NEZ PERCE TRIBE
DEPARTMENT OF FISHERIES RESOURCE MANAGEMENT

CONSTRUCTION PLANS FOR

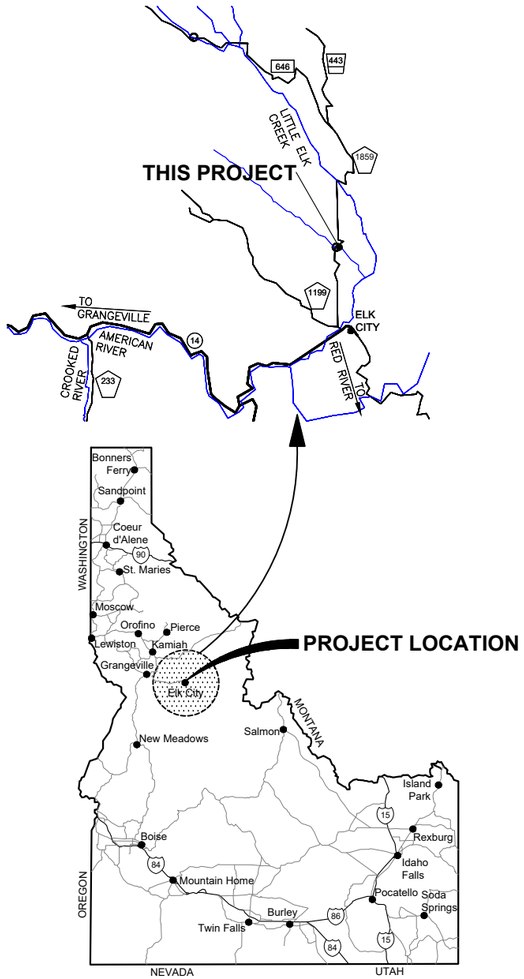
BIG ELK CREEK CULVERT REPLACEMENT
ELK CREEK ROAD

IDAHO COUNTY, IDAHO

SHEET INDEX

PROJECT: 1-23155

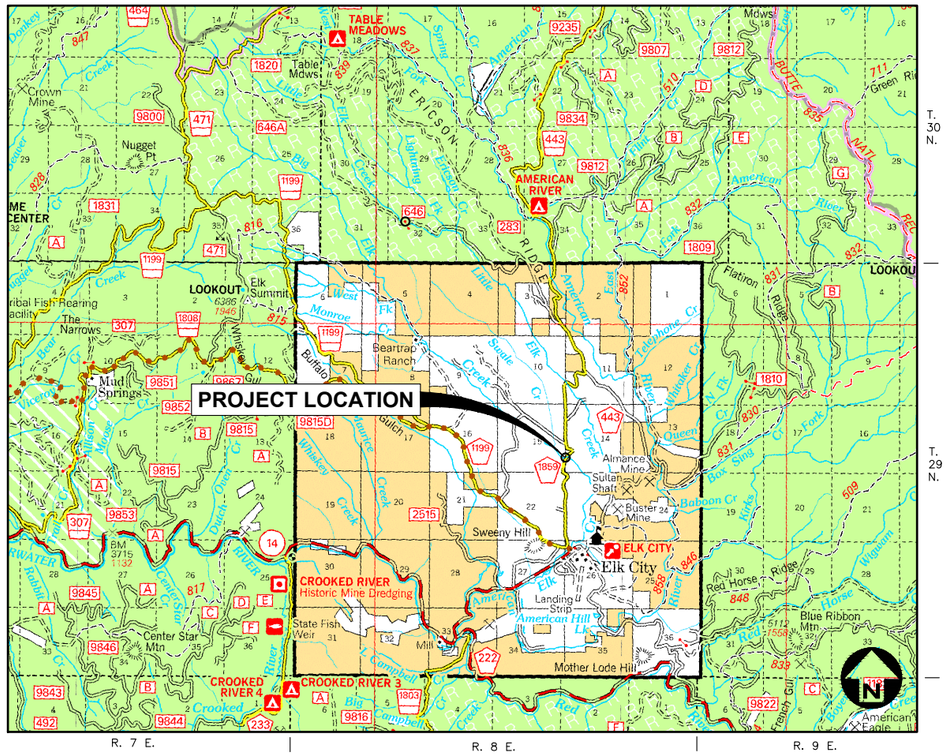
DATE: 9/30/2024



LOCATION MAP

NOT TO SCALE

SECTION 14, TOWNSHIP 29 NORTH, AND RANGE 8 EAST
LAT: 45.847°, LONG: -115.4429°



VICINITY MAP

NOT TO SCALE

PLANS PREPARED BY:

BEN WINDAUER, E.I.

QA/QC BY:

JEREMIAH THEYS, P.E.

PROFESSIONAL ENGINEER REGISTERED 12313 STATE OF IDAHO JEREMIAH J. THEYS 9-30-2024

NOTE:
DRAWING SCALE IS ONLY ACCURATE WHEN PLANS ARE PLOTTED ON 11" X 17" (TABLOID)-SIZED PAPER.

GreatWest ENGINEERING
2501 BELT VIEW DRIVE
HELENA, MT 59601
(406)449-8627

NO.	REVISION DESCRIPTION	BY	DATE

SET NO.

SHEET NO. 1

Y:\Shared\Helena Projects\1-23155-NPT ? Elk Creek Bridge and Big Elk Creek AOP Modifications\Big Elk Creek AOP\CADD 1-23155-BEC\Sheets\1-23155-BEC-01-Cover.dwg

Y:\Shared\Helena Projects\1-23155-NPT ? Elk Creek Bridge and Big Elk Creek AOP Modifications\Big Elk Creek AOP\CADD 1-23155-BEC\Sheets\1-23155-BEC-02-Typical Roadway Section & Estimated Quantities.dwg

GENERAL NOTES:

SPECIFICATIONS:
MATERIALS AND CONSTRUCTION OF THIS STRUCTURE SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS, FP-14 (U.S. CUSTOMARY UNITS).

DESIGN SPECIFICATION:
DESIGNS SHALL CONFORM TO HL-93 LOADING IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020 WITH CURRENT INTERIMS.

HYDROLOGY & HYDRAULICS:
THIS STRUCTURE PROVIDES ADEQUATE CAPACITY FOR THE 100-YEAR FREQUENCY FLOOD WHICH HAS A DESIGN FLOW VOLUME OF 487 CUBIC FEET PER SECOND (CFS). THE 2-YEAR AND THE 10-YEAR EVENTS WERE ESTIMATED AT 138 CFS AND 277 CFS, RESPECTIVELY.

CLEARING AND GRUBBING:
CLEARING AND GRUBBING SHALL BE PAID INDIRECT TO THE MOBILIZATION BID ITEM. CONTRACTOR SHALL DISPOSE OF CLEARING AND GRUBBING MATERIAL PER SUPPLEMENTAL SPECIFICATION 203.

STRUCTURAL PLATE ARCH:
THE STRUCTURAL PLATE ARCH SHALL BE 20'-0" SPAN, 6'-4" RISE, 6" X 2" CORRUGATIONS WITH GALVANIZED STEEL OF 0.140" THICKNESS (10 GAGE). STEEL PLATES SHALL BE CONNECTED WITH BOLTS SUPPLIED BY THE MANUFACTURER.

THE CONTRACTOR SHALL VERIFY ALL FIELD DIMENSIONS AND CONDITIONS PRIOR TO ORDERING MATERIALS.

THE STEEL STRUCTURAL PLATE ARCH CULVERT SHALL BE ASSEMBLED IN ACCORDANCE WITH THE PLATE LAYOUT DRAWINGS PROVIDED BY THE MANUFACTURER AND PER THE MANUFACTURER'S RECOMMENDATIONS.

CONCRETE:
USE CLASS A(AE) CONCRETE, F'C = 4,000 PSI AT 28 DAYS WITH AN ENTRAINED AIR CONTENT OF 5% ± 1%. FINISH CONCRETE WITH A CLASS 1 – ORDINARY SURFACE FINISH.

ALL CONCRETE SHALL BE MADE IN ACCORDANCE WITH AN APPROVED MIX DESIGN. CHAMFER ALL EXPOSED EDGES OF CONCRETE AND FILLET ALL RE-ENTRANT ANGLES ¾" UNLESS NOTED OTHERWISE.

REINFORCING STEEL:
ALL REINFORCING SHALL BE OF THE DEFORMED BAR TYPE CONFORMING TO AASHTO M31 (ASTM A615), GRADE 60. CONCRETE CLEAR COVER SHALL BE 2" UNLESS SHOWN OTHERWISE ON THE PLANS. BENDING AND SPLICING OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH ACI 315.

HARDWARE AND STRUCTURAL STEEL:
ALL STEEL SHAPES, PLATES AND BARS SHALL CONFORM TO AASHTO M183 (ASTM A36) AND SHALL BE GALVANIZED. HARDWARE SHALL MEET REQUIREMENTS OF ASTM A325 UNLESS SHOWN OTHERWISE ON THE PLANS. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.5, BRIDGE WELDING CODE. ALL ELECTRODES SHALL BE E70XX.

DEWATERING & EROSION CONTROL PLAN:
SUBMIT A DEWATERING AND EROSION CONTROL PLAN TO THE OWNER FOR REVIEW 21 DAYS PRIOR TO BEGINNING ANY WORK. PROVIDE METHODS TO PREVENT RUNOFF FROM THE CONSTRUCTION SITE FROM DIRECTLY ENTERING INTO LIVE STREAMS. SEE SHEET 7 FOR MORE INFORMATION ON DEWATERING PLAN.

CONTRACTOR QUALITY CONTROL:
REFER TO FP-14 SECTION 153 AND SUPPLEMENTAL SPECIFICATION 153 FOR TESTING AND SUBMITTAL REQUIREMENTS.

TRAFFIC CONTROL:
REFER TO FSSS SECTION 156 (PUBLIC TRAFFIC) FOR TRAFFIC CONTROL REQUIREMENTS.

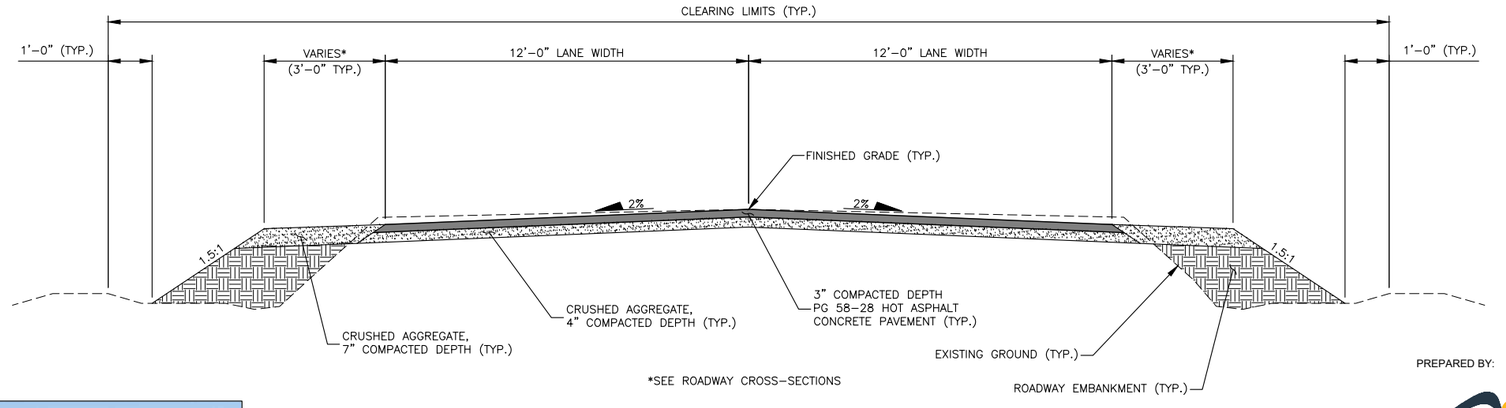
DISPOSAL:
CONTRACTOR IS RESPONSIBLE FOR REMOVING ANY MATERIALS IDENTIFIED FOR REPLACEMENT/REMOVAL HEREIN, FROM PUBLIC AND PRIVATE LANDS AND DISPOSING THEM IN AN ENVIRONMENTALLY SAFE MANNER THAT MEETS ALL LOCAL, STATE AND FEDERAL REGULATIONS. THIS WORK SHALL BE INCIDENTAL TO RESPECTIVE BID ITEM(S). NO OWNER FURNISHED WASTE DISPOSAL SITES ARE AVAILABLE.

MATERIAL STOCKPILE:
SPACE AT THE PROJECT SITE IS LIMITED. THE CONTRACTOR WILL BE ALLOWED TO STOCKPILE MATERIAL, INCLUDING RIPRAP, FISH REST STOP ROCKS, AND CULVERT COMPONENTS, ADJACENT TO THE EXISTING CULVERT. MATERIALS MUST BE STOCKPILED IN SUCH A MANNER AS TO AVOID IMPACTS TO THE ROADWAY AND MUST BE PLACED ABOVE THE ORDINARY HIGH WATER MARK OF THE STREAM. PROVIDE THE OWNER 72 HOURS ADVANCE NOTIFICATION PRIOR TO STOCKPILING ANY MATERIALS AT THE CONSTRUCTION SITE.

ESTIMATED QUANTITIES**

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	REMARKS
15101	MOBILIZATION	LS	ALL	THE FOLLOWING ITEMS ARE INDIRECT TO THIS PAY ITEM: CLEARING AND GRUBBING, FIRE PROTECTION & EQUIPMENT CLEANING; TRAFFIC CONTROL; SUBMITTAL OF ALL PLANS DELINEATED IN FSSS 153 INCLUDING TRAFFIC CONTROL.
15221	CONSTRUCTION SURVEY AND STAKING	LS	ALL	
15601	CONSTRUCTION DETOUR (INCLUDES DETOUR STRUCTURE)	LS	ALL	INCLUDES DETOUR ROUTE AND STRUCTURE INSTALLATION AND REMOVAL, DETOUR SIGNAGE AND ANY NECESSARY DEWATERING FOR INSTALLATION OF DETOUR STRUCTURE.
15713	SOIL EROSION AND POLLUTION CONTROL	LS	ALL	INCLUDES DIVERSION AND DEWATERING OF PRIMARY STRUCTURE. INCLUDES EROSION CONTROL PLAN PREPARATION, INSTALLATION AND REMOVAL.
20301	REMOVAL OF EXISTING CORRUGATED METAL CULVERTS	LS	ALL	REMOVE EXISTING SQUASH PIPES AND LEGALLY DISPOSE OF.
20806	STRUCTURE EXCAVATION & BACKFILL	LS	ALL	STRUCTURAL BACKFILL WILL MEET SPECIFICATION FP-14 703.05 GRADATION F OR G. INCLUDES PROCTOR AND DENSITY TESTING. APPROXIMATELY 930 CY OF STRUCTURE EXCAVATION. APPROXIMATELY 570 CY OF STRUCTURAL BACKFILL. INCLUDES ROADWAY EMBANKMENT AND EXCAVATION, COMPACTION PLACEMENT METHOD 1.
25101	PLACED RIPRAP, CLASS 4	CY	133	RIPRAP PLACED ALONG FOOTINGS AND AT STRUCTURE ENDS. INTERMIXED STREAMBED MATERIAL AS SHOWN ON SHEET 7 IS INDIRECT TO THIS PAY ITEM.
27250	GEOCELL ABUTMENT STABILIZATION, 6 INCH DEPTH	SY*	115	INCLUDES INSTALLATION OF GEOCELL, GRANULAR INFILL MATERIAL, AND GEOTEXTILE WRAP.
30207	AGGREGATE SURFACE COURSE, 1"- MINUS, COMPACTION METHOD 1	CY	92	
40301	HOT ASPHALT CONCRETE PAVEMENT, GRADING C, PG 58-28	TON	97	SAWCUT AND REMOVAL OF EXISTING ASPHALT SHOWN IN THE PLANS ARE INDIRECT TO THIS PAY ITEM.
553A01	PRECAST CONCRETE MEMBER, STEMWALL W/FOOTINGS	LS	ALL	REQUIRES SHOP DRAWINGS. INCLUDES INSTALLATION AND ALL OTHER INSTALLATION ITEMS (SPLICES, HARDWARE, ETC.)
60304	STEEL STRUCTURAL PLATE ARCH, 20'-0" SPAN, 6'-4" RISE, 0.140" THICKNESS	LF	60	FURNISH AND INSTALL STRUCTURAL PLATE ARCH PER PLAN AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
62201a	HYDRAULIC EXCAVATOR WITH THUMB	HR	4	INCLUDES SALVAGED SOIL MATS, RIPARIAN VEGETATION & TOPSOIL AS DIRECTED BY OWNER. INCLUDES OTHER MISC. WORK AS DIRECTED BY OWNER.
62201b	LARGE DUMP TRUCK	HR	4	INCLUDES MISCELLANEOUS WORK AS DIRECTED BY OWNER.
62501	SEEDING, DRY METHOD	LS	ALL	UTILIZE NATIVE SEED MIX APPROVED BY THE OWNER.
62601	STREAM BANK REVEGETATION	SY*	18	
64808	CHANNEL EXCAVATION AND EMBANKMENT	LF	10	
64809	FISH REST STOP ROCK	EA	10	

