



# UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT CASH CREEK TRIBUTARY AOP



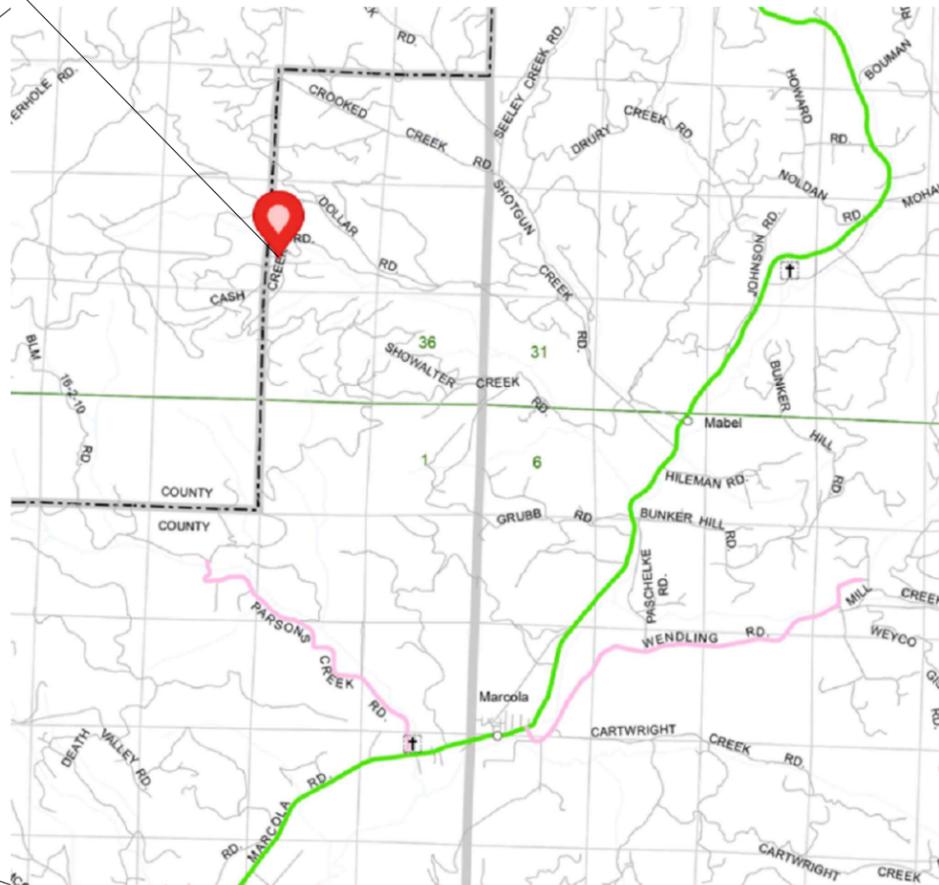
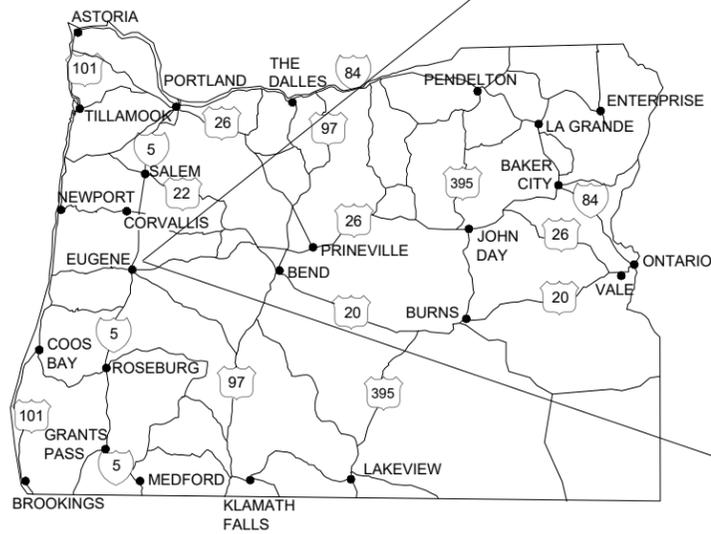
## NORTHWEST OREGON DISTRICT

LOCATION T15S, R2W, SECTION 26  
BLM ROAD 15-2-25.1, M.P. 1.8  
(44.234103, -122.903095)

**PROJECT SITE**  
**BLM ROAD 15-2-25.1, M.P. 1.8**  
**(LAT. 44.234103°, LONG. -122.903095°)**

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- LEGEND**
- INTERSTATE HIGHWAY
  - STATE HIGHWAY
  - COUNTY ROAD
  - 11-1-11, -11.1 BLM ROADS
  - POWER LINES



AREA REFERENCE MAP

AREA MAP

REV. NO.	DESCRIPTION	DATE	APPROVED
UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT NORTHWEST OREGON DISTRICT			
TITLE SHEET & AREA MAP			
ENG. APPROVAL _____ DISTRICT ENGINEER			
SUBMITTED _____ FIELD OFFICE MANAGER			
RECOMMENDED _____ ADM DIVISION OF OPERATIONS			
APPROVED _____ DISTRICT MANAGER			
DRAWN: C.L.S.		SCALE: AS SHOWN	
DATE: SEPTEMBER 2024		SHEET 1 OF 11	
DRAWING NO. --			

## ESTIMATE OF QUANTITIES

BASE BID ITEMS				
ITEM NUMBER	DESCRIPTION	PAY UNIT	ESTIMATED QUANTITY	REMARKS
15101	MOBILIZATION	LUMP SUM	ALL	FIRE PROTECTION & EQUIPMENT CLEANING INDIRECT TO PAY ITEM
15201	CONSTRUCTION SURVEY AND STAKING, METHOD 1, TOLERANCE A	LUMP SUM	ALL	PRECISION A
15713	SOIL EROSION POLLUTION CONTROL	LUMP SUM	ALL	INCLUDES EROSION CONTROL PLAN PREP, INSTALLATION & REMOVAL
15761	DEWATERING STRUCTURE	EACH	1	INCLUDES DEWATERING PLAN, PREP., INSTALLATION AND REMOVAL
20158	CLEARING AND GRUBBING	LUMP SUM	ALL	DISPOSE OF EXCESS MATERIAL AT THE DESIGNATED DISPOSAL AREA.
20301	REMOVAL OF EXISTING CULVERT, DISPOSAL METHOD A	LUMP SUM	ALL	DISPOSE OF EXISTING CORRUGATED METAL PIPE CULVERT LEGALLY OFF OF GOVERNMENT LAND
20407	ROADWAY EXCAVATION	*CUBIC YARD	120	REMOVE EXISTING ROADWAY MATERIAL DOWN TO THE CORRECT ELEVATION TO PROVIDE NEW 1'-3" ROADWAY STRUCTURE
20417	EMBANKMENT CONSTRUCTION, COMPACTION PLACEMENT METHOD 2	LUMP SUM	ALL	INCLUDES CONSTRUCTION OF NEW ROADWAY EMBANKMENT (OUTSIDE OF THE STRUCTURAL BACKFILL LIMITS SHOWN ON SHEET 7) WITH ON SITE EXCAVATED MATERIAL MEETING THE REQUIREMENTS OF SECTION 704.06
20426	DRAINAGE EXCAVATION, TYPE CHANNEL BANK MATERIAL	LUMP SUM	ALL	PAYMENT FOR MATERIAL EXCAVATED BELOW ROADWAY EXCAVATION (EXCLUDING STRUCTURAL EXCAVATION MATERIAL)
20858	STRUCTURE EXCAVATION	*CUBIC YARD	140	PAYMENT FOR MATERIAL EXCAVATED FOR PLACEMENT OF CONCRETE FOOTINGS
20860	STRUCTURAL BACKFILL	*TON	490	PAYMENT FOR BACKFILL MATERIAL WITHIN THE LIMITS SHOWN ON SHEET 7. CRUSHED AGGREGATE CONFORMING TO SECTION 703.06 IS ACCEPTABLE STRUCTURAL BACKFILL
25102	PLACED RIPRAP, CLASS 4	*TON	180	ROCK MATERIAL CONSERVED FROM DRAINAGE EXCAVATION MEETING THE CLASS 4 RIPRAP REQUIREMENTS IN 705.02 MAY BE USED. COMMERCIAL SOURCE FOR ALL ADDITIONAL RIPRAP
30207	AGGREGATE SURFACE COURSE, METHOD 1	*TON	60	CRUSHED AGGREGATE CONFORMING TO SECTION 703.06 IS ACCEPTABLE. CONTRACTOR MAY STOCKPILE EXISTING ROADWAY AGGREGATE AND RE-USE FOR NEW ROAD ROADWAY.
30211	PIT RUN MAXIMUM SIZE 6", METHOD 1	*TON	188	
55201	STRUCTURAL CONCRETE, CLASS A(AE), TYPE I	*CUBIC YARD	40	
55401	REINFORCING STEEL	*POUND	3432	
60304	18'-0" SPAN x 5'-9" RISE, STRUCTURAL PLATE ARCH PIPE, 0.111 INCH THICKNESS	FOOT	60	GALVANIZED STEEL. 6 X 2" CORRUGATIONS. PAY ITEM INCLUDES RECEIVING CHANNEL, STAMPED SHOP DRAWINGS AND STAMPED LOAD RATING REPORT
62552	SEEDING AND MULCHING, DRY METHOD	LUMP SUM	ALL	WEED FREE STRAW
63501	TEMPORARY TRAFFIC CONTROL	LUMP SUM	ALL	
64801	PLACED STREAMBED SIMULATION ROCK, BED CLASS 4, METHOD A	*CUBIC YARD	30	EXCAVATED EXISTING STREAMBED MATERIAL MAY BE CONSERVED AND RE-USED. COMMERCIAL SOURCE FOR ALL MATERIAL QUANTITIES EXCEEDING CONSERVED MATERIAL QUANTITY.
64805A	PLACED CHANNEL ROCK, CLASS CR-1, METHOD A	EACH	120	ROCKS CONSERVED FROM DRAINAGE EXCAVATION MATERIAL MEETING THE CHANNEL ROCK (CLASS CR-1) REQUIREMENTS ON SHEET 9 MAY BE USED. COMMERCIAL SOURCE FOR ALL ADDITIONAL CHANNEL ROCKS
64805B	PLACED CHANNEL ROCK, CLASS CR-2, METHOD A	EACH	180	ROCKS CONSERVED FROM DRAINAGE EXCAVATION MATERIAL MEETING THE CHANNEL ROCK (CLASS CR-2) REQUIREMENTS ON SHEET 9 MAY BE USED. COMMERCIAL SOURCE FOR ALL ADDITIONAL CHANNEL ROCKS

