



Public Notice

U.S. Army Corps
of Engineers
Tulsa District

Reply To:

U.S. Army Corps of Engineers
ATTN: Regulatory Office
2488 East 81st Street
Tulsa, Oklahoma 74137-4290

SWT-2019-00530
Public Notice No.

June 18, 2020
Public Notice Date

July 18, 2020
Expiration Date

PURPOSE

The purpose of this public notice is to inform you of a proposal for work in which you might be interested and to solicit your comments and information to better enable us to make a reasonable decision on factors affecting the public interest.

SECTION 10

The U.S. Army Corps of Engineers is directed by Congress through Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) to regulate all work or structures in or affecting the course, condition, or capacity of navigable waters of the United States. The intent of this law is to protect the navigable capacity of waters important to interstate commerce.

SECTION 404

The U.S. Army Corps of Engineers is directed by Congress through Section 404 of the Clean Water Act (33 U.S.C. 1344) to regulate the discharges of dredged and fill material into all waters of the United States. These waters include lakes, rivers, streams, mudflats, sandflats, sloughs, wet meadows, natural ponds, and wetlands adjacent to other waters. The intent of the law is to protect these waters from the indiscriminate discharge of material capable of causing pollution and to restore and maintain their chemical, physical, and biological integrity.

NOTICE TO PUBLISHERS

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
2488 EAST 81ST STREET
TULSA, OKLAHOMA 74137-4290

Application No. SWT-2019-00530

JOINT PUBLIC NOTICE
U.S. ARMY CORPS OF ENGINEERS
AND
OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ)
(30-DAY COMMENT PERIOD)

Interested parties are hereby notified that the District Engineer (DE) has received an application for a Department of the Army (DA) permit and water quality certification pursuant to Sections 404 and 401 of the Clean Water Act (CWA). The ODEQ hereby incorporates this public notice and procedure as its own public notice and procedure by reference thereto.

Applicant: Mr. Mark Cunningham
Cushing Connect Pipeline Holdings, LLC
2828 North Harwood, Suite 1300
Dallas, TX 75201

Agent: Mr. Brent Simmons
Audubon Field Solutions
10205 Westheimer Road, Suite 100
Houston, TX 77042

Location: There are 130 single and complete projects for crossings of waters of the United States (WOUS) that would traverse portions of Creek, Payne, and Tulsa Counties.

Project Description: The application is for the placement of dredge or fill material for 130 single and complete projects for crossings of WOUS associated with the construction of approximately 47 miles of 16-inch steel crude oil pipeline. Please note, the scope of each single and complete project impacting WOUS would have been evaluated for verification under Nationwide (NWP) 12 for Utility Line Activities, however, the Corps is enjoined from authorizing any dredge or fill activities associated with construction of new oil & gas pipelines under NWP 12 due to a recent court case (*Northern Plains Resource Council v. U.S. Army Corps of Engineers*, 2020).

Purpose: The overall purpose of this work is for the proposed pipeline installation within multiple WOUS, at single and complete project locations, associated with the supply of up to 160,000 barrels per day of crude oil from tankage located in Cushing, Oklahoma to the two refinery facilities located in Tulsa, Oklahoma. The project is not a water dependent activity.

Summary Table of Impacts:

Impact Activity	Impact Duration	Type of Water	Type of Fill Material	Footprint in Project Workspace ac = acre lf = linear feet	Total within waters of U.S.
Pipeline Installation	Temporary	Emergent Wetlands	Existing soil at onsite location (consisting of sand, silt, clay, and/or rock) excavated and backfilled	Each individual crossings less than 0.10 ac	24
Pipeline Installation	Temporary	Intermittent Streams	Existing soil at onsite location (consisting of sand, silt, clay, and/or rock) excavated and backfilled	Each individual crossing less than 0.10 ac	30
Pipeline Installation	Temporary	Ephemeral Streams	Existing soil at onsite location (consisting of sand, silt, clay, and/or rock) excavated and backfilled	Each individual crossing range is between minimum 11 lf and maximum 476 lf	76
				Total:	130

Description of Work: The applicant proposes to place dredge or fill material temporarily into 24 emergent wetlands (each individual crossing is less than 0.10 ac). Additionally, 30 intermittent streams (each crossing location less than 0.10 ac) and 76 ephemeral streams (each individual crossing is between a minimum 11 lf and 476 lf) would be crossed by this proposed utility line. At the wetland crossings, where the pipe would be installed by conventional open cut trench, segregated topsoil and trench spoil (soil other than topsoil from trench excavations that may be temporarily sidecast for no longer than three months) would be temporarily sidecast and stored in the wetland. Once the pipe is lowered into the trench, the trench spoil and topsoil would be replaced in the strata from which it was removed. At all intermittent stream crossings and most ephemeral stream crossings, additional temporary workspace has been added on setbacks of approximately 50 feet from the top of bank for spoil storage. For intermittent stream crossings, no spoil would be temporarily side cast within the limits of the ordinary high water mark. Once the pipe is installed in the trench, the spoil and topsoil would be replaced and the crossing would be restored to pre-construction contours.

There are 21 crossings of WOUS where the activities would consist of utilizing horizontal directional drill or guided bore methods. These activities would not be regulated pursuant to Section 404 of the CWA, therefore, the Corps is not soliciting comments for these areas.

Avoidance and Minimization Information: The applicant provided the following statement with regard to how avoidance and minimization of impacts to aquatic resources was incorporated into the project plan:

Avoidance:

Based on preliminary desktop reviews and field delineation data, the project was designed to include HDD or guided bore crossings of nine perennial stream crossings. No perennial streams would be impacted by the proposed project. Throughout the design phase of the project, a number of alternatives have been considered, and route alternatives development included route variations recommended by the field wetland delineation team. This was done in order to move the route away from delineated features resulting in complete avoidance or reduction impacts to discrete wetlands and waterways. Based on field delineation data, a total of twenty-seven wetlands, waterways, and man-made ponds have been removed from the project impacts as a result of routing.

Minimization:

Where practicable, at most crossings, additional temporary workspace has been added on 50 foot setbacks for spoil storage and equipment operation, and the workspace through the crossing has been reduced to limit the amount of impact across the feature.

Mitigation: Furthermore, the applicant proposes the following as compensatory mitigation for the unavoidable impacts to aquatic resources expected from the proposed project:

All impacts associated with the Cushing Connect Pipeline are temporary. Emergent wetlands will be restored to preconstruction contours and elevations and topsoil will be segregated during grading and replaced to maintain seed and root stock. Creek crossings will be restored to pre-construction contours, flow restored and banks stabilized. Because no permanent impacts are proposed mitigation would not be required.

This mitigation plan is the applicant's proposal. The Corps has made no determination at this time with regard to the adequacy of the proposed mitigation relative to the federal mitigation rules and guidance, including Tulsa District's Mitigation and Monitoring Guidelines. Compensatory Mitigation for unavoidable impacts may be required to ensure that this activity requiring a Section 404 permit, if issued, complies with the Section 404 (b)(1) Guidelines. The Corps bears the final decision on the need for and extent of mitigation required if the project proposed herein is authorized.

Government Authorizations obtained or received:

U.S. Fish and Wildlife Service, Native Endangered Species Habitat Conservation Plan,
Permit Number: TE59403D-0

Project Setting:

The project begins in the Central Great Plains ecoregion, crosses the Northern Cross Timbers, and terminates in the Osage Cuestas ecoregion according to the Level IV Ecoregions of Oklahoma (USEPA Region 6, 2001).

Cultural Resources:

The DE is responsible to ensure compliance with the National Historic Preservation Act of 1966 (NHPA) (Public Law 89-665), as amended, and other cultural resources laws and Executive Orders. A preliminary review has been completed of the state's records for the presence of sites included in, or eligible for, inclusion in the National Register of Historic Places, as well as the Oklahoma Landmark Inventory Database. Based on the preliminary information, there may be historic properties, as defined by the NHPA, in or within the vicinity of the proposed permit area. The Corps will comply with the NHPA to resolve any potential effects. A cultural resource survey has been completed and information will be provided to the State Historic Preservation Office, Oklahoma Archeological Survey, and interested Indian Tribes.

