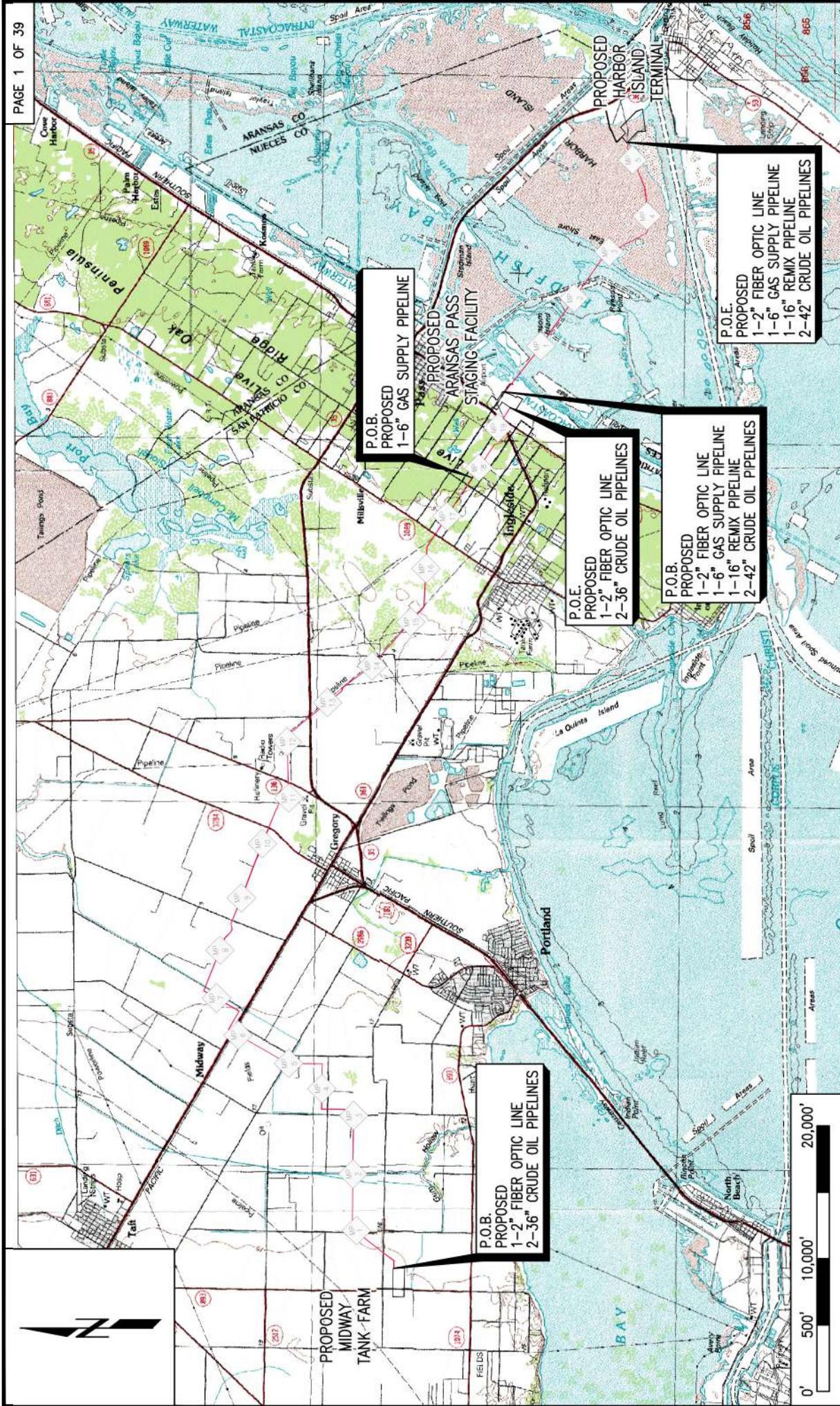


# **ATTACHMENT 2.0**

## **REVISED PERMIT DRAWINGS**



P.O.B. PROPOSED 1-6" GAS SUPPLY PIPELINE

P.O.E. PROPOSED 1-2" FIBER OPTIC LINE 2-36" CRUDE OIL PIPELINES

P.O.B. PROPOSED 1-2" FIBER OPTIC LINE 1-6" GAS SUPPLY PIPELINE 1-16" REMIX PIPELINE 2-42" CRUDE OIL PIPELINES

P.O.E. PROPOSED 1-2" FIBER OPTIC LINE 1-6" GAS SUPPLY PIPELINE 1-16" REMIX PIPELINE 2-42" CRUDE OIL PIPELINES



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Date: 12/27/2018  
Revised: 3/3/2019

VICINITY MAP  
PLS & Facility.: Midway T.F. to Harbor Island



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PREPARED BY:	LRW
CHECKED BY:	
APPROVED BY:	
PROJECT NO.:	19012
REISSUE DATE:	3/25/19

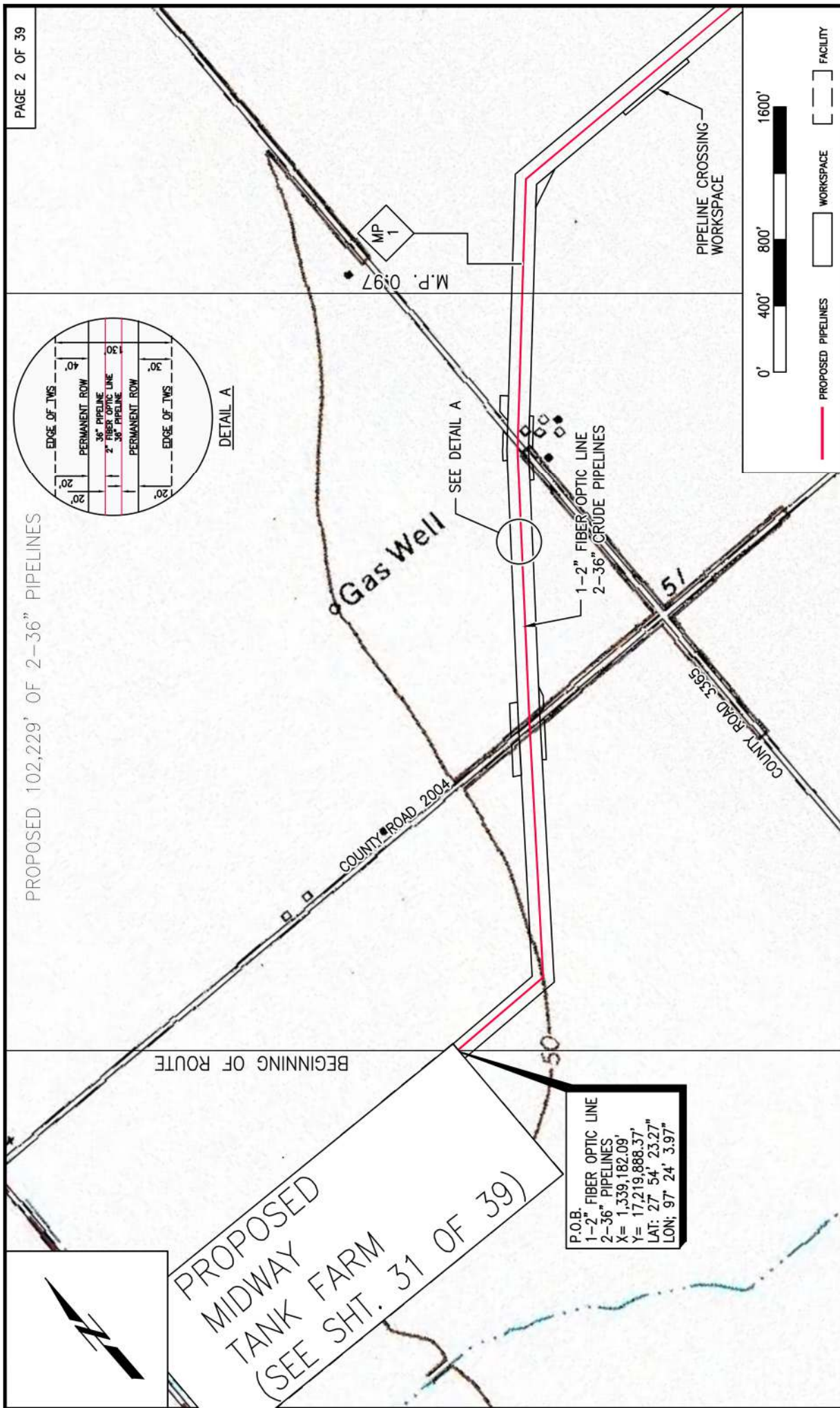
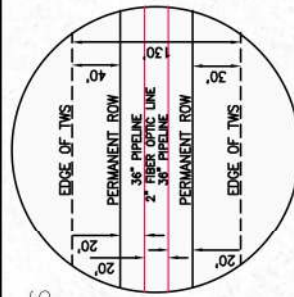


AXIS MIDSTREAM

**AXIS MIDSTREAM HOLDINGS, LLC**  
Proposed Pipelines & Facilities  
MIDWAY to HARBOR ISLAND PROJECT

SAN PATRICIO & NUECES COUNTIES, TEXAS  
Prepared BY: Project Consulting Services, Inc.