\* DENOTES CONTRACT QUANTITY (CQ) PER BLM SPECIAL PROJECT REQUIREMENT 109.02

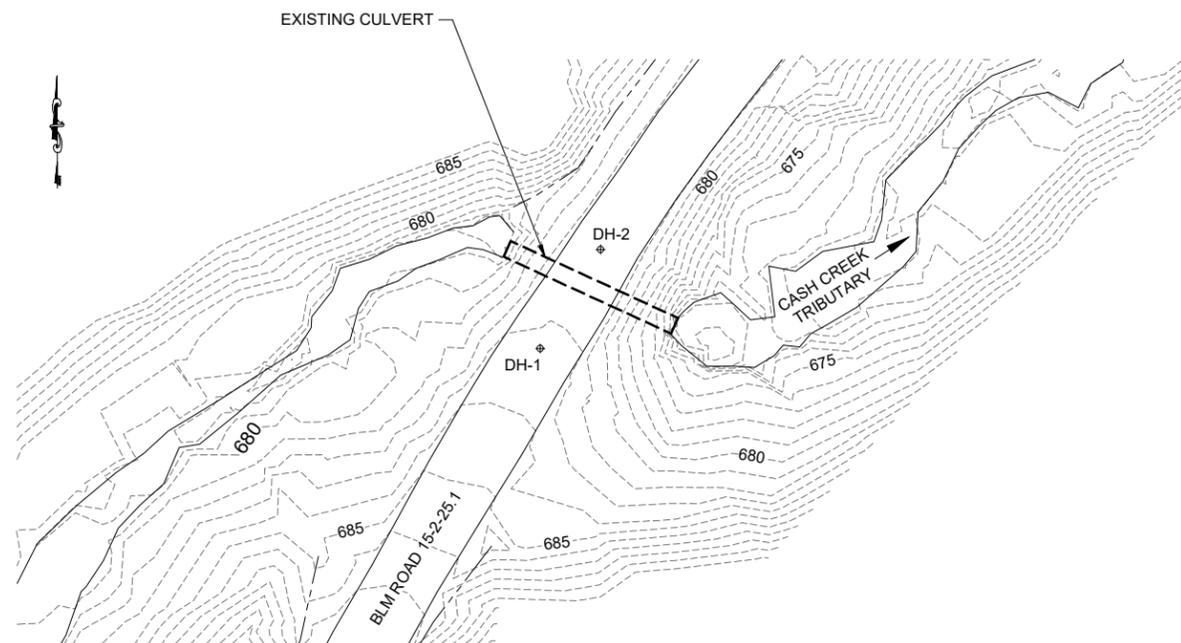


RENEWAL DATE: 06/30/2026

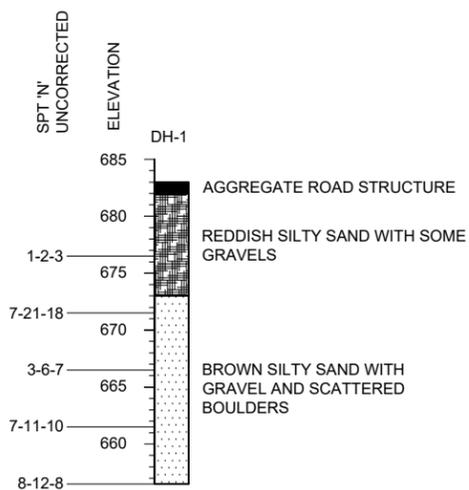
**CONSTRUCTION NOTES:**

- 1) PERFORM CONSTRUCTION IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL LANDS FP-14 US CUSTOMARY UNITS EXCEPT AS MODIFIED BY BLM SPECIAL CONTRACT REQUIREMENTS AND CLAUSES IN THE CONTRACT DOCUMENT OR THE PLANS.
- 2) WATER FOR FIRE PREVENTION & SUPPRESSION REQUIREMENTS UNDER THE CONTRACT, AS WELL AS FOR USE WITH CONSTRUCTION ACTIVITIES, MAY BE OBTAINED FROM CASH CREEK TRIBUTARY. ALL WATER WITHDRAWALS FOR FIRE OR CONSTRUCTION SHALL ABIDE BY CURRENT NMFS WATER DRAFTING GUIDELINES. AT A MINIMUM, ANY WATER WITHDRAWAL IN ACTIVE STREAMS SHALL HAVE SCREENED INTAKES WITH A MAXIMUM SCREEN OPENING OF 3/32 INCH, MAXIMUM INTAKE VELOCITY OF 0.4 FEET PER SECOND, AND WILL NOT REDUCE STREAM FLOW BY MORE THAN 10% BY VISUAL MEASURE. WATER WITHDRAWAL FROM ANY OTHER SOURCE SHALL BE APPROVED IN WRITING, PRIOR TO USE, BY THE CO.
- 3) DESIGN DOES NOT INCLUDE EXCAVATION FOR EQUIPMENT ACCESS TO THE BOTTOM OF THE EXCAVATION AREAS. ALL EXCAVATION AND OTHER WORK FOR ACCESS IS INDIRECT TO PAY ITEM 20858
- 4) PRIOR TO DIGGING, CALL "DIG SAFELY OREGON" 1-800-332-2344. LOCATING AND PROTECTION OF ALL UTILITIES (PUBLIC & PRIVATE) IS THE RESPONSIBILITY OF THE CONTRACTOR.
- 5) CONTRACTING OFFICER APPROVAL IS REQUIRED PRIOR TO THE PLACEMENT OF THE FOLLOWING ITEMS: BEDDING OR LEVELING COURSE OF ANY STRUCTURE, CONCRETE FORMS, STRUCTURAL OR LEAN CONCRETE, STRUCTURAL BACKFILL AROUND STRUCTURAL PLATE ARCH CULVERT AND CRUSHED AGGREGATE BASE/SURFACING.
- 6) REMOVE ALL CONSTRUCTION RELATED REFUSE FROM GOVERNMENT LAND PRIOR TO FINAL ACCEPTANCE.
- 7) REPAIR ANY DAMAGE TO THE EXISTING ROAD SYSTEM DUE TO CONTRACTOR'S OPERATIONS, INSIDE OR OUTSIDE THE PROJECT BOUNDARY, AT THE CONTRACTOR'S EXPENSE, PRIOR TO FINAL ACCEPTANCE.
- 8) CONFINE CONSTRUCTION EQUIPMENT TO THE ROADWAY, UNLESS OTHERWISE SHOWN ON THE PLANS OR APPROVED BY THE CONTRACTING OFFICER.
- 9) STORING OF ALL EQUIPMENT ON GOVERNMENT LANDS WILL BE AT THE CONTRACTOR'S RISK AND AT A LOCATION APPROVED BY THE CONTRACTING OFFICER.
- 10) DEPTHS OF SOIL AND AGGREGATE ARE GIVEN AS FINAL COMPACTED DEPTHS.
- 11) CONSTRUCTION TOLERANCE IS 'A' UNLESS OTHERWISE NOTED ON THE DRAWINGS.

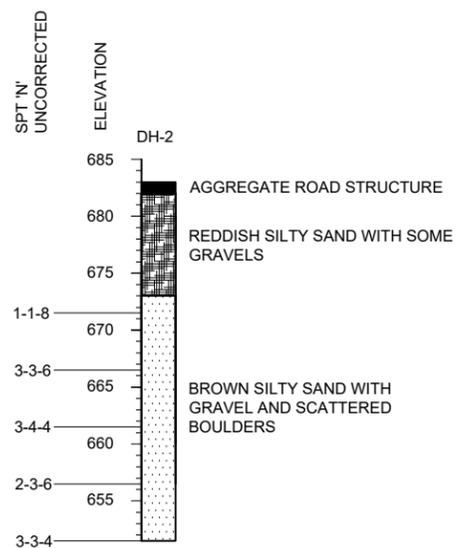
▲			
REV. NO.	DESCRIPTION	DATE	APPROVED
UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT NORTHWEST OREGON DISTRICT			
CASH CREEK TRIBUTARY AOP <b>ESTIMATE OF QUANTITIES</b>			
DESIGNED _____			
REVIEWED _____			
APPROVED _____ <small>CHEF, BRANCH OF ENGINEERING OR DISTRICT ENGINEER</small>			
C.L.S.		SCALE: AS SHOWN	
DATE: OCTOBER 2024		SHEET 2 OF 11	
DRAWING NO. --			



