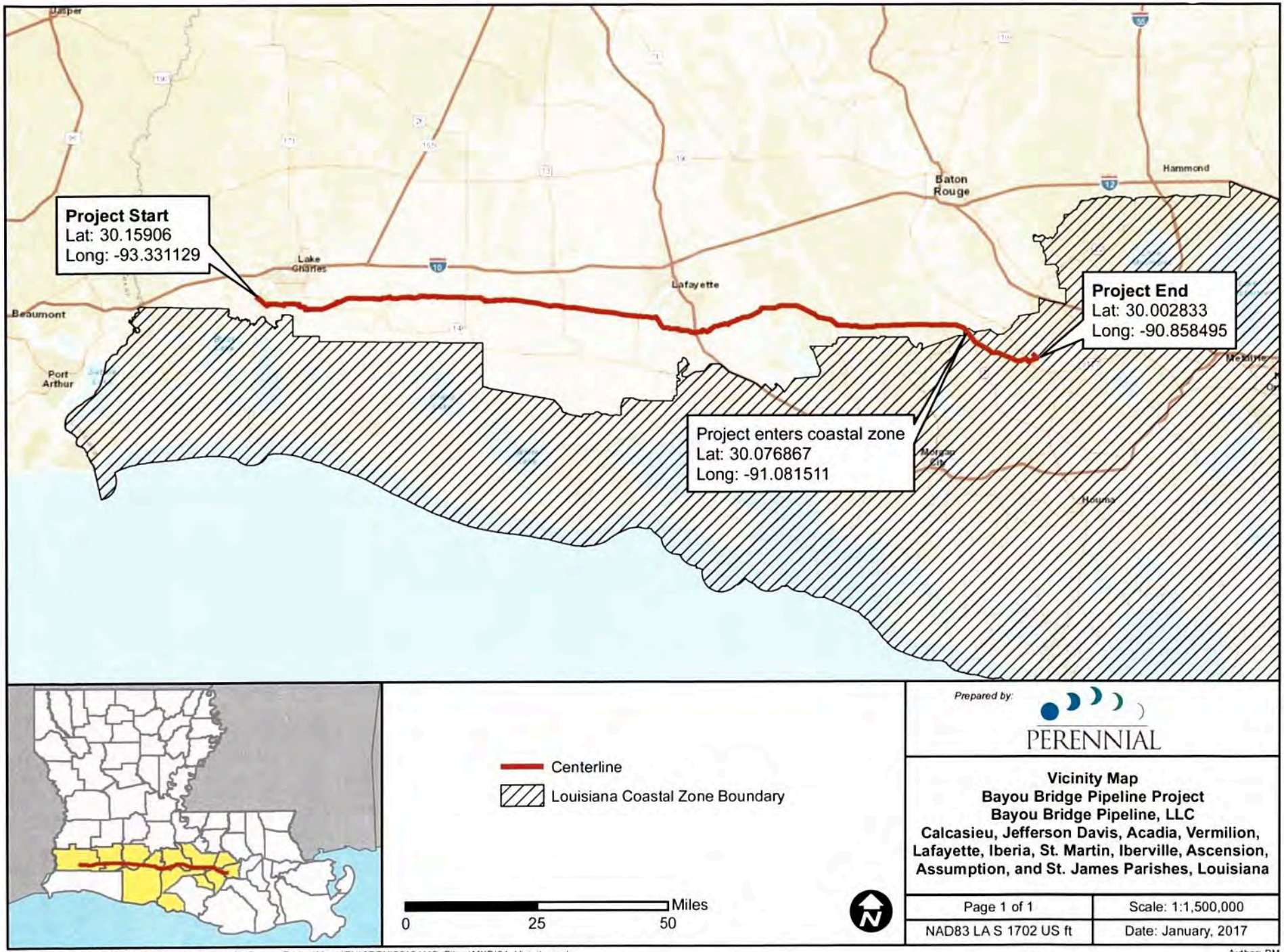

Prepared by: PERENNIAL

Vicinity Map
Bayou Bridge Pipeline Project
Bayou Bridge Pipeline, LLC
Calcasieu, Jefferson Davis, Acadia, Vermilion, Lafayette, Iberia, St. Martin, Iberville, Ascension, Assumption, and St. James Parishes, Louisiana

Page 1 of 1	Scale: 1:1,500,000
NAD83 LA S 1702 US ft	Date: January, 2017

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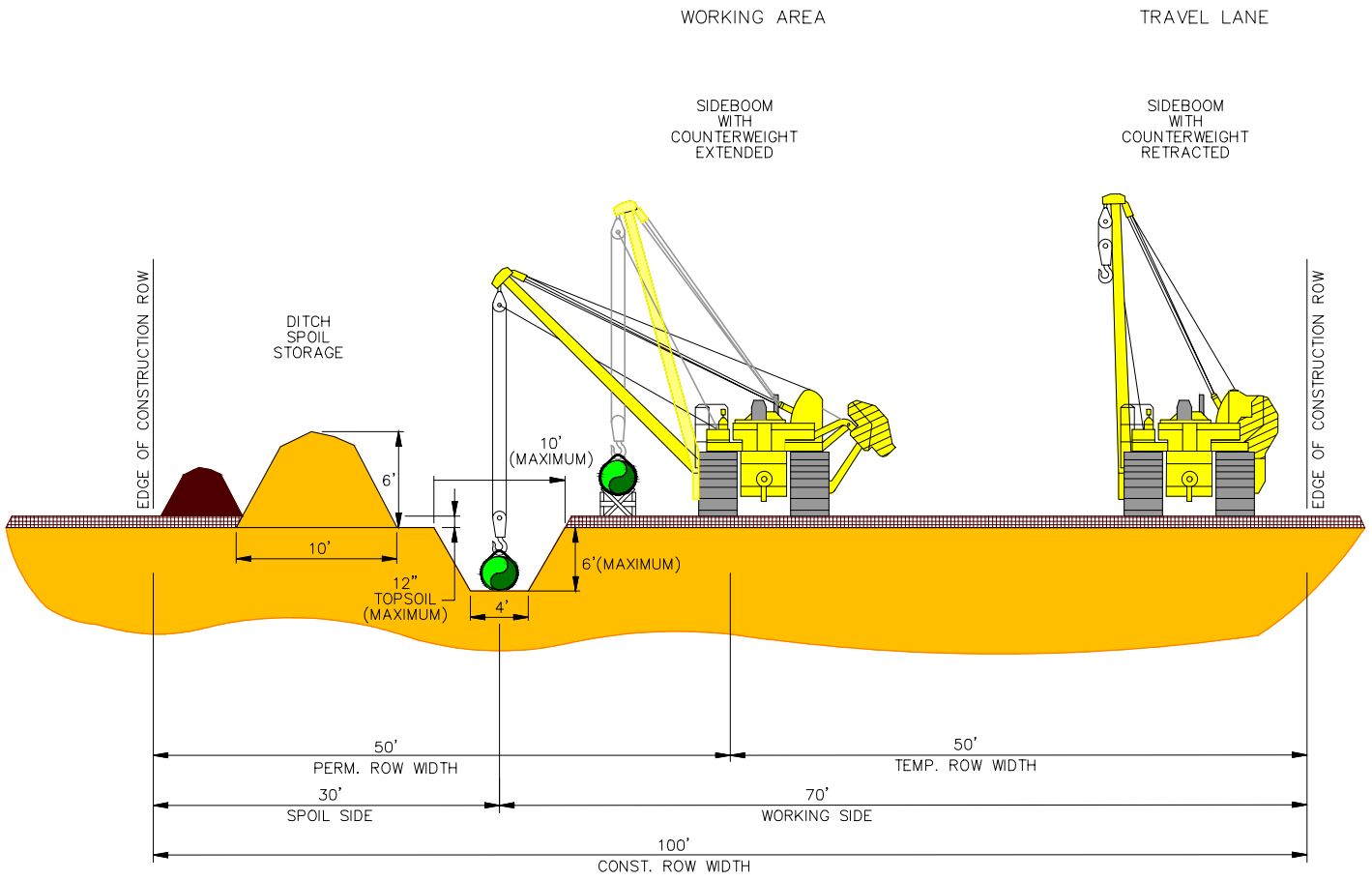
Author: RM



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TRC PROJ. #53595, LIC. No. EF 4588

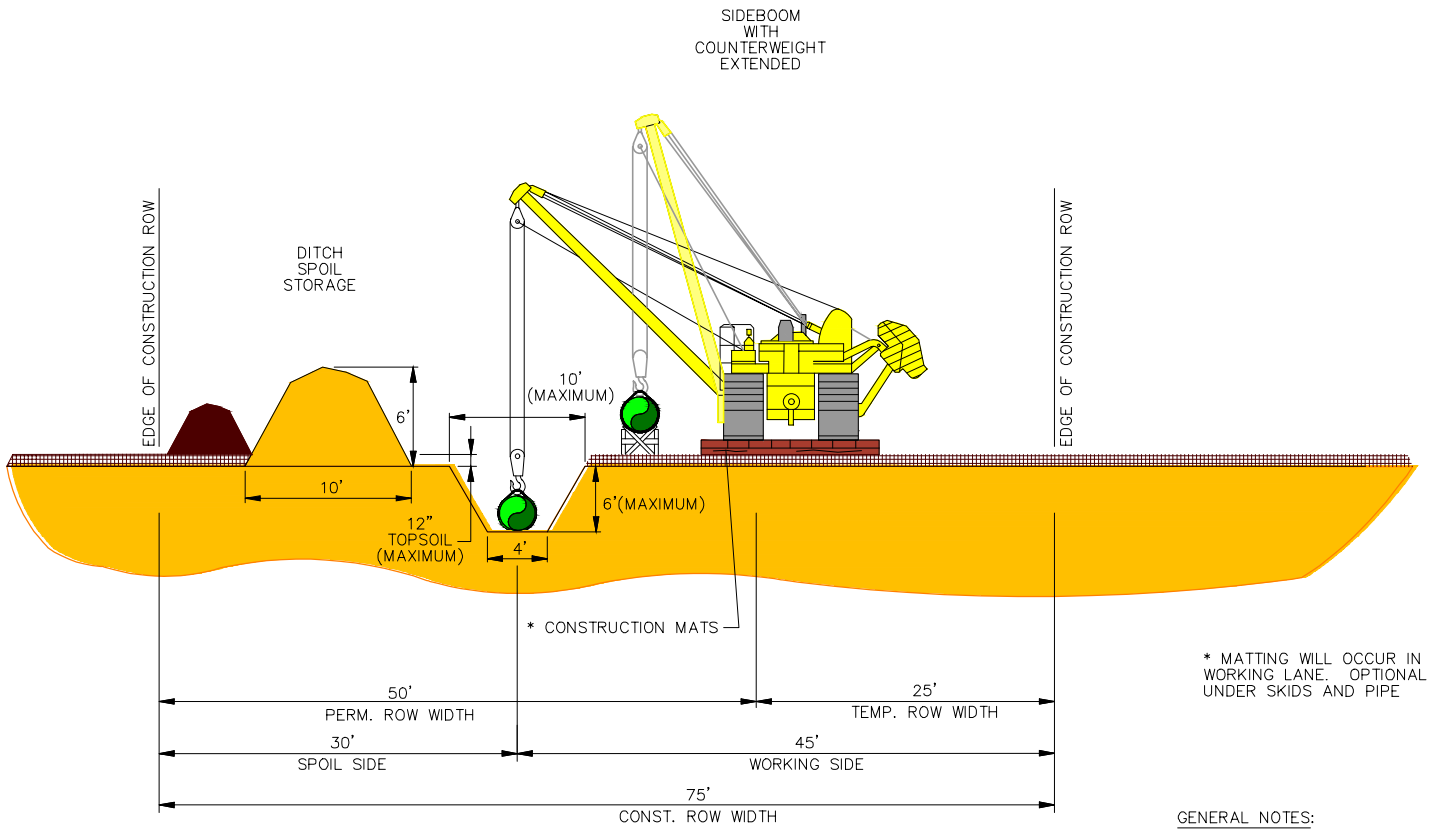
NO.	REVISION	DATE	APPR.

SCALE	DATE	DRAWN	CHECKED	APPROVED
NTS	1/27/16	JRW	AL	BAM

MAINLINE CONSTRUCTION
UPLAND CONSTRUCTION
RIGHT-OF-WAY
BAYOU BRIDGE PIPELINE, LLC

WEI PROJ. NO.	DRAWING NUMBER	SHEET
	STD-B-013	1 OF 1

WORKING AREA



* MATTING WILL OCCUR IN WORKING LANE. OPTIONAL UNDER SKIDS AND PIPE

GENERAL NOTES:

1. EXTRA DEPTH MAY BE REQUIRED FOR CONCRETE COATED PIPE OR WEIGHTS

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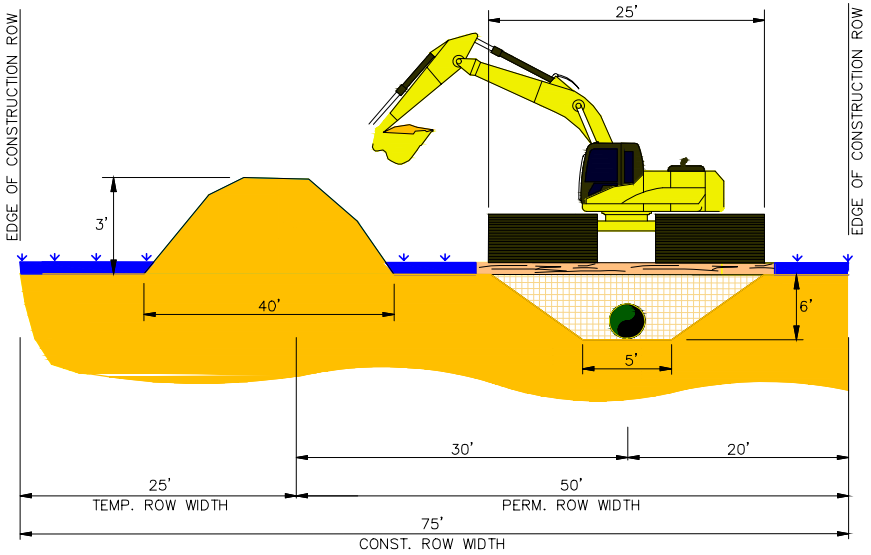
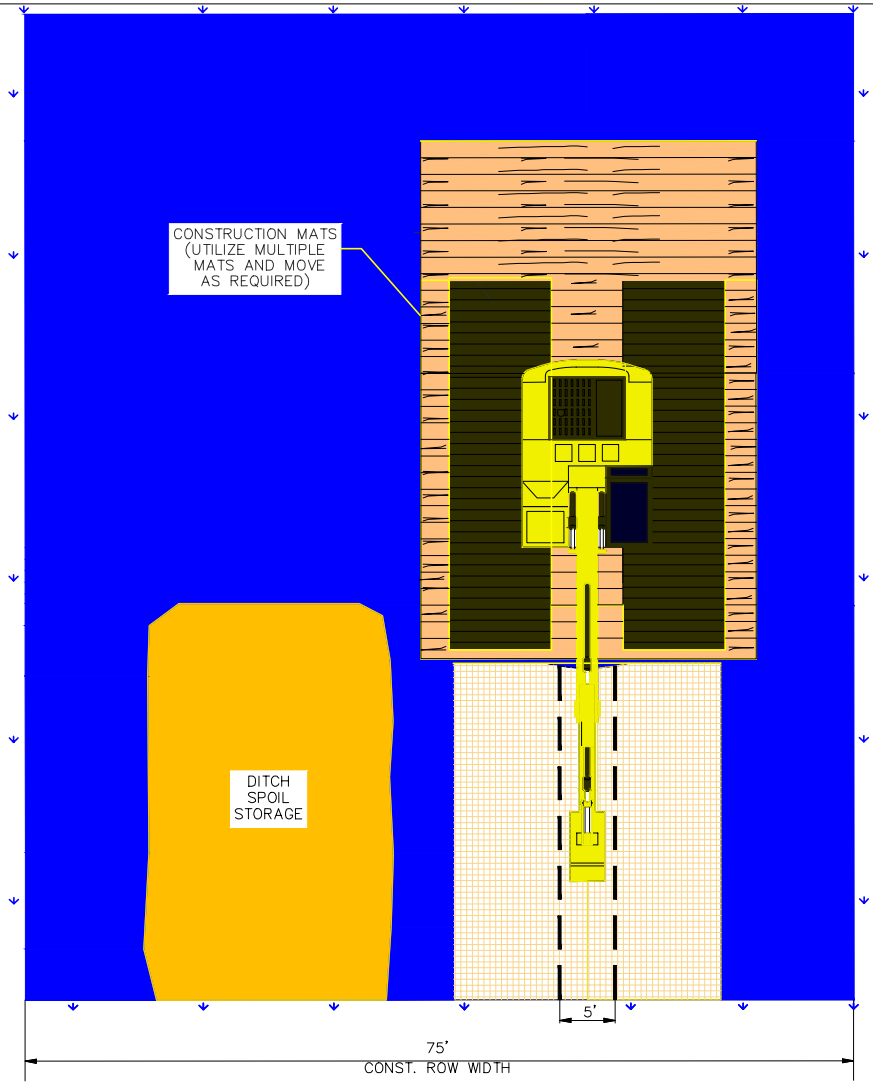
MAINLINE CONSTRUCTION
WETLAND CONSTRUCTION
RIGHT-OF-WAY
BAYOU BRIDGE PIPELINE, LLC

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS	1/27/16	JRW	AL	BAM		STD-B-012	1 OF 1





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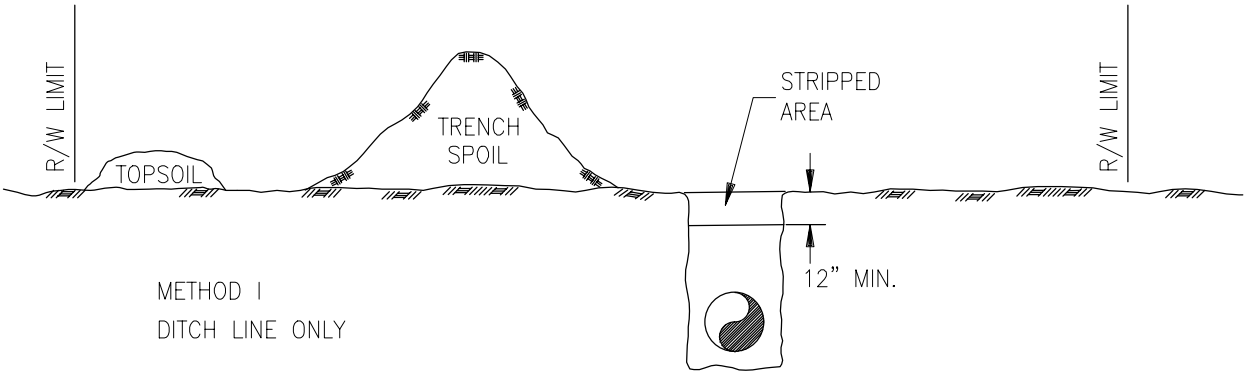
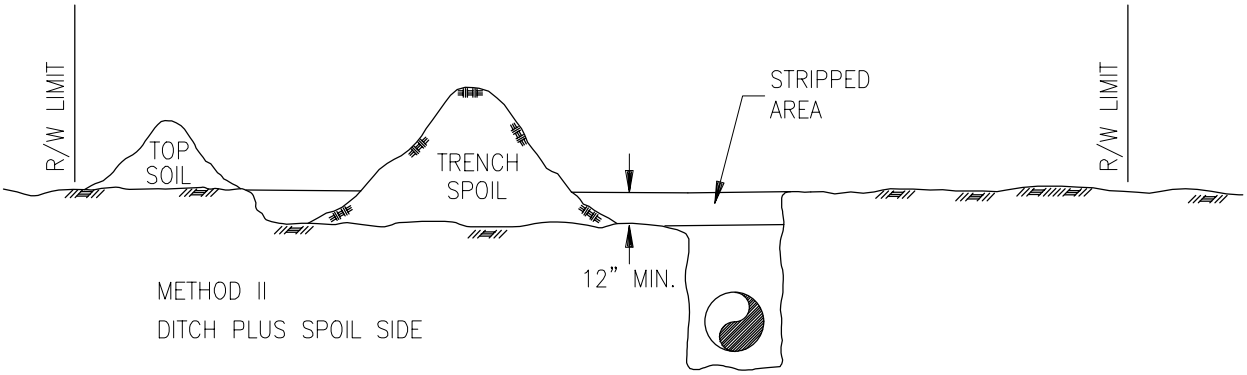
NO.	REVISION	DATE	APPR.

MAINLINE CONSTRUCTION
SUBMERGED WETLAND
RIGHT-OF-WAY
BAYOU BRIDGE PIPELINE, LLC

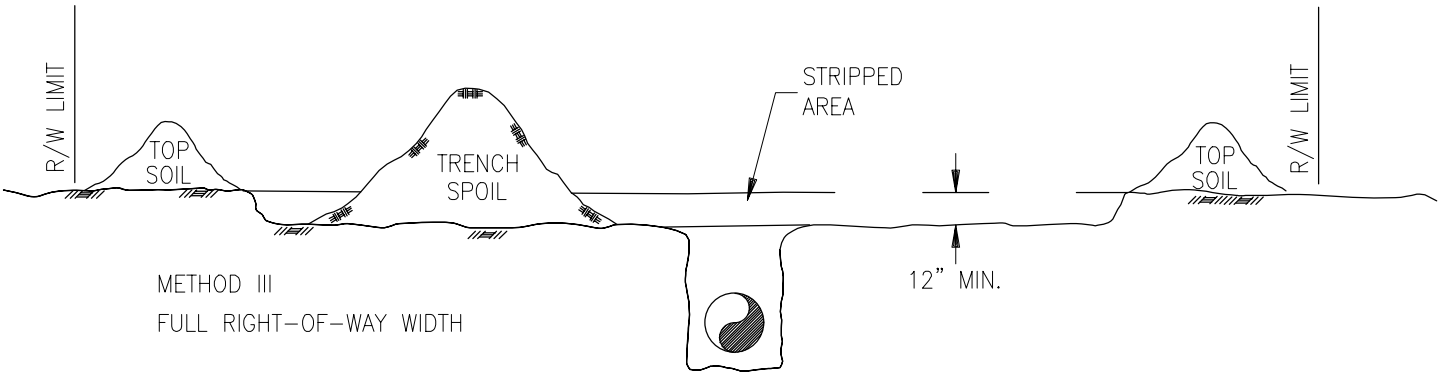
SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS	2/17/16	JRW	AL	BAM		STD-B-014	1 OF 1



METHOD I
DITCH LINE ONLY



METHOD II
DITCH PLUS SPOIL SIDE



METHOD III
FULL RIGHT-OF-WAY WIDTH

NOTES

1. STORE TOPSOIL ON ONE OR BOTH SIDES OF THE RIGHT-OF-WAY ADJACENT TO STRIPPED AREAS AS SHOWN ABOVE.

2. MAINTAIN A MINIMUM 3 FEET SEPARATION BETWEEN THE TOPSOIL AND THE TRENCH SPOIL PILES.

3. RETURN TOPSOIL EVENLY OVER STRIPPED AREA AFTER TRENCH BACKFILL HAS SUFFICIENTLY SETTLED OR HAS BEEN COMPACTED.

4. REMOVE ALL ROCKS GREATER THAN 4 INCHES IN DIAMETER FROM STRIPPED TOPSOIL.

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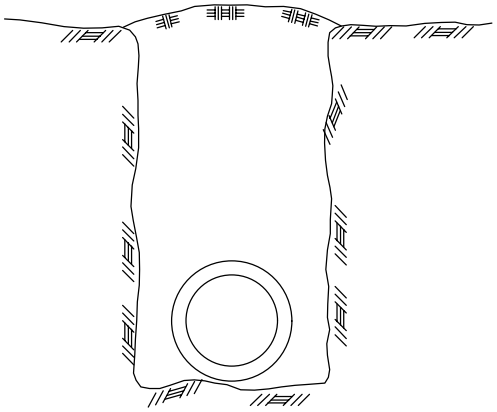
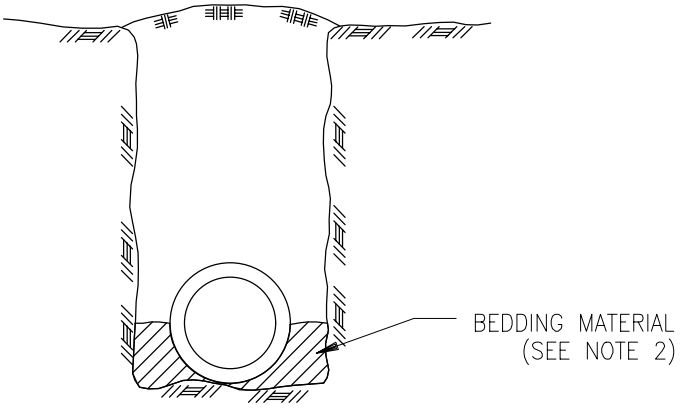
PIPELINE STANDARD TOPSOIL STRIPPING METHODS

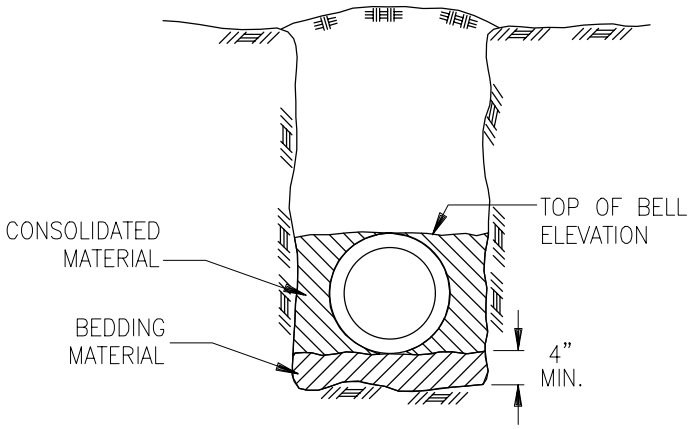
SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS	03-JAN-03					STD-A-009	1 OF 1



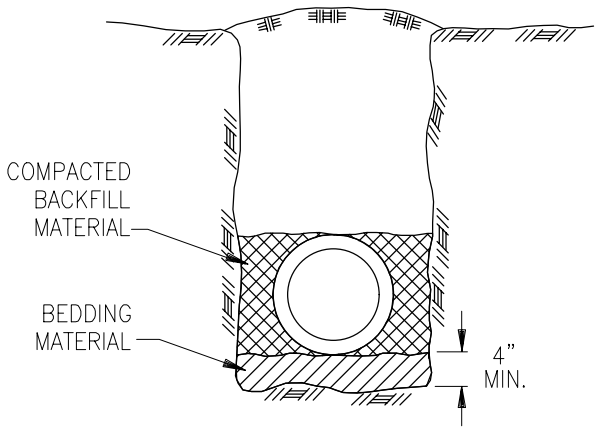
TYPE 1 TRENCH



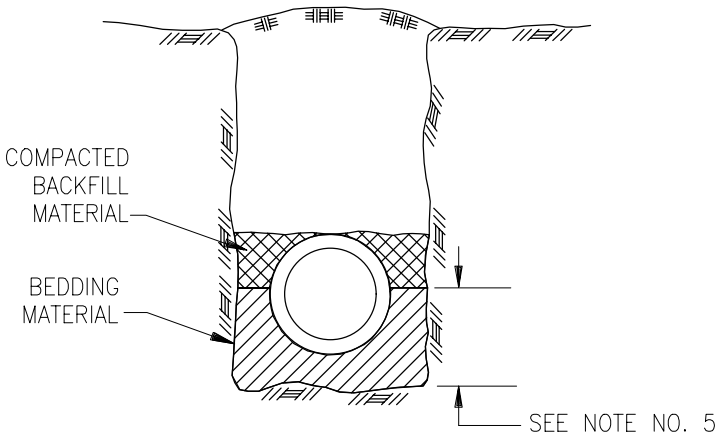
TYPE 2 TRENCH



TYPE 3 TRENCH
(SEE NOTE NO. 3)



TYPE 4 TRENCH
(SEE NOTE NO. 4)



TYPE 5 TRENCH
(SEE NOTE NO. 5)

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NO.	REVISION	DATE	APPR.

TRENCH AND BACKFILL TYPE DETAILS

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS	03-JAN-03					STD-A-305	1 OF 2

NOTES:

1. FOR A TYPE 1, THE PIPE SHALL BE INSTALLED DIRECTLY ON THE UNDISTURBED EARTH AT THE BOTTOM OF THE TRENCH AND BACKFILLED PER THE SPECIFICATIONS.

2. FOR A TYPE 2, THE TRENCH IS IDENTICAL TO A TYPE 1 EXCEPT THAT THE DEPTH FROM THE BOTTOM OF THE TRENCH TO THE CENTERLINE OF THE DUCTILE IRON PIPE IS BACKFILLED WITH LIGHTLY CONSOLIDATED EXCAVATION MATERIAL.

3. FOR TYPE 3, THE TRENCH SHALL HAVE A 4 INCH MINIMUM PIPE BEDDING MATERIAL INSTALLED. THE BEDDING MATERIAL SHALL BE LOOSE SOIL OR SELECT MATERIAL. LOOSE SOIL OR SELECT MATERIAL IS DEFINED AS SAND OR NATIVE SOIL EXCAVATED FROM THE TRENCH FREE OF ROCKS, FOREIGN MATERIAL AND FROZEN MATERIAL. FROM PIPE BEDDING ELEVATION TO THE TOP OF THE PIPE ELEVATION, THE BACKFILL MATERIAL SHALL BE LIGHTLY CONSOLIDATED MATERIAL.

4. FOR TYPE 4, THE TRENCH SHALL HAVE A MINIMUM DEPTH EQUAL TO WHICHEVER IS THE GREATER DEPTH OF 4 INCHES PIPE BEDDING OR ⅛ OF THE PIPE DIAMETER AND SHALL BE COMPOSED OF SAND, GRAVEL OR CRUSHED ROCK. FROM THE PIPE BEDDING ELEVATION TO THE TOP OF PIPE ELEVATION THE BACKFILL SHALL BE COMPACTED IN 6–INCH MAXIMUM LIFTS TO 80 PERCENT MODIFIED PROCTOR AS DETERMINED BY ASTM D698.

5. FOR TYPE 5, THE TRENCH SHALL HAVE THE PIPE BEDDING MATERIAL A MINIMUM OF 4 INCHES UNDER THE PIPE UP TO THE CENTERLINE OF THE PIPE. THE PIPE BEDDING MATERIAL SHALL BE COMPACTED AND SHALL BE COMPOSED OF GRANULAR MATERIAL. FROM THE TOP OF THE PADDING MATERIAL TO THE TOP OF THE PIPE, THE BACKFILL SHALL BE COMPACTED AND COMPOSED OF GRANULAR OR SELECT MATERIAL. THE PADDING MATERIAL AND THE BACKFILL MATERIAL TO THE TOP OF THE PIPE SHALL BE COMPACTED IN 6–INCH MAXIMUM LIFTS TO 90 PERCENT MODIFIED PROCTOR AS DETERMINED BY ASTM D698.

6. ALL OF THE BACKFILL FOR TYPE 1, FROM CENTERLINE OF PIPE FOR TYPE 2 AND FROM THE TOP OF PIPE ELEVATION FOR TYPE 3, 4, AND 5, TO GRADE ELEVATION THE BACKFILL SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.

7. FOR ALL TRENCH TYPES, THE BODY OF THE DUCTILE IRON PIPE SHALL BE COMPLETELY SUPPORTED BY THE BODY OF THE PIPE. THE BELL PORTION SHALL NOT SUPPORT THE PIPE WEIGHT DURING INSTAL–LATION WHICH WILL REQUIRE HAND EXCAVATION AT THE BELL END AREAS.

8. FOR TYPES 1 AND 2, THE MINIMUM WIDTH OF THE TRENCH IS O.D. PLUS 12 INCHES. FOR TYPES 3, 4 AND 5, THE MINIMUM WIDTH OF THE TRENCH IS O.D. PLUS 24 INCHES WITH THE PIPE BEING CENTERED IN THE TRENCH AS MUCH AS IS PRACTICAL.

9. THE TRENCH WALLS ABOVE THE TOP OF PIPE ELEVATION SHALL BE SHORED OR SLOPED FOR STABILITY AS REQUIRED TO PROVIDE A SAFE WORK ENVIRONMENT.

10. MINIMUM COVER IS 4'–0". THIS REQUIRED DEPTH IS MEASURED FROM THE TOP OF BELL JOINT AREA AND WHEN APPLICABLE FROM THE TOP OF CONCRETE WEIGHT OR THE REQUIRED RIP–RAP HEIGHT PER STANDARD DRAWING STD–A–010 TO THE TOP OF ORIGINAL GRADE.

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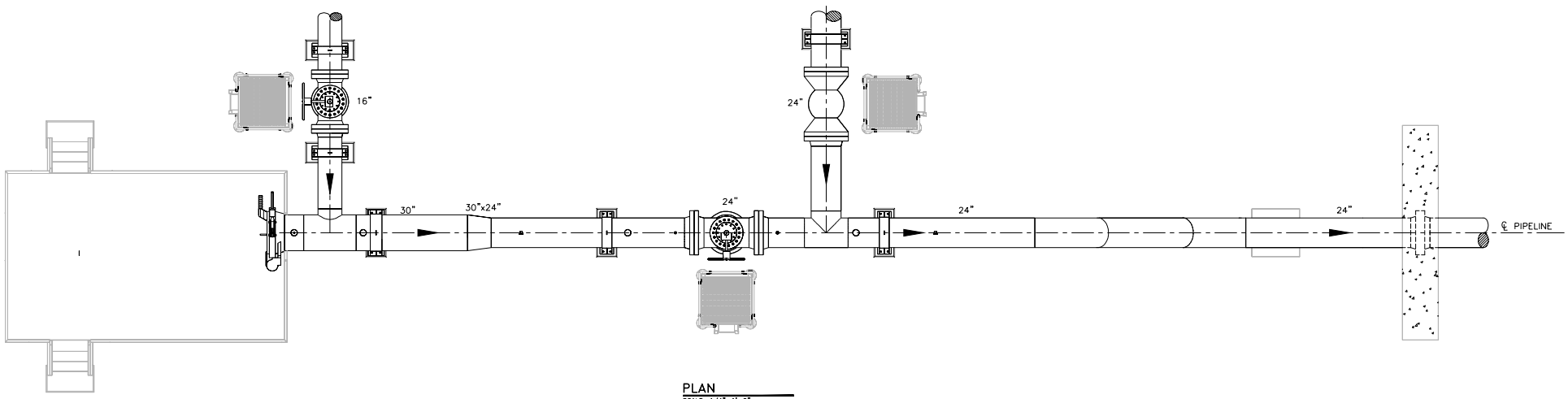
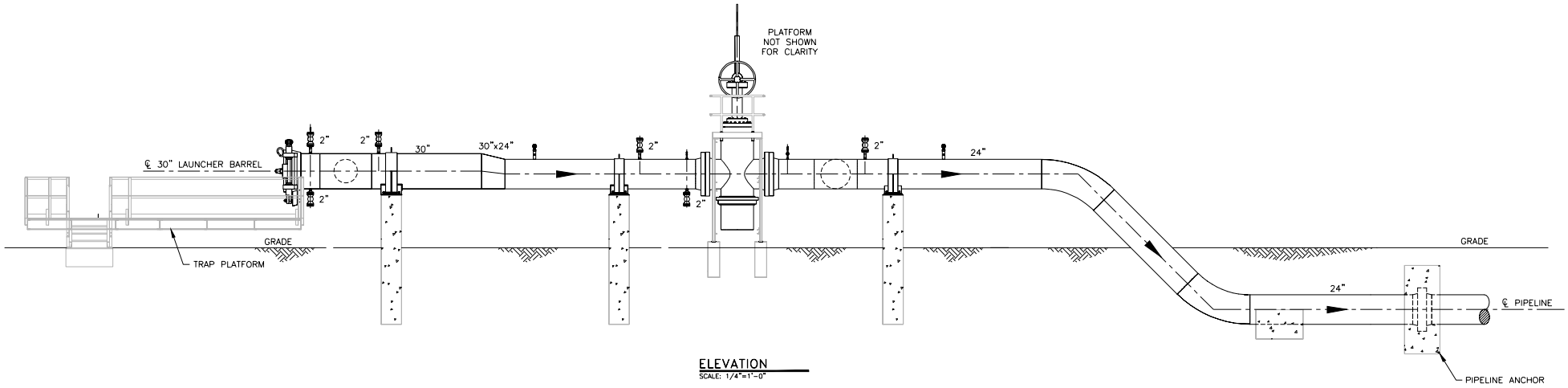
TRENCH AND BACKFILL TYPE DETAILS

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS	03–JAN–03					STD–A–305	2 OF 2



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



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

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02/12/2016

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TRC PROJ. #53595, LA LIC. No. EF.0005488

NO.	REVISION - DESCRIPTION	BY	DATE	CHK'D	APP'D
A	ISSUED FOR INITIAL PERMIT APPLICATION	JCD	02/12/16	AL	BAM

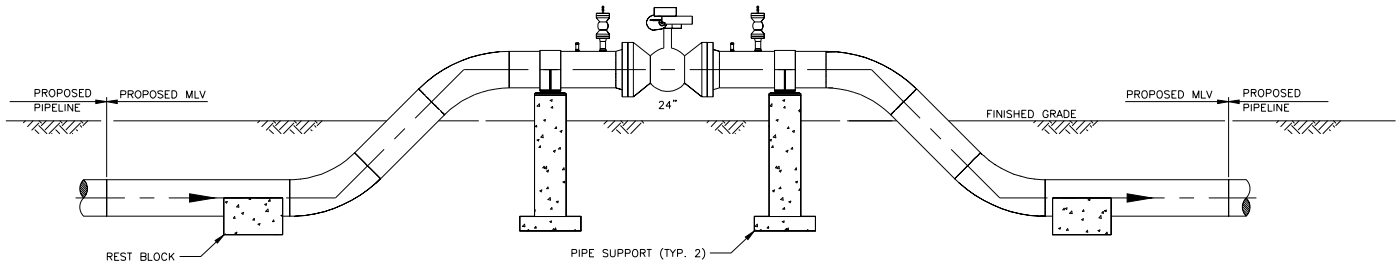
PL./STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR
FILE NO.
SCALE: 1/4"=1'-0"

	BY	DATE
DESIGN	AL	02/10/16
DRAWN	JCD	02/11/16
ASBUILT		

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
TYPICAL LAUNCHER

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET OF
DWG. NO. P5-1A
SHEET 1 OF 1
A



SECTION
SCALE 1/4"=1'-0"

NOT FOR CONSTRUCTION
02/12/2016

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NO.	REVISION - DESCRIPTION	BY	DATE	CHK'D	APP'D
A	ISSUED FOR INITIAL PERMIT APPLICATION	JCD	02/12/16	AL	BAM

PL./STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR

	BY	DATE
DESIGN	AL	02/10/16
DRAWN	JCD	02/11/16
ASBUILT		

FILE NO.
SCALE: 1/4"=1'-0"

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
TYPICAL MAIN LINE VALVE

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET OF
DWG. NO. P6-1A
SHEET 1 OF 1
A

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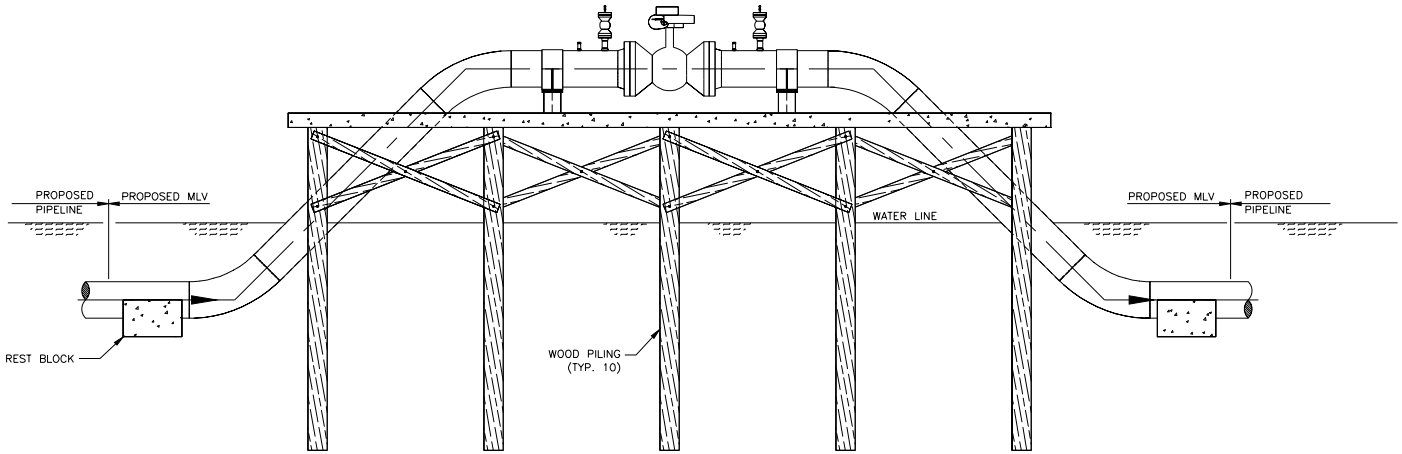

SECTION
SCALE 1/4"=1'-0"

NOT FOR CONSTRUCTION
02/12/2016

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TRC PROJ. #53595, LA LIC. No. EF.0005488

NO.	REVISION - DESCRIPTION	BY	DATE	CHK'D	APP'D
A	ISSUED FOR INITIAL PERMIT APPLICATION	JCD	02/12/16	AL	BAM

PL./STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR

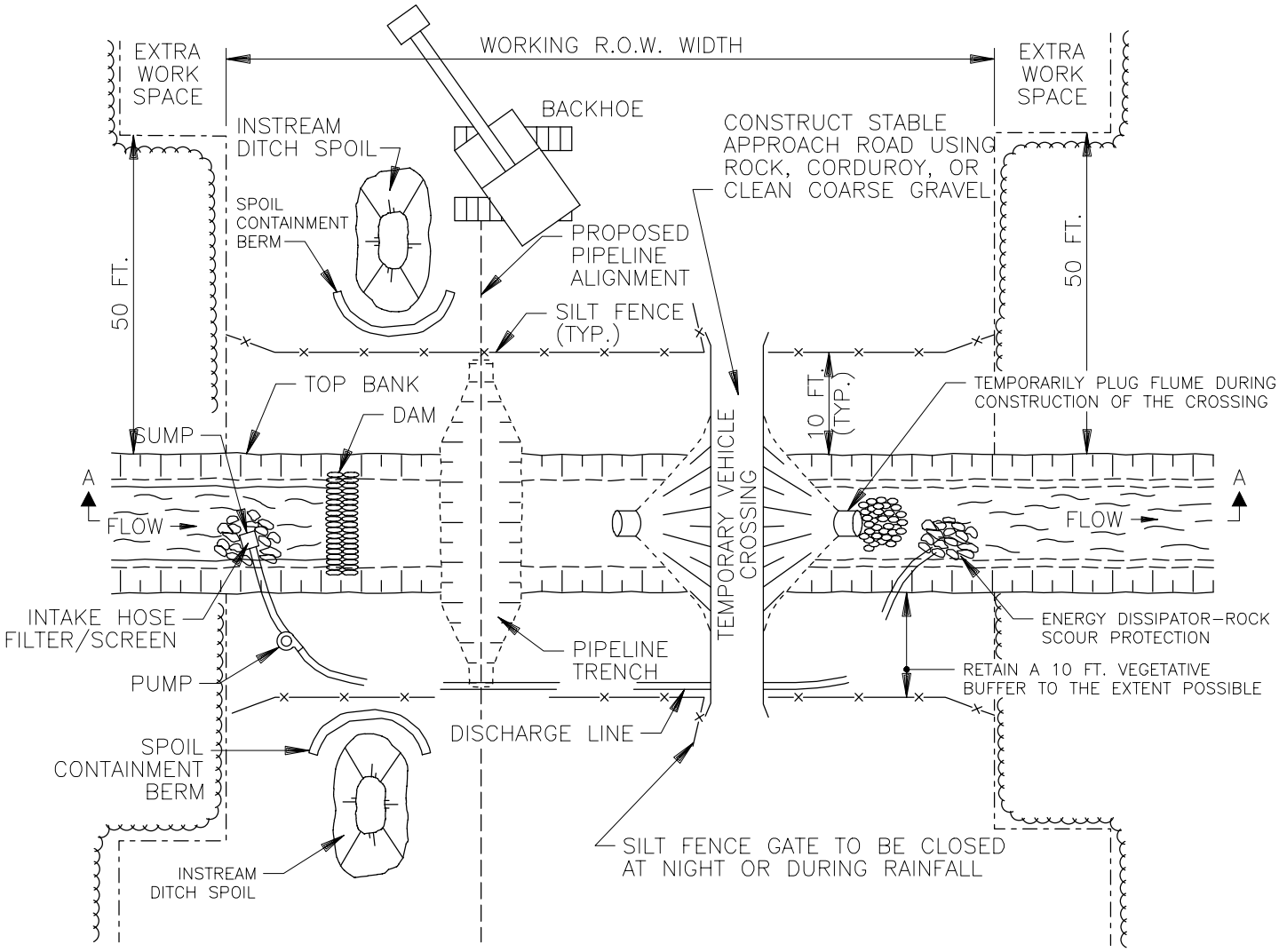
	BY	DATE
DESIGN	AL	02/10/16
DRAWN	JCD	02/11/16
ASBUILT		

FILE NO.
SCALE: 1/4"=1'-0"

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

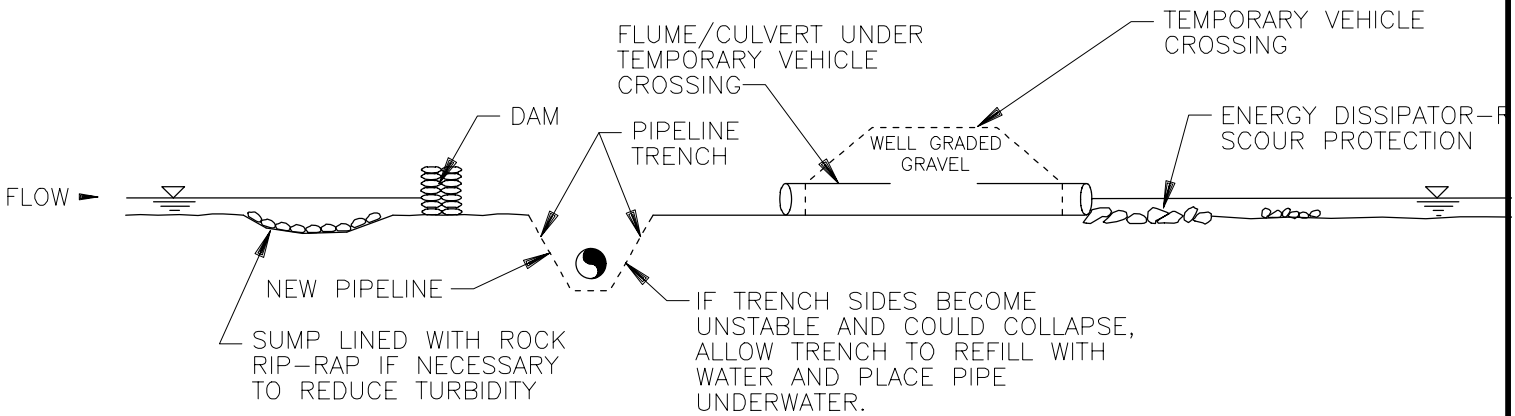
BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
TYPICAL MAIN LINE VALVE ON PLATFORM

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET OF
DWG. NO. P6-2A
SHEET 1 OF 1
A



PLAN VIEW

SCALE: N.T.S.



SECTION 'A–A'

SEE SHEET 2 FOR NOTES.

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NO.	REVISION	DATE	APPR.

TYPICAL DAM AND PUMP CROSSING

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–105	1 OF 2

DAM AND PUMP CROSSING

THE FOLLOWING IS A SEQUENCE OF CONSTRUCTION AND MITIGATION MEASURES TO BE FOLLOWED AT ALL "DAM AND PUMP" TYPE CROSSINGS.

SEQUENCE OF ACTIVITIES

STEP 1. CLEAR AND GRADE CERTIFICATED RIGHT-OF-WAY AS NECESSARY.
STEP 2. IMPLEMENT THE TEMPORARY EROSION AND SEDIMENT CONTROLS.
STEP 3. FABRICATE PIPE.
STEP 4. INSTALL DRY STREAM CROSSING MATERIALS.
STEP 5. EXCAVATE TRENCH AND INSTALL PIPE.
STEP 6. BACKFILL AND RESTORE STREAM BANKS.
STEP 7. REMOVE DAMS.
STEP 8. IMPLEMENT THE PERMANENT EROSION AND SEDIMENTATION CONTROLS.

MAINTENANCE OF STREAMFLOW

IF THERE IS ANY FLOW IN THE WATERCOURSE, INSTALL PUMPS TO MAINTAIN STREAMFLOW AROUND THE BLOCKED OFF SECTIONS OF CHANNEL. THE PUMP IS TO HAVE 1.5 TO 2 TIMES THE PUMPING CAPACITY OF ANTICIPATED FLOW. A SECOND STANDBY PUMP OF EQUAL CAPACITY IS TO BE READILY AVAILABLE AT ALL TIMES. AN ENERGY DISSIPATOR IS TO BE BUILT TO ACCEPT PUMP DISCHARGE WITHOUT STREAMBED OR STREAMBANK EROSION. IF THE CROSSING IS PROLONGED BEYOND ONE DAY THE OPERATION NEEDS TO BE MONITORED OVERNIGHT.

NOTES:

1. WHERE NECESSARY, OBTAIN PRIOR APPROVAL BEFORE USING THE DAM AND PUMP METHOD.

2. SCHEDULE INSTREAM ACTIVITY FOR LOW FLOW PERIODS AND FOR THE APPROPRIATE TIMING WINDOW.

3. MARK OUT AND MAINTAIN LIMITS OF AUTHORIZED WORK AREAS WITH FENCING OR FLAGGING TAPE TO AVOID UNNECESSARY DISTURBANCE OF VEGETATION. ENSURE EQUIPMENT OPERATORS WORKING ON THE CROSSING HAVE BEEN BRIEFED ABOUT THIS PLAN AND THE MEASURES NEEDED TO PROTECT WATER QUALITY. INSTALL PRE-WORK SEDIMENT CONTROL MEASURES AS SPECIFIED IN THE PLAN. ALL NECESSARY EQUIPMENT AND MATERIALS TO BUILD THE DAMS AND TO PUMP WATER MUST BE ON SITE OR READILY AVAILABLE PRIOR TO COMMENCING IN-WATER CONSTRUCTION. PIPE SHOULD BE STRUNG, WELDED AND COATED AND READY FOR INSTALLATION PRIOR TO WATERCOURSE TRENCHING.

4. CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES, AS DEPICTED OR ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVILY SILT LADEN WATER ENTERS STREAM.
   a. NO HEAVILY SILT LADEN WATER SHALL BE DISCHARGED DIRECTLY OR INDIRECTLY INTO THE STREAM.
   b. EROSION AND SEDIMENT CONTROL STRUCTURE LOCATIONS AS DEPICTED ARE APPROXIMATE AND MAY BE ADJUSTED AS DIRECTED BY THE COMPANY INSPECTOR TO ACTUAL SITE CONDITIONS.
   c. SILT FENCE OR STRAW BALE INSTALLATIONS SHALL INCLUDE REMOVABLE SECTIONS TO FACILITATE ACCESS DURING CONSTRUCTION. UTILIZE STRAW BALE BARRIERS ONLY IN LIEU OF A SILT FENCE WHERE FREQUENT ACCESS IS REQUIRED.
   d. SEDIMENT LADEN WATER FROM TRENCH DEWATERING SHALL BE DISCHARGED TO A WELL VEGETATED UPLAND AREA, INTO A STRAW BALE DEWATERING STRUCTURE OR GEOTEXTILE FILTER BAG.
   e. SEDIMENT CONTROL STRUCTURES MUST BE IN PLACE AT ALL TIMES ACROSS THE DISTURBED PORTIONS OF THE RIGHT-OF-WAY EXCEPT DURING EXCAVATION/INSTALLATION OF THE CROSSING PIPE.
   f. SOFT DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE RIVER CROSSING UNTIL THE RIVER CROSSING IS INSTALLED AND BACKFILLED.

5. TO THE EXTENT POSSIBLE, MAINTAIN A MINIMUM 10 FEET VEGETATIVE BUFFER STRIP BETWEEN DISTURBED AREAS AND THE WATERCOURSE. INSTALL AND MAINTAIN A SILT FENCE UPSLOPE OF THE BUFFER STRIP ON EACH SIDE OF THE WATERCOURSE. THE SILT FENCE SHOULD INCORPORATE REMOVABLE "GATES" AS REQUIRED TO ALLOW ACCESS WHILE MAINTAINING EASE OF REPLACEMENT FOR OVERNIGHT OR DURING PERIODS OF RAINFALL.

6. CONSTRUCT A TEMPORARY SUMP UPSTREAM OF THE DAM AND LINE WITH ROCKFILL IF A NATURAL POOL DOES NOT EXIST. INSTALL THE PUMP OR PUMP INTAKE IN THE POOL OR SUMP. DISCHARGE WATER ONTO AN ENERGY DISSIPATOR DOWNSTREAM OF THE WORK AREA.

7. EXCAVATED MATERIAL MUST NOT BE STOCKPILED WITHIN 10 FT. OF THE WATERCOURSE. THIS MATERIAL MUST BE CONTAINED WITHIN BERM CONTAINMENT, WITH SECONDARY SILT FENCE PROTECTION TO PREVENT SATURATED SOIL FROM FLOWING BACK INTO THE WATERCOURSE.

8. CHEMICALS, FUELS, LUBRICATING OILS SHALL NOT BE STORED AND EQUIPMENT REFUELED WITHIN 100 FT. OF THE WATERBODY. PUMPS ARE TO BE REFUELED AS PER THE SPCC PLANS.

9. STAGING AREAS ARE TO BE LOCATED AT LEAST 50 FT. FROM THE WATER'S EDGE (WHERE TOPOGRAPHIC CONDITIONS PERMIT) AND SHALL BE THE MINIMUM SIZE NEEDED.

10. DAMS ARE TO BE MADE OF STEEL PLATE, INFLATABLE PLASTIC DAM, SAND BAGS, COBBLES, WELL GRADED COARSE GRAVEL FILL, OR ROCK FILL. DAMS MAY NEED KEYING INTO THE BANKS AND STREAMBED. ENSURE THAT THE DAM AND VEHICLE CROSSING ARE LOCATED FAR ENOUGH APART TO ALLOW FOR A WIDE EXCAVATION. CAP FLUMES USED UNDER VEHICLE CROSSING DURING DRY CROSSING.

11. DEWATER AREA BETWEEN DAMS IF POSSIBLE. DEWATERING SHOULD OCCUR IN A STABLE VEGETATIVE AREA A MINIMUM OF 50 FT. FROM ANY WATERBODY. THE PUMP DISCHARGE SHOULD BE DISCHARGED ONTO A STABLE SPILL PAD CONSTRUCTED OF ROCKFILL SANDBAGS, OR TIMBERS TO PREVENT LOCALIZED EROSION. THE DISCHARGE WATER SHOULD ALSO BE FORCED INTO SHEET FLOW IMMEDIATELY BEYOND THE SPILL PAD BY USING STRAW BALES AND THE NATURAL TOPOGRAPHY. IF IT IS NOT POSSIBLE TO DEWATER THE EXCAVATION DUE TO SOILS WITH A HIGH HYDRAULIC CONDUCTIVITY, THE EXCAVATION AND PIPE PLACEMENT IS TO BE CARRIED OUT IN THE STANDING WATER. PUMP ANY DISPLACED WATER AS DESCRIBED ABOVE TO PREVENT OVERTOPPING OF DAMS.

12. EXCAVATE TRENCH THROUGH PLUGS AND STREAMBED FROM BOTH SIDES, RE-POSITIONING DISCHARGE HOSE AS NECESSARY. LOWER THE PIPE IN THE TRENCH AND BACKFILL IMMEDIATELY. DURING THIS OPERATION WORK IS TO BE COMPLETED AS QUICKLY AS POSSIBLE.

13. CONTRACTOR SHALL RESTORE THE STREAM BED AND BANKS TO APPROXIMATE PRE-CONSTRUCTION CONTOURS, BUT NOT TO EXCEED 2 HORIZONTAL TO 1 VERTICAL.
   a. CONTRACTOR SHALL INSTALL PERMANENT EROSION AND SEDIMENT CONTROL STRUCTURES AS INDICATED ON A SITE SPECIFIC BASIS. IN THE ABSENCE OF SITE SPECIFIC INFORMATION, A FLEXIBLE CHANNEL LINER SUCH AS NAG C125 OR C350 WHICH IS CAPABLE OF WITHSTANDING ANTICIPATED FLOW SHALL BE INSTALLED. ALTERNATIVELY, ROCK RIP-RAP SHALL BE INSTALLED.
   b. ANY MATERIALS PLACED IN THE STREAM TO FACILITATE CONSTRUCTION SHALL BE REMOVED DURING RESTORATION. BANKS SHALL BE STABILIZED AND TEMPORARY SEDIMENT BARRIERS INSTALLED AS SOON AS POSSIBLE AFTER CROSSING, BUT WITHIN 24 HOURS OF COMPLETING THE CROSSING.
   c. MAINTAIN A SILT FENCE OR STRAW BALE BARRIER ALONG THE WATER COURSE UNTIL VEGETATION IS ESTABLISHED IN ADJACENT DISTURBED AREAS.

14. WHEN THE STREAMBED HAS BEEN RESTORED, THE CREEK BANKS ARE TO BE CONTOURED TO A STABLE ANGLE AND PROTECTED WITH EROSION RESISTANT MATERIAL COMPATIBLE WITH FLOW VELOCITY BETWEEN DAMS (E.G., EROSION CONTROL BLANKETS, CRIBBING, ROCK RIP-RAP, ETC.). THE DAMS ARE TO BE REMOVED DOWNSTREAM FIRST. KEEP PUMP RUNNING UNTIL NORMAL FLOW IS RESUMED. COMPLETE BANK TRIMMING AND EROSION PROTECTION. IF SANDBAGS ARE USED FOR THE DAMS, PLACE AND REMOVE BY HAND TO AVOID EQUIPMENT BREAKING BAGS.

