

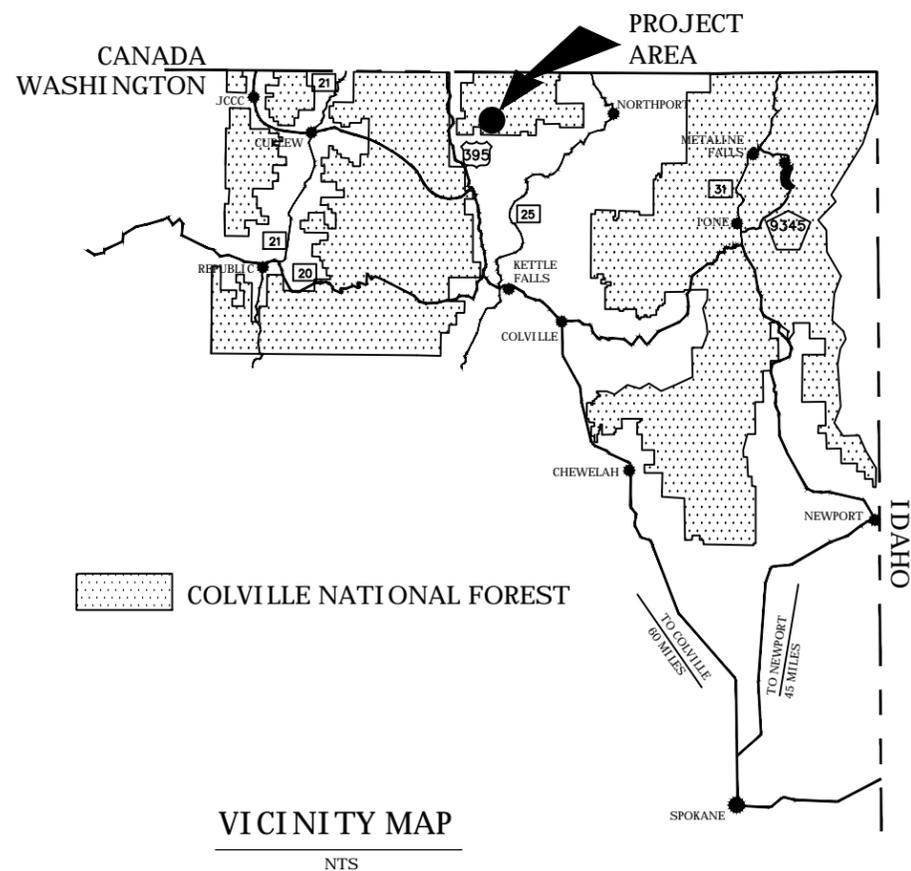


UNITED STATES DEPARTMENT OF AGRICULTURE
 FOREST SERVICE - REGION SIX
 COLVILLE NATIONAL FOREST



DRAWINGS FOR PROPOSED

FISHER CREEK CULVERT REPLACEMENTS



DRAWING INDEX

SHEET	DESCRIPTION
1	TITLE, DRAWING INDEX, AND VICINITY MAP
2	SITE MAP AND TRAFFIC CONTROL PLAN
3	LOWER FISHER CREEK SURVEY CONTROL, DEMO, AND QUANTITIES
4	LOWER FISHER CREEK CULVERT PLAN AND PROFILE
5	LOWER FISHER CREEK ROAD PLAN AND PROFILE
6	LOWER FISHER CREEK DETAILS
7	UPPER FISHER CREEK SURVEY CONTROL, DEMO, AND QUANTITIES
8	UPPER FISHER CREEK CULVERT PLAN AND PROFILE
9	UPPER FISHER CREEK ROAD PLAN AND PROFILE
10	UPPER FISHER CREEK DETAILS
11	SAMPLE DEWATER PLAN

*INCHES/FEET SCALE ONLY VALID FOR DRAWINGS THAT ARE PRINTED WITHOUT SCALING

U.S. DEPARTMENT OF AGRICULTURE
 FOREST SERVICE
 COLVILLE NATIONAL FOREST
 THREE RIVERS RANGER DISTRICT

APPROVED BY: _____
 /s/ Douglas Bladek 05/05/2015
 FOREST ENGINEER Date

 DISTRICT RANGER

DESIGNED LR _____
 DRAWN LR _____
 CHECKED MZ _____

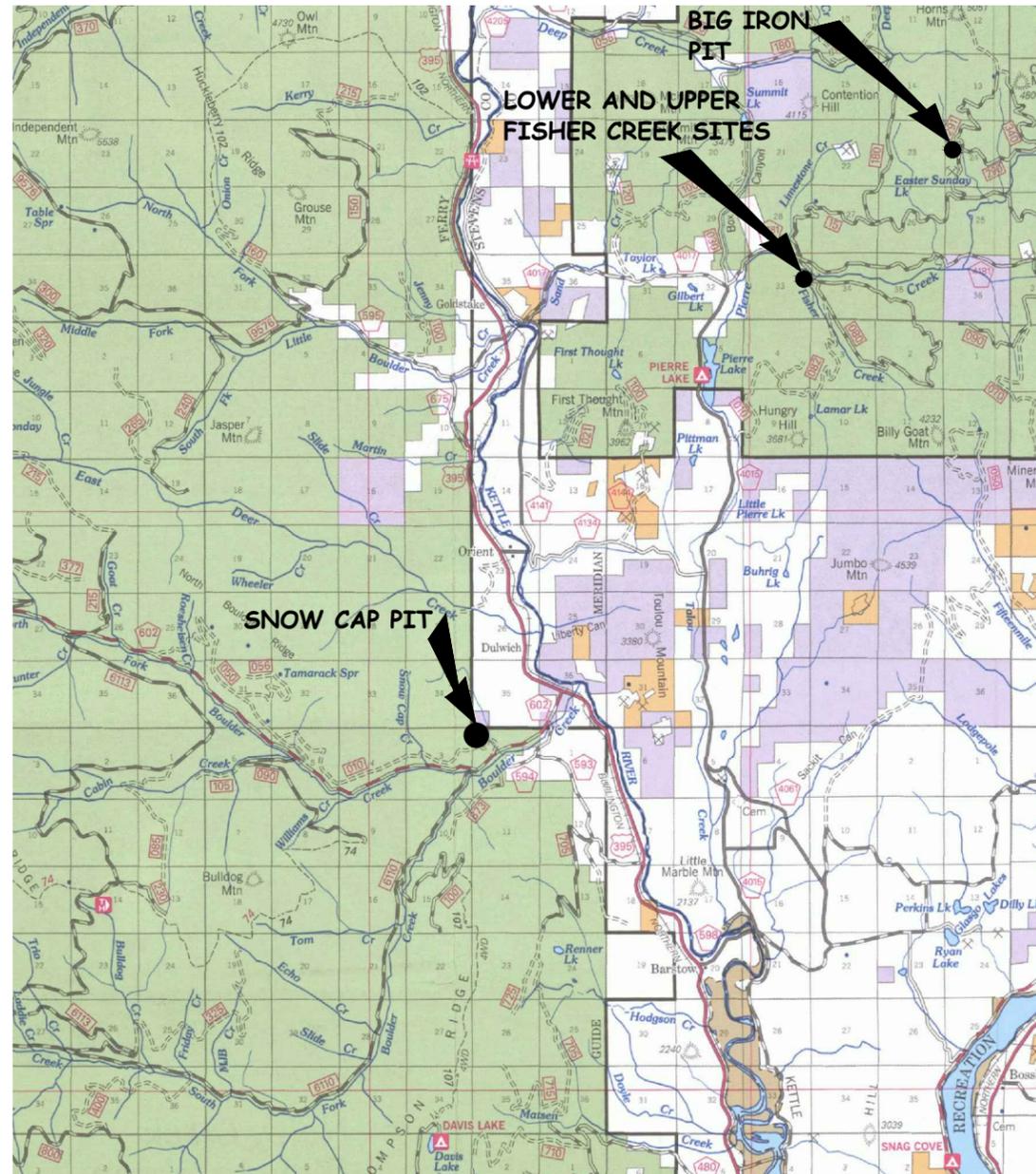
TITLE, DRAWING INDEX AND VICINITY MAP

FISHER CREEK CULVERT REPLACEMENTS

SHEET 1
 OF 11

LOWER FISHER CREEK: FSR 1500080 - MP 0.65

UPPER FISHER CREEK: FSR 1500080 - MP 0.87



SITE MAP

NTS

DESIGN NOTES:

SPECIFICATIONS

CONSTRUCTION: MATERIALS AND CONSTRUCTION OF THESE STRUCTURES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS (FP-03) WITH APPLICABLE FOREST SERVICE SUPPLEMENTAL SPECIFICATIONS (FSSS).

DESIGN LOADS

LIVE LOAD: HS 20

MATERIALS

STEEL STRUCTURAL PLATE ARCH PER FP-03 603 AND FSSS 603. STRUCTURAL PLATES SHALL NOT BE LESS THAN 0.111 INCHES THICK AND SHALL BE ASSEMBLED AND FASTENED TO FOOTINGS PER MANUFACTURER'S RECOMMENDATIONS. FASTENERS AND OTHER HARDWARE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 707 OF THE FP-03 SPECIFICATIONS.

PRE-CAST FOOTINGS PER FP-03 601 AND FSSS 601 AND FP-03 725.11 AND FSSS 725.11 AS DESIGNED BY THE ENGINEERING OF RECORD AND AS APPROVED BY THE CO.

SOIL

NO SOILS INVESTIGATION WAS COMPLETED FOR THE SITES.

CONSTRUCTION

WHEN USING CONSTRUCTION EQUIPMENT WITH AXLE LOADS GREATER THAN 40 KIPS, THE MINIMUM HEIGHT OF FILL OVER THE CULVERT SHALL BE INCREASED DURING THE CONSTRUCTION PHASE TO 4.0 FT

MATERIAL SOURCES

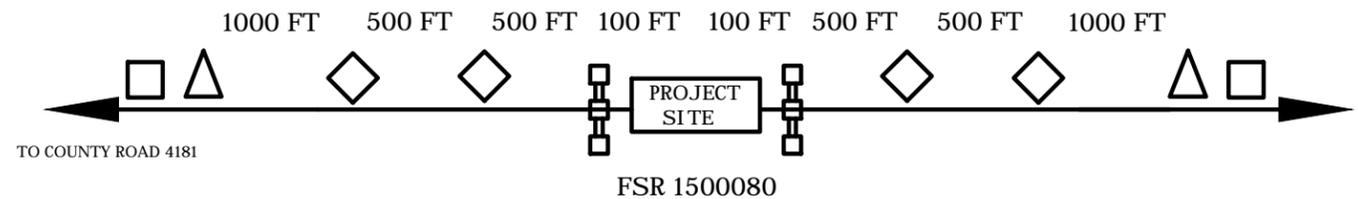
- UNCLASSIFIED BORROW - BIG IRON PIT
- ROADWAY AGGREGATE - SNOW CAP PIT
- RIPRAP - SNOW CAP PIT
- BANK MARGIN ROCK - SNOW CAP PIT
- STREAMBED SIMULATION ROCK (IF NEEDED) - BIG IRON PIT

GENERAL NOTES:

1. THE CONTRACTOR IS DEFINED HEREIN AS THE ENTITY RESPONSIBLE FOR ON SITE INSTALLATION OF ALL ITEMS SPECIFIED AND SHOWN IN THE CONTRACT DOCUMENTS.
2. THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING LOCATION OF STAGING, STOCKPILE, AND ACCESS AREAS WITH THE US FOREST SERVICE PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING WHATEVER MEASURES ARE NECESSARY FOR THE PROTECTION OF ALL EXISTING FACILITIES, INCLUDING THOSE ASSOCIATED WITH TEMPORARY ACCESS OR STAGING ON ADJOINING PROPERTIES, DURING THE COURSE OF THE CONSTRUCTION. ANY REPAIRS, REPLACEMENTS OR RESTORATION MEASURES MADE NECESSARY BY THE CONTRACTOR'S ACTIVITIES WILL BE MADE AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL VERIFY ALL ONSITE MEASUREMENTS OF EXISTING STRUCTURES PRIOR TO SUBMISSION OF SHOP DRAWINGS, COMMENCING WITH ANY STRUCTURAL FABRICATION, AND COMMENCEMENT OF ON-SITE WORK. CONTRACTOR TO NOTIFY CO IMMEDIATELY OF ANY DISCREPANCIES FOUND THAT MAY AFFECT THE INTENDED WORK.
5. THE SAFETY OF ALL ON SITE WORKERS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONFORM TO ALL LAWS AND CODES REGARDING CONSTRUCTION SAFETY.
6. ALL DISCHARGE FROM DEWATERING EFFORTS SHALL BE ROUTED TO THE CREEK AND SHALL MEET ALL STATE AND FEDERAL REGULATIONS.
7. THE CONTRACTOR SHALL PERFORM ALL EXCAVATION AND BACKFILL WORK TO THE LINES, DIMENSIONS AND ELEVATIONS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH THE EXISTING SOIL CONDITIONS AT THE SITE BY PERSONAL EXAMINATION OF THE SITE PRIOR TO COMMENCEMENT.
8. ALL INSTREAM WORK SHALL BE COMPLETED BETWEEN JUNE 16 AND SEPTEMBER 30.

