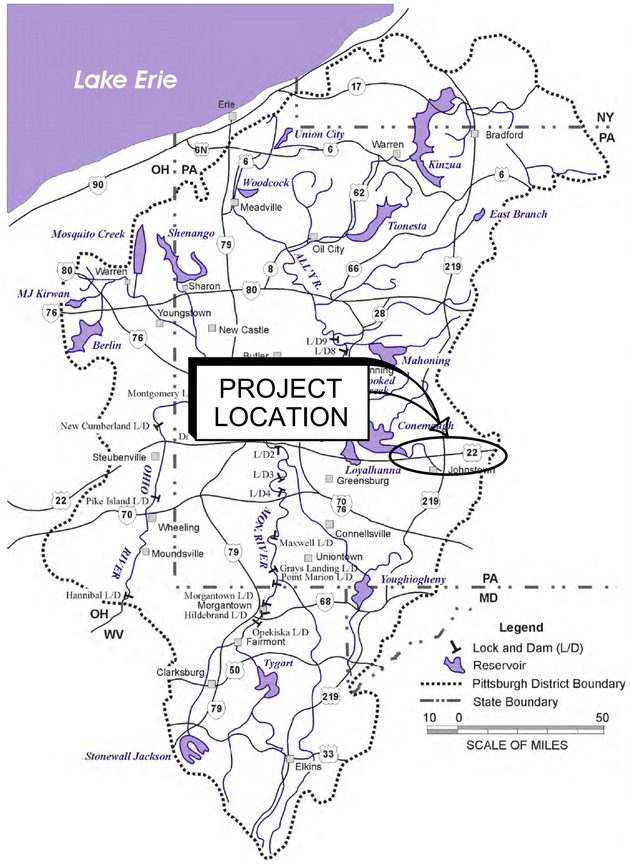
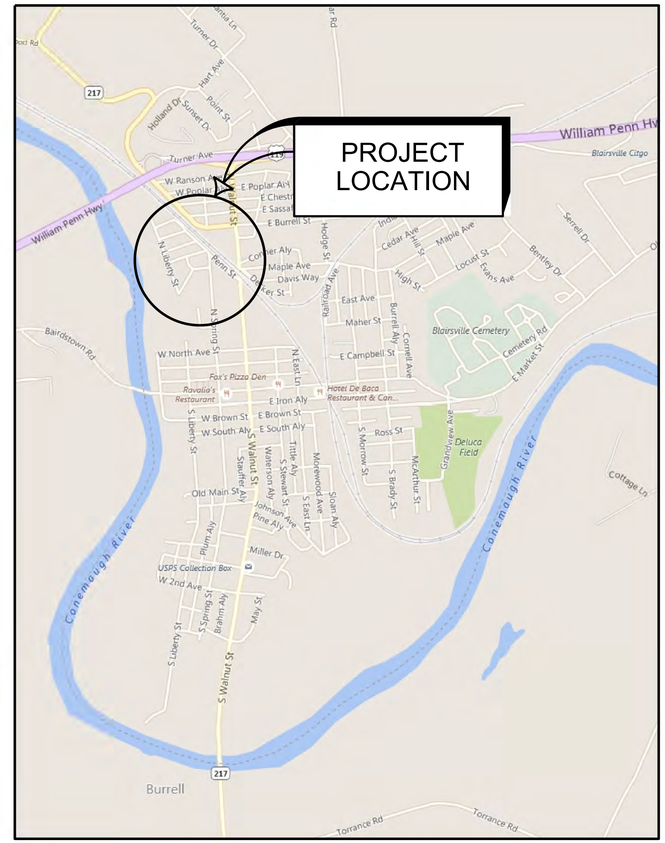
US Army Corps of Engineers®
Pittsburgh District

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, INDIANA COUNTY PA

SOLICITATION NO: W911WN-17-B-8007
CONTRACT NO: W911WN-17-X-XXXX
ISSUE DATE: JULY 2017
CERTIFIED FINAL DOCUMENTS



PROJECT VICINITY MAP
NTS



PROJECT LOCATION MAP
NTS

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SIGNATURES AFFIXED BELOW INDICATE OFFICIAL RECOMMENDATION AND APPROVAL OF ALL DRAWINGS LISTED ON THE INDEX SHEET.	
SUBMITTED BY:	
/s/ JESSICA C. FARMER, P.E. SECTION CHIEF	14 JULY 2017 DATE
APPROVAL RECOMMENDED BY:	
/s/ BETH L. SCHNELLER, P.E. BRANCH CHIEF	14 JULY 2017 DATE
APPROVED BY:	
/s/ JEANINE M. HOEY, P.E. CHIEF, ENGINEERING AND CONSTRUCTION DIVISION	14 JULY 2017 DATE

THIS PROJECT WAS DESIGNED BY THE PITTSBURGH DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS AND THE A/E FIRMS IDENTIFIED ON THIS SHEET. THE INITIALS OR SIGNATURES AND REGISTRATION DESIGNATIONS OF U.S. ARMY CORPS OF ENGINEERS INDIVIDUALS APPEAR ON THESE PROJECT DOCUMENTS WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY ER 1110-1-8152.

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MARK	DESCRIPTION	DATE

DESIGNED BY: S. MISSENDA
DRAWN BY: B. BAKER
CHECKED BY: J. FARMER
SUBMITTED BY: JESSICA C. FARMER, P.E.
SIGNATURE DATE: 31-AUG-2017 12:46
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ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
CONTRACT NO.: FILE NAME: A03bib_100_G-0010.dgn

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA. 15222

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

COVER SHEET

SHEET ID
G-0010

CONTRACT DRAWINGS

	FILE NAME	SHEET ID NO.	DRAWING TITLE
			GENERAL
	AO38ab_100_G-0010	G-0010	COVER SHEET
2 1	AO38ab_100_G-0011-B	G-0011-B	CONTRACT AND REFERENCE DRAWING INDEX
2	AO38ab_100_G-1012-A	G-1012-A	EXISTING CONDITIONS PLAN VIEW
	AO38ab_100_G-1013	G-0013	CONTRACTOR WORK LIMITS PLAN
			SURVEY
	AO38ab_204_V-1001	V-1001	SURVEY CONTROL PLAN
			CIVIL
2 1	AO38ab_204_C-0010-B	C-0010-B	CONSTRUCTION SEQUENCE
2	AO38ab_204_C-1011-A	C-1011-A	PROPOSED LAYOUT PLAN
2 1	AO38ab_204_C-4012-B	C-4012-B	CULVERT REPLACEMENT AND LINING PLAN AND SECTION
2	AO38ab_204_C-5013-A	C-5013-A	EXISTING CONDITIONS CULVERT SECTIONS
2 1	AO38ab_204_C-5014-B	C-5014-B	CULVERT REPAIR DETAILS - SHEET 1 OF 3
2 1	AO38ab_204_C-5015-B	C-5015-B	CULVERT REPAIR DETAILS - SHEET 2 OF 3
2 1	AO38ab_204_C-5016-B	C-5016-B	CULVERT REPAIR DETAILS - SHEET 3 OF 3
2 1	AO38ab_204_C-3017-B	C-3017-B	EMBANKMENT REPAIR SECTIONS
2 1	AO38ab_204_C-5018-B	C-5018-B	HEADWALL DETAILS - SHEET 1 OF 2
2 1	AO38ab_204_C-5019-A	C-5019-A	HEADWALL DETAILS - SHEET 2 OF 2
2	AO38ab_204_C-5020-A	C-5020-A	SULPHUR RUN BANK STABILIZATION DETAILS
1	AO38ab_204_C-5021	C-5021	CHAIN LINK SECURITY FENCE TYPE FE-5 DETAILS
			EROSION AND SEDIMENTATION CONTROL
1	AO38ab_886_X-1001-A	X-1001-A	EROSION AND SEDIMENT CONTROL PLAN
	AO38ab_886_X-5002	X-5002	EROSION AND SEDIMENT CONTROL PLAN BEST MANAGEMENT PRACTICE DETAILS
	AO38ab_886_X-5003	X-5003	EROSION AND SEDIMENT CONTROL PLAN BEST MANAGEMENT PRACTICE DETAILS
	AO38ab_886_X-5004	X-5004	EROSION AND SEDIMENT CONTROL PLAN BEST MANAGEMENT PRACTICE DETAILS
	AO38ab_886_X-5005	X-5005	EROSION AND SEDIMENT CONTROL PLAN BEST MANAGEMENT PRACTICE DETAILS
	AO38ab_886_X-0006	X-0006	EROSION AND SEDIMENT CONTROL PLAN BEST MANAGEMENT PRACTICE INSTALLATION AND MAINTENANCE NOTES AND ABBREVIATIONS

REFERENCE DRAWINGS

FILE NAME	DRAWING TITLE
PLATE_01-B	EXISTING CONDITIONS, SLOPE AREA FAILURE PLAN VIEW
PLATE_02-A	EXISTING & PROPOSED EMBANKMENT CONDITIONS
PLATE_03-B	EROSION AND SEDIMENT CONTROL PLAN AND FOOTPRINT OF TEMPORARY STABILIZATION BERM PLAN VIEW
PLATE_04-A	EROSION & SEDIMENTATION CONTROL PLAN BEST MANAGEMENT PRACTICE INSTALLATION AND MAINTENANCE NOTES AND ABBREVIATIONS
FIG 1	POOL STAGE HYDROGRAPHS 1952-1963
FIG 2	POOL STAGE HYDROGRAPHS 1964-1975
FIG 3	POOL STAGE HYDROGRAPHS 1976-1987
FIG 4	POOL STAGE HYDROGRAPHS 1988-1999
FIG 5	POOL STAGE HYDROGRAPHS 2000-2011
FIG 6	POOL STAGE HYDROGRAPHS 2012-2016
FIG 7	MISCELLANEOUS DETAILS - TEMPORARY STABILIZATION BERM CONSTRUCTION

ABBREVIATIONS:

USACE	U.S. ARMY CORPS OF ENGINEERS	PVC	POLYVINYL CHLORIDE
NTS	NOT TO SCALE	HDPE	HIGH DENSITY POLYETHYLENE
STA	STATION	ID	IDENTIFICATION
EL	ELEVATION	AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
T/	TOP OF		
DWGS(S)	DRAWING(S)	W/	WITH
REQ'D	REQUIRED	CFS	COMPOST FILTER SOCK
MAX	MAXIMUM	BMP	BEST MANAGEMENT PRACTICE
MIN	MINIMUM	RCE	ROCK CONSTRUCTION ENTRANCE
TYP	TYPICAL	PWFB	PUMPED WATER FILTER BAG
C/C	CENTER TO CENTER	D	DIAMETER
CONC	CONCRETE	CCCP	CENTRIFUGALLY CAST CONCRETE PIPE
CY	CUBIC YARD	UN	UNLESS NOTED
CWL	CONTRACTOR WORK LIMITS	GT	GEOTEXTILE
EA	EACH		
EQ	EQUAL		
C	CENTERLINE		
CTR	CONTROL		
HSE	HOUSE		
ABD	ABANDONED		
APPROX	APPROXIMATE		
TG	TOP GRATE		
INV	INVERT		
MH	MANHOLE		
GEN	GENERATOR		
RM	ROOM		
CMP	CORRUGATED METAL PIPE		

LEGEND:

- 990 — MAJOR CONTOUR (EXISTING)
- ZONE A - 100 YEAR FLOOD PLAIN BOUNDARY
- EDGE OF WATER SURFACE
- FENCE LINE
- E x — EXISTING OVERHEAD ELECTRIC LINE
- E x — EXISTING UNDERGROUND ELECTRIC LINE
- S S x (FORCE) — EXISTING SANITARY SEWER FORCE MAIN
- S S x — EXISTING SANITARY SEWER GRAVITY LINE
- S D x — EXISTING STORM SEWER LINE
- G x — EXISTING NATURAL GAS LINE
- W x — EXISTING WATER LINE
- (ABD) — PIPING ABANDONED IN-PLACE
- P L — PROPERTY LINE
- LEGAL RIGHT-OF-WAY LINE
- CONTRACTOR WORK LIMITS
- LIMITS OF DISTURBANCE
- 990 — MAJOR CONTOUR (PROPOSED)
- S D — NEW STORM SEWER LINE
- ST — NEW 5' DIAMETER STORM SEWER MANHOLE
- S — SANITARY SEWER MANHOLE
- STORM INLET
- G — GAS METER
- SANITARY SEWER CLEAN-OUT
- UTILITY POLE
- UTILITY POLE GUY WIRE
- VALVE
- TB-2 — BORING LOCATIONS/NUMBER
- TREE
- EXISTING VEGETATION LINE
- EMBANKMENT CREST FILL AREA
- AREA OF RIPRAP EMBANKMENT PROTECTION
- SULPHUR RUN BANK STABILIZATION AREA AND NEW STORM SEWER RIPRAP APRON

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE
2	REVISED AMENDMENT 2	8-29-2017 JCF
1	REVISED AMENDMENT 1	8-17-2017 JCF

DESIGNED BY: S. MISSENDA
DRAWN BY: B. BAKER
CHECKED BY: J. FARMER
SUBMITTED BY: JESSICA C. FARMER, P.E.
SIZE: FORMAT AE
ANSI D
ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
CONTRACT NO.:
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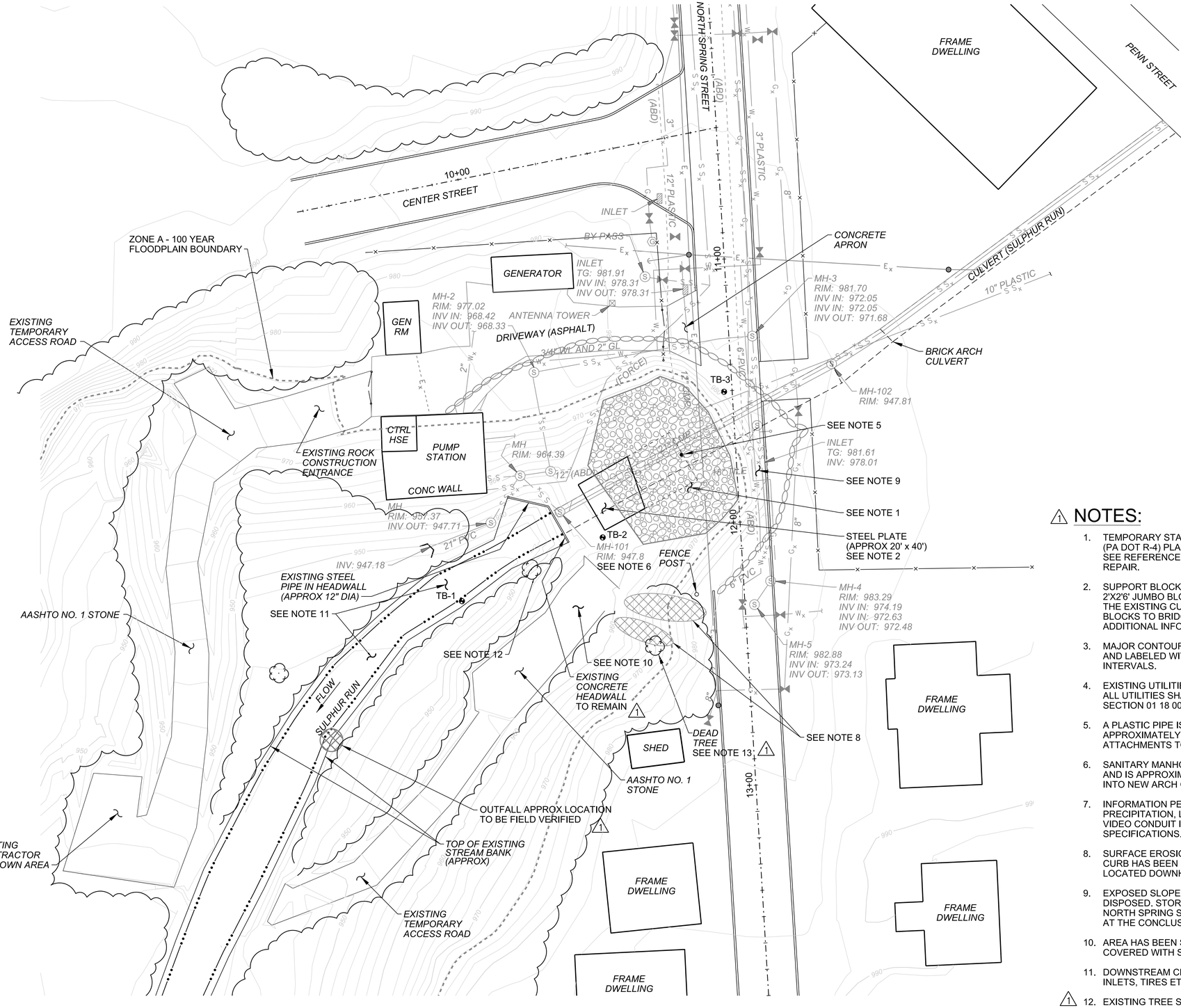
U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA, 15222

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

CONTRACT AND REFERENCE DRAWING INDEX

SHEET ID
G-0011-B



PLAN - EXISTING CONDITIONS

SCALE: 1" - 20'

LEGEND:

- MAJOR CONTOUR (EXISTING) - SEE NOTE 2
- ZONE A - 100 YEAR FLOOD PLAIN BOUNDARY
- EDGE OF WATER SURFACE
- FENCE LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING SANITARY SEWER FORCE MAIN (FORCE)
- EXISTING SANITARY SEWER GRAVITY LINE
- EXISTING STORM SEWER LINE
- EXISTING NATURAL GAS LINE
- EXISTING WATER LINE
- PIPING ABANDONED IN-PLACE (ABD)
- SANITARY SEWER MANHOLE
- STORM INLET
- GAS METER
- SANITARY SEWER CLEAN-OUT
- UTILITY POLE
- UTILITY POLE GUY WIRE
- VALVE
- TB-2 BORING LOCATIONS/NUMBER
- EXISTING VEGETATION LINE
- EXISTING TREE (SINGLE)
- SANDBAGS
- AREA OF RIPRAP EMBANKMENT PROTECTION
- APPROXIMATE AREA OF EROSION

⚠ NOTES:

1. TEMPORARY STABILIZATION PERFORMED IN SPRING 2017 ROCK BUTTRESS (PA DOT R-4) PLACED AS SHOWN AT THE TOE OF THE FAILURE SURFACE. SEE REFERENCE DRAWING (PLATE 2A) FOR SCHEMATIC CROSS-SECTION OF REPAIR.
2. SUPPORT BLOCKS FOR TEMPORARY STABILIZATION MEASURES CONSIST OF 2'X2'6' JUMBO BLOCKS KEYED TOGETHER TO FORM SUPPORT OUTSIDE OF THE EXISTING CULVERT. A SERIES OF WELDED PLATES WERE ANCHORED TO THE BLOCKS TO BRIDGE THE CULVERT. SEE REFERENCE DRAWING (FIGURE 7) FOR ADDITIONAL INFORMATION.
3. MAJOR CONTOURS ARE SHOWN ON THIS DRAWING AT INTERVALS OF 10 FEET AND LABELED WITH THE ELEVATION; MINOR CONTOURS ARE SHOWN AT 2-FOOT INTERVALS.
4. EXISTING UTILITIES LOCATIONS PROVIDED BY THE BOROUGH OF BLAIRSVILLE. ALL UTILITIES SHALL BE CONFIRMED IN ACCORDANCE WITH SPECIFICATION SECTION 01 18 00.
5. A PLASTIC PIPE IS ENTERING THE CROWN OF THE STONE ARCH CULVERT APPROXIMATELY 7 FEET DOWNSTREAM OF THE STONE/BRICK TRANSITION. SEE ATTACHMENTS TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. SANITARY MANHOLE 101 IS LOCATED INSIDE THE EXISTING STRUCTURAL PLATE AND IS APPROXIMATELY 3'x4'x4'. CONTRACTOR SHALL INCORPORATE MANHOLE INTO NEW ARCH CULVERT.
7. INFORMATION PERTAINING TO GEOTECHNICAL CONDITIONS, HISTORICAL PRECIPITATION, LAKE LEVELS AT CONEMAUGH DAM, EXISTING UTILITIES, AND VIDEO CONDUIT INSPECTIONS ARE PROVIDED IN THE ATTACHMENTS TO SPECIFICATIONS.
8. SURFACE EROSION OBSERVED IN THIS AREA DUE TO CHANNELING OF RUNOFF. CURB HAS BEEN REMOVED IN THIS AREA DUE TO UTILITY WORK. A DEAD TREE IS LOCATED DOWNHILL AS SHOWN AND SHALL BE REMOVED PRIOR TO CONSTRUCTION.
9. EXPOSED SLOPE COVERED BY GEOTEXTILE. GEOTEXTILE TO BE REMOVED AND DISPOSED. STORM WATER RUNOFF IS CONTROLLED BY SANDBAG DIKES ALONG NORTH SPRING STREET. SANDBAGS SHALL BE REMOVED AND STORED FOR REUSE AT THE CONCLUSION OF THE CONTRACT.
10. AREA HAS BEEN SUBJECT TO DEPOSITION OF FINES FROM HILLSIDE. AGGREGATE IS COVERED WITH SILTY SAND. SEE NOTE 8.
11. DOWNSTREAM CHANNEL AND SIDE SLOPES CONTAIN LARGE DEBRIS (ROCK, SEWER INLETS, TIRES ETC.) THAT SHALL BE REMOVED AND DISPOSED OF.
12. EXISTING TREE SHALL BE REMOVED PRIOR TO ANY CONSTRUCTION.
13. DEAD TREE TO BE REMOVED DURNING EXCAVATION OF SLOPES PRIOR TO PLACING R4.

0 20' 40'
SCALE: 1"=20'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE
	JCF	8-29-2017
1	REVISED AMENDMENT 2	

DESIGNED BY: S. MISSENDA
DRAWN BY: B. BAKER
CHECKED BY: J. FARMER
SUBMITTED BY: JESSICA C. FARMER, P.E.
SUBMITTAL DATE: 31-AUG-2017
ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
CONTRACT NO.:
FILE NAME: AO38bb_204_G-1012-A.dgn
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U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA, 15222

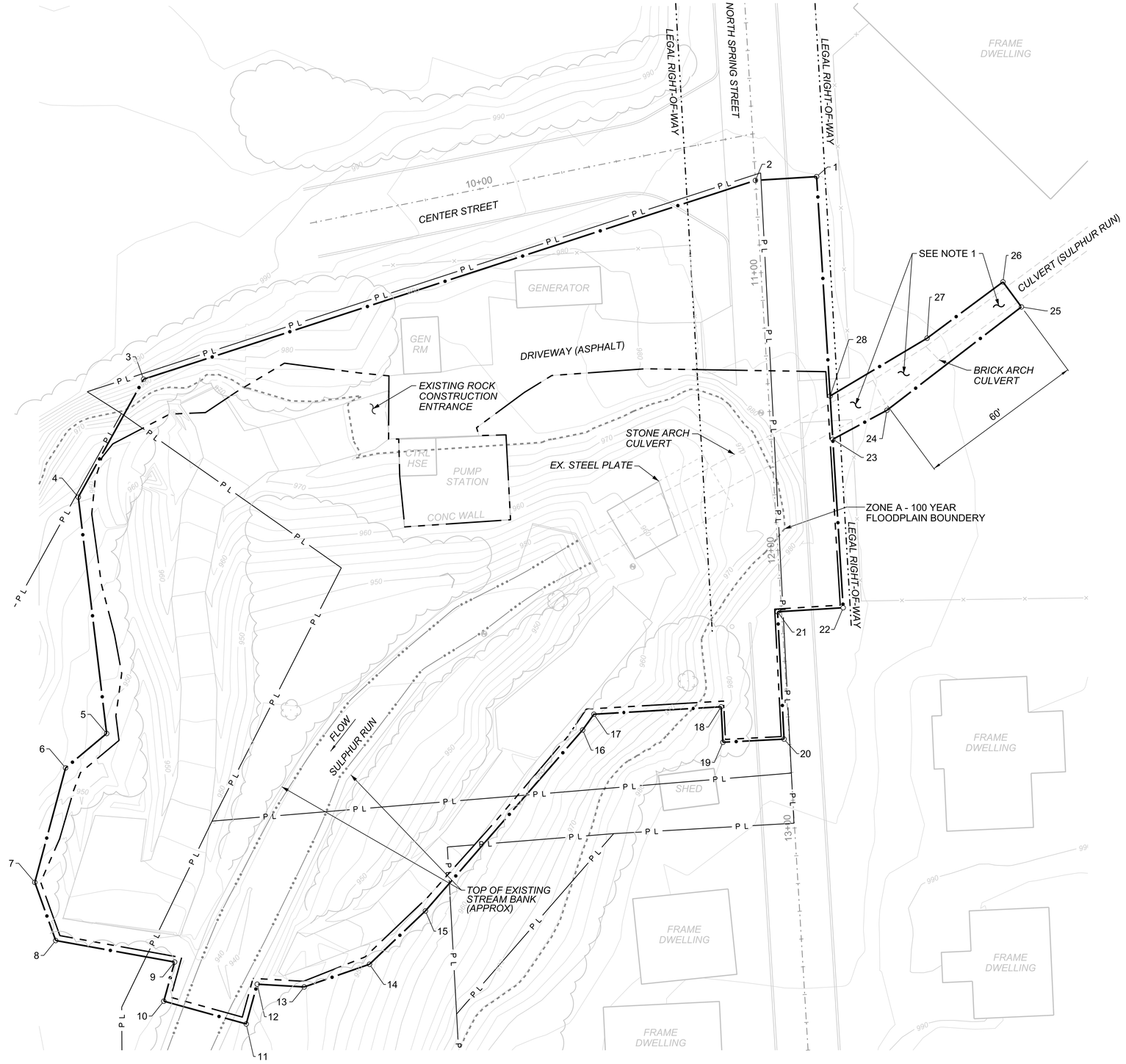
ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

EXISTING CONDITIONS
PLAN VIEW

SHEET ID
G-1012-A

H4TSDRST 20.00004:1

CERTIFIED FINAL DOCUMENTS



CONTRACTOR WORK LIMITS

POINT NO.	NORTHING	EASTING
1	405135.89	1546398.68
2	405134.53	1546376.70
3	405063.05	1546156.78
4	405020.65	1546133.31
5	404935.70	1546143.49
6	404923.30	1546128.73
7	404882.18	1546117.67
8	404861.26	1546125.18
9	404853.53	1546167.93
10	404839.46	1546164.04
11	404831.27	1546193.66
12	404845.56	1546197.61
13	404844.58	1546214.52
14	404852.73	1546237.98
15	404871.89	1546258.07
16	404936.97	1546314.60
17	404942.61	1546318.64
18	404945.29	1546364.36
19	404932.54	1546365.01
20	404933.67	1546386.98
21	404979.44	1546384.24
22	404980.90	1546408.24
23	405041.46	1546404.51
24	405051.89	1546423.96
25	405089.05	1546472.30
26	405098.03	1546465.67
27	405077.79	1546438.39
28	405057.02	1546403.55

LEGEND:

- P L — PROPERTY LINE
- LEGAL RIGHT-OF-WAY LINE
- CONTRACTOR WORK LIMITS
- LIMITS OF DISTURBANCE
- ZONE A - 100 YEAR FLOOD PLAIN BOUNDERY

NOTES:

1. WORK UPSTREAM OF THE LEGAL RIGHT-OF-WAY LINE FOR NORTH SPRING STREET SHALL BE CONSTRAINED TO UNDERGROUND WITHIN THE EXISTING CULVERT.
2. ITEMS CALLED OUT IN ITALICS AND/OR DISPLAYED IN GRAYSCALE REPRESENT EXISTING FEATURES.