REFER TO SHEET 1

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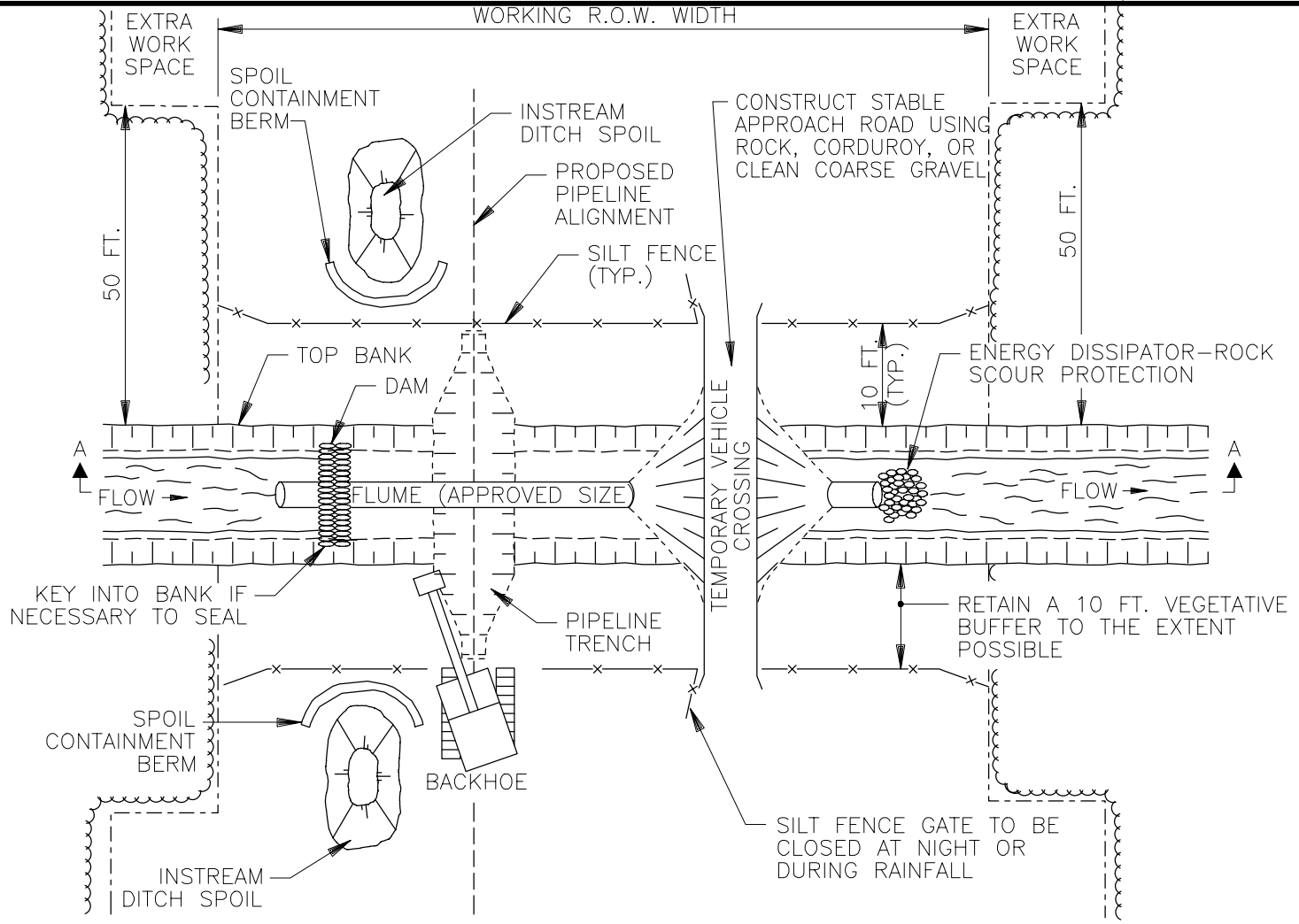
TRC PROJ. #53595, LIC. No. EF 4588

NO.	REVISION	DATE	APPR.

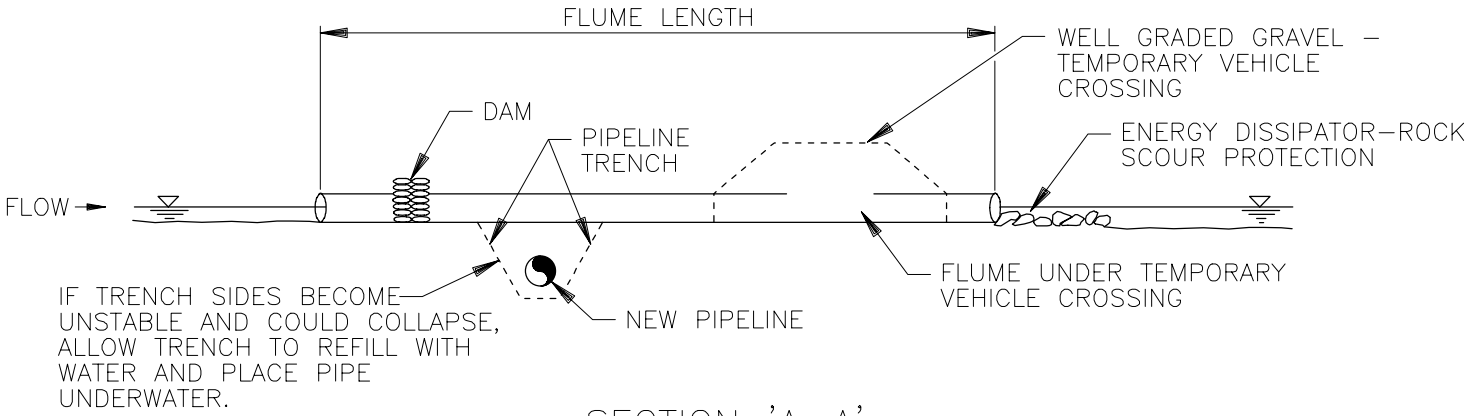
TYPICAL
DAM AND PUMP CROSSING

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-106	2 OF 2



PLAN VIEW

SCALE: N.T.S.



SECTION 'A–A'

SCALE: N.T.S.

SEE SHEET 2 FOR NOTES.

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NO.	REVISION	DATE	APPR.

TYPICAL DRY FLUME CROSSING

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–099	1 OF 2

DRY FLUME CROSSINGS

THE FOLLOWING IS A SEQUENCE OF CONSTRUCTION AND MITIGATION MEASURES TO BE FOLLOWED AT ALL "DRY FLUME" TYPE CROSSINGS.

SEQUENCE OF ACTIVITIES

STEP 1. CLEAR AND GRADE CERTIFICATED RIGHT-OF-WAY AS NECESSARY.
STEP 2. IMPLEMENT THE TEMPORARY EROSION AND SEDIMENT CONTROLS.
STEP 3. FABRICATE PIPE.
STEP 4. INSTALL DRY STREAM CROSSING MATERIALS.
STEP 5. EXCAVATE TRENCH AND INSTALL PIPE.
STEP 6. BACKFILL AND RESTORE STREAM BANKS.
STEP 7. REMOVE FLUME CROSSING.
STEP 8. IMPLEMENT THE PERMANENT EROSION AND SEDIMENTATION CONTROLS.

NOTES:

1. MARK OUT AND MAINTAIN LIMITS OF AUTHORIZED WORK AREAS WITH FENCING OR FLAGGING TAPE TO AVOID UNNECESSARY DISTURBANCE OF VEGETATION. ENSURE EQUIPMENT OPERATORS WORKING ON THE CROSSING HAVE BEEN BRIEFED ABOUT THIS PLAN AND THE MEASURES NEEDED TO PROTECT WATER QUALITY.

2. ALL NECESSARY EQUIPMENT AND MATERIALS TO BUILD THE FLUME MUST BE ON SITE OR READILY AVAILABLE PRIOR TO COMMENCING IN-WATER WORK.

3. TO THE EXTENT POSSIBLE, MAINTAIN A MINIMUM 10 FT. VEGETATIVE BUFFER STRIP BETWEEN DISTURBED AREAS AND THE WATERCOURSE. INSTALL AND MAINTAIN A SILT FENCE OR STRAW BALE BARRIER UPSLOPE OF THE BUFFER STRIP ON EACH SIDE OF THE WATERCOURSE.

4. CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES, AS DEPICTED OR ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVILY SILT LADEN WATER ENTERS STREAM.
   a. NO HEAVILY SILT LADEN WATER SHALL BE DISCHARGED DIRECTLY OR INDIRECTLY INTO THE STREAM.
   b. EROSION AND SEDIMENT CONTROL STRUCTURE LOCATIONS AS DEPICTED ARE APPROXIMATE AND MAY BE ADJUSTED AS DIRECTED BY THE COMPANY INSPECTOR TO ACTUAL SITE CONDITIONS.
   c. SILT FENCE OR STRAW BALE INSTALLATIONS SHALL INCLUDE REMOVABLE SECTIONS TO FACILITATE ACCESS DURING CONSTRUCTION. UTILIZE STRAW BALE BARRIERS ONLY IN LIEU OF A SILT FENCE WHERE FREQUENT ACCESS IS REQUIRED.
   d. SEDIMENT LADEN WATER FROM TRENCH DEWATERING SHALL BE DISCHARGED TO A WELL VEGETATED UPLAND AREA INTO A STRAW BALE DEWATERING STRUCTURE OR GEOTEXTILE FILTER BAG.
   e. SEDIMENT CONTROL STRUCTURES MUST BE IN PLACE AT ALL TIMES ACROSS THE DISTURBED PORTIONS OF THE RIGHT-OF-WAY EXCEPT DURING EXCAVATION/INSTALLATION OF THE CROSSING PIPE.
   f. SOFT DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE RIVER CROSSING UNTIL THE RIVER CROSSING IS INSTALLED AND BACKFILLED.

5. PIPE SHALL BE STRUNG AND WELDED FOR READY INSTALLATION PRIOR TO WATERCOURSE TRENCHING.

6. FLUME CAPACITY DURING DRY CROSSING SHALL BE SUFFICIENT TO ACCOMMODATE 1.5 TIMES THE FLOW MEASURED AT THE TIME OF CONSTRUCTION PROVIDED THAT THE FLUMES WILL BE IN PLACE NOT MORE THAN 96 HOURS AND NO PRECIPITATION IS FORECAST. FLUME CAPACITY FOR VEHICLE ACCESS SHALL BE SUFFICIENT TO PASS THE 2 YEAR DESIGN FLOW OR THE FLOW REASONABLY EXPECTED TO OCCUR DURING THE INSTALLATION. EXCESS FLUMES REQUIRED FOR LONGER TERM ACCESS SHALL BE CAPPED DURING DRY CROSSING PROCEDURES.

7. ENSURE THAT THE DAMS AND VEHICLE-CROSSING ARE LOCATED FAR ENOUGH APART TO ALLOW FOR A WIDE EXCAVATION. FLUMES ARE TO BE SET WITH 10 PERCENT OF THEIR DIAMETER BELOW STREAMBED LEVEL WHERE SOIL CONDITIONS PERMIT (OTHERWISE INSTALLED AT STREAM GRADE AND SLOPE).

8. PLACE IMPERVIOUS DAMS AT EACH END OF THE FLUME, UPSTREAM FIRST, THEN DOWNSTREAM. ACCEPTABLE ALTERNATIVES INCLUDE GRAVEL WITH RIP-RAP PROTECTION, SAND BAGS, STEEL PLATE AND ROCKFILL. DURING INSTALLATION, INSTALL AN IMPERVIOUS MEMBRANE, IF NECESSARY, TO LIMIT LEAKAGE, DAMS MAY NEED KEYING INTO THE BANK AND STREAMBED.

9. EXCAVATE TRENCH THROUGH PLUGS AND UNDER FLUME FROM BOTH SIDES. WORK IS TO BE COMPLETED AS QUICKLY AS POSSIBLE.
   a. LOWER IN PIPE BY PASSING UNDER FLUME AND BACKFILL IMMEDIATELY WITH SPOIL MATERIAL.
   b. IT IS NOT NECESSARY TO DEWATER THE IN-STREAM TRENCH, HOWEVER, DISPLACED WATER SHALL BE PUMPED TO A STABLE UPLAND AREA TO AVOID OVERTOPPING OF DAMS DURING PIPE PLACEMENT.
   c. IF THE SPOIL MATERIAL IS NOT SUITABLE, USE IMPORTED CLEAN GRANULAR MATERIAL.
   d. IF BLASTING IS REQUIRED, USE CONTROLLED BLASTING TECHNIQUES TO PREVENT DAMAGE TO THE FLOW CONVEYANCE SYSTEM. ALTERNATIVELY, BLASTING MAY BE ACCOMPLISHED PRIOR TO FLUME INSTALLATION BY DRILLING THROUGH THE OVERBURDEN.

10. EXCAVATED MATERIAL MUST NOT BE STOCKPILED WITHIN 10 FT. OF THE WATERCOURSE. THIS MATERIAL MUST BE CONTAINED WITHIN BERM CONTAINMENT, WITH SECONDARY SILT FENCE PROTECTION TO PREVENT SATURATED SOIL FROM FLOWING BACK INTO THE WATERCOURSE.

11. DEWATERING OF THE ONLAND TRENCH SHOULD OCCUR IN A STABLE VEGETATED AREA A MINIMUM OF 50 FT. FROM ANY WATERBODY. THE PUMP DISCHARGE SHOULD BE DIRECTED ONTO A STABLE SPILL PAD CONSTRUCTED OF ROCKFILL OR TIMBERS TO PREVENT LOCALIZED EROSION. THE DISCHARGE WATER SHOULD ALSO BE FORCED INTO SHEET FLOW IMMEDIATELY BEYOND THE SPILL PAD BY BY USING STRAW BALES AND THE NATURAL TOPOGRAPHY.

12. FLUMES SHOULD BE REMOVED AS SOON AS POSSIBLE, WHEN NO LONGER REQUIRED FOR PIPE LAYING OR FOR ROAD ACCESS, IN THE FOLLOWING MANNER:
   a. REMOVE THE VEHICLE CROSSING RAMP. BANKS ARE TO BE RESTORED TO A STABLE ANGLE AND PROTECTED WITH EROSION RESISTANT MATERIAL COMPATIBLE WITH THE FLOW CONDITIONS (E.G., EROSION CONTROL BLANKETS, CRIBBING, ROCK RIP-RAP, ETC.) TO THE MAXIMUM EXTENT POSSIBLE BEFORE REMOVING THE DAMS.
   b. REMOVE DOWNSTREAM DAM.
   c. REMOVE UPSTREAM DAM.
   d. REMOVE FLUME.
   e. COMPLETE BANK TRIMMING AND EROSION PROTECTION. IF SANDBAGS ARE USED FOR THE DAMS, PLACE AND REMOVE BY HAND TO AVOID EQUIPMENT BREAKING BAGS.

13. CONTRACTOR SHALL RESTORE THE STREAM BED AND BANKS TO APPROXIMATE PRE-CONSTRUCTION CONTOURS, BUT NOT TO EXCEED 2 HORIZONTAL TO 1 VERTICAL.
   a. CONTRACTOR SHALL INSTALL PERMANENT EROSION AND SEDIMENT CONTROL STRUCTURES AS INDICATED ON A SITE SPECIFIC BASIS. IN THE ABSENCE OF SITE SPECIFIC INFORMATION, A FLEXIBLE CHANNEL LINER SUCH AS NAG C125 OR C350 WHICH IS CAPABLE OF WITHSTANDING ANTICIPATED FLOW SHALL BE INSTALLED. ALTERNATIVELY, ROCK RIP-RAP SHALL BE INSTALLED.
   b. ANY MATERIALS PLACED IN THE STREAM TO FACILITATE CONSTRUCTION SHALL BE REMOVED DURING RESTORATION. BANKS SHALL BE STABILIZED AND TEMPORARY SEDIMENT BARRIERS INSTALLED AS SOON AS POSSIBLE AFTER CROSSING, BUT WITHIN 24 HOURS OF COMPLETING THE CROSSING.
   c. MAINTAIN A SILT FENCE OR STRAW BALE BARRIER ALONG THE WATER COURSE UNTIL VEGETATION IS ESTABLISHED IN ADJACENT DISTURBED AREAS.

REFER TO SHEET 1

TRC
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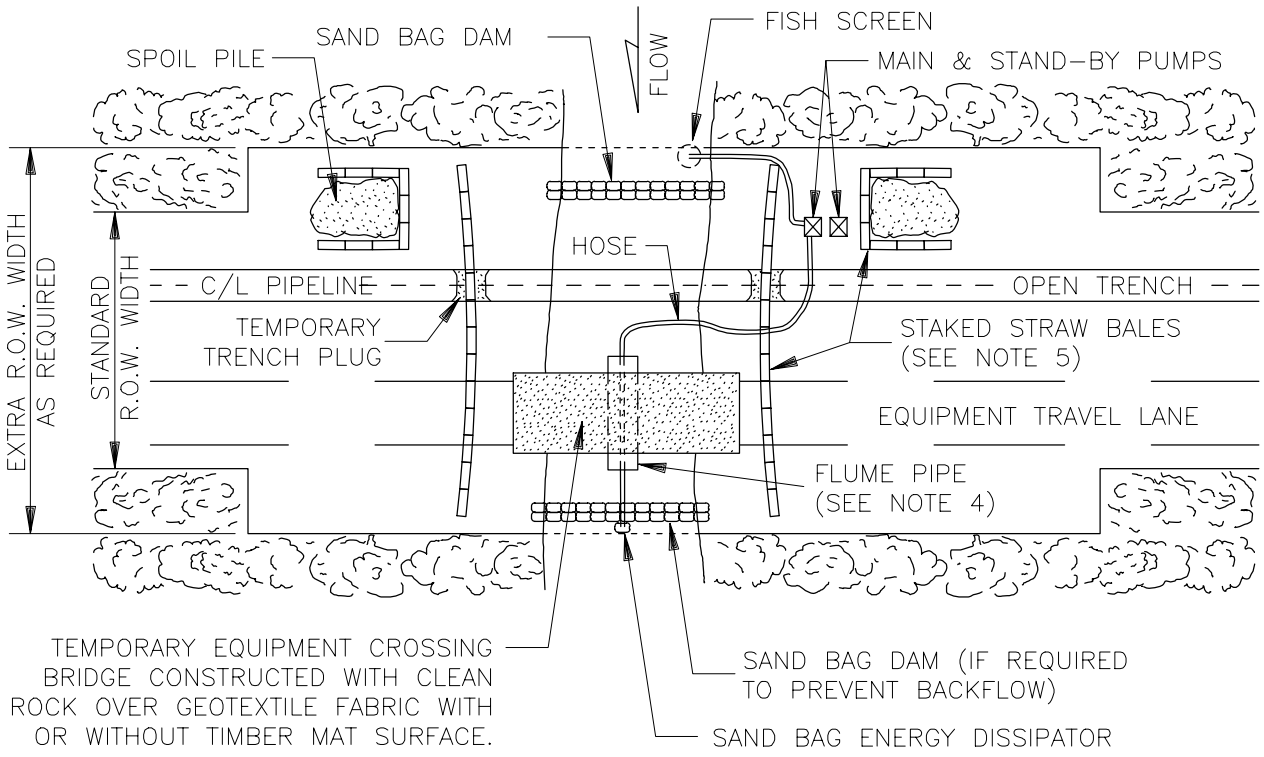
TYPICAL
DRY FLUME CROSSING

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-100	2 OF 2



NOTES

1. USE PUMP AROUND METHOD FOR SMALL STREAMS SUPPORTING WARM OR COLD WATER FISHERIES WHERE FISH PASSAGE IS NOT A CONCERN.

2. AFTER INSTALLING PIPE AND BACKFILLING, DISMANTLE DOWNSTREAM THEN UPSTREAM DAMS WHILE KEEPING PUMP RUNNING TO MAINTAIN STREAM FLOW.

3. PUMPS SHALL HAVE A CAPACITY AT LEAST TWICE THAT OF THE MAXIMUM ANTICIPATED STREAM FLOW AS DETERMINED BY THE RATIONAL METHOD.

4. ACTUAL NUMBER OF FLUME PIPES (MIN. 20" DIA.) REQUIRED DETERMINED BY STREAM FLOW AS DETERMINED BY MANNING'S FORMULA.

5. STRAW BALES TO BE IN PLACE ACROSS TRAVEL LANE DURING PERIODS OF NO CONSTRUCTION ACTIVITY.

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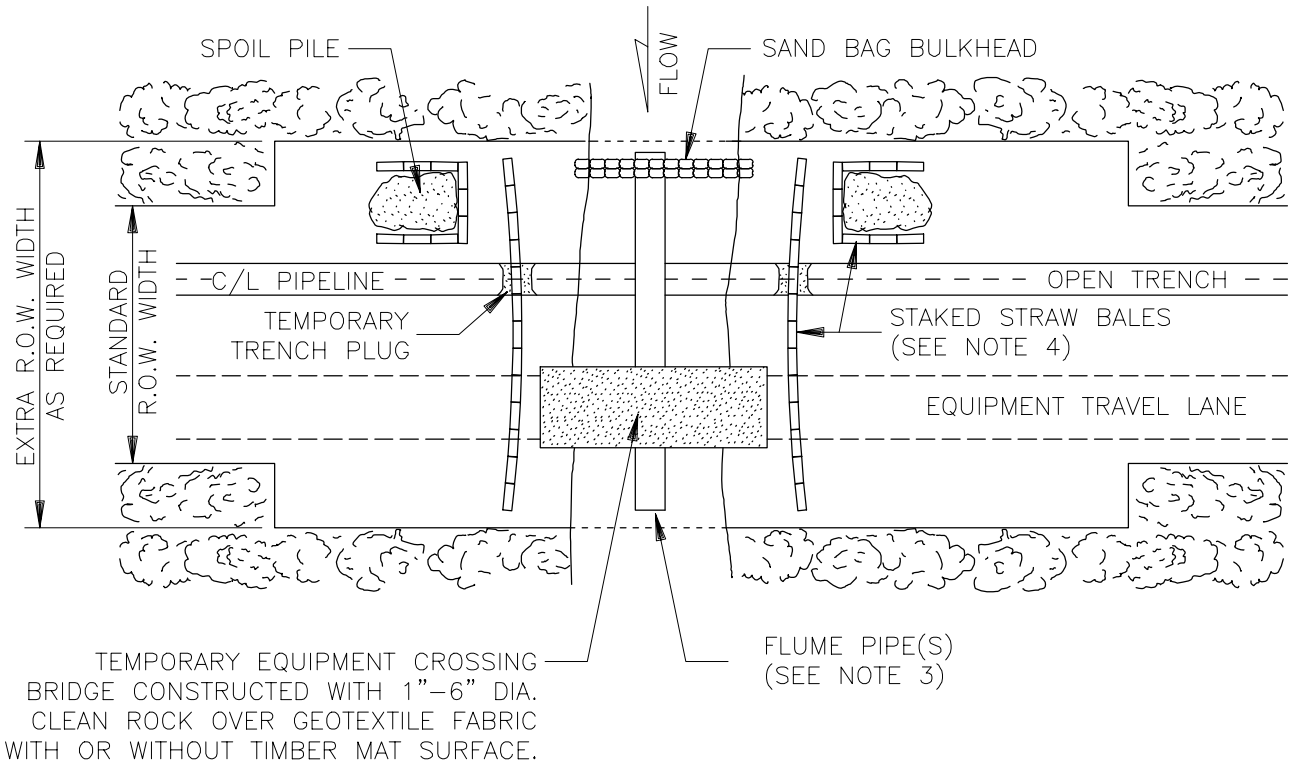
NO.	REVISION	DATE	APPR.

PIPELINE STANDARD DRY STREAM CROSSING (PUMP AROUND & FLUME EQUIPMENT CROSSING)

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-035	1 OF 1



NOTES:

1. USE FLUME TRENCH METHOD FOR SMALL STREAMS SUPPORTING COLD OR WARM WATER FISHERIES.
2. LOWER PIPE INTO TRENCH BY PASSING UNDER THE FLUME PIPES.
3. USE AS MANY FLUME PIPES (MIN. 20" DIA.) AS REQUIRED TO INSURE FLOW IS NOT OBSTRUCTED BY BRIDGE.
4. WHEN MORE THAN ONE FLUME PIPE IS REQUIRED, MINIMUM SPACING BETWEEN FLUME PIPES IS 0.5 TIMES THE NOMINAL DIAMETER OF THE FLUME PIPE.
5. STRAW BALES TO BE IN PLACE ACROSS TRAVEL LANE DURING PERIODS OF NO CONSTRUCTION ACTIVITY.
6. MINIMUM CLEAN ROCK COVER OVER FLUME PIPE(S) IS 1.0' – 0.0".

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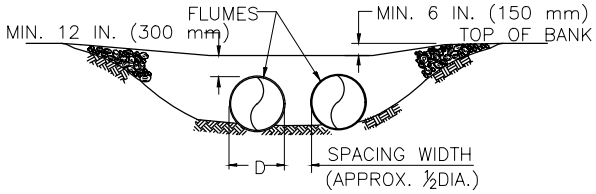
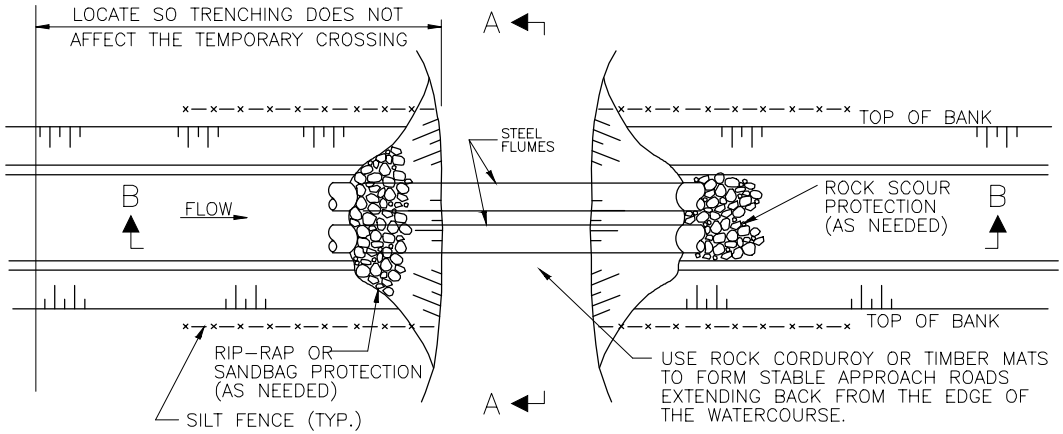
NO.	REVISION	DATE	APPR.

PIPELINE STANDARD DRY STREAM CROSSING (FLUME & TRENCH AND EQUIPMENT CROSSING)

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–110	1 OF 1



SECTION 'A–A'
SCALE: N.T.S.



PLAN VIEW
SCALE: N.T.S.

THE FOLLOWING IS A SEQUENCE OF CONSTRUCTION AND MITIGATION MEASURES TO BE FOLLOWED AT ALL TEMPORARY FLUME VEHICLE CROSSINGS.

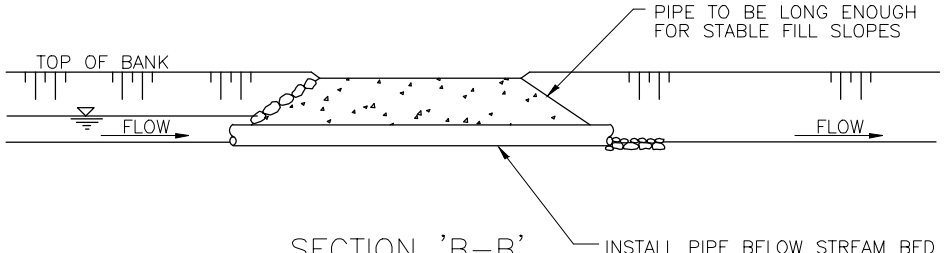
1. A PORTABLE FLEXI–FLOAT, OR TEMPORARY BRIDGE MAY BE SUBSTITUTED FOR THE TEMPORARY FLUME CROSSING.

2. THE LENGTH OF THE FLUME SHALL BE SUFFICIENT TO SPAN THE ENTIRE AREA REQUIRED FOR VEHICULAR ACCESS, EXTENDING 4 FT. BEYOND TOE OF FILL MATERIAL, SO TRENCHING WILL NOT AFFECT THE ROAD CROSSING. A LONGER PIPE IS TO BE USED, IF NEEDED, TO MAINTAIN STABLE SIDE SLOPES. FLUME CAPACITY TO BE BASED ON THE 2–YEAR DESIGN FLOW OR MAXIMUM FLOW ANTICIPATED TO OCCUR DURING INSTALLATION, AS SPECIFIED IN CONSTRUCTION DOCUMENTS.

3. WHERE PRACTICAL, BACKFILL AROUND THE PIPES AT THE ROAD WITH CLEAN, COARSE ROCK FILL MATERIAL. IF SCOUR IS POSSIBLE, RIP–RAP IS TO BE PLACED ON THE STREAM BED DOWN–STREAM OF THE PIPE OUTLET EXTENDING A MINIMUM OF TWO PIPE DIAMETERS. ALTERNATIVELY, TIMBER EQUIPMENT MATS, SAND BAGS OR TIMBER CORDUROY MAY BE USED TO FORM THE TRAVEL SURFACE.

4. TO REDUCE MUD ENTERING THE WATER FROM EQUIPMENT TRACKS, THE APPROACH ROAD LEADING TO THE CULVERT CROSSING MUST BE RAISED AND STABLE SO EQUIPMENT LOADS ARE SUPPORTED A SUFFICIENT DISTANCE BACK FROM THE WATER. IF CUTS ARE NEEDED TO OBTAIN A SATISFACTORY GRADE, THEY ARE TO BE DUG WITH SIDE DITCHES AND STABLE SLOPES. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED TO LIMIT THE POTENTIAL FOR SEDIMENT TO ENTER THE WATERBED (E.G., CHECK DAMS, SILT FENCE, RIP–RAP, SEED AND MULCH, SEDIMENT TRAPS, ETC.).

5. PERIODICALLY CHECK THE TEMPORARY CROSSING INSTALLATION AND REMOVE ANY BUILD–UP OF SEDIMENT OR DEBRIS ON THE BRIDGE. DISPOSE OF THIS MATERIAL AT LEAST 100 FT. FROM THE WATERCOURSE AND ABOVE THE HIGH WATER LEVEL.



SECTION 'B–B'
SCALE: N.T.S.

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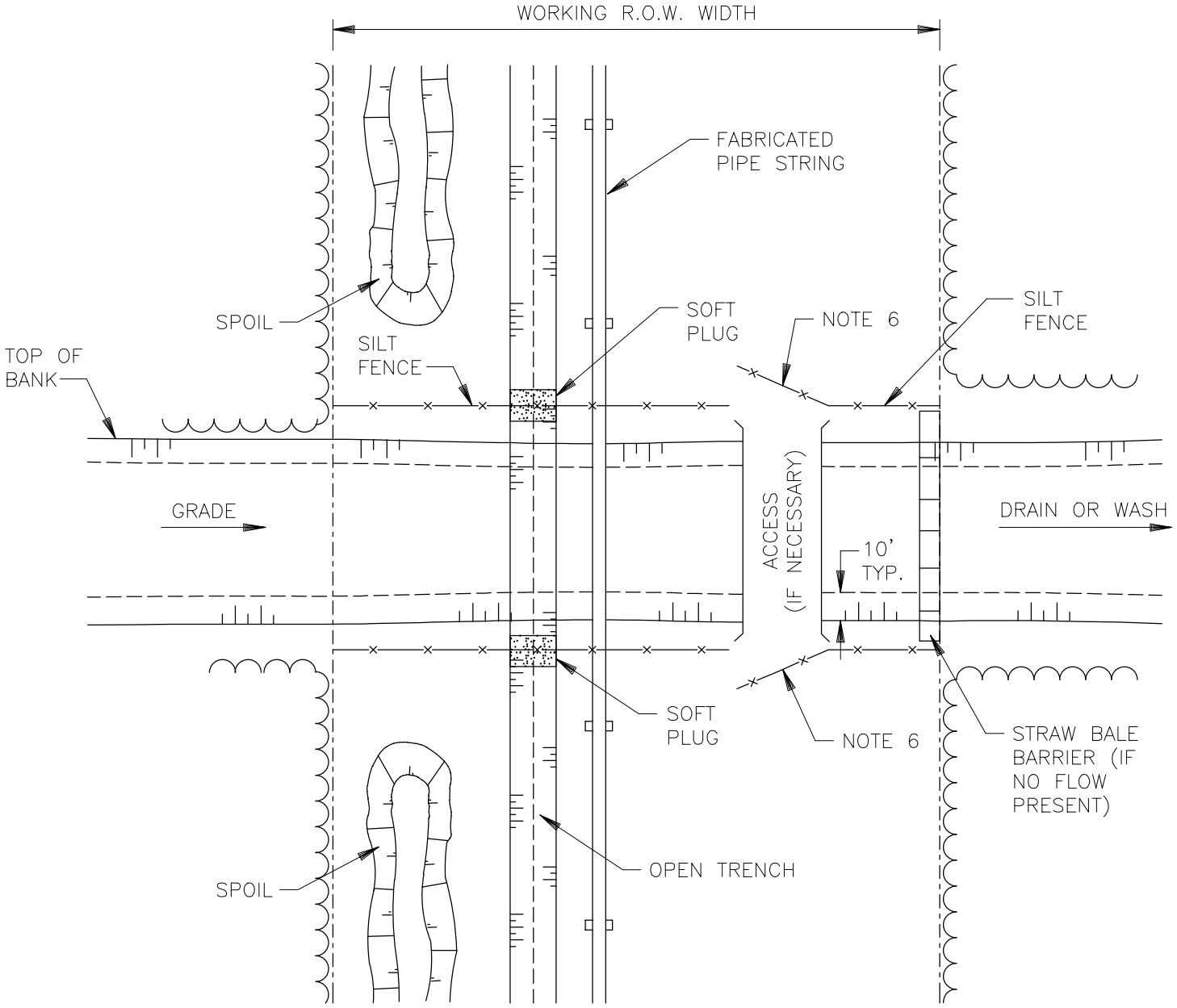
NO.	REVISION	DATE	APPR.

TYPICAL FLUME EQUIPMENT CROSSING

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–101	1 OF 1



PLAN VIEW

SCALE: N.T.S.

NOTES:

1. APPLICABLE TO MINOR (<10') WATERBODIES THAT ARE NOT FLOWING AT THE TIME OF CONSTRUCTION, OR DO NOT SUPPORT A SIGNIFICANT FISHERY.
2. VEHICLE ACCESS IS ONLY REQUIRED WHERE NECESSARY TO FACILITATE EQUIPMENT MOVEMENT AND MAY CONSIST OF TIMBER MATS, TEMPORARY BRIDGES, RAIL FLATCARS OR FLUME CROSSINGS.
3. INSTALL SOFT PLUGS FOLLOWING EXCAVATION OF MAINLINE DITCH THROUGH CROSSING.
4. INSTALL SEDIMENT BARRIERS AS INDICATED. PROTECT ACCESS WITH SILT FENCE GATES OR STRAW BALE BARRIERS.
5. MAINLINE PIPE SECTION MAY SPAN CROSSING IN PREPARATION FOR LOWER IN.
6. SILT FENCE OR STRAW BALE "GATE" TO BE CLOSED AT NIGHT OR DURING RAINFALL.

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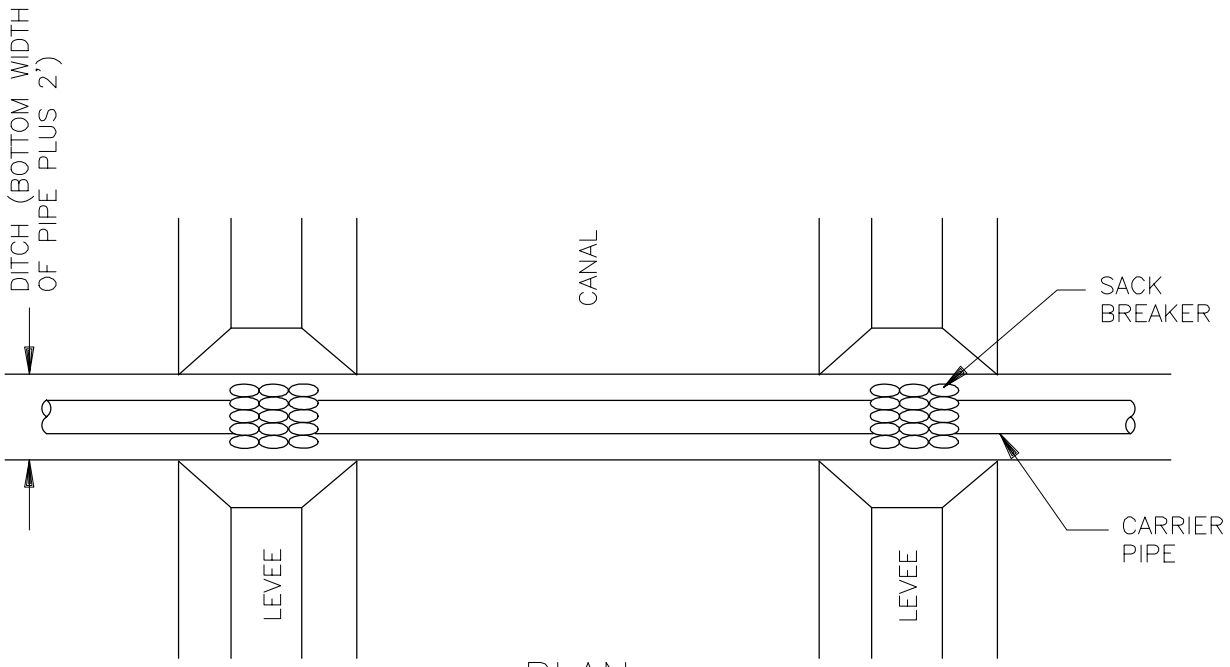
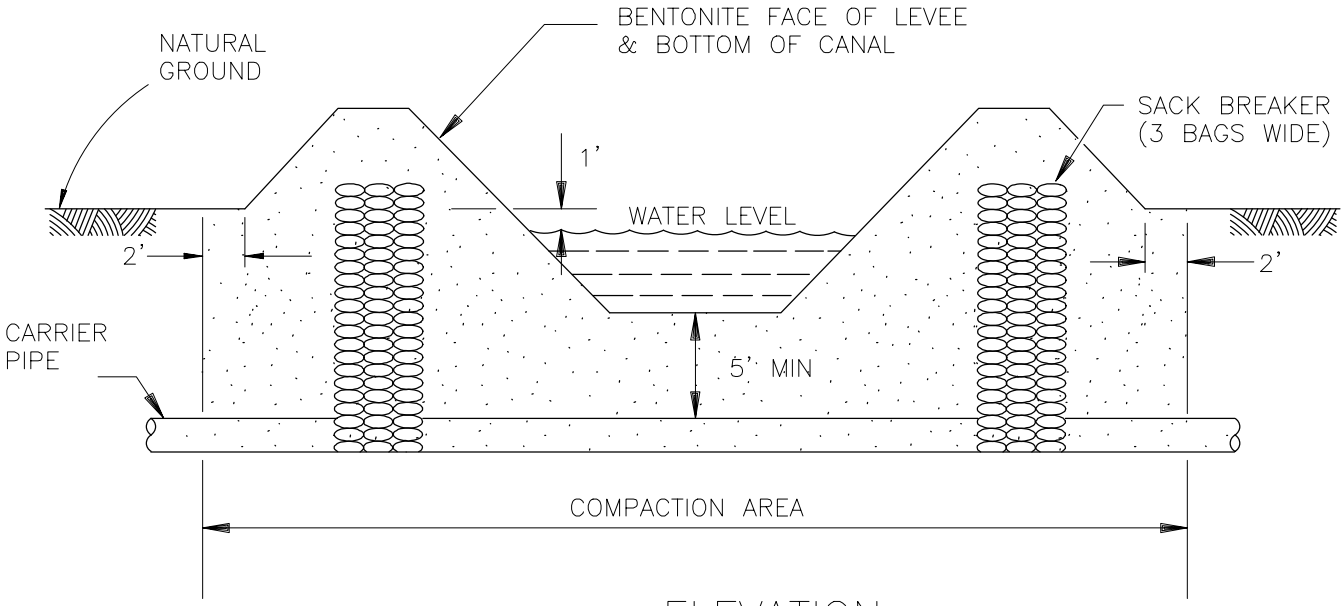
NO.	REVISION	DATE	APPR.

NON-FLOWING INTERMITTENT/AGRICULTURAL OPEN CUT CROSSING

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-096	1 OF 1



PLAN



ELEVATION

NOTE:

EARTH LINED CANAL CROSSING ONLY WHEN CANAL IS DRY

LEGEND

TO BE COMPACTED

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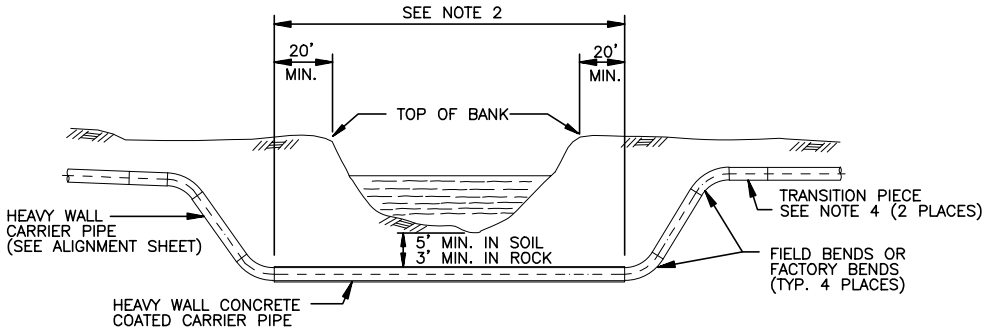
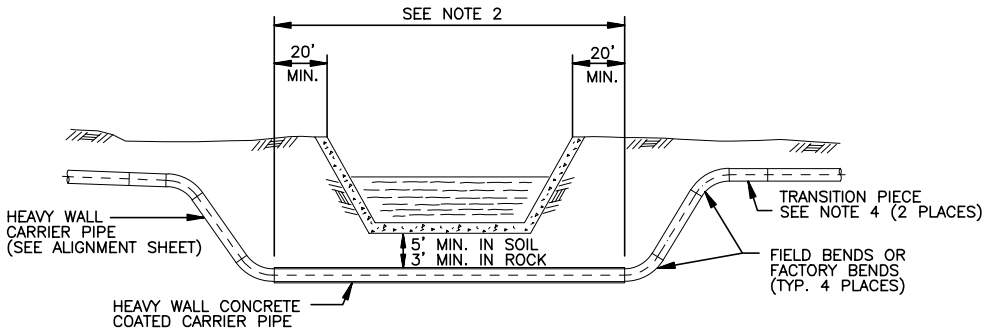
NO.	REVISION	DATE	APPR.

PIPELINE STANDARD
LEVEE REPAIR ON CANAL
CROSSING PIPE INSTALLED
BY OPEN CUTTING

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-029	1 OF 1



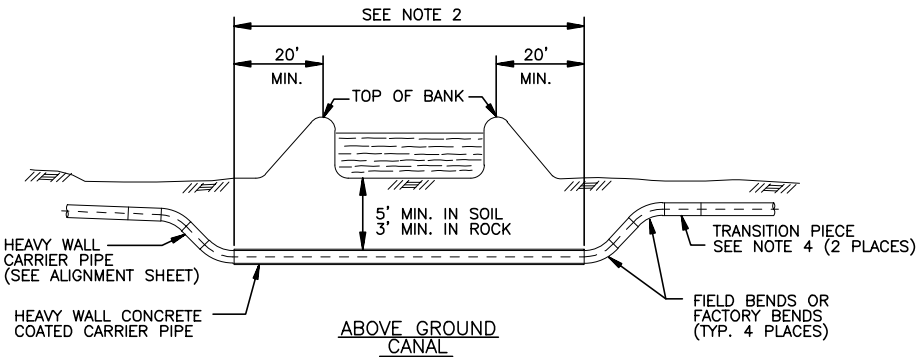
BELOW GROUND LEVEL CANAL/STREAM



CONCRETE LINED CANAL

NOTES:

1. CROSSING INSTALLATION SHALL BE IN ACCORDANCE WITH APPLICABLE PERMITS.
2. PIPE IN THIS AREA SHALL BE CONCRETE COATED PER DWG. WEI-STD-A-016 OR PER DWG. WEI-STD-A-015 IF CONCRETE WEIGHT COATING IS SPECIFIED. PIPE SHALL BE LEVEL UNDER CROSSING TO THE LENGTH AND DEPTH SHOWN.
3. CONTINUOUS CONCRETE COATING MATERIALS FOR PIPE WILL BE FURNISHED AND INSTALLED BY CONTRACTOR.
4. INSTALL TRANSITION PIECE AS REQUIRED FOR DIFFERENT WALL THICKNESS PIPE AT CROSSING PER ALIGNMENT SHEETS.
5. THIS STANDARD DRAWING IS APPLICABLE TO ALL FABRICATED CANAL/STREAM CROSSINGS UNLESS NOTED OTHERWISE IN THE CONSTRUCTION DRAWINGS OR SPECIFICATIONS.
6. CONCRETE-LINED AND ABOVE-GROUND CANAL CROSSINGS SHALL BE INSTALLED BY BORING RIGHT-OF-WAY TO RIGHT-OF-WAY. BELOW GROUND CANALS/STREAMS MAY BE INSTALLED BY OPEN CUT IF ALLOWED BY THE PERMIT.
7. OPEN CUT CANAL CROSSING BACKFILL SHALL BE OF SELECT MOIST BACKFILL MATERIAL, PLACED IN LAYERS AND THOROUGHLY COMPACTED BY MECHANICAL TAMPING TO 95% OF COMPACTION, AS PER ASTM D-1557-70, OR AS REQUIRED BY CANAL OWNER.



ABOVE GROUND CANAL

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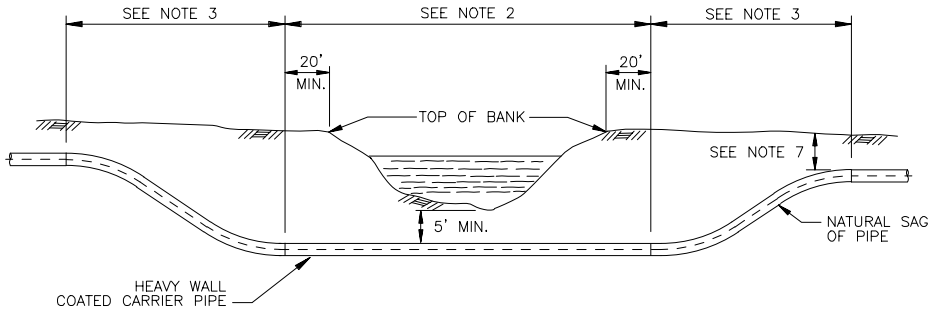
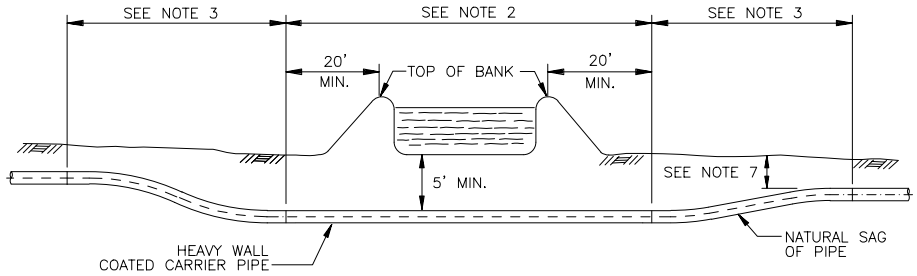
NO.	REVISION	DATE	APPR.

PIPELINE STANDARD FABRICATED CANAL AND STREAM CROSSING

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-B-012	1 OF 1



BELOW GROUND LEVEL
CANAL/STREAM



ABOVE GROUND
CANAL

NOTES:

1. CROSSING INSTALLATION SHALL BE IN ACCORDANCE WITH APPLICABLE PERMITS.
2. PIPE SHALL BE LEVEL UNDER CROSSING TO THE LENGTH AND DEPTH SHOWN.
3. PIPE SHALL BE LAID TO EXTRA DEPTH AT THESE LOCATIONS TO ACCOMMODATE FREE-STRESS BENDING.
4. THIS STANDARD DRAWING IS APPLICABLE TO ALL FREE-STRESS CANAL/STREAM CROSSINGS UNLESS NOTED OTHERWISE IN THE CONSTRUCTION DRAWINGS OR SPECIFICATIONS.
5. ABOVE-GROUND CANAL CROSSINGS SHALL BE INSTALLED BY BORING RIGHT-OF-WAY TO RIGHT-OF-WAY. BELOW-GROUND CANALS/STREAMS MAY BE INSTALLED BY OPEN CUT.
6. OPEN CUT CANAL CROSSING BACKFILL SHALL BE OF SELECT MOIST BACKFILL MATERIAL, PLACED IN LAYERS AND THOROUGHLY COMPACTED BY MECHANICAL TAMPING TO 95% OF COMPACTION, AS PER ASTM D-1557-70, OR AS REQUIRED BY CANAL OWNER.
7. 3' FT COVER ON MAINLINE; 4' FT COVER ON AGRICULTURAL LANDS.

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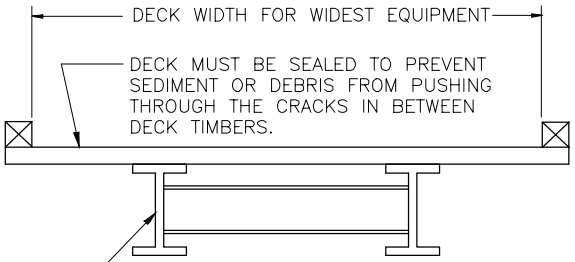
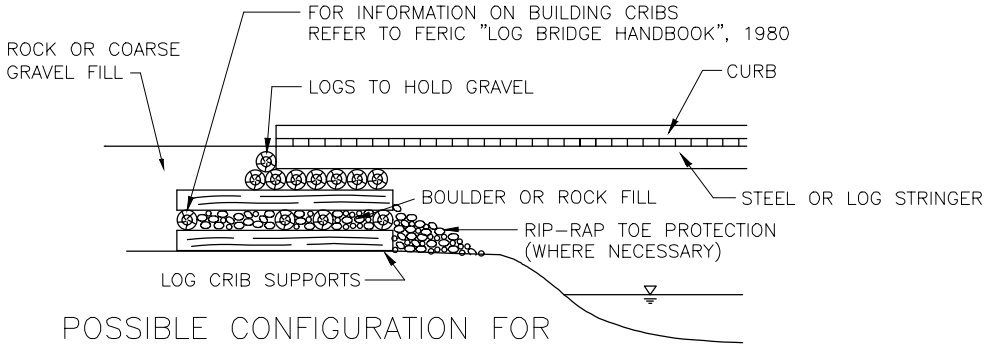
PIPELINE STANDARD
FREE-STRESS CANAL
AND STREAM CROSSING

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-B-013	1 OF 1

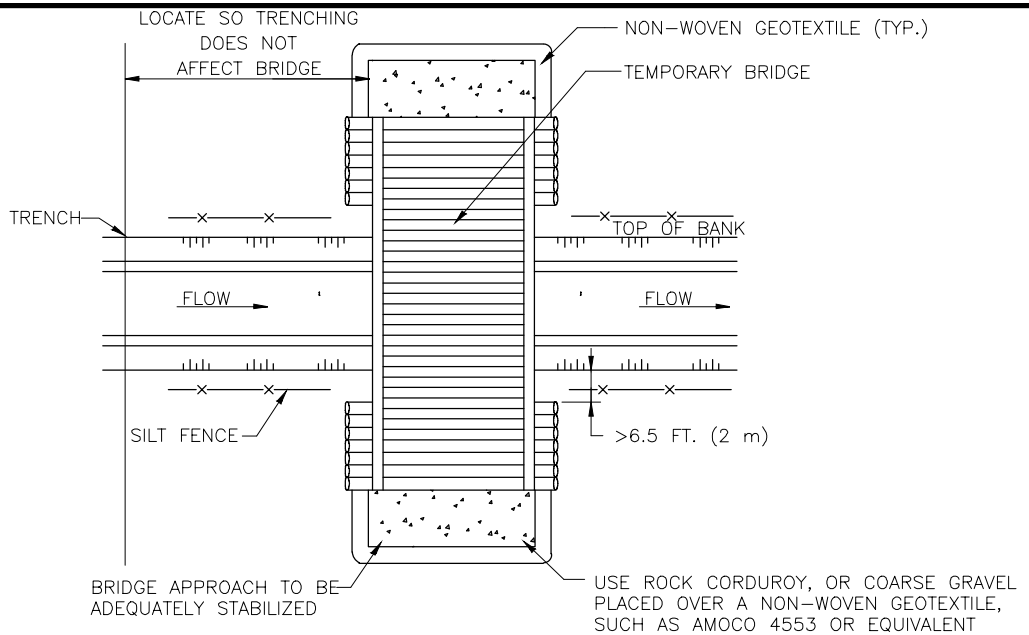


ALL BRIDGES TO HAVE CURBS 6" OR HIGHER TO CONTAIN SEDIMENT OR DEBRIS.

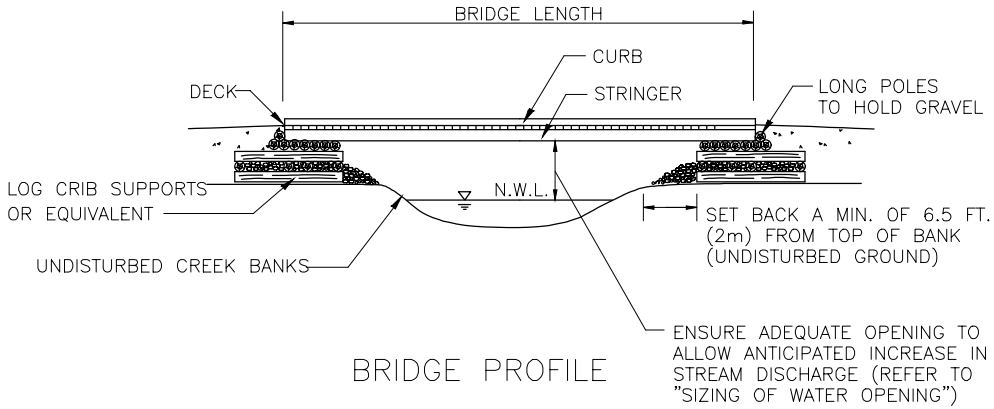
SECTION 'A–A'



POSSIBLE CONFIGURATION FOR TEMPORARY CRIB ABUTMENT



PLAN



BRIDGE PROFILE

THE FOLLOWING IS A SEQUENCE OF CONSTRUCTION AND MITIGATION MEASURES TO BE FOLLOWED AT ALL TEMPORARY BRIDGE CROSSINGS.

1. A PRE–FABRICATED BRIDGE OR FLATBED RAILCAR , FLEXI–FLOAT OR FLUMED VEHICLE CROSSING MAY BE SUBSTITUTED FOR THE TEMPORARY BRIDGE.

2. INSTALL THE BRIDGE IN A MANNER THAT WILL MINIMIZE SEDIMENT ENTERING THE WATER. STRINGERS MUST BE DESIGNED TO SUPPORT THE LOADS EXPECTED ON THE BRIDGE. CURBS AT LEAST 6 IN. HIGH MUST BE INSTALLED ALONG THE EDGE OF THE DECK TO CONTAIN SEDIMENT AND DEBRIS ON THE BRIDGE. FASTENERS CONNECTING COMPONENTS MUST BE STRONG ENOUGH TO HOLD THEM IN POSITION DURING THE LIFE OF THE BRIDGE. CRIBS ARE TO BE FILLED WITH ROCK OR COBBLE. RIP–RAP EROSION PROTECTION IS TO BE PLACED AROUND THE CRIBS AND ON ANY FILL SLOPES PROJECTING INTO THE WATER.

   ROAD APPROACHES LEADING TO THE BRIDGE MUST BE RAISED AND STABLE SO EQUIPMENT LOADS ARE SUPPORTED A SUFFICIENT DISTANCE BACK FROM THE WATER TO REDUCE SEDIMENT AND DEBRIS ENTERING THE STREAM FROM EQUIPMENT TRACKS. DO NOT USE SOIL TO CONSTRUCT OR STABILIZE EQUIPMENT BRIDGES. IF CUTS ARE NEEDED TO OBTAIN A SATISFACTORY GRADE, THEY ARE TO BE DUG WITH SIDE DITCHES AND STABLE SLOPES. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED TO KEEP SEDIMENT ON LAND (E.G., SILT FENCING, FILTER CLOTH, RIP–RAP, SEED AND MULCH, ETC.).

   PERIODICALLY CHECK BRIDGE INSTALLATION AND REMOVE ANY BUILD–UP OF SEDIMENT OR DEBRIS ON THE BRIDGE.

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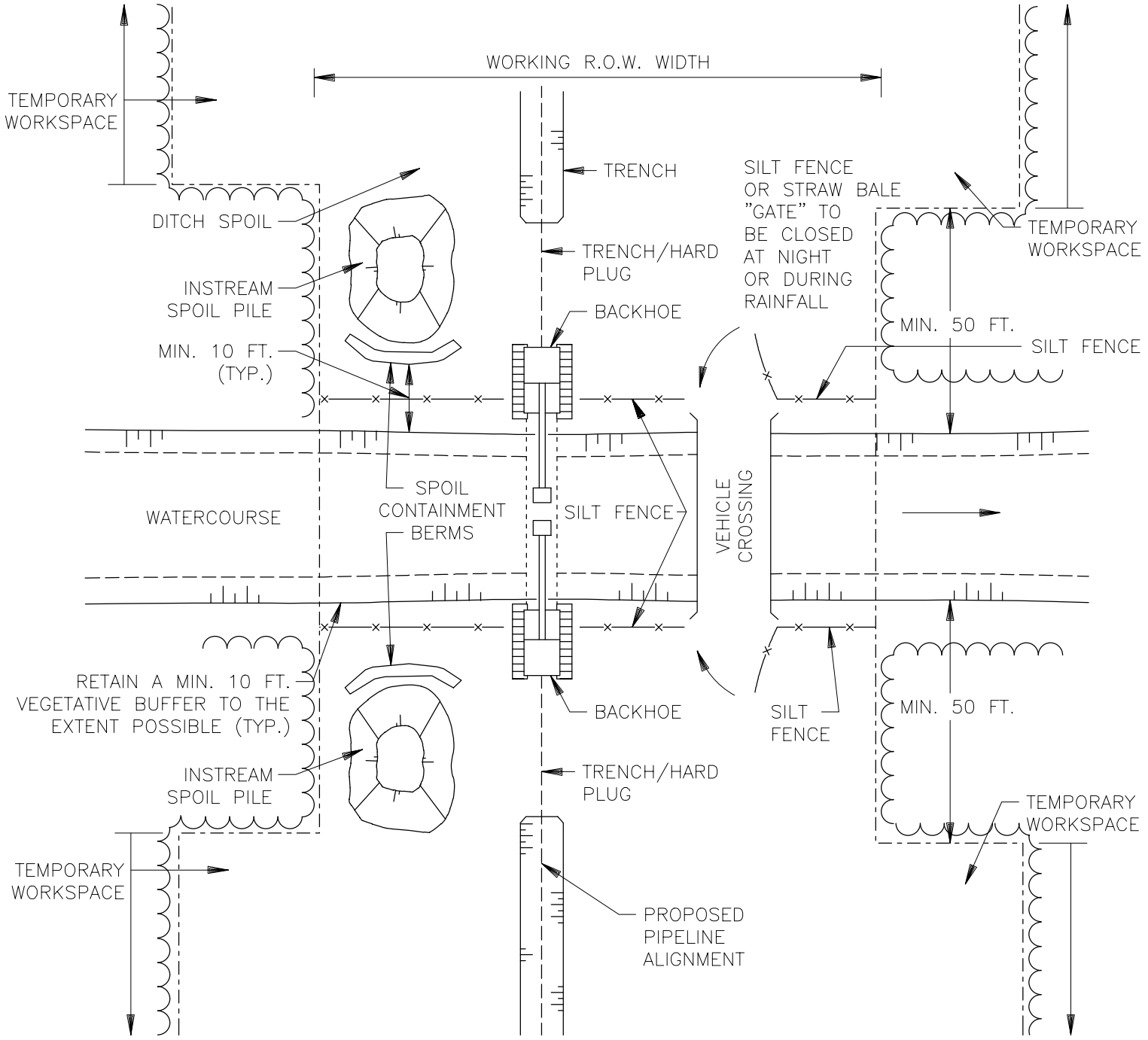
TYPICAL TEMPORARY BRIDGE

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–098	1 OF 1



PLAN VIEW

SCALE: N.T.S.