LEGEND

- "TRUCKS AHEAD" 36"X36"
- ◇ "ROAD CLOSED AHEAD" 36"X36"
- △ "CONSTRUCTION AHEAD" 36"X36"
- ⊠ ROAD CLOSURE BARRICADE, TYPE III WITH ROAD CLOSED SIGN 30" X 18"



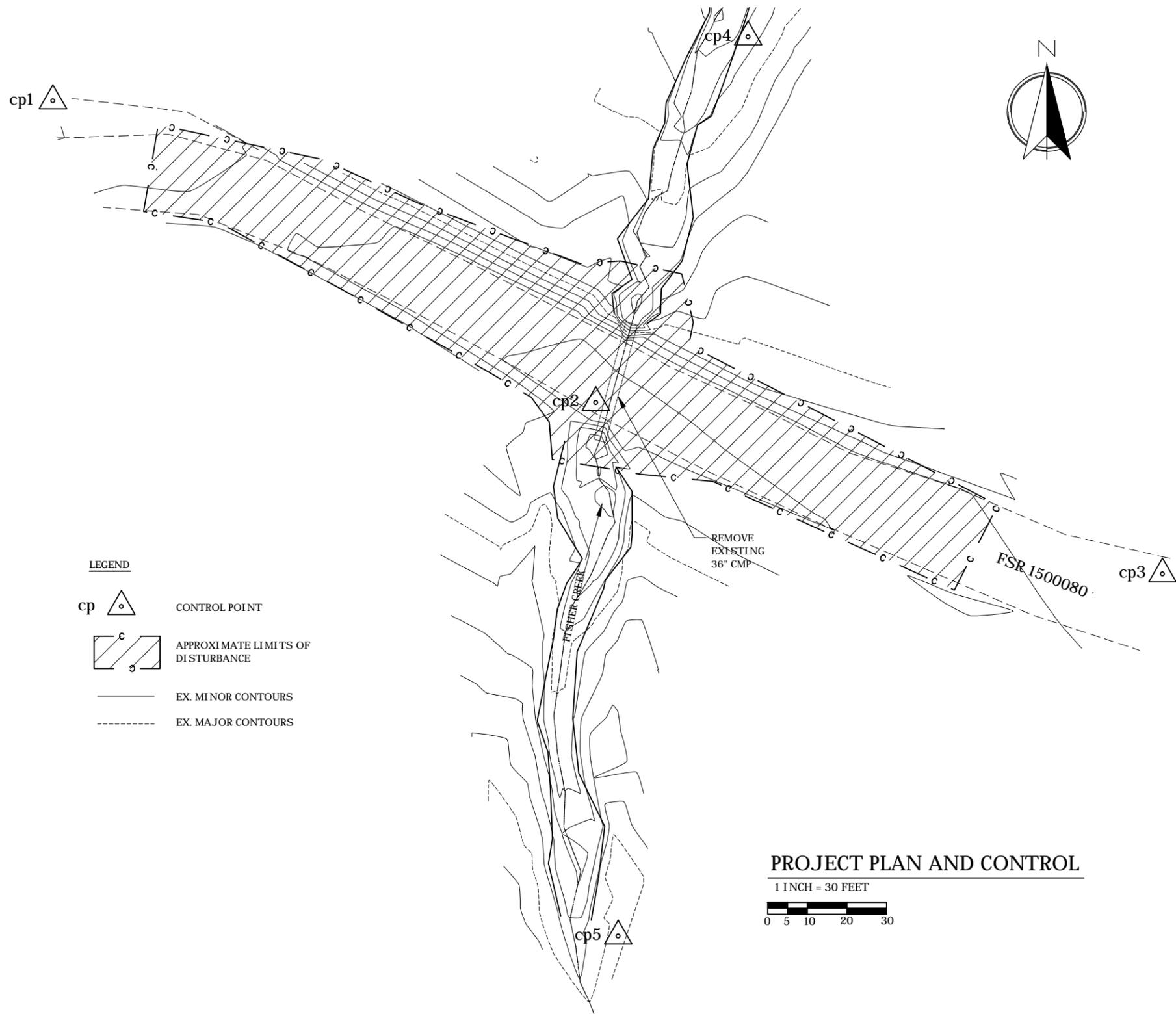
CONCEPTUAL TRAFFIC CONTROL DIAGRAM

NTS

SIGNAGE NOTES:

1. SIGN DISTANCES AND LOCATIONS MAY BE ADJUSTED BASED ON ROAD CONDITIONS.
2. BARRICADES SHALL BE IN A LOCATION WHERE VEHICLES CAN TURN AROUND.
3. SIGNAGE MUST MEET MUTCD STANDARDS.

SITE MAP AND TRAFFIC CONTROL PLAN	SHEET 2
FISHER CREEK CULVERT REPLACEMENTS	OF 11



- LEGEND**
- cp CONTROL POINT
 - APPROXIMATE LIMITS OF DISTURBANCE
 - EX. MINOR CONTOURS
 - EX. MAJOR CONTOURS

PROJECT PLAN AND CONTROL

1 INCH = 30 FEET

Point Table			
Northing	Easting	Elevation	Description
5075.97	9862.95	998.89	cp1
5000.00	10000.00	999.63	cp2
4956.83	10143.01	997.80	cp3
5092.05	10038.42	988.89	cp4
4865.64	10005.64	1006.29	cp5

- SURVEY NOTES**
- EXISTING SURVEY INFORMATION IS BASED ON INFORMATION DATED SEPTEMBER 2014. HORIZONTAL AND VERTICAL ELEMENTS CORRESPOND TO ARBITRARY LOCAL DATUM WITH AZIMUTH BEARING SET AT TRUE NORTH.
 - ELEVATIONS ARE ASSUMED. APPROXIMATE TRUE ELEVATION OF SITE IS ELEVATION 2400 AS INTERPOLATED FROM THE "CHURCHILL" USGS QUAD MAP.
 - CONTROL POINTS ARE COMPOSED OF CONSTRUCTION STAKES 0.3 INCHES THICK X 1.5 INCHES WIDE X 24 INCHES LONG WITH THE TOP 2 INCHES PAINTED ORANGE MARKING LOCATION OF METAL SPIKE.

Estimate of Quantities

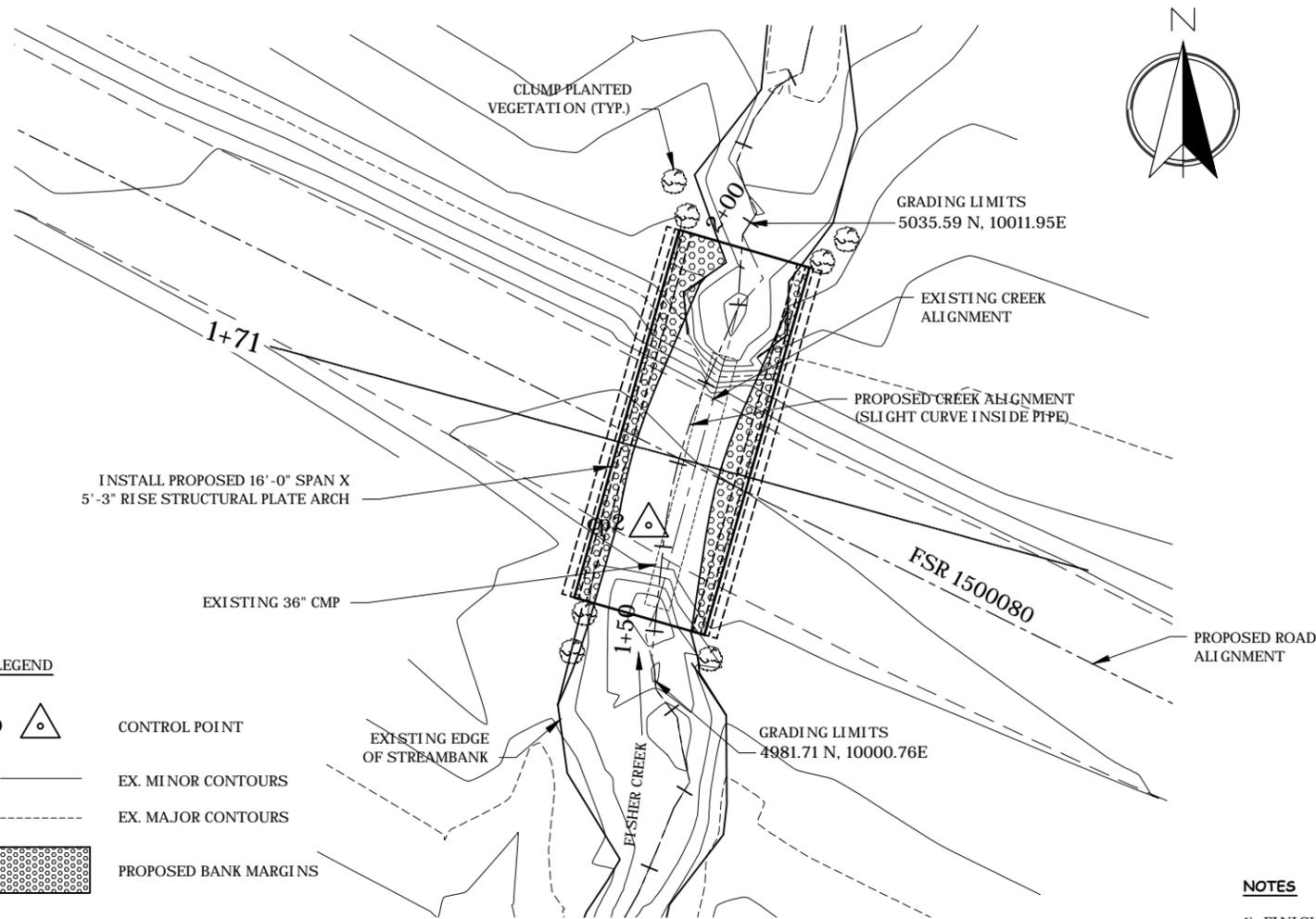
Item No.	Description	Pay Unit	Estimated Quantity	Remarks
15101	Mobilization	Lump Sum	1	
15211	Construction survey and staking	Lump Sum	1	
15401	Contractor testing	Lump Sum	1	Compaction testing
15713	Soil erosion and pollution control	Lump Sum	1	Includes dewatering
20102	Clearing and grubbing	Lump Sum	1	
20305	Removal of structures and obstructions	Lump Sum	1	
20401	Roadway excavation, <i>Compaction method varies (see Remarks), Finishing method A</i>	Cubic Yard	220	Assumes all material excavated is suitable for reuse for structural backfill and embankment. See FP-03 208.11 for compaction requirements inside the structural backfill limits; use compaction method B for road embankment
20404	Unclassified Borrow, <i>Compaction method varies (see Remarks for Item 20401)</i>	Cubic Yard	250	Big Iron Pit
20702	Geocell, 6" depth	Lump Sum	1	
25104B	Keyed riprap, <i>Class 3</i>	Cubic Yard	40	Gov't source - Snow Cap Pit
32232	Haul and place stockpiled aggregate, <i>Compaction Method B</i>	Cubic Yard	72	Gov't source - Snow Cap Pit
60101	Concrete <i>Method A</i>	Cubic Yard	20	Precast
60304	16'-0" span, 5'-3" rise structural plate arch, 0.111" thick, 6"x2" corrugations	LF	45	
62201	Equipment Rental, Hydraulic Excavator (with thumb)	Hour	4	Use for shaping streambed
64801	Placed Streambed Bank Margin Rock	Cubic Yard	10	Gov't source - Snow Cap Pit
64808	Placed Streambed Simulation Rock, <i>Bed Class 9</i>	CY	Up to 85 CY	For streambed; Gov't source - Big Iron Pit

CONSTRUCTION NOTES

1) PROVIDE CLEARING AND GRUBBING OF DEBRIS AND VEGETATION PRESENT WITHIN AREAS AS NECESSARY TO DO THE PROJECT. CLEARED DEBRIS SHALL BE SCATTERED ALONG FILL SLOPES IN AREAS LACKING RIPRAP TO PROVIDE SLOPE STABILIZATION AND PLACED IN AREAS AS DIRECTED BY CO FOR HYDROLOGICAL STABILIZATION.