PROPOSED 102,229' OF 2-36" PIPELINES



**PLAN VIEW**

PLS: Midway T.F. to Aransas

Date: 12/27/2018  
Revised: 3/3/2019

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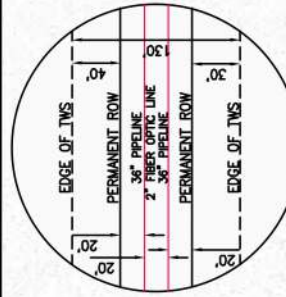
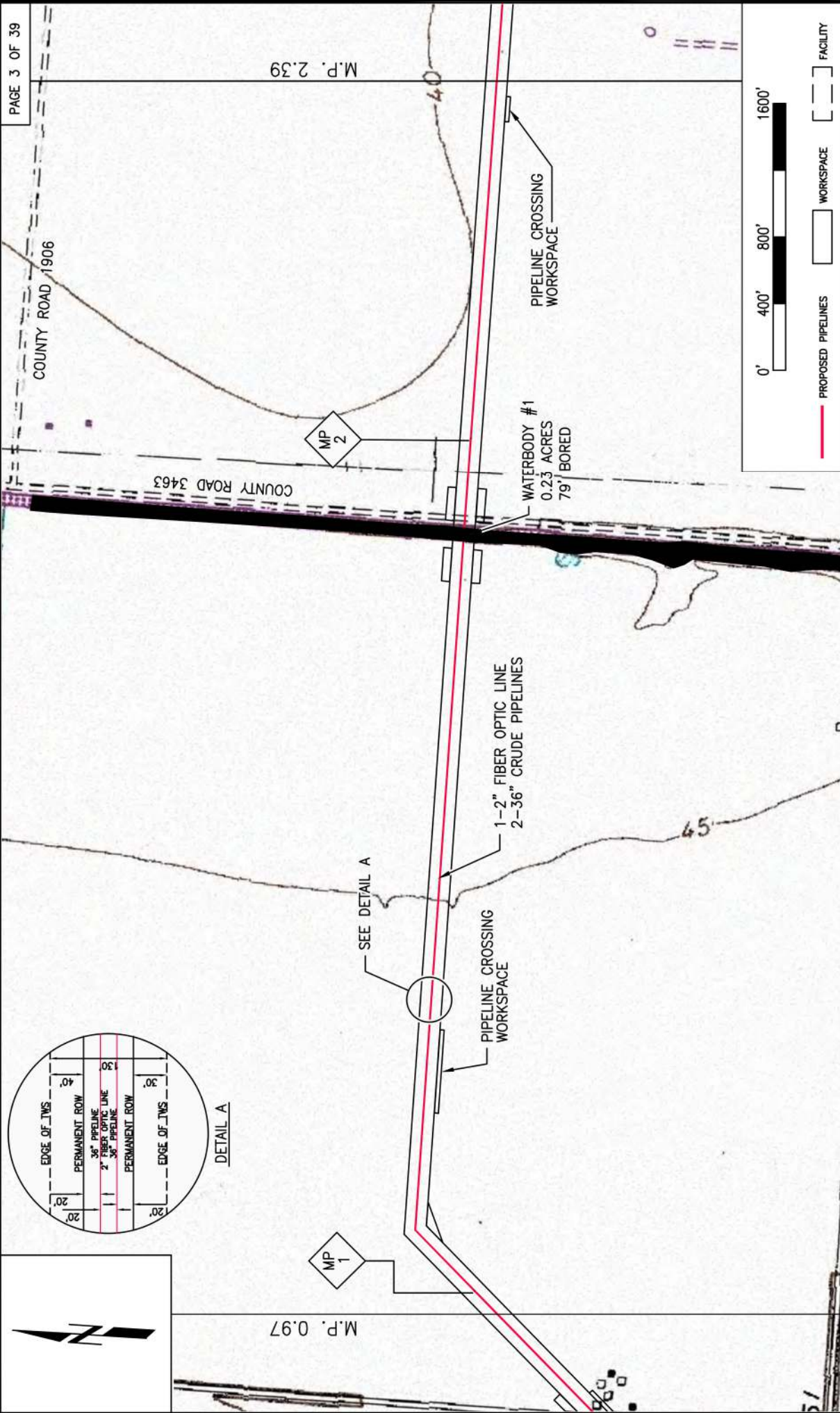
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BEGINNING OF ROUTE

PROPOSED  
MIDWAY FARM  
TANK FARM  
(SEE SHT. 31 OF 39)

P.O.B.  
1-2" FIBER OPTIC LINE  
2-36" PIPELINES  
X= 1,339,182.09'  
Y= 17,219,888.37'  
LAT: 27 54' 23.27"  
LON: 97 24' 3.97"



— PROPOSED PIPELINES   
  WORKSPACE   
  FACILITY

### PLAN VIEW

PLS: Midway T.F. to Aransas

Date: 12/27/2018  
Revised: 3/3/2019

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# AXIS MIDSTREAM HOLDINGS, LLC

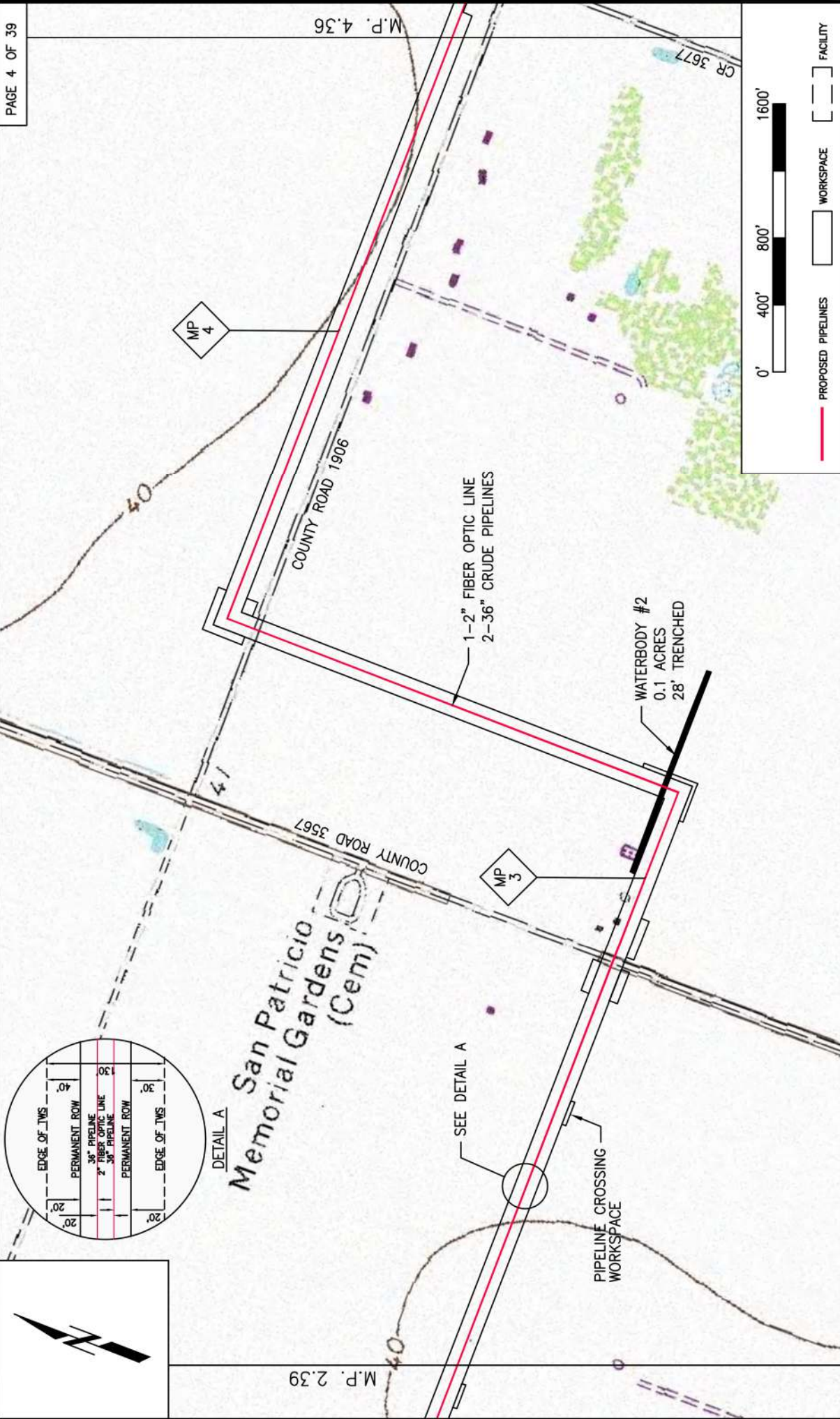
Proposed Pipelines & Facilities  
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AXIS MIDSTREAM

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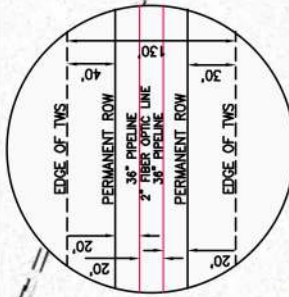




**PLAN VIEW**

PLS: Midway T.F. to Aransas

PROPOSED PIPELINES [red line] WORKSPACE [white box] FACILITY [black box]



