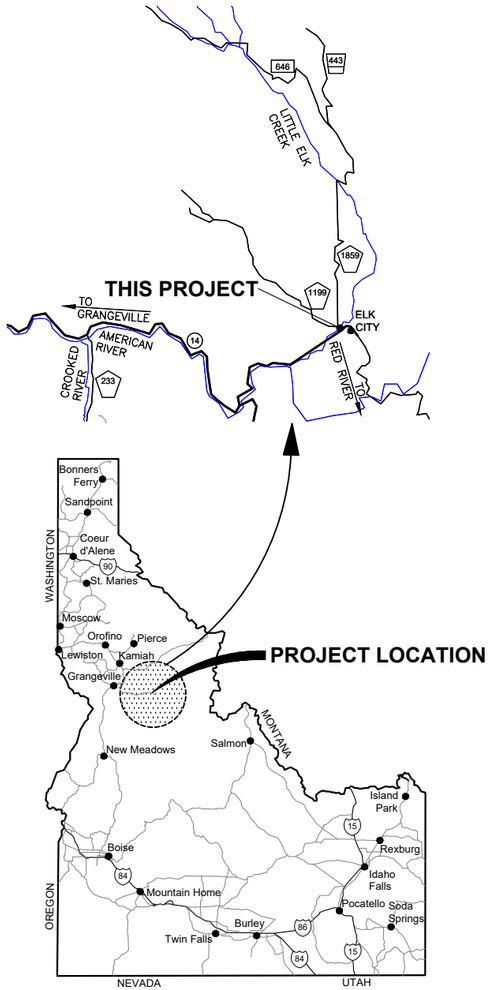
NEZ PERCE TRIBE
DEPARTMENT OF FISHERIES RESOURCE MANAGEMENT

CONSTRUCTION PLANS FOR

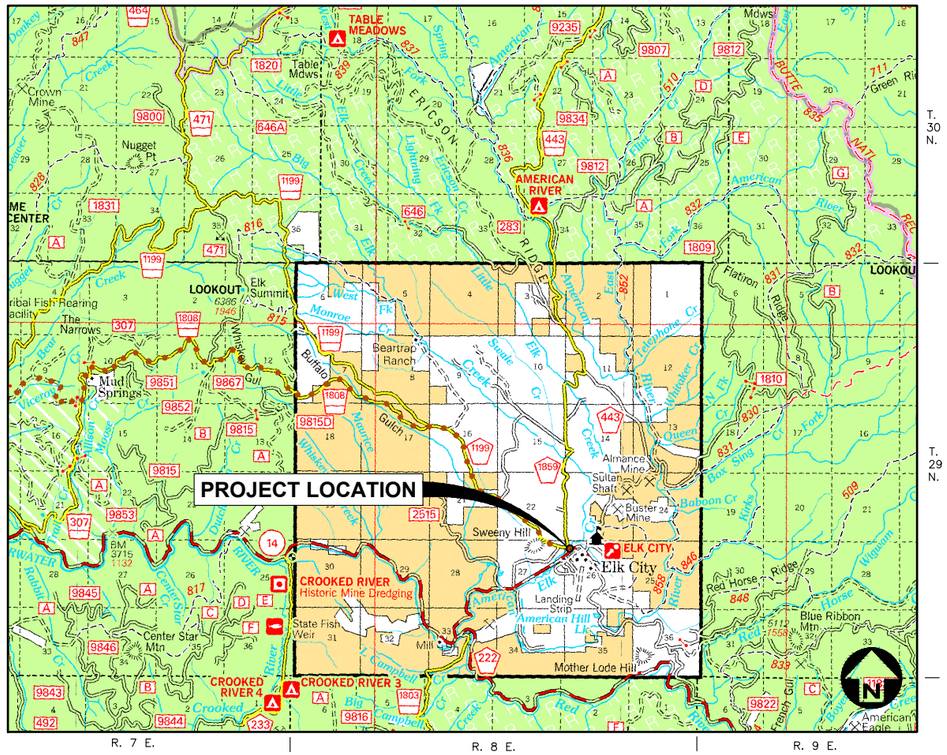
ELK CREEK BRIDGE REPLACEMENT
SWEENEY HILL ROAD

IDAHO COUNTY, IDAHO

SECTION 26, TOWNSHIP 29 NORTH, AND RANGE 8 EAST
LAT: 45.827°, LONG: -115.441°



LOCATION MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

SHEET INDEX

PROJECT: 1-23155
DATE: 9/30/2024

PLANS PREPARED BY:

BRETT BURGLUND, E.I.

QA/QC BY:

JEREMIAH THEYS, P.E.

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

GreatWest ENGINEERING

NO.	REVISION DESCRIPTION	BY	DATE
1			
2			
3			
4			
5			
6			

SET NO.

SHEET NO. 1

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

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.
15201	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 BRIDGE AND CONCRETE SLAB, DISPOSAL METHOD A	LS	ALL	REMOVE AND LEGALLY DISPOSE OF EXISTING BRIDGE AND CONCRETE SLAB AS SHOWN IN THE DRAWINGS.
20403	ROADWAY EMBANKMENT, COMPACTION PLACEMENT METHOD 1	CY*	152	
20806	STRUCTURE EXCAVATION & BACKFILL	LS	ALL	STRUCTURE EXCAVATION FOR BRIDGE ABUTMENTS (GRADE BEAMS). STRUCTURAL BACKFILL WILL MEET SPECIFICATION FP-14 703.05 GRADATION F OR G. INCLUDES PROCTOR AND DENSITY TESTING. ESTIMATED STRUCTURAL EXC.= 218 CY, TOTAL STRUCTURAL BACKFILL= 115 CY.
25101	PLACED RIPRAP, CLASS 4	CY*	126	BRIDGE ABUTMENT ARMORING.
27250	GEOCELL ABUTMENT STABILIZATION, 6 INCH DEPTH	SY*	41	INCLUDES INSTALLATION OF GEOCELL, GRANULAR INFILL MATERIAL, AND GEOTEXTILE WRAP.
30207	AGGREGATE SURFACE COURSE, 1" MINUS, COMPACTION METHOD 1	CY*	100	
40301	HOT ASPHALT CONCRETE PAVEMENT, GRADING C, PG 58-28	TON	142	SAWCUT AND REMOVAL OF EXISTING ASPHALT SHOWN IN THE PLANS ARE INDIRECT TO THIS PAY ITEM.
553A01	PRECAST CONCRETE MEMBER, GRADE BEAMS	LS	ALL	REQUIRES SHOP DRAWINGS. INCLUDES INSTALLATION AND ALL OTHER INSTALLATION ITEMS (SPLICES, HARDWARE, ETC.)
55503	PRE-FABRICATED STEEL MODULAR BRIDGE	LS	ALL	REQUIRES SHOP DRAWINGS. INCLUDES INSTALLATION AND ALL OTHER INSTALLATION ITEMS (PREFABRICATED WEATHERING STEEL GIRDER MODULES WITH CORRUGATED STEEL DECKING, CORRUGATED STEEL BACKWALLS, STEEL SIDE DAMS, SPLICES, BEARINGS, ETC.).
61702a	18'-9" FLARED GUARDRAIL TERMINAL END SECTION	EA	3	
61702b	RADIUSED GUARDRAIL TERMINAL END SECTION	EA	1	
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	STREAMBANK REVEGETATION	SY*	142	
63305	OBJECT MARKERS, TYPE 3 W/POSTS	EA	4	
64808	CHANNEL EXCAVATION AND EMBANKMENT	LF	127	
64809	ROCK CROSS-VANE STRUCTURE	EA	1	
64810	FISH REST STOP ROCK	EA	20	

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

GreatWest ENGINEERING
2501 BELT VIEW DRIVE
HELENA, MT 59601
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ELK CREEK BRIDGE REPLACEMENT

SWEENEY HILL ROAD
NEZ PERCE TRIBE

ESTIMATED QUANTITIES

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

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) AND THE FOREST SERVICE SUPPLEMENTAL SPECIFICATIONS (FSSS).

DESIGN:
DESIGN SHALL CONFORM WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 9TH EDITION, 2020 WITH CURRENT INTERIMS.

DESIGN DATA AS FOLLOWS:
- HL–93 LIVE LOAD
- TRUCK IMPACT = 33%
- SYSTEM FACTOR = 1.0

SUPERIMPOSED DEAD LOAD = 35 PSF. SUPERIMPOSED DEAD LOAD MAY BE ASSUMED TO BE EQUALLY DISTRIBUTED TO ALL GIRDERS.

HYDROLOGY & HYDRAULICS:
THIS STRUCTURE WAS DESIGNED TO PASS THE 100–YEAR FLOOD EVENT OF 801 CUBIC FEET PER SECOND (CFS). THE 2–YEAR AND THE 10–YEAR EVENTS WERE ESTIMATED AT 227 CFS AND 456 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.

CONCRETE:
USE FP–14 CLASS A(AE). 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 3/4" UNLESS NOTED OTHERWISE. REFER TO FP–14 SECTION 552 FOR COMPRESSIVE STRENGTHS AND OTHER REQUIREMENTS FOR CLASS A(AE).

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.

WELDING:
WELDING, WELDER QUALIFICATIONS, PRE–QUALIFICATION OF WELD DETAILS, AND INSPECTION OF WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE ANSI/AASHTO/AWS BRIDGE WELDING CODE D1.5. NO FIELD WELDING WILL BE ALLOWED UNLESS NOTED OTHERWISE. ALL ELECTRODES SHALL BE E70XX.

PAINTING OF OPTIONAL GRADE BEAM SPLICE:
IN LIEU OF GALVANIZING, OPTIONAL GRADE BEAM SPLICES MAY BE FIELD PAINTED WITH ONE PRIMER COAT AND TWO FIELD COATS. THE FIELD COATS SHALL BE ALUMINUM PAINT CONFORMING TO AASHTO M69, TYPE II.

CONTRACTOR INSTALLATION PLAN:
SUPPLIER SHALL SUBMIT AN INSTALLATION PLAN DETAILING ALL STEPS NECESSARY IN THE TRANSPORT, PLACEMENT AND INSTALLATION OF ALL PRECAST CONCRETE AND STEEL BRIDGE ELEMENTS. INSTALLATION PLAN SHALL INCLUDE ALL NECESSARY EQUIPMENT AND ANY ADDITIONAL WORK NECESSARY TO ACCOMMODATE SPECIAL EQUIPMENT. INSTALLATION PLAN IS INCLUDED IN ITEM 55503.

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.

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

STEEL MODULAR BRIDGE:
THE STEEL BRIDGE SUPERSTRUCTURE (STEEL GIRDERS) LAYOUT PROVIDED UTILIZES A W24 GIRDER FOR PURPOSES OF ESTABLISHING ELEVATIONS. THE FINAL BRIDGE SUPERSTRUCTURE AND DECK SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF IDAHO. THE STEEL BRIDGE SUPPLIER IS TO SUPPLY AND DESIGN THE STEEL GIRDERS, DIAPHRAGMS, BEARING ASSEMBLY, BACKWALL, BACKWALL ATTACHMENT TO GIRDERS, SIDE DAM, STIFFENERS, CORRUGATED DECKING, RAIL AND RAIL ATTACHMENTS, AND OTHER APPURTENANCES.

SUBMIT SHOP DRAWINGS FOR ALL STRUCTURAL STEEL ELEMENTS. SHOW ALL DIMENSIONS, FABRICATION DETAILS, AND MATERIAL SPECIFICATIONS ON THE SHOP DRAWINGS FOR ALL CUT OR BORED STEEL. FIELD DRILLING OF HOLES SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED ON THE DRAWINGS.

PROVIDE A STEEL ERECTION PLAN WITH THE STRUCTURAL STEEL SHOP DRAWINGS.

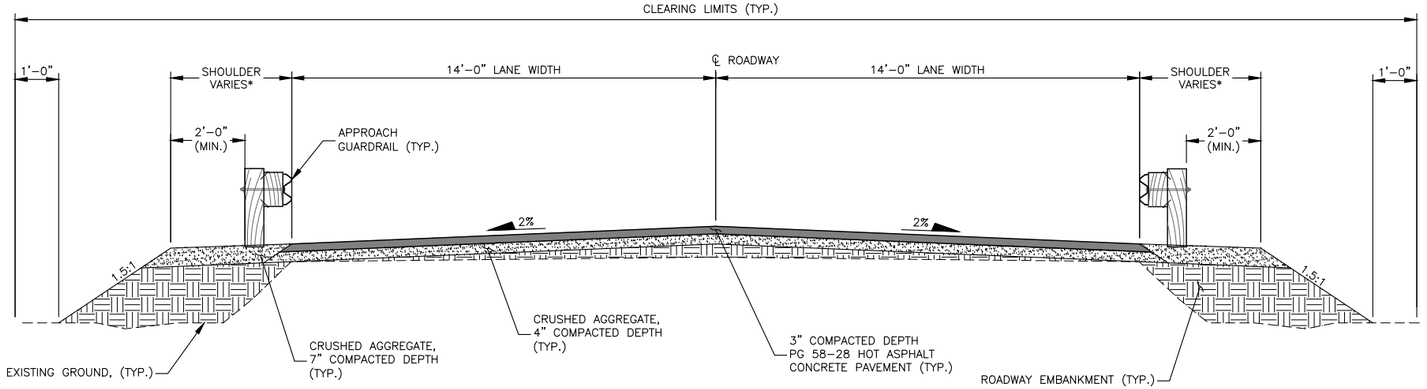
STEEL FABRICATOR SUPPLYING STRUCTURAL COMPONENTS SHALL BE CERTIFIED UNDER THE AISC QUALITY CERTIFICATION PROGRAM, SIMPLE STEEL BRIDGES (CATEGORY SBR), EFFECTIVE AS OF THE PROJECT LETTING DATE OR MEET REQUIREMENTS AS DELINEATED IN FSSS 555.

STEEL GIRDERS AND DIAPHRAGMS SHALL BE AASHTO M270, GRADE 50W (ASTM 709, GRADE 50), WEATHERING STEEL. BEARINGS SHALL CONFORM TO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS. BEARING COMPONENTS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

AN ALTERNATE W–SECTION MAY BE USED IN LIEU OF THE GIRDER SHOWN IN THE PLANS. THE GIRDERS MAY BE INCREASED IN DEPTH UP TO 3" FROM THE PREFERRED W24 SECTION. THE BRIDGE MAY NOT DEVIATE FROM THE USABLE WDTH OF 28'. IF AN ALTERNATE BRIDGE SUPERSTRUCTURE IS USED, THE FINISHED GRADE OF THE ROAD SHALL BE MAINTAINED WITH ADJUSTMENTS MADE IN THE SUBSTRUCTURE ELEVATIONS TO ACCOMMODATE VARIATIONS IN THE SUPERSTRUCTURE DEPTH. NO ADDITIONAL COST SHALL BE INCURRED IF CONTRACTOR ELECTS TO UTILIZE AN ALTERNATE BRIDGE SECTION.

ALL STRUCTURAL STEEL AND HARDWARE SHALL MEET THE REQUIREMENTS OF AASHTO M183 GRADE 36, WITH NUTS AND BOLTS CONFORMING TO ASTM A307, EXCEPT AS NOTED. ALL STEEL HARDWARE SHALL BE GALVANIZED ACCORDING TO AASHTO M232 UNLESS NOTED OTHERWISE.

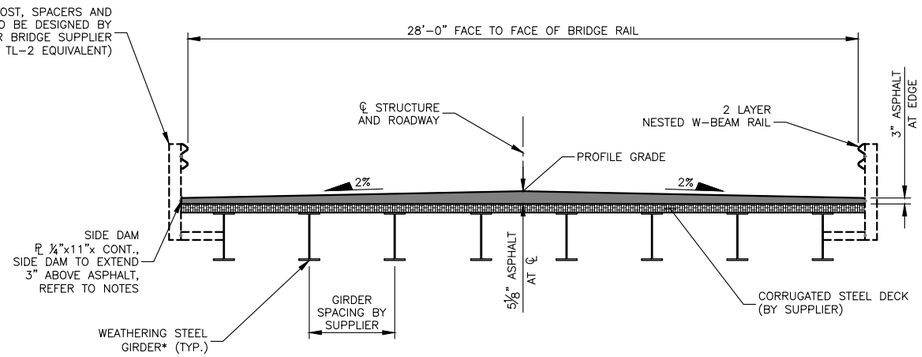
ALL STEEL SHAPES, PLATES, AND BARS SHALL MEET THE REQUIREMENTS OF AASHTO M270, GRADE 50W, UNLESS NOTED OTHERWISE. ALL NUTS AND BOLTS SHALL CONFORM TO ASTM A325, TYPE 3, UNLESS OTHERWISE NOTED.



* SEE ROADWAY CROSS–SECTIONS

TYPICAL ROADWAY SECTION

NOT TO SCALE



TYPICAL BRIDGE SECTION

NOT TO SCALE

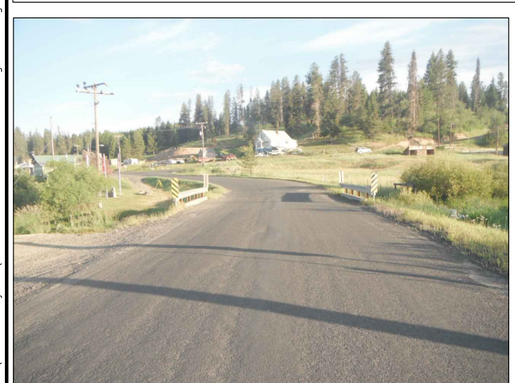
NOTES:

*W24 GIRDERS WERE ASSUMED FOR THE BRIDGE LAYOUT AND ARE SHOWN THROUGHOUT THESE PLANS. REFER TO GENERAL NOTES ON THIS SHEET.

DIAPHRAGMS ARE NOT SHOWN AND TO BE DESIGNED BY SUPPLIER.

INTENT OF SIDE DAM IS BOTH FOR ASPHALT RETENTION AND ALSO TO CONVEY DRAINAGE. SIDE DAMS TO EXTEND 3" ABOVE ASPHALT TO FUNCTION AS CURBS.

