STANDARD SPECIFICATIONS.

3.2. UNLESS INDICATED OTHERWISE BY THE PROJECT PLANS AND SPECIFICATIONS, ALL WORK SHALL CONFORM TO THE LATEST EDITIONS OF STANDARD PLANS AND SPECIFICATIONS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT), AND APPLICABLE LOCAL STANDARDS AS DETERMINED BY THE OWNER.

3.3. IN CASE OF A CONFLICT BETWEEN THE PLANS, SPECIFICATIONS, OTHER CONTRACT DOCUMENT, REGULATORY STANDARDS, OR LOCAL REGULATIONS; THE MORE STRINGENT, AS DETERMINED BY THE OWNER, SHALL TAKE PRECEDENCE. PRIOR TO PROCEEDING WITH THE WORK IN QUESTION THE CONTRACTOR SHALL OBTAIN CLARIFICATION/DIRECTION FROM THE OWNER.

3.4. QUANTITIES SHOWN ON THE PLANS ARE ESTIMATES, CONTRACTOR IS RESPONSIBLE FOR VERIFYING ITEMS AND QUANTITIES REQUIRED TO COMPLETE THE WORK AS SHOWN ON THE PLANS AND REQUIRED IN THE SPECIFICATIONS.

3.5. PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED OR IDENTIFIED ON THE PROJECT PLANS OR IN THE SPECIFICATIONS THE CONTRACTOR SHALL RECEIVE IN WRITING AUTHORIZATION FROM THE OWNER.

3.6. PROJECT PLANS USED FOR CONSTRUCTION SHALL BE PRINTED IN FULL COLOR AND TO SCALE.

4. PERMITS

4.1. THIS PROJECT IS PERMITTED BY YAKAMA NATION AND FEDERAL AGENCIES. IN CASE OF A CONFLICT BETWEEN THE PERMITS AND THE PROJECT PLANS AND SPECIFICATIONS, THE MORE STRINGENT, AS DETERMINED BY THE OWNER IN CONSULTATIONS WITH THE PERMITTING AGENCY, SHALL PREVAIL. THE CONTRACTOR WILL BE PROVIDED A HARD COPY OF THE PROJECT PERMITS BY THE OWNER. THE CONTRACTOR SHALL KEEP A HARD COPY OF THE PROJECT PERMITS AVAILABLE ON-SITE AT ALL TIMES DURING CONSTRUCTION.

5. WORK PERIODS

5.1. WORK SHALL OCCUR DURING THE PERMITTED WORK PERIOD. CHANGES TO THE WORK PERIOD SHALL BE AT THE SOLE DISCRETION OF THE OWNER. TIME IS OF THE ESSENCE FOR THE CONTRACT AND LIQUIDATED DAMAGES MAYBE SOUGHT BY THE OWNER FOR CERTAIN DELAYS IN PROJECT COMPLETION. SEE PROJECT CONTRACT AND PERMITS FOR ADDITIONAL REQUIREMENTS.

6. COORDINATE SYSTEM, DATUMS, AND UNITS

6.1. PROJECT HORIZONTAL COORDINATE SYSTEM: NORTH AMERICAN DATUM OF 1983 (NAD83) WASHINGTON STATE PLANE, SOUTH ZONE. WELL KNOWN IDENTIFICATION (WKID): 2286, AUTHORITY: EPSG.

6.2. PROJECT VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), GEOID 12B.

6.3. PROJECT LENGTH AND ELEVATION UNIT: PLANS, SECTIONS AND PROFILES - DECIMAL US SURVEY FEET. DETAILS AND TYPICALS - DECIMAL FEET OR INCHES.

7. EXISTING DATA

7.1. LIDAR DATA WAS COLLECTED ON OCTOBER 4, 2015 BY QUANTUM SPATIAL, UNDER THE OVERSIGHT AND DIRECTION OF CHRISTOPHER GLANTZ (REGISTERED WASHINGTON STATE PROFESSIONAL LAND SURVEYOR NUM. 48755). THE LIDAR DATA AS A BARE EARTH AND HIGHEST HIT DIGITAL ELEVATION MODEL (DEM) RASTER FILES (1M X 1M) WERE PROVIDED TO THE DESIGN ENGINEER BY QUANTUM SPATIAL. THE PROVIDED DEMS WERE ADAPTED FOR PROJECT USE TO PROVIDE A BASE FOR DEVELOPMENT OF THE PRE-PROJECT DIGITAL ELEVATION MODEL AND CANOPY HEIGHT ANALYSIS.

7.2. GROUND BASED TOPOGRAPHIC AND FEATURE LOCATION SURVEY DATA WAS COLLECTED IN OCTOBER OF 2020 AND MAY OF 2021 BY INTER-FLUVE STAFF, UNDER THE OVERSIGHT AND DIRECTION OF JOHN GAFFNEY (REGISTERED WASHINGTON STATE PROFESSIONAL ENGINEER NUM. 51075). THE SURVEY USED RTK GPS EQUIPMENT. POSITION AND ELEVATION DATA WAS POST PROCESSED AND CORRECTED BASED ON THE BASE LOCATION ON CONTROL POINT 200.

7.3. PRE-PROJECT SURFACE DATA (DEM, EXISTING CONTOURS, GRADES, AND LINES) SHOWN ARE DERIVED FROM THE AERIAL LIDAR. THE GROUND BASED TOPOGRAPHIC AND FEATURE LOCATION SURVEY DATA WAS USED TO VERIFY THE LIDAR AND LOCATE KEY PROJECT EXISTING AND PROPOSED FEATURES. PRE-PROJECT SITE CONDITIONS AND FEATURES SHOWN ON THE PLANS REPRESENT CONDITIONS AT THE TIME OF THE PRE-PROJECT SURVEY.

7.4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING IF PRE-PROJECT CONDITIONS SHOWN ON THE PLANS ARE SUFFICIENTLY REPRESENTATIVE OF THE CURRENT PRE-PROJECT CONDITIONS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY SUBSTANTIAL DIFFERENCES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER PRIOR TO PROCEEDING WITH THE WORK.

7.5. ROADS SHOWN ARE FOR VISUAL REFERENCE ONLY AND ARE CONSIDERED APPROXIMATE. ROAD DATA WAS PROVIDED BY YAKAMA NATION IN GIS SHAPE FILE FORMAT AND WERE ADAPTED AND REFINED FOR PROJECT USE BY INTER-FLUVE.

7.6. AERIAL PHOTO DISPLAYED: NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) IMAGERY TAKEN AUGUST 3, 2019.

8. SUBSURFACE CONDITIONS

8.1. BEDROCK: THE TOE OF A SIMCOE MOUNTAIN BASALT FLOW APRON UNDERLIES THE DOWNSTREAM PORTION OF THE PROJECT AREA AND DEFINES THE EASTERN AND SOUTHERN VALLEY EDGES. COLUMBIA RIVER BASALTS UNDERLY THE UPPER SECTION OF THE PROJECT AREA.

8.2. SOILS: THE SOIL TYPES DELINEATED BY THE BUREAU OF INDIAN AFFAIRS ARE REPORTED AS SILT-LOAM WITH VARIATIONS IN PERCENT OF CLAY, ASH, AND SAND. SOIL DEPTH TO UNDERLYING BEDROCK RANGES FROM 20 TO MORE THAN 80 INCHES.

8.3. SUBSURFACE INVESTIGATIONS: NO SUBSURFACE INVESTIGATIONS, OTHER THAN OBSERVATIONS ALONG ERODED CHANNEL BANKS, HAVE BEEN COMPLETED WITHIN THE PROJECT FOOTPRINT FOR THIS PROJECT.

9. UTILITIES

9.1. NO KNOWN UTILITIES ARE LOCATED WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR HAVING UTILITIES LOCATED PRIOR TO CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CONTACT THE UTILITY LOCATION REQUEST CENTER (ONE-CALL CENTER) AT 1-800-424-5555 FOR UTILITY LOCATE PRIOR TO GROUND DISTURBING WORK THAT MAY IMPACT EXISTING UTILITIES.

10. FENCES, GATES, AND OTHER INFRASTRUCTURE

10.1. FENCES, GATES, AND OTHER INFRASTRUCTURE IMPACTED DURING CONSTRUCTION THAT IS NOT IDENTIFIED ON THE PLANS FOR REMOVAL SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER PRIOR TO FINAL COMPLETION. FENCES, GATES, AND OTHER PRIVATE INFRASTRUCTURE IDENTIFIED FOR REMOVAL ON THE PLANS OR APPROVED FOR REMOVAL BY THE OWNER SHALL BE PROPERLY DISPOSED OF OFF-SITE.

11. CULTURAL RESOURCES

11.1. CULTURAL RESOURCE MONITORING TO BE PROVIDED BY THE OWNER DURING GROUND DISTURBING ACTIVITIES. THE CONTRACTOR SHALL ACCOMMODATE THE MONITORING PERSONNEL AND COMPLY WITH THEIR DIRECTION RELATIVE TO INTERACTIONS WITH POTENTIAL CULTURAL RESOURCES.

11.2. IF YOUR WORK BRINGS YOU INTO CONTACT WITH ANY OF THE FOLLOWING CULTURAL RESOURCES:

- NATIVE AMERICAN CULTURAL ARTIFACTS (EXAMPLE: FLAKES, ARROWHEADS, STONE TOOLS, BONE TOOLS, POTTERY, ETC)
- HISTORIC ERA ARTIFACTS (EXAMPLE: BUILDING FOUNDATIONS, HOMESTEADS, MINING CAMPS, ETC)
- HUMAN SKELETAL REMAINS AND BONE FRAGMENTS

YOU MUST IMMEDIATELY DISCONTINUE ALL GROUND-DISTURBING ACTIVITY. DO NOT TOUCH OR MOVE THE OBJECTS AND MAINTAIN THE CONFIDENTIALITY OF THE SITE. FOLLOW THE PROCEDURES LISTED IN THE TRIBES INADVERTENT DISCOVERY PROCEDURE. THEN AWAIT FURTHER DIRECTION FROM THE TRIBES CULTURAL RESOURCES STAFF.

12. WETLANDS, WATERS OF THE US, AND STATE OWNED AQUATIC LANDS

12.1. TRIBUTARIES OF STARVATION FLATS ARE INTERMITTENT WITHIN THE PROJECT AREA, TYPICALLY DRYING OUT BY LATE JULY ANNUALLY. AS SUCH THE PROJECT AREA LIES OUTSIDE THE JURISDICTIONAL BOUNDARIES OF WATERS OF THE US.

12.2. SEASONAL WETLANDS ARE PRESENT WITHIN THE PROJECT SITE. WETLAND DELINEATIONS WERE PERFORMED AT THE PROJECT SITE ON NOVEMBER 16, 2020 BY INTER-FLUVE PERSONNEL, UNDER THE OVERSIGHT AND DIRECTION OF EMILY ALCOTT (PROFESSIONAL WETLANDS SCIENTIST NUM. 2692).

Note: Summary of Quantities are not accurate for Phase 3. Please refer to Bid Sheet for estimated quantities for Phase 3 only.

SUMMARY OF QUANTITIES

Description	Quantity
CLEARING AND GRUBBING	7.2 Acres
EXCAVATION, NATIVE	3,440 CY
BACKFILL INCL. COMPACTION, NATIVE	3,440 CY
BACKFILL INCL. COMPACTION, IMPORT	1,430 CY
ROCK FOR EROSION AND SCOUR PROTECTION, IMPORT	4,350 CY
NEW ROAD GRADING	3,490 SY
TREE CUTTING	2.5 Acres
ROAD DECOMMISSIONING	1.1 Acres
EROSION CONTROL FABRIC	14,300 SY
REVEGETATION, PRAIRIE	6.2 Acres
REVEGETATION, FLOODPLAIN	4.6 Acres
REVEGETATION, POND	2.4 Acres

NOTE: QUANTITIES ARE ESTIMATES ONLY FOR EVALUATING THE SCALE OF THE WORK. QUANTITIES MAY NOT INCLUDE ALL WORK ITEMS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING QUANTITIES NEEDED TO COMPLETE THE WORK SHOWN ON THE PLANS.

ABBREVIATIONS

APPROX	APPROXIMATE
AVE	AVERAGE
CFS	CUBIC FEET PER SECOND
CMs	CONSERVATION MEASURES
CY	CUBIC YARDS
°	DEGREES
DIA	DIAMETER
EL or ELEV	ELEVATION
EXIST	EXISTING
FT or '	FEET
HWY	HIGHWAY
HORIZ	HORIZONTAL
IN or "	INCH
INV	INVERT
LN	LANE
MAX	MAXIMUM
MIN	MINIMUM
NOAA	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
OHW	ORDINARY HIGH WATER
%	PERCENT
RD	ROAD
RMx	RIVER MILE x
STA	STATION
TBD	TO BE DETERMINED
TBM	TEMPORARY BENCHMARK
TESC	TEMPORARY EROSION AND SEDIMENTATION CONTROL
TYP	TYPICAL
VERT	VERTICAL
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
WSE	WATER SURFACE ELEVATION
YR	YEAR

JOHN R. GAFFNEY STATE OF WASHINGTON 51075 REGISTERED PROFESSIONAL ENGINEER

NO.	BY	DATE	REVISION DESCRIPTION

DRAWN	DESIGNED	CHECKED
DF	PL,JG	GJ
APPROVED	DATE	PROJECT
JG	6/28/2021	

YAKAMA NATION FISHERIES PROGRAM
YAKAMA RESERVATION
STARVATION FLATS UPPER NW MEADOW FINAL DESIGN

inter·fluve
501 Portway Avenue, Suite 101
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GENERAL NOTES, LEGEND, AND ESTIMATED QUANTITIES

13. CONSTRUCTION STAKING

13.1. PRIOR TO MOBILIZATION OF HEAVY EQUIPMENT OR MATERIALS ONTO THE SITE CONTRACTOR SHALL MEET WITH THE OWNER AND ENGINEER TO REVIEW AREAS MARKED BY THE OWNER:
- 13.1.1. SENSITIVE RESOURCE AREAS TO BE AVOIDED;
- 13.1.2. LIMITS OF DISTURBANCE;
- 13.1.3. EQUIPMENT ENTRY AND EXIT POINTS;
- 13.1.4. ACCESS ROUTE ALIGNMENTS; AND
- 13.1.5. STAGING, STORAGE, AND STOCKPILE AREAS;

13.2. THE OWNER WILL PROVIDE THE CONTRACTOR WITH A 3D ENGINEERED MODEL OF THE PROJECT PLANS. THE CONTRACTOR SHALL USE THE CONTENT OF THE 3D ENGINEERED MODEL, IN CONJUNCTION WITH THE PLANS AND CONSTRUCTION SURVEY EQUIPMENT, TO STAKE OUT AND ASSIST IN COMPLETING THE WORK SHOWN ON THE PLANS. IN CASE OF A CONFLICT BETWEEN THE 3D ENGINEERED MODEL AND THE PLANS, THE PLANS SHALL TAKE PRECEDENCE OVER THE 3D ENGINEERED MODEL.

13.3. CONTRACTOR SHALL PROVIDE PROJECT SURVEY AS NECESSARY TO COMPLETE THE WORK AND PROVIDE THE OWNER A MEANS OF VISUALLY VERIFYING THAT THE WORK WAS COMPLETED PER PLAN. THIS SHALL INCLUDE ESTABLISHING INTERMEDIATE CONTROL POINTS, INSTALLING GRADE STAKES, INSTALLING LOCATION AND LOCATION OFF-SET STAKES, AND SETTING OTHER STAKES, FLAGGING, OR MARKINGS DETERMINED TO BE NECESSARY. CONTRACTOR SHALL ACCOMMODATE INQUIRIES FROM THE OWNER AND ENGINEER CONCERNING THE METHODS USED TO ESTABLISH CONSTRUCTION STAKING. THE CONTRACTOR SHALL ACCOMMODATE GRADE AND LOCATION CHECK REQUESTS MADE BY THE OWNER AND ENGINEER THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE TIME AND SAFE ACCESS FOR THE CONTRACTING OFFICER'S INDEPENDENT GRADE AND LOCATION VERIFICATION THROUGHOUT CONSTRUCTION.