DETAIL A

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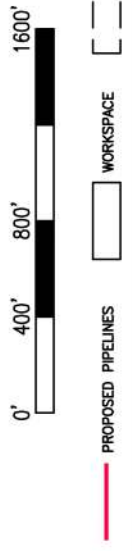
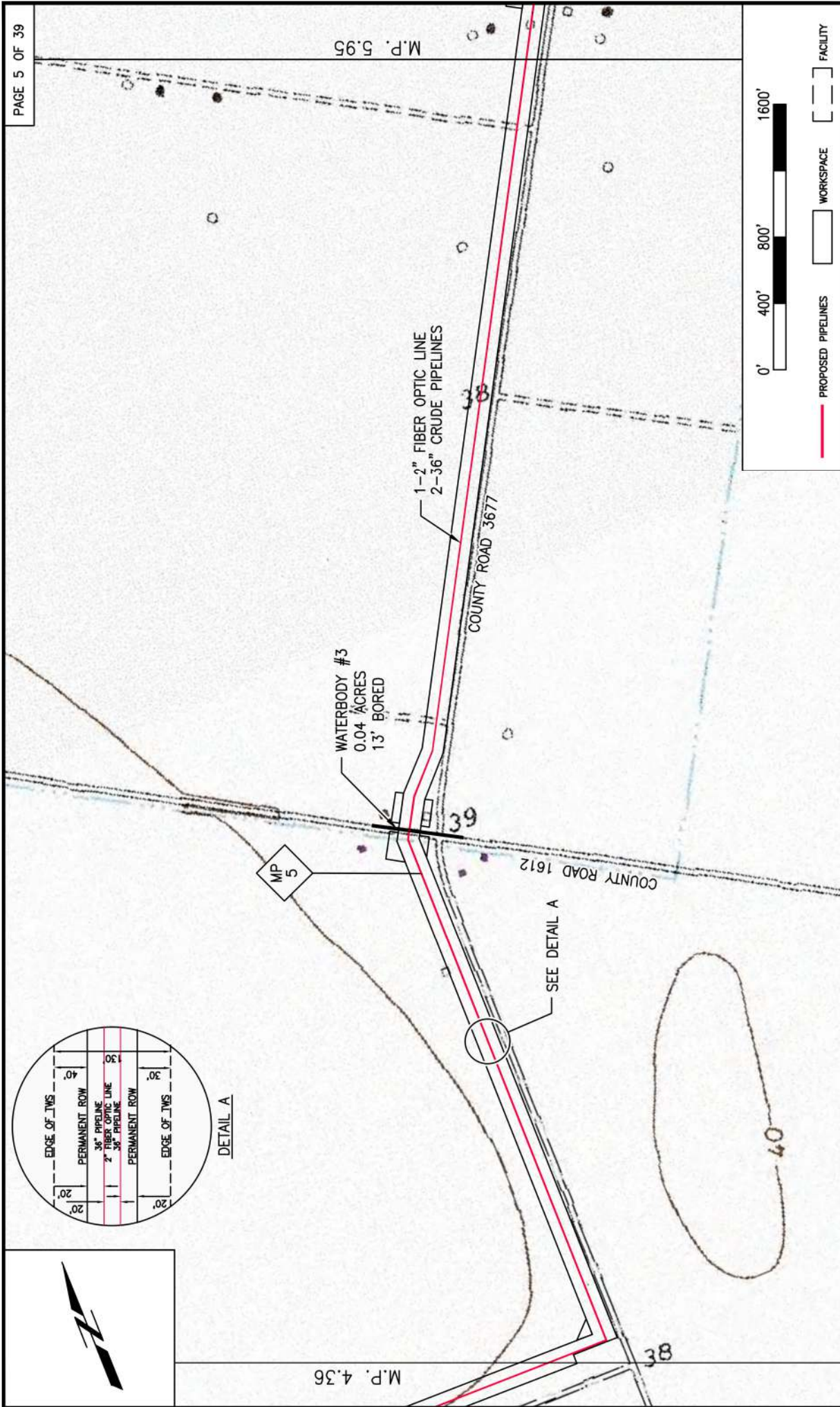
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**PLAN VIEW**

PLS: Midway T.F. to Arkansas

Date: 12/27/2018  
Revised: 3/3/2019

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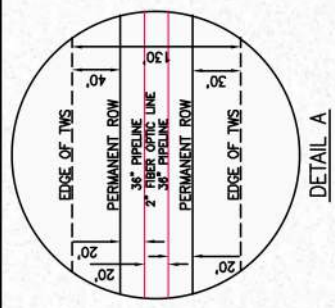
**AXIS MIDSTREAM HOLDINGS, LLC**  
Proposed Pipelines & Facilities  
**MIDWAY TO HARBOR ISLAND PROJECT**  
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M.P. 4.36

M.P. 5.95

MP 5

COUNTY ROAD 3677

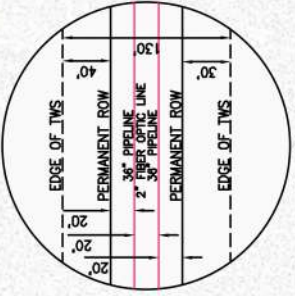
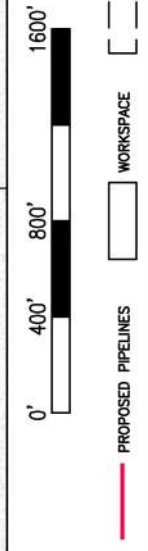
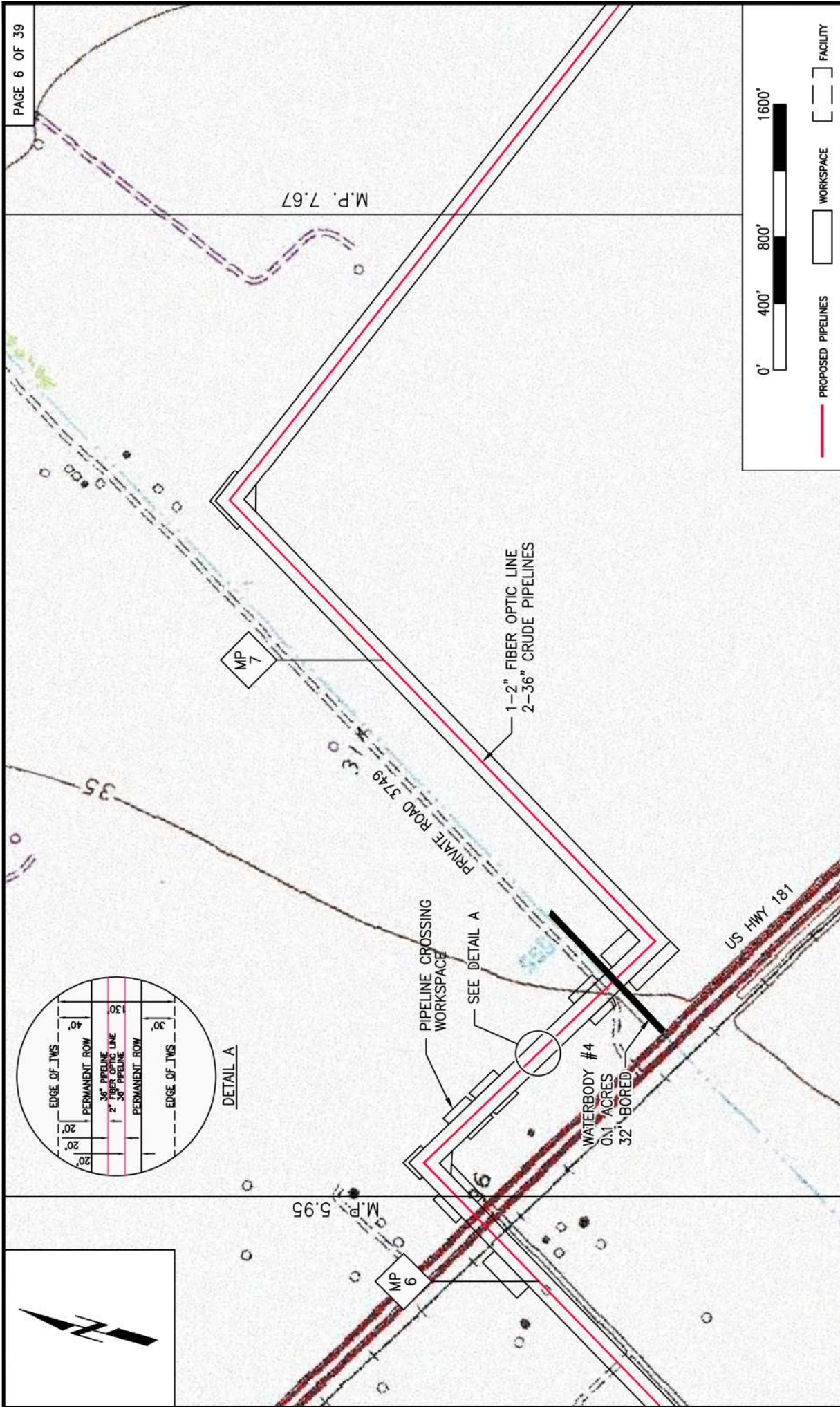
COUNTY ROAD 1612