ENSURE PROPER ASPHALT COMPACTION AND INSTALLATION MEASURES OCCUR FOR INSTALLATION OF ASPHALT WITHIN THE STEEL CORRUGATED DECK. CONTRACTOR TO UTILIZE STEEL MODULAR FABRICATOR RECOMMENDATIONS FOR ASPHALT INSTALLATION.



VIEW OF EXISTING APPROACH LOOKING NORTHWEST (JULY 2014)

ELEVATION VIEW OF EXISTING BRIDGE LOOKING UPSTREAM (JULY 2014)

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GENERAL NOTES & TYPICAL SECTIONS

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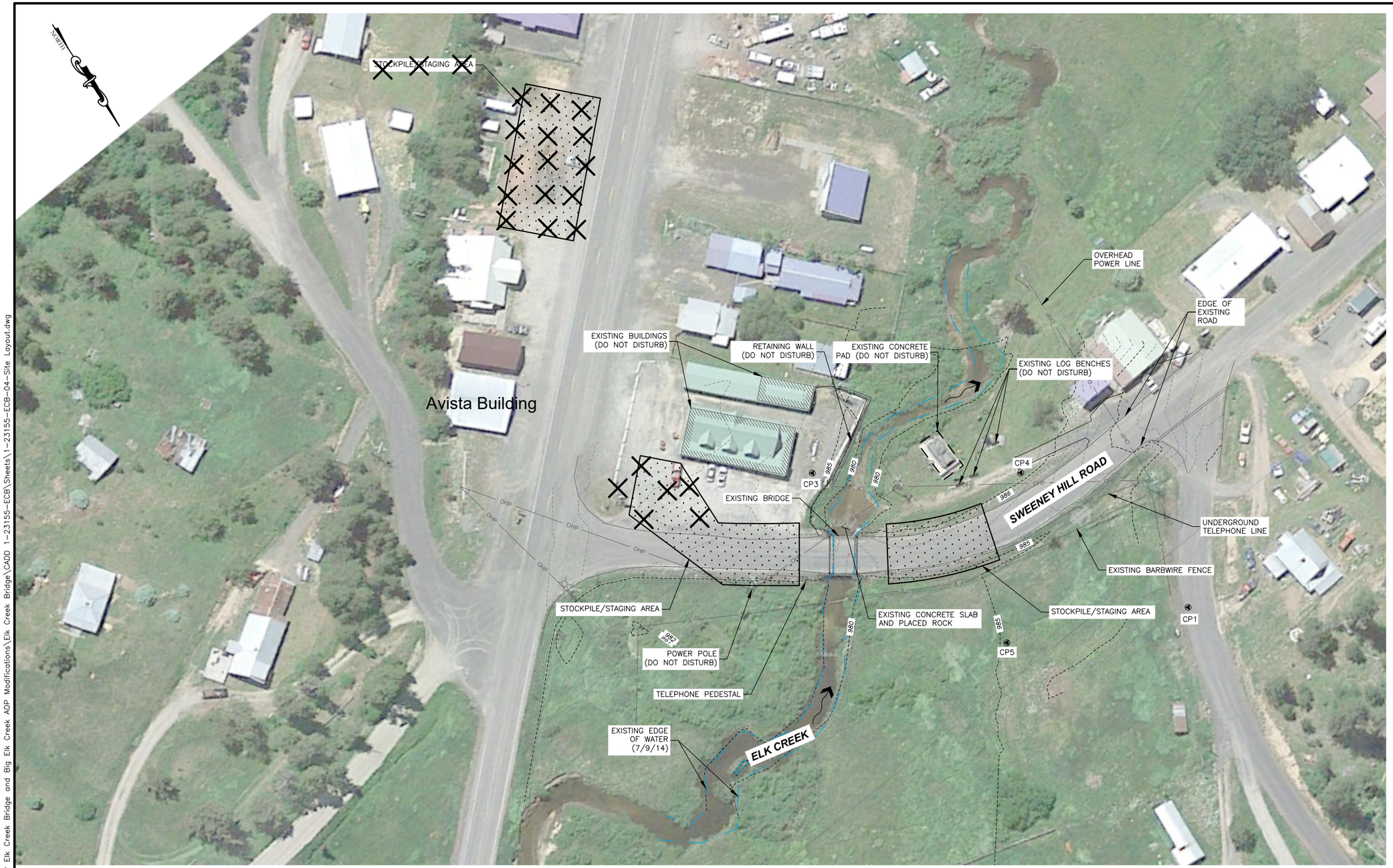
DRAWN: BMB	DRAWING CHECKED: JJT	△			

SHEET NO. 3 OF 20



SITE LAYOUT

0 40 80

SCALE IN FEET

*Storage and stockpile on roadway only. Areas with X are not storage and stockpile areas. Area adjacent to Avista storage building may be a stoarage and stockpile locations.

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ELK CREEK BRIDGE REPLACEMENT

SWEENEY HILL ROAD
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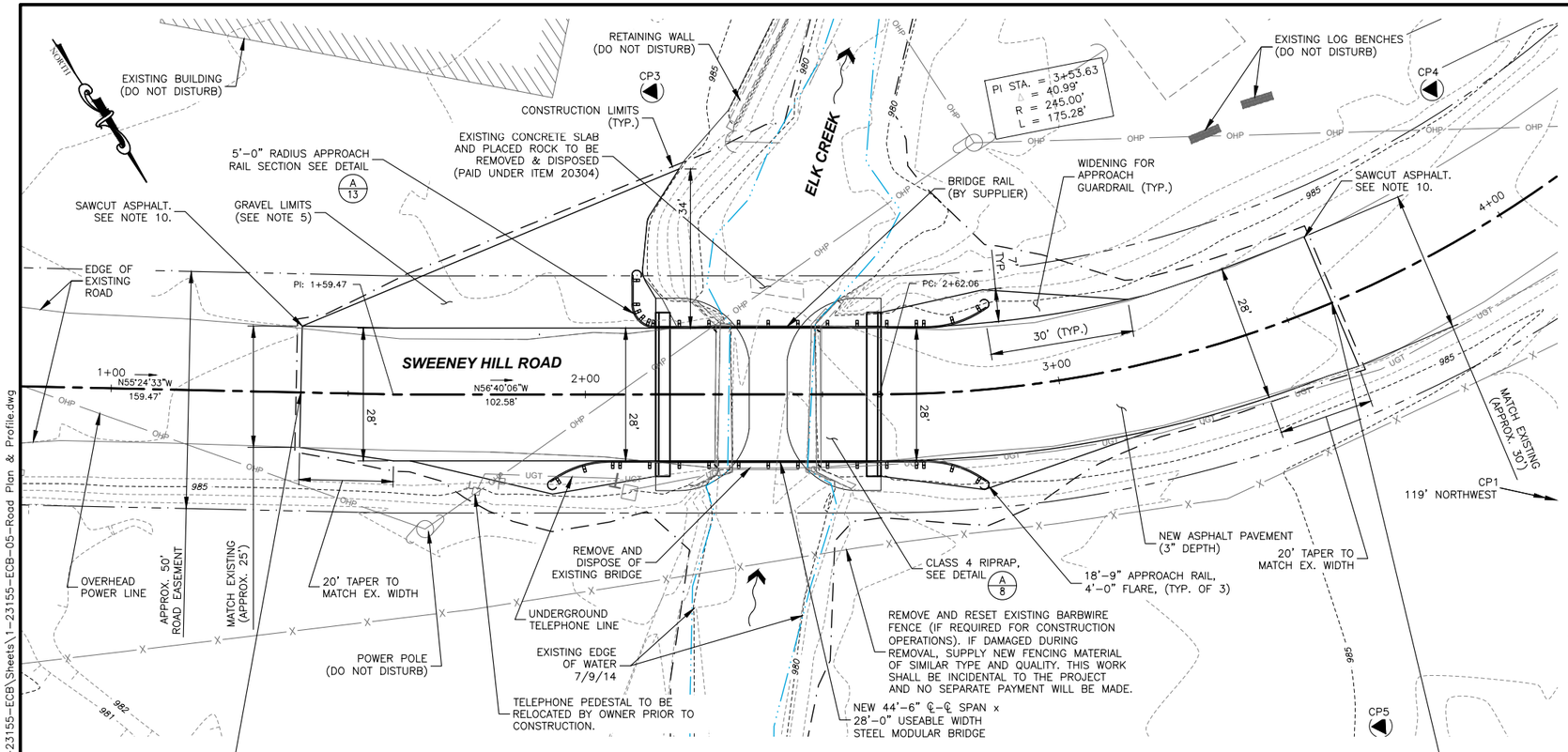
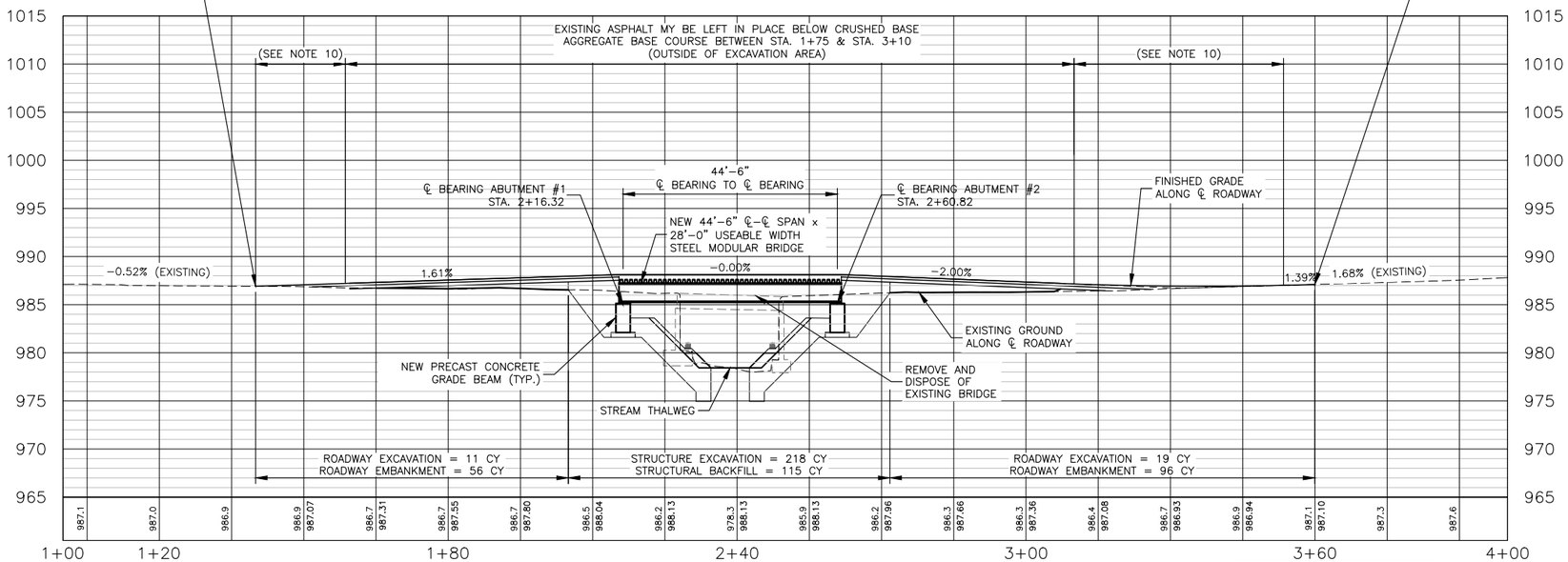
SITE LAYOUT

PROJECT: 1-23155 DATE: 9/30/2024	NO.	REVISION DESCRIPTION	BY	DATE	SHEET NO. 4 OF 20
DESIGNED: BMB DESIGN CHECKED: JJT	△				
DRAWN: BMB DRAWING CHECKED: JJT	△				



PLAN VIEW OF SWEENEY HILL ROAD - STA. 1+00 TO STA. 4+00



PROFILE VIEW OF SWEENEY HILL ROAD - STA. 1+00 TO STA. 4+00

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 15'

NOTE:
BRIDGE RAIL AND APPROACH RAIL NOT SHOWN FOR CLARITY

CONTROL POINT COORDINATE TABLE*

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	5000.00	10000.00	1000.00	REBAR W/CAP
CP3	4748.48	10189.53	985.44	REBAR W/CAP
CP4	4838.52	10051.94	983.11	REBAR W/CAP
CP5	4944.75	10134.77	985.24	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. CONTRACTOR SHALL SEED ALL DISTURBED AREAS AFTER CONSTRUCTION USING A NATIVE SEED MIX APPROVED BY THE OWNER.
2. ALL CONSTRUCTION SIGNING AND TRAFFIC CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL COMPLY WITH MUTCD REQUIREMENTS.
3. 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 WILL BE PAID FOR UNDER ITEM 20403.
4. ESTIMATED QUANTITIES ARE PROVIDED FOR INFORMATION ONLY AND ARE IN PLACE QUANTITIES ONLY, NO SHRINK OR SWELL FACTORS HAVE BEEN APPLIED. CONTRACTOR TO VERIFY QUANTITIES.
5. CONTRACTOR TO BLEND AND RE-GRADE EXISTING GRAVEL DRIVEWAYS AND APPROACHES WITHIN THE PROJECT EXTENTS TO MATCH THE NEW ROADWAY. PLACE 7" COMPACTED DEPTH OF CRUSHED AGGREGATE ON REGRADED AREA (PAID UNDER ITEM 30207).
6. NO MATERIALS OR EQUIPMENT MAY BE STORED BELOW THE ORDINARY HIGH WATER MARK OF THE CREEK.
7. AN OVERHEAD POWERLINE IS LOCATED ON THE DOWNSTREAM SIDE OF THE ROADWAY. COORDINATE TEMPORARY CONSTRUCTION MEASURES WITH THE LOCAL UTILITY PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. THIS WORK IS INCIDENTAL TO THE PROJECT AND NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK.

   OWNER WILL COORDINATE WITH THE LOCAL UTILITY FOR THE RELOCATION OF THE TELEPHONE PEDESTAL, AS SHOWN, PRIOR TO CONSTRUCTION.
8. 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. ANY DAMAGE CAUSED DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR.
9. SAWCUT AND REMOVE ASPHALT AT THE BEGINNING AND ENDING STATIONS OF THE ROADWORK. OVERLAYING THE EXISTING ASPHALT WILL NOT BE ALLOWED FROM STA. 1+40 TO STA. 1+75 & STA. 3+10 TO STA. 3+60. THE FULL TYPICAL SECTION SHALL BE INSTALLED FOR THE ABOVE REFERENCED SECTIONS.
10. A GEOTECHNICAL INVESTIGATION HAS NOT BEEN CONDUCTED AT THIS SITE. ABUTMENT 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.

ROADWAY CENTERLINE COORDINATE STAKING TABLE

DESCRIPTION	NORTHING	EASTING	ELEVATION
STA. 1+40.00 BEGIN ROADWORK	4760.83	10286.33	986.91
STA. 1+59.47 PI	4771.89	10270.30	987.22
STA. 1+80.00	4783.17	10253.15	987.55
STA. 2+00.00	4794.16	10236.44	987.88
STA. 2+16.32 CL BEARING ABUT. 1	4803.12	10222.80	988.13
STA. 2+60.82 CL BEARING ABUT. 2	4827.58	10185.62	988.13
STA. 2+62.06 PC	4828.26	10184.59	988.12
STA. 2+80.00	4837.56	10169.25	987.76
STA. 3+00.00	4846.57	10151.40	987.36
STA. 3+20.00	4854.10	10132.88	987.01
STA. 3+40.00	4860.09	10113.80	986.92
STA. 3+60.00 END ROADWORK	4864.51	10094.30	987.10
STA. 4+37.33 PT	4866.37	10017.32	EXISTING

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SWEENEY HILL ROAD
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ROAD PLAN & PROFILE