13.4. FIELD ADJUSTMENTS TO THE LINES, GRADES, AND LOCATIONS OF WORK ITEMS ARE TO BE EXPECTED GIVEN THE NATURE OF THE PROJECT AND THE KNOWN POTENTIAL FOR VARIATIONS IN CONDITIONS WITHIN AND ADJACENT TO NATURALLY CHANGING SYSTEM. THE CONTRACTOR SHALL CONSULT THE OWNER AND ENGINEER PRIOR TO MAKING FIELD ADJUSTMENTS. FIELD ADJUSTMENTS SHALL BE APPROVED BY THE OWNER. THE LOCATION, ALIGNMENT, AND ELEVATION OF FEATURES ARE SUBJECT TO ADJUSTMENT BASED ON FIELD CONDITIONS AND MATERIAL SIZE DELIVERED, AS APPROVED BY THE OWNER.

13.5. A NUMBER OF PROJECT PRIMARY SURVEY CONTROL POINTS HAVE BEEN ESTABLISHED IN THE PROJECT AREA, SEE PLANS. THE CONTRACTOR SHALL REPLACE DAMAGED OR DESTROYED PRIMARY SURVEY CONTROL POINTS AT NO ADDITIONAL COST TO THE OWNER.

14. EROSION CONTROL

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

14.2. EROSION CONTROL MEASURES SHALL BE PREPARED AND CARRIED OUT, COMMENSURATE IN SCOPE WITH THE ACTION, THAT MAY INCLUDE THE FOLLOWING:
- 14.2.1. TEMPORARY EROSION CONTROLS.
  - 14.2.1.1. TEMPORARY EROSION CONTROLS SHALL BE IN PLACE BEFORE ANY SIGNIFICANT ALTERATION OF THE ACTION SITE AND APPROPRIATELY INSTALLED DOWNSLOPE OF PROJECT ACTIVITY WITHIN THE RIPARIAN BUFFER AREA UNTIL SITE REHABILITATION IS COMPLETE.
  - 14.2.1.2. IF THERE IS A POTENTIAL FOR ERODED SEDIMENT TO ENTER THE STREAM, SEDIMENT BARRIERS SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF PROJECT IMPLEMENTATION.
  - 14.2.1.3. TEMPORARY EROSION CONTROL MEASURES MAY INCLUDE FIBER WATTLES, SILT FENCES, JUTE MATTING, WOOD FIBER MULCH AND SOIL BINDER, OR GEOTEXTILES AND GEOSYNTHETIC FABRIC.
  - 14.2.1.4. SOIL STABILIZATION UTILIZING WOOD FIBER MULCH AND TACKIFIER (HYDRO-APPLIED) MAY BE USED TO REDUCE EROSION OF BARE SOIL IF THE MATERIALS ARE NOXIOUS WEED FREE AND NONTOXIC TO AQUATIC AND TERRESTRIAL ANIMALS, SOIL MICROORGANISMS, AND VEGETATION.
  - 14.2.1.5. SEDIMENT SHALL BE REMOVED FROM EROSION CONTROLS ONCE IT HAS REACHED 1/3 OF THE EXPOSED HEIGHT OF THE CONTROL.
  - 14.2.1.6. ONCE THE SITE IS STABILIZED AFTER CONSTRUCTION, TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED.
- 14.2.2. EMERGENCY EROSION CONTROLS. THE FOLLOWING MATERIALS FOR EMERGENCY EROSION CONTROL SHALL BE AVAILABLE AT THE WORK SITE:
  - 14.2.2.1. A SUPPLY OF SEDIMENT CONTROL MATERIALS; AND
  - 14.2.2.2. AN OIL-ABSORBING FLOATING BOOM WHENEVER SURFACE WATER IS PRESENT.

14.3. SEE PROJECT PERMITS FOR ADDITIONAL REQUIREMENTS.

15. STAGING, STORAGE, AND STOCKPILE AREAS.

15.1. 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, OR ON AN ADJACENT, ESTABLISHED ROAD AREA IN A LOCATION AND MANNER THAT WILL PRECLUDE EROSION INTO OR CONTAMINATION OF THE WATERBODY OR WETLAND.

15.2. NATURAL MATERIALS USED FOR IMPLEMENTATION OF RESTORATION, SUCH AS LARGE WOOD, GRAVEL, AND BOULDERS, MAY BE STAGED OUTSIDE THE DESIGNATED STAGING AREAS WITHIN THE LIMITS OF DISTURBANCE AS APPROVED BY THE OWNER.

15.3. ANY LARGE WOOD, TOPSOIL, AND NATIVE CHANNEL MATERIAL DISPLACED BY CONSTRUCTION SHALL BE STOCKPILED FOR USE DURING SITE RESTORATION AT A SPECIFICALLY IDENTIFIED AND FLAGGED AREA.

15.4. ANY MATERIAL NOT USED IN RESTORATION, AND NOT NATIVE TO THE PROJECT SITE SHALL BE REMOVED TO AN OFF-SITE LOCATION FOR DISPOSAL.

16. EQUIPMENT

16.1. MECHANIZED EQUIPMENT AND VEHICLES SHALL BE SELECTED, OPERATED, AND MAINTAINED IN A MANNER THAT MINIMIZES ADVERSE EFFECTS ON THE ENVIRONMENT (E.G., MINIMALLY-SIZED, LOW PRESSURE TIRES; MINIMAL HARD-TURN PATHS FOR TRACKED VEHICLES; TEMPORARY MATS OR PLATES WITHIN WET AREAS OR ON SENSITIVE SOILS). ALL VEHICLES AND OTHER MECHANIZED EQUIPMENT SHALL BE:
- STORED, FUELED, AND MAINTAINED IN A VEHICLE STAGING AREA PLACED 150 FEET OR MORE FROM ANY NATURAL WATER BODY OR WETLAND OR ON AN ADJACENT, ESTABLISHED ROAD AREA;
- REFUELED IN A VEHICLE STAGING AREA PLACED 150 FEET OR MORE FROM A NATURAL WATERBODY OR WETLAND, OR IN AN ISOLATED HARD ZONE, SUCH AS A PAVED PARKING LOT OR ADJACENT, ESTABLISHED ROAD (THIS MEASURE APPLIES ONLY TO GAS-POWERED EQUIPMENT WITH TANKS LARGER THAN 5 GALLONS);
- BIODEGRADABLE LUBRICANTS AND FLUIDS SHALL BE USED ON EQUIPMENT OPERATING IN AND ADJACENT TO MEADOW, OTHER THAN ALONG EXISTING DESIGNATED ROADS.
- INSPECTED DAILY FOR FLUID LEAKS BEFORE LEAVING THE VEHICLE STAGING AREA FOR OPERATION WITHIN 150 FEET OF ANY NATURAL WATER BODY OR WETLAND; AND
- THOROUGHLY CLEANED BEFORE OPERATION AND AS OFTEN AS NECESSARY DURING OPERATION, TO REMAIN GREASE FREE.
- ALL EQUIPMENT USED FOR SITE WORK SHALL BE CLEANED OF DIRT, PLANT MATERIAL (TO PREVENT THE SPREAD OF NOXIOUS WEEDS), PRIOR TO ENTERING THE PROJECT AREA.

17. DUST ABATEMENT

17.1. THE OWNER WILL DETERMINE THE APPROPRIATE DUST CONTROL MEASURES BY CONSIDERING SOIL TYPE, EQUIPMENT USAGE, PREVAILING WIND DIRECTION, AND THE EFFECTS CAUSED BY OTHER EROSION AND SEDIMENT CONTROL MEASURES. IN ADDITION, THE FOLLOWING CRITERIA SHALL BE FOLLOWED:
- WORK SHALL BE SEQUENCED AND SCHEDULED TO REDUCE EXPOSED BARE SOIL SUBJECT TO WIND EROSION.
- DUST-ABATEMENT ADDITIVES AND STABILIZATION CHEMICALS SHALL NOT BE USED.
- PETROLEUM-BASED PRODUCTS SHALL NOT BE USED FOR DUST ABATEMENT.

18. SPILL PREVENTION, CONTROL, AND COUNTER MEASURES

18.1. THE CONTRACTOR SHALL ADHERE TO THE FOLLOWING MEASURES:
- A DESCRIPTION OF HAZARDOUS MATERIALS THAT WILL BE USED, INCLUDING INVENTORY, STORAGE, AND HANDLING PROCEDURES SHALL BE AVAILABLE ON-SITE.
- WRITTEN PROCEDURES FOR NOTIFYING ENVIRONMENTAL RESPONSE AGENCIES SHALL BE POSTED AT THE WORK SITE.
- SPILL CONTAINMENT KITS (INCLUDING INSTRUCTIONS FOR CLEANUP AND DISPOSAL) ADEQUATE FOR THE TYPES AND QUANTITY OF HAZARDOUS MATERIALS USED AT THE SITE SHALL BE AVAILABLE AT THE WORK SITE.
- WORKERS SHALL BE TRAINED IN SPILL CONTAINMENT PROCEDURES AND BE INFORMED OF THE LOCATION OF SPILL CONTAINMENT KITS.
- ANY WASTE LIQUIDS GENERATED AT THE STAGING AREAS SHALL BE TEMPORARILY STORED UNDER AN IMPERVIOUS COVER, SUCH AS A TARPAULIN, UNTIL THEY CAN BE PROPERLY TRANSPORTED TO AND DISPOSED OF AT A FACILITY THAT IS APPROVED FOR RECEIPT OF HAZARDOUS MATERIALS.

19. CONSTRUCTION ACCESS AND SEQUENCING

19.1. THE PROJECT IS ENTIRELY WITHIN THE YAKAMA RESERVATION. ACCESS TO THE SITE REQUIRES PRIOR AUTHORIZATION FROM THE YAKAMA NATION. THE CONTRACTOR SHALL OBTAIN ANY REQUIRED ACCESS AUTHORIZATIONS FOR ALL VEHICLES AND PERSONNEL FROM THE OWNER PRIOR TO ENTRY.

19.2. CONTRACTOR SHALL SUBMIT AN ACCESS, STAGING, AND SEQUENCING PLAN TO THE OWNER FOR APPROVAL PRIOR TO MOBILIZATION. THE PLAN SHALL INCLUDE ANY ANTICIPATED CHANGES TO THE ACCESS ROUTES AND STAGING AREAS SHOWN ON THE PLANS. CHANGES TO THE ACCESS ROUTES AND STAGING AREAS ARE SUBJECT TO REVIEW AND APPROVAL BY THE OWNERS CULTURAL RESOURCES STAFF IN CONSULTATION WITH STATE, FEDERAL, AND TRIBAL AGENCIES.

19.3. ALL EQUIPMENT, MATERIALS AND PERSONNEL SHALL REMAIN WITHIN THE LIMITS OF DISTURBANCE SHOWN ON THE PLANS OR MARKED IN THE FIELD BY THE OWNER. THE CONTRACTOR SHALL KEEP THE WORK AREAS IN A NEAT AND CLEAN CONDITION FREE OF DEBRIS AND LITTER FOR THE DURATION OF THE PROJECT. AREAS DISTURBED OUTSIDE THE LIMITS OF DISTURBANCE, EITHER INADVERTENTLY OR INTENTIONALLY BY THE CONTRACTOR, SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER AT NO ADDITIONAL COST TO THE OWNER.

19.4. EXISTING ACCESS ROADS AND PATHS SHALL BE PREFERENTIALLY USED WHENEVER REASONABLE, AND THE NUMBER AND LENGTH OF TEMPORARY ACCESS ROUTES AND PATHS THROUGH MEADOW AREAS SHALL BE MINIMIZED TO LESSEN SOIL DISTURBANCE AND COMPACTION, AND IMPACTS TO VEGETATION. ACCESS ROUTES OTHER THAN THE ONES SHOWN SHALL BE ONLY AS APPROVED BY THE OWNER.

19.5. THE REMOVAL OF RIPARIAN VEGETATION DURING CONSTRUCTION OF TEMPORARY ACCESS ROUTES SHALL BE MINIMIZED. WHEN TEMPORARY VEGETATION REMOVAL IS REQUIRED, VEGETATION SHALL BE CUT AT GROUND LEVEL (NOT GRUBBED).

19.6. MINIMIZE THE NUMBER OF TEMPORARY ACCESS ROUTES TO LESSEN SOIL DISTURBANCE AND COMPACTION AND IMPACTS TO VEGETATION. TEMPORARY ACCESS ROUTES SHALL NOT BE LOCATED ON SLOPES WHERE GRADE, SOIL, OR OTHER FEATURES SUGGEST A LIKELIHOOD OF EXCESSIVE EROSION OR FAILURE. ALL TEMPORARY ACCESS ROUTES SHALL BE DECOMMISSIONED.

19.7. THE CONTRACTOR SHALL IMPROVE CONDITIONS ON THE ACCESS ROADS AND ROUTES AS NECESSARY TO FACILITATE EQUIPMENT MOVEMENT AND MATERIAL HAULING. IMPROVEMENTS TO ESTABLISHED ACCESS ROUTES (E.G. ROADS AND TWO-TRACKS) SHALL REMAIN IN PLACE FOLLOWING CONSTRUCTION, UNLESS OTHERWISE REQUIRED BY THE OWNER. TEMPORARY ACCESS ROUTE IMPROVEMENTS SHALL BE DECOMMISSIONED BY; RETURNING THE ROUTE TO PRE-PROJECT GRADES. SLASH SHALL BE DISTRIBUTED OVER AND WORKED INTO THE NATIVE MATERIAL ALONG TEMPORARY ACCESS ROUTES AS APPROVED BY THE OWNER. SEE PLANTING PLAN AND SPECIFICATIONS FOR ADDITIONAL TEMPORARY ACCESS ROUTE AND STAGING AREA DECOMMISSIONING REQUIREMENTS.

19.8. FOR THE DURATION OF PROJECT, CONTRACTOR SHALL KEEP ALL PRIVATE AND PUBLIC ROADS USED FOR ACCESS FREE OF DEBRIS AND MUD ORIGINATING FROM PROJECT CONSTRUCTION ACTIVITIES. IN THE EVENT MATERIALS ARE INADVERTENTLY DEPOSITED ON ROADWAYS THE MATERIAL SHALL BE PROMPTLY REMOVED. MATERIALS ARE TO BE SWEPT AND REMOVED PRIOR TO ANY ROAD FLUSHING.

19.9. UNLESS OTHERWISE APPROVED BY THE CONTRACTING AGENCY, THE CONTRACTOR SHALL BE REQUIRED TO INSTALL AND MAINTAIN STABILIZED CONSTRUCTION ENTRANCES CONFORMING TO WSDOT STD. PLANS AND SPECIFICATIONS AT LOCATIONS WHERE ACCESS ROUTES JOIN ESTABLISHED ROADS. STABILIZED CONSTRUCTION ENTRANCES SHALL BE REMOVED FOLLOWING CONSTRUCTION UNLESS OTHERWISE REQUESTED BY THE OWNER.

20. CONSTRUCTION MEANS & METHODS

20.1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTION OF THE MEANS AND METHODS USED TO COMPLETE THE WORK. THE MEANS AND METHODS SELECTED SHALL PROVIDE FOR CONFORMANCE WITH THE PROJECT PLANS, SPECIFICATIONS, AND PERMITS WITHIN THE ALLOTTED PROJECT PERFORMANCE PERIOD. THE MEANS AND METHODS SHALL ALSO PROVIDE THE OWNER SUFFICIENT AND SAFE OPPORTUNITIES TO INSPECT THE WORK FOR CONFORMANCE WITH THE PROJECT PLANS, SPECIFICATIONS, AND PERMITS.

20.2. WORK FROM WITHIN THE INCISED CHANNELS FOR WORK WITHIN THE MEADOW - TO THE EXTENT FEASIBLE, HEAVY EQUIPMENT SHALL WORK FROM WITHIN THE EXCAVATION, UNLESS WORK FROM OUTSIDE THE EXCAVATION WOULD RESULT IN LESS DAMAGE TO THE ECOSYSTEM.