PLAN - CONTRACTOR WORK LIMITS

SCALE: 1" - 20'

0 20' 40'
SCALE: 1"=20'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: C. MARTIN
DRAWN BY: B. CRATTY
CHECKED BY: J. RUSNAK
SUBMITTED BY: M. JAMES / SHIBATA, P.E.
SIZE: ANSI D
ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
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DATE: 31-AUG-2017 12:46

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA, 15222

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

CONTRACTOR WORK LIMITS PLAN

SHEET ID
G-1013

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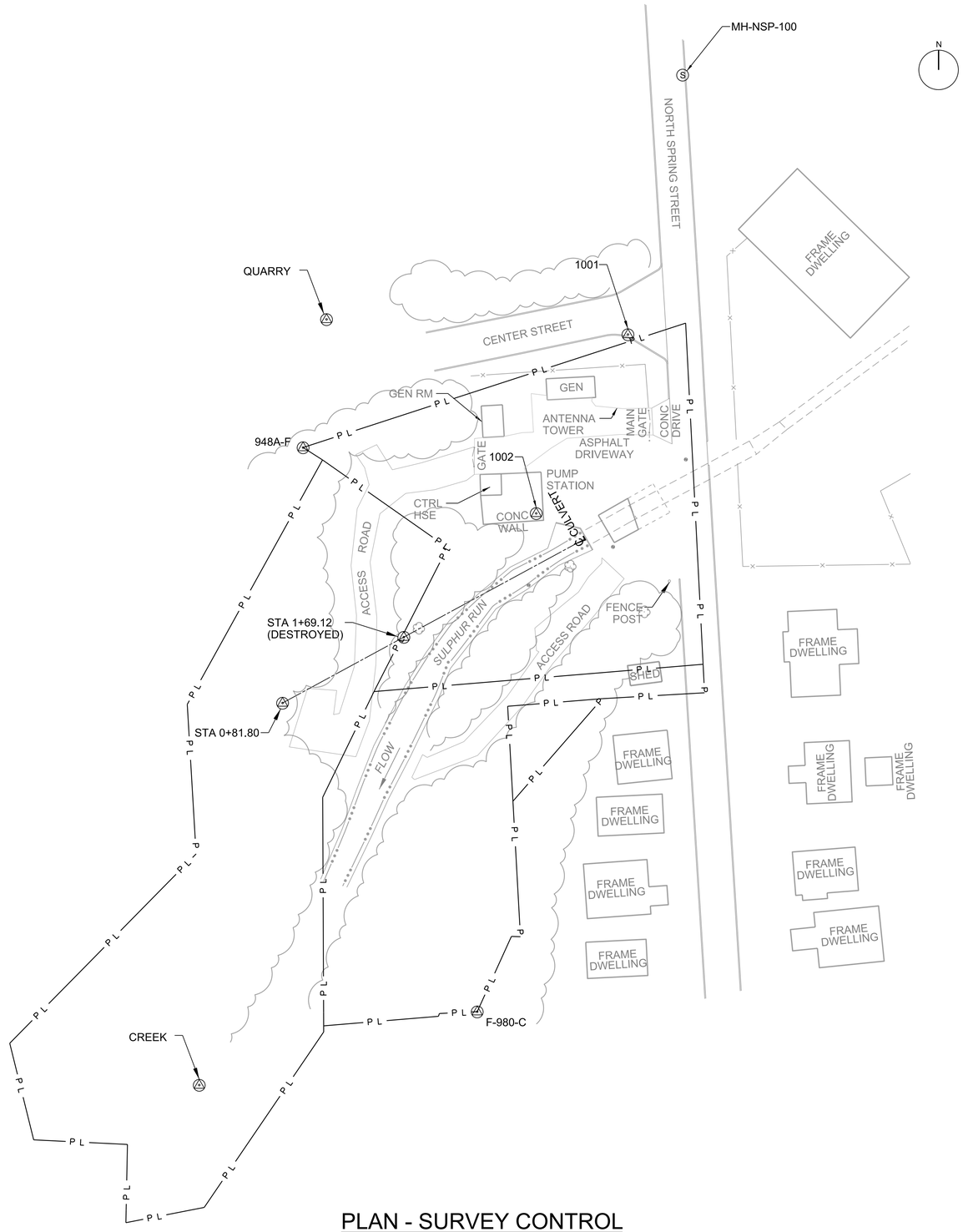
CERTIFIED FINAL DOCUMENTS



PLAN - SURVEY CONTROL

SCALE: 1" = 40'

SURVEY CONTROL

STATION NAME	GRID NORTHING	GRID EASTING	ELEVATION	DESCRIPTION
QUARRY	405140.25	1546154.45	992.85	ALUMINUM DISK STAMPED "QUARRY" ON 5/8" X 30"
CREEK	404656.11	1546073.89	940.09	ALUMINUM DISK STAMPED "CREEK"
1001	405130.83	1546345.15	983.67	NAIL
1002	405017.73	1546287.11	976.50	SCRIBE IN CONCRETE
STA 0+81.80	404897.78	1546126.61	945.43	5/8" REBAR
STA 1+69.12	404939.43	1546203.33	---	DESTROYED
MH-NSP-100	---	---	989.81	SANITARY SEWER MANHOLE
948A-F	405059.46	1546139.56	---	USACE BOUNDRY DISK ON PIPE
F-980-C	404702.51	1546249.78	---	USACE BOUNDRY DISK ON PIPE

LEGEND:

- P L — PROPERTY LINE
- EDGE OF WATER SURFACE
- FENCE LINE
- ℄ CENTER LINE

NOTES:

1. THE HORIZONTAL DATUM IS NAD83(2011). THE GRID COORDINATE SYSTEM IS PENNSYLVANIA SPCS SOUTH ZONE (FIPS 3702). THE UNITS ARE US SURVEY FEET. THE NAD83(2011) COORDINATES WERE DERIVED FROM A FIVE HOUR GNSS OCCUPATION OF 1001, CALCULATED BY NGS OPUS, AND CHECKED AGAINST NGS PID KX1056.
2. THE VERTICAL DATUM IS NAVD88. THE ELEVATION UNITS ARE FEET. ALL GNSS ELEVATIONS ARE BASED ON GEOID12B.
3. THE EXISTING MAPPING PROVIDED BY THE BOROUGH OF BLAIRSVILLE WAS ON AN ASSUMED HORIZONTAL COORDINATE SYSTEM AND AN ASSUMED VERTICAL DATUM. CONTROL POINTS STA 0+81.80 AND 1+69.12, BOTH 5/8" REBAR, WERE RECOVERED AND OBSERVED BY USACE SURVEYORS AND USED TO MOVE MAPPING TO THE SPCS. STA 1+69.12 HAS SINCE BEEN DESTROYED.
4. THE EXISTING DROP MANHOLE NSP-100 WAS USED AS THE REFERENCE POINT TO LOWER THE EXISTING BOROUGH OF BLAIRSVILLE MAPPING TO NAVD88.
5. THE AVERAGE COMBINED SCALE FACTOR (PA SOUTH ZONE) FOR THE PROJECT IS 0.99991766.
6. FILED DATA WAS COLLECTED IN JANUARY, MARCH, AND MAY OF 2017 BY USACE PITTSBURGH GEOSPATIAL SECTION.

0 40' 80'
SCALE: 1"=40'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

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SOLICITATION NO.: W911WN-17-B-8007
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DESIGNED BY: R. PRICE
DRAWN BY: B. BAKER
CHECKED BY: J. JALBRZIKOWSKI
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
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PITTSBURGH PA. 15222

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

SURVEY CONTROL PLAN

SHEET ID
V-1001

2 PROPOSED SEQUENCE OF WORK – BLAIRSVILLE PERMANENT EMBANKMENT REPAIRS:

THE PROPOSED CONSTRUCTION SEQUENCE PRESENTS ONE POSSIBLE METHOD OF PERFORMING THE WORK. THE CONTRACTOR HAS THE ABILITY TO MODIFY THE SEQUENCE TO SUIT THEIR MEANS AND METHODS WHILE ADHERING TO ALL DEFINED CONSTRUCTION RESTRICTIONS. IF THE CONTRACTOR ELECTS TO MODIFY THIS SEQUENCE, ANY MODIFICATIONS SHALL BE APPROVED BY THE CONTRACTING OFFICER.

1. VERIFY AND CLEARLY MARK ALL EXISTING UTILITIES WITHIN THE CONTRACTOR'S WORK LIMITS.
2. COORDINATE WITH CONTRACTING OFFICER AND BOROUGH OF BLAIRSVILLE TO PROVIDE ACCESS TO PUMP STATION FACILITIES TO BOROUGH PERSONNEL. COORDINATE WITH CONTRACTING OFFICER AND BOROUGH OF BLAIRSVILLE TO REMOVE EXISTING FENCING AND INSTALL ANY TEMPORARY FENCES AND GATES AS REQUIRED TO RESTRICT ACCESS TO THE SITE.
3. PROVIDE CONFINED SPACE ENTRY PERMIT PRIOR TO ANY WORK WITH THE EXISTING CULVERT STRUCTURE. INITIATE MONITORING TO ENSURE WORKER SAFETY WITHIN EXISTING CULVERT IN ACCORDANCE WITH APPROVED CONFINED SPACE ENTRY PLAN.
4. PERFORM A VIDEO SURVEY OF THE EXISTING CULVERT.
5. INSTALL TEMPORARY STREAM CROSSING, COMPOST FILTER SOCKS, PERFORM CLEARING AND GRUBBING AND TREE REMOVAL; INSTALL SANDBAG DIVERSION ALONG NORTH SPRING STREET, TEMPORARY INLETS, TEMPORARY SLOPE PIPES, INLET FILTER BAGS AND R-5 RIPRAP AT TEMPORARY SLOPE PIPE DISCHARGES.
6. INSTALL STONE ARCH CULVERT SUPPORT SYSTEM FROM STATION 3+53 TO 3+63.
7. INSTALL PIPE FLUME, TEMPORARY UPSTREAM SANDBAG DAM, AND DOWNSTREAM ROCK FILTER OR OTHER APPROVED DIVERSION TECHNIQUES.
8. 1 EXCAVATE TEMPORARY STABILIZATION FEATURES AND MATERIAL FROM THE FAILED STONE ARCH CULVERT TO THE LINES AND GRADES SHOWN IN THE CONTRACT DOCUMENTS. PREPARE EXPOSED SOIL SLOPES TO EFFECT A SMOOTH, UNIFORM SURFACE FOR PLACEMENT OF GEOTEXTILE AND BEDDING MATERIAL. PERFORM THIS EXCAVATION IN A SEQUENCE SUCH THAT NO MORE MATERIAL THAN NECESSARY IS REMOVED AT ANY TIME PRIOR TO BACKFILLING WITH THE PERMANENT EMBANKMENT MATERIAL. INSTALL SHORING, SHEETING, AND BRACING AS NEEDED. REMOVE AND DISPOSE OF STEEL PLATE AND CONCRETE BLOCKS FROM TEMPORARY STABILIZATION BUTTRESS. STORE R-4 FROM TEMPORARY STABILIZATION BERM AT CONTRACTOR LAYDOWN AREA FOR RE-USE.
9. 1 INSTALL MICROPILES AND FOOTER FOR CULVERT REPLACEMENT AND EXTENSION SECTIONS AND CONCRETE HEADWALL AND WINGWALL FOUNDATIONS.
10. INSTALL STRUCTURAL PLATE OVER FOOTERS FOR CULVERT REPLACEMENT AND EXTENSION SECTIONS
11. GROUT CULVERT KEY.
12. 1 INSTALL STRUCTURAL BACKFILL AND GEOTEXTILE SEPARATION LAYER AT CULVERT REPLACEMENT.
13. 1 FORM AND POUR CONCRETE HEADWALL END TREATMENT FOR ARCH CULVERT EXTENSION.
14. 1 INSTALL STRUCTURAL BACKFILL AND GEOTEXTILE SEPARATION LAYER AT CULVERT EXTENSION AND BEHIND HEADWALL/WINGWALLS.
15. 1 INSTALL UPSTREAM CUT-OFF-KEY (SEE PLAN ON SHEET C-4012).
16. 1 (BASE AWARD) INSTALL CCCP LINER IN STONE ARCH CULVERT AND CULVERT REPLACEMENT SECTION BETWEEN STATION 2+95 AND STATION 3+80 (SEE PLAN ON SHEET C-4012). FLOWLINE SHALL BE LINED WITH INVERT REPAIR MORTAR BETWEEN STATION 2+78 AND STATION 4+20. ALTER POSITIONING OF PIPE FLUME OR OTHER APPROVED DIVERSION TECHNIQUES AS REQUIRED FOR LATERAL PHASING OF THIS WORK.
17. 1 (IF AWARDED) INSTALL UPSTREAM OPTION CCCP LINER IN STONE ARCH CULVERT BETWEEN STATIONS 3+80 AND 4+20. ALTER POSITIONING OF PIPE FLUME AS REQUIRED FOR LATERAL PHASING OF THIS WORK.
18. 1 (IF AWARDED) INSTALL DOWNSTREAM OPTION CCCP LINER IN EXISTING STRUCTURAL PLATE AND CULVERT EXTENSION BETWEEN STATIONS 2+71 AND 2+95 (SEE PLAN ON SHEET C-4012). ALTER POSITIONING OF PIPE FLUME AS REQUIRED FOR LATERAL PHASING OF THIS WORK.
19. 1 INSTALL GEOTEXTILE FABRIC AND ROCK FILL EMBANKMENT TO THE LINES AND GRADES SHOWN ON CONTRACT DRAWINGS, INCLUDING SAND BEDDING LAYER, ANCHOR TRENCHES, AND EMBANKMENT CREST AND TRANSITION ZONES. RE-USE STORED R-4 FROM TEMPORARY STABILIZATION BUTTRESS AS APPROVED BY THE CONTRACTING OFFICER. COMPLETE CONSTRUCTION USING NEW R-4 MATERIAL FROM APPROVED SOURCES.
20. 1 INSTALL REQUIRED BANK ARMORING (BASE AWARD).
21. 1 REMOVE DOWNSTREAM ROCK FILTER, PIPE FLUME AND TEMPORARY UPSTREAM SANDBAG DAM.
22. 1 (IF AWARDED) INSTALL APPROVED FLOW DIVERSION STRUCTURES FOR EXTENDED BANK ARMORING.
23. 1 (IF AWARDED) INSTALL EXTENDED BANK ARMORING.
24. 1 (IF AWARDED) REMOVE FLOW DIVERSION STRUCTURES FOR EXTENDED BANK ARMORING.
25. 1 INSTALL NEW CHAIN LINK SECURITY FENCE.
26. 1 REMOVE TEMPORARY INLETS AND TEMPORARY SLOPE PIPES.
27. 1 SEED, FERTILIZE, LIME, AND MULCH AREAS THAT HAVE BEEN DISTURBED BY THE CONSTRUCTION ACTIVITY.
28. INSTALL TEMPORARY EROSION CONTROL BLANKETS ON ALL SLOPES GREATER THAN 3:1 AND ALONG THE STREAM BANKS.
29. TEMPORARY STREAM CROSSING SHALL BE REMOVED AND RESTORED TO PRE-CONSTRUCTION CONDITIONS AS SHOWN. STONE USED TO CONSTRUCT CROSSING SHALL BE SPREAD ALONG TEMPORARY ACCESS ROAD.
30. TREES, BRUSH, EXCESS SOIL AND CONSTRUCTION WASTE FROM THE CONSTRUCTION AND DEMOLITION ACTIVITIES SHALL BE DISPOSED OF OFF-SITE AT AN APPROVED FACILITY.
31. ONCE THE SITE HAS BEEN STABILIZED AND REACHED A UNIFORM 70% PERENNIAL VEGETATIVE COVER, THE COMPOST FILTER SOCKS SHALL BE CUT OPEN AND THE WOODEN STAKES AND MESH SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY FOLLOWING THE BMP INSTALLATION NOTES.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE
2	REVISED AMENDMENT 2	8-29-2017
1	REVISED AMENDMENT 1	8-17-17

JCF JCF

DESIGNED BY: S MISSENDA
DRAWN BY: R TYSZKIEWICZ
CHECKED BY: J FARMER
SUBMITTED BY: JESSICA C. FARMER, P.E.
QUALITY CONTROL BY:
ANSI D

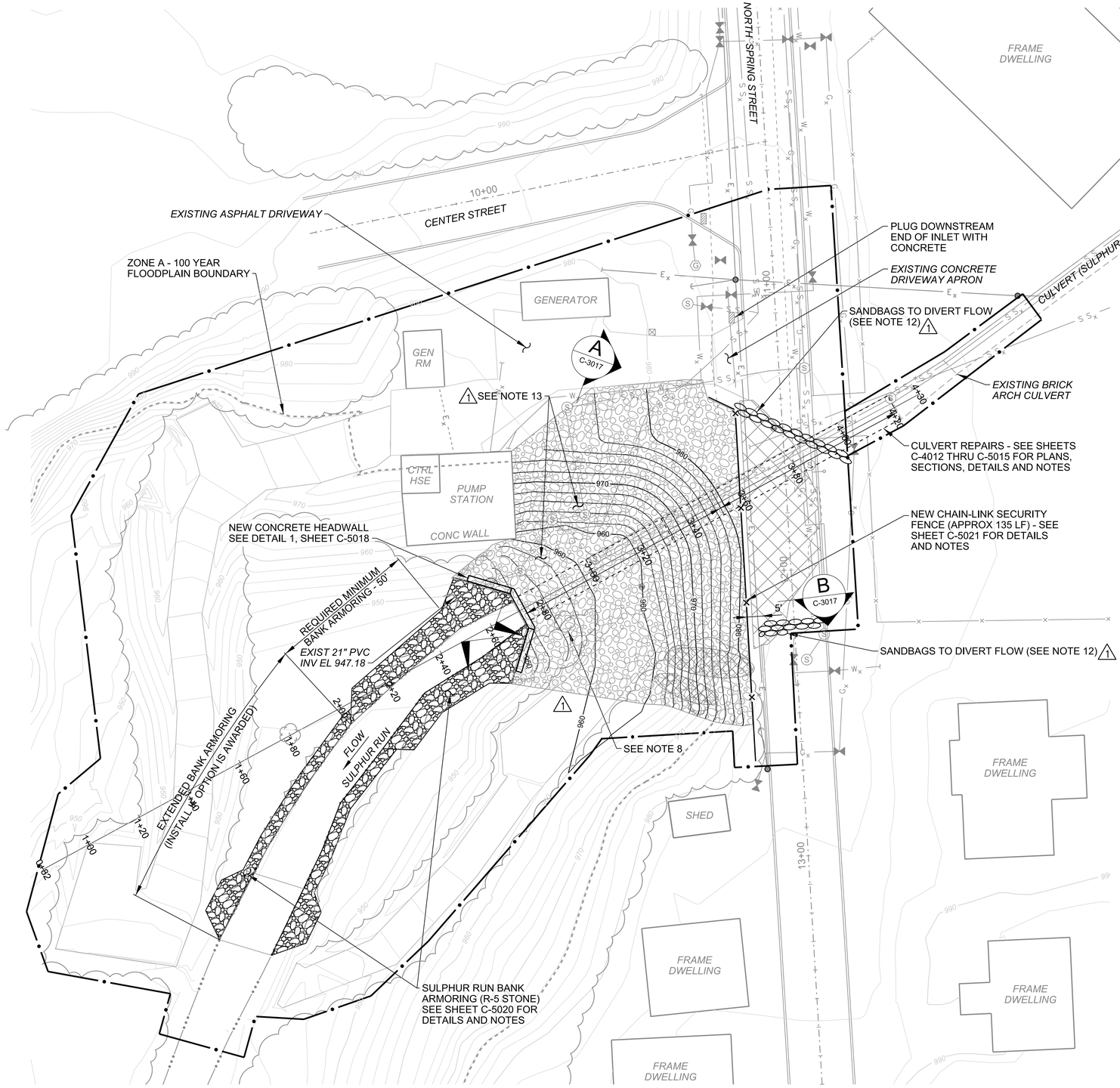
ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
CONTRACT NO.:
FILE NAME: AO36tb_086_C-0010-B.dgn
SIZE: 24" x 36"
31-AUG-2017 12:47

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA. 15222

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

CONSTRUCTION SEQUENCE

SHEET ID
C-0010-B



PLAN - PROPOSED LAYOUT

SCALE: 1" - 20'

LEGEND:

- APPROXIMATE AREA OF EROSION GULLY
- EMBANKMENT CREST FILL AREA
- AREA OF R-4 RIPRAP EMBANKMENT PROTECTION
- SULPHUR RUN BANK STABILIZATION AREA
- CONTRACTOR WORK LIMITS
- 990 — MAJOR CONTOUR (PROPOSED) - SEE NOTE 3
- *990* — MAJOR CONTOUR (EXISTING) - SEE NOTE 3
- ZONE A - 100 YEAR FLOOD PLAIN BOUNDARY
- EDGE OF WATER SURFACE
- NEW CHAIN-LINK SECURITY FENCE

NOTES:

1. CONTOURS IN THE AREA OF FAILURE REPRESENT THE CONDITIONS AFTER INSTALLATION OF TEMPORARY STABILIZATION MEASURES. EXISTING PAVEMENT HAS BEEN REMOVED ALONG NORTH SPRING STREET IN THIS AREA. SEE REFERENCE DRAWINGS FOR DESIGN SECTIONS. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND PERFORM SURVEY AS NECESSARY PRIOR TO BEGINNING WORK.

⚠1 2. ONCE TEMPORARY STABILIZATION BERM HAS BEEN REMOVED, CONTRACTOR SHALL EXCAVATE NO MORE OF THE SOIL SLOPES THAN NECESSARY TO EFFECT A SMOOTH, UNIFORM SURFACE FOR PLACEMENT OF GEOTEXTILE AND BEDDING LAYER, EXCEPT WHERE ADDITIONAL EXCAVATION IS NECESSARY FOR INSTALLING APPROVED SLOPING, BENCHING, OR SHORING.

⚠1 3. MAJOR CONTOURS ARE SHOWN ON THIS DRAWING AT INTERVALS OF 10 FEET AND LABELED WITH THE ELEVATION; MINOR CONTOURS ARE SHOWN AT 2-FOOT INTERVALS.

⚠1 4. SEE SHEET C-4012 FOR TYPICAL CROSS SECTION FOR BUTTRESS CONSTRUCTION ALONG CENTER OF CULVERT. SEE SHEET C-3017 FOR ADDITIONAL DETAILS.

