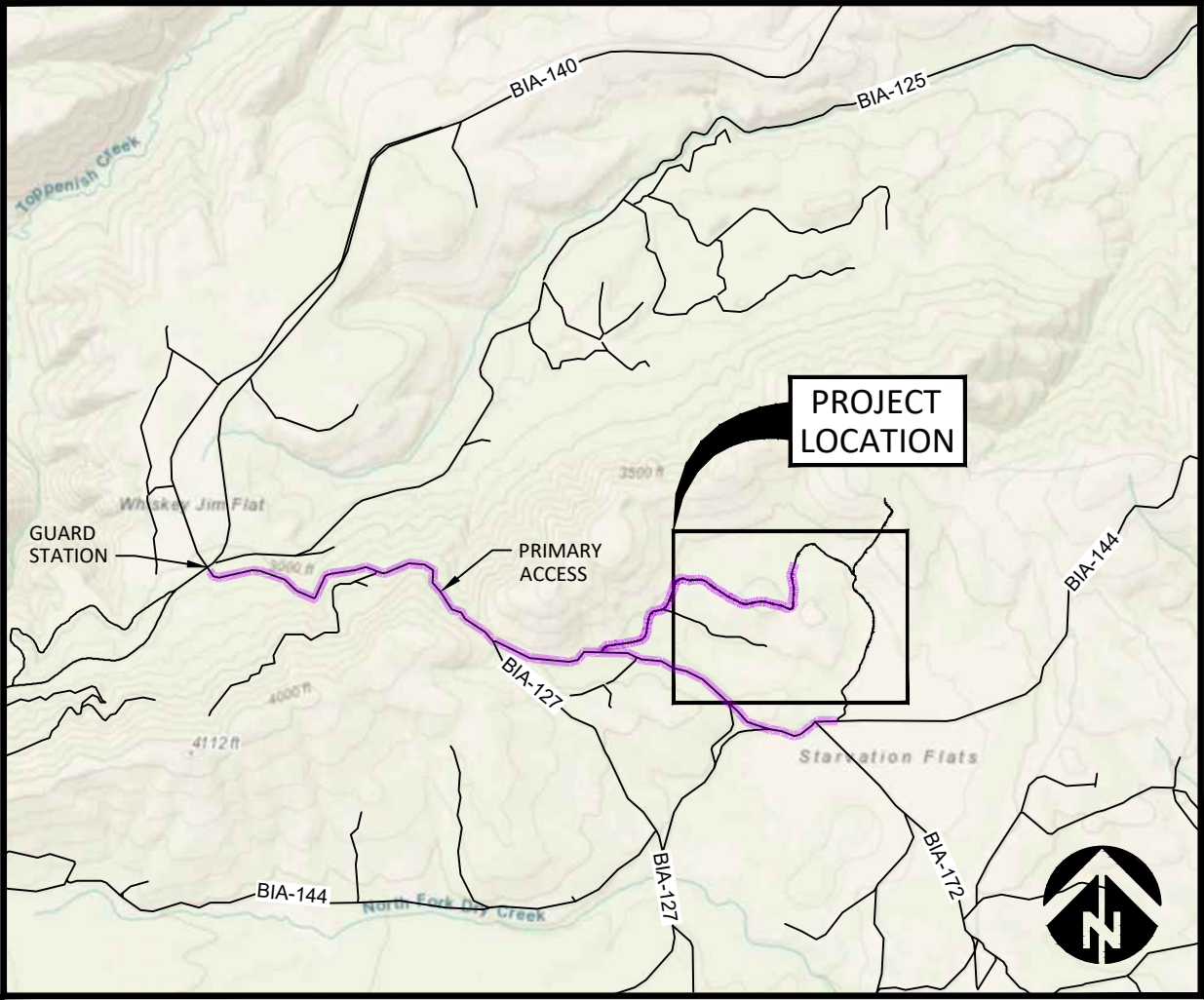
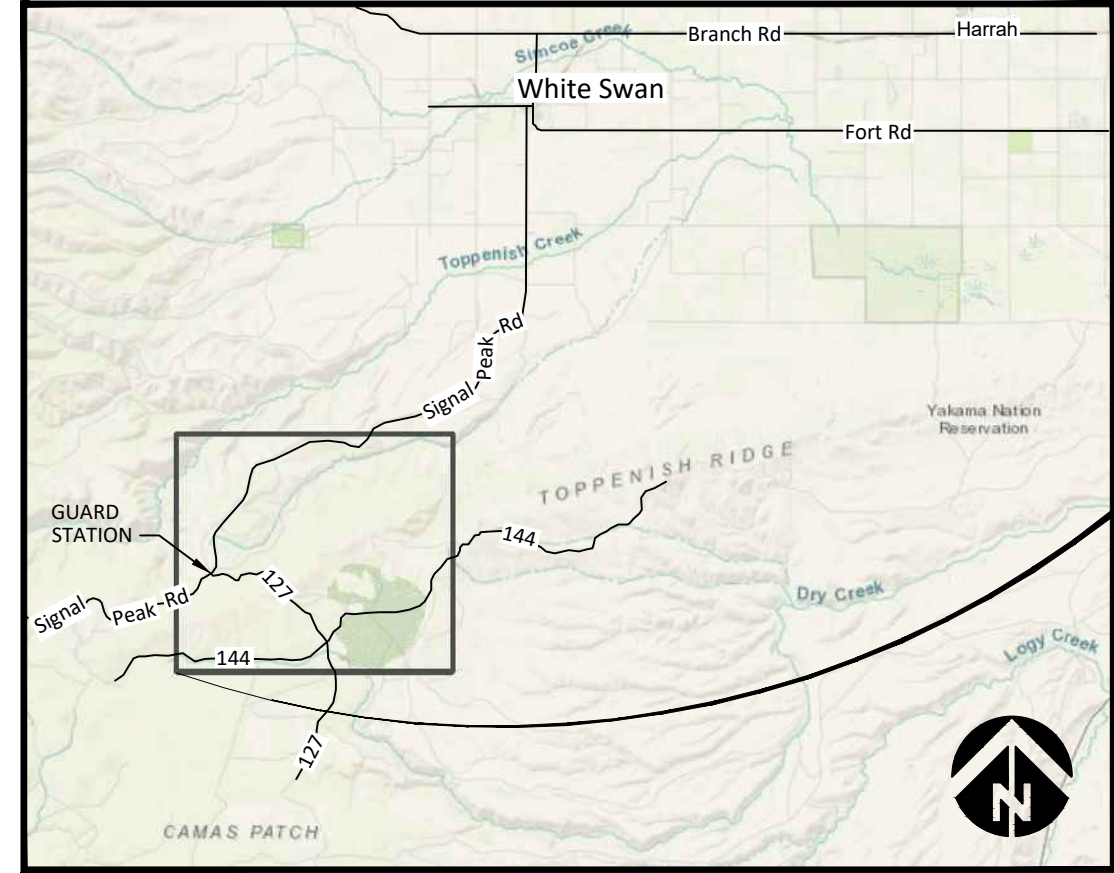
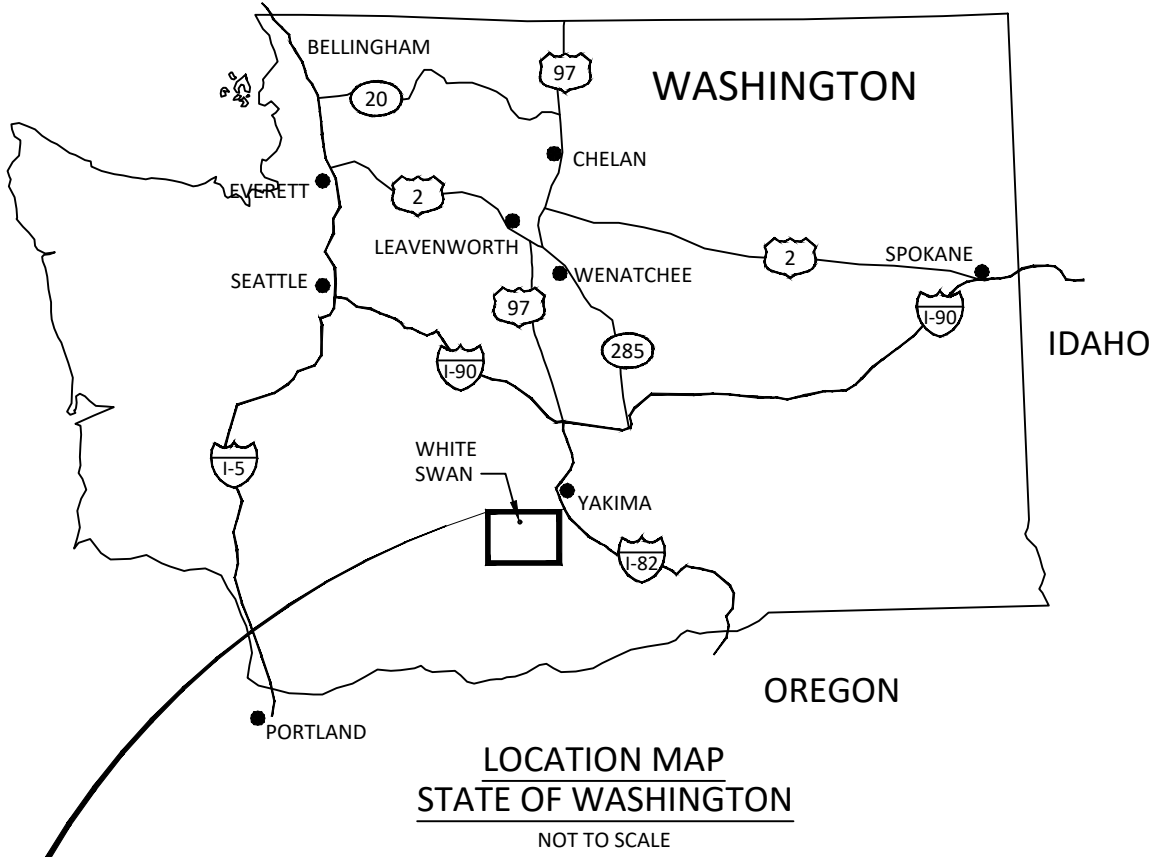