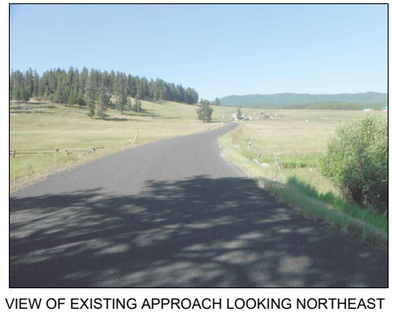
ITEMS TO BE MEASURED AS CONTRACT QUANTITY (CQ)
****INFORMATION ONLY - NOT FOR BIDDING PURPOSES - REFER TO BID SCHEDULE***



*SEE ROADWAY CROSS-SECTIONS

TYPICAL ROADWAY SECTION

NOT TO SCALE



VIEW OF EXISTING APPROACH LOOKING NORTHEAST (JULY 2014)

ELEVATION VIEW OF EXISTING CULVERTS LOOKING DOWNSTREAM (JULY 2014)

PREPARED BY:

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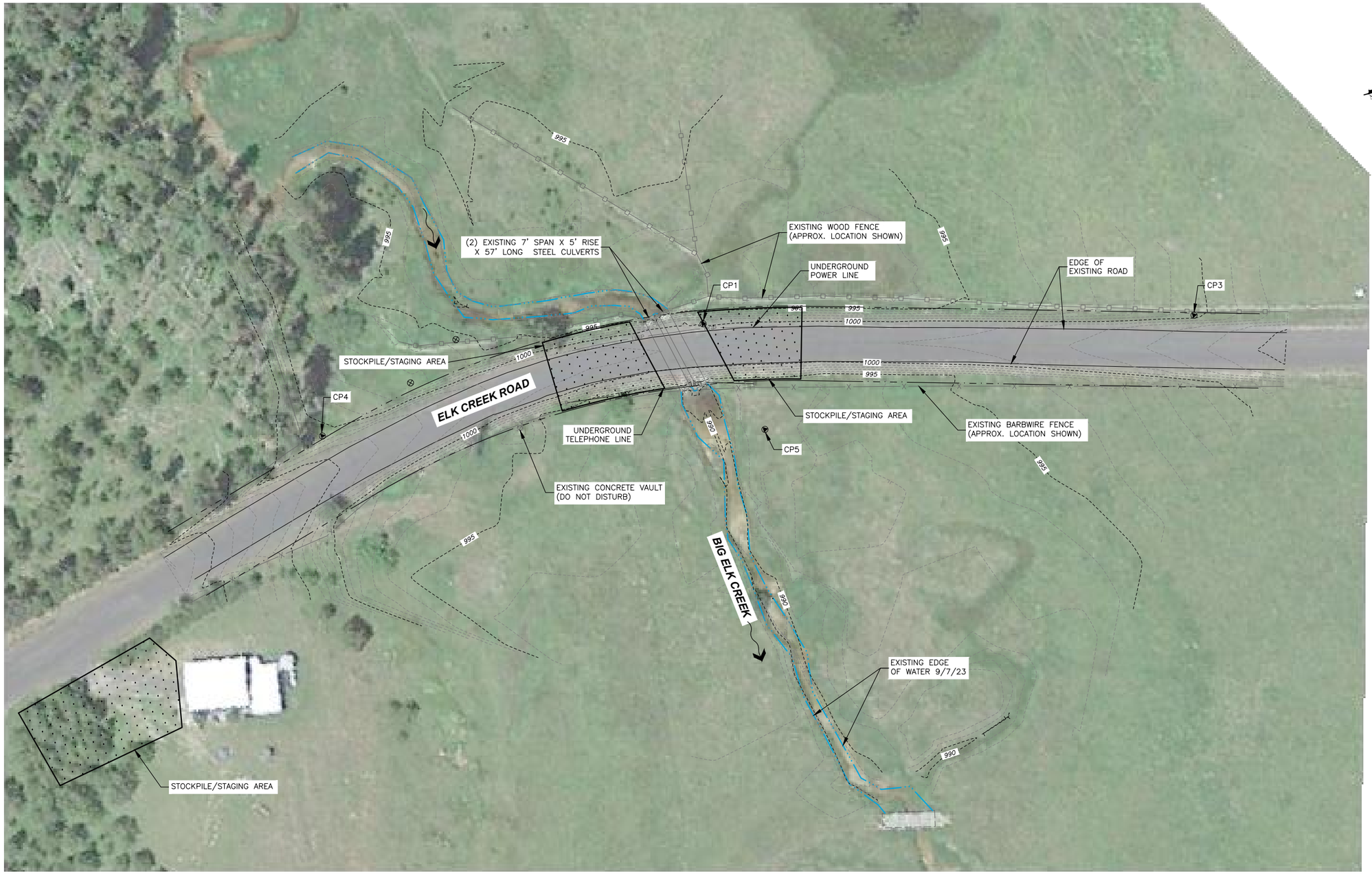
BIG ELK CREEK CULVERT REPLACEMENT

ELK CREEK ROAD
NEZ PERCE TRIBE

TYPICAL ROADWAY SECTION & ESTIMATED QUANTITIES

PROJECT: 1-23155	DATE: 9/30/2024	NO.	REVISION DESCRIPTION	BY	DATE
DESIGNED: BMB	DESIGN CHECKED: JJT	△			
DRAWN: BMB	DRAWING CHECKED: JJT	△			



SITE LAYOUT

0 35 70

SCALE IN FEET

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BIG ELK CREEK CULVERT REPLACEMENT

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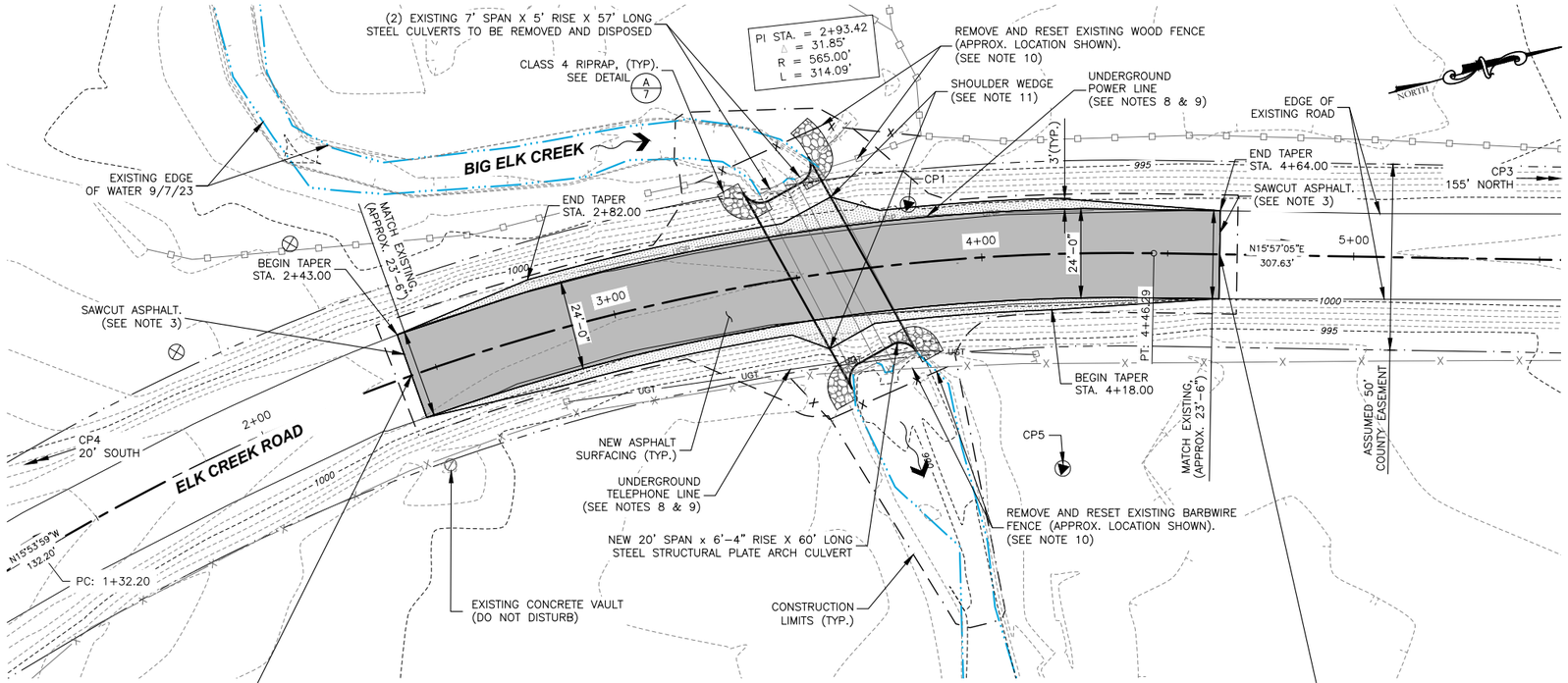
SITE LAYOUT

PROJECT: 1-23155	DATE: 9/30/2024	NO.	REVISION DESCRIPTION	BY	DATE
DESIGNED: BMB	DESIGN CHECKED: JJT				
DRAWN: BMB	DRAWING CHECKED: JJT				

SHEET NO. 3 OF 17

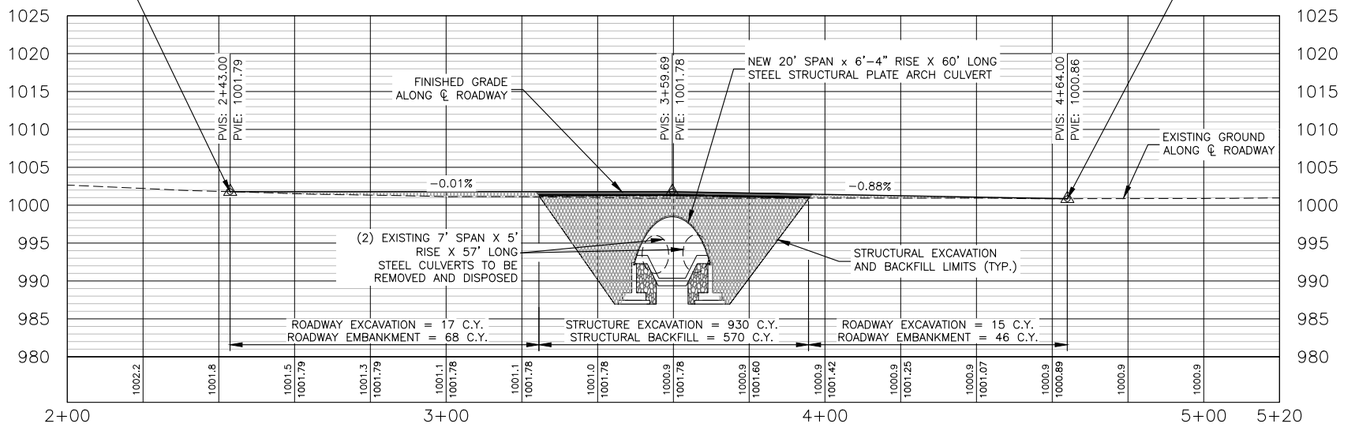


PLAN VIEW OF ELK CREEK ROAD - STA. 2+00 TO STA. 5+20

0 20 40
SCALE IN FEET

BEGIN PROJECT STA. 2+43.00 (MATCH EXISTING)

END PROJECT STA. 4+64.00 (MATCH EXISTING)



PROFILE VIEW OF ELK CREEK ROAD - STA. 2+00 TO STA. 5+20

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 20'

CONTROL POINT COORDINATE TABLE*

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	5000.00	10000.00	1000.00	REBAR W/CAP
CP3	5320.34	10079.87	999.65	REBAR W/CAP
CP4	4733.25	10006.64	1000.90	REBAR W/CAP
CP5	5021.80	10079.34	993.64	REBAR W/CAP

*LOCAL COORDINATE SYSTEM UTILIZED. ORIGINAL TOPOGRAPHIC SURVEY COMPLETED IN 2014. LONGITUDINAL STREAM SURVEY COMPLETED IN 2023. LEGAL BOUNDARY AND ROW SURVEY WERE NOT INCLUDED IN SCOPE. ROW SHOWN ON PLANS IS APPROXIMATE.

NOTES:

1. A GEOTECHNICAL INVESTIGATION HAS NOT BEEN CONDUCTED AT THIS SITE. FOOTING DESIGN COMPLETED UTILIZING A FACTORED BEARING RESISTANCE OF 4000 PSF ASSUMING BEARING MATERIALS CONSISTING OF GRAVEL, GRAVEL–SAND MIXTURE, BOULDER–GRAVEL MIXTURES (GW, GP, SW, SP) ARE ENCOUNTERED. IF POORER QUALITY MATERIALS ARE ENCOUNTERED CONTACT OWNER IMMEDIATELY.
2. CONTRACTOR MAY USE SUITABLE ONSITE MATERIAL FROM ROADWAY EXCAVATION FOR ROADWAY EMBANKMENT CONSTRUCTION. COMPACT ROADWAY EMBANKMENT PER FP–14 SECTION 204. ROADWAY EXCAVATION AND EMBANKMENT SHALL BE INDIRECT TO ITEM 20806.
3. OVERLAYING THE EXISTING ASPHALT WILL NOT BE ALLOWED. THE FULL TYPICAL SECTION (3" ASPHALT ON 4" OF CRUSHED BASE) SHALL BE INSTALLED FROM STATION 2+43 TO STATION 4+64. CONTRACTOR TO SAWCUT ASPHALT TO PROVIDE A CLEAN EDGE FOR PAVING.
4. ESTIMATED QUANTITIES ARE PROVIDED FOR INFORMATION ONLY AND ARE IN–PLACE QUANTITIES. NO SHRINKAGE OR SWELL FACTORS HAVE BEEN APPLIED. CONTRACTOR TO VERIFY QUANTITIES.
5. CONTRACTOR TO DISPOSE OF EXCESS AND/OR UNSUITABLE MATERIAL IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS.
6. REFER TO SHEETS 9–10 FOR ROADWAY CROSS–SECTIONS.
7. NO MATERIALS OR EQUIPMENT MAY BE STORED BELOW THE ORDINARY HIGH WATER MARK OF THE CREEK.
8. UNDERGROUND POWER AND TELEPHONE ARE PRESENT WITHIN THE PROJECT LIMITS. OWNER TO COORDINATE WITH UTILITY OWNERS TO TEMPORARILY RELOCATE UTILITIES DURING CONSTRUCTION.
9. EXISTING UNDERGROUND UTILITIES SHOWN ARE FROM THE BEST INFORMATION AVAILABLE. THIS INFORMATION IS APPROXIMATE AND MAY BE INCOMPLETE. FOR ACCURATE LOCATION OF UNDERGROUND UTILITIES THE CONTRACTOR SHALL CONTACT, PRIOR TO EXCAVATION, THE UTILITIES UNDERGROUND LOCATION CENTER AT: 1–800–424–5555.
10. REMOVE AND RESET EXISTING FENCE. IF DAMAGE OCCURS DURING REMOVAL, SUPPLY NEW FENCING MATERIAL OF SIMILAR TYPE AND QUALITY. THIS WORK SHALL BE INCIDENTAL TO THE PROJECT AND NO SEPARATE PAYMENT WILL BE MADE.
11. DUE TO THE CULVERT SKEW – CONTRACTOR SHALL COMPLETE BALANCED FILL FOR CULVERT INSTALLATION BY INSTALLING SHOULDER WEDGE (AS SHOWN), ALONG WITH OTHER INSTALLATION PROCEDURES AS RECOMMENDED BY THE CULVERT SUPPLIER.

