June 28, 2024

Kathryn Sauceda
Regional Director
TCEQ – Region 10
3870 Eastex Fwy.
Beaumont, TX 77703-1830
409-898-3838

Re: Request for Temporary Water Use Permit, Up to 39.9 Acre-Feet
Blackfin Pipeline, LLC
Blackfin Pipeline
Hardin and Jasper Counties, Texas

Dear Ms. Sauceda:

Blackfin Pipeline, LLC (Blackfin) requests permission to withdraw water from the Neches River in Hardin and Jasper Counties, Texas to hydrostatically test the Blackfin Pipeline. Specifically, Blackfin proposes to withdraw up to 39.9 acre-feet (13,000,000 gallons) of water between the east bank diversion (30.356841°, -94.093373°) and west bank diversion (30.356860°, -94.094353°) to conduct hydrostatic testing of new steel, 48-inch-diameter pipe, for a period of less than three years. Subsequent to completion of hydrostatic testing, it is assumed that all diverted water will be returned to the Neches River at the same locations.

Enclosed are a Texas Commission on Environmental Quality (TCEQ) Temporary Water Use Permit Application Form (TCEQ-10202), maps of the proposed diversion locations, environmental measures, copies of easement agreements, and payment check for TCEQ review and approval.

The current project schedule, subject to change and pending TCEQ approval, estimates construction to begin September 1, 2024 and proposed to be complete by December 31, 2025. Water withdrawal will be conducted during construction and is proposed for a one-time use over a 30-60 day duration.

Should you have questions or require additional information/coordination please contact me at 720-556-2820 (email at [redacted]. Following issuance of the permit, please e-mail me a copy of the permit.

Sincerely,

Leslie Kelton

Leslie Kelton
Senior Project Manager
Blackfin Pipeline, LLC

Attachments: Attachment 1 – TCEQ Form 10202, Attachment 2 – Maps, Attachment 3 – Environmental Measures, Attachment 4 – Copy of Easement Agreements, Attachment 5 –Payment Check

ATTACHMENT 1

Form TCEQ-10202

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

P.O. Box 13087 MC-160, Austin, Texas 78711-3087
Telephone (512) 239-4600, FAX (512) 239-4770

APPLICATION FOR A TEMPORARY WATER USE PERMIT FOR MORE THAN 10 ACRE-FEET OF WATER, AND/OR FOR A DIVERSION PERIOD LONGER THAN ONE CALENDAR YEAR

This form is for an application for a temporary permit to divert water under Section 11.138, Texas Water Code. Any permit granted from this application may be suspended **at any time** by the applicable TCEQ Office if it is determined that surplus water is no longer available.

Notice: This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol.

1. **Data on Applicant and Project:** Social Security or Federal ID No. _____

   A. Name: Blackfin Pipeline, LLC

   B. Mailing Address: 100 Congress Avenue, Suite 2200, Austin, Texas 78701

   C. Telephone Number: (720) 556-2820 Fax Number: _____ E-mail Address: [redacted]

   D. Applicant owes fees or penalties? ☐ Yes ☒ No

   If yes, provide the amount and the nature of the fee or penalty as well as any identifying number:

   _____

   E. Describe Use of Water The water will be used for hydrostatic testing.

   F. Description of Project (TDH Project No. if applicable) Installation of a new 48-inch diameter natural gas pipeline.

   G. Highway Designation No. _____ County Jasper & Hardin

2. **Type of Diversion (check one):**
   ☒ From Stream ☐ From Reservoir

3. **Rate of Diversion:**
   A. Maximum 5,000 gpm
   (capacity of pump)

4. **Amount and Source of Water:**

   39.9 acre-feet of water within a period of three years (specify term period not to exceed a three year term). The water is to be obtained from Neches River, tributary of N/A, tributary of N/A, tributary of N/A, Neches River Basin.

5. **Location of Diversion Point 1 (i.e., east bank/side diversion location):**

   At Latitude 30.356841 °N, Longitude -94.093373 °W, ((at) or (near) the stream crossing of), (at a reservoir in the vicinity of) US Highway 96 (R-O-W) (Highway), located in Zip Code 77656, located 38.92 miles in a southwest direction from Jasper (County Seat), Jasper County, and 1.24 miles in a west direction from Evadale, a nearby town shown on County road map.

   Note: Distance in straight line miles.

   Location of Diversion Point 2 (i.e., west bank/side diversion location):

   At Latitude 30.356860 °N, Longitude -94.094353 °W, ((at) or (near) the stream crossing of), (at a reservoir in the vicinity of) US ~~96~~ Highway 96 (R-O-W) (Highway), located in Zip Code 77656, located 13.06 miles in an east direction from Kountze (County Seat), Hardin County, and 1.33 miles in a west direction from Evadale, a nearby town shown on County road map. Note: Distance in straight line miles.

   Enclose a USGS 7.5 minute topographic map with the diversion point and/or the return water discharge points labeled. Owner's written consent is required for water used from any private reservoir, or private access to diversion point.

6. **Access to Diversion Point (check one):**

   ☐ Public right-of-way
   ☒ Private property
   (A letter of permission from landowner is attached)
   ☐ Other (Explain)

7. **Fees Enclosed:**

	10 ac-ft or less	greater than 10 ac-ft
Filing	$ 100.00	$ 250.00
Recording.....	$ 1.25	$ 1.25
Use ($1.00 per ac-ft or fraction thereof)	$ _____	$ _____
(Note: 1 ac-ft = 325,851 gals. 1 ac-ft = 7758.35 bbls.) Total	$ _____	$ _____

Upon completion of any project for which a temporary water permit is granted, the Permittee is required by law to report the amount of water used. This document must be properly signed and duly notarized before it can by accepted or considered by the Texas Commission on Environmental Quality.

Leslie Kelton
Name (sign)

Leslie Kelton
Name (print)

Subscribed and sworn to me as being true and correct before me this 28th day of June, 20 24

KATIE LEVETENISE BOLDEN
Notary ID #132128375
My Commission Expires
August 14, 2027

Notary Public, State of Texas

Form TCEQ-10202 (revised 3/2010)

Delaware

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "BLACKFIN PIPELINE, LLC", FILED IN THIS OFFICE ON THE TENTH DAY OF FEBRUARY, A.D. 2023, AT 12:03 O`CLOCK P.M.

Jeffrey W. Bullock, Secretary of State

7213310 8100
SR# 20230463931

Authentication: 202688029
Date: 02-10-23

You may verify this certificate online at corp.delaware.gov/authver.shtml

CERTIFICATE OF FORMATION

OF

BLACKFIN PIPELINE, LLC

February 10, 2023

This Certificate of Formation of Blackfin Pipeline, LLC (the "Company") is being executed by the undersigned for the purpose of forming a limited liability company under the Delaware Limited Liability Company Act, Del. Code, tit. 6, Section 18-101 *et seq*., as amended from time to time (the "Act").

1. Name. The name of the limited liability company formed hereby is "Blackfin Pipeline, LLC".

2. Registered Office. The address of the registered office of the Company in the State of Delaware is c/o Cogency Global Inc., 850 New Burton Road, Suite 201, Dover, Delaware 19904.

3. Registered Agent. The name and address of the registered agent for service of process on the Company in the State of Delaware is Cogency Global Inc., 850 New Burton Road, Suite 201, Dover, Delaware 19904.

[*Signature Page Follows*]

State of Delaware
Secretary of State
Division of Corporations
Delivered 12:03 PM 02/10/2023
FILED 12:03 PM 02/10/2023
SR 20230463931 - File Number 7213310

LIMITED POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS:

That **Blackfin Pipeline, LLC**, a Delaware limited liability company ("**Blackfin**"), whose address is 100 Congress Avenue, Suite 2200, Austin, Texas 78701, does hereby make, constitute and appoint for a term commencing on October 6, 2023 and expiring on April 30, 2025, unless earlier terminated by **Blackfin** or as provided by law, **Leslie Kelton**, its true and lawful attorney for it and in its name and on its behalf to execute, acknowledge and deliver any contract, agreement, assignment, lease, offer to lease, application, conveyance of real property or any other instrument similar to any of the preceding that such attorney-in-fact may deem necessary or proper, in each case, with respect to the acquisition of permits and real property rights on behalf of Blackfin. The said attorney-in-fact is empowered to execute, acknowledge and deliver any such instruments as fully as if special authority had been granted in each particular case by the undersigned.

Executed this 10th day of October 2023, but effective for all purposes as set forth above.

By: _____

Name: Glenn Kellison

Title: Senior Vice President, Blackfin Pipeline, LLC

STATE OF TEXAS §
§
COUNTY OF TRAVIS §

The foregoing instrument was acknowledged before me this 10th day of October, 2023, by Glenn Kellison as Senior Vice President of Blackfin Pipeline, LLC, a Delaware limited liability company, on behalf of said corporation.

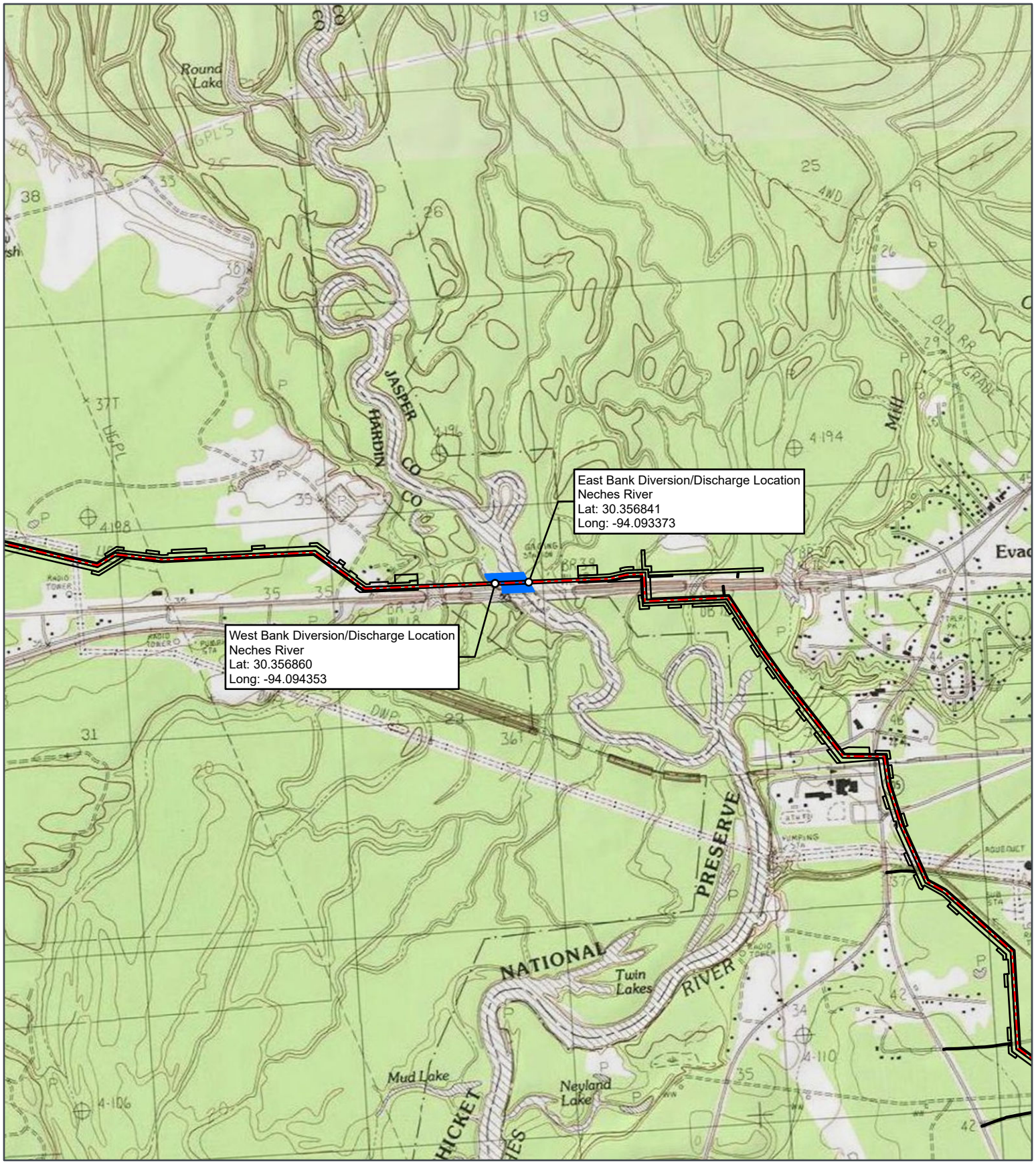
_____

Notary Public in and for the State of Texas

THAO THANH NGUYEN
Notary Public, State of Texas
Comm. Expires 10-22-2023
Notary ID 130416209

ATTACHMENT 2

Maps



BLACKFIN PIPELINE PROJECT
USACE GALVESTON DISTRICT

Hydrotest Location Map

Neches River

Project Centerline
Hydrotest Location
Workspace
Surveyed Waterbody

Hardin and Jasper Counties, Texas
NAD 1983 StatePlane Texas Central FIPS 4203 Feet
30.3569°N 94.0939°W

0 1,000 2,000 Feet
0 250 500 Meters

N

1:24,000

Base Map: Esri ArcGIS Online, accessed June 2024
Updated: 6/4/2024
Project No. 80282
Layout: BFP Hydrotest Mapbook
Aprx: 80282 Blackfin Pipeline NR

SWCA ENVIRONMENTAL CONSULTANTS

ATTACHMENT 3

Environmental Measures

Impingement and Entrainment

Blackfin Pipeline, LLC (the Applicant) will take reasonable measures to avoid impingement and entrainment of aquatic organisms for each diversion structure including, but not limited to, screens.

ATTACHMENT 4

Copy of Easement Agreements

UTILITY PERMIT APPROVAL

TO:	Nguyen Thao
	WhiteWater Midstream, LLC
	100 Congress Avenue Suite 2200 Austin,78701

Date:	01-11-2024
Application/Permit No.:	00002/20231020/19723/37624/UP
District:	Beaumont

Highway	Control Section	Maintenance Section	County
US0096-K: At milepost 438+0.213	0065-04		Hardin
US0096-L: From milepost 119.465 To milepost 119.671	0065-04		Hardin
US0096-R: From milepost 119.795 To milepost 120.411	0065-05		Hardin
US0096-R: At milepost 120.407	0065-05		Hardin
US0096-R: At milepost 119.703	0065-04		Jasper
US0096-L: At milepost 119.721	0065-04		Jasper
US0096-L: At milepost 119.358	0065-04		Jasper

Schedule Dates: from 01/01/2025 to 07/31/2025

TxDOT offers no objection to the location on the right-of-way of your proposed utility installation, as described by Notice of Proposed Utility Installation No. 00002/20231020/19723/37624/UP dated

10/20/2023 and accompanying documentation, except as noted below.

Special Provisions:
You are required to notify TxDOT 72 hours (3 business days) before you start construction to allow for proper inspection and coordination of workdays and traffic control plans. Use the RULIS website for the 72-hour notification. DO NOT start construction until you have coordinated the construction start date and inspection with TxDOT. You are also required to keep a copy of this Approval and any approved amendments at the job site.

When installing utility lines on controlled-access highways, access for serving this installation shall be limited to access via (a) frontage roads where provided, (b) nearby or adjacent public roads or streets, (c) trails along or near the highway right-of-way lines, connecting only to intersecting roads; from any one or all of which entry may be made to the outer portion of the highway right-of-way for routine service and maintenance operations. The Installation Owner's rights of access to the through-traffic roadways and ramps shall be subject to the same rules and regulations as that apply to the general public except, however, if an emergency occurs and usual means of access for routine service operations will not permit the immediate action required by the Utility Installation Owner in making emergency repairs as required for the safety and welfare of the public, the Utility Owners shall have a temporary right of access to and from the through-traffic roadways and ramps as necessary to accomplish the required emergency repairs, provided TxDOT is immediately notified by the Utility Installation Owner when such repairs are initiated and adequate provision is made by the Utility Installation Owner for the convenience and safety of highway traffic.

The installation shall not damage any part of the highway, and adequate provisions must be made to cause minimum inconveniences to traffic and adjacent property owners. If the Utility Installation Owner fails to comply with any or all the requirements as set forth herein, the State may take such action as it deems appropriate to compel compliance.

SME - Utility Coordinator Review
Review Answer:*Recommend Denial*
Response text: *Not in my area. I inspect Liberty and Chambers County.*

SME - Utility Coordinator Review
Review Answer:*Recommend Approval*
Response text: *There are no active or upcoming projects in this location. Please continue your review. – Beaumont*

District TP&D Utility Team

SME ATTACHMENTS:

The following Documents are Included in this Approved Utility Permit:

Plans (Must be available on Job site): link
General Provisions : link
General Provisions : link
General Provisions : link

October 20, 2023

Dave Collins
TxDOT
8450 Eastex Freeway
Beaumont, TX 77708
[redacted]

Subject: **Blackfin Pipeline Project**
TxDOT Highway 96 Parallel Occupancy - Hardin and Jasper Counties, TX
Permit Application Package

Dear Mr. Collins,

Blackfin Pipeline, LLC is submitting the permit application package for its proposed 48-inch natural gas pipeline within the TxDOT Highway 96 corridor across the Neches River in Hardin and Jasper Counties, TX. The following documentation is included:

- Permit Application (online submission)
- Supporting drawings dated October 20, 2023 (signed and stamped):
  - Overview drawings (5 sheets)
  - Horizontal directional drill (HDD) design drawing for Neches River crossing (1 sheet)
  - Highway 96 crossing permit drawing for perpendicular bored crossing (1 sheet)
- Additional supporting documentation:
  - Barlow calculations for proposed line pipe (signed and stamped)
  - Traffic control plan and figures

Please also reference the detailed package dated 8/17/2023 (submitted to TxDOT on 8/18/2023) for a complete justification for Blackfin's proposed pipeline parallel occupancy request.

The Blackfin Pipeline team looks forward to the face-to-face meeting set for 10/25/2023 with the TxDOT representatives to discuss this package and other crossings. We greatly appreciate your support and assistance. Please feel free to call me any time at 405.313.0413.

Best Regards,

Oliver Sutton

Oliver Sutton
Permitting Agent
Norfleet Land Services

Confidential

Blackfin Pipeline – TxDOT Highway 96 Parallel Occupancy Permit Application

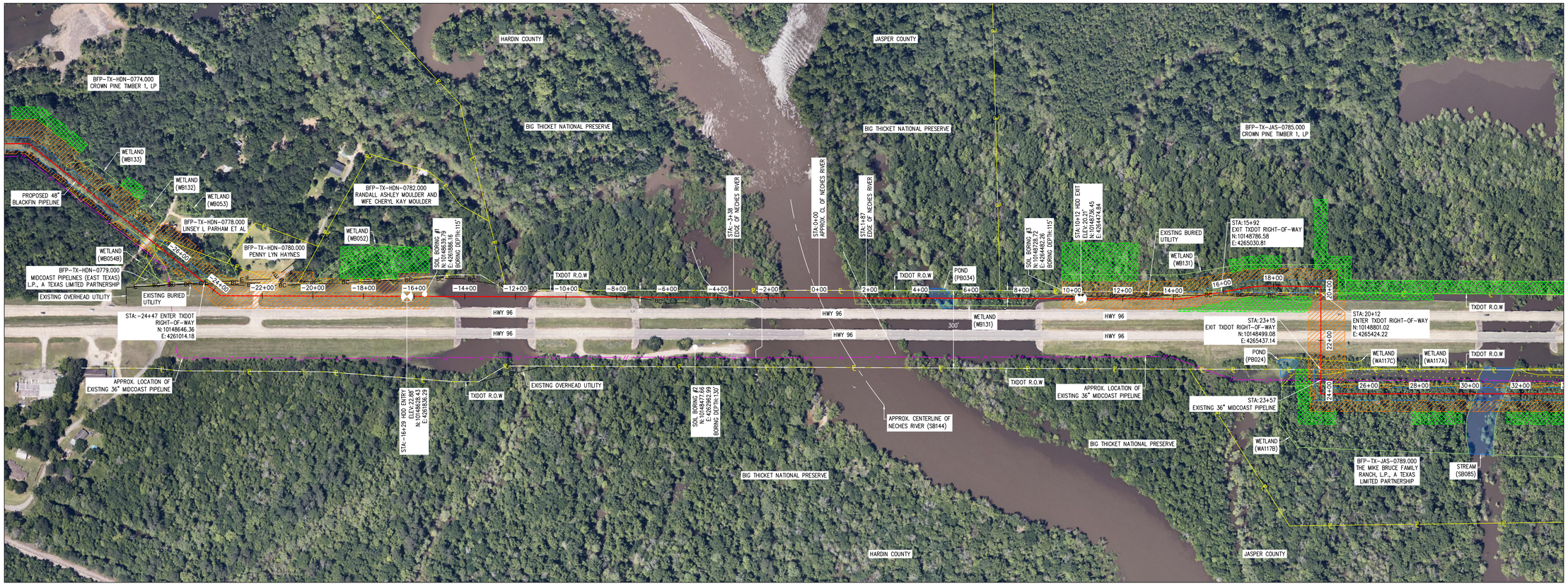
Contents

BLACKFIN PIPELINE

Confidential

Attachment 1: Overview drawings dated October 20, 2023

BLACKFIN PIPELINE



PLAN

SCALE: 1" = 200'

NOTES:
1. ALL LINEWORK IS PERFORMED IN TEXAS STATE PLANE, CENTRAL ZONE.
2. PIPELINE ROUTE AND PROPERTY LINE RECTIFICATION SURVEYS HAVE BEEN PERFORMED BY ENSITE USA.
3. ENVIRONMENTAL FEATURES HAVE BEEN SURVEYED AND DELINEATED BY SWCA ENVIRONMENTAL CONSULTANTS.
4. FOR HDD CROSSING DESIGN, REFER TO DWG. NO. 23700-PLE-HDPD-009 PREPARED BY CCI & ASSOCIATES INC.