STARVATION FLATS UPPER NW
MEADOW FINAL DESIGN
YAKAMA NATION FISHERIES PROGRAM

Designs for work completed in previous phases have been edited out

JUNE 28, 2021



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)
- 6 CONSERVATION BMPs AND TESC MEASURES (2 OF 2)
- 7 PROPOSED CONDITIONS OVERVIEW
- ~~8 PROPOSED CONDITIONS PLAN (1 OF 6)~~
- ~~9 PROPOSED CONDITIONS PLAN (2 OF 6)~~
- ~~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



NO.	BY	DATE	REVISION DESCRIPTION

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

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



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

COVER SHEET, LOCATION, AND
SHEET LIST

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.

- 2.1. 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.

- 3.1. 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.

4.1. 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.

5.1. 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.

- 6.1. 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.

- 7.1. 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.

- 8.1. 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.

9.1. 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.

10.1. 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.

- 11.1. 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:

- 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.

- 12.1. 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).

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

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



				DF DRAWN	PLJG DESIGNED	GJ CHECKED	YAKAMA NATION FISHERIES PROGRAM YAKAMA RESERVATION STARVATION FLATS UPPER NW MEADOW FINAL DESIGN 501 Portway Avenue, Suite 101 Hood River, OR 97031 541.386.9003 www.interfluve.com	GENERAL NOTES, LEGEND, AND ESTIMATED QUANTITIES	SHEET
				JG APPROVED	6/28/2021 DATE				2 OF 32
NO.	BY	DATE	REVISION DESCRIPTION			PROJECT			

- 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.

- 14.1. 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.

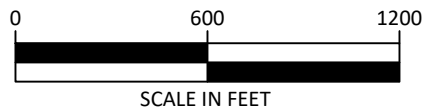
- 15.1. STAGING AREAS (USED FOR CONSTRUCTION EQUIPMENT STORAGE, VEHICLE STORAGE, FUELING, SERVICING, AND HAZARDOUS MATERIAL STORAGE) SHALL BE 150 FEET OR MORE FROM ANY NATURAL WATER BODY OR WETLAND, OR ON AN ADJACENT, ESTABLISHED ROAD AREA IN A LOCATION AND MANNER THAT WILL PRECLUDE EROSION INTO OR CONTAMINATION 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.

- 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).

- 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.



					DF DRAWN	PLJG DESIGNED	GJ CHECKED	YAKAMA NATION FISHERIES PROGRAM YAKAMA RESERVATION STARVATION FLATS UPPER NW MEADOW FINAL DESIGN	 501 Portway Avenue, Suite 101 Hood River, OR 97031 541.386.9003 www.interfluve.com	GENERAL NOTES	SHEET
					JG APPROVED	6/28/2021 DATE	PROJECT				3 OF 32
NO.	BY	DATE	REVISION	DESCRIPTION							

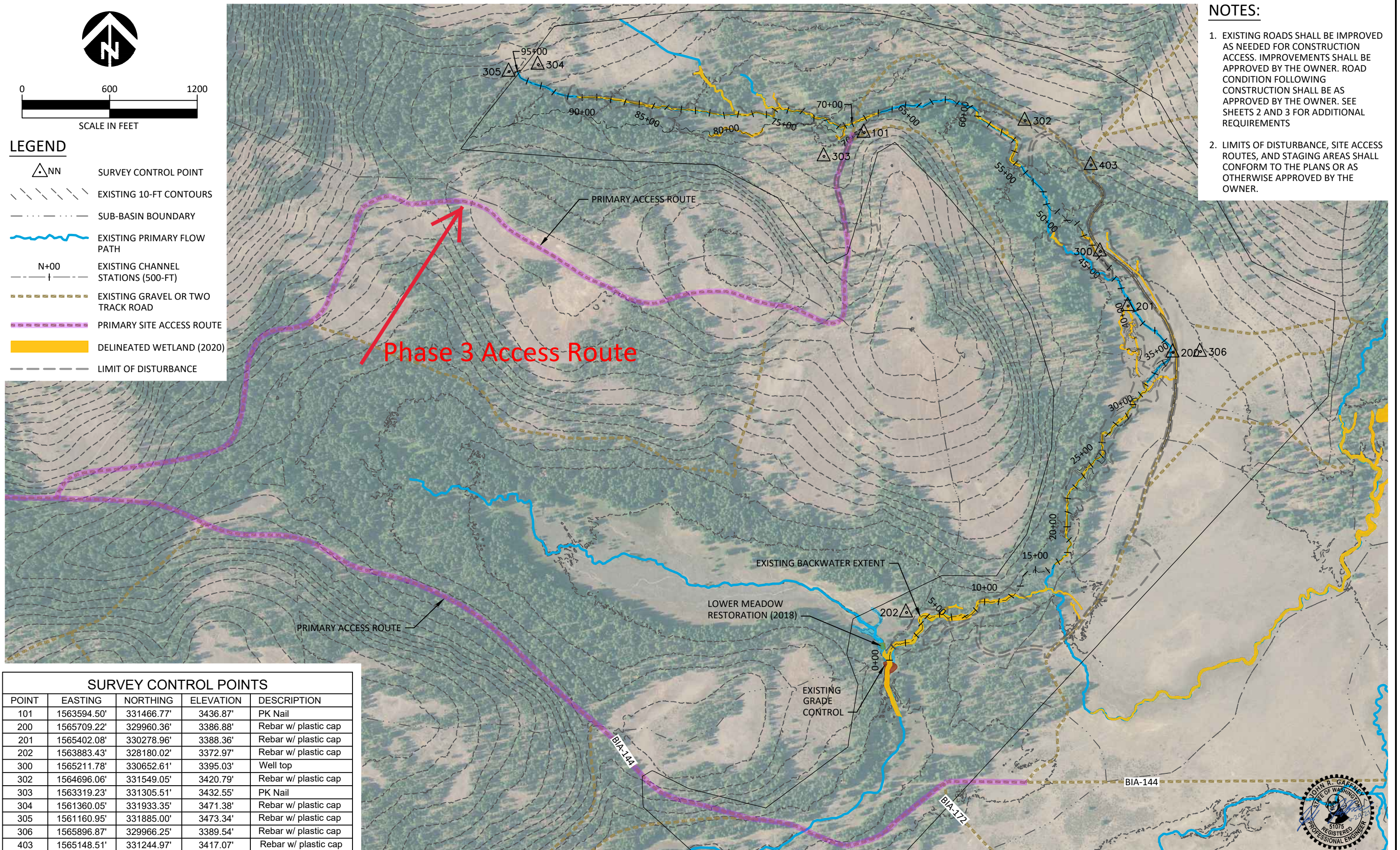


LEGEND

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

NOTES:

- 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
- LIMITS OF DISTURBANCE, SITE ACCESS ROUTES, AND STAGING AREAS SHALL CONFORM TO THE PLANS OR AS OTHERWISE APPROVED BY THE OWNER.