20.3. TIMELY COMPLETION - MINIMIZE TIME IN WHICH HEAVY EQUIPMENT IS IN MEADOW AREAS AND WETLANDS.

21. TREE CLEARING

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

21.2. NATIVE WOODY VEGETATION CLEARED SHALL BE INCORPORATED INTO THE PROJECT AT NO ADDITIONAL COST TO THE OWNER.

21.3. 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 TO REMAIN, UNLESS OTHERWISE APPROVED BY THE owner. WHEN VEGETATION REMOVAL IS REQUIRED OUTSIDE THE GRADING LIMITS, AND APPROVED BY THE CONTRACTING OFFICER, VEGETATION SHALL BE CUT TO GROUND LEVEL (NOT GRUBBED).

22. CONSTRUCTION MATERIALS

22.1. ESTIMATED MATERIAL VOLUMES ARE APPROXIMATE IN-PLACE QUANTITY 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 FROM THE CONTRACTING AGENCY.

22.2. MANUFACTURED PRODUCTS USED SHALL BE ALL-NEW AND UNDAMAGED. SUBMITTALS ARE REQUIRED FOR IMPORTED PRODUCTS AND MATERIALS FROM EACH SUPPLIER AND MANUFACTURE. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

22.3. ALL MATERIALS EXCAVATED WITHIN THE PROJECT AREA SHALL REMAIN WITHIN THE PROJECT SITE AS DIRECTED BY THE OWNER.

23. SITE RESTORATION

23.1. INITIATE REHABILITATION - UPON PROJECT COMPLETION, REHABILITATE ALL DISTURBED AREAS IN A MANNER THAT RESULTS IN SIMILAR OR BETTER THAN PRE-WORK CONDITIONS THROUGH REMOVAL OF PROJECT RELATED WASTE, SPREADING OF STOCKPILED MATERIALS (SOIL, LARGE WOOD, TREES, ETC.) SEEDING, OR PLANTING WITH LOCAL NATIVE SEED MIXES OR PLANTS.

23.2. SHORT-TERM STABILIZATION - MEASURES MAY INCLUDE THE USE OF NATIVE SEEDS, JUTE MATTING, AND OTHER SIMILAR TECHNIQUES. SHORT-TERM STABILIZATION MEASURES SHALL BE MAINTAINED UNTIL PERMANENT EROSION CONTROL MEASURES ARE EFFECTIVE. STABILIZATION MEASURES SHALL BE IMPLEMENTED WITHIN THREE DAYS OF CONSTRUCTION COMPLETION.

23.3. REVEGETATION - REPLANT EACH AREA REQUIRING REVEGETATION PRIOR TO OR AT THE BEGINNING OF THE FIRST GROWING SEASON FOLLOWING CONSTRUCTION.

23.4. DECOMPACT SOILS - DECOMPACT SOIL BY SCARIFYING THE SOIL SURFACE OF ACCESS ROUTES, UPLAND AREAS, AND OTHER DISTURBED AREAS INCLUDING; STAGING, AND STOCKPILE AREAS TO A MINIMUM DEPTH OF 6 INCHES SO THAT SEEDS AND PLANTINGS CAN ROOT.

JOHN R. GAFFNEY — STATE OF WASHINGTON — 51075 — REGISTERED PROFESSIONAL ENGINEER — 6-28-21

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JG	6/28/2021	
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YAKAMA NATION FISHERIES PROGRAM
YAKAMA RESERVATION
STARVATION FLATS UPPER NW MEADOW FINAL DESIGN

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GENERAL NOTES

SHEET
3 OF 32

0 600 1200

SCALE IN FEET

LEGEND

- NN — SURVEY CONTROL POINT
- EXISTING 10-FT CONTOURS
- SUB-BASIN BOUNDARY
- EXISTING PRIMARY FLOW PATH
- N+00 — EXISTING CHANNEL STATIONS (500-FT)
- EXISTING GRAVEL OR TWO TRACK ROAD
- PRIMARY SITE ACCESS ROUTE
- DELINEATED WETLAND (2020)
- LIMIT OF DISTURBANCE

NOTES:

1. EXISTING ROADS SHALL BE IMPROVED AS NEEDED FOR CONSTRUCTION ACCESS. IMPROVEMENTS SHALL BE APPROVED BY THE OWNER. ROAD CONDITION FOLLOWING CONSTRUCTION SHALL BE AS APPROVED BY THE OWNER. SEE SHEETS 2 AND 3 FOR ADDITIONAL REQUIREMENTS
2. LIMITS OF DISTURBANCE, SITE ACCESS ROUTES, AND STAGING AREAS SHALL CONFORM TO THE PLANS OR AS OTHERWISE APPROVED BY THE OWNER.

PRIMARY ACCESS ROUTE

Phase 3 Access Route

PRIMARY ACCESS ROUTE

EXISTING BACKWATER EXTENT

LOWER MEADOW RESTORATION (2018)

EXISTING GRADE CONTROL

BIA-144

BIA-172

BIA-144

SURVEY CONTROL POINTS

POINT	EASTING	NORTHING	ELEVATION	DESCRIPTION
101	1563594.50'	331466.77'	3436.87'	PK Nail
200	1565709.22'	329960.36'	3386.88'	Rebar w/ plastic cap
201	1565402.08'	330278.96'	3388.36'	Rebar w/ plastic cap
202	1563883.43'	328180.02'	3372.97'	Rebar w/ plastic cap
300	1565211.78'	330652.61'	3395.03'	Well top
302	1564696.06'	331549.05'	3420.79'	Rebar w/ plastic cap
303	1563319.23'	331305.51'	3432.55'	PK Nail
304	1561360.05'	331933.35'	3471.38'	Rebar w/ plastic cap
305	1561160.95'	331885.00'	3473.34'	Rebar w/ plastic cap
306	1565896.87'	329966.25'	3389.54'	Rebar w/ plastic cap
403	1565148.51'	331244.97'	3417.07'	Rebar w/ plastic cap

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EXISTING CONDITIONS, SITE ACCESS, AND STAGING

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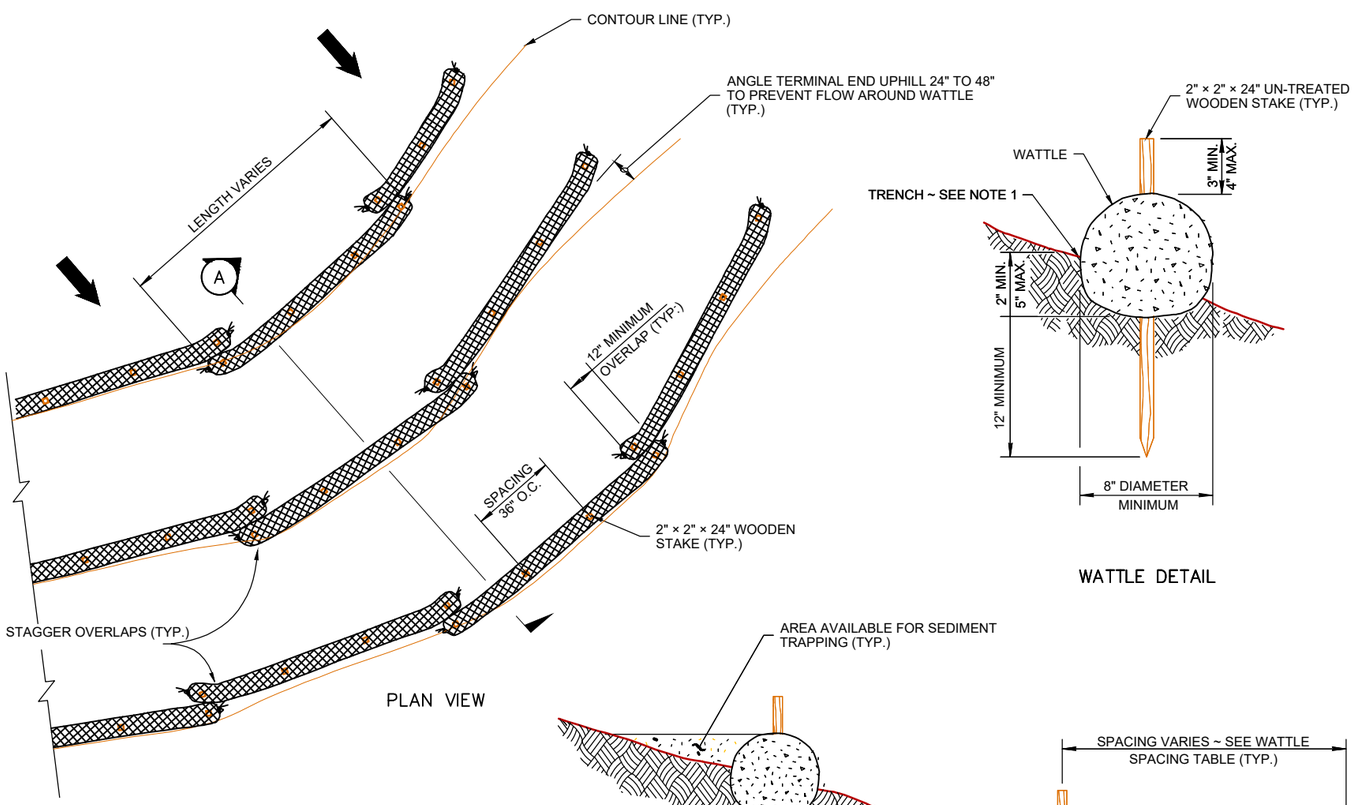
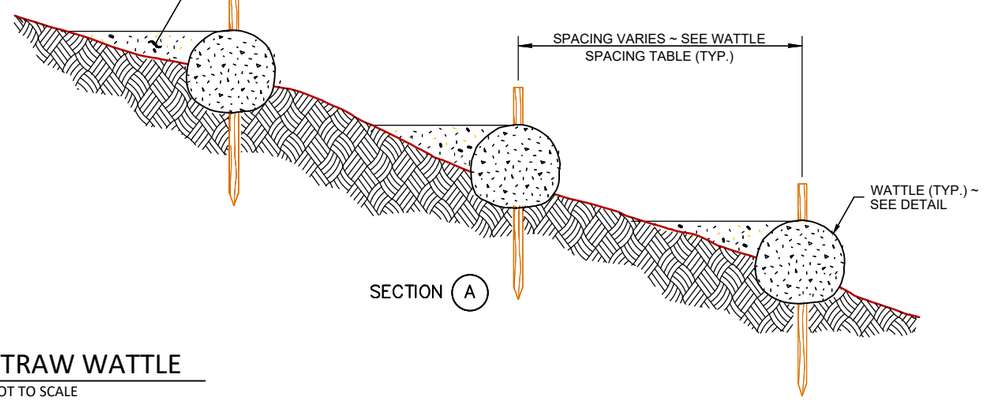


PLAN VIEW

WATTLE DETAIL



STRAW WATTLE

NOT TO SCALE

8" DIAMETER WATTLE SPACING TABLE	
SLOPE	MAXIMUM SPACING
1H : 1V	10' - 0"
2H : 1V	20' - 0"
3H : 1V	30' - 0"
4H : 1V	40' - 0"

NOTES

1. WATTLES SHALL BE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION 9-14.5(5). INSTALL WATTLES ALONG CONTOURS. INSTALLATION SHALL BE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION 8-01.3(10).
2. SECURELY KNOT EACH END OF WATTLE. OVERLAP ADJACENT WATTLE ENDS 12" BEHIND ONE ANOTHER AND SECURELY TIE TOGETHER.
3. COMPACT EXCAVATED SOIL AND TRENCHES TO PREVENT UNDERCUTTING. ADDITIONAL STAKING MAY BE NECESSARY TO PREVENT UNDERCUTTING.
4. INSTALL WATTLE PERPENDICULAR TO FLOW ALONG CONTOURS.
5. WATTLES SHALL BE INSPECTED REGULARLY, AND IMMEDIATELY AFTER A RAINFALL PRODUCES RUNOFF, TO ENSURE THEY REMAIN THOROUGHLY ENTRENCHED AND IN CONTACT WITH THE SOIL.
6. PERFORM MAINTENANCE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION 8-01.3(15).
7. REFER TO WSDOT STANDARD SPECIFICATION 8-01.3(16) FOR REMOVAL.

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CONSERVATION BMPS AND TESC MEASURES (1 OF 2)

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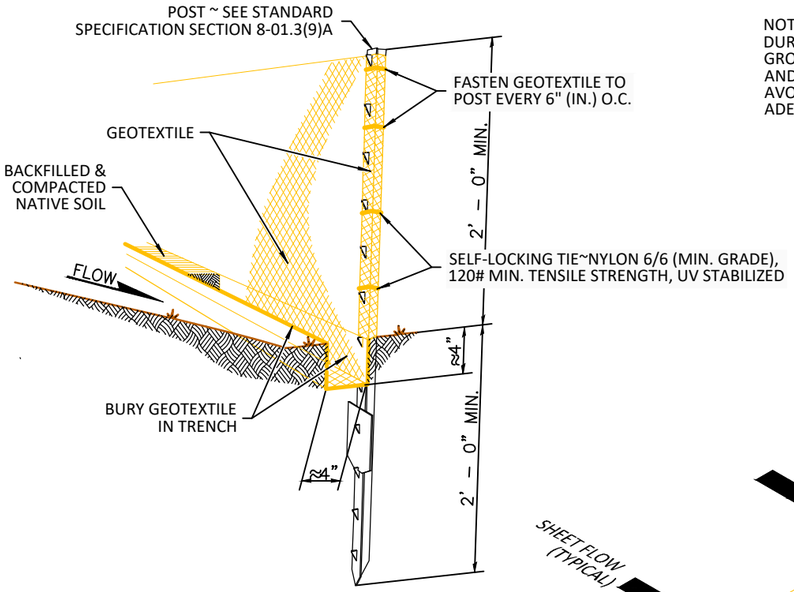
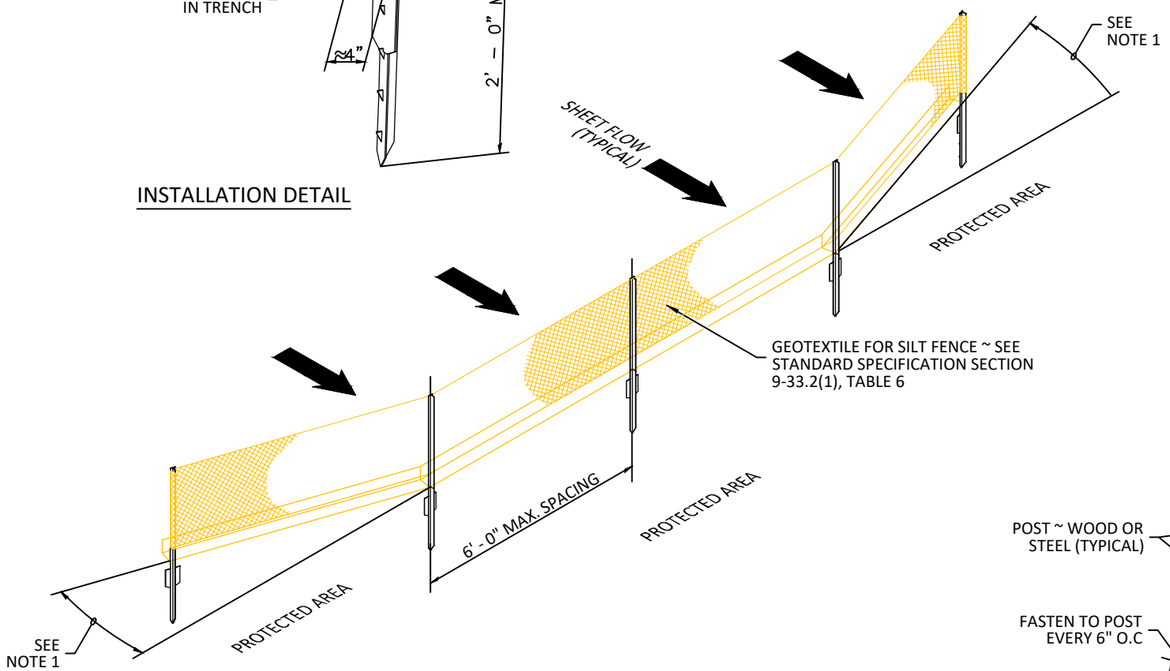


INSTALLATION DETAIL

NOTE:
DURING EXCAVATION, MINIMIZE DISTURBING THE GROUND AROUND TRENCH AS MUCH AS IS FEASIBLE, AND SMOOTH SURFACE FOLLOWING EXCAVATION TO AVOID CONCENTRATING FLOWS. COMPACTION MUST BE ADEQUATE TO PREVENT UNDERCUTTING FLOWS.