⚠1 5. MINIMUM BANK ARMORING TO BE PERFORMED TO STATION 1+30. SEE SHEET C-5020 FOR DETAILS AND NOTES. ADDITIONAL ARMORING INSTALLATION TO STATION 2+03.

⚠1 6. EXISTING UTILITIES LOCATIONS PROVIDED BY THE BOROUGH OF BLAIRSVILLE. ALL UTILITIES SHALL BE CONFIRMED IN ACCORDANCE WITH SPECIFICATION SECTION 01 18 00.

⚠1 7. FOR ADDITIONAL LEGEND SYMBOLS, SEE SHEET G-1012.

⚠1 8. EXISTING TREE ADJACENT TO HEADWALL TO BE REMOVED PRIOR TO ANY CONSTRUCTION.

⚠1 9. THE CONTRACTOR SHALL TAKE SPECIAL PRECAUTIONS WHEN WORKING WITHIN THE EXISTING CULVERT. CONTRACTOR SHALL ENSURE THAT A SYSTEM IS IN PLACE TO PROTECT WORKERS FROM HIGH FLOWS. SEE SPECIFICATION SECTION 01 35 00 FOR ADDITIONAL REQUIREMENTS.

⚠1 10. THE CONTRACTOR SHALL PERFORM EXCAVATIONS IN A SEQUENCE SUCH THAT NO MORE MATERIAL THAN NECESSARY IS REMOVED AT ANY TIME PRIOR TO BACK-FILLING WITH THE PERMANENT EMBANKMENT MATERIAL. IF SLOPE INSTABILITIES ARE OBSERVED FOLLOWING REMOVAL OF THE TEMPORARY STABILITY BERM, NO PORTION OF THE SLOPE SHALL BE OPENED WHICH CANNOT BE QUICKLY BACK-FILLED. SHORING, SHEETING, AND BRACING SHALL BE INSTALLED AS NEEDED. IN THE CASE OF AN IMPENDING HIGH WATER EVENT, THE CONTRACTOR SHALL FLATTEN OR SHORE TEMPORARY SLOPES TO ENSURE ACCEPTABLE STABILITY.

⚠1 11. EMBANKMENT ROCK FILL SHALL DIRECTLY CONTACT SSP FOR BANK ARMORING. THE EMBANKMENT - SSP INTERFACE SHALL EXTEND A MINIMUM OF 2 FEET BEYOND EXTENTS OF WINGWALLS TO EFFECT DRAINAGE.

⚠1 12. CONTRACTOR TO INSTALL SANDBAGS AS SHOWN. CONTRACTOR MAY RE-USE STORED SANDBAGS AS APPROVED BY THE CONTRACTING OFFICER. IF SANDBAGS ARE RE-USED, THEY SHALL BE FREE OF RIPS AND TEARS. SANDBAGS SHALL BE PLACED SUCH THAT ROWS ARE OFFSET TO PREVENT SURFACE FLOW FROM RUNNING BETWEEN ADJACENT BAGS. SANDBAGS SHALL BE ABLE TO DIVERT A FLOW DEPTH OF UP TO 6 INCHES.

⚠1 13. THE CONTRACTOR SHALL TAKE SPECIAL CARE DURING EXCAVATION ALONG THE RIGHT BANK TO PREVENT DAMAGES TO EXISTING STRUCTURES SUCH AS THE PUMP STATION, EXISTING SANITARY SEWERS, AND MANHOLES AND THE EMERGENCY SANITARY OUTFALL.

0 20' 40'
SCALE: 1"=20'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE
1	REVISED BY AMENDMENT 2	8-29-2017
	EG	

DESIGNED BY: A. MARCUM
DRAWN BY: B. CRATTY
CHECKED BY: E. GUY
SUBMITTED BY: S. ERICH P.E., P.G., P.H.
QUALITY CONTROL BY: ANSI D.
ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
CONTRACT NO.:
FILE NAME: A036bb_686_C-1011-A.dgn
PLOT DATE: 31-AUG-2017 12:47

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA, 15222

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

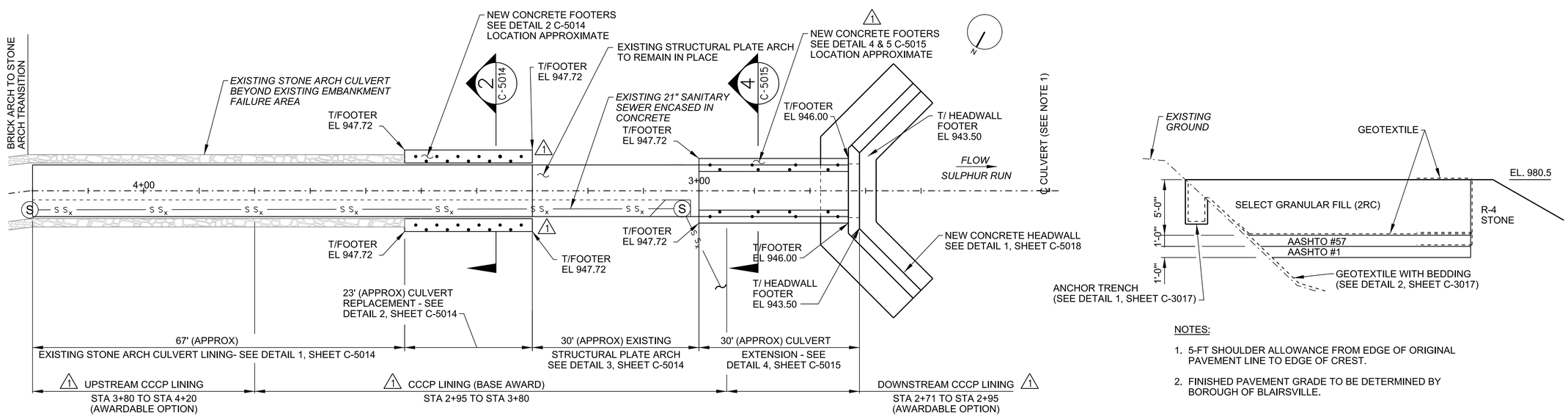
PROPOSED LAYOUT PLAN

SHEET ID

C-1011-A

H4TSDRST 20.00004:1

CERTIFIED FINAL DOCUMENTS



PLAN - CULVERT LINING AND REPLACEMENT

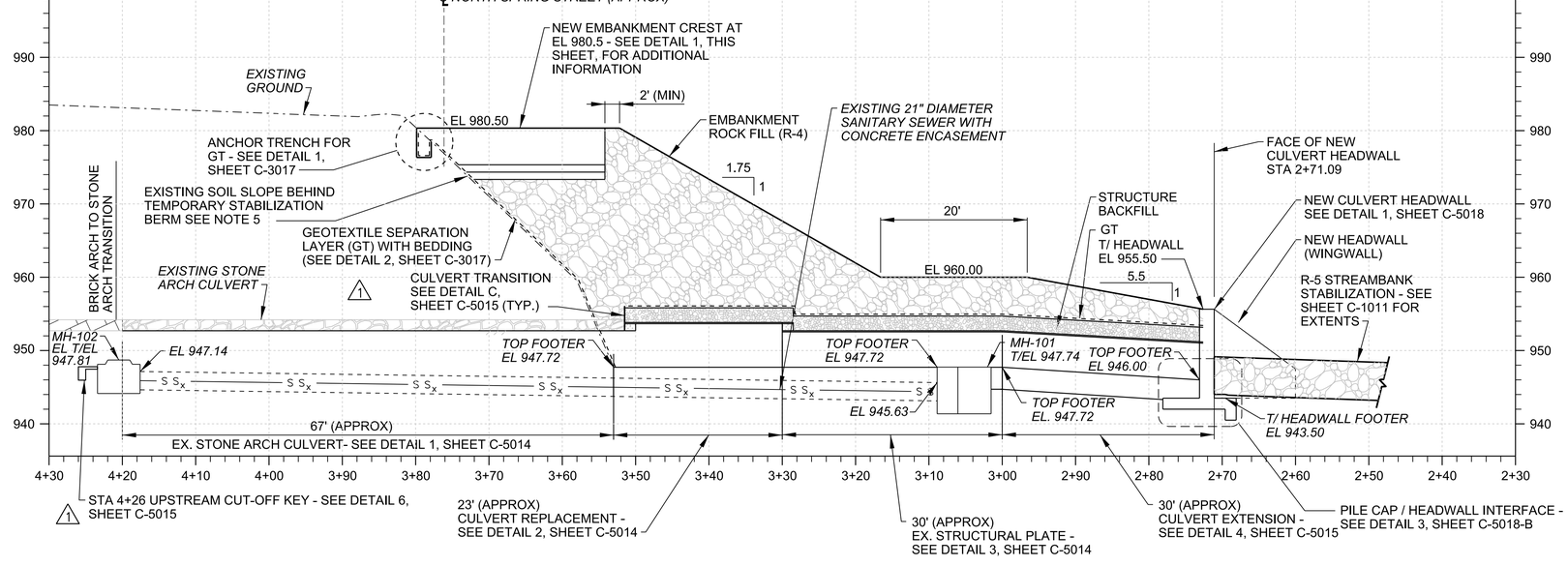
SCALE: 1" - 10'

NOTES:

1. 5-FT SHOULDER ALLOWANCE FROM EDGE OF ORIGINAL PAVEMENT LINE TO EDGE OF CREST.
2. FINISHED PAVEMENT GRADE TO BE DETERMINED BY BOROUGH OF BLAIRSVILLE.

1 DETAIL - EMBANKMENT CREST

C-4012 NTS



PROFILE - CULVERT LINING AND REPLACEMENT AND EMBANKMENT REPAIR ALONG ℄ OF CULVERT

SCALE: 1" = 10'

NOTES:

1. SHOWN ON SURVEY CONTROL SHEET V-1001, SPECIFICALLY 5/8" REBAR (STA 0+81.80) AND NO MONUMENT (DESTROYED) (STA 1+69.12).
2. BASE AWARD SHALL BE LINED WITH CCCP LINER, OR OTHER APPROVED MATERIAL, BETWEEN STATION 3+80 AND STATION 2+95. FLOWLINE SHALL BE LINED WITH OF INVERT REPAIR MORTAR BETWEEN STATION 4+26 AND STATION 2+71.
3. CCCP LINER, OR OTHER APPROVED MATERIAL, SHALL BE INSTALLED UPSTREAM IN THE STONE ARCH CULVERT BETWEEN STATION 3+80 AND STATION 4+20, AND IN THE DOWNSTREAM CULVERT EXTENSION BETWEEN STATION 2+71 AND STATION 2+95, IF OPTIONS ARE AWARDED.
4. CCCP LINER AND FLOWABLE MORTAR SHALL MEET THE REQUIREMENTS OF SPEC SECTION 33 01 30.72. EXISTING SANITARY MANHOLES AND PIPES ENTERING THE SYSTEM SHALL BE COVERED TO PREVENT LINING.
5. ONCE TEMPORARY STABILIZATION BERM HAS BEEN REMOVED, CONTRACTOR SHALL EXCAVATE NO MORE OF THE SOIL SLOPES THAN NECESSARY TO EFFECT A SMOOTH, UNIFORM SURFACE FOR PLACEMENT OF GEOTEXTILE AND BEDDING LAYER, EXCEPT WHERE ADDITIONAL EXCAVATION IS NECESSARY FOR INSTALLING APPROVED SLOPING, BENCHING, OR SHORING.

0 10' 20'
SCALE: 1"=10'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE
2	REVISED AMENDMENT 2	8-29-2017
1	REVISED AMENDMENT 1	8-17-2017

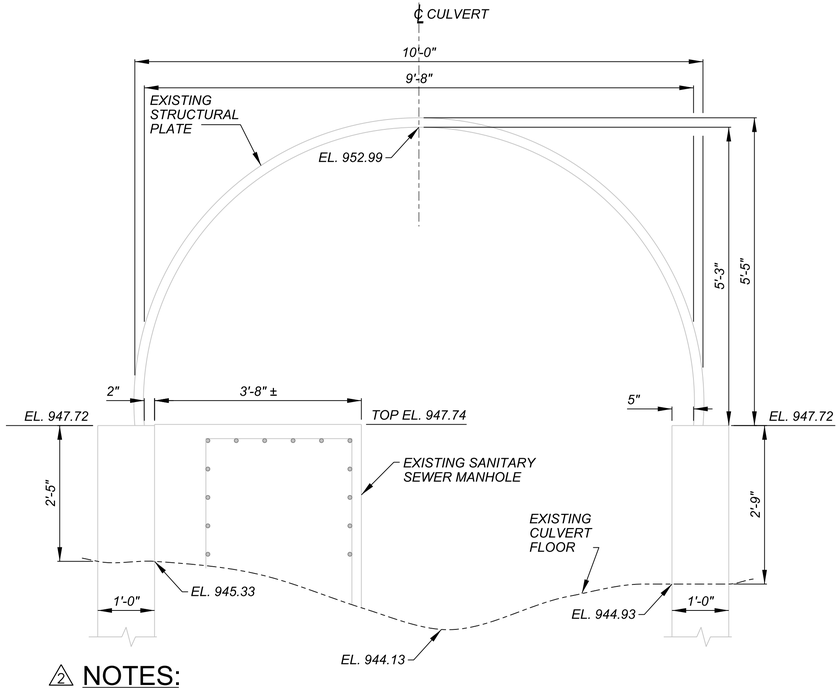
DESIGNED BY: A. MARKUM
DRAWN BY: B. CRATTY/B. BAKER
CHECKED BY: E. GUY
SUBMITTED BY: M. FRENCH, P.E.
QUALITY CONTROL BY: E. GUY
ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
CONTRACT NO.:
FILE NAME: A0388b_086_C-4012-B.dgn
PLOT DATE: 31-AUG-2017 12:47
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA. 15222

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

CULVERT REPLACEMENT AND LINING
PLAN AND SECTION

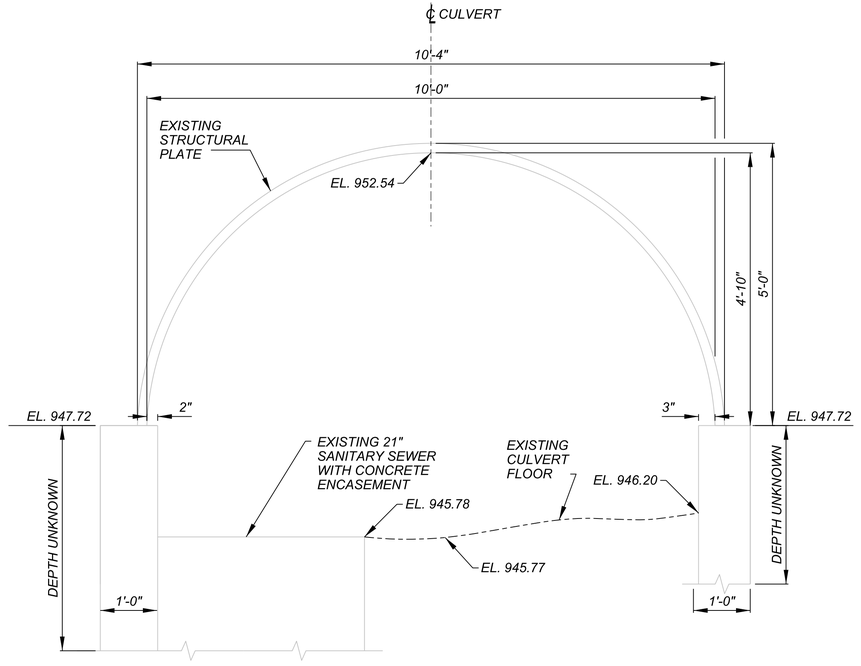
SHEET ID
C-4012-B



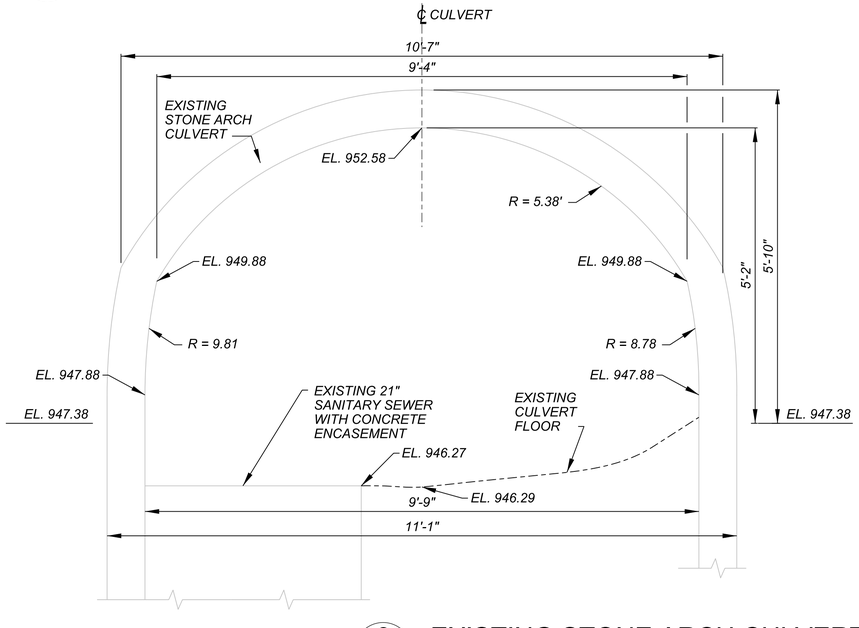
⚠2 NOTES:

1. EXISTING MANHOLE SHALL BE PROTECTED TO AVOID LINING.
2. EXISTING STRUCTURAL PLATE, CONCRETE, AND FLOWLINE SHALL BE LINED AS INDICATED ON DETAIL 3 ON SHEET C-5014.

1 C-5013 EXISTING STRUCTURAL PLATE LOOKING UPSTREAM STA 3+03.44
NTS



2 C-5013 EXISTING STRUCTURAL PLATE LOOKING UPSTREAM STA 3+31.44
NTS



3 C-5013 EXISTING STONE ARCH CULVERT LOOKING UPSTREAM STA 3+53.44
NTS

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MARK	DESCRIPTION		DATE
1	REVISED AMENDMENT 2	EG	8-29-2017

DESIGNED BY: J. FREEMAN
DRAWN BY: B. BAKER
CHECKED BY: E. GUY
SUBMITTED BY: ISI FRENCH D. GOT, P.E.
ANSI D

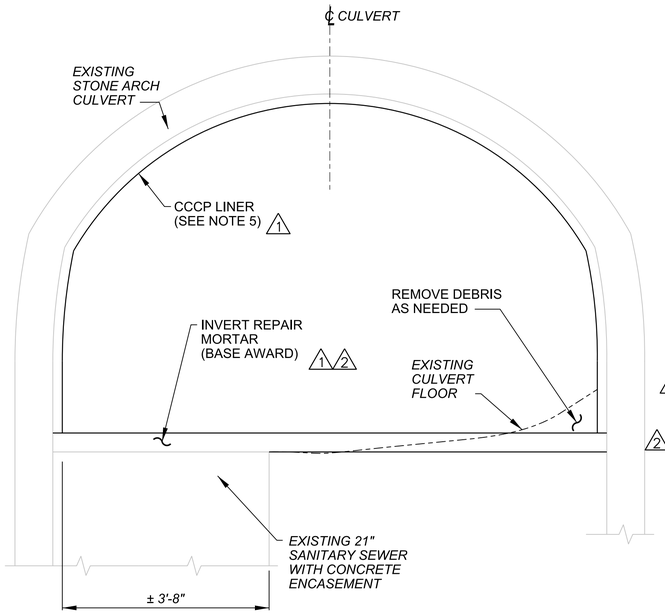
ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
CONTRACT NO.:
FILE NAME: AO388d_i586_C-5013-A.dgn
SIZE: C-5013-A.dgn
PLOT DATE: 31-AUG-2017 12:47

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA. 15222

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

EXISTING CONDITIONS
CULVERT SECTIONS

SHEET ID
C-5013-A

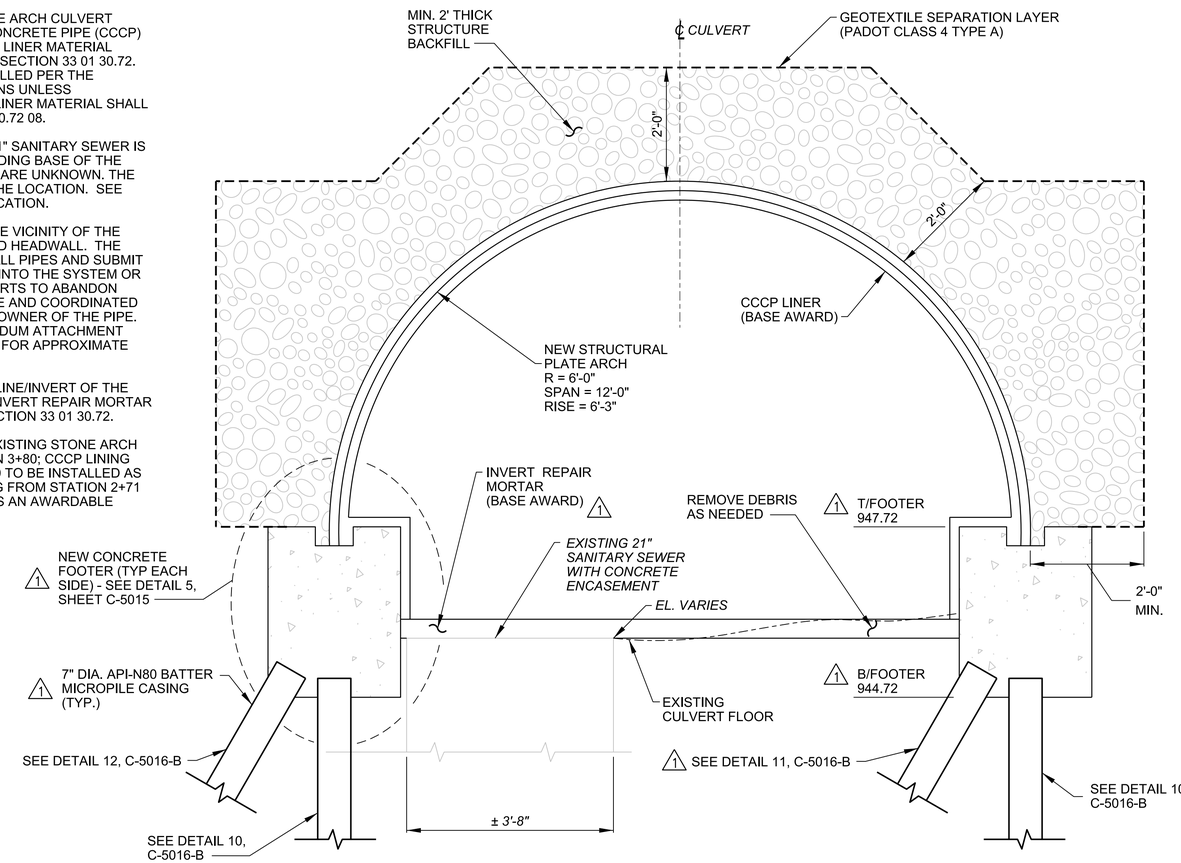


1 C-4012 NTS

CCCP LINER FOR EXISTING STONE ARCH CULVERT LINING

NOTES:

1. LINER MATERIAL FOR EXISTING STONE ARCH CULVERT SHALL BE A CENTRIFUGALLY CAST CONCRETE PIPE (CCCP) OR OTHER APPROVED ALTERNATIVE. LINER MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION 33 01 30.72. THE LINER MATERIAL SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE NOTED. THICKNESS OF LINER MATERIAL SHALL MEET THE REQUIREMENTS OF 33 01 30.72 08.
2. AN EXISTING, CONCRETE-ENCASED 21" SANITARY SEWER IS LOCATED ALONG THE RIGHT DESCENDING BASE OF THE ARCH CULVERT. EXACT DIMENSIONS ARE UNKNOWN. THE CONTRACTOR SHALL FIELD-VERIFY THE LOCATION. SEE SHEET G-1012 FOR APPROXIMATE LOCATION.
3. MULTIPLE PIPES CAN BE FOUND IN THE VICINITY OF THE WORK AREA INSIDE THE CULVERT AND HEADWALL. THE CONTRACTOR SHALL FIELD LOCATE ALL PIPES AND SUBMIT A PLAN TO INCORPORATE THE PIPES INTO THE SYSTEM OR ABANDON AS APPLICABLE. ANY EFFORTS TO ABANDON PIPES SHALL BE APPROVED BY USACE AND COORDINATED WITH THE APPROPRIATE AUTHORITY/OWNER OF THE PIPE. SEE CONDUIT INSPECTION MEMORANDUM ATTACHMENT FOR REFERENCE. SEE SHEET G-1012 FOR APPROXIMATE LOCATIONS OF KNOWN PIPES.
4. CONTRACTOR SHALL LINE THE FLOWLINE/INVERT OF THE BOTTOMLESS ARCH CULVERT WITH INVERT REPAIR MORTAR MEETING THE REQUIREMENTS OF SECTION 33 01 30.72.
5. BASE AWARD FOR CCCP LINING OF EXISTING STONE ARCH BETWEEN STATION 2+95 AND STATION 3+80; CCCP LINING FROM STATION 3+80 TO STATION 4+20 TO BE INSTALLED AS AN AWARDABLE OPTION. CCCP LINING FROM STATION 2+71 TO STATION 2+95 TO BE INSTALLED AS AN AWARDABLE OPTION.