PIPE SPECIFICATIONS:
1. CARRIER PIPE: SEE PROFILE VIEW ON SHEETS 002, 003, 004 AND 005.
2. MIN. TEST PRESSURE: 1,800 PSI.
3. MAX. OPER. PRESSURE: 1,440 PSIG.
4. MIN. YIELD STRENGTH: 70,000 PSI.

ALIGNMENT WITHIN TXDOT ROW

DESCRIPTION	BEGIN STATION	END STATION	FOOTAGE
OPEN CUT SECTION 1	-24+47	-16+29	818
HDD	-16+29	10+12	2,641
OPEN CUT SECTION 2	10+12	15+92	580
CONVENTIONAL BORE	20+12	23+15	303
TOTAL EST. FOOTAGE WITHIN TXDOT ROW			**4,342**

FOR PERMITTING PURPOSES ONLY

STATE OF TEXAS
DANSON BLUDAU
149788
LICENSED
PROFESSIONAL ENGINEER

DANSON BLUDAU, P.E.
TEXAS P.E. LICENSE No. 149788
TROY ENGINEERING SERVICES, LLC 10/20/23

LEGEND:
- PROPOSED 48" BLACKFIN PIPELINE
- PROPOSED TEMPORARY WORKSPACE
- PROPOSED ADDITIONAL TEMPORARY WORKSPACE
- DELINEATED WETLAND
- DELINEATED POND

DWG. NO.	REFERENCE DRAWING TITLE
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C	ISSUED FOR PERMIT	MMM	10/20/23	JP	DB
B	ISSUED FOR REVIEW	MMM	07/06/23	JP	DB
A	ISSUED FOR REVIEW	MMM	06/08/23	JP	DB

PREPARED BY: TROY FIRM No:23055
8521 McHARD RD, HOUSTON, TX 77053

	BY	DATE
DESIGN		
DRAWN	MMM	06/06/23
ASBUILT		

SCALE: 1"=200'

BLACKFIN PIPELINE

P.L/STA. NO. -24+47 TO 23+15
CONSTRUCTION YEAR 2024
IN-SERVICE DATE Q2 2025

PROPOSED 48" BLACKFIN PIPELINE
TXDOT R.O.W. DETAILS
HIGHWAY 96 AT NECHES RIVER
HARDIN & JASPER COUNTIES, TEXAS

AFE NO. 23700
DWG. NO. 23700-PLE-HDPD-010_HWY-96_TXDOT_ROW
SHEET 1 OF 5
REVISION C
DATE: 10/20/23

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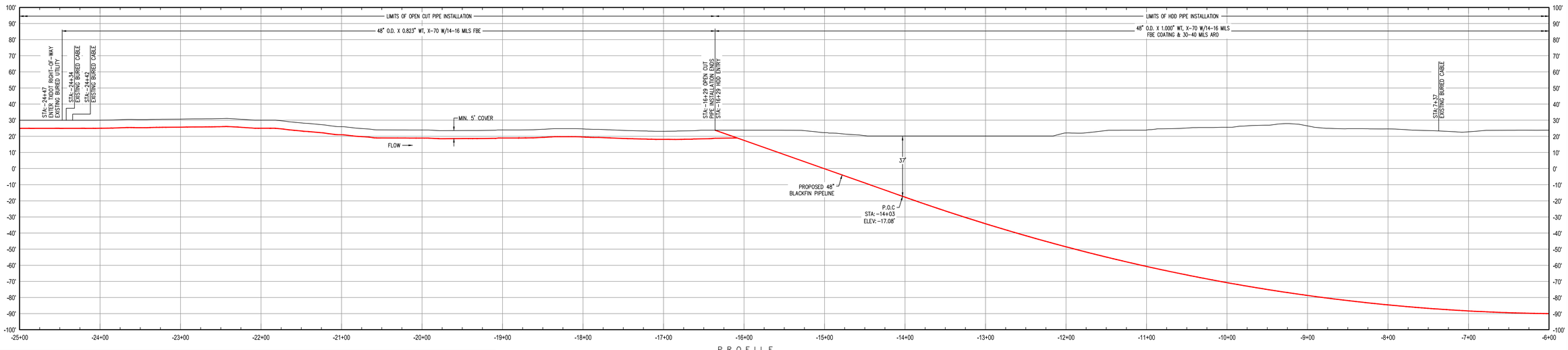
P L A N

SCALE: 1" = 60'



P R O F I L E

HORIZONTAL SCALE: 1" = 60'
VERTICAL SCALE: 1" = 30'

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PREPARED BY: TROY FIRM No:23055
8521 McHARD RD., HOUSTON, TX. 77053

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DESIGN		
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BLACKFIN PIPELINE

P.L./STA. NO. -24+47 TO 23+15
CONSTRUCTION YEAR 2024
IN-SERVICE DATE Q2 2025

PROPOSED 48" BLACKFIN PIPELINE
TXDOT R.O.W. DETAILS
HIGHWAY 96 AT NECHES RIVER
HARDIN & JASPER COUNTIES, TEXAS

AFE NO. 23700
DWG. NO. 23700-PLE-HDPD-010_HWY-96_TXDOT_ROW
SHEET 2 OF 5
REVISION C
DATE: 10/20/23

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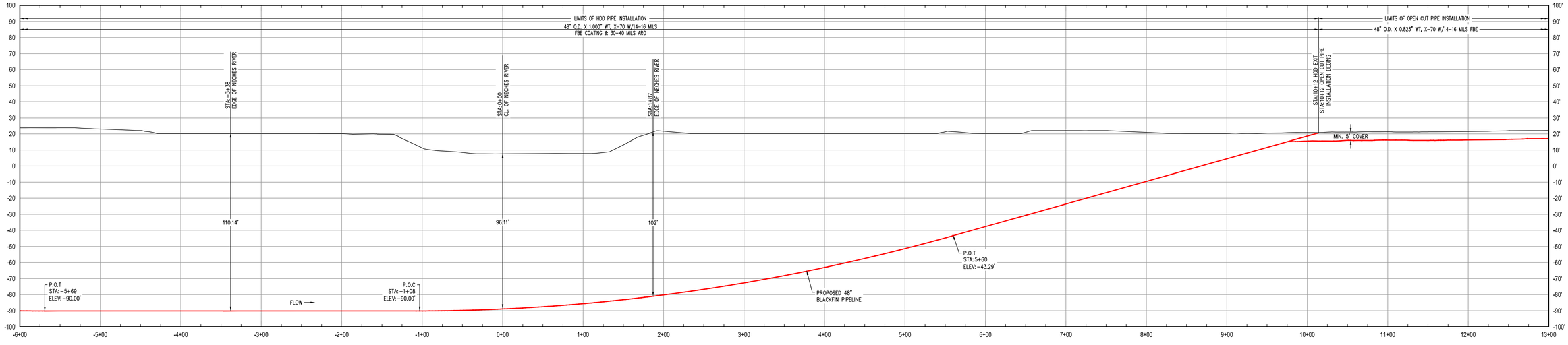
PLAN
SCALE: 1" = 60'



PROFILE
HORIZONTAL SCALE: 1" = 60'
VERTICAL SCALE: 1" = 30'

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PREPARED BY: FIRM No:23055
TROY
8521 McHARD RD., HOUSTON, TX 77053

	BY	DATE
DESIGN		
DRAWN	MMM	06/06/23
ASBUILT		
SCALE: 1"=200'		

BLACKFIN PIPELINE

P.L./STA. NO. -24+47 TO 23+15
CONSTRUCTION YEAR 2024
IN-SERVICE DATE Q2 2025

PROPOSED 48" BLACKFIN PIPELINE
TXDOT R.O.W DETAILS
HIGHWAY 96 AT NECHES RIVER
HARDIN & JASPER COUNTIES, TEXAS

AFE NO. 23700
DWG. NO. 23700-PLE-HDPD-010_HWY-96_TXDOT_ROW
SHEET 3 OF 5
REVISION C
DATE: 10/20/23

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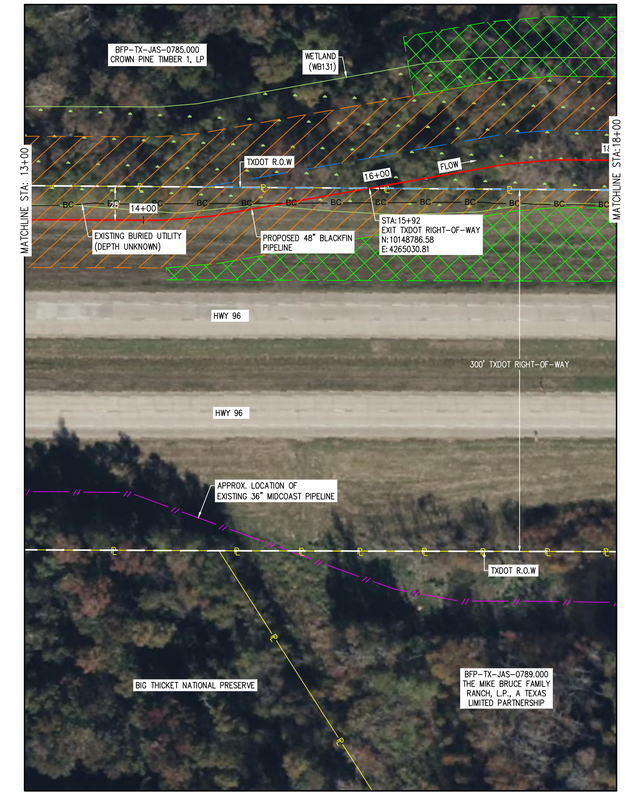

P L A N

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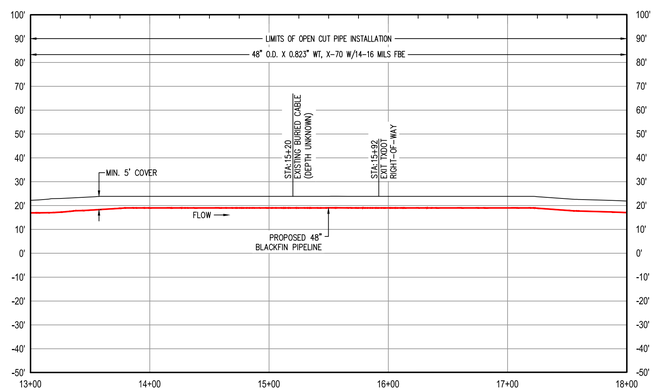

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3. ENVIRONMENTAL FEATURES HAVE BEEN SURVEYED AND DELINEATED BY SWCA ENVIRONMENTAL CONSULTANTS.

PIPE SPECIFICATIONS:
1. CARRIER PIPE: SEE PROFILE VIEW ON SHEETS 002, 003, 004 AND 005.
2. MIN. TEST PRESSURE: 1,800 PSI.
3. MAX. OPER. PRESSURE: 1,440 PSIG.
4. MIN. YIELD STRENGTH: 70,000 PSI.

FOR PERMITTING PURPOSES ONLY

STATE OF TEXAS
DANSON BLUDAU
149788
LICENSED
PROFESSIONAL ENGINEER

DANSON BLUDAU, P.E.
TEXAS P.E. LICENSE No. 149788
TROY ENGINEERING SERVICES, LLC 10/20/23

LEGEND:
- PROPOSED 48" BLACKFIN PIPELINE
- PROPOSED TEMPORARY WORKSPACE
- PROPOSED ADDITIONAL TEMPORARY WORKSPACE
- DELINEATED WETLAND
- DELINEATED POND

DWG. NO.	REFERENCE DRAWING TITLE
-	-
-	-
-	-
-	-
-	-
-	-
-	-

NO.	REVISION - DESCRIPTION	BY	DATE	CHK	APP
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
C	ISSUED FOR PERMIT	MMM	10/20/23	JP	DB
B	ISSUED FOR REVIEW	MMM	07/26/23	JP	DB
A	ISSUED FOR REVIEW	MMM	06/08/23	JP	DB

PREPARED BY: FIRM No:23055
TRC
8521 McHARD RD, HOUSTON, TX 77053

	BY	DATE
DESIGN		
DRAWN	MMM	06/06/23
ASBUILT		
SCALE: 1"=200'		

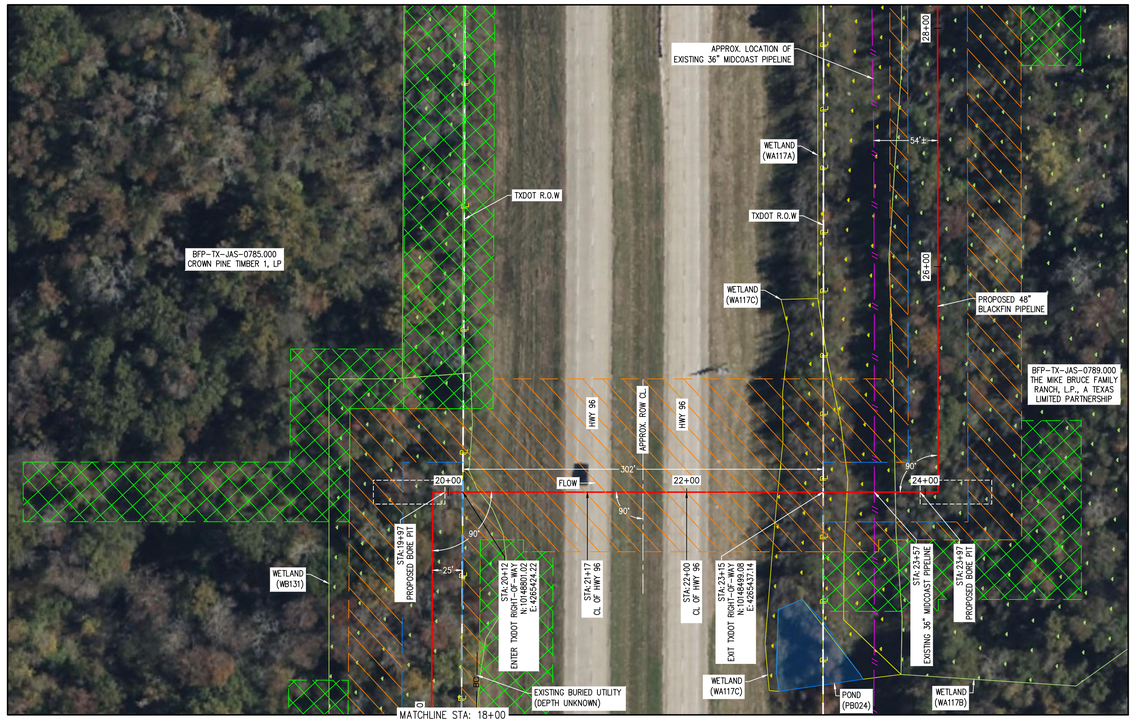
BLACKFIN PIPELINE

P.L./STA. NO. −24+47 TO 23+15
CONSTRUCTION YEAR 2024
IN-SERVICE DATE Q2 2025

PROPOSED 48" BLACKFIN PIPELINE
TXDOT R.O.W DETAILS
HIGHWAY 96 AT NECHES RIVER
HARDIN & JASPER COUNTIES, TEXAS

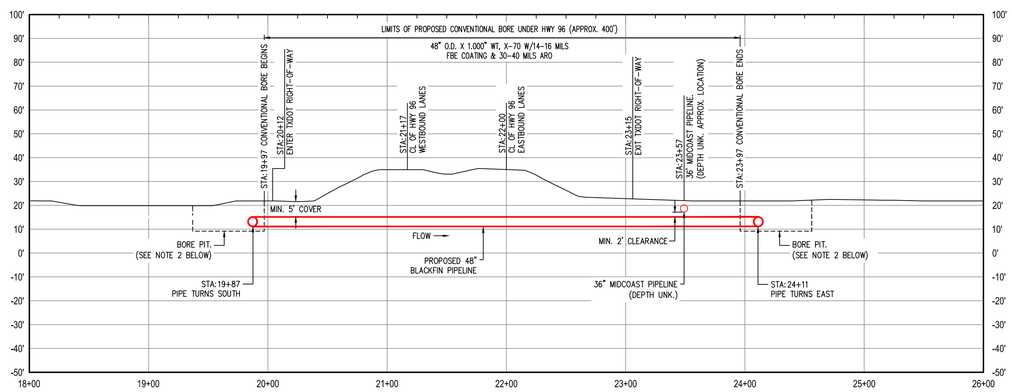
AFE NO. 23700
DWG. NO. 23700-PLE-HDPD-010_HWY-96_TXDOT_ROW
SHEET 4 OF 5
REVISION C
DATE: 10/20/23

C:\Users\mmurphy\TROYCONSTRUCTION.COM\23.9.1.05 - Blackfin Pipeline - Documents\Internal\Drafting and Mapping\Drawings\HDDs\48 Inch BLACKFIN PIPELINE\23700-PLE-HDPD-010_HWY-96_TXDOT_ROW.DWG 2023-10-20 - 9:55am



PLAN

SCALE: 1" = 60'



PROFILE

HORIZONTAL SCALE: 1" = 60'
VERTICAL SCALE: 1" = 30'

NOTES:
1. ALL LINEWORK IS PERFORMED IN TEXAS STATE PLANE, CENTRAL ZONE.
2. PIPELINE ROUTE AND PROPERTY LINE RECTIFICATION SURVEYS HAVE BEEN PERFORMED BY ENSITE USA.
3. ENVIRONMENTAL FEATURES HAVE BEEN SURVEYED AND DELINEATED BY SWCA ENVIRONMENTAL CONSULTANTS.
4. BORE PITS ARE TYPICAL REPRESENTATIONS. ACTUAL DIMENSIONS WILL BE FIELD DETERMINED DURING CONSTRUCTION.

PIPE SPECIFICATIONS:
3. CARRIER PIPE: SEE PROFILE VIEW ON SHEETS 002, 003, 004 AND 005.
4. MIN. TEST PRESSURE: 1,800 PSI.
5. MAX. OPER. PRESSURE: 1,440 PSIG.
6. MIN. YIELD STRENGTH: 70,000 PSI.

FOR PERMITTING PURPOSES ONLY

STATE OF TEXAS
DANSON BLUDAU
149788
LICENSED
PROFESSIONAL ENGINEER

DANSON BLUDAU, P.E.
TEXAS P.E. LICENSE No. 149788
TROY ENGINEERING SERVICES, LLC 10/20/23

LEGEND:
- PROPOSED 48" BLACKFIN PIPELINE
- PROPOSED TEMPORARY WORKSPACE
- PROPOSED ADDITIONAL TEMPORARY WORKSPACE
- DELINEATED WETLAND
- DELINEATED POND

DWG. NO.	REFERENCE DRAWING TITLE
-	-
-	-
-	-
-	-
-	-
-	-
BFP-TX-JAS-0786.000-HW	STATE ROAD US-96 CROSSING PERMIT DRAWING

NO.	REVISION - DESCRIPTION	BY	DATE	CHK	APP
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
C	ISSUED FOR PERMIT	MMM	10/20/23	JP	DB
B	ISSUED FOR REVIEW	MMM	07/26/23	JP	DB
A	ISSUED FOR REVIEW	MMM	06/08/23	JP	DB

PREPARED BY: TRY FIRM No:23055
8521 McHARD RD, HOUSTON, TX 77053

	BY	DATE
DESIGN		
DRAWN	MMM	06/06/23
ASBUILT		
SCALE: 1"=200'		

BLACKFIN PIPELINE

P.L./STA. NO. −24+47 TO 23+15
CONSTRUCTION YEAR 2024
IN-SERVICE DATE Q2 2025

PROPOSED 48" BLACKFIN PIPELINE
TXDOT R.O.W DETAILS
HIGHWAY 96 AT NECHES RIVER
HARDIN & JASPER COUNTIES, TEXAS

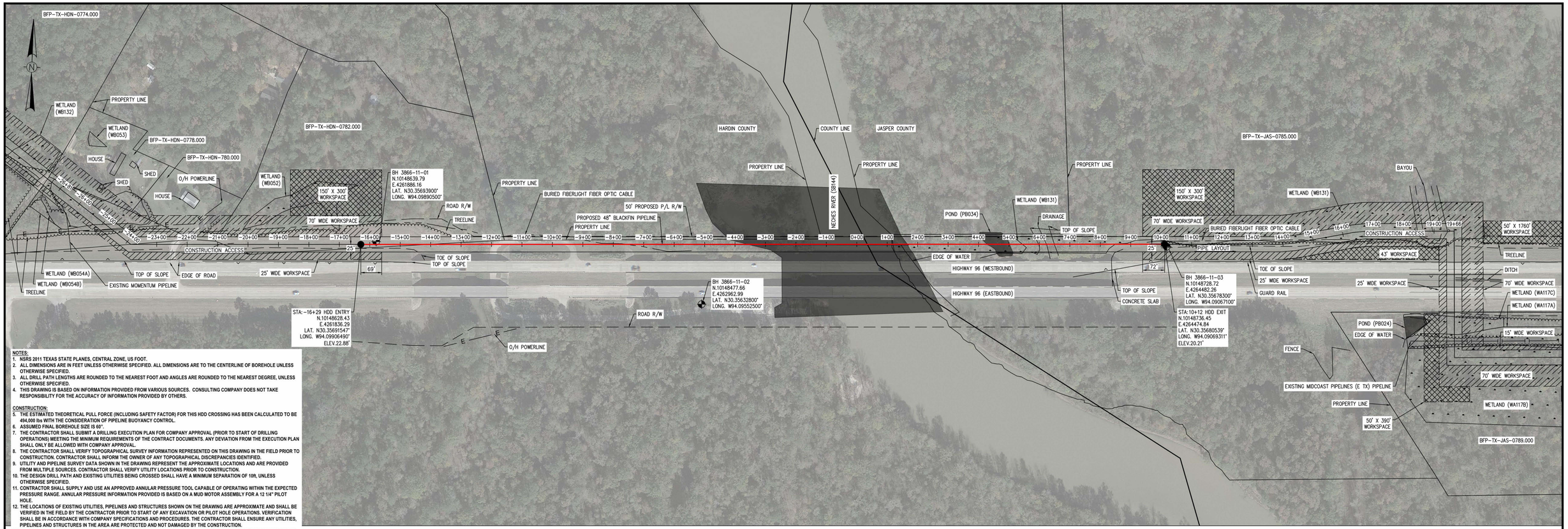
AFE NO. 23700
DWG. NO. 23700-PLE-HDPD-010_HWY-96_TXDOT_ROW
SHEET 5 OF 5
REVISION C
DATE: 10/20/23