Threatened and Endangered Species: The following federally listed species are known to occur in the vicinity or are listed for the county in which the proposed action is located: northern long-eared bat (*Myotis septentrionalis*), least tern (*Sterna antillarum*), piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), whooping crane (*Grus Americana*), American burying beetle (*Nicrophorus americanus*). A copy of this notice is being furnished to the U.S. Fish and Wildlife Service and appropriate state agencies. The IPAC consultation number is 02EKOK00-2019-SLI-3073.

We are currently assessing the potential effects of the proposed action on these species and will comply with the Endangered Species Act with regard to any effect of our decision on this permit application.

Evaluation Factors: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity and its intended use on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof: conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownerships, and, in general, the needs and welfare of the people. A permit will be denied if the discharge does not comply with the Environmental Protection Agency's 404(b)(1) Guidelines. Subject to the 404(b)(1) Guidelines and any other applicable guidelines or

criteria, a permit will be granted unless the DE determines that it would be contrary to the public interest.

Plans and Data: Plans showing the location of the proposed activity and other data are enclosed with this notice. If additional information is desired, it may be obtained from Mr. Rob Hoffmann, Tulsa District Corps of Engineers, ATTN: Regulatory Office, 2488 East 81st Street, Tulsa, OK 74137; or telephone 918-669-7400.

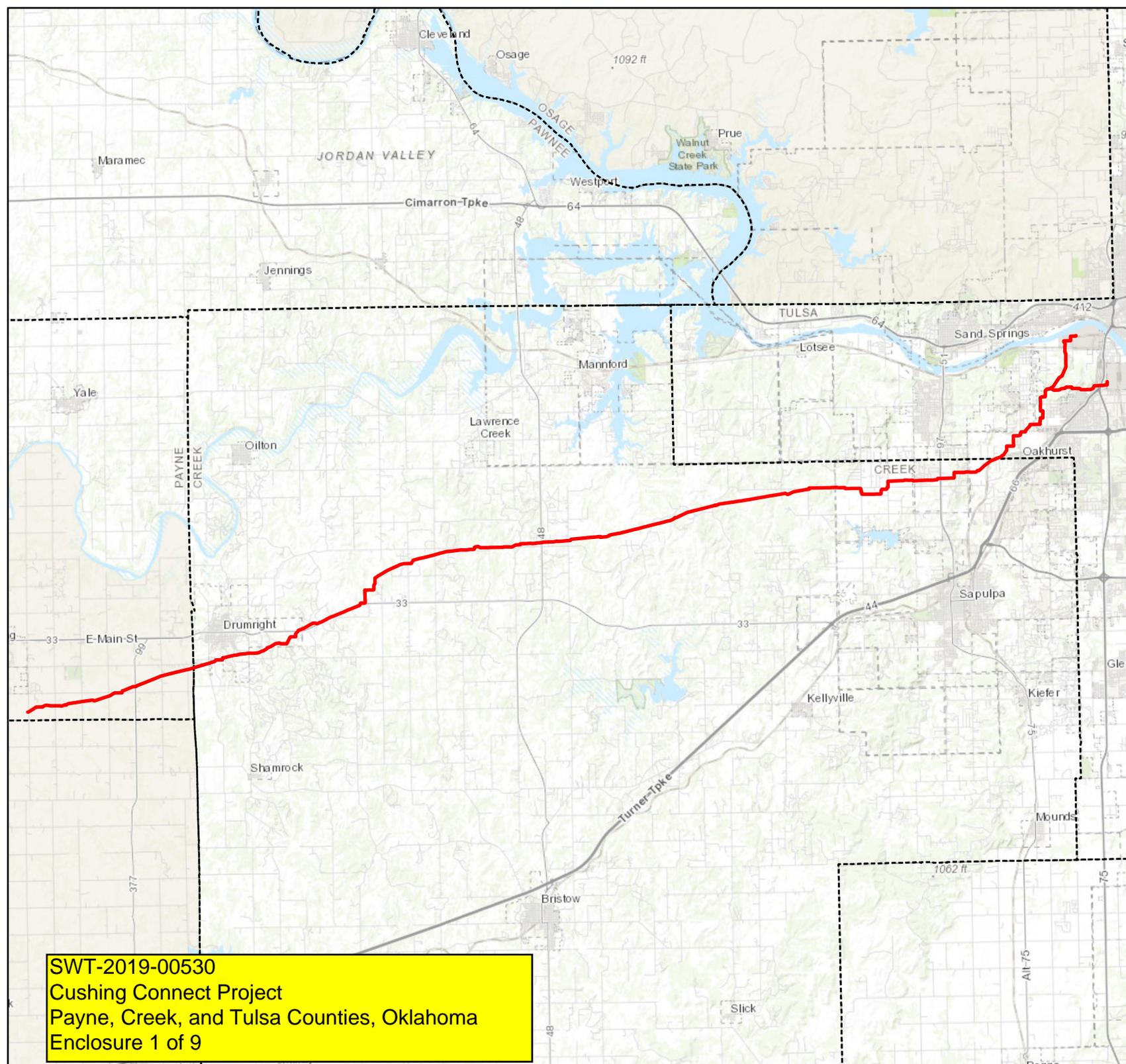
Comments: The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Any comments on this proposal must be submitted to be received by the Corps by the expiration date of this public notice comment period. Comments received after this date will not be considered in our decision. You may submit comments to mailing address Tulsa District Corps of Engineers, ATTN: Regulatory Office, 2488 East 81st Street, Tulsa, OK 74137 or email CESWT-RO@usace.army.mil. Please include the public notice number SWT-2019-00530 in the subject line of your email message.

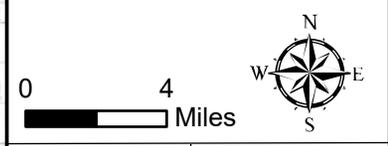
Comments concerning water quality impacts will be forwarded to ODEQ for consideration in issuing a Section 401 Water Quality Certification for the proposed project. Work may **not** commence until decisions have been made on both Sections 401 and 404.