2) THE CONTRACTOR SHALL SUBMIT AN EROSION CONTROL PLAN INCLUDING DEWATERING MEASURES TO THE CO PER FSSS 157. REFER TO SHEET 11 FOR A SAMPLE DEWATERING PLAN. MOST FISH WILL BE REMOVED FROM SITE BEFORE CONSTRUCTION BY THE GOVERNMENT. IF ANY ADDITIONAL FISH ARE ENCOUNTERED, CONTRACTOR SHALL CAPTURE FISH AND PLACE THEM SAFELY DOWNSTREAM OF THE PROJECT.

LOWER FISHER CREEK SURVEY CONTROL AND DEMO FISHER CREEK CULVERT REPLACEMENTS	SHEET 3
	OF 11



- LEGEND**
- cp CONTROL POINT
 - EX. MINOR CONTOURS
 - EX. MAJOR CONTOURS
 - PROPOSED BANK MARGINS

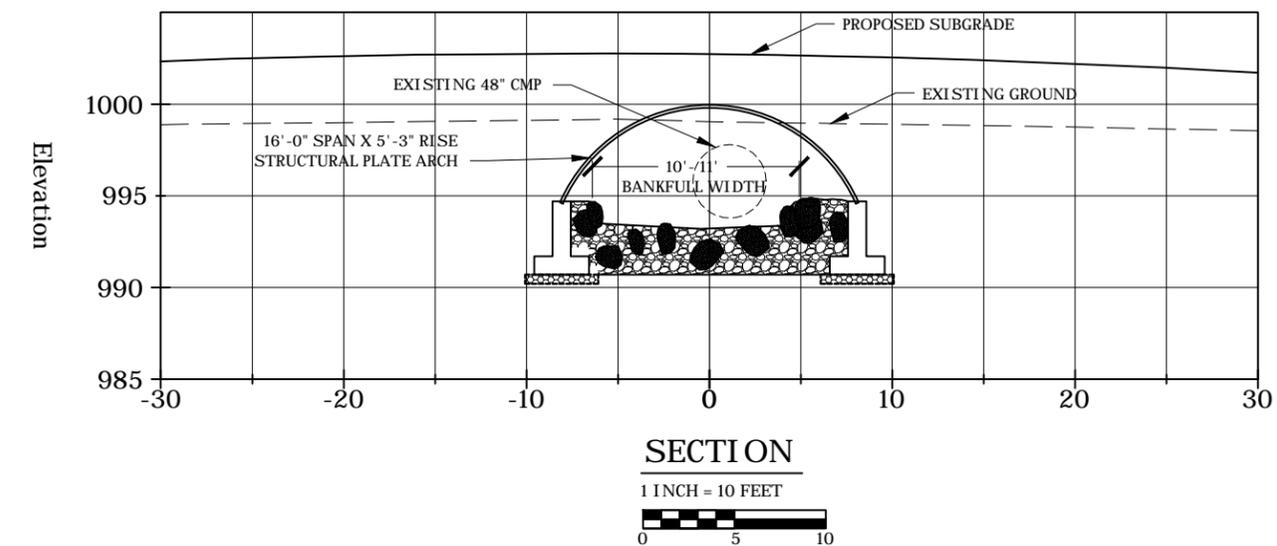
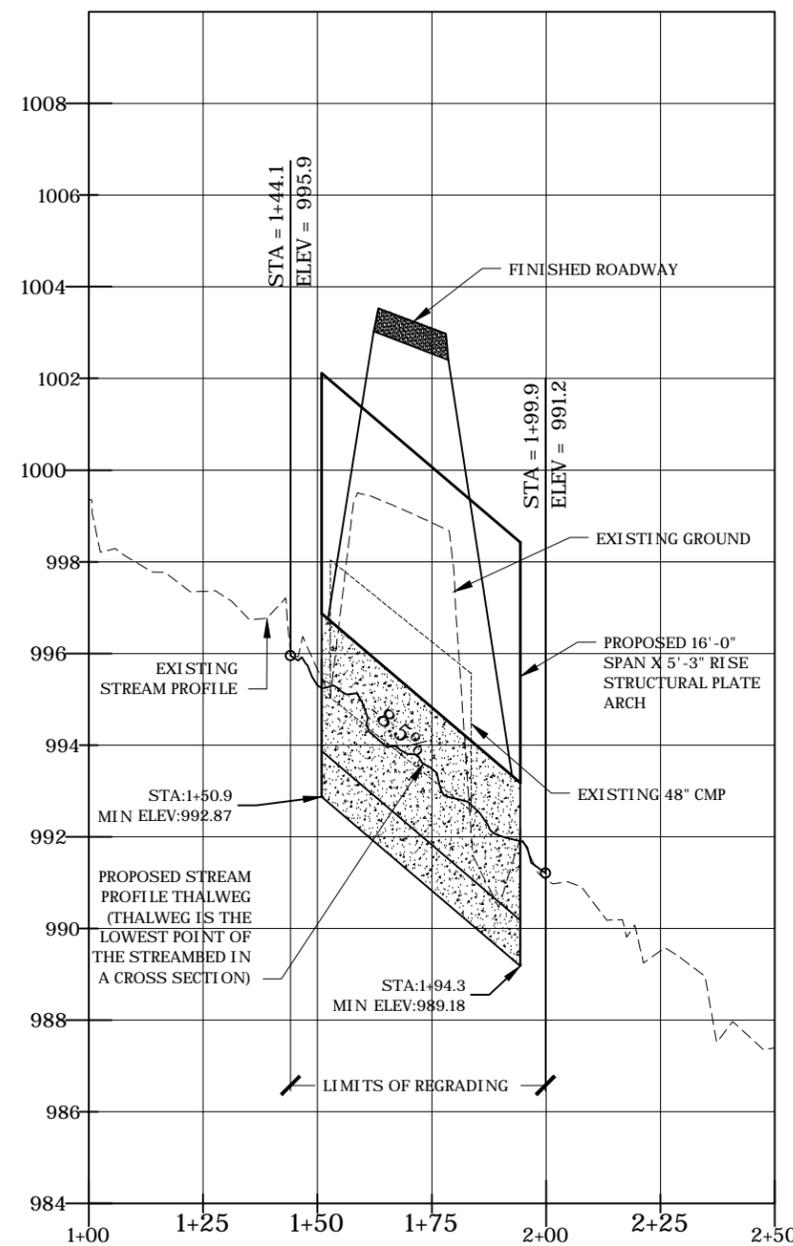
CULVERT COORDINATES @ CENTERLINE

INLET	4989.31 N	9998.90 E
OUTLET	5032.57 N	10011.29 E



NOTES

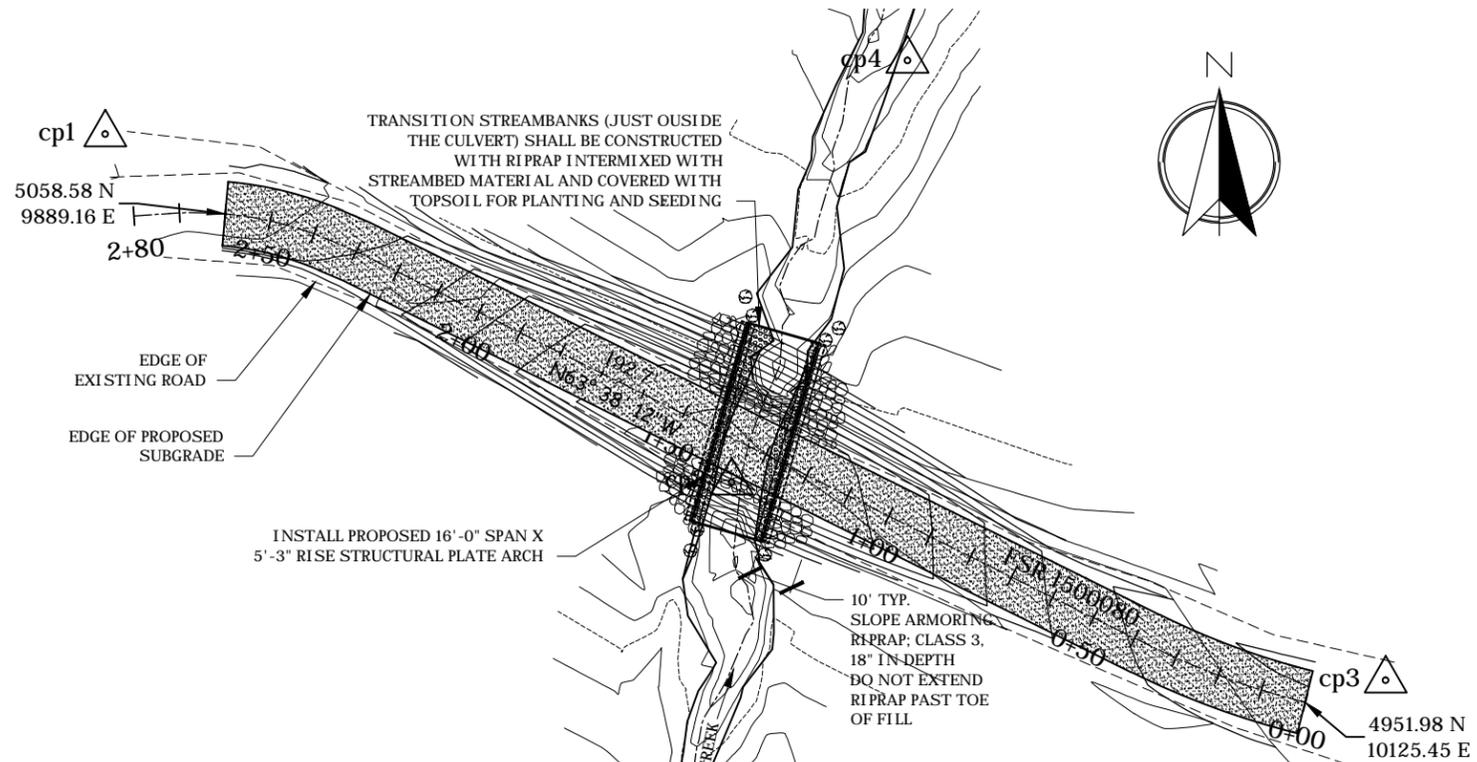
- 1) FINISHED CHANNEL DIMENSIONS TO TRANSITION SMOOTHLY TO UPSTREAM AND DOWNSTREAM CHANNEL.
- 2) CONTRACTOR SHALL SHAPE STREAMBED AS DIRECTED BY CO.
- 3) CLUMP PLANTED VEGETATION CONSISTS OF TRANSPLANTING 4 TO 6 SHRUBS OR OTHER PLANTS WITH MACHINERY. LOCATION OF CLUMP PLANTED VEGETATION SHOW IS CONCEPTUAL AND MAY BE ADJUSTED IN THE FIELD PER THE CO.