**DRILL HOLE LOCATION SITE PLAN**



**DH-1 DRILL LOG SUMMARY**  
NOT TO SCALE



**DH-2 DRILL LOG SUMMARY**  
NOT TO SCALE

**GENERAL NOTES:**

- SPECIFICATIONS:**  
DESIGN: "AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS" 9TH EDITION W/ INTERIMS.
- CONSTRUCTION: STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS" (FP-14), 2014 WITH SUPPLEMENTAL SPECIFICATIONS.
- DESIGN:**  
DEAD LOAD: CONCRETE AT 150 PCF, STEEL AT 490 PCF AND EARTH AT 120 PCF.  
LIVE LOAD: AASHTO HL93 LOADING.
- LOAD RATING:**  
LOAD RATE STRUCTURE IN ACCORDANCE WITH THE "MANUAL FOR BRIDGE EVALUATION," CURRENT EDITION WITH INTERIMS, USING LRFR METHODOLOGY (CH. 6A). RATE FOR THE FOLLOWING VEHICLES AND CONFIGURATIONS USING THE DESIGNATED LOAD MODIFICATION FACTORS: HL-93 (VEHICLE + LANE OR TANDEM AXLES + LANE); TYPE 3, TYPE 3S2, AND TYPE 3-3; SPECIAL HAUL VEHICLES SU4 THROUGH SU7; EMERGENCY VEHICLE CONFIGURATIONS EV2 AND EV3; AND OREGON SPECIAL PERMIT LOADS OR-STP-3, 4A, 4B. RATE THE HL-93 FOR INVENTORY AND OPERATING, AND RATE ALL OTHER VEHICLES FOR THE SAFE OPERATING CAPACITY. LOAD RATING CALCULATIONS AND REPORT SHALL STAMPED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF OREGON. PAYMENT FOR LOAD RATING REPORT IS INDIRECT TO PAY ITEM 60304.
- MATERIALS:**  
CONCRETE: REINFORCED CONCRETE, AIR ENTRAINED CLASS A(AE) WITH A 28 DAY COMPRESSIVE STRENGTH OF 4500 PSI. ALL CONCRETE SHALL BE MADE IN ACCORDANCE WITH AN APPROVED MIX DESIGN. FINISH CONCRETE WITH A CLASS 1, ORDINARY FINISH. CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.
- REINFORCING STEEL: CONFORM TO AASHTO M31 GRADE 60. TWO INCH CONCRETE COVER EXCEPT AS NOTED.
- STRUCTURAL STEEL: CONFORM TO AASHTO M183 (ASTM A36). HOT DIP GALVANIZE ALL EXPOSED STRUCTURAL STEEL AFTER FABRICATION ACCORDING TO AASHTO M111. HOT DIP GALVANIZE EXPOSED STEEL FASTENERS, BOLTS AND NUTS, AND HARDWARE ACCORDING TO AASHTO M232.
- STRUCTURAL PLATE ARCH:**  
THE STRUCTURAL PLATE ARCH WILL BE 18'-0" SPAN, 5'-9" RISE, 6X2" CORRUGATIONS WITH GALVANIZED STEEL PLATE OF 0.111" THICKNESS (12 GAUGE). STEEL PLATES SHALL BE CONNECTED PER MANUFACTURER'S DESIGN.
- HYDROLOGY & HYDRAULICS:**  
THIS STRUCTURE IS DESIGNED TO PASS A 100 YEAR FLOOD OF 143 CFS WITH AN APPROXIMATE FREE BOARD OF 4.0 FT. HIGH WATER DEPTH IS APPROXIMATELY 1.7 FT.
- FOUNDATION INVESTIGATION:**  
DRILL HOLES LOGS ARE PROVIDED ON THIS SHEET. THE NOMINAL BEARING CAPACITY AT THE PROPOSED BOTTOM OF FOOTING ELEVATION IS 5717 PSF. ADDITIONAL DRILL LOG INFORMATION IS AVAILABLE UPON REQUEST.



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<b>GENERAL NOTES &amp; DRILL LOGS</b>			
DESIGNED _____			
REVIEWED _____			
APPROVED _____ <small>CHEF, BRANCH OF ENGINEERING OR DISTRICT ENGINEER</small>			
C.L.S.		SCALE: AS SHOWN	
DATE: OCTOBER 2024		SHEET 3 OF 11	
DRAWING NO. --			



EXISTING 3-0" Ø X 32'  
LENGTH CORRUGATED  
METAL PIPE CULVERT TO  
BE REMOVED

N: 10220.7  
E: 10123.6

N: 10204.7  
E: 10082.4

BLM ROAD 15-2235.1

N: 10197.5  
E: 10160.0

N: 10173.7  
E: 10038.3

CP3

CASH CREEK  
TRIBUTARY

N: 10179.2  
E: 10163.2

N: 10155.9  
E: 10046.4

N: 10157.5  
E: 10145.9

N: 10133.8  
E: 10059.8

CP5

N: 10119.7  
E: 10090.3

**CONTROL TABLE**

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
#1	10316.73	10237.23	678.15	REBAR
#2	10000.00	10000.00	700.00	REBAR
#3	10181.63	10100.68	682.65	MAG. SPIKE
#4	10209.73	10136.95	680.70	MAG. SPIKE
#5	10116.54	10043.50	690.84	MAG. SPIKE

**NOTE:**

- COORDINATES ARE ARBITRARY. BEARINGS ARE BASED ON HAND COMPASS BEARING.
- CONTOUR INTERVALS ARE ONE-FOOT.
- THE ELEVATION OF 4500.00' AT CP2 IS ASSUMED.
- THE LINES DEFINED BY THE COORDINATE REFERENCES ARE THE LIMITS OF THE PROJECT BOUNDARY.
- PROVIDE CLEARING AND GRUBBING OF DEBRIS AND VEGETATION WITHIN THE PROJECT BOUNDARY AS NECESSARY TO COMPLETE THE PROJECT.

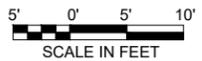


RENEWAL DATE: 06/30/2026

**LEGEND**

- CONTROL POINT (CP)
- EXISTING CONTOURS
- PROPOSED FINAL CONTOURS
- EXISTING EDGE OF ROAD
- EXISTING EDGE OF CREEK
- EXISTING DITCH LINE

**EXISTING SITE PLAN, SURVEY CONTROL & PROJECT BOUNDARY**



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	CASH CREEK TRIBUTARY AOP <b>EXISTING SITE PLAN, SURVEY CONTROL &amp; PROJECT BOUNDARY</b>		
	DESIGNED _____		
	REVIEWED _____		
	APPROVED _____		
C.L.S.	SCALE: AS SHOWN		
DATE: OCTOBER 2024	SHEET 4 OF 11		
DRAWING NO. --			

**CENTERLINE CONCRETE FOOTING LAYOUT TABLE**

DESIGN POINT	NORTHING	EASTING	TOP OF STEM WALL ELEVATION	DESCRIPTION
⊕ A	10181.34	10073.94	675.56'	⊕ NORTH FOOTING AT INLET
⊕ B	10163.35	10074.74	675.56'	⊕ SOUTH FOOTING AT INLET
⊕ C	10184.00	10133.88	672.17'	⊕ NORTH FOOTING AT OUTLET
⊕ D	10166.02	10134.68	672.17'	⊕ SOUTH FOOTING AT OUTLET

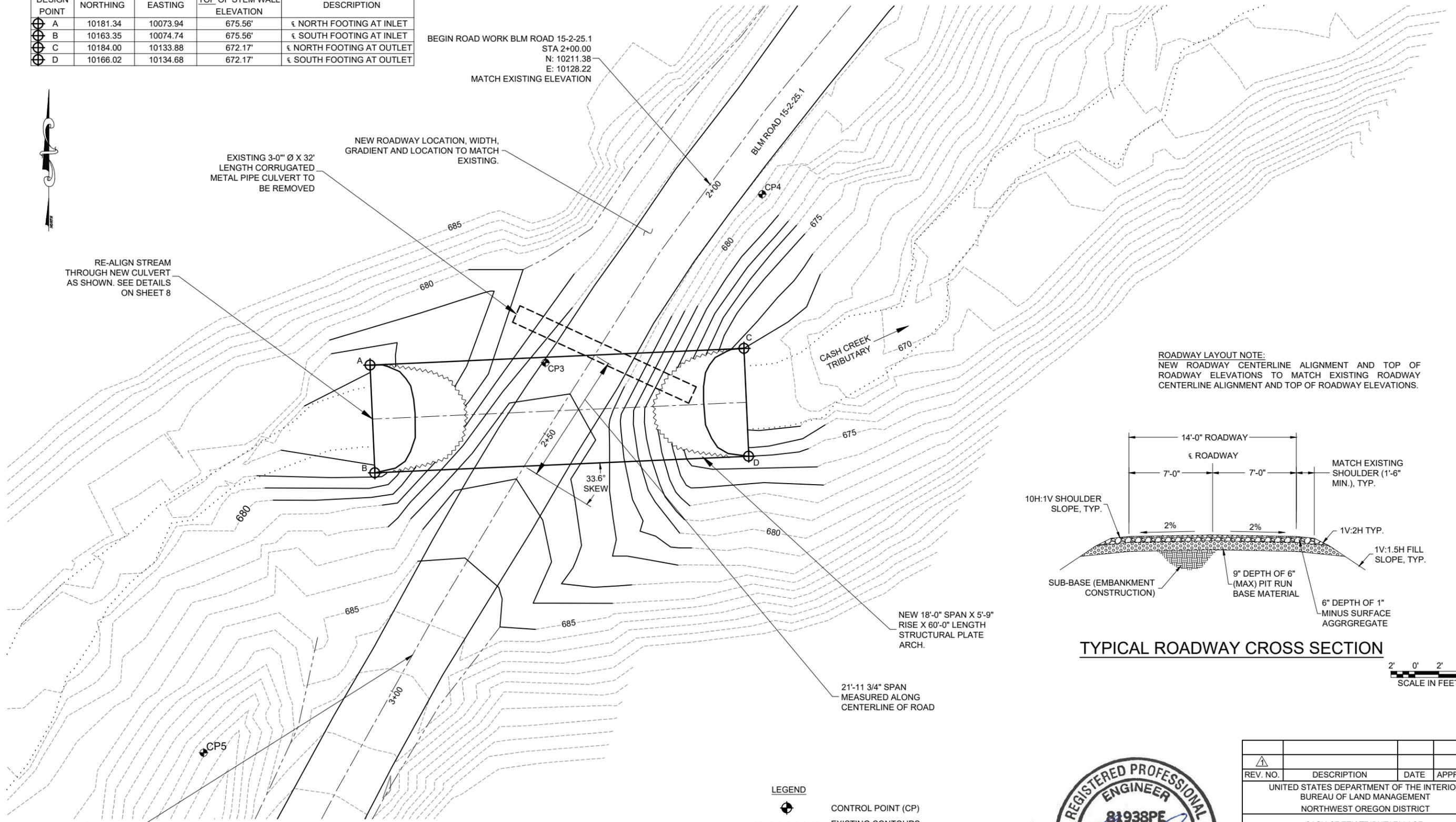
BEGIN ROAD WORK BLM ROAD 15-2-25.1  
 STA 2+00.00  
 N: 10211.38  
 E: 10128.22  
 MATCH EXISTING ELEVATION