SEQUENCE OF ACTIVITIES

STEP 1. CLEAR AND GRADE.

STEP 2. IMPLEMENT THE TEMPORARY EROSION AND SEDIMENT CONTROLS.

STEP 3. FABRICATE PIPE.

STEP 4. EXCAVATE TRENCH AND INSTALL PIPE.

STEP 5. BACKFILL AND RESTORE STREAM BANKS.

STEP 6. IMPLEMENT THE PERMANENT EROSION AND SEDIMENT CONTROLS.

SEE SHEET 2 FOR NOTES.

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NO.	REVISION	DATE	APPR.

TYPICAL OPEN CUT WET CROSSING

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-094	1 OF 2

NOTES:

1– WORK SPACE — MAXIMUM LIMITS ARE DEPICTED. STAGING FOR MAKEUP LOCATED A MINIMUM OF 50 FEET FROM WATERBODY.

2– CLEARING — MARK CLEARING LIMITS AND MINIMIZE CLEARING OF RIPARIAN VEGETATION. WOODY VEGETATION SHALL BE CUT AT GROUND LEVEL AND THE STUMPS/ROOTS LEFT IN PLACE TO THE EXTENT POSSIBLE.

3– TOPSOIL STRIPPING — TOPSOIL SHALL BE STRIPPED FROM ALL WETLAND AREAS OVER THE DITCH LINE AND SPOIL AREAS.

4– SPILL PREVENTION — CONTRACTOR SHALL INSTALL SIGNS 100 FEET MINIMUM FROM EACH STREAM BANK AND WETLAND TO IDENTIFY THE HAZARDOUS MATERIALS EXCLUSION AREA.

5– EROSION & SEDIMENT CONTROL

A. CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES, AS DEPICTED OR ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVILY SILT LADEN WATER ENTERS STREAM OR WETLAND.

B. NO HEAVILY SILT LADEN WATER SHALL BE DISCHARGED DIRECTLY OR INDIRECTLY INTO THE STREAM. ALL EROSION AND SEDIMENT CONTROL STRUCTURE LOCATIONS AS DEPICTED ARE APPROXIMATE AND MAY BE ADJUSTED AS DIRECTED BY THE COMPANY INSPECTOR TO SUIT ACTUAL SITE CONDITIONS. SILT FENCE OR STRAW BALE INSTALLATIONS SHALL INCLUDE REMOVABLE SECTIONS TO FACILITATE ACCESS DURING CONSTRUCTION.

C. SEDIMENT LADEN WATER FROM TRENCH DEWATERING SHALL BE DISCHARGED TO A WELL VEGETATED UPLAND AREA, INTO A STRAW BALE DEWATERING STRUCTURE OR GEOTEXTILE FILTER BAG. SEDIMENT CONTROL STRUCTURES MUST BE IN PLACE AT ALL TIMES ACROSS THE DISTURBED CONSTRUCTION RIGHT OF WAY EXCEPT DURING EXCAVATION /INSTALLATION OF THE CROSSING PIPE.

D. SOFT DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE RIVER CROSSING UNTIL THE RIVER CROSSING IS INSTALLED AND BACKFILLED.

E. TRENCH BREAKERS ARE TO BE INSTALLED AT THE SAME SPACING AND IMMEDIATELY UPSLOPE OF PERMANENT SLOPE BREAKERS, OR AS DIRECTED BY THE COMPANY.

6– INSTALLATION — CONTRACTOR SHALL MAINTAIN HARD PLUGS IN THE DITCH AT THE RIVER EDGE UNTIL JUST PRIOR TO PIPE INSTALLATION. CONTRACTOR SHALL EXCAVATE TRENCH AND INSTALL PIPE AS EXPEDIENTLY AS PRACTICAL TO REDUCE THE DURATION OF WORK ACTIVITIES IN THE STREAM BED.

7– SPOIL PLACEMENT — CONTRACTOR SHALL PLACE TRENCH SPOIL ONLY IN CERTIFICATED WORK SPACE AND A MINIMUM OF 10 FEET FROM THE STREAM BANKS TO PREVENT ENTRY OF SPOIL INTO THE STREAM FLOW. SPOIL SHALL BE CONTAINED AS NECESSARY USING EITHER A STRAW BALE BARRIER OR AN EARTH/ROCK BERM.

8– CLEANUP BANK STABILIZATION RESTORATION — CONTRACTOR SHALL RESTORE THE STREAM BED AND BANKS TO APPROXIMATE PRECONSTRUCTION CONTOURS, UNLESS OTHERWISE APPROVED BY THE COMPANY. CONTRACTOR SHALL INSTALL PERMANENT EROSION AND SEDIMENT CONTROL STRUCTURES AS INDICATED. ANY MATERIALS PLACED IN THE STREAM TO FACILITATE CONSTRUCTION SHALL BE REMOVED DURING RESTORATION. BANKS SHALL BE STABILIZED AND TEMPORARY SEDIMENT BARRIERS INSTALLED AS SOON AS POSSIBLE AFTER CROSSING, BUT WITHIN 24 HOURS OF COMPLETING THE CROSSING. MAINTAIN A SILT FENCE OR STRAW BALE BARRIER ALONG THE WATER COURSE AND WETLAND BOUNDARIES UNTIL VEGETATION IS ESTABLISHED IN ADJACENT DISTURBED AREAS.

9– TEMPORARY VEHICLE CROSSING — VEHICLE CROSSING CAN BE CONSTRUCTED USING EITHER A FLUME CROSSING OR A TEMPORARY BRIDGE.

10– REFERENCE — REFER TO WATER BODY AND WETLAND CROSSING PROCEDURES FOR REQUIREMENTS.

REFER TO SHEET 1

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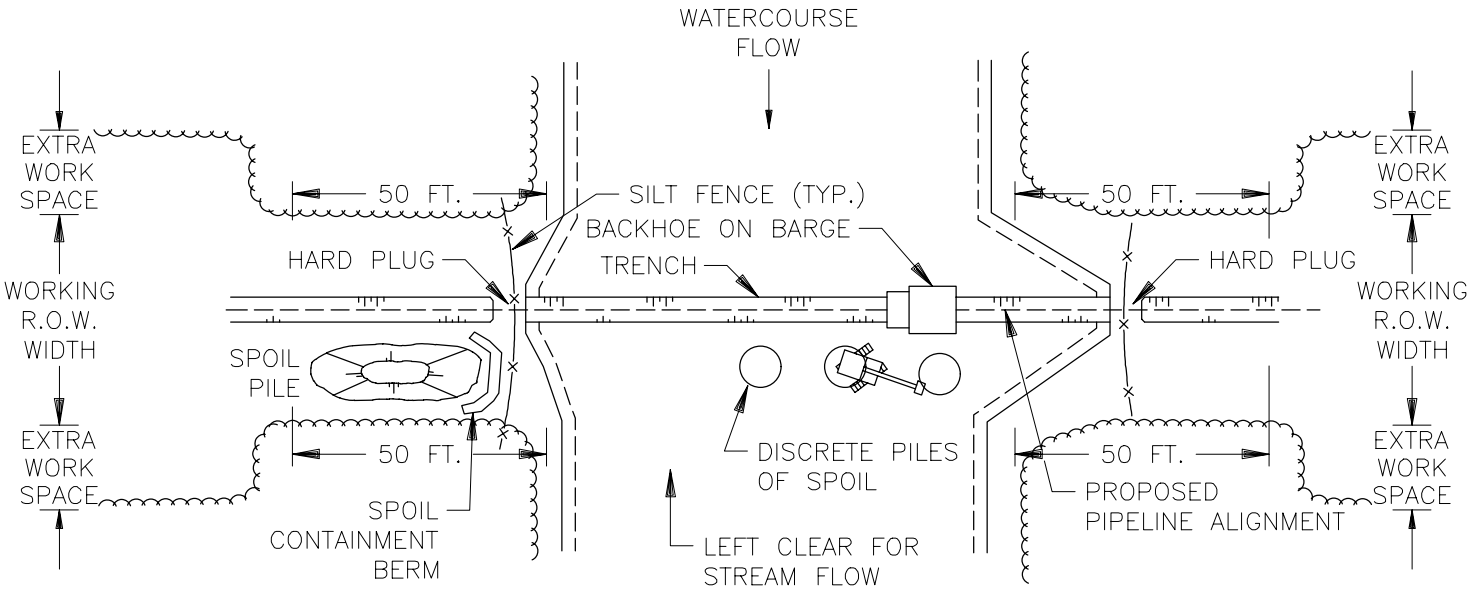
TYPICAL
OPEN CUT WET CROSSING

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–095	2 OF 2



PLAN VIEW

SCALE: N.T.S.

NOTES:

1. SCHEDULE INSTREAM ACTIVITY FOR LOW FLOW PERIODS AND FOR THE APPROPRIATE TIMING WINDOW.
2. OBTAIN ADDITIONAL TEMPORARY WORK SPACE TO ALLOW INSTREAM SPOIL TO BE STORED ON BANKS WHERE POSSIBLE. THE SIZE OF THE AREA REQUIRED WILL DEPEND UPON THE ENCOUNTERED SOIL TYPE AND TOPOGRAPHIC CONDITIONS.
3. PIPE MAKEUP AREA TO BE LOCATED AT LEAST 50 FT. BACK FROM THE EDGE OF THE WATERCOURSE.
4. MAINTAIN HARD PLUGS AT BANK.
5. THE INSTREAM PIPE SECTION SHOULD BE FABRICATED, TESTED AND COATED PRIOR TO COMMENCEMENT OF INSTREAM ACTIVITY.
6. TRENCH THROUGH WATERCOURSE, RETAINING TRENCH/HARD PLUGS AT EACH BANK UNTIL JUST PRIOR TO PIPE INSTALLATION.
7. STOCKPILE AS MUCH SPOIL ON BANKS AS POSSIBLE. CONSTRUCT SPOIL CONTAINMENT BERM AND/OR SUMP WITH SECONDARY SILT FENCE PROTECTION TO PREVENT SATURATED SPOIL FROM FLOWING BACK INTO WATERCOURSE. ALL INSTREAM SPOIL STORED ON LAND SHOULD BE KEPT A MINIMUM OF 10 FT. FROM THE EDGE OF THE WATERCOURSE.
8. PLACE INSTREAM STORAGE IN DISCRETE PILES ON DOWNSTREAM SIDE OF TRENCH, AVOIDING AREAS OF HIGHEST WATER VELOCITY. DO NOT WINDROW SPOIL ACROSS THE CHANNEL OR BLOCK MORE THAN 2/3 OF THE CHANNEL WIDTH. MAINTAIN STREAM FLOW IF PRESENT, THROUGHOUT CROSSING CONSTRUCTION. LOWER IN AND BACKFILL IMMEDIATELY. RESTORE STREAM CHANNEL TO APPROXIMATE PRE-CONSTRUCTION PROFILE. ATTEMPT TO COMPLETE ALL INSTREAM ACTIVITY AS QUICKLY AS POSSIBLE.
9. RESTORE AND STABILIZE WATERCOURSE BANKS AND APPROACHES AS CLOSE TO ORIGINAL GRADE AS POSSIBLE. INSTALL BANK PROTECTION AS SPECIFIED IN THE CONSTRUCTION DRAWINGS.

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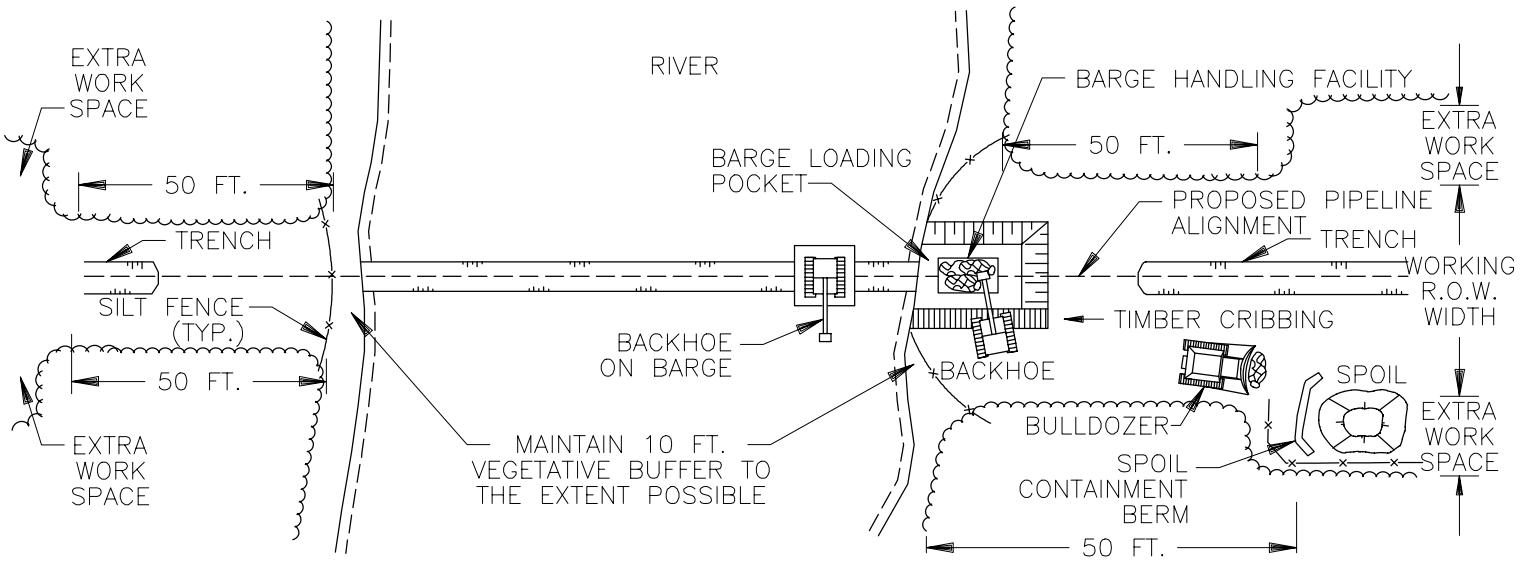
OPEN CUT WET CROSSING USING IN-STREAM OR BARGE MOUNTED EQUIPMENT & SIDE CAST METHOD

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-103	1 OF 1



PLAN VIEW

SCALE: N.T.S.

NOTES:

1. SCHEDULE INSTREAM ACTIVITY FOR LOW FLOW PERIODS AND FOR THE APPROPRIATE TIMING WINDOW.
2. THE INSTREAM PIPE SECTION SHOULD BE FABRICATED, TESTED AND COATED PRIOR TO COMMENCEMENT OF INSTREAM ACTIVITY.
3. BARGE CAN BE STABILIZED BY TUG BOAT, SPUDS, WINCHED CABLES CONNECTED TO DEADMAN ANCHORS ON SHORE, OR A COMBINATION OF THESE METHODS.
4. BARGE HANDLING FACILITY TO BE EXCAVATED DEEP ENOUGH TO ACCOMMODATE LOADED BARGE WITH CRIBBING USED ON AT LEAST ONE SIDE TO ALLOW LOADING AND UNLOADING BY BACKHOE.
5. THE INSTREAM SPOIL REMOVED BY THE BARGE IS TO BE STOCKPILED IN A SPOIL CONTAINMENT AREA LOCATED A MINIMUM OF 50 FT. FROM THE RIVER'S EDGE. THE SPOIL IS TO BE LOCATED BEHIND BERM CONTAINMENT WITH SECONDARY SILT FENCE PROTECTION.
6. REMOVE SPOIL FROM THE BARGE BY BACKHOE AND MOVE TO CONTAINMENT AREA BY BULLDOZER, LOADER, OR TRUCK.
7. RESTORE AND STABILIZE WATERCOURSE BANKS AND APPROACHES AS CLOSE TO ORIGINAL GRADE AS POSSIBLE. INSTALL BANK PROTECTION AS SPECIFIED IN THE CONSTRUCTION DRAWINGS.

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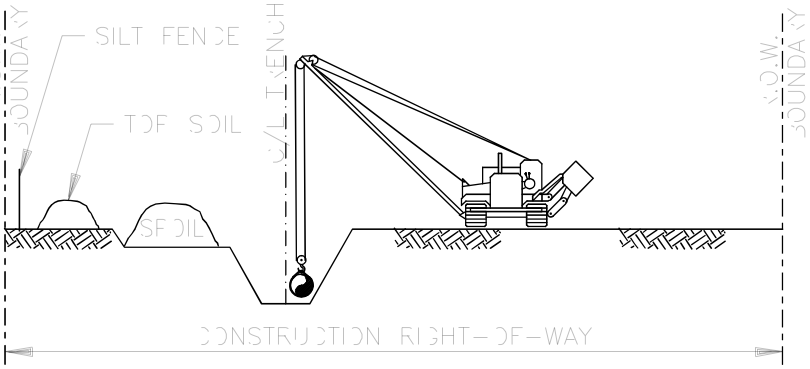
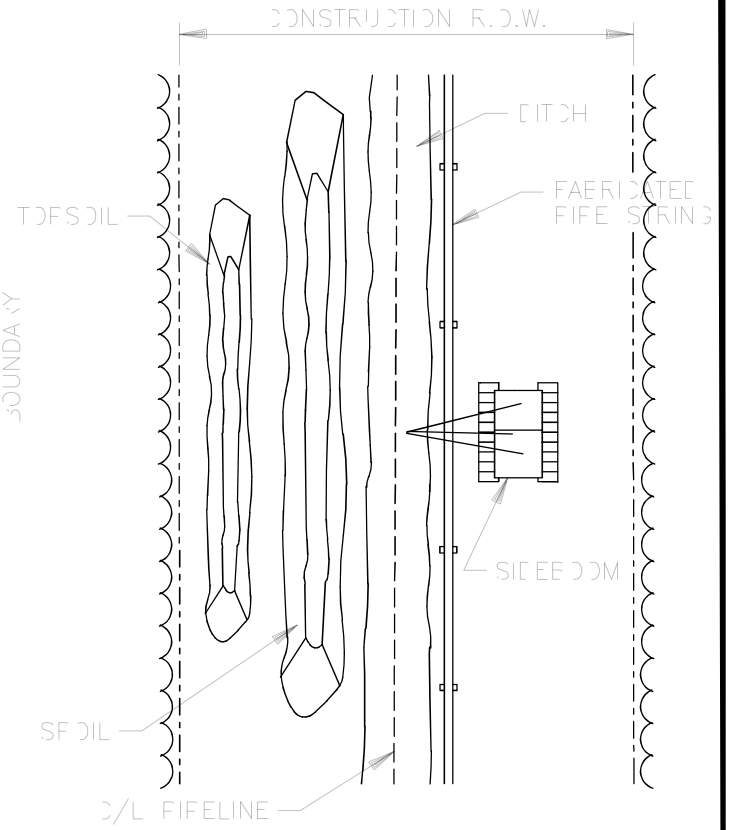
OPEN CUT WET CROSSING WITH BACKHOE ON BARGE AND ON SHORE SPOIL CONTAINMENT

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-104	1 OF 1



CROSS SECTION

SCALE: N.T.S.



PLAN VIEW

SCALE: N.T.S.

CONSTRUCTION PROCEDURE NOTES:

1. FLAG WETLAND BOUNDARIES PRIOR TO CLEARING.
2. NO REFUELING OF MOBILE EQUIPMENT IS ALLOWED WITHIN 100 FEET OF WETLAND. PLACE "NO FUELING" SIGN POSTS 100 FEET BACK FROM WETLAND BOUNDARY. REFUEL STATIONARY EQUIPMENT AS PER SPCC PLAN.
3. INSTALL TEMPORARY SLOPE BREAKER UPSLOPE WITHIN 100 FEET OF WETLAND BOUNDARY IF DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
4. CONSTRUCT WHEN DRY, IF POSSIBLE. IF SITE BECOMES WET AT TIME OF TRENCHING, AVOID SOIL COMPACTION BY UTILIZING PREFABRICATED EQUIPMENT MATS.
5. AVOID ADJACENT WETLANDS. INSTALL SEDIMENT BARRIERS (STRAW BALES AND/OR SILT FENCE) AT DOWN SLOPE EDGE OF RIGHT-OF-WAY ALONG WETLAND EDGE IF EVIDENT, OTHERWISE INSTALL BARRIER ON BOTH EDGES.
6. RESTRICT ROOT GRUBBING TO ONLY THAT AREA OVER THE DITCHLINE AND DITCH SPOIL AREAS. GRIND STUMPS IF NECESSARY IN OTHER AREAS TO FACILITATE CONSTRUCTION.
7. CONDUCT TRENCH LINE TOPSOIL STRIPPING (IF TOPSOIL IS NOT SATURATED). SALVAGE TOPSOIL TO ACTUAL DEPTH OR A MAXIMUM DEPTH OF 12 INCHES, AS DETERMINED BY THE ENVIRONMENTAL INSPECTOR. SEGREGATED TOPSOIL PILE MAY BE LOCATED ON SPOIL SIDE, AS REQUIRED.
8. TRENCH THROUGH WETLANDS.
9. PIPE SECTION MAY BE FABRICATED WITHIN THE WETLAND AND ADJACENT TO ALIGNMENT, OR IN STAGING AREA OUTSIDE THE WETLAND AND WALKED IN.
10. LOWER-IN PIPE. PRIOR TO BACKFILLING TRENCH, TRENCH PLUG REQUIREMENTS SHALL BE DETERMINED BY THE ENVIRONMENTAL INSPECTOR. BACKFILL TRENCH.
11. RESTORE GRADE TO NEAR PRE-CONSTRUCTION TOPOGRAPHY, REPLACE TOPSOIL AND INSTALL PERMANENT EROSION CONTROL.
12. REMOVE ANY TIMBER MATS OR PREFABRICATED MATS FROM WETLANDS UPON COMPLETION.
13. NO FILL SHALL BE PLACED UNDERNEATH BOARD MATS DURING PROJECT CONSTRUCTION.

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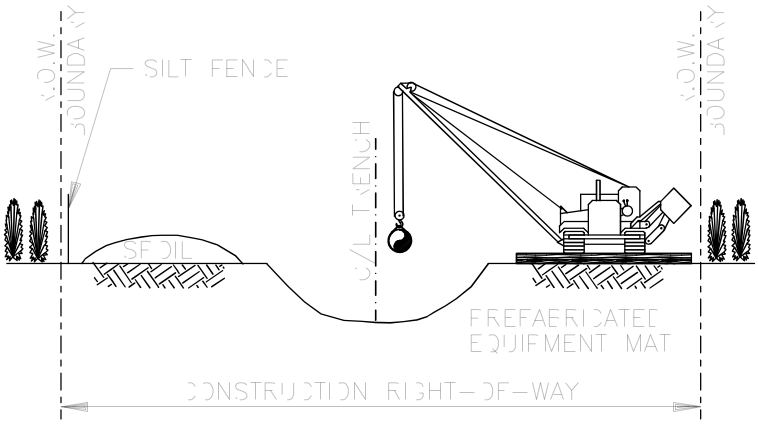
TYPE 1 'DRY' WETLAND CROSSING

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-107	1 OF 1



CROSS SECTION

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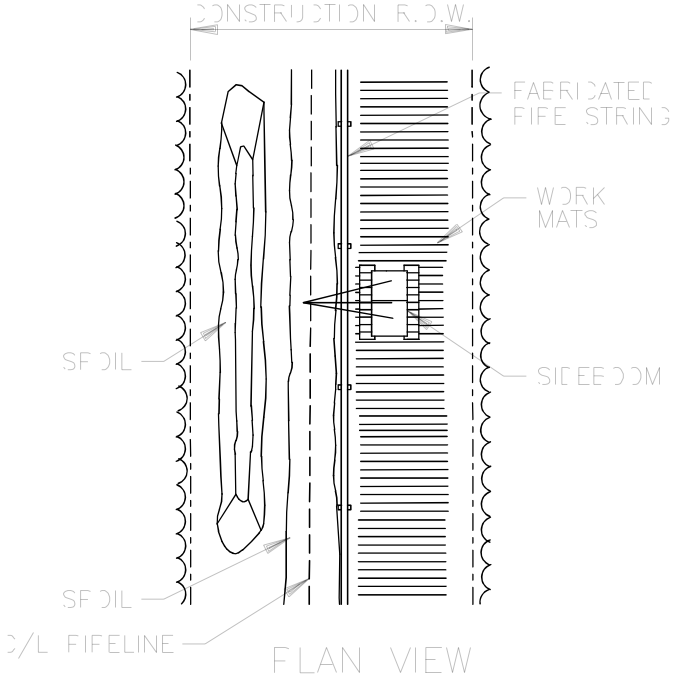

PLAN VIEW

SCALE: N.T.S.

CONSTRUCTION PROCEDURE NOTES:

1. FLAG WETLAND BOUNDARIES PRIOR TO CLEARING.
2. NO REFUELING OF MOBILE EQUIPMENT IS ALLOWED WITHIN 100 FEET OF WETLAND. PLACE "NO FUELING" SIGN POSTS 100 FEET BACK FROM WETLAND BOUNDARY. REFUEL STATIONARY EQUIPMENT AS PER SPCC PLAN.
3. INSTALL TEMPORARY SLOPE BREAKER UPSLOPE WITHIN 100 FEET OF WETLAND BOUNDARY IF DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
4. MINIMIZE SOIL COMPACTION BY UTILIZING PREFABRICATED EQUIPMENT MATS.
5. AVOID ADJACENT WETLANDS. INSTALL SEDIMENT BARRIERS (STRAW BALES AND/OR SILT FENCE) AT DOWN SLOPE EDGE OF RIGHT-OF-WAY AND ALONG WETLAND EDGE AS REQUIRED.
6. RESTRICT ROUT BRUSHING TO ONLY THAT AREA OVER THE DITCHLINE AND DITCH SPOIL AREAS. GRIND STUMPS IF NECESSARY IN OTHER AREAS TO FACILITATE CONSTRUCTION.
7. TOPSOIL STRIPPING SHALL NOT BE REQUIRED IN SATURATED SOIL CONDITIONS.
8. LEAVE HARD PLUGS AT THE EDGE OF WETLAND UNTIL JUST PRIOR TO TRENCHING.
9. INSTALL TIMBER MATS THROUGH ENTIRE WETLAND AREA. EQUIPMENT NECESSARY FOR RIGHT-OF-WAY CLEARING MAY MAKE ONE (1) PASS THROUGH THE WETLAND BEFORE MATS ARE INSTALLED.
10. TRENCH THROUGH WETLANDS.
11. PIPE SECTION MAY BE FABRICATED WITHIN THE WETLAND AND ADJACENT TO ALIGNMENT, OR IN STAGING AREA OUTSIDE THE WETLAND AND WALKED IN.
12. LOWER-IN PIPE, INSTALL TRENCH PLUGS AT WETLAND EDGES IF DIRECTED BY THE ENVIRONMENTAL INSPECTOR AND BACKFILL IMMEDIATELY.
13. REMOVE ANY TIMBER MATS OR PREFABRICATED MATS FROM WETLANDS UPON COMPLETION.
14. RESTORE GRADE TO NEAR PRE-CONSTRUCTION TOPOGRAPHY, REPLACE TOPSOIL AND INSTALL PERMANENT EROSION CONTROL.
15. GENERALLY, SEEDING IN WETLANDS WILL NOT BE NECESSARY SINCE WETLANDS REVEGETATE QUICKLY AND SOIL WILL REMAIN INTACT EXCEPT OVER TRENCH. THE CONTRACTOR SHALL SEED ANY WETLANDS THAT MAY REQUIRE SEEDING AS DETERMINED BY THE ENVIRONMENTAL INSPECTOR.
16. **NO FILL SHALL BE PLACED UNDERNEATH BOARD MATS DURING PROJECT CONSTRUCTION.**

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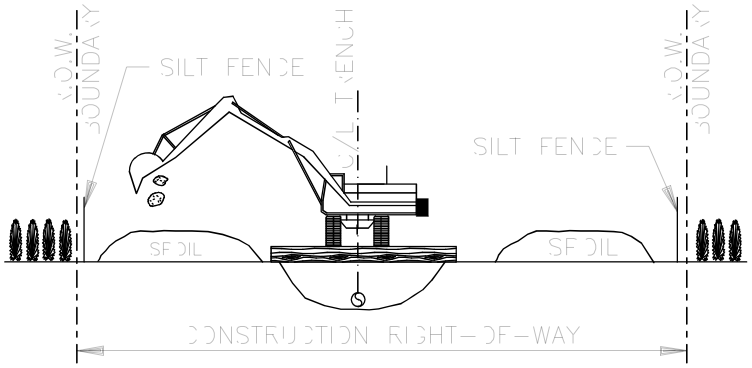
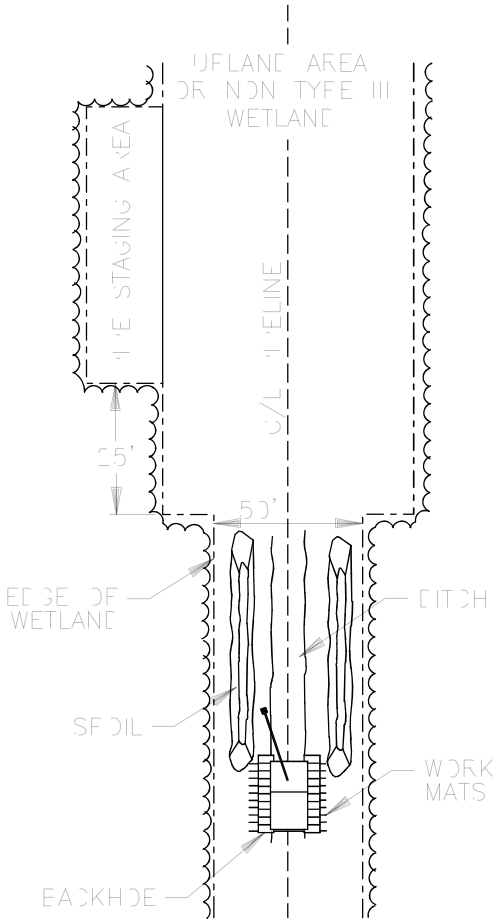
TYPE II 'WET' SATURATED WETLAND CROSSING

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-108	1 OF 1



CROSS SECTION

SCALE: N.T.S.



PLAN VIEW

SCALE: N.T.S.

CONSTRUCTION PROCEDURE NOTES:

1. REDUCE THE CONSTRUCTION RIGHT-OF-WAY TO 75 FEET OR LESS IN TYPE III WETLAND.
2. FLAG WETLAND BOUNDARIES PRIOR TO CLEARING.
3. NO REFUELING OF MOBILE EQUIPMENT IS ALLOWED WITHIN 100 FEET OF WETLAND. PLACE "NO FUELING" SIGN POSTS 100 FEET BACK FROM WETLAND BOUNDARY. REFUEL STATIONARY EQUIPMENT AS PER SPCC PLAN.
4. INSTALL TEMPORARY SLOPE BREAKER UPSLOPE WITHIN 100 FEET OF WETLAND BOUNDARY AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
5. RESTRICT ROOT GRUBBING TO ONLY THE AREA OVER THE DITCHLINE.
6. TOPSOIL STRIPPING SHALL NOT BE REQUIRED IN SATURATED SOIL CONDITIONS.
7. UTILIZE AMPHIBIOUS EXCAVATORS (FRONTON MOUNTED BACKHOES) OR TRACKED BACKHOES SUPPORTED BY FABRICATED TIMBER MATS OR FLOATS, TO EXCAVATE TRENCH. IF FABRICATED TIMBER MATS ARE USED FOR STABILIZATION, THE BACKHOE SHALL GRADUALLY MOVE ACROSS THE WETLAND BY MOVING THE MAT FROM IMMEDIATELY BEHIND TO IMMEDIATELY IN FRONT OF THE BACKHOE'S PATH.
8. AVOID ADJACENT WETLANDS. INSTALL SEDIMENT BARRIERS (STRAW BALES AND/OR SILT FENCE) AT EDGE OF RIGHT-OF-WAY AND ALONG WETLAND EDGE AS REQUIRED.
9. FABRICATE PIPE IN A STAGING AREA OUTSIDE THE TYPE III WETLAND AS INDICATED ON THE CONSTRUCTION DRAWINGS.
10. LEAVE HARD PLUGS AT THE EDGE OF TYPE III WETLAND UNTIL JUST PRIOR TO PIPE PLACEMENT.
11. FLOAT PIPE IN PLACE, LOWER-IN, INSTALL TRENCH PLUGS AT WETLAND EDGES OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR AND BACKFILL IMMEDIATELY.
12. REMOVE ANY MATS OR FILL CONSISTING OF NON-NATIVE MATERIAL FROM WETLANDS UPON COMPLETION.
13. RESTORE GRADE TO NEAR PRE-CONSTRUCTION TOPOGRAPHY AND INSTALL PERMANENT EROSION CONTROL.
14. WETLANDS CROSSED USING PUSH/PULL METHOD TEND TO BE TOO WET FOR EFFECTIVE SEEDING. HOWEVER, IF THE SITE IS DRY ENOUGH AND IF DIRECTED BY THE ENVIRONMENTAL INSPECTOR, THE RIGHT-OF-WAY SHALL BE SEEDED WITH ANNUAL RYE GRASS TO STABILIZE THE AREA UNTIL INDIGENOUS WETLAND SPECIES CAN RE-ESTABLISH THEMSELVES.
15. **NO FILL SHALL BE PLACED UNDERNEATH BOARD MATS DURING PROJECT CONSTRUCTION.**

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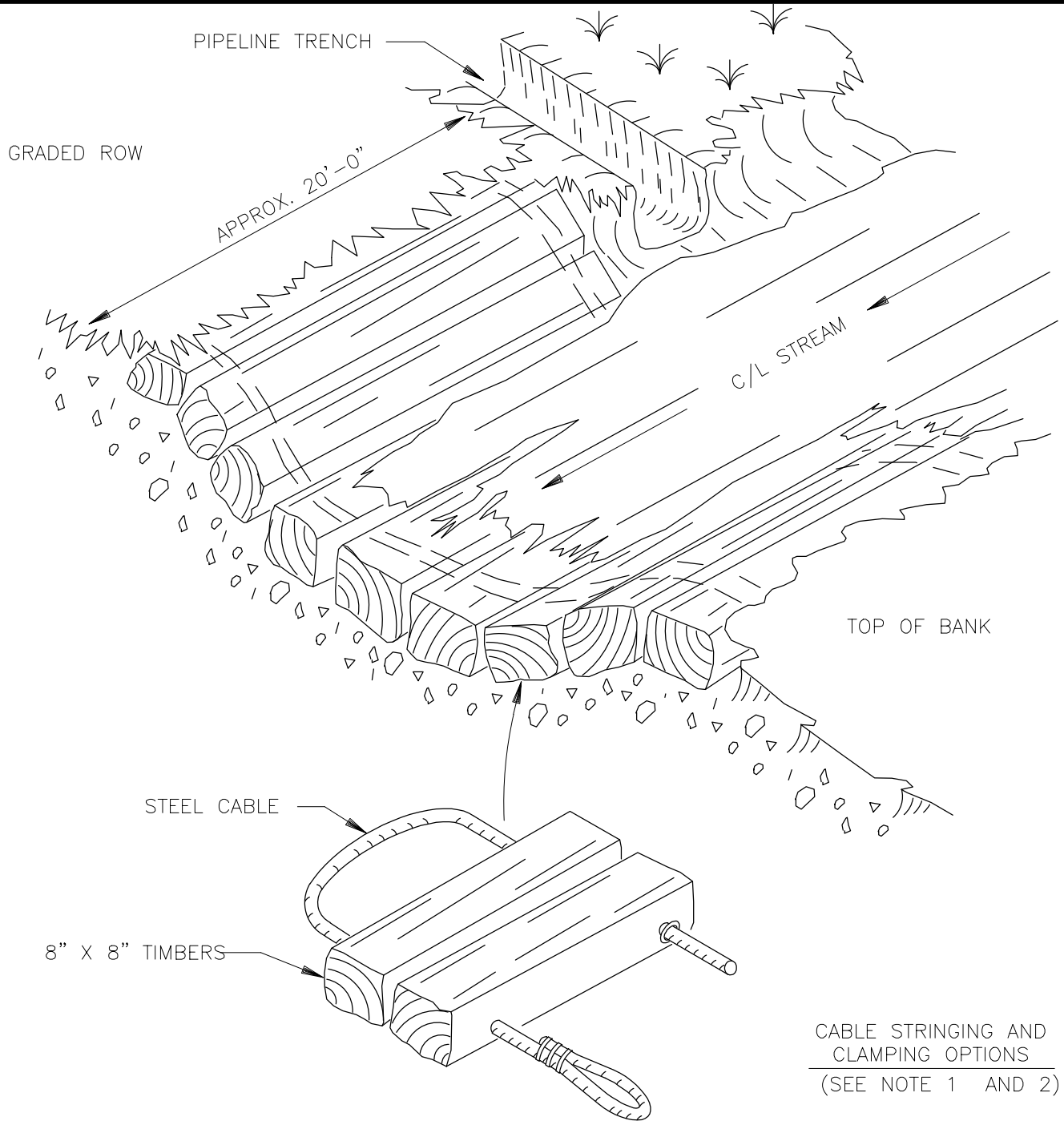
TYPE III 'WET' FLOODED WETLAND CROSSING (PUSH / PULL)

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-109	1 OF 1



CABLE STRINGING AND CLAMPING OPTIONS
(SEE NOTE 1 AND 2)

NOTES:

1. STEEL CABLES TO BE STRUNG THROUGH BOTH ENDS OF TIMBERS.
2. STEEL CABLES TO BE SECURED BY ANY OF FOLLOWING MEANS:
   - CLAMP ENDS OF CABLE INTO A LIFTING LOOP.
   - CLAMP ENDS OF CABLE SO CABLE CAN'T BE PULLED BACK THROUGH TIMBERS.
   - LOOP END OF STRUNG CABLE BACK THROUGH HOLES AT OTHER END OF TIMBER.
3. ALL MATERIALS TO BE SUPPLIED BY CONTRACTOR.

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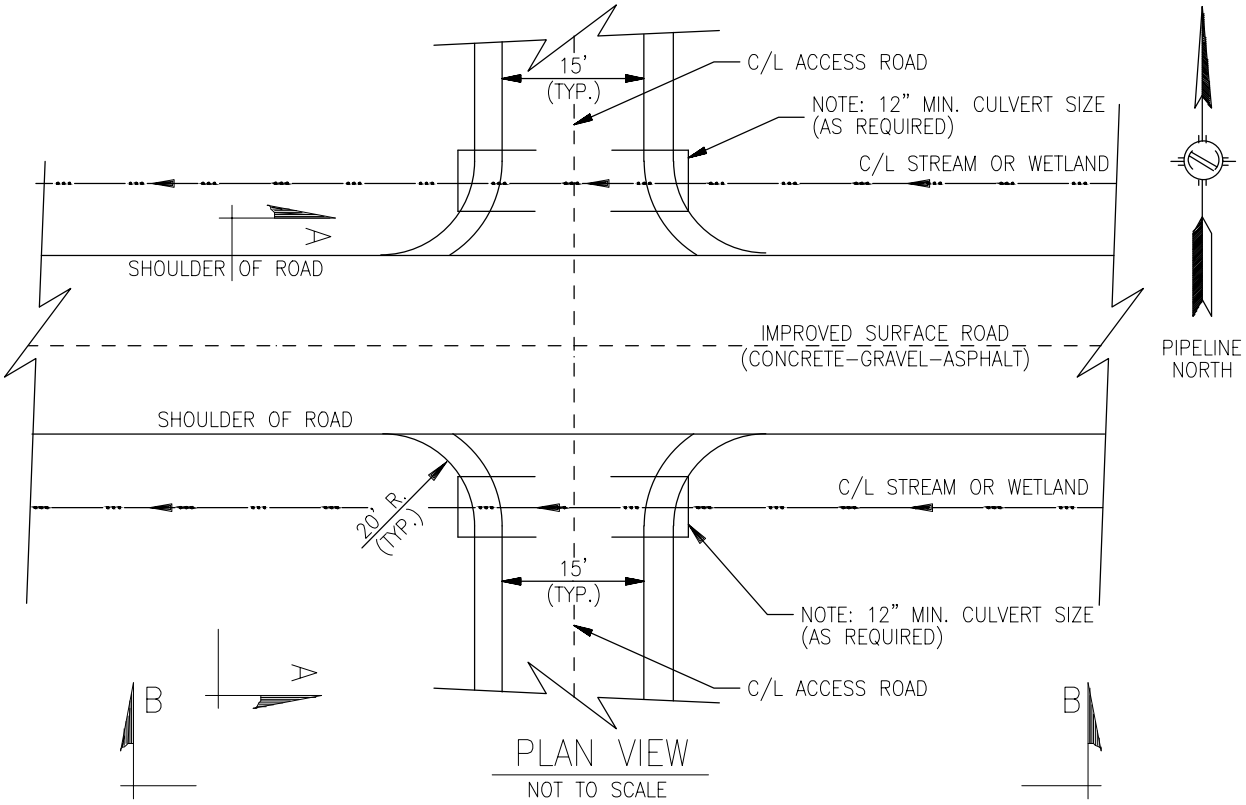
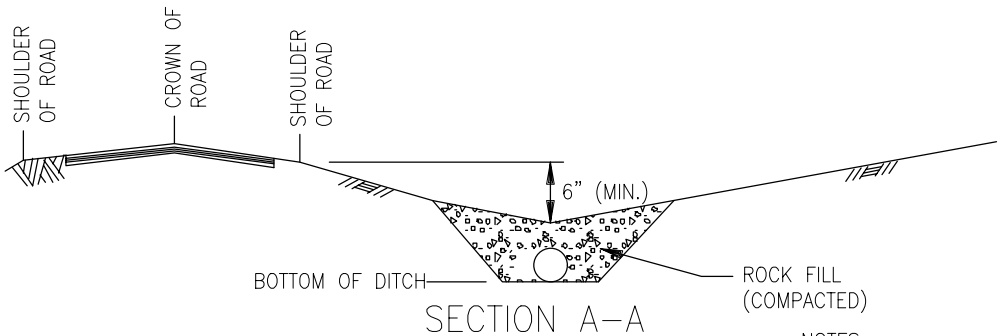
PIPELINE STANDARD MUD BOARDS (EQUIPMENT MATS)

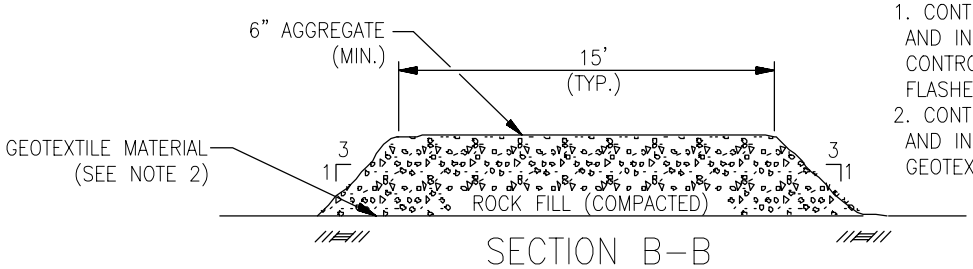
SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-037	1 OF 1



PLAN VIEW
NOT TO SCALE



SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE

NOTES:

1. CONTRACTOR SHALL FURNISH AND INSTALL ADEQUATE TRAFFIC CONTROL SIGNS, MARKERS, FLASHERS, ETC.
2. CONTRACTOR SHALL FURNISH AND INSTALL COMPANY APPROVED GEOTEXTILE MATERIAL.

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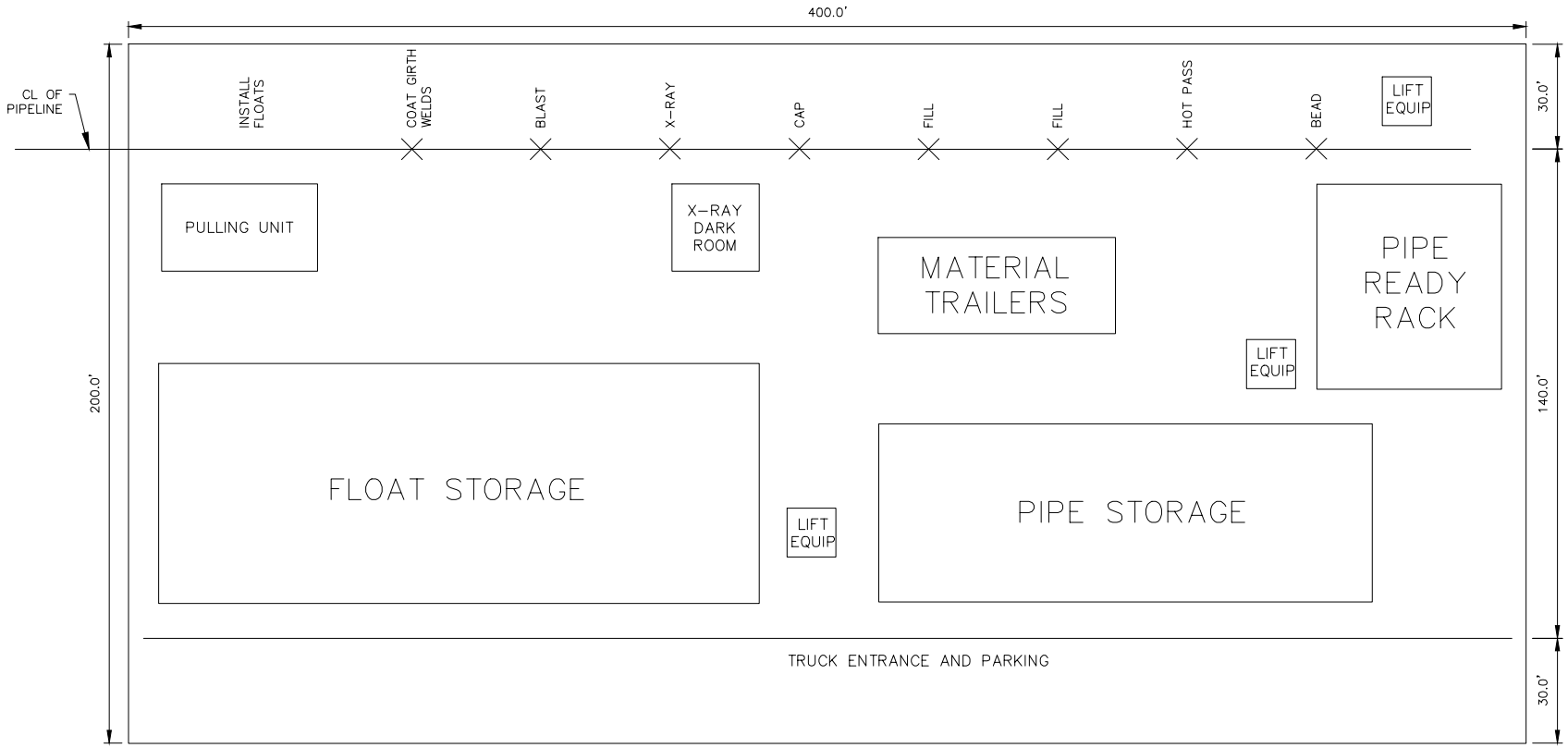
0	ISSUED FOR PERMIT	3/31/16	AL

TYPICAL CULVERT INSTALLATION IN STREAM/ WETLAND CROSSING

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS	3/31/16	SD	JRW	AL		STD-A-233	1 OF 1



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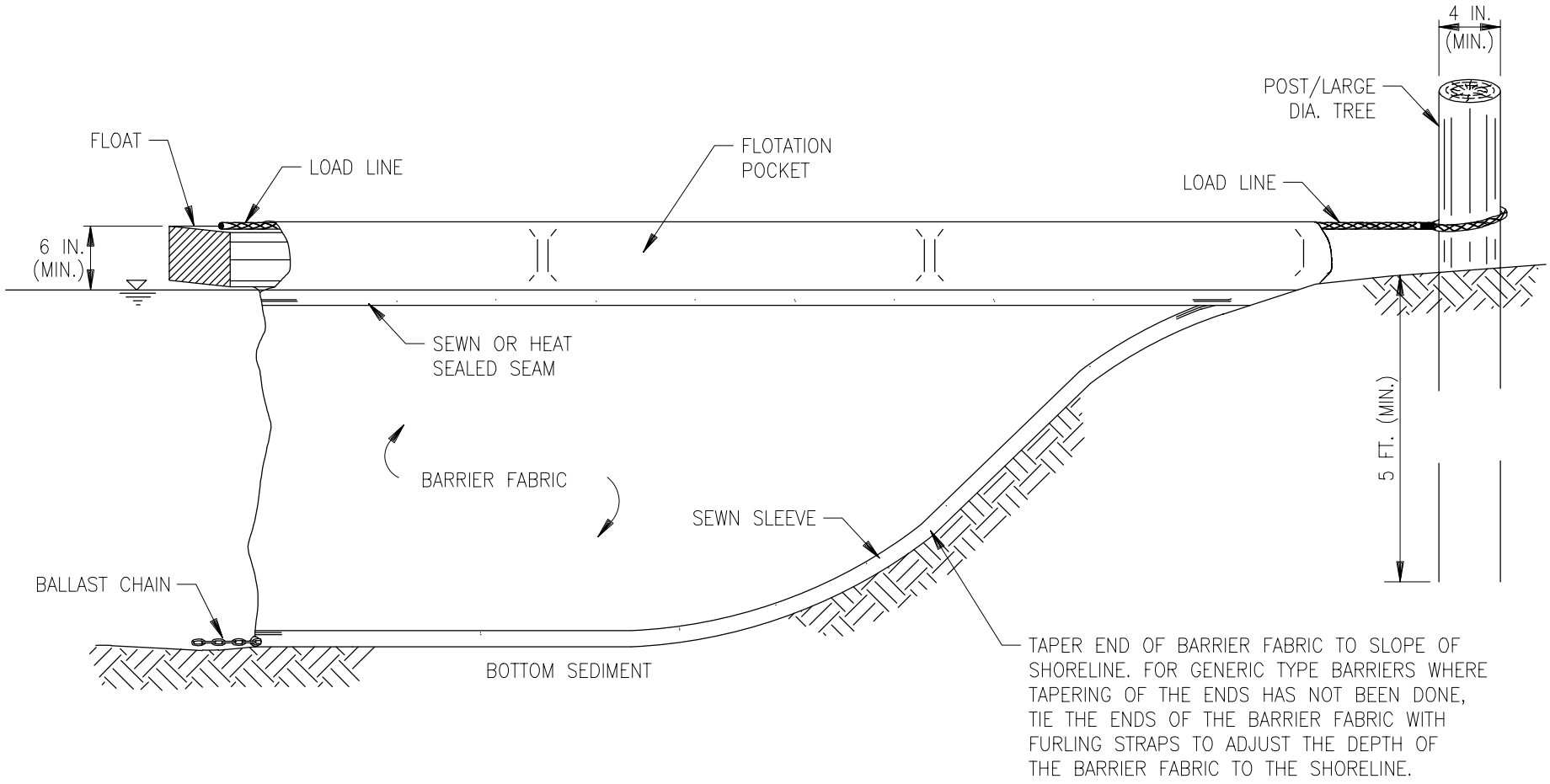
PUSH DITCH WORKSPACE CONFIGURATION

BAYOU BRIDGE PIPELINE, LLC

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
1"=30'	7/11/16	JRW	AL	BAM		STD-B-017	1 OF 1



1. TO BE USED ONLY WHERE SPECIFIED ON THE CONSTRUCTION DRAWINGS.
2. NOT TO BE USED TO FILTER STEADY STREAM FLOW.

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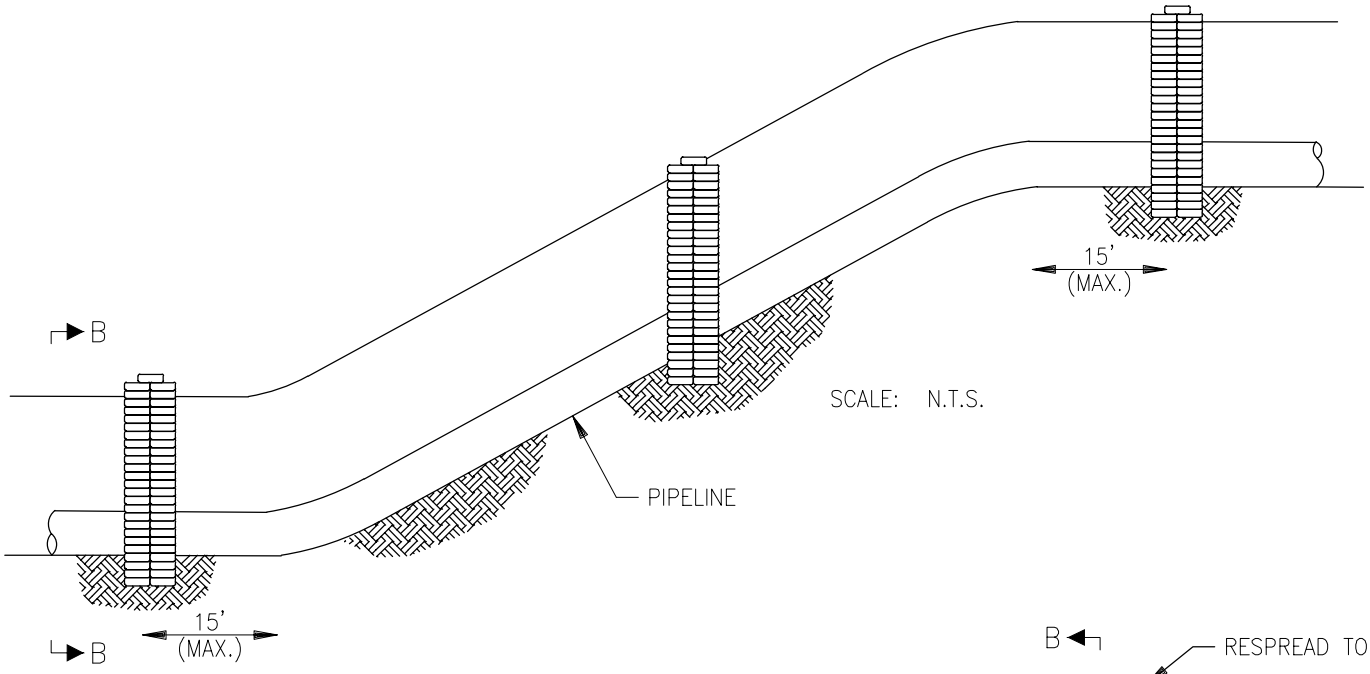
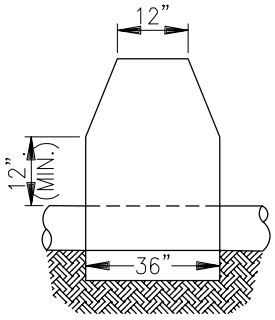
TYPICAL FLOATING SEDIMENT BARRIER

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-205	1 OF 1

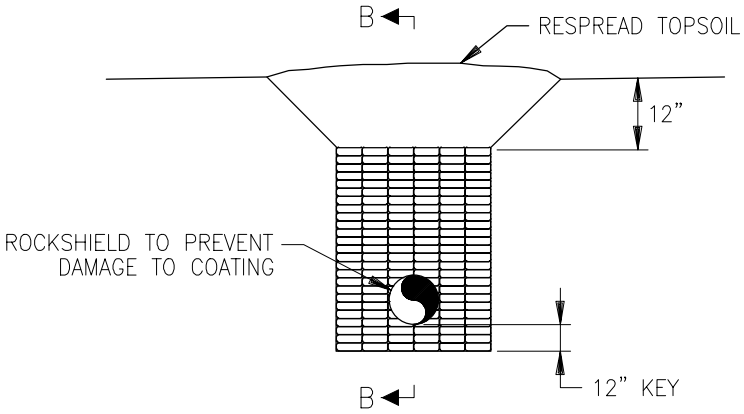


SCALE: N.T.S.



SECTION 'B–B'

SCALE: N.T.S.



SECTION 'A–A'

SCALE: N.T.S.

NOTES:

1. INSTALL TRENCH BREAKERS WHERE PIPELINE TRENCH MAY DRAIN A WETLAND OR DIVERT A STREAM AS DIRECTED BY THE COMPANY. BREAKERS SHALL ALSO BE INSTALLED WHERE NATURAL DRAINAGE PATTERN, PROFILE AND TYPE OF BACKFILL MATERIAL MAY RESULT IN LOSS OF BACKFILL MATERIAL OR ALTERATION OF NATURAL DRAINAGE PATTERN.

2. INSTALL TRENCH BREAKERS IMMEDIATELY UPSLOPE OF ALL DIVERSION BERMS UNLESS OTHERWISE AUTHORIZED BY THE COMPANY REPRESENTATIVE.

3. SLOPE BREAKER LOCATIONS AND SPACING SHALL BE DETERMINED IN ACCORDANCE WITH "THE UPLAND EROSION CONTROL, REVEGETATION AND MAINTENANCE PLAN" AND ENVIRONMENTAL SPECIFICATIONS.

4. KEY EACH TRENCH BREAKER A MINIMUM OF ONE (1) FT. INTO BOTTOMS AND SIDES OF TRENCH.

5. OPEN WEAVE HEMP OR JUTE SACKS SHALL BE FILLED WITH AN AVERAGE 55 LBS. MIXTURE OF:
   1) ONE (1) PART CEMENT AND SIX (6) PARTS SAND OR SUBSOIL, OR
   2) ONE (1) PART CEMENT, THREE (3) PARTS FLYASH, AND FIVE (5) PARTS SAND OR SUBSOIL
   WITH JUST SUFFICIENT WATER TO PERMIT MIXTURE TO EXUDE AND BOND SACKS TOGETHER. TOPSOIL IS NOT TO BE USED IN SACKS. ALTERNATIVELY, FOAM TRENCH BREAKERS MAY BE USED AS SPECIFIED BY THE ENVIRONMENTAL INSPECTOR.