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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JG	6/28/2021	
APPROVED	DATE	PROJECT

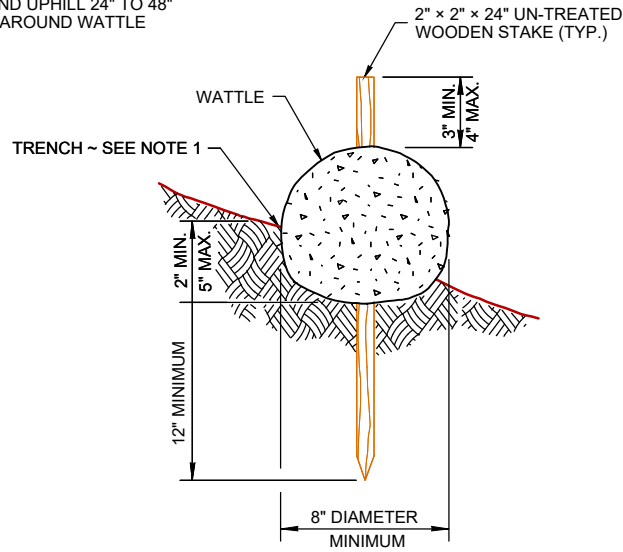
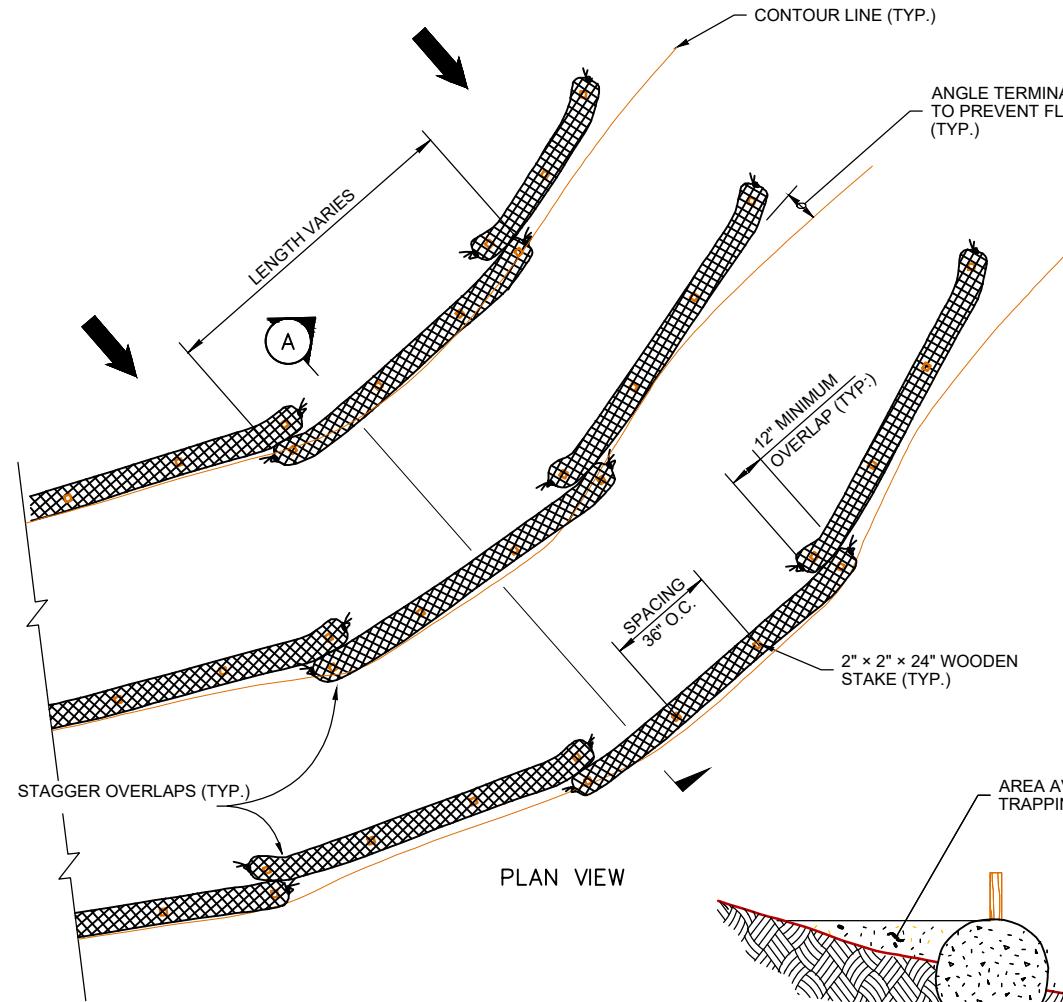
YAKAMA NATION FISHERIES PROGRAM
YAKAMA RESERVATION
STARVATION FLATS UPPER NW MEADOW FINAL DESIGN



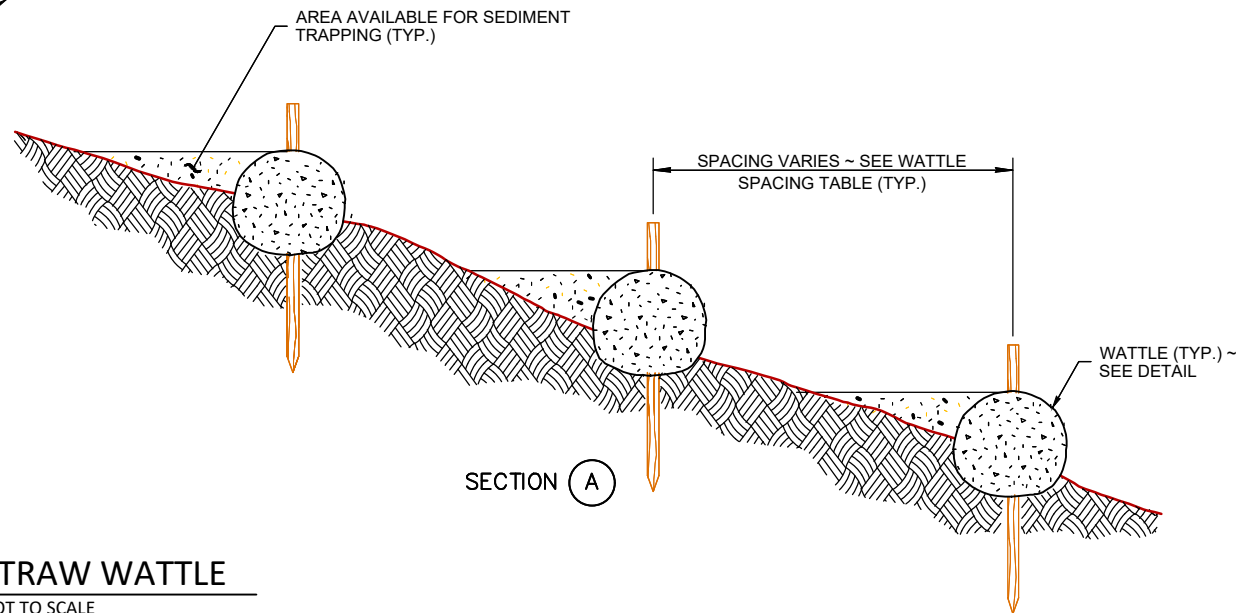
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EXISTING CONDITIONS, SITE ACCESS,
AND STAGING





WATTLE DETAIL



SECTION A

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

STRAW WATTLE
NOT TO SCALE

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.

I:\projects\2021\Yakama Nation Fisheries Program\Starvation Flats Upper NW Meadow Final Design.dwg, 4/26/21

NO.	BY	DATE	REVISION DESCRIPTION

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

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



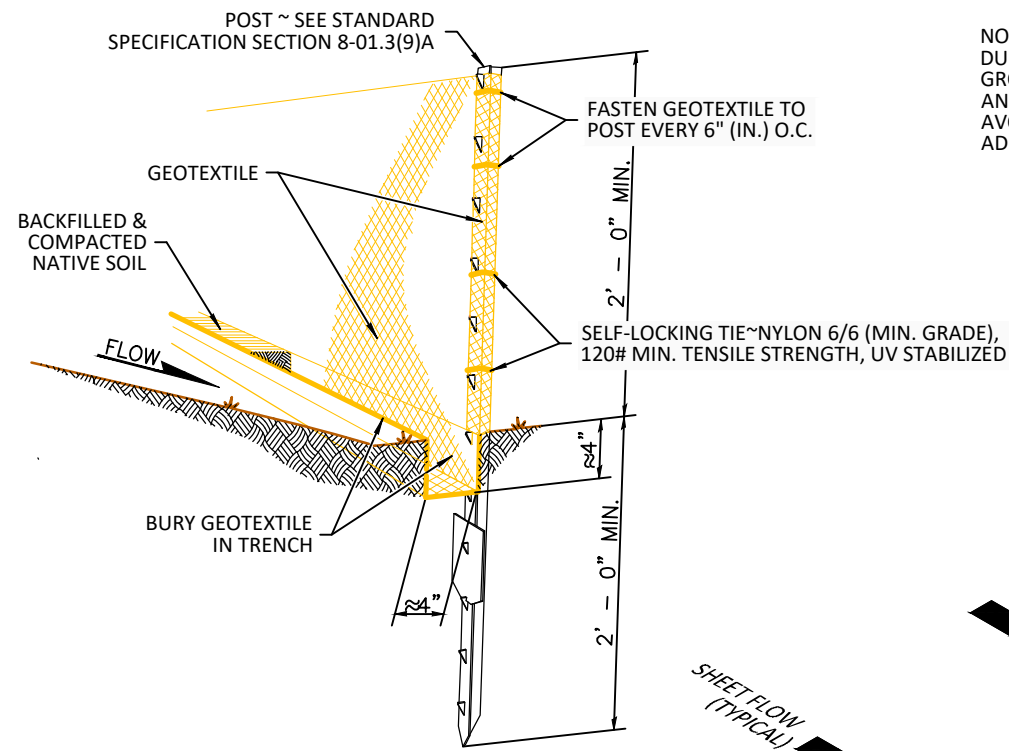
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CONSERVATION BMPS AND TESC
MEASURES (1 OF 2)