SEE DETAIL A

38

39

40



### PLAN VIEW

PLs: Midway T.F. to Aransas

Date: 12/27/2018  
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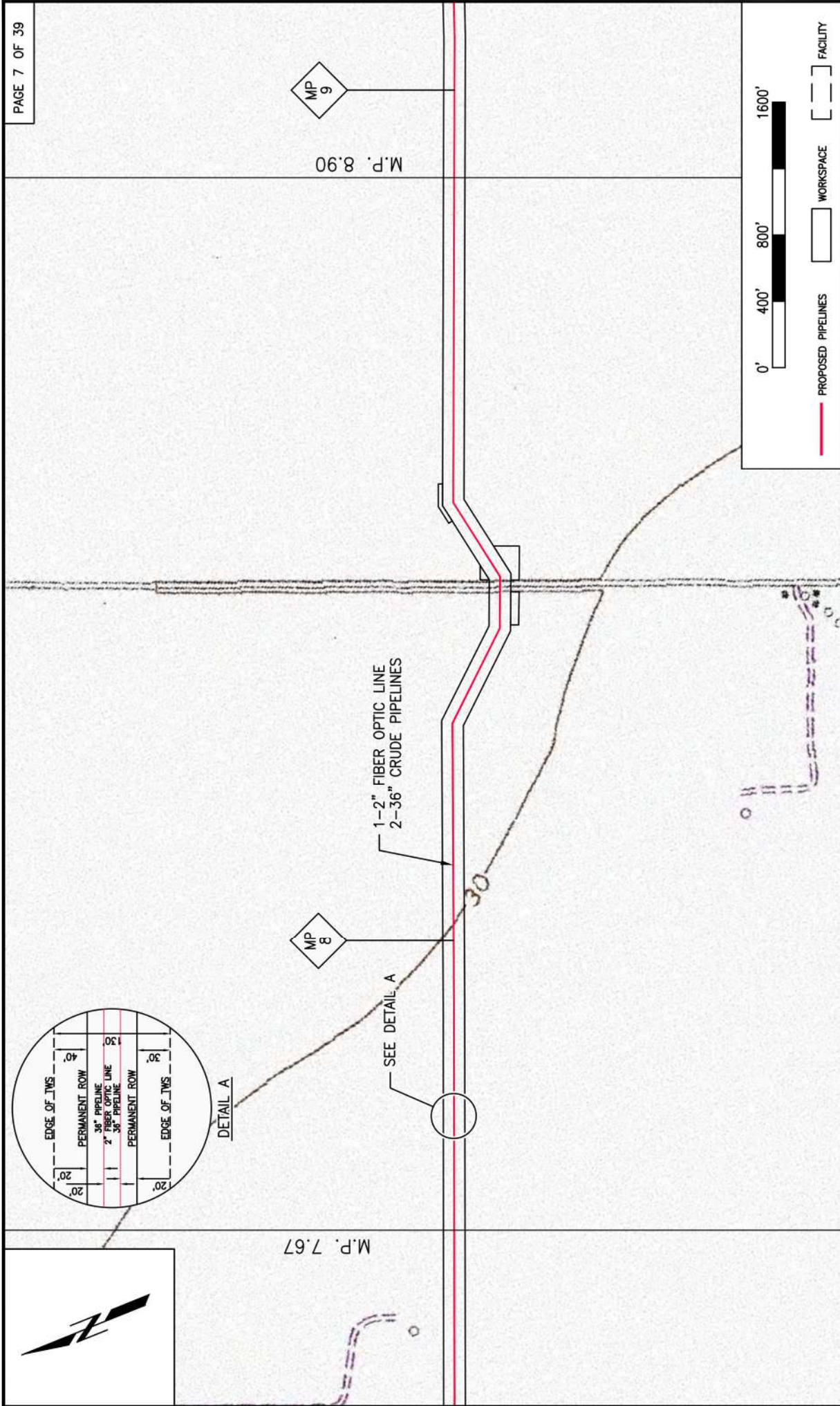
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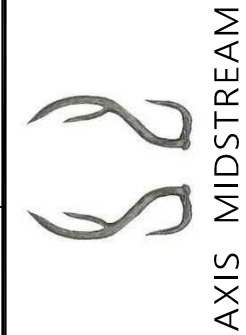
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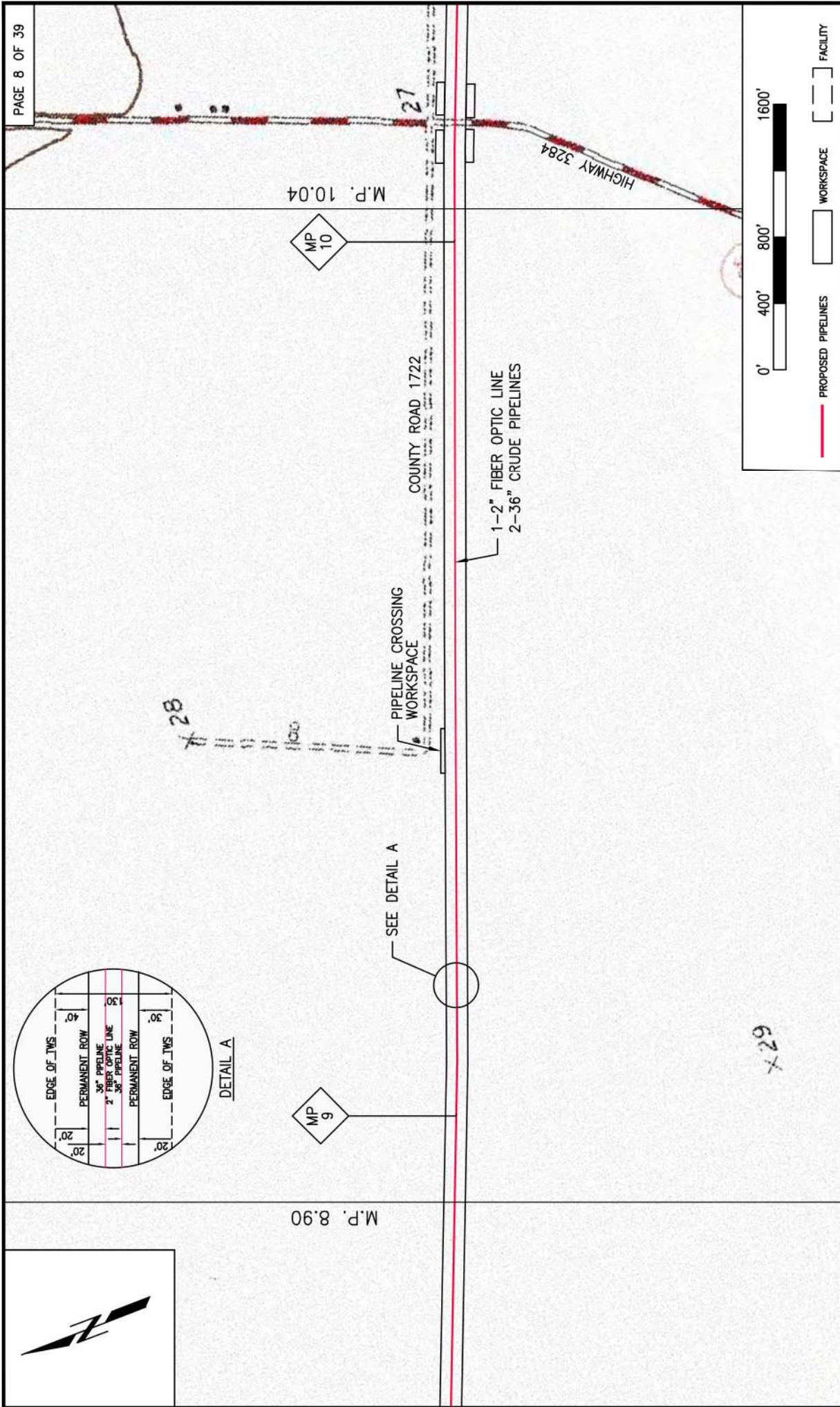
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**PLAN VIEW**

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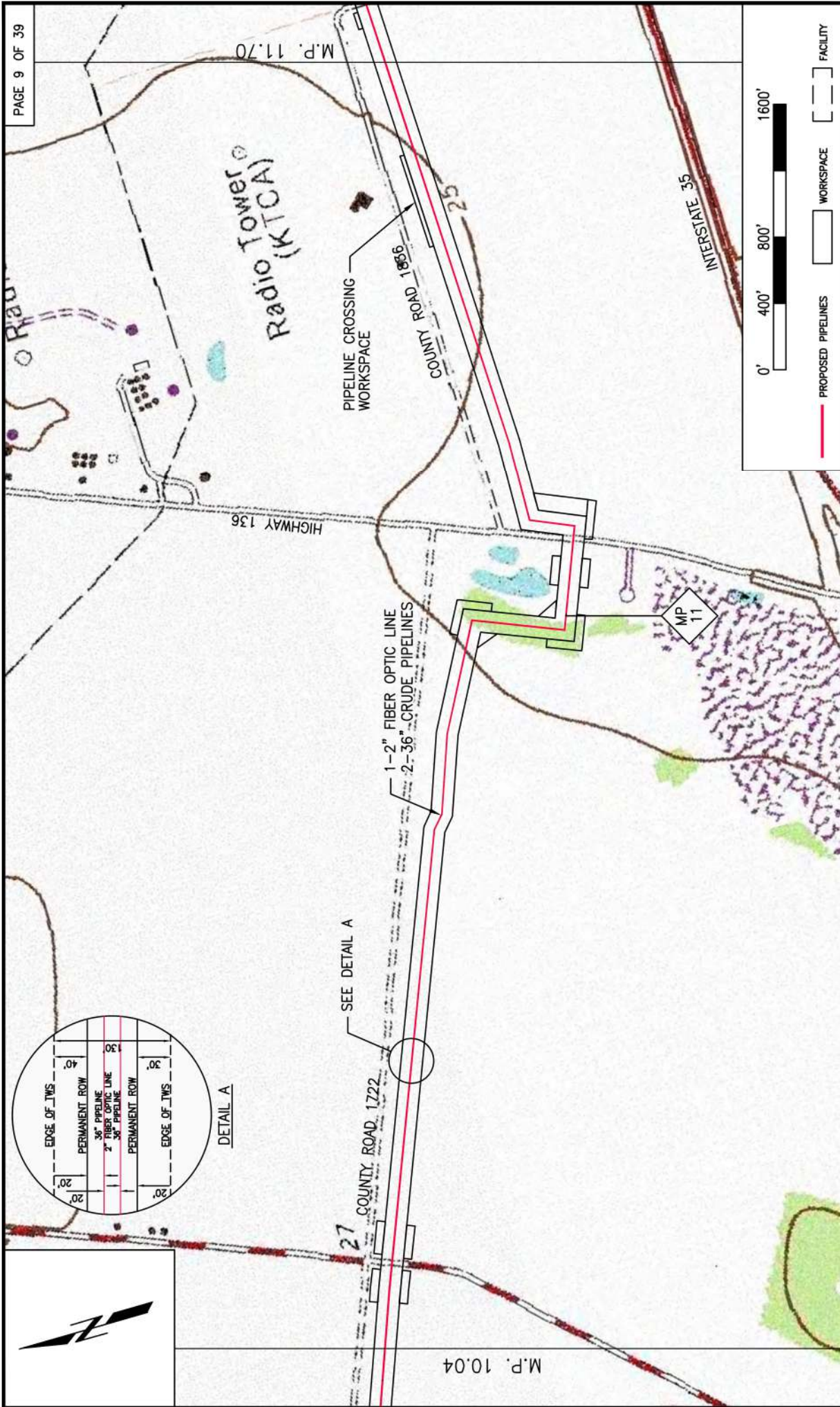