ROADWAY CENTERLINE COORDINATE STAKING TABLE

DESCRIPTION	NORTHING	EASTING	ELEVATION
STA. 0+86.14 PC	4706.08	10042.26	EXISTING
STA. 2+43.00 BEGIN ROADWORK	4859.23	10009.89	1001.79
STA. 2+60.00	4876.19	10008.77	1001.79
STA. 2+80.00	4896.18	10008.09	1001.79
STA. 2+90.00	4906.18	10008.02	1001.78
STA. 3+00.00	4916.18	10008.13	1001.78
STA. 3+20.00	4936.16	10008.87	1001.78
STA. 3+40.00	4956.11	10010.32	1001.78
STA. 3+59.71 CL CULVERT	4975.70	10012.44	1001.78
STA. 3+80.00	4995.78	10015.34	1001.60
STA. 4+00.00	5015.46	10018.89	1001.42
STA. 4+20.00	5035.01	10023.14	1001.25
STA. 4+46.29 PT	5057.74	10029.01	1001.04
STA. 4+64.00 END ROADWORK	5077.47	10034.65	1000.86

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BIG ELK CREEK CULVERT REPLACEMENT

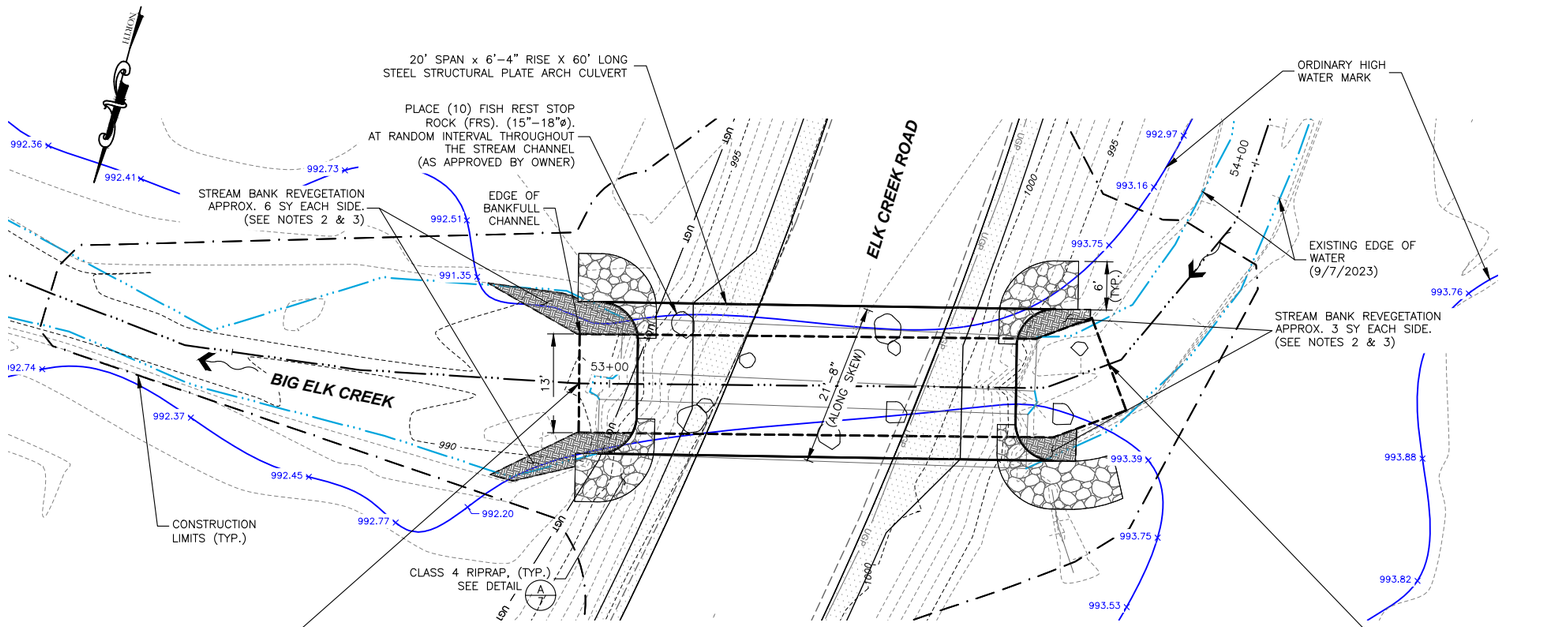
ELK CREEK ROAD
NEZ PERCE TRIBE

ROAD PLAN & PROFILE

PROJECT: 1-23155	DATE: 9/30/2024	NO.	REVISION DESCRIPTION	BY	DATE
DESIGNED: BMB	DESIGN CHECKED: JJT	△			
DRAWN: BMB	DRAWING CHECKED: JJT	△			

SHEET NO. 4 OF 17

Y:\Shared\Helena Projects\1-23155-NPT ? Elk Creek Bridge and Big Elk Creek AOP Modifications\Big Elk Creek AOP\CADD 1-23155-BEC\Sheets\1-23155-BEC-04-Road Plan & Profile.dwg

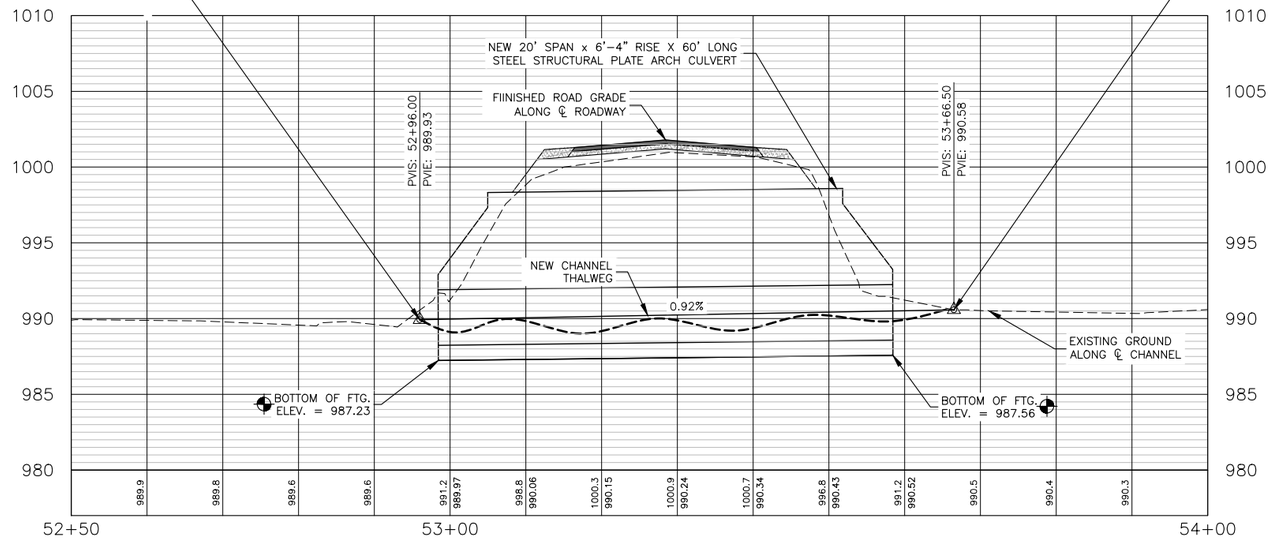


PLAN VIEW OF BIG ELK CREEK - STA. 52+50 TO STA. 54+00

0 10 20
SCALE IN FEET

BEGIN CHANNEL WORK
STA. 52+96.00
MATCH EXISTING

END CHANNEL WORK
STA. 53+66.50
MATCH EXISTING



PROFILE VIEW OF BIG ELK CREEK - STA. 52+50 TO STA. 54+00

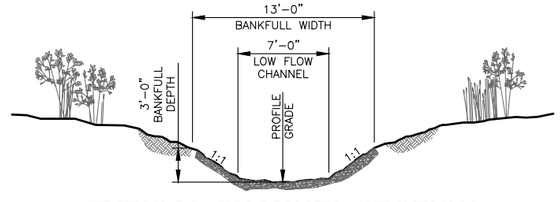
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 10'

NOTES:

1. CONTRACTOR SHALL USE SUITABLE ON-SITE MATERIAL FROM CHANNEL AND STRUCTURE EXCAVATION FOR STREAMBED SIMULATION ROCK TO REGRADE AND SHAPE THE STREAM CHANNEL. SORTING OF THE MATERIAL WILL BE REQUIRED TO MEET THE REQUIREMENTS SPECIFIED IN FSSS 705. REGRADE AND SHAPE THE CHANNEL WITHIN THE CULVERT PER DETAILS ON SHEET 8; THIS WORK WILL BE INDIRECT TO ITEM 20806. REGRADE AND SHAPE THE CHANNEL OUTSIDE THE CULVERT PER THE TYPICAL CHANNEL SECTION DETAIL ON THIS SHEET; THIS WORK WILL BE PAID FOR UNDER ITEM 64808.
2. STREAMBED MATERIAL TO BE INSTALLED NON-UNIFORMLY, WITH RIFFLE/POOL CONSTRUCTION AS DIRECTED BY OWNER.
3. THE FINAL CHANNEL BOTTOM SHOULD BE A DENSE, INTERLOCKED STREAMBED WITH LOW PERMEABILITY. COMPACT EACH LAYER AND FILL SURFACE VOIDS BY WASHING IN FINE MATERIAL. USE WATER PRESSURE, TAMPING RODS, AND SIMILAR HAND OPERATED EQUIPMENT TO FORCE FINE MATERIAL INTO ALL SURFACE VOIDS. CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THE STREAM FLOW DOES NOT GO SUBSURFACE THROUGH THE CULVERT FOR A 48 HOUR PERIOD AFTER REWATERING.
4. FISH REST STOP ROCKS SHALL BE PLACED IN THE STREAM CHANNEL AT RANDOM INTERVALS WITHIN THE WORK AREA. THE INTENT IS FOR A NATURAL STREAM BOTTOM WITH INTERMITTENT AND VARYING SIZE FISH REST STOP ROCKS PLACED THROUGHOUT.
5. CONTRACTOR SHALL SALVAGE VEGETATED SOILS MATS, OTHER RIPARIAN VEGETATION, AND TOPSOIL PRIOR TO CLEARING AND GRUBBING AS DIRECTED BY THE OWNER. VEGETATION WILL BE PLACED ON THE STREAM BANKS AND THE NEW CHANNEL SECTION INTO THE CULVERT ALONG THE STREAM BANKS AS SHOWN ON THE PLANS AND AS DIRECTED IN THE FIELD BY THE OWNER. PLACING SOIL MATS AND RIPARIAN VEGETATION WILL BE PAID FOR UNDER ITEM 62601. PLACING SALVAGED TOPSOIL SHALL BE INCLUDED IN ITEM 62201A.
6. TO OPTIMIZE TRANSPLANT SUCCESS, OVER-EXCAVATE A DIVOT FOR SOIL MAT OR OTHER RIPARIAN VEGETATION. PLACE FILL MATERIAL IN DIVOT HOLE SURROUNDING PLANT TO NATURAL CONTOUR. COMPACT THOROUGHLY. WATER IMMEDIATELY WITH EXCAVATOR BUCKET.

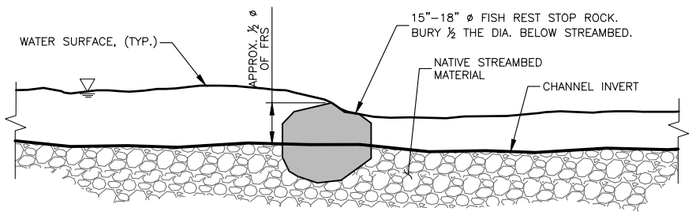
CHANNEL CENTERLINE COORDINATE STAKING TABLE

DESCRIPTION	NORTHING	EASTING	ELEVATION
STA. 52+96.00 BEGIN CHANNEL WORK	4983.75	10043.86	989.93
STA. 52+98.68 D/S INV. @ CL CULVERT, BTM. OF FTG. ELEV.	4983.09	10041.25	987.23
STA. 53+58.76 U/S INV. @ CL CULVERT, BTM. OF FTG. ELEV.	4967.70	9983.28	987.56
STA. 53+66.50 END CHANNEL WORK	4963.22	9976.96	990.58



TYPICAL CHANNEL SECTION

NOT TO SCALE



FISH REST STOP ROCK DETAIL

NOT TO SCALE

GRADATION REQUIREMENTS FOR STREAMBED SIMULATION MATERIAL

BED CLASS	100% PASSING	84% PASSING	50% PASSING	16% PASSING	10% PASSING
2	5	2	3/4	1/4	NO. 10

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BIG ELK CREEK CULVERT REPLACEMENT

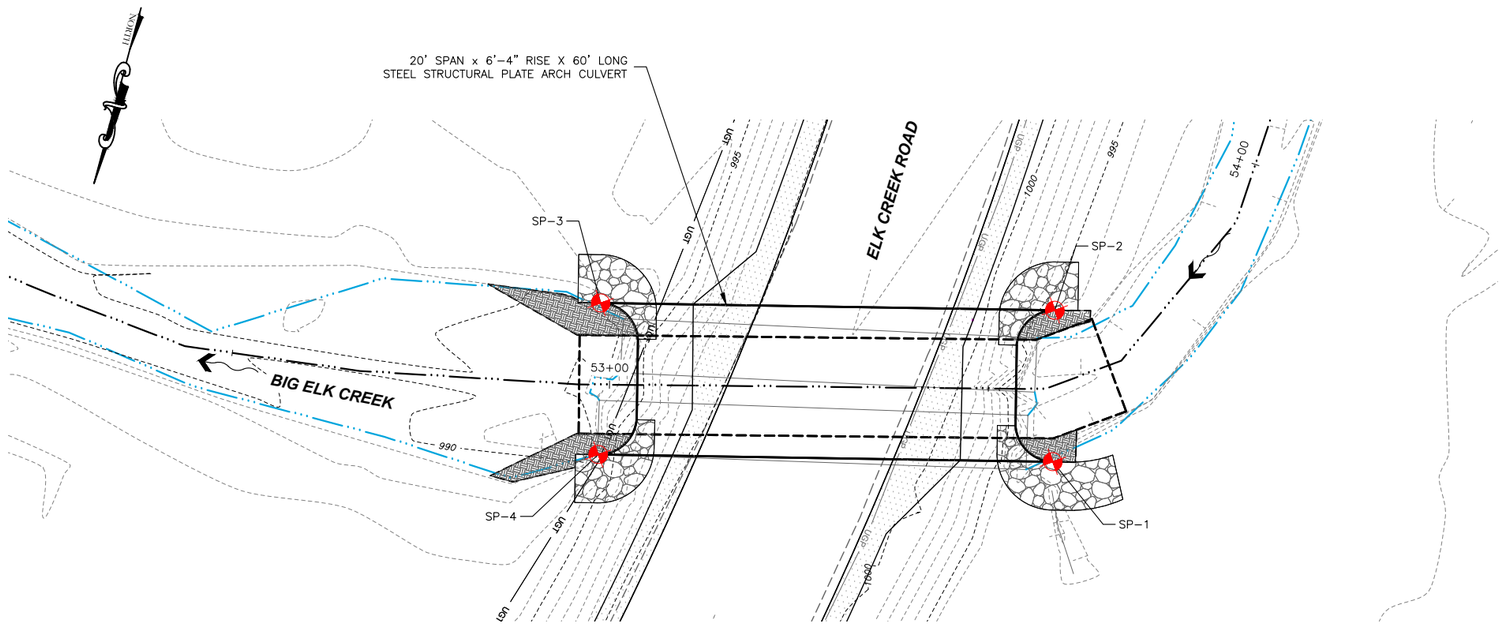
ELK CREEK ROAD
NEZ PERCE TRIBE

STREAM PLAN & PROFILE

PROJECT: 1-23155	DATE: 9/30/2024	NO.	REVISION DESCRIPTION	BY	DATE
DESIGNED: BMB	DESIGN CHECKED: JJT				
DRAWN: BMB	DRAWING CHECKED: JJT				

SHEET NO. 5 OF 17

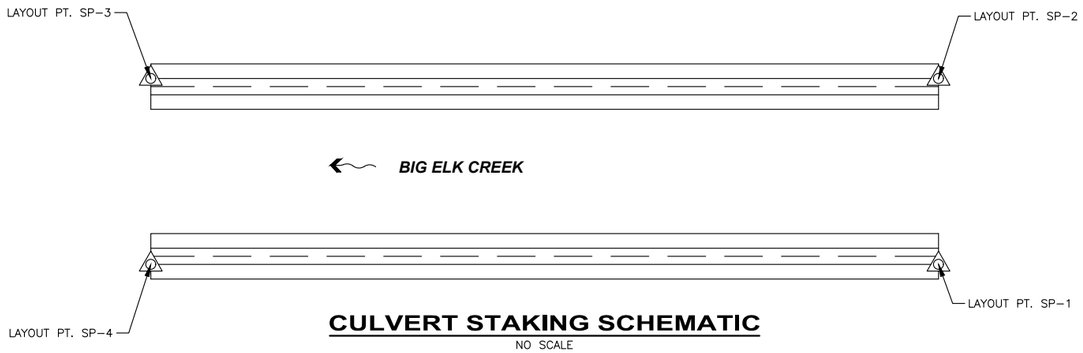
Y:\Shared\Helena Projects\1-23155-NPT ? Elk Creek Bridge and Big Elk Creek AOP Modifications\Big Elk Creek AOP\CADD\1-23155-BEC\Sheets\1-23155-BEC-05- Stream Plan & Profile.dwg



PLAN VIEW OF BIG ELK CREEK - STA. 52+50 TO STA. 54+00

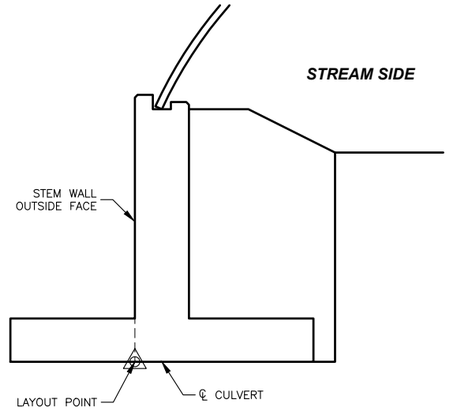
0 10 20
SCALE IN FEET

CULVERT STAKING TABLE				
POINT #	***NORTHING***	***EASTING***	***ELEVATION***	***DESCRIPTION***
SP-1	4978.1568	9980.9569	987.56	UPSTREAM LAYOUT
SP-2	4957.4889	9986.142	987.56	UPSTREAM LAYOUT
SP-3	4972.0852	10044.3319	987.23	DOWNSTREAM LAYOUT
SP-4	4992.7279	10039.0332	987.23	DOWNSTREAM LAYOUT