EXISTING 3-0" Ø X 32' LENGTH CORRUGATED METAL PIPE CULVERT TO BE REMOVED

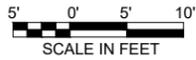
NEW ROADWAY LOCATION, WIDTH, GRADIENT AND LOCATION TO MATCH EXISTING.

RE-ALIGN STREAM THROUGH NEW CULVERT AS SHOWN. SEE DETAILS ON SHEET 8



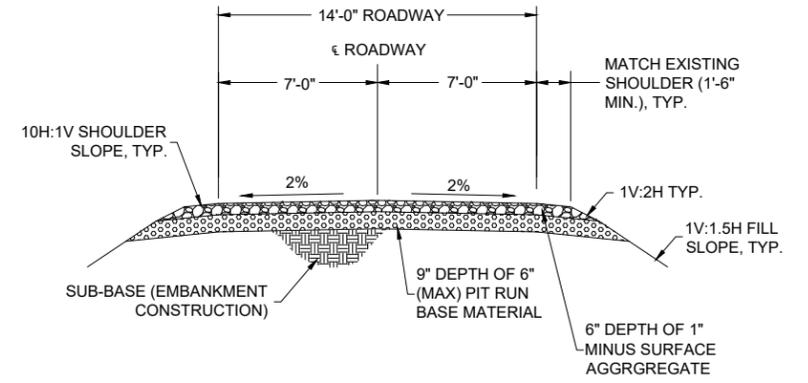
END ROAD WORK  
 STA 2+90.00  
 N: 10135.50  
 E: 10079.92  
 MATCH EXISTING ELEVATION

**PROPOSED SITE PLAN**

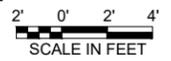


- LEGEND**
- ⊕ CONTROL POINT (CP)
  - - - EXISTING CONTOURS
  - PROPOSED FINAL CONTOURS
  - EDGE OF ROAD
  - · · · · EDGE OF CREEK
  - - - DITCHLINE

**ROADWAY LAYOUT NOTE:**  
 NEW ROADWAY CENTERLINE ALIGNMENT AND TOP OF ROADWAY ELEVATIONS TO MATCH EXISTING ROADWAY CENTERLINE ALIGNMENT AND TOP OF ROADWAY ELEVATIONS.



**TYPICAL ROADWAY CROSS SECTION**

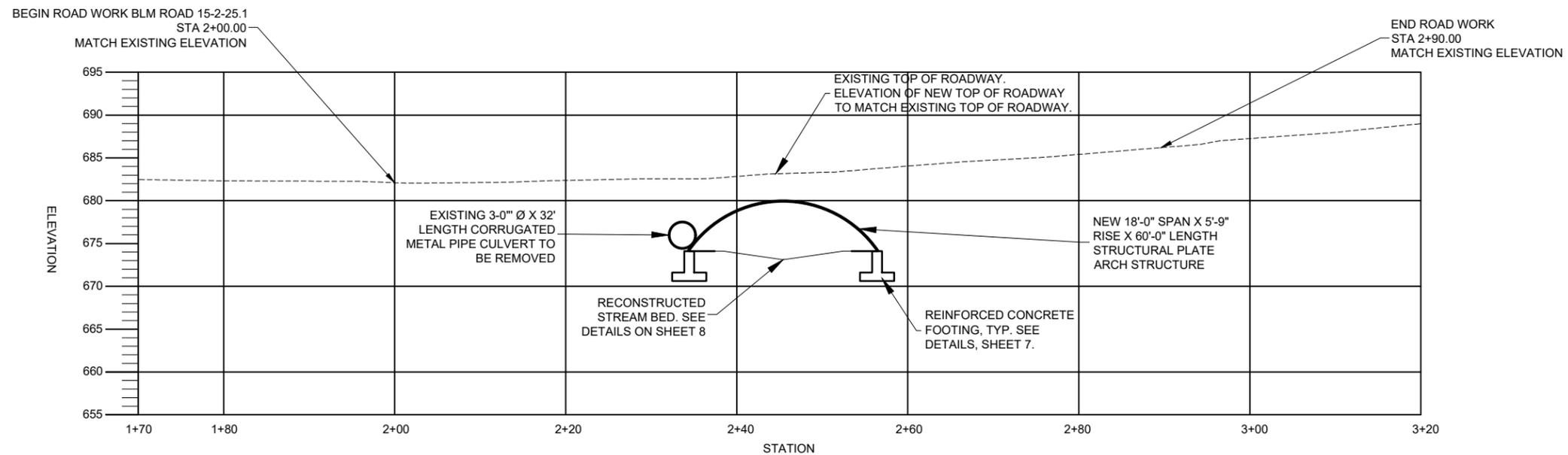


NEW 18'-0" SPAN X 5'-9" RISE X 60'-0" LENGTH STRUCTURAL PLATE ARCH.

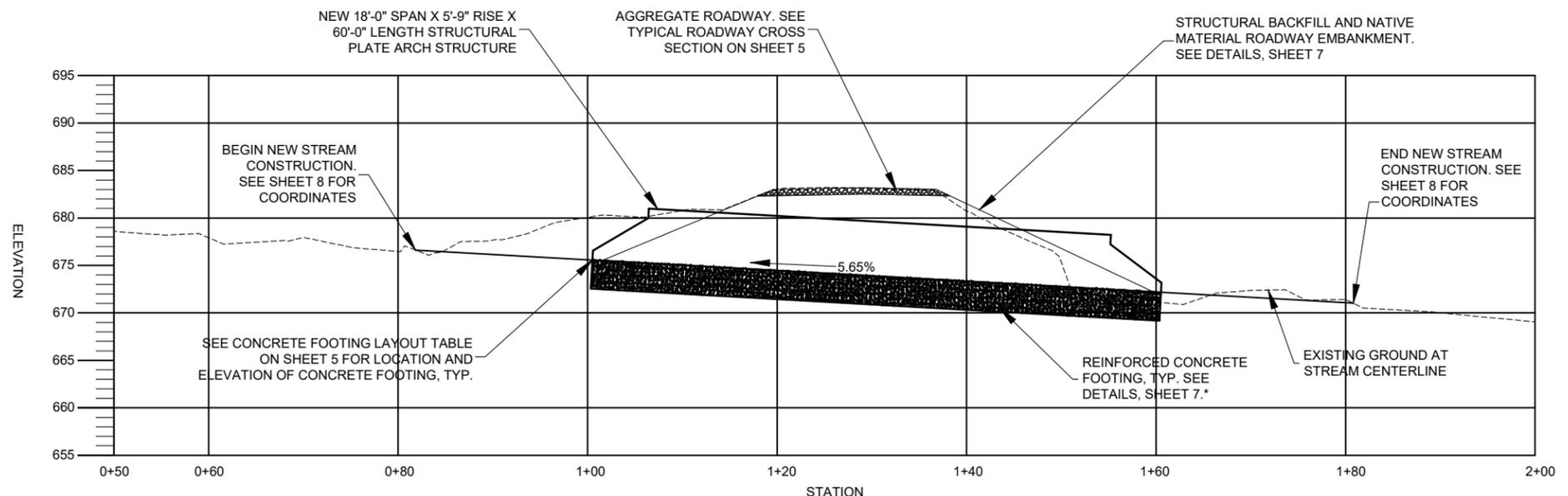
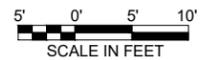
21'-11 3/4" SPAN MEASURED ALONG CENTERLINE OF ROAD



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CASH CREEK TRIBUTARY AOP <b>PROPOSED SITE PLAN &amp; TYPICAL ROAD SECTION</b>			
DESIGNED			
REVIEWED			
APPROVED			
<small>CHIEF, BRANCH OF ENGINEERING OR DISTRICT ENGINEER</small>			
C.L.S.	SCALE: AS SHOWN		
DATE: OCTOBER 2024	SHEET 5 OF 11		
DRAWING NO. --			