C:\Users\mmurphy\TROYCONSTRUCTION.COM\23.9.1.05 - Blackfin Pipeline - Documents\Internal\Drafting and Mapping\Drawings\HDDs\48 Inch BLACKFIN PIPELINE\23700-PLE-HDPD-010_HWY-96_TXDOT_ROW.DWG 2023-10-20 - 9:55am

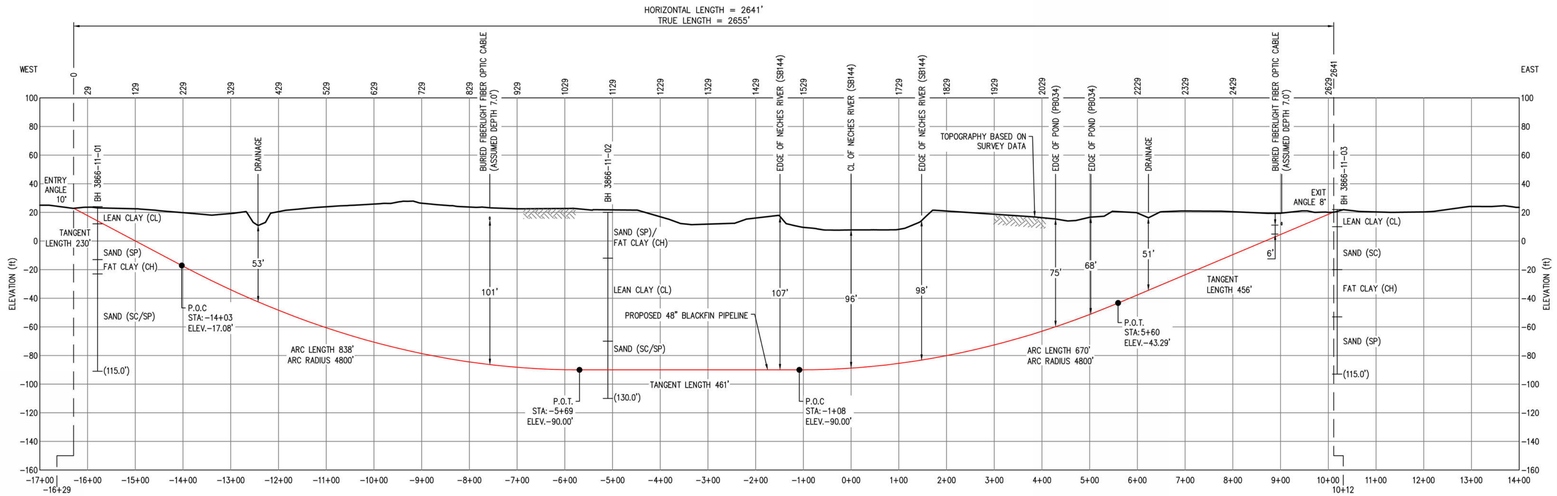
Confidential

Attachment 2: Horizontal directional drill (HDD) design drawing for Neches River crossing

BLACKFIN PIPELINE

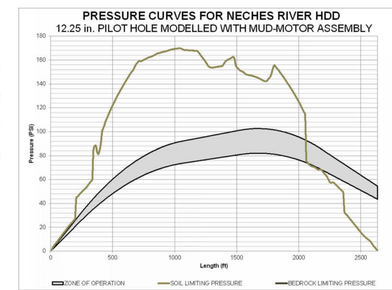


P L A N
SCALE: 1" = 150'



P R O F I L E
HORIZONTAL SCALE: 1" = 150'
VERTICAL SCALE: 1" = 50'

PILOT HOLE TOLERANCES	
ITEM	TOLERANCE
PILOT ENTRY ANGLE	INCREASE ANGLE UP TO 1° (STEEPER), BUT NO DECREASE IN ANGLE ALLOWED.
PILOT ENTRY LOCATION	AS STAKED BY COMPANY. NO CHANGE WITHOUT COMPANY APPROVAL.
PILOT EXIT ANGLE	INCREASE ANGLE UP TO 1° (STEEPER). DECREASE UP TO 2° (FLATTER).
PILOT EXIT LOCATION	UP TO 20 FEET LONGER OR 10 FEET SHORTER THAN EXIT STAKE. BETWEEN 5 FEET LEFT AND 5 FEET RIGHT OF COMPANY SURVEY CENTERLINE.
PILOT DEPTH	UP TO 2 FEET ABOVE THE DESIGNED DRILL PROFILE OR UP TO 10 FEET BELOW THE DESIGNED DRILL PROFILE.
PILOT ALIGNMENT	SHALL REMAIN WITHIN 5 FEET LEFT OR RIGHT OF COMPANY CENTERLINE SURVEY.



NOTES:
1. NSRS 2011 TEXAS STATE PLANES, CENTRAL ZONE, US FOOT.
2. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS ARE TO THE CENTERLINE OF BOREHOLE UNLESS OTHERWISE SPECIFIED.
3. ALL DRILL PATH LENGTHS ARE ROUNDED TO THE NEAREST FOOT AND ANGLES ARE ROUNDED TO THE NEAREST DEGREE, UNLESS OTHERWISE SPECIFIED.
4. THIS DRAWING IS BASED ON INFORMATION PROVIDED FROM VARIOUS SOURCES. CONSULTING COMPANY DOES NOT TAKE RESPONSIBILITY FOR THE ACCURACY OF INFORMATION PROVIDED BY OTHERS.

CONSTRUCTION:
5. THE ESTIMATED THEORETICAL PULL FORCE (INCLUDING SAFETY FACTOR) FOR THIS HDD CROSSING HAS BEEN CALCULATED TO BE 494,000 lbs WITH THE CONSIDERATION OF PIPELINE BUOYANCY CONTROL.
6. ASSUMED FINAL BOREHOLE SIZE IS 60".
7. THE CONTRACTOR SHALL SUBMIT A DRILLING EXECUTION PLAN FOR COMPANY APPROVAL (PRIOR TO START OF DRILLING OPERATIONS) MEETING THE MINIMUM REQUIREMENTS OF THE CONTRACT DOCUMENTS. ANY DEVIATION FROM THE EXECUTION PLAN SHALL ONLY BE ALLOWED WITH COMPANY APPROVAL.
8. THE CONTRACTOR SHALL VERIFY TOPOGRAPHICAL SURVEY INFORMATION REPRESENTED ON THIS DRAWING IN THE FIELD PRIOR TO CONSTRUCTION. CONTRACTOR SHALL INFORM THE OWNER OF ANY TOPOGRAPHICAL DISCREPANCIES IDENTIFIED.
9. UTILITY AND PIPELINE SURVEY DATA SHOWN IN THE DRAWING REPRESENT THE APPROXIMATE LOCATIONS AND ARE PROVIDED FROM MULTIPLE SOURCES. CONTRACTOR SHALL VERIFY UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
10. THE DESIGN DRILL PATH AND EXISTING UTILITIES BEING CROSSED SHALL HAVE A MINIMUM SEPARATION OF 10ft, UNLESS OTHERWISE SPECIFIED.
11. CONTRACTOR SHALL SUPPLY AND USE AN APPROVED ANNULAR PRESSURE TOOL CAPABLE OF OPERATING WITHIN THE EXPECTED PRESSURE RANGE. ANNULAR PRESSURE INFORMATION PROVIDED IS BASED ON A MUD MOTOR ASSEMBLY FOR A 12 1/4" PILOT HOLE.
12. THE LOCATIONS OF EXISTING UTILITIES, PIPELINES AND STRUCTURES SHOWN ON THE DRAWING ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO START OF ANY EXCAVATION OR PILOT HOLE OPERATIONS. VERIFICATION SHALL BE IN ACCORDANCE WITH COMPANY SPECIFICATIONS AND PROCEDURES. THE CONTRACTOR SHALL ENSURE ANY UTILITIES, PIPELINES AND STRUCTURES IN THE AREA ARE PROTECTED AND NOT DAMAGED BY THE CONSTRUCTION.
13. THE CONTRACTOR SHALL TAKE SPECIFIC PRECAUTIONS IN PROTECTING EXISTING UTILITIES, PIPELINES AND STRUCTURES AT THE ENTRY AND EXIT SITES. SUCH PRECAUTIONS MAY INCLUDE: ENTRY/EXIT PITS EXCAVATED BELOW EXISTING UTILITIES, CASING OR SHEET PILING USED TO PROTECT PIPELINES, RAMPING/MATTING AND SPECIAL DRILLING PRECAUTIONS EMPLOYED DURING DRILLING. THESE PRECAUTIONS SHALL BE USED TO ENSURE THE DRILLING TOOLS, PIPE AND PRODUCT PIPE MAINTAIN A SAFE DISTANCE FROM THE EXISTING PIPELINES, UTILITIES AND STRUCTURES.
14. THE CONTRACTOR SHALL ASSESS THE NEED FOR TEMPORARY CASING, INCLUDING BOTH SMALL DIAMETER "WASH-OVER" TYPE CASING DURING PILOT HOLE, AND LARGE DIAMETER HAMMERED-IN PLACE CASING. IF LARGE DIAMETER CASING IS UTILIZED, CASING SHALL BE SIZED TO ACCOMMODATE THE FINAL REAM PASS AND SHALL UTILIZE CENTRALIZER CASING WITHIN THE TEMPORARY CONDUCTOR CASING. CASING DIAMETER, WALL THICKNESS, GRADE, AND DRIVE SHOE DESIGN SHALL BE DETERMINED BY THE CONTRACTOR. A CONTRACTOR'S CASING PLAN SHALL BE SUBMITTED AND APPROVED BY COMPANY PRIOR TO CASING INSTALLATION. ALL TEMPORARY CASINGS SHALL BE REMOVED AT COMPLETION UNLESS OTHERWISE NOTED.
15. THE PILOT HOLE SHALL BE DRILLED ALONG THE DESIGN DRILL PATH WITH THE DESIGNATED DESIGN RADIUS OF CURVATURE SHOWN IN THE DRAWING. THE PILOT HOLE SHALL BE MAINTAINED WITHIN THE TOLERANCES SHOWN IN THE TOLERANCE TABLE.
16. THE DESIGN RADIUS FOR THIS CROSSING IS 4,800 ft. THE PILOT HOLE DRILLING SHALL ADHERE TO THE FOLLOWING TOLERANCES:
    30ft (SINGLE JOINT) RADIUS SHALL NOT BE LESS THAN 2,200 ft.
    100ft (3-JOINT) AVERAGE RADIUS SHALL NOT BE LESS THAN 2,900 ft.
17. THIS ENGINEERED DESIGN IS BASED ON THE FOLLOWING MINIMUM EQUIPMENT REQUIREMENTS THAT THE CONTRACTOR SHALL HAVE ONSITE:
    A. DRILLING EQUIPMENT:
    - DRILLING RIG WITH A MINIMUM PULL FORCE OF 880,000 lbs;
    - IF USING A FORWARD REAMING METHODOLOGY, A DEVICE SHALL BE SUPPLIED TO PROVIDE TENSION ON THE DRILLING STRING ON EXIT SIDE (EXCAVATOR, WINCH OR SECOND DRILL RIG);
    - DRILL PIPE 6 5/8" (INSPECTED AS PER THE HDD SPECIFICATION);
    - DRILL BIT - 12 1/4" IN DIAMETER OR LARGER (PROVIDE DETAILS, CONDITION, AND SUPPLIER);
    - ANNULAR PRESSURE TOOL (0 TO 510 psi RANGE);
    - REAMERS DESIGNED FOR THE FORMATION (PROVIDE MANUFACTURER'S OPERATING SPECIFICATIONS, CONDITION, AND SUPPLIER);
    - MAGNETIC AND/OR GYROSCOPIC STEERING SYSTEM;
    - CASING (SPECIFICATIONS AND DETAILS TO BE PROVIDED FOR APPROVAL).
    B. DRILLING FLUID RECYCLING EQUIPMENT:
    - PUMP CAPACITY (OPERABLE RATE - 530 GPM);
    - SHAKERS (OPERABLE RATE - 530 GPM);
    - CENTRIFUGE/DESANDER/DESILTER (MINIMUM CAPACITY OF 400 GPM PER MINUTE);
    - ENGINEERED DRILLING FLUID PLAN MUST BE ABLE TO BE IMPLEMENTED IN THE FIELD WITH THE PROPOSED EQUIPMENT.
    C. THIS IS A MINIMUM LIST OF EQUIPMENT AND SHOULD NOT BE CONSIDERED A DIRECTIVE ON HOW TO COMPLETE THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR THE EXECUTION OF THE WORK UNDER ITS APPROVED EXECUTION PLAN AND SHALL SUPPLY ALL NECESSARY EQUIPMENT TO COMPLETE ITS PLAN AT ITS OWN COST. ALL EQUIPMENT SHALL BE SUPPLIED IN GOOD WORKING ORDER, MAINTAINED, FUELED AND SERVICED.
18. DRILLING FLUID IS ASSUMED TO HAVE A MAXIMUM DENSITY OF 10 lbs/gallon AND 1.0% SAND CONTENT.

ENVIRONMENTAL:
19. EMERGENCY RESPONSE SPILL KITS MUST BE ON-SITE AND AVAILABLE FOR USE FOR THE DURATION OF THE PROJECT.
20. TERRESTRIAL "INADVERTENT RETURN WALKS" SHALL BE INITIATED EVERY 4HRS. (AT A MINIMUM), OR IMMEDIATELY FOLLOWING A LOSS OF FLUID EVENT.
21. CONTRACTOR'S PROPOSED DRILLING FLUID COMPOSITION, INCLUDING ALL EXPECTED ADDITIVES, SHALL BE REVIEWED AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
22. THE WATERCOURSE MUST BE MONITORED FOR A POTENTIAL RELEASE OF DRILLING FLUID AND TO ASSESS THE IMMEDIATE EFFECTS OF CONSTRUCTION ACTIVITIES ON THE AQUATIC ENVIRONMENT IN ACCORDANCE WITH APPLICABLE FEDERAL AND STATE REGULATIONS.
23. THE CONTRACTOR SHALL ENSURE THAT THE FOLLOWING DOCUMENTATION IS ON-SITE AND READILY AVAILABLE AT ALL TIMES (AT A MINIMUM):
    A. EMERGENCY RESPONSE PROCEDURE (ERP);
    B. ENVIRONMENTAL PROTECTION PLAN (EPP);
    C. SDS FOR ALL ON-SITE MATERIAL;
    D. COPIES OF LAND USE AGREEMENTS.

GEOTECHNICAL:
24. SUBSURFACE CONDITIONS ARE BELIEVED TO BE SUITABLE FOR THE CONSTRUCTION OF THE PROPOSED DIRECTIONALLY DRILLED CROSSING BASED ON THE DATA AVAILABLE.
25. SOIL STRATIGRAPHY SHOWN IS BASED ON INTERPRETATION OF DATA FROM THREE (3) BOREHOLES DRILLED AT THE LOCATIONS SHOWN AND CCI'S UNDERSTANDING OF THE LOCAL GEOLOGY. BOREHOLE INFORMATION SHOWN IS SUMMARIZED FROM THE PRELIMINARY FIELD LOGS; REFER TO THE BORING LOG FOR DETAILED DESCRIPTIONS OF SUBSURFACE CONDITIONS ENCOUNTERED. DUE TO NATURAL VARIATIONS IN SUBSURFACE CONDITIONS AND INHERENT UNCERTAINTIES ASSOCIATED WITH THE INTERPRETATION OF SUBSURFACE DATA, SOME VARIATION IN STRATIGRAPHY BEYOND THE LOCATION OF THE BOREHOLE AND ALONG THE LENGTH OF THE BORE SHOULD BE EXPECTED.
26. IT IS ALSO RECOMMENDED THAT THE DIRECTIONAL DRILLING CONTRACTOR INDEPENDENTLY EVALUATE THE FEASIBILITY OF DRILLING THE CROSSING, GIVING DUE CONSIDERATION TO THE SUITABILITY OF THEIR PROPOSED EQUIPMENT AND CONSTRUCTION PROCEDURES.

PIPE SPECIFICATIONS:
1. CARRIER PIPE: 48" O.D. X 1.000" WT, X-70
2. 14-16 MILS FBE COATING & 30-40 MILS ARO COATING
3. MAX. OPER. PRESSURE: 1,440 PSIG
4. MIN. TEST PRESSURE: 1,800 PSIG
5. MIN. YIELD STRENGTH: 70,000 PSI

STATE OF TEXAS
GUNNAR R. BUSCH
136448
LICENSED
PROFESSIONAL ENGINEER
October 13, 2023

DWG. NO.	REFERENCE DRAWING TITLE
3866-11-AP-00	ANNULAR PRESSURE
3866-11-STEEL STRESS-00	STRESS SHEET
WWM_BLACKFIN_DESIGN_BASE	BASE MAP

NO.	REVISION - DESCRIPTION	BY	DATE	CHK	APP
1	ISSUED FOR PERMIT	AK	10/13/2023	MAL	GB
0	ISSUED FOR PERMIT	MH	09/28/2023	MAL	GB

PREPARED BY:
CCI & Associates Inc.
26445 State Highway 249, Suite 250
Houston, TX 77070
Firm # F-18518

	BY	DATE
DESIGN	NH	10/13/2023
DRAWN	MH	10/13/2023
ASBUILT		
SCALE: AS SHOWN		

BLACKFIN PIPELINE

P.L./STA. NO.	TO
CONSTRUCTION YEAR	2024
IN-SERVICE DATE	Q2 2025

BLACKFIN PIPELINE
48" HDD CROSSING
NECHES RIVER
HARDIN & JASPER COUNTIES, TEXAS

AFE NO. 23700
DWG. NO. 23700-PLE-HDPD-009
SHEET 1 OF 1
REVISION 1
DATE: 10/13/2023

S:\US Current Jobs\3866-Troy Construction-WWM Blackfin Pipeline\Eng\Drawings\11-Neches River\IFP\23700-PLE-HDPD-009-1.dwg 2023-10-13 - 9:23am

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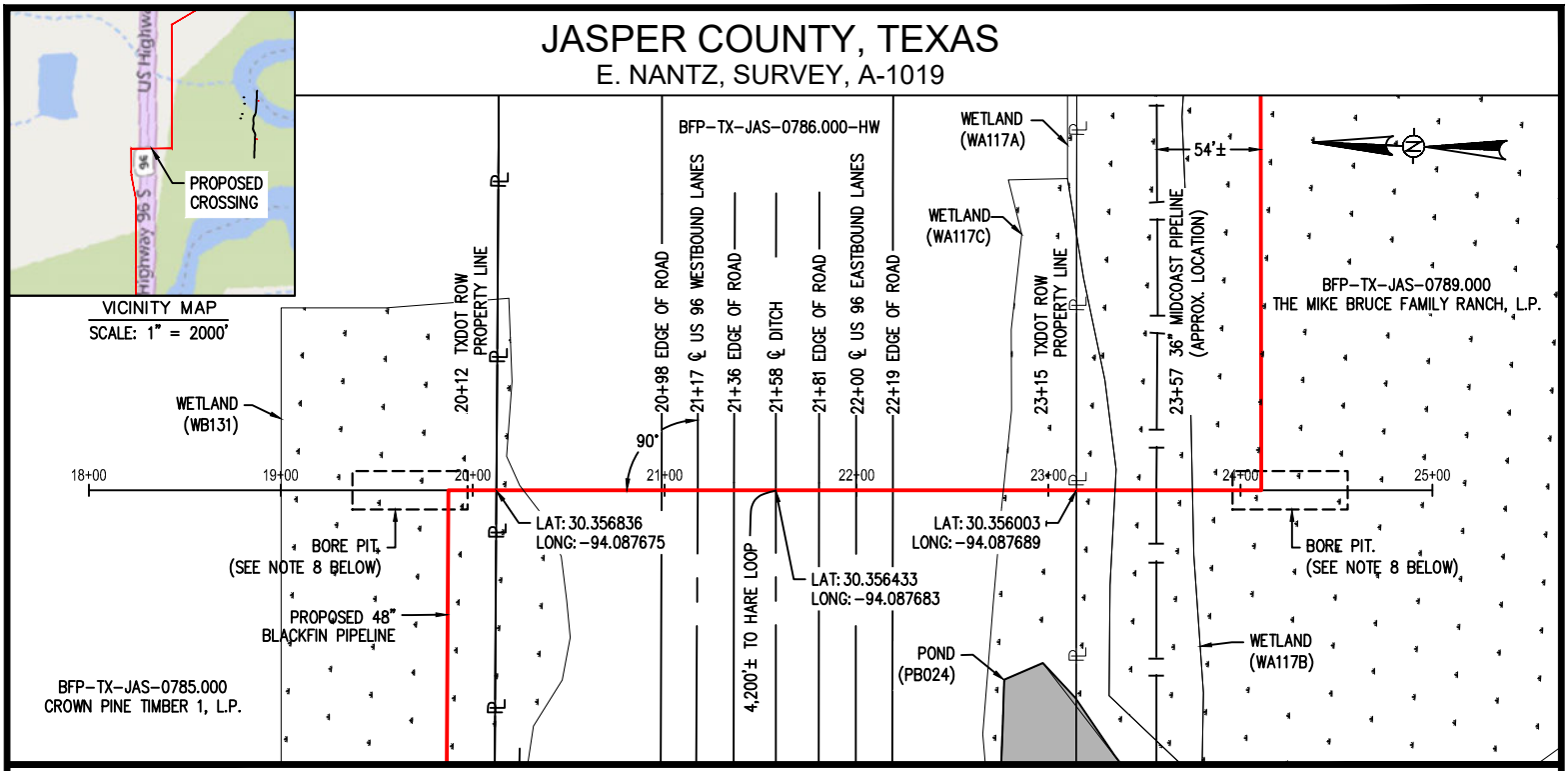
Attachment 3: Highway 96 crossing permit drawing for perpendicular bored crossing