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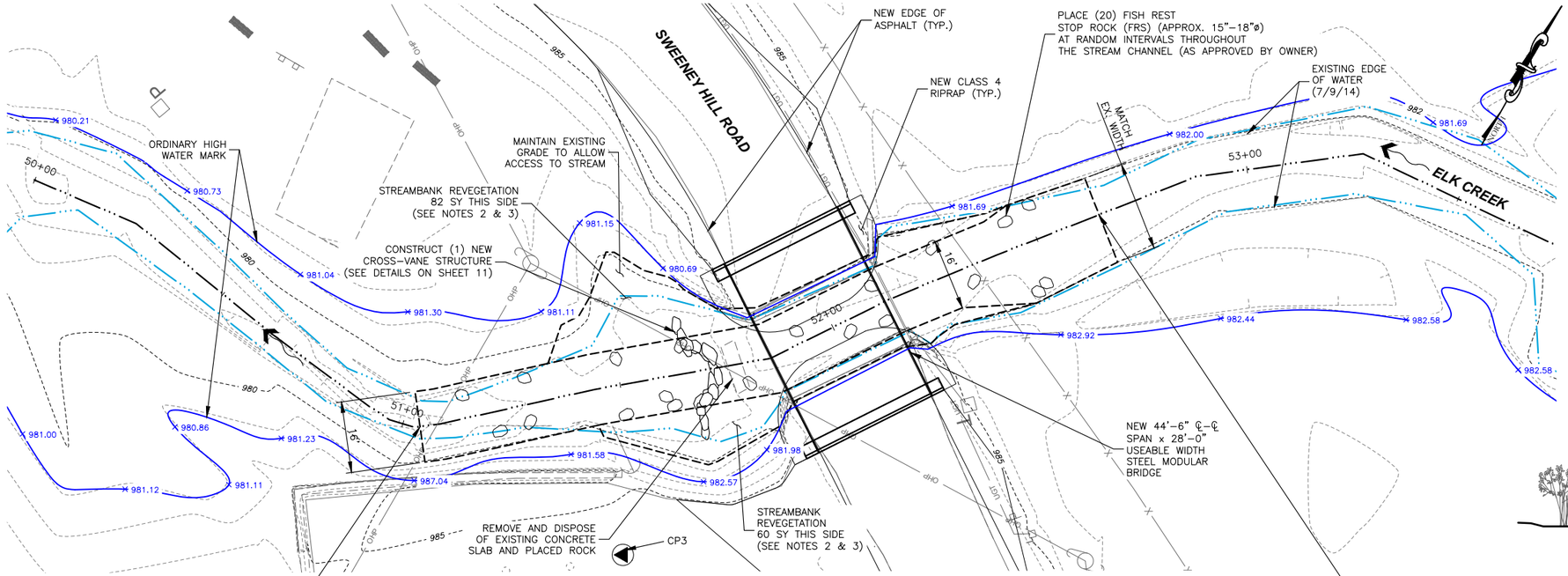
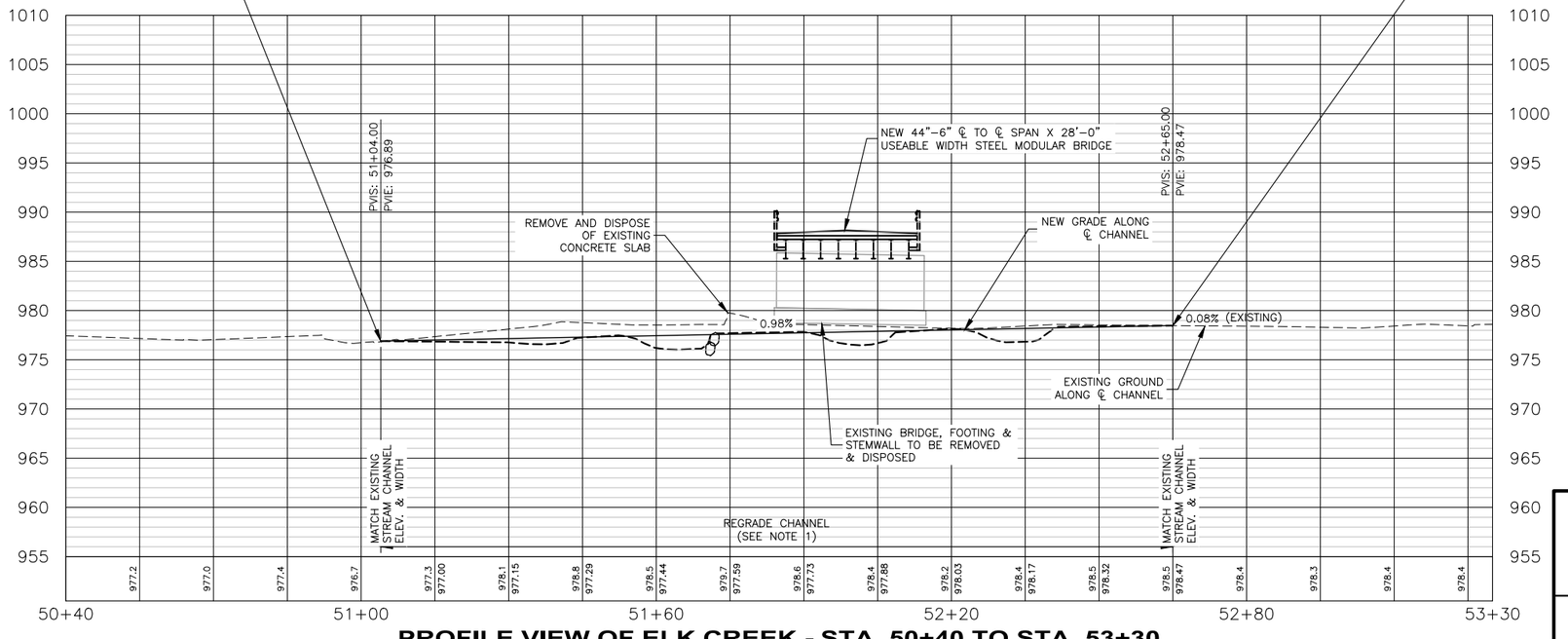


PLAN VIEW OF ELK CREEK - STA. 50+40 TO STA. 53+30

0 15 30
SCALE IN FEET

BEGIN STREAMWORK STA. 51+04.00 (MATCH EXISTING)

END STREAMWORK STA. 52+65.00 (MATCH EXISTING)

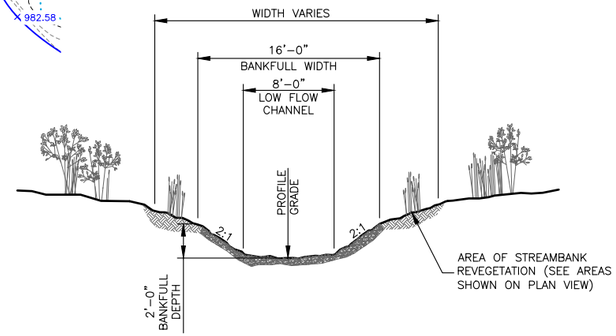


PROFILE VIEW OF ELK CREEK - STA. 50+40 TO STA. 53+30

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 15'

NOTES:

1. CONTRACTOR SHALL UTILIZE SUITABLE ON–SITE MATEIRAL FROM CHANNEL AND STRUCTURE EXCAVATION FOR STREAM IMPROVEMENTS. REGRADE AND SHAPE THE CHANNEL WITHIN THE BRIDGE PER THE DETAILS ON SHEET 8. THIS WORK SHALL BE INDIRECT TO ITEM 20806. REGRADE AND SHAPE THE CHANNEL OUTSIDE THE BRIDGE PER THE TYPICAL CHANNEL SECTION DETAIL ON THIS SHEET. THIS WORK SHALL BE PAID UNDER ITEM 64808. CONTRACTOR SHALL UTILIZED SALVAGED ONSITE STREAMBED MATERIAL FOR STREAM REGRADING.
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. 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 RIPRAP SLOPES AND THE NEW CHANNEL 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.
5. 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.



TYPICAL CHANNEL SECTION

NOT TO SCALE

CHANNEL CENTERLINE COORDINATE STAKING TABLE

DESCRIPTION	*NORTHING*	*EASTING*	*ELEVATION*
STA. 51+04.00 BEGIN CHANNEL WORK	4750.60	10135.63	976.89
STA. 51+71.50 CROSS-VANE STRUCTURE	4795.07	10186.38	977.55
STA. 52+65.00 END CHANNEL WORK	4868.20	10244.06	978.47

*Fish rest stop rocks will not be used.
Only one wier will be constructed.

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ELK CREEK BRIDGE REPLACEMENT

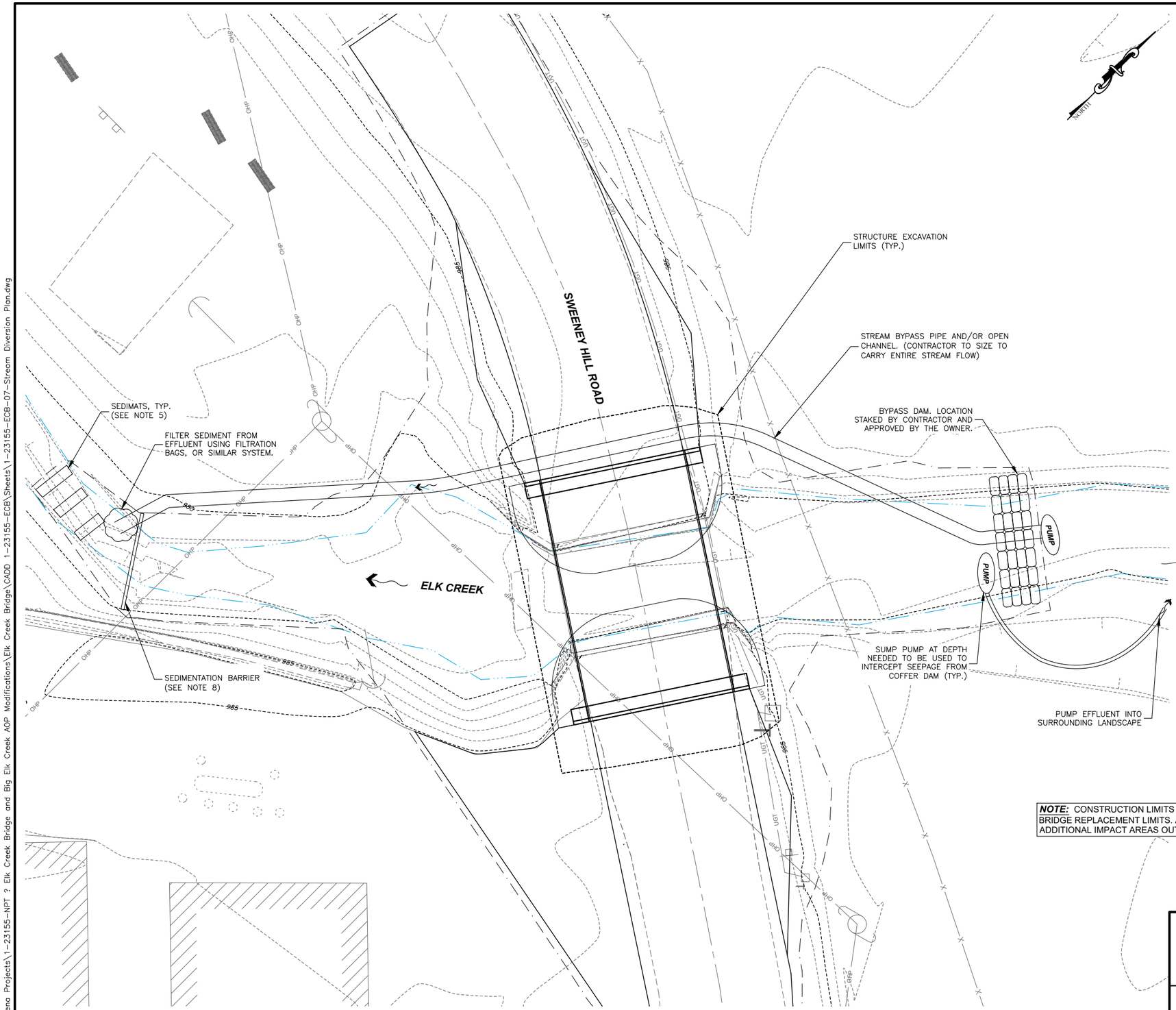
SWEENEY HILL ROAD
NEZ PERCE TRIBE

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. 6 OF 20

Y:\Shared\Helena Projects\1-23155-NPT ? Elk Creek Bridge and Big Elk Creek AOP Modifications\Elk Creek Bridge\CADD 1-23155-ECB\Sheets\1-23155-ECB-06-Stream Plan & Profile.dwg

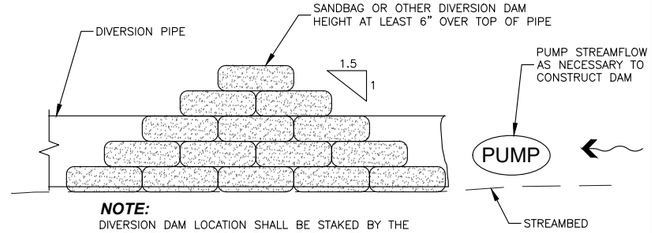


STREAM DIVERSION PLAN

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 THE 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 MANUFACTURE'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.
8. INSTALL A SEDIMENTATION BARRIER DOWNSTREAM OF THE WORK AREA. THE BARRIER MAY CONSIST OF EITHER ONE OR A COMBINATION OF THE FOLLOWING: STRAW BALES, WATTLES, OR WOODY DEBRIS WITH LOOSELY PLACED STRAW MIXED IN. INSTALL BARRIER PRIOR TO COMMENCEMENT OF WORK. THE LOCATION OF THE BARRIER WILL BE LOCATED BY THE CONTRACTOR AND APPROVED BY THE OWNER. THIS WORK IS INDIRECT TO ITEM 15713.



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

A/7 **DIVERSION DAM DETAIL**
NOT TO SCALE

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

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ELK CREEK BRIDGE REPLACEMENT

SWEENEY HILL ROAD
NEZ PERCE TRIBE

STREAM DIVERSION PLAN

PROJECT: 1-23155	DATE: 9/30/2024	NO.	REVISION DESCRIPTION	BY	DATE
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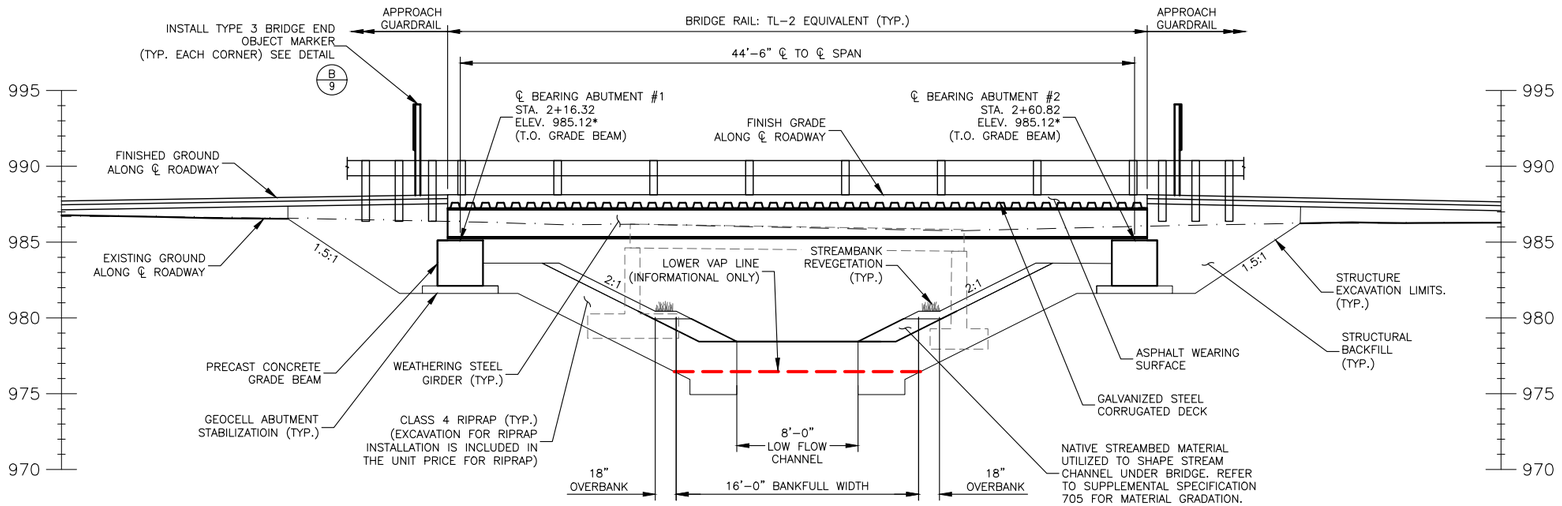
SHEET NO. 7 OF 20

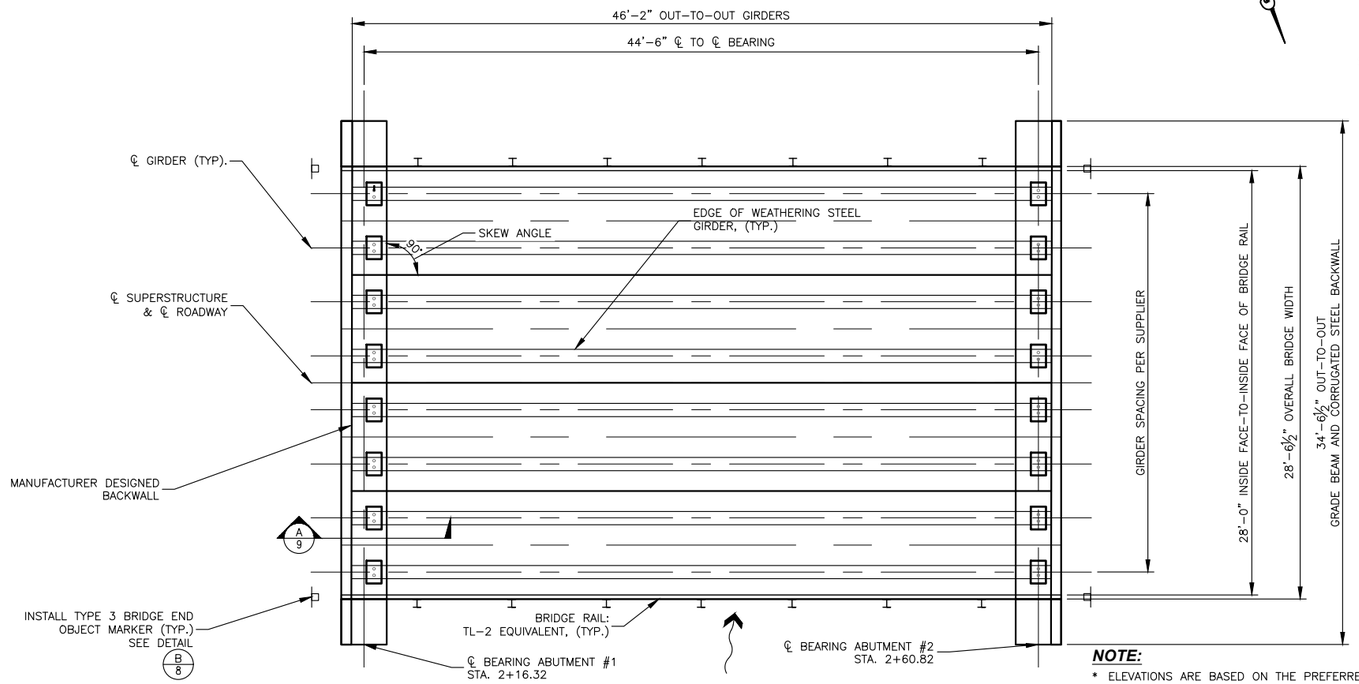
Y:\Shared\Helena Projects\1-23155-NPT ? Elk Creek Bridge and Big Elk Creek AOP Modifications\Elk Creek Bridge\CADD 1-23155-ECB\Sheets\1-23155-ECB-07-Stream Diversion Plan.dwg



BRIDGE ELEVATION

0 5 10

SCALE IN FEET



SUPERSTRUCTURE PLAN

0 5 10

SCALE IN FEET

NOTE:

* ELEVATIONS ARE BASED ON THE PREFERRED W24 GIRDER SECTION. THE GIRDERS MAY BE DECREASED IN DEPTH UP TO 3". IF AN ALTERNATE BRIDGE SUPERSTRUCTURE IS USED, THE FINISHED GRADE OF THE ROAD SHALL BE MAINTAINED WITH ADJUSTMENTS MADE IN THE SUBSTRUCTURE ELEVATIONS TO ACCOMMODATE VARIATIONS IN THE SUPERSTRUCTURE DEPTH. SEE ADDITIONAL NOTES ON SHEET 3.