CULVERT STAKING SCHEMATIC

NO SCALE



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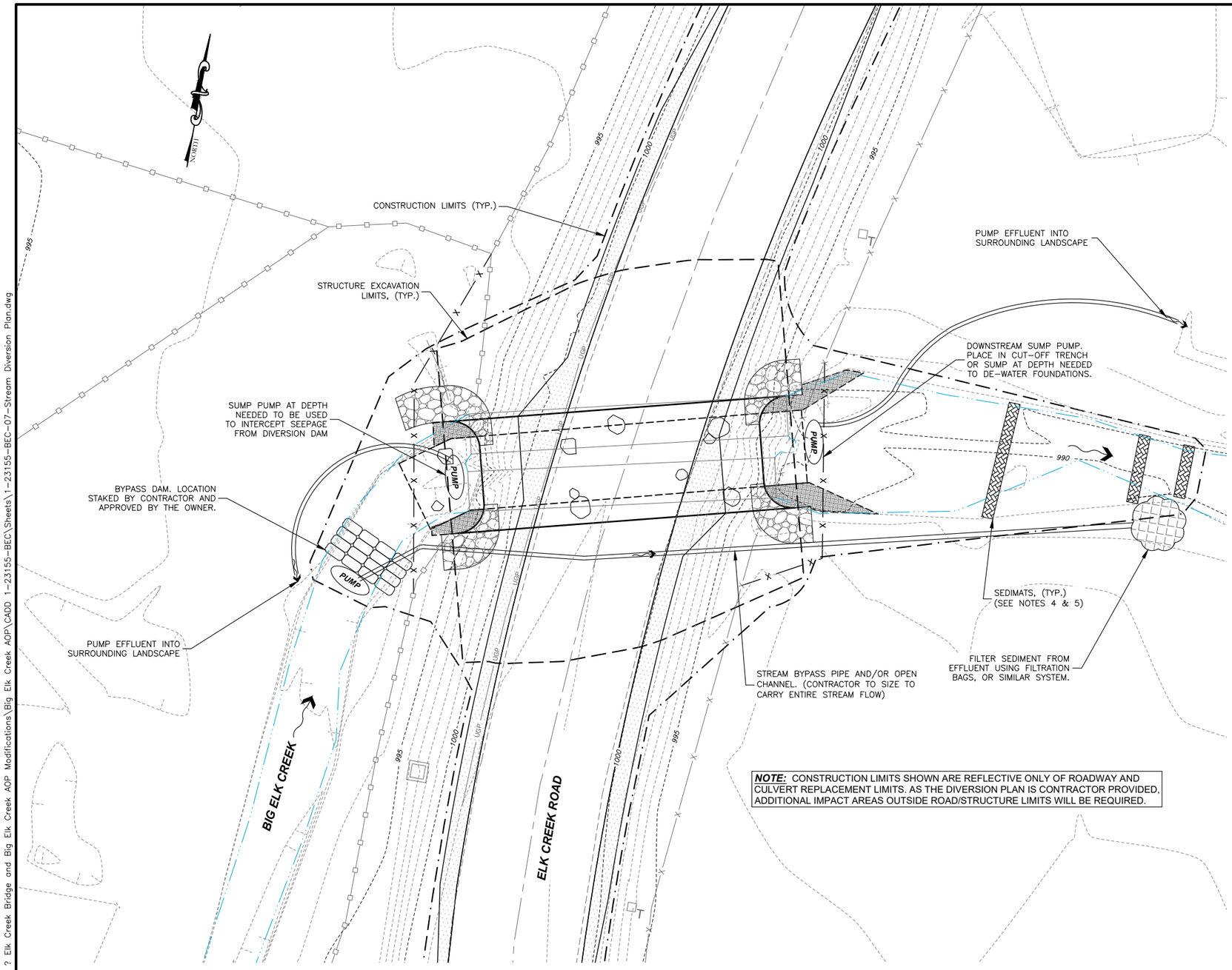
BIG ELK CREEK CULVERT REPLACEMENT

ELK CREEK ROAD
NEZ PERCE TRIBE

CULVERT STAKING INFORMATION

PROJECT: 1-23155	DATE: 9/30/2024	NO.	REVISION DESCRIPTION	BY	DATE	SHEET NO. 6 OF 17
DESIGNED: BMB	DESIGN CHECKED: JJT	△				
DRAWN: BMB	DRAWING CHECKED: JJT	△				



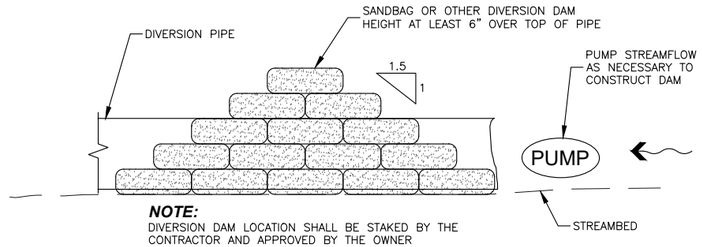
NOTE: CONSTRUCTION LIMITS SHOWN ARE REFLECTIVE ONLY OF ROADWAY AND CULVERT REPLACEMENT LIMITS. AS THE DIVERSION PLAN IS CONTRACTOR PROVIDED, ADDITIONAL IMPACT AREAS OUTSIDE ROAD/STRUCTURE LIMITS WILL BE REQUIRED.

STREAM DIVERSION PLAN

0 10 20
SCALE IN FEET

NOTES:

1. DE-WATER THE EXCAVATION IN ACCORDANCE WITH FP-14 SECTIONS 208, 209 AND 157 AND THE REQUIREMENTS ON THIS SHEET.
2. DE-WATERING IS THE RESPONSIBILITY OF THE CONTRACTOR AND CONTRACTOR SHALL SUBMIT A DE-WATERING PLAN TO THE OWNER FOR APPROVAL ALONG WITH THE EXCAVATION PLAN. THIS SHEET ILLUSTRATES GENERIC DE-WATERING REQUIREMENTS AND POSSIBLE METHODS AND EQUIPMENT AND IS NOT CONSIDERED ADEQUATE FOR THIS PROJECT. CONTRACTOR SHALL DEVELOP THEIR OWN PROJECT SPECIFIC DE-WATERING PLANS AND SHALL INCLUDE DRAWINGS AND A WRITTEN OUTLINE ILLUSTRATING AND DESCRIBING PROPOSED LAYOUT, METHODS, EQUIPMENT, AND ANTICIPATED STREAM FLOW VOLUMES. APPROVAL OF THE DE-WATERING PLAN BY THE OWNER DOES NOT RELIEVE THE CONTRACTOR FROM COMPLETING THE WORK AS SPECIFIED. IF CONTRACTOR'S IDENTIFIED DE-WATERING METHODS ARE NOT PRODUCING DESIRED RESULTS, CONTRACTOR SHALL RE-EVALUATE AND SUBMIT ANOTHER PLAN TO OWNER FOR APPROVAL. NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS WORK. ALL WORK RELATING TO THE STREAM DIVERSION IS PAID UNDER ITEM 15713.
3. CONTRACTOR IS RESPONSIBLE FOR SIZING ALL PUMPS, DAMS, BYPASS PIPES, OPEN CHANNELS, ETC.
4. SOIL EROSION AND SEDIMENT CONTROL MEASURES SPECIFIC TO THE DE-WATERING PLAN SHALL BE INCLUDED AND SHALL BE IN CONFORMANCE WITH PROJECT PERMITS.
5. INSTALL A MINIMUM OF 3 SEDIMATS (OR AS RECOMMENDED BY THE MANUFACTURER) DOWNSTREAM OF STREAM WORK PRIOR TO CONSTRUCTION. SEDIMATS ARE TO BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. THIS WORK IS INCIDENTAL TO ITEM 15713.
6. CONTRACTOR SHALL GIVE 2 DAYS NOTICE BEFORE DEWATERING. **DEWATERING SHALL TAKE PLACE FIRST THING IN THE MORNING AND NO IN-STREAM WORK OR WORK NEARBY SHALL TAKE PLACE FOR THE REST OF THE DAY.** REWATERING WILL ALSO BE DONE SLOWLY IN A MANNER TO REDUCE SEDIMENTATION.
7. CLEARING LIMITS WILL VARY DEPENDING ON THE DIVERSION PLAN SUBMITTED BY THE CONTRACTOR. CONTRACTOR TO SUBMIT PROPOSED CLEARING LIMITS WITH DIVERSION PLAN.



NOTE:
DIVERSION DAM LOCATION SHALL BE STAKED BY THE CONTRACTOR AND APPROVED BY THE OWNER

A/6 DIVERSION DAM DETAIL

NOT TO SCALE

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BIG ELK CREEK CULVERT REPLACEMENT

ELK CREEK ROAD
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STREAM DIVERSION PLAN

PROJECT: 1-23155 DATE: 9/30/2024	NO.	REVISION DESCRIPTION	BY	DATE	SHEET NO. 7 OF 17
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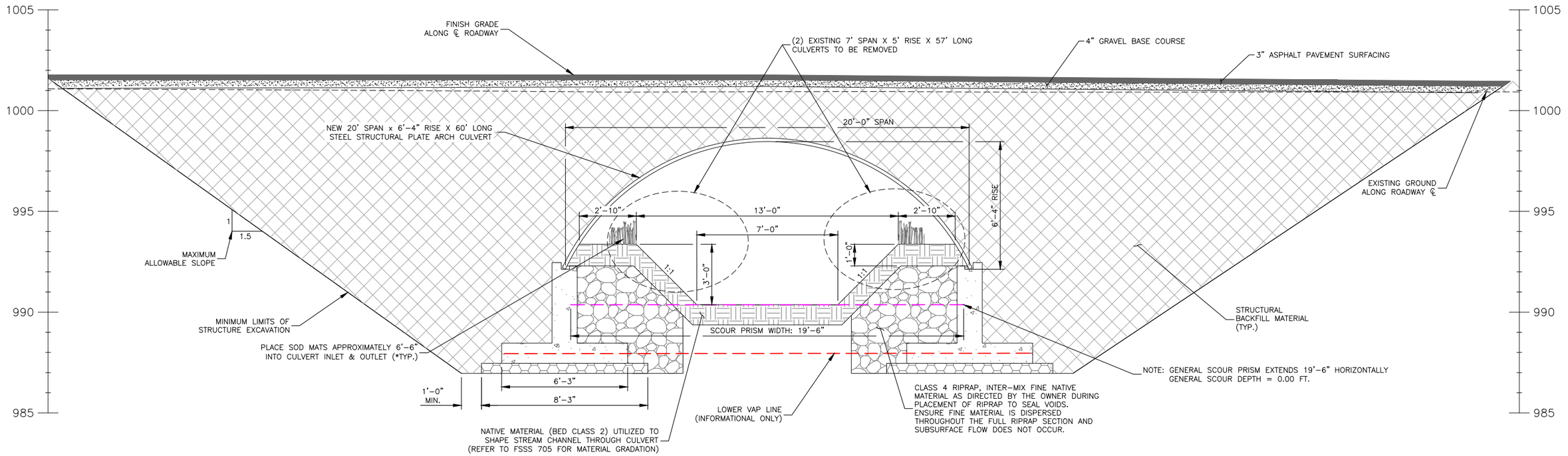
DRAWN: BMB DRAWING CHECKED: JJT	△				

Y:\Shared\Helena Projects\1-23155-NPT ? Elk Creek Bridge and Big Elk Creek AOP Modifications\Big Elk Creek AOP\CADD 1-23155-BEC\Sheets\1-23155-BEC-07-Stream Diversion Plan.dwg



TYPICAL SECTION - STRUCTURAL PLATE ARCH CULVERT

SCALE: 1" = 5'

STRUCTURE EXCAVATION NOTES:

1. STRUCTURE EXCAVATION SHALL BE COMPLETED IN ACCORDANCE WITH FP-14, SECTION 208 AND FSSS-208.
2. LIMITS SHOWN ARE MINIMUM EXCAVATION REQUIREMENTS BASED ON ASSUMPTION OF OSHA SOIL TYPE C AND OSHA EXCAVATION REQUIREMENTS. ACTUAL SITE CONDITIONS MAY VARY. AS NOTED ON SHEET 3, GEOTECHNICAL INVESTIGATION WAS NOT COMPLETED FOR THE SITE.
3. STRUCTURE EXCAVATION QUANTITY SHOWN IS FOR INFORMATION ONLY BASED ON THE LIMITS SHOWN. CONTRACTOR IS RESPONSIBLE FOR DETERMINING ACTUAL QUANTITIES BASED ON THEIR OWN EXCAVATION PLAN.
4. CONTRACTOR SHALL SUBMIT EXCAVATION PLAN TO OWNER FOR APPROVAL. PLAN SHALL INCLUDE DRAWINGS AND WRITTEN OUTLINE ILLUSTRATING AND DESCRIBING PROPOSED EXCAVATION LIMITS, METHODS, EQUIPMENT, LOCATION OF STOCKPILES, AND ESTIMATED QUANTITIES AND COMPLY WITH OSHA EXCAVATION SOIL TYPING AND REQUIREMENTS. CHANGES TO THE EXCAVATION LIMITS SHOWN ON THIS SHEET FOR CONTRACTOR'S DEWATERING METHODS OR OTHER CONTRACTOR CONVENIENCE, MUST BE SHOWN ON THE CONTRACTOR'S PLAN AND ARE THE RESPONSIBILITY OF THE CONTRACTOR. THIS WORK IS INCIDENTAL TO ITEM 20806.

DEWATERING AND EROSION CONTROL:

1. PROTECT AGAINST SOIL EROSION AND SEDIMENTATION DURING CONSTRUCTION IN ACCORDANCE WITH FP-14, SECTION 157 AND THE PROJECT PERMITS. CONTRACTOR SHALL PREPARE AND SUBMIT A SOIL EROSION AND SEDIMENT CONTROL PLAN TO OWNER FOR APPROVAL. PLAN SHALL INCLUDE DRAWINGS AND A WRITTEN OUTLINE ILLUSTRATING AND DESCRIBING PROPOSED LAYOUT, METHODS, AND EQUIPMENT.
2. DEWATER THE EXCAVATION IN ACCORDANCE WITH FP-14 SECTIONS 208, 209, 157 AND THE REQUIREMENTS ON SHEET 7.
3. CONTRACTOR SHOULD ANTICIPATE WATER INFILTRATING THE EXCAVATIONS.
4. SUBGRADE EXCAVATION, GEOCELL INSTALLATION, FOOTING PLACEMENT, RIPRAP PLACEMENT, BEDDING PLACEMENT AND BACKFILL ARE TO BE COMPLETED PER THE CONTRACT SPECIFICATIONS AND STANDING OR RUNNING WATER IN THE WORK AREA DOES NOT RELIEVE THE CONTRACTOR FROM MEETING THE SPECIFICATIONS.

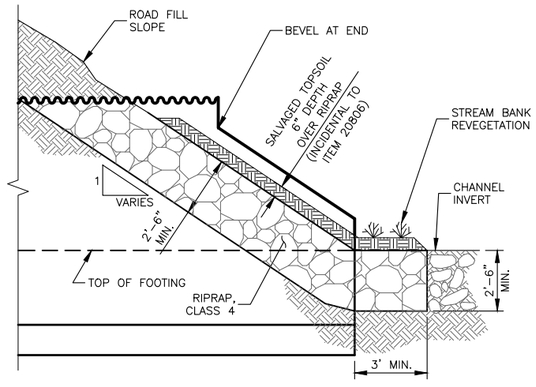
GEOCELL:

1. INSTALL GEOCELL PER SUPPLEMENTAL SPECIFICATION 272.06. PLACE GEOCELL ON LEVEL COMPACTED SUBGRADE. CONTRACTOR SHALL HOLD GEOCELL IN PLACE TO THE LINES AND GRADES SHOWN ON THE DRAWING WITH SUITABLE SIDE FORMS (STRETCHER FRAMES).
2. BACKFILL GEOCELL WITH COURSE GRANULAR BACKFILL.
3. PLACE TYPE 1, CLASS A GEOTEXTILE UNDER GEOCELL AND RIPRAP. WRAP GEOTEXTILE OVER TOP OF GEOCELL AFTER IT IS BACKFILLED (INCIDENTAL TO ITEM 27250). PLACE GEOCELL ON LEVEL COMPACTED SUBGRADE.

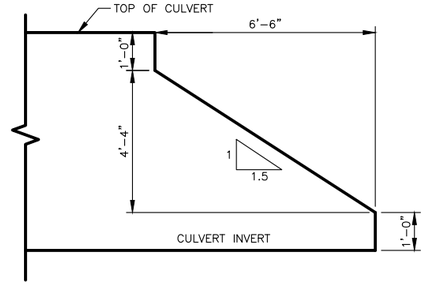
BACKFILL:

1. BACKFILL MATERIAL SURROUNDING THE STRUCTURE SHALL BE COMPACTED IN ACCORDANCE WITH FP-14 SECTION 209. THE PROCTOR DENSITY FOR BACKFILL MATERIAL(S) SHALL BE OBTAINED IN ACCORDANCE WITH AASHTO T99, METHOD C. SAMPLING AND TESTING IS REQUIRED PER FP-14 TABLE 208-1.
2. BACKFILL LIMITS SHOWN ARE MINIMUM REQUIREMENTS. ANY BACKFILL OUTSIDE THE SHOWN LIMITS SHALL BE CONSIDERED ROADWAY EMBANKMENT AND MUST MEET THE REQUIREMENTS OF FP-14 SUBSECTION 704.06.
3. APPROXIMATELY 80 PERCENT OF THE STRUCTURE EXCAVATION MATERIAL IS ANTICIPATED TO BE SUITABLE FOR BACKFILL MATERIAL.
   A. SOME MIXING AND SORTING MAY BE REQUIRED PRIOR TO BACKFILL.
   B. MUST HAVE APPROVAL FROM OWNER PRIOR TO REUSE.