BLACKFIN PIPELINE

JASPER COUNTY, TEXAS

E. NANTZ, SURVEY, A-1019

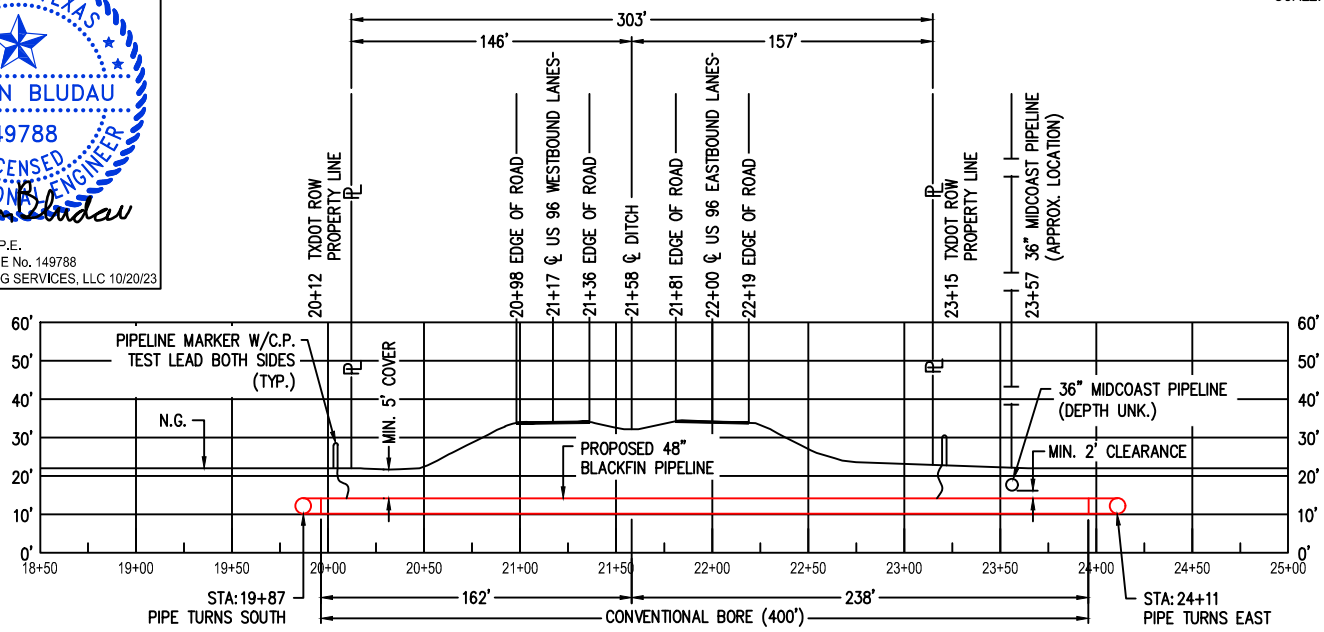


PLAN

SCALE: 1" = 100'

STATE OF TEXAS
DANSON BLUDAU
149788
LICENSED
PROFESSIONAL ENGINEER

DANSON BLUDAU, P.E.
TEXAS P.E. LICENSE No. 149788
TROY ENGINEERING SERVICES, LLC 10/20/23



PROFILE

HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 20'

NOTES:

1. CARRIER PIPE: 48" O.D., 1.000" W.T., X-70 14-16 MILS FBE, 30-40 MILS ARO
2. MAX. OPERATING PRESSURE: 1,440 PSI
3. MIN. TEST PRESSURE: 1,800 PSI
4. MIN. YIELD STRENGTH: 70,000 PSI
5. CONSTRUCTION METHOD WILL BE CONVENTIONAL BORE UNLESS NOTED OTHERWISE.
6. A MINIMUM 5-FOOT DEPTH OF COVER OVER TOP OF CARRIER PIPE WILL BE MAINTAINED WITHIN ROAD ROW.
7. A MINIMUM 24 INCHES OF CLEARANCE WILL BE MAINTAINED FROM ALL EXISTING UTILITIES.
8. BORE PITS ARE TYPICAL REPRESENTATIONS. ACTUAL DIMENSIONS WILL BE FIELD DETERMINED DURING CONSTRUCTION.
9. REFER TO DWG. 23700-PLE-HDPD-010_HWY-96_TXDOT_ROW FOR TXDOT ROW LAYOUT AND SPECIFICATIONS.
10. PIPELINE ROUTE AND PROPERTY LINE RECTIFICATION SURVEYS HAVE BEEN PERFORMED BY ENSITE USA.
11. ENVIRONMENTAL FEATURES HAVE BEEN SURVEYED AND DELINEATED BY SWCA ENVIRONMENTAL CONSULTANTS.
12. LOCATION AND DEPTH OF ALL FOREIGN UTILITY LINES TO BE FIELD DETERMINED BY CONSTRUCTION CONTRACTOR.

LEGEND:

- PROPOSED 48" BLACKFIN PIPELINE
- DELINEATED WETLAND
- DELINEATED POND/STREAM

NO.	REVISION DESCRIPTION	BY	DATE	CHK'D	APP'D
A	ISSUED FOR PERMIT	MMM	10/20/23	MAM	DB

PREPARED BY: TROY FIRM No:23055
8521 McHARD RD, HOUSTON, TX 77053

DWN. BY:	MMM	10/20/23
CHK.	MAM	10/20/23
PROJ. ENGR.	DB	10/20/23
PROJ. MGR.	JP	10/20/23
CLIENT APP.		
SCALE:	AS NOTED	

BLACKFIN PIPELINE

PROPOSED 48" BLACKFIN PIPELINE
STATE ROAD CROSSING
US-96

DWG. NO.	SHT. NO.	REV.
BFP-TX-JAS-0786.000-HW	1 OF 1	A

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Attachment 4: Barlow calculations for proposed line pipe

BLACKFIN PIPELINE

Blackfin Pipeline Project

Calculation Cover Sheet

Troy Engineering Services, LLC

8521 McHard Rd
Houston, TX 77053

Firm Number: 23055

Exhibit A

High Pressure Pipeline – over 60 PSI

Barlow

CARRIER PIPE		CASING PIPE	
1. Outside Diameter *in.* (D)	48.00”	~~1. Outside Diameter *in.*~~	
2. Wall Thickness *in.* (t)	0.686”	~~2. Wall Thickness *in.*~~	
3. Material Specifications	API 5L, PSL 2	~~3. Material Specifications~~	
4. Minimum Yield Strength (S)	70,000 psi	~~4. Minimum Yield Strength~~	
5. Design Factor (F)	0.72		
6. Longitudinal Seam Joint Factor (E)	1.00		
7. Temperature Derating Factor (T)	1.00		
8. Maximum Operating Pressure	1440 psig		
9. Design Pressure (P)	1,440.6 psig		

The pipeline material and design must meet minimum Federal Safety Standards stated In 49 CFR:

Gas Pipeline Part 192 subpart C	~~Liquid Pipeline Part 195 subpart C~~
P=((2xSx(t/D))xFxExT)	~~P=((2xSx(t/D))xExF)~~
Design Factor (F): See § 192.111	~~Seam Joint Factor (E): See§ 195.106~~
Longitudinal Joint Factor (E): See § 192.113	~~Design Factor (F): See § 195.106~~
Temperature Derating Factor (T): See§ 192.115	

Place Calculation Below

$$P = 2 \times S \times \left(\frac{t}{D}\right) \times F \times E = 2 \times 70000 \times \frac{0.686}{48} \times 0.72 \times 1 = 1{,}440.6\ psig$$

Engineer's Seal

Engineer's Signature Date

Exhibit A

High Pressure Pipeline – over 60 PSI

Barlow

CARRIER PIPE		CASING PIPE	
1. Outside Diameter *in.* (D)	48.00”	~~1. Outside Diameter *in.*~~	
2. Wall Thickness *in.* (t)	0.823”	~~2. Wall Thickness *in.*~~	
3. Material Specifications	API 5L, PSL 2	~~3. Material Specifications~~	
4. Minimum Yield Strength (S)	70,000 psi	~~4. Minimum Yield Strength~~	
5. Design Factor (F)	0.60		
6. Longitudinal Seam Joint Factor (E)	1.00		
7. Temperature Derating Factor (T)	1.00		
8. Maximum Operating Pressure	1440 psig		
9. Design Pressure (P)	1,440.3 psig		

The pipeline material and design must meet minimum Federal Safety Standards stated In 49 CFR:

Gas Pipeline Part 192 subpart C	~~Liquid Pipeline Part 195 subpart C~~
P=((2xSx(t/D))xFxExT)	~~P=((2xSx(t/D))xExF)~~
Design Factor (F): See § 192.111	~~Seam Joint Factor (E): See§ 195.106~~
Longitudinal Joint Factor (E): See § 192.113	~~Design Factor (F): See § 195.106~~
Temperature Derating Factor (T): See§ 192.115	

Place Calculation Below

$$P = 2 \times S \times \left(\frac{t}{D}\right) \times F \times E = 2 \times 70000 \times \frac{0.823}{48} \times 0.60 \times 1 = 1{,}440.3\ psig$$

Engineer's Seal

Engineer's Signature Date

Exhibit A

High Pressure Pipeline – over 60 PSI

Barlow

CARRIER PIPE		CASING PIPE	
1. Outside Diameter *in.* (D)	48.00"	~~1. Outside Diameter *in.*~~	
2. Wall Thickness *in.* (t)	1.000"	~~2. Wall Thickness *in.*~~	
3. Material Specifications	API 5L, PSL 2	~~3. Material Specifications~~	
4. Minimum Yield Strength (S)	70,000 psi	~~4. Minimum Yield Strength~~	
5. Design Factor (F)	0.50		
6. Longitudinal Seam Joint Factor (E)	1.00		
7. Temperature Derating Factor (T)	1.00		
8. Maximum Operating Pressure	1440 psig		
9. Design Pressure (P)	1,458.3 psig		

The pipeline material and design must meet minimum Federal Safety Standards stated In 49 CFR:

Gas Pipeline Part 192 subpart C
P=((2xSx(t/D))xFxExT)
Design Factor (F): See § 192.111
Longitudinal Joint Factor (E): See § 192.113
Temperature Derating Factor (T): See§ 192.115

~~Liquid Pipeline Part 195 subpart C~~
~~P=((2xSx(t/D))xExF)~~
~~Seam Joint Factor (E): See§ 195.106~~
~~Design Factor (F): See § 195.106~~

Place Calculation Below

$$P = 2 \times S \times \left(\frac{t}{D}\right) \times F \times E = 2 \times 70000 \times \frac{1.000}{48} \times 0.5 \times 1 = 1{,}458.3\ psig$$

Engineer's Seal

Engineer's Signature Date

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Attachment 5: Traffic control plan and figures

BLACKFIN PIPELINE

November 20, 2023

Dave Collins
TxDOT
8450 Eastex Freeway
Beaumont, TX 77708
[redacted]

Subject: **Blackfin Pipeline Project**
TxDOT Highway 96 Pipeline Construction – Hardin and Jasper Counties, TX
Permit Application Package – Supplemental Documentation

Dear Mr. Collins,

Blackfin Pipeline, LLC is submitting requested supplemental documentation for the permit application package for its proposed 48-inch natural gas pipeline within the TxDOT Highway 96 corridor across the Neches River in Hardin and Jasper Counties, TX. The initial permit application was filed on October 20, 2023. The following documentation is attached:

- Neches River HDD inadvertent returns contingency plan
- Supporting drawings for proposed temporary construction access:
  - Temporary construction access overview drawing
  - Temporary construction access road typical drawing
- Revised traffic control plan

Please also reference the detailed package submitted to TxDOT on August 18, 2023 for a complete justification for Blackfin's proposed pipeline parallel occupancy request.

We greatly appreciate your support and assistance. Please feel free to call me any time at 405.313.0413.

Best Regards,

Oliver Sutton

Oliver Sutton
Permitting Agent
Norfleet Land Services

Confidential

Blackfin Pipeline – TxDOT Highway 96 Supplemental Permit Application Documentation for 48-inch Natural Gas Pipeline

Date: November 20, 2023

Contents

BLACKFIN PIPELINE

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Blackfin Pipeline – TxDOT Highway 96 Supplemental Permit Application Documentation for 48-inch Natural Gas Pipeline

Date: November 20, 2023

Attachment 1: Neches River HDD Inadvertent Returns Contingency Plan

BLACKFIN PIPELINE

Neches River HDD Inadvertent Returns Contingency Plan
Whitewater Midstream
Blackfin Pipeline Project

Project Name: Blackfin Pipeline Project

Project AFE Number: 23700

Project Type: Natural Gas Pipeline Project

Revision History						
Rev. No.	**Date** (YYYY-MM-DD)	**Document Status**	**Brief Description of Change History**	**Originator** (By)	**Reviewer(s)** (Checkers)	**Approver(s)**
A	2023-11-20	Issued	Permit	G. Busch (CCI)	D. Bludau (Troy)	L. Kelton (WWM)

TABLE OF CONTENTS

ATTACHMENTS

1. **Neches River HDD Drawing (Issued for Permit)**
   - HDD Plan & Profile Design Drawing
   - Pressure Curves Calculations
   - HDD Stress Calculations
2. **Example Safety Data Sheets (SDS)**

1. INTRODUCTION

Whitewater Midstream (WWM) is planning to construct the new Blackfin Pipeline Project which includes the installation of approximately 160.4 miles of 48-inch natural gas pipeline and appurtenant facilities in the surrounding area north and west of Houston, Texas. Project construction is scheduled to begin in Q3 2024 and has a targeted in-service date of Q4 2025.

The proposed Neches River horizontal directional drill (HDD) follows the Blackfin Pipeline alignment and measures approximately 2,641 ft in horizontal length. The proposed HDD alignment parallels Highway 96 within Texas Department of Transportation (TxDOT) property/right-of-way (ROW), approximately 60 ft north of the westbound lanes; the HDD includes the bridge crossing of the Neches River. Additionally, the proposed Neches River HDD alignment is, at minimum, approximately 25 ft inside of the northern edge of the TxDOT Highway 96 ROW. Further site/crossing specific details for the Neches River HDD are provided in site-specific plans and documents included in the attachments within the TxDOT permit application package. For a summary of the Neches River HDD crossing characteristics, please see Table 1 below:

Table 1: Proposed Neches River HDD Location

Crossing Name	Pipeline Diameter (in)	Approx. Entry Milepost	Approx. Exit Milepost	Total Length (ft)	Subsurface Material
Neches River HDD	48	152.29	152.79	2,641	Clay & Sand

2. PERSONNEL AND RESPONSIBILITIES

The Chief Inspector and/or environmental inspectors (EI) have overall responsibility for implementing this Plan. The Chief Inspector/EI will verify that all employees are trained prior to drilling activities. The WWM Environmental Planning and Permitting Compliance Lead shall be notified immediately if an inadvertent return (IR) is detected. They will be responsible for verifying WWM's project response team is aware of an IR, coordinating appropriate personnel, response, cleanup, regulatory agency notification and coordination to verify proper clean-up, disposal of recovered material and timely reporting of the incident. In the event of an IR, the Environmental Services Lead will verify that waste materials are properly containerized, labeled, and removed from the site to an approved disposal facility by personnel experienced in the removal, transport, and disposal of drilling mud.

The Chief Inspector and/or EI shall be familiar with all aspects of the drilling activity, the contents of this Plan, and the conditions of approval under which the activity is permitted to take place. They shall have stop work authority and commit the resources (personnel and equipment) necessary to implement this Plan. They shall verify that a copy of this Plan is available (on-site) and accessible to all applicable construction personnel. They shall verify that all pertinent workers are properly trained and familiar with the necessary procedures for response to an IR, prior to commencement of drilling operations. Changes to this Plan are not allowed unless a new, updated Plan has been approved by the necessary parties.

3. PRE-CONSTRUCTION ACTIVITIES

The first step in limiting the impact of an IR is prevention. Before commencement of operations, the HDD Plan shall be reviewed with regard to the risk of an IR. The HDD construction contractor will be responsible for preparing an Inadvertent Return Mitigation Plan (IRMP), which will be consistent with all applicable

provisions from this Plan. Before any HDD occurs, a meeting will take place to discuss the HDD operation and the HDD Contractor's IRMP, including response measures and reporting/notification requirements. Anticipated fluid loss risk for each crossing based on geologic conditions will be discussed. All relevant Contractor personnel and Company representatives and inspectors will take part in these meetings. Records of these meetings and all safety trainings conducted on site will be maintained through meeting sign-in sheets, meeting minutes, and/or safety training certificates issued by the Company, as appropriate.

Erosion and sediment controls will be installed at the HDD entrance/exit pits, as needed. Spill containment and cleanup materials will be kept on-site at a designated location. All on-site personnel will be made aware of the location of these materials.

The HDD Operations On-Site Foreman will have the responsibility and authority for executing the IRMP. The On-Site Foreman shall be competent in all aspects of the HDD drilling activity and the IRMP. The IRMP will be retained on-site. Prior to the start of drilling operations, the On-Site Foreman will verify that workers are properly trained and familiar with the necessary procedures for response to an IR.

All HDD crossing locations shall be inspected by the Company construction oversight personnel prior to construction. Confirmation of foot access for visual inspection along the drill path shall be confirmed, and any required modifications to the inspection plan identified and communicated to the EI, Contractor, and any other relevant inspection staff.

Water source testing will be required if a water well is located within 150 ft of any of the HDD alignments. Pre-testing, monitoring, and post-testing of any wells within 150 ft of the proposed HDD alignment will be conducted by WWM.

Landowners at and adjacent to the HDD location will be notified of HDD operations prior to construction. Notifications will include details on noise mitigation measures to be implemented, where applicable. To facilitate expedited response times in the event of an IR, advance requests for landowner permission to access locations adjacent to approved work areas for IR identification and cleanup activities will be obtained by the Company where possible.

All regulatory agencies with jurisdiction over the HDD crossings will be notified of expected construction start dates and timelines prior to the initiation of construction activities.

4. DOCUMENTATION

The following documentation will be maintained by the Company, in conjunction with the Contractor, throughout the HDD construction activities:

- Employee training logs & all safety meeting documentation
- Records of visual surface monitoring (including time, observations, and personnel completing the monitoring)
- HDD instrument logs (including logs of measured annular pressure data)
- Logs of all drilling fluid additives utilized (including quantity, timing, and additive descriptions)
- Logs of all mud property testing (including fluid weight, viscosity, sand content, pH)
- Any records of communications with public and/or agencies that has occurred during HDD activities (including inquiries, comments, responses and associated actions taken)

5. DRILLING FLUID MANAGEMENT

Water for use in drilling fluids shall be sourced from suitable locations relevant to the HDD crossing site. Where possible, municipal sources may be utilized. Where non-municipal sources are utilized, water shall be tested for environmental contaminants prior to use.

It is anticipated that some fluid additives aside from bentonite would be required for use in the HDD in this project, to verify efficient and successful drill completion. Possible expected additives are included in the attachments of this plan. A site-specific engineered drilling fluid plan will be developed by the Contractor, reviewed for compliance, and approved for use by the Company. Example safety data sheets (SDS) for drilling fluids are provided in Attachment 2.

A drilling fluid disposal plan will be developed prior to construction and will be in compliance with all applicable state and local requirements. It is currently anticipated that disposal facilities may be utilized for drilling fluid disposal for this project. Any disposal of waste would need to be coordinated with the Environmental Services Lead to verify the final disposal location is approved. If the HDD waste is not contaminated, there may be an opportunity to land apply along the project-approved workspace, however EPP, Environmental Services, Legal, Land, and Remediation Depts. would need to approve.

6. HDD OPERATIONAL CONDITIONS AND RESPONSE ACTIONS

The risk of an IR is greatest during the pilot bore phase of the installation process. The HDD Contractor will employ reasonable measures during drilling to prevent or minimize the risk of an IR occurrence. These measures may include:

- On-Site Mud Technician to monitor the drilling fluid circulation and returns and modify the drilling fluid properties as necessary
- Controlled drill advancement with minimal flow initially to minimize the risk of an IR as the drill progresses at relatively shallow depths
- Maintaining the pump pressures at no more than the minimum required to maintain good circulation and keep the borehole clear of cuttings
- Monitoring of the downhole drilling fluid pressures (annular pressure) during the pilot bore and reacting to pressure spikes by reducing flow, reducing forward advancement, and/or tripping back to clear any blockages behind the bit
- Tracking pit/tank volumes to identify any significant loss of drilling fluid volume that may indicate transmission of drilling fluid outside of the HDD borehole

If the HDD Contractor observes a major and/or unexpected change in fluid pressure or loss of circulation, or any other change to operating parameters that may indicate an IR, the operator will notify the On-Site Supervisor and Environmental Inspector (EI). A spotter will monitor the immediate area of the drill head to scout for a potential surface discharge. Pumping may be halted temporarily while the search is being performed if it is suspected that the loss of circulation is likely due to an IR. If an IR is confirmed the EI will immediately notify WWM's On-Site Representative.