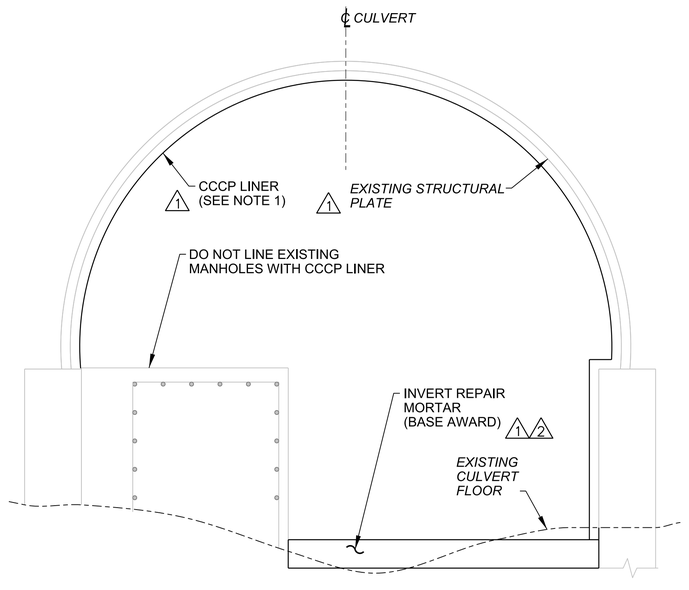


NOTES:

1. STRUCTURE BACKFILL SHALL BE PLACED AND COMPACTED AS SHOWN AROUND ALL STRUCTURAL ARCH CULVERT. STRUCTURE BACKFILL AND COMPACTION SHALL MEET THE REQUIREMENTS OF 31 00 00 FOR EARTHWORK, SECTION 3.11.1.2 STRUCTURE BACKFILL. GEOTEXTILE FABRIC SHALL BE PLACED CONTINUOUSLY BETWEEN THE STRUCTURE BACKFILL AND THE EMBANKMENT ROCK FILL. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 31 05 19 GEOTEXTILE.
2. MINIMUM THICKNESS FOR STRUCTURAL PLATE SHALL BE 8 GAUGE. THE STRUCTURAL PLATE SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE NOTED. CONTRACTOR MAY SUBMIT ALTERNATIVES TO THE STRUCTURAL PLATE FOR APPROVAL.
3. NEW STRUCTURAL PLATE SHALL BE LINED WITH A CCCP OR OTHER APPROVED ALTERNATIVE.

2 C-4012 NTS

STRUCTURAL PLATE ARCH FOR CULVERT REPLACEMENT (STA 3+30 TO 3+53)



3 C-4012 NTS

CCCP LINER FOR EX. STRUCTURAL PLATE ARCH (STA 3+00 TO 3+30)

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE
2	REVISED AMENDMENT 2	8-29-2017
1	REVISED AMENDMENT 1	8-17-2017

DESIGNED BY: J. FREEMAN
DRAWN BY: B. CRATTY/B. BAKER
CHECKED BY: E. GUY
SUBMITTED BY: /S/ ERICH D. GUY, P.E.
QUALITY CONTROL BY:
ANSI D

ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
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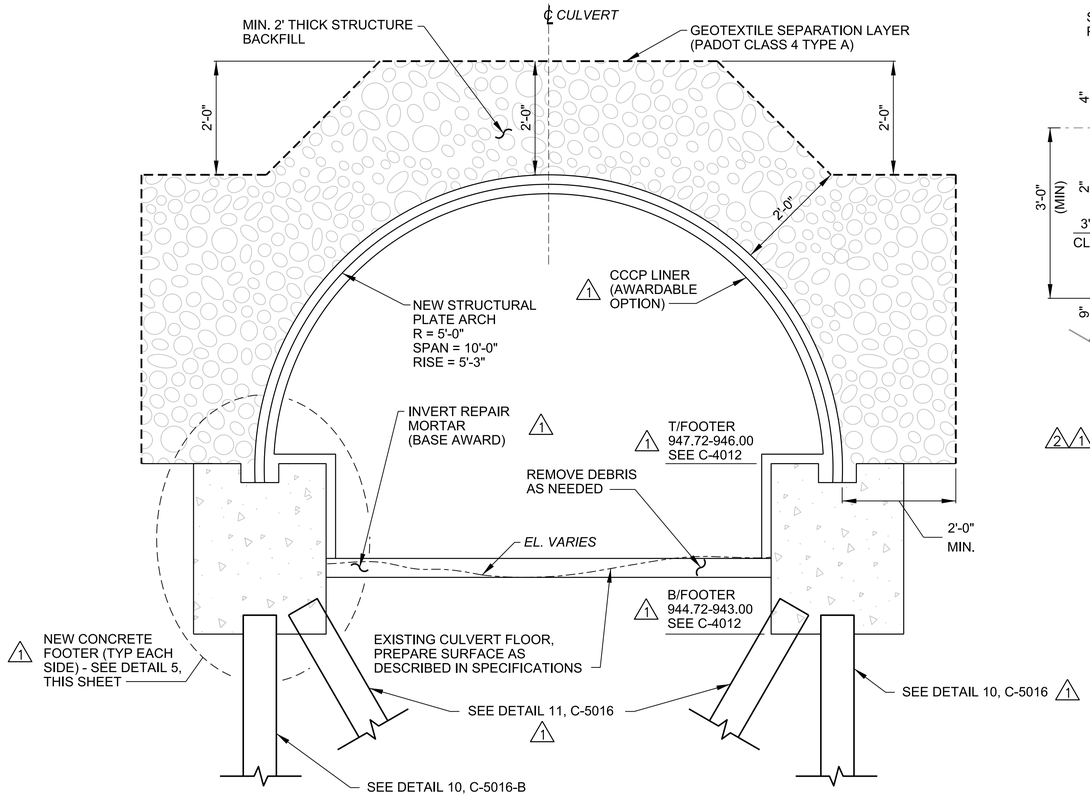
PLOT DATE: 31-AUG-2017 12:47

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA, 15222

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

CULVERT REPAIR DETAILS
SHEET 1 OF 3

SHEET ID
C-5014-B

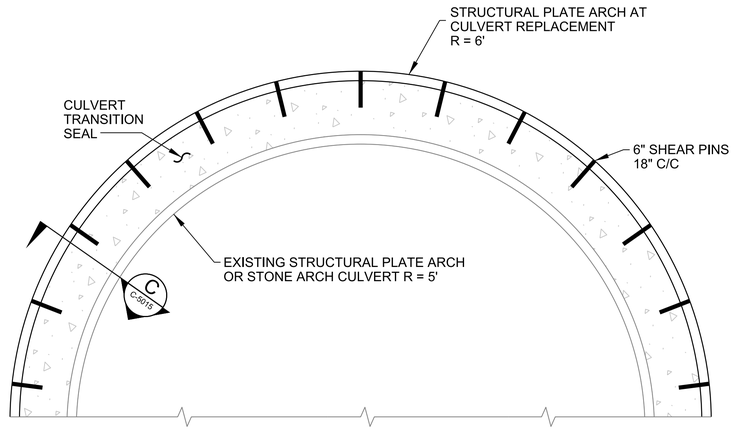


NOTE:

1. CCCP LINING OF THE STRUCTURAL PLATE ARCH FOR CULVERT EXTENSION TO BE INSTALLED AS AN AWARDABLE OPTION.

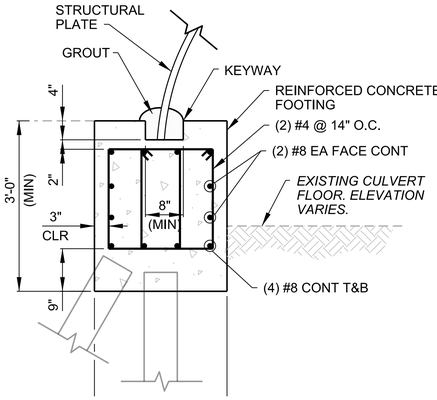
2 4 C-4012 STRUCTURAL PLATE ARCH FOR CULVERT EXTENSION

NTS



7 C-4012 CULVERT TRANSITION (STA 3+30 AND 3+53)

NTS



2 1 5 C-4012 C-5014 C-5015 FOOTER REINFORCEMENT DETAIL

NTS

STRUCTURAL PLATE ARCH FOOTER NOTES:

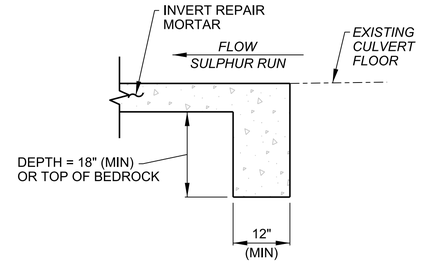
1 1. THE FOOTERS SHALL BE CAST-IN-PLACE CONCRETE MEETING THE REQUIREMENTS OF 03 30 00 CAST-IN-PLACE CONCRETE.

1 2. FOOTERS SHALL MEET THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES.

1 3. SURFACES AGAINST WHICH CONCRETE IS TO BE PLACED MUST BE FREE OF DEBRIS, LOOSE MATERIAL, STANDING WATER, SNOW, ICE, AND OTHER DELETERIOUS SUBSTANCES BEFORE START OF CONCRETE PLACING.

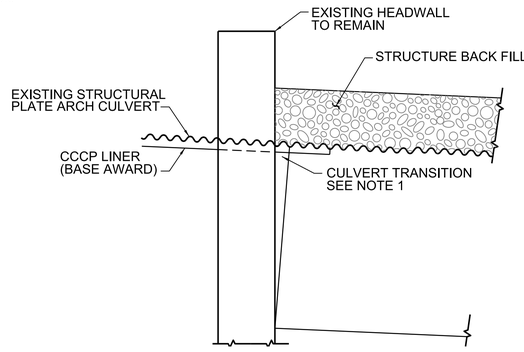
1 4. THE CONNECTION OF THE STRUCTURAL PLATE TO THE FOOTING SHALL BE MADE BY A GROUTED KEYWAY/SLOT (SEE FOOTER DETAIL, THIS SHEET). GROUT SHALL MEET THE REQUIREMENTS OF SECTION 31 73 00.

1 5. THE CONTRACTOR SHALL COORDINATE KEYWAY DIMENSIONS WITH THE MANUFACTURER AND REVISE DIMENSIONS ACCORDINGLY.



6 C-4012 UPSTREAM CUT-OFF KEY

NTS

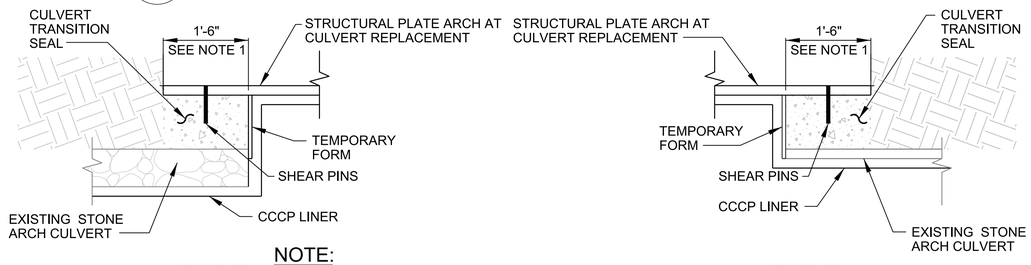


NOTE:

1. CONTRACTOR SHALL SUBMIT FOR APPPROVAL A CUSTOM FABRICATED CULVERT TRANSITION MATCHING THE MATERIALS OF THE STRUCTURAL ARCH PLATE

2 8 C-4012 UPSTREAM CUT-OFF KEY

NTS



NOTE:

1. STRUCTURAL PLATE ARCH AT CULVERT REPLACEMENT SHALL OVERLAP EXISTING ARCHES MIN. 18".
2. CULVERT TRANSITION SEAL SHALL BE NON-SHRINK GROUT MEETING THE REQUIREMENTS OF SECTION 31 73 00.00 OR OTHER APPROVED ALTERNATIVES.
3. CONTRACTOR SHALL STABILIZE THE INSIDE OF THE STONE ARCH CULVERT WITH A SURFACE APPLIED TREATMENT AS NEEDED TO ACCOMMODATE THE NEW CONSTRUCTION. THE STONE SHALL BE REMOVED TO A LINE THAT VARIES NO MORE THAN 6" ACROSS A SINGLE STATION PRIOR TO PLACEMENT OF THE TRANSITION SEAL AND CCCP LINER.
4. TEMPORARY FORM TO BE REMOVED PRIOR TO PLACING CCCP LINER.

2 1 C C-5015 TRANSITION SECTION

NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE
2	REVISED AMENDMENT 2	8-29-2017
1	REVISED AMENDMENT 1	8-17-2017

DESIGNED BY: J. FREEMAN
DRAWN BY: B. CRATTY/B. BAKER
CHECKED BY: E. GUY
SUBMITTED BY: M. FERCH, P.E.
SIGNATURE / DOT DATE:
ANSI D

ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
CONTRACT NO.:
FILE NAME: AO3bb_086_C-5015-B.dgn
31-AUG-2017 12:47

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA, 15222

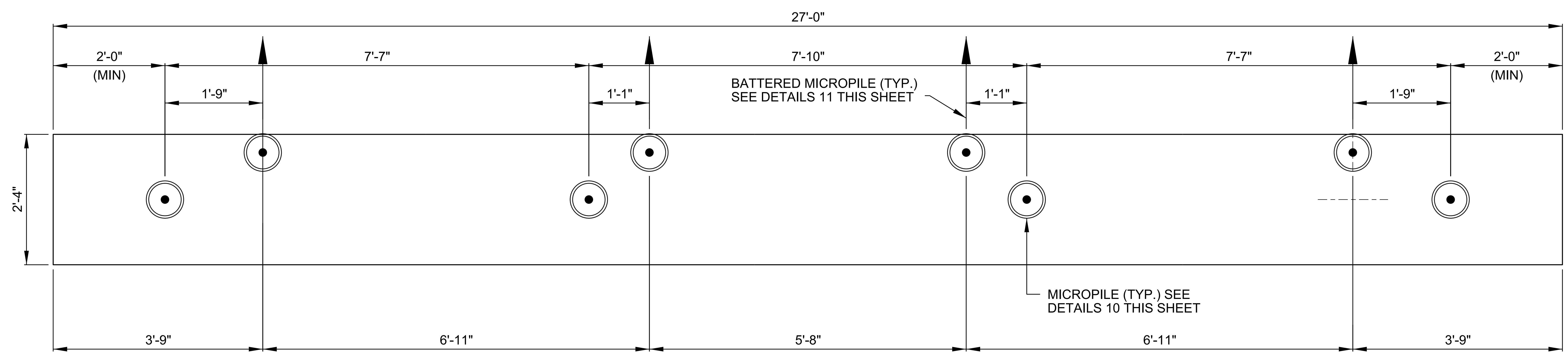
ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

CULVERT REPAIR DETAILS
SHEET 2 OF 3

SHEET ID
C-5015-B

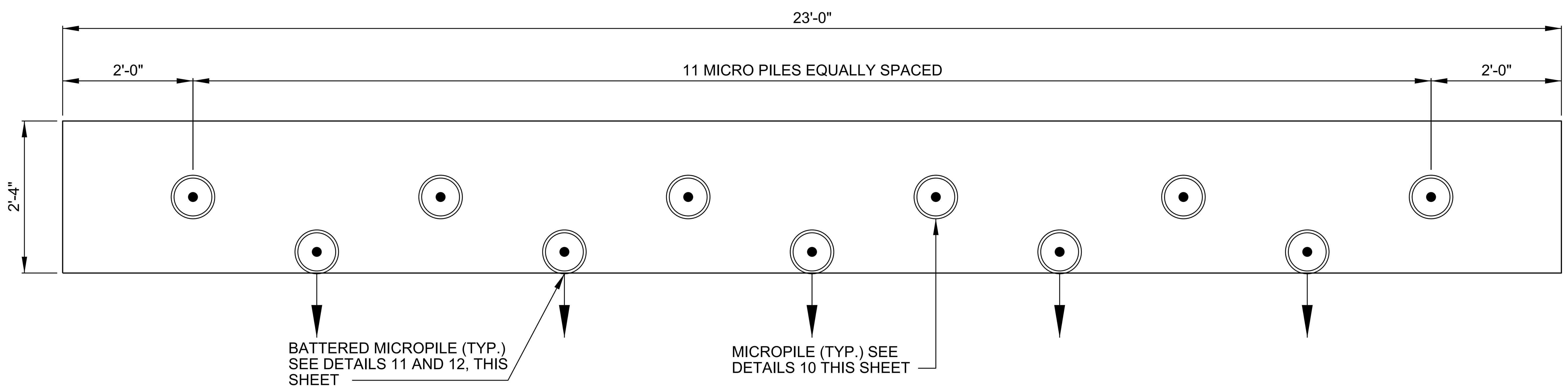
H4TSDRST 0.083334:1

CERTIFIED FINAL DOCUMENTS



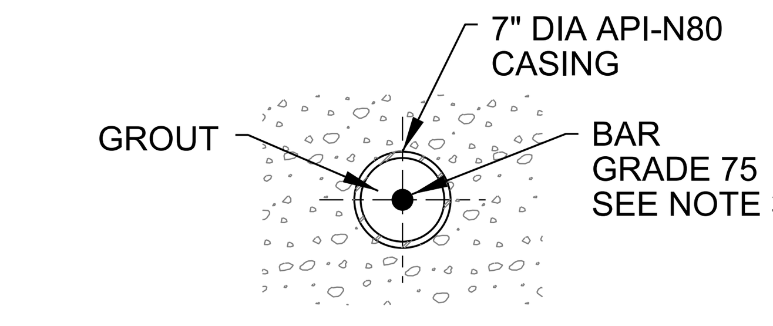
10 (C-4012) CULVERT EXTENSION MICROPILES (STA 2+73 TO 3+00)

NTS



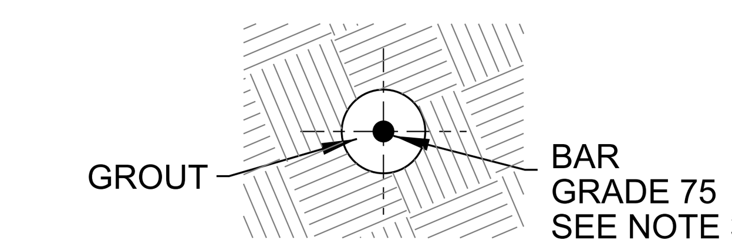
9 (C-4012) CULVERT REPLACEMENT MICROPILES (STA 3+30 TO 3+53)