LOWER FISHER CREEK
CULVERT PLAN AND PROFILE

FISHER CREEK CULVERT REPLACEMENTS

SHEET 4
OF 11

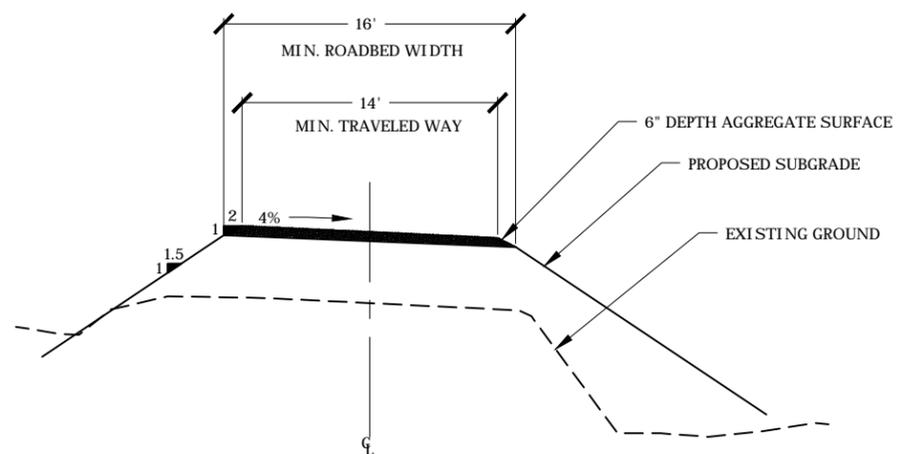


LEGEND

- cp CONTROL POINT
- EX. MINOR CONTOURS
- EX. MAJOR CONTOURS
- PROPOSED CONTOUR

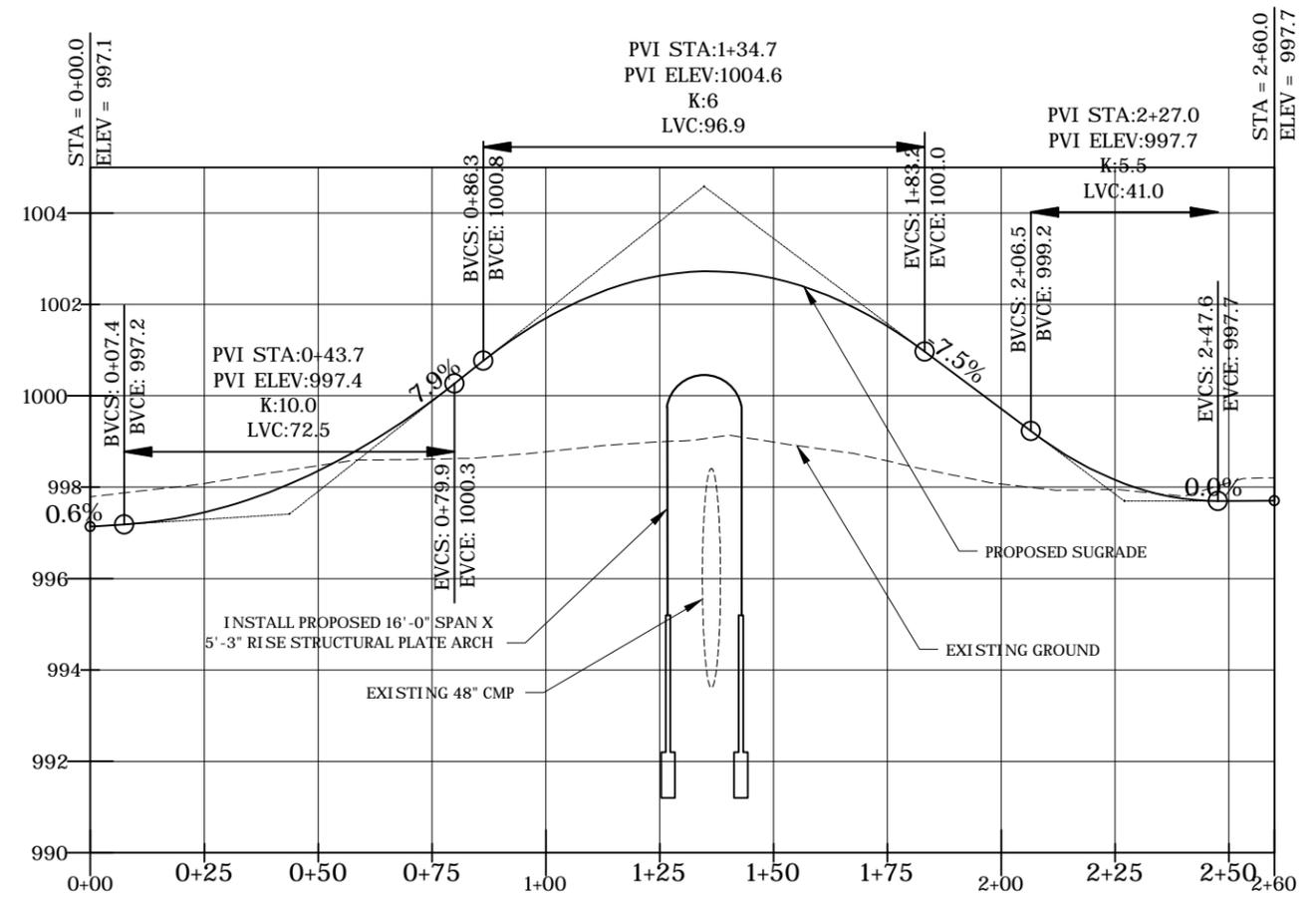
PLAN

1 INCH = 30 FEET



ROAD SECTION

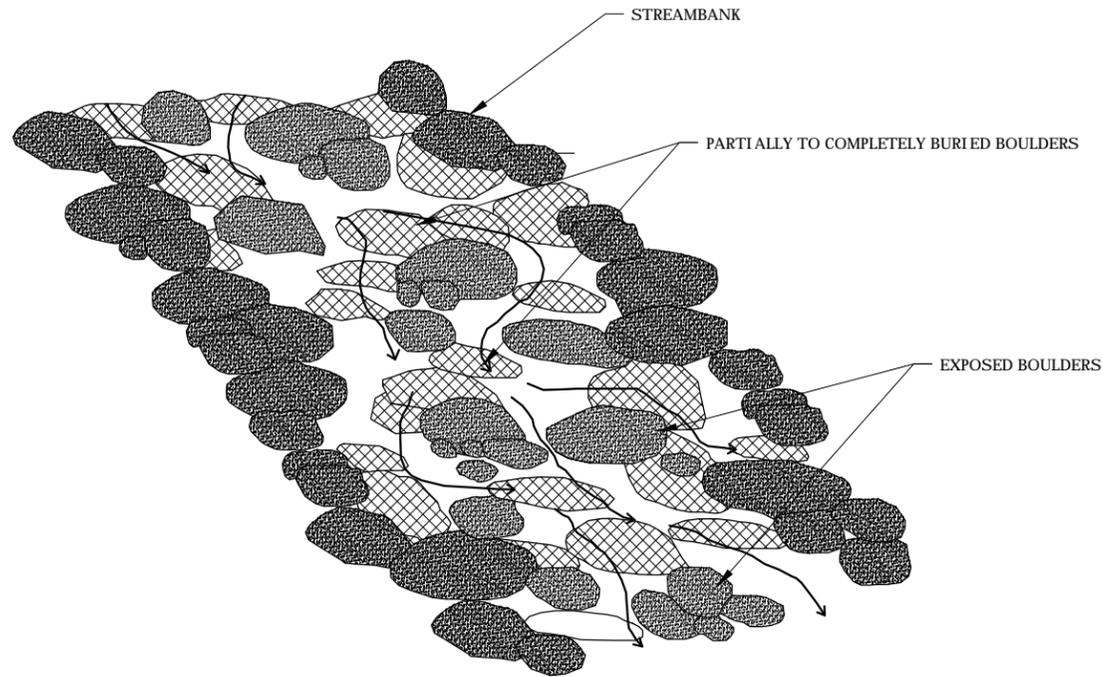
1 INCH = 10 FEET



PROFILE

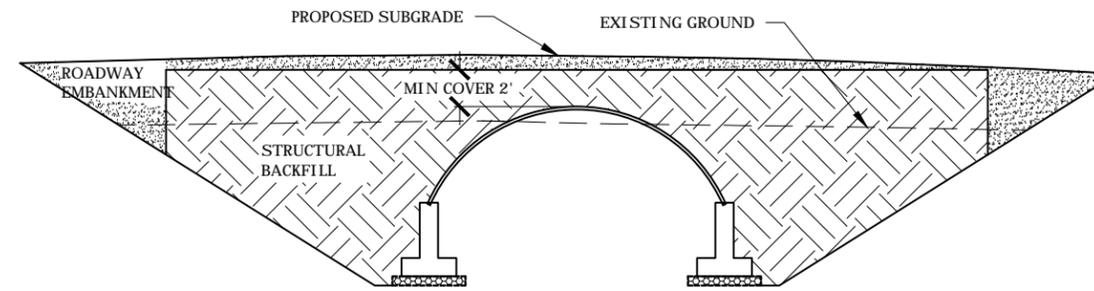
1 INCH = 40 FEET

LOWER FISHER CREEK ROAD PLAN AND PROFILE FISHER CREEK CULVERT REPLACEMENTS	SHEET
	5
	OF
	11



STREAMBED CHANNEL STRUCTURE PLAN VIEW

NTS



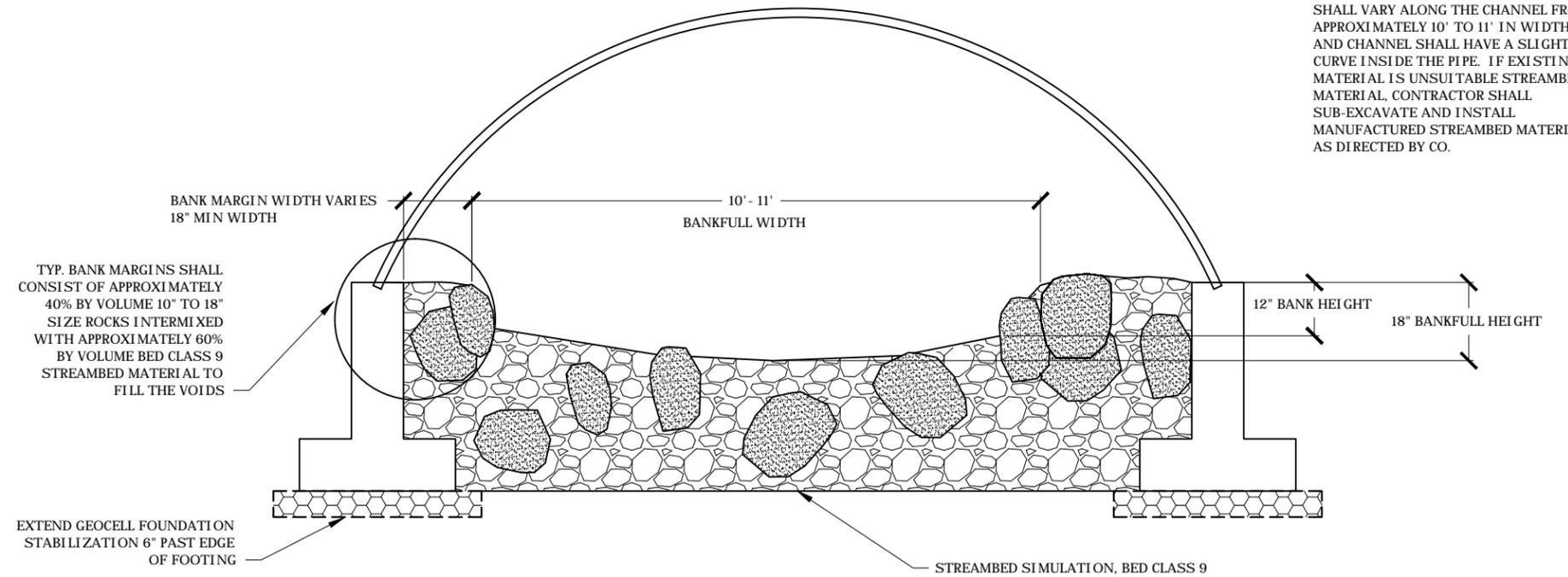
TRENCH SECTION

NTS

NOTES:

1) LIMITS OF EXCAVATION ARE SHOWN FOR INFORMATION PURPOSES ONLY. SLOPE OR SHORE AS REQUIRED FOR SAFETY. ALL EXCAVATION SHALL COMPLY WITH OSHA STANDARDS. CONTRACTOR SHALL SUBMIT EXCAVATION PLAN PRIOR TO CONSTRUCTION.

2) THE ESTIMATED VOLUME OF EXCAVATION IS BASED ON THE EXCAVATION LIMITS SHOWN IN TRENCH SECTION DETAIL. THIS QUANTITY DOES NOT INCLUDE ANY STREAMBED SIMULATION OR EARTHWORK NECESSARY FOR STREAM CHANNEL RE-GRADING. ALL BACKFILL IN AND AROUND THE NEW CULVERT IS CONSIDERED STRUCTURAL BACKFILL AND SHALL BE COMPACTED IN ACCORDANCE WITH FP-03 and FSSS 208.11.



STREAMBED CHANNEL DETAILS

NTS

NOTE:

STREAM CHANNEL BED TO BE INSTALLED NON-UNIFORMLY. BANKFULL WIDTH SHALL VARY ALONG THE CHANNEL FROM APPROXIMATELY 10' TO 11' IN WIDTH AND CHANNEL SHALL HAVE A SLIGHT CURVE INSIDE THE PIPE. IF EXISTING MATERIAL IS UNSUITABLE STREAMBED MATERIAL, CONTRACTOR SHALL SUB-EXCAVATE AND INSTALL MANUFACTURED STREAMBED MATERIAL AS DIRECTED BY CO.