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**PLAN VIEW**

PLS: Midway T.F. to Arkansas

Date: 12/27/2018  
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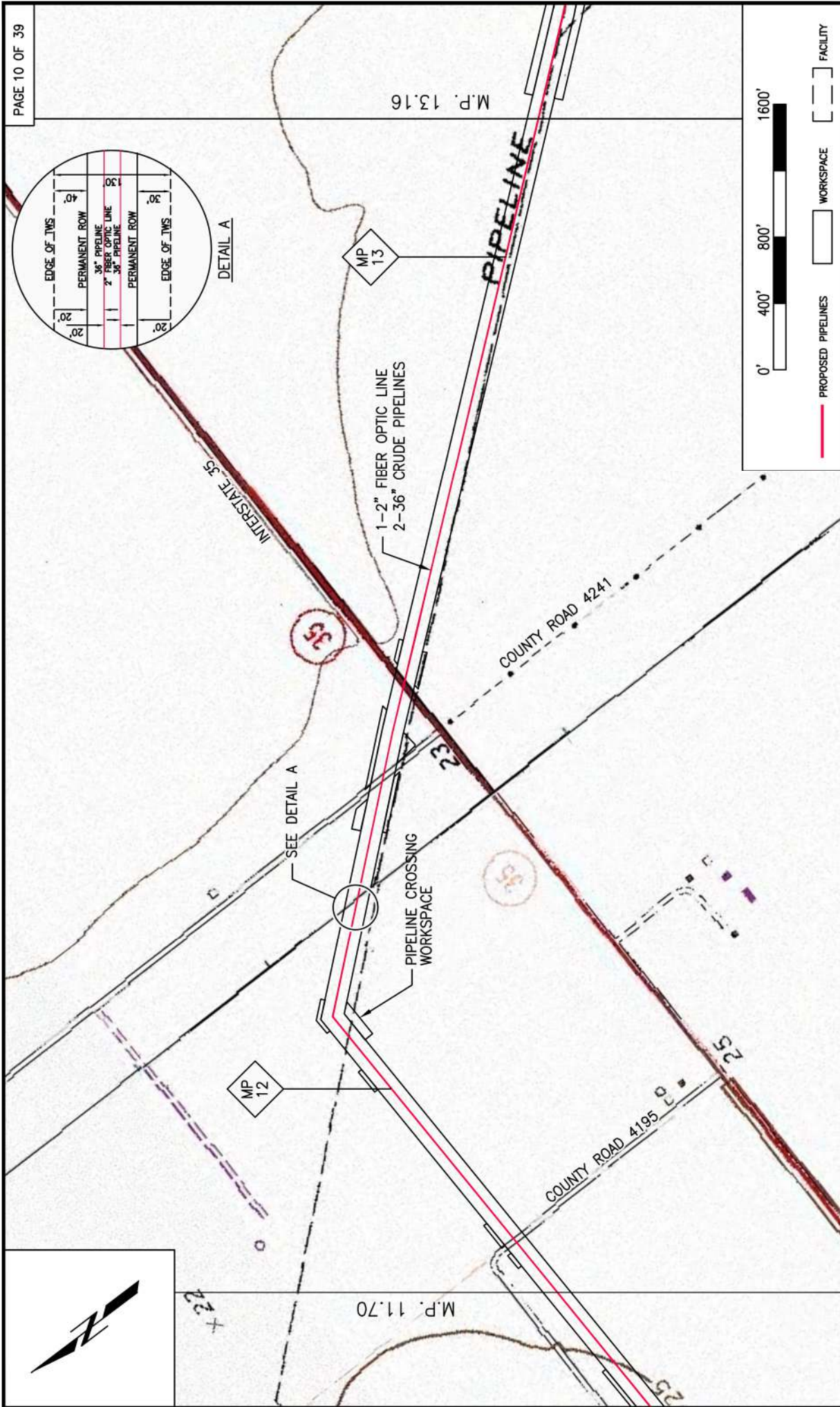
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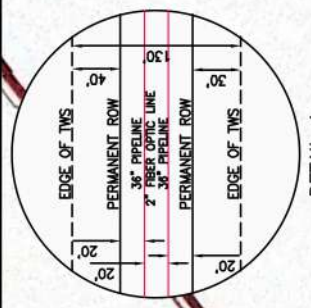
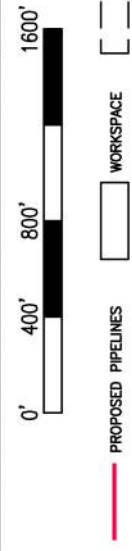


AXIS MIDSTREAM



**PLAN VIEW**

PLS: Midway T.F. to Arkansas



Date: 12/27/2018  
Revised: 3/3/2019

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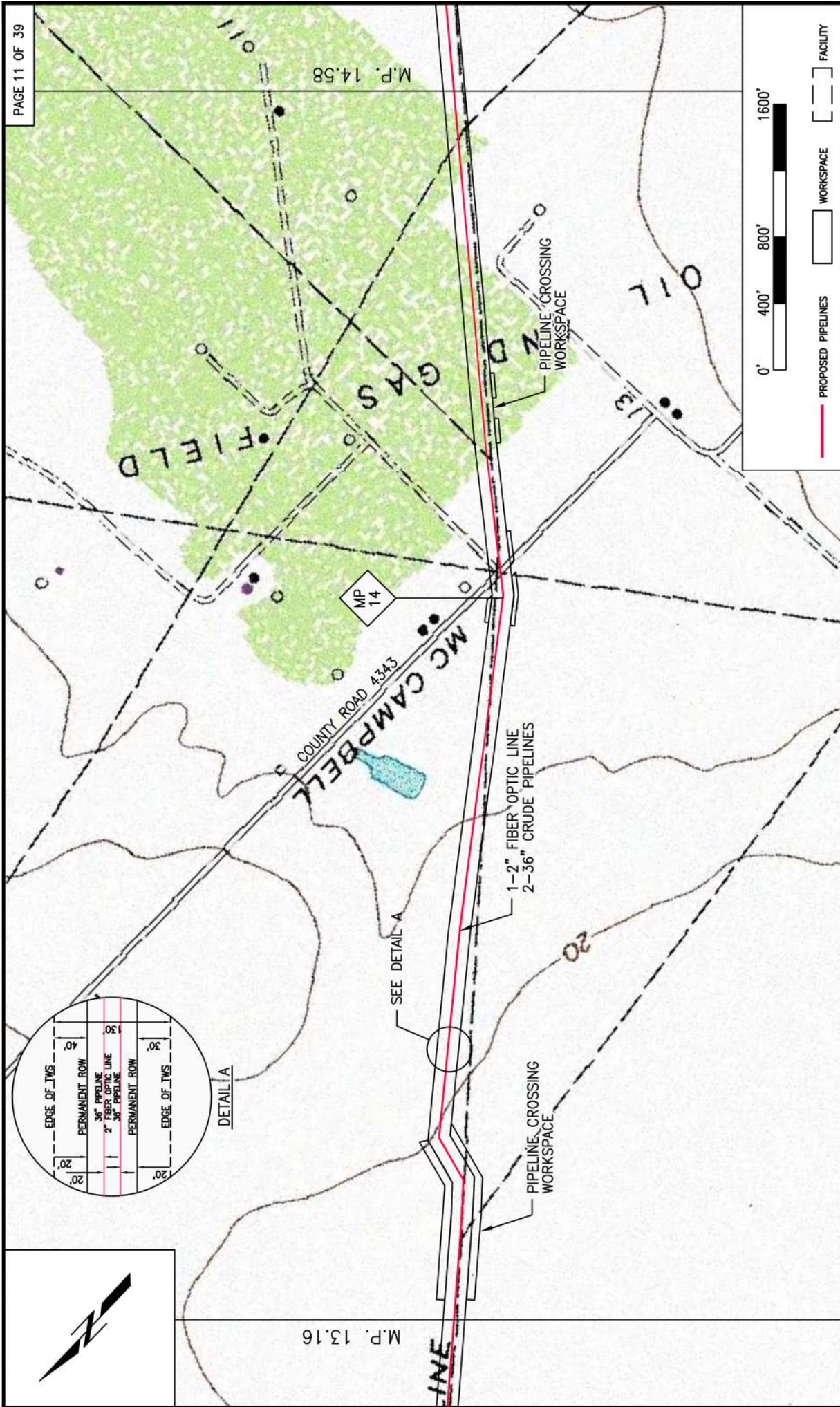