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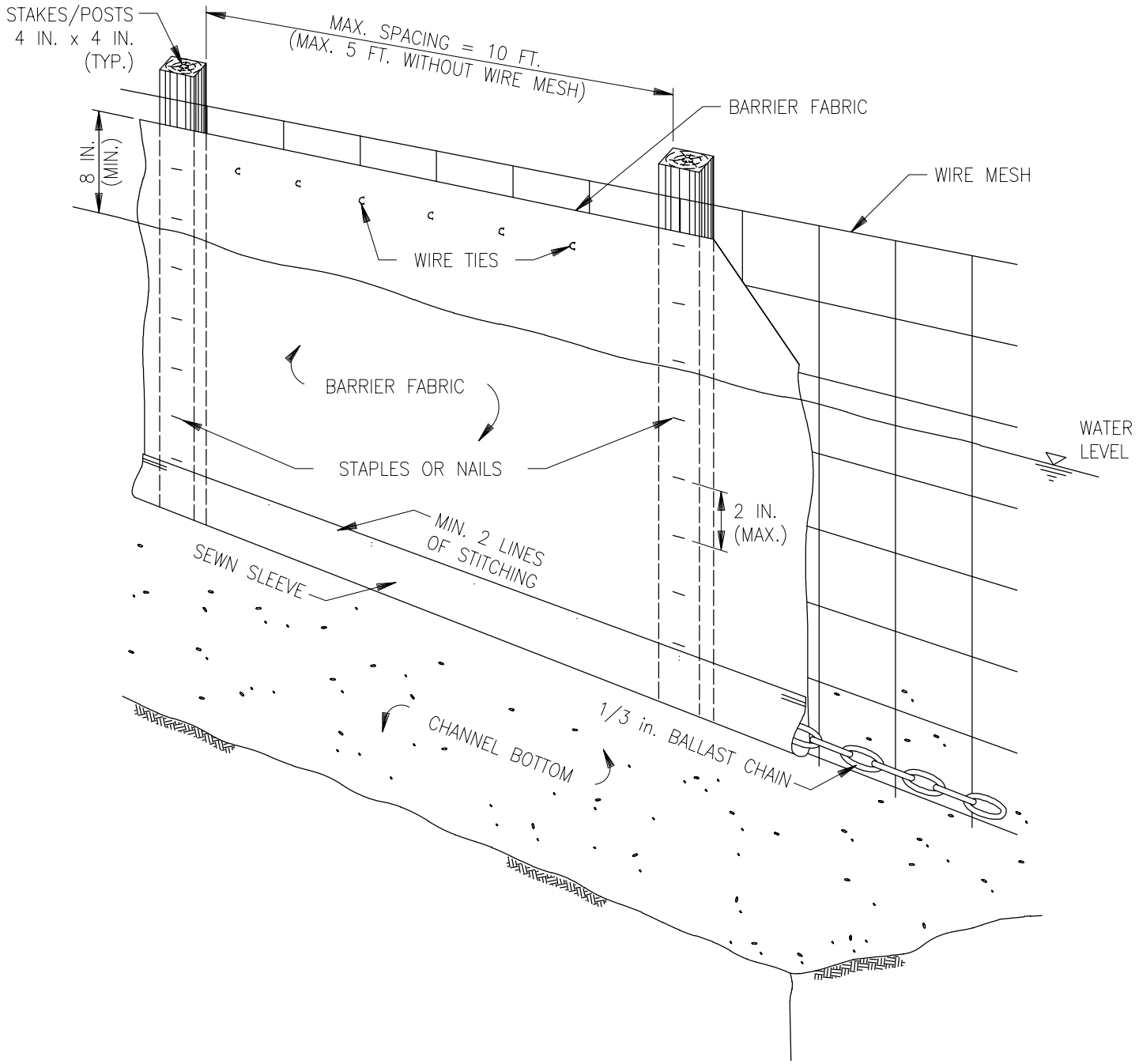
TYPICAL PERMANENT TRENCH BREAKERS

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–198	1 OF 1



1. TO BE USED ONLY WHERE SPECIFIED ON THE CONSTRUCTION DRAWINGS.
2. NOT TO BE USED TO FILTER STEADY STREAM FLOW.

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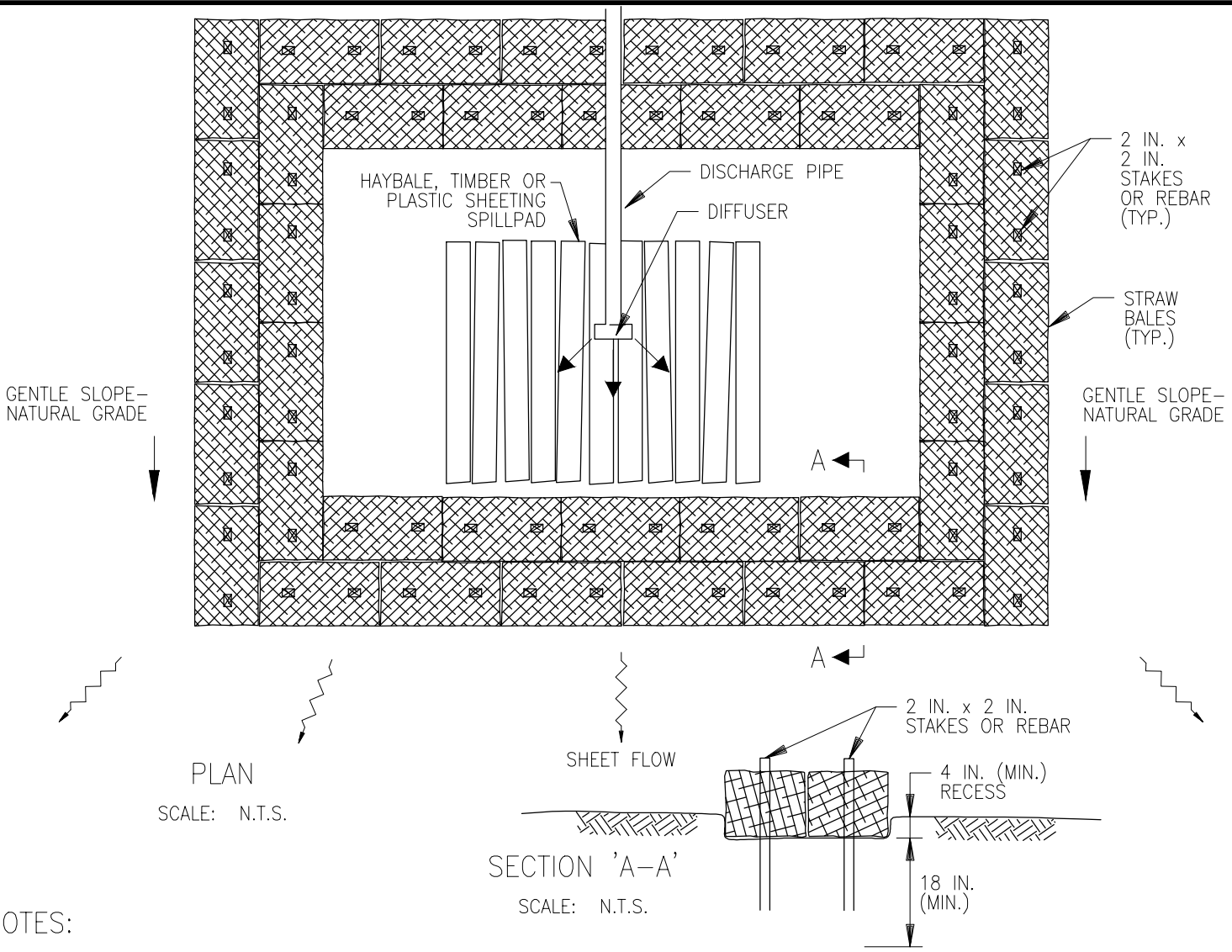
TYPICAL STAKED INSTREAM SEDIMENT BARRIER

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-201	1 OF 1



PLAN

SCALE: N.T.S.

SECTION 'A–A'

SCALE: N.T.S.

NOTES:

1. INSTALL A STRAW BALE DEWATERING STRUCTURE WHEREVER IT IS NECESSARY AND AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR TO PREVENT THE FLOW OF HEAVILY SILT LADEN WATER INTO WATERBODIES OR WETLANDS. ALL DEWATERING ACTIVITIES SHALL BE IN ACCORDANCE WITH ENVIRONMENTAL SPECIFICATION AND RELEVANT PERMITS.

2. DISCHARGE SITE SHOULD BE WELL VEGETATED AND LOCATED AT LEAST 50 FEET FROM ANY WATERCOURSE. THE TOPOGRAPHY OF THE SITE SHOULD BE SUCH THAT WATER WILL FLOW INTO THE DEWATERING STRUCTURE AND AWAY FROM ANY WORK AREAS. THE AREA DOWNSLOPE FROM THE WATERING SITE MUST BE REASONABLY FLAT OR STABILIZED BY VEGETATION OR OTHER MEANS TO ALLOW THE FILTERED WATER TO CONTINUE AS SHEET FLOW.

3. DIRECT THE PUMPED WATER ONTO A STABLE SPILL PAD CONSTRUCTED OF ROCKFILL, WEIGHTED TIMBERS, OR A WOVEN GEOTEXTILE STAKED TO THE GROUND SURFACE, SUCH AS MIRAFI 600X, TERRAFIX 400W, OR A COMPANY APPROVED EQUIVALENT. BEYOND THE SPILL PAD FORCE THE DISCHARGE WATER INTO SHEET FLOW USING STRAW BALES AND THE NATURAL TOPOGRAPHY.

4. DISCHARGE RATES SHOULD BE SUCH THAT THE CAPACITY OF THE STRUCTURE WILL NOT BE EXCEEDED.

5. DISCHARGE WATER SHALL BE FORCED INTO SHEET FLOW IMMEDIATELY BEYOND THE SPILL PAD USING A COMBINATION OF STRAW BALES AND THE NATURAL TOPOGRAPHY. RECESS STRAW BALES A MIN. OF FOUR (4) INCHES. DRIVE TWO (2) STAKES OR REBAR INTO EACH BALE TO ANCHOR THEM IN PLACE.

6. MANUFACTURED FILTER BAGS ARE A SUITABLE ALTERNATIVE TO STRAW BALE STRUCTURES FOR TRENCH DEWATERING. FILTER BAGS SHALL BE INSTALLED AS SPECIFIED BY THE MANUFACTURER. DISPOSE OF FULL FILTER BAGS AT AN APPROVED OFF–SITE FACILITY.

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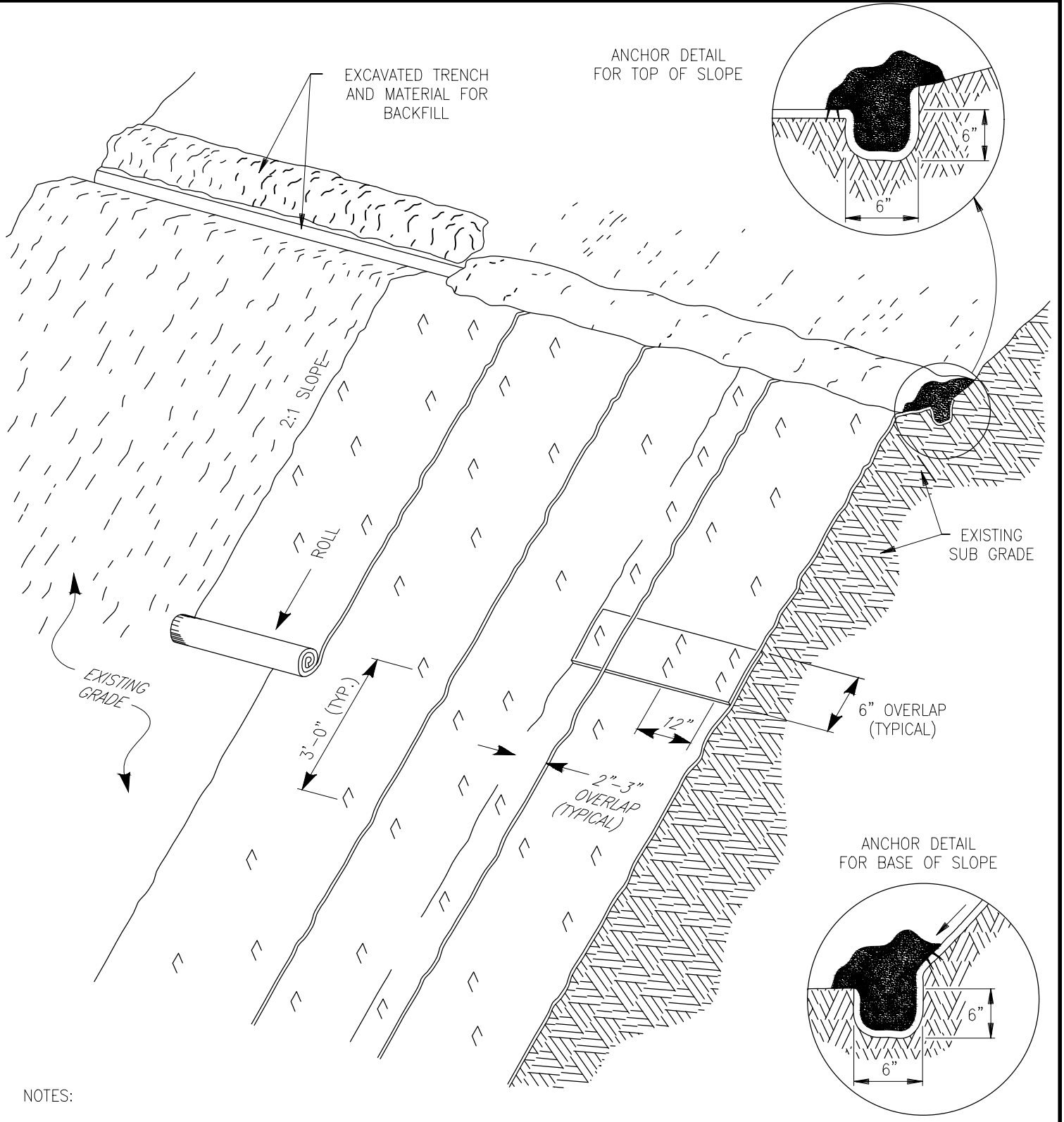
TYPICAL STRAW BALE DEWATERING STRUCTURE

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–204	1 OF 1



NOTES:

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS; MAT/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL; DO NOT STRETCH MATERIAL.
3. STAPLES SHALL BE INSTALLED PER THE STAPLE LAYOUT DETAIL AND WITH STANDARD MAT STAPLES.
4. ON SLOPED AREAS MATTING SHOULD BE INSTALLED VERTICALLY DOWNSLOPE.

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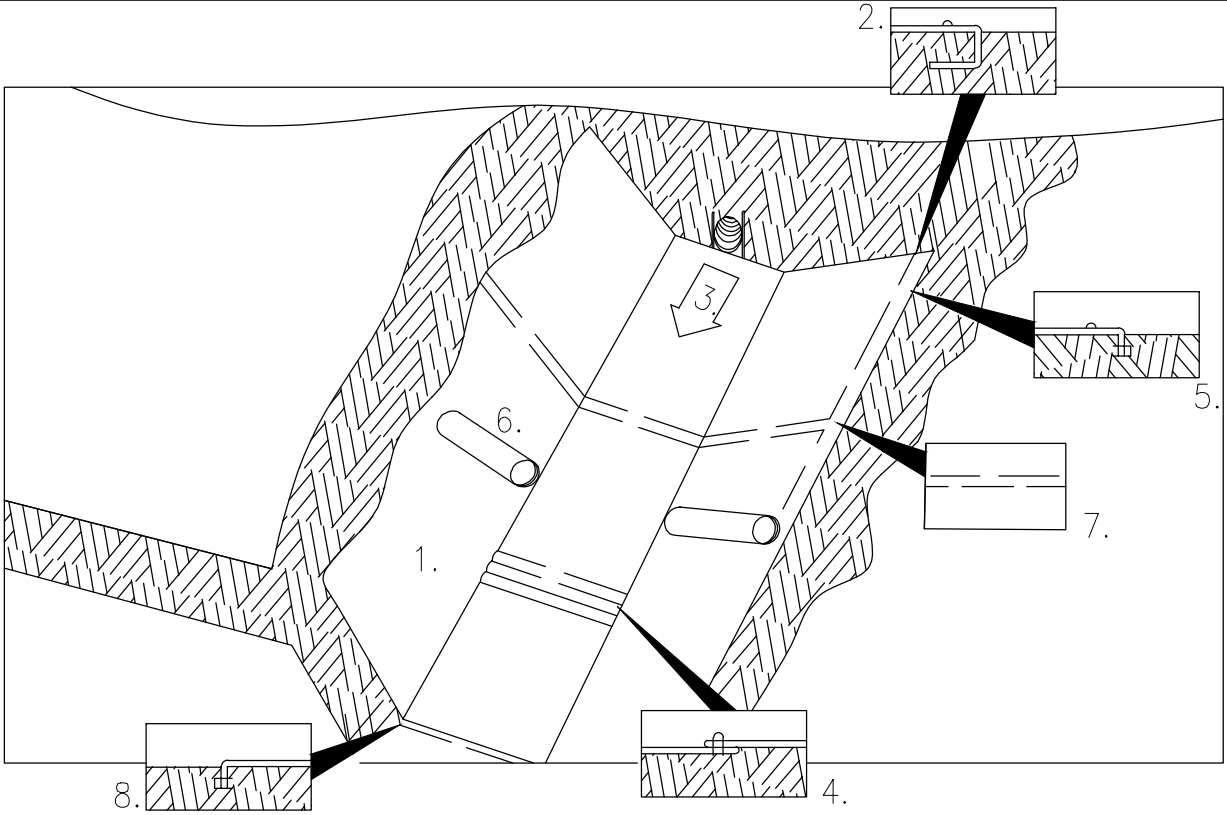
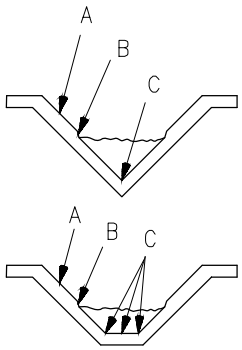
EROSION CONTROL BLANKET MEASURE 1

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-123	1 OF 1



CRITICAL POINTS

A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPES VERTICES



NOTES:

1. HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINT ALONG THE CHANNEL SURFACE.

2. REFER TO THE GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR CHANNELS.

NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP x 6" WIDE TRENCH; BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW ON BOTTOM OF CHANNEL.
4. PLACE BLANKETS END OVER END (SINGLE STYLE) WITH A 6" OVERLAP. USE A DOUBLE ROW OF STAGGERED STAPLES, 4" APART, TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT THE TOP OF SIDE SLOPES MUST BE ANCHORED IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER SAMPLING.
6. BLANKETS ON SIDE SLOPES MUST BE OVERLAPPED 4" OVER THE CENTER BLANKET AND STAPLED.
7. IN MEDIUM TO HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A ROW OF STAPLES 4" APART OVER THE ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" BELOW THE FIRST ROW IN A STAGGERED PATTERN.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED IN A 6" DEEP x 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

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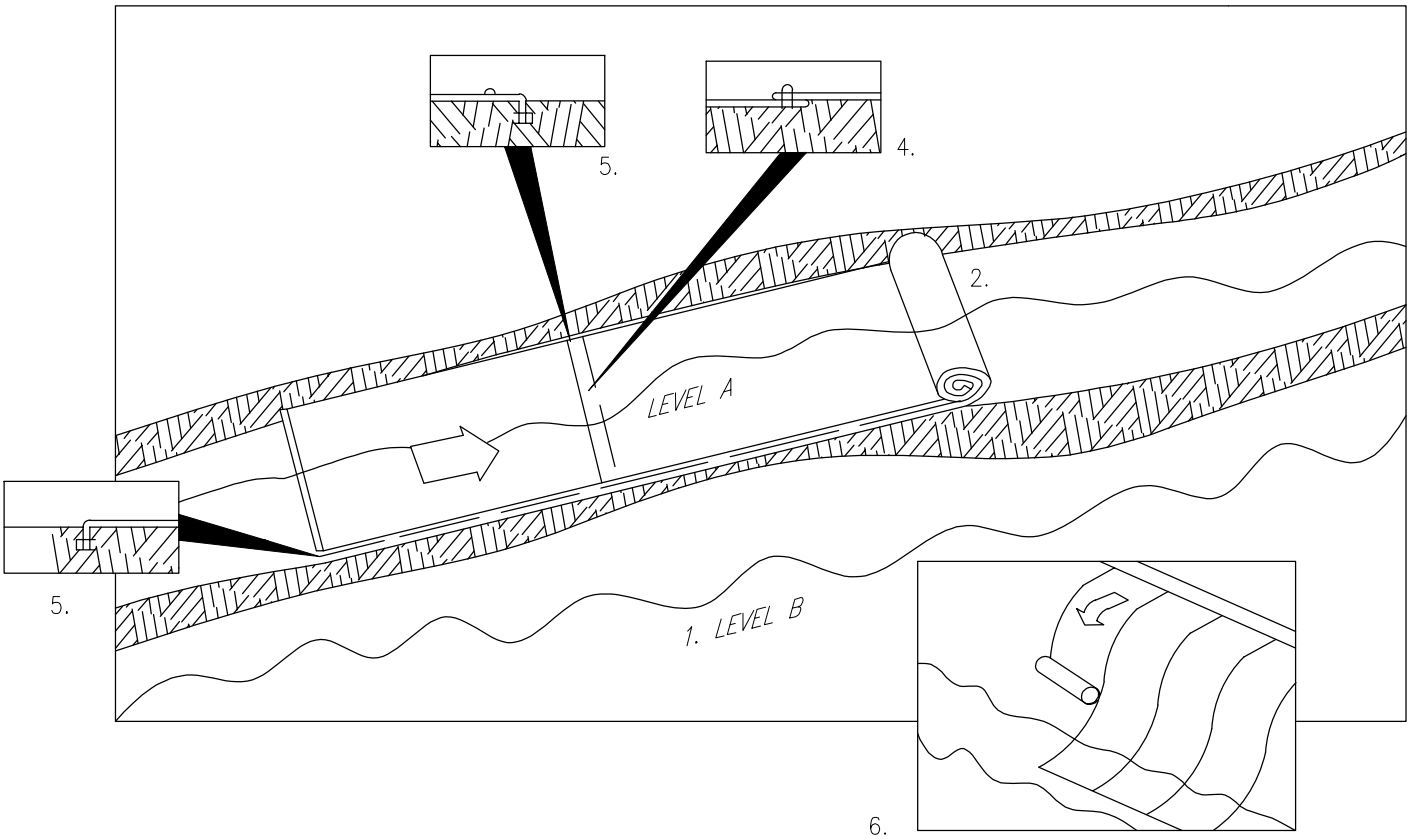
EROSION CONTROL BLANKET MEASURE 2

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-124	1 OF 1



NOTES:

1. FOR OPTIMUM PERFORMANCE, AND IF POSSIBLE, LOWER WATER FROM LEVEL A TO LEVEL B BEFORE INSTALLING
2. PREPARE SOIL BEFORE INSTALLING BLANKETS INCLUDING APPLICATION OF LIME, FERTILIZER AND SEED.
3. THE TOP EDGE OF THE BLANKET MUST BE ANCHORED IN A 6" DEEP x 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
4. PLACE BLANKETS END OVER END WITH 6" OVERLAP. STAPLE THROUGH BOTH BLANKETS OF THE OVERLAPPED AREA APPROXIMATELY 12" APART.
5. THE EDGE OF THE BLANKET THAT FALLS BELOW NORMAL WATER LEVEL MUST BE ANCHORED IN A 6" DEEP x 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. (STONE MAY BE SUBSTITUTED FOR SOIL BACKFILL).
6. IF BANK IS STEEP, OR IF WATER LEVEL VARIES MORE THAN THE WIDTH OF THE BLANKET, USE VERTICAL INSTALLATION.
7. IN LOOSE SOIL CONDITIONS; THE USE OF 12" OR LONGER METAL/WASHER PINS MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.
8. REFER TO THE GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SHORELINES.

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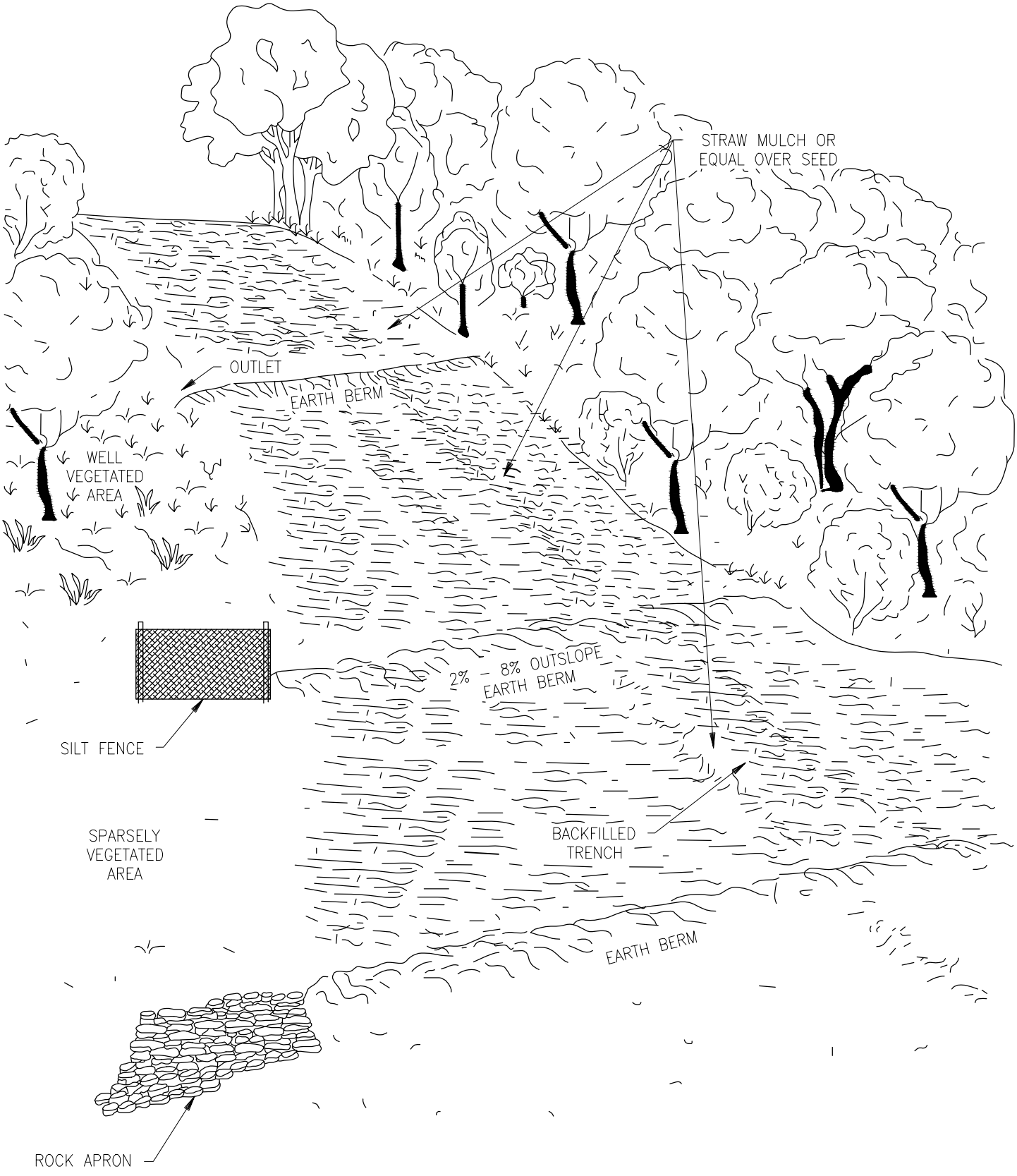
EROSION CONTROL BLANKET MEASURE 3

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-125	1 OF 1



NOTES:
SILT FENCE REMOVED WHEN VEGETATION ESTABLISHED.

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EROSION CONTROL

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-111	1 OF 1

TYPICAL DRAWING: NONE

APPLICATION RATES AND LOCATIONS:

1. HYDRO-MULCH WITH TACKIFIER SHALL BE USED AT LOCATIONS IDENTIFIED ON THE CONSTRUCTION DRAWINGS AND/OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR TO PROTECT SOIL AGAINST EROSION. AREAS TARGETED FOR HYDRO MULCH INCLUDE SLOPES BETWEEN 40% AND 60%.

2. THE CONTRACTOR SHALL BE REQUIRED TO USE EXTENSION HOSES TO REACH INACCESSIBLE AREAS.

3. HYDRO-MULCH AND TACKIFIER SHALL BE APPLIED AT A RATE OF 3000 LBS/ACRE AND 120 LBS/ACRE RESPECTIVELY. IN A SINGLE APPLICATION HYDRO-MULCH AND TACKIFIER SHALL PRODUCE A UNIFORM, MAT-LIKE COVERING THE GROUND.

4. WHEN DIRECTED BY THE ENVIRONMENTAL INSPECTOR, TOPSOIL STOCKPILES SHALL BE TACKIFIED AT A RATE OF 120 LBS/ACRE TO CONTROL WIND EROSION.

HYDRO-MULCH MATERIAL:

1. THE HYDRO-MULCH MATERIAL SHALL CONSIST OF WOOD FIBERS MEETING THE FOLLOWING PHYSICAL AND CHEMICAL PROPERTIES:
   - MOISTURE CONTENT 12 % | 3.0%
   - ORGANIC MATTER (OVEN-DRIED BASIS) 99.2 % | 0.2%
   - ASH CONTENT 0.8 % | 0.2%
   - WATER HOLDING CAPACITY 1000 GRAMS MIN.

   NOTE: WATER HOLDING CAPACITY – 100 GRAMS OF OVEN DRIED MULCH SATURATED, DRAINED AND WEIGHTED.

2. THE HYDRO-MULCH MATERIAL SHALL MEET THE FOLLOWING ADDITIONAL REQUIREMENTS:
   - THE FIBERS SHALL NOT CONTAIN ANY GROWTH GERMINATION INHIBITING FACTORS.
   - THE FIBERS SHALL NOT BE PRODUCED FROM RECYCLED MATERIAL SUCH AS SAWDUST, CARDBOARD OR PULP AND PAPER PLANT RESIDUE.
   - THE FIBERS SHALL BE DYED TO FACILITATE VISUAL METERING DURING APPLICATION.

3. THE HYDRO-MULCH SHALL BE SUPPLIED IN 50 POUND NET WEIGHT BAGS. EACH PACKAGE SHALL BE MARKED BY THE MANUFACTURER TO SHOW THE AIR-DRY CONTENT.

4. THE HYDRO-MULCH MATERIAL SHALL BE OF SUCH CONSISTENCY THAT AFTER BEING COMBINED IN A SLURRY TANK WITH WATER AND APPROVED TACKIFIER, THE FIBERS IN THE MATERIAL SHALL BE UNIFORMLY SUSPENDED TO FORM A HOMOGENEOUS SLURRY.

5. THE HYDRO-MULCH MATERIAL SHALL BE MANUFACTURED BY WEYERHAEUSER COMPANY, FIBER MARKETING INTERNATIONAL OR AN APPROVED EQUAL AND BE SUPPLIED IN PACKAGES MARKED BY THE MANUFACTURER TO SHOW THE AIR DRY WEIGHT CONTENT. MULCH WHICH HAS BEEN DAMAGED BY MOISTURE OR OTHER MEANS SHALL NOT BE ACCEPTED.

6. IF REQUESTED, THE CONTRACTOR SHALL SUBMIT A MINIMUM ONE (1) POUND BAG OF THE PRODUCT PROPOSED TO USE ON THE PROJECT TO COMPANY FOR TESTING OR, IF REQUESTED, THE CONTRACTOR SHALL SUBMIT A SIGNED STATEMENT CERTIFYING THAT THE MATERIAL FURNISHED HAS BEEN LABORATORY AND FIELD TESTED AND THAT IT MEETS REQUIREMENTS FOR ITS INTENDED USE. EXPRESS MAY ACCEPT THE HYDRO-MULCH MATERIAL FOR USE BASED ON A CERTIFICATE OF COMPLIANCE.

TACKIFIER MATERIAL:

1. TACKIFIER SHALL MEET THE FOLLOWING REQUIREMENTS:
   - BE A BIODEGRADABLE ORGANIC FORMULATION.
   - CONSIST OF SPECIFICALLY BLENDED COMPATIBLE HYDROCOLLOIDS (SOLUBLE POLYSACCHARIDES, GUAR GUM OR PLANTAGO). STARCH BASED TACKIFIERS ARE UNACCEPTABLE.
   - HAVE AN EQUILIBRIUM AIR-DRY MOISTURE CONTENT AT TIME OF MANUFACTURE OF 8% | 2% WITH A MINIMUM WATER HOLDING CAPACITY OF 6.5 TIMES BY WEIGHT OF DRY MATERIAL.
   - HAVE THE CHARACTERISTICS OF HYDRATING AND UNIFORMLY DISPERSING IN CIRCULATING WATER TO FORM A HOMOGENEOUS SLURRY AND REMAIN IN SUCH A STATE IN THE HYDRAULIC MIXING UNIT (USUALLY A HYDRO-MULCHER).

2. TACKIFIER SHALL BE SUPPLIED IN PACKAGES MARKED BY THE MANUFACTURER TO SHOW WEIGHT CONTENT. TACKIFIER WHICH HAS BEEN DAMAGED BY MOISTURE OR OTHER MEANS SHALL NOT BE ACCEPTED.

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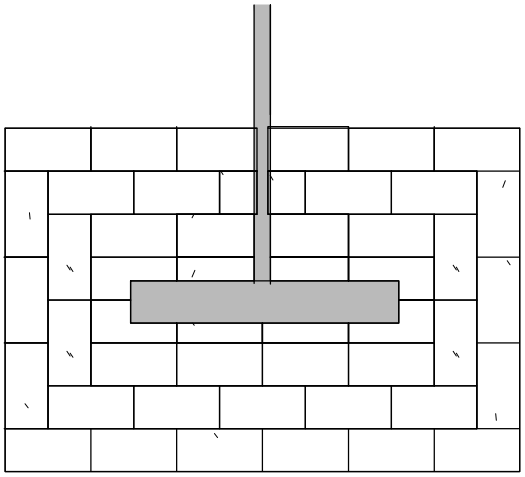
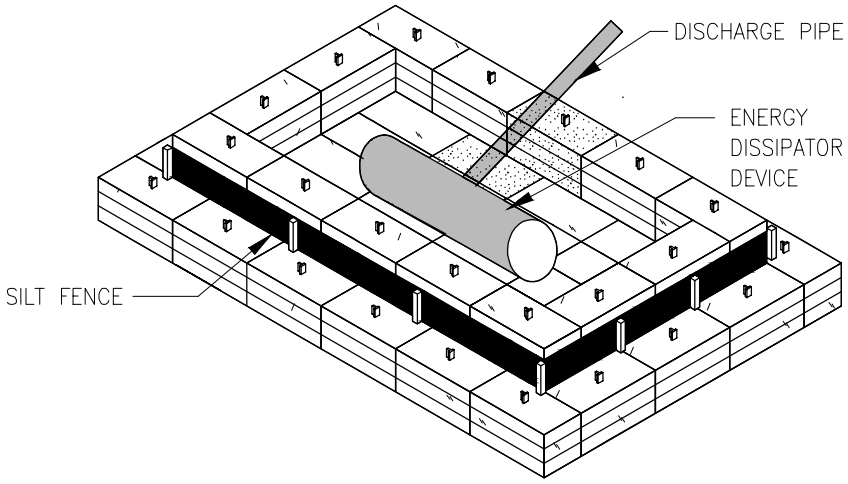
HYDRO-MULCH AND TACKIFIER

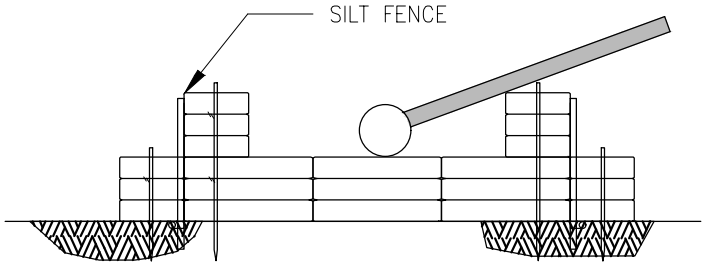
SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-128	1 OF 1



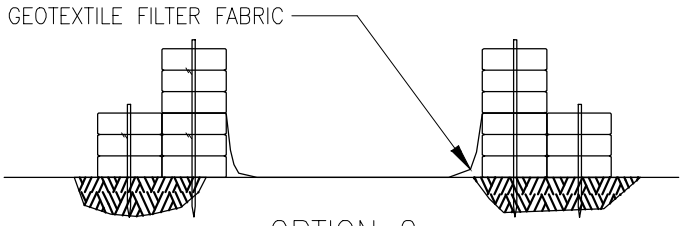
PLAN VIEW
(NOT TO SCALE)



ISOMETRIC VIEW
(NOT TO SCALE)



OPTION 1



OPTION 2

NOTES:

1. INSTALL A STRAW BALE DEWATERING STRUCTURE WHEREVER IT IS NECESSARY AND AS DIRECTED BY THE ENGINEER TO PREVENT THE FLOW OF HEAVILY SILT LADEN WATER INTO WATER BODIES OR WETLANDS. ALL DEWATERING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH PERMIT CONDITIONS.

2. DISCHARGE SITE SHOULD BE WELL VEGETATED AND LOCATED AT LEAST 100FT. FROM ANY WATERCOURSE. THE TOPOGRAPHY OF THE SITE SHOULD BE SUCH THAT WATER WILL FLOW INTO THE DEWATERING STRUCTURE AND AWAY FROM ANY WORK AREAS. THE AREA DOWNSLOPE FROM THE WATERING SITE MUST BE REASONABLY LEVEL OR STABILIZED BY VEGETATION OR OTHER MEANS TO ALLOW THE FILTERED WATER TO CONTINUE AS SHEET FLOW.

3. DIRECT THE PUMPED WATER ONTO A STABLE SPILL PAD CONSTRUCTED OF STRAW BALES, ROCK FILL, WEIGHTED TIMBERS, OR A WOVEN GEOTEXTILE STAKED TO THE GROUND SURFACE.

4. DISCHARGE RATES SHOULD BE SUCH THAT THE STRUCTURE WILL NOT OVERFLOW.

5. DISCHARGE WATER TO BE FORCED INTO SHEET FLOW IMMEDIATELY BEYOND THE SPILL PAD USING A COMBINATION OF STRAW BALES AND THE NATURAL TOPOGRAPHY. RECESS STRAW BALES A MINIMUM OF 4 in. DRIVE TWO STAKES OR REBAR INTO EACH BALE TO ANCHOR THEM IN PLACE.

6. MANUFACTURED FILTER BAGS ARE A SUITABLE ALTERNATIVE TO STRAW BALE STRUCTURES FOR TRENCH DEWATERING.

7. ENERGY DISSIPATOR DEVICE SHALL BE ANCHORED BY CONTRACTOR.

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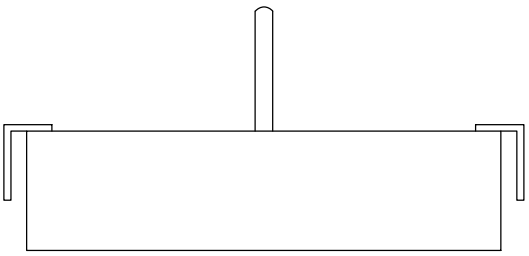
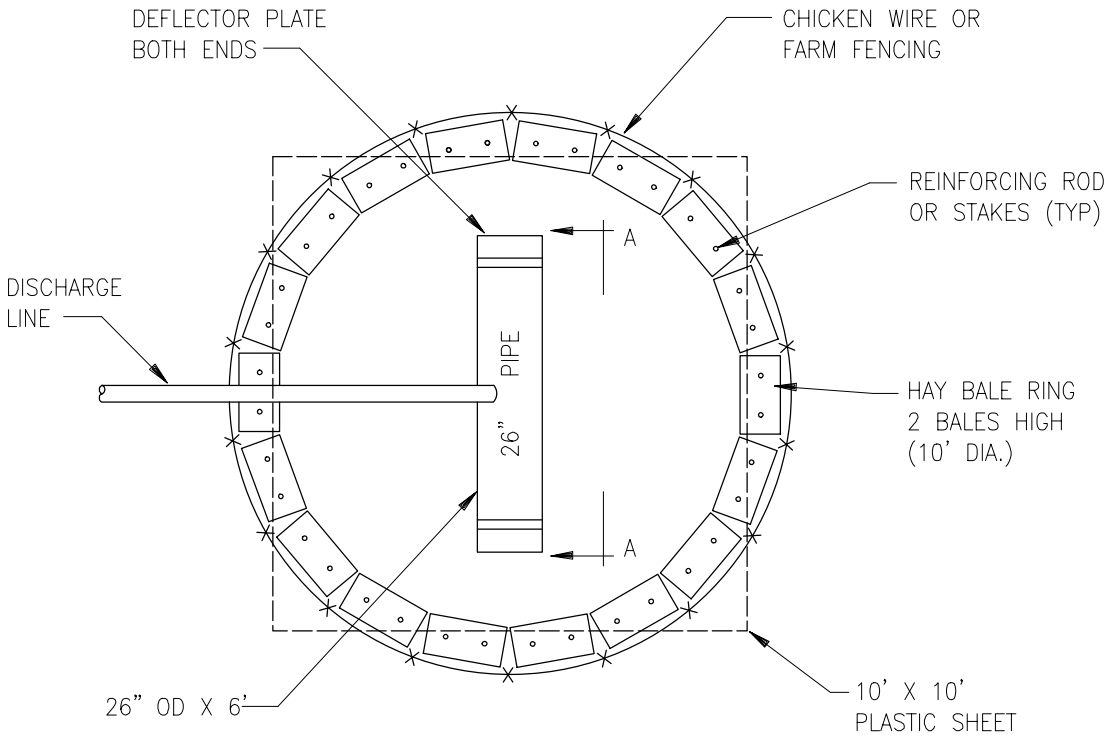
NO.	REVISION	DATE	APPR.

HYDROSTATIC TEST DEWATERING (METHOD 1)

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS							STD-A-203



VIEW A–A



PLAN VIEW

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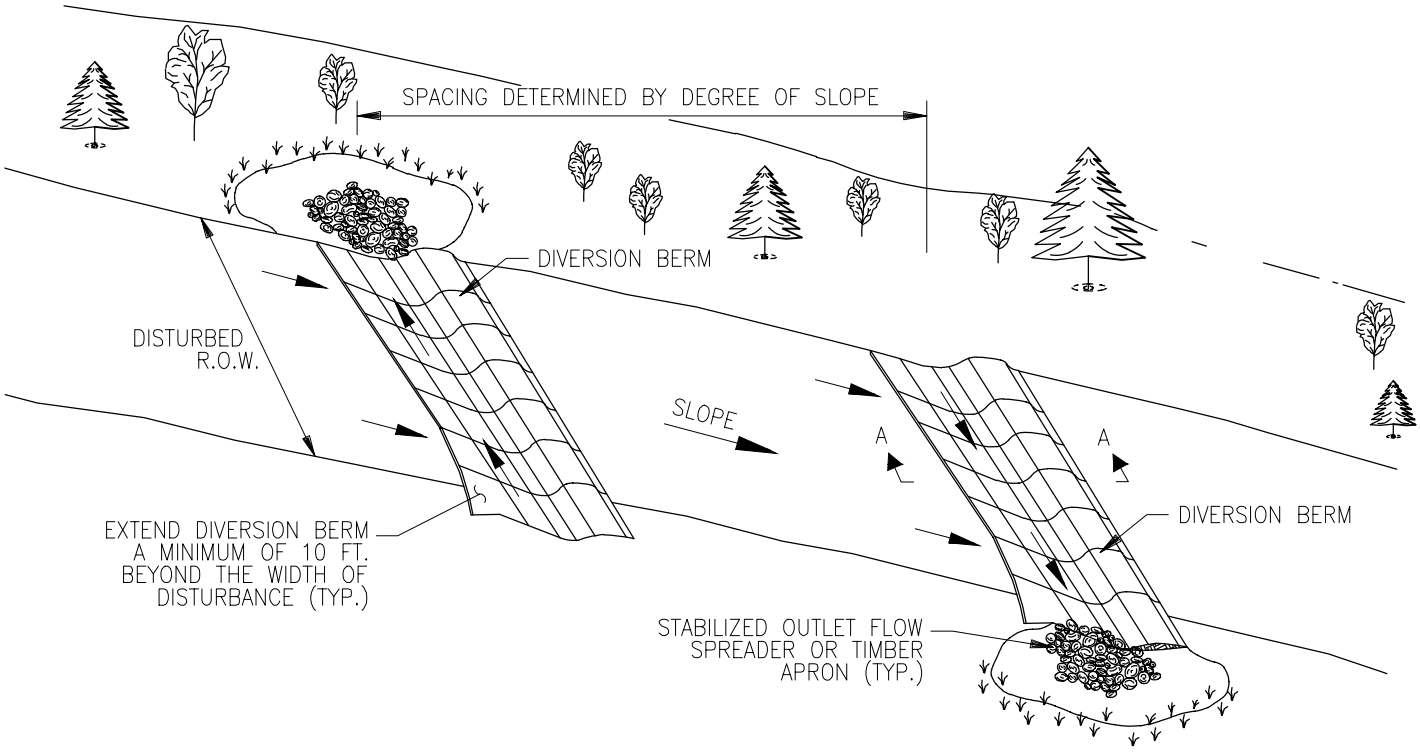
NO.	REVISION	DATE	APPR.

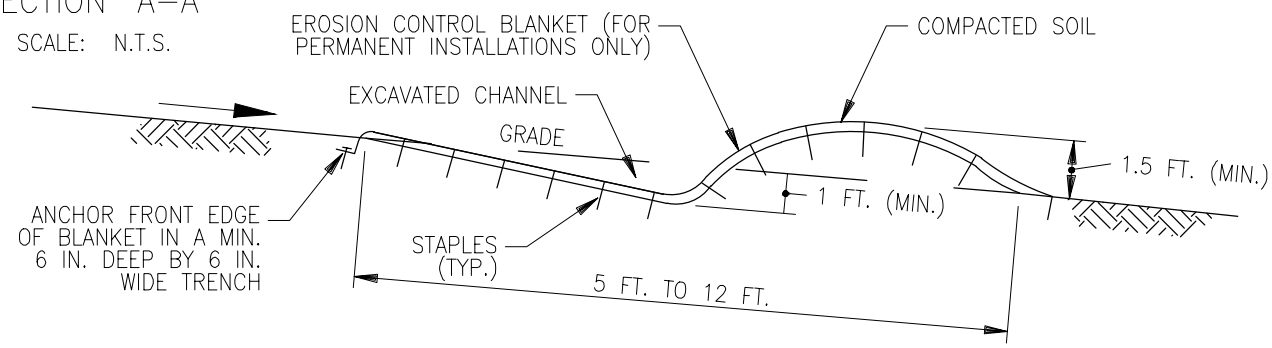
METHOD FOR DISCHARGING WATER TO GROUND

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–117	1 OF 1



SECTION 'A–A'

SCALE: N.T.S.



NOTES:

1. ADDITIONAL BERMS WILL BE INSTALLED WITH ALTERNATE DIRECTIONS OF FLOW.
2. EROSION CONTROL BLANKET FOR PERMANENT DIVERSION BERMS SHALL CONSIST OF NORTH AMERICAN GREEN SC150 OR EQUIVALENT.
3. UPSLOPE EDGE OF BLANKET TO BE ANCHORED IN A 6 INCH x 6 INCH TRENCH.
4. TOTAL WIDTH OF BLANKET INSTALLATION TO BE AT LEAST 6 FT., (INCLUDING ANCHORING DETAILS).
5. LONGITUDINAL SLOPE TO BE GREATER THAN 1% AND LESS THAN 5%.
6. ENERGY DISSIPATING DEVICES CAN INCLUDE FENCES, ROCK, OR BLANKETS.
7. FOR TEMPORARY USE PRIOR TO FINAL CLEAN–UP, DIVERSION BERMS DO NOT REQUIRE A LINING, AND MAY BE DESTROYED EACH DAY TO ALLOW CONSTRUCTION ACTIVITIES, HOWEVER, THEY SHALL BE RECONSTRUCTED NIGHTLY. TEMPORARY BERMS CAN TYPICALLY BE CONSTRUCTED WITH A SINGLE PASS OF A BULLDOZER. MAINTAIN BREAKS IN SPOIL PILES TO ACCOMMODATE BERMS. MODIFY BERMS AS NECESSARY TO AVOID DISCHARGE OF RUN–OFF WATER INTO ANY OPEN DITCH.

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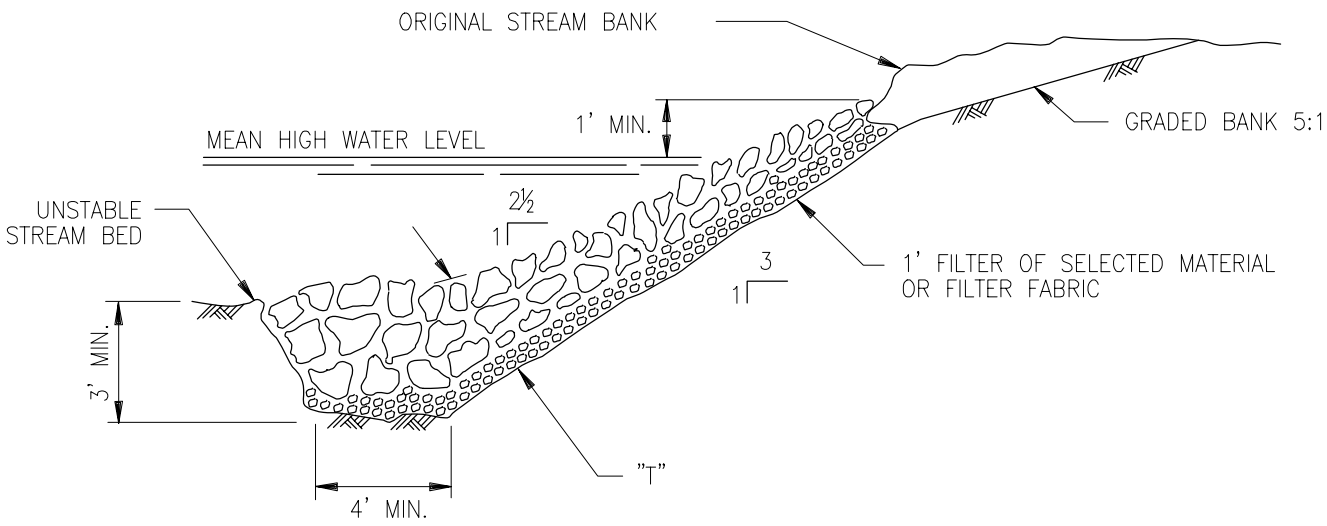
NO.	REVISION	DATE	APPR.

PERMANENT WATER BARS OR TERRACES

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–112	1 OF 1



EXCAVATED TOE DETAIL

VELOCITY	RIP RAP			
FT./SEC.	MAX. SIZE (POUNDS)	AVG. SIZE (POUNDS)	20% SIZE* (POUNDS)	"T" DESIGN THICKNESS
12–15	250	50–80	20	15"–27"

* INDICATES THAT NOT MORE THAN 20% OF TOTAL ROCK QUANTITIES SHALL BE LESS THAN 20 LBS. EACH.

1. ALL AREAS TO BE REVETTED SHALL BE CLEARED OF ALL TREES, BRUSH, LOGS, STUMPS AND DEBRIS.
2. RIP RAP SHALL BE PLACED IN SUCH A MANNER AS TO PRODUCE A REASONABLY WELL GRADED MASS.
3. THE FINISHED RIP RAP SHALL BE FREE OF OBJECTIONABLE POCKETS OF SMALL STONES.
4. PLACING OF RIP RAP WHICH MAY CAUSE SEGREGATION OF VARIOUS SIZES, WILL NOT BE PERMITTED.
5. RIP RAP SHALL BE NATURAL OR BROKEN STONE OR OTHER MATERIAL ACCEPTABLE TO THE COMPANY AND GOVERNING AGENCY.
6. THE FINISHED RIP RAP TO BE ACCEPTED BY THE GOVERNING AGENCY PRIOR TO LEAVING THE AREA.

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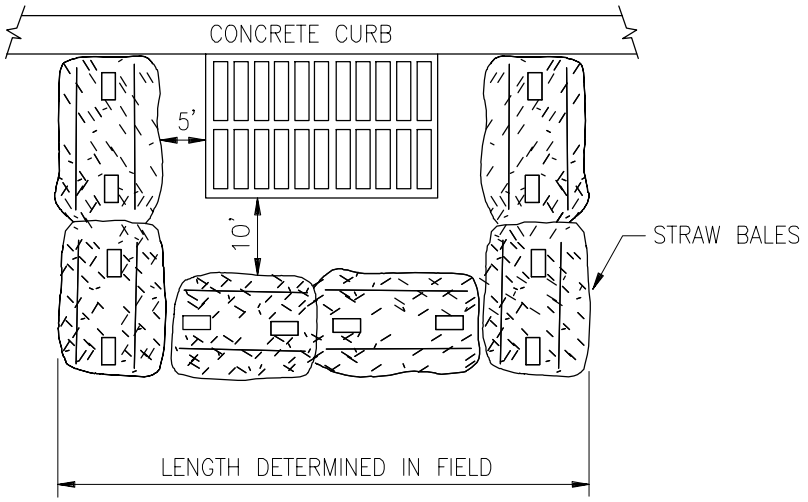
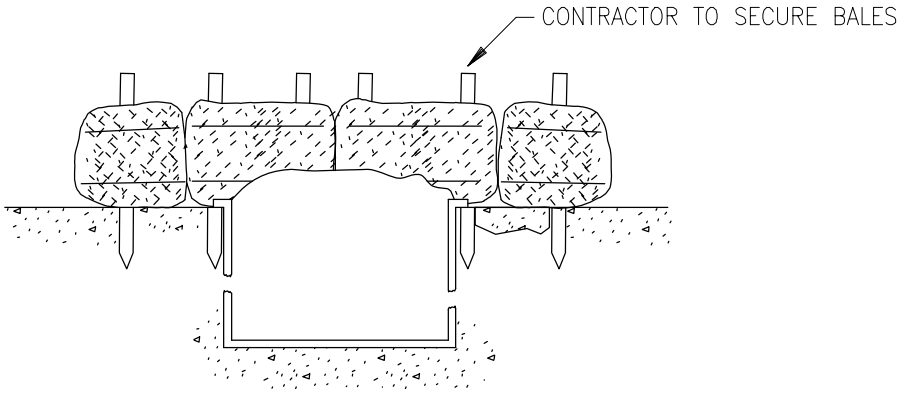
NO.	REVISION	DATE	APPR.

PIPELINE STANDARD
DESIGN FOR ROCK RIP RAP
INSTALLATION (EXCAVATED TOE)

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–044	1 OF 1



TOP VIEW



FRONT VIEW

NOTES:

1. INSTALL PRIOR TO GRADING.
2. ANGLE FIRST STAKE TOWARD PREVIOUSLY POSITIONED BALE.
3. IMBED BALES IN EARTH APPROXIMATELY 4".
4. WHEN REMOVING BALES, SCATTER SILT AND STRAW ACROSS RIGHT-OF-WAY.
5. ALL MATERIALS TO BE SUPPLIED BY CONTRACTOR.

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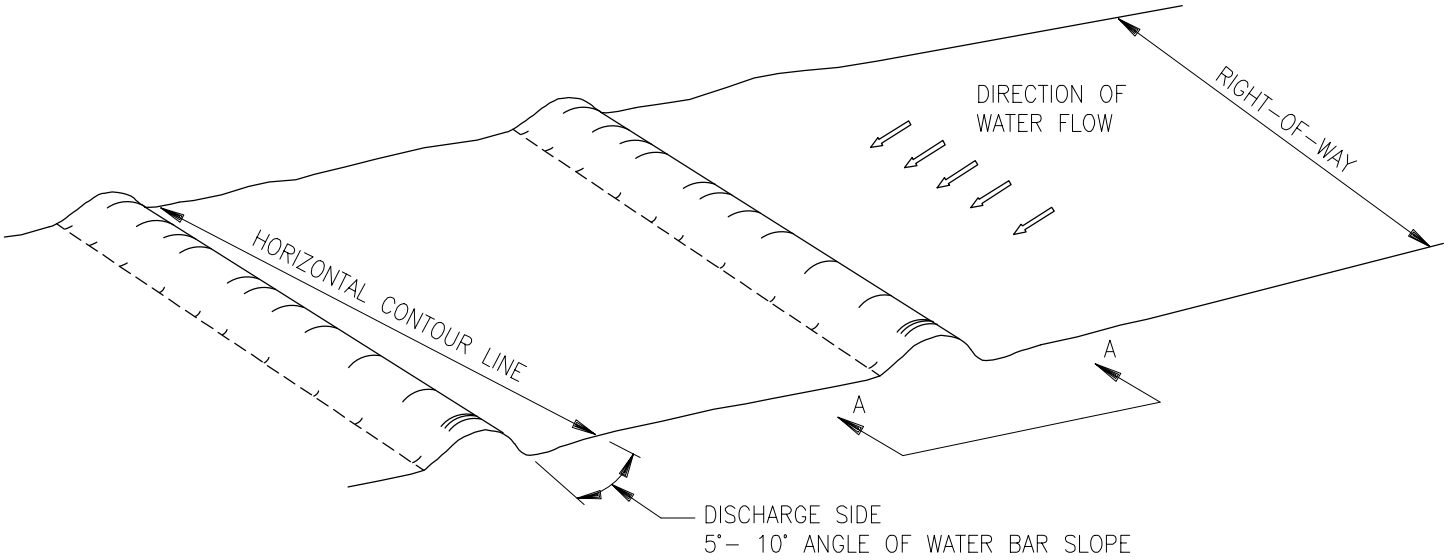
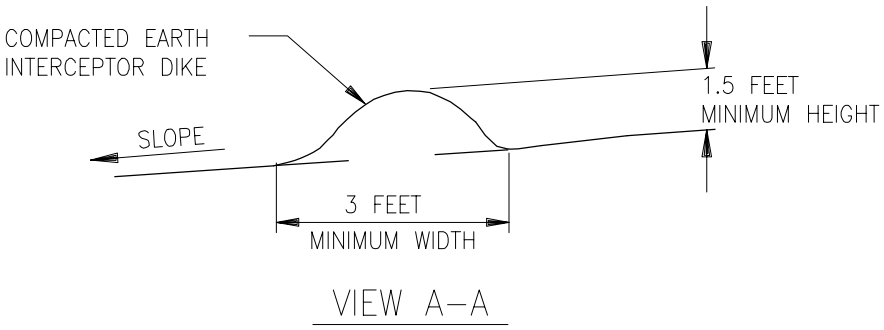
NO.	REVISION	DATE	APPR.

PIPELINE STANDARD
EROSION CONTROL
INLET PROTECTION

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-207	1 OF 1





VIEW A–A

SLOPE BREAKER SPACING	
GRADE, %	SPACING
0 – 5	NONE REQ'D
5 – 15	300
15 – 30	200
> 30	100

NOTES:

1. WATER SHALL BE DIVERTED OFF THE GRADED RIGHT–OF–WAY BY CONSTRUCTING DIKES ACCORDING TO THE FOLLOWING PROCEDURE.

   A. THE HORIZONTAL CONTOUR LINE ACROSS THE ENTIRE RIGHT–OF–WAY WIDTH WILL BE ESTABLISHED AT EACH INTERCEPT OR DIKE. THE HORIZONTAL CONTOUR LINE WILL BE PERPENDICULAR TO THE DIRECTION OF FLOW. A SURVEYOR'S LEVEL OR HAND LEVEL WILL BE USED TO LOCATE THE CONTOUR LINE.

   B. THE WATER BAR SHALL SLOPE DOWNHILL 5° – 10° FROM HORIZONTAL CONTOUR LINE AND TOWARD DISCHARGE SIDE. CHANNEL THE FLOW TO THE SIDE OF THE GRADED RIGHT–OF–WAY WITH THE BEST VEGETATIVE COVER AND TOPOGRAPHY. IF VEGETATION IS SPARSE SECURE OUTLET WITH STRAW BALES.

2. SLOPE BREAKER SPACING SHALL BE IN ACCORDANCE WITH LOCAL SOIL CONSERVATION SERVICE RECOMMENDATIONS. IN ABSENCE OF THESE RECOMMENDATIONS THE ABOVE TABLE SHALL BE USED.