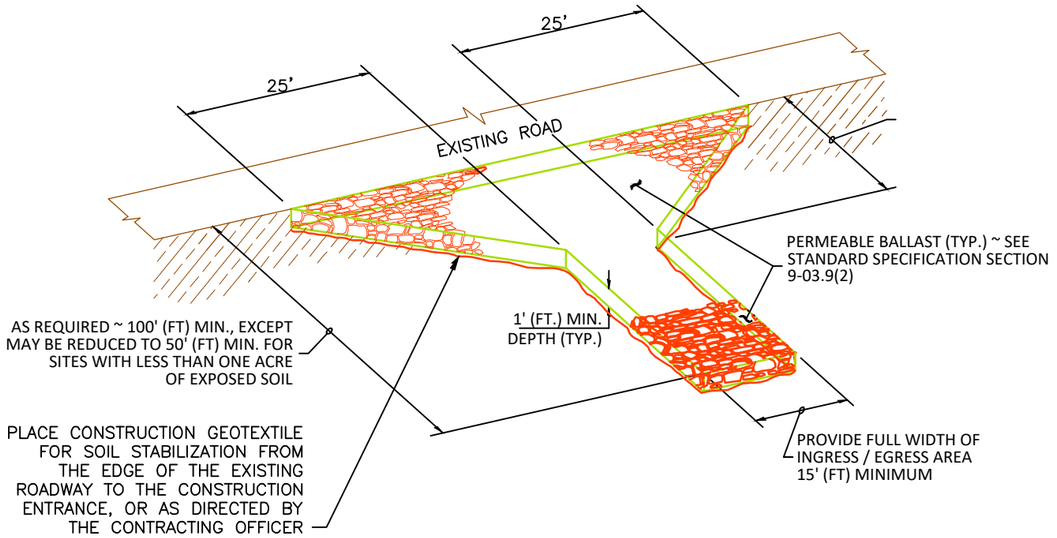
ISOMETRIC VIEW

NOTES:

1. INSTALL THE ENDS OF THE SILT FENCE TO POINT SLIGHTLY UPSLOPE TO PREVENT SEDIMENT FROM FLOWING AROUND THE ENDS OF THE FENCE.
2. PERFORM MAINTENANCE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTIONS 8-01.3(9)A AND 8-01.3(15).
3. SPLICES SHALL NEVER BE PLACED IN LOW SPOTS OR SUMP LOCATIONS. IF SPLICES ARE LOCATED IN LOW OR SUMP AREAS, THE FENCE MAY NEED TO BE REINSTALLED UNLESS THE PROJECT ENGINEER APPROVES THE INSTALLATION.
4. INSTALL SILT FENCING PARALLEL TO MAPPED CONTOUR LINES.

TYPICAL DETAIL - SILT FENCE

NOT TO SCALE

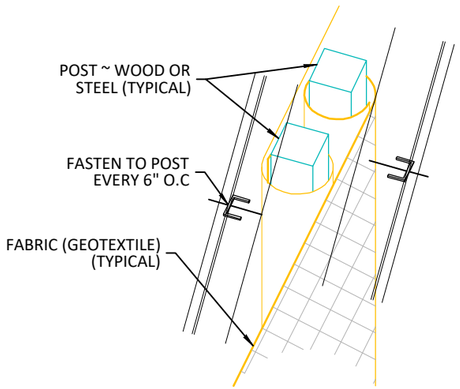


ISOMETRIC VIEW

NOTE:
STABILIZED CONSTRUCTION ENTRANCE SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 8-01.3(7)

TYPICAL DETAIL - STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



SPLICED FENCE SECTIONS SHALL BE CLOSE ENOUGH TOGETHER TO PREVENT SILT LADEN WATER FROM ESCAPING THROUGH THE FENCE AT THE OVERLAP.

SPLICE DETAIL

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CONSERVATION BMPS AND TESC MEASURES (2 OF 2)

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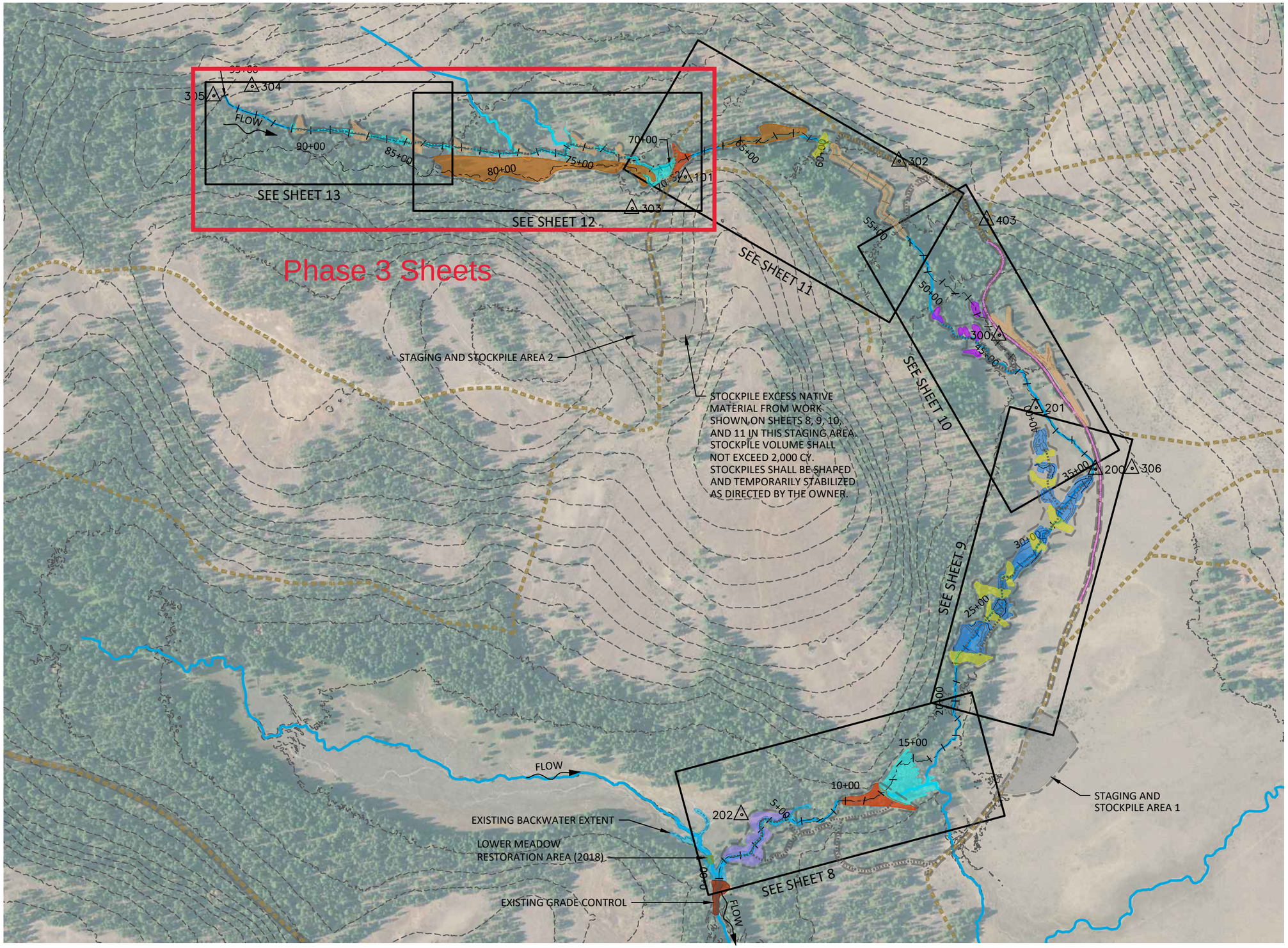

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SCALE IN FEET

LEGEND

- NN — SURVEY CONTROL POINT
- EXISTING 10-FT CONTOURS
- EXISTING PRIMARY FLOW PATHS
- N+00 — EXISTING CHANNEL STATIONS (500-FT)
- EXISTING ROAD
- TEMPORARY ACCESS ROUTE
- ROAD IMPROVEMENT
- LIMIT OF DISTURBANCE
- PROPOSED STAGING / STOCKPILE AREA
- BANK LAYBACK
- GRADE CONTROL AND BACKWATER
- PLUG AND POND
- PLUG AND BACKWATER
- HEADCUT REVETMENT
- FILL DITCH
- FLOODPLAIN ROUGHNESS

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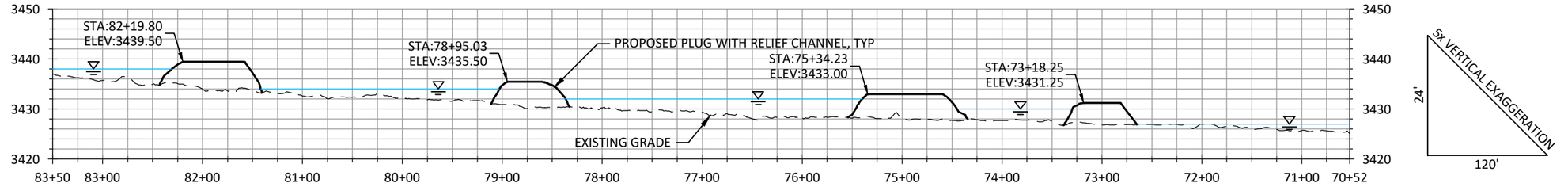
PROPOSED CONDITIONS OVERVIEW

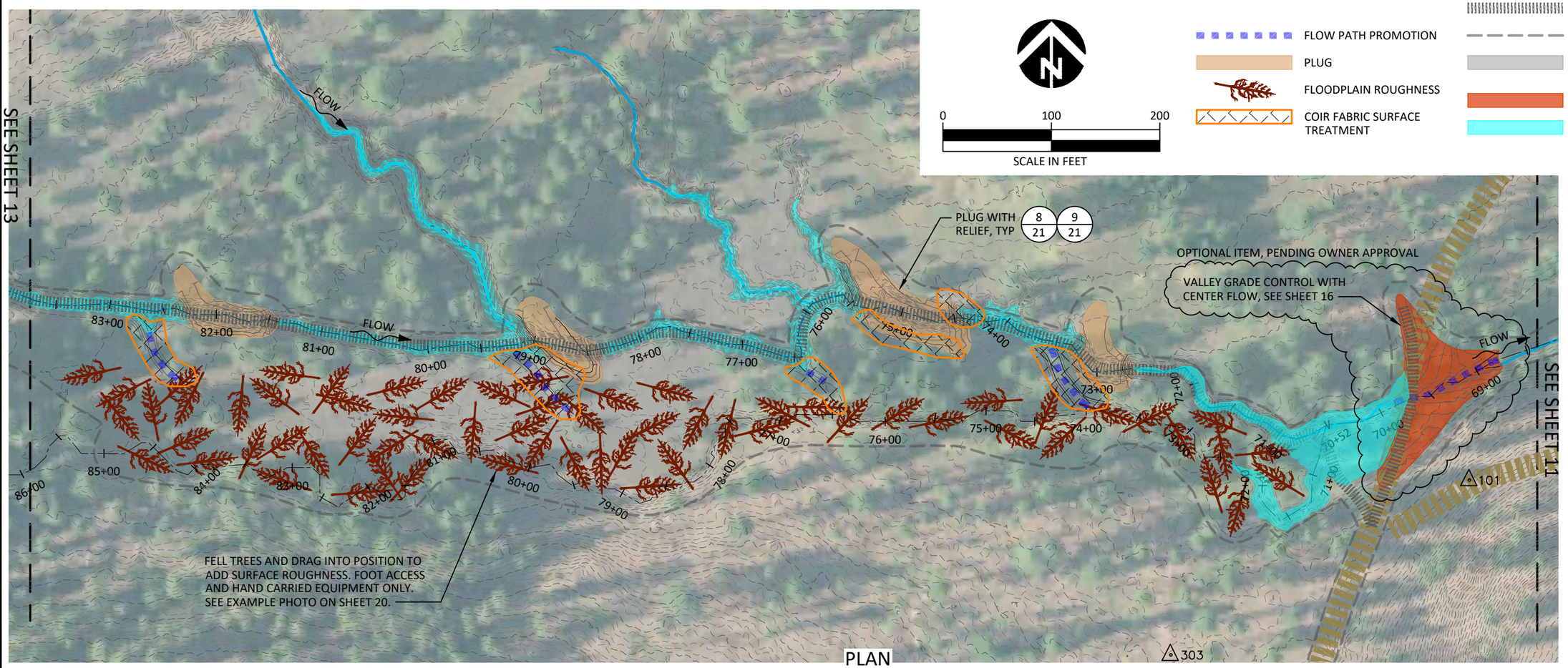
SHEET 7 OF 32



PROFILE - EXISTING UPPER DITCH STA 70+52 TO STA 83+50

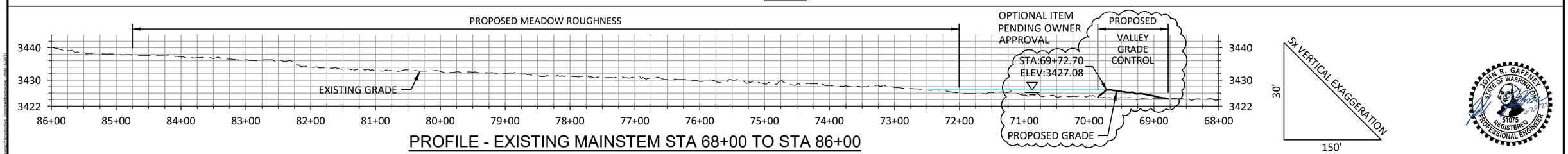
LEGEND

- NN — SURVEY CONTROL POINT
- EXISTING 0.5-FT CONTOURS
- PROPOSED 0.5-FT CONTOURS
- EXISTING PRIMARY FLOW PATHS
- N+00 — EXISTING CHANNEL STATIONS (500-FT)
- EXISTING ROAD
- TEMPORARY ACCESS ROUTE
- LIMIT OF DISTURBANCE
- PROPOSED STAGING / STOCKPILE AREA
- GRADE CONTROL
- BACKWATER
- FLOW PATH PROMOTION
- PLUG
- FLOODPLAIN ROUGHNESS
- COIR FABRIC SURFACE TREATMENT



PLAN

Note: The limit of disturbance will be expanded from what is shown here to allow more room to maneuver equipment.



PROFILE - EXISTING MAINSTEM STA 68+00 TO STA 86+00

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PROPOSED CONDITIONS PLAN
(5 OF 6)

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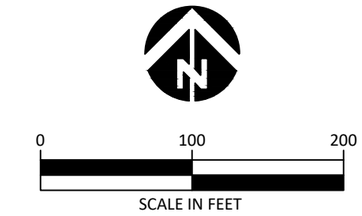
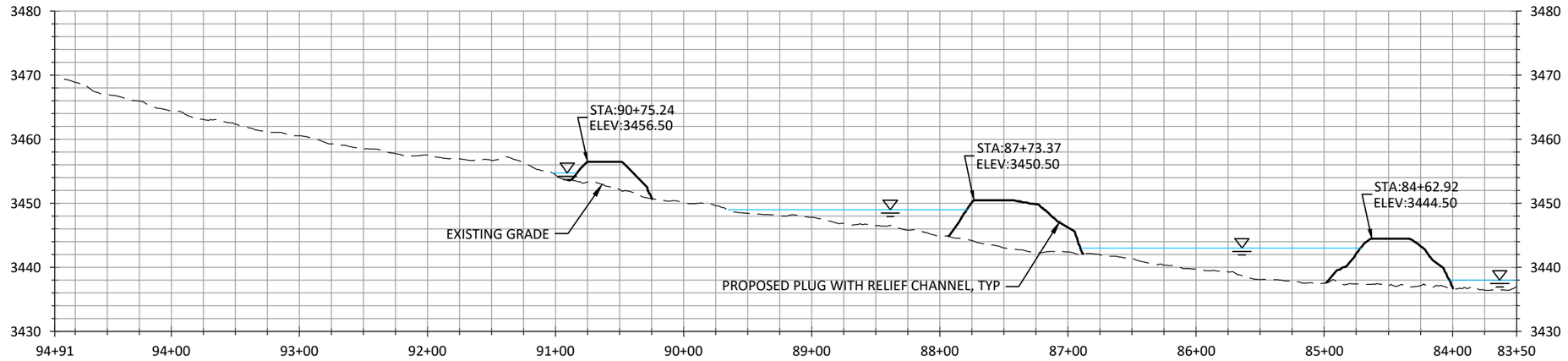
PLAN



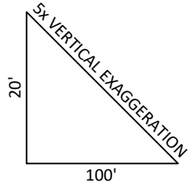
LEGEND

- NN — SURVEY CONTROL POINT
- EXISTING 0.5-FT CONTOURS
- PROPOSED 0.5-FT CONTOURS
- EXISTING PRIMARY FLOW PATHS
- N+00 — EXISTING CHANNEL STATIONS (500-FT)
- TEMPORARY ACCESS ROUTE
- LIMIT OF DISTURBANCE
- PROPOSED STAGING / STOCKPILE AREA
- BACKWATER
- FLOW PATH PROMOTION
- PLUG
- FLOODPLAIN ROUGHNESS
- COIR FABRIC SURFACE TREATMENT

Note: The limit of disturbance will be expanded from what is shown here to allow for more room to maneuver equipment.