**ROAD PROFILE**

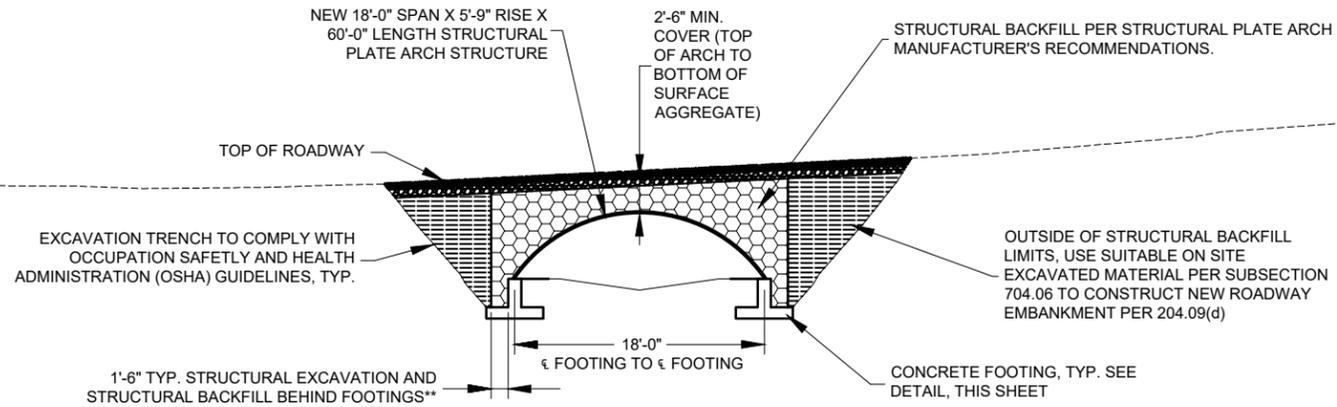


**STREAM CENTERLINE PROFILE**

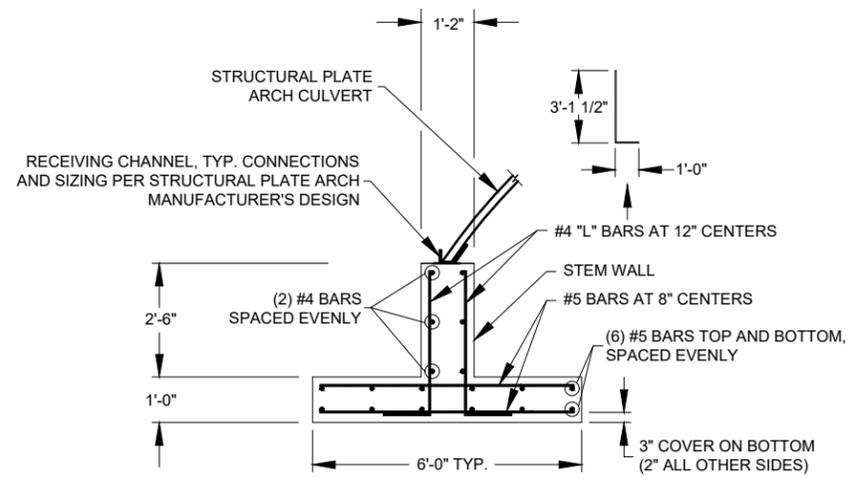
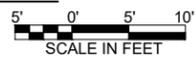


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CASH CREEK TRIBUTARY AOP <b>ROAD &amp; STREAM PROFILE</b>			
DESIGNED _____			
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**STRUCTURE CROSS SECTION**

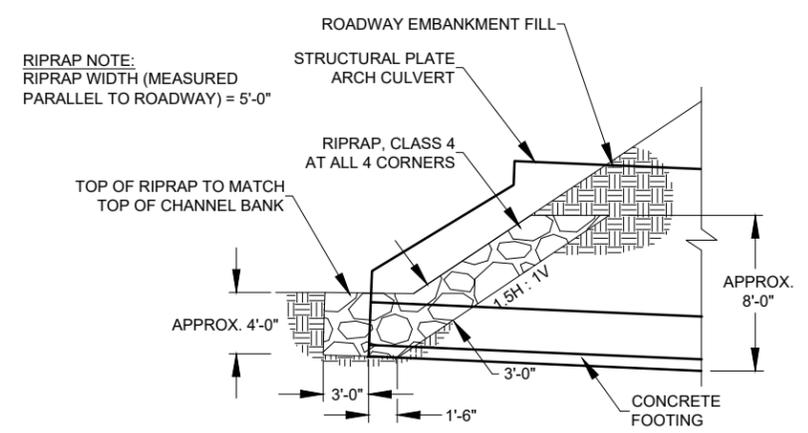


**CONCRETE FOOTING DETAILS**



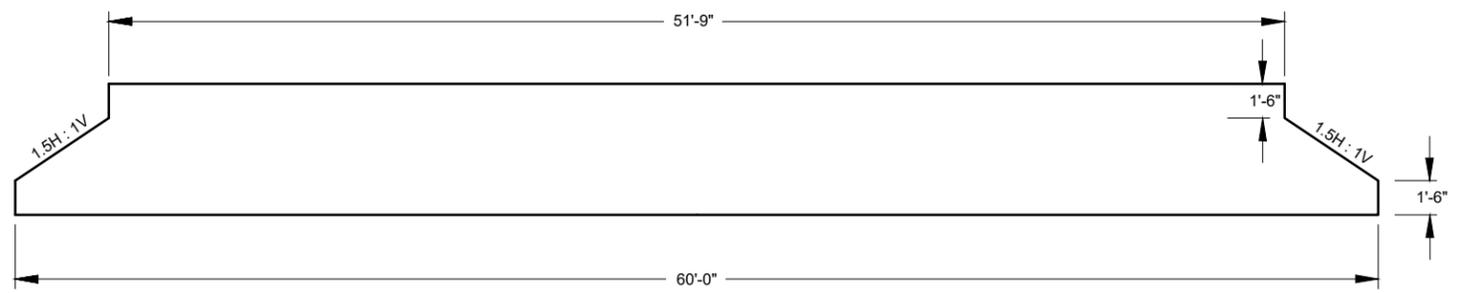
**\*\*NOTE:**  
STRUCTURAL EXCAVATION AND BACKFILL EXTENTS MAY GO BEYOND THE LIMITS SPECIFIED ON THIS SHEET BASED ON STRUCTURAL PLATE ARCH MANUFACTURER'S RECOMMENDATIONS. ANY VOLUMES OF STRUCTURAL EXCAVATION AND BACKFILL BEYOND THE LIMITS SHOWN ON THIS SHEET DUE TO MANUFACTURER'S RECOMMENDATIONS ARE INDIRECT TO PAY ITEMS 20858 AND 20860.

- BACKFILL NOTES:**
- 1) PLACE STRUCTURAL BACKFILL PER STRUCTURAL PLATE ARCH MANUFACTURER'S RECOMMENDATIONS.
  - 2) MONITORING OF THE ARCH SHAPE IS NECESSARY DURING ALL BACKFILLING STEPS.
  - 3) PREVENT DISTORTION OF THE SHAPE AS NECESSARY BY VARYING COMPACTION METHODS AND EQUIPMENT.
  - 4) SWITCH TO PLACING STRUCTURAL BACKFILL IN RADIAL LIFTS @ APPROX. 75% OF THE RISE OF THE STRUCTURE.
  - 5) BECAUSE OF THE FLEXING AND VIBRATION OF THE CROWN PLATES, THE FULL COMPACTION DENSITY LEVELS OFTEN CAN NOT BE ACHIEVED IN THE FIRST SEVERAL INCHES OF FILL OVER THE CROWN.
  - 6) DURING BACKFILL, ONLY LIGHTWEIGHT TRACKED VEHICLES (D-4 OR LIGHTER) SHOULD BE NEAR THE STRUCTURE AS FILL PROGRESSES ABOVE THE CROWN AND TO THE FINISHED GRADE.