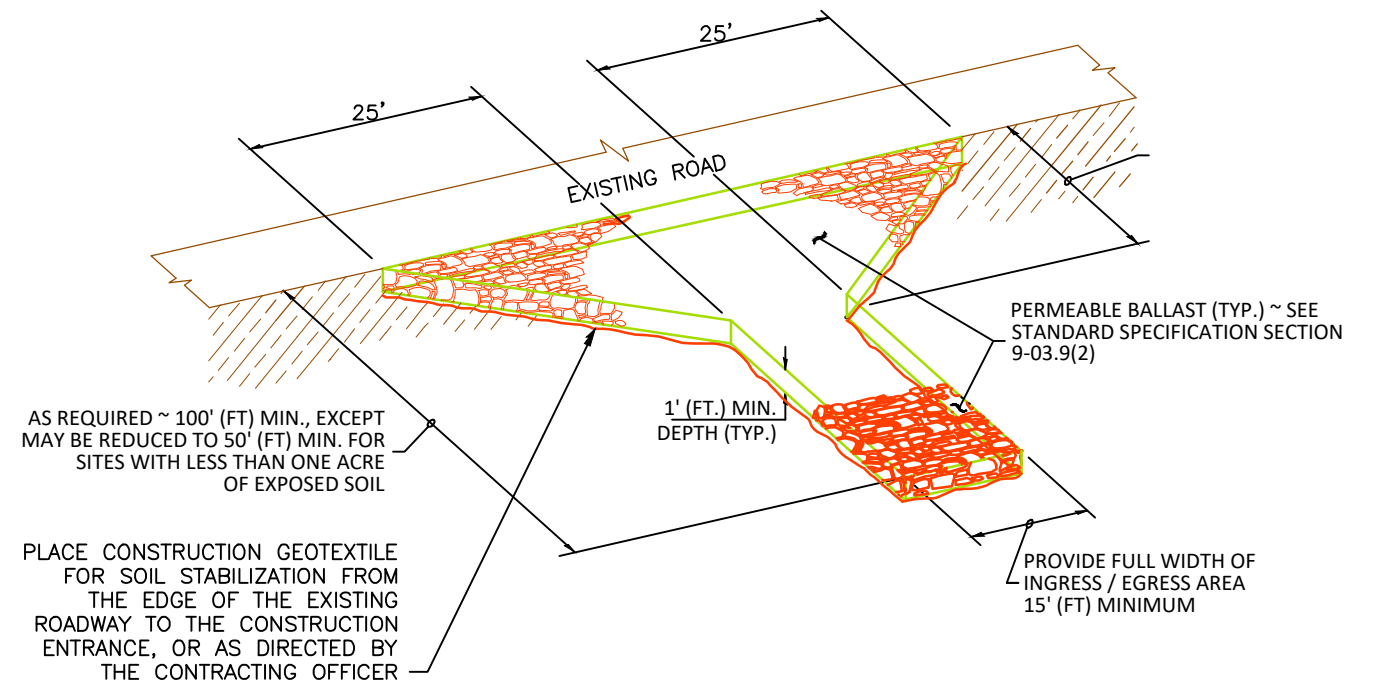


SHEET

5 OF 32



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.

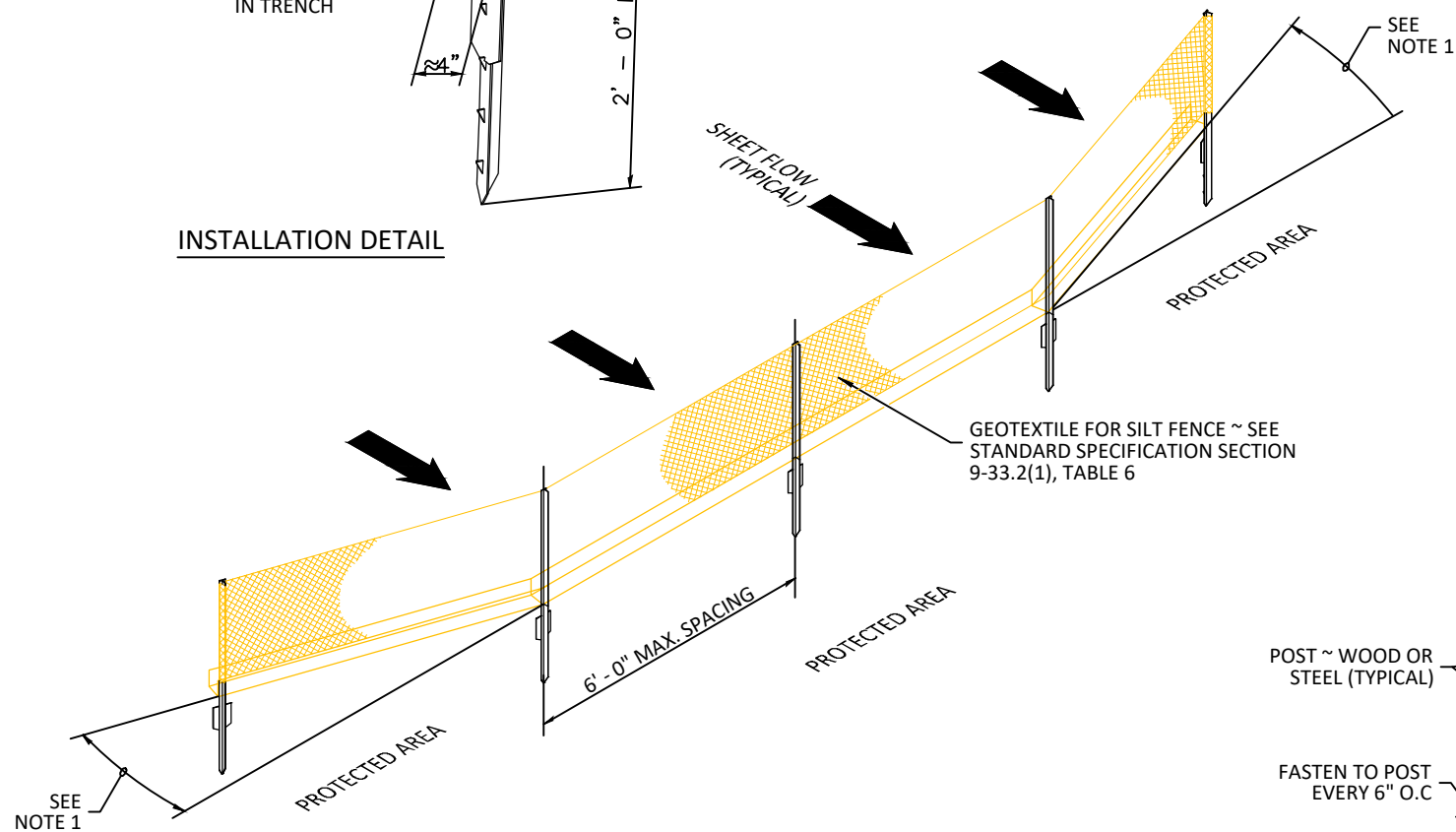


NOTE:
STABILIZED CONSTRUCTION ENTRANCE SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 8-01.3(7)

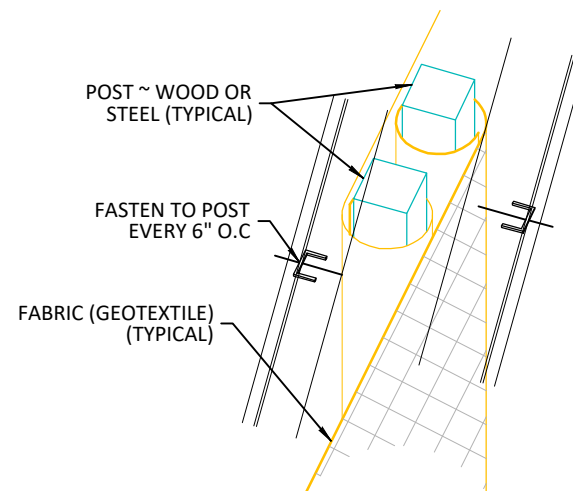
ISOMETRIC VIEW

TYPICAL DETAIL - STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



ISOMETRIC VIEW



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

SPICE DETAIL

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

NO.	BY	DATE	REVISION DESCRIPTION
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	JG	6/28/2021	
	APPROVED	DATE	PROJECT