STRUCURE EXCAVATION NOTES:

1. STRUCTURE EXCAVATION SHALL BE COMPLETED IN ACCORDANCE WITH FP-14, SECTION 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.

GEOCELL:

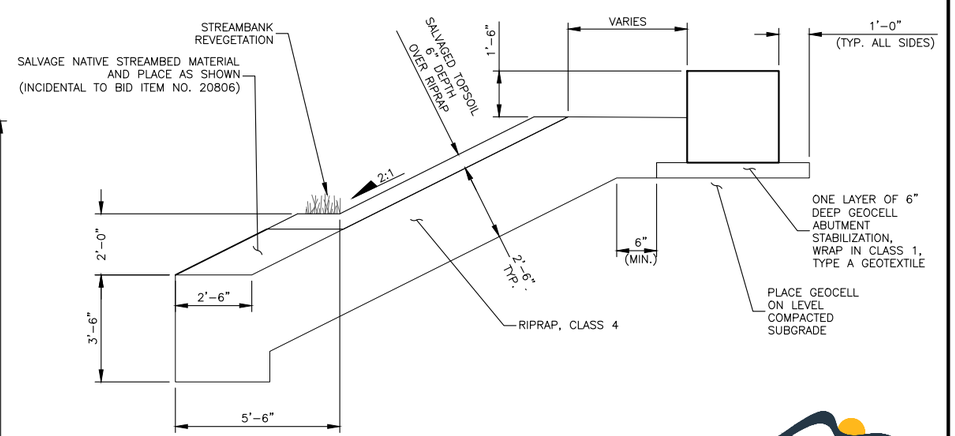
1. INSTALL GEOCELL PER SUPPLEMENTAL SPECIFICATION 272.06. PLACE GEOCELL ON LEVEL COMPACTED SUBGRADE. CONTRACTOR SHALL HOLD GEOCELL IN PLACE TO THE LINES AND GRADES SHOWN ON THE DRAWING WITH SUITABLE SIDE FORMS (STRETCHER FRAMES).
2. BACKFILL GEOCELL WITH COURSE GRANULAR BACKFILL.
3. PLACE CLASS 1, TYPE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

BACKFILL:

1. BACKFILL MATERIAL BEHIND THE STRUCTURE SHALL BE COMPACTED IN ACCORDANCE WITH FP-14 SECTION 208. 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 FOR EMBANKMENT.
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	218	CY
SUITABLE STRUCUTRE EXCAVATION MATERIAL (80%)	174	CY
STRUCTURAL BACKFILL	105	CY
ESTIMATED EXCESS STRUCTURAL EXCAVATION MATERIAL	69	CY



A/8 **GEOCELL AND RIPRAP SECTION**

NOT TO SCALE

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ELK CREEK BRIDGE REPLACEMENT

SWEENEY HILL ROAD
NEZ PERCE TRIBE

BRIDGE PLAN & ELEVATION

PROJECT: 1-23155	DATE: 9/30/2024	NO.	REVISION DESCRIPTION	BY	DATE
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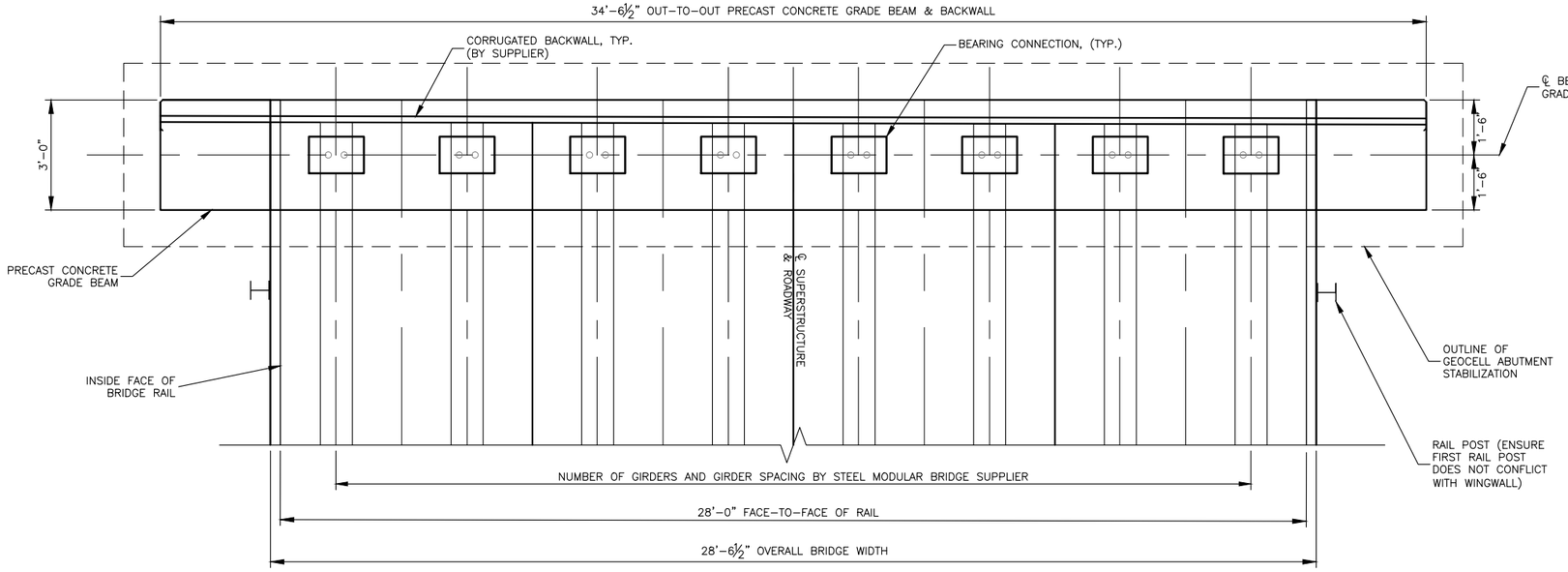
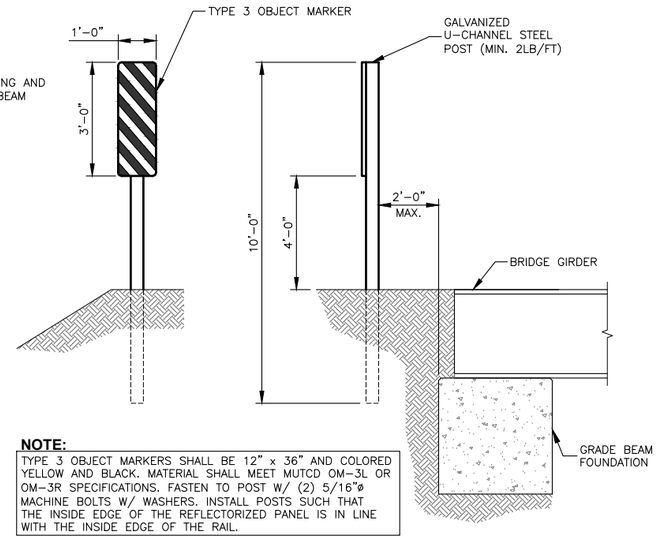


ABUTMENT PLAN

SCALE: 1/4" = 1' – 0"

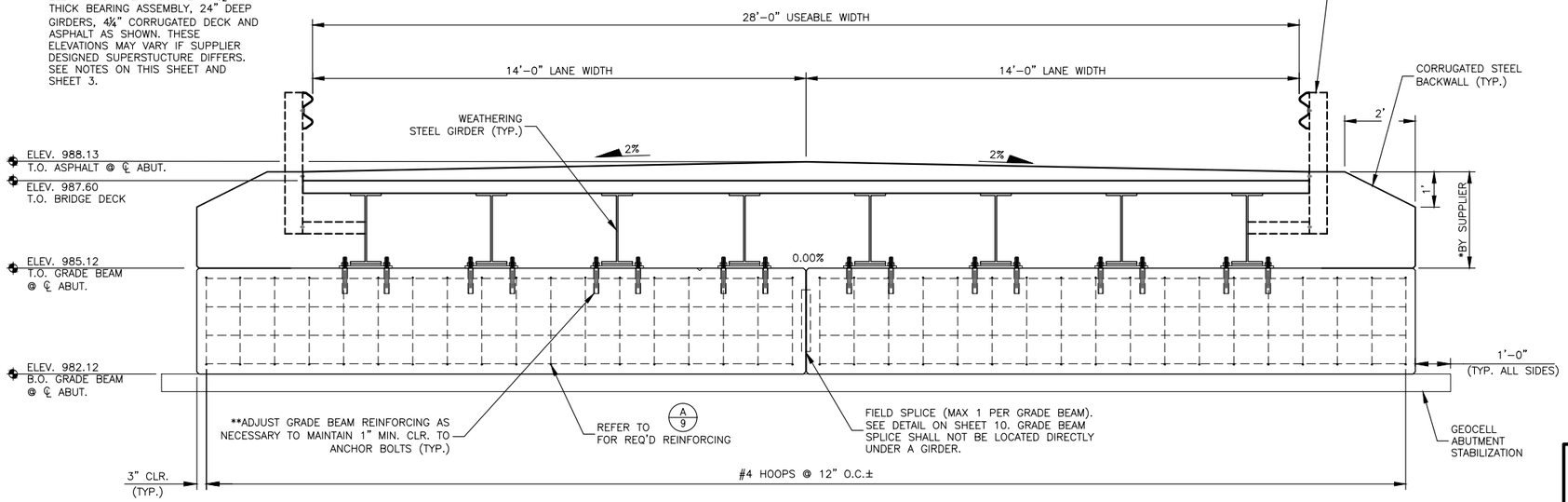


NOTE:
TYPE 3 OBJECT MARKERS SHALL BE 12" x 36" AND COLORED YELLOW AND BLACK. MATERIAL SHALL MEET MUTCD OM–3L OR OM–3R SPECIFICATIONS. FASTEN TO POST W/ (2) 5/16"ø MACHINE BOLTS W/ WASHERS. INSTALL POSTS SUCH THAT THE INSIDE EDGE OF THE REFLECTORIZED PANEL IS IN LINE WITH THE INSIDE EDGE OF THE RAIL.

B/9 TYPE 3 OBJECT MARKER DETAIL

NOT TO SCALE

NOTE:
BRIDGE DECK AND FINISHED GRADE ELEVATIONS GIVEN ASSUME A 1½" THICK BEARING ASSEMBLY, 24" DEEP GIRDERS, 4¼" CORRUGATED DECK AND ASPHALT AS SHOWN. THESE ELEVATIONS MAY VARY IF SUPPLIER DESIGNED SUPERSTUCTURE DIFFERS. SEE NOTES ON THIS SHEET AND SHEET 3.

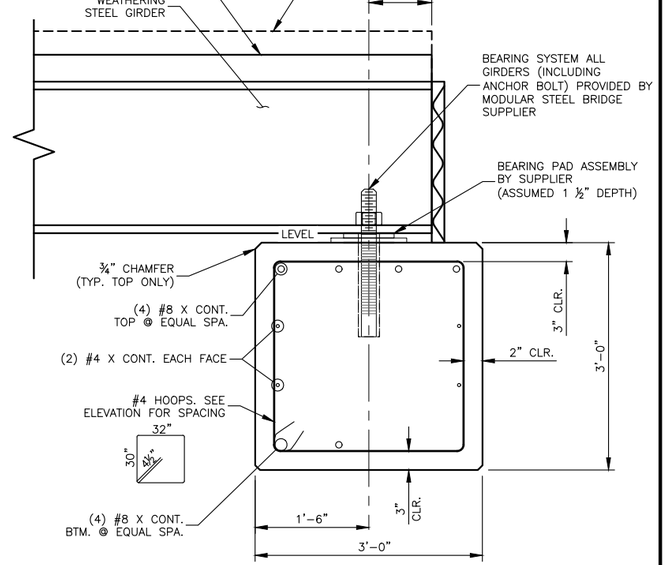


ABUTMENT ELEVATION

1/4" = 1' – 0"

NOTE:
ELEVATIONS ARE BASED ON THE PREFERRED W24 GIRDER SECTION. THE GIRDERS MAY BE INCREASED IN DEPTH UP TO 3". IF AN ALTERNATE BRIDGE SUPERSTRUCTURE IS USED, THE FINISHED GRADE OF THE ROAD SHALL BE MAINTAINED WITH ADJUSTMENTS MADE IN THE SUBSTRUCTURE ELEVATIONS TO ACCOMMODATE VARIATIONS IN THE SUPERSTRUCTURE DEPTH. SEE ADDITIONAL NOTES ON SHEET 3.

****NOTE:**
CONCRETE GRADE BEAM SUPPLIER TO COORDINATE WITH STEEL BRIDGE SUPPLIER TO VERIFY GRADE BEAM REINFORCEMENT DOES NOT INTERFERE WITH ANCHOR BOLT SPACING.



A/9 ABUTMENT SECTION

SCALE: 1/2" = 1'–0"

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ELK CREEK BRIDGE REPLACEMENT

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ABUTMENT PLAN & ELEVATION

PROJECT: 1-23155 DATE: 9/30/2024	NO.	REVISION DESCRIPTION	BY	DATE	SHEET NO. 9 OF 20
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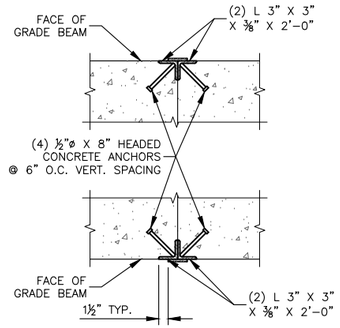
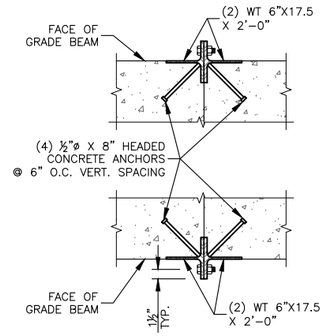
DRAWN: BMB DRAWING CHECKED: JJT	△				



PLAN SECTION



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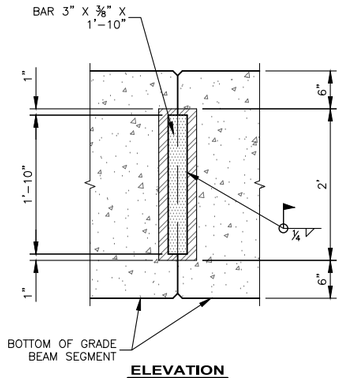
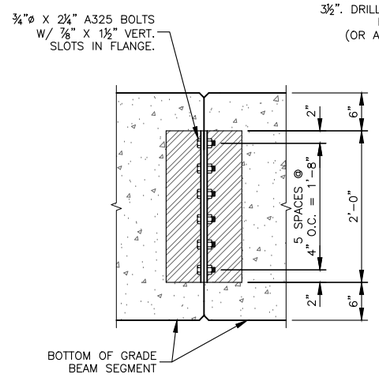


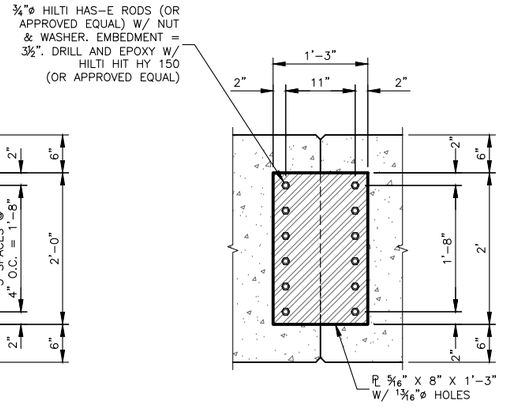
ELEVATION

FIELD WELD ALTERNATIVE



ELEVATION

FIELD BOLT ALTERNATIVE



ELEVATION

POST-INSTALLED ANCHOR PLATE ALTERNATIVE

A/10 OPTIONAL GRADE BEAM FIELD SPLICE DETAILS

SCALE: 1/2" = 1'-0"