Andrew R. Commer
Chief, Regulatory Office

Enclosures



 Proposed HEP Cushing Connect
 County

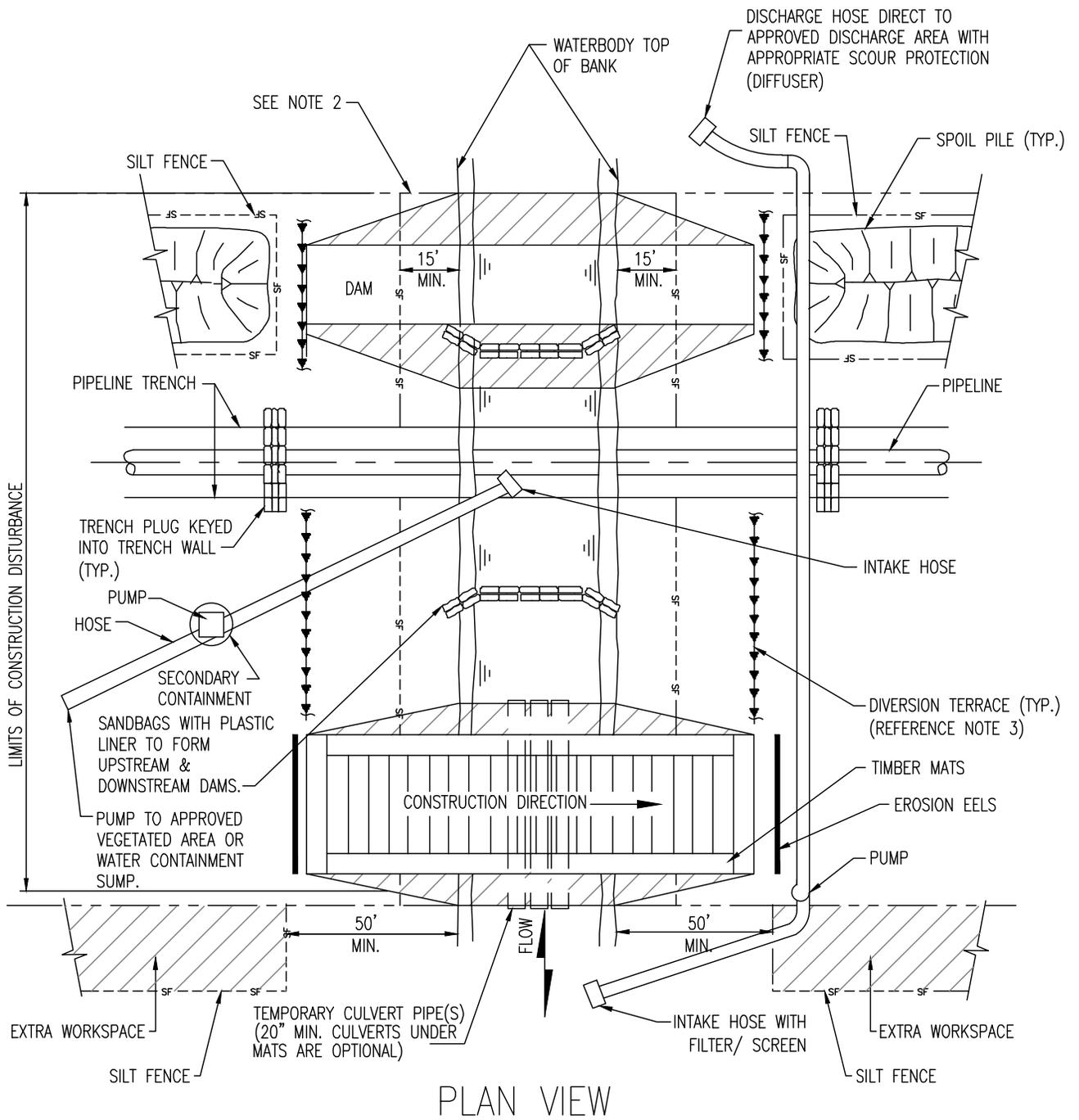


Drawn by: GIS Dept	Issue Date: 5/27/2020
Approved by: LR	Rev: 0 Map 1 of 1

**HEP CUSHING CONNECT PIPELINE
CREEK, PAYNE, AND TULSA
COUNTIES, OKLAHOMA**

SWT-2019-00530
 Cushing Connect Project
 Payne, Creek, and Tulsa Counties, Oklahoma
 Enclosure 1 of 9





PLAN VIEW

NOTE:

1. CONSTRUCTION METHOD SHOWN IS AN OPTION AS CONDITIONS NECESSITATE.
2. EXCEPT FOR THE GRADED DRIVE LANE, POSTPONE CLEARING IN THE BUFFER AREA ADJACENT TO WATERBODY UNTIL THE STAGING AREA IS PREPARED AND WORK IN THE WATERBODY IS READY TO COMMENCE. BUFFER IS A MINIMUM OF FIFTEEN (15) FEET AND EXTENDS FIFTEEN (15) FEET BEYOND THE EDGE OF THE RIPARIAN AREA, TO A MAXIMUM OF FIFTY (50) FEET.
3. INSTALL SLOPE BREAKER AT THE BASE OF ALL SLOPES ADJACENT TO THE WETLAND.
4. FLAG BUFFER ZONES PRIOR TO CLEARING.
5. USE SILT FENCE IN THE STREAM AT THE TIME OF CROSSING TO CONTAIN SATURATED SOILS.
6. LIMIT BANK GRADING IN BUFFER AREA (SEE NOTE 2) TO WIDTH ALLOWED BY PERMIT ACROSS CONSTRUCTION ROW, UNLESS TOPOGRAPHICAL FEATURES DICTATE OTHERWISE, IF APPROVED BY THE ENVIRONMENTAL INSPECTOR.
7. INSTALL GEOTEXTILE FABRIC UNDER ALL BRIDGES AND TEMPORARY TIMBER MATS IN ORDER TO PREVENT SEDIMENT FROM ENTERING ADJACENT WATERBODIES AND WETLANDS.

REVISIONS

NO.	DATE	DESCRIPTION	ENG.	DRAWN	CHK.
A	12/19/19	ISSUED FOR REVIEW	AK	LBT	NF



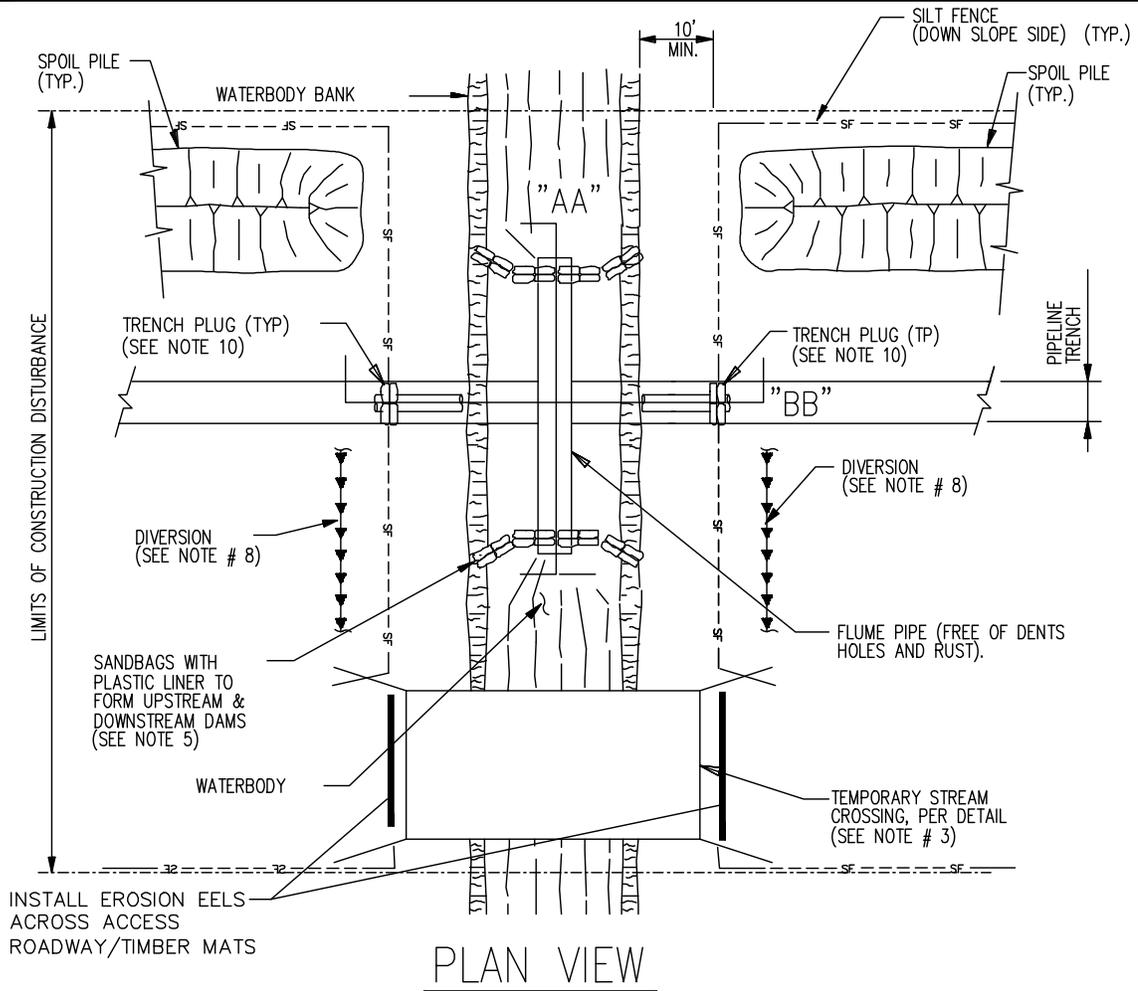
HOLLY ENERGY PARTNERS

TYPICAL WATERBODY CROSSING
DAM AND PUMP METHOD

PAYNE, CREEK & TULSA COUNTIES, OKLAHOMA

DRAWN BY: LBT	CHECKED BY: NF	APPROVED BY: ML	SCALE: NTS
DATE: 12/19/19	DRAWING NO: 3973-1800-614	SHEET 1 OF 1	

SWT-2019-00530
Cushing Connect Project
Payne, Creek, and Tulsa Counties, Oklahoma
Enclosure 2 of 9