In the event an IR is detected, timely notification will be made to the Construction and Environmental Inspectors to verify prompt implementation of a response plan. The first action required when an IR is detected is to minimize the volume of drill fluid that is released. This will be done by immediately halting pumping of drilling fluid downhole. Pumping will not resume until the situation is assessed and, if possible,

the fluid release is contained and controlled. WWM's EI shall have "stop work authority" and their instructions must be followed.

As it is probable that the IR will resume as soon as fluid pumping starts again, containment and control measures shall be designed to contain additional volumes of drilling fluid. It is common for an IR to stop releasing fluid when the drilling assembly has progressed a sufficient distance ahead of the release point. The risk of failure of an HDD installation increases dramatically as the duration over which pumping is halted increases. It is important actions are quickly taken to verify that pumping may resume as quickly as possible. Adjacent landowners will be notified of the HDD activities prior to construction and where possible, access to adjacent landowner property for IR containment/cleanup purposes will be pre-approved.

6.1. MONITORING AND PEDESTRIAN SURVEYS

The HDD Contractor shall verify that operations are monitored for the occurrence of an IR. During HDD construction operations, pipeline construction personnel will monitor the surface above the pipeline drill path. Visual monitoring of the HDD alignment will be performed at least three (3) times per shift to visually monitor for the presence of undetected IR along and to the sides of the alignment. Any indication of a release will be reported immediately to the On-Site Supervisor and the Environmental Inspector (EI).

Field crews are to be briefed on what to watch for and will be made aware of the importance of timely detection and response to any IR throughout the drill. The responsible individuals shall inspect the surface of the water for any turbidity plumes that may indicate an IR is occurring. If operating parameters (loss of returns) indicate the risk of an IR under water, the water inspector should become continuous (during daylight hours) until the location of losses is found, the drill is complete, returns are fully re-established, or other measures to remedy the losses have been successful.

7. RESPONDING TO INADVERTENT RETURNS (IR)

In the event of an IR, the Contractor shall do the following:

- Temporarily halt all drilling operations, including shutting down the pumps
- Determine the appropriate combination of hay bales, silt fence, pumps, hoses, and other containment measures to most effectively contain and remove drilling fluids
- Promptly notify the On-Site Supervisor and the EI
- Inform WWM's On-Site Representative so that they can promptly notify applicable regulatory agencies. All communication to the regulatory agencies will be through WWM's On-Site Representative
- Install the appropriate containment measures, as needed, to contain and recover drilling mud
- All of these measures should be implemented for upland, surface water, or wetland IRs

7.1. IR TO WATERBODY

In the event of a surface water release, containment and removal of drilling fluid is generally impractical because of dilution and dispersion. If the EI feels that the resulting plume is excessive or may directly and negatively impact aquatic resources or life, the following containment may be considered in consultation with WWM:

- Contain releases with silt-fence or sandbags if releases are within an area where these measures are deemed suitable.
- Depending on the depth of water and surface conditions, floating silt booms, anchored in place, may be placed over the location of the release to contain the suspended solids until some observable degree of settlement has occurred. Removal of the drilling fluids is not anticipated.
- The containment shall remain in place until the release stops, and settlement renders the turbidity inside the containment similar to the adjacent waters based on visual inspection, or the threat to the sensitive resource has passed.
- Any containment structure placed in open water shall be clearly marked as an obstruction in accordance with federal and state agency regulations, with special consideration given to the type of marine traffic observed in the area.
- Note: Regulatory entities will be contacted in the event of an IR, and communications will occur to coordinate any pertinent activities related to the nearby boat ramp/potential boat traffic.

7.2. IR TO WETLANDS

In the event of a release to wetlands, containment and removal shall be performed if there is generally a net benefit in the reduction of impacts, as determined by the following:

- Prior to commencement of the HDD, the HDD Contractor will verify that appropriate equipment is available at the crossing location to contain and recover drilling fluid flow from inadvertent releases into wetlands.
- Upon confirmation of an inadvertent release in wetlands, the HDD Contractor shall assist the EI in measuring the area directly affected by the released drilling fluids. The area affected may be estimated from a distance if access to the affected area for measurement would result in additional unacceptable negative impacts.
- The EI will assist with characterization of the type of impact (e.g., temporary, permanent, vegetation only, change in surface hydrology) caused by the released fluids.
- The HDD Contractor and the EI shall jointly estimate the additional area, if any, likely to be affected if the drilling were to proceed and the drilling fluids were not contained and removed.
- The total actual impacts, plus the estimated impacts from continuation of an uncontained release, shall be compared to the total actual impacts, plus the estimated impacts from accessing the area for containment and removal, less the estimated reduction in impacts as a result of recovery of the fluids. When making this comparison, consideration and judgment will be given to the types of impacts, and value of the resources affected if dissimilar. The action resulting in the least total impacts will generally be selected, unless there are mitigating circumstances or as otherwise instructed by the regulatory agency having jurisdiction.
- If the decision is made to forgo containment, and the environmental permits allow WWM to proceed with the drill, the HDD Contractor will continue to observe the location of the release. If

impacts continue to increase, the EI will periodically repeat the comparison described above, until such time as containment and removal are justified or the drill is complete.

- If it is determined that the released drilling fluid is to be contained and recovered, the contractor, in consultation with the EI, shall direct the placement of the equipment at the applicable points of fluids release and transfer the contained fluids to a hopper barge or container for subsequent reuse or disposal.
- All access to the wetlands will be done in such a manner as to cause the least impacts to the vegetation and surface hydrology, and only with prior agency approval. Because of site-specific variables such as distance from open water, surface hydrologic conditions, and vegetation cover, the selection of the most appropriate access method will be made on a case-by-case basis, subject to approval by the Inspector. The least number of personnel and equipment necessary to accomplish the task safely and in a timely manner shall be deployed.

7.3. IR WITHIN TxDOT PROPERTY

In the event of a fluid release within the TxDOT ROW or property, all removal and cleanup of potentially contaminated areas shall be conducted in a manner in which safe traffic operations can be maintained within the active roadway. It is the responsibility of the Contractor to verify that the roadway or other structures owned and operated by the TxDOT are not detrimentally impacted by the cleanup activities and to repair the TxDOT property as necessary to restore function that may have been impacted from the fluid release. If an inadvertent return of drilling fluids is detected outside of certificated workspaces within TxDOT property, the following monitoring and operational protocol will be implemented:

- Halt drilling operations to allow the EI to appropriately quantify the return, assess potential impacts, and develop a management plan.
- Notify the appropriate TxDOT representative, EI, and WWM representative of IR
- The management plan will include approvals from TxDOT prior to allowing access and remediate the IR which could include access plans, traffic control, equipment and materials layout, schedule of remediation work, etc.
- TxDOT representative will assess the impact of IR to TxDOT property, roadway, or structures to determine if further remediation or repairs would be necessary.
- If remediation to TxDOT property is required, follow necessary steps as instructed by TxDOT.
- Documentation pertaining to the release will be executed in accordance with Section 5.0. Additional information including status updates will be provided to the project team, as necessary.
- Upon completion of the drilling operations, WWM will consult with TxDOT to determine if any final remediation or cleanup will be necessary.

7.4. POST IR RESPONSE

Once required cleanup and containment or other measures have been put in place, the following actions may be taken to proceed with drilling.

- The HDD Contractor shall employ best efforts to restore circulation to the entry location.
- The HDD Contractor will restart the pumps and work back several joints to reopen the circulation path to entry.
- The drilling fluid may also be altered to re-establish circulation, as required, depending on borehole conditions.

- If full circulation to entry is re-established and flow to the IR has reduced significantly, the drill may be allowed to proceed with WWM approval.
- If circulation is not re-established, higher density products known as Lost Circulation Materials (LCM) designed to plug the formation may be used (e.g., saw dust, magma fiber)
- If cessation or plugging of the IR cannot be achieved, partial recovery of circulation from the fracture to the surface may be allowed if the IR can be managed by pumping fluid back to either the entry or exit point. This may be sufficient if a diligent monitoring program is undertaken to verify fluid is not being released to the environment.
- If an IR ceases or full containment and partial circulation recovery is achieved, continue with drilling operations while verifying no effect to the environment. This activity must be approved by WWM prior to implementing.
- All actions taken shall be clearly documented by the HDD Contractor, including summary of contractor downtime, steps taken to restore circulation (with photographs), as well as details on date, time, location, and estimated release volumes.

7.5. IR RESPONSE MATERIALS & EQUIPMENT

In order to facilitate any necessary cleanup activities, the following items will be available at all times to the HDD drilling crews for containment, response, and clean-up:

- Hay bales (certified weed-free)
- Silt fence
- Sandbags
- Plastic sheeting
- Wood stakes
- Shovels, brooms, and appropriate hand tools
- Generator, pump, and hose
- Frac tank or mud pit large enough for excess mud
- Vacuum truck
- SDS for the drilling mud
- Silt curtain/absorbent booms (in-water work)
- Light towers for work at night
- Heavy equipment, such as backhoe or dozer, for containment and cleanup of drilling mud
- Boat for major waterbody crossings to allow for monitoring of releases to water

It is important to note that in the event of an IR at night, light towers should be pointed away from public areas, homes, or traffic flow and as low to the ground as possible so as not to unduly disrupt the public or traffic flow. If the IRs are suspected to contain contaminated fluids from the soils, proper testing, containment, and disposal procedures must be followed. Appropriate contaminated soil bags and liners should be available on-site to contain and remove any contaminated material.

8. RESTORATION

All areas affected by IRs will be restored to pre-existing conditions and contours to the extent practicable. Upland areas will be restored through typical right- of-way restoration procedures, such as grading, seeding,

and temporary and permanent erosion control devices, as necessary. Restoration of wetlands and waterbodies (if required) shall be as per the recommendations of the appropriate regulatory agencies in regulated wetlands and waterbodies.

9. CONTINGENCY PLANNING

9.1. ALTERNATE CROSSING MEASURES

In the event the HDD cannot be completed successfully, an alternate HDD drill path at a different alignment or at a deeper depth may be utilized to avoid the issues encountered with the initial attempt. Prior to attempting a second HDD crossing, a risk mitigation workshop should be held with all parties to determine the cause of the initial failure and any mitigation measure that could be adopted to reduce the risk(s) during the second HDD attempt. Although not expected on this project, if the conditions prove infeasible for a successful HDD the mitigation workshop may evaluate and recommend alternative construction methods, such as conventional bore, Pipe Thruster Micro Tunnel Boring (PTMB), or open trench. All contingency crossing plans shall be reviewed in advance with TxDOT and any other applicable permitting and regulatory agencies.

9.2. ABANDONMENT

In the event an IR cannot be plugged/healed, or for any other reason a hole must be abandoned, the drilling contractor must provide an abandonment plan for the unsuccessful drill path, including grouting of the abandoned hole. The site-specific grouting plan will be developed based on the location of the IR(s) within the hole, specific conditions of the hole, and phase of construction (pilot hole, ream) at the time of abandonment. Typical plans would involve a process similar to the following:

When the decision is made to abandon the unsuccessful drill path, a string of drill pipe will likely still be within the unsuccessful drill path borehole. This drill pipe can be used to position a grout pipe into position near the IR location. If abandonment occurs after completion of the pilot hole phase, the process for placing the grouting line would differ from the process that would be utilized if abandoning during pilot hole phase. In either case, the grout line of required length to extend from the surface to a point typically 200 ft past the IR location can be loaded into the ID of the drill pipe. The drill pipe can then be withdrawn while keeping the grout line in place.

Through the grout line, the surface crew will pump a cement-bentonite grout mix as the grout line is retracted to the surface. Pulling the grout line and pumping the cement-bentonite grout will begin and continue for a distance of 400 ft, or another chosen length which would adequately verify coverage throughout the zone of issue. Once a volume of cement-bentonite grout has been pumped equal to this planned length of the abandoned hole, HDD Grout (flowable fill) can be pumped from this position to the surface.

The result of this process is that cement grout would be centered at or near the IR and extend a certain distance on either side of the IR zone(s). From the plug of cement grout, flowable fill will extend to the surface in both directions, if applicable.

Depending on the condition and phase of the hole, local and owner federal regulatory requirements, cementitious grout may not be required, and HDD Grout abandonment would be suitable for the entirety of the abandoned length. All grouting plans for abandonment will be developed to be site specific and to verify compliance with the requirements of all applicable stakeholders.

ATTACHMENTS

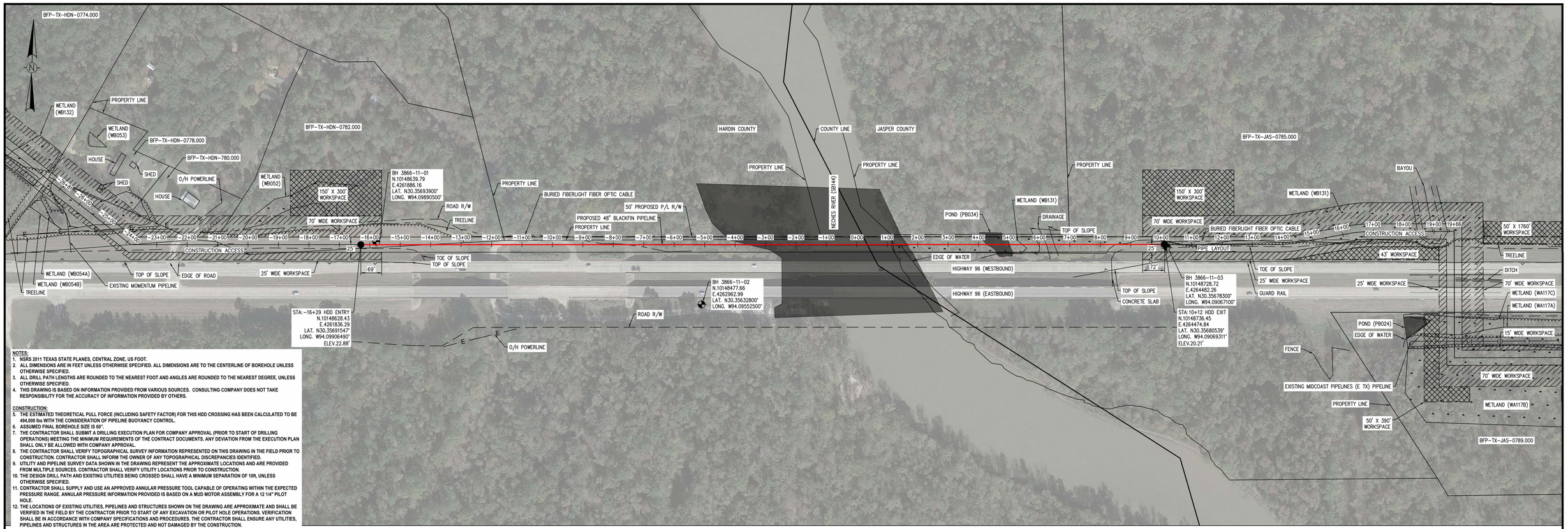
Attachment 1 – Neches River HDD Drawing (Issued for Permit)

Attachment 2 – Example Safety Data Sheets (SDS)

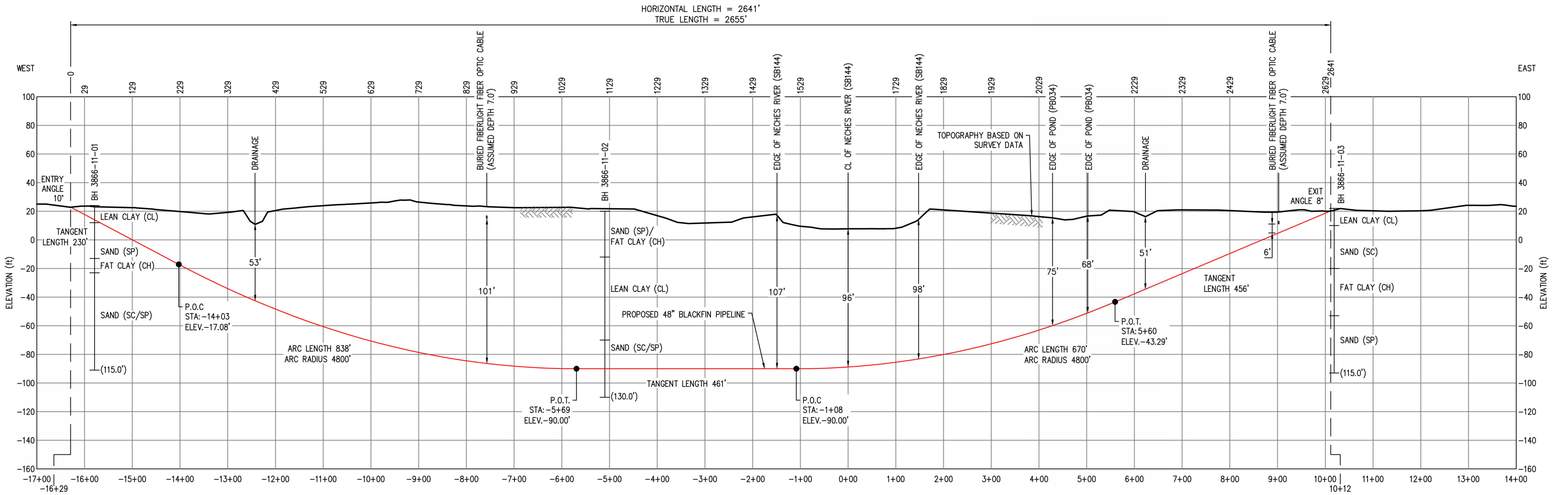
ATTACHMENT 1

Neches River HDD Drawing (Issued for Permit)

HDD Name	MP	MP	Dwg/Doc Number	Type of Drawing
Neches River HDD	152.29	152.79	23700-PLE-HDPD-009-1	IFP HDD Plan & Profile Design
			3866-11-AP-01	Pressure Curves Calc
			3866-11-STEEL STRESS-01	HDD Stress Calc

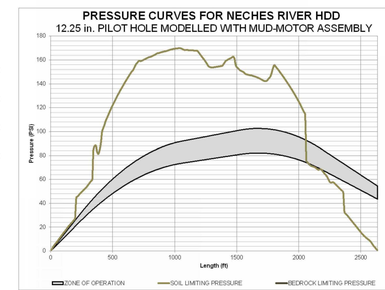


PLAN
SCALE: 1" = 150'



PROFILE
HORIZONTAL SCALE: 1" = 150'
VERTICAL SCALE: 1" = 50'

PILOT HOLE TOLERANCES	
ITEM	TOLERANCE
PILOT ENTRY ANGLE	INCREASE ANGLE UP TO 1° (STEEPER), BUT NO DECREASE IN ANGLE ALLOWED.
PILOT ENTRY LOCATION	AS STAKED BY COMPANY. NO CHANGE WITHOUT COMPANY APPROVAL.
PILOT EXIT ANGLE	INCREASE ANGLE UP TO 1° (STEEPER). DECREASE UP TO 2° (FLATTER).
PILOT EXIT LOCATION	UP TO 20 FEET LONGER OR 10 FEET SHORTER THAN EXIT STAKE. BETWEEN 5 FEET LEFT AND 5 FEET RIGHT OF COMPANY SURVEY CENTERLINE.
PILOT DEPTH	UP TO 2 FEET ABOVE THE DESIGNED DRILL PROFILE OR UP TO 10 FEET BELOW THE DESIGNED DRILL PROFILE.
PILOT ALIGNMENT	SHALL REMAIN WITHIN 5 FEET LEFT OR RIGHT OF COMPANY CENTERLINE SURVEY.



NOTES:
1. NSRS 2011 TEXAS STATE PLANES, CENTRAL ZONE, US FOOT.
2. ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS ARE TO THE CENTERLINE OF BOREHOLE UNLESS OTHERWISE SPECIFIED.
3. ALL DRILL PATH LENGTHS ARE ROUNDED TO THE NEAREST FOOT AND ANGLES ARE ROUNDED TO THE NEAREST DEGREE, UNLESS OTHERWISE SPECIFIED.
4. THIS DRAWING IS BASED ON INFORMATION PROVIDED FROM VARIOUS SOURCES. CONSULTING COMPANY DOES NOT TAKE RESPONSIBILITY FOR THE ACCURACY OF INFORMATION PROVIDED BY OTHERS.