3. REFER TO "ENVIRONMENTAL AND RIGHT–OF–WAY STIPULATIONS" FOR INSTALLATION.

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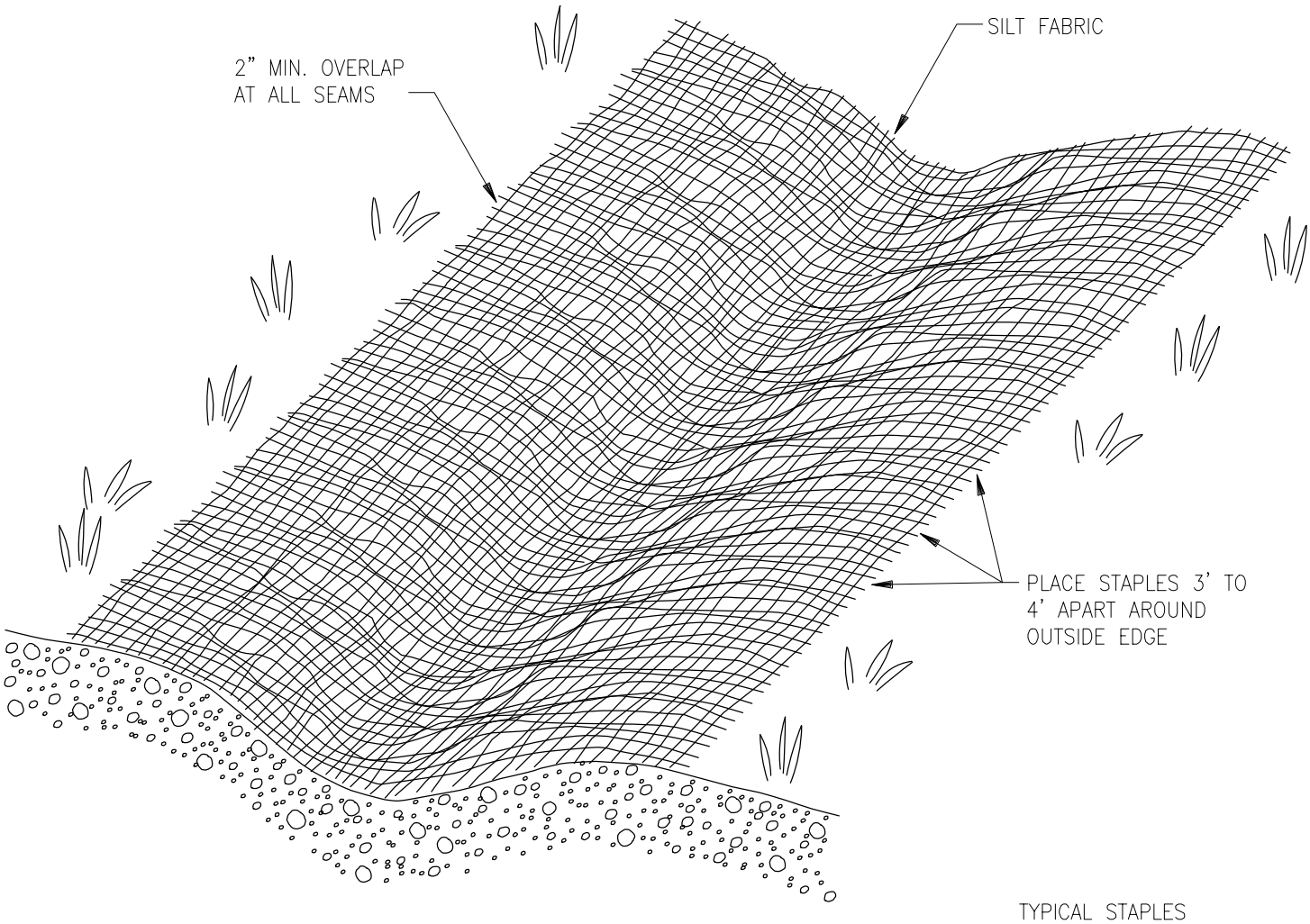
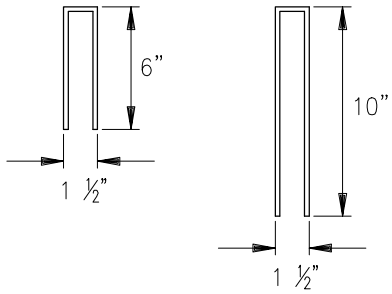
NO.	REVISION	DATE	APPR.

PIPELINE STANDARD
EROSION CONTROL
INTERCEPTOR DIKES

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–038	1 OF 1



TYPICAL STAPLES
CONSTRUCTED OF 8 GAUGE WIRE



NOTES:

1. INSTALL AT LOCATIONS DIRECTED BY COMPANY (BOTTOM OF SURFACE DRAINS, STREAM BANKS, AND STEEP SLOPE AREAS).
2. LIME, FERTILIZE AND SEED, BY HAND, AREA TO BE THATCHED.
3. HYDROSEED OR EQUIVALENT AFTER INSTALLING.
4. ALL MATERIALS TO BE SUPPLIED BY CONTRACTOR.

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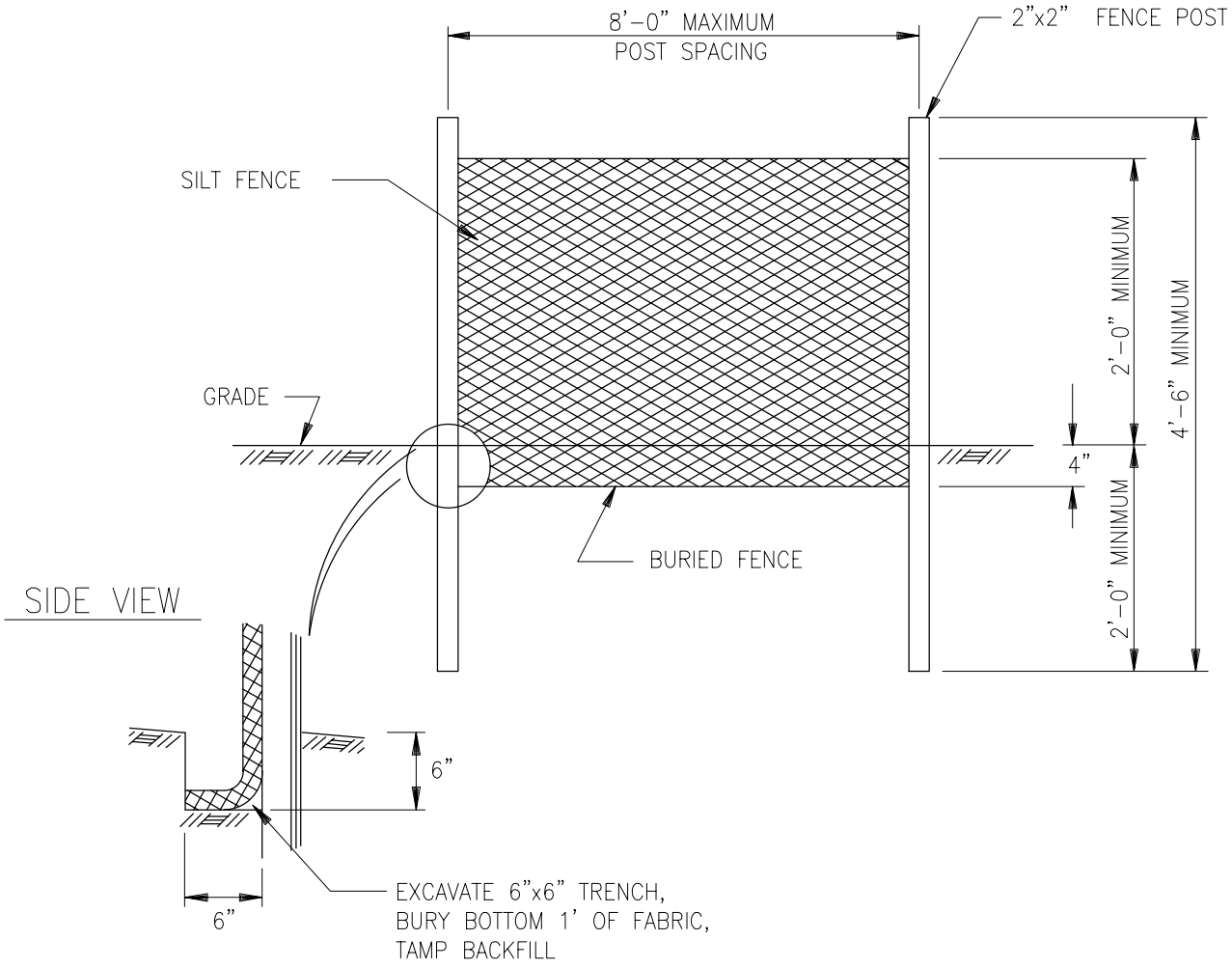
NO.	REVISION	DATE	APPR.

PIPELINE STANDARD
EROSION CONTROL
SILT FABRIC

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-041	1 OF 1



NOTES:

SILT FENCES ARE CONSTRUCTED FROM SYNTHETIC MESH MATERIAL DESIGNED TO RETAIN SILT WHILE ALLOWING WATER TO PASS THROUGH. (AMOCO CONSTRUCTION FABRIC 1380 SILT STOP OR APPROVED EQUAL).

SILT FENCES WILL BE CONSTRUCTED AT THE EDGE OF THE ROW:

- AT THE OUTFALL OF AN INTERCEPTOR DIKE IF NATURAL VEGETATION IS INSUFFICIENT TO FILTER THE SILT FROM THE RUN-OFF WATER.
- AT THE BASE OF SLOPES ADJACENT TO ROADWAYS AND STREAMS WHEN THE NATIVE VEGETATION COVER HAS BEEN DISTURBED.
- WHEN THE DISTANCE (IN AREAS OF GOOD VEGETATION COVER) OF THE ROW TO A BODY OF WATER IS EQUAL TO OR LESS THAN THE FOLLOWING SCHEDULE.

PERCENT SLOPE	DISTANCE
0 – 5%	25 FEET
5 – 15%	50 FEET
15 – 30%	75 FEET
OVER 30%	100 FEET

- WHEN THE DISTANCE (IN AREAS OF POOR VEGETATION COVER) OF THE ROW TO A BODY OF WATER IS WITHIN 150 FEET AND THE AREA SLOPES TOWARD THE WATER.

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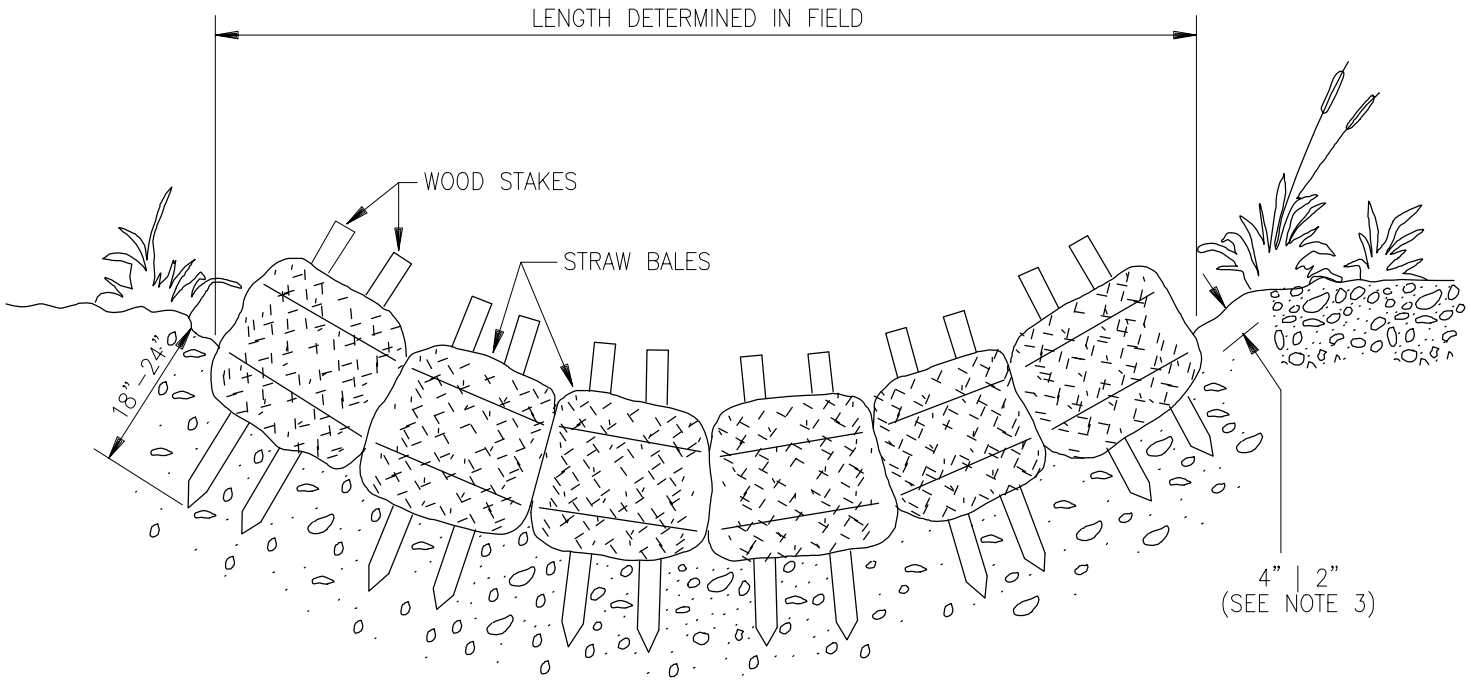
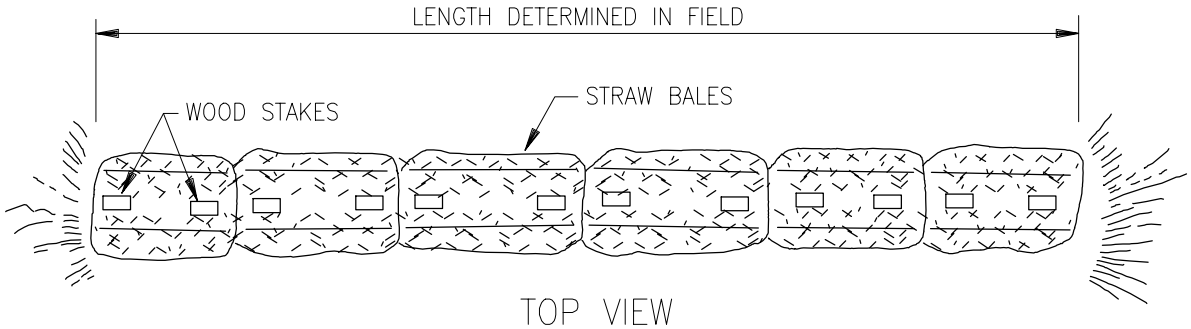
NO.	REVISION	DATE	APPR.

PIPELINE STANDARD EROSION CONTROL SILT FENCE

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-042	1 OF 1



FRONT VIEW



TOP VIEW

NOTES:

1. INSTALL PRIOR TO GRADING.
2. ANGLE FIRST STAKE TOWARD PREVIOUSLY LAID BALE.
3. IMBED BALES IN EARTH APPROXIMATELY 4".
4. WHEN REMOVING BALES, SCATTER SILT AND STRAW OVER RIGHT-OF-WAY.
5. ALL MATERIALS TO BE SUPPLIED BY CONTRACTOR.

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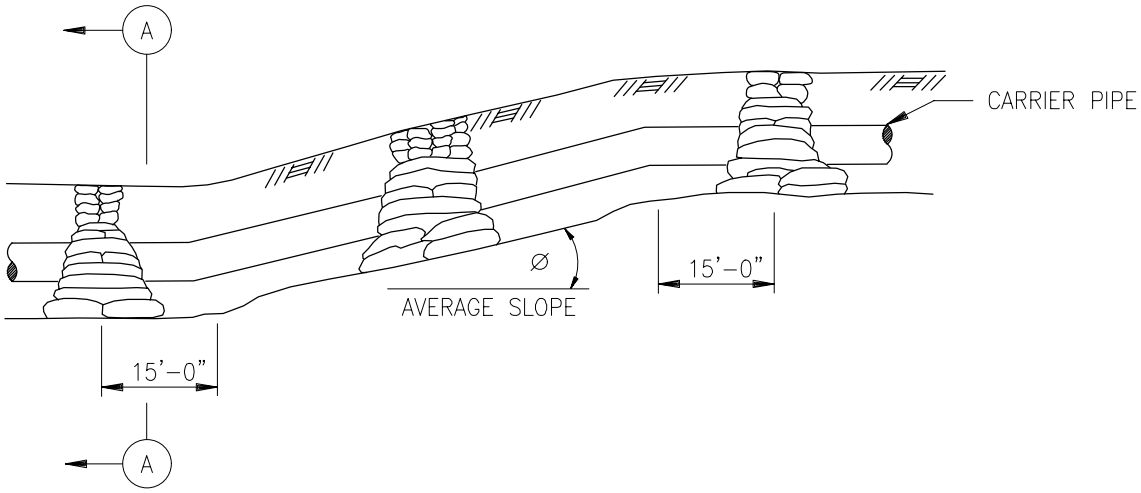
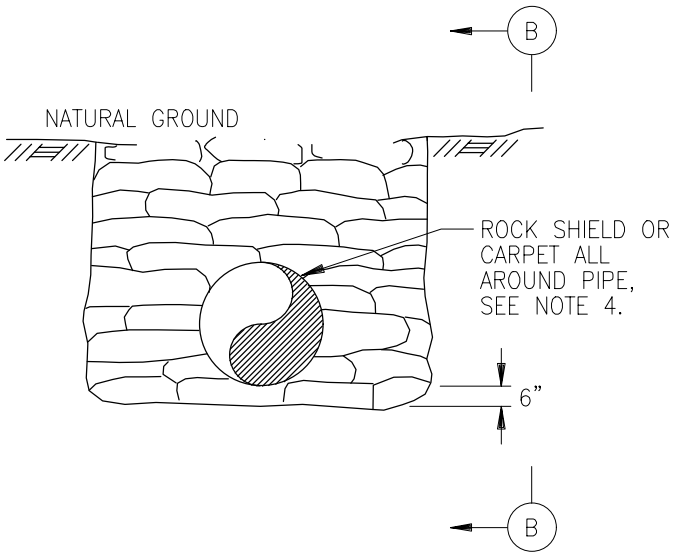
NO.	REVISION	DATE	APPR.

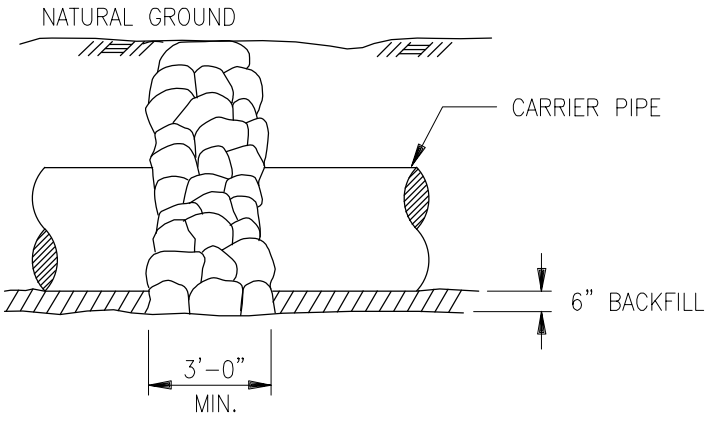
PIPELINE STANDARD EROSION CONTROL STAKED STRAW BALES

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-040	1 OF 1





SECTION "A–A"



SECTION "B–B"

NOTES:

1. BREAKERS SHALL BE INSTALLED ON ALL SLOPES GREATER THAN OR EQUAL TO 5% AT STREAM BANKS AND AT LOCATIONS DIRECTED BY COMPANY.

2. BREAKERS SHALL BE INSTALLED AT A SPACING SUCH THAT THE TOP OF THE LOWER BREAKER IS AT THE SAME ELEVATION AS THE BOTTOM OF THE NEXT HIGHER BREAKER.

3. DITCH PLUGS SHALL CONSIST OF EITHER SANDBAG BURLAP SACKS FILLED WITH A MINIMUM OF 0.6 FOOT OF EARTH OR SPRAYED–IN–PLACE POLYURETHANE FOAM, MINIMUM DENSITY OF 1.75 LB/CF AS DIRECTED BY COMPANY.

4. INSTALL ½" TERRA SHIELD PERFORATED ROCKSHIELD, FOR SACK BREAKERS, AND FIBER–BACKED (NOT FOAM–BACKED) CARPET FOR FOAM BREAKERS.

5. REFER TO "ENVIRONMENTAL AND RIGHT–OF–WAY STIPULATIONS" FOR INSTALLATION.

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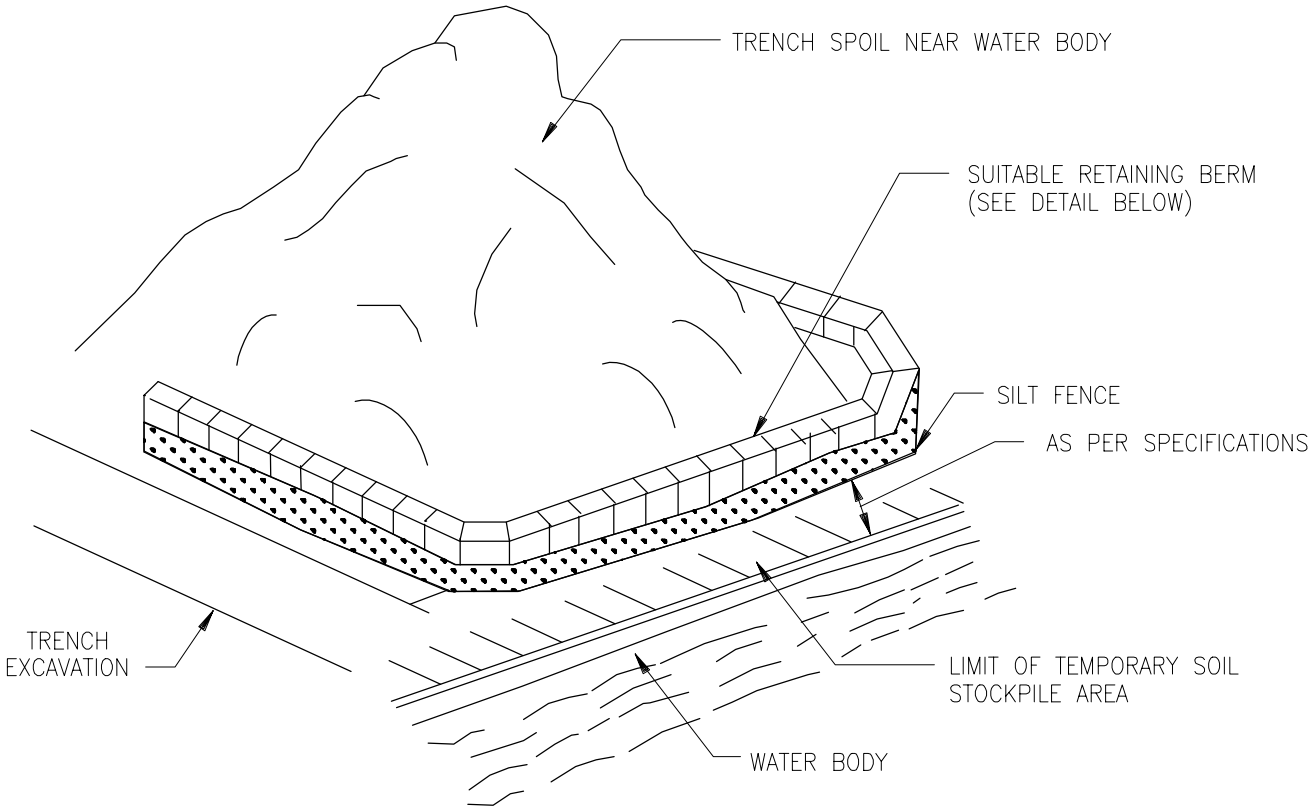
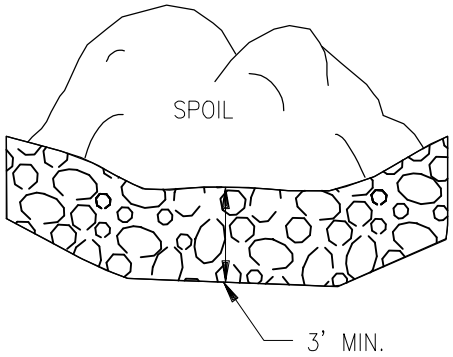
NO.	REVISION	DATE	APPR.

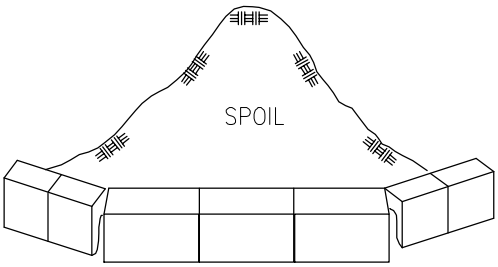
PIPELINE STANDARD
PIPELINE DITCH PLUG

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–039	1 OF 1

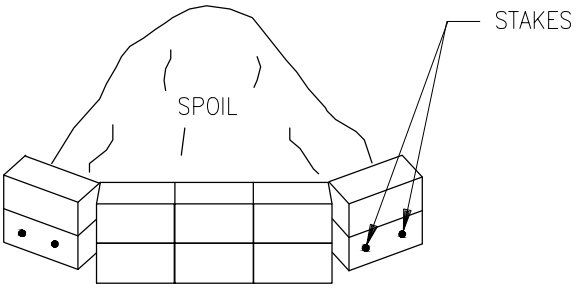




1. WINDROW BOULDERS/SHOT ROCK



2. SADDLE WEIGHTS



3. STRAW BALES (STAKED)

NOTES:

1. OTHER STRUCTURES MAY BE SUBSTITUTED IF APPROVED BY ENGINEER.

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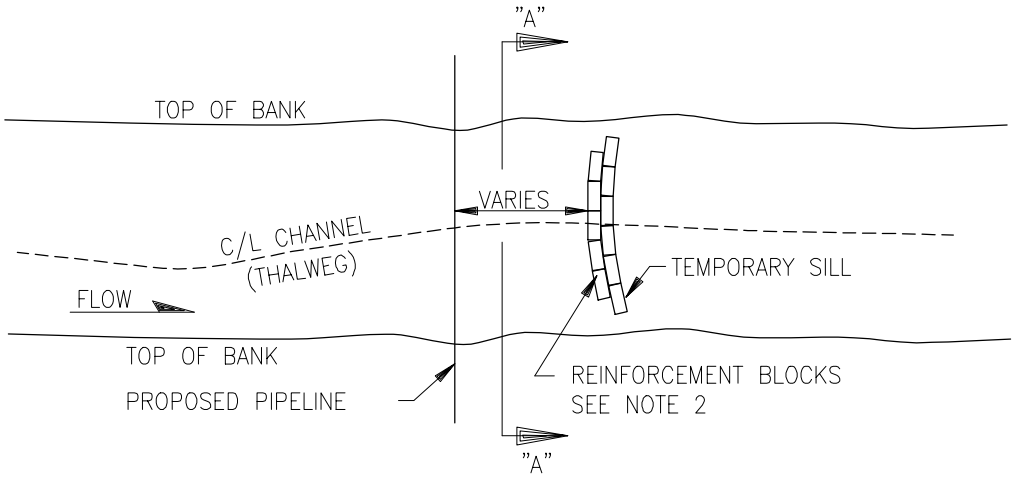
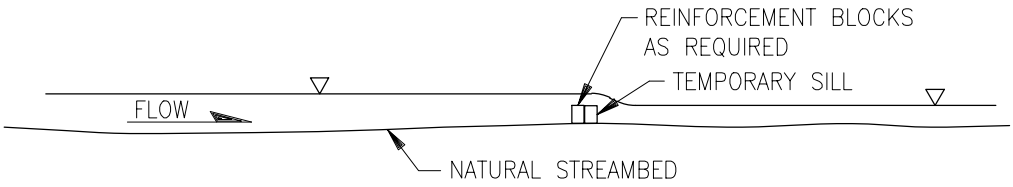
NO.	REVISION	DATE	APPR.

PIPELINE STANDARD SOIL RETAINING BERMS

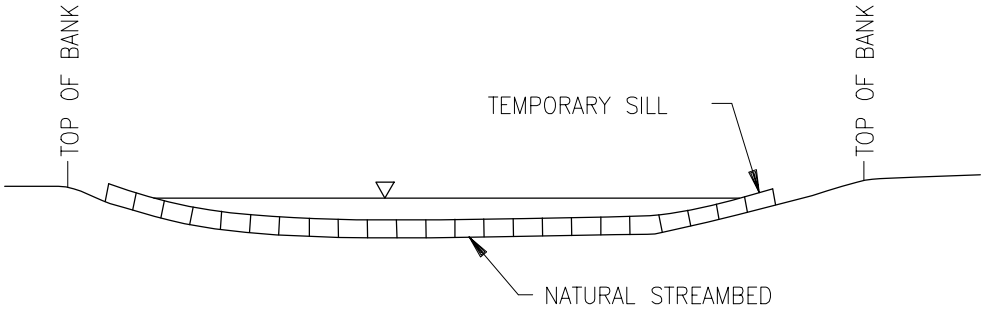
SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-200	1 OF 1



PLAN VIEW



PROFILE



SECTION "A"–"A"

NOTES:

1. TEMPORARY SILL SHALL BE INSTALLED AT STREAM CROSSING LOCATIONS AS SPECIFIED BY COMPANY PRIOR TO ANY EXCAVATION WITHIN STREAMBANKS.

2. SILL SHALL BE CONSTRUCTED OF CONCRETE ECOLOGY BLOCKS (4'Lx2'Wx2'H) OR APPROVED EQUAL. CONTRACTOR SHALL PROVIDE AND PLACE ADDITIONAL REINFORCEMENT BLOCKS AS REQUIRED TO STABILIZE TEMPORARY SILL AND TO MINIMIZE WATER FLOW BETWEEN SILL BLOCKS.

3. TEMPORARY SILL SHALL BE COMPLETELY REMOVED UPON COMPLETION OF TRENCH BACKFILL. REMOVAL SHALL BE SYSTEMATIC AND GRADUAL TO MINIMIZE REENTRAINMENT OF DISTURBED SEDIMENTS. CONTRACTOR SHALL RESTORE STREAM BED AND BANKS AS NEARLY AS PRACTICAL TO PRECONSTRUCTION CONTOURS.

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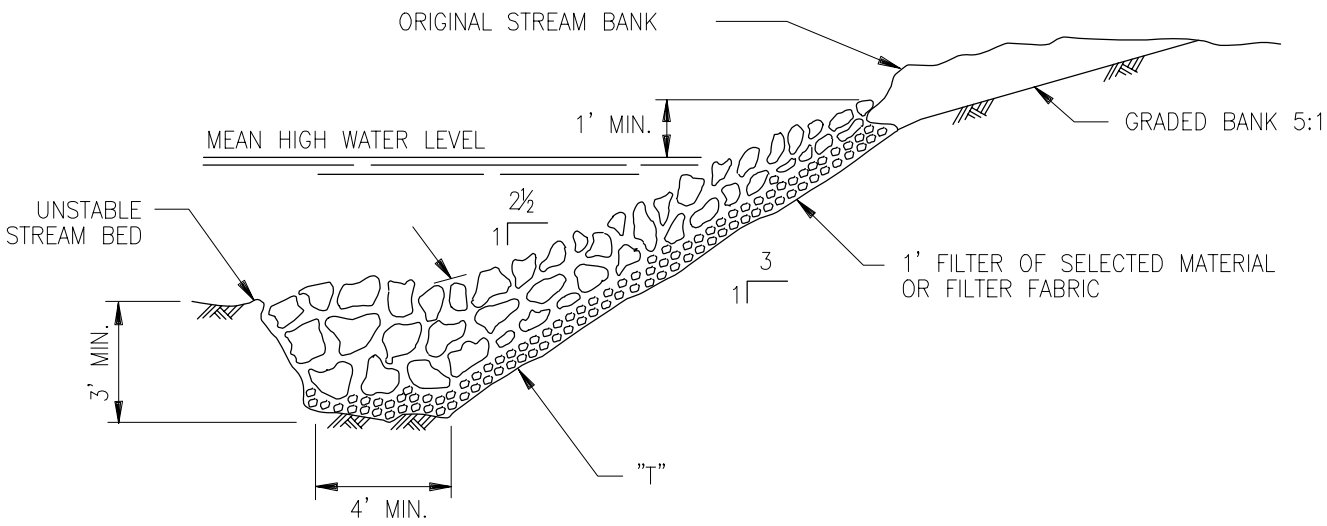
PH: (281) 616-0100
TRC PROJ. #53595, LIC. No. EF 4588

NO.	REVISION	DATE	APPR.

PIPELINE STANDARD
TEMPORARY SILL

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–043	1 OF 1



EXCAVATED TOE DETAIL

VELOCITY	RIP RAP			
FT./SEC.	MAX. SIZE (POUNDS)	AVG. SIZE (POUNDS)	20% SIZE* (POUNDS)	"T" DESIGN THICKNESS
12–15	250	50–80	20	15"–27"

* INDICATES THAT NOT MORE THAN 20% OF TOTAL ROCK QUANTITIES SHALL BE LESS THAN 20 LBS. EACH.

1. ALL AREAS TO BE REVETTED SHALL BE CLEARED OF ALL TREES, BRUSH, LOGS, STUMPS AND DEBRIS.
2. RIP RAP SHALL BE PLACED IN SUCH A MANNER AS TO PRODUCE A REASONABLY WELL GRADED MASS.
3. THE FINISHED RIP RAP SHALL BE FREE OF OBJECTIONABLE POCKETS OF SMALL STONES.
4. PLACING OF RIP RAP WHICH MAY CAUSE SEGREGATION OF VARIOUS SIZES, WILL NOT BE PERMITTED.
5. RIP RAP SHALL BE NATURAL OR BROKEN STONE OR OTHER MATERIAL ACCEPTABLE TO THE COMPANY AND GOVERNING AGENCY.
6. THE FINISHED RIP RAP TO BE ACCEPTED BY THE GOVERNING AGENCY PRIOR TO LEAVING THE AREA.

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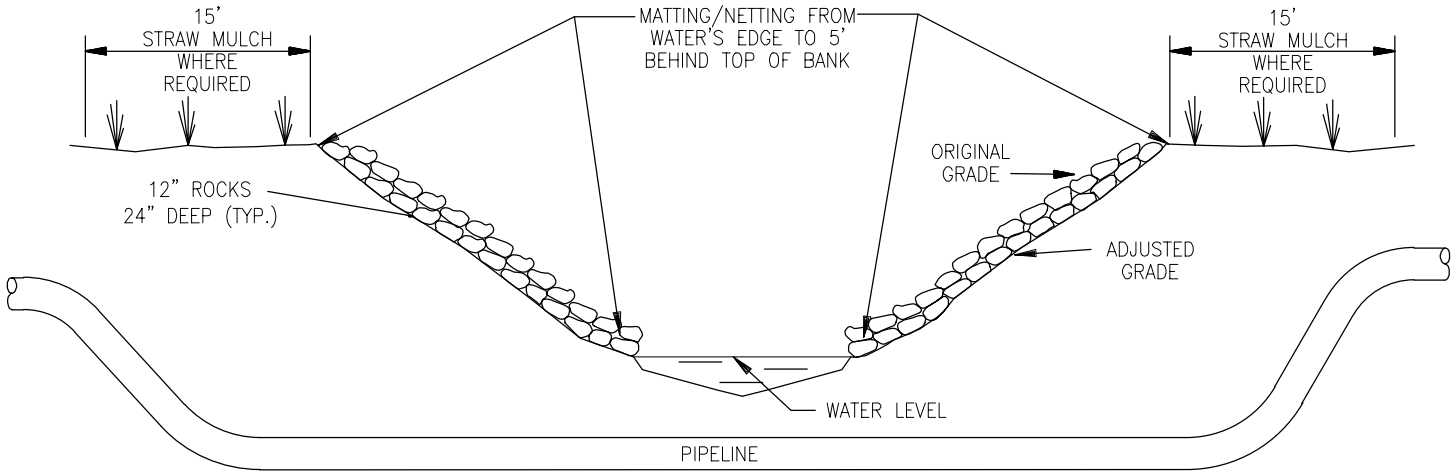
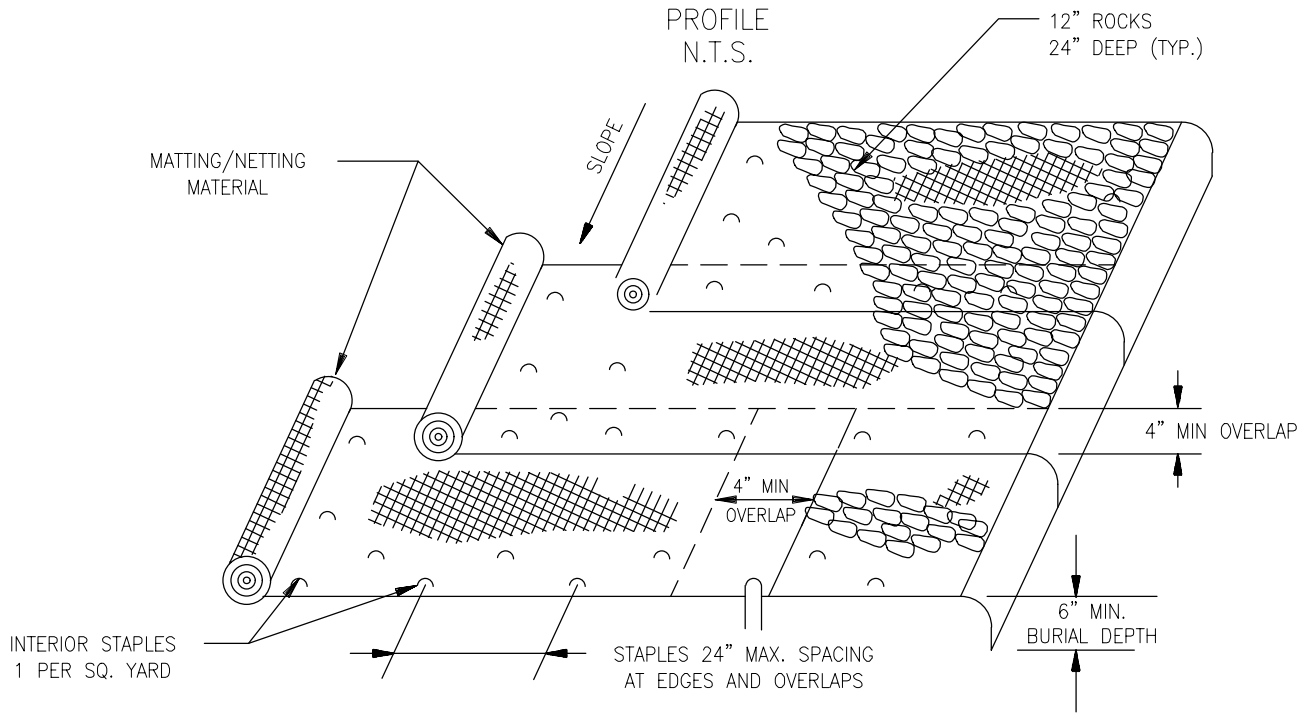
PIPELINE STANDARD DESIGN FOR ROCK RIP RAP INSTALLATION (EXCAVATED TOE)

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–044	1 OF 1





1. MATTING/NETTING SHALL BE RUN HORIZONTAL AND PARALLEL TO THE GROUND CONTOUR FOR THE FULL WIDTH OF THE PERMANENT ROW. RIPRAP MAY NOT BE PLACED HIGHER THAN TOP OF BANK VERTICALLY.
2. ONLY THE FOLLOWING MATERIALS MAY BE USED AS RIPRAP: CLEAN STONE, BROKEN CONCRETE, CONCRETE BLOCKS, FABRIC FORMED CONCRETE, ROCK & WIRE MATTRESSES, AND SAND/CEMENT FILLED BAGS OVER GEOTECH FABRIC MATERIALS.
3. IF BROKEN CONCRETE IS USED, PROTRUDING MATERIALS SUCH AS STEEL REBAR SHALL BE CUT FLUSH WITH THE SURFACE OF THE CONCRETE AND REMOVED FROM CONSTRUCTION AREA.
4. STAPLES SHALL BE 10" LONG, STANDARD MATTING/NETTING STAPLES.
5. THIS METHOD RECOMMENDED FOR SLOPES GREATER THAN 1.5 TO 1 OVER (34°)
6. DUMPED STONE MAY BE PLACED AT A SLOPE OF 2 TO 1 OR FLATTER. (27°)
7. HAND PLACED STONE SHOULD BE PLACED AT A SLOPE OF 1.5 TO 1 OR FLATTER. (34°)
8. RIPRAP CANNOT CHANGE THE CROSS SECTIONAL PROFILE OF THE STREAM AFTER CONSTRUCTION. THE BANK MAY BE GRADED TO ALLOW PLACEMENT OF RIPRAP TO BE EVEN WITH ADJACENT ELEVATIONS.
9. IN ILLINOIS THE INSTALLATION OF RIPRAP SHALL FOLLOW THE GUIDELINES AS LISTED IN THE STATE WIDE PERMIT No. 9 FOR MINOR STREAM BANK STABILIZATION.

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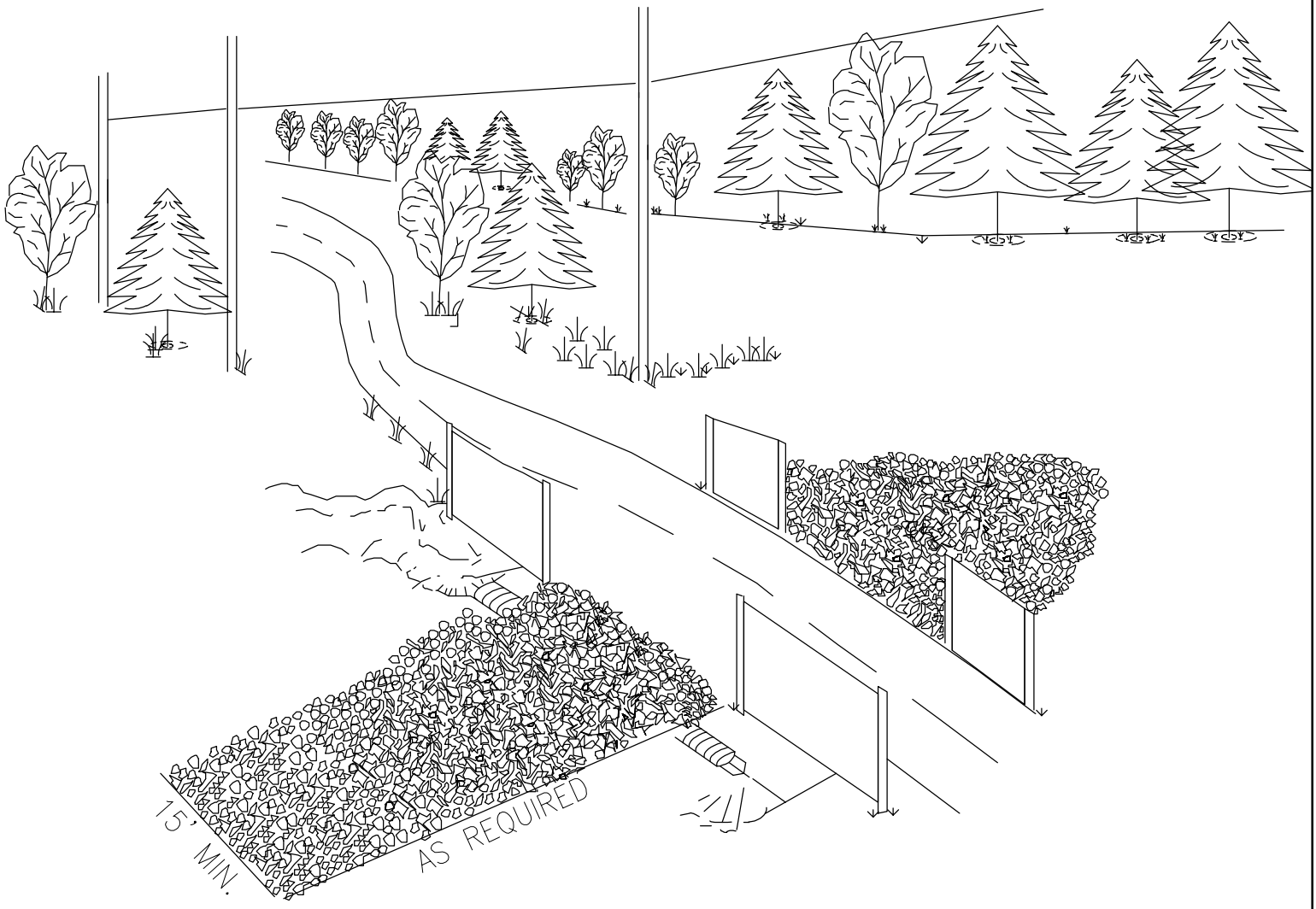
NO.	REVISION	DATE	APPR.

RIP RAP BANK STABILIZATION FOR HIGH FLOW VELOCITY CROSSINGS

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS	02-JAN-03					STD-A-118	1 OF 1



NOTES:

1. ROCK PADS WILL BE INSTALLED AT ROAD CROSSINGS WITH HIGH TRAFFIC VOLUME. TO MINIMIZE TRACKING MUD ONTO THE ROAD, CRUSHED STONE SHALL BE 6 INCHES.

2. MINIMUM ROCK PAD DIMENSIONS SHALL BE 20 FEET LONG AND 15 FEET WIDE. ADDITIONAL LENGTH WILL BE REQUIRED UNDER ADVERSE CONDITIONS.

3. HAY BALES MAY BE USED IN LIEU OF SILT FENCES.

4. IN AGRICULTURAL LAND, A 4 TO 6 INCH LAYER OF SAND OR A SYNTHETIC FIBER MAT WILL BE PLACED BENEATH THE ROCK PAD TO FACILITATE ROCK REMOVAL UPON COMPLETION.

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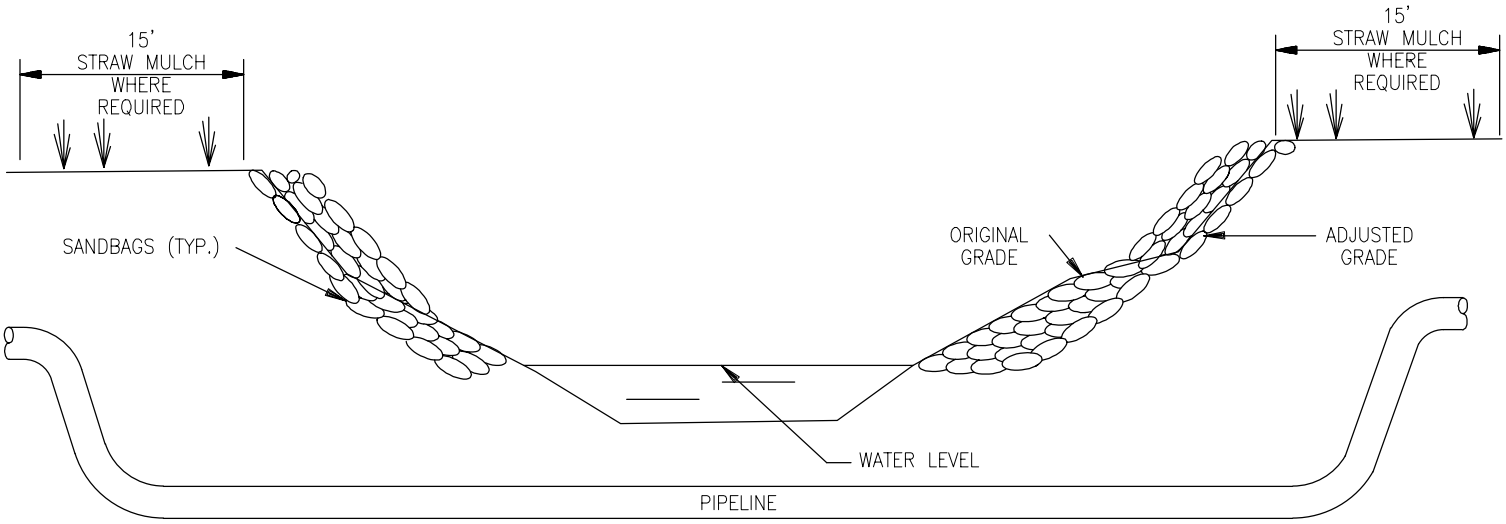
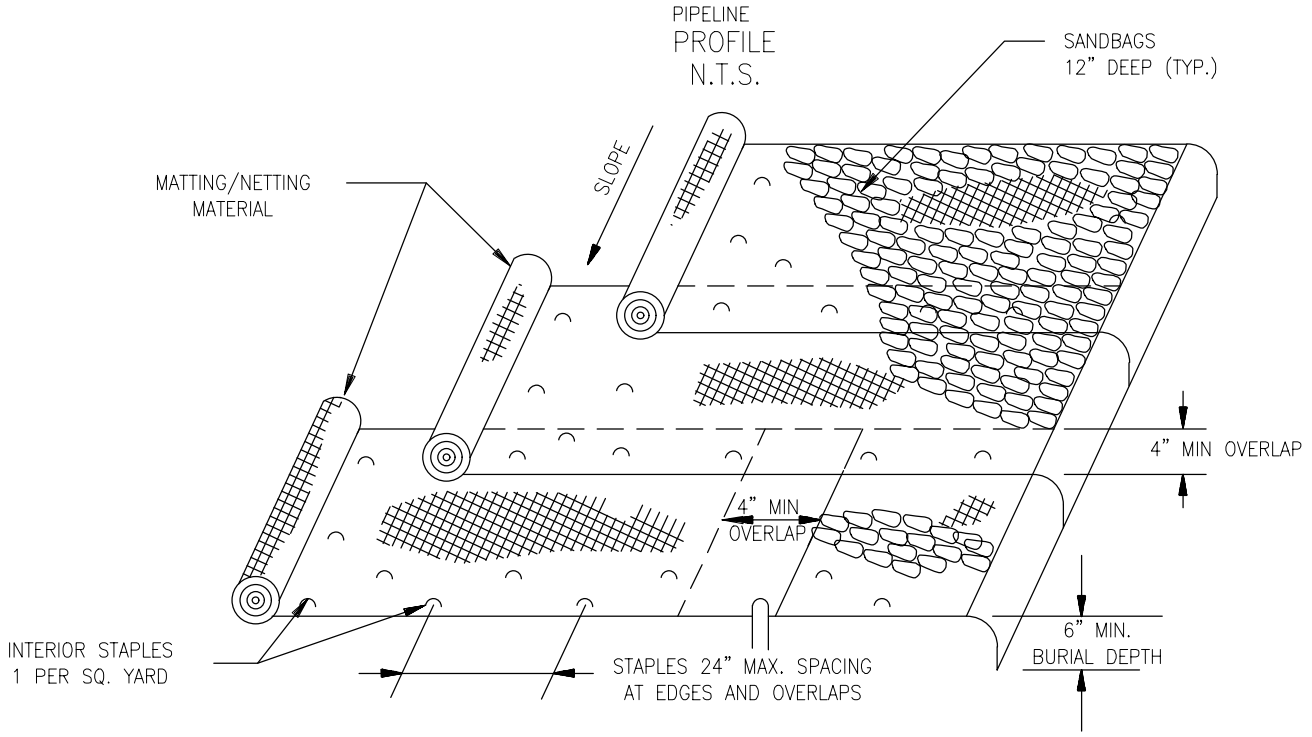
NO.	REVISION	DATE	APPR.

ROCK PADS WITH SILT FENCES AT PAVED ROAD CROSSING

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-199	1 OF 1





NOTES:

1. MATTING/NETTING SHALL BE RUN HORIZONTAL AND PARALLEL TO THE GROUND CONTOUR FOR THE FULL WIDTH OF THE PERMANENT ROW.
2. SANDBAGS MAY NOT BE PLACED HIGHER THAN TOP OF BANK VERTICALLY.
3. STAPLES SHALL BE 10" LONG, STANDARD MATTING/NETTING STAPLES.
4. ROLL ANY EXCESS BAG UNDER SANDBAG.
5. SANDBAGS CANNOT CHANGE THE CROSS SECTIONAL PROFILE OF THE STREAM AFTER CONSTRUCTION. THE BANK MAY BE GRADED TO ALLOW PLACEMENT OF SANDBAGS TO BE EVEN WITH ADJACENT ELEVATIONS.
6. IN ILLINOIS THE INSTALLATION OF SANDBAGS SHALL FOLLOW THE GUIDELINES AS LISTED IN THE STATE WIDE PERMIT No. 9 FOR MINOR STREAM BANK STABILIZATION.

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NO.	REVISION	DATE	APPR.

SANDBAG BANK STABILIZATION FOR LOW FLOW VELOCITY CROSSINGS

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS	02-JAN-03					STD-A-119	1 OF 1

TYPICAL DRAWING:

NONE

NOTES:

THE ENTIRE RIGHT-OF-WAY SHALL BE SEEDED. SEEDING METHOD, MIX AND APPLICATION RATE SHALL BE AS SPECIFIED IN THE CONSTRUCTION DRAWINGS, OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR. SEED SHALL BE EVENLY DISTRIBUTED.

A. BROADCAST

1. HAND OR MECHANICAL BROADCAST SEEDING SHALL BE USED AS SPECIFIED IN THE CONSTRUCTION AND ENVIRONMENTAL SPECIFICATIONS, UNLESS OTHERWISE DETERMINED BY THE ENVIRONMENTAL INSPECTOR.

2. BROADCAST SEEDING BY HAND SHALL BE WITH A CYCLONE SHOULDER STRAP BROADCAST SPREADER OR AN APPROVED EQUIVALENT. DISTRIBUTING SEED BY HAND WITHOUT A MECHANICAL BROADCASTER WILL NOT BE ALLOWED.

B. HYDROSEEDING

1. HYDRAULIC SEEDING EQUIPMENT (HYDRO-SEEDER) MAY BE USED, PROVIDING 1 POUND OF WOOD FIBER PER THREE (3) GALLONS OF WATER IS ADDED IN THE HYDRAULIC SEEDER TO CUSHION SEED DURING APPLICATION.

2. AFTER BLENDING SEED AND MULCH, THE SLURRY SHALL BE APPLIED TO THE SEEDBED WITHIN ONE HOUR AFTER THE SEED HAS BEEN ADDED TO THE MIXTURE. IF SLURRY CAN NOT BE APPLIED WITHIN THE SPECIFIED ONE HOUR, IT SHALL BE RECHARGED AT NO COST TO THE COMPANY, WITH THE CORRECT RATIO OF SEED TO THE REMAINING SLURRY AND A NEW ONE HOUR TIME FRAME ESTABLISHED FOR APPLYING THE FORTIFIED MIXTURE.

3. HYDROSEEDING SHALL BE CONDUCTED TO ENSURE SEED/SOIL CONTACT BY DIRECTING THE SPRAY AT THE GROUND AND AS MUCH AS POSSIBLE, MIXING SOIL, SEED AND MULCH TOGETHER.

4. THE CONTRACTOR SHALL BE REQUIRED TO USE EXTENSION HOSES TO REACH INACCESSIBLE AREAS.

5. THE MULCH USED AS A CUSHION MAY BE PART OF TOTAL REQUIRED MULCH, WITH THE REMAINDER APPLIED IN A SEPARATE APPLICATION AFTER SEED IS IN PLACE.

C. DRILL

1. DRILL SEEDING EQUIPMENT MUST BE OF RANGE OR RECLAMATION TYPE FOR APPLYING GRASS AND/OR FLUFFY SEED. THE DRILL SEEDER MUST REGULATE THE SEED APPLICATION RATE AND PLANTING DEPTH AND SHALL BE EQUIPPED WITH PRESS WHEELS. PLANTING DEPTH SHALL BE REGULATED BY DEPTH BANDS OR COULTERS. THE ROWS OF PLANTING SEED SHALL BE A MAXIMUM OF ELEVEN (11) INCHES APART. A DRILL SHALL BE NO WIDER THAN THE WIDTH OF THE AREA OVER WHICH IT IS TO OPERATE. THE DRILL BOX SHALL BE PARTITIONED BY DIVIDERS NO MORE THAN 24 INCHES APART, IN ORDER TO PROVIDE FOR MORE EVEN DISTRIBUTION ON SLOPING AREAS.

2. SEED MUST BE UNIFORMLY DISTRIBUTED IN THE DRILL HOPPER DURING OPERATION.

3. SEEDING DEPTH SHALL BE AT LEAST ¼ INCH AND A MAXIMUM OF ½ INCH OR AS SPECIFIED BY THE ENVIRONMENTAL INSPECTOR.

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NO.	REVISION	DATE	APPR.

SEEDING

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-126	1 OF 1

TYPICAL DRAWING:

NONE

NOTES:

1. STRAW MULCH SHALL BE USED AT LOCATIONS IDENTIFIED ON THE CONSTRUCTION DRAWINGS AND/OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR TO PROTECT SOIL FROM EROSION. AREAS TARGETED FOR STRAW MULCH INCLUDE SLOPES BETWEEN 8% AND 40%.

2. STRAW MULCH SHALL BE APPLIED AT A RATE OF 2 TONS/ACRE. IN AREAS WHERE RESPREAD TOPSOIL EXHIBITS AN ADEQUATE COVER FROM RESPREAD PLANT DEBRIS AND COARSE FRAGMENTS, MULCH RATES MAY BE REDUCED OR ELIMINATED BY THE ENVIRONMENTAL INSPECTOR.

3. ONLY CERTIFIED NOXIOUS WEED-FREE STRAW SHALL BE USED. WRITTEN CONFIRMATION FROM A CERTIFIED SUPPLIER SHALL BE REQUIRED.

4. STRAW FIBER LENGTH SHALL BE AT LEAST EIGHT (8) INCHES LONG AND CRIMPED IN PLACE AFTER APPLICATION.

5. EQUIPMENT SPECIFICALLY DESIGNED TO CRIMP STRAW (SUCH AS STRAW MULCH CRIMPER MANUFACTURED BY FINN CORPORATION OR AN APPROVED EQUIVALENT) SHALL BE USED TO CRIMP STRAW FIBERS TO A DEPTH OF TWO (2) TO THREE (3) INCHES. STEEP SLOPES INACCESSIBLE WITH A CRIMPER SHALL BE CRIMPED BY TRACKING WITH A CRAWLER RUNNING PERPENDICULAR TO THE SLOPE. DISCS SHALL NOT BE ALLOWED FOR CRIMPING.