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YAKAMA RESERVATION
STARVATION FLATS UPPER NW MEADOW FINAL DESIGN



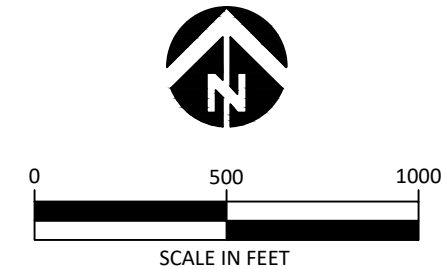
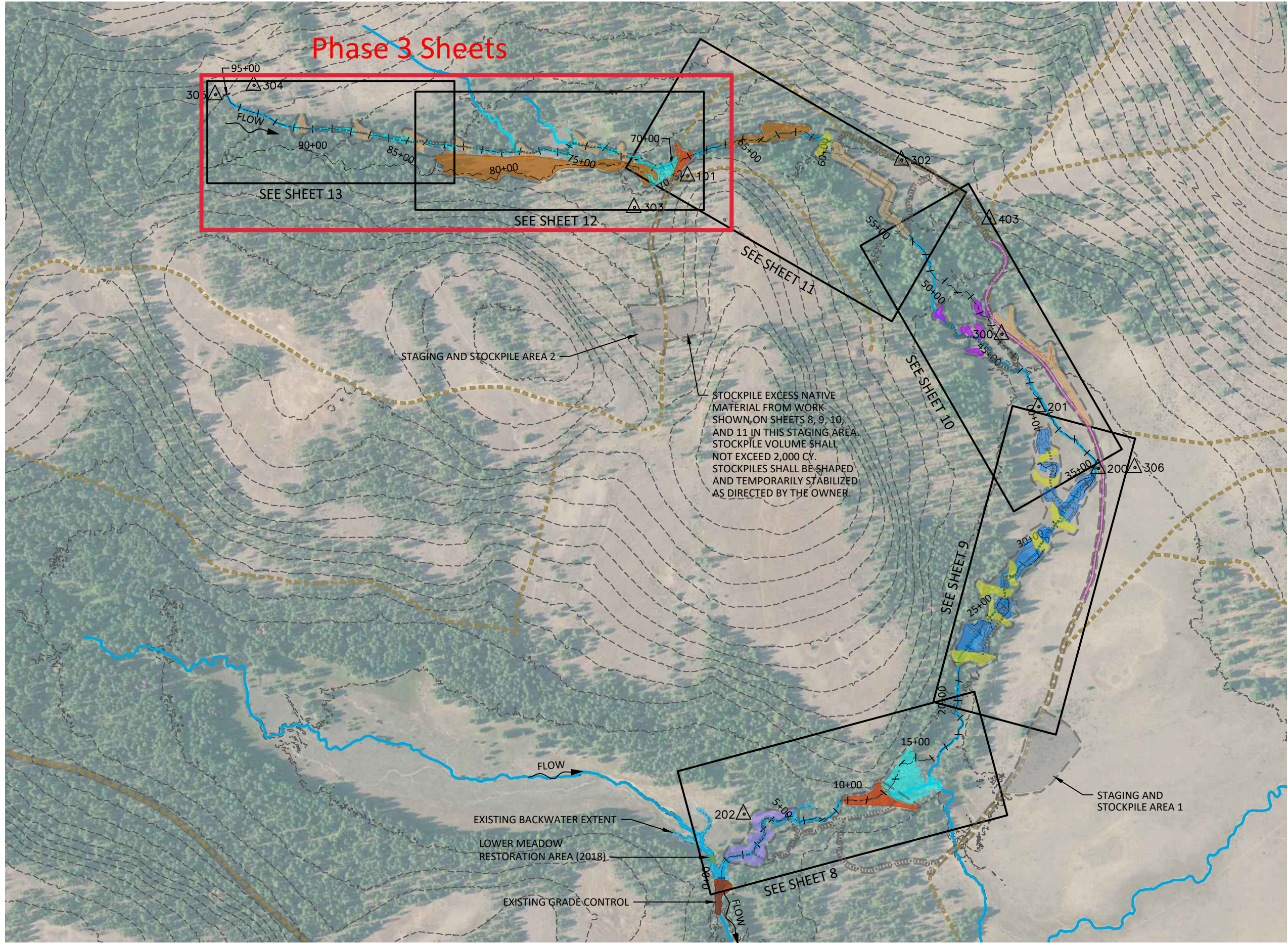
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CONSERVATION BMPs AND TESC
MEASURES (2 OF 2)



SHEET

6 OF 32



LEGEND

- SURVEY CONTROL POINT
- EXISTING 10-FT CONTOURS
- EXISTING PRIMARY FLOW PATHS
- 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



NO.	BY	DATE	REVISION DESCRIPTION

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APPROVED	DATE	PROJECT

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



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PROPOSED CONDITIONS OVERVIEW

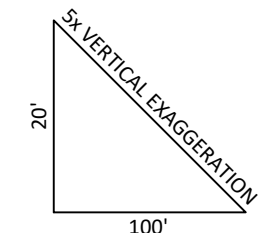
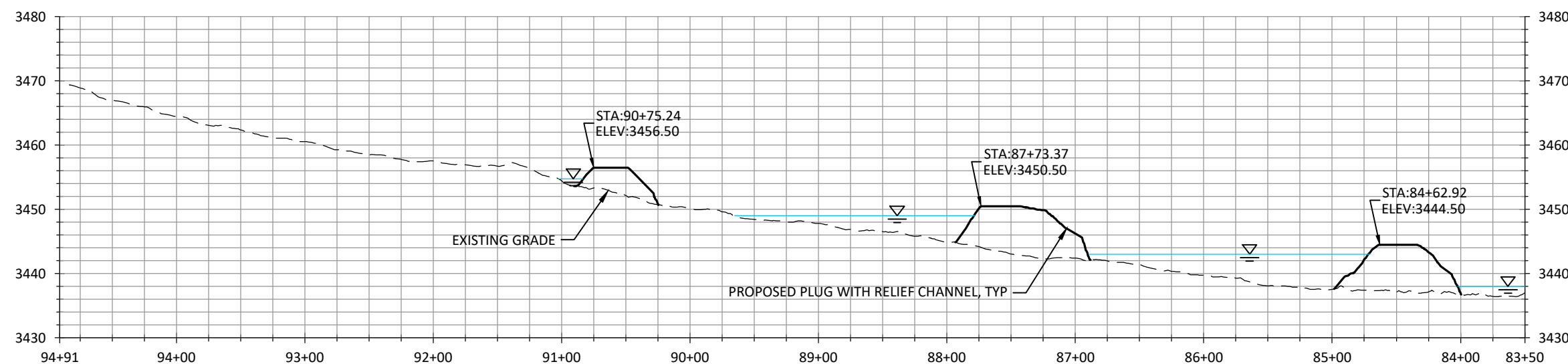


0 100 200
SCALE IN FEET

LEGEND

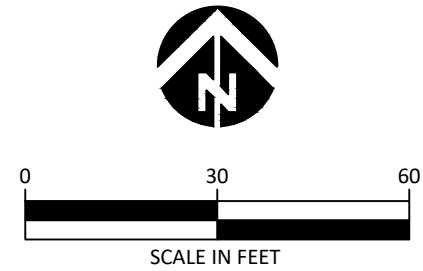
- SURVEY CONTROL POINT
- EXISTING 0.5-FT CONTOURS
- PROPOSED 0.5-FT CONTOURS
- EXISTING PRIMARY FLOW PATHS
- EXISTING CHANNEL STATIONS (500-FT)
- TEMPORARY ACCESS ROUTE
- LIMIT OF DISTURBANCE
- PROPOSED STAGING / STOCKPILE AREA
- BACKWATER
- FLOW PATH PROMOTION
- PLUG
- FLOODPLAIN ROUGHNESS
- COIR FABRIC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