CONSTRUCTION:
5. THE ESTIMATED THEORETICAL PULL FORCE (INCLUDING SAFETY FACTOR) FOR THIS HDD CROSSING HAS BEEN CALCULATED TO BE 494,000 lbs WITH THE CONSIDERATION OF PIPELINE BUOYANCY CONTROL.
6. ASSUMED FINAL BOREHOLE SIZE IS 60".
7. THE CONTRACTOR SHALL SUBMIT A DRILLING EXECUTION PLAN FOR COMPANY APPROVAL (PRIOR TO START OF DRILLING OPERATIONS) MEETING THE MINIMUM REQUIREMENTS OF THE CONTRACT DOCUMENTS. ANY DEVIATION FROM THE EXECUTION PLAN SHALL ONLY BE ALLOWED WITH COMPANY APPROVAL.
8. THE CONTRACTOR SHALL VERIFY TOPOGRAPHICAL SURVEY INFORMATION REPRESENTED ON THIS DRAWING IN THE FIELD PRIOR TO CONSTRUCTION. CONTRACTOR SHALL INFORM THE OWNER OF ANY TOPOGRAPHICAL DISCREPANCIES IDENTIFIED.
9. UTILITY AND PIPELINE SURVEY DATA SHOWN IN THE DRAWING REPRESENT THE APPROXIMATE LOCATIONS AND ARE PROVIDED FROM MULTIPLE SOURCES. CONTRACTOR SHALL VERIFY UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
10. THE DESIGN DRILL PATH AND EXISTING UTILITIES BEING CROSSED SHALL HAVE A MINIMUM SEPARATION OF 10ft, UNLESS OTHERWISE SPECIFIED.
11. CONTRACTOR SHALL SUPPLY AND USE AN APPROVED ANNULAR PRESSURE TOOL CAPABLE OF OPERATING WITHIN THE EXPECTED PRESSURE RANGE. ANNULAR PRESSURE INFORMATION PROVIDED IS BASED ON A MUD MOTOR ASSEMBLY FOR A 12 1/4" PILOT HOLE.
12. THE LOCATIONS OF EXISTING UTILITIES, PIPELINES AND STRUCTURES SHOWN ON THE DRAWING ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO START OF ANY EXCAVATION OR PILOT HOLE OPERATIONS. VERIFICATION SHALL BE IN ACCORDANCE WITH COMPANY SPECIFICATIONS AND PROCEDURES. THE CONTRACTOR SHALL ENSURE ANY UTILITIES, PIPELINES AND STRUCTURES IN THE AREA ARE PROTECTED AND NOT DAMAGED BY THE CONSTRUCTION.
13. THE CONTRACTOR SHALL TAKE SPECIFIC PRECAUTIONS IN PROTECTING EXISTING UTILITIES, PIPELINES AND STRUCTURES AT THE ENTRY AND EXIT SITES. SUCH PRECAUTIONS MAY INCLUDE: ENTRY/EXIT PITS EXCAVATED BELOW EXISTING UTILITIES, CASING OR SHEET PILING USED TO PROTECT PIPELINES, RAMPING/MATTING AND SPECIAL DRILLING PRECAUTIONS EMPLOYED DURING DRILLING. THESE PRECAUTIONS SHALL BE USED TO ENSURE THE DRILLING TOOLS, PIPE AND PRODUCT PIPE MAINTAIN A SAFE DISTANCE FROM THE EXISTING PIPELINES, UTILITIES AND STRUCTURES.
14. THE CONTRACTOR SHALL ASSESS THE NEED FOR TEMPORARY CASING, INCLUDING BOTH SMALL DIAMETER "WASH-OVER" TYPE CASING DURING PILOT HOLE, AND LARGE DIAMETER HAMMERED-IN PLACE CASING. IF LARGE DIAMETER CASING IS UTILIZED, CASING SHALL BE SIZED TO ACCOMMODATE THE FINAL REAM PASS AND SHALL UTILIZE CENTRALIZER CASING WITHIN THE TEMPORARY CONDUCTOR CASING. CASING DIAMETER, WALL THICKNESS, GRADE, AND DRIVE SHOE DESIGN SHALL BE DETERMINED BY THE CONTRACTOR. A CONTRACTOR'S CASING PLAN SHALL BE SUBMITTED AND APPROVED BY COMPANY PRIOR TO CASING INSTALLATION. ALL TEMPORARY CASINGS SHALL BE REMOVED AT COMPLETION UNLESS OTHERWISE NOTED.
15. THE PILOT HOLE SHALL BE DRILLED ALONG THE DESIGN DRILL PATH WITH THE DESIGNATED DESIGN RADIUS OF CURVATURE SHOWN IN THE DRAWING. THE PILOT HOLE SHALL BE MAINTAINED WITHIN THE TOLERANCES SHOWN IN THE TOLERANCE TABLE.
16. THE DESIGN RADIUS FOR THIS CROSSING IS 4,800 ft. THE PILOT HOLE DRILLING SHALL ADHERE TO THE FOLLOWING TOLERANCES:
    30ft (SINGLE JOINT) RADIUS SHALL NOT BE LESS THAN 2,200 ft.
    100ft (3-JOINT) AVERAGE RADIUS SHALL NOT BE LESS THAN 2,900 ft.
17. THIS ENGINEERED DESIGN IS BASED ON THE FOLLOWING MINIMUM EQUIPMENT REQUIREMENTS THAT THE CONTRACTOR SHALL HAVE ONSITE:
    A. DRILLING EQUIPMENT:
    - DRILLING RIG WITH A MINIMUM PULL FORCE OF 880,000 lbs;
    - IF USING A FORWARD REAMING METHODOLOGY, A DEVICE SHALL BE SUPPLIED TO PROVIDE TENSION ON THE DRILLING STRING ON EXIT SIDE (EXCAVATOR, WINCH OR SECOND DRILL RIG);
    - DRILL PIPE 6 5/8" (INSPECTED AS PER THE HDD SPECIFICATION);
    - DRILL BIT - 12 1/4" IN DIAMETER OR LARGER (PROVIDE DETAILS, CONDITION, AND SUPPLIER);
    - ANNULAR PRESSURE TOOL (0 TO 510 psi RANGE);
    - REAMERS DESIGNED FOR THE FORMATION (PROVIDE MANUFACTURER'S OPERATING SPECIFICATIONS, CONDITION, AND SUPPLIER);
    - MAGNETIC AND/OR GYROSCOPIC STEERING SYSTEM;
    - CASING (SPECIFICATIONS AND DETAILS TO BE PROVIDED FOR APPROVAL).
    B. DRILLING FLUID RECYCLING EQUIPMENT:
    - PUMP CAPACITY (OPERABLE RATE - 530 GPM);
    - SHAKERS (OPERABLE RATE - 530 GPM);
    - CENTRIFUGE/DESANDER/DESILTER (MINIMUM CAPACITY OF 400 GPM PER MINUTE);
    - ENGINEERED DRILLING FLUID PLAN MUST BE ABLE TO BE IMPLEMENTED IN THE FIELD WITH THE PROPOSED EQUIPMENT.
    C. THIS IS A MINIMUM LIST OF EQUIPMENT AND SHOULD NOT BE CONSIDERED A DIRECTIVE ON HOW TO COMPLETE THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR THE EXECUTION OF THE WORK UNDER ITS APPROVED EXECUTION PLAN AND SHALL SUPPLY ALL NECESSARY EQUIPMENT TO COMPLETE ITS PLAN AT ITS OWN COST. ALL EQUIPMENT SHALL BE SUPPLIED IN GOOD WORKING ORDER, MAINTAINED, FUELED AND SERVICED.
18. DRILLING FLUID IS ASSUMED TO HAVE A MAXIMUM DENSITY OF 10 lbs/gallon AND 1.0% SAND CONTENT.

ENVIRONMENTAL:
19. EMERGENCY RESPONSE SPILL KITS MUST BE ON-SITE AND AVAILABLE FOR USE FOR THE DURATION OF THE PROJECT.
20. TERRESTRIAL "INADVERTENT RETURN WALKS" SHALL BE INITIATED EVERY 4HRS. (AT A MINIMUM), OR IMMEDIATELY FOLLOWING A LOSS OF FLUID EVENT.
21. CONTRACTOR'S PROPOSED DRILLING FLUID COMPOSITION, INCLUDING ALL EXPECTED ADDITIVES, SHALL BE REVIEWED AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
22. THE WATERCOURSE MUST BE MONITORED FOR A POTENTIAL RELEASE OF DRILLING FLUID AND TO ASSESS THE IMMEDIATE EFFECTS OF CONSTRUCTION ACTIVITIES ON THE AQUATIC ENVIRONMENT IN ACCORDANCE WITH APPLICABLE FEDERAL AND STATE REGULATIONS.
23. THE CONTRACTOR SHALL ENSURE THAT THE FOLLOWING DOCUMENTATION IS ON-SITE AND READILY AVAILABLE AT ALL TIMES (AT A MINIMUM):
    A. EMERGENCY RESPONSE PROCEDURE (ERP);
    B. ENVIRONMENTAL PROTECTION PLAN (EPP);
    C. SDS FOR ALL ON-SITE MATERIAL;
    D. COPIES OF LAND USE AGREEMENTS.

GEOTECHNICAL:
24. SUBSURFACE CONDITIONS ARE BELIEVED TO BE SUITABLE FOR THE CONSTRUCTION OF THE PROPOSED DIRECTIONALLY DRILLED CROSSING BASED ON THE DATA AVAILABLE.
25. SOIL STRATIGRAPHY SHOWN IS BASED ON INTERPRETATION OF DATA FROM THREE (3) BOREHOLES DRILLED AT THE LOCATIONS SHOWN AND CCI'S UNDERSTANDING OF THE LOCAL GEOLOGY. BOREHOLE INFORMATION SHOWN IS SUMMARIZED FROM THE PRELIMINARY FIELD LOGS; REFER TO THE BORING LOG FOR DETAILED DESCRIPTIONS OF SUBSURFACE CONDITIONS ENCOUNTERED. DUE TO NATURAL VARIATIONS IN SUBSURFACE CONDITIONS AND INHERENT UNCERTAINTIES ASSOCIATED WITH THE INTERPRETATION OF SUBSURFACE DATA, SOME VARIATION IN STRATIGRAPHY BEYOND THE LOCATION OF THE BOREHOLE AND ALONG THE LENGTH OF THE BORE SHOULD BE EXPECTED.
26. IT IS ALSO RECOMMENDED THAT THE DIRECTIONAL DRILLING CONTRACTOR INDEPENDENTLY EVALUATE THE FEASIBILITY OF DRILLING THE CROSSING, GIVING DUE CONSIDERATION TO THE SUITABILITY OF THEIR PROPOSED EQUIPMENT AND CONSTRUCTION PROCEDURES.

PIPE SPECIFICATIONS:
1. CARRIER PIPE: 48" O.D. X 1.000" WT, X-70
2. 14-16 MILS FBE COATING & 30-40 MILS ARO COATING
3. MAX. OPER. PRESSURE: 1,440 PSIG
4. MIN. TEST PRESSURE: 1,800 PSIG
5. MIN. YIELD STRENGTH: 70,000 PSI

STATE OF TEXAS
GUNNAR R. BUSCH
136448
LICENSED
PROFESSIONAL ENGINEER
October 13, 2023

DWG. NO.	REFERENCE DRAWING TITLE
3866-11-AP-00	ANNULAR PRESSURE
3866-11-STEEL STRESS-00	STRESS SHEET
WWM_BLACKFIN_DESIGN_BASE	BASE MAP

NO.	REVISION - DESCRIPTION	BY	DATE	CHK	APP
1	ISSUED FOR PERMIT	AK	10/13/2023	MAL	GB
0	ISSUED FOR PERMIT	MH	09/28/2023	MAL	GB

PREPARED BY:
CCI & Associates Inc.
20445 State Highway 249, Suite 250
Houston, TX 77070
Firm # F-18518

	BY	DATE
DESIGN	NH	10/13/2023
DRAWN	MH	10/13/2023
ASBUILT		

SCALE: AS SHOWN

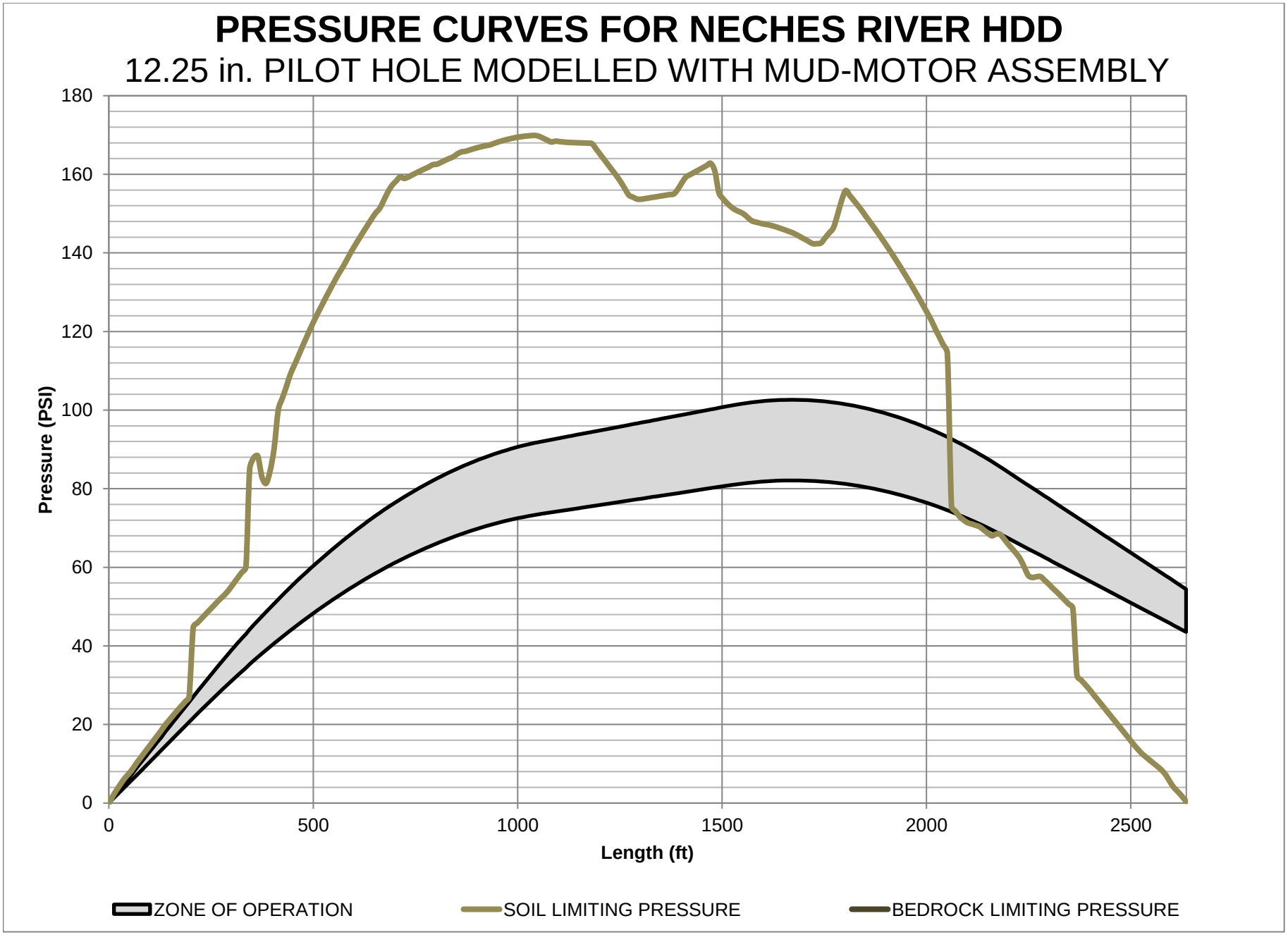
BLACKFIN PIPELINE

P.L./STA. NO.	TO
CONSTRUCTION YEAR	2024
IN-SERVICE DATE	Q2 2025

BLACKFIN PIPELINE
48" HDD CROSSING
NECHES RIVER
HARDIN & JASPER COUNTIES, TEXAS

AFE NO. 23700
DWG. NO. 23700-PLE-HDPD-009
SHEET 1 OF 1
REVISION 1
DATE: 10/13/2023

S:\US Current Jobs\3866-Troy Construction-WWM Blackfin Pipeline\Eng\Drawings\11-Neches River\IFP\23700-PLE-HDPD-009-1.dwg 2023-10-13 - 9:23am


PRESSURE CURVES FOR NECHES RIVER HDD
12.25 in. PILOT HOLE MODELLED WITH MUD-MOTOR ASSEMBLY
Pressure (PSI)
180
160
140
120
100
80
60
40
20
0
0
500
1000
1500
2000
2500
Length (ft)
ZONE OF OPERATION
SOIL LIMITING PRESSURE
BEDROCK LIMITING PRESSURE

Owner:	Troy Construction
Project:	3866 - Blackfin Pipeline
Date:	10/12/2023
Calculation Description:	Stress Assessment NPS 48 HDD - Design
Applicable Crossings:	Neches River HDD

CCI & Associates Inc.

Completed By:	NH	Reviewed By:	GB	Sheet Revision:	R19.1

Pipe Information			Design Criteria				Crossing Characteristics	
Pipe Diameter (in)	**Pipe W.T. (in)**	**Pipe Grade (psi)**	**MOP (psi)**	**Max. Operating Temperature (°F)**	**Installation Temperature (°F)**	**Design Radius (ft)**	**Maximum Depth From Entry Location (ft)**	**HDD Length (ft)**
48	1.000	70,000	1,440	100	40	4,800	113	2,655

The pipe section installated stresses are modelled in 5 sections (exit tangent (5), exit arc (4), bottom tangent (3), entry arc (2), entry tangent (1)) incorporating effects of buoyancy, soil friction, curvature, fluidic drag and pipe weight. The calculated stresses are evaluated using the AGA method (PRCI). Operating stresses incorporate hoop, bending, tensile, and thermal expansion.

Variable Definitions:

F_y - Specified Minimum Yield Strength
D - Outer Diameter of Product Pipe
E - Young's Modulus (Steel)
t - Wall Thickness of Product Pipe

Tensile Stress:

			% of Allowable
5	1133.2 psi	**PRCI 5.1.1, 5.5**	1.8%
4	1332.0 psi		2.1%
3	1555.4 psi	**Allowable Tensile Stress**	2.5%
2	2037.9 psi	$F_t = (0.9) * F_y$	3.2%
1	2229.3 psi	= 63000 psi	**3.5%**

Bending Stress:

			% of Allowable
5	590.0 psi	**PRCI 5.2.2**	1.3%
4	12291.7 psi	$f_b = (E/D)/(2R)$	**26.9%**
3	590.0 psi	**Allowable Bending Stress**	1.3%
2	12291.7 psi	$F_b = \{0.72 - (0.58\ F_y\ D / (E\ t)\}\ F_y$	**26.9%**
1	590.0 psi	= 45775.7 psi	1.3%

Hoop Stress:

			% of Allowable
5	1335.0 psi	**PRCI 5.2.3**	17.8%
4	1968.2 psi	$f_h = P_{ext}D/2t$	**26.2%**
3	1968.2 psi	**Allowable Hoop Stress**	**26.2%**
2	1968.2 psi	$F_{hc} = [0.88 \times E \times (t/D)^2] / 1.5$	**26.2%**
1	910.9 psi	= 7511.6 psi	12.1%

Operating Stresses:

			% of Allowable
5	17953.2 psi	**PRCI 5.4.4.2:**	57.0%
4	23786.2 psi	**Allowable Shear Stress**	**75.5%**
3	17935.4 psi	F(v) = 45% of F_y	56.9%
2	23786.2 psi	F(v) = 31500 psi	**75.5%**
1	17987.3 psi		57.1%

Combined Stress (Tensile and Bending)

			% of Allowable
5	0.03	**PRCI 5.2.4**	3%
4	0.29	$f_t/0.9F_y+f_b/F_b \le 1$	29%
3	0.04		4%
2	0.30		**30%**
1	0.05		5%

Combined Stress (Tensile, Bending, and Hoop)

			% of Allowable
5	0.03	**PRCI 5.2.4**	3%
4	0.16	$A^2+B^2+2\nu\lvert A\rvert B \le 1$	16%
3	0.07	$A = ((f_t+f_b-0.5f_h)1.25)/F_y$	7%
2	0.16	$B = 1.5f_h/F_{hc}$	**16%**
1	0.02		2%

Estimated PullForce (with Buoyancy Control)

328,997 lbs 493,496 lbs (including 1.5x Safety Factor)

ATTACHMENT 2

Example Safety Data Sheets (SDS)

SAFETY DATA SHEET

Product Trade Name: **BARA-KADE® BENTONITE**

Revision Date: 01-Jun-2020 **Revision Number:** 11

1. Identification

1.1. Product Identifier

Product Trade Name: BARA-KADE® BENTONITE
Synonyms None
Chemical Family: Mineral
Internal ID Code HM005230

1.2 Recommended use and restrictions on use

Application: Additive
Uses advised against No information available

1.3 Manufacturer's Name and Contact Details

Manufacturer/Supplier
BENTONITE Performance Minerals LLC
3000 N Sam Houston Parkway East
Houston, TX 77032
Telephone: (281) 871-7900

Halliburton Energy Services, Inc.
645 - 7th Ave SW Suite 1800
Calgary, AB
T2P 4G8
Canada

Prepared By Chemical Stewardship
Telephone: 1-281-871-6107
e-mail: [redacted]

1.4. Emergency telephone number:

Emergency Telephone Number 1-866-519-4752 or 1-760-476-3962
Global Incident Response Access Code: 334305
Contract Number: 14012

2. Hazards Identification

2.1 Classification in accordance with paragraph (d) of §1910.1200

Carcinogenicity	Category 1A - H350
Specific Target Organ Toxicity - (Repeated Exposure)	Category 1 - H372

2.2. Label Elements

Hazard Pictograms

Signal Word: Danger

Hazard Statements
H350 - May cause cancer by inhalation
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled

Precautionary Statements

Prevention
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves/protective clothing/eye protection/face protection

Response
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P314 - Get medical attention/advice if you feel unwell

Storage
P405 - Store locked up

Disposal
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

2.3 Hazards not otherwise classified

This product contains Wyoming bentonite or other sorptive clays. Crystalline silica forms found in this particular clay are limited to quartz. Extreme temperatures that can generate cristobalite or tridymite are not expected to occur under realistic conditions. In addition, all quartz found in sorptive clays are considered “occluded”, i.e., strongly coated with an amorphous silica surface. Occluded quartz has been experimentally-determined to be relatively non-toxic compared to unoccluded quartz. A lack of health effects found in several studies examining occupational exposure to sorptive clays also suggest that chronic inhalation of sorptive clays is not expected to result in silicosis or cancer. In light of these findings OSHA has recently exempted Wyoming bentonite and other sorptive clays from the crystalline silica PEL in §1910.1053(a)(1)(iii).

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Crystalline silica, quartz	14808-60-7	1 - 5%	Carc. 1A (H350) STOT RE 1 (H372)

The exact percentage (concentration) of the composition has been withheld as proprietary.

4. First Aid Measures

4.1. Description of first aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Skin Wash with soap and water. Get medical attention if irritation persists.