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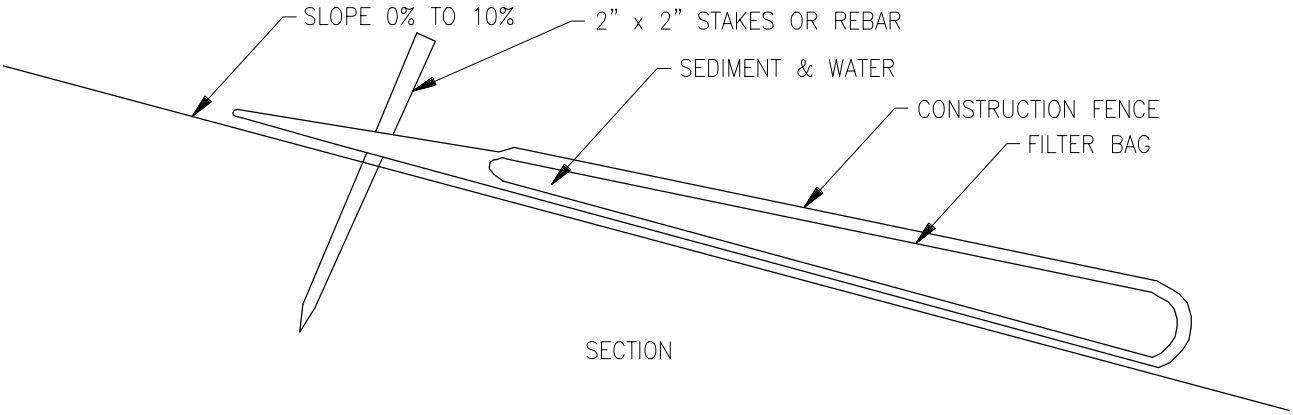
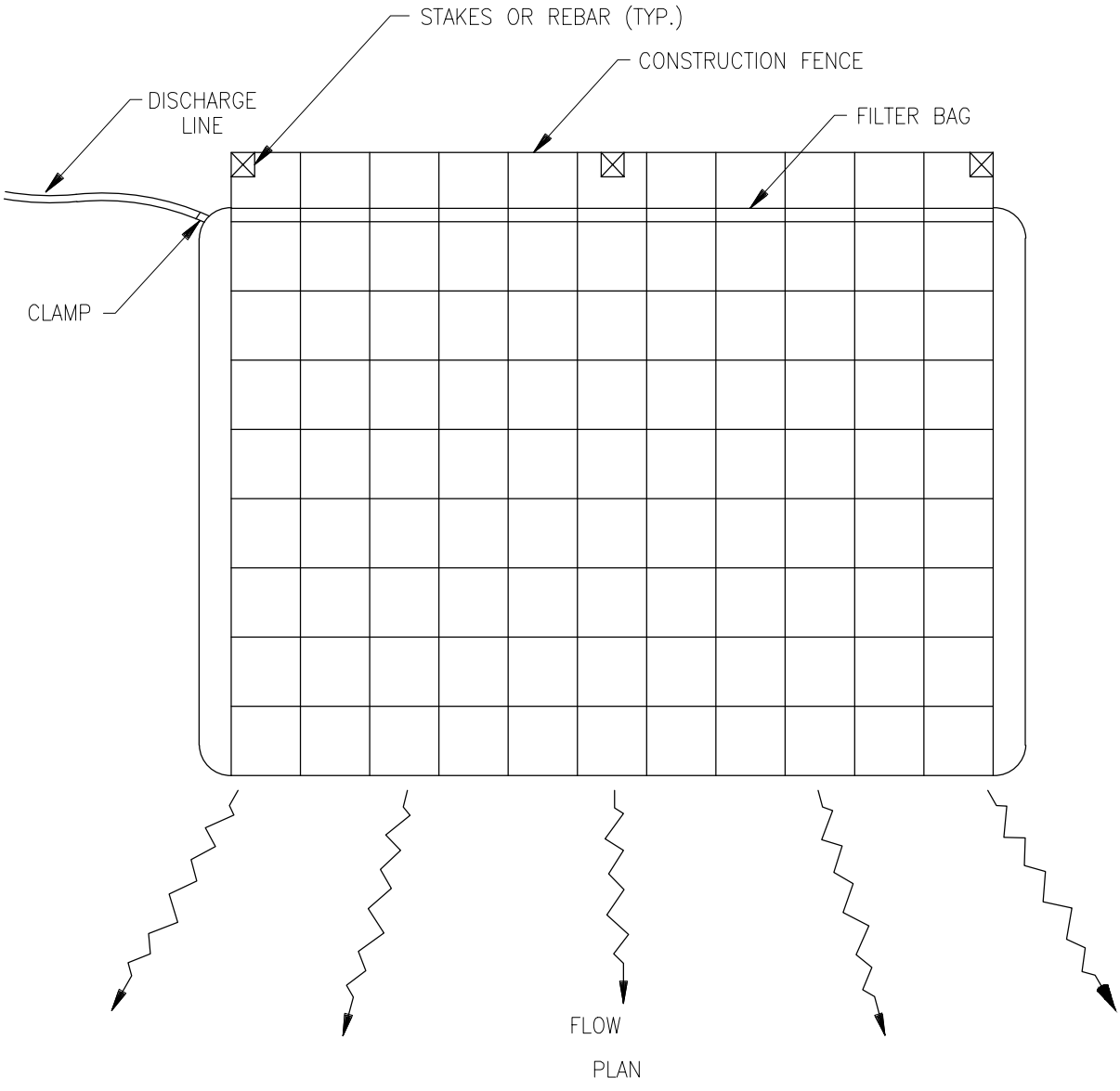
NO.	REVISION	DATE	APPR.

STRAW MULCH

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-127	1 OF 1



SECTION



PLAN

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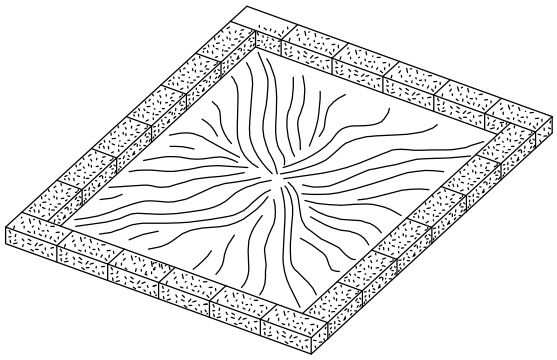
NO.	REVISION	DATE	APPR.

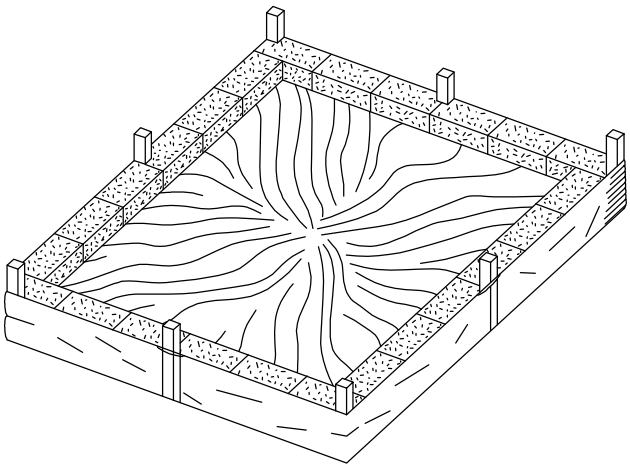
TRENCH DEWATERING MEASURE 1

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-114	1 OF 1



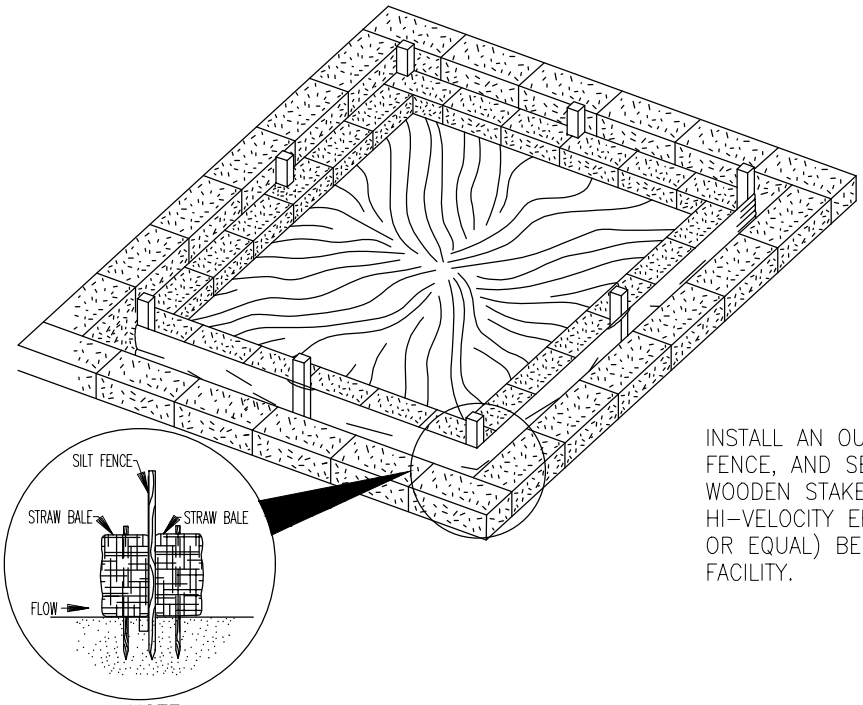
STEP 1

ON LEVEL LAND, DIG A SUMP DEPENDING ON ACTUAL FLOW RATES APPROXIMATELY 200 SQ. FT., WHICH IS 2'' DEEP AT THE CENTER. PLACE A LAYER OF STRAW BALES AS SHOWN, TO COMPLETELY SURROUND THE SUMP.



STEP 2

INSTALL SILT FENCE ALL AROUND THE STRAW BALES, (IF LAND IS LEVEL) DIG IN SILT FENCE 6".



STEP 3

INSTALL AN OUTER LAYER OF BALES AROUND THE SILT FENCE, AND SECURE EACH BALE USING WOODEN STAKE. COVER THE ENTIRE SUMP WITH HI-VELOCITY EROSION CONTROL FABRIC (CURLEX OR EQUAL) BEFORE PUMPING THE WATER INTO THE FACILITY.

NOTE: PUMP INTAKE HOSE MUST NOT BE ALLOWED TO REST ON THE TRENCH BOTTOM THROUGHOUT DEWATERING. PROVISIONS MUST BE MADE TO ELEVATE THE INLET HOSE TO AT LEAST ONE FOOT ABOVE THE TRENCH BOTTOM UNTIL BOTTOM DEWATERING IS NECESSARY.

EROSION CONTROL DURING PIPELINE DITCH,
AND HYDROSTATIC TEST DEWATERING
FOR LEVEL AREAS WITH SPARSE VEGETATION

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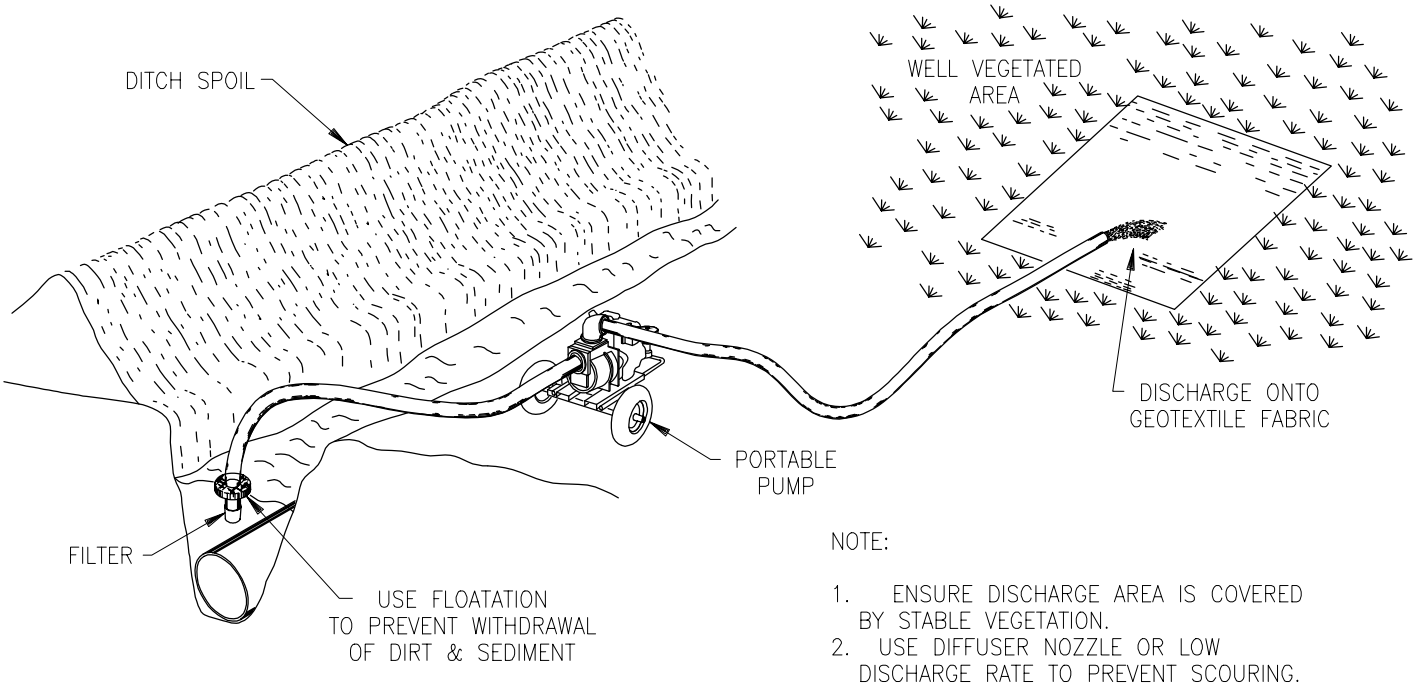
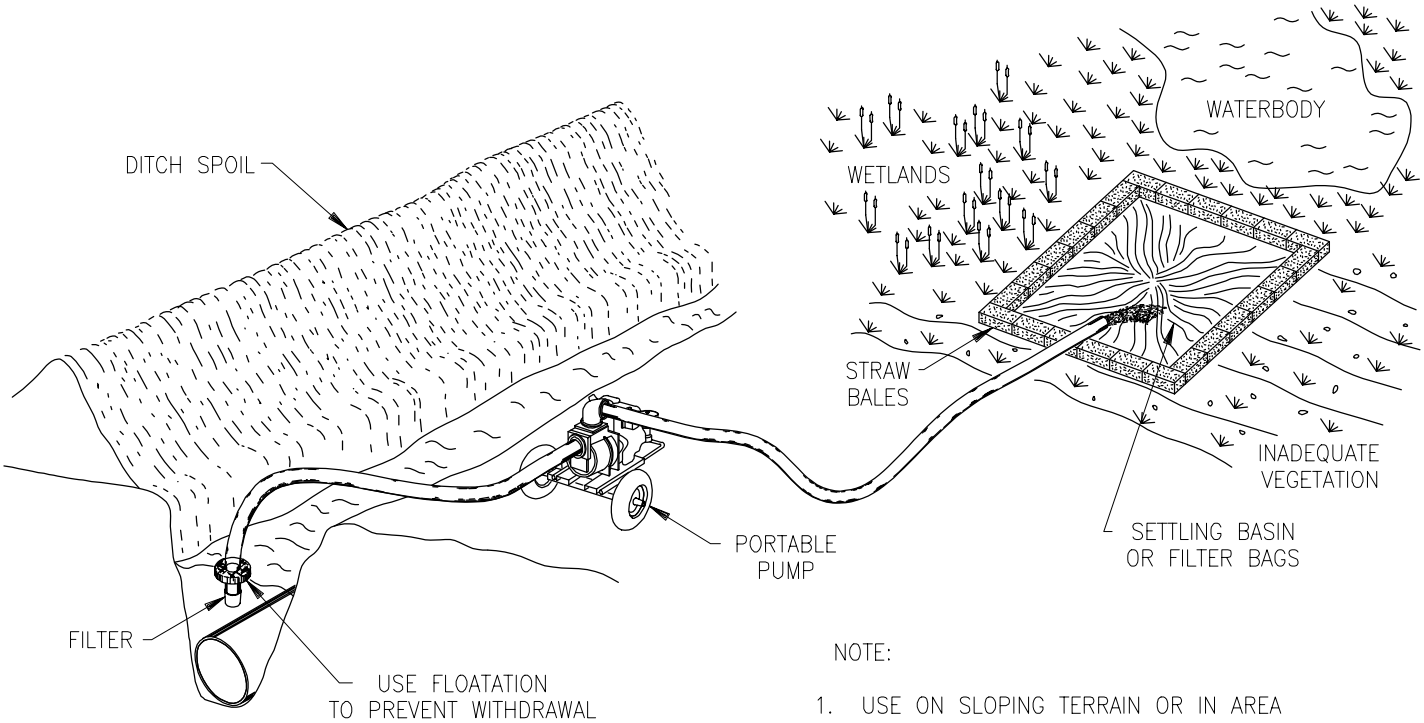
TRENCH DEWATERING
MEASURE 2

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-115	1 OF 1



NOTE:

1. ENSURE DISCHARGE AREA IS COVERED BY STABLE VEGETATION.
2. USE DIFFUSER NOZZLE OR LOW DISCHARGE RATE TO PREVENT SCOURING.
3. USE A FLOATATION DEVICE ON INTAKE; & MAINTAIN DISTANCE FROM SIDES & BOTTOM OF DITCH.



NOTE:

1. USE ON SLOPING TERRAIN OR IN AREA WITH EROSION PRONE SOILS.
2. USE DIFFUSER NOZZLE OR LOW DISCHARGE RATE TO PREVENT SCOURING.
3. ADDITIONAL STRAW BALES MAY BE USED TO INCREASE RETENTION & FILTERING.
4. USE A FLOATATION DEVICE ON INTAKE; & MAINTAIN DISTANCE FROM SIDES & BOTTOM OF DITCH.

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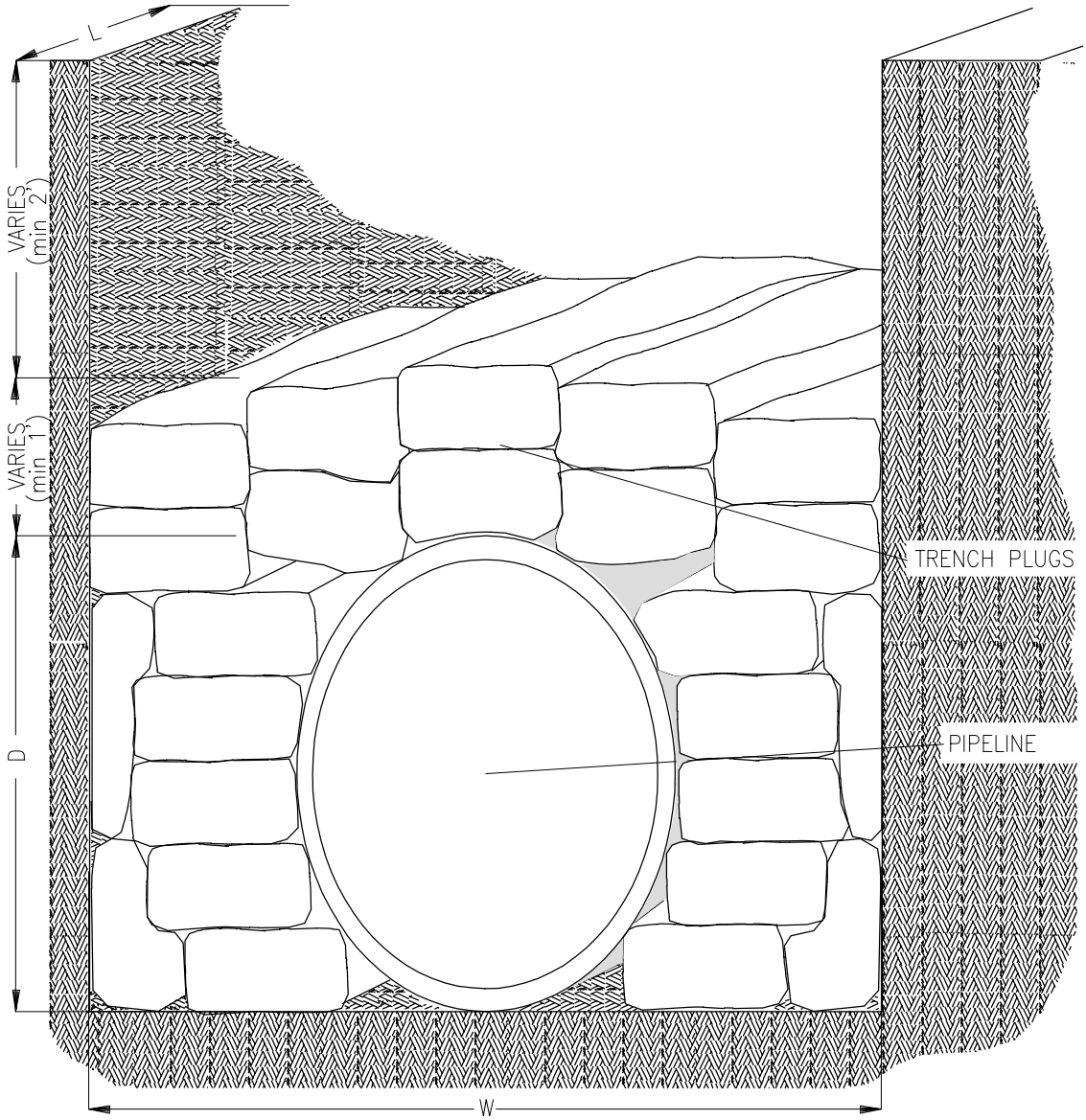
NO.	REVISION	DATE	APPR.

TRENCH DEWATERING MEASURE 3

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-116	1 OF 1



D = 3 FEET

W = 5 TO 9 FEET

L = APPROXIMATELY 18 – 24 INCHES

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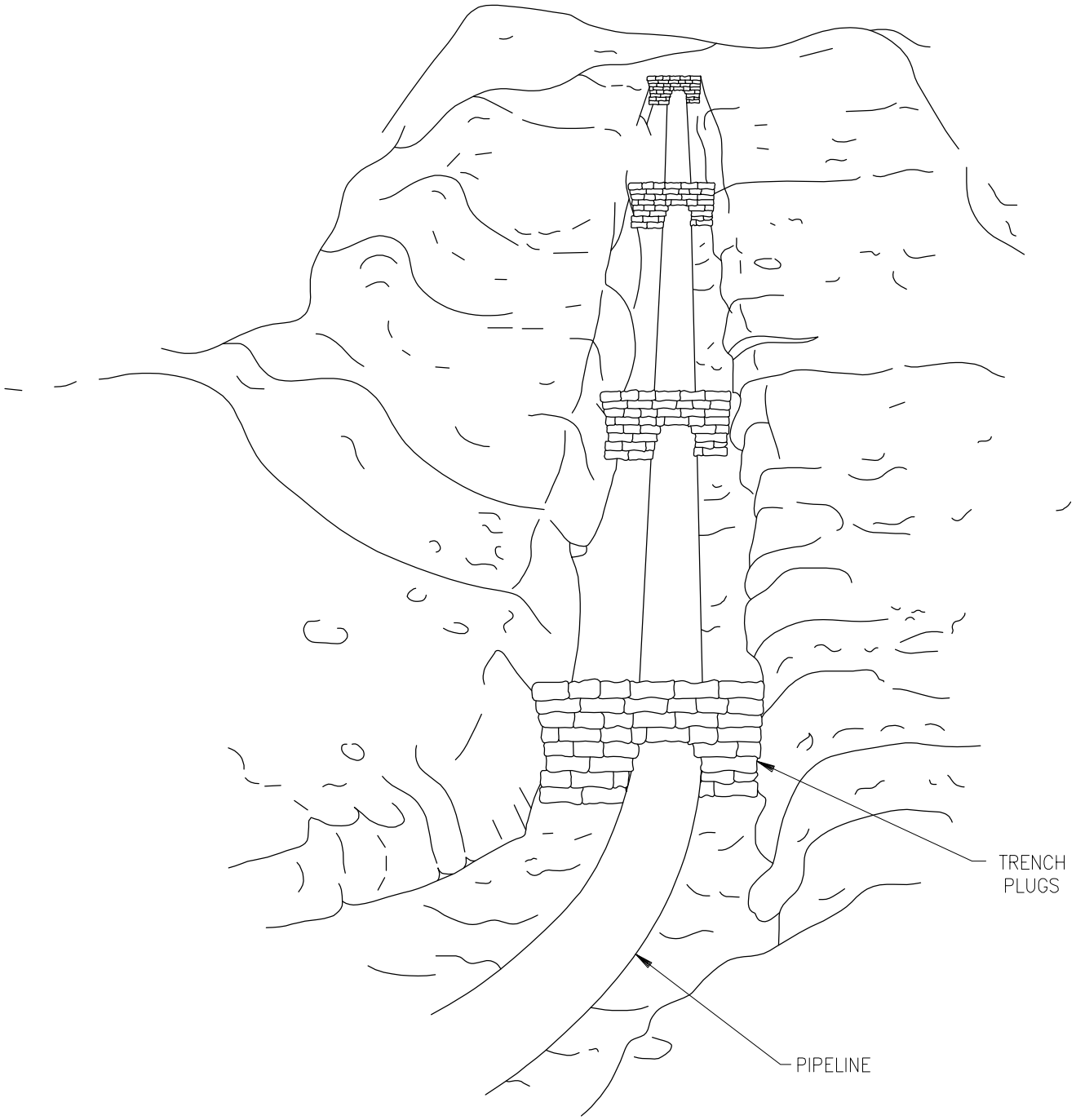
TRENCH PLUGS MEASURE 1

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–121	1 OF 1



NOTE: TRENCH PLUGS MAY NOT BE CONSTRUCTED USING TOPSOIL.

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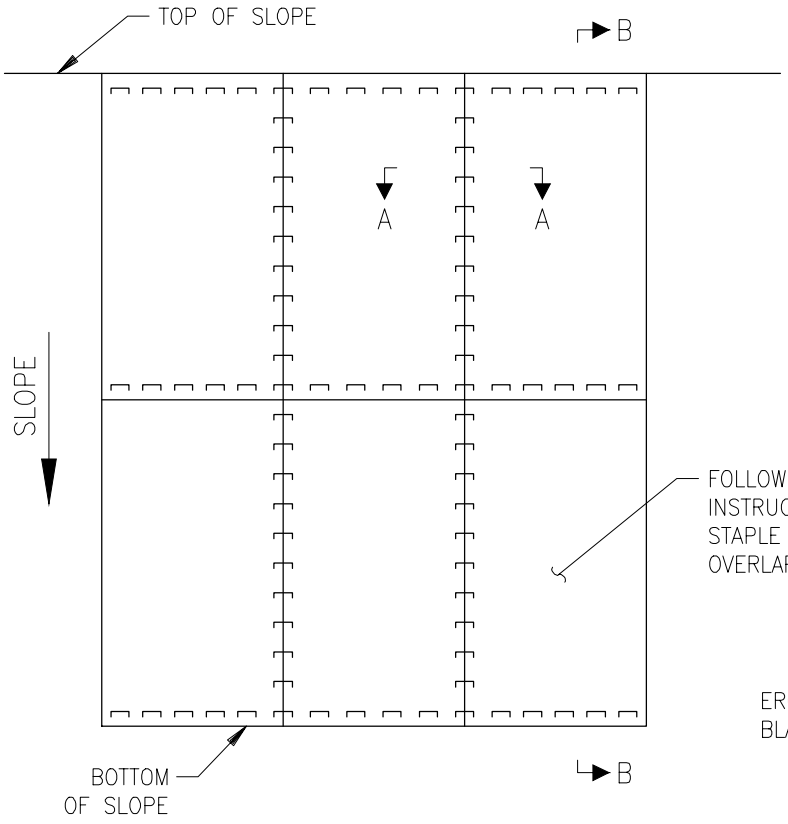
NO.	REVISION	DATE	APPR.

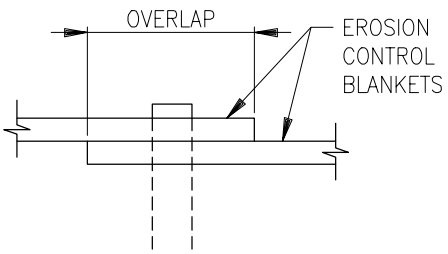
TRENCH PLUGS
MEASURE 2

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD-A-122	1 OF 1



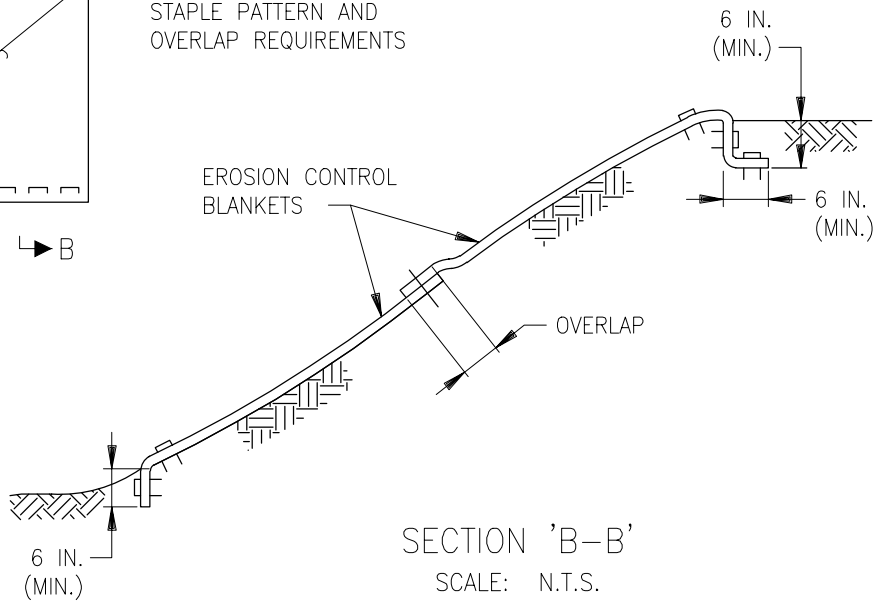
PLAN

SCALE: N.T.S.



SECTION 'A–A'

SCALE: N.T.S.



SECTION 'B–B'

SCALE: N.T.S.

NOTES:

1. EROSION CONTROL BLANKETS SHALL BE NORTH AMERICAN GREEN S 150 FOR SLOPES 3 TO 1 AND SC 150 FOR SLOPES 2 TO 1 OR APPROVED EQUALS.
2. INSTALL BLANKETS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING GRADING, REMOVAL OF LARGE ROCKS AND DEBRIS, AND THE APPLICATION OF SEED AND FERTILIZER.
4. EROSION CONTROL BLANKETS SHALL EXTEND COMPLETELY ACROSS DISTURBED AREAS TO PROTECT ERODIBLE SURFACES.
5. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A MINIMUM SIX (6) INCHES WIDE AND SIX (6) INCHES DEEP TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ROLL THE BLANKETS DOWN THE SLOPE IN THE DIRECTION OF THE WATER FLOW.
7. AS AN ALTERNATIVE TO STAPLES, WOODEN STAKES CAN BE USED.
8. ENSURE COMPLETE CONTACT BETWEEN THE BLANKETS AND THE SLOPE FACE. ADDITIONAL STAPLES CAN BE USE TO ELIMINATE GAPS.

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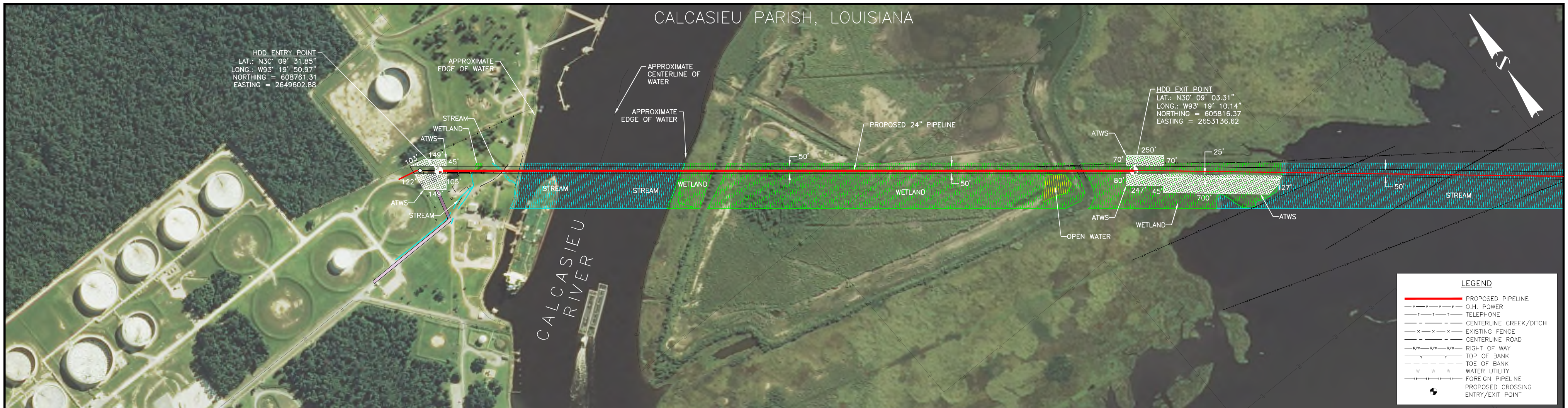
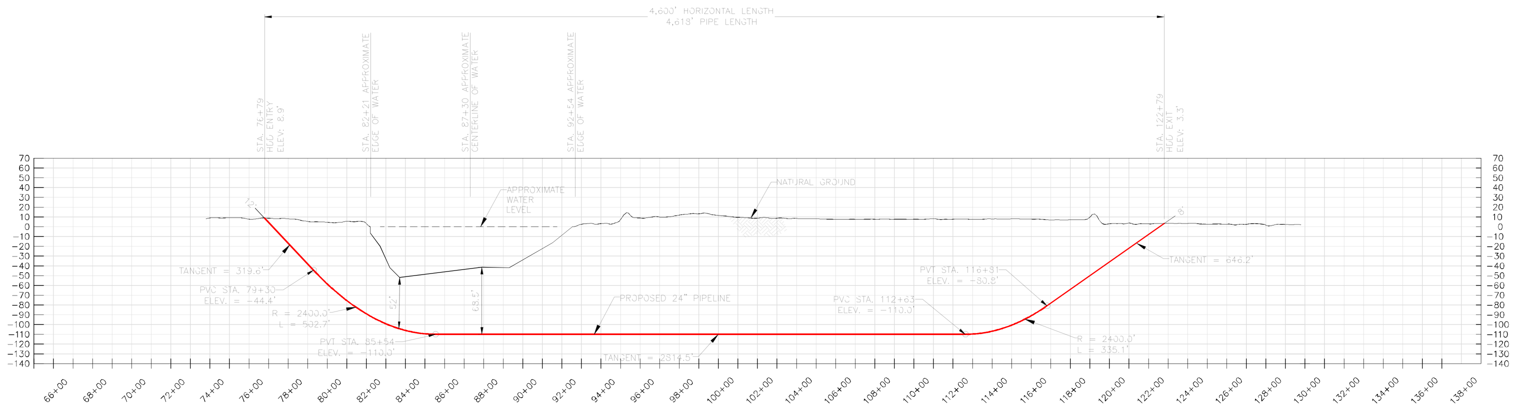
NO.	REVISION	DATE	APPR.

TYPICAL EROSION CONTROL BLANKET INSTALLATION

SCALE	DATE	DRAWN	CHECKED	APPROVED	WEI PROJ. NO.	DRAWING NUMBER	SHEET
NTS						STD–A–195	1 OF 1



PLAN
SCALE 1"=300'



PROFILE
1" = 300' H
1" = 60' V

NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC. PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN. AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,800 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C.
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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1	REISSUED FOR FILING	MEH	01/12/17	AL	BAM

DWG. NO. | REFERENCE DRAWING TITLE

DWG. STATUS	CHECKED BY	DATE	APPROVED BY	DATE	BY	DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE					
	FILE NAME					

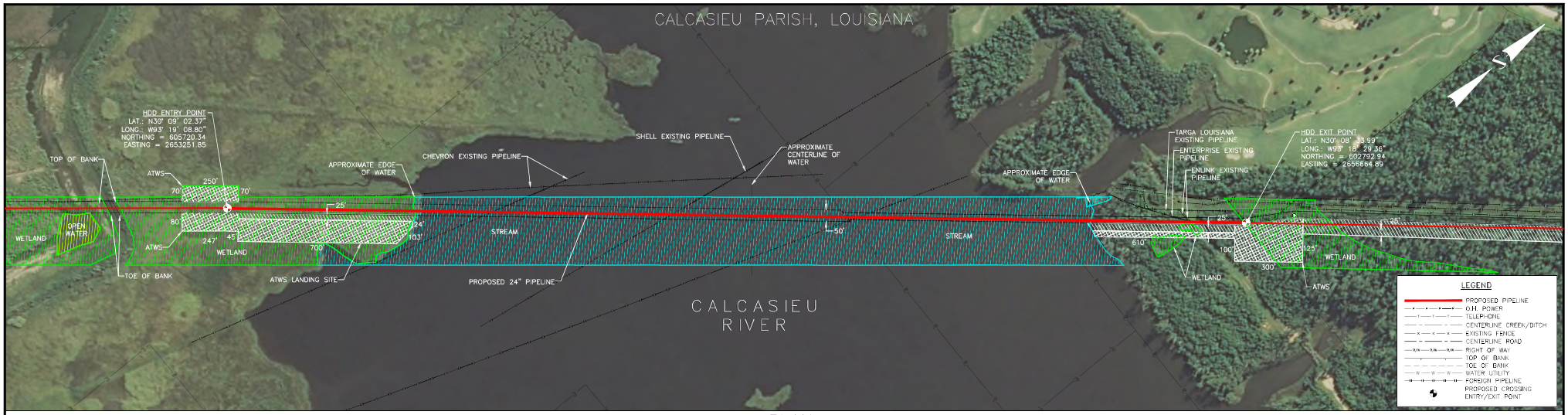
P.L./STA. NO. ACCOUNT NO.
CONSTRUCTION YEAR
DESIGN
DRAWN
ASBUILT
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
CALCASIEU RIVER CROSSING

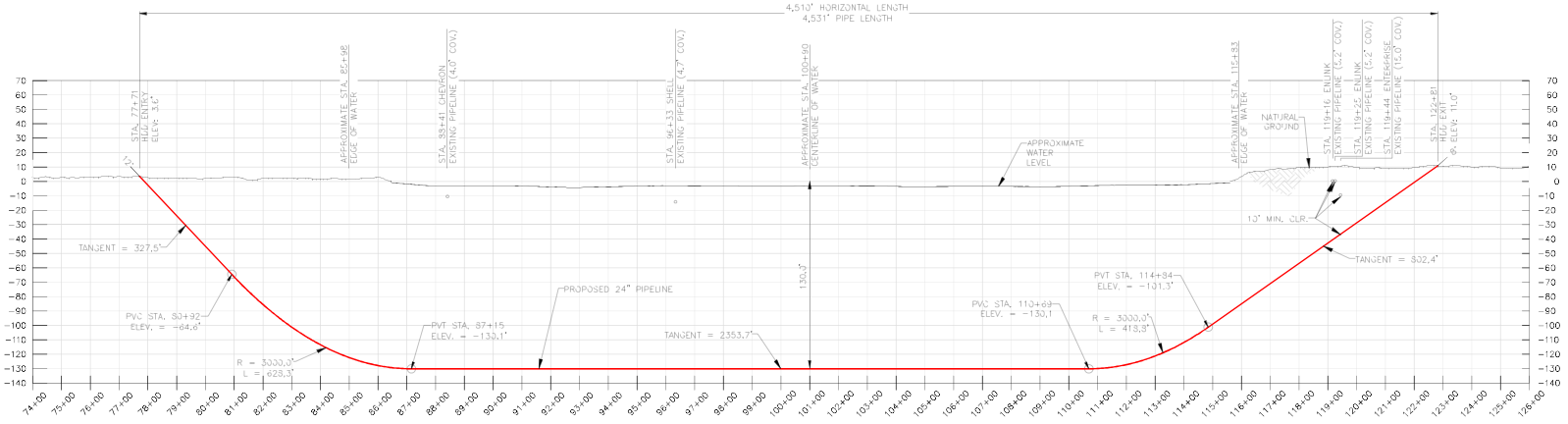
CALCASIEU PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-1A
SHEET 1 OF 1



PLAN

SCALE 1"=200'



PROFILE

1" = 200' H

1" = 40' V

NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS, THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACES, MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PROJECT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN, AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE. CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT OFFSET RADIUS SHALL BE NO LESS THAN 1,500 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 50 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL; 24.00" O.D. X 0.500" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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NO.	REVISION – DESCRIPTION	BY	DATE	CHK'D	APP'D
1	REISSUED FOR FILING	MEH	01/12/17	AL	BAM

DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE	APPROVED BY	APPROVED DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE:					
	FILE NAME:					

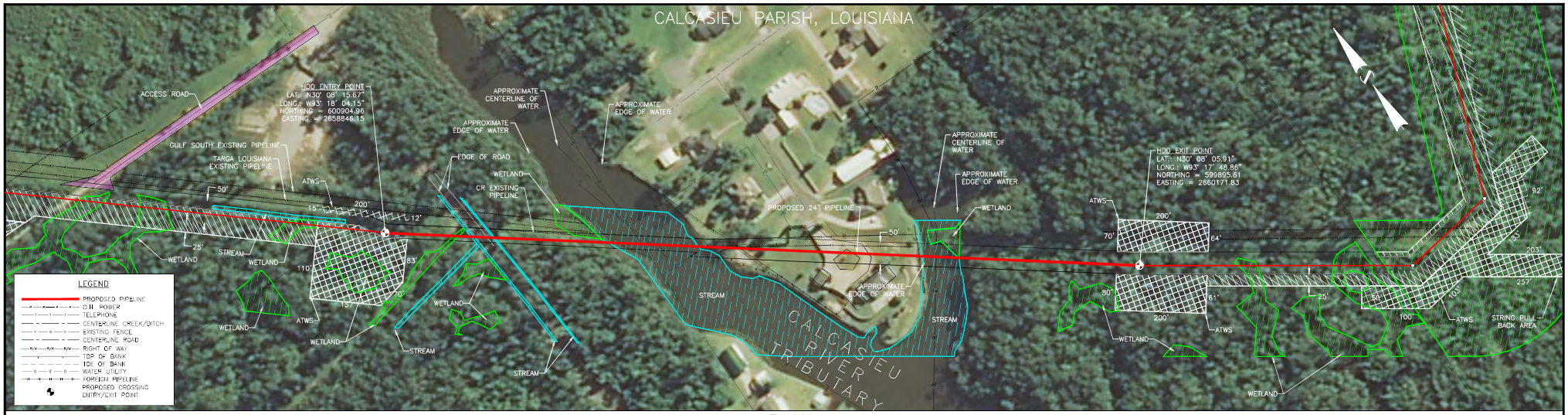
	BY	DATE
JOB/STA. NO.		
ACCOUNT NO.		
CONSTRUCTION YEAR		
DESIGN		
DRAWN		
ASBUILT		
FILE NO.		
SCALE: AS SHOWN		

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
CALCASIEU RIVER BACK BAY CROSSING

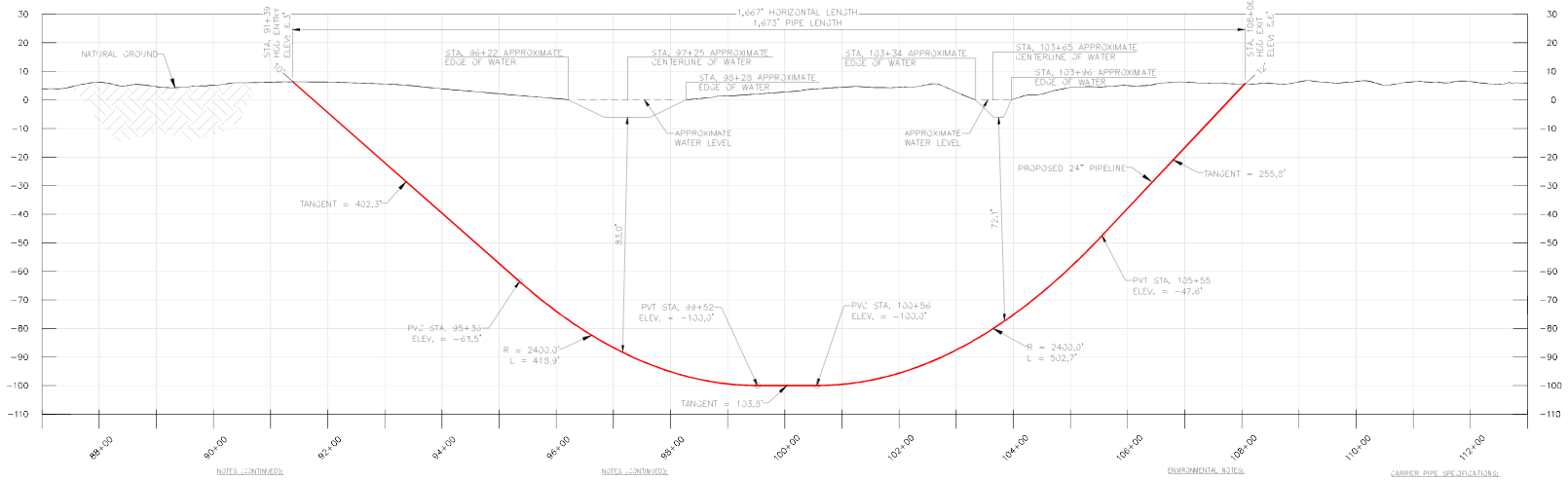
CALCASIEU PARISH, LOUISIANA

PROJECT NO.: 53595
PREVIOUS DWG. NO.:
SHEET 1 OF 1
DWG. NO.: P4-26A
SHEET 1 OF 1



PLAN

SCALE 1"=100'



PROFILE

1" = 100' H
1" = 20' V

NOTES:

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3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MINIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PROJECT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
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11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE. CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT SWAB RAMPS SHALL BE INSTALLED EVERY 1,500 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
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15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 50 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.500" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO SWP
FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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NO.	REVISION - DESCRIPTION	BY	DATE	CHK'D	APP'D
1	REISSUED FOR FILING	MEH	01/12/17	AL	BAM

REFERENCE DRAWING TITLE — DWG. NO.

DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE	BY	DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE:		FILE NAME:			

PAL/STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR
DESIGN
DRAWN
ASBUILT
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

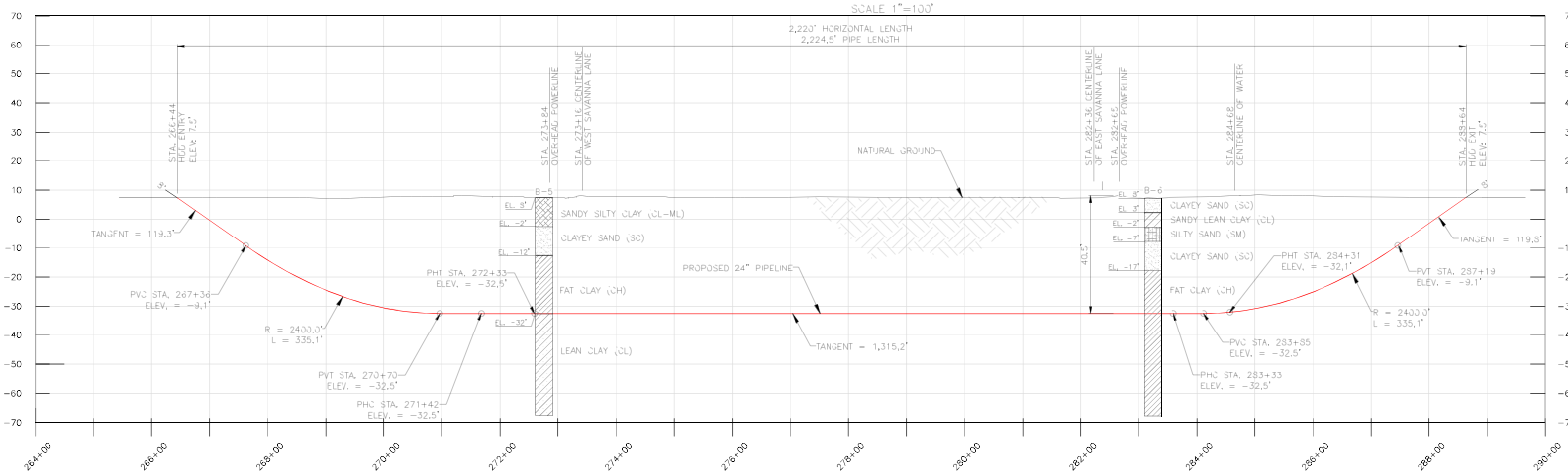
BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
CALCASIEU RIVER TRIBUTARY CROSSING

CALCASIEU PARISH, LOUISIANA

PROJECT NO.: 53595
PREVIOUS DWG. NO.:
SHEET 1 OF 1
DWG. NO.: P4-2A
SHEET 1 OF 1

PLAN

SCALE 1"=100'



NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
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4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACES MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PROJECT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES CONTINUED:

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPLICABLE).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CAUPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN AFTER THE PILOT

NOTES CONTINUED:

HOLE IS COMPLETE. CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT SWAGE RADIUS SHALL BE NO LESS THAN 1,500 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW-GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

PROFILE

1" = 100' H
1" = 20' V

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C.
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTORS: 0.53
PIPE: CARBON STEEL, 24.30" O.D. X 0.539" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE	BY	DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE: FILE NAME:					

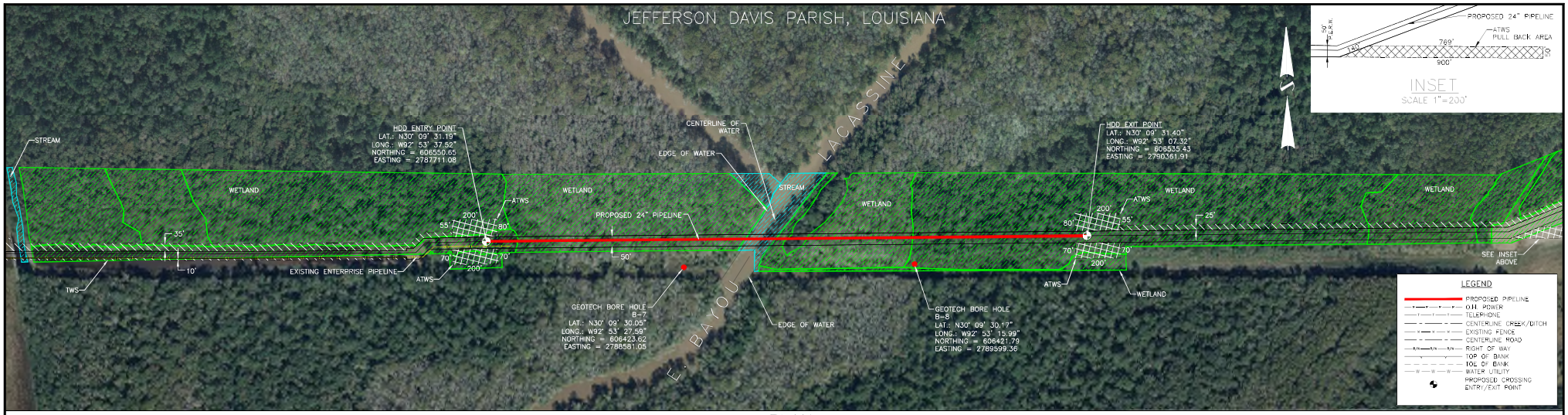
AFE/TA NO.
ACCOUNT NO.
CONSTRUCTION YEAR
DESIGN
DRAWN
ASBUILT
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

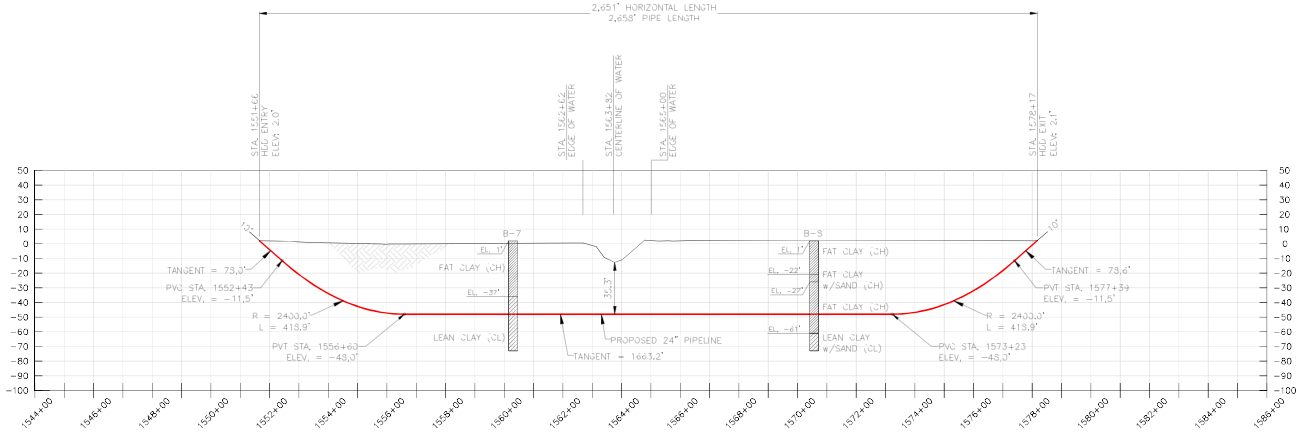
BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
SAVANNA LANE CROSSING

CALCASIEU PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-22A
SHEET 1 OF 1



PLAN
SCALE 1"=200'



PROFILE
1" = 200' H
1" = 40' V

NOTES:
1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PROJECT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES CONTINUED:
NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCE, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN AFTER THE PILOT

NOTES CONTINUED:
HOLE IS COMPLETE, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,500 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:
1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 50 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:
1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Feet.

CARRIER PIPE SPECIFICATIONS:
PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.500" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, API 5CT PBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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BID						
CONSTR.						
CADDS	PLOT DATE:		FILE NAME:			

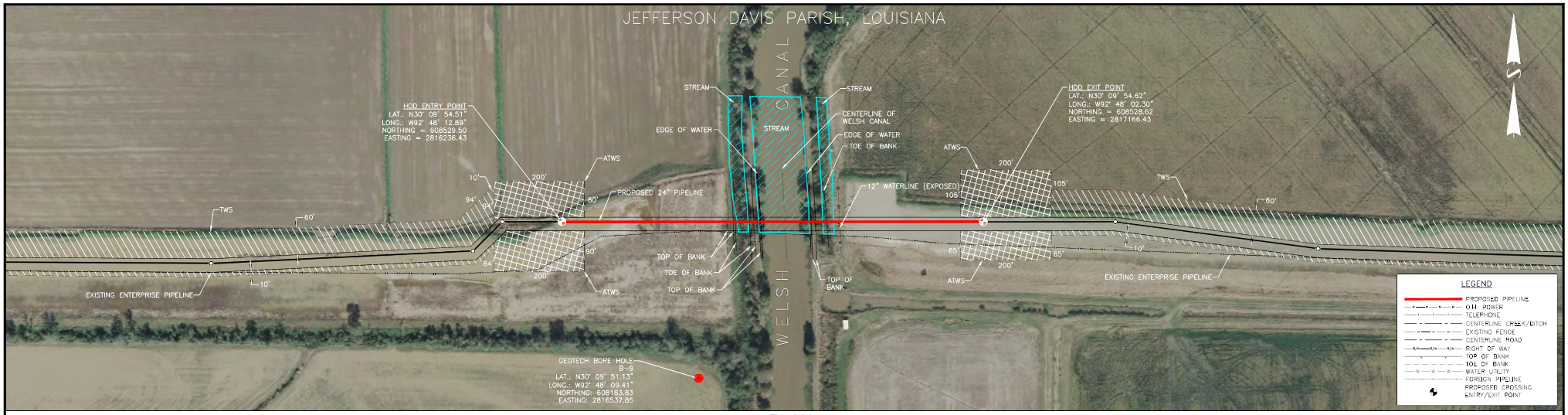
RW/STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR
DESIGN
DRAWN
ASBUILT
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
E. BAYOU LACASSINE CROSSING

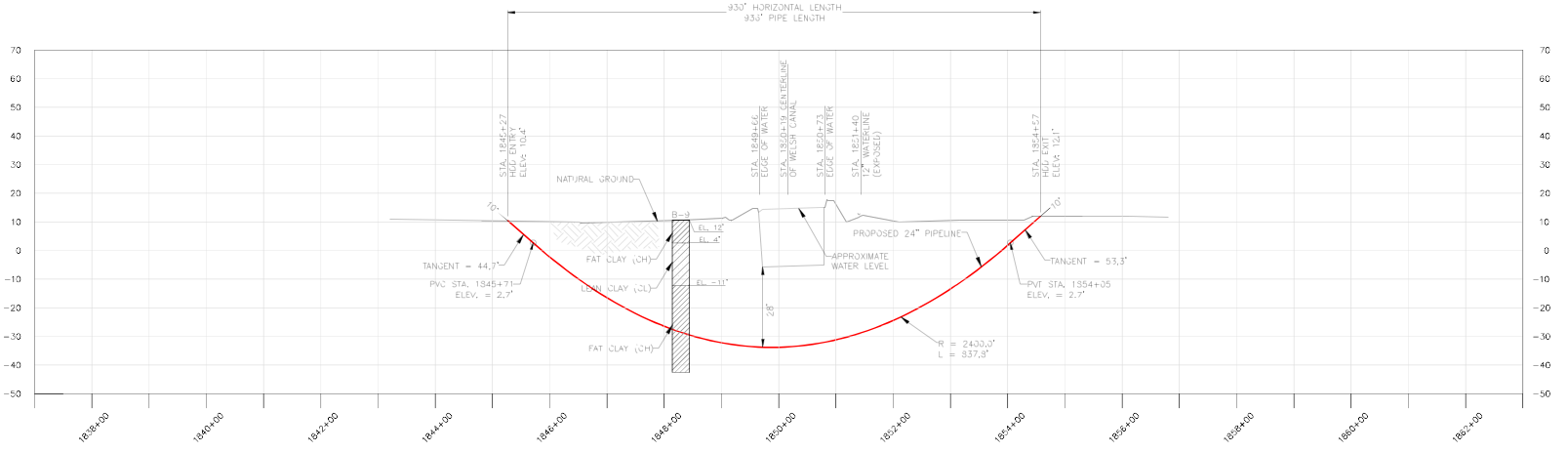
JEFFERSON DAVIS PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-3A
SHEET 1 OF 1



PLAN

SCALE 1"=100'



NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS, THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACES: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN, AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE. CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT STRIP RADIUS SHALL BE NO LESS THAN 1,500 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

PROFILE

1" = 100' H
1" = 20' V

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE R.O.W. BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 50 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL; 24.00" O.D. X 0.500" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE	APPROVED BY	APPROVED DATE
PREL'Y						
BID						
CONSTR.						