PLAN VIEW

NOTE

1. SILT FENCE SHALL BE INSTALLED AS DEPICTED AND ALONG DOWN GRADIENT SIDES OF WORK AREAS AND STAGING AREAS SUCH THAT NO HEAVY SILT LADEN WATER ENTERS THE WATERBODY OR LEAVES THE CONSTRUCTION RIGHT-OF-WAY.
2. HARD DITCH PLUGS MUST REMAIN IN PLACE AT CONVENIENT LOCATIONS TO SEPARATE MAINLINE DITCH FROM THE WATERBODY CROSSING UNTIL THE WATERBODY CROSSING IS INSTALLED AND BACKFILLED.
3. EQUIPMENT OPERATING IN THE WATERBODY SHALL BE LIMITED TO THAT NEEDED TO PERFORM CONSTRUCTION. IF OTHER TYPES OF EQUIPMENT MUST CROSS THE WATERBODY, CONTRACTOR SHALL PROVIDE AND USE A TEMPORARY STREAM CROSSING.
4. STAGING AREA(S) FOR WATERBODY CROSSING(S), OF A MINIMUM SIZE NEEDED FOR CONVENIENT PREPARATION 50 FEET FROM WATER'S EDGE AND SHALL BE
5. FLUME CROSSING METHOD REQUIREMENTS INCLUDE:
 - A. INSTALL FLUME PIPE(S) AFTER BLASTING (IF NECESSARY), BUT BEFORE ANY TRENCHING.
 - B. USE SAND BAG OR SAND BAG AND PLASTIC SHEETING DIVERSION STRUCTURE OR EQUIVALENT TO DEVELOP AN EFFECTIVE SEAL AND TO DIVERT STREAM FLOW THROUGH THE FLUME PIPE (SOME MODIFICATIONS TO THE STREAM BOTTOM MAY BE REQUIRED TO ACHIEVE AN EFFECTIVE SEAL).
 - C. PROPERLY ALIGN FLUME PIPE(S) TO PREVENT BANK EROSION AND STREAMBED SCOUR.
 - D. DO NOT REMOVE FLUME PIPE DURING TRENCHING, PIPE LAYING, OR BACKFILLING ACTIVITIES, OR INITIAL STREAM BED RESTORATION EFFORTS.
 - E. REMOVE ALL FLUME PIPES AND DAMS THAT ARE NOT ALSO PART OF THE EQUIPMENT BRIDGE AS SOON AS FINAL CLEANUP OF THE STREAM BED AND BANK IS COMPLETE.
6. THE FLUME PIPE MUST BE SIZED TO PREVENT IMPEDIMENT OF THE UPSTREAM FLOW AND TO MAINTAIN ADEQUATE FLOW RATES TO PROTECT AQUATIC LIFE, AND PREVENT THE INTERRUPTION OF EXISTING DOWNSTREAM USES.
7. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED DAILY AND REPAIRED IF NECESSARY.
8. INSTALL DIVERSION TRENCHES AT THE BASE OF ALL SLOPES ADJACENT TO THE WATERBODY.
9. CHEMICALS, FUELS AND LUBRICATING OILS SHALL NOT BE STORED AND EQUIPMENT SHALL NOT BE REFUELED WITHIN 100 FEET OF THE WATERBODY.
10. INSTALL TRENCH PLUGS ON BOTH SIDES OF THE WATERBODY TO PREVENT DIVERSION OF WATER INTO UPLAND PORTIONS OF THE PIPELINE TRENCH AND TO KEEP ANY ACCUMULATED TRENCH WATER OUT OF THE WATERBODY.
11. CONTRACTOR SHALL POSTPONE GRADING OF RIGHT-OF-WAY IMMEDIATELY ADJACENT TO WATERBODY UNTIL STAGING AREA IS PREPARED AND WORK IN THE WATERBODY IS READY TO COMMENCE.
12. INSTALL GEOTEXTILE FABRIC UNDER ALL BRIDGES AND TEMPORARY TIMBER MATS IN ORDER TO PREVENT SEDIMENT FROM ENTERING ADJACENT WATERBODIES AND WETLANDS.

REVISIONS

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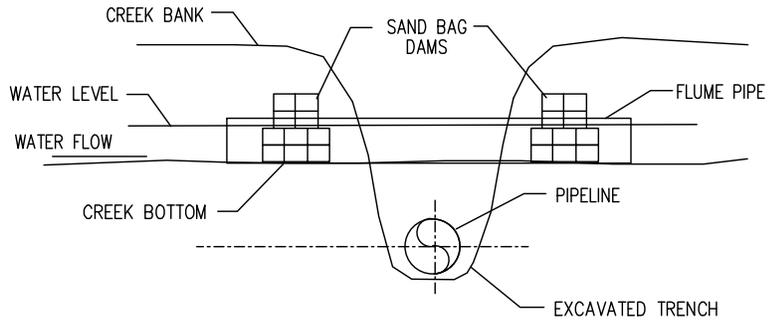


HOLLY ENERGY PARTNERS

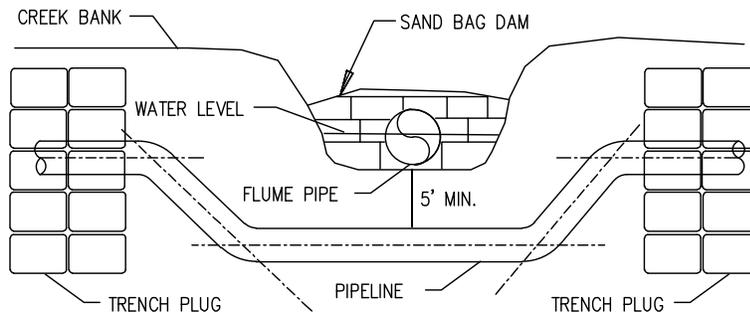
**TYPICAL WATERBODY CROSSING
FLUME CROSSING
PLAN VIEW
PAYNE, CREEK & TULSA COUNTIES, OKLAHOMA**

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SWT-2019-00530
Cushing Connect Project
Payne, Creek, and Tulsa Counties, Oklahoma
Enclosure 3 of 9



SECTION "A-A"



SECTION "B-B"