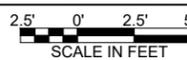


**TYPICAL RIPRAP PROTECTION AT STRUCTURE ENDS**

NOT TO SCALE

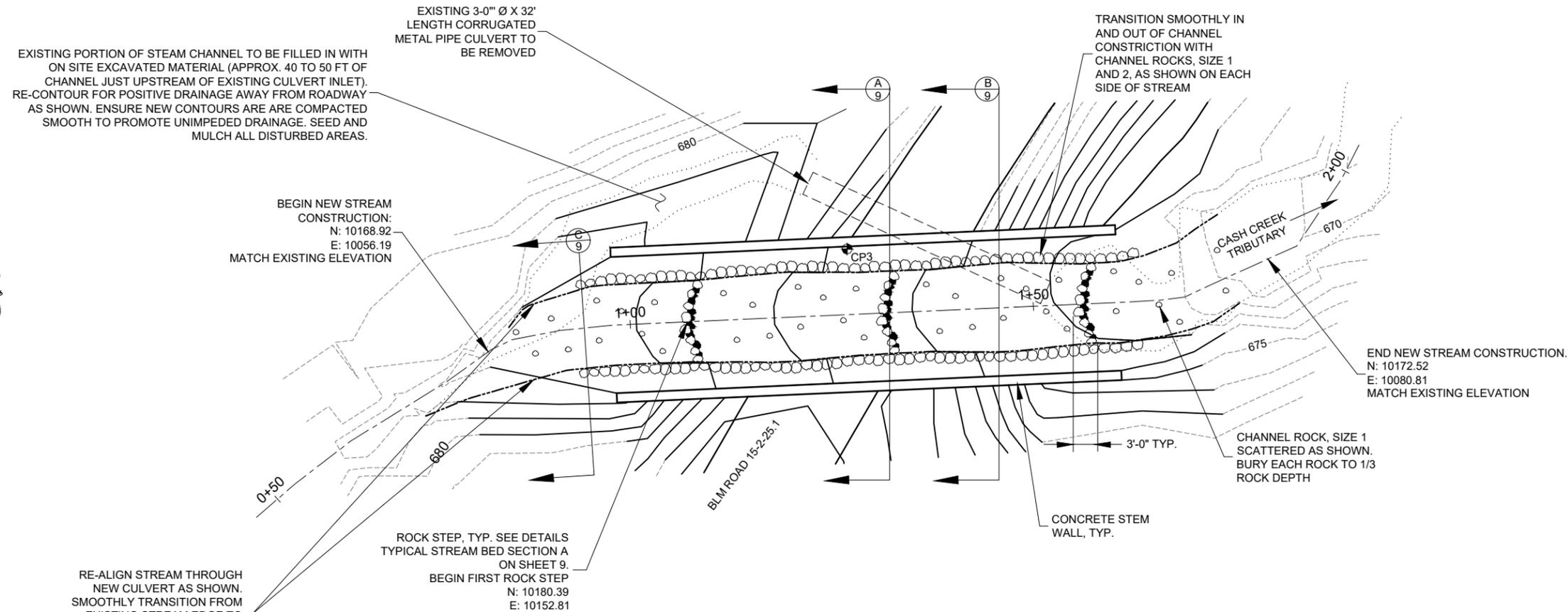


**STRUCTURAL PLATE ARCH GEOMETRY**



RENEWAL DATE: 06/30/2026

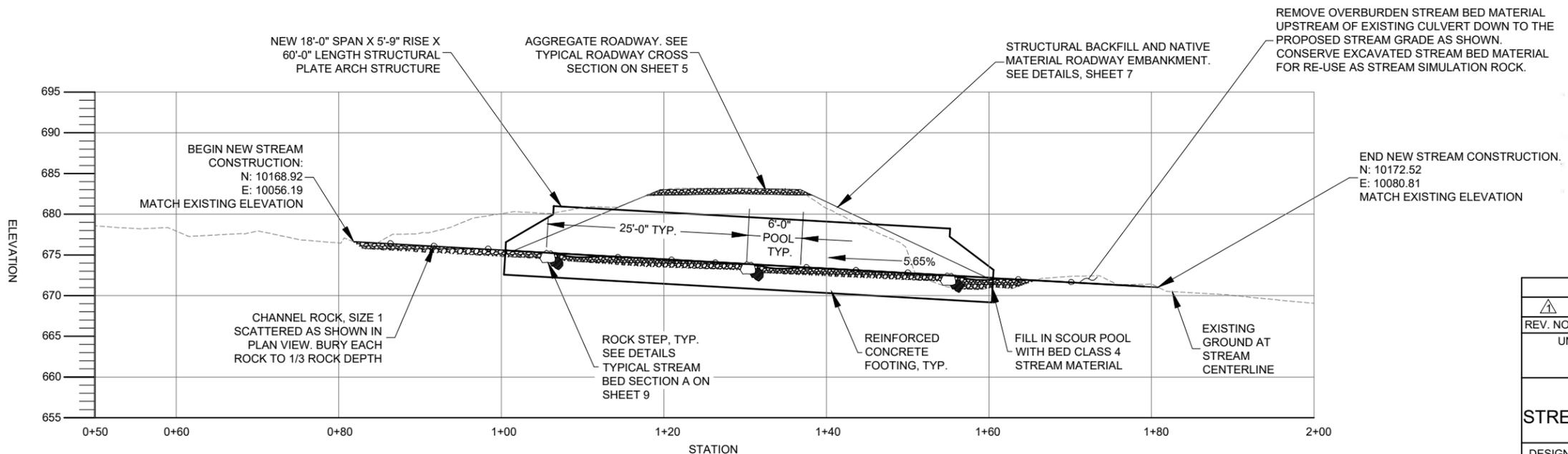
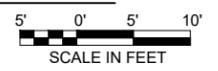
REV. NO.	DESCRIPTION	DATE	APPROVED
UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT NORTHWEST OREGON DISTRICT CASH CREEK TRIBUTARY AOP <b>STRUCTURE DETAILS</b>			
DESIGNED _____			
REVIEWED _____			
APPROVED _____			
<small>CHEF, BRANCH OF ENGINEERING OR DISTRICT ENGINEER</small>			
C.L.S.	SCALE: AS SHOWN		
DATE: OCTOBER 2024	SHEET 7 OF 11		
DRAWING NO. --			



**LEGEND**

	CONTROL POINT (CP)
	EXISTING CONTOURS
	PROPOSED FINAL CONTOURS
	EXISTING EDGE OF ROAD
	EXISTING EDGE OF CREEK
	NEW EDGE OF CREEK

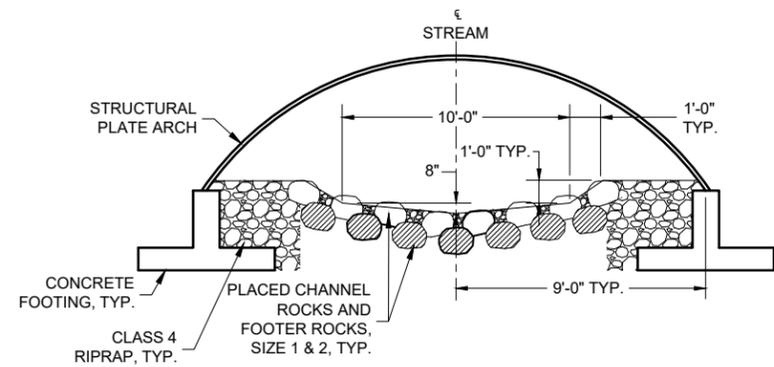
**STREAMBED CONSTRUCTION PLAN**



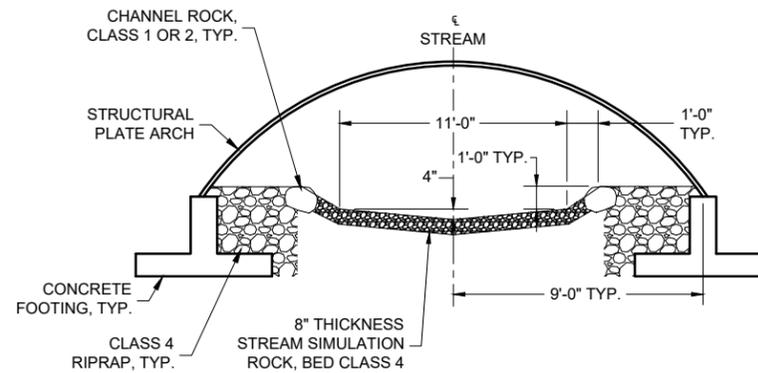
**STREAM CENTERLINE PROFILE**



REV. NO.	DESCRIPTION	DATE	APPROVED
UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT NORTHWEST OREGON DISTRICT CASH CREEK TRIBUTARY AOP			
<b>STREAM CONSTRUCTION DETAILS 1</b>			
DESIGNED _____			
REVIEWED _____			
APPROVED _____ <small>CHEF, BRANCH OF ENGINEERING OR DISTRICT ENGINEER</small>			
C.L.S.	SCALE: AS SHOWN		
DATE: OCTOBER 2024	SHEET 8 OF 11		
DRAWING NO. --			



**TYPICAL STREAM BED SECTION A**  
NOT TO SCALE



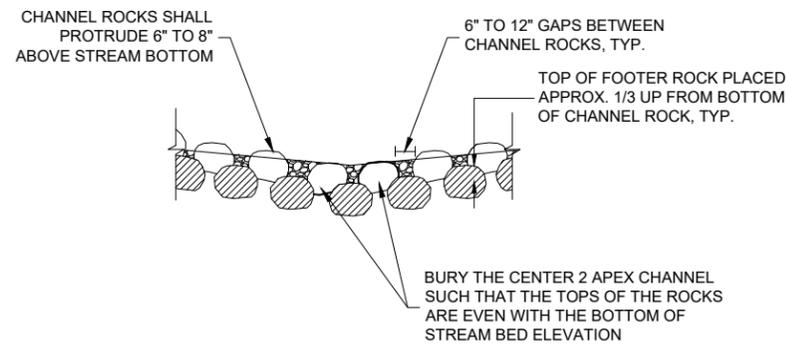
**TYPICAL STREAM BED SECTION B**  
NOT TO SCALE

**CHANNEL ROCK NOTE:**

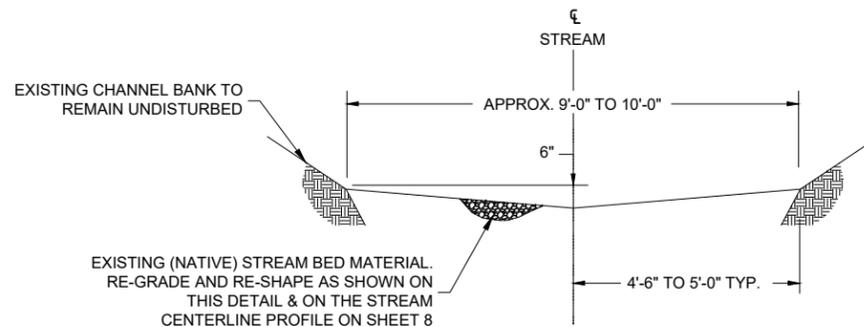
- 1) CHANNEL ROCKS SHALL BE ROUNDED RIVER ROCK FREE FROM MACHINE MADE SCARS/MARS AND OF A COLOR INDIGENOUS TO THE AREA.
- 2) CHANNEL ROCKS FOR ROCK STEPS (INCLUDING FOOTER ROCKS) AND STREAM BANK ROCKS SHALL BE A MIX OF SIZE 1 AND SIZE 2, PER BLM SPECIAL CONTRACT REQUIREMENT 705.08, WITH AN APPROX. CUBIC DIMENSION OF 12 TO 18 AND 18 TO 24 INCHES AND AN APPROX. MASS OF 90 TO 300 AND 300 TO 700 POUNDS. SCATTERED CHANNEL ROCKS SIZE 1 SHALL BE PER 705.08, WITH AN APPROX. CUBIC DIMENSION OF 12 TO 18 INCHES AND AN APPROX. MASS OF 90 TO 300 POUNDS. ROCKS FROM EXCAVATION MATERIAL MEETING THE ABOVE CRITERIA WILL BE ACCEPTABLE FOR USE AS CHANNEL ROCKS.
- 3) CONTRACTOR SHALL PROVIDE NOTICE TO THE CO IN WRITING AT LEAST 7 DAYS PRIOR TO PLACEMENT OF CHANNEL ROCKS.