PLAN



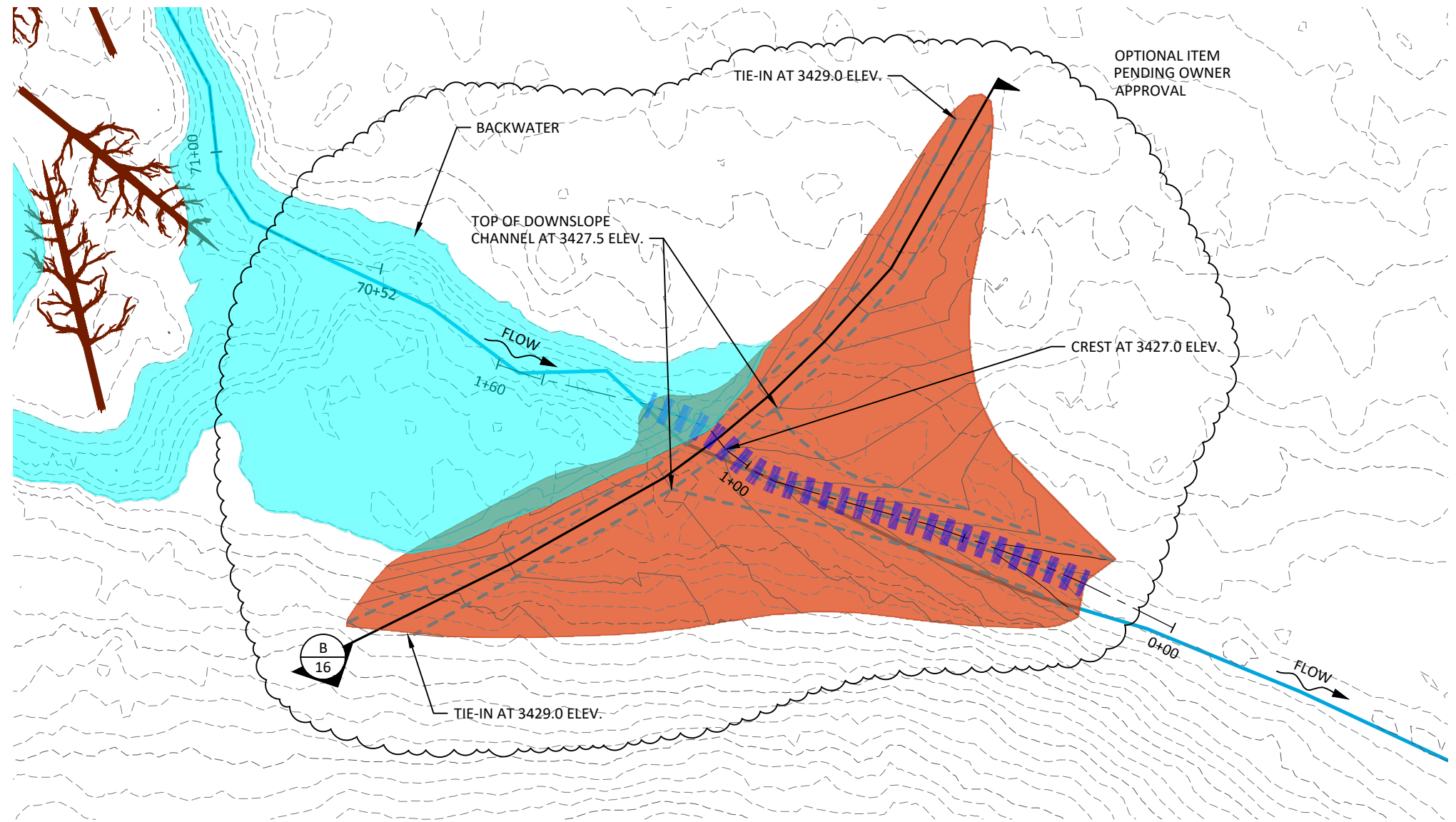
PROFILE - EXISTING UPPER DITCH STA 83+50 TO STA 94+91



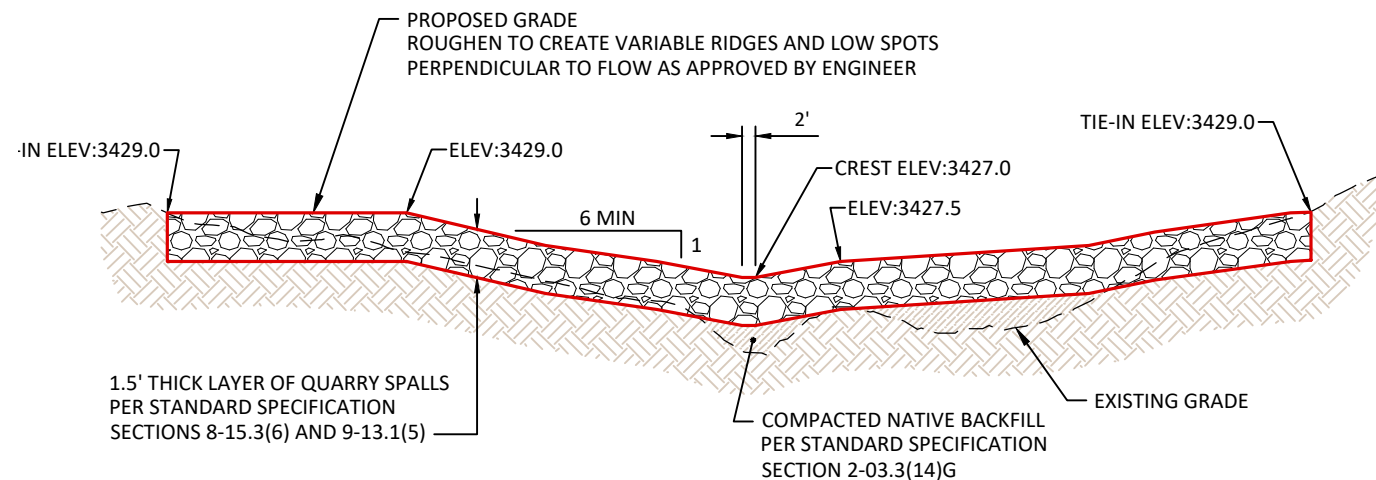


LEGEND

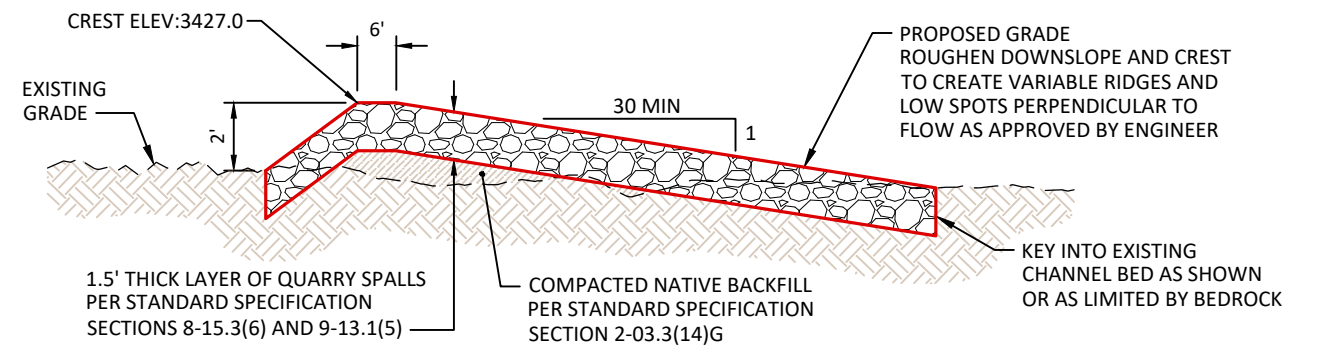
- SURVEY CONTROL POINT
- EXISTING 0.5-FT CONTOURS
- EXISTING PRIMARY FLOW PATHS
- EXISTING CHANNEL STATIONS (500-FT)
- GRADE CONTROL
- BACKWATER
- FLOW PATH PROMOTION



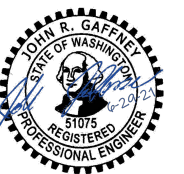
PLAN



B
16
SECTION - VALLEY GRADE CONTROL



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



NO.	BY	DATE	REVISION DESCRIPTION

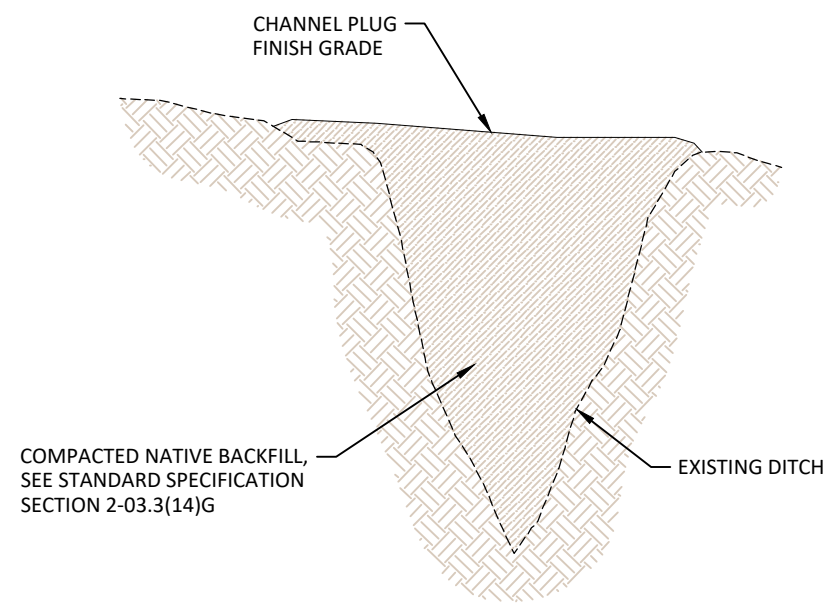
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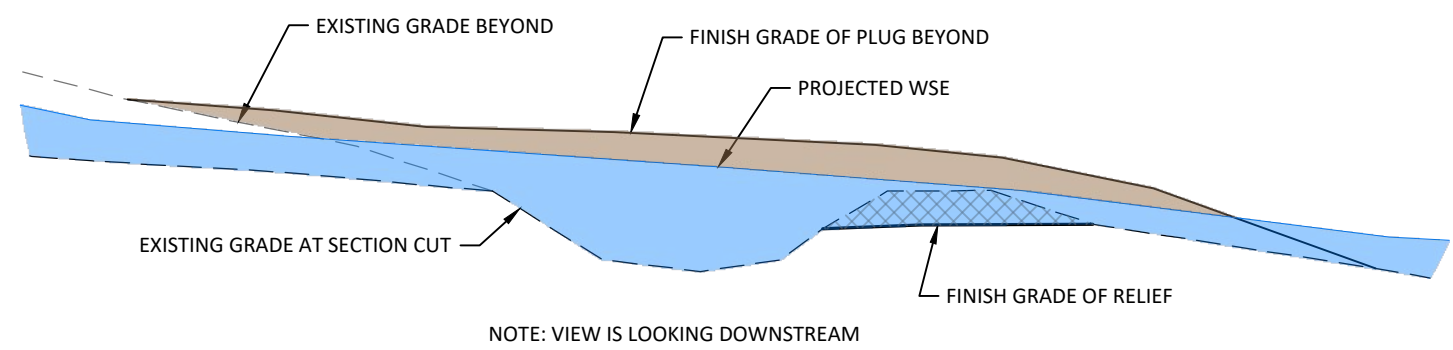