ESTIMATED QUANTITIES	
STRUCTURE EXCAVATION	930 CY
USEABLE STRUCTURE EXCAVATION MATERIAL (80%)	744 CY
STRUCTURAL BACKFILL MATERIAL REQUIRED	570 CY



A/8 **RIPRAP AT INLET & OUTLET**
NOT TO SCALE



B/8 **CULVERT END TREATMENT**
NOT TO SCALE

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BIG ELK CREEK CULVERT REPLACEMENT

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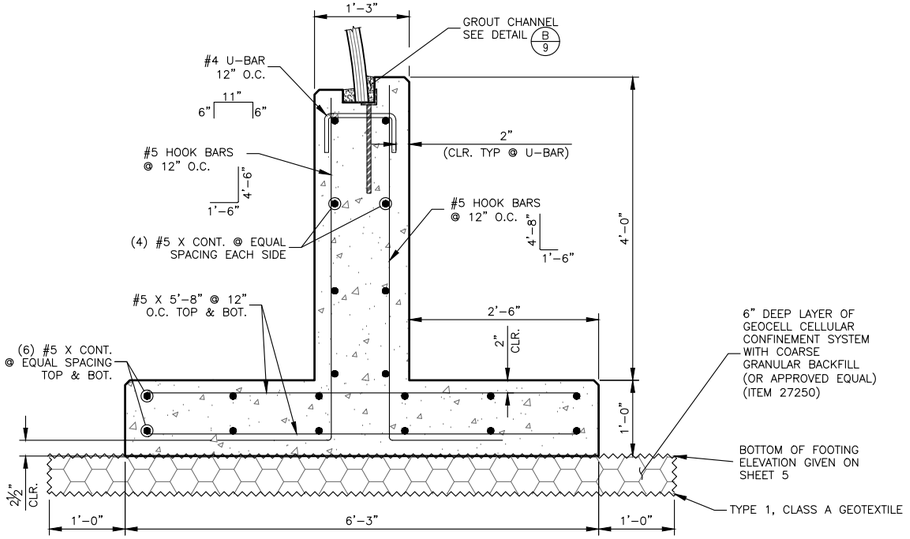
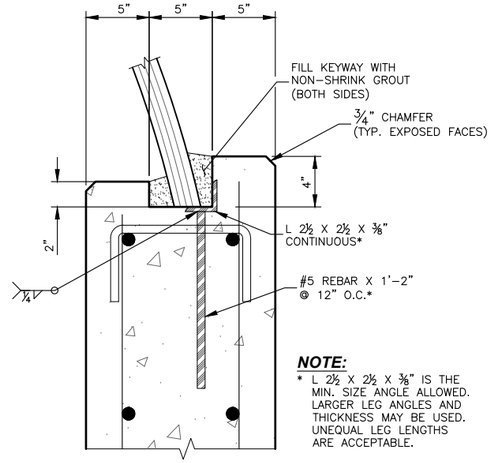
CULVERT DETAILS

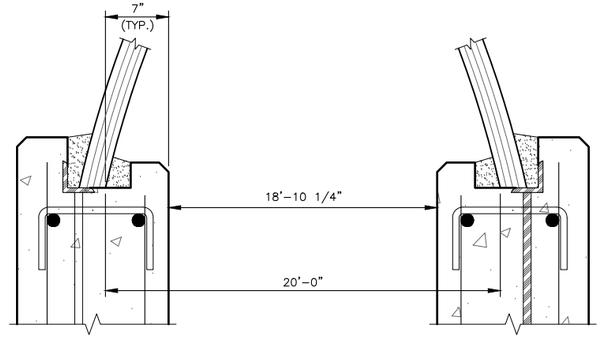
PROJECT: 1-23155	DATE: 9/30/2024	NO.	REVISION DESCRIPTION	BY	DATE
DESIGNED: BMB	DESIGN CHECKED: JJT	△			
DRAWN: BMB	DRAWING CHECKED: JJT	△			



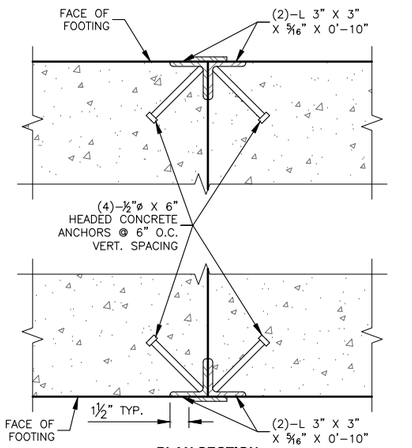
A 9 **FOOTING DETAIL**
NOT TO SCALE



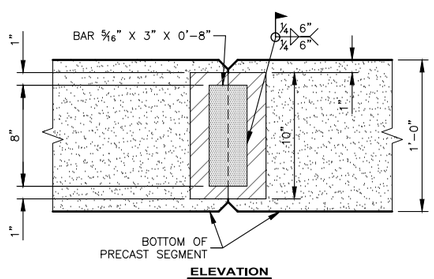
B 9 **GROUT CHANNEL DETAIL**
SCALE: 1" = 1'-0"



C 9 **STEMWALL POSITIONING DETAIL**
NOT TO SCALE

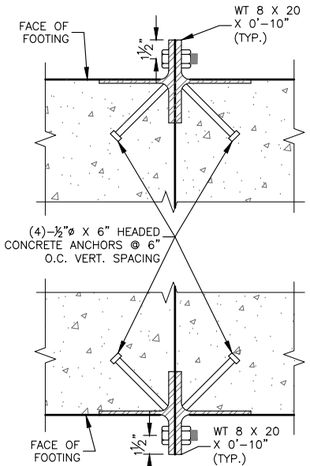


PLAN SECTION

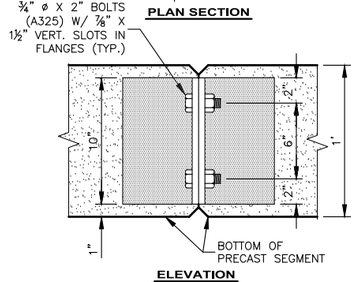


ELEVATION

WELDED ALTERNATIVE



PLAN SECTION

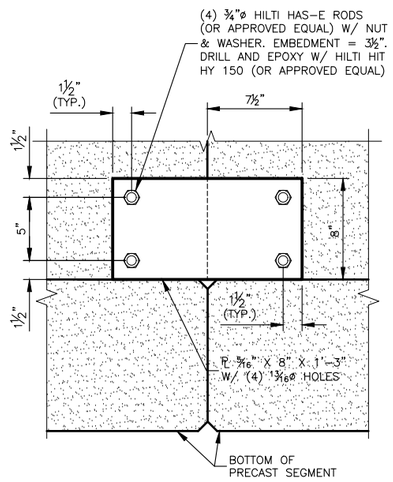


ELEVATION

BOLTED ALTERNATIVE

NOTE:
FOOTING CONNECTION IS SHOWN. WALL CONNECTION IS SIMILAR.

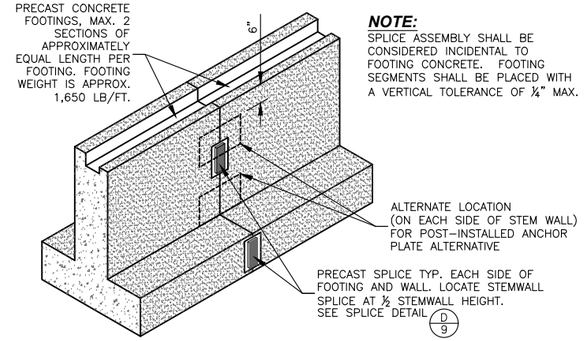
D 9 **TYPICAL FOOTING SPLICE DETAILS**
NOT TO SCALE



NOTE:
IN LIEU OF PRECAST MECHANICAL SPLICE CONNECTIONS AT FOOTING, ALL 4 POST-INSTALLED SPLICE PLATES MAY BE INSTALLED ON THE STEM WALL AS SHOWN ON TYPICAL PRECAST SEGMENT DETAIL.

ELEVATION

POST-INSTALLED ANCHOR PLATE ALTERNATIVE



NOTE:
SPLICE ASSEMBLY SHALL BE CONSIDERED INCIDENTAL TO FOOTING CONCRETE. FOOTING SEGMENTS SHALL BE PLACED WITH A VERTICAL TOLERANCE OF ¼" MAX.

E 9 **TYPICAL PRECAST FOOTING SEGMENTS**
NOT TO SCALE

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FOOTING DETAILS

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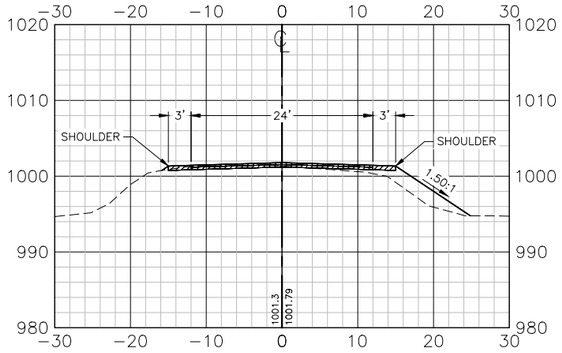
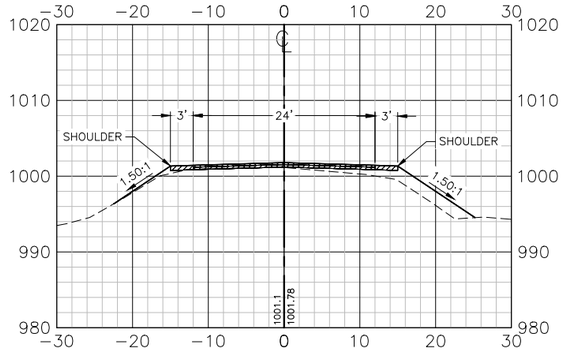
SHEET NO. 9 OF 17

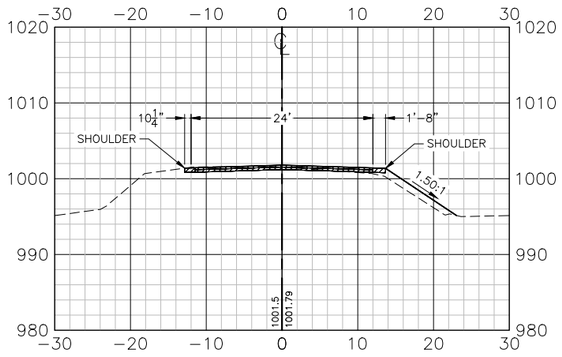
2+80.00



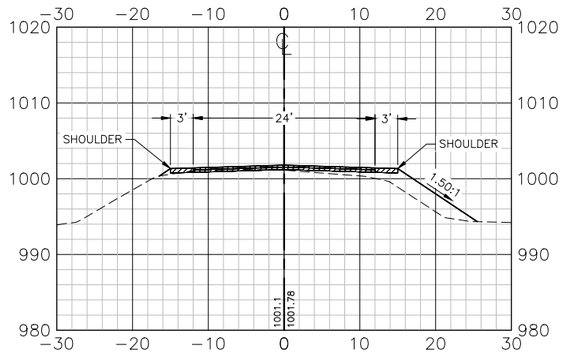
3+20.00



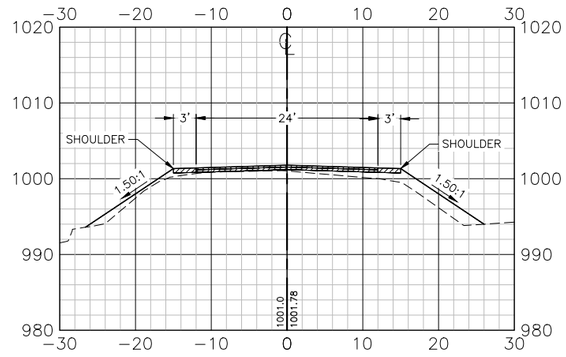
2+60.00



3+00.00

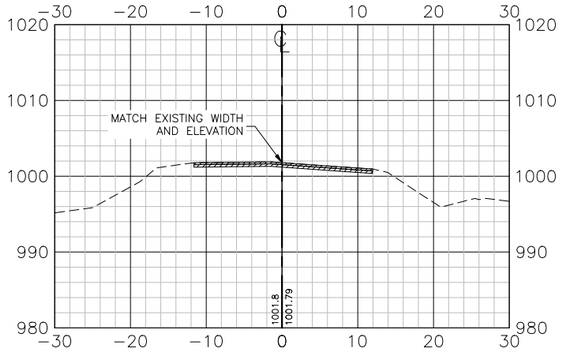


3+40.00

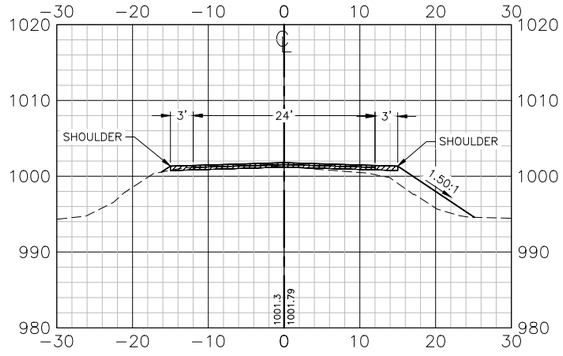


BEGIN ROAD WORK

2+43.00



2+89.24



ROADWAY CROSS-SECTIONS

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

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ROADWAY CROSS-SECTIONS

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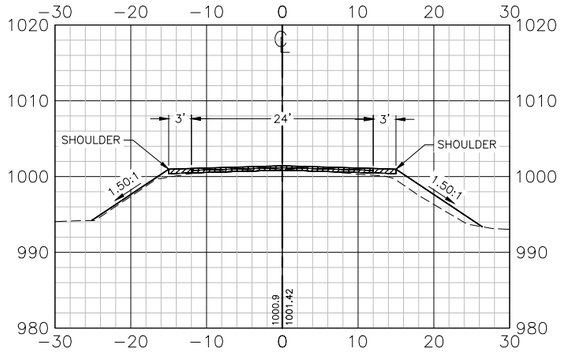
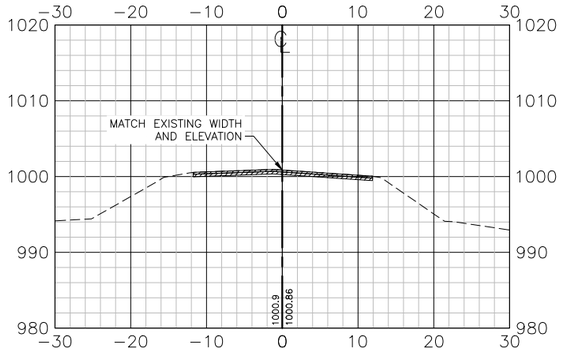
4+00.00

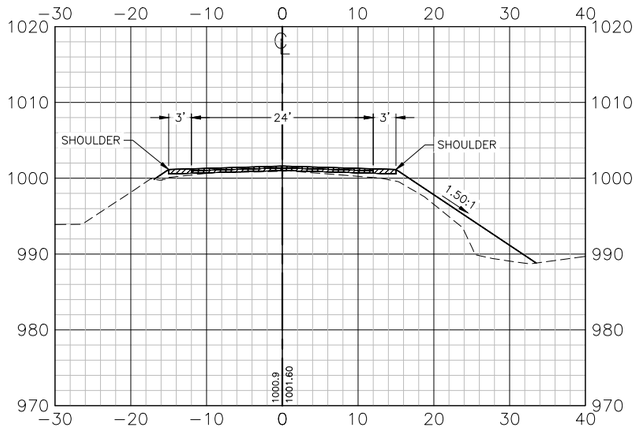


END ROAD WORK

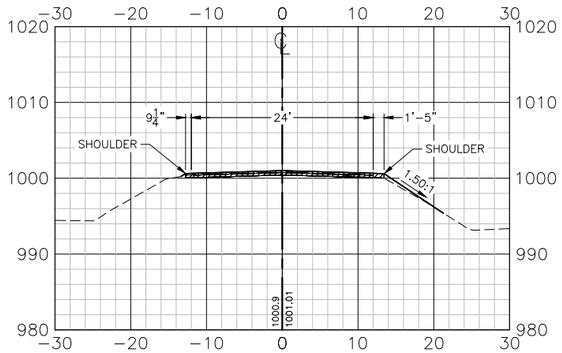
4+64.00



3+80.00

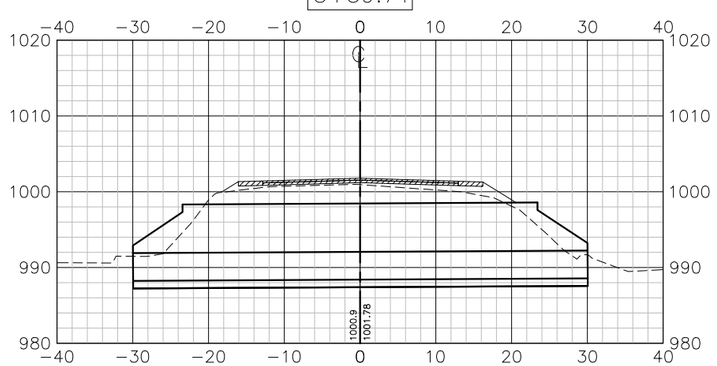


4+46.29 PT

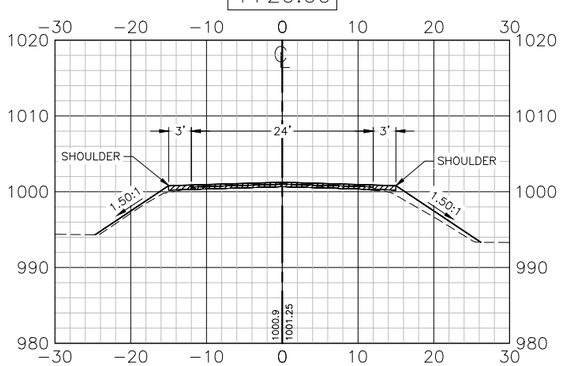


SHOWN ALONG CULVERT ℄ - SKEWED

3+59.71



4+20.00



ROADWAY CROSS-SECTIONS

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 20'