NTS



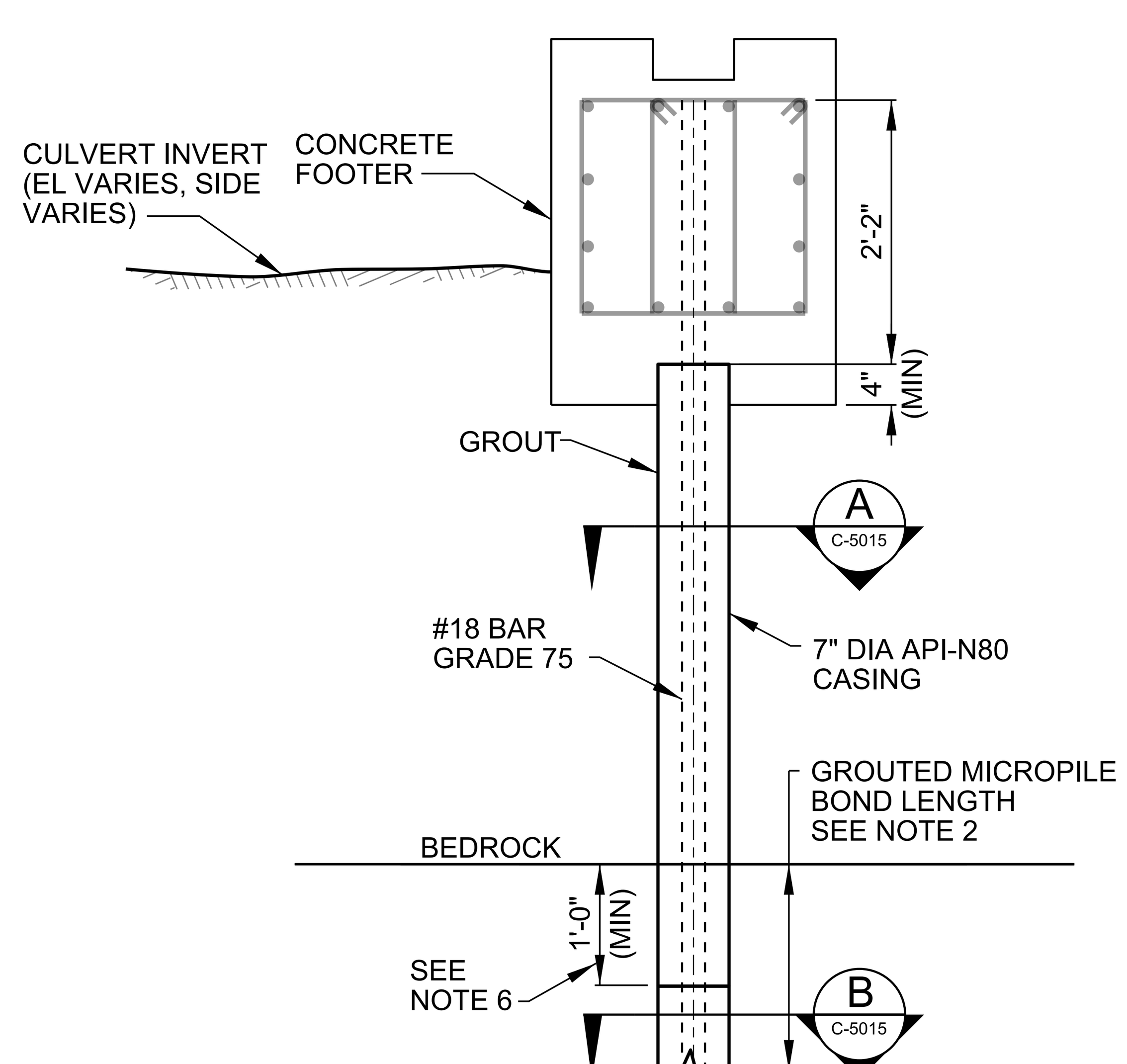
A (C-5015) MICROPILE SECTION IN SOIL

NTS



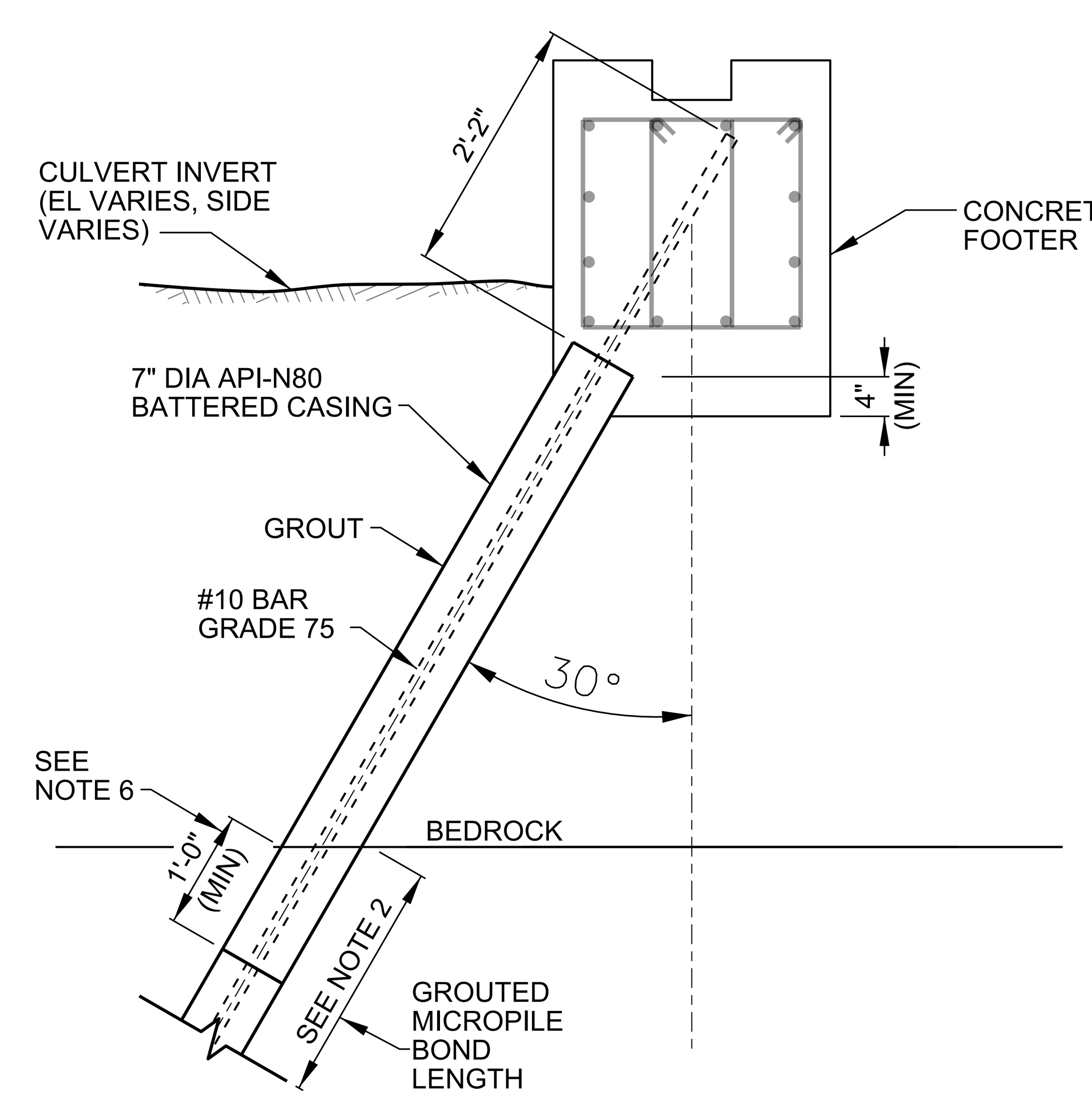
B (C-5015) MICROPILE SECTION IN BEDROCK

NTS



10 (C-5015) DETIAIL - VERTICAL MICROPILE

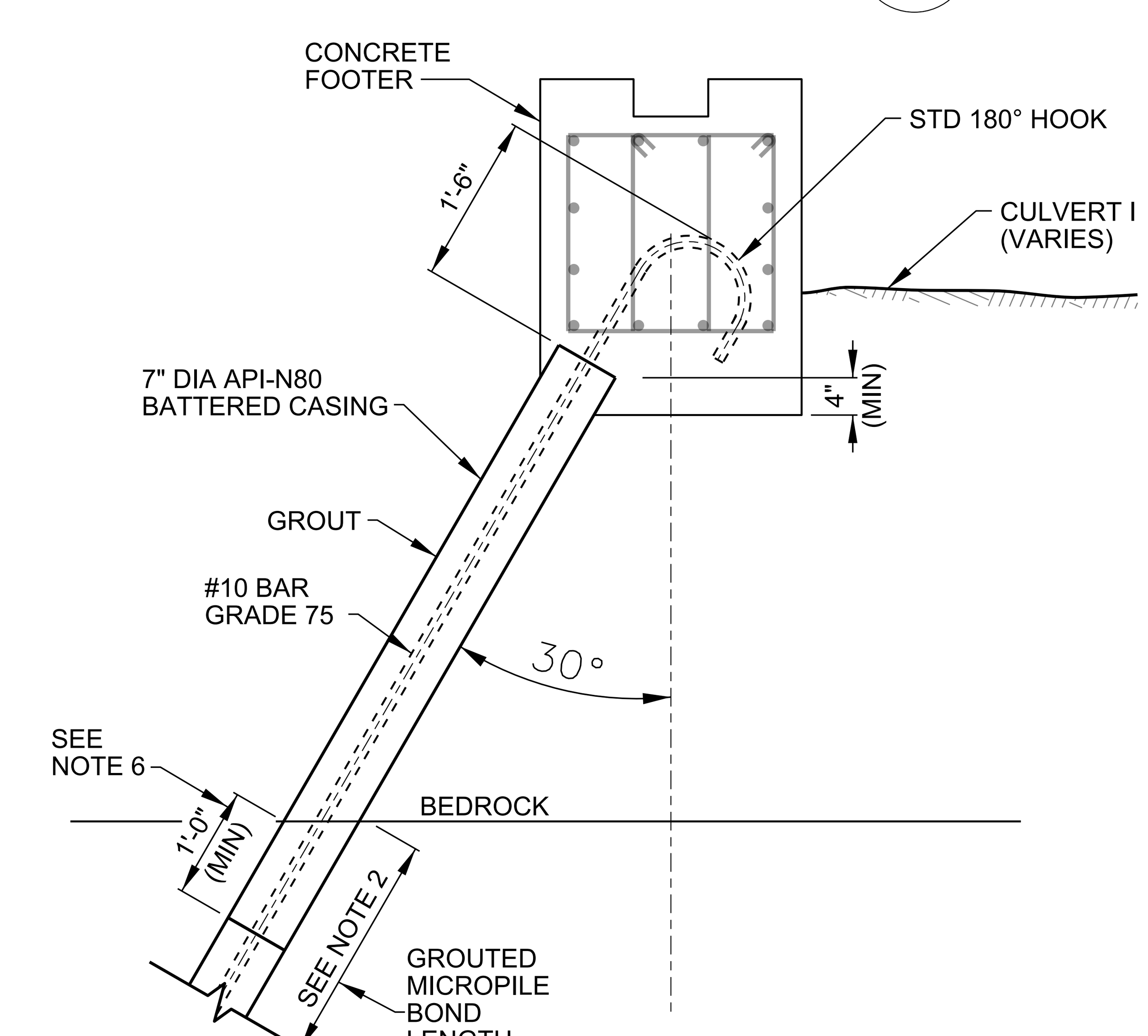
NTS



11 (C-5015) DETAIL - BATTERED COMPRESSION MICROPILE

NTS

STA 3+30 TO 3+53 FT RIGHT
STA 2+73 TO 3+00 5FT RIGHT
STA 2+73 TO 3+00 5FT LEFT (REVERSED)



NOTE:

1. 7" DIA API N-80 CASING IS TO HAVE AN OUTER DIAMETER OF 7 IN. AND A WALL THICKNESS OF 0.498 IN.
2. GROUTED MICROPILE BOND LENGTH SHALL BE AS SHOWN BELOW:
   CULVERT REPLACEMENT (STA 3+30 TO 3+53)
   VERTICAL: 21 FEET BATTERED: 10 FEET
   CULVERT EXTENSION (STA 2+73 TO 3+00)
   VERTICAL: 21 FEET BATTERED: 10 FEET
3. BATTERED PILES SHALL CONTAIN NO. 10 BAR. VERTICAL PILES SHALL CONTAIN NO. 18 BAR.
4. BATTERED PILE CULVERT REPLACEMENT SECTION: BATTER PILES AWAY FROM CENTERLINE STATION 3+30 TO 3+53 OFFSET 5 FT LEFT. BATTER PILES TOWARD CENTERLINE STATION 3+30 TO 3+53 OFFSET 5 FT RIGHT.
5. BATTERED PILE CULVERT EXTENSION SECTION: BATTER PILES TOWARD CENTERLINE STATION 2+73 TO 3+00.
6. MICOPILE CASING SHALL EXTEND A MINIMUM OF 1 FOOT INTO BEDROCK.
7. ALL BENDS AND HOOKS OF REINFORCEMENT SHALL BE PER ACI DETAILING MANUAL.

12 (C-5015) DETAIL - BATTERED TENSION MICROPILE

NTS

STA 3+30 TO 3+53 5FT LEFT

US Army Corps of Engineers®

MARK	DESCRIPTION		DATE
2	REVISED AMENDMENT 2	EG	8-29-2017
1	REVISED AMENDMENT 1	EG	8-17-2017

ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
CONTRACT NO.:
FILE NAME: AO38ab_886_C-5016-B.dgn
PLOT DATE: 31-AUG-2017 14:24
SIZE: ANSI D

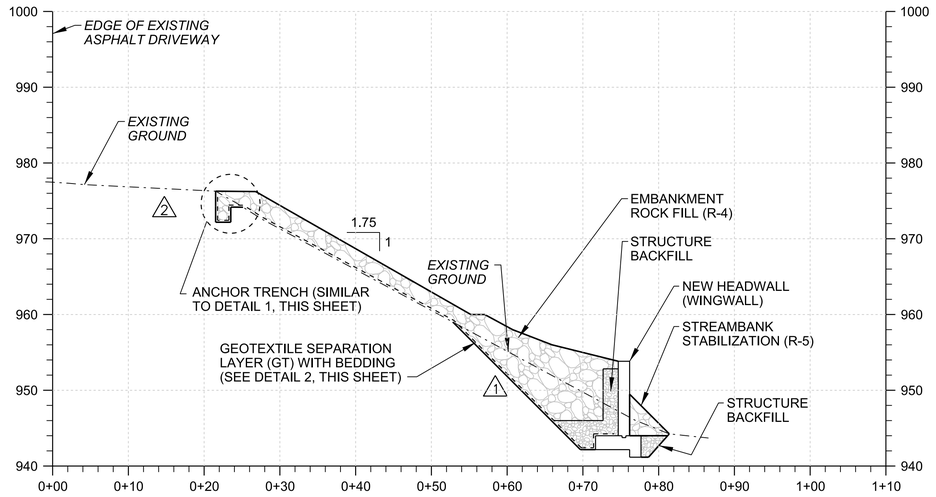
DESIGNED BY: J. FREEMAN
DRAWN BY: B. BAKER
CHECKED BY: E. GUY
SUBMITTED BY: /s/ ERICH D. GUY, P.E.

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA, 15222

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

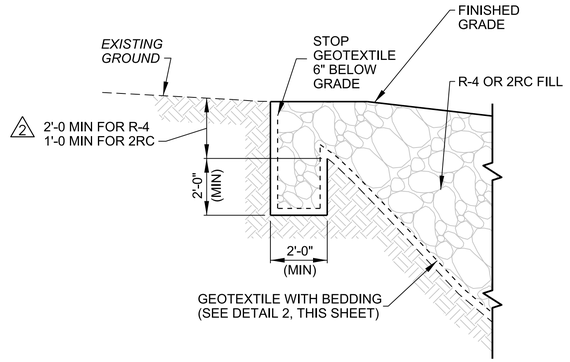
CULVERT REPAIR DETAILS
SHEET 3 OF 3

SHEET ID
C-5016-B



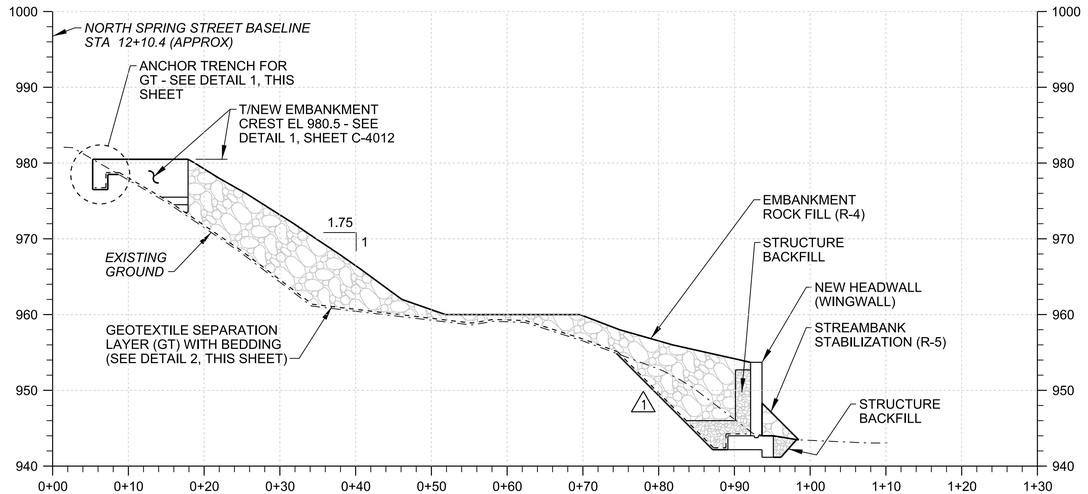
A C-1011 SECTION - EMBANKMENT REPAIR

SCALE: 1" = 10'



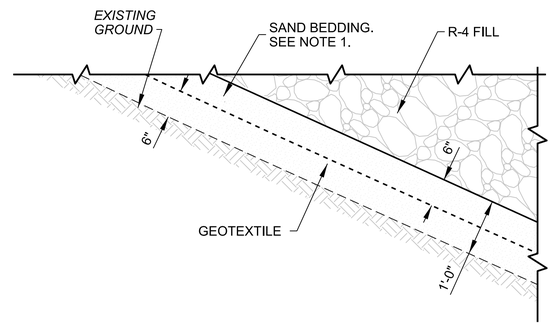
1 C-3017 C-4012 DETAIL - ANCHOR TRENCH (TYP)

NTS



B C-1011 SECTION - EMBANKMENT REPAIR

SCALE: 1" = 10'



2 C-3017 C-4012 DETAIL - GEOTEXTILE WITH BEDDING

NTS

NOTES:

1. SAND BEDDING SHALL MEET THE REQUIREMENTS OF SPEC SECTION 31 00 00 SECTION 3.12.5.

0 10' 20'

SCALE: 1"=10'

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MARK	DESCRIPTION	DATE
2	REVISED AMENDMENT 2	8-29-2017
1	REVISED AMENDMENT 1	8-17-2017

ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
CONTRACT NO.:

DESIGNED BY: A. MARKUM
DRAWN BY: B. CRATTY
CHECKED BY: E. GUY
SUBMITTED BY: M. PERICH, GOVT
SCALE: AS NOTED
ANSI D

FILE NAME: AO38tb_i386_C-3017-B.dgn
P.E. DATE: 31-AUG-2017 12:47

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA, 15222

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

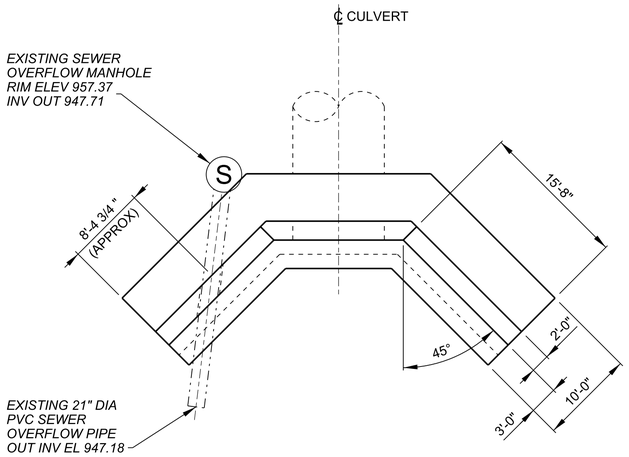
EMBANKMENT REPAIRS SECTIONS

SHEET ID

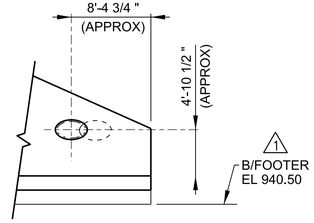
C-3017-B

H4TSDRST 10.00002:1

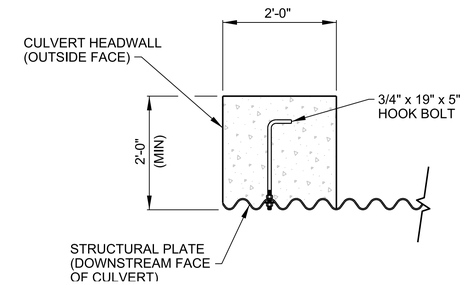
CERTIFIED FINAL DOCUMENTS



PLAN VIEW

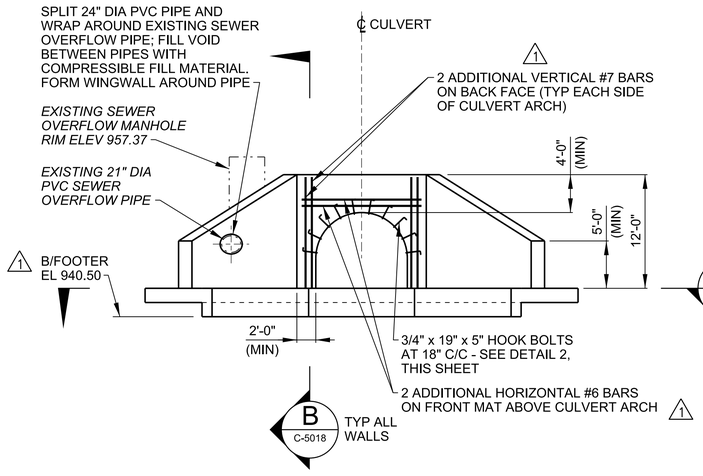


LEFT WINGWALL - REAR ELEVATION

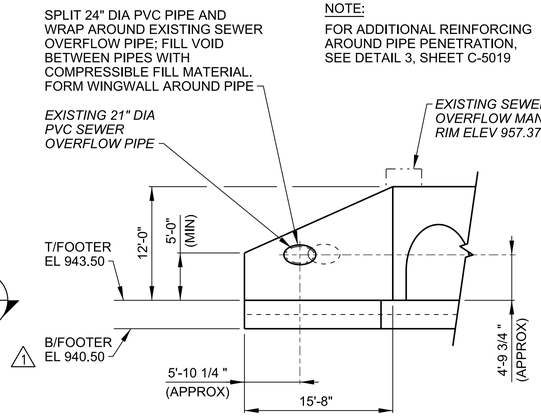


2 C-5018 DETAIL - STRUCTURAL PLATE ANCHORAGE

SCALE: 3/4" = 1'-0"



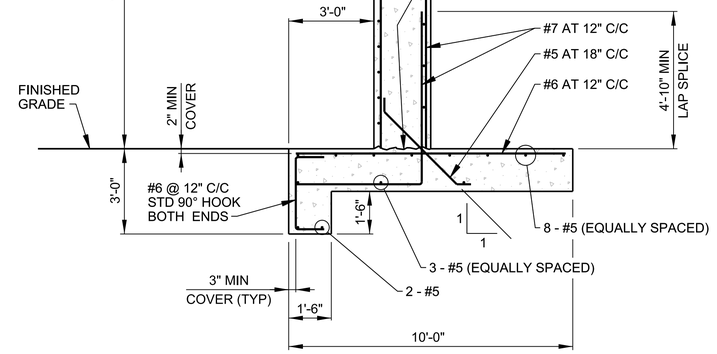
FRONT ELEVATION



LEFT WINGWALL - FRONT ELEVATION

NOTE:

FOR ADDITIONAL REINFORCING
AROUND PIPE PENETRATION,
SEE DETAIL 3, SHEET C-5019

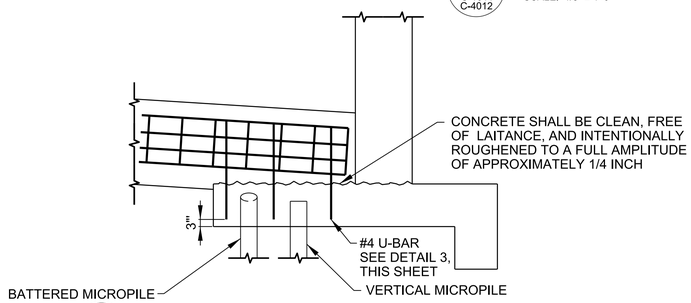


B C-5018 TYPICAL WALL SECTION

SCALE: 3/8" = 1'-0"

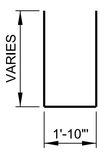
1 C-1011 C-4012 DETAIL - CULVERT HEADWALL

SCALE: 1/8" = 1'-0"



2 3 C-4012 DETAIL - PILE CAP / HEADWALL INTERFACE

SCALE: 3/8" = 1'-0"



2 3 C-4012 DETAIL - U-BAR

SCALE: 3/8" = 1'-0"

NOTES:

1. A HEADWALL WITH WINGWALLS SHALL BE INSTALLED AS AN END TREATMENT FOR THE ARCH CULVERT. THE HEADWALL AND WINGWALLS SHALL BE REINFORCED CONCRETE UNLESS OTHERWISE APPROVED. THE HEADWALL MAY BE EITHER CAST-IN-PLACE OR PRECAST. CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 03 30 00 CAST-IN-PLACE CONCRETE.
2. CONCRETE SHALL BE 5,000 PSI COMPRESSIVE STRENGTH CONCRETE.
3. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" x 45° CHAMFER. CHAMFER ON VERTICAL EDGES SHALL BE CONTINUED A MINIMUM OF 1-FT BELOW FINISHED GROUND LINE.
4. ALL REINFORCING STEEL SHALL BE EPOXY COATED BARS, UNLESS OTHERWISE NOTED ON THE DETAIL. MINIMUM COVER FOR REINFORCING SHALL BE AS SHOWN IN THE DETAILS.
5. THE STRUCTURE BACKFILL SHALL BE INSTALLED AS SHOWN ON DETAIL 1, SHEET C-5015, SECTIONS A AND B ON C-3017, AND THE PROFILE ON C-4012. THE STRUCTURE BACKFILL SHALL TERMINATE 2' BELOW THE TOP OF THE HEADWALL AND WINGWALLS. STRUCTURE BACKFILL AND COMPACTION SHALL MEET THE REQUIREMENTS OF SECTION 31 00 00 FOR EARTHWORK, SECTION 3.11.1.2 STRUCTURE BACKFILL. GEOTEXTILE FABRIC SHALL BE PLACED CONTINUOUSLY BETWEEN THE STRUCTURE BACKFILL AND THE EMBANKMENT ROCK FILL. GEOTEXTILE FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 31 05 19 GEOTEXTILE.
2. 6. ALL BENDS AND HOOKS OF REINFORCEMENT SHALL BE PER ACI DETAIL MANUAL.

0 1' 2' 4' SCALE: 3/4"=1'

0 2' 4' 8' SCALE: 3/8"=1'

0 4' 8' 16' SCALE: 1/8"=1'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE
2	REVISED AMENDMENT 2	8-29-2017
1	REVISED AMENDMENT 1	8-17-2017

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA, 15222

DESIGNED BY: J. FREEMAN
DRAWN BY: B. CRATTY/B. BAKER
CHECKED BY: E. GUY / G. MEYER
SUBMITTED BY: M. FRENCH, P.E.
SUPERVISED BY: A. SEE
ANSI D

ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
CONTRACT NO.:
FILE NAME: AO38bb_686_C-5018-B.dgn
PLOT DATE: 31-AUG-2017 12:48

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

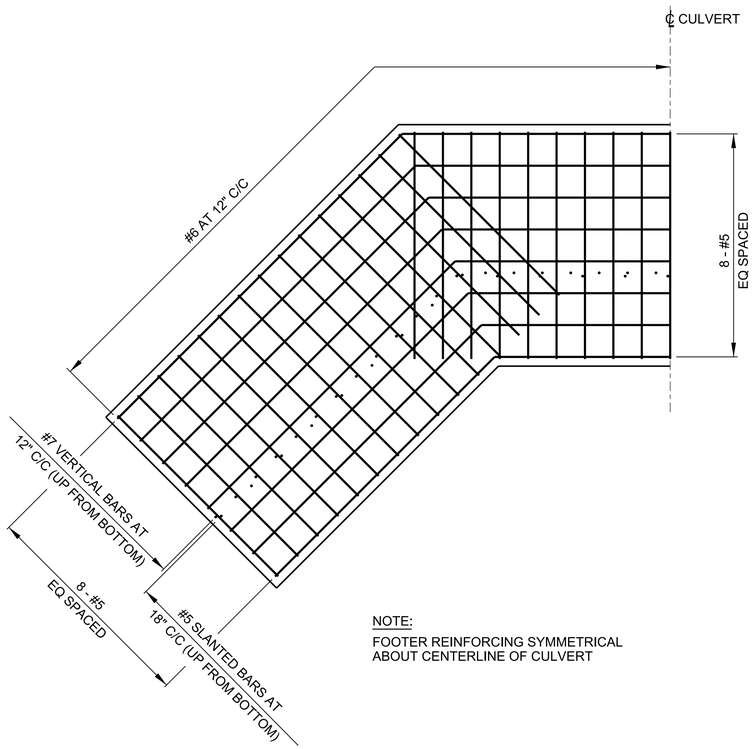
HEADWALL DETAILS
SHEET 1 OF 2

SHEET ID

C-5018-B

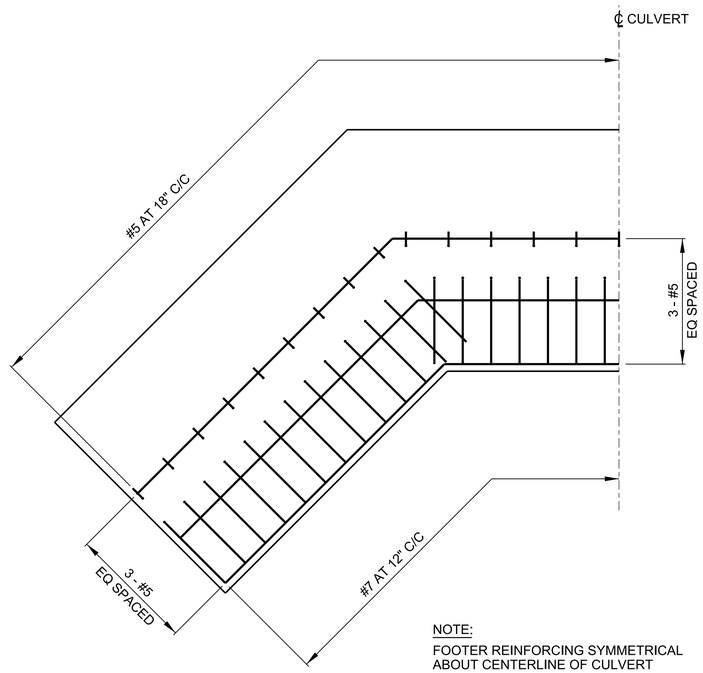
H4TSDRST 0.083334:1

CERTIFIED FINAL DOCUMENTS



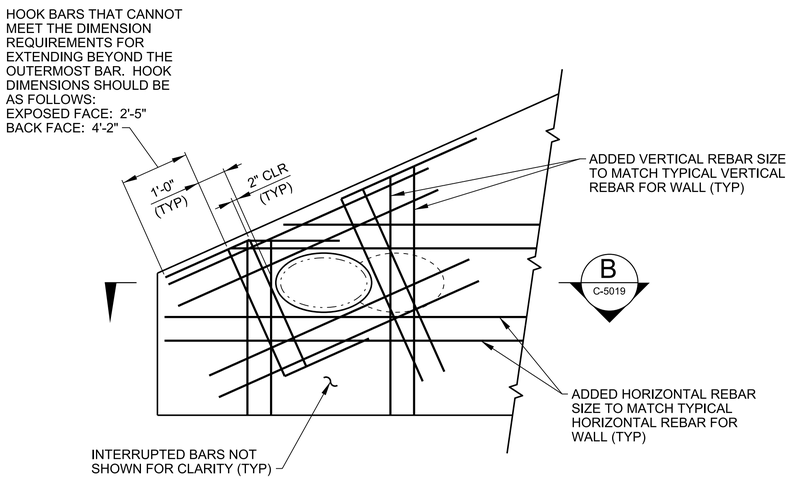
NOTE:
FOOTER REINFORCING SYMMETRICAL
ABOUT CENTERLINE OF CULVERT

A C-5018 SECTION - FOOTER REINFORCING - TOP LAYER
SCALE: 3/8" = 1'-0"

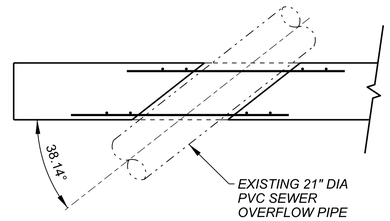


NOTE:
FOOTER REINFORCING SYMMETRICAL
ABOUT CENTERLINE OF CULVERT

A C-5018 SECTION - FOOTER REINFORCING - BOTTOM LAYER
SCALE: 3/8" = 1'-0"



1 3 C-5018 DETAIL - WINGWALL REINFORCING AT PIPE PENETRATION
SCALE: 3/8" = 1'-0"



B C-5019 SECTION - WINGWALL REINFORCING AT PIPE PENETRATION
SCALE: 3/8" = 1'-0"

NOTE:
1. WORK THIS DRAWING WITH SHEET C-5018.
1 2. ALL BENDS AND HOOKS OF REINFORCEMENT SHALL BE PER ACI DETAILING MANUAL.