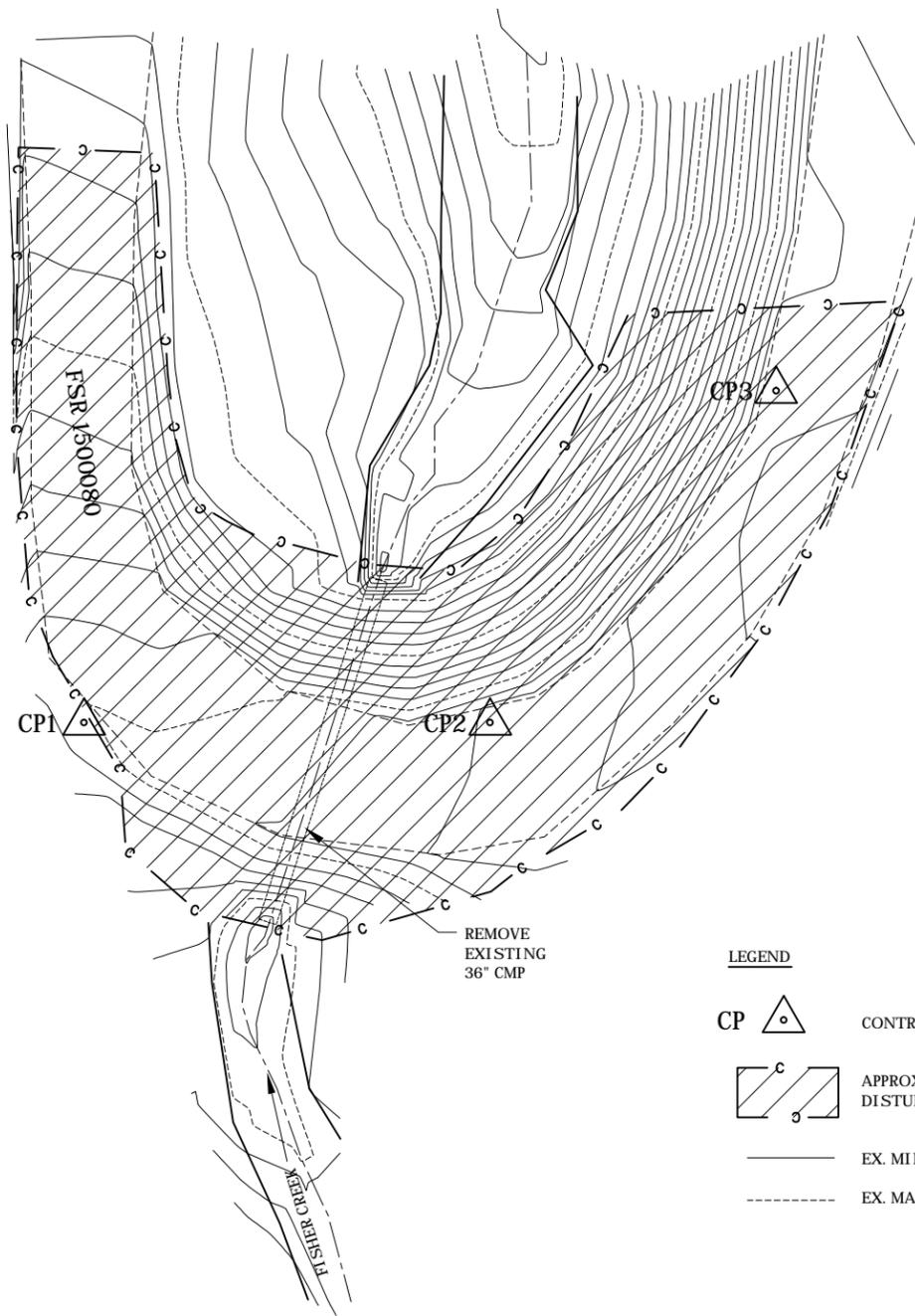
NOTES:

- 1) FOOTINGS SHALL BE PRECAST UNITS.
- 2) MINIMUM DEPTH OF FOOTING SHALL BE 4'-0".
- 2) FOOTING DIMENSIONS AND REINFORCEMENT QUANTITY SHALL BE PER CULVERT ENGINEER OF RECORD.
- 3) FOOTING SEGMENTS SHALL BE SPLICED TOGETHER PER FOOTING MANUFACTURER. CONNECTION SHALL SATISFACTORILY KEEP THE FOOTINGS PLUMB AND LEVEL AND TIGHTLY CONNECTED TO ADJACENT FOOTING SEGMENTS WHEN ACTED UPON BY AN HS 20 LOAD.
- 4) CULVERT SHALL BE ATTACHED TO FOOTING PER MANUFACTURER.

**LOWER FISHER CREEK
DETAILS**

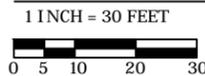
FISHER CREEK CULVERT REPLACEMENTS

SHEET	6
OF	11



- LEGEND**
- CP CONTROL POINT
 - APPROXIMATE LIMITS OF DISTURBANCE
 - EX. MINOR CONTOURS
 - - - EX. MAJOR CONTOURS

PROJECT PLAN AND CONTROL



CONSTRUCTION NOTES

- 1) PROVIDE CLEARING AND GRUBBING OF DEBRIS AND VEGETATION PRESENT WITHIN AREAS AS NECESSARY TO DO THE PROJECT. CLEARED DEBRIS SHALL BE SCATTERED ALONG FILL SLOPES IN AREAS LACKING RIPRAP TO PROVIDE SLOPE STABILIZATION AND PLACED IN AREAS AS DIRECTED BY CO FOR HYDROLOGICAL STABILIZATION.
- 2) THE CONTRACTOR SHALL SUBMIT AN EROSION CONTROL PLAN INCLUDING DEWATERING MEASURES TO THE CO PER FSSS 157. REFER TO SHEET 11 FOR A SAMPLE DEWATERING PLAN. MOST FISH WILL BE REMOVED FROM SITE BEFORE CONSTRUCTION BY THE GOVERNMENT. IF ANY ADDITIONAL FISH ARE ENCOUNTERED, CONTRACTOR SHALL CAPTURE FISH AND PLACE THEM SAFELY DOWNSTREAM OF THE PROJECT.

SURVEY NOTES

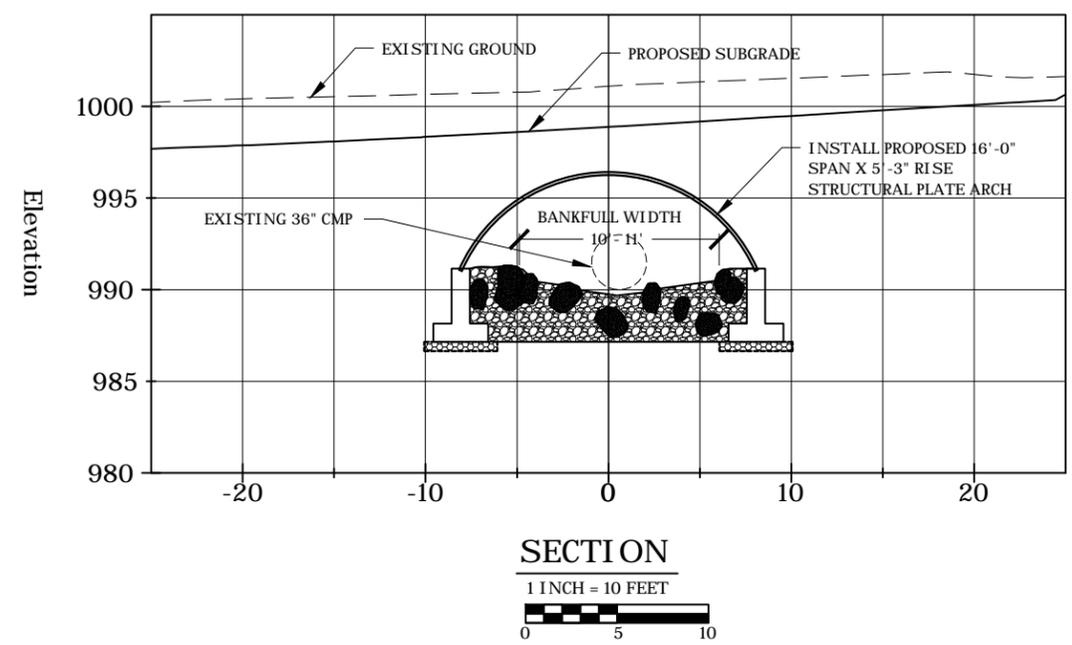
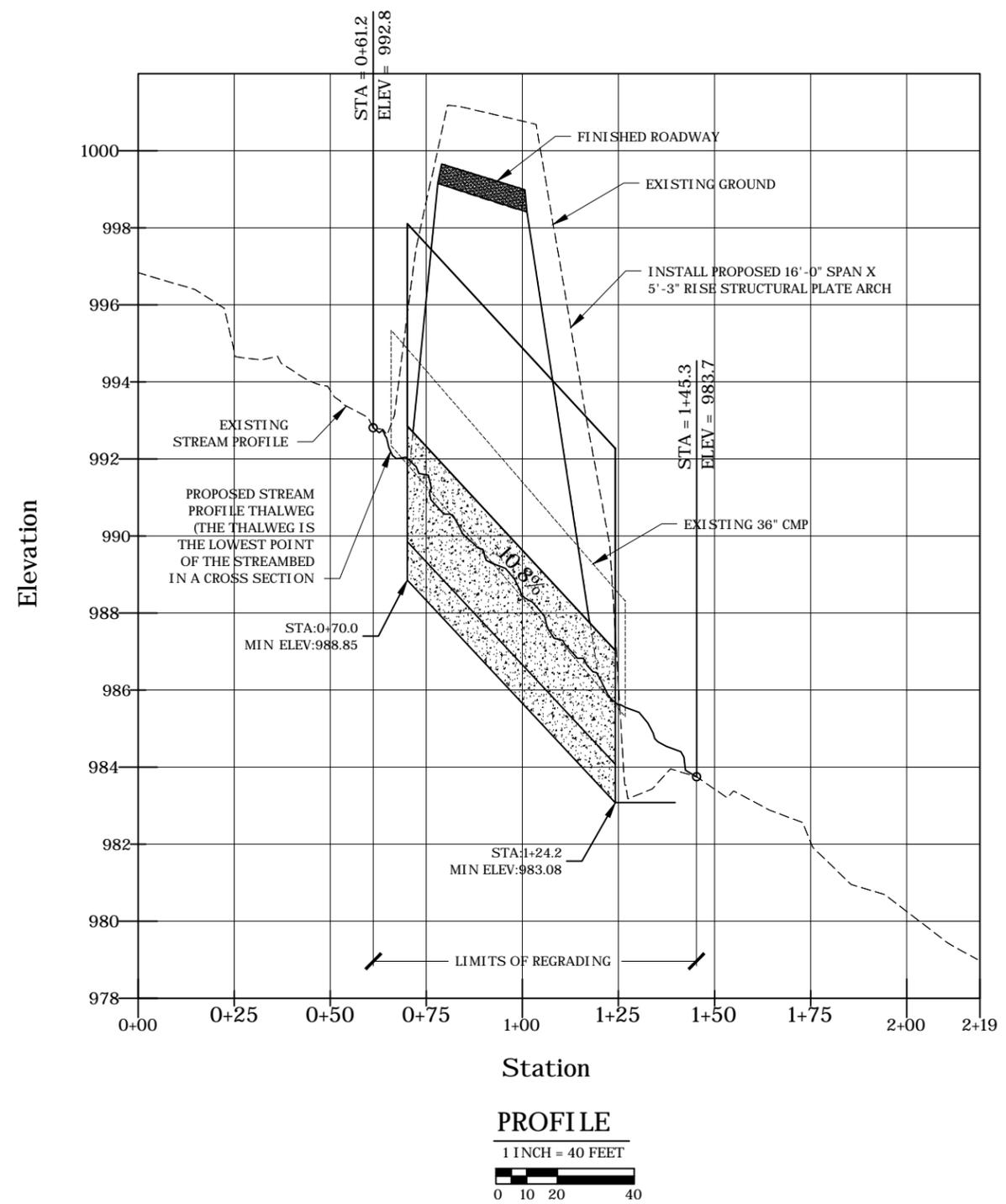
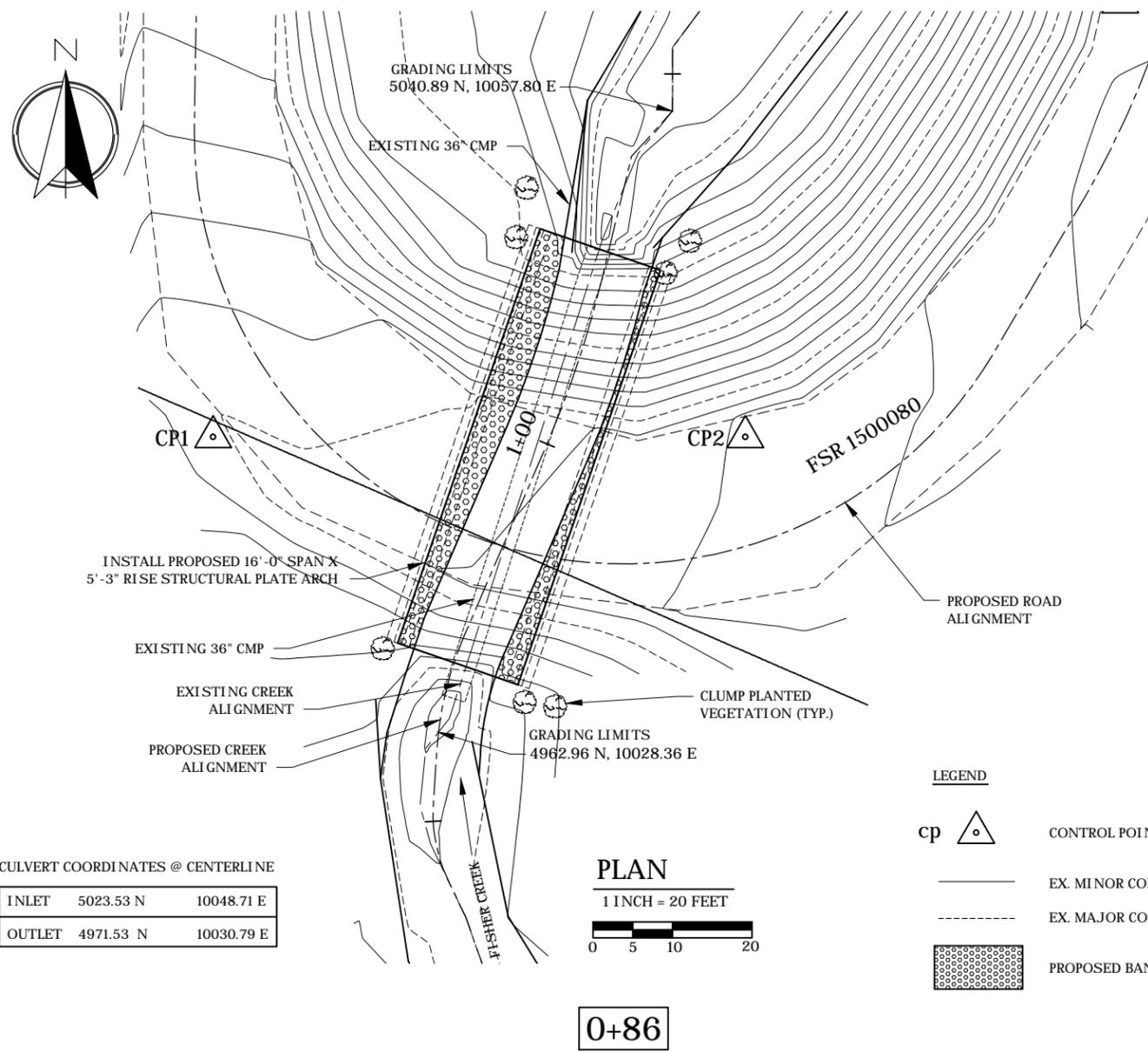
1. EXISTING SURVEY INFORMATION IS BASED ON INFORMATION DATED SEPTEMBER 2014. HORIZONTAL AND VERTICAL ELEMENTS CORRESPOND TO ARBITRARY LOCAL DATUM WITH AZIMUTH BEARING SET AT TRUE NORTH.
2. ELEVATIONS ARE ASSUMED. APPROXIMATE TRUE ELEVATION OF SITE IS ELEVATION 2460 AS INTERPOLATED FROM THE "CHURCHILL" USGS QUAD MAP.
3. CONTROL POINTS ARE COMPOSED OF CONSTRUCTION STAKES 0.3 INCHES THICK X 1.5 INCHES WIDE X 24 INCHES LONG WITH THE TOP 2 INCHES PAINTED ORANGE MARKING LOCATION OF METAL SPIKE.