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VALLEY GRADE CONTROL STA 70+00
PLAN AND DETAILS



8
21 TYPICAL SECTION - DITCH PLUG
NOT TO SCALE



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



NO.	BY	DATE	REVISION DESCRIPTION

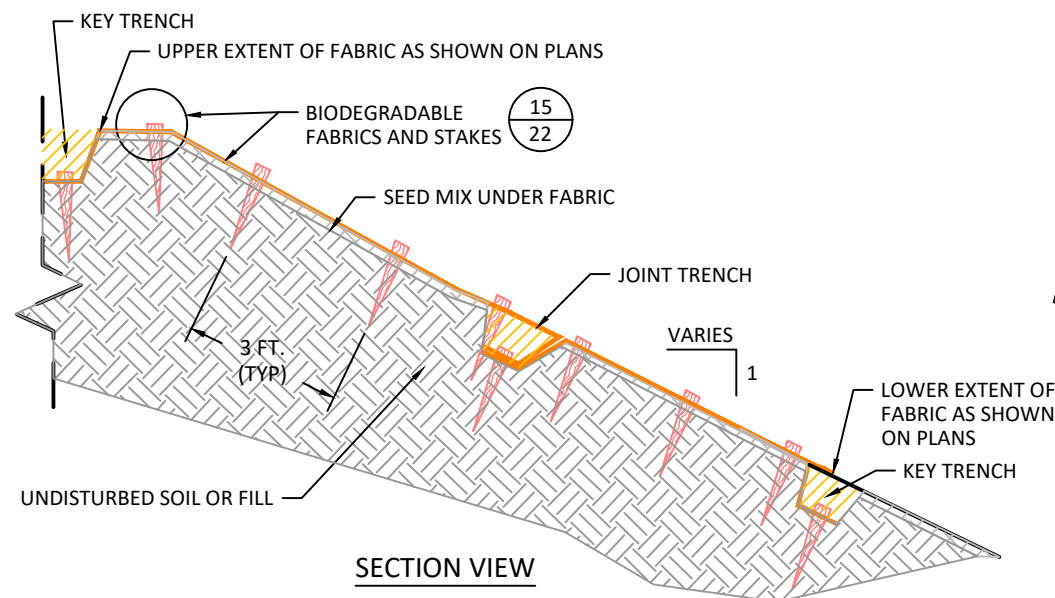
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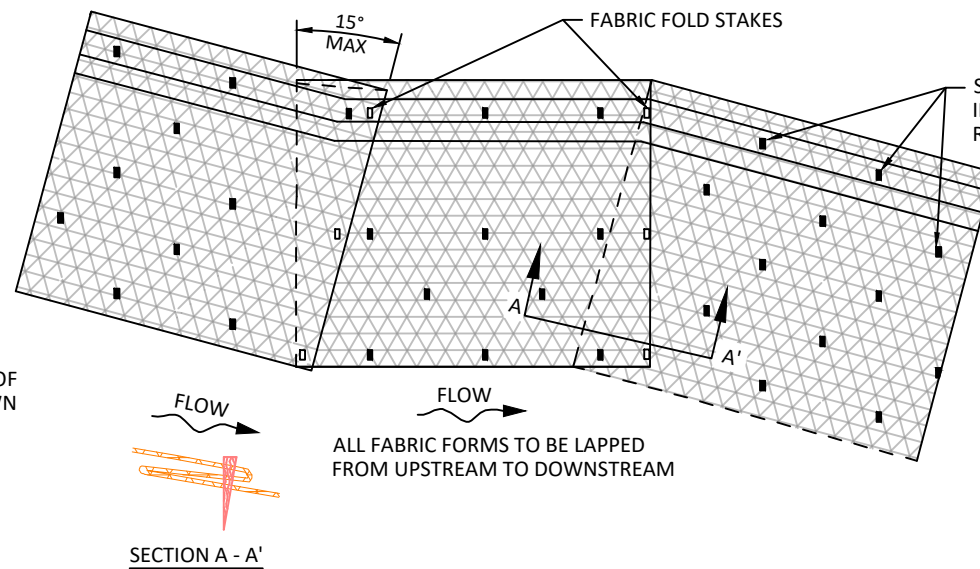


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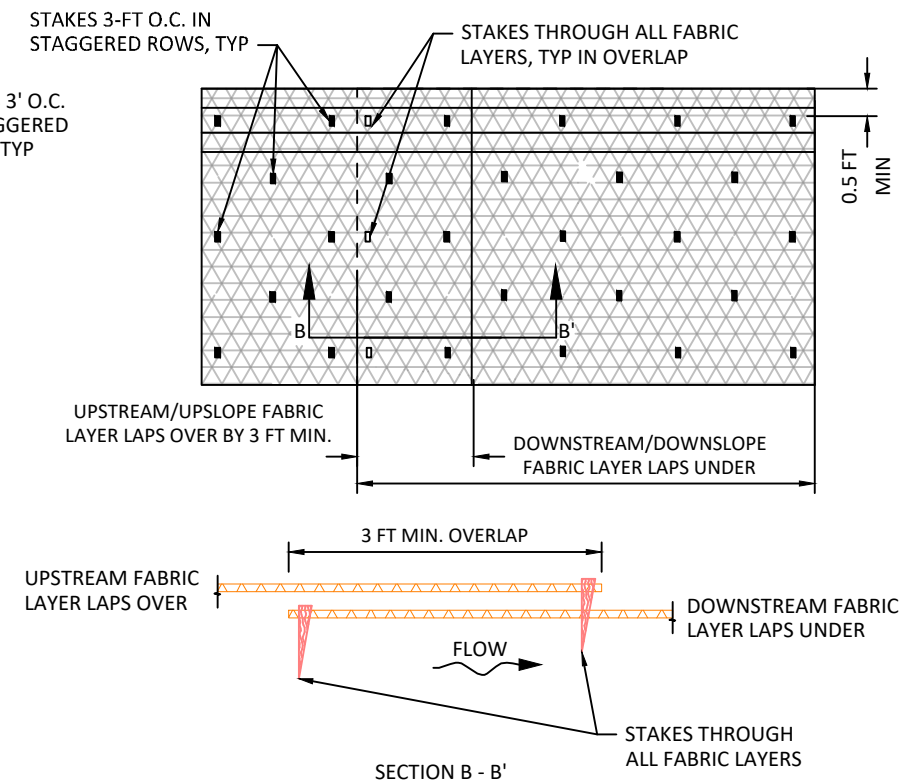
DITCH PLUG AND RELIEF TYPICAL
DETAILS