CADDS — PLOT DATE: — FILE NAME:

JOB/STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR

	BY	DATE
DESIGN		
DRAWN		
ASBUILT		

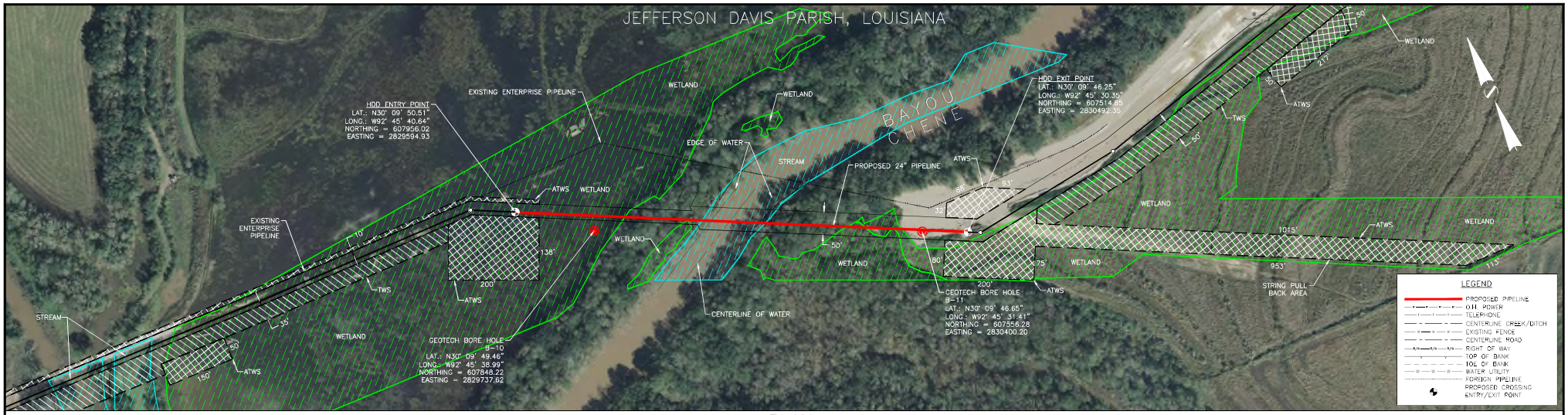
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
WELSH CANAL CROSSING

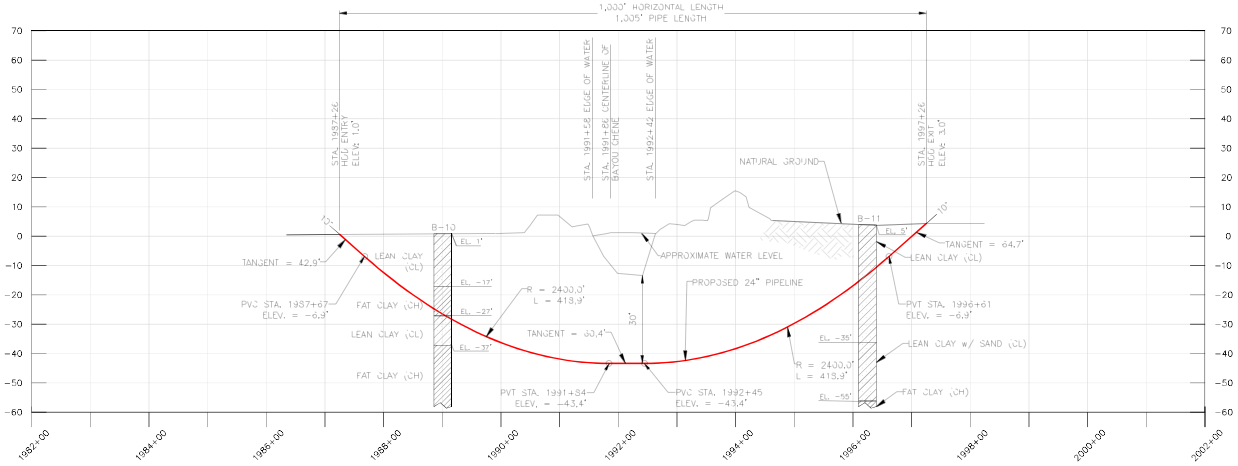
JEFFERSON DAVIS PARISH, LOUISIANA

PROJECT NO.: 53595
PREVIOUS DWG. NO.:
SHEET 1 OF 1
DWG. NO.: P4-4A
SHEET 1 OF 1



PLAN

SCALE 1"=100'



PROFILE

1" = 100' H
1" = 20' V

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NOTES:

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3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PROJECT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES CONTINUED:

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).

7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
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11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITH THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN AFTER THE PILOT

NOTES CONTINUED:

HOLE IS COMPLETE. CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC, FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.

12. 3-JOINT DRIVE RADIUS SHALL BE NO LESS THAN 1,500 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
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ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 50 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C.
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.30" O.D. X 0.500" W.T.,
API 5L, PSL2, GRADE X-70, DRL, ARO over
FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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TRC PROJ. #53595, LIC. No. EF 4588

DWG. NO.	REFERENCE DRAWING TITLE

NO.	REVISION – DESCRIPTION	BY	DATE	CHK'D	APP'D
1	REISSUED FOR FILING	MEH	01/12/17	AL	BAM

DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE	APPROVED BY	APPROVED DATE
PREL'Y						
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CONSTR.						
CADDS	PLOT DATE:		FILE NAME:			

	BY	DATE
DESIGN		
DRAWN		
ASBUILT		

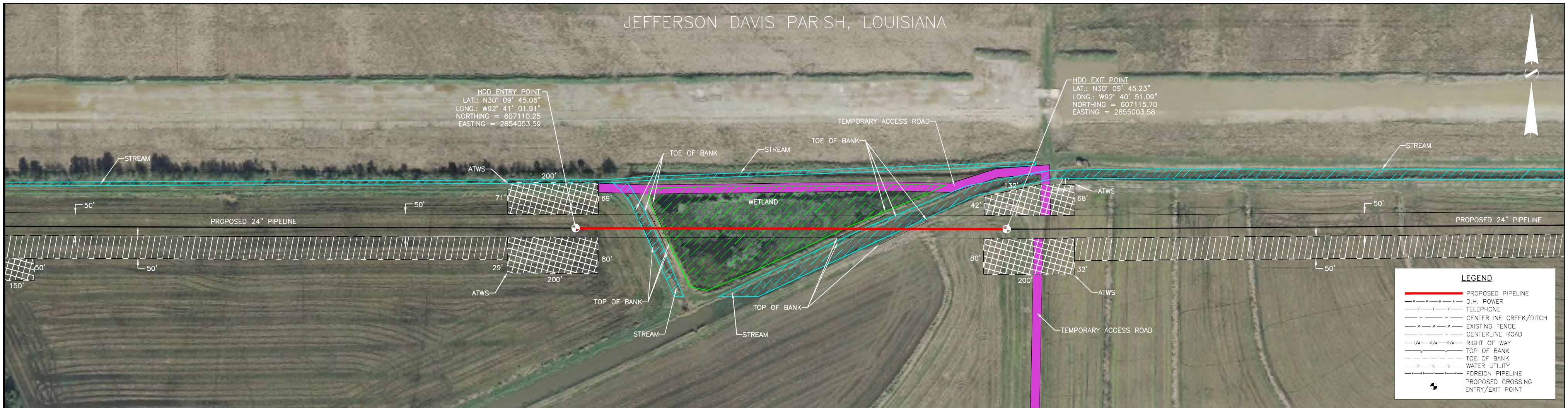
CAL/DATA NO.
ACCOUNT NO.
CONSTRUCTION YEAR
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

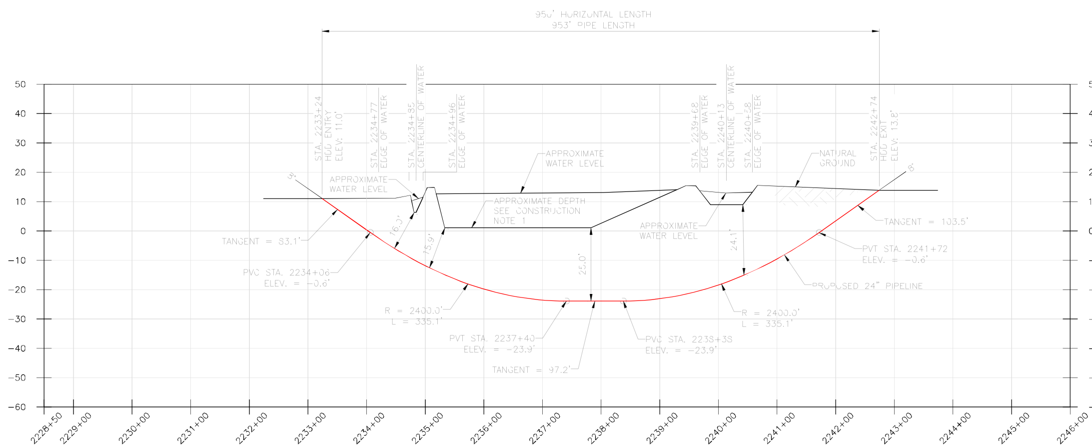
BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
BAYOU CHENE CROSSING

JEFFERSON DAVIS PARISH, LOUISIANA

PROJECT NO.: 53595
PREVIOUS DWG. NO.:
SHEET 1 OF 1
DWG. NO.: P4-5A
SHEET OF 1



PLAN
SCALE 1"=60'



PROFILE
1" = 100' H
1" = 20' V

REISSUED FOR FILING 01/12/17

NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC. PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).

7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN. AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.

12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,500 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C.
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.500" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

CONSTRUCTION NOTES:

1. DEPTH OF POND PROVIDED BY LANDOWNER AND IS APPROXIMATE.

TRC Results you can rely on

16350 PARK TEN PLACE, SUITE 101
HOUSTON, TX. 77084
PH: (281) 616-0100
TRC PROJ. #53595, LIC. No. EF 4588

DWG. NO.	REFERENCE DRAWING TITLE	NO.	REVISION - DESCRIPTION	BY	DATE	CHK'D	APP'D
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DWG. STATUS	CHECKED BY	DATE	APPROVED BY	DATE	BY	DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE:		FILE NAME:			

P.L./STA. NO. ACCOUNT NO.
CONSTRUCTION YEAR
DESIGN / DRAWN / ASBUILT
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
POND CROSSING
JEFFERSON DAVIS PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-27A

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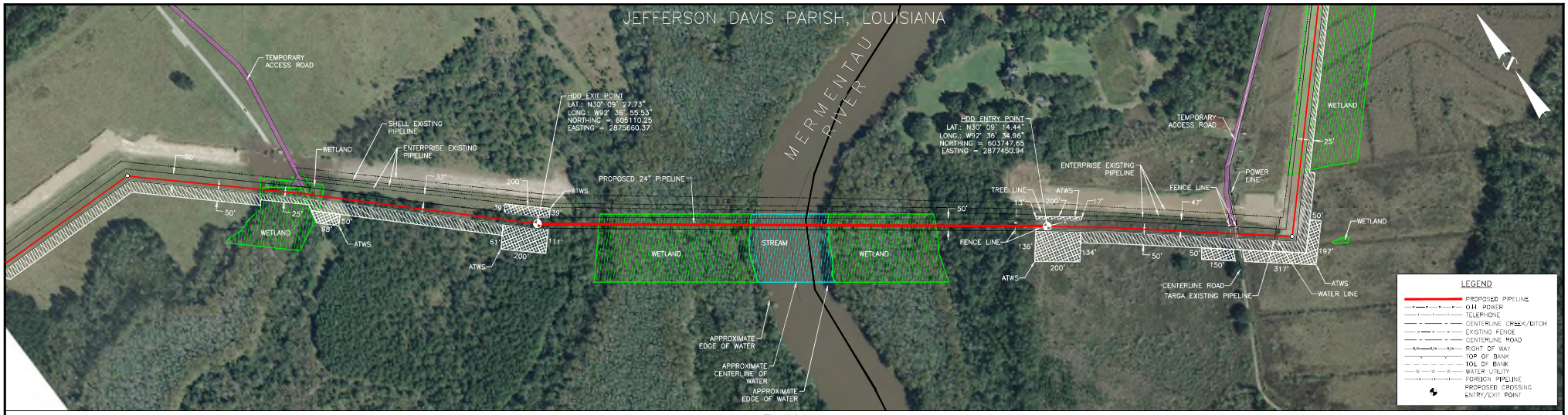
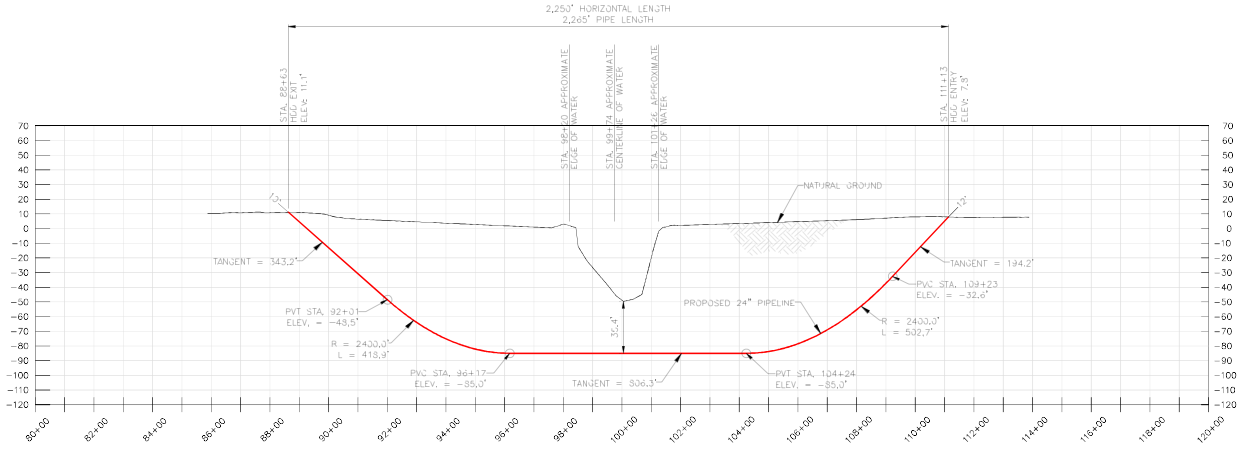


PLAN
SCALE 1"=200'



PROFILE
1" = 200' H
1" = 40' V

NOTES:
1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC; SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DIAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PROJECT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):
NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN, AFTER THE PILOT

NOTES (CONTINUED):
HOLE IS COMPLETE. CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT DRIVE RADIUS SHALL BE NO LESS THAN 1,500 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:
1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 50 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:
1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:
PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL; 24.00" O.D. X 0.530" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

REISSUED FOR FILING
01/12/17

TRC
Results you can rely on

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HOUSTON, TX. 77084
PH: (281) 618-0100
TRC PROJ. #53595, LIC. No. EF 4588

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CONSTR.				
CADDS	PLOT DATE:			
	FILE NAME:			

	BY	DATE
DESIGN		
DRAWN		
ASBUILT		

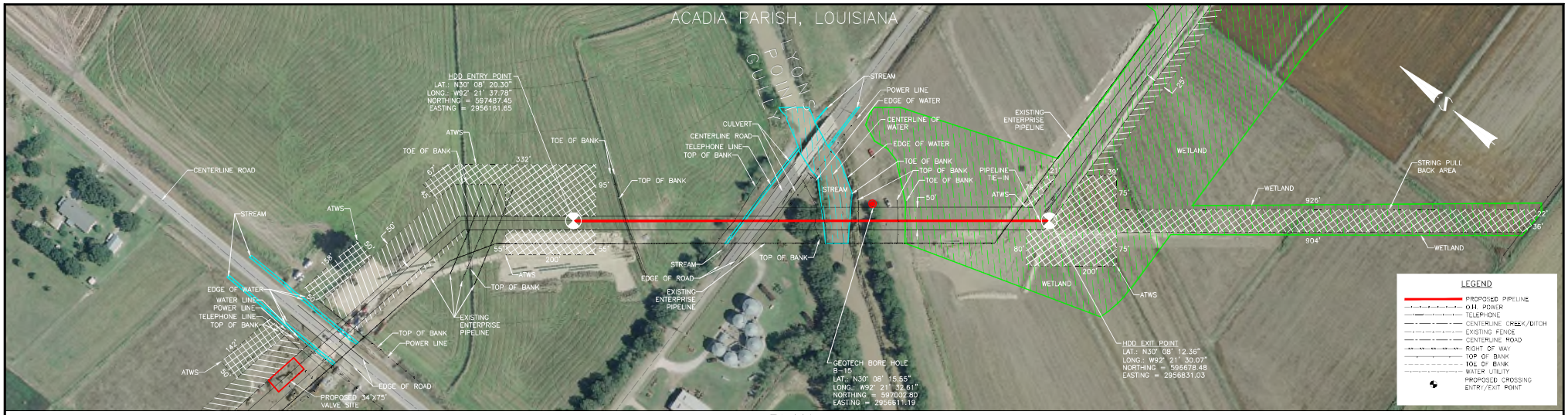
JOB/STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
MERMENTAU RIVER CROSSING

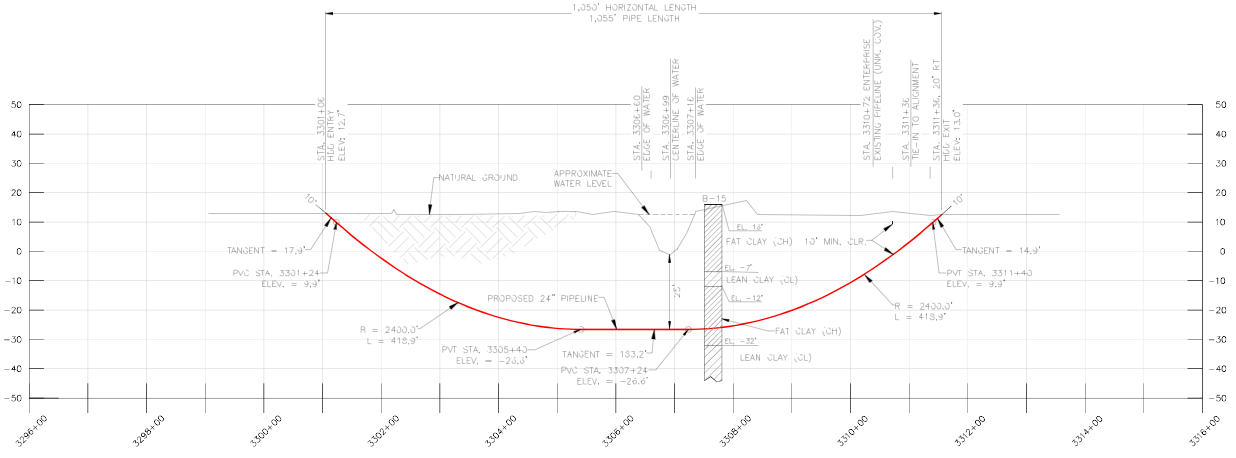
JEFFERSON DAVIS PARISH, LOUISIANA

PROJECT NO.
53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO.
P4-7A
SHEET 1 OF 1



PLAN

SCALE 1"=100'



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3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS, THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROAD.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PROJECT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A GAUGER PG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROLS: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE. CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT OFFSETS SHALL BE NO LESS THAN 1,333 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

PROFILE

1" = 100' H

1" = 20' V

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREA ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Feet.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL; 24.00" O.D. X 0.539" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO SMF
FBE COATING
DESIGN PRESSURE (P): 1,435 PSIG

TRC
Results you can rely on
16350 PARK TEN PLACE, SUITE 101
HOUSTON, TX. 77084
PH: (281) 618-0100
TRC PROJ. #53595, LIC. No. EF 4588

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PREL'Y						
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CONSTR.						
CADDS	PLOT DATE:		FILE NAME:			

	BY	DATE
DESIGN		
DRAWN		
ASBUILT		

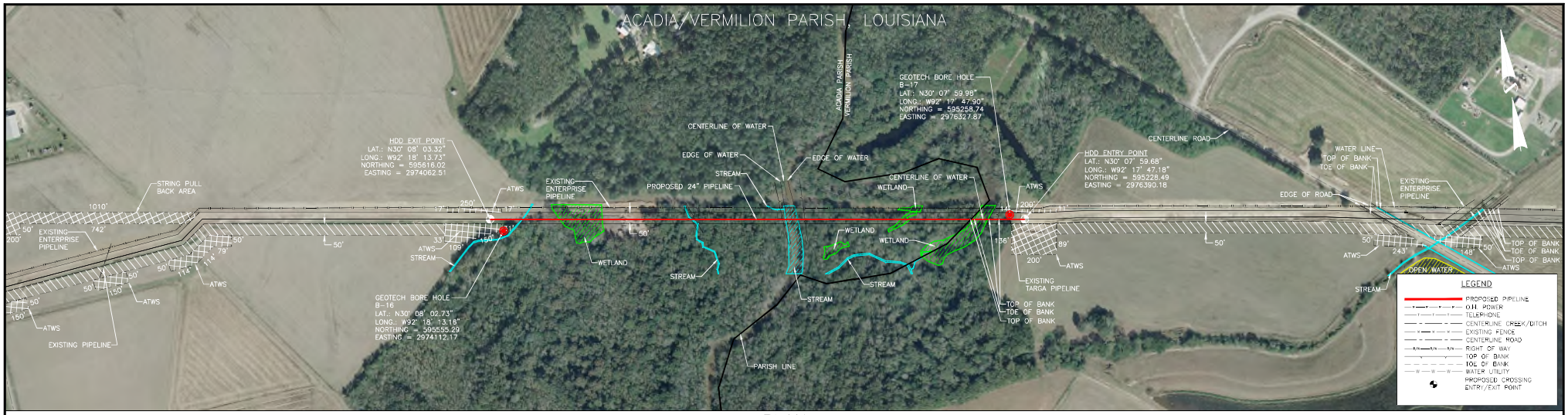
AFE/STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

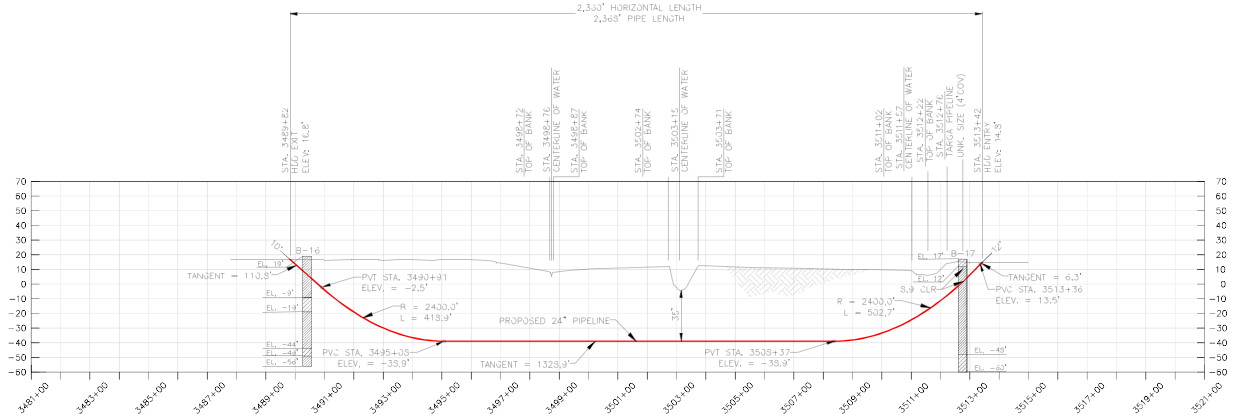
BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
LYONS POINT GULLY CROSSING

ACADIA PARISH, LOUISIANA

PROJECT NO.: 53595
PREVIOUS DWG. NO.:
SHEET 1 OF 1
DWG. NO.: P4-3A
SHEET 1 OF 1



PLAN
SCALE 1"=200'



PROFILE
1" = 200' H
1" = 40' V

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NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
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3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROAD.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PROJECT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES CONTINUED:

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN AFTER THE PILOT

NOTES CONTINUED:

HOLE IS COMPLETE, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,500 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREA ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Feet.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL; 24.30" O.D. X 0.539" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO SMF
FBE COATING
DESIGN PRESSURE (P): 1,435 PSIG

CONSTRUCTION NOTE:

1. CONTRACTOR SHALL "DAYLIGHT" THE TARGA PIPELINE TO PROVIDE VISUAL EVIDENCE THAT THE HDD PILOT HOLE HAS THE PROPER CLEARANCE FROM THE EXISTING PIPELINE.

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HOUSTON, TX. 77084
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TRC PROJ. #53595, LIC. No. EF 4988

DWG. NO.	REFERENCE DRAWING TITLE

NO.	REVISION - DESCRIPTION	BY	DATE	CHK'D	APP'D
1	REISSUED FOR FILING	MEH	01/12/17	AL	BAM

DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE	APPROVED BY	APPROVED DATE
PREL'Y						
BID						
CONSTR.						

CADDS — PLOT DATE: — FILE NAME:

	BY	DATE
DESIGN		
DRAWN		
ASBUILT		

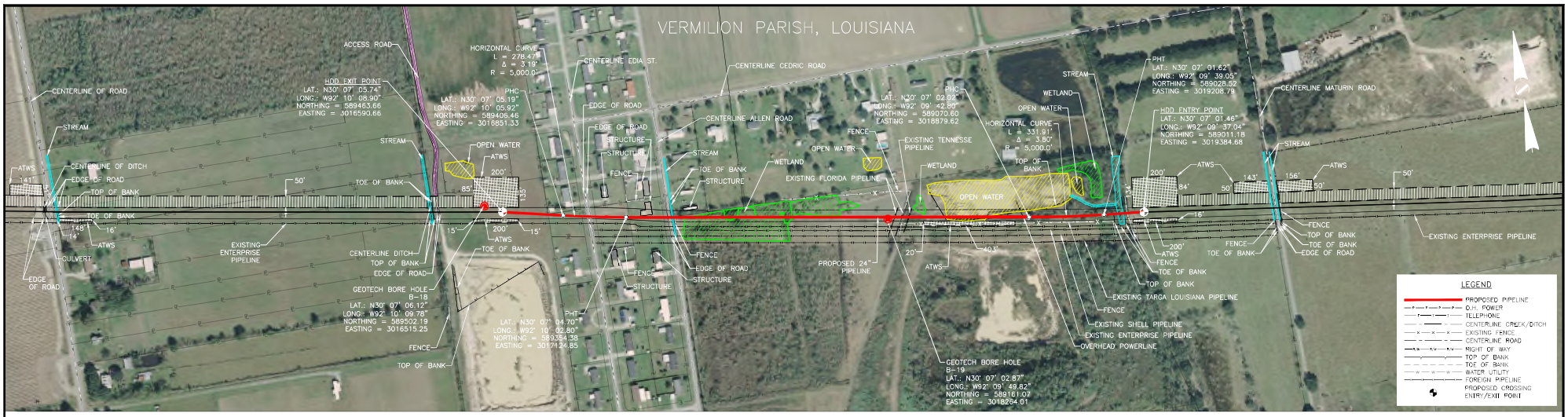
FAC./STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

PROPOSED 24" PIPELINE FORESTED TRACTS CROSSING

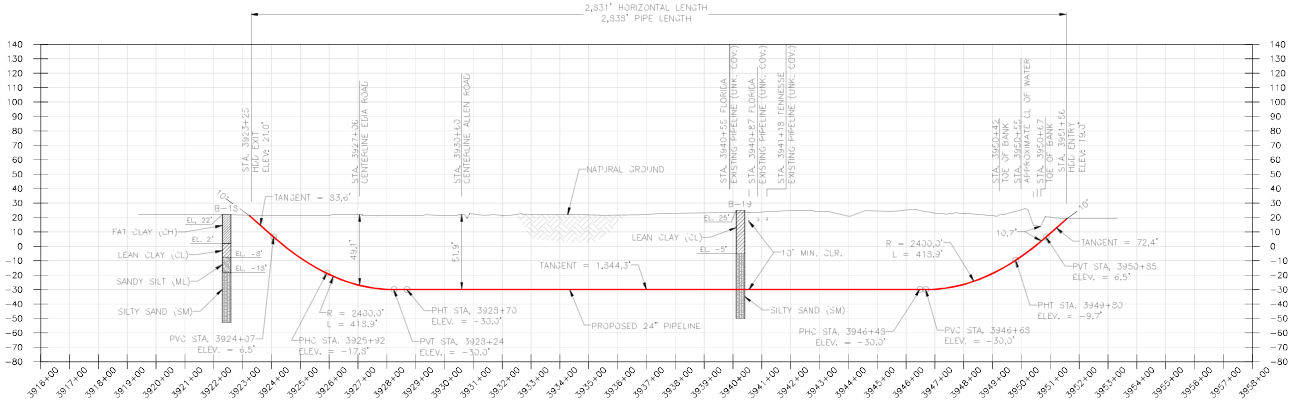
ACADIA/VERMILION PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-9A
SHEET 1 OF 1



PLAN

SCALE 1"=200'



NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC, SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC, PRIOR TO INITIATING HDD OPERATIONS.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
3. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
4. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
5. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PIPEJACT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A VAUPER TEST SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPILL PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN, AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE. CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC, FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,533 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY PARA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

PROFILE

1" = 200' H
1" = 40' V

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATION.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. x 0.509" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,435 PSIG

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DWG. NO.	REFERENCE DRAWING TITLE

NO.	REVISION - DESCRIPTION	BY	DATE	CHK'D	APP'D
1	REISSUED FOR FILING	MEH	01/12/17	AL	BAM

DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE	APPROVED BY	APPROVED DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE:					
	FILE NAME:					

CC/JTA NO. ACCOUNT NO.	
CONSTRUCTION YEAR	BY / DATE
DESIGN	
DRAWN	
ASBUILT	
FILE NO.	
SCALE: AS SHOWN	

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

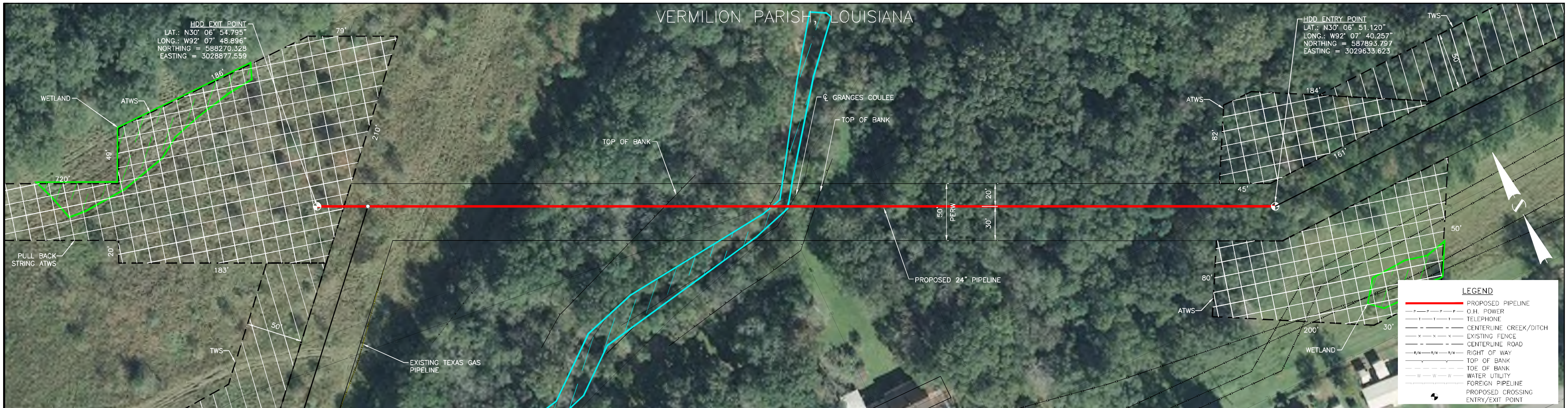
BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
EDIA / ALLEN ROAD CROSSING

VERMILION PARISH, LOUISIANA

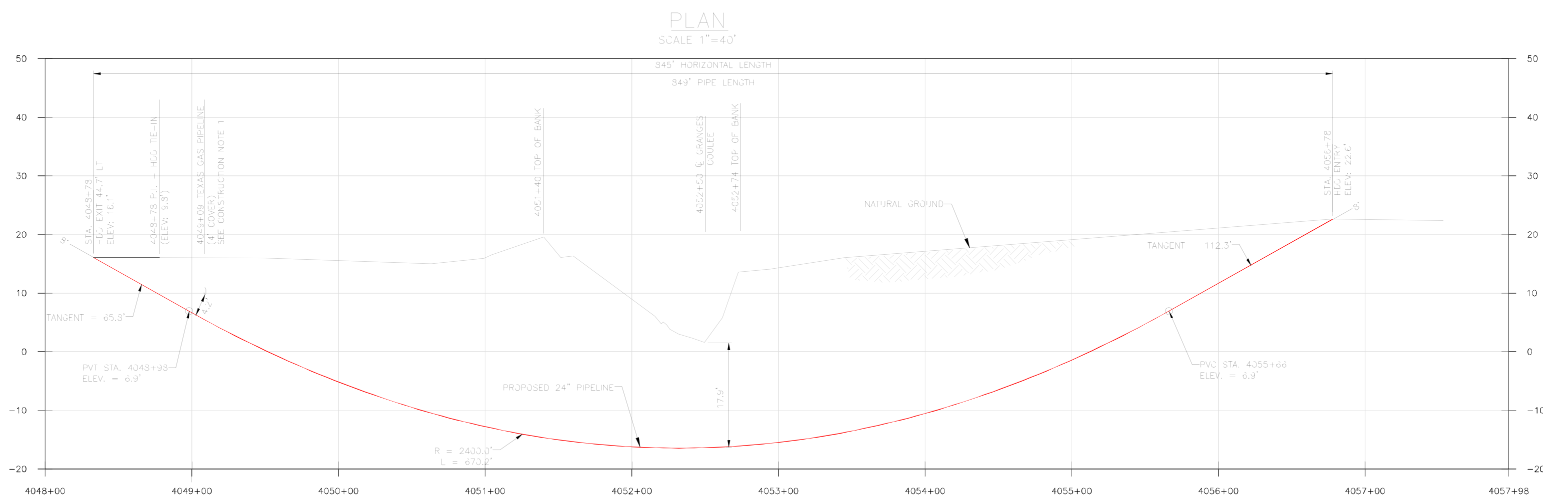
PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-23A
SHEET 1 OF 1

P:\Projects\53595000 - Bayou Bridge Pipeline\04 - CAD\Plans\Drawings\HDD\HDD P4-23A.dwg

VERMILION PARISH, LOUISIANA



PLAN
SCALE 1"=40'



PROFILE
1" = 40' H
1" = 10' V

*CONSTRUCTION NOTE:

1. CONTRACTOR SHALL "DAYLIGHT" THE TEXAS GAS PIPELINE TO PROVIDE VISUAL EVIDENCE THAT THE HDD PILOT HOLE HAS THE PROPER CLEARANCE FROM THE EXISTING PIPELINE.

NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC. PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN. AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,800 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C.
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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DWG. NO.	REFERENCE DRAWING TITLE	NO.	REVISION - DESCRIPTION	BY	DATE	CHK'D	APP'D
		1	REISSUED FOR FILING	SD	01/12/17	AL	BAM

DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE	APPROVED BY	APPROVED DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE:					
	FILE NAME:					

P.L./STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR
DESIGN
DRAWN
ASBUILT
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
GRANGES COULEE CROSSING

VERMILION PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-30A

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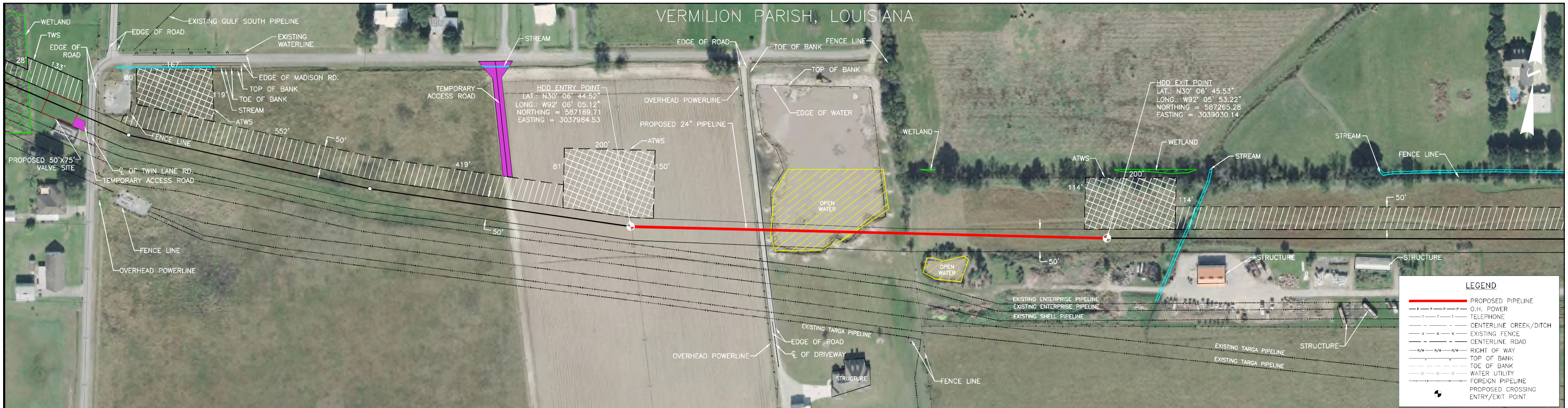
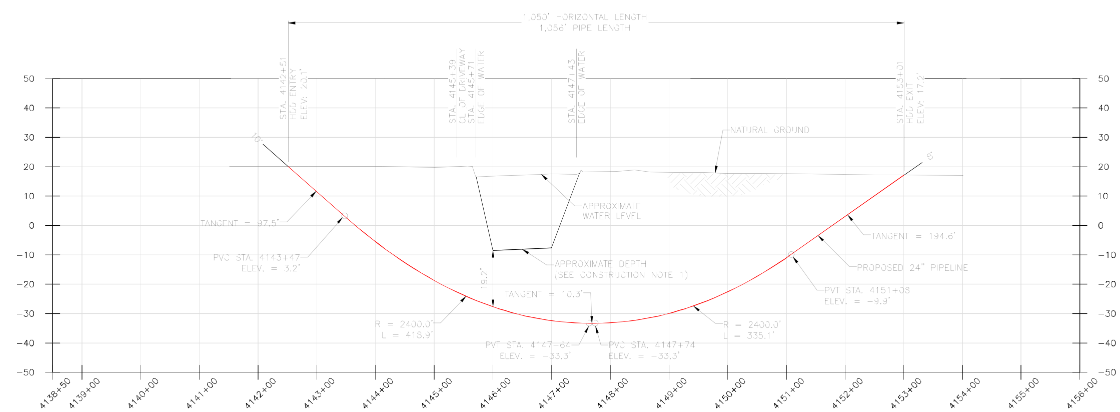
VERMILION PARISH, LOUISIANA



PLAN
SCALE 1"=100'



PROFILE
1" = 100' H
1" = 20' V

REISSUED FOR FILING 01/12/17

NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC. PRIOR TO INITIATING HDD OPERATIONS.
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NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).

7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
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11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN. AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.

12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,800 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS, IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED. CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C.
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

CONSTRUCTION NOTES:

1. DEPTH OF POND PROVIDED BY LANDOWNER AND IS APPROXIMATE.

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HOUSTON, TX. 77084
PH: (281) 616-0100
TRC PROJ. #53595, LIC. No. EF 4588

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		1	REISSUED FOR FILING	SD	01/12/17	AL	BAM

DWG. STATUS	CHECKED BY	DATE	APPROVED BY	DATE	BY	DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE:		FILE NAME:			

P.L./STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR
DESIGN / DRAWN / ASBUILT — BY / DATE
FILE NO.
SCALE: AS SHOWN

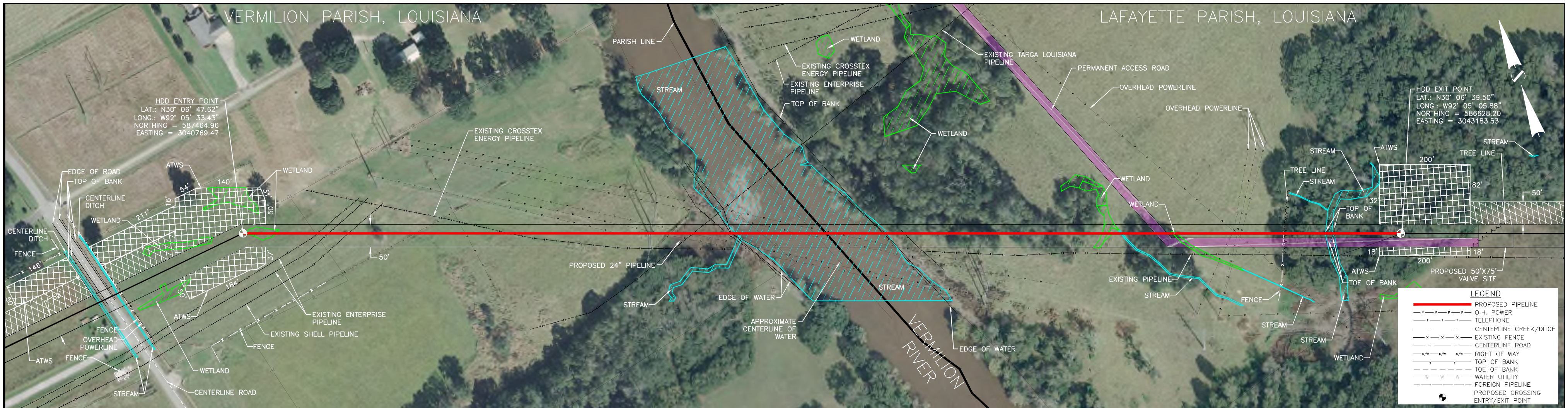
BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
NAQUIN POND CROSSING

VERMILION PARISH, LOUISIANA

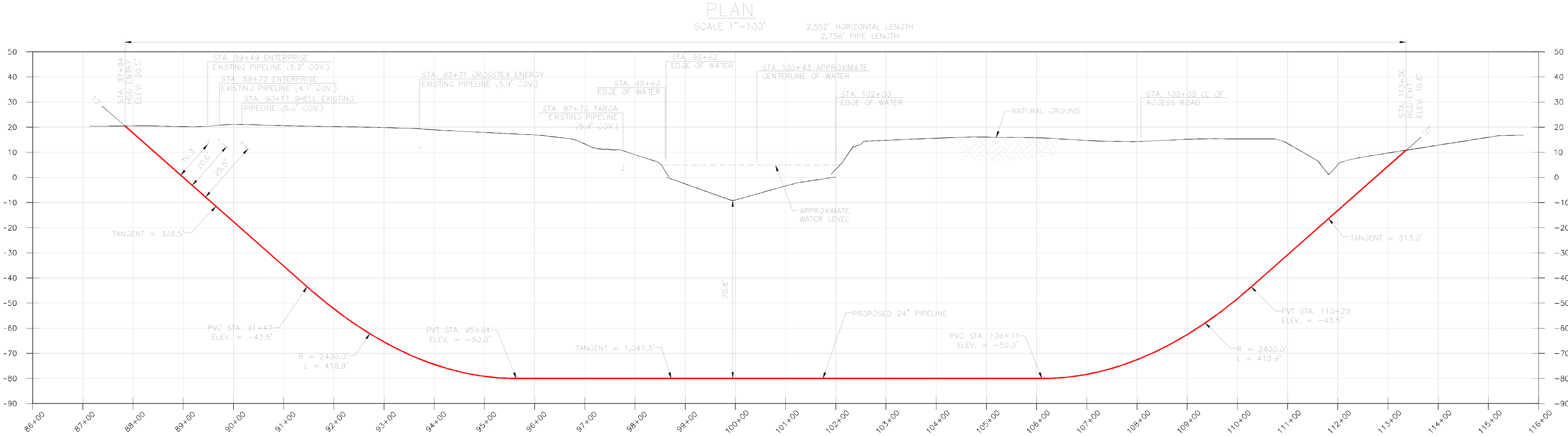
PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-28A
SHEET 1 OF 1

P:\Projects\53595000 - Bayou Bridge Pipeline\CA - CADD\Pipeline\Drawings\HDDs\HDD\P4-28.dwg



PLAN
SCALE 1"=100'

2,552' HORIZONTAL LENGTH
2,736' PIPE LENGTH



PROFILE
1" = 100' H
1" = 20' V

NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC. PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN. AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,800 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C.
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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CONSTR.						
CADDS	PLOT DATE:		FILE NAME:			

P.L./STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR
DESIGN
DRAWN
ASBUILT
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
VERMILION RIVER CROSSING

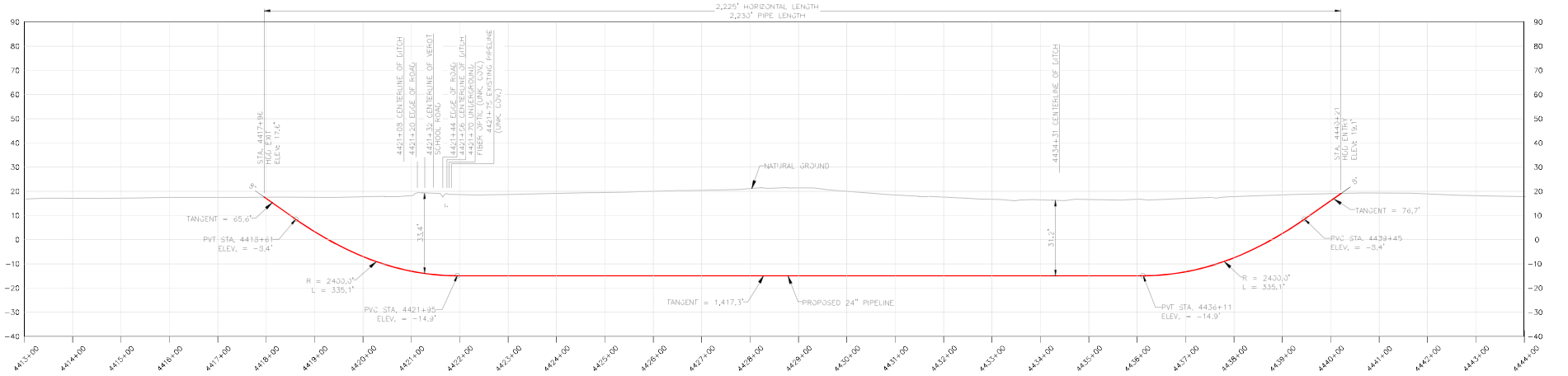
VERMILION/LAFAYETTE PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-10A
SHEET 1 OF 1

P:\Projects\53595000 - Bayou Bridge Pipeline\CA - CADD\Pipeline\Drawings\HDDs\USACE\GeoEngineers_Update\P4-10A.DWG

PLAN

SCALE 1"=100'



NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC; SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PROJECT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER, WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE. CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC, FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT DRIVE RADIUS SHALL BE NO LESS THAN 1,500 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

PROFILE

1" = 100' H
1" = 20' V

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 50 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL; 24.00" O.D. X 0.500" W.T., ERW, API 5L, PSL2, GRADE X-52, DRL, ARO SMF
FBE COATING
DESIGN PRESSURE (P): 1,435 PSIG

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NO.	REFERENCE DRAWING TITLE

NO.	REVISION - DESCRIPTION	BY	DATE	CHK'D	APP'D
1	REISSUED FOR FILING	SD	01/12/17	AL	BAM

DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE
PREL'Y				
BID				
CONSTR.				

CADDS — PLOT DATE: — FILE NAME:

PROJ./STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR

	BY	DATE
DESIGN		
DRAWN		
AS-BUILT		

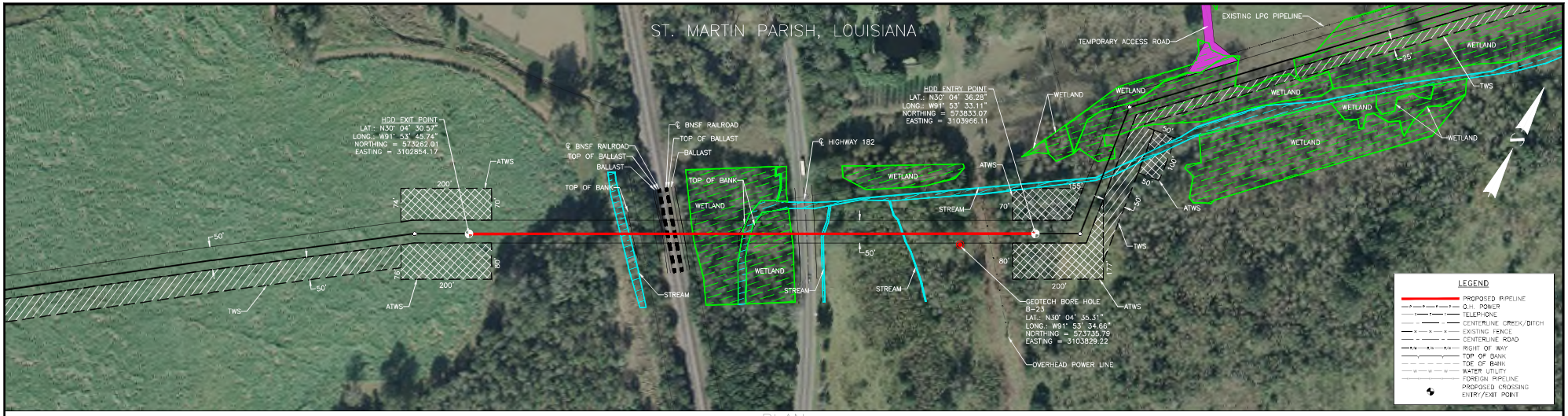
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
VEROT PARK SUBDIVISION

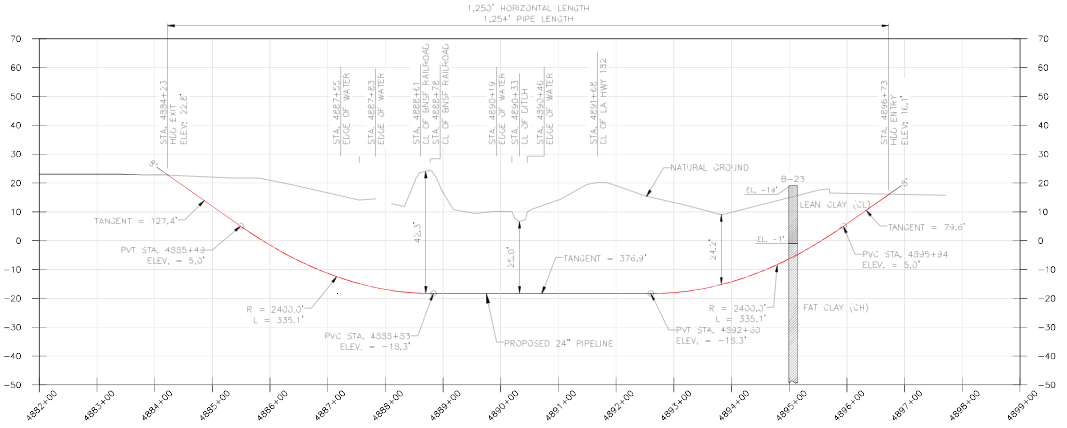
LAFAYETTE PARISH, LOUISIANA

PROJECT NO.: 53595
PREVIOUS DWG. NO.:
SHEET 1 OF 1
DWG. NO.: P4-31A
SHEET 1 OF 1



PLAN

SCALE 1"=100'



PROFILE

1" = 100' H
1" = 20' V

NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC, PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE, MAXIMUM WORK SPACE LIMITS ARE DEPICTED, RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PROJECT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES CONTINUED:

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER, WHERE APPROVED.

7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTATIVE REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN, AFTER THE PILOT

NOTES CONTINUED:

HOLE IS COMPLETE. CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.

12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,333 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 33 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Feet.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C
DESIGN MAXIMUM OPERATING PRESSURE: 1,433 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" WT., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,435 PSIG

REISSUED FOR FILING
01/12/17

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DWG. NO.	REFERENCE DRAWING TITLE

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1	REISSUED FOR FILING	SD	01/12/17	AL	BAM

DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE	APPROVED BY	APPROVED DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE:					
	FILE NAME:					

CC/STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR

	BY	DATE
DESIGN		
DRAWN		
ASBUILT		

FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

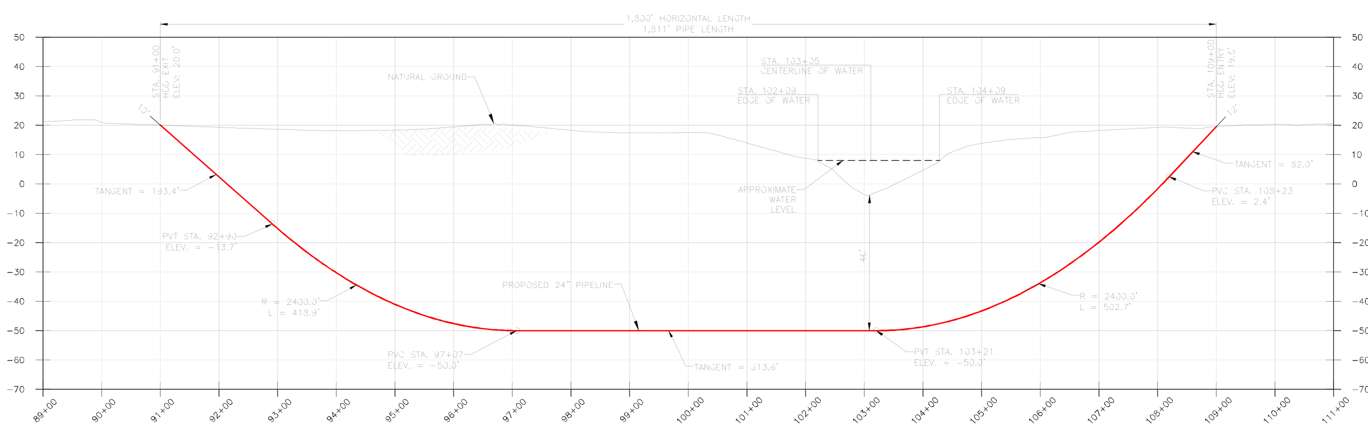
BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
HWY 182 & BNSF RAILROAD CROSSING

ST. MARTIN PARISH, LOUISIANA

PROJECT NO.
53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO.
P4-24A
SHEET 1 OF 1
1

P:\Projects\53595000 - Bayou Bridge Pipeline\04 - CADD\Plans\Drawings\P04-24.dwg

PLAN
SCALE 1"=100'



PROFILE
1" = 100' H
1" = 20' V

NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC. PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN. AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,800 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C.
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

REISSUED FOR FILING 01/12/17

TRC
Results you can rely on

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HOUSTON, TX. 77084
PH: (281) 616-0100
TRC PROJ. #53595, LIC. No. EF 4588

DWG. NO.	REFERENCE DRAWING TITLE	NO.	REVISION - DESCRIPTION	BY	DATE	CHK'D	APP'D
		1	REISSUED FOR FILING	MEH	01/12/17	AL	BAM

DWG. STATUS	CHECKED BY	DATE	APPROVED BY	DATE	BY	DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE:					
	FILE NAME:					

P.L./STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR
DESIGN / DRAWN / ASBUILT — BY / DATE
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
BAYOU TECHE RIVER CROSSING
ST. MARTIN PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-11A
SHEET 1 OF 1

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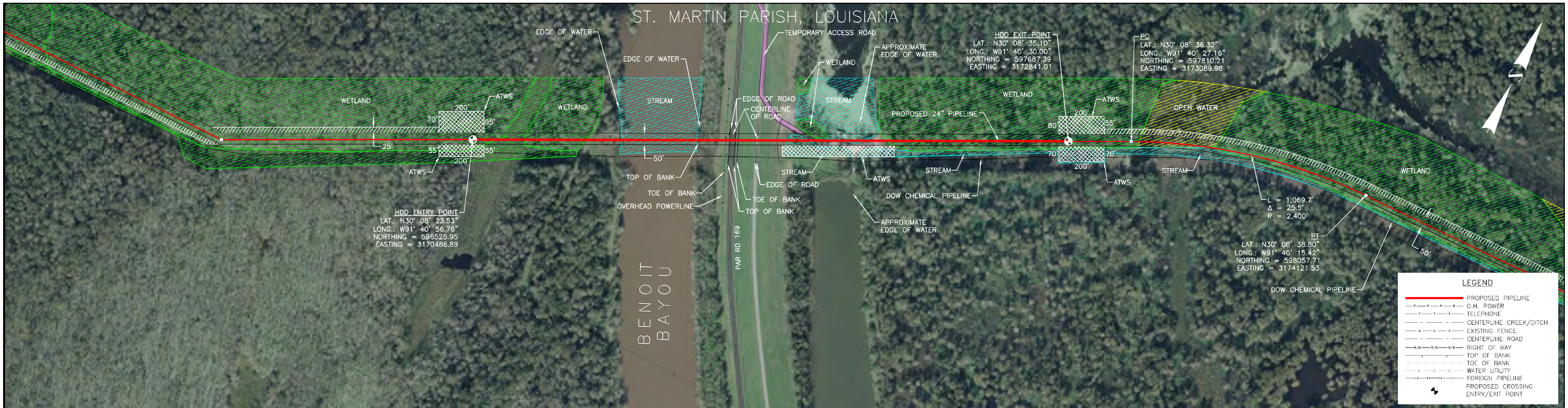
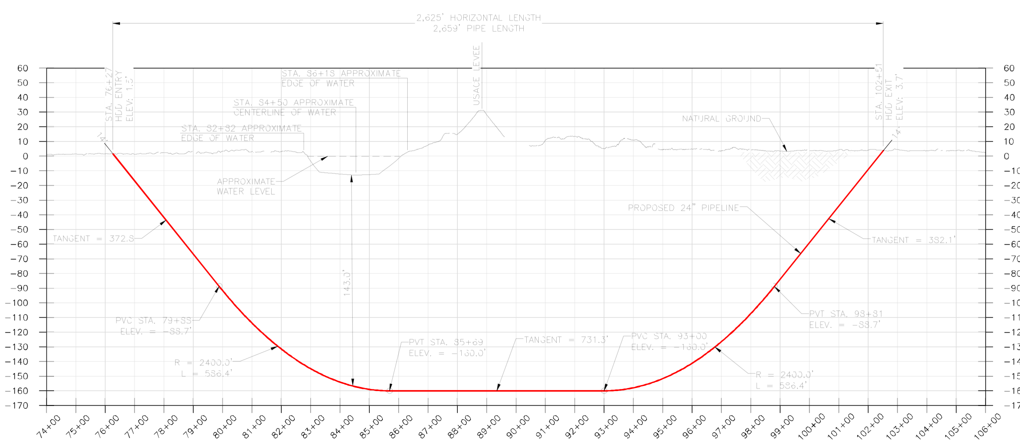


PLAN
SCALE 1"=200'



PROFILE
1" = 200' H
1" = 40' V

NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC. PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN. AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,800 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C.
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

REISSUED FOR FILING 01/12/17

16350 PARK TEN PLACE, SUITE 101
HOUSTON, TX. 77084
PH: (281) 616-0100
TRC PROJ. #53595, LIC. No. EF 4588

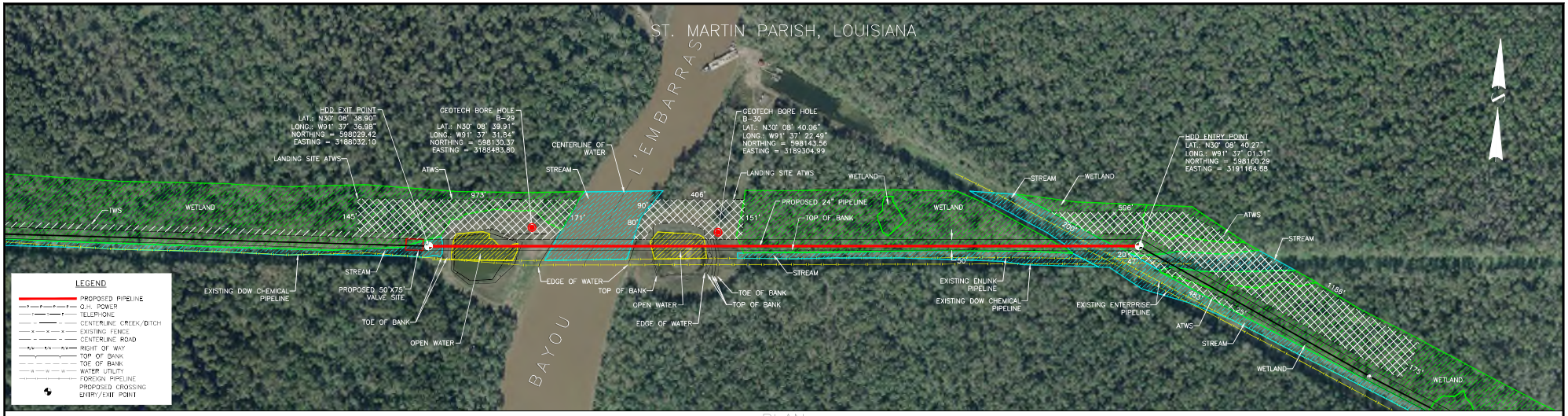
DWG. NO.	REFERENCE DRAWING TITLE	NO.	REVISION - DESCRIPTION	BY	DATE	CHK'D	APP'D
		1	REISSUED FOR FILING	MEH	01/12/17	AL	BAM

DWG. STATUS	CHECKED BY	DATE	APPROVED BY	DATE	BY	DATE
PREL'Y						
BID						
CONSTR.						
CADDS						

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

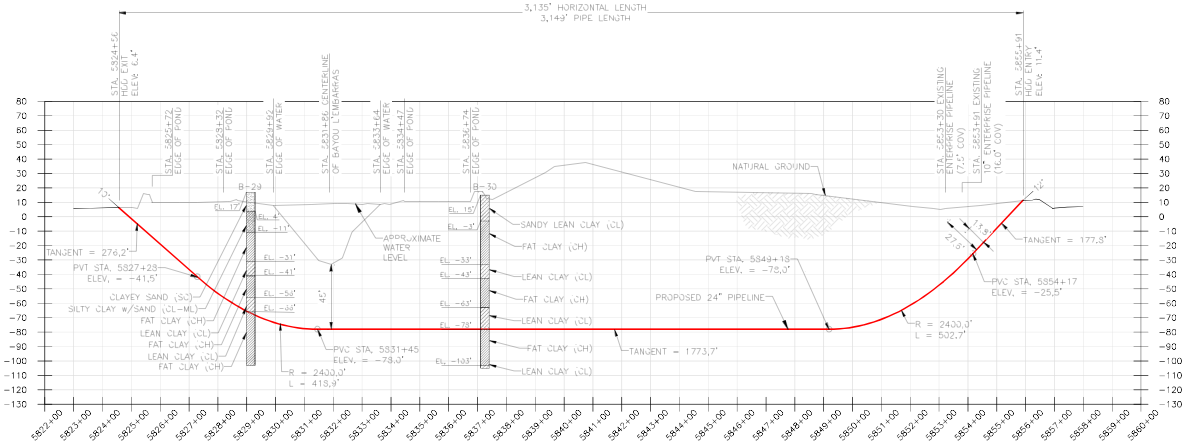
BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
WEST LEVEE CROSSING
ST. MARTIN PARISH, LOUISIANA

PROJECT NO. 53595
SCALE: AS SHOWN
DWG. NO. P4-12A
SHEET 1 OF 1



PLAN

SCALE 1"=200'



NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC, PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PROJECT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES CONTINUED:

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER, WHERE APPROVED.