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**PLAN VIEW**

PLS: Midway T.F. to Arkansas

Date: 12/27/2018  
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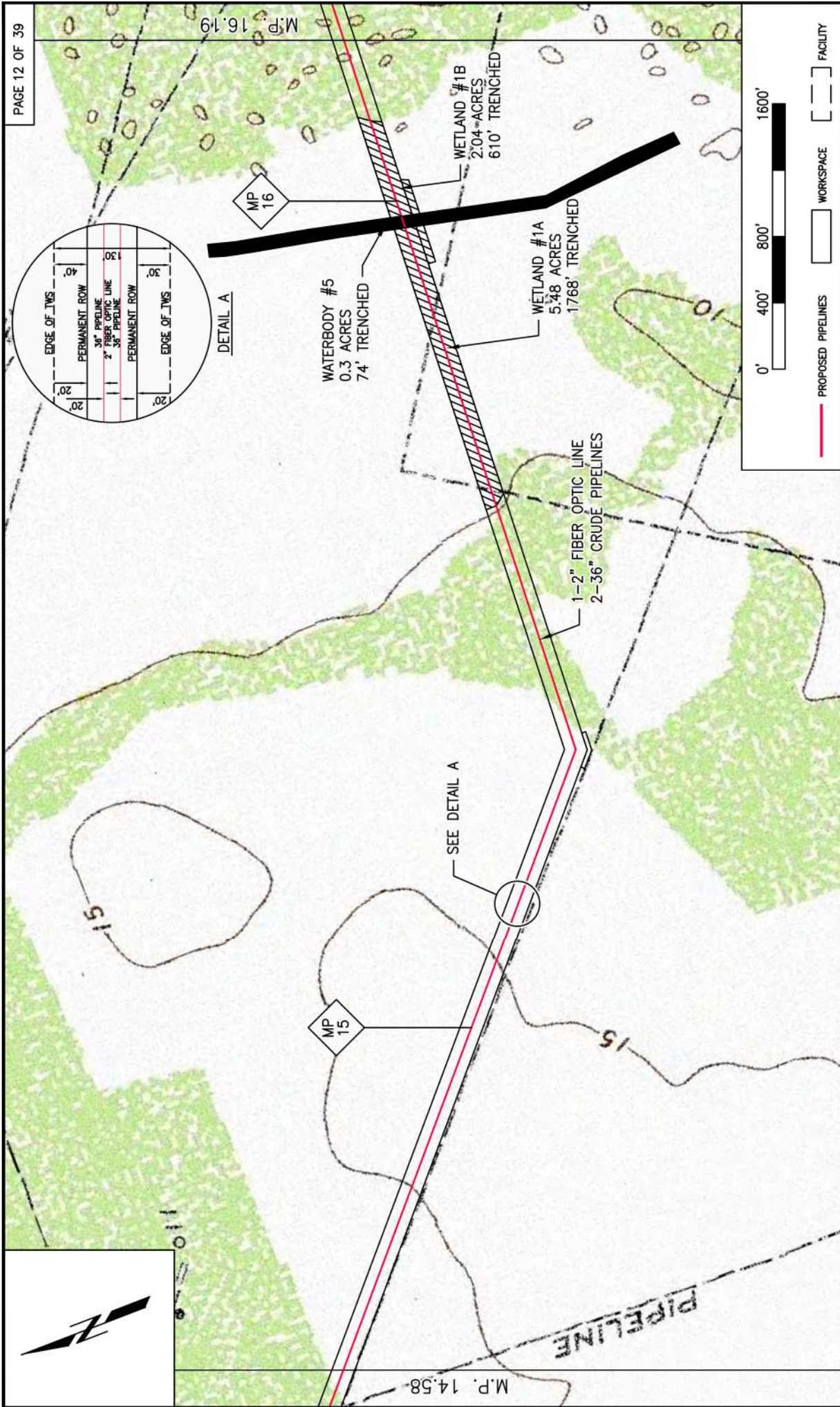
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AXIS MIDSTREAM



**PLAN VIEW**

PLS: Midway T.F. to Arkansas

PROPOSED PIPELINES   
 WORKSPACE   
 FACILITY

Date: 12/27/2018  
Revised: 3/3/2019

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**PLAN VIEW**

PLs: Midway T.F. to Aransas

PROPOSED PIPELINES    WORKSPACE    FACILITY

Date: 12/27/2018  
Revised: 3/3/2019

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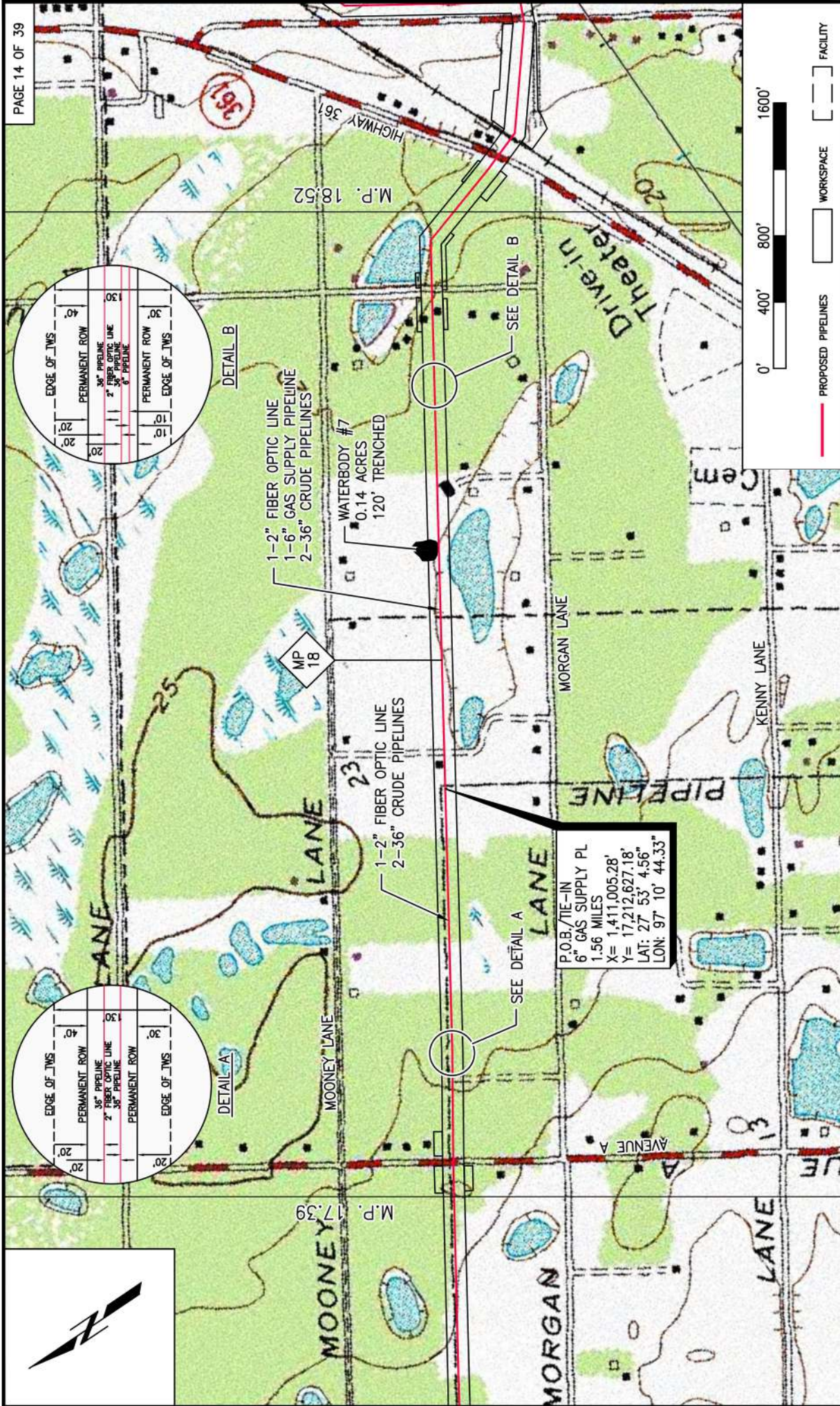


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MANDEVILLE, LA    SAN ANTONIO, TX  
CHICAGO, IL    NORTH HAMPTON, NH





**PLAN VIEW**

PLS: Midway T.F. to Arkansas

PROPOSED PIPELINES [red line] WORKSPACE [white box] FACILITY [dashed box]