Northing	Easting	Elevation	Description
5000.00	10000.00	1000.00	CP1
5000.00	10066.98	1002.13	CP2
5054.56	10114.16	1003.51	CP3
4870.50	10059.37	1002.14	CP4

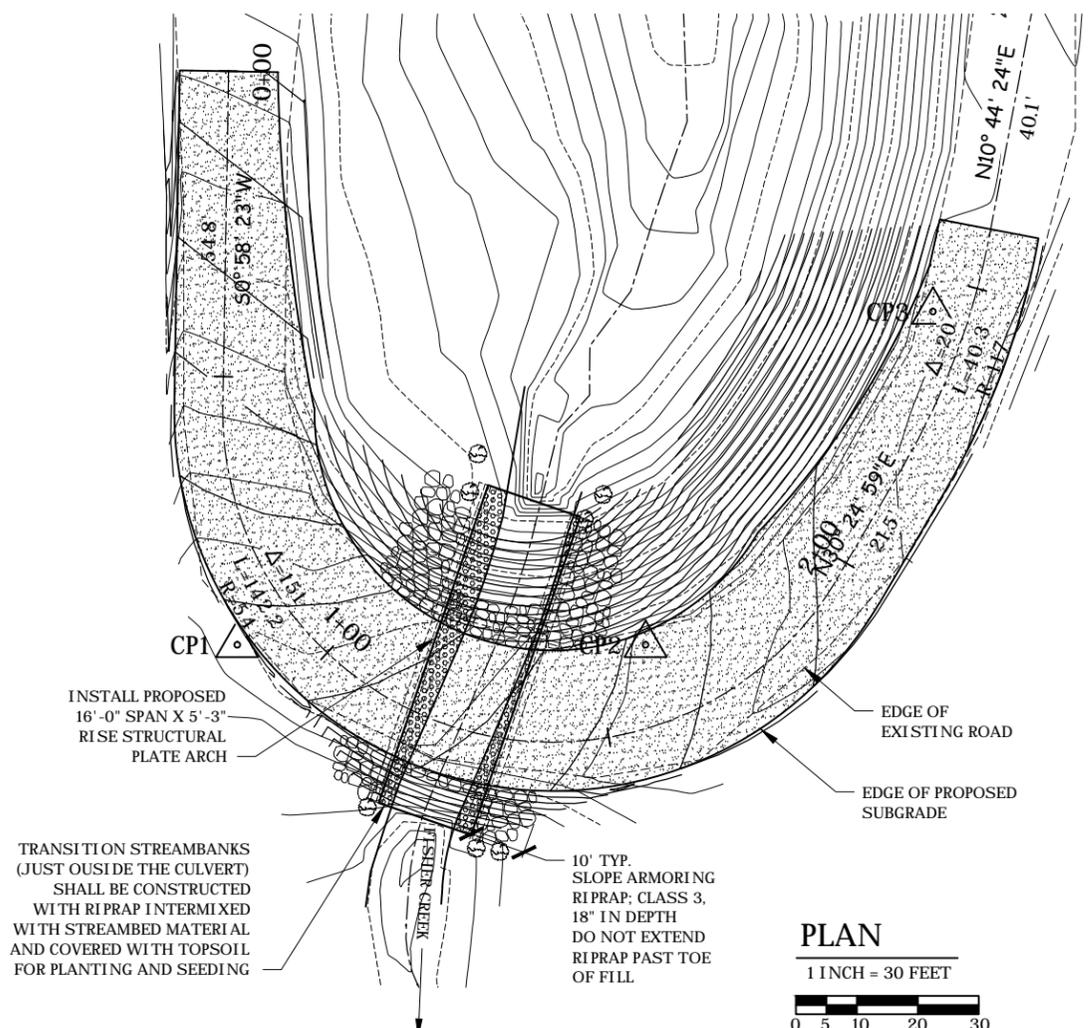
Estimate of Quantities

Item No.	Description	Pay Unit	Estimated Quantity	Remarks
15101	Mobilization	Lump Sum	1	
15211	Construction survey and staking	Lump Sum	1	
15401	Contractor testing	Lump Sum	1	Compaction testing
15713	Soil erosion and pollution control	Lump Sum	1	Includes dewatering
20102	Clearing and grubbing	Lump Sum	1	
20305	Removal of structures and obstructions	Lump Sum	1	
20401	Roadway excavation, <i>Compaction method varies (see Remarks), Finishing method A</i>	Cubic Yard	740	Assumes all material excavated is suitable for reuse for structural backfill and embankment. See FP-03 208.11 for compaction requirements inside the structural backfill limits; use compaction method B for road embankment
20702	Geocell, 6" depth	Lump Sum	1	
25104B	Keyed riprap, <i>Class 3</i>	Cubic Yard	40	Gov't source - Snow Cap Pit
32232	Haul and place stockpiled aggregate, <i>Compaction Method B</i>	Cubic Yard	100	Gov't source - Snow Cap Pit
60101	Concrete <i>Method A</i>	Cubic Yard	25	Precast
60304	16'-0" span, 5'-3" rise structural plate arch, 0.111" thick, 6"x2" corrugations	LF	55	
62201	Equipment Rental, Hydraulic Excavator (with thumb)	Hour	4	Use for shaping streambed
64801	Placed Streambed Bank Margin Rock	Cubic Yard	12	Gov't source - Snow Cap Pit
64808	Placed Streambed Simulation Rock, <i>Bed Class 9</i>	CY	Up to 110 CY	For streambed; Gov't source - Big Iron Pit

UPPER FISHER CREEK SURVEY CONTROL, DEMO, AND QUANTITIES	SHEET 7
FISHER CREEK CULVERT REPLACEMENTS	OF 11



- NOTES**
- 1) FINISHED CHANNEL DIMENSIONS TO TRANSITION SMOOTHLY TO UPSTREAM AND DOWNSTREAM CHANNEL.
 - 2) CONTRACTOR SHALL SHAPE STREAMBED AS DIRECTED BY CO.
 - 3) CLUMP PLANTED VEGETATION CONSISTS OF TRANSPLANTING 4 TO 6 SHRUBS OR OTHER PLANTS WITH MACHINERY. LOCATION OF CLUMP PLANTED VEGETATION SHOW IS CONCEPTUAL AND MAY BE ADJUSTED IN THE FIELD PER THE CO.