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ABUTMENT DETAILS

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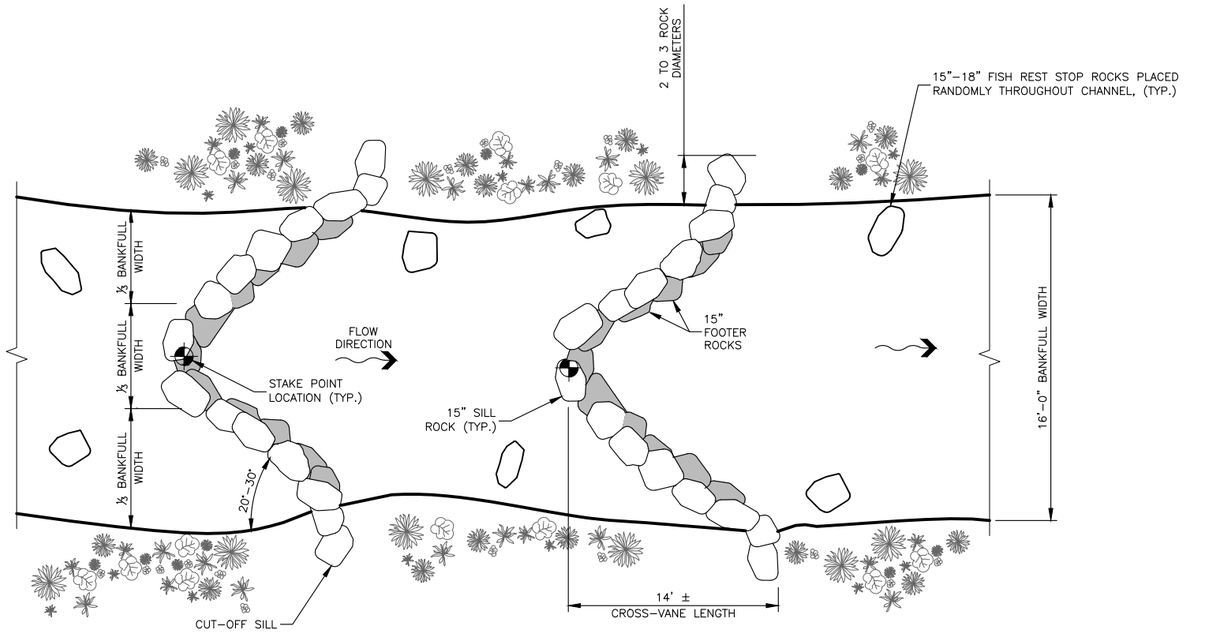
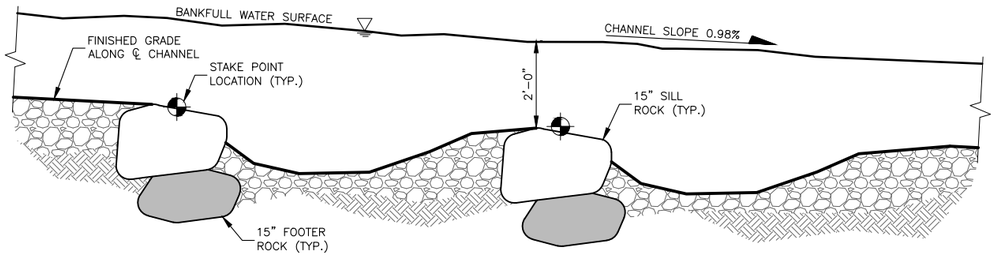
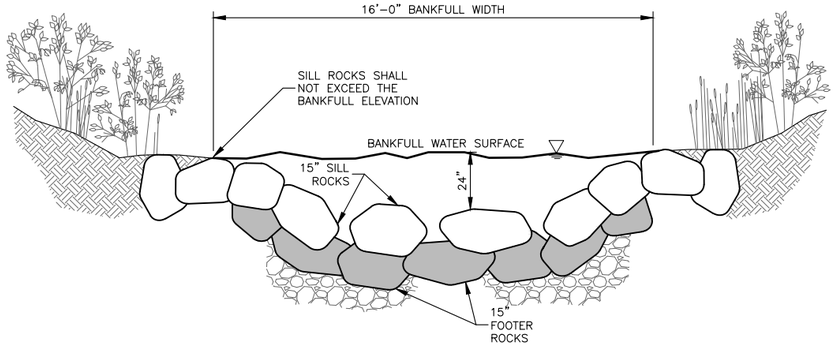


PLAN

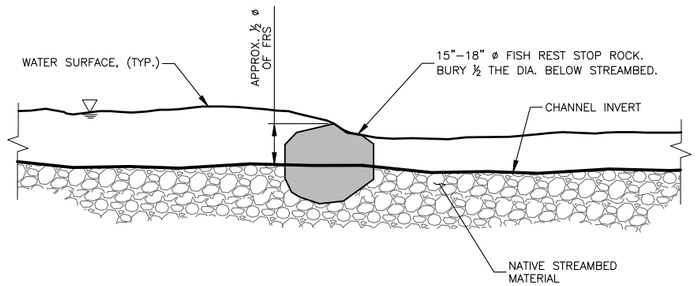


PROFILE



CROSS-VANE STRUCTURE

NOT TO SCALE



FISH REST STOP ROCK DETAIL

NOT TO SCALE

NOTES:

1. MINIMIZE GAPS BETWEEN FOOTER ROCKS. BACKFILL SIDES OF FOOTER ROCKS WITH NATIVE GRAVEL AND COBBLE.
2. PLACE SILL ROCKS SLIGHTLY UPSTREAM OF FOOTER ROCKS. MINIMIZE GAPS IN SILL ROCKS IN THE OUTER ⅓ CHANNEL WIDTHS. SILL ROCKS IN THE MIDDLE ⅓ OF THE CHANNEL SHALL HAVE A GAP EQUAL TO ¼ OF THE ROCK DIAMETER.
3. SEE STREAM CENTERLINE COORDINATE TABLE FOR CROSS–VANE STAKING INFORMATION ON SHEET 6.
4. THE SHAPE AND SPACING OF THE CROSS–VANE STRUCTURES SHOWN IS CONCEPTUAL AND MAY BE MODIFIED IN THE FIELD BY THE OWNER TO BEST FIT THE CHANNEL AND OTHER SITE CONDITIONS.
5. IF AVAILABLE, CONTRACTOR MAY USE SUITABLE ON–SITE MATERIAL FOR CROSS–VANE STRUCTURES. THE MATERIAL SHALL BE APPROVED BY THE OWNER BEFORE PLACEMENT.
6. CONTRACTOR SHALL SHAPE CHANNEL WITH NATIVE STREAMBED MATERIAL.
7. FISH REST STOP ROCKS SHALL BE BURIED ½ THE DIAMETER BELOW THE CHANNEL INVERT OR AS DIRECTED BY THE OWNER.
8. 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.

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CROSS-VANE DETAILS

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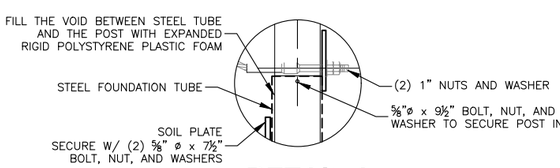
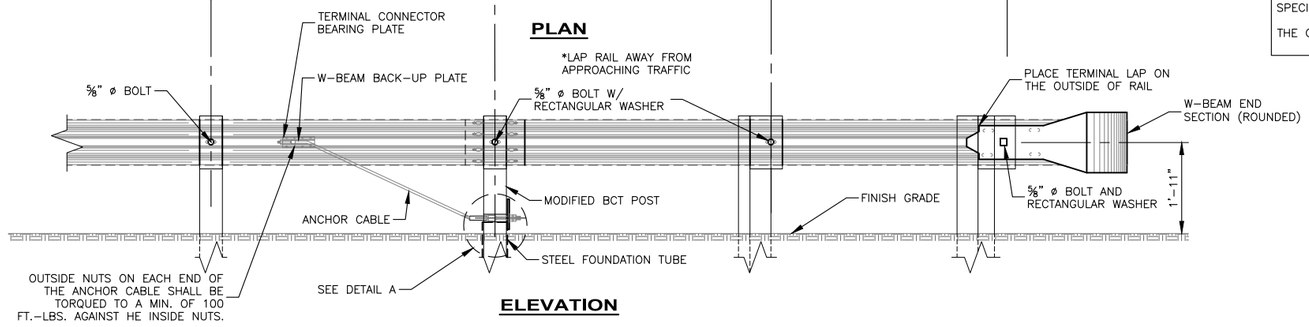


DETAIL A

NOT TO SCALE

W-BEAM METAL GUARDRAIL SECTIONS SHALL BE PRECURVED FOR BENDS LESS THAN 150 FT. RADIUS.

PLAN



ELEVATION

18'-9" FLARED TERMINAL END SECTION

NOT TO SCALE

GENERAL NOTES:

GENERAL:

- ALL POST SPACING MEASUREMENTS ARE MADE ALONG THE BACK OF RAIL.
- TANGENT DISTANCE IS MEASURED BEGINNING AT THE LAST TERMINAL POST'S HORIZONTAL CENTERLINE TO A POINT ALONG THE TANGENT (*BACK OF RAIL) WHICH CORRESPONDS TO THE RAILS POINT OF OFFSET MEASUREMENT.
- OFFSET DISTANCE IS MEASURED FROM THE POINT ALONG THE TANGENT (BACK OF RAIL) TO A POINT BACK OF THE TERMINAL RAIL.

MATERIALS:

STEEL SHAPES, PLATES AND BARS SHALL BE STRUCTURAL STEEL CONFORMING TO AASHTO M270, GRADE 36, EXCEPT STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B, OR ASTM A501. IF NOT COVERED BY 1 INCH OR MORE OF CONCRETE, STEEL SHAPE, PLATES AND BARS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 (ASTM A123). W-BEAM GUARDRAIL AND ASSOCIATED HARDWARE SHALL MEET AASHTO M180, CLASS A, AND SHALL BE TYPE 2 (GALVANIZED) PER GENERAL LAYOUT SHEET. W-BEAM TERMINAL PIECE SHALL BE CLASS B. ALL BOLTS, NUTS AND WASHERS, EXCEPT BUTTONHEAD BOLTS, SHALL CONFORM TO AASHTO M164 (ASTM A325 OR A449) AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 (ASTM A153). CABLE ASSEMBLY SHALL BE GALVANIZED AND CONFORM TO AASHTO M30 (ASTM A741).

TIMBERS SHALL BE WESTERN WOOD (NO. 1 GRADE) CONFORMING TO THE CURRENT WWPA OR WCLIB GRADING RULES FOR WESTERN LUMBER.

FABRICATION:

ALL LUMBER FABRICATION SHALL BE COMPLETED BEFORE TREATMENT. STRUCTURAL STEEL SHALL BE SHOP FABRICATED. WELDING SHALL CONFORM TO AWS STRUCTURAL WELDING CODE D1.1 AND SHALL BE BY A CERTIFIED WELDER. ALL STEEL SHALL BE FABRICATED BEFORE BEING GALVANIZED, EXCEPT MINOR SHOP CUTTING. DRILLING AND WELDING IS PERMITTED ON GALVANIZED METAL, PROVIDED THESE AREAS ARE CLEANED AND REPAIRED WITH 2 COATS OF ZINC DUST-ZINC OXIDE PAINT MEETING FEDERAL SPECIFICATION TT-P-641 OR MILITARY SPECIFICATION MIL-P-21035. ALL RAIL SPLICES SHALL OCCUR AT POSTS. SHOP BEND CURVED RAIL SECTIONS.

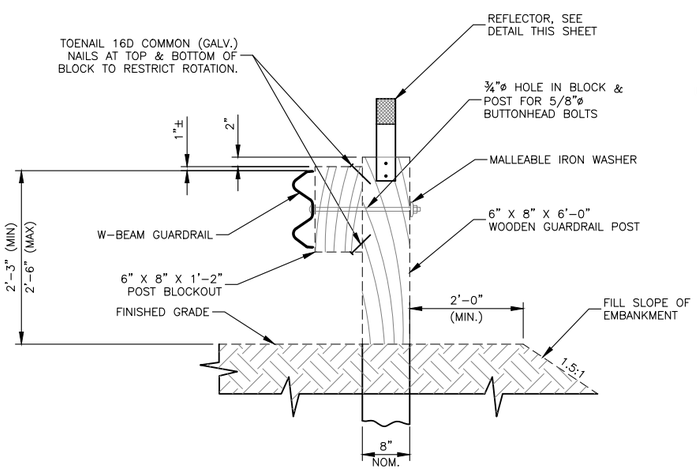
TREATMENT:

AFTER FABRICATION, ALL TIMBER SHALL BE INCISED AND THEN PRESSURE TREATED IN ACCORDANCE WITH AWPA C14 FOR POST, GUARDRAIL, AND SPACER BLOCKS USAGE. TREATMENT SHALL COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF WWPA'S "BEST MANAGEMENT PRACTICES FOR THE USE OF TREATED WOOD IN AQUATIC ENVIRONMENTS" AND THE SUPPLIER SHALL FURNISH, UPON DELIVERY OF MATERIALS, A CERTIFICATE OF COMPLIANCE.

ERECTION:

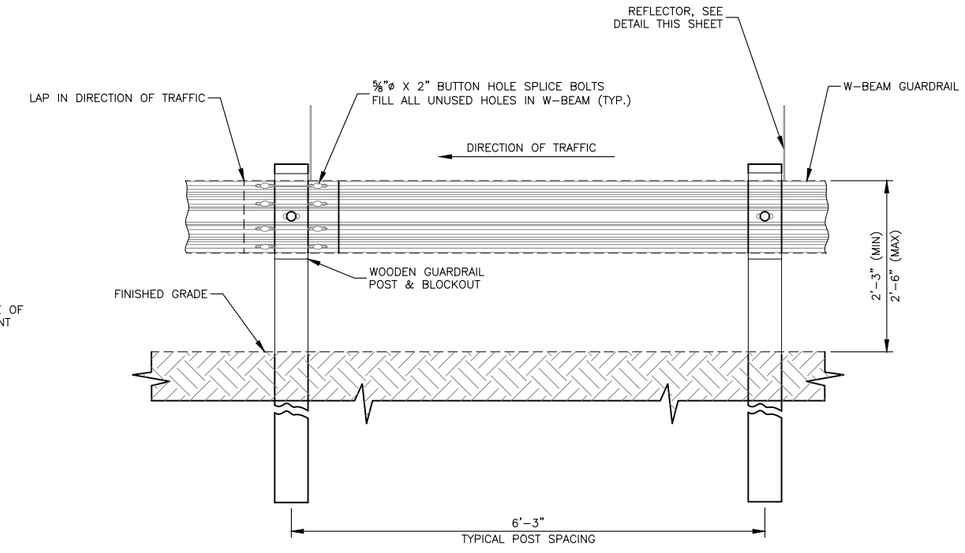
NO FIELD CUTTING OR WELDING IS PERMITTED ON GALVANIZED METAL UNLESS APPROVED BY THE OWNER. ALL RAIL POSTS SHALL BE SET VERTICALLY AND THE RAILING ERECTED PARALLEL TO GRADE. THE CONTRACTOR SHALL FURNISH GALVANIZED STEEL SHIM PLATES AS REQUIRED TO ALIGN RAILING. APPROACH GUARDRAIL POST HOLES SHALL BE A MINIMUM OF 18" IN DIAMETER, UNLESS AUGERED OR DRIVEN. BOTTOM OF EXCAVATED HOLES SHALL BE THOROUGHLY COMPACTED AND BACKFILL SHALL BE THOROUGHLY TAMPED IN 4 INCH LAYERS. FILL ALL UNUSED HOLES IN W-BEAM WITH STANDARD BUTTONHEAD BOLTS AND NUTS. AFTER ERECTION IS COMPLETE, BURR THREADS OF ALL RODS AND BOLTS TO PREVENT BACKING OFF OF NUTS. ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH 2 COATS OF ZINC PAINT AS SPECIFIED IN THE FABRICATION NOTE ABOVE. THERE SHALL BE NO MORE THAN ONE RAIL SPLICE PER POST WHEN DOUBLE-LAYER W-BEAM GUARDRAIL ELEMENTS ARE SPECIFIED.

THE OUTSIDE NUTS ON EACH END OF THE ANCHOR CABLE SHALL BE TORQUED TO A MINIMUM OF 100 FT-LBS AGAINST THE INSIDE NUTS.



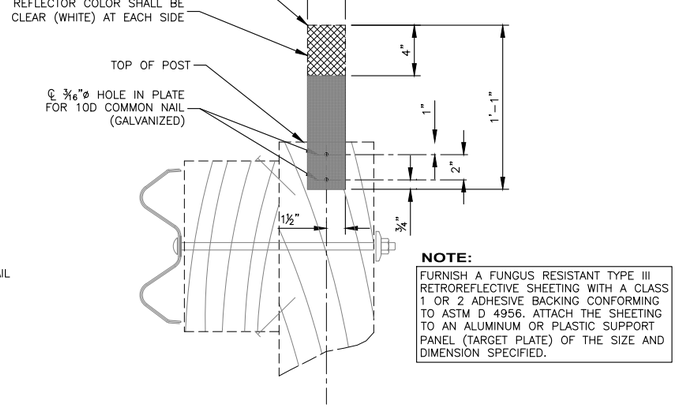
TYPICAL GUARDRAIL CROSS-SECTION

NOT TO SCALE



GUARDRAIL SPLICE DETAIL

NOT TO SCALE



NOTE:

FURNISH A FUNGUS RESISTANT TYPE III RETROREFLECTIVE SHEETING WITH A CLASS 1 OR 2 ADHESIVE BACKING CONFORMING TO ASTM D 4956. ATTACH THE SHEETING TO AN ALUMINUM OR PLASTIC SUPPORT PANEL (TARGET PLATE) OF THE SIZE AND DIMENSION SPECIFIED.