Ingestion Under normal conditions, first aid procedures are not required.

4.2 Most important symptoms/effects, acute and delayed

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. Fire-fighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

All standard fire fighting media

Extinguishing media which must not be used for safety reasons

None known.

5.2 Specific hazards arising from the substance or mixture

Special exposure hazards in a fire

Decomposition in fire may produce harmful gases.

5.3 Special protective equipment and precautions for fire-fighters

Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid creating and breathing dust.

See Section 8 for additional information

6.2. Environmental precautions

Use appropriate care to minimize from entering sewers and waterways.

6.3. Methods and material for containment and cleaning up

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

7. Handling and storage

7.1. Precautions for safe handling

Handling Precautions

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.

8. Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Crystalline silica, quartz	14808-60-7	TWA: 50 µg/m³	TWA: 0.025 mg/m³

Exposures to crystalline silica that result from bentonite or other sorptive clays are exempt from the PEL in §1910.1053. The PEL in §1910.1000 Table Z–3 (i.e., the formula that is approximately equivalent to 100 µg/m³) applies to occupational exposures to respirable crystalline silica from sorptive clays.

8.2 Appropriate engineering controls

Engineering Controls Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

8.3 Individual protection measures, such as personal protective equipment

Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)

Hand Protection Normal work gloves.

Skin Protection Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

Eye Protection Wear safety glasses or goggles to protect against exposure.

Other Precautions None known.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Solid **Color** Various
Odor: Odorless **Odor Threshold:** No information available

Property Remarks/ - Method	Values
pH:	8-10
Freezing Point / Range	No data available
Melting Point / Range	No data available
Boiling Point / Range	No data available
Flash Point	No data available
Flammability (solid, gas)	No data available
Upper flammability limit	No data available
Lower flammability limit	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	2.65
Water Solubility	Insoluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%) No data available

10. Stability and Reactivity

10.1. Reactivity
Not expected to be reactive.

10.2. Chemical stability
Stable

10.3. Possibility of hazardous reactions
Will Not Occur

10.4. Conditions to avoid
None anticipated

10.5. Incompatible materials
Hydrofluoric acid.

10.6. Hazardous decomposition products
Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

11. Toxicological Information

11.1 Information on likely routes of exposure

Principle Route of Exposure Eye or skin contact, inhalation.

11.2 Symptoms related to the physical, chemical and toxicological characteristics

Acute Toxicity

Inhalation Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).

Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).

Eye Contact May cause mechanical irritation to eye.
Skin Contact None known.
Ingestion None known.

Chronic Effects/Carcinogenicity Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology

Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2). There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

This product contains Wyoming bentonite or other sorptive clays. Crystalline silica forms found in this particular clay are limited to quartz. Extreme temperatures that can generate cristobalite or tridymite are not expected to occur under realistic conditions. In addition, all quartz found in sorptive clays are considered “occluded”, i.e., strongly coated with an amorphous silica surface (Wendlandt et al., 2007; Hochella and Muryama, 2010; SMI, 2014). Occluded quartz has been experimentally-determined to be relatively non-toxic compared to unoccluded quartz (Geh et al., 2006; Creutzenberg et al., 2008). A lack of health effects found in several studies examining occupational exposure to sorptive clays also suggest that chronic inhalation of sorptive clays is not expected to result in silicosis or cancer (Waxweiler et al., 1988; ACGIH, 1991; USEPA, 1996; IARC, 2005). In light of these findings OSHA has recently exempted Wyoming bentonite and other sorptive clays from the crystalline silica PEL in §1910.1053(a)(1)(iii).

11.3 Toxicity data

Toxicology data for the components

Substances	CAS Number	**LD50 Oral**	**LD50 Dermal**	**LC50 Inhalation**
Crystalline silica, quartz	14808-60-7	> 15000 mg/kg (human)	No data available	No data available

Substances	**CAS Number**	**Skin corrosion/irritation**
Crystalline silica, quartz	14808-60-7	Non-irritating to the skin

Substances	**CAS Number**	**Serious eye damage/irritation**
Crystalline silica, quartz	14808-60-7	Non-irritating to the eye

Substances	**CAS Number**	**Skin Sensitization**
Crystalline silica, quartz	14808-60-7	No information available.

Substances	**CAS Number**	**Respiratory Sensitization**
Crystalline silica, quartz	14808-60-7	No information available

Substances	**CAS Number**	**Mutagenic Effects**
Crystalline silica, quartz	14808-60-7	Not regarded as mutagenic.

Substances	**CAS Number**	**Carcinogenic Effects**
Crystalline silica, quartz	14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure.

Substances	**CAS Number**	**Reproductive toxicity**
Crystalline silica, quartz	14808-60-7	No information available

Substances	**CAS Number**	**STOT - single exposure**
Crystalline silica, quartz	14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	**CAS Number**	**STOT - repeated exposure**
Crystalline silica, quartz	14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)

Substances	**CAS Number**	**Aspiration hazard**
Crystalline silica, quartz	14808-60-7	Not applicable

12. Ecological Information

12.1. Toxicity

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Crystalline silica, quartz	14808-60-7	EC50 (72 h) =440 mg/L (Selenastrum capricornutum)(similar substance)	LL0 (96 h) =10000 mg/L (Danio rerio)(similar substance)	No information available	LL50 (24 h) >10000 mg/L (Daphnia magna)(similar substance)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Crystalline silica, quartz	14808-60-7	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Crystalline silica, quartz	14808-60-7	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Crystalline silica, quartz	14808-60-7	No information available

12.5 Other adverse effects

No information available

13. Disposal Considerations

13.1. Waste treatment methods

Disposal methods Dispose of in a landfill according to federal, state, and local regulations.
Contaminated Packaging Follow all applicable national or local regulations.

14. Transport Information

US DOT

UN Number Not restricted
UN proper shipping name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

Canadian TDG

UN Number Not restricted
UN proper shipping name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

IMDG/IMO

UN Number Not restricted
UN proper shipping name: Not restricted

Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

IATA/ICAO
UN Number Not restricted
UN proper shipping name: Not restricted
Transport Hazard Class(es): Not applicable
Packing Group: Not applicable
Environmental Hazards: Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable
Special Precautions for User None

15. Regulatory Information

US Regulations

US TSCA Inventory All components listed on inventory or are exempt.

TSCA Significant New Use Rules - S5A2

Substances	CAS Number	TSCA Significant New Use Rules - S5A2
Crystalline silica, quartz	14808-60-7	Not applicable

EPA SARA Title III Extremely Hazardous Substances

Substances	CAS Number	EPA SARA Title III Extremely Hazardous Substances
Crystalline silica, quartz	14808-60-7	Not applicable

EPA SARA (311,312) Hazard Class
Chronic Health Hazard

EPA SARA (313) Chemicals

Substances	CAS Number	Toxic Release Inventory (TRI) - Group I	Toxic Release Inventory (TRI) - Group II
Crystalline silica, quartz	14808-60-7	Not applicable	Not applicable

EPA CERCLA/Superfund Reportable Spill Quantity

Substances	CAS Number	CERCLA RQ
Crystalline silica, quartz	14808-60-7	Not applicable

EPA RCRA Hazardous Waste Classification
If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

California Proposition 65

Substances	CAS Number	California Proposition 65
Crystalline silica, quartz	14808-60-7	carcinogen

U.S. State Right-to-Know Regulations

Substances	CAS Number	MA Right-to-Know Law	NJ Right-to-Know Law	PA Right-to-Know Law
Crystalline silica, quartz	14808-60-7	Carcinogen Extraordinarily hazardous	1660	Present

NFPA Ratings: Health 0, Flammability 0, Reactivity 0
HMIS Ratings: Health 0*, Flammability 0, Physical Hazard 0 , PPE: E

Canadian Regulations

Canadian Domestic Substances List (DSL)	All components listed on inventory or are exempt.

16. Other information

Preparation Information

Prepared By	Chemical Stewardship Telephone: 1-281-871-6107 e-mail: [redacted]
Revision Date:	01-Jun-2020
Reason for Revision	SDS sections updated: 1 2 8 11

Additional information
For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key or legend to abbreviations and acronyms used in the safety data sheet
bw – body weight
CAS – Chemical Abstracts Service
d - day
EC50 – Effective Concentration 50%
ErC50 – Effective Concentration growth rate 50%
h - hour
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
mg/m^3 - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
NIOSH – National Institute for Occupational Safety and Health
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
UN – United Nations
w/w - weight/weight

Key literature references and sources for data
www.ChemADVISOR.com/

Disclaimer Statement
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in

any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

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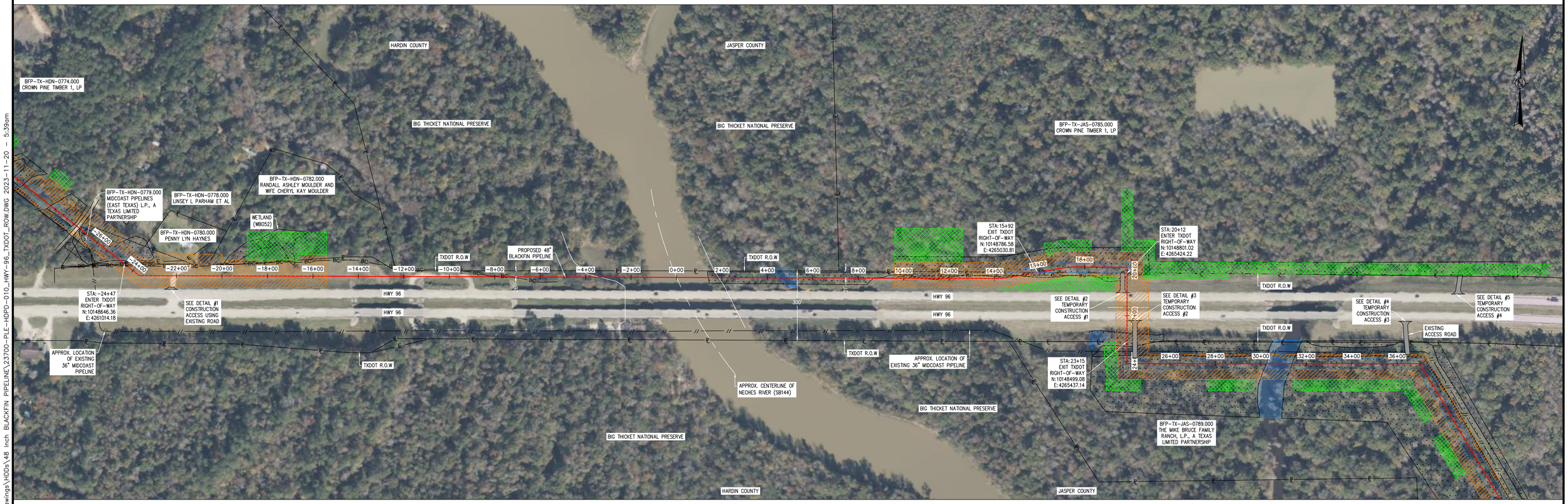
Blackfin Pipeline – TxDOT Highway 96 Supplemental Permit Application Documentation for 48-inch Natural Gas Pipeline

Date: November 20, 2023

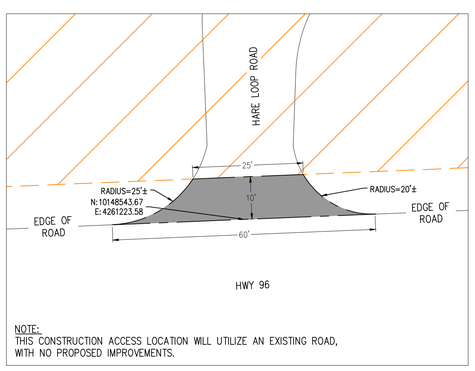
Attachment 2: Supporting Drawings for Proposed Temporary Construction Access

- Temporary Construction Access Overview Drawing
- Temporary Construction Access Road Typical Drawing

BLACKFIN PIPELINE

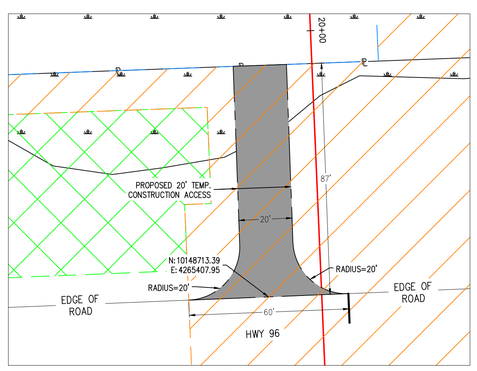


PLAN
SCALE: 1" = 200'

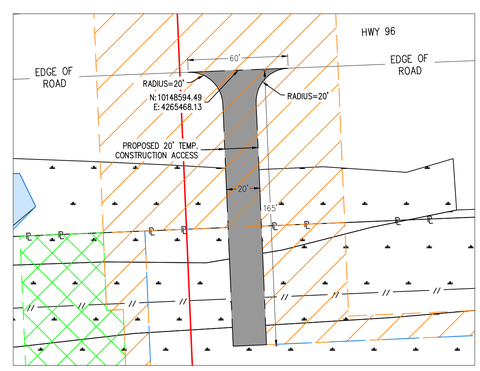


NOTE:
THIS CONSTRUCTION ACCESS LOCATION WILL UTILIZE AN EXISTING ROAD, WITH NO PROPOSED IMPROVEMENTS.

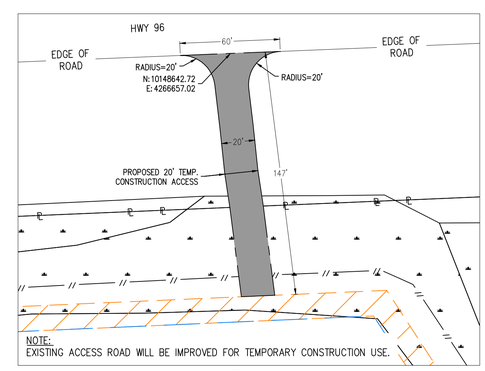
DETAIL #1
CONSTRUCTION ACCESS USING EXISTING ROAD
N.T.S.



DETAIL #2
TEMPORARY CONSTRUCTION ACCESS #1
N.T.S.

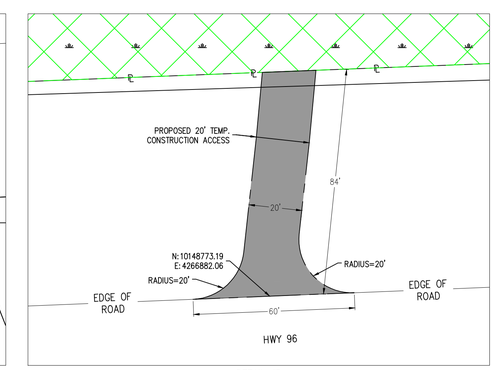


DETAIL #3
TEMPORARY CONSTRUCTION ACCESS #2
N.T.S.



NOTE:
EXISTING ACCESS ROAD WILL BE IMPROVED FOR TEMPORARY CONSTRUCTION USE.

DETAIL #4
TEMPORARY CONSTRUCTION ACCESS #3
N.T.S.



DETAIL #5
TEMPORARY CONSTRUCTION ACCESS #4
N.T.S.

NOTES:
1. TEMPORARY CONSTRUCTION ACCESS LOCATIONS #1, #2, #3 & #4 MAY VARY SLIGHTLY BASED ON FIELD CONDITIONS AND CONSTRUCTION METHODOLOGY.
2. UPON COMPLETION OF CONSTRUCTION, TEMPORARY ACCESS ROAD MATERIALS WILL BE REMOVED AND SITE WILL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS.
3. ALL LINEWORK IS PERFORMED IN TEXAS STATE PLANE, CENTRAL ZONE

LEGEND:
- PROPOSED 48" BLACKFIN PIPELINE
- PROPOSED TEMPORARY WORKSPACE
- PROPOSED ADDITIONAL TEMPORARY WORKSPACE
- DELINEATED WETLAND
- DELINEATED POND

DWG. NO.	REFERENCE DRAWING TITLE	NO.	REVISION - DESCRIPTION	BY	DATE	CHK	APP
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	A	ISSUED FOR PERMIT	RM	11/20/2023	JP	DB

PREPARED BY: FIRM No:23055
TRC
8521 McHARD RD, HOUSTON, TX 77053

	BY	DATE
DESIGN		
DRAWN	MMM	11/20/2023
ASBUILT		
SCALE: 1"=200'		

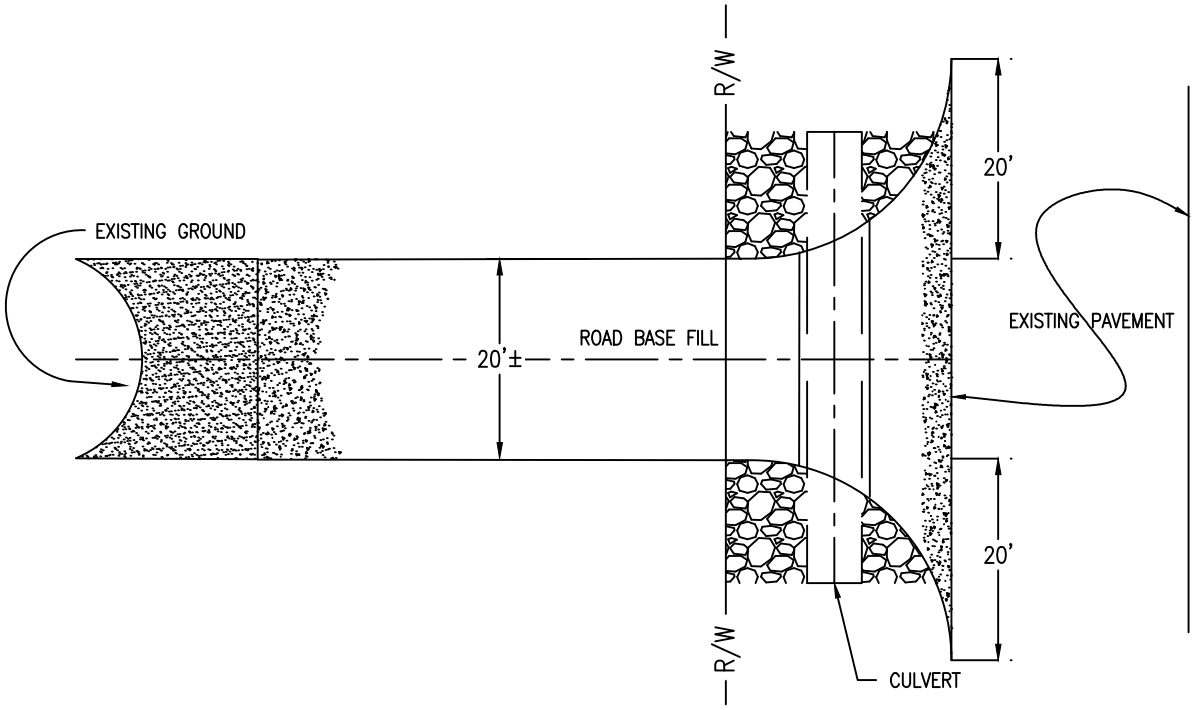
BLACKFIN PIPELINE

P.L./STA. NO. −24+47 TO 23+15
CONSTRUCTION YEAR 2024
IN-SERVICE DATE Q2 2025

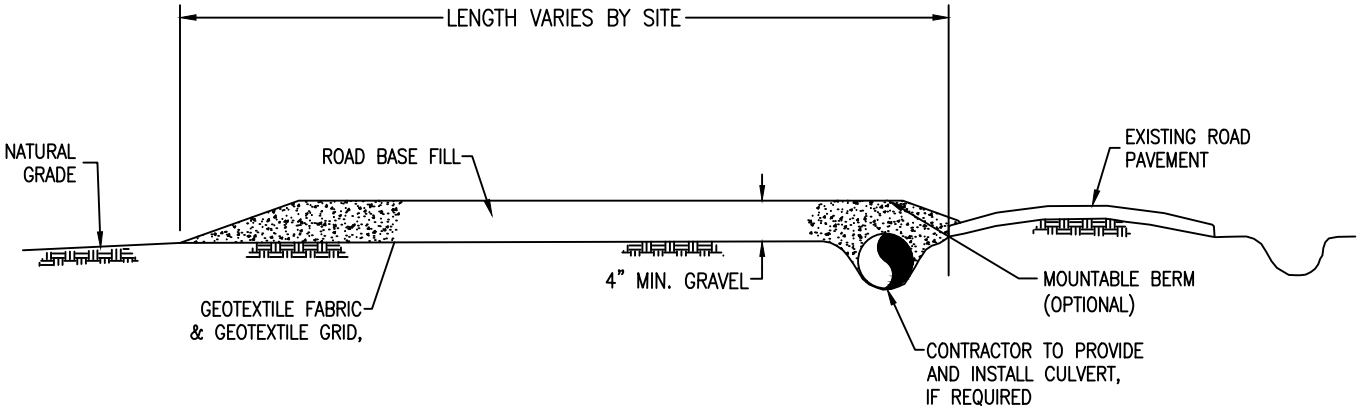
PROPOSED 48" BLACKFIN PIPELINE
TXDOT R.O.W. CONSTRUCTION ACCESS
HIGHWAY 96 AT NECHES RIVER
HARDIN & JASPER COUNTIES, TEXAS

AFE NO. 23700
DWG. NO. 23700-PLE-HDPD-010_HWY-96_TXDOT_ROW_B
SHEET 1 OF 1
REVISION A
DATE: 11/20/2023

C:\Users\rmurphy\OneDrive\TROYCONSTRUCTION.COM\23.9.1.05 - Blackfin Pipeline - Documents\Internal\Drafting and Mapping\Drawings\HDDs\48 Inch BLACKFIN PIPELINE\23700-PLE-HDPD-010_HWY-96_TXDOT_ROW.DWG 2023-11-20 - 5:39am



PLAN VIEW



PROFILE VIEW

NOTE:
CONTRACTOR TO PROVIDE AND INSTALL CULVERT IF REQUIRED TO MATCH UP/DOWN STREAM.