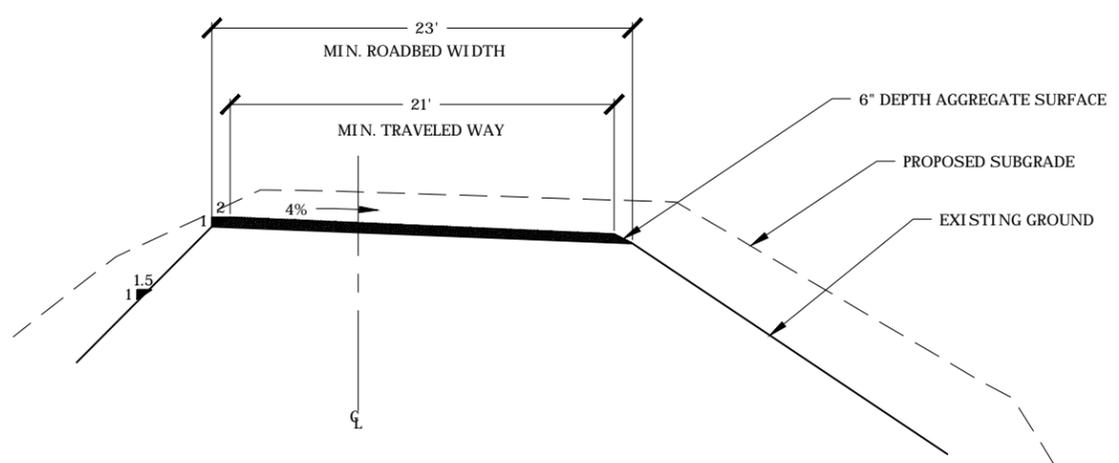
INSTALL PROPOSED
16'-0" SPAN X 5'-3"
RISE STRUCTURAL
PLATE ARCH

TRANSITION STREAMBANKS
(JUST OUTSIDE THE CULVERT)
SHALL BE CONSTRUCTED
WITH RIPRAP INTERMIXED
WITH STREAMBED MATERIAL
AND COVERED WITH TOPSOIL
FOR PLANTING AND SEEDING

10' TYP.
SLOPE ARMORING
RIPRAP, CLASS 3,
18" IN DEPTH
DO NOT EXTEND
RIPRAP PAST TOE
OF FILL

PLAN
1 INCH = 30 FEET

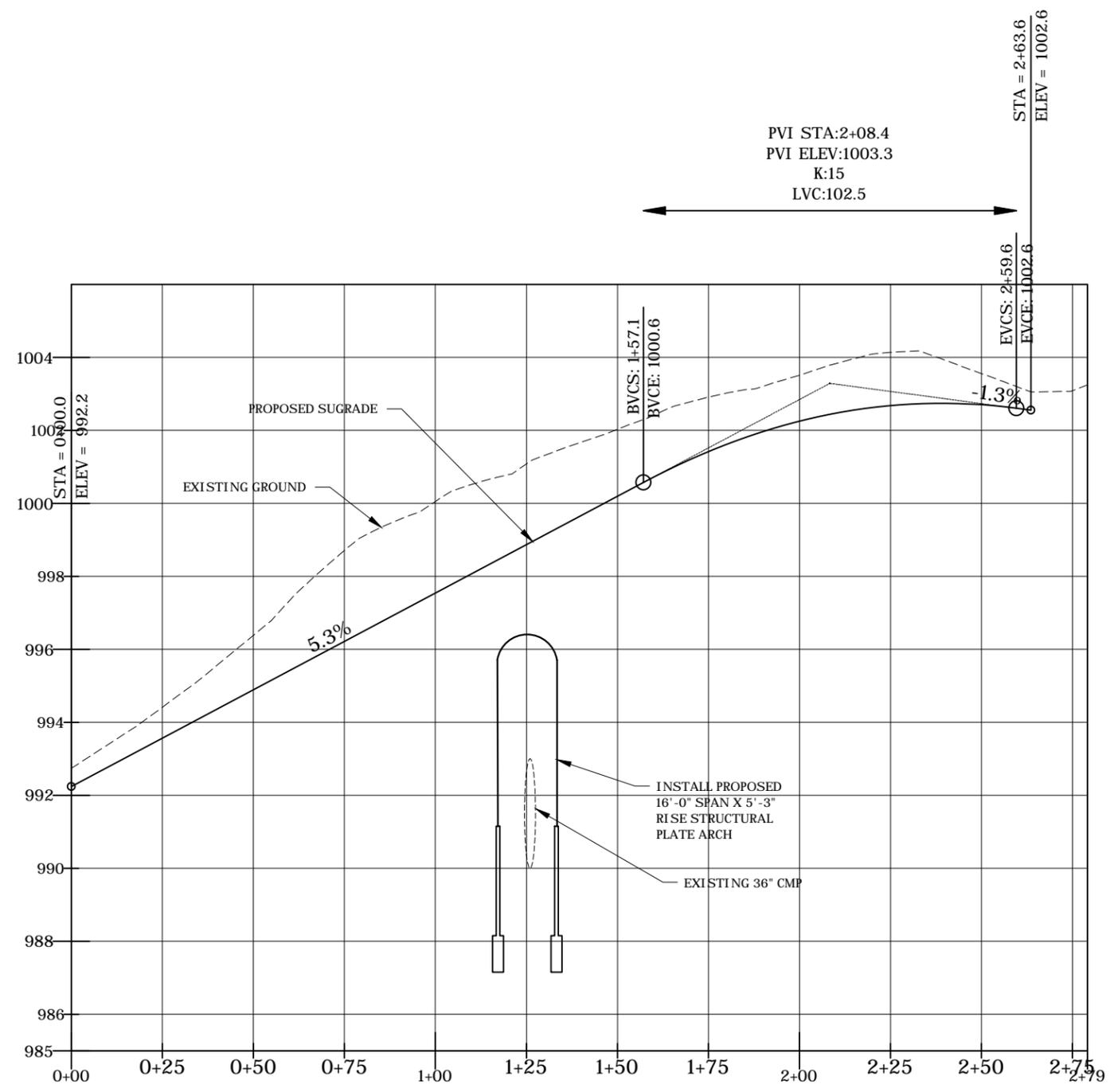
- LEGEND**
- CP CONTROL POINT
 - EX. MINOR CONTOURS
 - EX. MAJOR CONTOURS
 - PROPOSED CONTOUR



ROAD SECTION THROUGH CURVE
1 INCH = 10 FEET

ROADWAY TOP WIDTH TABLE

STATION	TOP WIDTH
0+00 TO 0+54.8	TRANSITION FROM 14' TO 21'
0+54.8 TO 0+97.0	21'
0+97.0 TO 2+60.0	TRANSITION FROM 21' TO 14'



PROFILE
1 INCH = 40 FEET

**UPPER FISHER CREEK
ROAD PLAN AND PROFILE**

FISHER CREEK CULVERT REPLACEMENTS

SHEET 9

OF 11

PVI STA: 2+08.4
PVI ELEV: 1003.3
K: 15
LVC: 102.5

STA = 2+63.6
ELEV = 1002.6

EVCS: 1+57.1
BVCE: 1000.6

EVCS: 2+59.6
EVCE: 1002.6

STA = 0+00.0
ELEV = 992.2

EVCS: 1+57.1
BVCE: 1000.6

EVCS: 2+59.6
EVCE: 1002.6

STA = 2+63.6
ELEV = 1002.6

EVCS: 1+57.1
BVCE: 1000.6

EVCS: 2+59.6
EVCE: 1002.6

STA = 0+00.0
ELEV = 992.2

EVCS: 1+57.1
BVCE: 1000.6

EVCS: 2+59.6
EVCE: 1002.6

STA = 2+63.6
ELEV = 1002.6

EVCS: 1+57.1
BVCE: 1000.6

EVCS: 2+59.6
EVCE: 1002.6

STA = 0+00.0
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EVCS: 1+57.1
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EVCS: 2+59.6
EVCE: 1002.6

STA = 2+63.6
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EVCS: 1+57.1
BVCE: 1000.6

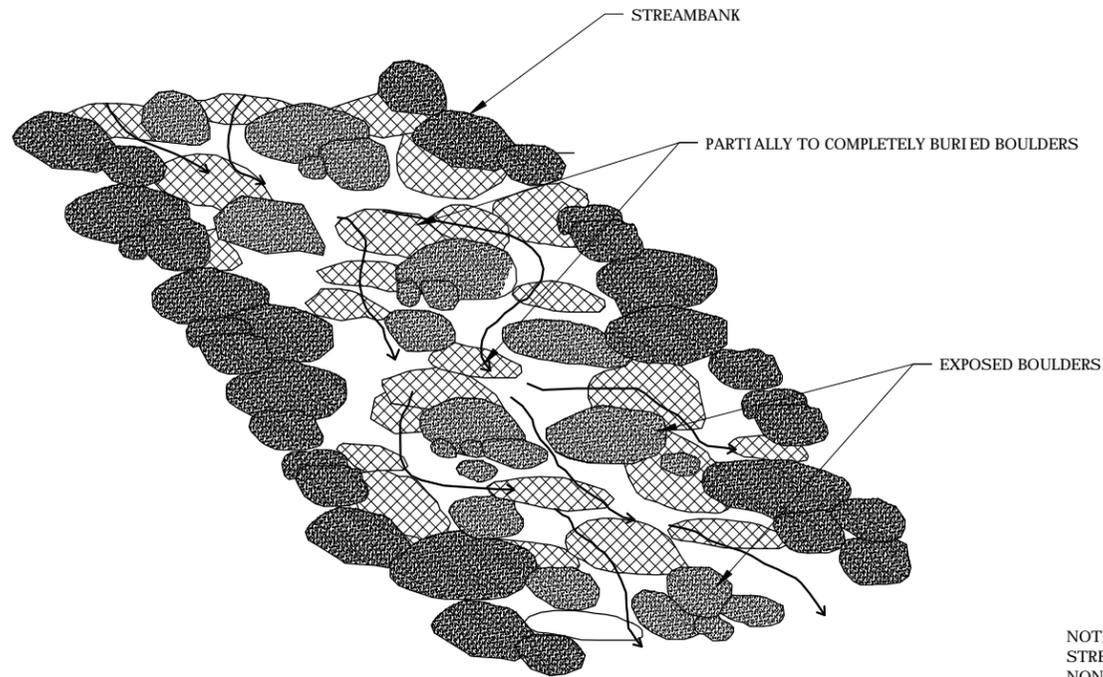
EVCS: 2+59.6
EVCE: 1002.6

STA = 0+00.0
ELEV = 992.2

EVCS: 1+57.1
BVCE: 1000.6

EVCS: 2+59.6
EVCE: 1002.6

STA = 2+63.6
ELEV = 1002.6

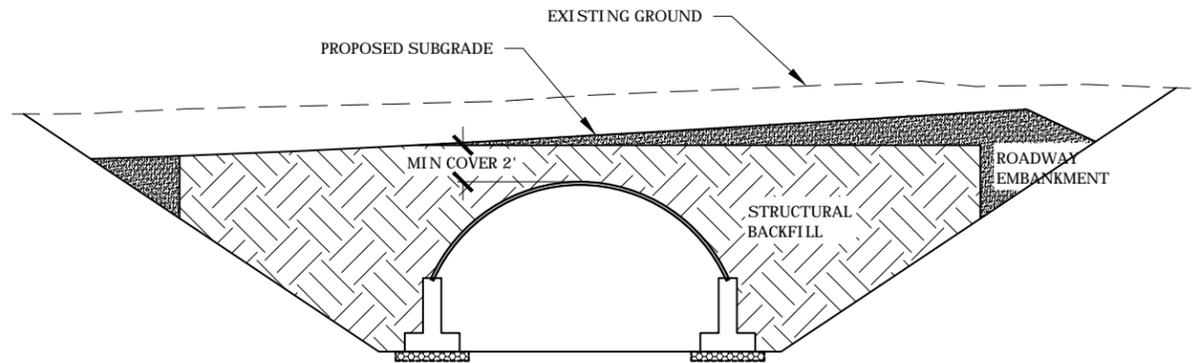


STREAMBED CHANNEL STRUCTURE PLAN VIEW
NTS

NOTE:
STREAM CHANNEL BED TO BE INSTALLED NON-UNIFORMLY. BANKFULL WIDTH SHALL VARY ALONG THE CHANNEL FROM APPROXIMATELY 10' TO 11' IN WIDTH AND CHANNEL SHALL HAVE A SLIGHT MEANDER INSIDE THE PIPE. IF EXISTING MATERIAL IS UNSUITABLE STREAMBED MATERIAL, AND CONTRACTOR SHALL SUB-EXCAVATE AND INSTALL MANUFACTURED STREAMBED MATERIAL AS DIRECTED BY CO.