GUARDRAIL REFLECTORS

NOT TO SCALE

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

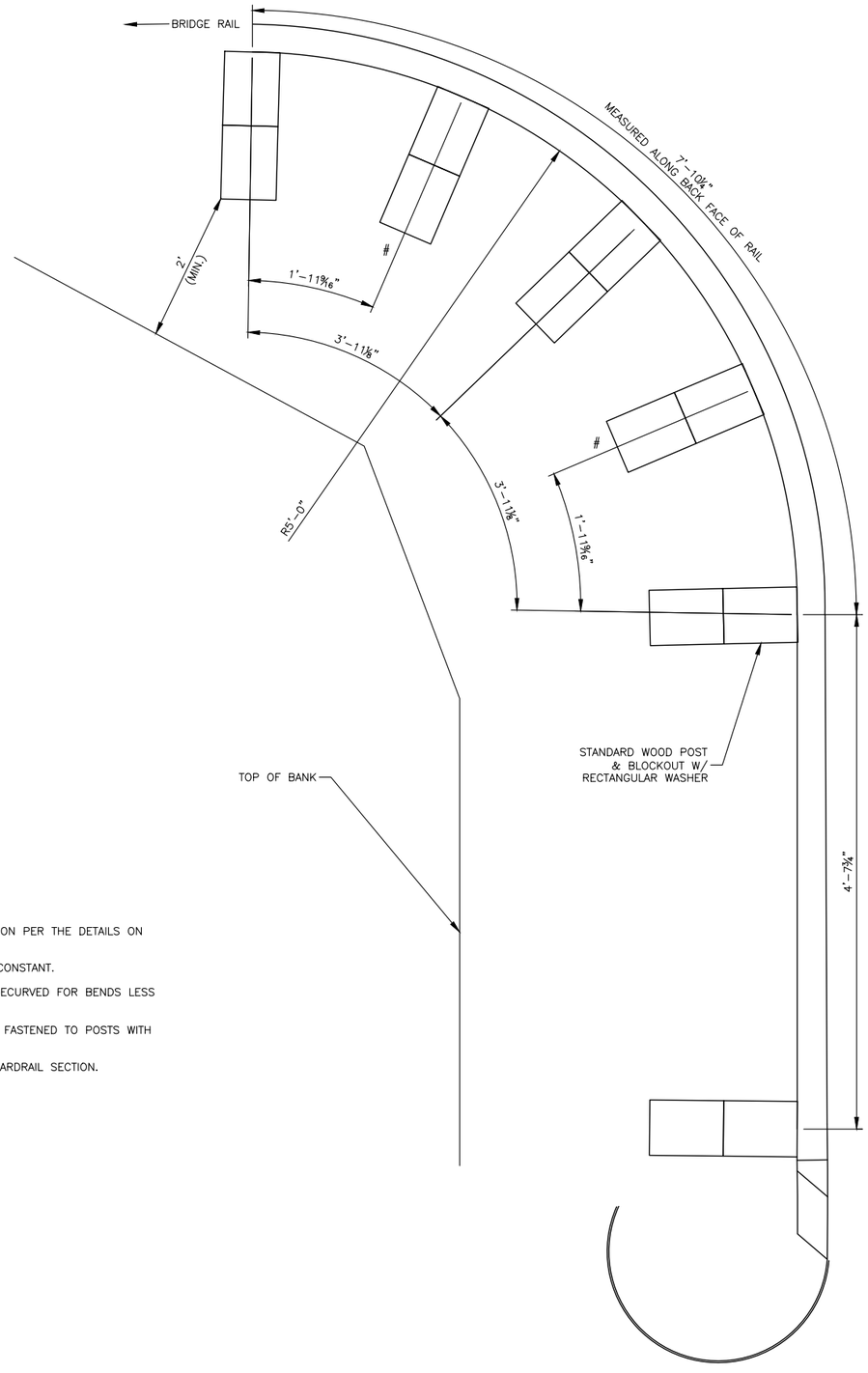
ELK CREEK BRIDGE REPLACEMENT

SWEENEY HILL ROAD
NEZ PERCE TRIBE

GUARDRAIL DETAIL

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

SHEET NO. 12 OF 20



NOTES:

1. INSTALL THE RADIUSED APPROACH GUARDRAIL SECTION PER THE DETAILS ON ITD DRAWING G-1-H, AND THIS SHEET.
2. THE RADIUS FOR ANY PARTICULAR INSTALATION IS CONSTANT.
3. W-BEAM METAL GUARDRAIL SECTIONS SHALL BE PRECURVED FOR BENDS LESS THAN 150 FT. RADIUS.
4. # GUARDRAIL NOT ATTACHED TO POSTS. BLOCKOUT FASTENED TO POSTS WITH STANDARD POST BOLT.
5. USE DOUBLE GUARDRAIL PANELS ON APPROACH GUARDRAIL SECTION.

(A 13) **RADIUSED APPROACH GUARDRAIL SECTION**
NOT TO SCALE

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

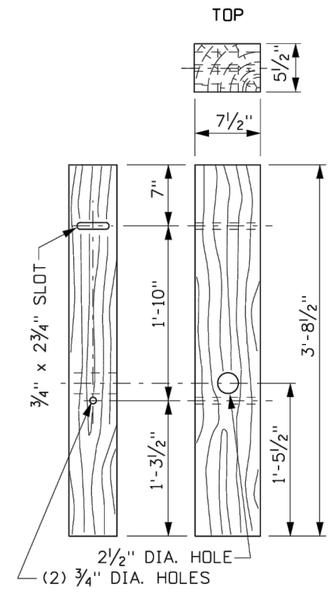
ELK CREEK BRIDGE REPLACEMENT

SWEENEY HILL ROAD
NEZ PERCE TRIBE

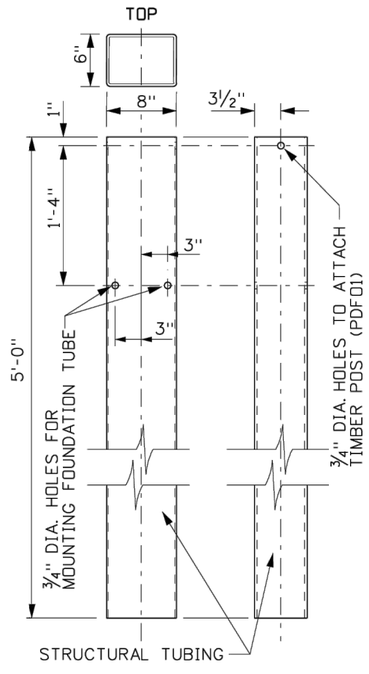
GUARDRAIL DETAILS

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

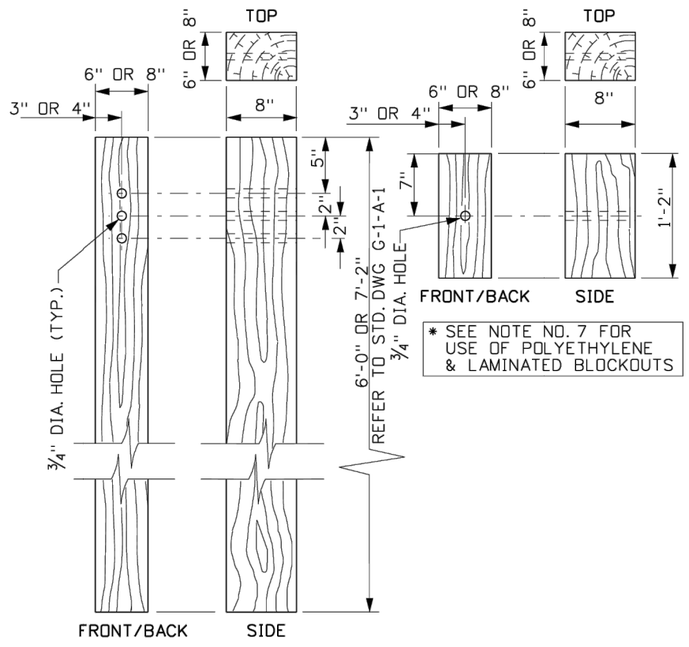
SHEET NO. 13 OF 20



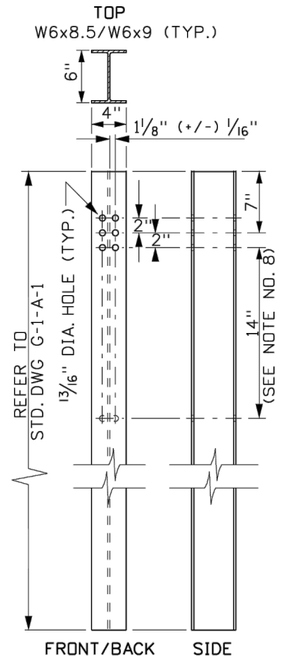
MODIFIED BCT TIMBER POST

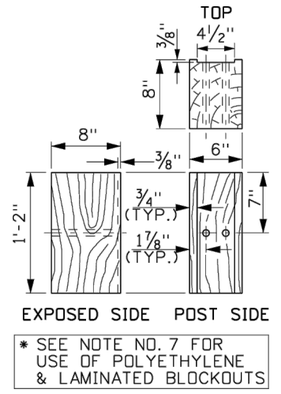


FOUNDATION TUBE
ITEM NO. PTE05

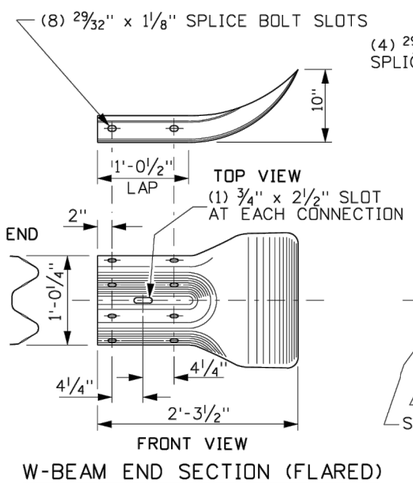


* WOODEN GUARDRAIL POST & BLOCKOUT

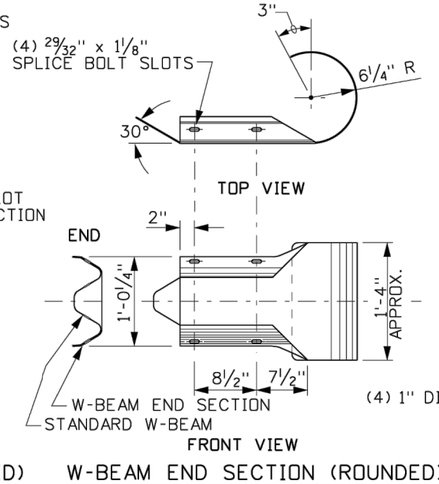




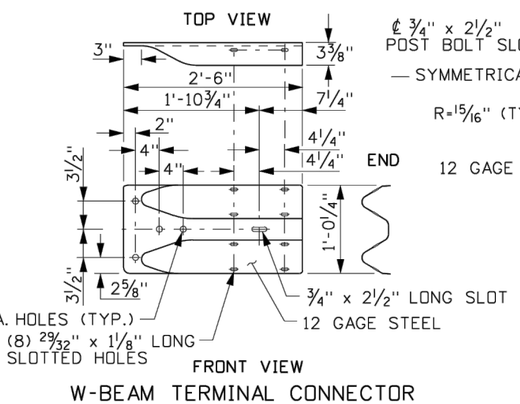
* STEEL GUARDRAIL POST & MODIFIED BLOCKOUT



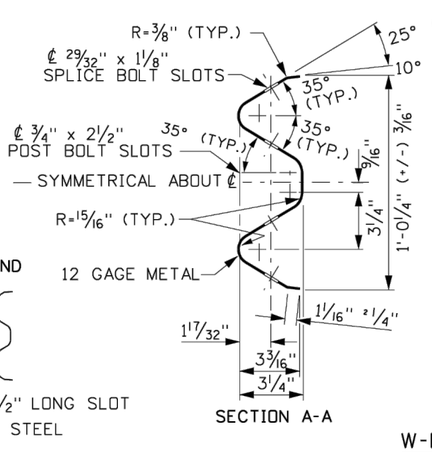
W-BEAM END SECTION (FLARED)
ITEM NO. RWE01a

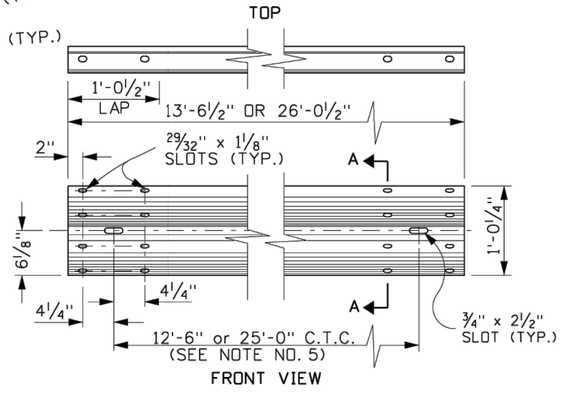


W-BEAM END SECTION (ROUNDED)
ITEM NO. RWE03a



W-BEAM TERMINAL CONNECTOR
ITEM NO. RWE02a





W-BEAM RAIL DETAILS
ITEM NO. RWM02a-b

REVISIONS									
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	06-96	MSM	5	12-04	MSM			
2	06-97	MSM	6	05-06	MSM			
3	07-00	MSM	7	05-07	MSM			
4	12-01	MSM	8	11-08	JRV			
5	06-04	MSM	9	10-10	PLR			

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY

CADD FILE NAME: g1a3_1210.dgn

DRAWING DATE: JUNE, 1996

IDAHO TRANSPORTATION DEPARTMENT

BOISE IDAHO

ORIGINAL SIGNED BY: LOREN THOMAS
ASSISTANT CHIEF ENGINEER (DEVELOPMENT)
ORIGINAL SIGNED BY: TOM COLE
CHIEF ENGINEER

STANDARD DRAWING

W-BEAM GUARDRAIL POSTS, BLOCKOUTS, & HARDWARE

REQUIRES SHEET 2 OF 2

English

STANDARD DRAWING NO.
G-1-A-3

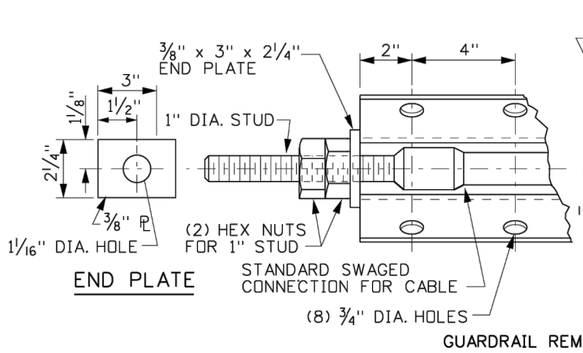
SHEET 1 OF 2

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho

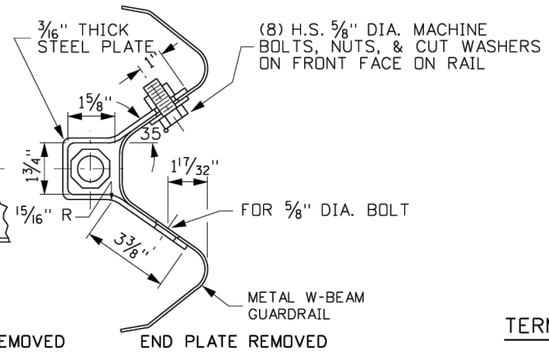
ORIGINAL SIGNED BY: TED E. MASON
DATE ORIGINAL SIGNED: OCTOBER 26, 2010

SHEET NO.
14 OF 20

Y:\Shared\Helena Projects\1-23155-NPT ? Elk Creek Bridge and Big Elk Creek AOP Modifications\Elk Creek Bridge\CADD 1-23155-ECB\Sheets\1-23155-ECB-14-ITD1.dwg

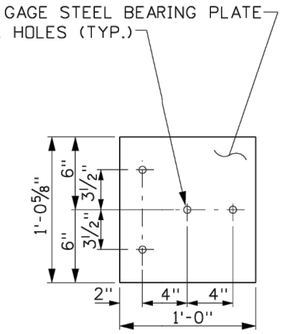


END PLATE

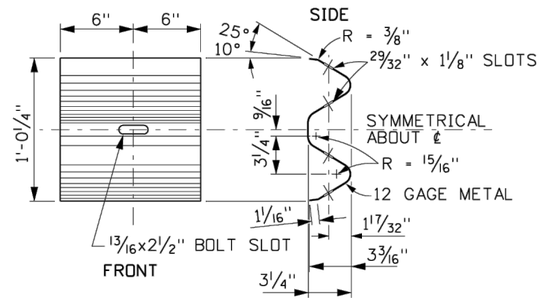


GUARDRAIL REMOVED

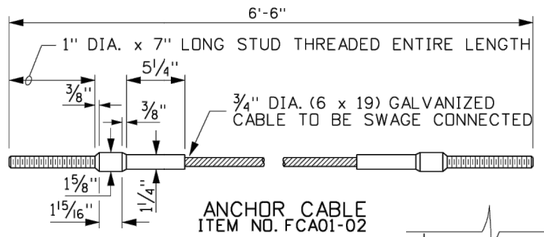
END PLATE REMOVED



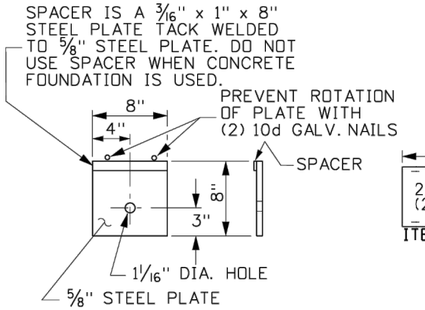
TERMINAL CONNECTOR BEARING PLATE
ITEM NO. FPB02



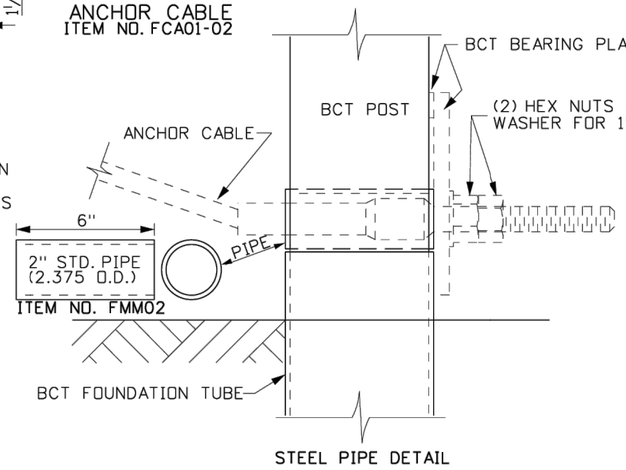
W-BEAM BACK-UP PLATE
ITEM NO. RWB01a-b



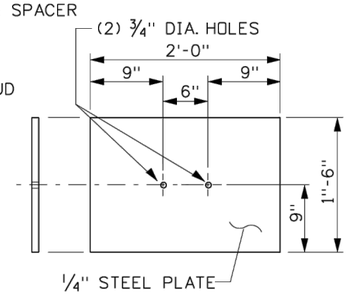
ANCHOR CABLE
ITEM NO. FCA01-02



BCT BEARING PLATE
ITEM NO. F-36-79



STEEL PIPE DETAIL



CONNECTS TO BCT FOUNDATION TUBE (SEE NOTE NOS. 9 & 10)