PROFILE - EXISTING UPPER DITCH STA 83+50 TO STA 94+91



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PROPOSED CONDITIONS PLAN
(6 OF 6)

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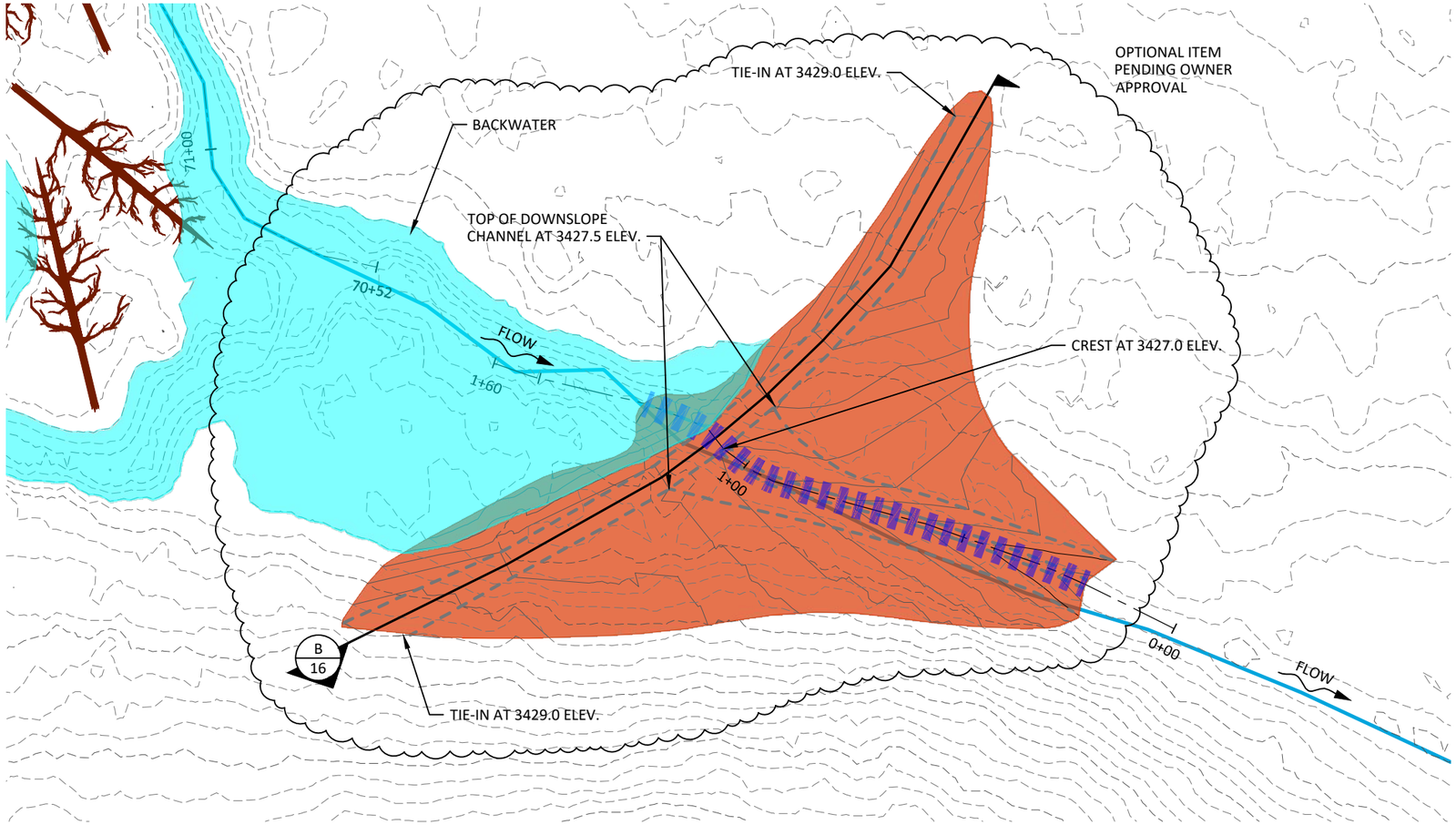
0 30 60

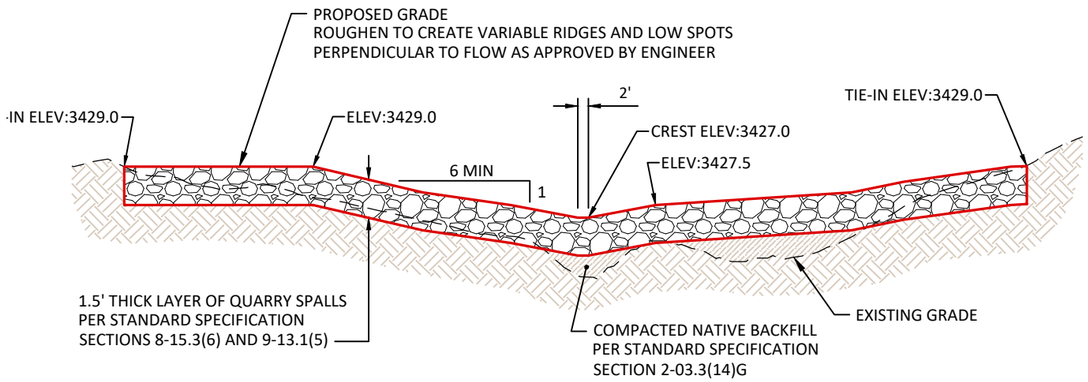
SCALE IN FEET

LEGEND

- NN — SURVEY CONTROL POINT
- EXISTING 0.5-FT CONTOURS
- EXISTING PRIMARY FLOW PATHS
- N+00 — EXISTING CHANNEL STATIONS (500-FT)
- GRADE CONTROL
- BACKWATER
- FLOW PATH PROMOTION



PLAN



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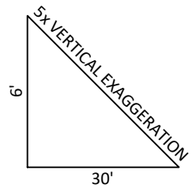
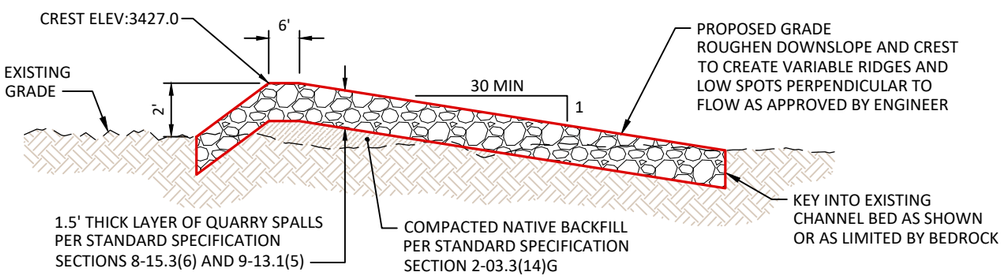
SECTION - VALLEY GRADE CONTROL





PROFILE OF THALWEG - VALLEY GRADE CONTROL AT STATION 70+00

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APPROVED	DATE	PROJECT

YAKAMA NATION FISHERIES PROGRAM
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VALLEY GRADE CONTROL STA 70+00
PLAN AND DETAILS

SHEET
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EXAMPLE PHOTO - VALLEY GRADE CONTROL (IN PROFILE VIEW)

EXAMPLE PHOTO - VALLEY GRADE CONTROL (IN SECTION VIEW)

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STATE OF WASHINGTON
21075
REGISTERED
PROFESSIONAL ENGINEER

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VALLEY GRADE CONTROL TYPICAL DETAILS

SHEET
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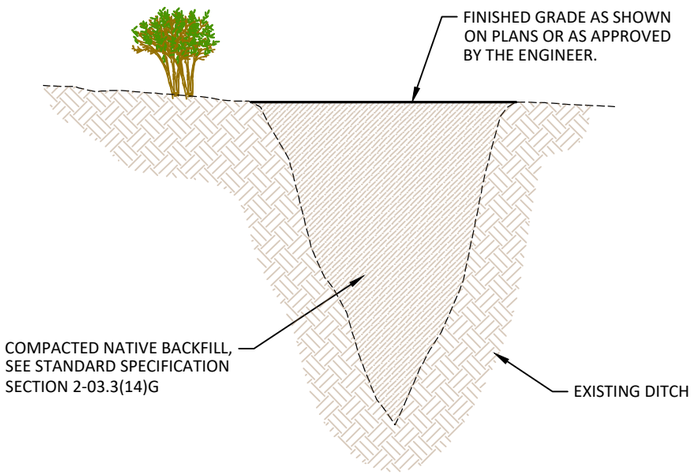

7/20 TYPICAL SECTION - DITCH FILL
NOT TO SCALE

PHOTO EXAMPLE - MEADOW ROUGHNESS BY FELLING TREES

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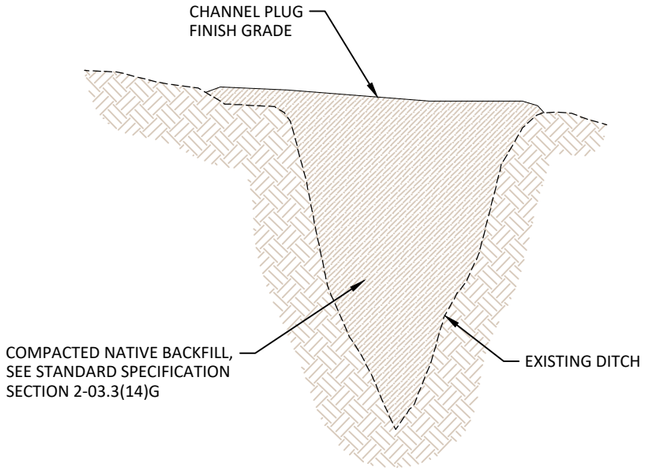
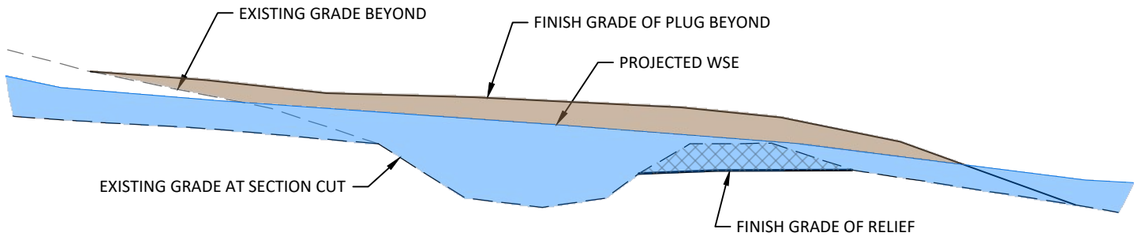
DITCH FILL AND MEADOW ROUGHNESS TYPICAL DETAILS

SHEET
20 OF 32



8/21 TYPICAL SECTION - DITCH PLUG
NOT TO SCALE



NOTE: VIEW IS LOOKING DOWNSTREAM

9/21 TYPICAL SECTION AT RELIEF CHANNEL (PLUG BEYOND)
NOT TO SCALE

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PROFESSIONAL ENGINEER
6-29-21

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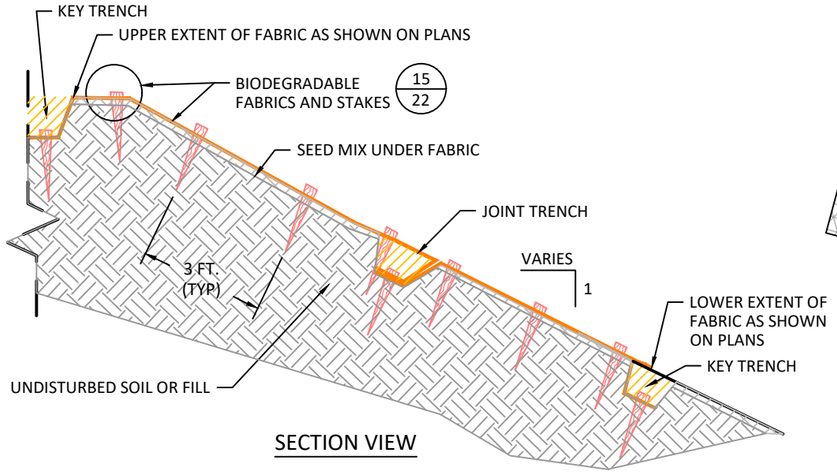
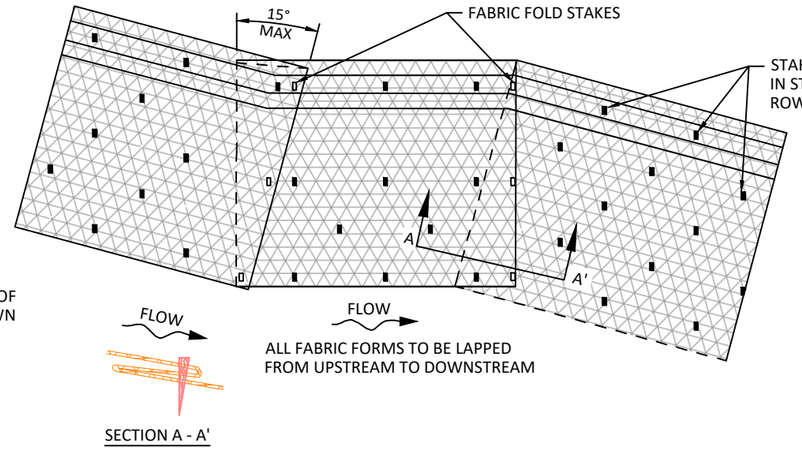
DITCH PLUG AND RELIEF TYPICAL DETAILS

SHEET
21 OF 32



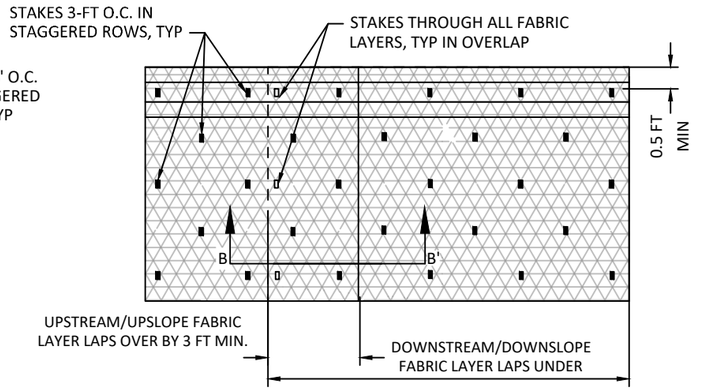
SECTION VIEW

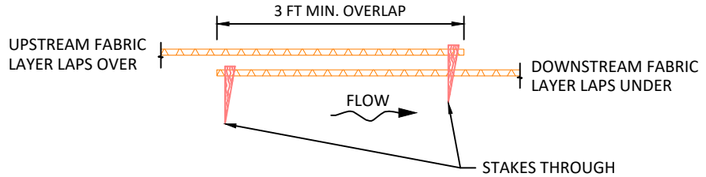
9/22 SURFACE FABRIC
NOT TO SCALE



SECTION A - A'