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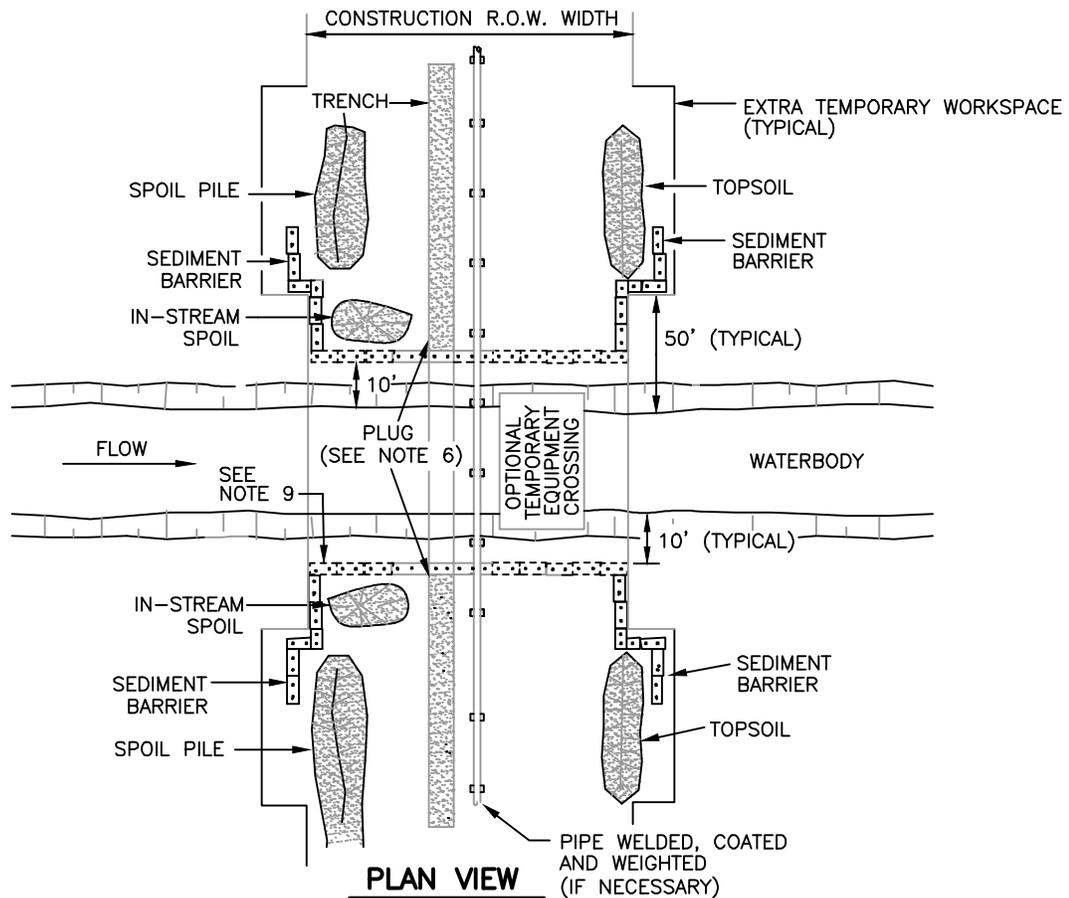
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TYPICAL WATERBODY CROSSING
FLUME CROSSING
SECTIONS

PAYNE, CREEK & TULSA COUNTIES, OKLAHOMA

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SWT-2019-00530
Cushing Connect Project
Payne, Creek, and Tulsa Counties, Oklahoma
Enclosure 4 of 9



FLOWING

PLAN VIEW

1. THIS METHOD APPLIES TO MINOR WATERBODIES WHERE FLUME AND/OR DAM AND PUMP METHOD IS NOT REQUIRED, OR COVERED BY A FEDERAL OR STATE ISSUED CROSSING PERMIT.
2. SCHEDULE CROSSINGS BETWEEN DATES ALLOWED BY PERMITS AND DURING LOW FLOW PERIOD.
3. COMPLETE ALL IN-STREAM ACTIVITIES WITHIN 24 HOURS. MAINTAIN STREAM FLOW THROUGHOUT CROSSING CONSTRUCTION.
4. WHERE INSTREAM TRENCHING IS DELAYED UNTIL JUST BEFORE INSTALLATION OF THE PIPE, THE CONTRACTOR MAY MAINLINE TRENCH THROUGH THE WATERBODY OR UP TO BOTH SIDES OF THE CROSSING; STRING, WELD, COAT AND WEIGHT (IF NECESSARY), USING THE MAINLINE CREW WITH THE PIPE SKIDDED OVER THE WATERBODY.
5. USE TRENCH PLUGS TO PREVENT DIVERSION OF WATER INTO UPLAND PORTIONS OF THE PIPELINE TRENCH AND TO KEEP ACCUMULATED TRENCH WATER OUT OF THE WATERBODY.
6. NO REFUELING OF EQUIPMENT OR CONCRETE COATING ACTIVITIES WITHIN 100 FEET OF WATERBODY. IF REFUELING MUST BE CONDUCTED WITHIN 100 FEET OF WATERBODY, REFUEL EQUIPMENT AS PER THE SWPPP PLAN.
7. IN AGRICULTURAL LAND AND OTHER AREAS WHERE TOPSOIL SEGREGATION IS REQUIRED, STRIP TOPSOIL FROM SPOIL STORAGE AREA. STOCKPILE TOPSOIL AND SPOIL SEPARATELY, TOPSOIL AND SPOIL WILL NOT BE STOCKPILED IN THE CROSSING CHANNEL AND WILL BE PLACED A MINIMUM OF 10 FEET FROM CROSSING BANKS WITHIN THE CONSTRUCTION R.O.W.
8. CONSTRUCT SEDIMENT BARRIERS ALONG THE SIDES OF SPOIL AND TOPSOIL PILES AND ACROSS THE ENTIRE CONSTRUCTION R.O.W. TO PREVENT HEAVILY SILT LADEN WATER AND SPOIL FROM FLOWING BACK INTO WATERBODY. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED WHEN ACCESS IS NO LONGER NEEDED OR AT A MINIMUM AT THE END OF EACH WORKING DAY.
9. IN-STREAM SPOIL TO BE STORED OUT OF THE STREAM CHANNEL A MINIMUM OF 10 FEET FROM THE WATER'S EDGE AND WITHIN THE CONSTRUCTION R.O.W. UNLESS DEPICTED OTHERWISE IN SITE-SPECIFIC CROSSING PLANS. EXTRA TEMPORARY WORK SPACE MUST BE A MINIMUM OF 50 FEET FROM THE WATER'S EDGE UNLESS DEPICTED OTHERWISE IN SITE-SPECIFIC CROSSING PLANS OR ALLOWED BY PERMITS.
10. BACKFILL WITH NATIVE MATERIAL OR AS STIPULATED IN STATE OR FEDERAL PERMIT CONDITIONS.
11. RESTORE WATERBODY CHANNEL TO APPROXIMATE PRE-CONSTRUCTION PROFILE AND SUBSTRATE.
12. RESTORE STREAM BANK TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE AS REQUIRED. STABILIZE WATERBODY BANKS AND INSTALL TEMPORARY SEDIMENT BARRIERS WITHIN 24 HOURS OF COMPLETING THE CROSSING.