BCT SOIL PLATE
ITEM NO. PLS03

ANCHOR PLATE DETAILS

NOTES

1. ALL GUARDRAIL AND ACCESSORIES SHALL CONFORM TO THE "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE".
2. W-BEAM RAIL AND TERMINAL SECTIONS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M180, CLASS A, TYPE 2 WITH THE EXCEPTION THAT ALL RAIL AND TERMINAL SECTIONS SHALL BE GALVANIZED AFTER FABRICATION WITH FABRICATION TO INCLUDE FORMING, CUTTING, SHEARING, PUNCHING, DRILLING BENDING, WELDING AND RIVETING.
3. NO TERMINAL HARDWARE OR TERMINAL ACCESSORY SHALL BE FIELD OR OTHERWISE MODIFIED. SLIGHT FIELD FITTING MODIFICATIONS ARE ALLOWED ON STANDARD GUARD-RAIL INSTALLATIONS. ANY DRILLING, CUTTING (NOT BY HEAT), OR PUNCHING TO STANDARD GUARDRAIL ITEMS SHALL BE PAINTED WITH TWO COATS OF FORMULA 14-82 ZINC SILICATE PAINT.
4. TIMBER POSTS AND BLOCKS SHALL BE TREATED. REFER TO SECTION 710 - TIMBER AND PRESERVATIVES, OF THE "ITD STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION".
5. 12'-6" W-BEAM METAL GUARDRAIL LENGTHS SHALL BE USED UNLESS OTHERWISE SPECIFIED.
6. W-BEAM METAL GUARDRAIL SECTIONS SHALL BE PRECURVED FOR CURVES LESS THAN 150 FT. RADII (RADIUS TO FACE OF RAIL).
7. W-BEAM GUARDRAIL POSTS MAY BE WOOD OR STEEL; HOWEVER, POSTS AND BLOCKOUTS MAY BE MADE OF POLYETHYLENE PLASTIC, WOOD, LAMINATED WOOD, OR OTHER PRODUCTS PROVIDED THEY ARE LISTED IN AND USED ACCORDING TO THE IDAHO TRANSPORTATION DEPARTMENT'S "QUALIFIED PRODUCTS LIST".
8. THE POST HOLE(S) FOR RUBRAIL ON THE W6x8.5 OR W6x9 POST ARE NECESSARY ONLY WHEN A RUBRAIL IS TO BE INSTALLED.
9. THE BCT SOIL PLATE IS TO BE USED WITH THE BCT FOUNDATION TUBE. IT IS TO BE ATTACHED WITH BOLTS. THE PLATE SHALL BE INSTALLED WHEN THE ENGINEER DETERMINES THAT FIELD CONDITIONS WARRANTS ITS USE.
10. SOIL PLATES SHALL CONFORM TO ASTM A36 AND STRUCTURAL TUBING TO ASTM A500. WELDING SHALL MEET ALL REQUIREMENTS OF THE AMERICAN WELDING SOCIETY D1.1.
11. ALL WOODEN BREAKAWAY POSTS AND BLOCKOUTS WITH DRILLED HOLES SHALL BE PRESERVATIVE TREATED PRIOR TO INSTALLATION. PRESERVATIVE TREATMENT SHALL BE IN ACCORDANCE WITH AASHTO M133 AND WITH ITD STANDARD SPECIFICATIONS.
12. NOT TO SCALE.

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho

ORIGINAL SIGNED BY: TED E. MASON
DATE ORIGINAL SIGNED: DECEMBER 6, 2010

REVISIONS

NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	06-96	MSM	5	12-04	MSM			
2	06-97	MSM	6	05-06	MSM			
3	07-00	MSM	7	05-07	MSM			
4	12-01	MSM	8	11-08	JRV			
5	06-04	MSM	9	10-10	PLR			

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY

CADD FILE NAME: g1a3_1210.dgn

DRAWING DATE: JUNE, 1996

IDAHO TRANSPORTATION DEPARTMENT

BOISE IDAHO

ORIGINAL SIGNED BY: LOREN THOMAS
ASSISTANT CHIEF ENGINEER (DEVELOPMENT)
ORIGINAL SIGNED BY: TOM COLE
CHIEF ENGINEER

STANDARD DRAWING

W-BEAM GUARDRAIL POSTS, BLOCKOUTS, & HARDWARE

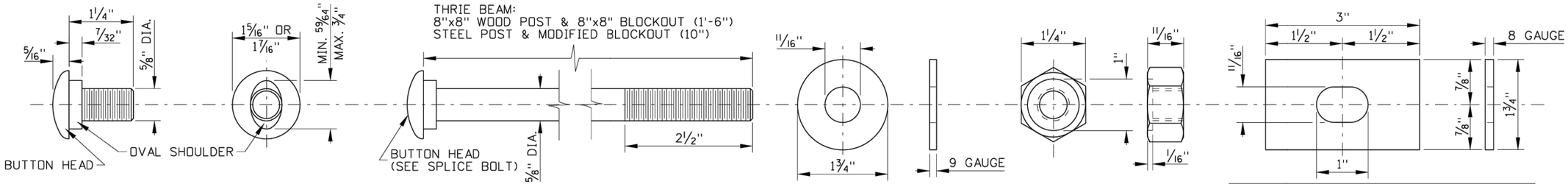
REQUIRES SHEET 1 OF 2

English

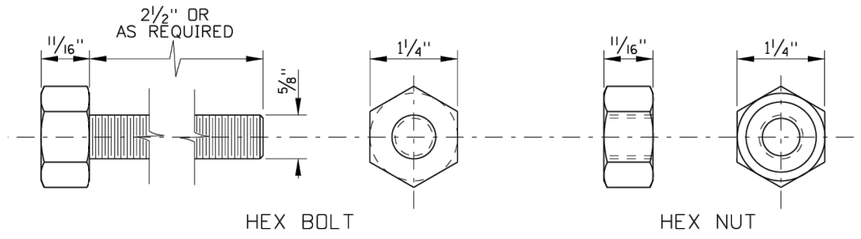
STANDARD DRAWING NO. G-1-A-3

SHEET 2 OF 2

SHEET NO. 15 OF 20

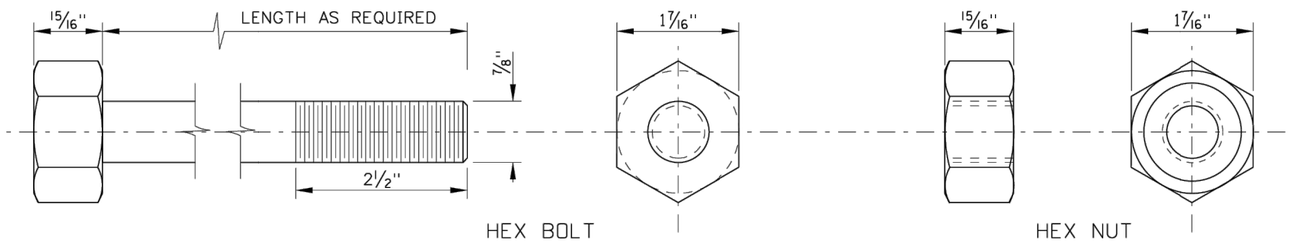


BOLTING HARDWARE



STEEL POST BOLTING HARDWARE

ITEM NO. FBX16a



HIGH STRENGTH BOLTING HARDWARE

ITEM NO. FBX16b-36b

NOTES

1. ALL GUARDRAIL BOLTING HARDWARE AND ACCESSORIES SHALL CONFORM TO THE SPECIFICATIONS AS INDICATED IN THE AASHTO "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE".
2. THE BOLTING HARDWARE SHOWN IS USED FOR BOTH W-BEAM AND THRIE BEAM INSTALLATIONS.
3. NOT TO SCALE.

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho

ORIGINAL SIGNED BY: MILFORD L. MILLER
DATE ORIGINAL SIGNED: APRIL 26, 2006

REVISIONS								
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY

CADD FILE NAME: g1a4_0406.dgn

DRAWING DATE: APRIL, 2006

IDAHO TRANSPORTATION DEPARTMENT

BOISE IDAHO

ORIGINAL SIGNED BY: LOREN THOMAS
ASSISTANT CHIEF ENGINEER (DEVELOPMENT)
ORIGINAL SIGNED BY: STEVEN HUTCHINSON
CHIEF ENGINEER

STANDARD DRAWING

GUARDRAIL BOLTING HARDWARE FOR W-BEAM & THRIE BEAM

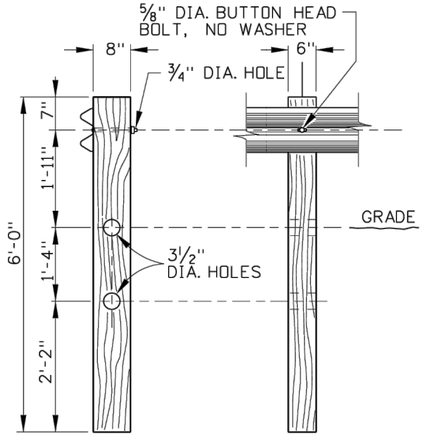
English

STANDARD DRAWING NO. G-1-A-4

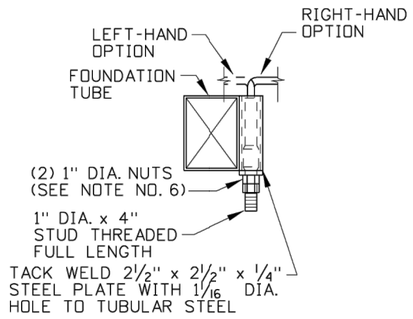
SHEET 1 OF 1

SHEET NO. 16 OF 20

Y:\Shared\Helena Projects\1-23155-NPT ? Elk Creek Bridge and Big Elk Creek AOP Modifications\Elk Creek Bridge\CADD 1-23155-ECB\Sheets\1-23155-ECB-16-ITD3.dwg



MODIFIED CRT TIMBER POST



ANCHOR DETAIL
(SEE NOTE NO. 9)

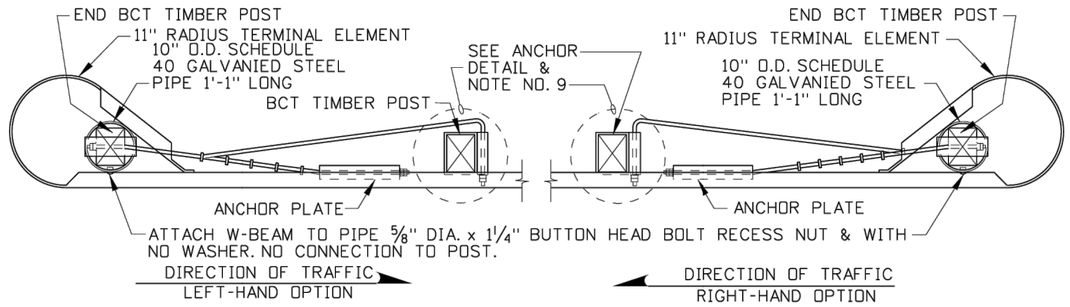
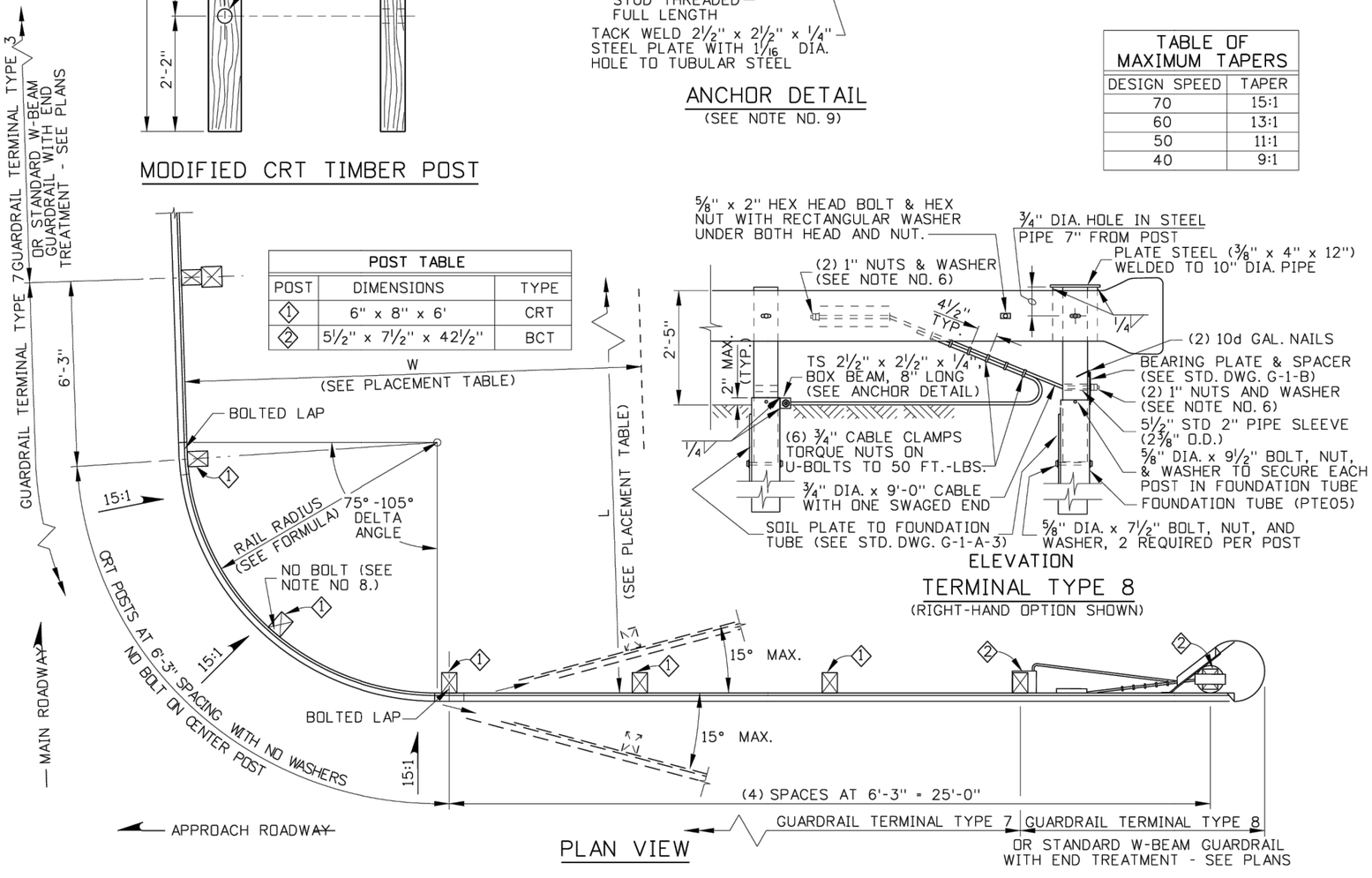


TABLE OF MAXIMUM TAPERS	
DESIGN SPEED	TAPER
70	15:1
60	13:1
50	11:1
40	9:1

PLACEMENT TABLE					
DELTA ANGLE	RAIL RADIUS	NO. RAIL SECTIONS	NO. CRT POSTS	AREA FREE OF FIXED OBJECTS	
				L	W
75°-105°	8'	1	5	25'	15'
75°-105°	16'	2	7	30'	15'
75°-105°	24'	3	9	40'	20'
75°-80°	32'	3	9	40'	20'
>80°-100°	32'	4	11	40'	20'
>100°-105°	32'	5	13	40'	20'



PLAN VIEW

POST TABLE		
POST	DIMENSIONS	TYPE
1	6" x 8" x 6'	CRT
2	5 1/2" x 7 1/2" x 42 1/2"	BCT

ELEVATION

TERMINAL TYPE 8
(RIGHT-HAND OPTION SHOWN)

NOTES

1. THE TYPE 8 TERMINAL SHALL ONLY BE USED OUTSIDE THE CLEAR ZONE OR WHEN THE APPROACH ROADWAY SPEED IS 35 MPH OR LESS. OTHERWISE AN APPROPRIATE NCHRP 350 TERMINAL IS REQUIRED.

2. THE GUARDRAIL ALONG THE APPROACH ROADWAY MAY BE ANGLED 15° TO EITHER SIDE OF THE PERPENDICULAR AXIS TO THE MAIN ROADWAY. HOWEVER, FLARE RATES ALONG ROADWAYS WITH 35 MPH OR GREATER SPEEDS MUST FOLLOW STANDARD TAPER RATES (SEE "TABLE OF MAXIMUM TAPERS").

3. THE ROADWAY IN FRONT THE CURVED PORTION OF THE TERMINAL SHALL BE 15:1 OR FLATTER. GRADE TERRAIN TO A 10:1 SLOPE OR FLATTER FOR 2' BEYOND THE GUARDRAIL POST, THEN A 2:1 OR FLATTER SLOPE. A 6:1 OR FLATTER SLOPE IS DESIRABLE. IF THE FILL HEIGHT IS GREATER THAN 30' OTHER SOLUTIONS SHOULD BE CONSIDERED. AN AREA FREE OF FIXED OBJECTS SHALL BE MAINTAINED BEHIND THE GUARDRAIL.

4. THIS DRAWING REQUIRES STANDARD DRAWINGS G-1-A-1 THROUGH G-1-A-4 AND IS SUBJECT TO THE W-BEAM GUARDRAIL INSTALLATION REQUIREMENTS AND HARDWARE/ACCESSORY SPECIFICATIONS.

5. ALL TERMINAL HARDWARE ITEMS SHALL MEET THE SPECIFICATIONS IN THE "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE" (CURRENT EDITION). ALL WELDING SHALL MEET THE REQUIREMENTS OF THE AMERICAN WELDING SOCIETY.