7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTIVE REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN, AFTER THE PILOT HOLE IS COMPLETE. CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS AND NEED FOR AND INSTALL APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,333 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

PROFILE

1" = 200' H
1" = 40' V

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 33 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Feet.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C
DESIGN MAXIMUM OPERATING PRESSURE: 1,433 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" WT., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,435 PSIG

REISSUED FOR FILING 01/12/17

TRC
Results you can rely on

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HOUSTON, TX. 77084
PH: (281) 616-0100
TRC PROJ. #53595, LIC. No. EF 4588

DWG. NO.	REFERENCE DRAWING TITLE

NO.	REVISION - DESCRIPTION	BY	DATE	CHK'D	APP'D
1	REISSUED FOR FILING	MEH	01/12/17	AL	BAM

DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE	APPROVED BY	APPROVED DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE:					
	FILE NAME:					

CC/ATA NO. ACCOUNT NO.		
CONSTRUCTION YEAR		
	BY	DATE
DESIGN		
DRAWN		
ASBUILT		
FILE NO.		
SCALE: AS SHOWN		

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
BAYOU L'EMBARRAS RIVER CROSSING

ST. MARTIN PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-13A
SHEET 1 OF 1

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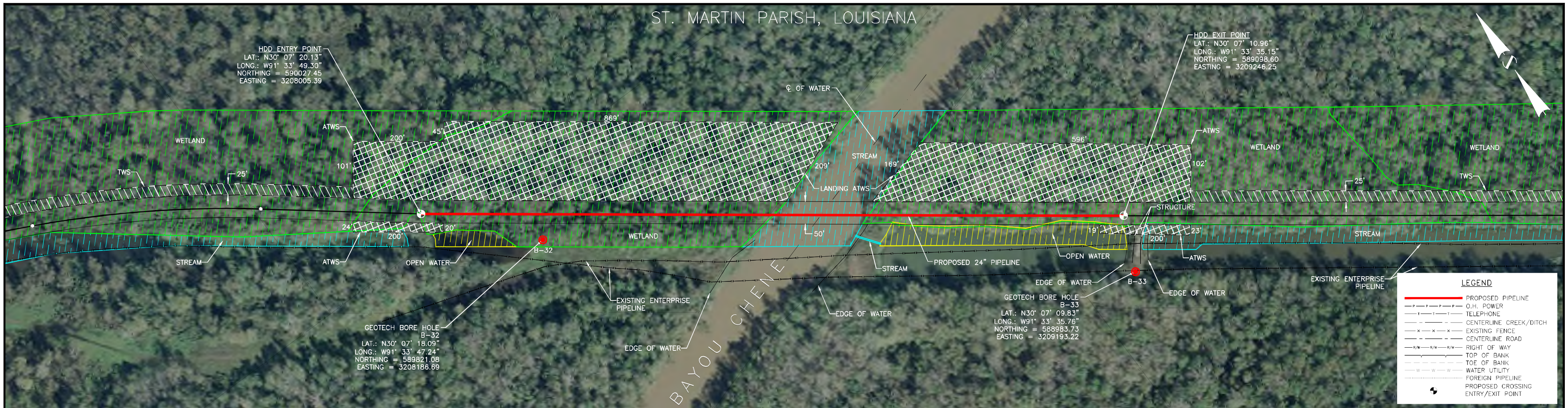
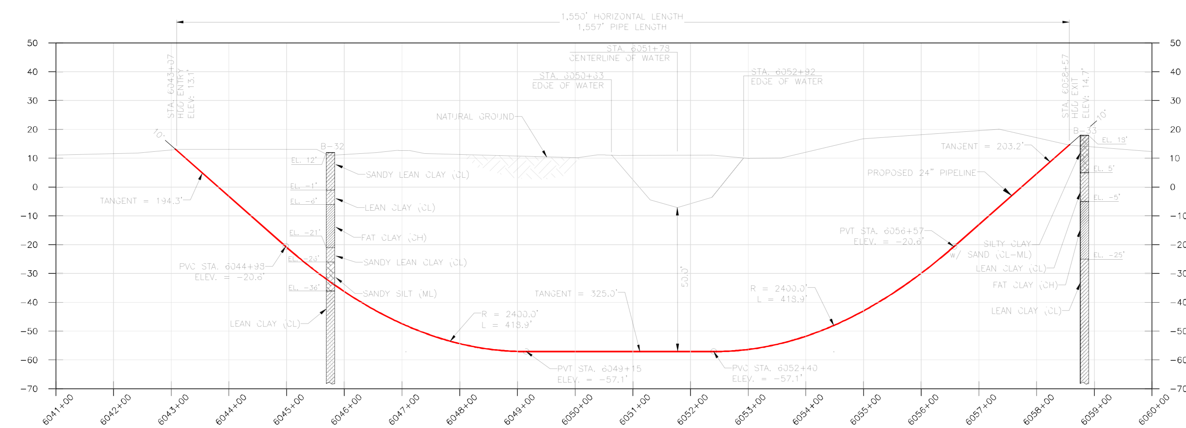


PLAN

SCALE 1"=100'



PROFILE

1" = 100' H
1" = 20' V

NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC. PRIOR TO INITIATING HDD OPERATIONS.
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4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN. AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,800 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C.
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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TRC PROJ. #53595, LIC. No. EF 4588

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DWG. STATUS	CHECKED BY	DATE	APPROVED BY	DATE	BY	DATE
PREL'Y						
BID						
CONSTR.						
CADDS						

DWG. NO. | REFERENCE DRAWING TITLE

P.L./STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR
DESIGN / DRAWN / CHECKED / FILE NO. — BY / DATE
PLOT DATE:
FILE NAME:
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
BAYOU CHENE RIVER CROSSING

ST. MARTIN PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-14A
SHEET 1 OF 1

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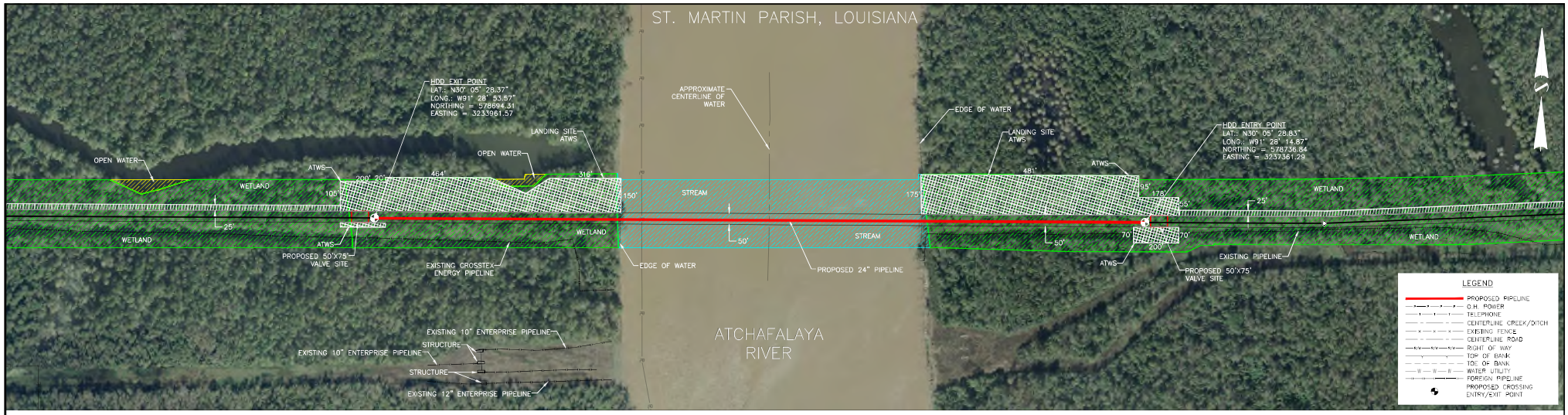
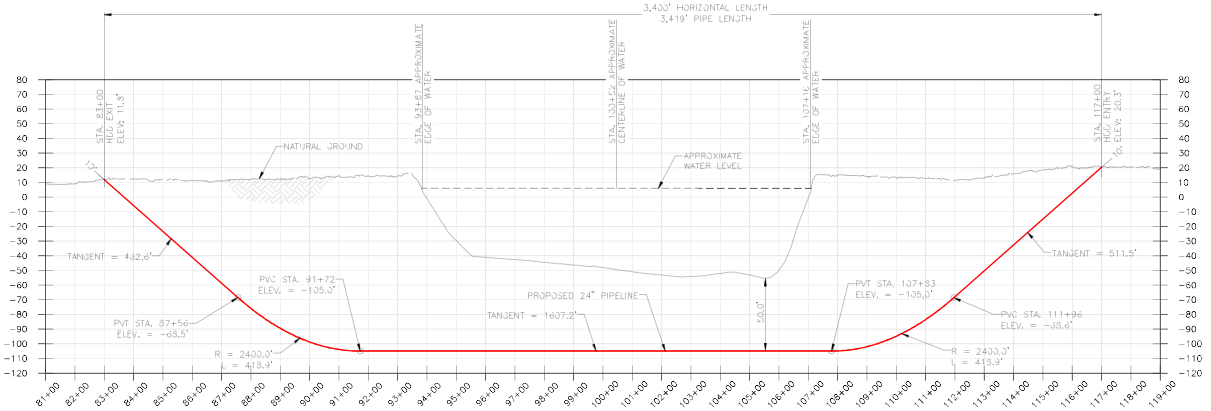


PLAN

SCALE 1"=200'



NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC. PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SHALL BE RUN. CLEANING SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN, AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE. CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,533 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

PROFILE
1" = 200' H
1" = 40' V

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C
DESIGN MAXIMUM OPERATING PRESSURE: 1,430 PSIG
DESIGN FACTOR: 0.53
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" WT., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,435 PSIG

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DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE	APPROVED BY	APPROVED DATE
PREL'Y						
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CONSTR.						
CADDS	PLOT DATE:					
	FILE NAME:					

P.I./STA. NO.:
ACCOUNT NO.:
CONSTRUCTION YEAR

	BY	DATE
DESIGN		
DRAWN		
ASBUILT		

FILE NO.:
SCALE: AS SHOWN

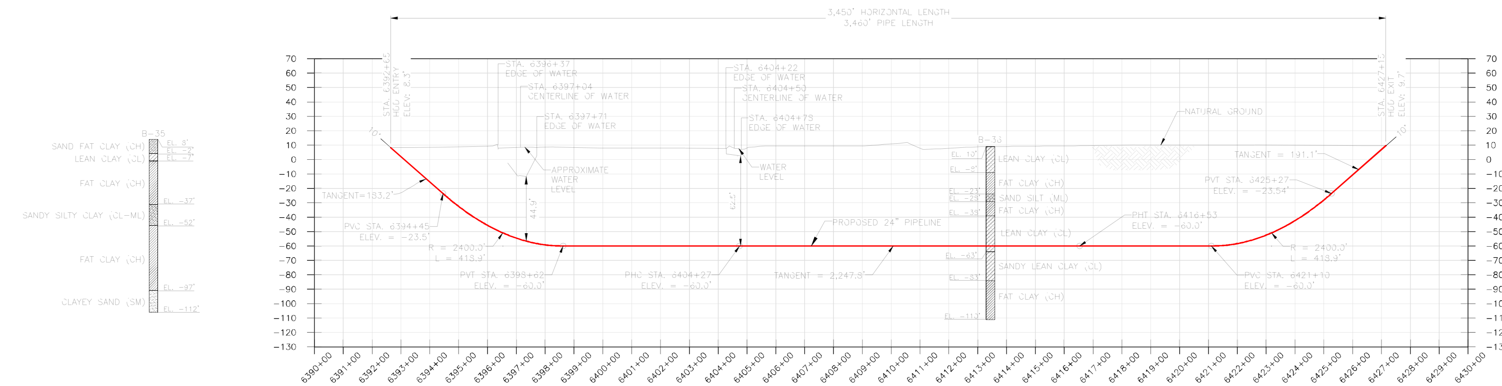
BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
ATCHAFALAYA RIVER CROSSING

ST. MARTIN PARISH, LOUISIANA

PROJECT NO.: 53595
PREVIOUS DWG. NO.:
SHEET 1 OF 1
DWG. NO.: P4-15A
SHEET 1 OF 1

PLAN
SCALE 1"=200'



PROFILE
1" = 200' H
1" = 40' V

NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC. PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN. AFTER THE PILOT HOLE IS COMPLETE, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,800 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENRRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTRUBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C.
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

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		1	REISSUED FOR FILING	MEH	01/12/17	AL	BAM

DWG. STATUS	CHECKED BY	DATE	APPROVED BY	DATE	BY	DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE:	FILE NAME:				

AFE/STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR
DESIGN / DRAWN / ASBUILT (BY, DATE)
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
ATCHAFALAYA BASIN TRIBUTARY 1 RIVER CROSSING
ST. MARTIN PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-16A
SHEET 1 OF 1

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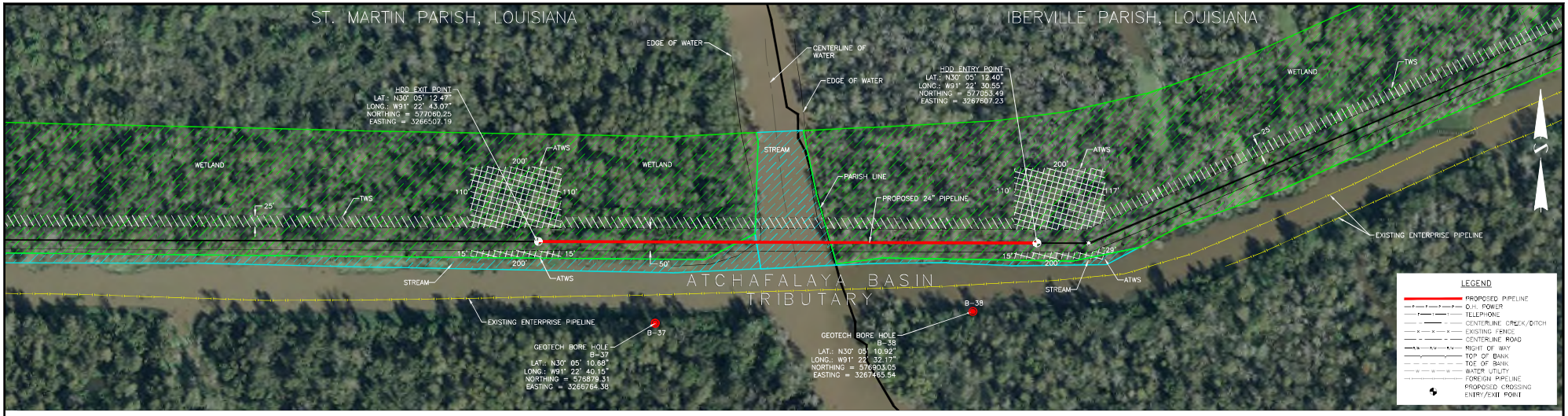
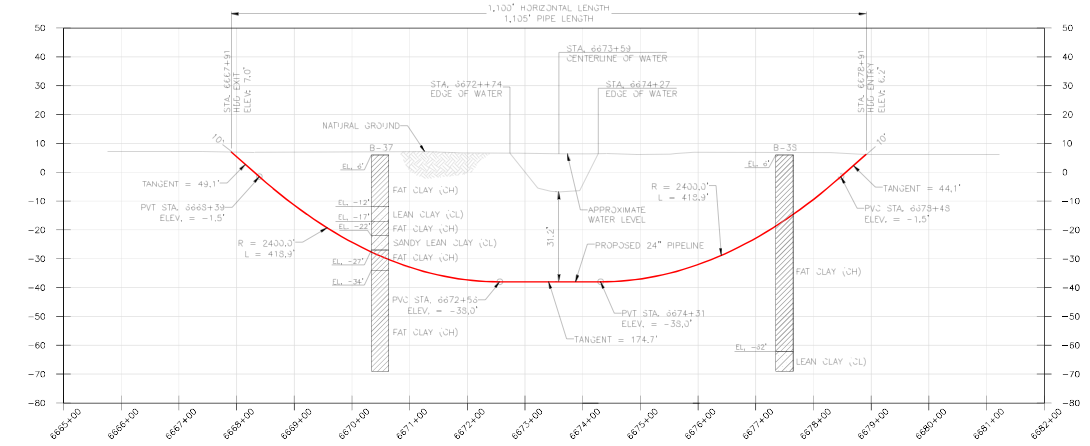


PLAN

SCALE 1"=100'



PROFILE

1" = 100' H
1" = 20' V

NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC's SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC. PRIOR TO INITIATING HDD OPERATIONS.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
3. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
4. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
5. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).

7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTIVE REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN, AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE. CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.

12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,500 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE GRADED AS SPECIFIED IN THE "CLEAN-UP AND RESTORATION REQUIREMENTS" IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED. CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
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ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 33 FT. CLEARING AREA ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C,
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.500" WT., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,495 PSIG

REISSUED FOR FILING 01/12/17

TRC
Results you can rely on

16350 PARK TEN PLACE, SUITE 101
HOUSTON, TX. 77084
PH: (281) 616-0100
TRC PROJ. #53595, LIC. No. EF 4588

DWG. NO.	REFERENCE DRAWING TITLE

NO.	REVISION - DESCRIPTION	BY	DATE	CHK'D	APP'D
1	REISSUED FOR FILING	MEH	01/12/17	AL	BAM

DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE	APPROVED BY	APPROVED DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE:					
	FILE NAME:					

	BY	DATE
DESIGN		
DRAWN		
ASBUILT		

CC/ATA NO.
ACCOUNT NO.
CONSTRUCTION YEAR
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
ATCHAFALAYA BASIN TRIBUTARY 2 RIVER CROSSING

ST. MARTIN/IBERVILLE PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-17A
SHEET 1 OF 1

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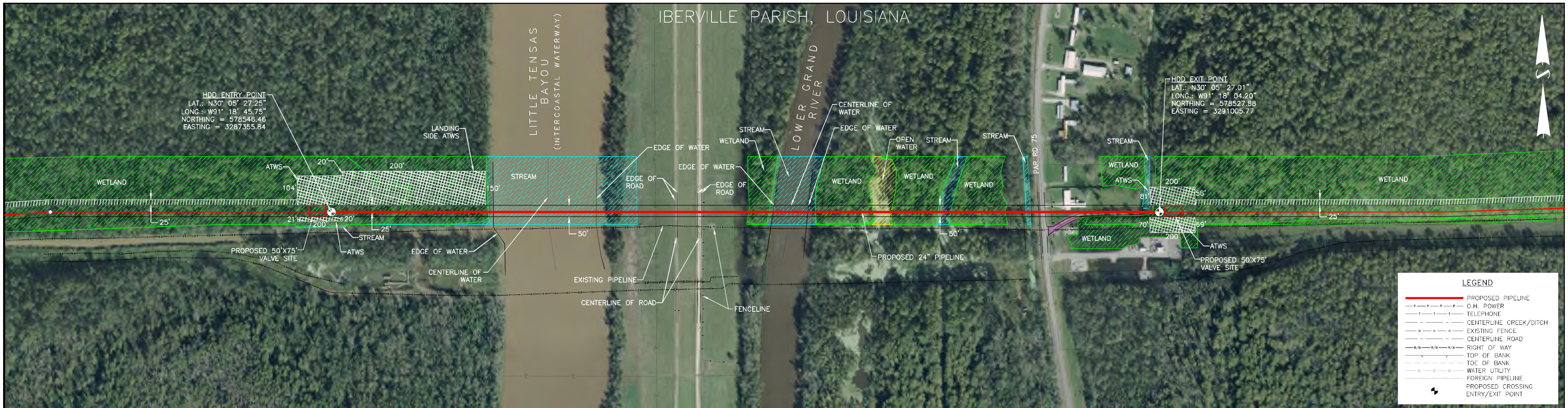
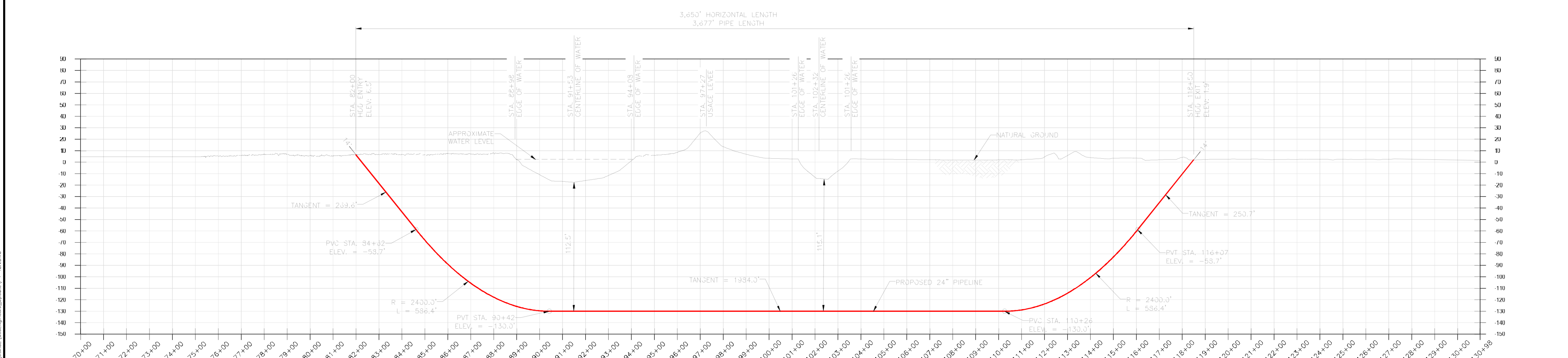


PLAN
SCALE 1"=200'



PROFILE
1" = 200' H
1" = 40' V

NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC. PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN. AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,800 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C.
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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TRC PROJ. #53595, LIC. No. EF 4588

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DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE	APPROVED BY	APPROVED DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE:					
	FILE NAME:					

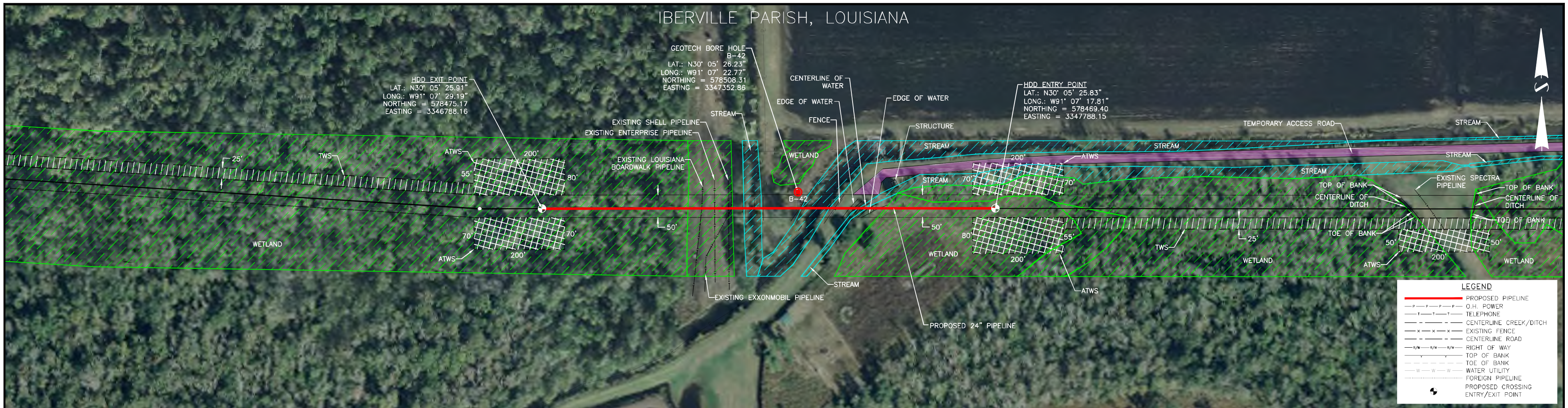
P.L./STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR
DESIGN
DRAWN
ASBUILT
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

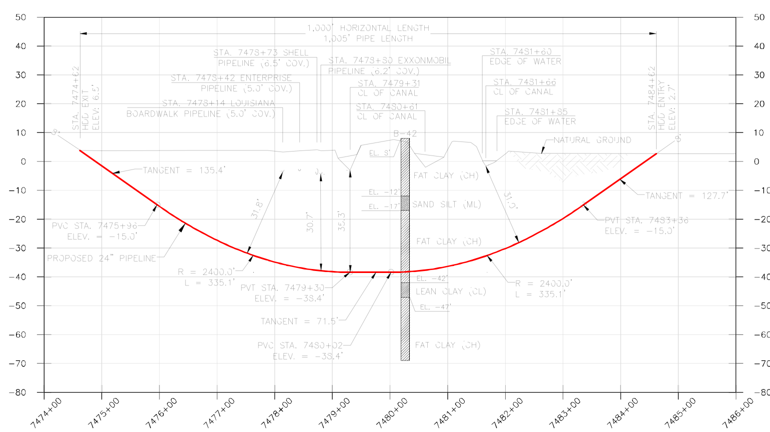
BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
INTERCOASTAL LOWER
GRAND LA 75 LEVEE CROSSING
IBERVILLE PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-18A
SHEET 1 OF 1

P:\Projects\53595000 - Bayou Bridge Pipeline\CA - CADD\Pipeline\Drawings\HDDs\USACE\GeoEngineers_Update\P4-18A.DWG



PLAN
SCALE 1"=100'



PROFILE
1" = 100' H
1" = 20' V

NOTES:

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NOTES (CONTINUED):

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NOTES (CONTINUED):

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DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C.
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

REISSUED FOR FILING 01/12/17

TRC
Results you can rely on

16350 PARK TEN PLACE, SUITE 101
HOUSTON, TX. 77084
PH: (281) 616-0100
TRC PROJ. #53595, LIC. No. EF 4588

DWG. NO.	REFERENCE DRAWING TITLE	NO.	REVISION – DESCRIPTION	BY	DATE	CHK'D	APP'D
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DWG. STATUS	CHECKED BY	DATE	APPROVED BY	DATE	BY	DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE:		FILE NAME:			

P.L./STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR
DESIGN / DRAWN / CHECKED / FILE NO. / SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

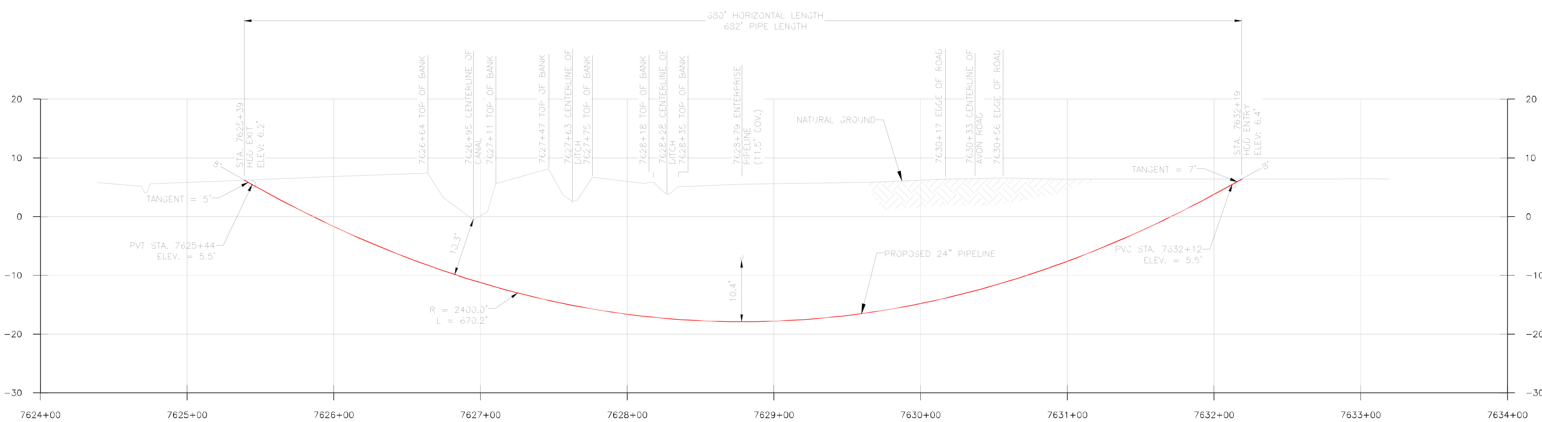
BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
CANAL CROSSING

IBERVILLE PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-19A
SHEET 1 OF 1

P:\Projects\53595000 - Bayou Bridge Pipeline\CA - CADD\Pipeline\Drawings\HDDs\HDD\P4-19.DWG

PLAN
SCALE 1"=40'



NOTES:

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NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
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11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN. AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
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14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

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2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

PROFILE
1" = 40' H
1" = 10' V

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C.
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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	FILE NAME:					

P.L./STA. NO.
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DESIGN
DRAWN
ASBUILT
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
CANAL & AEGIS PIPELINE CROSSING
ASSUMPTION PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-29A

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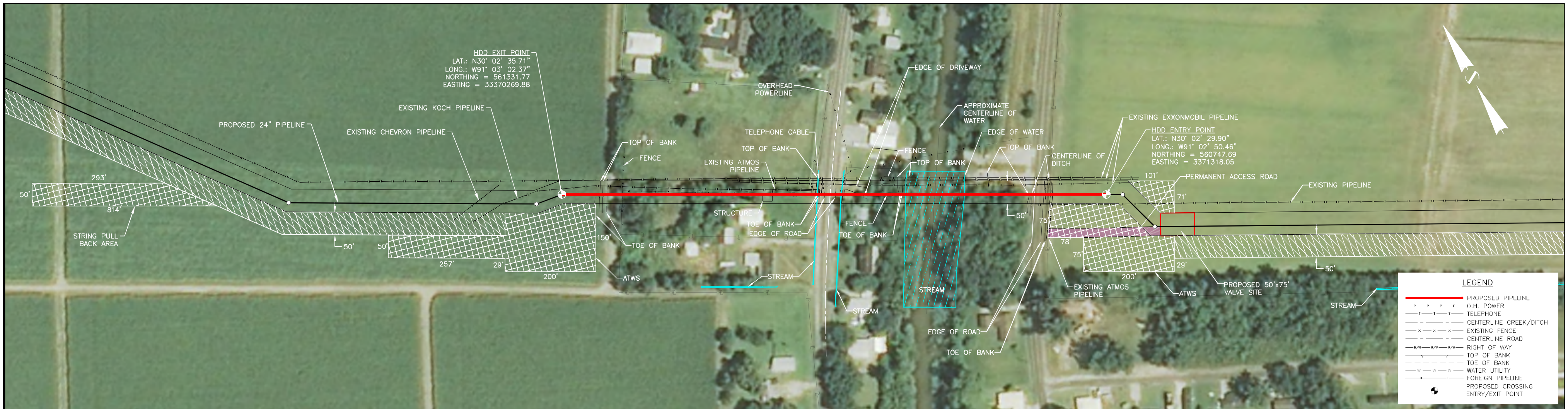
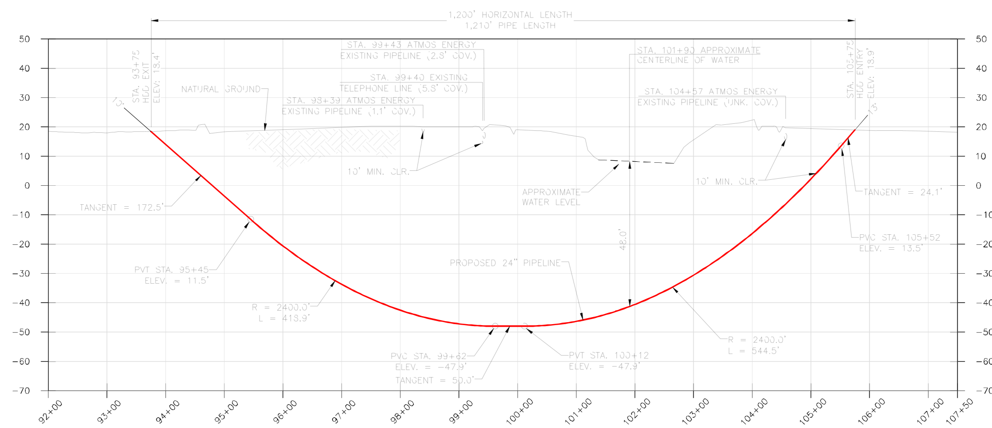


PLAN
SCALE 1"=100'



PROFILE
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NOTES:

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2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC. PRIOR TO INITIATING HDD OPERATIONS.
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5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
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10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN. AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
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14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
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3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C.
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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TRC PROJ. #53595, LIC. No. EF 4588

DWG. NO.	REFERENCE DRAWING TITLE	NO.	REVISION - DESCRIPTION	BY	DATE	CHK'D	APP'D
		1	REISSUED FOR FILING	MEH	01/12/17	AL	BAM

DWG. STATUS	CHECKED BY	DATE	APPROVED BY	DATE	BY	DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE:		FILE NAME:			

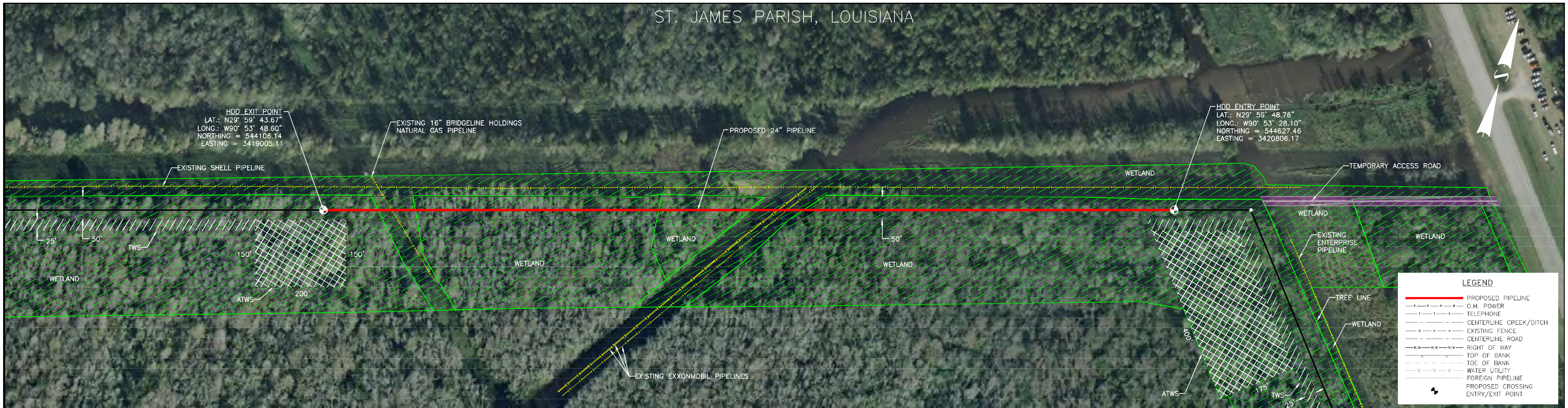
P.L./STA. NO. ACCOUNT NO.
CONSTRUCTION YEAR
DESIGN
DRAWN
ASBUILT
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

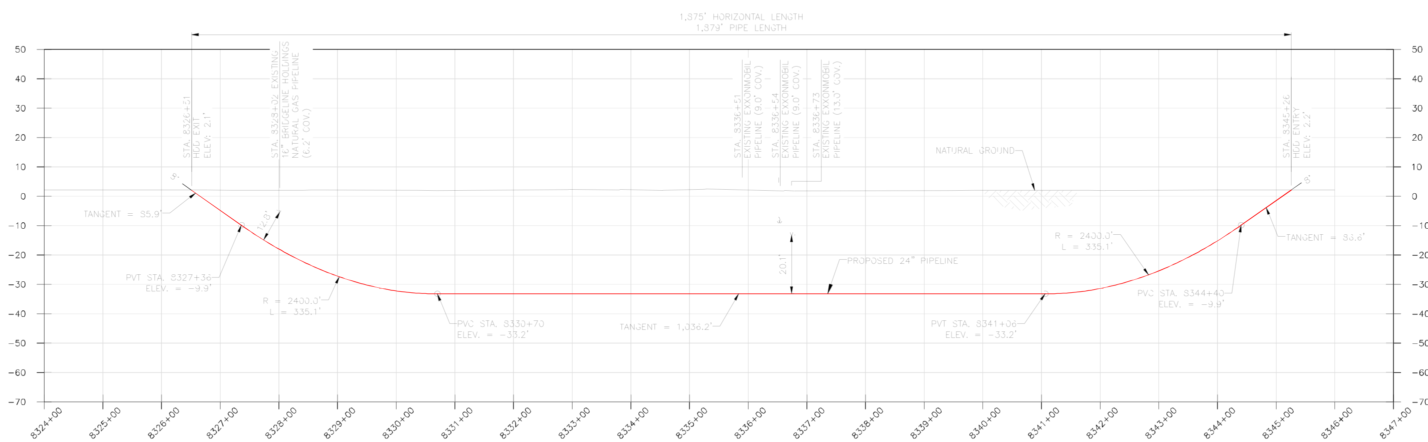
BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
BAYOU LAFOURCHE CROSSING
ASSUMPTION PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-20A
SHEET 1 OF 1

P:\Projects\53595000 - Bayou Bridge Pipeline\CA - CADD\Pipeline\Drawings\HDDs\USACE\GeoEngineers_Update\P4-20A.DWG



PLAN
SCALE 1"=100'



PROFILE
1" = 100' H
1" = 20' V

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DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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SCALE: AS SHOWN

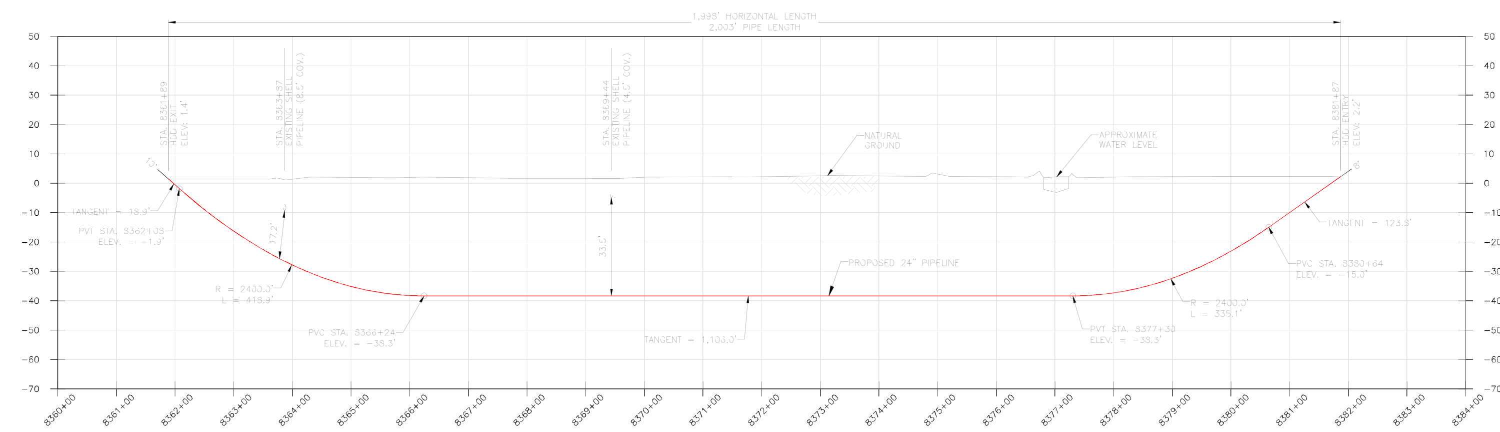
BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
LDNR EXXON/BRIDGELINE PIPELINE CORRIDOR CROSSING
ST. JAMES PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-32A
SHEET 1 OF 1

P:\Projects\53595000 - Bayou Bridge Pipeline\CA - CADD\Pipeline\Drawings\HDDs\HDD\P4-32.dwg

PLAN
SCALE 1"=100'



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DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C.
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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CONSTR.						
CADDS	PLOT DATE:		FILE NAME:			

P.L./STA. NO. ACCOUNT NO.
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DESIGN / DRAWN / ASBUILT
FILE NO.
SCALE: AS SHOWN

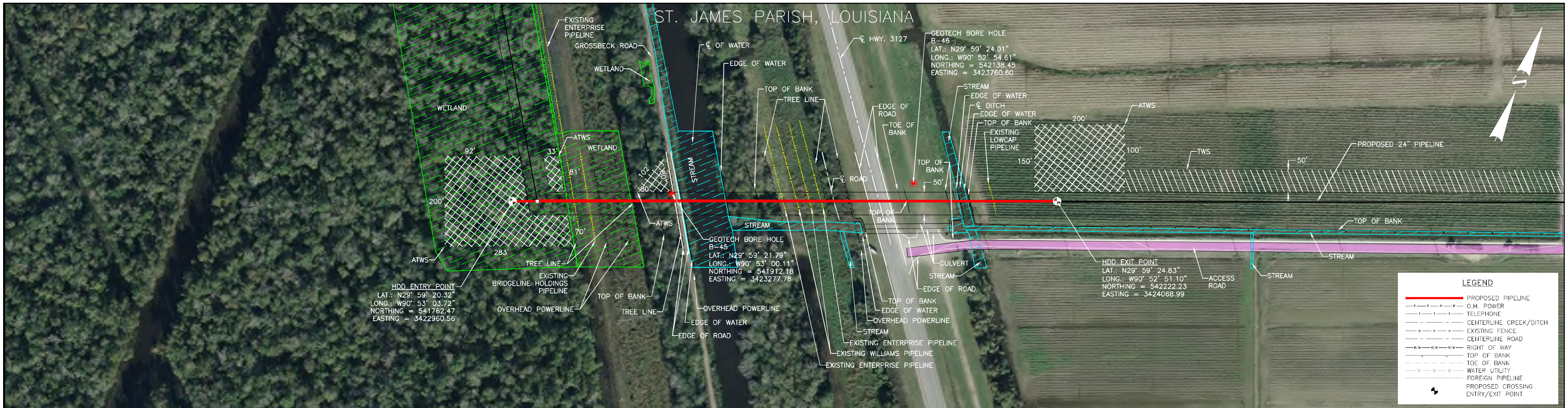
BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
LDNR SHELL PIPELINE CORRIDOR CROSSING

ST. JAMES PARISH, LOUISIANA

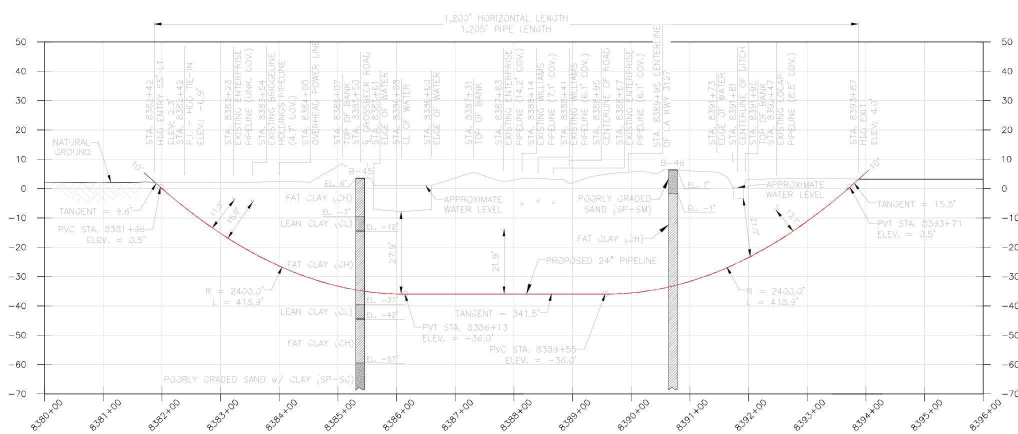
PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-33A
SHEET 1 OF 1

P:\Projects\53595000 - Bayou Bridge Pipeline\CA - CADD\Pipeline\Drawings\HDDs\HDD\P4-33.dwg



ST. JAMES PARISH, LOUISIANA
EXISTING ENTERPRISE PIPELINE
GROSSBECK ROAD
WETLAND
WETLAND
ATWS
33'
81'
92'
200'
70'
283'
ATWS
TREE LINE
EXISTING BRIDGELINE HOLDINGS PIPELINE
OVERHEAD POWERLINE
HDD ENTRY POINT
LAT.: N29° 59' 20.32"
LONG.: W90° 53' 03.72"
NORTHING = 541762.47
EASTING = 3422960.56
102'
80'
TOP OF BANK
TREE LINE
ATWS
℄ OF WATER
EDGE OF WATER
STREAM
GEOTECH BORE HOLE
B-45
LAT.: N29° 59' 21.79"
LONG.: W90° 53' 00.11"
NORTHING = 541912.18
EASTING = 3423277.78
OVERHEAD POWERLINE
EDGE OF WATER
EDGE OF ROAD
TOP OF BANK
TREE LINE
℄ ROAD
STREAM
EDGE OF ROAD
TOE OF BANK
TOP OF BANK
EDGE OF WATER
OVERHEAD POWERLINE
STREAM
EXISTING ENTERPRISE PIPELINE
EXISTING WILLIAMS PIPELINE
EXISTING ENTERPRISE PIPELINE
℄ HWY. 3127
GEOTECH BORE HOLE
B-46
LAT.: N29° 59' 24.01"
LONG.: W90° 52' 54.61"
NORTHING = 542138.45
EASTING = 3423760.60
STREAM
EDGE OF WATER
℄ DITCH
EDGE OF WATER
TOP OF BANK
EXISTING LOWCAP PIPELINE
TOP OF BANK
50'
CULVERT
STREAM
EDGE OF ROAD
150'
200'
100'
ATWS
TWS
50'
PROPOSED 24" PIPELINE
TOP OF BANK
STREAM
STREAM
ACCESS ROAD
HDD EXIT POINT
LAT.: N29° 59' 24.83"
LONG.: W90° 52' 51.10"
NORTHING = 542222.23
EASTING = 3424068.99
LEGEND
PROPOSED PIPELINE
O.H. POWER
TELEPHONE
CENTERLINE CREEK/DITCH
EXISTING FENCE
CENTERLINE ROAD
RIGHT OF WAY
TOP OF BANK
TOE OF BANK
WATER UTILITY
FOREIGN PIPELINE
PROPOSED CROSSING ENTRY/EXIT POINT

PLAN
SCALE 1"=100'



1,203' HORIZONTAL LENGTH
1,205' PIPE LENGTH
NATURAL GROUND
TANGENT = 9.6'
PVC STA. 8381+96
ELEV. = 3.5'
10°
STA. 8382+42
HDD ENTRY 22" LT
ELEV. 2.3'
R = 2400.0'
L = 418.9'
FAT CLAY (CH)
LEAN CLAY (CL)
FAT CLAY (CH)
LEAN CLAY (CL)
FAT CLAY (CH)
POORLY GRADED SAND w/ CLAY (SP-SC)
B-45
APPROXIMATE WATER LEVEL
POORLY GRADED SAND (SP-SM)
FAT CLAY (CH)
PROPOSED 24" PIPELINE
TANGENT = 341.5'
PVT STA. 8386+13
ELEV. = -36.0'
PVC STA. 8389+55
ELEV. = -36.0'
B-46
APPROXIMATE WATER LEVEL
R = 2400.0'
L = 418.9'
TANGENT = 15.8'
PVT STA. 8393+71
ELEV. = 3.5'
STA. 8393+87
HDD EXIT
ELEV. 4.3'
STA. 8389+95 CENTERLINE OF LA HWY 3127
8380+00
8381+00
8382+00
8383+00
8384+00
8385+00
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PROFILE
1" = 100' H
1" = 20' V

NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING.
2. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC. PRIOR TO INITIATING HDD OPERATIONS.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
4. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
5. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
6. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL-PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN. AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE, CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC. FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 3-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,800 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 30 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTING: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.509" W.T., ERW, API 5L, PSL2, GRADE X-70, DRL, ARO over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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DWG. NO.	REFERENCE DRAWING TITLE

DWG. STATUS	CHECKED BY	DATE	APPROVED BY	DATE	BY	DATE
PREL'Y						
BID						
CONSTR.						
CADDS	PLOT DATE:					
	FILE NAME:					

P.L./STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR
DESIGN
DRAWN
ASBUILT
FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" PIPELINE
CANAL & HWY 3127 CROSSING
ST. JAMES PARISH, LOUISIANA

PROJECT NO. 53595
PREVIOUS DWG. NO.
SHEET 1 OF 1
DWG. NO. P4-21A
SHEET 1 OF 1

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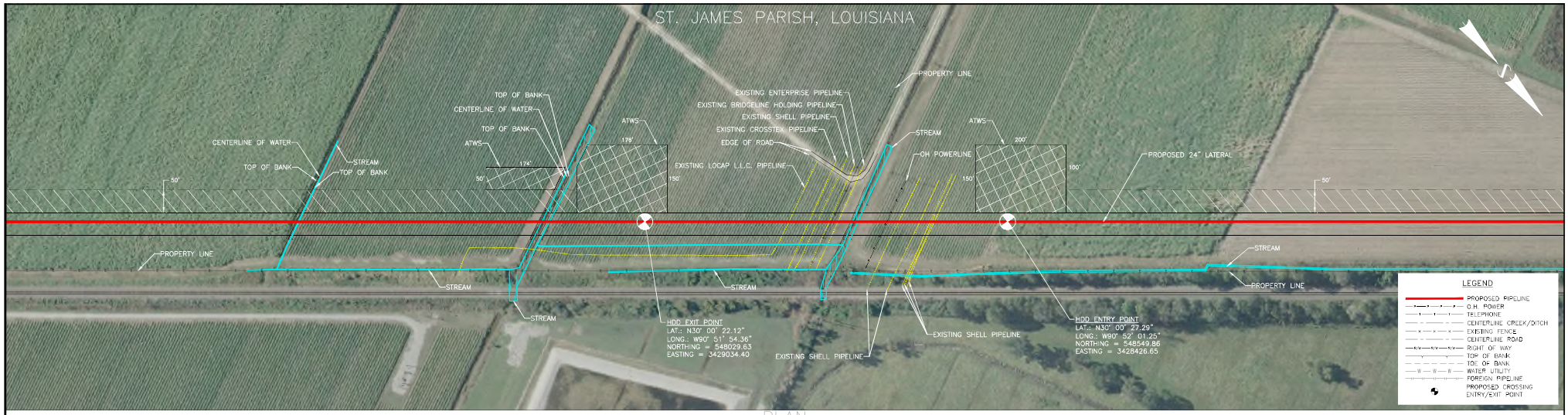
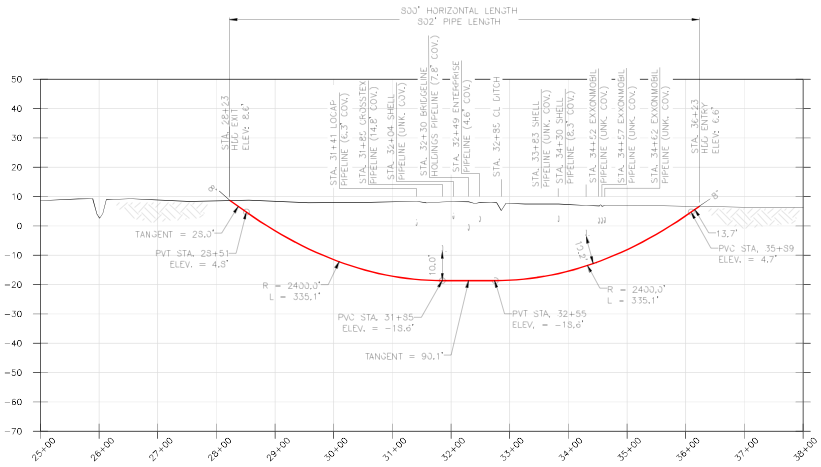


PLAN

SCALE 1"=100'



PROFILE

1" = 100' H

1" = 20' V

NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFICATIONS AND REQUIREMENTS PER BAYOU BRIDGE PIPELINE, LLC. SPECIFICATIONS, CONTRACT DOCUMENTS AND SPECIAL PERMIT CONDITIONS, EXCEPT AS NOTED ON THIS DRAWING. CONTRACTOR IS RESPONSIBLE FOR CALLING LOUISIANA ONE-CALL AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15 FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM BAYOU BRIDGE PIPELINE, LLC, PRIOR TO INITIATING HDD OPERATIONS.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
3. PLACEMENT OF THE HDD RIG IS NOT FIXED BY THE DESIGNATION OF THE ENTRY AND EXIT POINTS. THE USE OF DUAL HDD RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
4. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
5. WORK SPACE: MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT

NOTES (CONTINUED):

NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
7. WATER SOURCE: DRILL WATER AND HYDROSTATIC WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
8. HYDROSTATIC TEST: PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS. THE TEST WATER SHALL BE DISCHARGED IN AN UPLAND AREA INTO AN EROSION CONTROL STRUCTURE OF STRAW BALES AND/OR SILT FENCES, GEOTEXTILE FILTER BAG, OR COLLECTED IN A TRUCK AND HAULED TO AN APPROVED DISPOSAL SITE. UPON COMPLETION OF DEWATERING AND DRYING, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
9. SPILL PREVENTION: REFUELING OF ALL EQUIPMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE SPCC PLAN.
10. EROSION AND SEDIMENT CONTROL: CONTRACTOR SHALL SUPPLY, INSTALL AND MAINTAIN SEDIMENT CONTROL STRUCTURES IN ACCORDANCE WITH CONTRACT DOCUMENTS. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL STRUCTURES AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
11. INSTALLATION: THE PIPE SECTION FOR THE DRILLED CROSSING SHALL BE MADE UP WITHIN THE APPROVED CONSTRUCTION RIGHT-OF-WAY AT THE DRILL EXIT POINT AS SHOWN, AFTER THE PILOT

NOTES (CONTINUED):

HOLE IS COMPLETE. CONTRACTOR'S ACTUAL DRILL PROFILE SHALL BE SUBMITTED TO BAYOU BRIDGE PIPELINE, LLC, FOR APPROVAL. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
12. 5-JOINT CURVE RADIUS SHALL BE NO LESS THAN 1,500 FEET TO MEET THE REQUIREMENTS OF STANDARD HDD PRACTICES.
13. DRILLING FLUID DISPOSAL: CONTRACTOR SHALL DISPOSE OF EXCESS DRILLING FLUID AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WASH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF AS DIRECTED BY THE COMPANY REPRESENTATIVE IN ACCORDANCE WITH PERMIT CONDITIONS.
14. CLEANUP/STABILIZATION/RESTORATION: ALL DISTURBED AREAS SHALL BE RETURNED TO THE ORIGINAL CONTOURS. DISTURBED AREAS SHALL BE SEEDED AS SPECIFIED IN THE CLEAN-UP AND RESTORATION REQUIREMENTS. IF THE TERRAIN ALLOWS AND ACCESS IS PERMITTED, CONTRACTOR SHALL UTILIZE LOW GROUND PRESSURE EQUIPMENT OR OTHER EQUIPMENT APPROVED BY OWNER, TO FACILITATE CONTAINMENT AND CLEAN-UP OF ANY INADVERTENT RETURNS THAT OCCUR DURING THE HDD INSTALLATION PROCESS.
15. GEOTECHNICAL DATA: BORE HOLES ARE OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN ON THE PLAN VIEW. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY. REFER TO THE APPLICABLE GEOTECHNICAL REPORT (PROVIDED BY RABA KISTNER CONSULTANTS) IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION.

ENVIRONMENTAL NOTES:

1. CONTRACTOR SHALL ONLY CLEAR THE ROW BETWEEN THE HDD ENTRY/EXITS AS SPECIFIED ON THE DRAWINGS.
2. CONTRACTOR SHALL CENTER THE 50 FT. CLEARING AREAS ON THE CENTERLINE OF THE PIPE FOR MAINTENANCE OF OPERATIONS.
3. IF TEMPORARILY IMPACTED DURING CONSTRUCTION, RIPARIAN BUFFERS WILL BE ALLOWED TO REVEGETATE NATURALLY AFTER CONSTRUCTION.

DRAWING NOTES:

1. DRAWING IS PROJECTED IN: NAD83 Louisiana State Plane, Southern Zone, US Foot.

CARRIER PIPE SPECIFICATIONS:

PRODUCT TRANSPORTED: CRUDE OIL
49 CFR, LIQUID PIPELINE PART 195, SUBPART C
DESIGN MAXIMUM OPERATING PRESSURE: 1,480 PSIG
DESIGN FACTOR: 0.50
PIPE: CARBON STEEL, 24.00" O.D. X 0.500" WT., ERW, API 5L, PSL2, GRADE X-70, DRL, API 5ℓ over FBE COATING
DESIGN PRESSURE (P): 1,485 PSIG

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		1	REISSUED FOR FILING	MEH	01/12/17	AL	BAM

DWG. STATUS	CHECKED BY	CHECKED DATE	APPROVED BY	APPROVED DATE
PREL'Y				
BID				
CONSTR.				
CADDS	PLOT DATE:		FILE NAME:	

P/L/STA. NO.
ACCOUNT NO.
CONSTRUCTION YEAR

	BY	DATE
DESIGN		
DRAWN		
ASBUILT		

FILE NO.
SCALE: AS SHOWN

BAYOU BRIDGE PIPELINE, LLC
HOUSTON, TEXAS

BAYOU BRIDGE PIPELINE, LLC
PROPOSED 24" LATERAL
PIPELINE CORRIDOR CROSSING

ST. JAMES PARISH, LOUISIANA

PROJECT NO.: 258266
PREVIOUS DWG. NO.:
SHEET 1 OF 1
DWG. NO.: P4-1A
SHEET 1 OF 1

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