TYP. BANK MARGINS SHALL CONSIST OF APPROXIMATELY 40% BY VOLUME 12" TO 18" SIZE ROCKS INTERMIXED WITH APPROXIMATELY 60% BY VOLUME BED CLASS 9 STREAMBED MATERIAL TO FILL THE VOIDS

EXTEND GEOCELL FOUNDATION STABILIZATION 6" PAST EDGE OF FOOTING

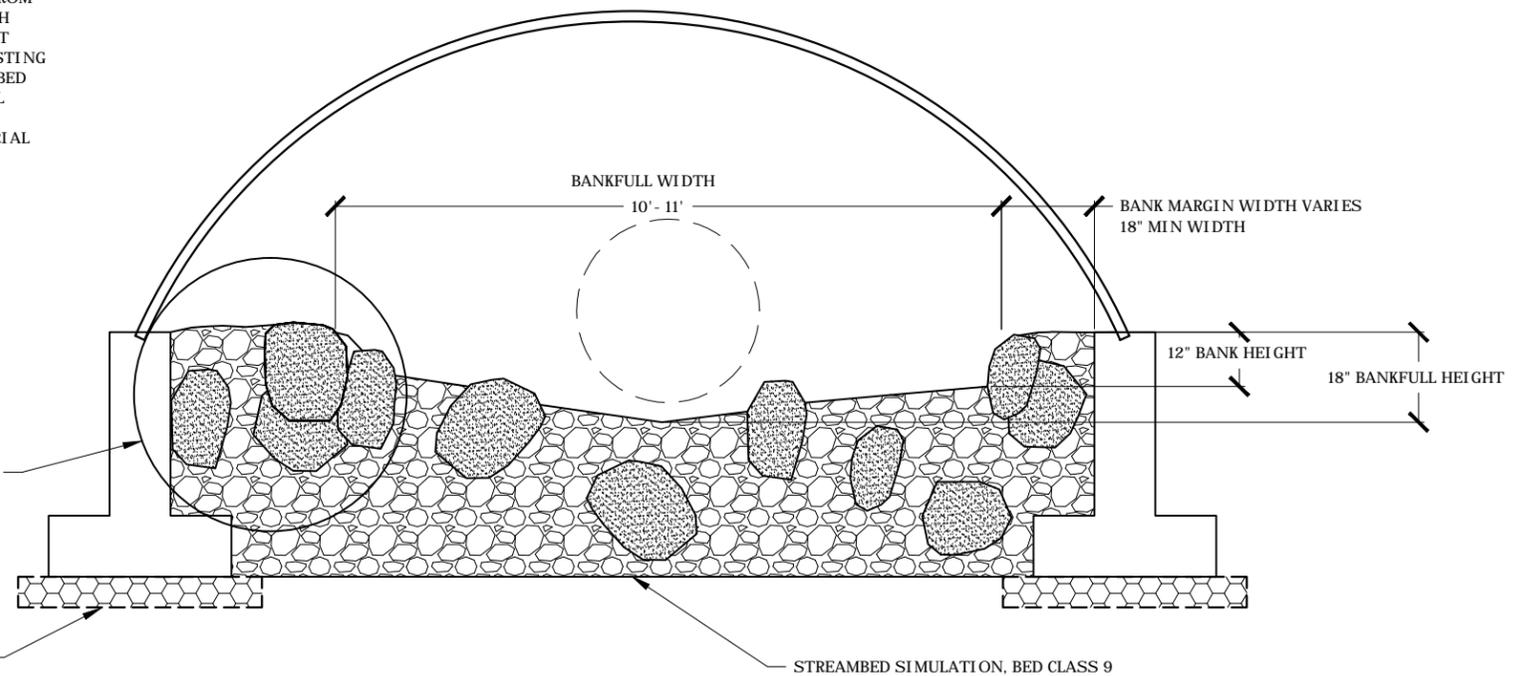


TRENCH SECTION
NTS

NOTES:

1) LIMITS OF EXCAVATION ARE SHOWN FOR INFORMATION PURPOSES ONLY. SLOPE OR SHORE AS REQUIRED FOR SAFETY. ALL EXCAVATION SHALL COMPLY WITH OSHA STANDARDS. CONTRACTOR SHALL SUBMIT EXCAVATION PLAN PRIOR TO CONSTRUCTION.

2) THE ESTIMATED VOLUME OF STRUCTURAL EXCAVATION IS BASED ON THE EXCAVATION LIMITS SHOWN IN TRENCH SECTION DETAIL. THIS QUANTITY DOES NOT INCLUDE ANY STREAMBED SIMULATION OR EARTHWORK NECESSARY FOR STREAM CHANNEL RE-GRADING. ALL BACKFILL IN AND AROUND THE NEW CULVERT IS CONSIDERED STRUCTURAL BACKFILL AND SHALL BE COMPACTED IN ACCORDANCE WITH FP-03 208.11 and FSSS 208.11.

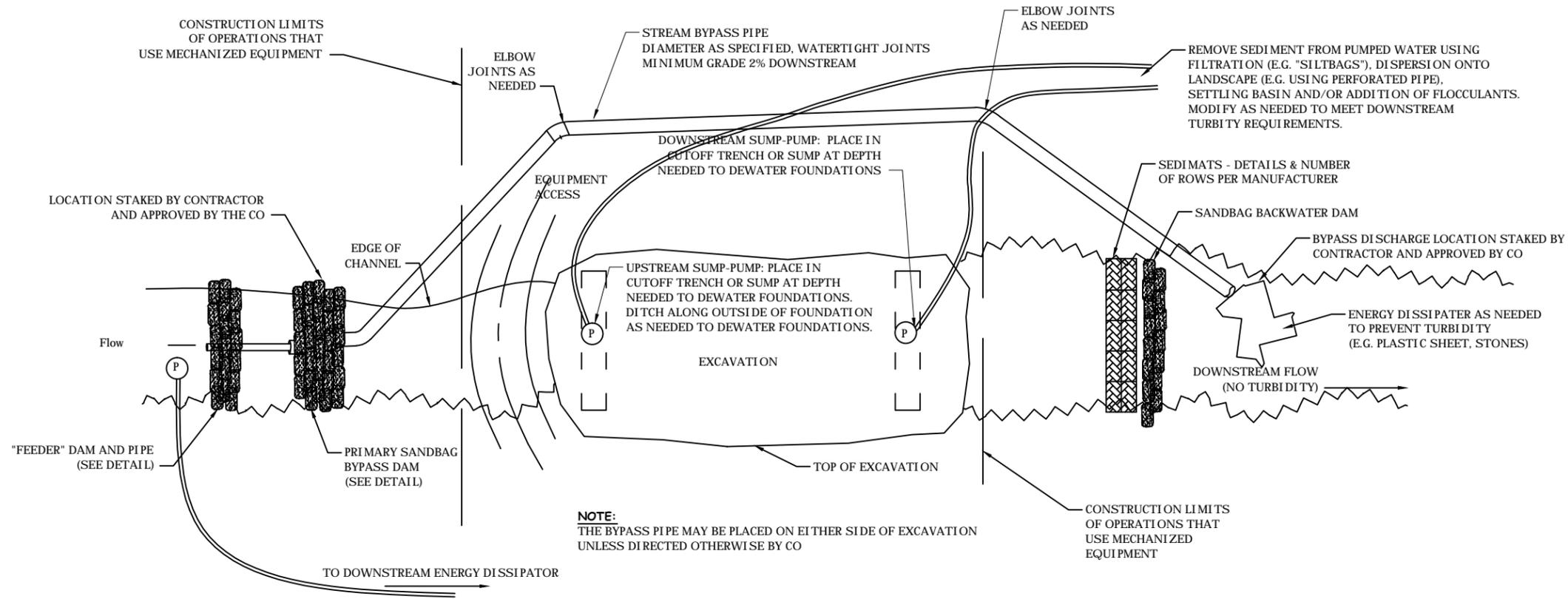


STREAMBED CHANNEL DETAILS
NTS

NOTES:

- 1) FOOTINGS SHALL BE PRECAST UNITS
- 2) MINIMUM DEPTH OF FOOTING SHALL BE 4'-0"
- 3) FOOTING DIMENSIONS AND REINFORCEMENT QUANTITY SHALL BE PER CULVERT ENGINEER OF RECORD.
- 4) FOOTING SEGMENTS SHALL BE SPLICED TOGETHER PER FOOTING MANUFACTURER. CONNECTION SHALL SATISFACTORILY KEEP THE FOOTINGS PLUMB AND LEVEL AND TIGHTLY CONNECTED TO ADJACENT FOOTING SEGMENTS WHEN ACTED UPON BY AN HS 20 LOAD.
- 5) CULVERT SHALL BE ATTACHED TO FOOTING PER MANUFACTURER.

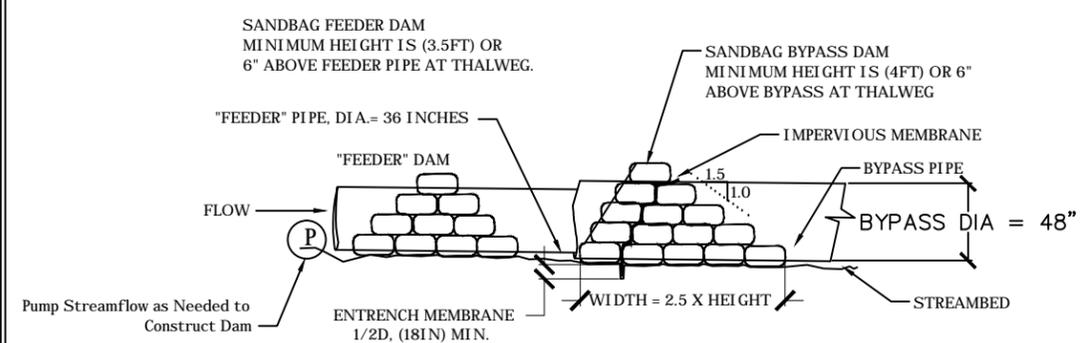
UPPER FISHER CREEK DETAILS	SHEET	10
	OF	11
FISHER CREEK CULVERT REPLACEMENTS		



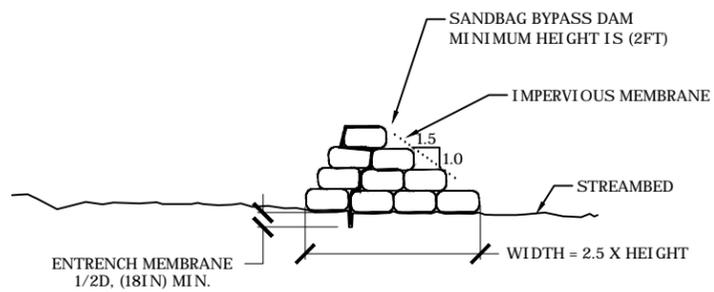
PLAN

- NOTES:**
1. CONTRACTOR SHALL DETERMINE THE SIZE OF THE BYPASS PIPE. THE SUMMERTIME BASEFLOW FOR THE LOWER FISHER CREEK SITE WAS RUNNING SUBSURFACE AT THE TIME OF SURVEY. THE AVERAGE SUMMERTIME BASEFLOW FOR THE UPPER FISHER CREEK SITE IS LESS THAN 5 CFS.
 2. ENSURE THAT THE BYPASS PIPE AND DAM ARE LEAK-PROOF. CONSTRUCTION SHALL NOT PROCEED UNTIL THE IMPLEMENTED DEWATERING PLAN HAS BEEN INSPECTED AND ACCEPTED BY THE CO IN WRITING.
 3. PUMPS SHALL BE CLEAN AND FREE OF LEAKS AND SHALL BE PLACED IN A CONTAINMENT KIT.
 4. DRAWDOWN POOL FOR SUMPS SHALL BE EXCAVATED A MINIMUM OF 2 FEET BELOW THE BOTTOM OF FOUNDATION FORMS AND BE A MINIMUM OF 5 FEET IN DIAMETER.
 5. MAINTAIN ALL ELEMENTS OF THE OPERATION IN ORDER TO DEWATER THE FOUNDATION, FACILITATE CONSTRUCTION, PREVENT HARM TO AQUATIC ORGANISMS (NOT JUST FISH) AND PREVENT SEDIMENT AND TURBIDITY FROM ENTERING THE STREAM. THE DEWATER SYSTEM WILL BE CONSTRUCTED IN A MANNER WHICH ENABLES FS BIOLOGIST TO COLLECT AND TRANSPORT ORGANISMS FROM THE LIVE CHANNEL, JUST BEFORE COMPLETION OF THE DIVERSION DAM.
 6. PUMPS (PERFERABLY ELECTRIC) SHALL REMAIN OPERATING DOWNSTREAM OF THE BYPASS DAM IF THE DAM DOES NOT SEAL THOROUGHLY. A PUMP SHALL BE MAINTAINED RUNNING 24 HOURS A DAY IN THE DOWNSTREAM SEDIMENT RETENTION DAM TO DIVERT WATER CONTAINING SEDIMENT TO THE FOREST FLOOR WHERE IT WILL BE FILTERED BEFORE ENTERING BACK INTO THE STREAM. PUMPS SHALL REMAIN IN POSITION ON SITE EVEN IF WATER DISCHARGE DROPS CONSIDERABLY. TO BE PREPARED FOR STORM FLOWS.

PLACE PIPES IN THALWEG, SMOOTH SURFACE AS NEEDED FOR PLACEMENT.



ELEVATION VIEW AT STREAMBED INVERT
SANDBAG BYPASS DAMS AT INLET AREA



ELEVATION VIEW AT STREAMBED INVERT
SANDBAG CONTAINMENT AND BACKWATER PREVENTION DAM AT OUTLET

***CONTRACTOR SHALL SUBMIT EROSION CONTROL PLAN TO BE APPROVED BY CO ACCORDING TO FSSS 157**

SAMPLE DEWATER PLAN

NTS

<p>SAMPLE DEWATER PLAN</p> <p>FISHER CREEK CULVERT REPLACEMENTS</p>	SHEET	11
	OF	11