NO.	REVISION DESCRIPTION	BY	DATE	CHK'D	APP'D
A	ISSUED FOR PERMIT	RM	11/20/23	DB	JP

DWN. BY:	RM	11/20/23
CHK.	DB	11/20/23
PROJ. ENGR.		–
PROJ. MGR.	JP	11/20/23
CLIENT APP.		
SCALE:	N.T.S.	

BLACKFIN PIPELINE

PROPOSED 48" BLACKFIN PIPELINE
TYPICAL TEMPORARY ACCESS
TO PUBLIC ROAD

DWG. NO.	SHT. NO.	REV.
23700-PLE-PTDW-0100	1 OF 1	A

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www.thetroycompanies.com

Confidential

Blackfin Pipeline – TxDOT Highway 96 Supplemental Permit Application Documentation for 48-inch Natural Gas Pipeline

Date: December 15, 2023

Attachment 3: Updated Traffic Control Plan

BLACKFIN PIPELINE

Proposed Blackfin Pipeline Construction – Traffic Control Summary

Blackfin Pipeline is requesting TxDOT approval for its proposed 48-inch natural gas pipeline construction within the TxDOT Highway 96 property/right-of-way(ROW) in Hardin and Jasper Counties, TX. Please refer to the construction access overview drawing previously submitted on November 20, 2023 for the proposed temporary construction access points within the TxDOT Highway 96 right-of-way (ROW). The drawing includes proposed temporary construction access roads and access points for the previously submitted Highway 96 parallel occupancy permit application.

Blackfin Pipeline representatives will inform the Beaumont Area TxDOT Office and the Orange Area TxDOT Office 48 hours in advance of all lane closures.

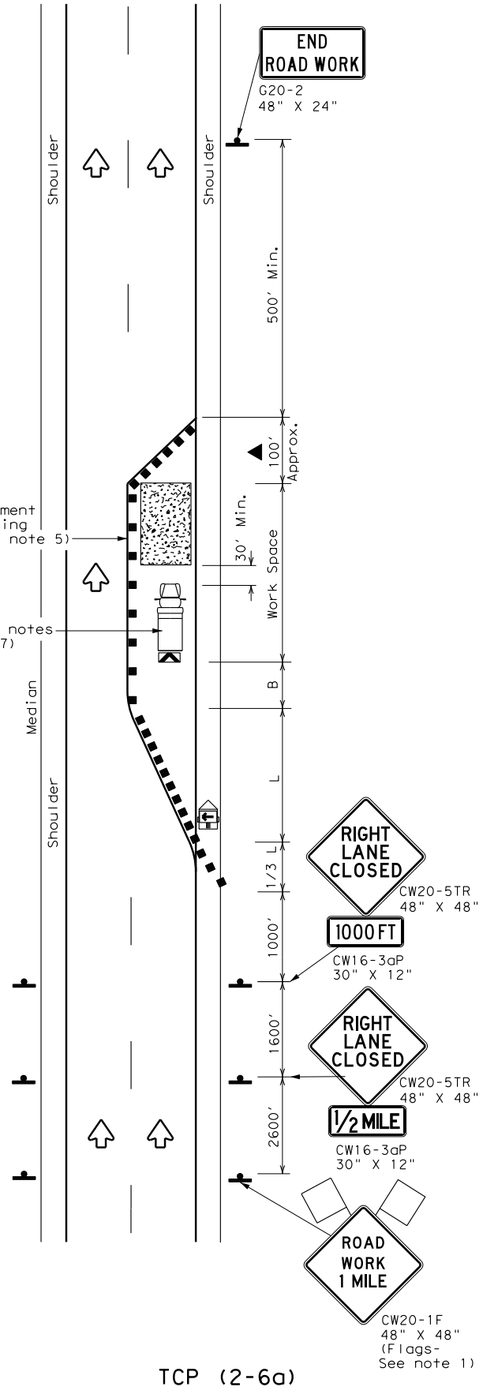
Outlined below is the traffic control plan to be utilized during construction within the TxDOT ROW:

Off-Loading and De-mobilizing Construction Equipment and Materials – Right-hand Lane and Shoulder Closure

1. Traffic controllers arrive at a time, to be determined, prior to off-loading or de-mobilizing construction equipment and materials. Controllers to establish traffic signage and delineators according to attached TxDOT Standard Drawing TCP (2-6) -18/Figure 2-6a for lane closures on divided highways. Traffic control measures will be implemented for right-hand lane and shoulder closures of the westbound and eastbound lanes of Highway 96 at the proposed construction location (see temporary construction access location drawings).
2. Once traffic control is established in accordance with the plan, construction equipment and materials with be off-loaded or de-mobilized as applicable.
3. Once all equipment/materials are off-loaded or de-mobilized from site, traffic control personnel will then remove and/or modify signage and traffic control devices as applicable, depending on construction being performed at that time (Note: Please refer to traffic control provisions below for construction operations).

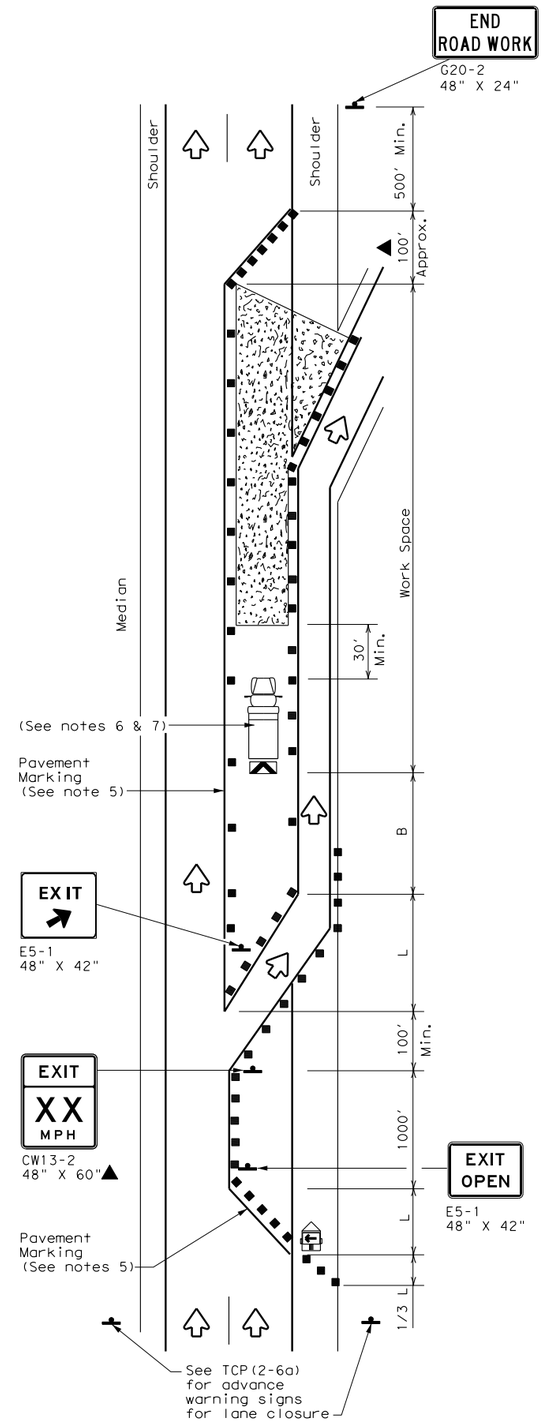
Construction Operations During Work Hours – Right-hand Shoulder Closure (for work adjacent to shoulder)

1. Traffic controllers arrive at a time, to be determined, prior to the commencement of construction. Controllers to establish traffic signage and delineators according to attached TxDOT Standard Drawing TCP (2-1) -18 for conventional road shoulder work. Traffic control measures will be implemented for right-hand shoulder closures of the westbound and eastbound lanes of Highway 96 at the proposed construction location (see temporary construction access location drawings).
2. Once traffic control is established in accordance with the plan, construction will commence for that day.
3. Construction operations within TxDOT Highway 96 ROW are currently anticipated to commence in January 2025 and are expected to last for a duration of 3 to 6 months – consisting of pipeline installations for open cut/parallel occupancy segments, horizontal directional drilling (HDD) segment for Neches River crossing, and perpendicular bored crossing segment. Traffic control provisions will be maintained and monitored throughout the duration of construction.
4. Shoulder will be closed at start of work hours each day and restored at end of work hours each day.
5. Upon completion of construction, all disturbed construction work areas will be restored to pre-construction conditions and equipment will be removed from site.
6. Once all equipment is removed from site, traffic control personnel will then remove signage and traffic control devices to allow traffic flow to return to normal.



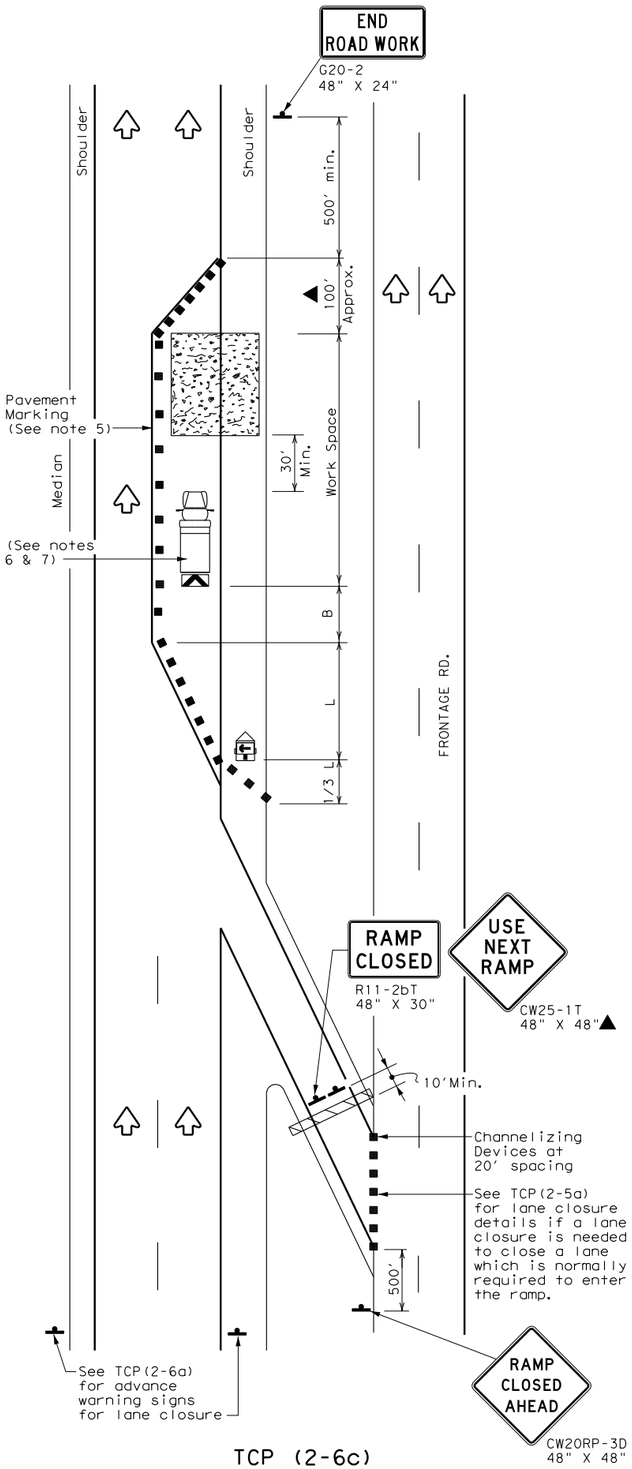
TCP (2-6a)

ONE LANE CLOSURE



TCP (2-6b)

LANE CLOSURE NEAR EXIT RAMPS



TCP (2-6c)

LANE CLOSURE NEAR ENTRANCE RAMPS

LEGEND

	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed ✱	Formula	Minimum Desirable Taper Lengths ✱✱			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

✱ Conventional Roads Only

✱✱ Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
			✓	✓

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. Channelizing devices used to close lanes may be supplemented with the Chevron Alignment Sign placed on every other channelizing device. Chevrons may be attached to plastic drums as per BC Standards.
4. Channelizing devices used along the work space or along tangent sections may be supplemented with vertical panels (VP) placed on everyother channelizing device. If night time conditions make it difficult to see at least two VPs, the VPs may be placed on each channelizing device.
5. The placement of pavement markings may be omitted on Intermediate-term stationary work zones with the approval of the Engineer.
6. Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
7. Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

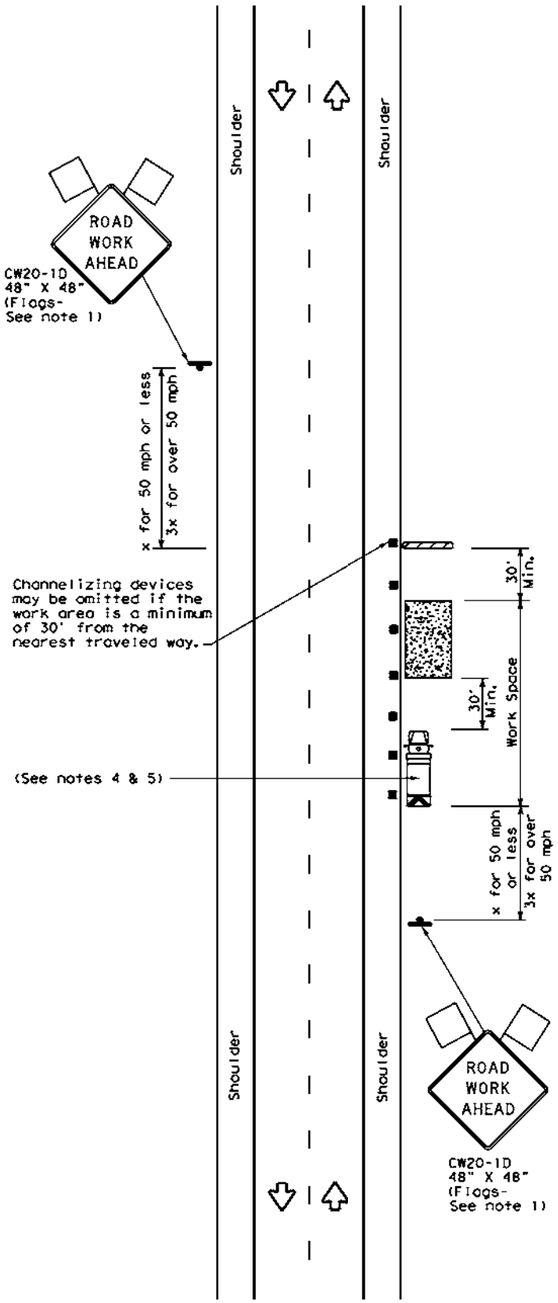
Texas Department of Transportation — Traffic Operations Division Standard

TRAFFIC CONTROL PLAN LANE CLOSURES ON DIVIDED HIGHWAYS

TCP(2-6)-18

FILE: tcp2-6-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 2-12 1-97 2-18	DIST		COUNTY	SHEET NO.

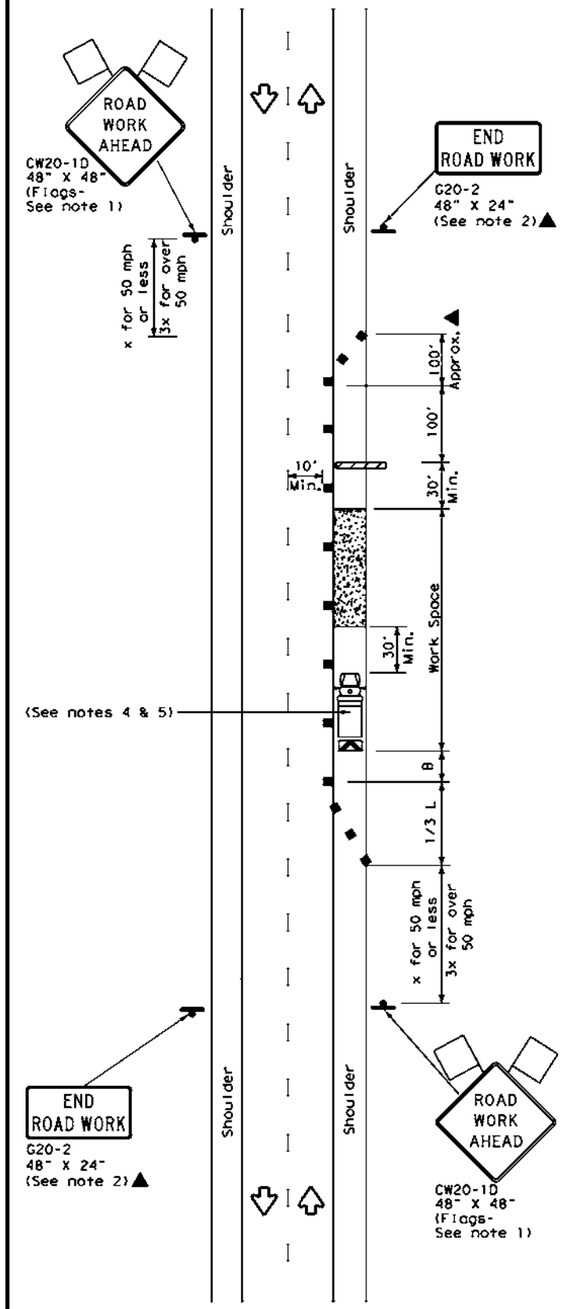
DATE:
FILE:



TCP (2-1a)

WORK SPACE NEAR SHOULDER

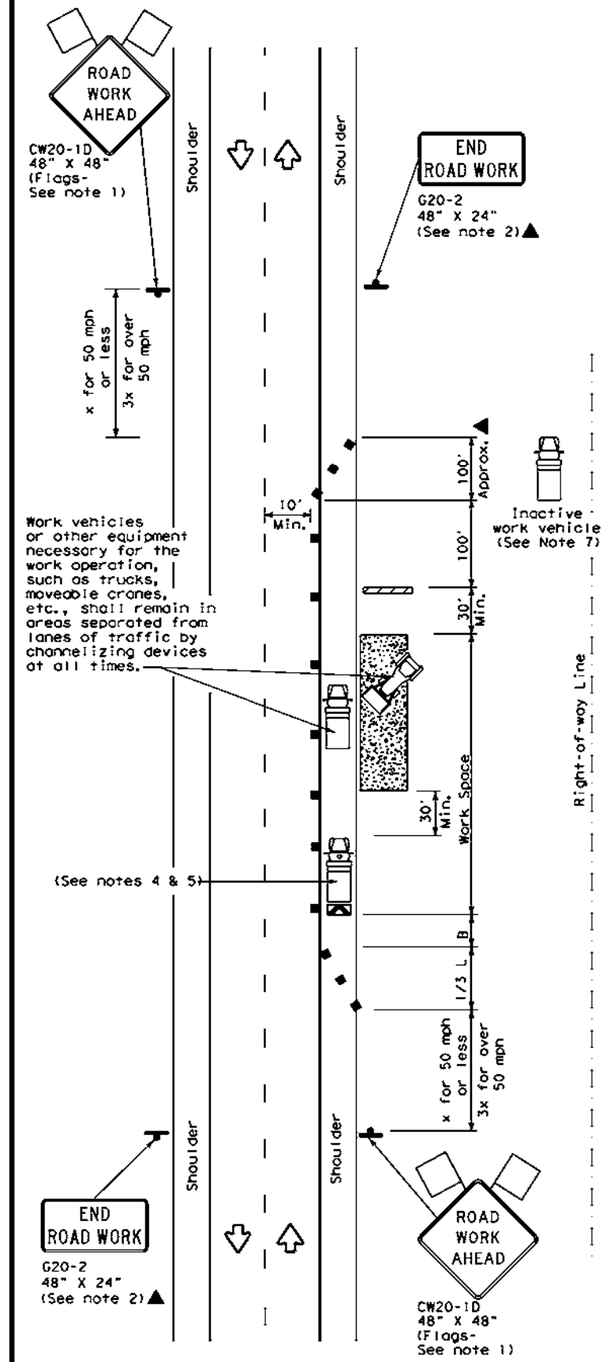
Conventional Roads



TCP (2-1b)

WORK SPACE ON SHOULDER

Conventional Roads



TCP (2-1c)

WORK VEHICLES ON SHOULDER

Conventional Roads

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only

** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	✓

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
3. Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
4. Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
6. See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
7. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
8. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(2-1)-18

FILE: tcp2-1-18.dgn	DN:	CK:	DW:	CK:
©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 2-12 1-97 2-18	DIST		COUNTY	SHEET NO.

DATE:
FILE:

ATTACHMENT 5

Payment Check

THE RED THERMO SECURED "SP" LOGO IN THE LOWER CORNER OF THIS CHECK MUST FADE TEMPORARILY WHEN WARMED BY TOUCH OR FRICTION. SEE BACK FOR ADDITIONAL FEATURES.

[redacted]

SWCA, INC.
IMPREST ACCOUNT
10245 W. LITTLE YORK RD, STE 600
HOUSTON, TX 77040

DATE 6/26/24

11-24/1210

PAY TO THE ORDER OF Texas Commission on Environmental Quality $ 251 25/00

Two hundred fifty-one dollars and 25/00 DOLLARS

WELLS FARGO Wells Fargo Bank, N.A.

MEMO Permit - Neches

Mobile Deposit Safe Details on back

[redacted]

ORIGINAL CHECK ON FILE WITH ISSUER. ALTERATIONS ON THIS DOCUMENT ARE PROHIBITED.

SECURED THERMO SECURED THERMO SECURED THERMO SECURED THERMO