**STREAM SIMULATION ROCK NOTE:**

- 1) LAYER PLACE AND COMPACT STREAMBED MATERIAL ACCORDING TO BLM SPECIAL PROJECT REQUIREMENT 648.04, THEN BLEND EXCAVATED NATIVE MATERIAL FINES (WELL GRADED MATERIAL PASSING THE NO. 4 SIEVE) WITH HOSE FED WATER PRESSURE INTO BED CLASS 4 STREAM SIMULATION MATERIAL & CONSERVED EXISTING STREAM BED MATERIAL (RE-WATERING OF THE CHANNEL TO BLEND FINES INTO STREAM BED MATERIAL IS NOT ALLOWED). THE FINISHED STREAMBED CHANNEL SURFACE SHALL BE CONSTRUCTED SUCH THAT STREAM WATER IS FLOWING ON TOP OF THE STREAMBED SURFACE.
- 2) BACKFILL SCOUR HOLES AND SUMP HOLES AS STAKED BY THE CO.
- 3) FINISHED CHANNEL DIMENSIONS SHALL TRANSITION SMOOTHLY TO UPSTREAM AND DOWNSTREAM CHANNEL. STREAM CONSTRUCTION COORDINATES ARE LABELED ON THE STREAM RECONSTRUCTION PROFILE ON SHEET 8.
- 4) THE CONTRACTOR MAY BE PERMITTED TO CONSERVE AND RE-USE ANY EXISTING EXCAVATED STREAM BED MATERIAL FOR NEW STREAMBED CONSTRUCTION.



**CHANNEL ROCK ELEVATION (LOOKING UPSTREAM)**  
NOT TO SCALE

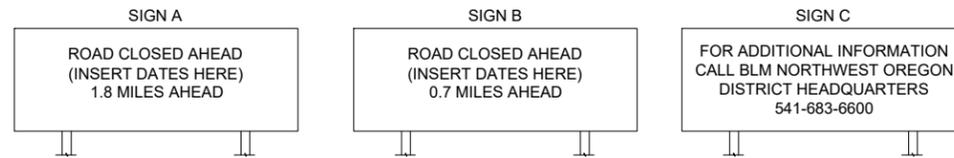


**TYPICAL STREAM BED SECTION C**  
NOT TO SCALE



RENEWAL DATE: 06/30/2026

REV. NO.	DESCRIPTION	DATE	APPROVED
	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT NORTHWEST OREGON DISTRICT		
	CASH CREEK TRIBUTARY AOP		
	<b>STREAM CONSTRUCTION DETAILS 2</b>		
	DESIGNED _____		
	REVIEWED _____		
	APPROVED _____		
	C.I.S. _____ SCALE: AS SHOWN		
	DATE: OCTOBER 2024	SHEET 9 OF 11	
	DRAWING NO. --		



**WARNING SIGN NOTES:**

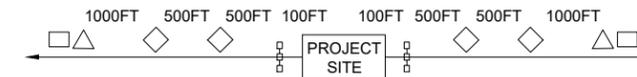
- 1) MOUNT SIGNS ON 4"x4" PRESSURE TREATED POSTS.
- 2) WARNING SIGNS A, B & C SHALL BE REFLECTIVE GUIDE SIGNS WITH ORANGE BACKGROUND AND BLACK 4" LETTERING.
- 3) PLACE WARNING SIGNS A & C ON BLM ROAD 15-2-25.1 NEAR THE INTERSECTION OF BLM ROADS 15-2-25.1 AND 15-1-31 AS STAKED BY THE CO.
- 4) PLACE WARNING SIGNS B & C ON BLM ROAD 15-2-25.1 NEAR THE INTERSECTION OF BLM ROADS 15-2-25.1 AND 15-2-34 AS STAKED BY THE CO.

**LEGEND**

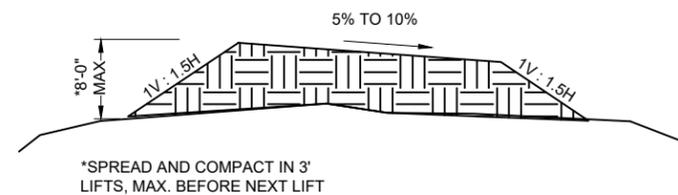
- "TRUCKS AHEAD" (36"x36")
- ◇ "ROAD CLOSED AHEAD" (36"x36")
- △ "CONSTRUCTION AHEAD" (36"x36")
- ⊠ (2) X ROAD CLOSURE BARRICADES, TYPE III W/ "ROAD CLOSED SIGN (SEE DETAIL, THIS SHEET)

**SIGN NOTES:**

- 1) SIGN DISTANCES AND LOCATIONS MAY BE ADJUSTED IN THE FIELD BASED ON ROAD CONDITIONS.
- 2) ALL SIGNS MUST COMPLY WITH THE STANDARDS OF THE MOST CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
- 3) PLACE ADDITIONAL ROAD CLOSURE WARNING SIGNS AS SPECIFIED ON THE AREA MAP.



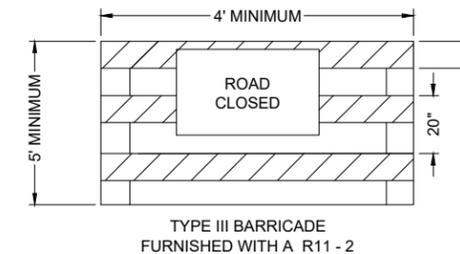
**CONCEPTUAL TRAFFIC CONTROL DIAGRAM**  
NOT TO SCALE



**DISPOSAL AREA DETAIL**  
NOT TO SCALE

**DISPOSAL AREA NOTES:**

- 1) DISPOSAL AREA LOCATION SHALL BE LOCATED AT THE END OF BLM ROAD 15-2-26.5, AS STAKED BY THE CO.
- 2) THE CONTRACTOR SHALL BE RESPONSIBLE FOR BRUSHING, FLATTENING AND RESHAPING AREAS WITHIN THE DISPOSAL AREA AS NEEDED TO ACCOMMODATE THE TOTAL ESTIMATED VOLUME OF DISPOSAL MATERIAL.
- 3) CO WILL FLAG DISPOSAL AREA LIMITS.
- 4) LAYER PLACE AND EQUIPMENT COMPACT MATERIAL IN THREE-FOOT LIFTS, MAX.

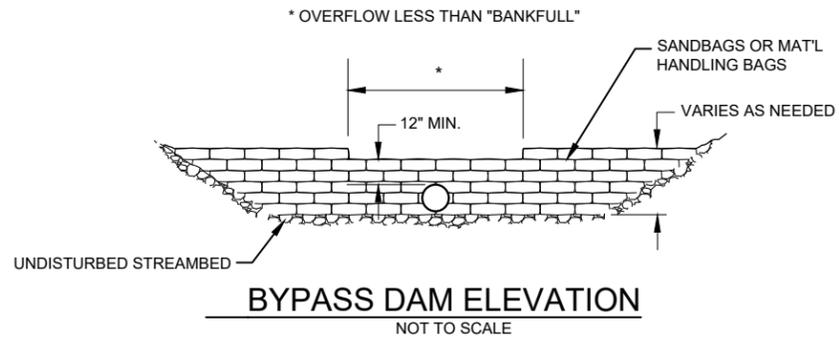


**TYPE III BARRICADE DETAIL**  
NOT TO SCALE



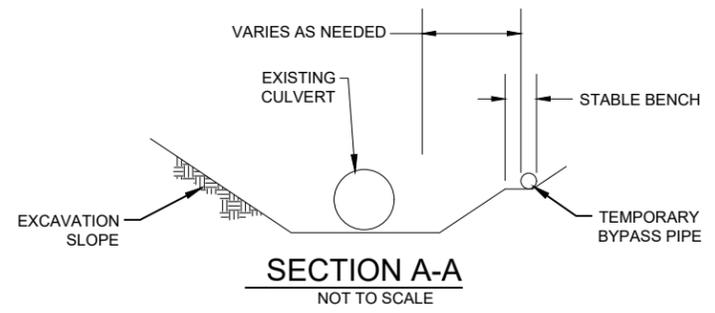
RENEWAL DATE: 06/30/2026

REV. NO.	DESCRIPTION	DATE	APPROVED
UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT NORTHWEST OREGON DISTRICT CASH CREEK TRIBUTARY AOP <b>TRAFFIC CONTROL &amp; DISPOSAL AREA DETAILS</b>			
DESIGNED _____			
REVIEWED _____			
APPROVED _____			
<small>CHIEF, BRANCH OF ENGINEERING OR DISTRICT ENGINEER</small>			
C.L.S.	SCALE: AS SHOWN		
DATE: OCTOBER 2024	SHEET 10 OF 11		
DRAWING NO. --			