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ROADWAY CROSS-SECTIONS

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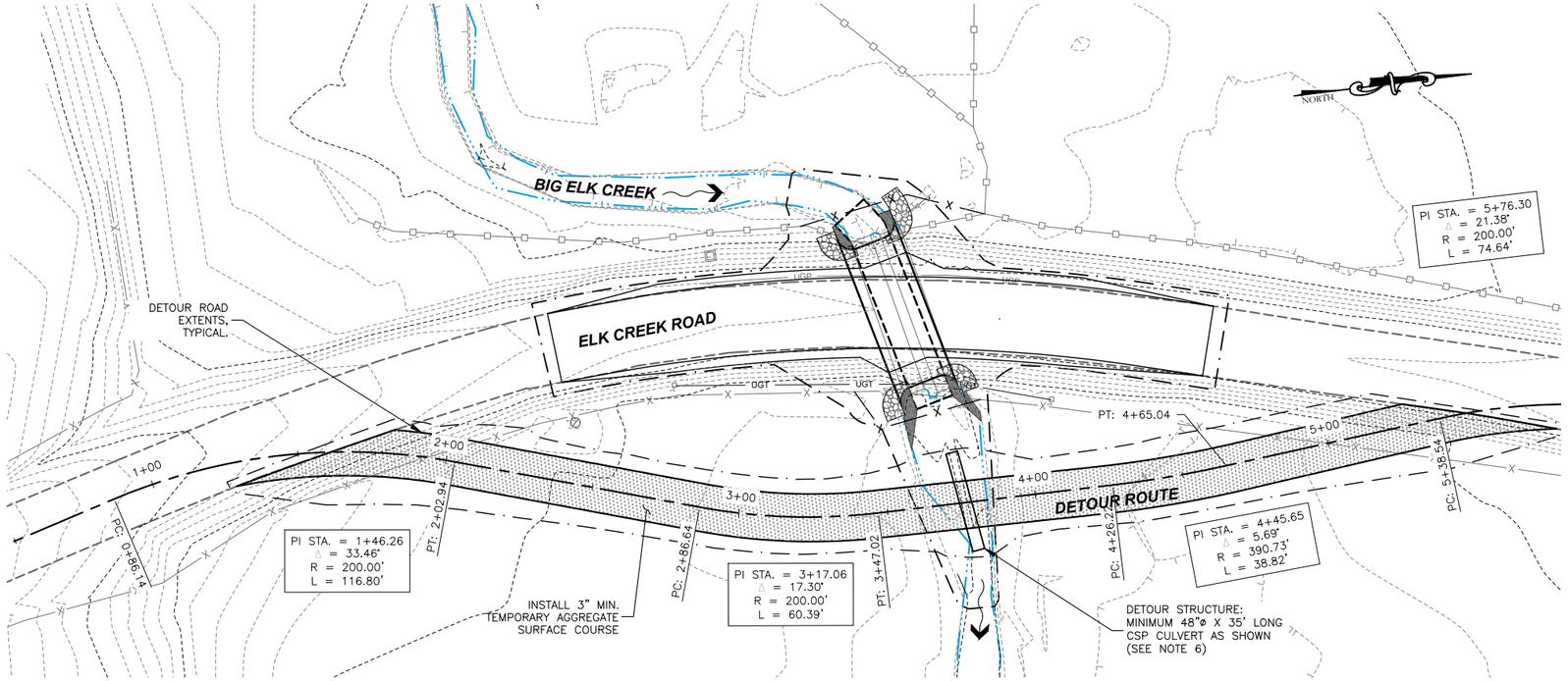
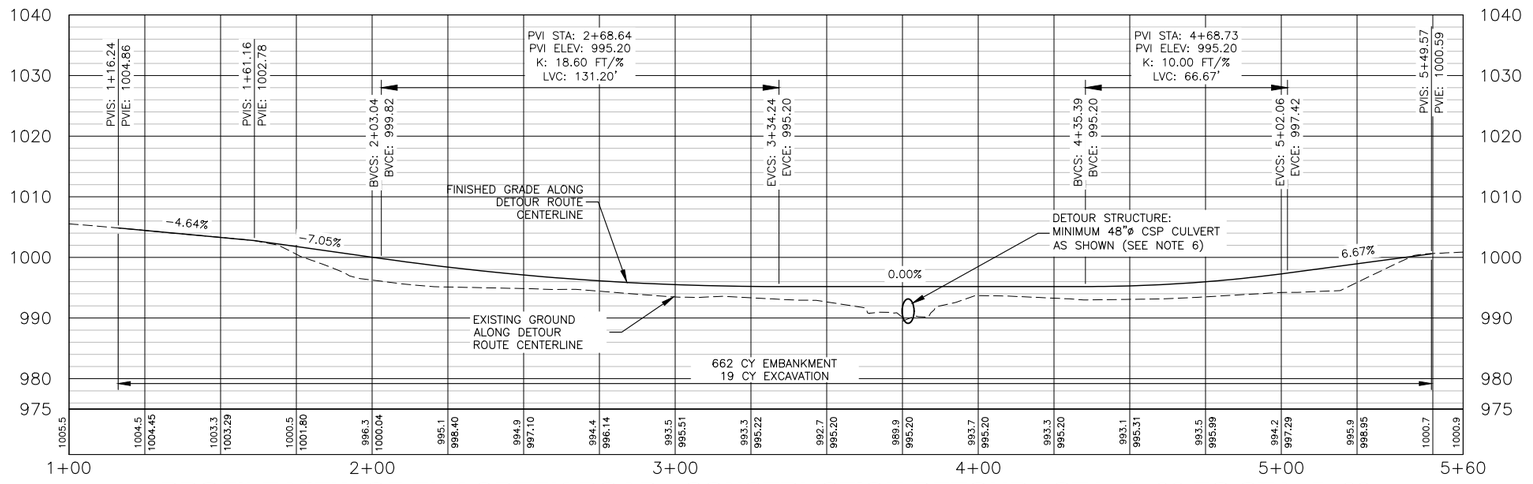


PLAN VIEW OF ELK CREEK ROAD - CONSTRUCTION DETOUR - STA. 1+00 TO STA. 5+60

0 25 50
SCALE IN FEET

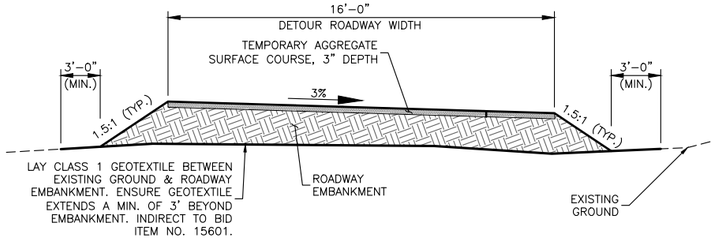


PROFILE VIEW OF ELK CREEK ROAD - CONSTRUCTION DETOUR - STA. 1+00 TO STA. 5+60

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 25'

TEMPORARY BYPASS NOTES:

1. CONTRACTOR TO SUPPLY AND INSTALL TEMPORARY DETOUR STRUCTURE. DETOUR STRUCTURE SHALL, AT A MINIMUM, BE ABLE TO ACCOMMODATE HL-93 LOADING AND HAVE A 16' USEABLE ROADWAY WIDTH OVER THE STRUCTURE. REFER TO FSSS 156 FOR REQUIREMENTS.
2. CONTRACTORS TEMPORARY DETOUR PLAN SHALL ENSURE THE TEMPORARY STRUCTURE AND ROADWAY IS ADEQUATE TO HANDLE CONTRACTOR PROPOSED CONSTRUCTION EQUIPMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY ROADWAY EXCAVATION, EMBANKMENT, AND SURFACING. THE TEMPORARY DETOUR ROADWAY SHALL FACILITATE INTERMITTENT SINGLE LANE TRAVEL.
4. THE DESIGN SPEED OF THE DETOUR ROUTE IS 15 MPH. DESIGN VEHICLE IS A LOWBOY.
5. ALL TEMPORARY TRAFFIC CONTROL FOR THE DETOUR ROUTE IS THE RESPONSIBILITY OF THE CONTRACTOR AND IS PAID UNDER ITEM 15601. TRAFFIC CONTROL ACTIVITIES MUST MEET ALL MUTCD REQUIREMENTS.
6. THE MINIMUM SIZE DETOUR STRUCTURE IS A 48"ø X 35' LONG CSP CULVERT. IF THE CONTRACTOR ELECTS TO INCREASE THE SIZE OF DETOUR STRUCTURE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE ADEQUATE ROAD FILL IS ACCOMMODATED.



TYPICAL DETOUR ROADWAY SECTION

NO SCALE

DETOUR ROAD CENTERLINE COORDINATE STAKING TABLE

DESCRIPTION	*NORTHING*	*EASTING*	*ELEVATION*
STA. 0+86.14 PC	4706.08	10042.26	EXISTING
STA. 1+61.05 TIE INTO EXISTING ROADWAY	4780.25	10035.54	1002.78
STA. 1+80.00	4799.00	10038.27	1001.45
STA. 2+02.94 PT	4821.22	10043.92	999.83
STA. 2+20.00	4837.48	10049.07	998.70
STA. 2+40.00	4856.55	10055.10	997.58
STA. 2+60.00	4875.62	10061.14	996.68
STA. 2+86.64 PC	4901.02	10069.18	995.81
STA. 3+10.00	4923.65	10074.91	995.36
STA. 3+30.00	4943.45	10077.69	995.20
STA. 3+47.02 PT	4960.44	10078.49	995.20
STA. 3+70.00	4983.42	10078.60	995.20
STA. 3+76.89 CL CULVERT	4990.31	10078.63	995.20
STA. 3+90.00	5003.42	10078.69	995.20
STA. 4+10.00	5023.42	10078.78	995.20
STA. 4+26.22 PC	5039.64	10078.85	995.20
STA. 4+40.00	5053.42	10078.67	995.21
STA. 4+65.04 PT	5078.41	10077.10	995.64
STA. 4+80.00	5093.30	10075.69	996.20
STA. 5+00.00	5113.21	10073.80	997.29
STA. 5+20.00	5133.12	10071.90	998.62
STA. 5+38.54 PC	5151.58	10070.15	999.86
STA. 5+47.47 TIE INTO EXISTING ROADWAY	5160.48	10069.50	1000.45
STA. 6+13.18 PT	5225.47	10076.95	EXISTING

GreatWest ENGINEERING
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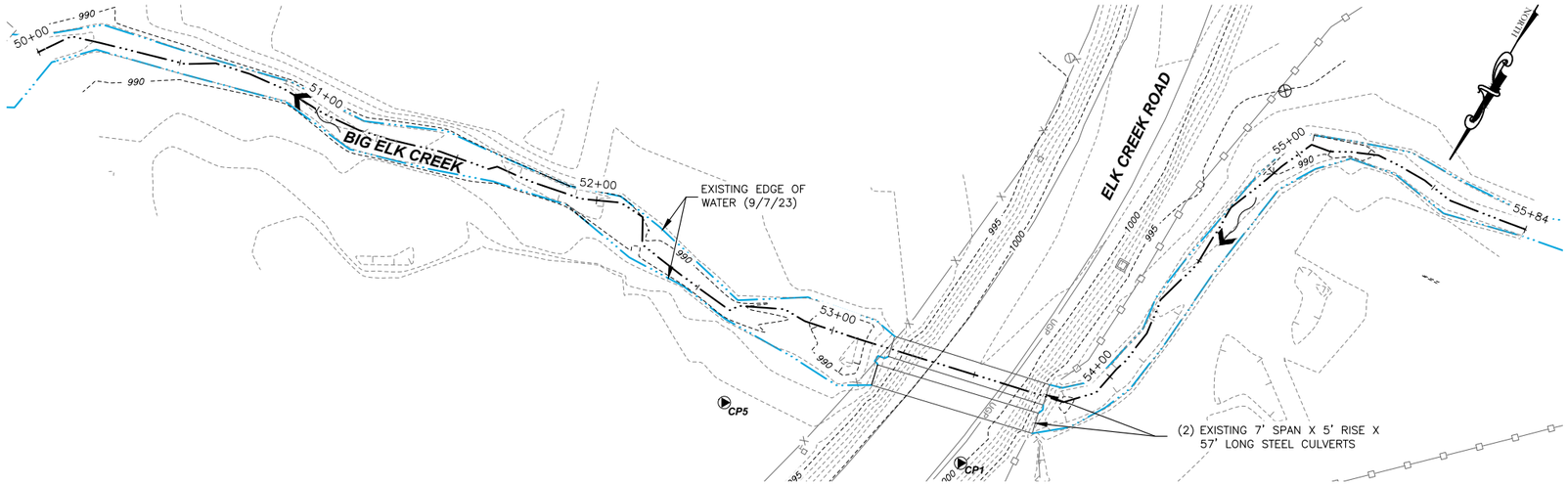
BIG ELK CREEK CULVERT REPLACEMENT

ELK CREEK ROAD
NEZ PERCE TRIBE

PUBLIC DETOUR ROUTE PLAN & PROFILE

PROJECT: 1-23155 DATE: 9/30/2024
DESIGNED: BMB DESIGN CHECKED: JJT
DRAWN: BMB DRAWING CHECKED: JJT

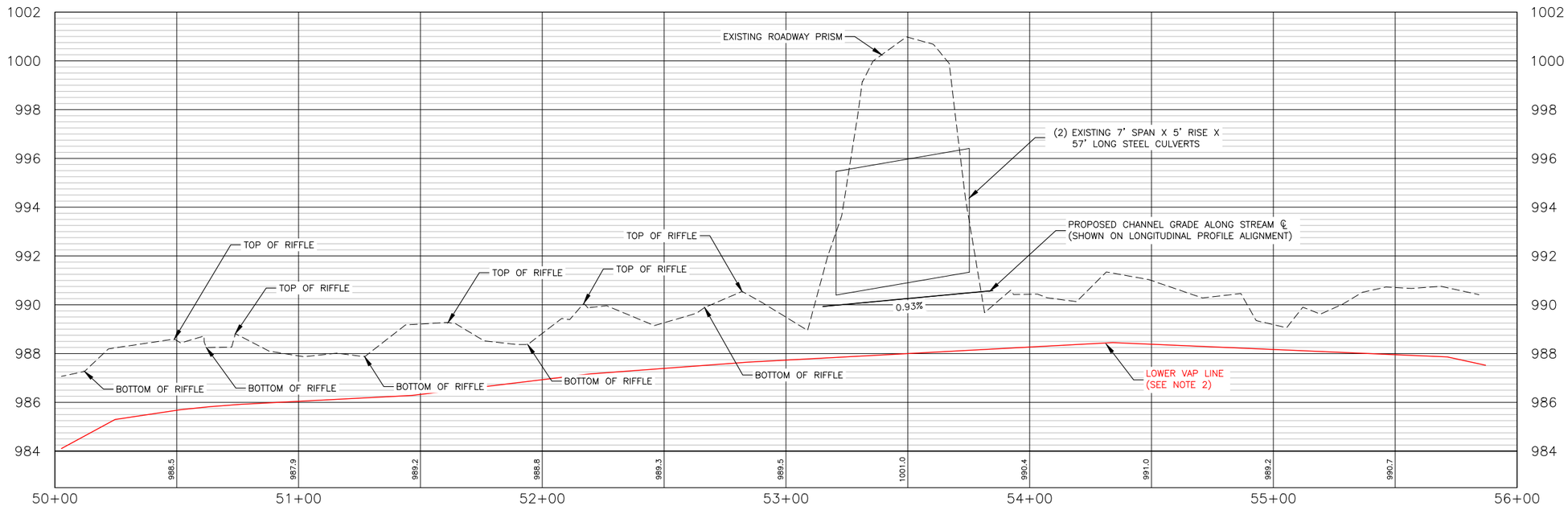
NO.	REVISION DESCRIPTION	BY	DATE
1			
2			



PLAN VIEW OF BIG ELK CREEK - LONGITUDINAL PROFILE - STA. 50+00 TO STA. 56+00

0 25 50
SCALE IN FEET

UPSTREAM & DOWNSTREAM STREAM WIDTHS	
DOWNSTREAM	
STATION	***BANKFULL WDITH (FT)***
50+22.00	12.34
50+42.00	10.03
50+62.00	10.31
50+82.00	9.85
51+02.00	8.93
51+22.00	8.76
51+42.00	13.70
51+62.00	14.63
51+82.00	8.84
52+02.00	12.14
UPSTREAM	
STATION	***BANKFULL WDITH (FT)***
53+90.00	10.91
54+00.00	13.45
54+10.00	12.71
54+20.00	12.39
54+30.00	13.27
54+40.00	13.31
54+50.00	13.02
54+60.00	13.07
54+70.00	13.00
54+80.00	11.64



PROFILE VIEW OF BIG ELK CREEK - LONGITUDINAL PROFILE - STA. 50+00 TO STA. 56+00

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

NOTE:
1. LONGITUDINAL STATIONING DOES NOT MATCH STATIONING SHOWN FOR DESIGN ON SHEET 5. THIS STATIONING IS BASED ON THALWEG AND STREAM FEATURES.
2. LOWER VAP LINE ELEVATION DEVELOPED USING MAXIMUM POOL DEPTH OF 1.69' MULTIPLIED BY CHANNEL TYPE FACTOR 1.75.
3. BANKFULL WIDTH = 13'-0".