0 2' 4' 8'
SCALE: 3/8"=1'

US Army Corps of Engineers®

MARK	DESCRIPTION		DATE
1	REVISED AMENDMENT	EG	8-29-2017

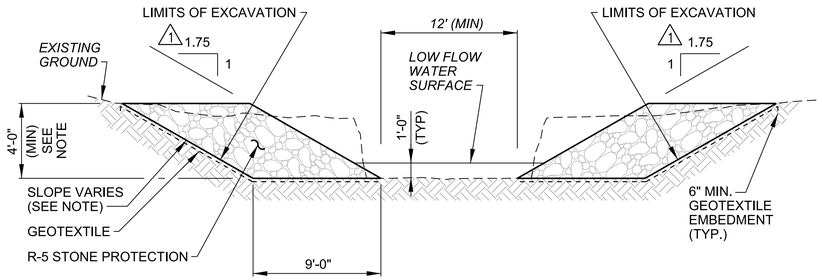
DESIGNED BY: J. FREEMAN	ISSUE DATE: 14 JULY 2017
DRAWN BY: B. CRATTY/B. BAKER	SOLICITATION NO.: W911WN-17-B-8007
CHECKED BY: E. GUY / G. MEYER	CONTRACT NO.:
SUBMITTED BY: M. FERCH, P.E.	FILE NAME: A0388d_686_C-5019-A.dgn
SIZE: ANSI D	PLOT DATE: 31-AUG-2017 14:26

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA, 15222

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

HEADWALL DETAILS
SHEET 2 OF 2

SHEET ID
C-5019-A

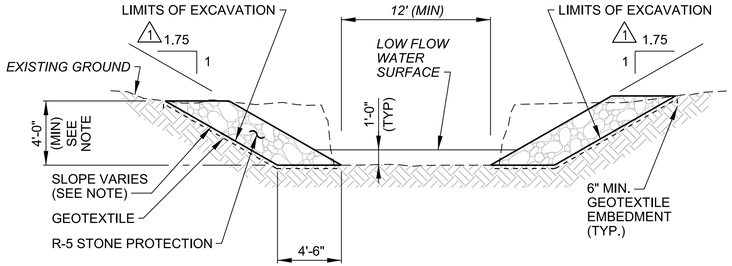


NOTE:

DIMENSIONS OF BANK STABILIZATION SHOWN ARE APPROXIMATE. DIMENSIONS OF BANK STABILIZATION VARY, BUT SHALL EXTEND TO THE TOP OF THE BANK OR NO LESS THAN 4 FEET. SLOPES VARY TO CONFORM TO EXISTING GROUND, BUT SHALL BE NO STEEPER THAN 1.75H:1V. FINAL DIMENSIONS SHALL BE DETERMINED IN THE FIELD.

1 C-1011 TYPICAL SECTION - REQUIRED MINIMUM BANK ARMORING

NTS

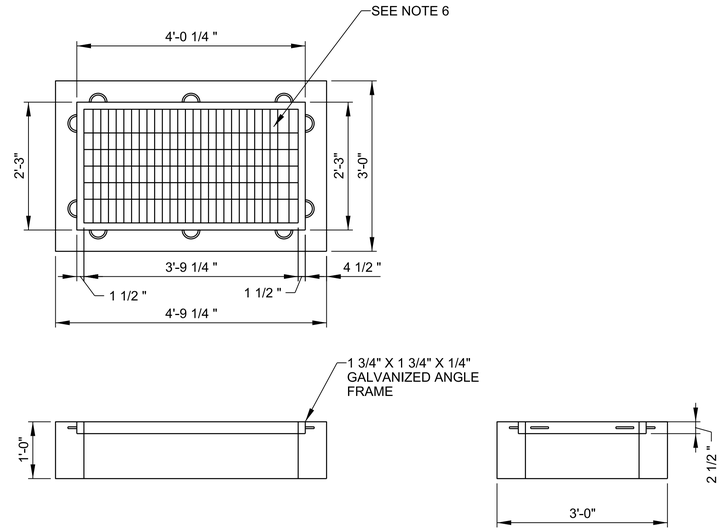


NOTE:

DIMENSIONS OF BANK STABILIZATION SHOWN ARE APPROXIMATE. DIMENSIONS OF BANK STABILIZATION VARY, BUT SHALL EXTEND TO THE TOP OF THE BANK OR NO LESS THAN 4 FEET. SLOPES VARY TO CONFORM TO EXISTING GROUND, BUT SHALL BE NO STEEPER THAN 1.75H:1V. FINAL DIMENSIONS SHALL BE DETERMINED IN THE FIELD.

2 C-1011 TYPICAL SECTION - EXTENDED BANK ARMORING

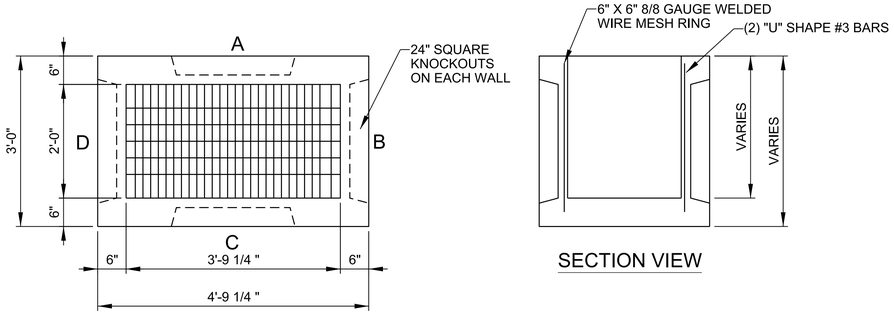
NTS



TYPE M TOP

NOTE:

1. PRECAST CONCRETE TO HAVE A COMPRESSIVE STRENGTH OF 4000 PSI WITHIN 28 DAYS.
2. ALL REINFORCEMENT TO HAVE A MINIMUM 1 1/2" CONCRETE COVER.
3. ALL OUTSIDE CORNERS TO HAVE A 1/2" X 1/2" CHAMFER
4. ALL TOLERANCES SHALL BE +/- 1/4" UNLESS NOTED.
5. SEE RC-45M SHEET 2 FOR REINFORCING DETAILS
6. SEE RC-45M SHEET 8 FOR STRUCTURAL STEEL BICYCLE SAFE GRATE.



TOP VIEW

SECTION VIEW

KNOCK OUT SIZES

WALL A AND C = 26" X 36"
WALL B AND D = 24" SQ.

NOTE:

1. PRECAST CONCRETE TO HAVE A COMPRESSIVE STRENGTH OF 4000 PSI WITHIN 28 DAYS.
2. THE INLETS AND GRATES SHALL MEET THE REQUIREMENTS OF SPECIFICATIONS SECTION 01 57 23.00 08 STORM WATER POLLUTION CONTROL.

3 X-1001 TYPICAL SECTION - TYPE M INLET

NTS

0 10' 20'
SCALE: 1"=10'

US Army Corps of Engineers®

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1	REVISED AMENDMENT 2	EG	8-29-2017

ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
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DESIGNED BY: A. MARKUM/C. MARTIN
DRAWN BY: B. BAKER/B. CRATTY
CHECKED BY: E. GUY
SUBMITTED BY: S. ERICH / P. GUY, P.E.
SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
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PITTSBURGH PA. 15222

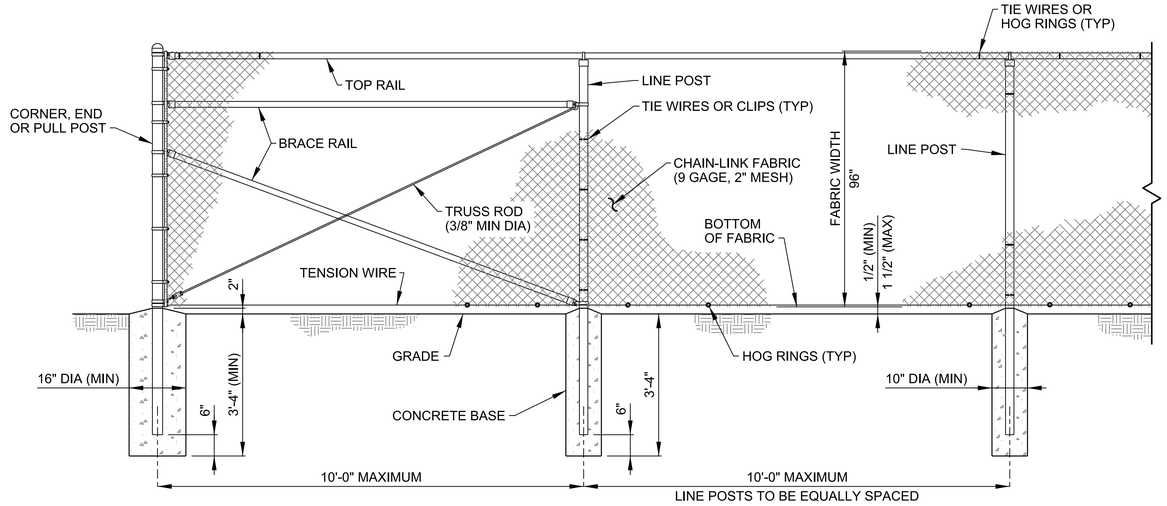
ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

SULPHUR RUN BANK STABILIZATION DETAILS

SHEET ID
C-5020-A

H4TSDRST 0.083334:1

CERTIFIED FINAL DOCUMENTS



CHAIN LINK SECURITY FENCE TYPE FE-5-TBR-96 DETAIL

NTS

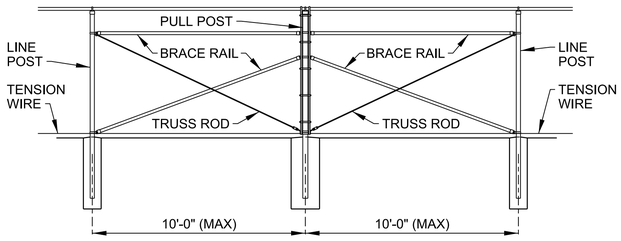
STEEL POST SCHEDULE			
USE AND SECTION	MINIMUM OUTSIDE DIMENSIONS (NORMAL)		
	FABRIC WIDTH 72" OR LESS	FABRIC WIDTH 84" TO 96"	FABRIC WIDTH 108" AND OVER
CORNER, END & PULL POSTS TUBULAR - ROUND	2.375" O.D.	2.875" O.D.	4.00" O.D.
LINE POSTS TUBULAR - ROUND	1.90" O.D.	2.375" O.D.	2.875" O.D.
TOP, BOTTOM, & BRACE RAILS TUBULAR - ROUND	1.66" O.D.		

NOTES:

1. DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPES OF FENCE SECTIONS AND METHODS OF INSTALLATION THAT COMPLY WITH THE SPECIFICATIONS.
2. WIRE TIES, RAILS, POSTS, AND BRACES SHALL BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL BE PLACED ON THE SIDE OPPOSITE THE SECURE AREA.
3. C-SECTION POSTS SHALL BE INSTALLED SO THAT THE VOID INSIDE THE POST IS COMPLETELY FILLED WITH CONCRETE UP TO THE TOP OF THE FOUNDATION.
4. CONCRETE SHALL BE 4,000 PSI COMPRESSIVE STRENGTH CONCRETE.
5. BOROUGH OF BLAIRSVILLE TO PROVIDE EXISTING ENTRANCE GATE SECTION. CONTRACTOR SHALL RE-INSTALL GATE SECTION TO WORKING CONDITIONS.

FENCE LEGEND:

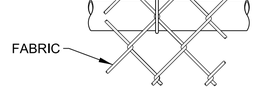
FE-5: CHAIN-LINK FENCE WITHOUT BARBED-WIRE APRON
TBR: FENCE WITH TOP RAIL AND TENSION WIRE AT BOTTOM
96: FABRIC WIDTH



NOTE:
PROVIDE BRACE PANEL WHENEVER
STRAIGHT RUNS EXCEED 500 FEET

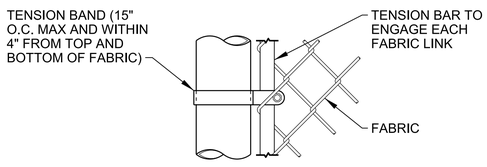
BRACE PANEL DETAIL

NTS

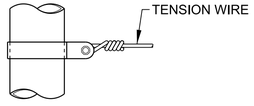


TOP OR BRACE RAIL ATTACHMENT

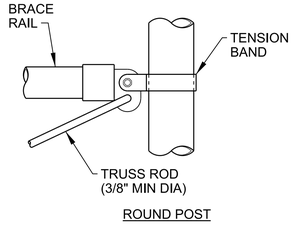
NTS



END OR GATE POST DETAIL

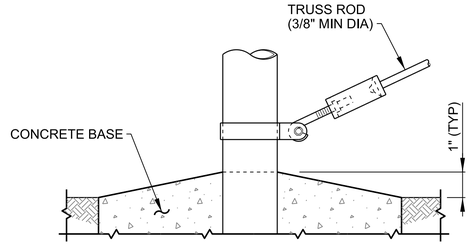


TENSION BAND DETAIL

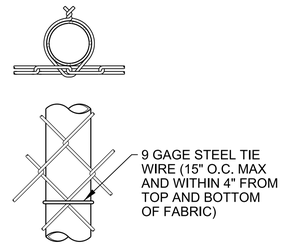


ROUND POST

BRACE RAIL CLAMP DETAIL



TRUSS ROD AND BAND



ROUND POST

LINE POST ATTACHMENT

NTS

FASTENING DETAILS

NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: C. MARTIN
DRAWN BY: B. CRATTY
CHECKED BY: J. RUSNAK
SUBMITTED BY:
ISSUE DATE:
SOLICITATION NO.: W911WN-17-B-8007
CONTRACT NO.:
FILE NAME: A0388b_686_C-5021.dgn
SIZE: ANSI D
PLOT DATE: 31-AUG-2017 12:48

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA, 15222

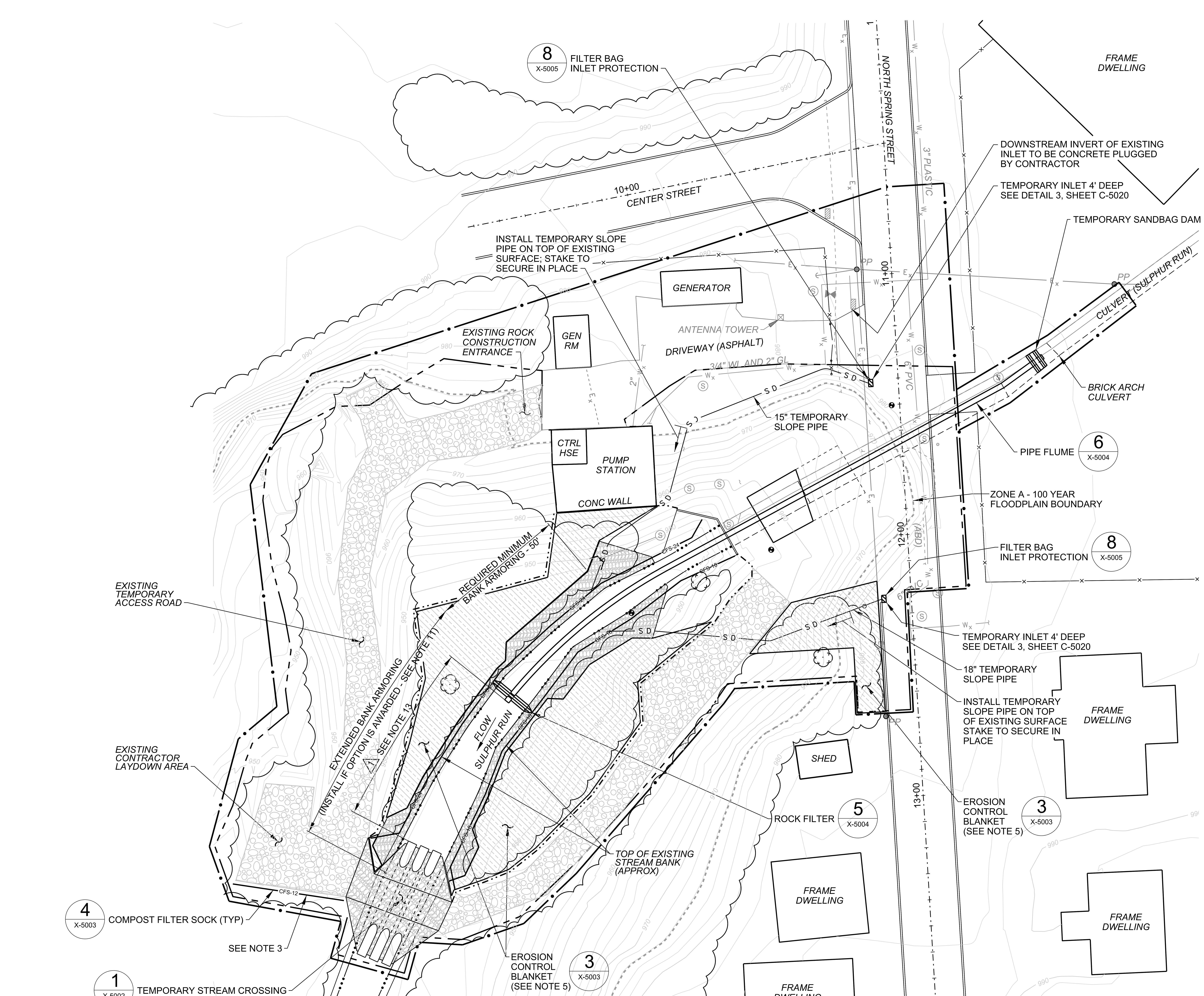
ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

CHAIN LINK SECURITY FENCE TYPE FE-5
DETAILS

SHEET ID
C-5021

H4TSDRST 0.083333:1

CERTIFIED FINAL DOCUMENTS



PLAN - EROSION AND SEDIMENT CONTROL MEASURES

SCALE: 1" - 20'

LEGEND:

- CONTRACTOR WORK LIMITS
- FENCE
- LIMITS OF DISTURBANCE
- ZONE A - 100 YEAR FLOOD PLAIN BOUNDARY
- APPROXIMATE STREAM LIMIT, WIDTH
- LIMITS OF CLEARING AND GRUBBING
- CFS-12 — 12" DIAMETER COMPOST FILTER SOCK
- CFS-18 — 18" DIAMETER COMPOST FILTER SOCK
- CFS-24 — 24" DIAMETER COMPOST FILTER SOCK
- EROSION CONTROL BLANKET

NOTES:

1. ALL SURFACE DISTURBANCE INFORMATION BASED ON FIELD OBSERVATIONS. DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD-VERIFIED.
2. FOR ADDITIONAL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS, SEE DRAWINGS X-1001 THRU X-0006.
3. TEMPORARY STREAM CROSSING TO BE CONSTRUCTED IN ACCORDANCE WITH SPECIFICATION SECTION 01 57 23.00 08 AND TEMPORARY STREAM CROSSING DETAIL (SHEET X-5002).
4. SEE LEGEND FOR COMPOST FILTER SOCK DIAMETER SPECIFIC FOR EACH INDICATED LOCATION.
5. PRIOR TO INSTALLATION OF EROSION CONTROL BLANKETS, BANK ARMORING AND R-4, CLEARING AND GRUBBING SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 31 11 00.
6. INSTALL R-5 STONE AT TEMPORARY SLOPE PIPE DISCHARGES TO REDUCE EROSION, THEN INSTALL TEMPORARY SLOPE PIPES AND TEMPORARY INLETS WITH FILTER BAG INLET PROTECTION. SECURE TEMPORARY SLOPE PIPES LAID ON TOP OF GROUND WITH STAKES.
7. INSTALL SANDBAG DIVERSIONS ALONG NORTH SPRING STREET. SANDBAGS ARE TO HAVE A MINIMUM THICKNESS OF 6 INCHES.
8. INSTALL PIPE FLUME, TEMPORARY UPSTREAM SANDBAG DAM, AND DOWNSTREAM ROCK FILTER.
9. ONCE WORK IS COMPLETE WITHIN THE CULVERT AND THE BANKS HAVE THE REQUIRED ARMORING, REMOVE THE DOWNSTREAM ROCK FILTER, PIPE FLUME AND TEMPORARY UPSTREAM SANDBAG DAM.
10. AFTER ROCK FILL HAS BEEN PLACED TO THE LINES AND GRADES SHOWN ON SHEET C-1011, REMOVE STAKES, TEMPORARY SLOPE PIPES AND TEMPORARY INLETS. BACKFILL AS REQUIRED.
11. IF EXTENDED BANK ARMORING SECTION IS AWARDED, INSTALL ADDITIONAL FLOW DIVERSION STRUCTURES WITHIN SECTION PRIOR TO EXTENDING ARMORING INSTALLATION.
12. REMOVE TEMPORARY STREAM CROSSING AND RESTORE TO EXISTING CONDITIONS. STONE USED TO CONSTRUCT THE TEMPORARY STREAM CROSSING SHALL BE SPREAD ALONG THE TEMPORARY ACCESS ROAD.
13. (Δ1) CONTRACTOR TO PROVIDE DIVERSION STRUCTURE IF EXTENDED BANK ARMORING

0 20' 40'
SCALE: 1"=20'

US Army Corps of Engineers®

MARK	DESCRIPTION		DATE
1	REVISED AMENDMENT 2	CM	8-29-2017

DESIGNED BY: C. MARTIN
DRAWN BY: B. CRATTY
CHECKED BY: J. RUSNAK
SUBMITTED BY: /s/ JAMES T. SHIBATA, P.E.
SIZE: ANSI D
ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
CONTRACT NO.:
FILE NAME: AO38ab_886_X-1001-A.dgn
PLOT DATE: 31-AUG-2017 12:48