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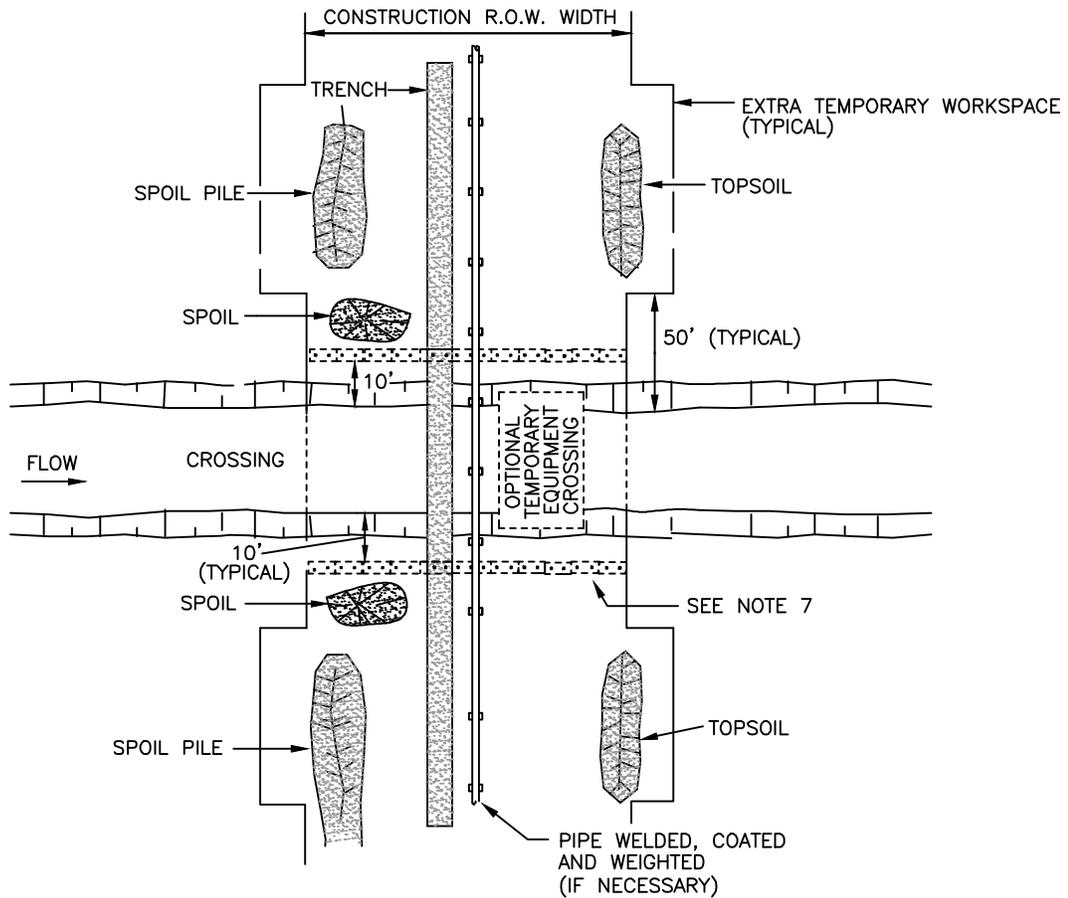
HOLLY ENERGY PARTNERS

**TYPICAL WATER CROSSING
OPEN CUT - FLOWING
MINOR WATERBODY/DITCH
PAYNE, CREEK & TULSA COUNTIES, OKLAHOMA**

DRAWN BY: LBT	CHECKED BY: NF	APPROVED BY: ML	SCALE: NTS
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SWT-2019-00530
Cushing Connect Project
Payne, Creek, and Tulsa Counties, Oklahoma
Enclosure 5 of 9

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PLAN VIEW

NON-FLOWING

1. THIS METHOD APPLIES TO CROSSINGS WHERE NO FLOWING WATER IS PRESENT AT THE TIME OF CROSSING.
2. CONTRACTOR MAY MAINLINE TRENCH THROUGH THE CROSSING OR UP TO BOTH SIDES OF THE CROSSING; STRING, WELD, COAT AND WEIGHT (IF NECESSARY), USING THE MAINLINE CREW WITH THE PIPE SKIDDED OVER THE CROSSING.
3. NO REFUELING OF MOBILE EQUIPMENT OR CONCRETE COATING ACTIVITIES WITHIN 100 FEET OF CROSSING. WHERE REFUELING MUST BE CONDUCTED WITHIN 100 FEET OF WATERBODY, REFUEL EQUIPMENT AS PER THE SPPC PLAN.
4. IN AGRICULTURAL LAND AND OTHER AREA WHERE TOPSOIL SEGREGATION IS REQUIRED, STRIP TOPSOIL FROM SPOIL STORAGE AREA. STOCKPILE TOPSOIL AND SPOIL SEPARATELY, TOPSOIL AND SPOIL WILL NOT BE STOCKPILED IN THE CROSSING CHANNEL AND WILL BE PLACED A MINIMUM OF 10 FEET FROM CROSSING BANKS WITHIN THE CONSTRUCTION R.O.W.
5. RESTORE CROSSING CHANNEL TO APPROXIMATE PRE-CONSTRUCTION PROFILE AND SUBSTRATE.
6. RESTORE CROSSING BANK TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE AS REQUIRED. STABILIZE CROSSING BANKS; INSTALL TEMPORARY SEDIMENT BARRIERS WITHIN 24 HOURS OF COMPLETING THE CROSSING.
7. AS DIRECTED BY THE CLIENT INSPECTOR, EROSION CONTROL MEASURES SHALL BE INSTALLED ACROSS THE R.O.W. FOLLOWING CLEARING AND GRADING AND MAINTAINED UNTIL CONSTRUCTION OF THE CROSSING. EROSION CONTROL MEASURES SHALL BE REINSTALLED IMMEDIATELY FOLLOWING BACKFILLING OF TRENCH AND STABILIZATION OF BANKS. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED WHEN ACCESS IS NO LONGER NEEDED OR AT A MINIMUM AT THE END OF EACH WORK DAY.

REVISIONS

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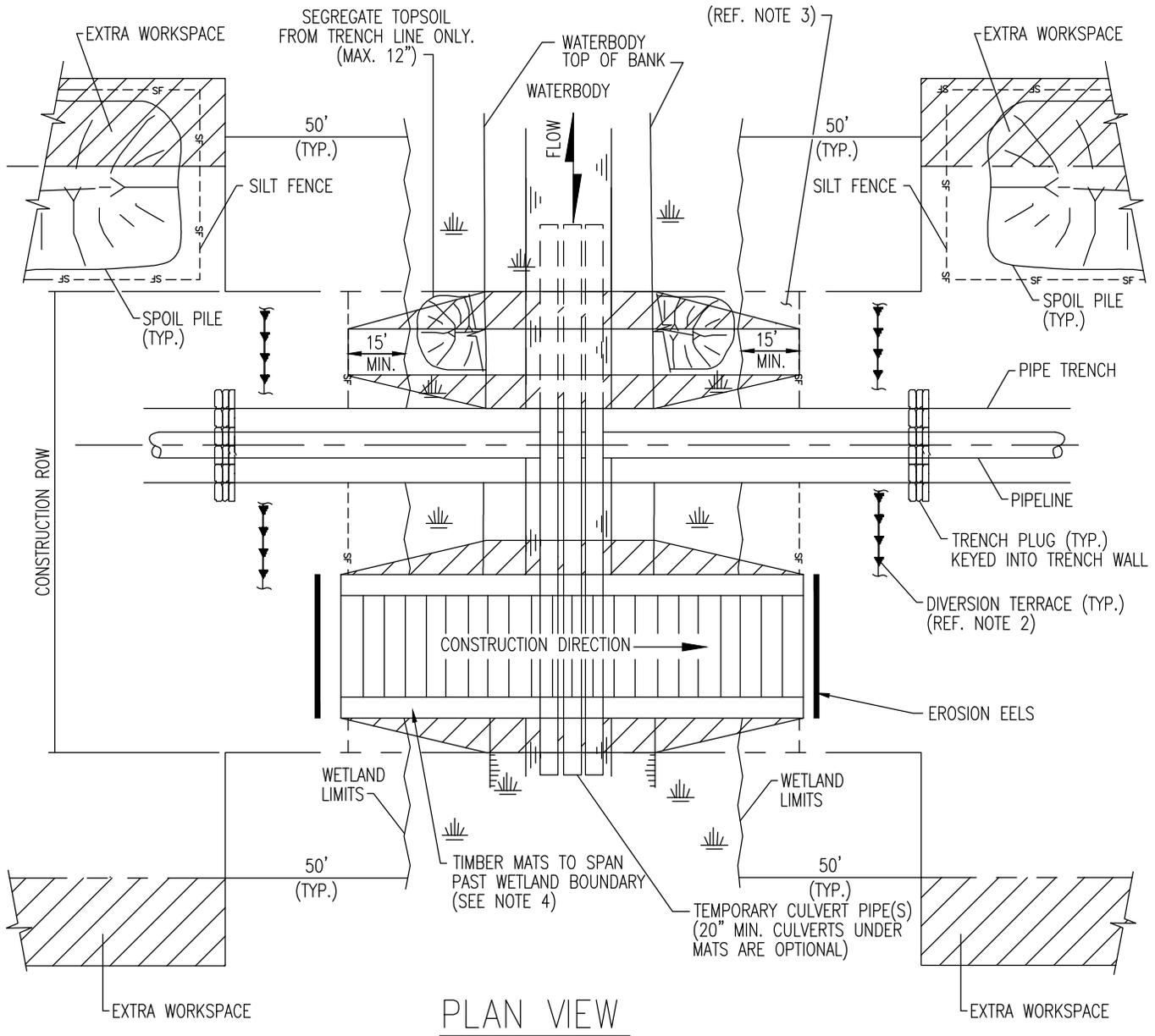
HOLLY ENERGY PARTNERS