NOTE: INFORMATIONAL ONLY

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BIG ELK CREEK CULVERT REPLACEMENT

ELK CREEK ROAD
NEZ PERCE TRIBE

BIG ELK CREEK LONGITUDINAL PLAN & PROFILE

PROJECT: 1-23155	DATE: 9/30/2024	NO.	REVISION DESCRIPTION	BY	DATE
DESIGNED: BMB	DESIGN CHECKED: JJT				
DRAWN: BMB	DRAWING CHECKED: JJT				

SHEET NO. 13 OF 17

HIP GENERAL CONSERVATION MEASURES APPLICABLE TO ALL ACTIONS

THE ACTIVITIES COVERED UNDER THE HIP ARE INTENDED TO PROTECT AND RESTORE FISH AND WILDLIFE HABITAT WITH LONG-TERM BENEFITS TO ESA-LISTED SPECIES. THE FOLLOWING GENERAL CONSERVATION MEASURES (DEVELOPED IN COORDINATION WITH USFWS AND NMFS) WILL BE APPLIED TO ALL ACTIONS OF THIS PROJECT, PROJECT DESIGN, AND SITE PREPARATION. MANY OF THESE ACTIONS WILL BE COMPLETED BY THE TRIBE BUT ARE INCLUDED TO INFORM THE CONTRACTOR OF THE PROVISIONS NECESSARY TO PROTECT FISH AND THEIR HABITAT.

1. STATE AND FEDERAL PERMITS.

A. ALL APPLICABLE REGULATORY PERMITS AND OFFICIAL PROJECT AUTHORIZATIONS WILL BE OBTAINED BY THE TRIBE BEFORE PROJECT IMPLEMENTATION.

B. THESE PERMITS AND AUTHORIZATIONS INCLUDE, BUT ARE NOT LIMITED TO, NATIONAL ENVIRONMENTAL POLICY ACT, NATIONAL HISTORIC PRESERVATION ACT, THE APPROPRIATE STATE AGENCY REMOVAL AND FILL PERMIT, USACE CLEAN WATER ACT (CWA) 404 PERMITS, AND CWA SECTION 401 WATER QUALITY CERTIFICATIONS.

2. TIMING OF IN-WATER WORK.

A. INSTREAM WORK SHALL ONLY OCCUR BETWEEN JULY 15 AND AUGUST 15 UNLESS AN EXTENSION IS PROVIDED BY THE USFWS AND NMFS.

3. SITE LAYOUT AND FLAGGING.

A. CONSTRUCTION AREAS TO BE CLEARLY FLAGGED PRIOR TO CONSTRUCTION. AREAS TO BE FLAGGED WILL INCLUDE:

1. SENSITIVE RESOURCE AREAS, SUCH AS AREAS BELOW ORDINARY HIGH WATER, SPAWNING AREAS, SPRINGS, AND WETLANDS;

2. EQUIPMENT ENTRY AND EXIT POINTS;

3. ROAD AND STREAM CROSSING ALIGNMENTS;

4. STAGING, STORAGE, AND STOCKPILE AREAS; AND

5. TEMPORARY ACCESS ROADS AND PATHS.

B. EXISTING ACCESS ROADS AND PATHS WILL BE PREFERENTIALLY USED WHENEVER REASONABLE, AND THE NUMBER AND LENGTH OF TEMPORARY ACCESS ROADS AND PATHS THROUGH RIPARIAN AREAS AND FLOODPLAINS WILL BE MINIMIZED.

C. TEMPORARY ACCESS ROADS AND PATHS WILL NOT BE BUILT ON SLOPES WHERE GRADE, SOIL, OR OTHER FEATURES SUGGEST A LIKELIHOOD OF EXCESSIVE EROSION OR FAILURE. IF SLOPES ARE STEEPER THAN 30%, THEN THE ROAD WILL BE DESIGNED BY A CIVIL ENGINEER WITH EXPERIENCE IN STEEP ROAD DESIGN.

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

E. AT PROJECT COMPLETION, ALL TEMPORARY ACCESS ROADS AND PATHS WILL BE OBLITERATED, AND THE SOIL WILL BE STABILIZED AND REVEGETATED. ROAD AND PATH OBLITERATION REFERS TO THE MOST COMPREHENSIVE DEGREE OF DECOMMISSIONING AND INVOLVES DECOMPACTING THE SURFACE AND DITCH, PULLING THE FILL MATERIAL ONTO THE RUNNING SURFACE, AND RESHAPING TO MATCH THE ORIGINAL CONTOUR.

4. TEMPORARY STREAM CROSSINGS.

A. TEMPORARY BRIDGES AND CULVERTS WILL BE INSTALLED TO ALLOW FOR EQUIPMENT AND VEHICLE CROSSING OVER PERENNIAL STREAMS DURING CONSTRUCTION.

TREATED WOOD SHALL NOT BE USED ON TEMPORARY BRIDGE CROSSINGS OR IN LOCATIONS IN CONTACT WITH OR DIRECTLY OVER WATER.

B. FOR PROJECTS THAT REQUIRE EQUIPMENT AND VEHICLES TO CROSS IN THE WET:

1. THE LOCATION AND NUMBER OF ALL WET CROSSINGS SHALL BE APPROVED BY THE BPA EC LEAD AND DOCUMENTED IN THE CONSTRUCTION PLANS;

2. VEHICLES AND MACHINERY SHALL CROSS STREAMS AT RIGHT ANGLES TO THE MAIN CHANNEL WHENEVER POSSIBLE;

3. NO STREAM CROSSINGS WILL OCCUR 300 FEET UPSTREAM OR 100 FEET DOWNSTREAM OF AN EXISTING REDD OR SPAWNING FISH; AND

4. AFTER PROJECT COMPLETION, TEMPORARY STREAM CROSSINGS WILL BE OBLITERATED AND BANKS RESTORED.

5. STAGING, STORAGE, AND STOCKPILE AREAS.

A. STAGING AREAS (USED FOR CONSTRUCTION EQUIPMENT STORAGE, VEHICLE STORAGE, FUELING, SERVICING, AND HAZARDOUS MATERIAL STORAGE) WILL BE 150 FEET OR MORE FROM ANY NATURAL WATER BODY OR WETLAND. STAGING AREAS CLOSER THAN 150 FEET WILL BE APPROVED BY THE EC LEAD.

B. NATURAL MATERIALS USED FOR IMPLEMENTATION OF AQUATIC RESTORATION, SUCH AS LARGE WOOD, GRAVEL, AND BOULDERS, MAY BE STAGED WITHIN 150 FEET IF CLEARLY INDICATED IN THE PLANS THAT AREA IS FOR NATURAL MATERIALS ONLY.

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

D. ANY MATERIAL NOT USED IN RESTORATION, AND NOT NATIVE TO THE FLOODPLAIN, WILL BE DISPOSED OF OUTSIDE THE 100-YEAR FLOODPLAIN.

6. EQUIPMENT.

A. MECHANIZED EQUIPMENT AND VEHICLES WILL 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).

B. EQUIPMENT WILL BE STORED, FUELED, AND MAINTAINED IN AN CLEARLY IDENTIFIED STAGING AREA THAT MEETS STAGING AREA CONSERVATION MEASURES.

C. EQUIPMENT WILL BE REFUELED IN A VEHICLE STAGING AREA 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).

D. BIODEGRADABLE LUBRICANTS AND FLUIDS WILL BE USED ON EQUIPMENT OPERATING IN AND ADJACENT TO THE STREAM CHANNEL AND LIVE WATER.

E. EQUIPMENT WILL BE INSPECTED DAILY FOR FLUID LEAKS BEFORE LEAVING THE VEHICLE STAGING AREA FOR OPERATION WITHIN 150 FEET OF ANY NATURAL WATER BODY OR WETLAND.

F. EQUIPMENT WILL BE THOROUGHLY CLEANED BEFORE OPERATION BELOW ORDINARY HIGH WATER, AND AS OFTEN AS NECESSARY DURING OPERATION, TO REMAIN GREASE FREE.

7. EROSION CONTROL.

A. TEMPORARY EROSION CONTROL MEASURES INCLUDE:

1. TEMPORARY EROSION CONTROLS WILL 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;

2. IF THERE IS A POTENTIAL FOR ERODED SEDIMENT TO ENTER THE STREAM, SEDIMENT BARRIERS WILL BE INSTALLED AND MAINTAINED FOR THE DURATION OF PROJECT IMPLEMENTATION;

3. TEMPORARY EROSION CONTROL MEASURES MAY INCLUDE SEDGE MATS, FIBER WATTLES, SILT FENCES, JUTE MATTING, WOOD FIBER MULCH AND SOIL BINDER, OR GEOTEXTILES AND GEOSYNTHETIC FABRIC;

5. SEDIMENT WILL BE REMOVED FROM EROSION CONTROLS ONCE IT HAS REACHED 1/3 OF THE EXPOSED HEIGHT OF THE CONTROL; AND

6. ONCE THE SITE IS STABILIZED AFTER CONSTRUCTION, TEMPORARY EROSION CONTROL MEASURES WILL BE REMOVED.

B. EMERGENCY EROSION CONTROLS. THE FOLLOWING MATERIALS FOR EMERGENCY EROSION CONTROL WILL BE AVAILABLE AT THE WORK SITE:

1. A SUPPLY OF SEDIMENT CONTROL MATERIALS; AND

HIP IV CONSERVATION MEASURES

2. AN OIL-ABSORBING FLOATING BOOM WHENEVER SURFACE WATER IS PRESENT.

8. DUST ABATEMENT.

A. DUST ABATEMENT, IN THE FORM OF WATER, SHALL BE APPLIED AS NEEDED OR DETERMINED BY THE TRIBE.

B. PETROLEUM-BASED PRODUCTS WILL NOT BE USED FOR DUST ABATEMENT.

9. SPILL PREVENTION, CONTROL, AND COUNTER MEASURES.

A. A DESCRIPTION OF HAZARDOUS MATERIALS THAT WILL BE USED, INCLUDING INVENTORY, STORAGE, AND HANDLING PROCEDURES WILL BE AVAILABLE ON-SITE.

B. WRITTEN PROCEDURES FOR NOTIFYING ENVIRONMENTAL RESPONSE AGENCIES WILL BE POSTED AT THE WORK SITE.

C. SPILL CONTAINMENT KITS (INCLUDING INSTRUCTIONS FOR CLEANUP AND DISPOSAL) ADEQUATE FOR THE TYPES AND QUANTITY OF HAZARDOUS MATERIALS USED AT THE SITE WILL BE AVAILABLE AT THE WORK SITE.

D. WORKERS WILL BE TRAINED IN SPILL CONTAINMENT PROCEDURES AND WILL BE INFORMED OF THE LOCATION OF SPILL CONTAINMENT KITS.

E. ANY WASTE LIQUIDS GENERATED AT THE STAGING AREAS WILL 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.

F. PUMPS USED ADJACENT TO WATER SHALL USE SPILL CONTAINMENT SYSTEMS.

10. INVASIVE SPECIES CONTROL.

A. PRIOR TO ENTERING THE SITE, ALL VEHICLES AND EQUIPMENT WILL BE POWER WASHED, ALLOWED TO FULLY DRY, AND INSPECTED TO MAKE SURE NO PLANTS, SOIL, OR OTHER ORGANIC MATERIAL ADHERES TO THE SURFACE. THIS WILL BE DONE AT THE SITE DESIGNATED BY THE TRIBE IN THE CONTRACT.

B. WATERCRAFT, WADERS, BOOTS, AND ANY OTHER GEAR TO BE USED IN OR NEAR WATER WILL BE INSPECTED FOR AQUATIC INVASIVE SPECIES.

C. WADING BOOTS WITH FELT SOLES ARE NOT TO BE USED DUE TO THEIR PROPENSITY FOR AIDING IN THE TRANSFER OF INVASIVE SPECIES UNLESS DECONTAMINATION PROCEDURES HAVE BEEN APPROVED BY THE EC LEAD.

11. WORK AREA ISOLATION AND FISH SALVAGE.

1. WORK AREA ISOLATION.

A. ANY WORK AREA WITHIN THE WETTED CHANNEL WILL BE ISOLATED FROM THE ACTIVE STREAM WHENEVER ESA-LISTED FISH ARE REASONABLY CERTAIN TO BE PRESENT, OR IF THE WORK AREA IS LESS THAN 300-FEET UPSTREAM FROM KNOWN SPAWNING HABITATS. THE CONTRACTOR SHALL PROVIDE 72 HOURS NOTICE PRIOR TO WORK AREA ISOLATION.

B. WORK AREA ISOLATION AND FISH SALVAGE ACTIVITIES WILL COMPLY WITH THE IN-WATER WORK WINDOW.

C. WORK AREA ISOLATION AND FISH CAPTURE ACTIVITIES WILL OCCUR DURING PERIODS OF THE COOLEST AIR AND WATER TEMPERATURES POSSIBLE, NORMALLY EARLY IN THE MORNING VERSUS LATE IN THE DAY, AND DURING CONDITIONS APPROPRIATE TO MINIMIZE STRESS AND DEATH OF SPECIES PRESENT.

2. FISH SALVAGE SHALL BE CONDUCTED BY THE TRIBE. 72 HOURS NOTICE IS REQUIRED. THE FOLLOWING IS FOR INFOMATIONAL PURPOSE ONLY.

A. MONITORING AND RECORDING WILL TAKE PLACE FOR DURATION OF SALVAGE. THE SALVAGE REPORT WILL BE COMMUNICATED TO AGENCIES VIA THE PROJECT COMPLETION FORM (PCF).

B. SALVAGE ACTIVITIES SHOULD TAKE PLACE DURING CONDITIONS TO MINIMIZE STRESS TO FISH SPECIES, TYPICALLY PERIODS OF THE COOLEST AIR AND WATER TEMPERATURES WHICH OCCUR IN THE MORNING VERSUS LATE IN THE DAY.

C. SALVAGE OPERATIONS WILL FOLLOW THE ORDERING, METHODS, AND CONSERVATION MEASURES SPECIFIED BELOW:

1. SLOWLY REDUCE WATER FROM THE WORK AREA TO ALLOW SOME FISH TO LEAVE VOLITIONALLY.

2. BLOCK NETS WILL BE INSTALLED AT UPSTREAM AND DOWNSTREAM LOCATIONS AND MAINTAINED IN A SECURED POSITION TO EXCLUDE FISH FROM ENTERING THE PROJECT AREA.

3. BLOCK NETS WILL BE SECURED TO THE STREAM CHANNEL BED AND BANKS UNTIL FISH CAPTURE AND TRANSPORT ACTIVITIES ARE COMPLETE. BLOCK NETS MAY BE LEFT IN PLACE FOR THE DURATION OF THE PROJECT TO EXCLUDE FISH AS LONG AS PASSAGE REQUIREMENTS ARE MET.

4. NETS WILL BE MONITORED HOURLY DURING IN-STREAM DISTURBANCE.

5. IF BLOCK NETS REMAIN IN PLACE MORE THAN ONE DAY, THE NETS WILL BE MONITORED AT LEAST DAILY TO ENSURE THEY ARE SECURED AND FREE OF ORGANIC ACCUMULATION. IF BULL TROUT ARE PRESENT, NETS ARE TO BE CHECKED EVERY 4 HOURS FOR FISH IMPINGEMENT.

6. CAPTURE FISH THROUGH SEINING AND RELOCATE TO STREAMS.

7. WHILE DEWATERING, ANY REMAINING FISH WILL BE COLLECTED BY HAND OR DIP NETS.

8. SEINES WITH A MESH SIZE TO ENSURE CAPTURE OF THE RESIDING ESA-LISTED FISH WILL BE USED.

9. MINNOW TRAPS WILL BE LEFT IN PLACE OVERNIGHT AND USED IN CONJUNCTION WITH SEINING.

10. ELECTROFISH TO CAPTURE AND RELOCATED FISH NOT CAUGHT DURING SEINING PER ELECTROFISH CONSERVATION MEASURES.

11. CONTINUE TO SLOWLY DEWATER STREAM REACH.

12. COLLECT ANY REMAINING FISH IN COLD-WATER BUCKETS AND RELOCATED TO THE STREAM.

13. LIMIT THE TIME FISH ARE IN A TRANSPORT BUCKET.

14. MINIMIZE PREDATION BY TRANSPORTING COMPARABLE SIZES IN BUCKETS.

15. BUCKET WATER TO BE CHANGED EVERY 15 MINUTES OR AERATED.

16. BUCKETS WILL BE KEPT IN SHADED AREAS OR COVERED.

17. DEAD FISH WILL NOT BE STORED IN TRANSPORT BUCKETS, BUT WILL BE LEFT ON THE STREAM BANK TO AVOID MORTALITY COUNTING ERRORS.

18. IF DRAWDOWN LESS THAN 48 HOURS, SALVAGE OF LAMPREY AND MUSSELSMAY NOT BE NECESSARY IF TEMPERATURES SUPPORT SURVIVAL IN SEDIMENTS.