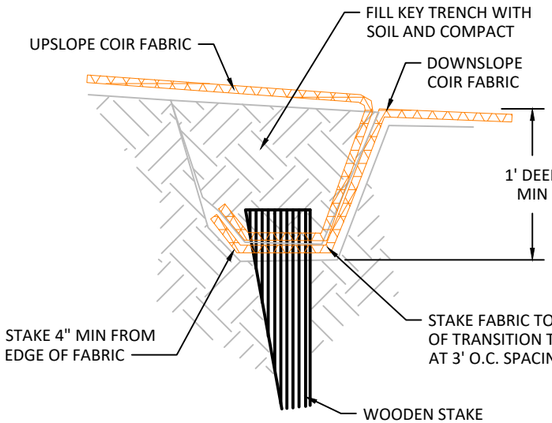
10/22 FOLDING OF FABRIC AT BENDS
NOT TO SCALE



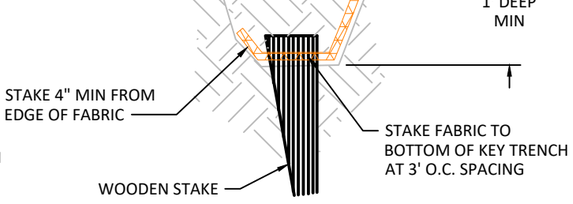


SECTION B - B'

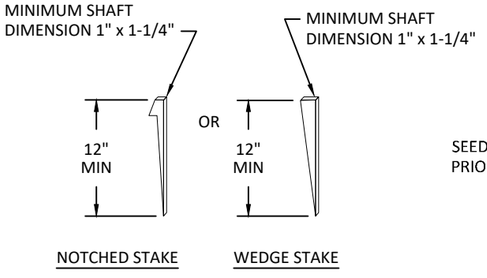
11/22 FABRIC JOINING PERPENDICULAR TO SLOPE
NOT TO SCALE



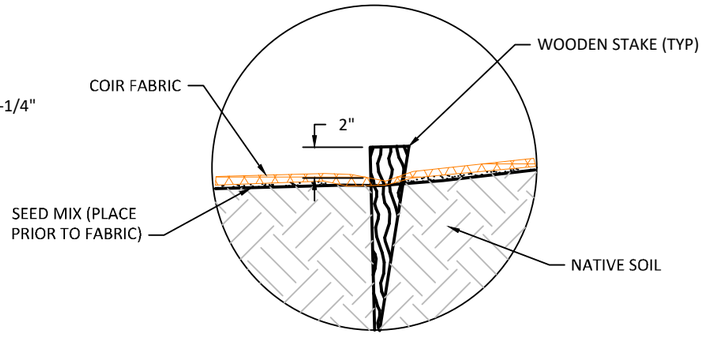
12/22 JOINT TRENCH PARALLEL TO SLOPE
NOT TO SCALE



13/22 KEY TRENCH AT ALL FABRIC EDGES
NOT TO SCALE



14/22 WOODEN STAKE FABRICATION
NOT TO SCALE



15/22 BIODEGRADABLE FABRIC AND STAKES
NOT TO SCALE

GENERAL NOTES ON COIR FABRIC

1. FABRIC SHALL BE NON-WOVEN COIR FABRIC, MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 9-14.6(2)D.
2. INSERT AND DRIVE WOOD STAKES, SEE STANDARD SPECIFICATION SECTION 9-14.6(10), BETWEEN THE FIBERS OF THE COIR FABRIC AS SHOWN. STAKING SHALL NOT BE FACILITATED BY PRE-CUTTING OF THE COIR FABRICS.
3. FABRIC ENDS PERPENDICULAR TO THE SLOPE SHALL BE JOINED BY LAPPING THE UPSTREAM PIECE OF FABRIC OVER THE DOWNSTREAM PIECE AS SHOWN.
4. FABRIC ENDS PARALLEL TO THE SLOPE SHALL BE JOINED WITH A JOINT TRENCH.
5. FABRIC EXTENT EDGES SHALL BE FINISHED WITH A KEY TRENCH UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
6. PLACE SEED ON NATIVE SOIL PRIOR TO COVERING SOIL WITH FABRIC.

EXAMPLE PHOTO

JOHN R. GAFFNEY STATE OF WASHINGTON 51075 REGISTERED PROFESSIONAL ENGINEER 6-28-21

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SURFACE FABRIC TREATMENT
TYPICAL DETAILS

SHEET
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PHOTO EXAMPLE - MATCHING ADJACENT GRADES AND ADDING OBSTACLES

CREDIT: USFS 2018GUIDELINES FOR STORING AND DECOMMISSIONING ROADS

ROAD DECOMMISSIONING NOTES:

USE SALVAGED LOGS TO CREATE ENTRANCE BARRIERS.

GRADE TO MATCH MEADOW TOPOGRAPHY AND REMOVE PREFERENTIAL ROUTING.

RIP SURFACE FOR SOIL DECOMPACTION.

SEED AND PLANT DISTURBED AREAS.

PHOTO EXAMPLE - PLANTING

CREDIT: USFS 2018GUIDELINES FOR STORING AND DECOMMISSIONING ROADS

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ROAD IMPROVEMENTS AND DECOMMISSIONING

SHEET
23 OF 32

Prairie Seed Mix
0.06 AC
2.4 LB

Prairie Seed Mix
0.1 AC
4 LB

Floodplain Seed Mix
0.01 AC
0.4 LB

90+00

Pond Seed Mix
0.05 AC
1.5 LB

Prairie Seed Mix
0.13 AC
12 LB

Pond Seed Mix
0.04 AC
1.2 LB

Floodplain Seed Mix
0.01 AC
0.4 LB

Pond Seed Mix
0.07 AC
2.1 LB

85+00

Prairie Seed Mix
0.06 AC
2.4 LB

Prairie Seed Mix
0.06 AC
2.4 LB

Floodplain Seed Mix
0.01 AC
0.4 LB

Prairie Seed Mix
0.12 AC
4.8 LB

Pond Seed Mix
0.07 AC
2.1 LB

Pond Seed Mix
0.03 AC
0.9 LB

80+00

Floodplain Seed Mix
0.01 AC
0.4 LB

Prairie Seed Mix
0.06 AC
2.4 LB

Pond Seed Mix
0.03 AC
0.9 LB

75+00

Floodplain Seed Mix
0.01 AC
0.4 LB

70+00

Floodplain Seed Mix
0.004 AC
0.16 LB

70+52

Floodplain Seed Mix
0.02 AC
0.8 LB

Pond Seed Mix
0.01 AC
0.42 LB

65+00

0.1 AC
4 LB

60+00

Prairie Seed Mix
0.3 AC
12 LB

Prairie Seed Mix
0.7 AC
28 LB

0.57 AC
22.8 LB

Prairie Seed Mix
0.3 AC
12 LB

55+00

Prairie Seed Mix
0.7 AC
28 LB

50+00

STOCKPILED NATIVE MATERIAL
SHALL BE STABILIZED AND SEEDED
AS DIRECTED BY THE OWNER.

0 250 500
SCALE IN FEET

LEGEND

- NN — SURVEY CONTROL POINT
- EXISTING 10-FT CONTOURS
- N+00 — EXISTING CHANNEL STATIONS (500-FT)
- FLOODPLAIN WILLOW PLANTINGS
- FLOODPLAIN SEED MIX
- POND SEED MIX
- PRAIRIE SEED MIX

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PHOTO EXAMPLE - NATIVE MEADOW SEED

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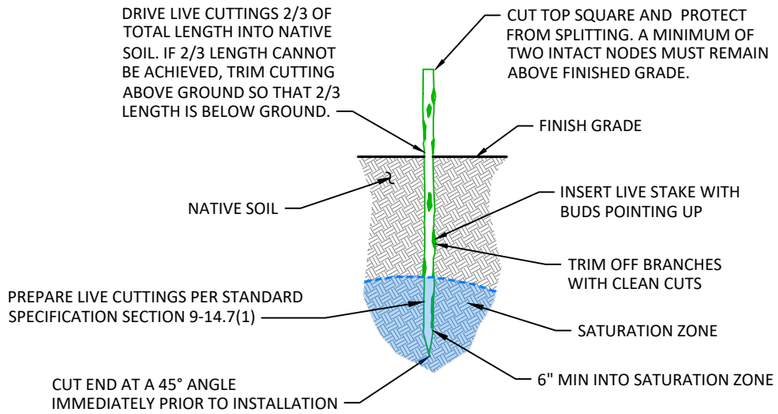
REVEGETATION PLAN (2 OF 2)

SHEET
25 OF 32



LIVE CUTTING DETAIL

NOT TO SCALE

Revegetation Treatment

Action	Type	Sq Ft	Acres	Treatment
Ditch Fill	floodplain	50266	1.15	seed
~~Plug Crest (ponds)~~	~~floodplain~~	~~47004~~	~~1.08~~	~~seed~~
Relief Plug Crest (in ditch)	prairie	25761	0.59	seed
Relief Cuts	floodplain	3423	0.08	seed
~~Bank Layback (bank)~~	~~floodplain~~	~~26982~~	~~0.62~~	~~seed~~
~~Bank Layback (bank)~~	~~floodplain~~	~~12584~~	~~0.29~~	~~willow stake~~
Temp Access Road Remediate	pond	15572	0.36	seed
	floodplain	6030	0.14	seed
	prairie	51054	1.17	seed
~~Ponds (Plug and Ponds)~~	~~pond~~	~~86683~~	~~1.99~~	~~seed~~
Staging Areas	priarie	142991	3.28	seed

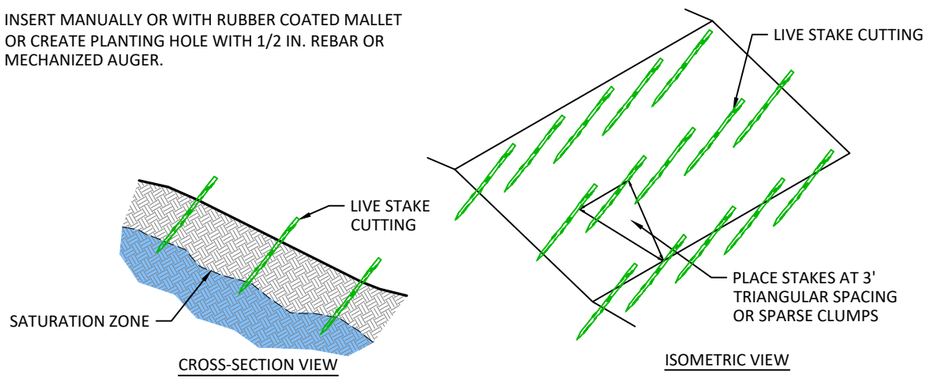
Native Seed Estimates

	lbs/acre	Total acres	total seed (lbs)
Prairie Seed	40	5.05	202
Floodplain Seed	40	3.36	134
Pond Seed	30	2.35	70

Note: Native seed estimates do not reflect Phase 3 work. Please refer to the Bid Sheet for accurate estimates.

NOTES:

INSERT MANUALLY OR WITH RUBBER COATED MALLET OR CREATE PLANTING HOLE WITH 1/2 IN. REBAR OR MECHANIZED AUGER.



LIVE CUTTING PLACEMENT DETAIL

NOT TO SCALE

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REVEGETATION TYPICAL DETAILS

SHEET 26 OF 32

Amendments to the Standard Specifications and Special Provisions

INTRODUCTION

The following Amendments to the Division 1, Division 2, Division 6, Division 8, and Division 9 Standard Specifications are made a part of this contract and supersede any conflicting provisions of the 2021 Standard Specifications for Road, Bridge and Municipal Construction, and the foregoing Amendments to the Standard Specifications, as issued by the Washington State Department of Transportation (WSDOT) and the American Public Works Association (APWA), Washington State Chapter (hereafter "Standard Specifications"). Each Amendment contains all current revisions to the applicable section of the Standard Specifications and may include references which do not apply to this particular project. The following Amendments and Special Provisions shall be used in conjunction with the applicable provisions of Washington Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction 2021 M 41-10, or as amended hereafter.

The "Contracting Agency" or "Owner" shall be the Yakama Nation Fisheries Program. The "Engineer" shall be the consultant's engineer of record. The "Right-of-Way" shall be the Project Limits.

Sections 1-02, 1-03, 1-08 (except 1-08.6 Suspension of Work, 1-08.7 Maintenance During Suspension, 1-08.8 Extension of Time, and 1.08.9 Liquidated Damages), and 1-10 of the Standard Specifications do not apply. The Standard Specifications may include additional content and references that are not relevant and do not apply to this project. Final determination of content and reference applicability shall be made by the Owner. Terms and Conditions of the Construction Services Agreement shall take precedence over the Standard Specifications, Amendments to the Standard Specifications, Special Provisions, and the Contract Plans unless otherwise indicated in writing by the Owner.

Division 1 General Requirements

1-01 Definitions and Terms

1-01.2(2) Items of Work and Units of Measurement

This section is supplemented with the following:

DBH diameter at breast height
dia. diameter
LWM large woody material

1-01.3 Definitions

All references in the Standard Specifications to the terms "State", "Department of Transportation", "Washington State Transportation Commission", "Commission", "Secretary of Transportation", "Secretary", "Headquarters", and "State Treasurer" shall be revised to have equal meaning for "Owner and Engineer". All references to "State Materials Laboratory" shall be revised to read "Owner designated location".

1-04.7 Differing Site Conditions (Changed Conditions)

This section is supplemented with the following:

The site is a sensitive montane meadow system formed by natural and manmade processes. Soils types and properties, surface and groundwater conditions may be complex and varied. Undocumented cultural resources may be discovered during construction. If the work comes in contact with certain cultural resources the Owner's Inadvertent Discovery Procedure shall be followed. The Contractor shall account for this in their bids. Variation in soils types, water conditions, and inadvertent discovery of cultural resources shall not qualify as Differing Site Conditions. It is the Contractor's responsibility to be familiar with site conditions. Contractor shall be responsible to collect additional data as required.

1-05.4 Conformity with and Deviations from Plans and Stakes

This section is supplemented with the following:

Contractor shall be responsible to have a Professional Land Surveyor licensed in the State of Washington establish survey control, grade stakes and location stakes as necessary to complete work in all respects. The Owner will verify a portion of the survey layout.

It is the responsibility of the Contractor to verify the accuracy of all survey information provided by the Owner prior to commencing earthwork operations. Survey layout completed by the Owner or Engineer should be considered as general guidance only. Commencement of these operations constitutes acceptance of the survey information as appropriate to meet the intent of the Contract.

1-05.4(1) Submittal

Prior to mobilization the Contractor shall submit a Survey Staking Plan including a narrative, diagrams showing staking configuration, and schedule of staking for approval by the Owner.

1-05.4(2) Measurement

No measurement will be made for lump sum pay item "Surveying"

1-05.4(3) Payment

No separate payment will be made for "Surveying". Costs for "Surveying" shall be incidental to the work.

1-05.5 Vacant

Add the following Sections:

1-05.5 Required Submittals

The Contractor shall prepare and submit the following submittals according to the requirements for each submittal. The Owner's approval shall be required prior to commencing work related to each submittal.

1-05.4(1)	Survey Staking Plan
1-07.15(1)	SPCC Plan
8-01.3(1)	TESC Plan
8-02.3(2)D	Decompaction Work Plan
8-26.3(1)	Stream Diversion Plan
8-27.3(1)	Dewatering Plan
9-14.6(2)	Biodegradable Erosion Control Blanket
9-14.6(10)	Wood Stakes

1-05.6 Inspection of Work and Materials

Add:

The Contractor shall accommodate periodic verification of accuracy of local positioning systems and global positioning systems used by the Contractor to layout and check the locations and elevation of the work.

The Contractor shall accommodate inspection of grading by the Engineer. The first inspection shall occur when areas are rough graded to elevations shown on the Plans. The second inspection shall occur when the grading is complete but before grading equipment has been removed from the work area. Time required to conduct inspections shall not warrant a time extension. Inspections by the Engineer shall not relieve the Contractor from the responsibility of checking grades and slopes as the work progresses and conformance with the grades and slopes shown on the Plans.