Date: 12/27/2018  
 Revised: 3/3/2019

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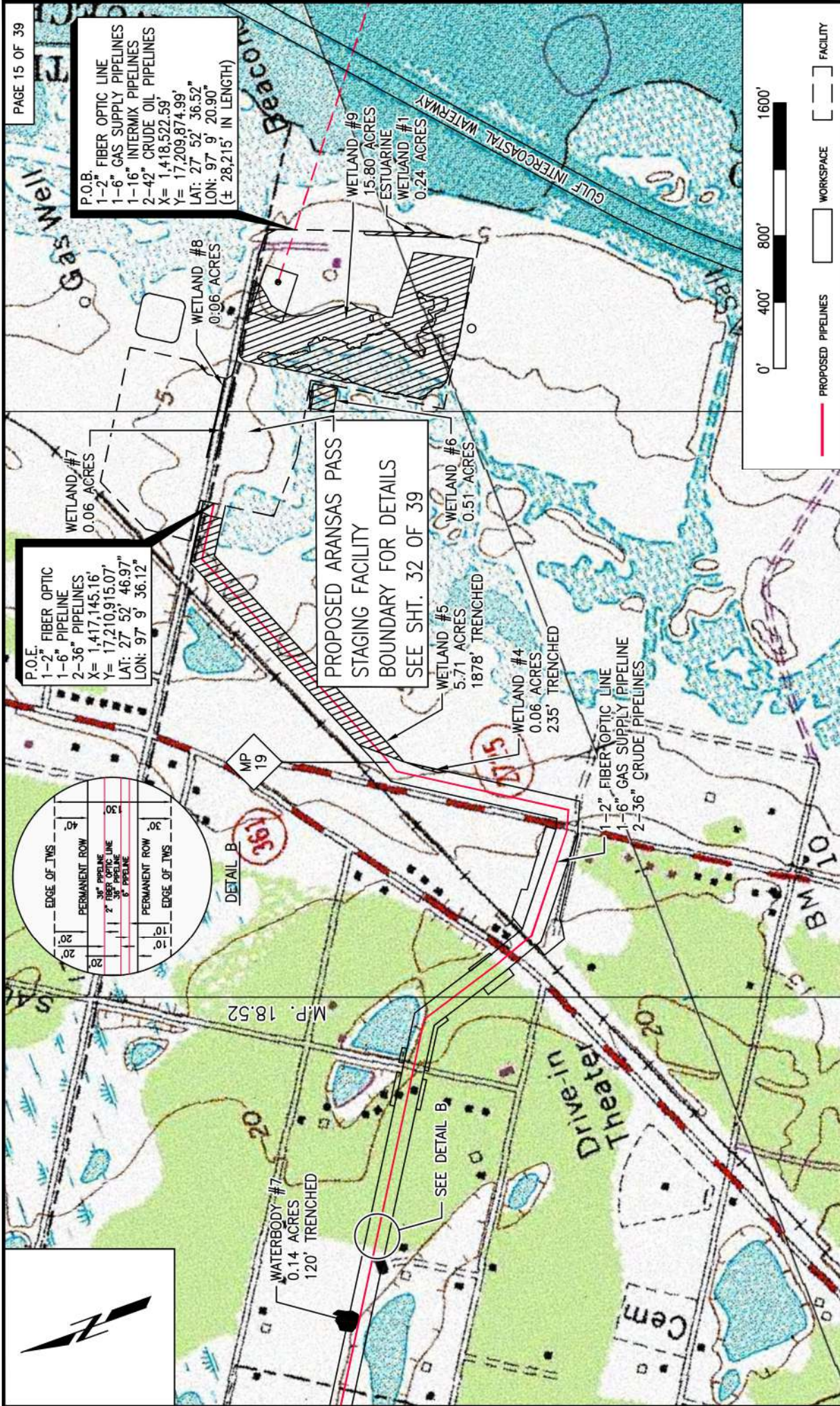
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**PLAN VIEW**

Pls: Midway T.F. to Aransas

Date: 12/27/2018  
Revised: 3/3/2019

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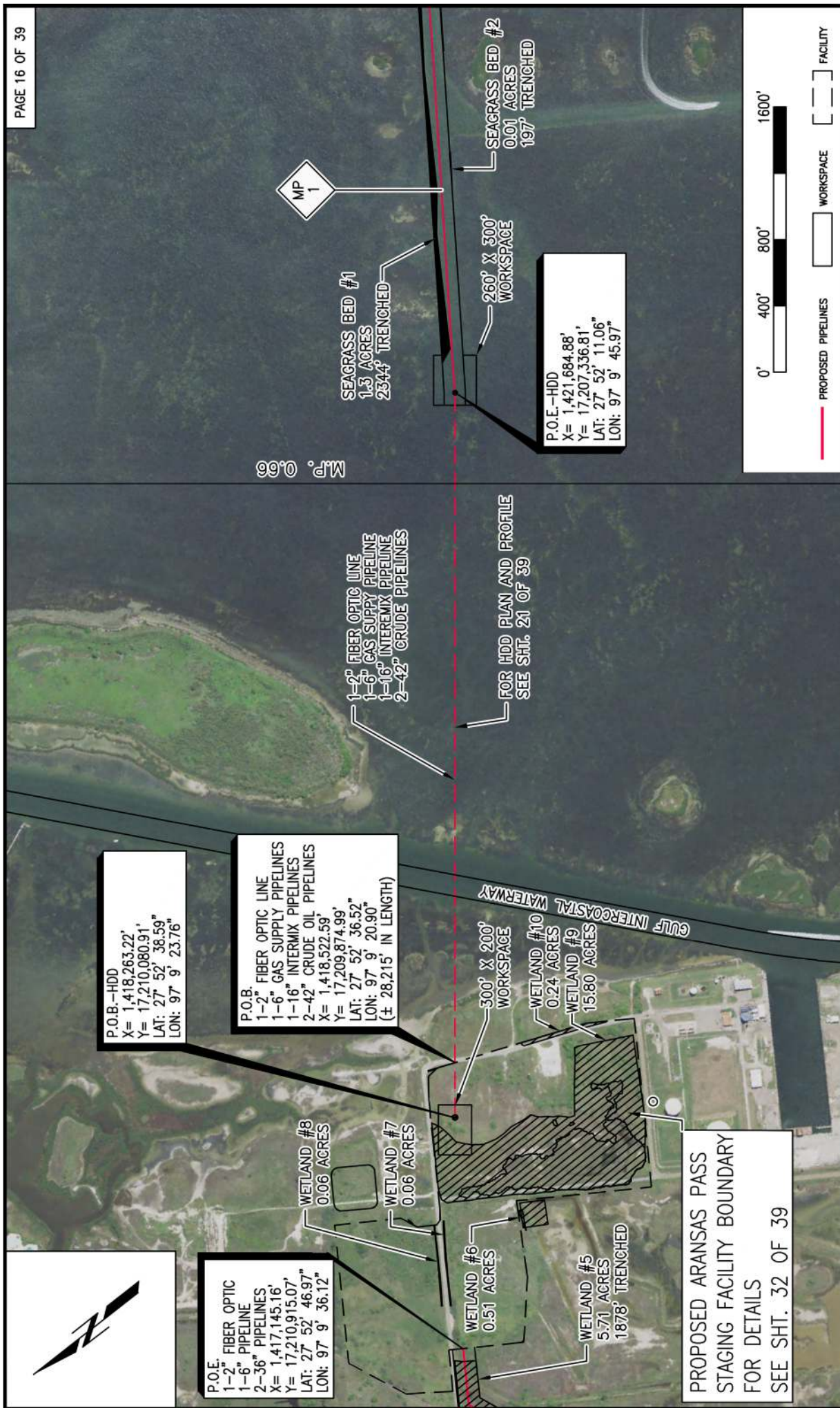
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MANDEVILLE, LA ♦ SAN ANTONIO, TX  
CHICAGO, IL ♦ NORTH HAMPTON, NH







M.P. 0.66

MP 1

P.O.B.-HDD  
 X= 1,418,263.22'  
 Y= 17,210,080.91'  
 LAT: 27 52' 36.59"  
 LON: 97 9' 23.76"

P.O.B.  
 1-2" FIBER OPTIC LINE  
 1-6" GAS SUPPLY PIPELINES  
 1-16" INTERMIX PIPELINES  
 2-42" CRUDE OIL PIPELINES  
 X= 1,418,522.59'  
 Y= 17,209,874.99'  
 LAT: 27 52' 36.52"  
 LON: 97 9' 20.90"  
 (± 28,215' IN LENGTH)

P.O.E.  
 1-2" FIBER OPTIC  
 1-6" PIPELINE  
 2-36" PIPELINES  
 X= 1,417,145.16'  
 Y= 17,210,915.07'  
 LAT: 27 52' 46.97"  
 LON: 97 9' 36.12"

P.O.E.-HDD  
 X= 1,421,684.88'  
 Y= 17,207,336.81'  
 LAT: 27 52' 11.06"  
 LON: 97 9' 45.97"

PROPOSED ARANSAS PASS  
 STAGING FACILITY BOUNDARY  
 FOR DETAILS  
 SEE SHT. 32 OF 39

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Date: 12/27/2018  
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PLAN VIEW  
 PLs: Aransas To Harbor Island

**AXIS MIDSTREAM HOLDINGS, LLC**  
 Proposed Pipelines & Facilities  
 MIDWAY TO HARBOR ISLAND PROJECT  
 SAN PATRICIO & NUECES COUNTIES, TEXAS  
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M.P. 0.66

SEAGRASS BED #1  
1.3 ACRES  
2344' TRENCHED  
260' X 300'  
WORKSPACE

SEAGRASS BED #2  
0.01 ACRES  
197' TRENCHED

SEAGRASS BED #3  
0.08 ACRES  
1148' TRENCHED

SEE SHT. 22 OF 39  
SEE SHT. 22 OF 39

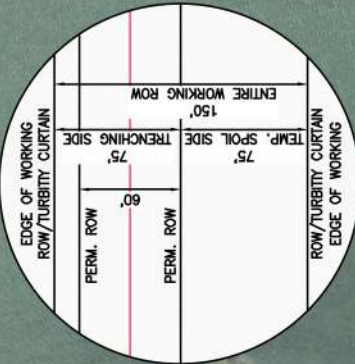
SEAGRASS BED #4  
0.09 ACRES  
423' TRENCHED

SEAGRASS BED #5  
0.35 ACRES  
826' TRENCHED

1-2" FIBER OPTIC LINE  
1-6" GAS SUPPLY PIPELINE  
1-16" INTERMIX PIPELINE  
2-42" CRUDE PIPELINES

SEE DETAIL C

DETAIL C



M.P. 1.88

REDFISH BAY



PROPOSED PIPELINES [red line] WORKSPACE [white box] FACILITY [grey box]

PIPELINE TO BE INSTALLED WITHIN EXISTING OIL FIELD CANAL, CHANNEL & SLIP.