**TYPICAL WATER CROSSING
OPEN CUT - NON FLOWING
MINOR WATERBODY/DITCH
PAYNE, CREEK & TULSA COUNTIES, OKLAHOMA**

SWT-2019-00530
Cushing Connect Project
Payne, Creek, and Tulsa Counties, Oklahoma
Enclosure 6 of 9

DRAWN BY: LBT	CHECKED BY: NF	APPROVED BY: ML	SCALE: NTS
DATE: 12/19/19	DRAWING NO: 3973-1800-618	SHEET 1 OF 1 A	

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PLAN VIEW

NOTES:

1. THIS METHOD WILL BE USED IN WETLANDS WITHOUT STANDING WATER OR SATURATED SOILS. IF NORMAL CONSTRUCTION EQUIPMENT CAUSES RUTS OR MIXING OF TOPSOIL AND SUBSOIL, LOW-GROUND-PRESSURE EQUIPMENT WILL BE USED, OR NORMAL EQUIPMENT WILL BE OPERATED ON TIMBER MATS.
2. INSTALL DIVERSION TERRACE AT THE BASE OF ALL SLOPES ADJACENT TO THE WETLAND.
3. EXCEPT FOR THE GRADED DRIVE LANE, CONTRACTOR SHALL POSTPONE CLEARING IN THE BUFFER AREA ADJACENT TO WETLAND UNTIL THE STAGING AREA IS PREPARED AND WORK IN THE WETLAND IS READY TO COMMENCE. BUFFER IS A MINIMUM OF FIFTY (50') FEET AND EXTEND FIFTEEN (15) FEET BEYOND THE EDGE OF THE RIPARIAN AREA.
4. USE ADDITIONAL TIMBER MAT LAYERS TO RAISE CROSSING ABOVE GRADE WHERE POOR SOIL CONDITIONS EXIST AND CONDITIONS REQUIRE.
5. CLEARLY AND ADEQUATELY FLAG ALL BUFFER ZONES PRIOR TO CLEARING.
6. INSTALL GEOTEXTILE FABRIC UNDER ALL BRIDGES AND TEMPORARY TIMBER MATS IN ORDER TO PREVENT SEDIMENT FROM ENTERING ADJACENT WATERBODIES AND WETLANDS.

REVISIONS

NO.	DATE	DESCRIPTION	ENG.	DRAWN	CHK.
A	12/19/19	ISSUED FOR REVIEW	AK	LBT	NF

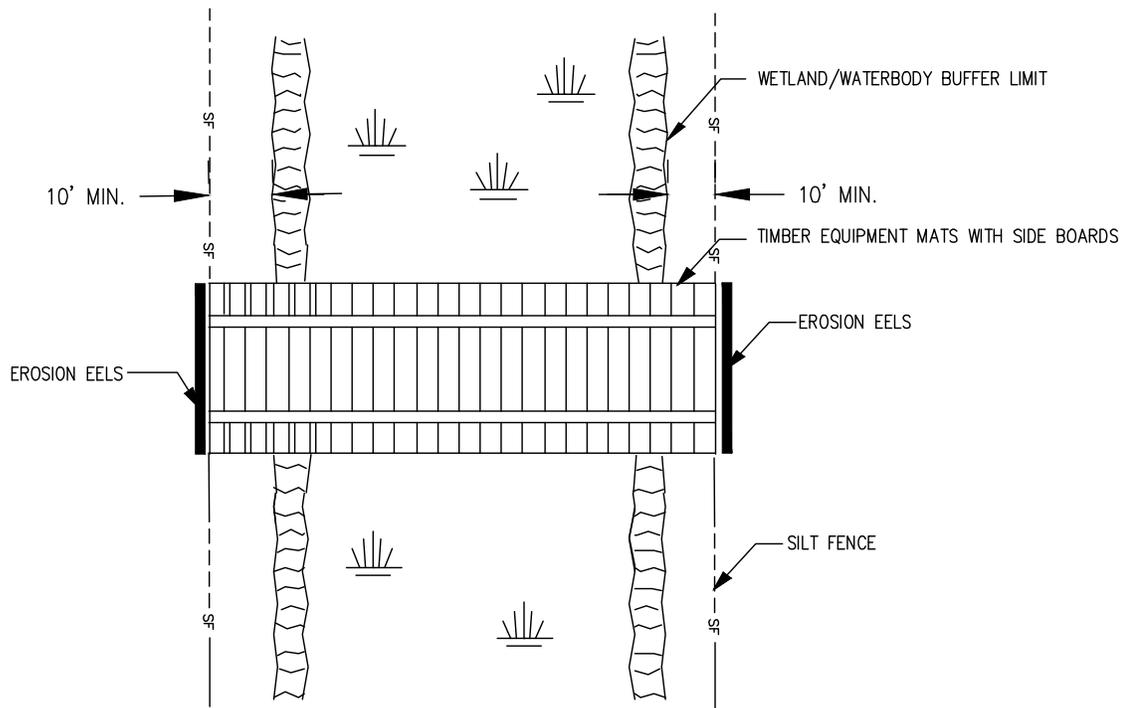


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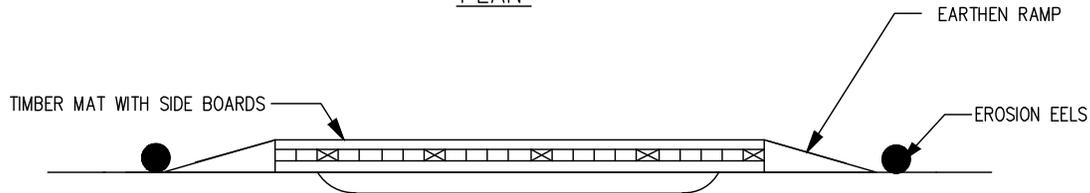
**TYPICAL WATERBODY CROSSING
UNSATURATED WETLAND/WATERBODY
CROSSING WITH TOPSOIL SEGREGATION
PAYNE, CREEK & TULSA COUNTIES, OKLAHOMA**

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DATE: 12/19/19	DRAWING NO: 3973-1800-619	SHEET 1 OF 1	

SWT-2019-00530
Cushing Connect Project
Payne, Creek, and Tulsa Counties, Oklahoma
Enclosure 7 of 9