1-07.16 Protection and Restoration of Property

1-07.16(2) Vegetation Protection and Restoration

Add:

Vegetation protection and restoration shall be incidental to Clearing and Grubbing.

1-07.26 Personal Liability of Public Officers

Revise paragraph to read:

Neither the Owner, Engineer, employees of Owner nor employees of Engineer shall be personally liable for any acts or failure to act in connection with the Contract, it being understood that in such matters, they are acting solely as agents of the Owner.

1-09 Measurement and Payment

1-09.1 Measurement of Quantities

Revise:

Volume measurement (in the hauling vehicle) shall not be allowed without prior written authorization of the Owner. Volume measurement shall be in place measure. Volume measurements do not include expansion of excavated material nor compaction of placed material.

1-09.7 Mobilization

Add:

Temporary site access shall be through alignments shown in the plans. Minor deviations to the alignments shall occur as required by the Owner to preserve sensitive areas or trees, or to avoid damage to fence posts or other features identified in the field. Deviations from the alignments shown in the plans shall be approved by Owner prior to use. If fence is removed to facilitate access or construction, the Contractor shall replace or repair fence at no additional cost to the Owner. Site access routes shall be maintained and restored to original or better condition unless they are designated for decommissioning on the Plans.

Division 2 Earthwork

2-01 Clearing, Grubbing, and Roadside Cleanup

2-01.1 Description

Add:

Areas for Clearing and Grubbing include the Grading Extents and Temporary Access Routes shown on the Plans. Grubbing shall not be completed along Temporary Access Routes unless those routes are coincident with grading areas. Adjustments to Clearing and Grubbing alignments and extents shall be as determined by the Owner to reduce damage to the environment. The final areas will be flagged in the field by the Owner prior to Clearing and Grubbing work. Clearing and Grubbing shall not occur outside of the designated limits.

"Salvage of Woody Vegetation" means removal, sorting and stockpiling of select trees, brush, and down timber for reuse in other project elements.

2-01.2 Disposal of Usable Material and Debris

2-01.2(1) Disposal Method No. 1 - Open Burning

Replace with:

Open burring of cleared and grubbed materials shall not be allowed unless otherwise approved by the Owner.

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SPECIFICATIONS (1 OF 6)

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27 OF 32

2-01.2(2) Disposal Method No. 2 - Waste Site

Add:

This disposal method shall only be used for invasive and non-native cleared and grubbed vegetation.

2-01.2(3) Disposal Method No. 3 - Chipping

Add:

Chipping shall only be as approved by the Owner. Other methods shall take precedence.

In the event that there is excess cleared woody material, not otherwise incorporated into the project, the material shall be chipped on-site and stockpiled. Chips shall be stockpiled in a location designated by the Owner.

2-01.3 Construction Requirements

2-01.3(1) Clearing

Add item number 8 as follows:

8. Within grading limits remove trees with rootwads intact and salvage as whole trees, for incorporation into the work as shown on the Plans and at the direction of the Contracting or as otherwise approved by the Engineer.

2-01.3(3) Vacant

Add the following Section:

2-01.3(3) Salvage of Woody Vegetation

Included in this item are the removal and salvage of trees and other woody vegetation as designated by the Owner.

The Contractor shall:

1. Within grading limits, to the maximum practicable extent, excavate around each rootwad to loosen soil and then push over the woody vegetation in order to salvage woody vegetation with intact attached roots.
2. Stockpile salvaged woody vegetation outside of the clearing limits but within reach of the excavator during construction. Stockpiling methods shall limit damage to the wood vegetation such as breaking of trunks and limbs.
3. Salvaged wood material shall be incorporated into wood placements as approved by the Engineer.
4. Evenly distribute within the limits of disturbance and along decommissioned access routes wood material not otherwise incorporated into wood placements shown on the Plans.
5. Dispose of excess woody materials in accordance with 2-02.2.

2-01.4 Measurement

Replace with:

Salvage of Woody Vegetation (2-01.3(3)) shall be considered incidental to the Clearing and Grubbing bid item. Measurement and compensation for the installation of the salvaged woody material is described in Section 8-31 and paid under that item. No separate compensation shall be made for placement of the salvaged woody material.

"Clearing and Grubbing," shall be measured as percent complete relative to the area delineated for clearing and grubbing. Any areas cleared or grubbed beyond limits delineated without the Owner's prior written authorization shall be at no additional cost to the Owner and shall be restored at no additional cost to the Owner.

2-01.5 Payment

Replace with:

Payment shall be made in accordance with *Section 1-04.8* and *Section 1-09.9* for the following bid items: "Clearing and Grubbing" per lump sum on a percent complete basis as approved by the Owner.

2-03 Roadway Excavation and Embankment

2-03.1 Description

Add:

Portions of work will be in and near sensitive meadow areas. The Contractor shall not disturb the ground outside the limits of disturbance, unless the limits of disturbance are revised by the Owner.

This item includes hauling of excess excavated material to a near-site location shown on the Plans and stockpiling the material. The unit contract price per cubic yard for Excavation shall include "Haul" and "Stockpile" of excess native material not placed as fill.

2-03.2 Vacant

Add the following Section:

2-03.2 Restoration Grading

This item includes detail grading to shape the meadow, swales, channels, and other excavations and fills. This includes creating minor ridges and swales for the naturalization of meadow topography. Minor ridges and swales shall be graded within the grading limits as approved by the Engineer.

Rough grade areas within the limits of grading, including adjacent transition areas. Roughen the finished surface within specified areas. Roughen the finished surface within specified tolerances; create meandering swales and curved slopes between points where elevations are shown on the Plans, or between such points and existing grades.

2-03.3 Construction Requirements

2-03.3(14)A Rock Embankment Construction

Road improvement rock embankment construction shall be to the lines and grades as shown on the plans. Road improvement rock embankment shall be constructed using Quarry Spalls. See 8-15.4(6) and 9-13.1(5).

2-03.3(14)C Compacting Earth Embankments

Add:

The Contractor shall use Method B for fill areas within the meadow grading extent, including: plugs, ditch fills, and valley grade control native fills.

2-03.3(14)G Backfilling

Add:

Place and compact backfill as specified on Plans within and around structures and features to the depth and lines shown on the Plans. Type and amount of material used for backfill, and the manner of placing material, shall be as shown on the Plans, described in the Specifications and are subject to approval by the Engineer.

Use suitable backfill material from material excavated from required excavations for project Work, where possible, and at the discretion of the Engineer. If sufficient suitable material is not available from on-site excavations, obtain additional suitable material from nearby borrow sources as approved by the Owner and Engineer.

2-03.4 Measurement

Replace with:

No allowance is made for expansion of excavated materials nor compaction of placed materials. Expansion of excavated materials and compaction of placed materials shall be incidental to other bid items for purposes of handling, haul, stockpile, etc. Measurement shall not be made by truck count or weight without prior written approval of the Owner.

"Excavation incl. Near-Site Stockpile" shall be measured by cubic yard. All excavated material shall be measured in the position it occupied before the excavation was performed. The original ground shall be taken as one of the following: 1) The existing grade (pre-project) shown on the Plans, 2) the existing grade (pre-project) digital terrain model, or 3) a pre-excavation ground survey conducted by a Professional Land Surveyor licensed in the State hired by the Contractor at no additional cost to the Owner. The original ground shall be compared with the planned finished section shown in the Plans. Slope/ground intercept points defining the limits of the measurement shall be as staked. No additional compensation will be made for excavated material that is stockpiled, re-excavated, and moved again.

"Embankment Fill and Compaction" shall be measured by cubic yard. All fill material shall be measured following compaction relative to the original ground. The original ground shall be taken as one of the following: 1) The existing grade (pre-project) shown on the Plans, 2) the existing grade (pre-project) digital terrain model, or 3) a pre-fill ground survey conducted by a Professional Land Surveyor licensed in the State hired by the Contractor at no additional cost to the Owner. The original ground shall be compared with the planned finished section shown in the Plans. Slope/ground intercept points defining the limits of the measurement shall be as staked. No additional compensation will be made for fill material that is stockpiled, re-excavated, and filled again.

2-03.5 Payment

Replace with:

Payment shall be considered full compensation for all equipment, labor, tools, materials, and incidentals necessary to complete this work as specified. Payment will be made in accordance with *Section 1-04.8* and *Section 1-09.9* for the following bid items:

"Excavation incl. Near-Site Stockpile" per cubic yard

"Embankment Fill and Compaction" per cubic yard

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2-04 Haul

2-04.2 Vacant

Add:

2-04.2 Contaminated Materials

Transportation of known or potentially contaminated materials shall be performed by properly licensed, insured, and registered waste haulers that are acceptable to the Owner and in accordance with applicable local, state, and federal regulations for transportation. Transportation contractors shall submit documentation that demonstrates proper licensing and compliance with applicable WSDOT regulations, as well as a copy of contingency and spill control plans describing measures to be implemented in the event of spills or discharges during material handling and transporting.

2-09 Structure Excavation

2-09.3 Construction Requirements

Add:

It is possible that the Contractor encounters previously buried large debris or riprap that extends above or below the planned excavation grades. Depending upon the factors observed, including the type of the debris and its estimated size, the Owner shall determine if its removal is required. Removal volume of this previously buried debris (as opposed to surficial debris) shall be treated as Differing Site Conditions under this contract. Such large debris, other than riprap, shall be disposed of legally at an appropriate off-site location.

2-09.3(3) Construction Requirements, Structure Excavation, Class A

2-09.3(3)D Shoring and Cofferdams

Add:

Cofferdams shall conform to the requirements provided in the Permits.

See Section 8-26 for additional requirements on cofferdams.

Division 8 Miscellaneous Construction

8-01 Erosion Control and Water Pollution Control

8-01.3 Construction Requirements

8-01.3(1) General

8-01.3(1)A Submittals

Replace with:

Prior to mobilization Contractor shall submit a Temporary Erosion and Sediment Control (TESC) plan for the project to the Owner for approval. The TESC must satisfy the requirements of the Washington Department of Ecology National Pollutant Discharge Elimination System (NPDES) Stormwater General Permit for Construction Activity and all other applicable permits. The TESC included in the Plans and described herein is intended to provide a baseline for sediment and erosion control and does not ensure that the standards established by any applicable permits will be met. The Contractor may use these measures or alternative measures of his own design to ensure satisfactory performance and that the erosion control requirements of all applicable permits are met. The contractor shall be named as the permit holder. The contractor shall be responsible for implementing, inspecting and filing reports, maintaining, replacing, and removing TESC measures. The plan shall include the name, address and 24-hour contact number of the person responsible for erosion prevention and sediment control measures.

Failure to accept all or part of any such Plan will not make the Owner liable to the Contractor for any Work delays.

8-01.3(9)A2 Silt Fence

Add:

Silt Fence shall be used to protect sensitive areas sediment and impacts from equipment. See HIP IV General Conservation Measures on the Plans.

8-01.3(7) Stabilized Construction Entrance

Add:

Tire washing shall be included in conjunction with the stabilized construction entrance.

This item includes erosion control measures for treating tire wash water such as dewatering bag, ditch checks, silt fence, or other suitable measures for treating wash water before it enters the stream or roadway, including the maintenance or replacement of spent erosion control measures.

8-01.4 Measurement

Replace with:

"TESC Plan and Implementation," including the above amendments to the item will be measured by lump sum.

8-01.5 Payment

Replace with:

Payment shall be considered full compensation for all equipment, labor, tools, materials, and incidentals necessary to complete this work as specified. Payment will be made in accordance with *Section 1-04.8* and *Section 1-09.9* for the following bid items: "TESC Plan and Implementation" per lump sum.

8-02 Roadside Restoration

8-02.1 Description

Replace with:

This Work consists of seeding designated areas with approved native seed mixes and planting live willow stakes as shown in the Plans or as designated by the Engineer. A specified seed mixes shall be used each of the three seeding areas defined in the Plans, including Prairie Seed Mix, Pond Seed Mix, and Floodplain Seed Mix. Native seeding and live stakes will hereinafter be referred to collectively as "plants "or "plant material". Owner will provide the plant material.

This work also includes soil decompaction in work areas and along temporary access routes.

8-02.3 Construction Requirements

8-02.3(2) Work Plans

8-02.3(2)D Vacant

Add the following Section:

8-02.3(2)D Decompaction Work Plan

Prior to demobilization the Contractor shall submit a Decompaction Work Plan for the Engineer's approval. The plan shall describe the sequence, methods, and equipment to be used for site decompaction.

8-02.3(8) Planting

Revise as follows:

1. Non-Irrigated Plant Material

   East of the summit of the Cascade Range - October 1 to November 15.

8-02.3(17) Vacant

Add the following Section:

8-02.3(17) Native Seeding

Hand broad cast shall be used to apply seed, unless otherwise approved by the Engineer.

The surfaces to be seeded shall be prepared as follows:

- The soil surface shall be weed free.
- Seed shall be installed in late summer/early fall and at least three weeks prior to the first expected killing frost of the year.
- Broadcast seed evenly at quantities (lb/acre) specified in the Plans.
- Owner will provide seed and stakes.
- Fertilizer shall not to be used
- Leave exposed soils roughened - do not blade smooth.
- Seed shall be broadcast by hand

8-02.3(18) Vacant

Add the following Section:

8-02.3(18) Surface Decompaction

Temporary access routes and staging areas shall be decompacted following use. . The surface shall be scarified, tilled, or ripped to a depth no less than 6-inches to increase soil pore space and improve soil structure for site revegetation. Decompact areas prior to application of seed.

8-02.4 Measurement

Add:

Willow stakes shall be measured by the plant installed that is in a healthy vigorous condition, as determined by the Owner.

Seeding shall be measured by the areas where seed has been satisfactorily applied.

No measurement shall be made for decompaction. Decompaction shall be considered incidental to Planting.

8-02.5 Payment

Add:

Payment for plants shall be 80 percent of the unit Contract price per each for contracted plants at the completion of the initial planting. Payment shall be increased to 100 percent one year after installation based on the actual number of healthy vigorous plants, as determined by the Owner, limited to plan quantity.

Payment for Seeding shall be considered full compensation for all equipment, labor, tools, materials, and incidentals necessary to complete this work as specified. Payment will be made in accordance with *Section 1-04.8* and *Section 1-09.9* for the following bid items: "Seeding" per acre.

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8-15.3(6) Quarry Spalls

Replace with:

Quarry spalls shall be placed on areas to be protected including; grade controls, meadow plugs, and headcut revetments and other areas as shown on the Plans or as otherwise directed by the Owner and as approved by the Engineer. After placement, the quarry spalls shall be compacted to be uniformly dense and unyielding. Quarry spalls placed for road improvement shall be placed and compacted per 2-03.3(14)A.

8-15.4 Measurement

Replace line 4 with:

Quarry spalls will be measured by per cubic yard of spalls actually placed.

8-15.4 Payment

Replace the quarry spalls lines with:

"Quarry Spalls", per cubic yard.

The unit Contract price per ton or per cubic yard for "Quarry Spalls" shall be full pay

for all costs in furnishing, placing, and compacting spalls.

8-26 Vacant

Add the following Section:

8-26 Diversion

8-26.1 Description

Furnish, install, maintain and operate all necessary cofferdams to route stream flows around work areas. Diversion shall isolate work area from active stream flows and prevent entry of turbidity from work areas into flowing channel, wetlands of other natural or surface water areas.

Surface water may be encountered in portions of the proposed Work within the incised channels. Limited geologic or groundwater information is available for the site. The Contractor shall make their own investigations and shall determine the extent and difficulty of removal of water from excavations.

8-26.3(1) Submittals

8-26.3(1)A Stream Diversion Plan

At the start of construction if water is found standing or flowing in the incised channels, the Contractor shall submit a Stream Diversion Plan to the Owner for approval prior to beginning in-water work. The implementation of the stream diversion plan shall be sufficient to bypass stream flows and to protect the work in progress.

The Diversion Plan requirements described herein is intended to provide a baseline of effort for diversion activity and does not ensure that the standards established by any applicable permits or required performance criteria will be met.