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA, 15222

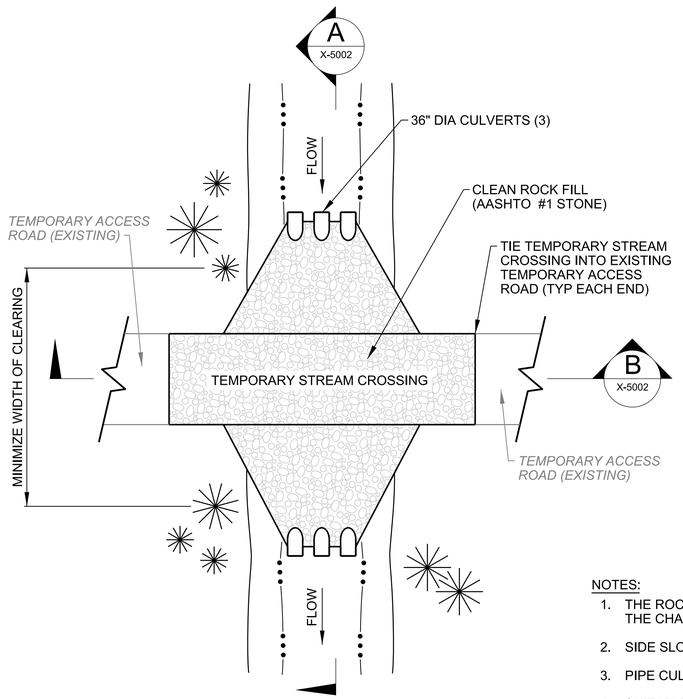
ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

EROSION AND SEDIMENT CONTROL PLAN

SHEET ID
X-1001-A

H4TSDRST 20.00004:1

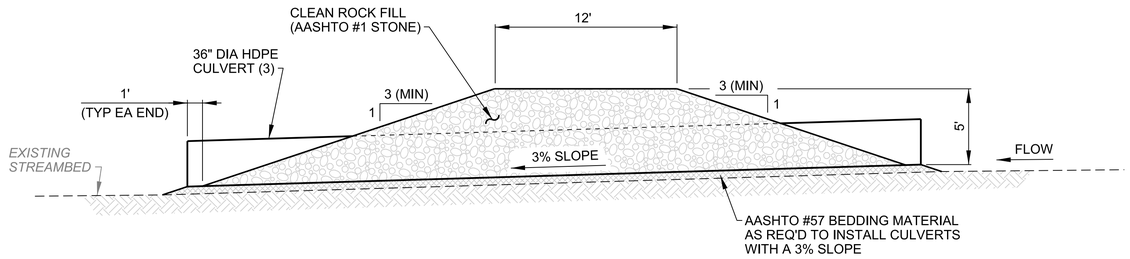
CERTIFIED FINAL DOCUMENTS



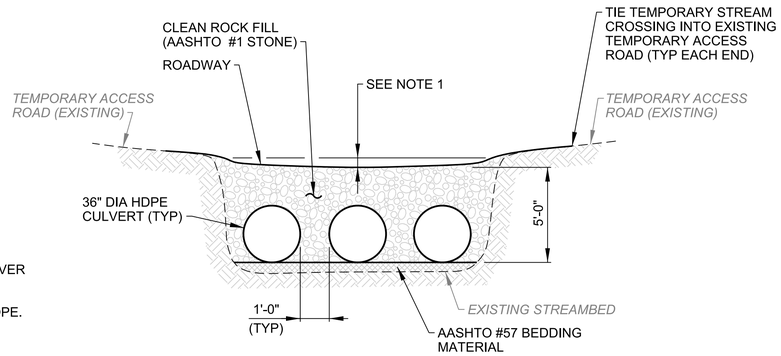
PLAN VIEW

NOTES:

1. THE ROCK FILL SHALL BE DEPRESSED A MINIMUM OF 6 INCHES OVER THE CHANNEL TO ALLOW FOR OVERFLOW.
2. SIDE SLOPES SHALL BE CONSTRUCTED AT A MINIIMUM 3H:1V SLOPE.
3. PIPE CULVERT MATERIAL SHALL BE HDPE.
4. SUITABLE OUTLET PROTECTION SHALL BE PROVIDED WHERE NECESSARY TO PREVENT SCOUR AT THE PIPE OUTLET. WHEREVER SOFT CHANNEL BED CONDITIONS EXIST, RIPRAP PROTECTION SHALL ALSO BE PROVIDED AT THE CULVERT ENTRANCE.
5. AS SOON AS THE TEMPORARY CROSSING IS NO LONGER NEEDED, IT SHALL BE REMOVED. ALL MATERIALS SHALL BE DISPOSED OF PROPERLY, AND DISTURBED AREAS SHALL BE STABILIZED.



SECTION A



SECTION B

1 DETAIL - TEMPORARY STREAM CROSSING

X-1001

NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
C. MARTIN	14 JULY 2017
DRAWN BY:	SOLICITATION NO.:
B. CRATTY	W911WN-17-B-8007
CHECKED BY:	CONTRACT NO.:
J.RUSNAK	
SUBMITTED BY:	FILE NAME:
S/ JAMES T. SHIMATA, P.E.	A0368d_i586_X-5002.dgn
SUPERVISORY P.E.	PLOT DATE:
ANSI D	31-AUG-2017 12:48

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA. 15222

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

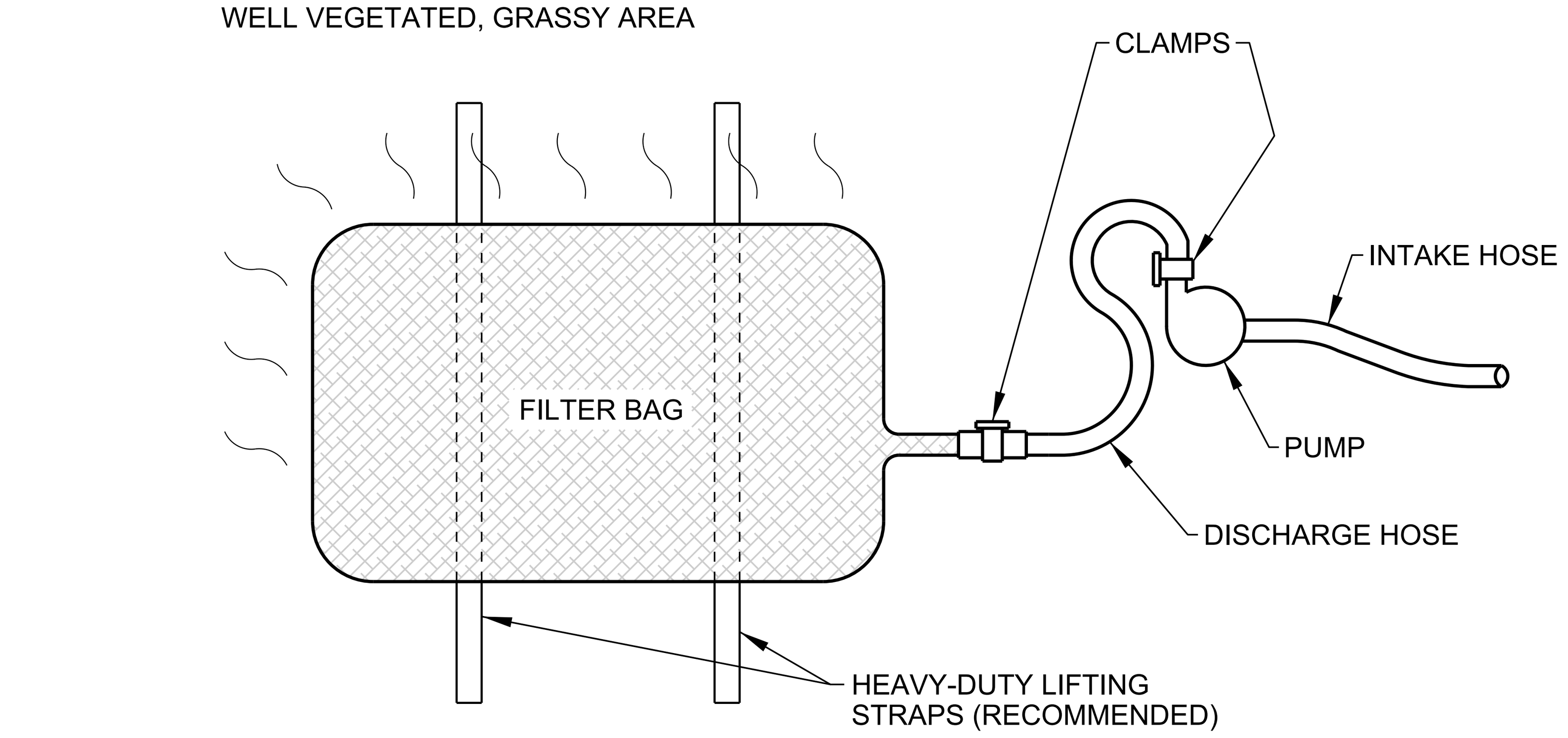
EROSION AND SEDIMENT CONTROL PLAN
BEST MANAGEMENT PRACTICE DETAILS

SHEET ID

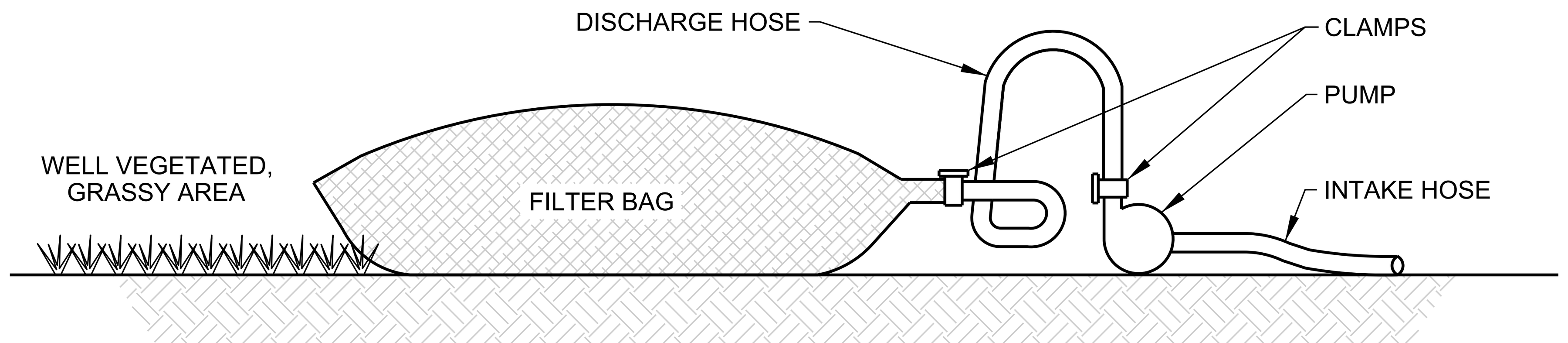
X-5002

H4TSDRST 0.083333:1

CERTIFIED FINAL DOCUMENTS



PLAN VIEW



ELEVATION

NOTES:

1. LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

2. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME ONE-HALF FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

3. BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREAS, AND DISCHARGE ONTO AREAS THAT ARE STABLE AND EROSION-RESISTANT. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDER-LAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

4. NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATER-SHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

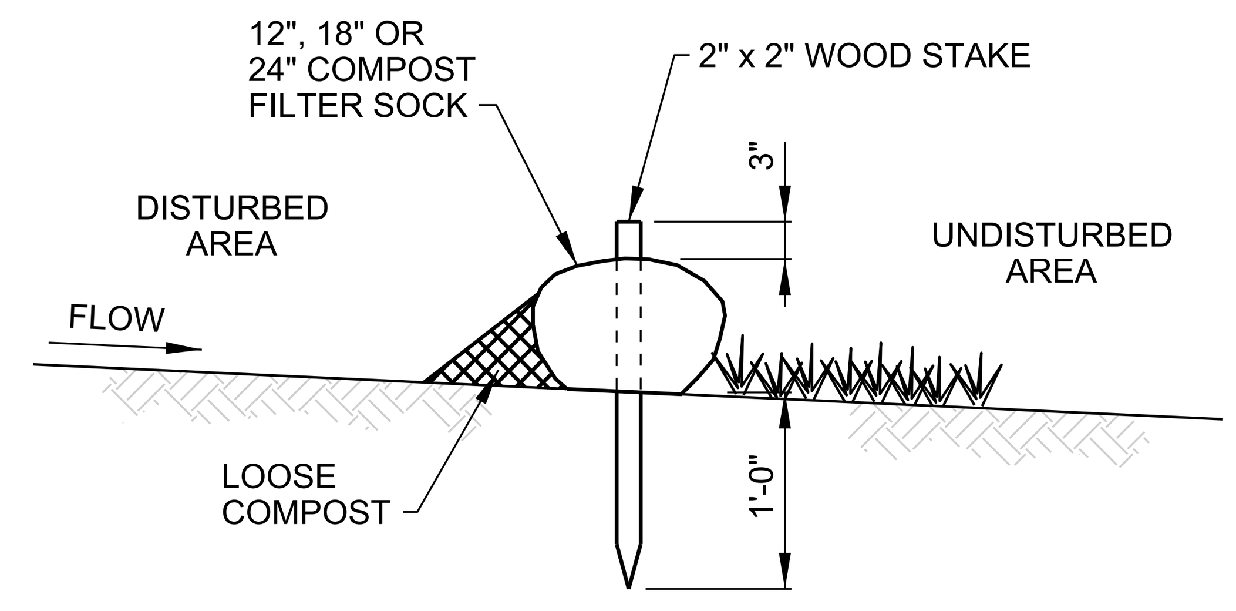
5. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

6. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR ONE-HALF THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.

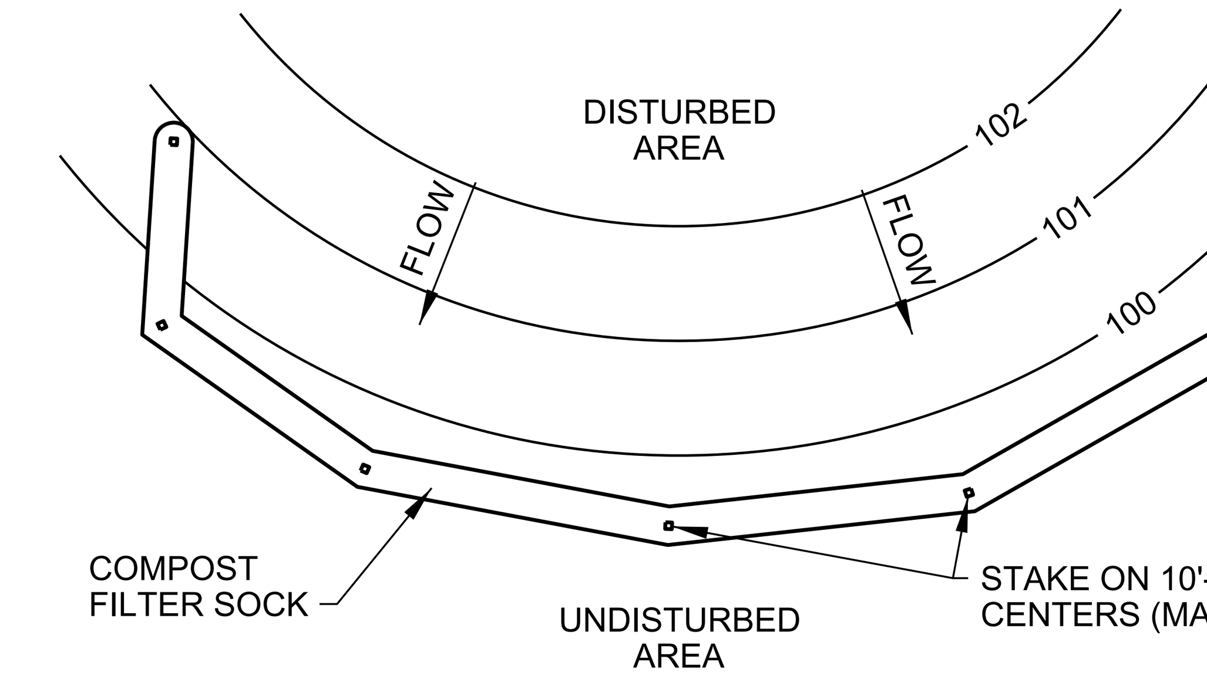
7. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

2 DETAIL - PUMPED SEDIMENT REMOVAL SYSTEM

X-1001 NTS



SECTION VIEW



PLAN VIEW

NOTES:

1. REMOVE DEPOSITS WHEN SEDIMENT ACCUMULATION IS ONE-HALF THE HEIGHT OF THE EXPOSED COMPOST FILTER SOCK.

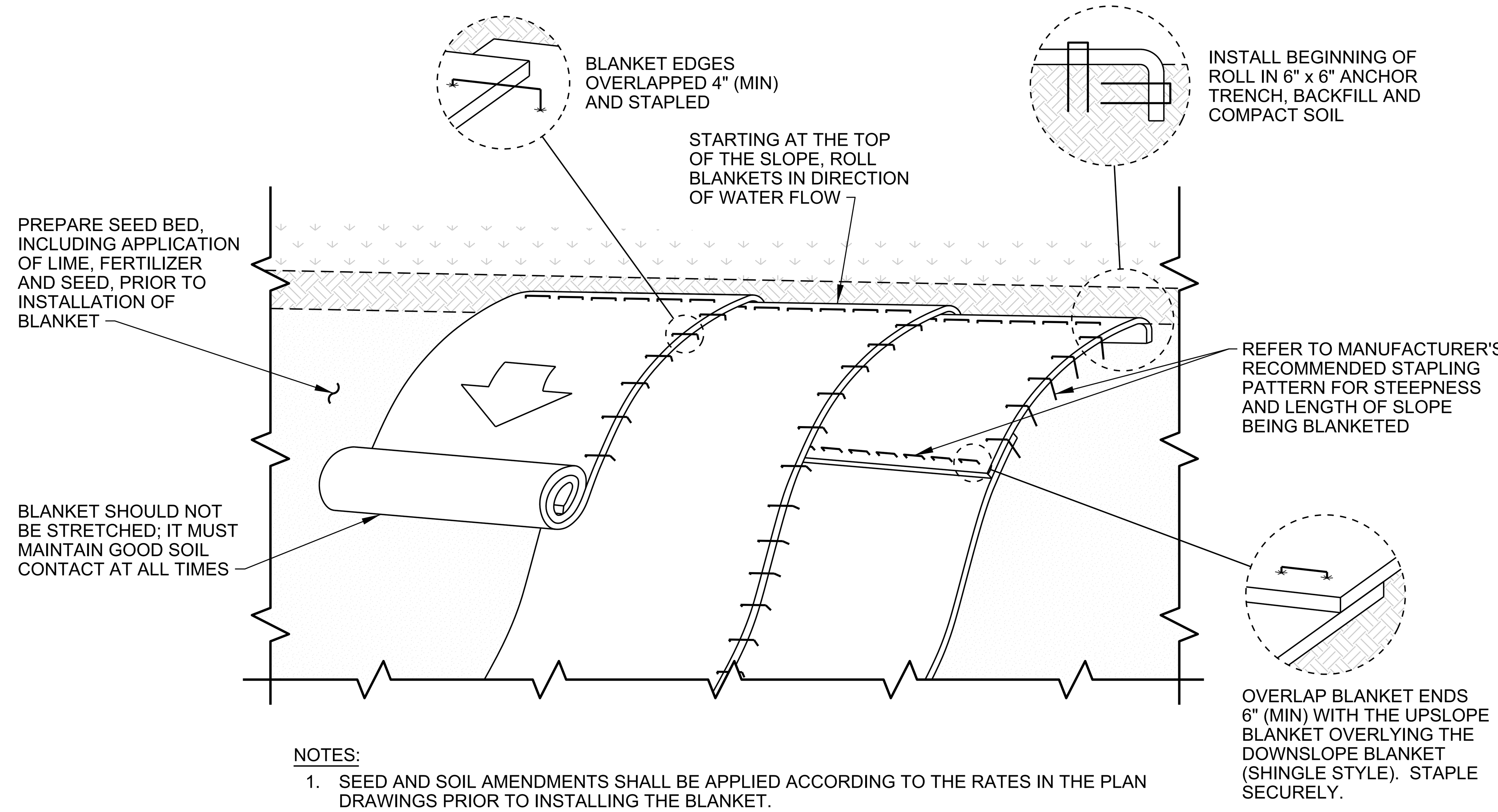
2. PLACE COMPOST FILTER SOCK ON LEVEL GRADE. EXTEND BOTH ENDS OF THE COMPOST FILTER SOCK AT LEAST 8'-0" UPSLOPE AT 45 DEGREES TO THE MAIN ALIGNMENT.

3. REPLACE BIODEGRADEABLE FILTER SOCK AFTER 6 MONTHS; PHOTODEGRADEABLE AFTER 12 MONTHS.

4. OVERLAP COMPOST FILTER SOCK SECTIONS 8' (MIN).

4 DETAIL - COMPOST FILTER SOCK

X-1001 NTS



NOTES:

1. SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.

2. PROVIDE ANCHOR TRENCH AT THE TOE OF THE SLOPE IN SIMILAR FASHION AS AT THE TOP OF THE SLOPE.

3. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS.

4. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT THE ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

5. THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

6. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERRENIAL VEGETATION IS ESTABLISHED TO A MINIMUM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

3 DETAIL - EROSION CONTROL BLANKET INSTALLATION

X-1001 NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: C. MARTIN
DRAWN BY: B. CRATTY
CHECKED BY: J.RUSNAK
SUBMITTED BY: /s/ JAMES T. SHIBATA, P.E.
SIZE: ANSI D
ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
CONTRACT NO.:
FILE NAME: AO38ab_886_X-5003.dgn
PLOT DATE: 31-AUG-2017 12:48

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA, 15222

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

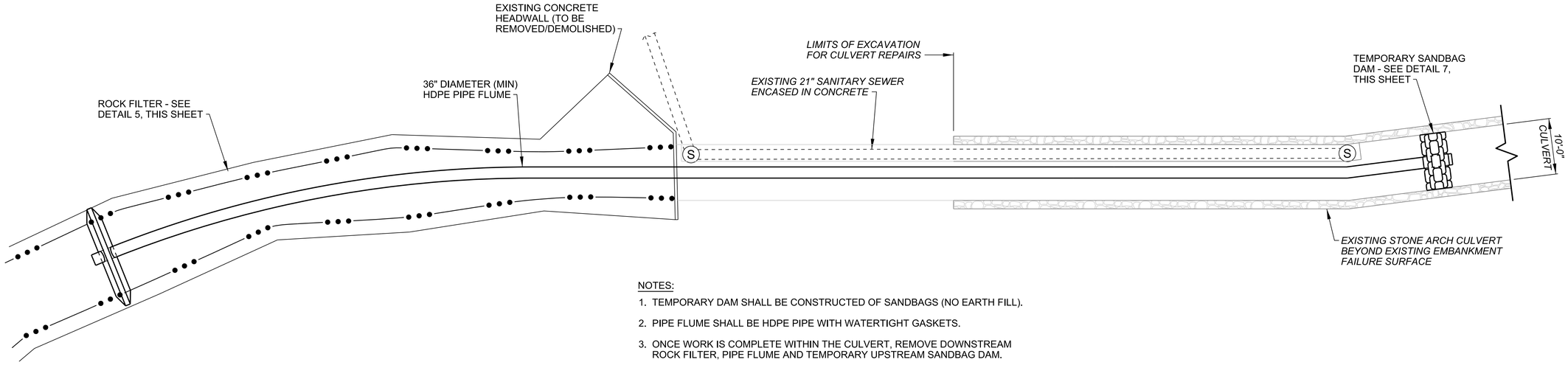
EROSION AND SEDIMENT CONTROL PLAN
BEST MANAGEMENT PRACTICE DETAILS

SHEET ID

X-5003

H4TSDRST 0.083333:1

CERTIFIED FINAL DOCUMENTS

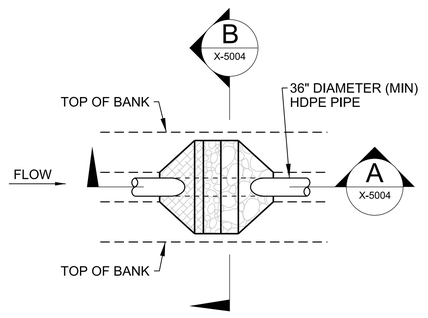


NOTES:

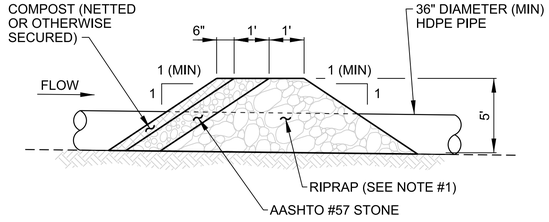
1. TEMPORARY DAM SHALL BE CONSTRUCTED OF SANDBAGS (NO EARTH FILL).
2. PIPE FLUME SHALL BE HDPE PIPE WITH WATERTIGHT GASKETS.
3. ONCE WORK IS COMPLETE WITHIN THE CULVERT, REMOVE DOWNSTREAM ROCK FILTER, PIPE FLUME AND TEMPORARY UPSTREAM SANDBAG DAM.