19. SALVAGE MUSSELS BY HAND, LOCATING BY SNORKELING OR WADING.

20. REGULARLY INSPECT DEWATERED SITE SINCE MUSSELS IKELY TO EMERGE AFTER DEWATERING AND MAY BECOME VISIBLE.

21. MUSSELS MAY BE TRANSFERRED IN COOLERS.

22. MUSSELS WILL BE PLACED INDIVIDUALLY TO ENSURE ABILITY TO BURROW INTO NEW HABITAT.

D. ELECTROFISHING.

1. RECORD WATER TEMPERATURE. ELECTROFISHING WILL NOT OCCUR WHEN WATER TEMPERATURES ARE ABOVE 18 DEGREES CELSIUS.

HIP IV CONSERVATION MEASURES

2. IF POSSIBLE, A BLOCK NET WILL BE PLACED DOWNSTREAM AND CHECKED REGULARLY TO CAPTURE STUNNED FISH THAT DRIFT DOWNSTREAM.

3. INITIAL SETTINGS WILL BE 100 VOLTS, PULSE WIDTH OF 500 MICRO SECONDS, AND PULSE RATE OF 30 HERTZ.

4. RECORDS FOR CONDUCTIVITY, WATER TEMPERATURE, AIR TEMPERATURE, ELECTROFISHING SETTINGS, ELECTROFISHER MODEL, ELECTROFISHER CALIBRATION, FISH CONDITIONS, FISH MORTALITIES, AND TOTAL CAPTURE RATES WILL BE INCLUDED IN THE SALVAGE LOG BOOK.

B. ELECTROFISHING TECHNIQUE.

1. SAMPLING SHOULD BEGIN USING STRAIGHT DC. POWER WILL REMAIN ON UNTIL THE FISH IS NETTED WHEN USING STRAIGHT DC. GRADUALLY INCREASE VOLTAGE WHILE REMAINING BELOW MAXIMUM LEVELS.

2. MAXIMUM VOLTAGE WILL BE 1100 VOLTS WHEN CONDUCTIVITY IS <100 MILLISECONDS, 800 VOLTS WHEN CONDUCTIVITY IS BETWEEN 100 AND 300 MILLISECONDS, AND 400 VOLTS WHEN CONDUCTIVITY IS >300 MILLISECONDS.

3. IF FISH CAPTURE IS NOT SUCCESSFUL USING STRAIGHT DC, THE ELECTROFISHER WILL BE SET TO INITIAL VOLTAGE FOR PDC. VOLTAGE, PULSE WIDTH, AND PULSE FREQUENCY WILL BE GRADUALLY INCREASED WITHIN MAXIMUM VALUES UNTIL CAPTURE IS SUCCESSFUL.

4. MAXIMUM PULSE WIDTH IS 5 MILLISECONDS. MAXIMUM PULSE RATE IS 70 HERTZ 5. ELECTROFISHING WILL NOT OCCUR IN ONE AREA FOR AN EXTENDED PERIOD.

6. THE ANODE WILL NOT INTENTIONALLY COME INTO CONTACT WITH FISH. THE ZONE FOR POTENTIAL INJURY OF 0.5 M FROM THE ANODE WILL BE AVOIDED.

7. SETTINGS WILL BE LOWERED IN SHALLOWER WATER SINCE VOLTAGE GRADIENTS LIKELY TO INCREASE.

8. ELECTROFISHING WILL NOT OCCUR IN TURBID WATER WHERE VISIBILITY IS POOR (I.E. UNABLE TO SEE THE BED OF THE STREAM).

9. OPERATIONS WILL IMMEDIATELY STOP IF MORTALITY OR OBVIOUS FISH INJURY IS OBSERVED. ELECTROFISHING SETTINGS WILL BE REEVALUATED.

C. SAMPLE PROCESSING.

1. FISH SHALL BE SORTED BY SIZE TO AVOID PREDATION DURING CONTAINMENT.

2. SAMPLERS WILL REGULARLY CHECK CONDITIONS OF FISH HOLDING CONTAINERS, AIR PUMPS, WATER TRANSFERS, ETC.

3. FISH WILL BE OBSERVED FOR GENERAL CONDITIONS AND INJURIES

4. EACH FISH WILL BE COMPLETELY REVIVED BEFORE RELEASE. ESA-LISTED SPECIES WILL BE PRIORITIZED FOR SUCCESSFUL RELEASE.

D. BULL TROUT ELECTROFISHING.

1. ELECTROFISHING FOR BULL TROUT WILL ONLY OCCUR FROM MAY 1 TO JULY 31. NO ELECTROFISHING WILL OCCUR IN ANY BULL TROUT OCCUPIED HABITAT AFTER AUGUST 15. IN FMO HABITATS ELECTROFISHING MAY OCCUR ANY TIME.

2. ELECTROFISHING OF BULL TROUT WILL NOT OCCUR WHEN WATER TEMPERATURES EXCEED 15 DEGREES CELSIUS.

4. DEWATERING.

A. DEWATERING WILL OCCUR AT A RATE SLOW ENOUGH TO ALLOW SPECIES TO NATURALLY MIGRATE OUT OF THE WORK AREA.

B. WHERE A GRAVITY FEED DIVERSION IS NOT POSSIBLE, A PUMP MAY BE USED. PUMPS WILL BE INSTALLED TO AVOID REPETIVE DEWATERING AND REWATERING.

C. WHEN FISH ARE PRESENT, PUMPS WILL BE SCREENED IN ACCORDANCE WITH NMFS FISH SCREEN CRITERIA. NMFS ENGINEERING REVIEW AND APPROVAL WILL BE OBTAINED FOR PUMPS EXCEEDING 3 CUBIC FEET PER SECOND.

D. DISSIPATION OF FLOW ENERGY AT THE BYPASS OUTFLOW WILL BE PROVIDED TO PREVENT DAMAGE TO THE STREAM CHANNEL AND RIPARIAN VEGETATION.

E. SEEPAGE WATER WILL BE PUMPED TO A TEMPORARY STORAGE AND TREATMENT SITE OF INTO UPLAND AREAS TO ALLOW WATER TO PERCOLATE THROUGH SOIL AND VEGETATION PRIOR TO REENTERING THE STREAM CHANNEL.

12. CONSTRUCTION AND POST CONSTRUCTION CONSERVATION MEASURES.

1. FISH PASSAGE.

A. FISH PASSAGE WILL BE PROVIDED FOR ADULT AND JUVENILE FISH LIKELY TO BE PRESENT DURING CONSTRUCTION UNLESS PASSAGE DID NOT EXIST BEFORE CONSTRUCTION OR NMFS AND USFWS PROVIDE A VARIANCE, THE STREAM IS NATURALLY IMPASSABLE, OR PASSAGE WILL NEGATIVELY IMPACT ESA-LISTED SPECIES OR THEIR HABITAT.

B. FISH PASSAGE ALTERNATIVES WILL BE APPROVED BY THE BPA EC LEAD UNDER ADVISEMENT BY THE NMFS HABITAT BIOLOGIST.

2. CONSTRUCTION AND DISCHARGE WATER.

A. SURFACE WATER MAY BE DIVERTED TO MEET CONSTRUCTION NEEDS ONLY IF DEVELOPED SOURCES ARE UNAVAILABLE OR INADEQUATE.

B. DIVERSIONS WILL NOT EXCEED 10% OF THE AVAILABLE FLOW.

C. CONSTRUCTION DISCHARGE WATER WILL BE COLLECTED AND TREATED TO REMOVE DEBRIS, NUTRIENTS, SEDIMENT, PETROLEUM HYDROCARBONS, METALS, AND OTHER POLLUTANTS.

3. TIME AND EXTENT OF DISTURBANCE.

A. EARTHWORK REQUIRING IN-STREAM MECHANIZED EQUIPMENT (INCLUDING DRILLING, EXCAVATION, DREDGING, FILLING, AND COMPACTING) WILL BE COMPLETED AS QUICKLY AS POSSIBLE.

B. MECHANIZED EQUIPMENT WILL WORK FROM TOP OF BANK UNLESS WORK FROM ANOTHER LOCATION WILL RESULT IN LESS HABITAT DISTURBANCE (TURBIDITY, VEGETATION DISTURBANCE, ETC.).

4. CESSATION OF WORK.

A. PROJECT OPERATIONS WILL CEASE WHEN HIGH FLOW CONDITIONS MAY RESULT IN INUNDATION OF THE PROJECT AREA (FLOOD EFFORTS TO DECREASE DAMAGES TO NATURAL RESOURCES PERMITTED).

B. WATER QUALITY LEVELS EXCEEDED. SEE CWA SECTION 401 WATER QUALITY CERTIFICATION AND TURBIDITY MEASURES.

5. SITE RESTORATION.

A. DISTURBED AREAS, STREAM BANKS, SOILS, AND VEGETATION WILL BE CLEANED UP AND RESTORED TO IMPROVED OR PRE-PROJECT CONDITIONS.

B. PROJECT-RELATED WASTE WILL BE REMOVED.

C. TEMPORARY ACCESS ROADS AND STAGING WILL BE DECOMPACTED AND RESTORED. SOILS WILL BE LOOSENED IF NEEDED FOR REVEGETATION OR WATER INFILTRATION.

D. THE PROJECT SPONSOR WILL RETAIN THE RIGHT OF REASONABLE ACCESS TO THE SITE TO MONITOR AND MAINTAIN THE SITE OVER THE LIFE OF THE PROJECT.

6. REVEGETATION.

A. PLANTING AND SEEDING WILL OCCUR PRIOR TO OR AT THE BEGINNING OF THE FIRST GROWING SEASON AFTER CONSTRUCTION.

B. A MIX OF NATIVE SPECIES (INVASIVE SPECIES NOT ALLOWED) APPROPRIATE TO THE SITE WILL BE USED TO REESTABLISH VEGETATION, PROVIDE SHADE, AND REDUCE EROSION. REESTABLISHED VEGETATION SHOULD BE AT LEAST 70% OF PRE-PROJECT CONDITIONS WITHIN THREE YEARS.

C. VEGETATION SUCH AS WILLOWS, SEDGES, OR RUSH MATS WILL BE SALVAGED FROM DISTURBED OR ABANDONED AREAS TO BE REPLANTED.

HIP IV CONSERVATION MEASURES

D. SHORT-TERM STABILIZATION MEASURE MAY INCLUDE THE USE OF NON-NATIVE STERILE SEED MIX (WHEN NATIVE NOT AVAILABLE), WEED-FREE CERTIFIED STRAW, OR OTHER SIMILAR TECHNIQUES.

E. SURFACE FERTILIZER WILL NOT BE APPLIED WITHIN 50 FEET OF ANY STREAM, WATE BODY, OR WETLAND.

F. FENCING WILL BE INSTALLED AS NECESSARY TO PREVENT ACCESS TO REVEGETATED SITES BY LIVESTOCK OR UNAUTHORIZED PERSONS.

G. INVASIVE PLANTS WILL BE REMOVED OR CONTROLLED UNTIL NATIVE PLANT SPECIES ARE WELL ESTABLISHED (TYPICALLY THREE YEARS POST-CONSTRUCTION).
7. SITE ACCESS AND IMPLEMENTATION MONITORING.

A. THE PROJECT SPONSOR WILL PROVIDE CONSTRUCTION MONITORING DURING IMPLEMENTATION TO ENSURE ALL CONSERVATION MEASURES ARE ADEQUATELY FOLLOWED, EFFECTS TO LISTED SPECIES ARE NOT GREATER THAN PREDICTED, AND INCIDENTAL TAKE LIMITATIONS ARE NOT EXCEEDED.

B. THE PROJECT SPONSOR OR DESIGNATED REPRESENTATIVE WILL SUBMIT THE PROJECT COMPLETION FORM (PCF) WITHIN 30 DAYS OF PROJECT COMPLETION.

8. CWA SECTION 401 WATER QUALITY CERTIFICATION.

A. THE PROJECT SPONSOR OR DESIGNATED REPRESENTATIVE WILL COMPLETE AND RECORD WATER QUALITY OBSERVATIONS (SEE TURBIDITY MONITORING) TO ENSURE IN-WATER WORK IS NOT DEGRADING WATER QUALITY.

B. DURING CONSTRUCTION, WATER QUALITY PROVISIONS PROVIDED BY THE IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY WILL BE FOLLOWED.

13. STAGED REWATERING PLAN.

A. WHEN REINTRODUCING WATER TO DEWATERED AREAS AND NEWLY CONSTRUCTED CHANNELS, A STAGED REWATERING PLAN WILL BE APPLIED.

B. THE FOLLOWING WILL BE APPLIED TO ALL REWATERING EFFORTS. COMPLEX REWATERING EFFORTS MAY REQUIRE ADDITIONAL NOTES OR A DEDICATED SHEET IN THE CONSTRUCTION DETAILS.

1. TURBIDITY MONITORING PROTOCOL WILL BE APPLIED TO REWATERING EFFORTS.

2. PRE-WASH THE AREA BEFORE REWATERING. TURBID WASH WATER WILL BE DETAINED AND PUMPED TO THE FLOODPLAIN OR SEDIMENT CAPTURE AREAS RATHER THAN DISCHARGING TO FISH-BEARING STREAMS.

3. INSTALL SEINE NETS AT UPSTREAM END TO PREVENT FISH FROM MOVING DOWNSTREAM UNTIL 2/3 OF TOTAL FLOW IS RESTORED TO THE CHANNEL.

4. STARTING IN EARLY MORNING INTRODUCE 1/3 OF NEW CHANNEL FLOW OVER PERIOD OF 1-2 HOURS.

5. INTRODUCE SECOND THIRD OF FLOW OVER NEXT 1 TO 2 HOURS AND BEGIN FISH SALVAGE OF BYPASS CHANNEL IF FISH ARE PRESENT.

6. REMOVE UPSTREAM SEINE NETS ONCE 2/3 FLOW IN REWATERED CHANNEL AND DOWNSTREAM TURBIDITY IS WITHIN ACCEPTABLE RANGE (LESS THAN 40 NTU OR LESS THAN 10% BACKGROUND).

7. INTRODUCE FINAL THIRD OF FLOW ONCE FISH SALVAGE EFFORTS ARE COMPLETE AND DOWNSTREAM TURBIDITY VERIFIED TO BE WITHIN ACCEPTABLE RANGE.

8. INSTALL PLUG TO BLOCK FLOW INTO OLD CHANNEL OR BYPASS. REMOVE ANY REMAINING SEINE NETS.

9. IN LAMPREY SYSTEMS, LAMPREY SALVAGE AND DRY SHOCKING MAY BE NECESSARY.

14. TURBIDITY MONITORING. 24 HOURS WILL BE GIVEN PRIOR TO ANY TURBIDTY CAUSING ACTIVIES. THE TRIBE WILL MONITOR TURBIDITY USING THE FOLLOWING METHODS:

A. RECORD THE READING, LOCATION, AND TIME FOR THE BACKGROUND READING APPROXIMATELY 100 FEET UPSTREAM OF THE PROJECT AREA USING A RECENTLY CALIBRATED TURBIDIMETER OR VIA VISUAL OBSERVATION (SEE THE HIP HANDBOOK TURBIDITY MONITORING SECTION FOR A VISUAL OBSERVATION KEY).

B. RECORD THE TURBIDITY READING, LOCATION, AND TIME AT THE MEASUREMENT COMPLIANCE LOCATION POINT.

1. 50 FEET DOWNSTREAM FOR STREAMS LESS THAN 30 FEET WIDE.

2. 100 FEET DOWNSTREAM FOR STREAMS BETWEEN 30 AND 100 FEET WIDE.

3. 200 FEET DOWNSTREAM FOR STREAMS GREATER THAN 100 FEET WIDE.

4. 300 FEET FROM THE DISCHARGE POINT OR NONPOINT SOURCE FOR LOCATIONS SUBJECT TO TIDAL OR COASTAL SCOUR.

C. TURBIDITY SHALL BE MEASURED (BACKGROUND LOCATION AND COMPLIANCE POINTS) EVERY 4 HOURS WHILE WORK IS BEING IMPLEMENTED.

D. IF THERE IS A VISIBLE DIFFERENCE BETWEEN A COMPLIANCE POINT AND THE BACKGROUND, THE EXCEEDANCE WILL BE NOTED IN THE PROJECT COMPLETION FORM (PCF). ADJUSTMENTS OR CORRECTIVE MEASURES WILL BE TAKEN IN ORDER TO REDUCE TURBIDITY.

E. IF EXCEEDANCES OCCUR FOR MORE THAN TWO CONSECUTIVE MONITORING INTERVALS (AFTER 8 HOURS), THE ACTIVITY WILL STOP UNTIL THE TURBIDITY LEVEL RETURNS TO BACKGROUND. THE BPA EC LEAD WILL BE NOTIFIED OF ALL EXCEEDANCES AND CORRECTIVE ACTIONS AT PROJECT COMPLETION.

F. IF TURBIDITY CONTROLS (COFFER DAMS, WADDLES, FENCING, ETC.) ARE DETERMINED INEFFECTIVE, CREWS WILL BE MOBILIZED TO MODIFY AS NECESSARY. OCCURRENCES WILL BE DOCUMENTED IN THE PROJECT COMPLETION FORM (PCF).

G. FINAL TURBIDITY READINGS, EXCEEDANCES, AND CONTROL FAILURES WILL BESUBMITTED TO THE BPA EC LEAD USING THE PROJECT COMPLETION FORM (PCF).

HIP IV CONSERVATION MEASURES