The Contractor shall use the included plan or an alternate arrangement of their own design to ensure satisfactory performance and that the requirements of all applicable permits are met. The Contractor's Stream Diversion Plan shall detail the Contractor's chosen method of diversion and shall include:

1. A narrative of the diversion method to be used and provisions for repairs to failure of diversion facilities.
2. A complete list of equipment, materials and materials data sheets to be used and a schedule for their delivery and installation at the site.
3. Location of diversion and discharge facilities.
4. Method to protect against erosion at the discharge location.
5. Provisions for addressing circumstances resulting from overtopping of diversion works due to wet weather conditions or other circumstances.

8-26.2 Materials

The contractor shall provide all required materials for the project. Bulk bag cofferdam sheet pile installed by vibratory driver are pre-approved cofferdam methods. Driving sheet pile by impact hammer is not acceptable.

If contractor elects to use an alternate method for cofferdams, contractor shall provide to the Owner shop drawings and/or vendor cut sheets for substitutions and submit cofferdam/diversion plan for review prior to implementation. Alternate cofferdam methods are subject to approval from the Owner, the Owner makes no guarantee that alternate methods will be approved.

8-26.3 Construction Requirements

The Contractor shall provide all equipment necessary for stream diversion as needed. The Contractor shall have on hand, at all times, sufficient materials, pumping equipment and machinery in good working condition and shall have available, at all times, competent workers for the operation of the pumping equipment. Adequate standby equipment shall be kept available at all times to ensure efficient diversions and maintenance of diversion operations during power failure or flash flow events.

The Contractor shall route diverted water downstream of the work area in a suitable manner without damage to adjacent meadow areas or to the channel bed or banks. No turbid water shall be allowed to drain away from work completed or under construction or be discharged from the site.

8-26.4 Measurement

No separate measurement shall be made for all labor, equipment and materials associated with diversion of stream flows including operation, maintenance, and removal and disposal of materials.

8-26.5 Payment

Diversion shall be incidental to the Earthwork items where diversion is required.

8-27 Vacant.

Add the following Section:

8-27 Dewatering

8-27.1 Description

Surface water and groundwater may be encountered in portions of the proposed Work throughout the meadow.

The work consists of furnishing, monitoring, operating, maintaining, and removing pumps, and installation of control of water BMPs for removal of water and groundwater from the various parts of the Work and for maintaining the footprint elevations and other parts of the Work free from water as required for constructing each part of the Work. All water control shall meet the appropriate construction permit conditions and requirements. Contractor shall provide size and number of pumps as required to execute dewatering and other work.

8-27.2 Materials

Contractor shall provide minimum one, or more as needed, pumps capable of dewatering the work area and discharging the water to a suitable location. Pumps shall have soundproofing. Submersible electric pumps with generators are a preferred and pre-approved method. Contractor shall provide discharge hoses, booster pumps, and related equipment as needed to discharge water to suitable location.

Pumps shall be placed within rigid or flexible pool to contain fuel or oil spills. Diapers shall be stored at each pump.

Environmental protection measures such as perforated pipe for discharge flow distributors, geotextiles, filter bags, or other means of controlling water at the discharge location shall be provided.

8-27.3 Construction Requirements

Construction water shall be pumped away from work areas and be infiltrated into the ground and without entering the meadow ponds. If infiltration becomes an ineffective means to control turbidity, additional and alternative methods, such as pumping into above ground silting basins, filtration geotextile fabric or other methods as needed shall be required of the Contractor at no additional cost to the Owner.

The Contractor shall provide all equipment and materials necessary for dewatering as needed. The Contractor shall have on hand, at all times, sufficient pumping and other equipment and machinery in good working condition and shall have available, at all times, competent workers for the operation of the pumping equipment. Adequate standby equipment shall be kept available to ensure efficient operation and maintenance of diversions during power failure.

Dewatering shall commence when water is first encountered, and shall be continuous until water can be allowed to rise in accordance with the following provisions and any other requirements of the Specifications:

1. The Contractor shall maintain the water level below the working level within excavations in the active work area to provide a dry active construction work area. The active work area shall be defined as the area where work is being completed, including excavation, grade and elevation checking, rock placement, backfill, and related activities.
2. The Contractor shall be fully responsible and liable for all damages that result from failure to adequately keep any excavation dewatered.

Water resulting from dewatering activity shall be discharged in accordance with the provisions of the approved Contractor's Dewatering Plan and Erosion Control Plan. The Contractor shall discharge outside the work area in a suitable manner without damage to adjacent meadow or upland areas.

8-27.3(1) Submittals

8-27.3(1)A Dewatering Plan

Prior to beginning work within standing water or below the groundwater level, the Contractor shall submit a Dewatering Plan to the Owner. The Dewatering Plan must satisfy the requirements of all applicable permits. The plan shall be sufficient to protect the work in progress and facilitate the work by maintaining a generally dry work environment.

Dewatering methods included on the Plans and described herein are intended to provide a baseline of effort for dewatering activity and does not ensure that the standards established by any applicable permits or required performance criteria will be met.

The Dewatering Plan must be approved by the Owner prior to implementation. This Plan shall include:

1. Narrative of the dewatering methods to be used including control of discharge water and sediment. Narrative shall include provisions for repairs in case of failure to maintain continuous dewatering,
2. A complete list of equipment and materials to be used and stored on-site,
3. A schedule for the arrival of materials and construction of these systems.
4. A list of pumps by size and number to be on site. A plan to mobilize and operate additional pumps as needed to achieve the required dewatering.
5. An approvable plan shall provide for treatment of water pumped from within the immediate work area, protection from erosion of discharge and monitoring and maintenance of pumped water discharge facilities.

8-27.4 Measurement

No separate measurement shall be made for all labor, equipment and materials associated with dewatering of work areas including operation, maintenance, and removal and disposal of materials.

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8-27.5 Payment

Dewatering shall be incidental to the excavation and backfill items where dewatering is required.

8-31 Vacant

Add the following Section:

8-31 Large Wood Placements

8-31.1 Description

Furnish all materials, equipment, and labor necessary to place the large woody materials (LWM) members as indicated on the Plans and as described in the Specifications.

The LWM shall be sourced entirely from on-site salvaged trees cleared for the project or marked for felling by the Owner. The Contractor shall be responsible for the care and placement of the large woody materials, once the large woody materials are in Contractor's possession. Possession of the large woody materials is assumed once the Contractor and the Owner have marked the clearing limits and marked trees for felling. Contractor shall be responsible for hauling of large woody material to the placement location.

8-31.2 Materials

8-31.2(1) Large Woody Materials

Large woody materials are required in multiple locations, as indicated on the Plans and shall include the following.

8-31.2(1)A Whole Trees

Whole trees: Large woody material consisting of a native non-invasive whole tree; not including the rootwad mass, but with an intact bole and intact limbs. Whole trees include bark and are untreated. Shall be salvaged from on site as approved by the Owner.

8-31.2(1)D Whole Trees with Rootwads

Whole trees: Large woody material consisting of a native non-invasive whole tree; including the rootwad mass, bole and intact limbs. Whole trees include bark and are untreated. Shall be salvaged from on site as approved by the Owner.

8-31.2(1)E Slash

Slash: Woody material consisting of native non-invasive woody vegetation and down timber with a dimeter of no more than 6-inches at any point. Slash shall consist of portions of trees and brush; including the rootwad mass, bole and intact limbs. Slash includes bark and is untreated. Shall be salvaged from on site as approved by the Owner.

8-31.3 Construction Requirements

8-31.3(1) Submittals

Contractor shall submit a Large Wood Management Plan for stockpile, handling, protection and installation of large woody material (LWM). Plan shall include list of equipment to be used and methods and best practices to meet the special handling requirements. Plan shall be submitted and approved prior to delivery of LWM on-site.

8-31.4(2) Quality Assurance

Large woody materials to be salvaged shall be inspected and inventoried by the Owner's Representative and Contractor. Following the inspection, the Contractor shall be responsible for the care, and management and handling of the approved inventory of large woody material. Materials that do not meet the requirements indicated on the Plans and described in the Specifications shall be rejected, unless otherwise approved by the Engineer.

8-31.4(3) Storage, And Handling

The Contractor shall store large woody materials, harvested from on site or acquired otherwise during the project, within the limits of disturbance indicated on the Plans and as described in the Specifications, or as approved by the Owner.

The Contractor is responsible for notifying the Owner if the total quantity of large woody materials is not available to complete the Work.

The Contractor shall protect the large woody materials from theft and damage from fire, breakage during handling, vandalism, and other means that result in the large woody materials not meeting the requirements indicated on the Plans and as described in the Specifications.

The Contractor shall handle the large woody material with equipment appropriate for the task and shall not drop large woody material into position. Handling shall not breakdown the large woody material into smaller pieces. Handling and moving large woody material shall not damage existing features or landscapes. The Contractor shall replace, at no additional cost to the Owner, members of large woody materials that are broken-down during handling or placement that had met the requirements indicated on the Plans and as described in the Specifications.

8-31.4(4) Installation

Construction shall include the placement of Large Wood Materials as shown on the Plans and approved by the Engineer.

8-31.4(4)C Whole Trees and Slash

Care shall be taken when moving and installing Whole Trees so that branches and roots remain attached to the tree.

Intermingle, stack, and rack slash material under and into the placed large wood to emulate natural accumulations of wood material.

8-31.4 Measurement

Large Wood Placements will be measured based upon the area complete relative to the extents shown on the Plans and accepted in accordance with the Specifications. Materials, equipment, labor, excavation, and placement of large wood materials, shall be incidental. Measurement shall be made as percent complete relative to the extent shown on the Plans as approved by the Owner.

8-31.5 Payment

Payment shall be made as percent complete.

8-33 Vacant.

Add the following Section:

8-33 Surface Fabric

8-33.1 Description

All reference to Surface Fabric shall include placement of biodegradable fabric within the project area as shown on the Plans or as indicated by the Owner. Surface Fabric is a combination of nonwoven coir fabrics, topsoil, seeding and wooden stakes arranged as shown on the Plans. The Contractor shall provide all labor, materials (unless otherwise noted), and equipment necessary for the construction and installation of Surface Fabric as shown on the Plans.

8-33.2 Materials

Shall be as indicated on the Plans and conform to the applicable material specifications in Section 9-14.6. The Contractor shall provide the seed mix for spreading under the surface fabric. The seed mix shall be stored in a cool dry location until seeding. Applied seed mix shall be per the applicable planting zone shown on the Plans unless otherwise approved by the Owner.

8-33.3 Construction Requirements

Surface Fabric shall be constructed as shown on the Plans.

Finished surface fabric treatments shall have no loose coir fabric. Areas with loose coir fabric shall be staked with wooden stakes to hold coir fabrics firmly to underlying soil. If coir fabric folds are required around channel bends, the fold shall be in the direction of flow and coir fabric shall be staked at the folds. The applicable planting zone seed mix shall be spread under the surface fabric at the rate shown on the Plans for that planting zone.

8-33.4 Measurement

Surface Fabric shall include local excavation, subgrade preparation, installation of fabric, seeding and wood staking of fabric. Surface Fabric shall be measured by the square yard of finished area measured on the plane of the finished grade. Coverage area shall be determined through design data included on the Plans or survey of area where Surface Fabric Bank Protection is installed. No measurement shall be made for overlap or keying in of the fabric materials.

8-33.5 Payment

Payment shall be per square yard for item "Surface Fabric".

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Division 9 Materials

9-13 Riprap, Quarry Spalls, Slope Protection, and Rock for Erosion and Scour Protection and Rock Walls

9-13.1 Riprap and Quarry Spalls

9-13.1(5) Quarry Spalls

Add:

Quarry spalls shall be locally sourced from borrow pits identified by the Owner. Variation in the material gradations shall only be as approved by the Engineer. Quarry spalls with 40 percent or more material larger than 3-inches in the distribution shall be preferentially used for the Valley Grade Control Structures shown on the Plans. Quarry Spalls with smaller than average grain sizes in the distribution shall be preferentially used for the Road Improvement Embankment shown on the Plans. The largest stones within the Quarry Spalls borrow pits shall be allocated for placement along the edge of the road improvement swales.

9-14 Erosion Control and Roadside Planting

9-14.6 Erosion Control Devices

9-14.6(2) Biodegradable Erosion Control Blanket

Add:

Submit product data and the Contractor's certification of conformance to the specifications for Biodegradable Erosion Control Blanket proposed for use in construction for review by the Engineer. If alternative "or equal" products are submitted, material samples shall be submitted as well. Contractor shall not order materials until the Engineer's acceptance has been obtained.

9-14.6(2)D Vacant

Add the following Section:

9-14.6(2)D Coir Fabric

Coir fabrics shall consist of 100% biodegradable materials. Nylon or synthetic fiber material in any of the coir fabrics is not acceptable. Only those coir fabrics specified will be accepted unless otherwise reviewed and approved by the Owner.

Each roll of coir fabric shall be packaged individually in a suitable sheet, wrapper, or container to protect the fabric from damage to ultraviolet light, moisture, and mud during normal storage and handling.

Each roll of coir fabric shall be identified with a tag or label securely affixed to the outside of the roll on one end. The label shall include the manufacturer or supplier, the style number, and the roll and lot numbers.

Store all coir fabrics elevated off the ground and ensure that they are adequately covered to protect the material from damage and exposure to moisture and sunlight. Protect coir fabrics from sharp objects which may damage the fabric. Coir fabrics damaged during transport, storage or placement shall be replaced at no expense to the Owner.

The Owner may randomly select and obtain samples from rolls of coir fabric after arrival on the site and prior to installation to compare to previously submitted samples.

9-14.6(2)E Vacant

Add the following Section:

9-14.6(2)E Nonwoven Coir Fabric

The nonwoven coir fabric shall be a biodegradable coconut fiber matrix natural fiber netting mat from one of the following manufactures; North American Green BioNet C125BN, Western Excelsior Excel CC-4 All Natural, Nedia C400B, or equal as reviewed and approved by the Engineer. The fabric shall meet the following performance criteria:

Property	Test Method	Criterion
Thickness, min.	ASTM D 6525	0.23 in (5.84mm)
Resiliency, min.	ECTC Guidelines	85%
Water Absorbency	ASTM D 1117	365% (+/-10%)
Mass/Unit Area, min.	ASTM D 6475	9.5 oz/sy (322 g/sm)
Light Penetration, min.	ECTC Guidelines	10%
Tensile Strength –MD, min.	ASTM D 6818	206 lb/ft (3.0 kN/m)
Elongation – MD, max.	ASTM D 6818	20%
Tensile Strength – TD, min.	ASTM D 6818	130 lb/ft (1.9 kN/m)
Elongation – TD, max.	ASTM D 6818	20%
Minimum Roll Width	Measured	6.6 ft.

MD = machine direction, TD = Thread direction

9-14.6(10) Vacant

Add the following Section:

9-14.6(10) Wood Stakes

Wood Stakes shall be used to anchor all coir fabrics. Stakes shall be untreated wood free of rot and decay, produced from stud grade or better lumber. Stakes shall be the style and dimensions shown on the Plans.

Submit product data and the Contractor's certification of conformance to the specifications for Wood Stakes proposed for use in construction for review by the Engineer. If alternative "or equal" products are submitted, material samples shall be submitted as well. Contractor shall not order or manufacture materials until the Engineer's acceptance has been obtained.

9-14.7 Plant Materials

9-14.7(1) Description

Add the following numbered items:

4. Live cuttings shall be harvested no less than 7 days and no more than 14 days prior to installation. Live cuttings shall be continuously and fully submerged in fresh water from within 1 hour of harvest to within 1 hour of installation.

5. Live cuttings shall have the lower rooting end recut cut to an approximate 45-degree angle no more than 1 hour prior to installation. The fresh cut prior to installation shall be 1 inch up from the original cut made during harvest.

5.1.

NO.	BY	DATE	REVISION DESCRIPTION

DF	PL,JG	GJ
DRAWN	DESIGNED	CHECKED
JG	6/28/2021	
APPROVED	DATE	PROJECT

YAKAMA NATION FISHERIES PROGRAM
YAKAMA RESERVATION
STARVATION FLATS UPPER NW MEADOW FINAL DESIGN

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SPECIFICATIONS (6 OF 6)

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