6 DETAIL - PIPE FLUME THROUGH WORK AREA

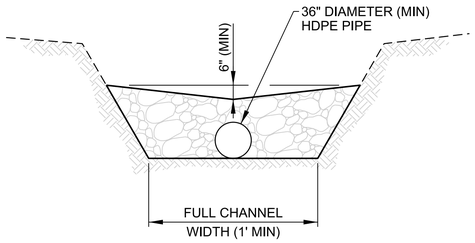
X-1001 NTS



PLAN VIEW



SECTION A-A



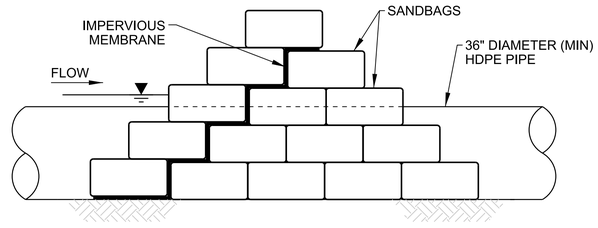
SECTION B-B

NOTES:

1. ROCK FILTERS SHOULD BE CONSTRUCTED WITH PENNDOT R-3 RIPRAP.
2. ROCK FILTERS SHALL HAVE A 6" DEPRESSION IN THE CENTER.
3. A ONE-FOOT THICK LAYER OF FILTER STONE (AASHTO #57 (OR SMALLER)) STONE SHOULD BE PLACED ON THE UPSTREAM SIDE OF THE FILTER. A 6" LAYER OF COMPOST SHOULD BE PLACED AND ANCHORED ON TOP OF THE FILTER STONE.
4. ROCK FILTERS AND COMPOST SHOULD BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT, NEEDED REPAIRS SHOULD BE INITIATED IMMEDIATELY AFTER THE INSPECTION.
5. CLOGGED COMPOST AND FILTER STONE SHOULD BE REPLACED.
6. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE ROCK FILTER.
7. IMMEDIATELY UPON STABILIZATION OF CULVERT, ACCUMULATED SEDIMENT SHALL BE REMOVED, THE ROCK FILTER SHALL BE REMOVED, AND DISTURBED AREAS SHALL BE STABILIZED.

5 DETAIL - ROCK FILTER

X-1001 NTS



NOTES:

1. MAXIMUM HEIGHT FOR TEMPORARY SANDBAG DAM SHALL BE NO GREATER THAN 4 FEET.
2. MINIMUM HEIGHT OF TEMPORARY SANDBAG DAM ABOVE NORMAL BASE FLOW SHALL BE A 2-BAG THICKNESS.

7 DETAIL - TEMPORARY SANDBAG DAM

X-1001 NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: C. MARTIN
DRAWN BY: B. CRATTY
CHECKED BY: J RUSNAK
SUBMITTED BY: SUMAIA P.E.
SIZE: ANSI D
ISSUE DATE: 14 JULY 2017
SOLICITATION NO.: W911WN-17-B-8007
CONTRACT NO.:
FILE NAME: A0368d_686_X-5004.dgn
DATE: 31-AUG-2017 12:48

U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA, 15222

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

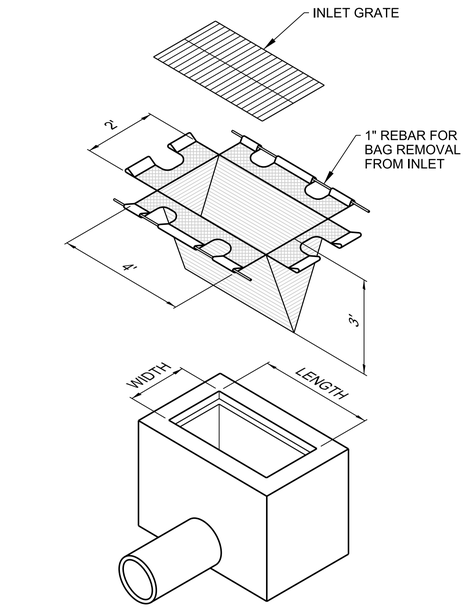
EROSION AND SEDIMENT CONTROL PLAN
BEST MANAGEMENT PRACTICE DETAILS

SHEET ID

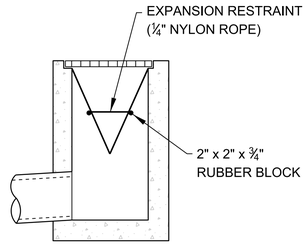
X-5004

H4TSDRST 10:1

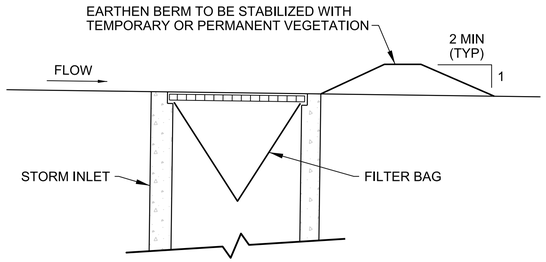
CERTIFIED FINAL DOCUMENTS



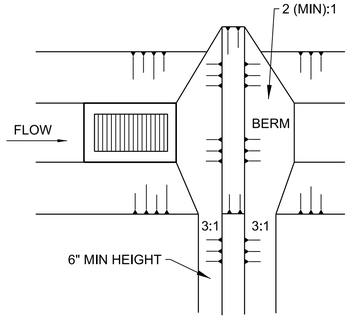
ISOMETRIC VIEW



INSTALLATION DETAIL



SECTION VIEW



PLAN VIEW

NOTES

1. INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS, AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF-FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT, AS WELL AS ALL USED BAGS, ACCORDING TO THE PLAN NOTES.

8 / X-1001 DETAIL - FILTER BAG INLET PROTECTION

NTS

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY:	ISSUE DATE:
C. MARTIN	14 JULY 2017
DRAWN BY:	SOLICITATION NO.:
B. CRATTY	W911WN-17-B-8007
CHECKED BY:	CONTRACT NO.:
J RUSNAK	
SUBMITTED BY:	FILE NAME:
SUJAMES SHRESTHA, P.E.	A0368b_086_X-5005.dgn
APPROVED BY:	PLOT DATE:
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U.S. ARMY CORPS OF ENGINEERS
PITTSBURGH DISTRICT
1000 LIBERTY AVENUE
PITTSBURGH PA, 15222

ALLEGHENY RIVER BASIN
CONEMAUGH RIVER LAKE
PERMANENT EMBANKMENT AND CULVERT REPAIR PROJECT
BLAIRSVILLE, PA

EROSION AND SEDIMENT CONTROL PLAN
BEST MANAGEMENT PRACTICE DETAILS

SHEET ID

X-5005

H4TSDRST 0.083333:1

CERTIFIED FINAL DOCUMENTS

EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE (BMP) INSTALLATION AND MAINTENANCE NOTES:

BMP INSTALLATION NOTES

ROCK CONSTRUCTION ENTRANCE

A. STOCKPILE RCE STONE NEAR FOR DAILY REPAIR REQUIREMENTS. MAINTAIN 8" (INCH) THICKNESS OF AASHTO #1 THROUGHOUT CONSTRUCTION.

B. INSPECT RCE DAILY. REMOVE ACCUMULATED SEDIMENTS DAILY.

C. REPLACE ALL ROCK WHEN SURFACE BECOMES CLOGGED WITH SOIL AND THE ABILITY TO TRAP MATERIAL HAS BEEN LOST.

PUMPED WATER FILTER BAG

A. SET UP PUMPED WATER FILTER BAG CLOSE TO THE WORK AREA. EASE OF EQUIPMENT ACCESS SHOULD BE TAKEN INTO CONSIDERATION.

B. GROUND SURFACE BENEATH THE FILTER BAG SHALL BE A WELL-VEGETATED, GRASSY AREA WITH LESS THAN A 5% SLOPE. NON-ERODIBLE MATERIAL SHALL BE PLACED UNDER THE FILTER BAG WHERE REQUIRED TO PROVIDE A GROUND SURFACE WITH LESS THAN A 5% SLOPE.

C. PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAG AND SECURELY CLAMPED AS SPECIFIED BY THE MANUFACTURER.

D. COMPOST FILTER SOCKS SHALL BE INSTALLED AROUND THE DOWNHILL SIDE OF THE FILTER BAG TO COVER ALL POSSIBLE PATHS OF DISCHARGE FROM THE FILTER BAG.

E. THE FILTER BAG DISCHARGE PATH SHALL BE ON A NATURAL, NON-ERODIBLE SURFACE, IF AVAILABLE; IF NOT AVAILABLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED.

F. FILTER BAGS SHALL BE INSPECTED DAILY AND REPLACED WHEN THEY BECOME HALF-FULL.

G. IF A PROBLEM OCCURS WITH THE PUMPING SYSTEM OR FILTER BAG, PUMPING SHALL STOP IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM HAS BEEN IDENTIFIED AND CORRECTED.

H. PUMPING SYSTEM AND FILTER BAG SHALL BE REMOVED UPON COMPLETION OF CONSTRUCTION REQUIRING IT'S USE.

I. ANY LAND DISTURBED BY THE PUMPING SYSTEM OR PLACEMENT OF THE FILTER BAG SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS.

COMPOST FILTER SOCK (CFS)

A. CFS SHALL BE INSTALLED PARALLEL TO CONTOURS (SEE PLAN DRAWINGS) WITH ENDS TURNED UP AT 45^ ANGLES.

B. REMOVE STICKS, ROCKS, HEAVY VEGETATION AND OTHER MATERIAL FROM ANY AREA WHERE CFS IS TO BE INSTALLED.

C. REMOVE ANY MANUFACTURER'S PROTECTIVE COATING FROM CFS AND DISPOSE OF PROPERLY.

D. ROLL OUT COMPLETE CFS ALONG GROUND, OR ROLL OUT AND FILL CFS IN-PLACE WITH COMPOST.

E. PLACE STAKES IN THE CENTER OF THE CFS AND SECURE TO THE GROUND. STAKE TYPE, SIZE, SPACING AND DEPTH REQUIREMENTS SPECIFIED BY CFS MANUFACTURER SHALL BE MET.

F. SEDIMENT CAPTURED BY THE CFS SHALL BE REMOVED WHEN SEDIMENT HEIGHT REACHES 1/2 THE HEIGHT OF THE CFS.

G. CONSTRUCTION EQUIPMENT SHALL NOT BE DRIVEN OVER ANY INSTALLED CFS.

H. BIODEGRADABLE CFS SHALL BE REPLACED EVERY 6 MONTHS; PHOTODEGRADABLE CFS SHALL BE REPLACED EVERY 12 MONTHS.

I. UPON STABILIZATION OF DISTURBED AREA ABOVE INSTALLED CFS, THE STAKES SHALL BE REMOVED, THE CFS CUT OPEN, AND THE MULCH (COMPOST) SPREAD OVER THE SURROUNDING GROUND SURFACE. CFS MESH AND STAKES SHALL BE REMOVED FROM THE AREA AND DISPOSED OF PROPERLY.

NON-ERODIBLE MATERIAL (TEMPORARY ACCESS ROAD/CONTRACTOR LAYDOWN AREAS)

A. STOCKPILE AASHTO #1 STONE FOR DAILY REPAIR REQUIREMENTS. MAINTAIN 6" (INCH) THICKNESS OF AASHTO #1 THROUGHOUT CONSTRUCTION.

B. REMOVE ACCUMULATED SEDIMENTS DAILY.

C. REPLACE ALL ROCK WHEN SURFACE BECOMES CLOGGED WITH SOIL AND THE ABILITY TO TRAP MATERIAL HAS BEEN LOST.

TEMPORARY SLOPE PIPES AND TEMPORARY INLETS

A. EXCAVATE AND INSTALL R-5 STONE AT TEMPORARY SLOPE PIPE DISCHARGES.

B. INSTALL TEMPORARY INLETS AND TEMPORARY SLOPE PIPES.

C. SECURE TEMPORARY SLOPE PIPES LAID ON TOP OF GROUND WITH STAKES OR REBAR DRIVEN INTO THE GROUND TO HOLD PIPES IN PLACES.

D. INSTALL FILTER BAG INLET PROTECTION WITHIN TEMPORARY INLETS.

E. INSTALL SANDBAG DIVERSIONS ALONG NORTH SPRING STREET.

F. SEDIMENT SHALL BE REMOVED FROM FILTER BAG INLET WHEN ACCUMULATION IS ONE-HALF FULL.

BMP INSTALLATION NOTES (CONTINUED)

PIPE FLUME THROUGH WORK AREA

A. INSTALL PIPE FLUME WITHIN SULPHUR RUN.

B. INSTALL TEMPORARY SANDBAG DAM UPSTREAM OF DISTURBANCE.

C. INSTALL ROCK FILTER DOWNSTREAM OF DISTURBANCE AREA.

D. TEMPORARY DAM SHALL BE CONSTRUCTED OF SANDBAGS OR OTHER NON-EROSIVE MATERIAL (NO EARTH FILL).

E. ROCK FILTER SHOULD BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. NEEDED REPAIRS SHOULD BE INITIATED IMMEDIATELY AFTER THE INSPECTION.

F. CLOGGED FILTER STONE SHOULD BE REPLACED.

G. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH ONE-HALF THE HEIGHT OF THE FILTER.

H. IMMEDIATELY UPON STABILIZATION OF SULPHUR RUN, REMOVE ACCUMULATED SEDIMENT, ROCK FILTER AND PIPE FLUME.

BMP MAINTENANCE PROGRAM

BMP INSPECTION SCHEDULE AND RESPONSIBILITIES

A. EACH BMP SHALL BE INSPECTED AT THE BEGINNING OF EACH WORK DAY BETWEEN 0730 AND 0830, AND AFTER EACH RUNOFF AND HIGH-WATER EVENT.

B. THE CONSTRUCTION CONTRACTOR QUALITY CONTROL REPRESENTATIVE SHALL CONDUCT THE INSPECTIONS AND NOTE THE FINDINGS IN THE DAILY CONSTRUCTION LOG. ANY DEFICIENCIES OBSERVED OR MAINTENANCE REQUIRED WILL BE NOTED AND THE CONSTRUCTION CONTRACTOR SUPERINTENDENT SHALL BE INFORMED.

C. THE CONSTRUCTION CONTRACTOR SUPERINTENDENT WILL BE RESPONSIBLE FOR THE REPAIR AND MAINTENANCE OF THE BMP'S.

D. REPAIR AND MAINTENANCE OF THE BMP SHALL BE PERFORMED THE SAME DAY OR PRIOR TO START OF WORK THE FOLLOWING DAY.

BMP MAINTENANCE INSTRUCTIONS

A. ROCK CONSTRUCTION ENTRANCE (RCE): AN ADEQUATE SUPPLY OF AASHTO No. 1 STONE SHALL BE STOCKPILED ON-SITE. THE THICKNESS OF THE RCE (8 INCHES) SHALL BE MAINTAINED AT ALL TIMES. ANY SEDIMENT MATERIAL TRACKED OUT ON TO PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

B. STONE SHALL BE ADDED TO THE TEMPORARY ACCESS ROAD, TURN-AROUND AREA AND CONTRACTOR LAYDOWN AREA (NON-ERODIBLE AGGREGATE SURFACES) WHEN THE THICKNESS BECOMES LESS THAN 6 INCHES.

C. FILTERED PUMP OUTFLOW: THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING SCREENED. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

D. COMPOST FILTER SOCK (CFS): SEDIMENT WILL BE REMOVED AND PROPERLY DISPOSED OF WHEN THE ACCUMULATED HEIGHT BEHIND THE CFS REACHES ONE-HALF THE HEIGHT OF THE CFS. UNDERCUT SECTIONS OF THE CFS WILL BE FILLED WITH NSA R-3 STONE. DAMAGED SECTIONS OF THE CFS WILL REMAIN IN PLACE AND A NEW SECTION OF CFS SHALL BE PLACED DIRECTLY UPSLOPE OF THE DAMAGED SECTION OF CFS. THE REPAIR CFS SECTION SHALL EXTEND A MINIMUM OF 4 FEET BEYOND EACH END OF THE DAMAGED SECTION OF CFS. ANY LOOSE OR BROKEN STAKES SHALL BE SECURED OR REPLACED.

E. AREAS TO RECEIVE VEGETATION SHALL BE MAINTAINED BY RE-SEEDING, MULCHING, FERTILIZING AND WATERING AS NEEDED.

HANDLING AND DISPOSAL OF MATERIALS REMOVED FROM BMP'S

A. SOIL MATERIAL REMOVED FROM THE ROCK CONSTRUCTION ENTRANCE AND FROM BEHIND THE CFS, AS WELL AS ANY PUMPED WATER FILTER BAGS, TREE LIMBS, BRUSH AND OTHER ORGANIC MATERIAL SHALL BE DISPOSED OF OFF-SITE AT A COMMERCIALLY AVAILABLE AND PROPERLY PERMITTED DISPOSAL FACILITY.

CONSTRUCTION WASTES (RECYCLING AND DISPOSAL)

A. EXCESS SOIL FROM CONSTRUCTION AND DEMOLITION OF THE VARIOUS WORK AREAS SHALL BE DISPOSED OF OFF-SITE AT A COMMERCIALLY AVAILABLE AND PROPERLY PERMITTED DISPOSAL FACILITY.

B. CONTRACTOR PERSONNEL FOOD, PAPER PRODUCTS AND BOTTLES WILL BE PLACED INTO SEPARATE GARBAGE CANS (PLASTIC AND GLASS BOTTLES FOR RECYCLING) AND SHALL BE DISPOSED OF OFF-SITE AS STATED ABOVE AT THE END OF EACH WORK WEEK.

C. NON-BIODEGRADABLE CONSTRUCTION WASTES, SUCH AS GEOTEXTILE, PVC PIPE, ETC., SHALL BE DISPOSED OF OFF-SITE AS STATED ABOVE.

BMP MAINTENANCE PROGRAM (CONTINUED)

CLEAN FILL/ENVIRONMENTAL DUE DILIGENCE

A. THE CONTRACTOR IS RESPONSIBLE FOR ENVIRONMENTAL INVESTIGATIONS FOR ANY OFF-SITE FILL MATERIAL. ALL OFF-SITE FILL MUST MEET PADEP CLEAN FILL STANDARDS.

B. ALL OFF-SITE BORROW AND/OR WASTE AREAS REQUIRE PRIOR APPROVAL FROM THE INDIANA COUNTY CONSERVATION DISTRICT/PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THOSE APPROVALS.

TEMPORARY CONTROL MEASURES-VEGETATION

SPECIES:	ANNUAL RYEGRASS
%PURE LIVE SEED:	10%
APPLICATION RATE:	40 LB/ AC
FERTILIZER TYPE:	10-10-10
FERTILIZER APPLICATION RATE:	500 LB/AC
LIMING RATE:	1 TON/ AC
MULCH TYPE:	STRAW
MULCHING RATE:	2 TONS/ AC

NOTE: SOIL AMENDMENTS AND SEED MIX IN ACCORDANCE WITH THE "EROSION CONTROL AND CONSERVATION PLANTINGS ON NONCROPLAND" MANUAL BY THE COLLEGE OF AGRICULTURAL SCIENCES, PENN STATE UNIVERSITY.

PERMANENT CONTROL MEASURES-VEGETATION

A. AFTER ALL BMP'S HAVE BEEN REMOVED FROM THE WORK AREA, THE GROUND SURFACE WITHIN THE WORK AREA SHALL BE RETURNED TO PRE-CONSTRUCTION CONDITIONS.

B. IF THE PRE-CONSTRUCTION AREA WAS VEGETATED, THE AREA SHALL BE RE-VEGETATED AS FOLLOWS:

SPECIES:	PDT 408, SECTION 804.2, FORMULA B
APPLICATION RATE:	2 LB/ 1000 SF
FERTILIZER TYPE:	10-20-20
FERTILIZER APPLICATION RATE:	2 TONS/ACRE
LIMING RATE:	1 TON/ ACRE
MULCH TYPE:	STRAW
MULCHING RATE:	2 TON/ ACRE

AREAS DISTURBED DURING THE CONSTRUCTION ACTIVITY SHALL BE PERMANENTLY SEEDED, FERTILIZED, LIMED AND MULCHED.

CONSTRUCTION SEQUENCE

A. CONTRACTOR TO ACQUIRE INDIANA COUNTY CONSERVATION DISTRICT WRITTEN APPROVAL OF ALL OFF-SITE WASTE/ BORROW AREAS BEFORE AREAS ARE DISTURBED.

B. LAYOUT THE LIMITS OF EARTH DISTURBANCE OF THE SITE AND ESTABLISH BENCHMARKS AND REFERENCE POINTS.

C. INSTALL TEMPORARY STREAM CROSSING IN ACCORDANCE WITH CONSTRUCTION DETAILS.

D. INSTALL CFS IN ACCORDANCE WITH STANDARD CONSTRUCTION DETAIL PRIOR TO CLEARING AND GRUBBING AND OTHER EARTH DISTURBANCE ACTIVITIES.

E. INSTALL R-5 STONE AT TEMPORARY SLOPE PIPE DISCHARGES, THEN INSTALL TEMPORARY INLETS AND TEMPORARY SLOPE PIPES. SECURE TEMPORARY SLOPE PIPES LAID ON TOP OF GROUND WITH STAKES OR REBAR DRIVEN INTO THE GROUND TO HOLD THE PIPES IN PLACE.

F. INSTALL FILTER BAG INLET PROTECTION WITHIN TEMPORARY INLETS.

G. INSTALL SANDBAG DIVERSIONS ALONG NORTH SPRING STREET.

H. INSTALL PIPE FLUME, TEMPORARY UPSTREAM SANDBAG DAM, AND DOWNSTREAM ROCK FILTER.

I. IF WATER IS ENCOUNTERED DURING STABILIZATION PROCESS A PUMPED WATER FILTER BAG SHALL BE USED FOLLOWING THE TEMPORARY CONTROL MEASURES FOR ITS USE.

J. INSPECT DOWNSTREAM ROCK FILTER, FILTER BAG INLET PROTECTION, CFS, AND TEMPORARY STREAM CROSSING. REMOVE ACCUMULATED SEDIMENT AND DEBRIS TO ALLOW SYSTEMS TO FUNCTION PROPERLY. IF NEEDED, MAKE NECESSARY REPAIRS.

K. ONCE WORK IS COMPLETE WITHIN THE CULVERT AND THE BANKS ARE ARMORED, REMOVE DOWNSTREAM ROCK FILTER, PIPE FLUME AND TEMPORARY UPSTREAM SANDBAG DAM.

L. AFTER ROCK FILL HAS BEEN PLACED TO THE LINES AND GRADES SHOWN, REMOVE STAKES AND TEMPORARY SLOPE PIPES AND TEMPORARY INLETS, AND BACKFILL AS REQUIRED.

M. (IF AWARDED) INSTALL TEMPORARY FLOW DIVERSION STRUCTURE FOR EXTENDED BANK ARMORING; ONCE EXTENDED BANK ARMORING IS COMPLETE, REMOVE TEMPORARY FLOW DIVERSION STRUCTURE.

N. SEED, FERTILIZER, LIME, AND MULCH AREAS THAT HAVE BEEN DISTURBED BY THE CONSTRUCTION ACTIVITY (AREAS NOT COVERED WITH R-4 RIP RAP).

O. INSTALL TEMPORARY EROSION CONTROL BLANKETS ON ALL SLOPES GREATER THAN 3H:1V, AND ALONG STREAM BANKS.

P. REMOVE TEMPORARY STREAM CROSSING AND RESTORE TO EXISTING CONDITIONS AS SHOWN. STONE USED TO CONSTRUCT THE TEMPORARY STREAM CROSSING SHALL BE SPREAD ALONG THE TEMPORARY ACCESS ROAD.

Q. TREES, BRUSH, EXCESS SOIL AND CONSTRUCTION WASTE FROM THE CONSTRUCTION AND DEMOLITION ACTIVITIES SHALL BE DISPOSED OF OFF-SITE AT AN APPROVED FACILITY.

R. ONCE THE SITE HAS BEEN STABILIZED AND REACHED A UNIFORM 70% PERENNIAL VEGETATIVE COVER, THE CFS SHALL BE CUT OPEN AND THE WOODEN STAKES AND MESH SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY FOLLOWING THE BMP INSTALLATION NOTES.

NOTE:

1. SEE SHEET G-0011 FOR ALL ABBREVIATIONS USED ON THIS SHEET.

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CHECKED BY: J. RUSNIAK
SUBMITTED BY: /S/ JAMES T. SHIBATA, P.E.
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U.S. ARMY CORPS OF ENGINEERS
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EROSION AND SEDIMENT CONTROL PLAN
BEST MANAGEMENT PRACTICE INSTALLATION AND MAINTENANCE NOTES AND ABBREVIATIONS

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