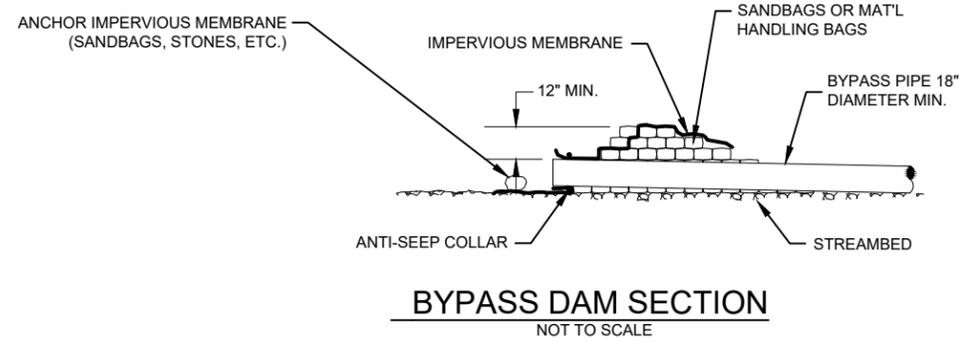


**BYPASS DAM ELEVATION**  
NOT TO SCALE

**NOTE:**  
THE DEWATERING & SEDIMENT CONTROL PLAN SHOWS THE MINIMUM ACCEPTABLE CRITERIA. PRIOR TO IMPLEMENTING THE DEWATERING PLAN, NOTIFY THE CO IN WRITING AT LEAST 14 DAYS IN ADVANCE. CONTRACTOR SHALL WORK WITH BLM FISHERIES STAFF TO FACILITATE COMPLETE AQUATIC ORGANISM CAPTURE PRIOR TO COMPLETELY DEWATERING THE STREAM. THE CONTRACTOR SHALL DRAW DOWN THE EXISTING PLUNGE POOL AT THE DOWNSTREAM END OF THE EXISTING PIPE IN UNISON WITH BLM PERSONNEL AQUATIC ORGANISM CAPTURE. MAINTAINING CLEAN WATER DOWNSTREAM OF THE PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR THROUGHOUT THE DURATION OF THE PROJECT, 24 HRS./DAY

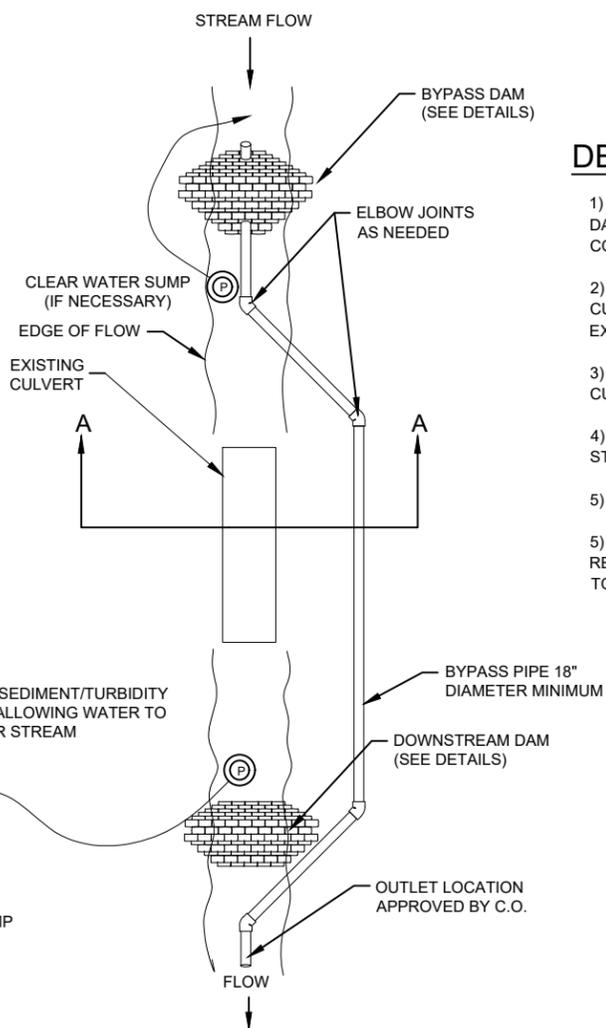


**SECTION A-A**  
NOT TO SCALE



**BYPASS DAM SECTION**  
NOT TO SCALE

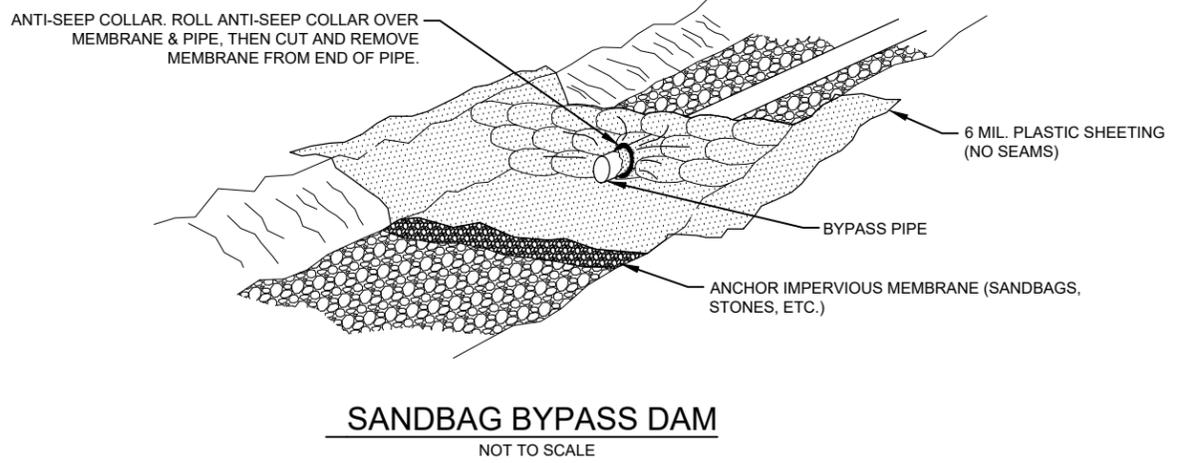
**ALTERNATIVE DEWATERING METHODS:**  
ANY CONTRACTOR PROPOSED ALTERNATIVE DEWATERING METHODS (PUMP SYSTEMS, OPEN CHANNELS, ETC.) MUST BE SUBMITTED (IN WRITING) AND APPROVED BY THE CO PRIOR IMPLEMENTATION. THE MAXIMUM DESIGN DEWATERING FLOW FOR THE MONTHS OF JUNE THROUGH OCTOBER IS 17 CFS.



**BYPASS TYPICAL PLAN VIEW**  
NOT TO SCALE

**DEWATERING SEQUENCE**

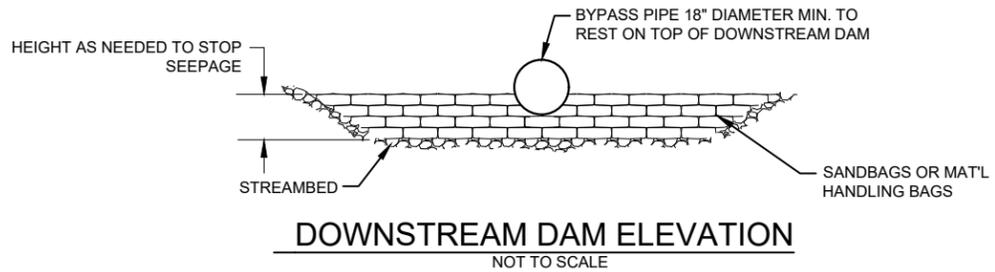
- 1) CONSTRUCT BYPASS DAM AND DOWNSTREAM DAM PER APPROVED DEWATERING PLAN AND CONSTRUCTION SCHEDULE.
- 2) PLACE DEWATERING PIPE AROUND EXISTING CULVERT AND DIVERT ALL WATER AROUND EXISTING CULVERT.
- 3) EXCAVATE ROAD FILL AND REMOVE EXISTING CULVERT.
- 4) CONSTRUCT CONCRETE FOOTINGS AND NEW STREAM BED.
- 5) CONSTRUCT STEEL ARCH STRUCTURE.
- 5) WASH EXCAVATED STREAM CHANNEL AS REQUIRED TO REMOVE FINE SEDIMENTS PRIOR TO REWATERING THE NEW STREAM CHANNEL.



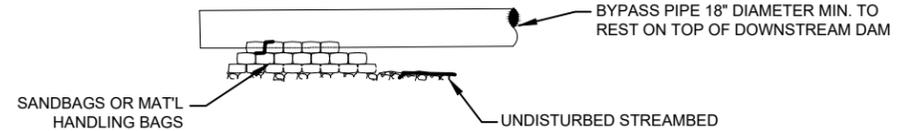
**SANDBAG BYPASS DAM**  
NOT TO SCALE



RENEWAL DATE: 06/30/2026



**DOWNSTREAM DAM ELEVATION**  
NOT TO SCALE



**DOWNSTREAM DAM SECTION**  
NOT TO SCALE

REV. NO.	DESCRIPTION	DATE	APPROVED
	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT NORTHWEST OREGON DISTRICT		
	CASH CREEK TRIBUTARY AOP <b>DEWATERING TYPICAL</b>		
DESIGNED	_____		
REVIEWED	_____		
APPROVED	_____		
C.L.S.	SCALE: AS SHOWN		
DATE: OCTOBER 2024	SHEET 11 OF 11		
DRAWING NO. --			