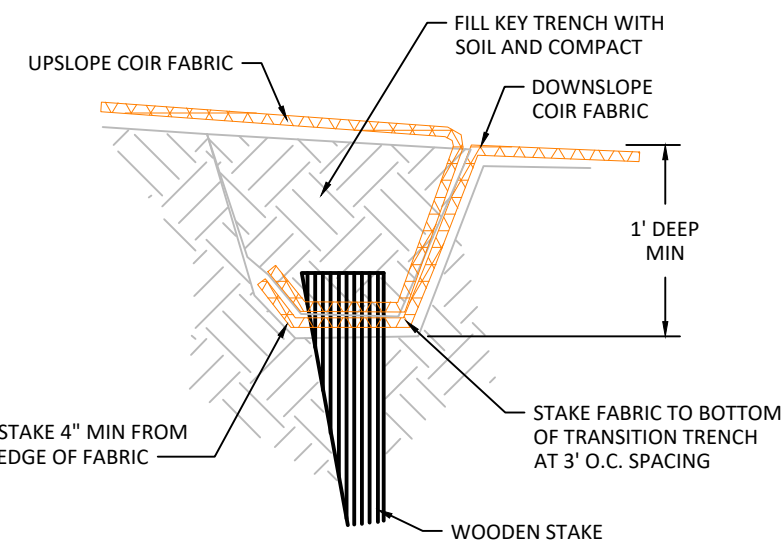
9
22 **SURFACE FABRIC**
NOT TO SCALE



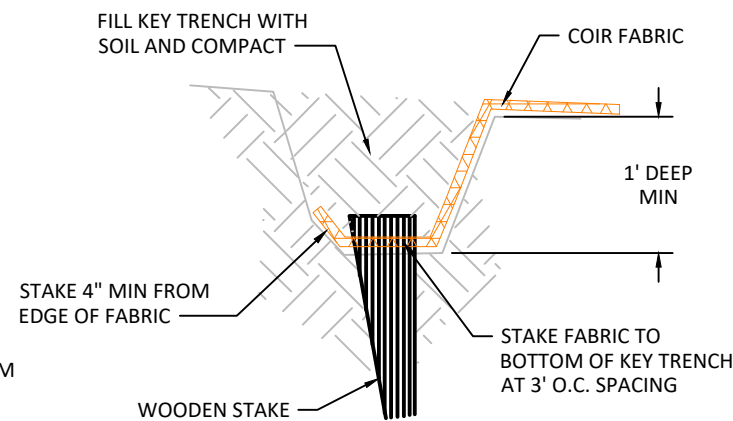
10
22 **FOLDING OF FABRIC AT BENDS**
NOT TO SCALE



11
22 **FABRIC JOINING PERPENDICULAR TO SLOPE**
NOT TO SCALE



12
22 **JOINT TRENCH PARALLEL TO SLOPE**
NOT TO SCALE



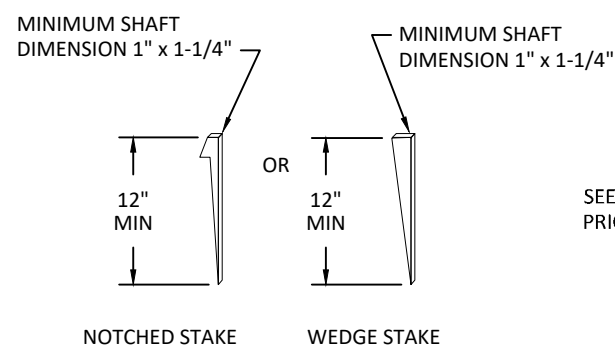
13
22 **KEY TRENCH AT ALL FABRIC EDGES**
NOT TO SCALE

GENERAL NOTES ON COIR FABRIC

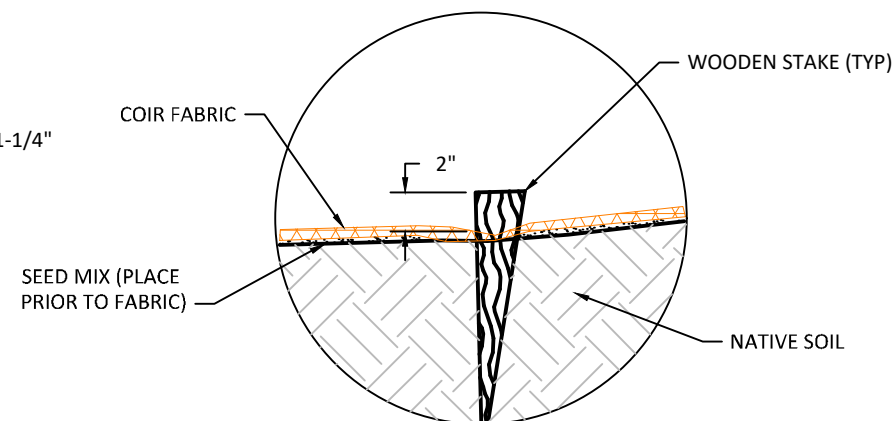
1. FABRIC SHALL BE NON-WOVEN COIR FABRIC, MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 9-14.6(2)D.
2. INSERT AND DRIVE WOOD STAKES, SEE STANDARD SPECIFICATION SECTION 9-14.6(10), BETWEEN THE FIBERS OF THE COIR FABRIC AS SHOWN. STAKING SHALL NOT BE FACILITATED BY PRE-CUTTING OF THE COIR 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



14
22 **WOODEN STAKE FABRICATION**
NOT TO SCALE



15
22 **BIODEGRADABLE FABRIC AND STAKES**
NOT TO SCALE

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SURFACE FABRIC TREATMENT
TYPICAL DETAILS



SHEET

22 OF 32

2-01.2(2) Disposal Method No. 2 - Waste Site								2-03.3(14)G Backfilling			
Add:								Add:			
This disposal method shall only be used for invasive and non-native cleared and grubbed vegetation.								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.			
2-01.2(3) Disposal Method No. 3 - Chipping											
Add:											
Chipping shall only be as approved by the Owner. Other methods shall take precedence.								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.			
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								2-03.4 Measurement			
2-01.3(1) Clearing								Replace with:			
Add item number 8 as follows:								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.			
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.								“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.			
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.								“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.			
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								2-03.5 Payment			
Replace with:								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.								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 <i>Section 1-04.8</i> and <i>Section 1-09.9</i> for the following bid items:			
								“Excavation incl. Near-Site Stockpile” per cubic yard			
								“Embankment Fill and Compaction” per cubic yard			

2-04Haul 2-04.2Vacant Add: 2-04.2Contaminated 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. 2-09Structure Excavation 2-09.3Construction 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 8Miscellaneous Construction 8-01Erosion Control and Water Pollution Control 8-01.3Construction 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. 8-01.4Measurement Replace with: “TESC Plan and Implementation,” including the above amendments to the item will be measured by lump sum. 8-01.5Payment 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 <i>Section 1-04.8</i> and <i>Section 1-09.9</i> for the following bid items: “TESC Plan and Implementation” per lump sum. 8-02Roadside Restoration 8-02.1Description 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. 8-02.3Construction 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. 8-02.4Measurement 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. 8-02.5Payment 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 <i>Section 1-04.8</i> and <i>Section 1-09.9</i> for the following bid items: “Seeding” per acre.			DF DRAWN PL,JG DESIGNED GJ CHECKED JG 6/28/2021 APPROVEDDATE 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 SPECIFICATIONS (3 OF 6) SHEET 29 OF 32			NO. BY DATE REVISION DESCRIPTION	
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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.				8-26.2 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.															
				DF DRAWN GJ CHECKED PL,JG DESIGNED JG 6/28/2021 APPROVED DATE PROJECT				YAKAMA NATION FISHERIES PROGRAM YAKAMA RESERVATION STARVATION FLATS UPPER NW MEADOW FINAL DESIGN				 501 Portway Avenue, Suite 101 Hood River, OR 97031 541.386.9003 www.interfluve.com				SPECIFICATIONS (4 OF 6)				SHEET 30 OF 32			
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8-27.5Payment Dewatering shall be incidental to the excavation and backfill items where dewatering is required. 8-31Vacant Add the following Section: 8-31Large Wood Placements 8-31.1Description 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. 8-31.2Materials 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)AWhole 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)DWhole 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)ESlash 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. 8-31.3Construction 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)CWhole 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. 8-31.4Measurement 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. 8-31.5Payment Payment shall be made as percent complete. 8-33Vacant. Add the following Section: 8-33Surface Fabric 8-33.1Description 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. 8-33.2Materials 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. 8-33.3Construction 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. 8-33.4Measurement 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. 8-33.5Payment Payment shall be per square yard for item “Surface Fabric”. DF DRAWN JG APPROVED PL,JG DESIGNED 6/28/2021 DATE GJ CHECKED PROJECT YAKAMA NATION FISHERIES PROGRAM YAKAMA RESERVATION STARVATION FLATS UPPER NW MEADOW FINAL DESIGN  501 Portway Avenue, Suite 101 Hood River, OR 97031 541.386.9003 www.interfluve.com SPECIFICATIONS (5 OF 6) SHEET 31 OF 32
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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.

DF

DRAWN

JG

APPROVED

PL,JG

DESIGNED

6/28/2021

DATE

GJ

CHECKED

PROJECT

YAKAMA NATION FISHERIES PROGRAM

YAKAMA RESERVATION

STARVATION FLATS UPPER NW MEADOW FINAL DESIGN



501 Portway Avenue, Suite 101

Hood River, OR 97031

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SPECIFICATIONS (6 OF 6)

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32 OF 32

JOHN R. GAFFNEY

STATE OF WASHINGTON

51075

REGISTERED PROFESSIONAL ENGINEER

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