6. WHEN FASTENING THE CABLE ENDS THE OUTSIDE NUTS SHALL BE TORQUED AGAINST INSIDE NUTS A MINIMUM OF 100 FT.-LBS.

7. ALL CURVED GUARDRAIL SHALL BE SHOP BENT, FIELD BENDING WILL NOT BE ALLOWED.

8. ALL CURVED RAIL SECTIONS SHALL BE 12'-6" IN LENGTH AND BOLTED TO THE POSTS ONLY AT THE LAPS.

9. THE ANCHOR CABLE FROM POST #1 TO POST #2 MUST BE ATTACHED ON THE FAR SIDE OF THE FOUNDATION TUBE FOR LEFT-HAND INSTALLATIONS.

10. NOT TO SCALE.

ORIGINAL STORED AT: ITD, Headquarters 3311 West State Boise, Idaho

ORIGINAL SIGNED BY: TED E. MASON
DATE ORIGINAL SIGNED: OCTOBER 26, 2010

REVISIONS									
NO.	DATE	BY	NO.	DATE	BY	NO.	DATE	BY
1	05-90	GB	6	05-06	MSM			
2	04-93	MSM	7	11-06	MSM			
3	04-99	MSM	8	09-10	MGL			
4	03-03	MSM						
5	12-04	MSM						

SCALES SHOWN ARE FOR 11" X 17" PRINTS ONLY

CADD FILE NAME: g1h_1010.dgn

DRAWING DATE: MAY, 1989

IDAHO TRANSPORTATION DEPARTMENT

BOISE IDAHO

ORIGINAL SIGNED BY: LOREN THOMAS
ASSISTANT CHIEF ENGINEER (DEVELOPMENT)
ORIGINAL SIGNED BY: TOM COLE
CHIEF ENGINEER

STANDARD DRAWING

GUARDRAIL TERMINALS TYPE 7 & 8

REQUIRES STD. DWGS. G-1-A-1 THRU G-1-A-4

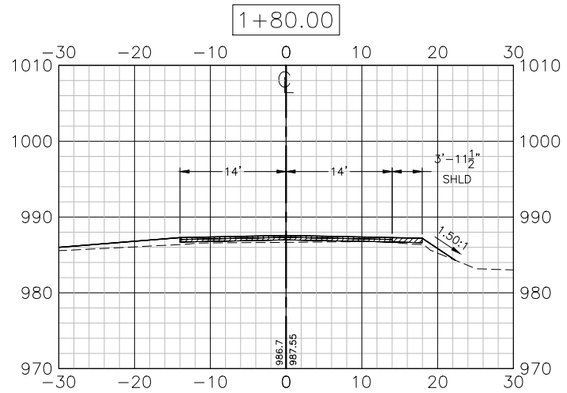
English

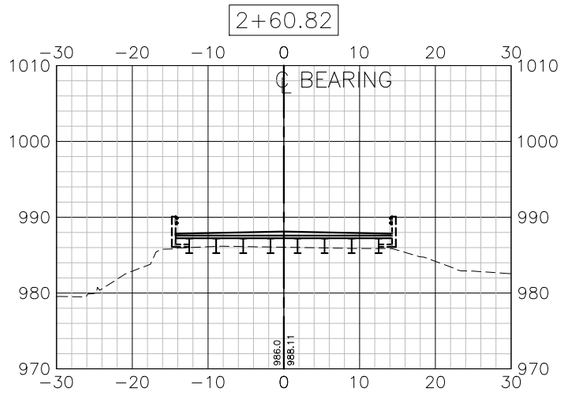
STANDARD DRAWING NO.
G-1-H

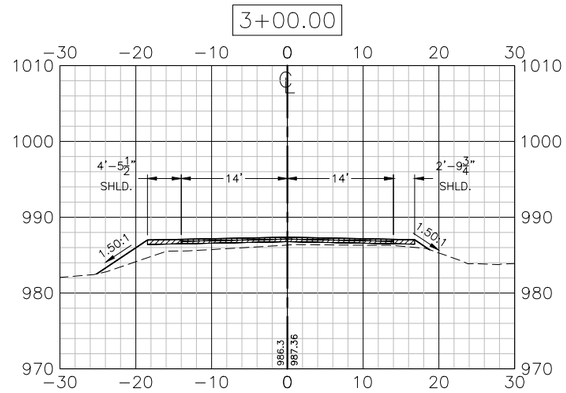
SHEET 1 OF 1

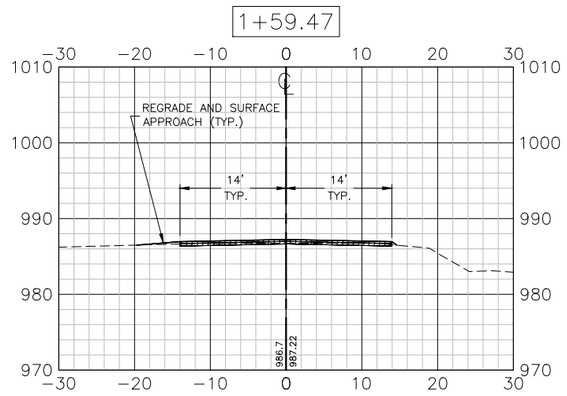
SHEET NO.
17 OF 20

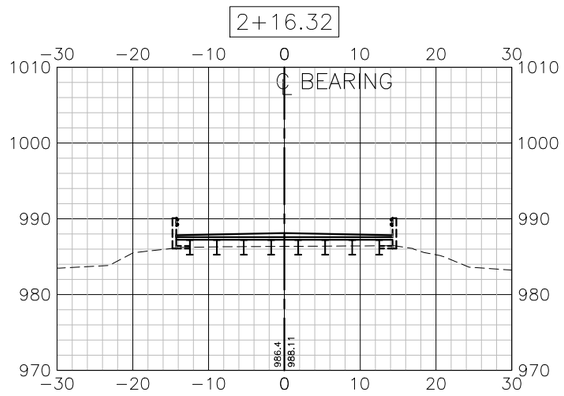
Y:\Shared\Helena Projects\1-23155-NPT ? Elk Creek Bridge and Big Elk Creek AOP Modifications\Elk Creek Bridge\CADD 1-23155-ECB\Sheets\1-23155-ECB-17-ITD4.dwg

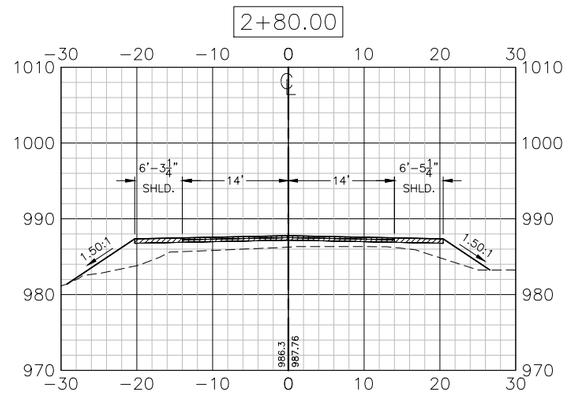


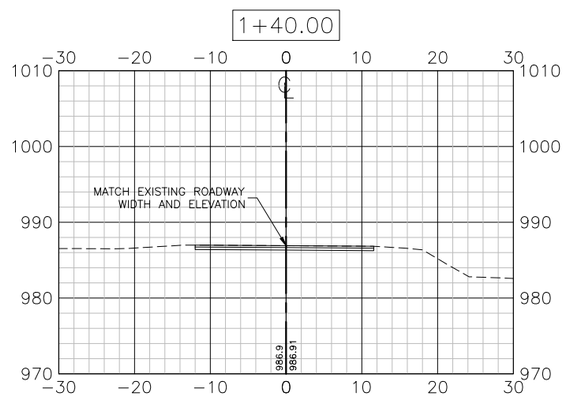


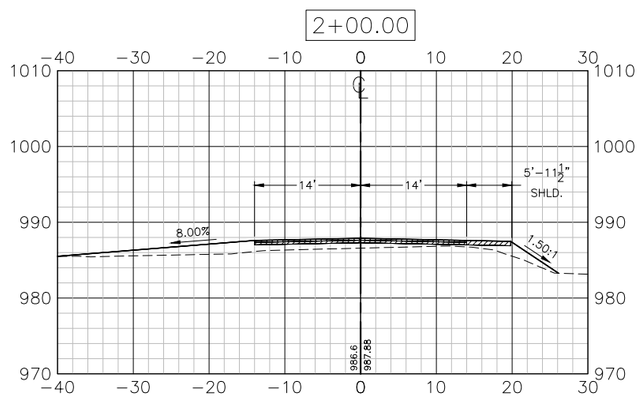












ROADWAY CROSS-SECTIONS

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

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

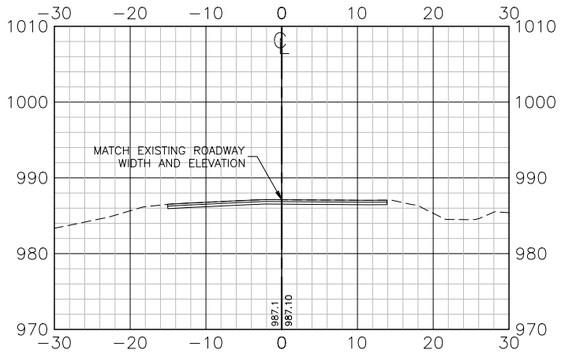
ELK CREEK BRIDGE REPLACEMENT

SWEENEY HILL ROAD
NEZ PERCE TRIBE

ROADWAY CROSS-SECTIONS

PROJECT: 1-23155 DATE: 9/30/2024	NO.	REVISION DESCRIPTION	BY	DATE	SHEET NO. 18 OF 20
DESIGNED: BMB DESIGN CHECKED: JJT	△				
DRAWN: BMB DRAWING CHECKED: JJT	△				

3+60.00



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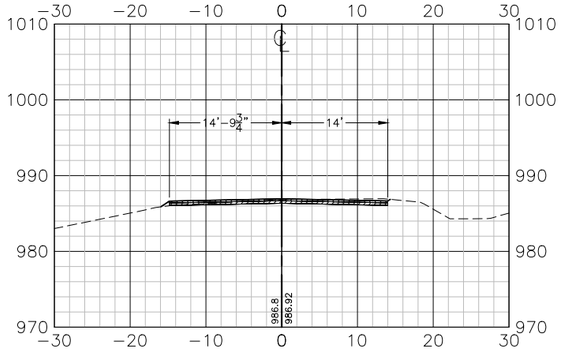

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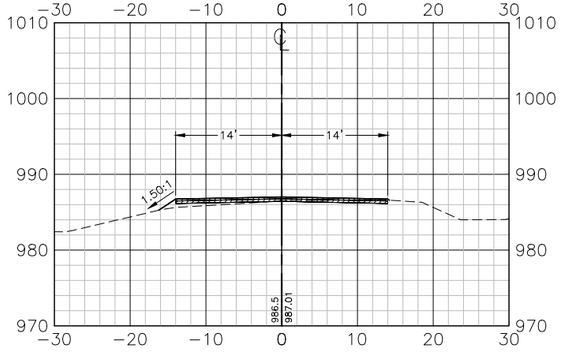

ROADWAY CROSS-SECTIONS

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VERTICAL SCALE: 1" = 20'

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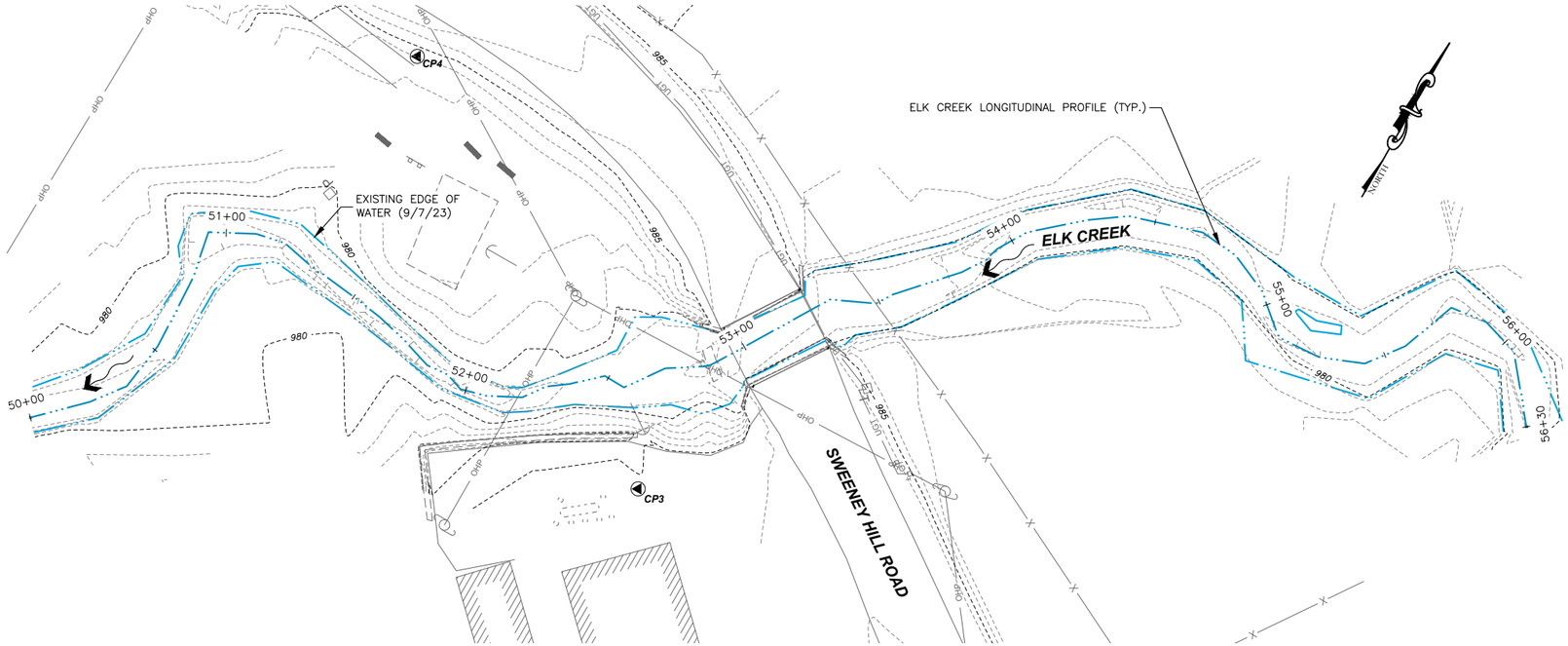
ELK CREEK BRIDGE REPLACEMENT

SWEENEY HILL ROAD
NEZ PERCE TRIBE

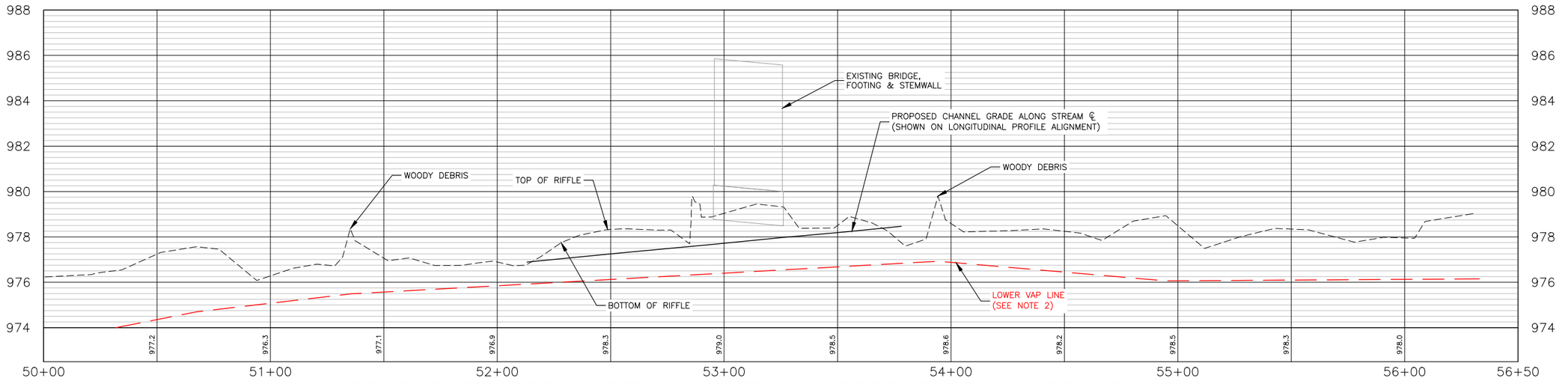
ROADWAY CROSS-SECTIONS

PROJECT: 1-23155 DATE: 9/30/2024	NO.	REVISION DESCRIPTION	BY	DATE	SHEET NO. 19 OF 20
DESIGNED: BMB DESIGN CHECKED: JJT	△				
DRAWN: BMB DRAWING CHECKED: JJT	△				



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

0 25 50
SCALE IN FEET



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

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

UPSTREAM & DOWNSTREAM STREAM WIDTHS

DOWNSTREAM	
STATION	**BANKFULL WDITH (FT)**
50+00.00	13.86
50+20.00	15.25
50+40.00	13.29
50+60.00	9.85
50+80.00	9.64
51+00.00	9.82
51+20.00	12.79
51+40.00	18.76
51+60.00	22.36
51+80.00	14.85
UPSTREAM	
STATION	**BANKFULL WDITH (FT)**
52+40.00	19.90
52+60.00	17.74
52+80.00	14.24
53+00.00	14.58
53+20.00	15.85
53+40.00	16.55
53+60.00	16.32
53+80.00	16.11
54+00.00	17.33
54+20.00	17.03

NOTE:
1. LONGITUDINAL STATIONING DOES NOT MATCH STATIONING SHOWN FOR DESIGN ON SHEET 6. THIS STATIONING IS BASED ON EXISTING THALWEG AND STREAM FEATURES.
2. LOWER VAP LINE ELEVATION DEVELOPED USING MAXIMUM POOL DEPTH OF 1.64' MULTIPLIED BY CHANNEL TYPE FACTOR 1.75.
3. BANKFULL WIDTH = 16'-0"

NOTE: INFORMATIONAL ONLY

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ELK CREEK BRIDGE REPLACEMENT
SWEENEY HILL ROAD
NEZ PERCE TRIBE

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	△			

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.

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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).

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