PLAN



PROFILE

NOTES

1. PERIODICALLY CHECK INSTALLATION AND REMOVE BUILD-UP OF SEDIMENT OR DEBRIS.
2. MATERIALS PLACED IN WETLANDS SHALL BE COMPLETELY REMOVED DURING FINAL CLEAN-UP. REMOVAL OF THIS STRUCTURE IS NOT CONTINGENT UPON ESTABLISHMENT OF PERMANENT VEGETATION.
3. IF A WATERBODY IS LOCATED WITHIN A WETLAND SYSTEM, EXTEND TIMBER EQUIPMENT MATS TO THE BRIDGE EQUIPMENT CROSSING USED TO CROSS THE WATERBODY IN ORDER TO ALLOW FOR CONTINUOUS TIMBER EQUIPMENT MAT COVERAGE THROUGH THE WETLAND AND WATERBODY AREA.
4. USE ADDITIONAL TIMBER MAT LAYERS TO RAISE CROSSING ABOVE GRADE WHERE POOR SOIL CONDITIONS EXIST.
5. TIMBER EQUIPMENT MATS SHALL EXTEND A MINIMUM OF 10 FEET OUTSIDE OF THE WETLAND/WATERBODY BOUNDARIES.
6. INSTALL EARTHEN RAMP APPROACHES TO TIMBER EQUIPMENT MATS. EARTHEN RAMPS TO BE CONSTRUCTED OF UPLAND MATERIAL, TOP SOIL SHALL NOT BE USED TO CONSTRUCT EARTHEN RAMPS.
7. INSTALL GEOTEXTILE FABRIC UNDER ALL BRIDGES AND TEMPORARY TIMBER MATS IN ORDER TO PREVENT SEDIMENT FROM ENTERING ADJACENT WATERBODIES AND WETLANDS.
8. ALL TIMBER MATS SHALL HAVE SIDE BOARDS/CURBS TO CONTAIN SEDIMENT AND/OR DEBRIS FROM ENTERING ADJACENT WATERBODIES AND WETLANDS.

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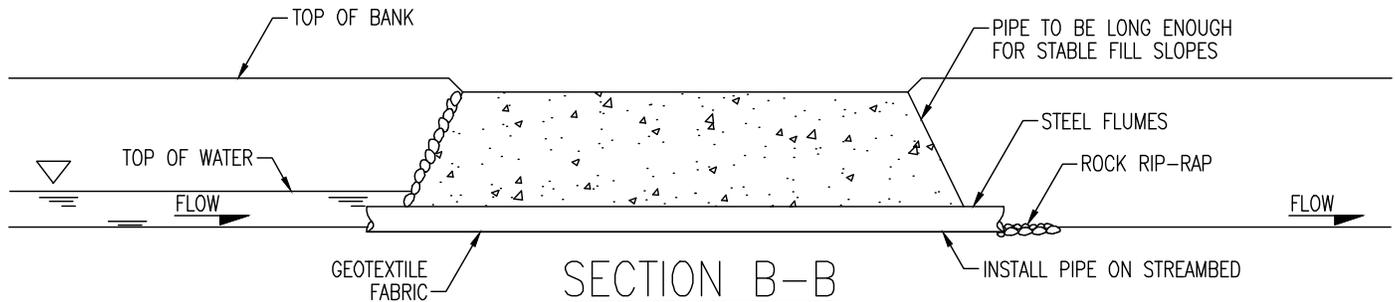
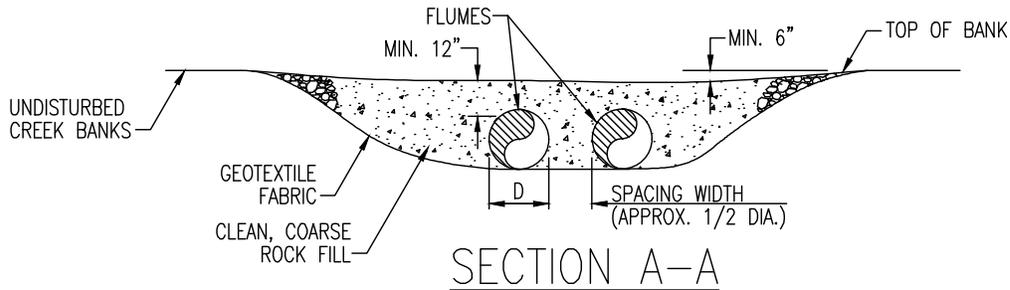
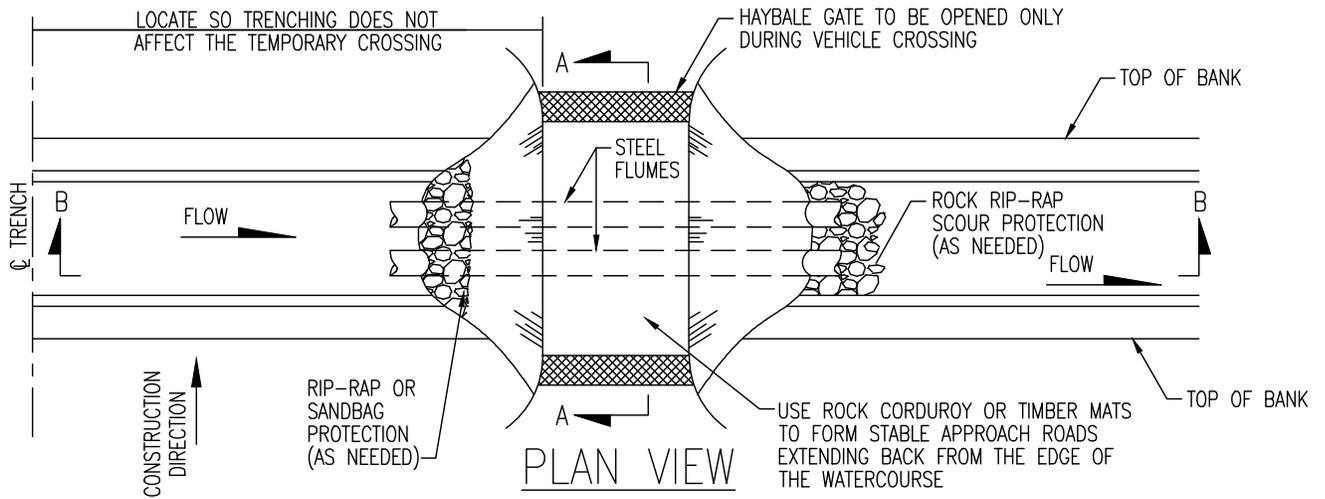
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 Enclosure 8 of 9

TEMPORARY TIMBER EQUIPMENT MAT

PAYNE, CREEK & TULSA COUNTIES, OKLAHOMA

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CONSTRUCTION PROCEDURES:

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

1. 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 TWO (2) FEET MINIMUM BEYOND THE TOE OF FILL MATERIAL. A LONGER PIPE IS TO BE USED, IF NEEDED, TO MAINTAIN STABLE SIDE SLOPES, FLUME CAPACITY TO BE BASED ON THE 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 WATERBODY BED DOWNSTREAM OF THE PIPE OUTLET EXTENDING A MINIMUM OF TWO (2) PIPE DIAMETERS. ALTERNATIVELY, TIMBER EQUIPMENT MATS, SAND BAGS OR TIMBER CORDUROY MAY BE USED TO FORM THE TRAVEL SURFACE.
4. TO REDUCE DEBRIS ENTERING THE WATERBODY FROM EQUIPMENT TRACKS, THE APPROACH ROAD LEADING TO THE CULVERT CROSSING MUST BE RAISED AND STABILIZED 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 WATERBODY (i.e. CHECK DAMS, 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 FEET FROM THE WATERBODY AND ABOVE THE HIGH WATER LEVEL.
6. FOLLOWING COMPLETION OF THE CROSSING, REMOVE ROCK FILL IN OR AROUND FLUME PIPES FROM THE WATERBODY OR WETLAND.
7. RESTORE STREAM BANKS AND WATERBODY BOTTOM.
8. IF WATER IS PRESENT (FLOWING), GEOTEXTILE FABRIC CAN BE PLACED OVER THE FLUMES TO KEEP IT IN PLACE PRIOR TO INSTALLING BRIDGE MATERIAL.

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Enclosure 9 of 9

TYPICAL FLUME BRIDGE CROSSING

PAYNE, CREEK & TULSA COUNTIES, OKLAHOMA

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