P.O.E.-HDD  
X= 1,421,684.86'  
Y= 17,207,336.81'  
LAT: 27 52' 11.06"  
LON: 97 9 45.97"

Date: 12/27/2018  
Revised: 3/3/2019

PLAN VIEW  
PLs: Aransas To Harbor Island



AXIS MIDSTREAM

# AXIS MIDSTREAM HOLDINGS, LLC

Proposed Pipelines & Facilities  
MIDWAY TO HARBOR ISLAND PROJECT

SAN PATRICIO & NUECES COUNTIES, TEXAS

Prepared BY: Project Consulting Services, Inc.

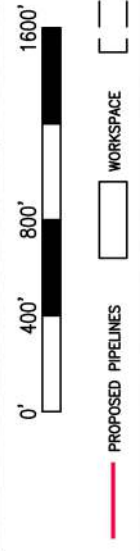
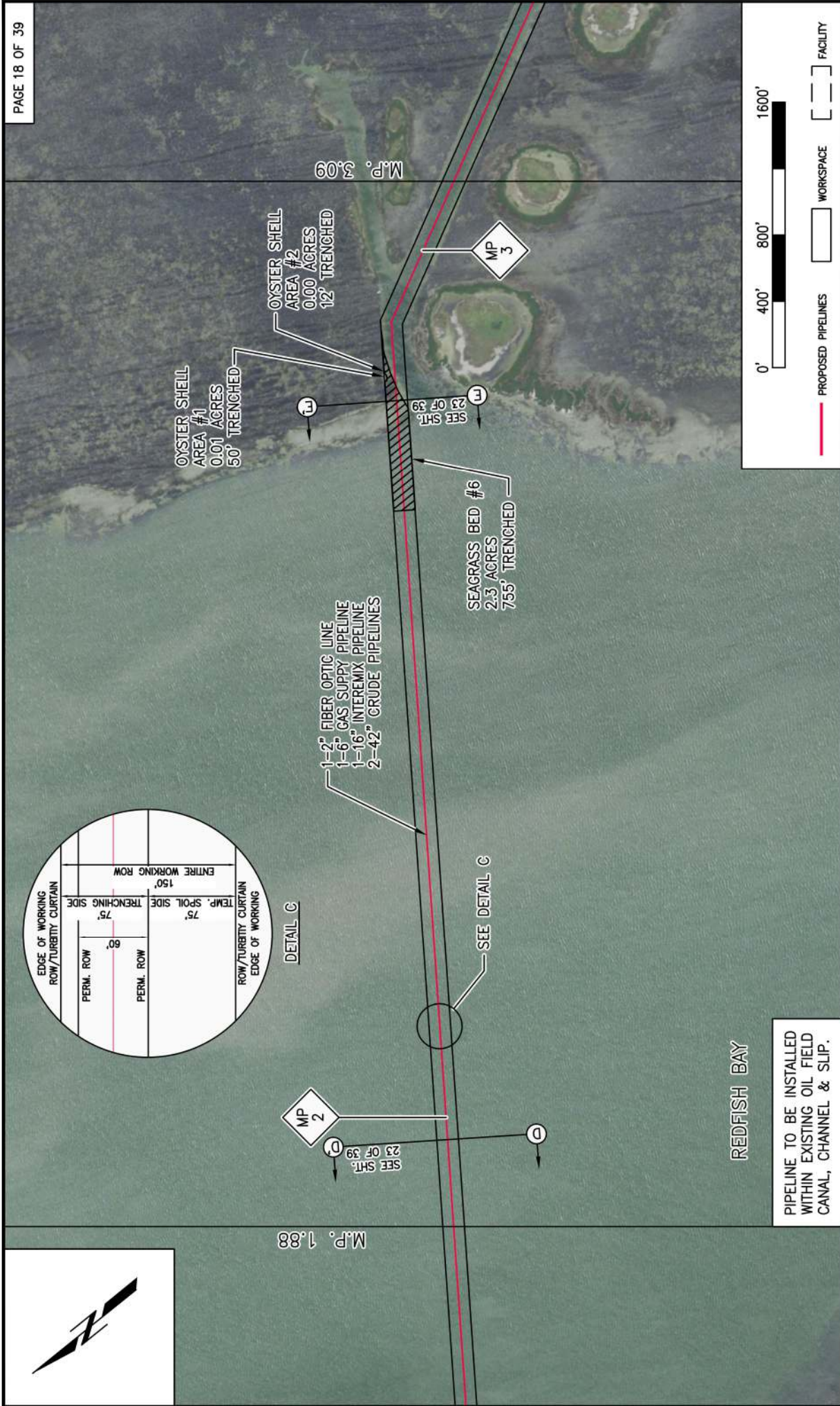


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PREPARED BY:	LRW
CHECKED BY:	
APPROVED BY:	
PROJECT NO.:	19012
REISSUE DATE:	3/25/19

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**PLAN VIEW**

PLs: Aransas To Harbor Island

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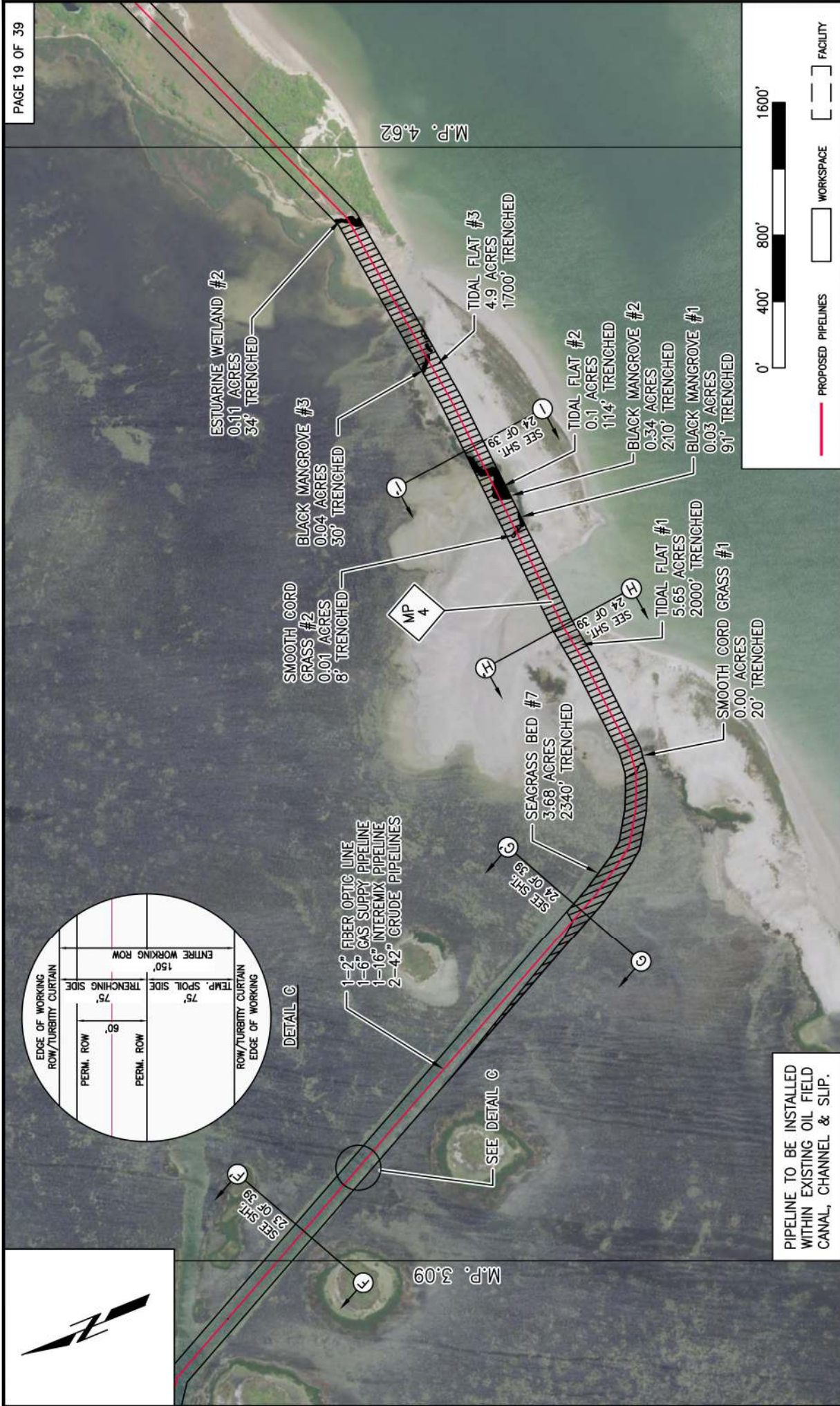


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**PLAN VIEW**

PLs: Aransas To Harbor Island

**AXIS MIDSTREAM HOLDINGS, LLC**  
 Proposed Pipelines & Facilities  
**MIDWAY TO HARBOR ISLAND PROJECT**  
 SAN PATRICIO & NUECES COUNTIES, TEXAS  
 Prepared BY: Project Consulting Services, Inc.



AXIS MIDSTREAM

Date: 12/27/2018  
 Revised: 3/3/2019

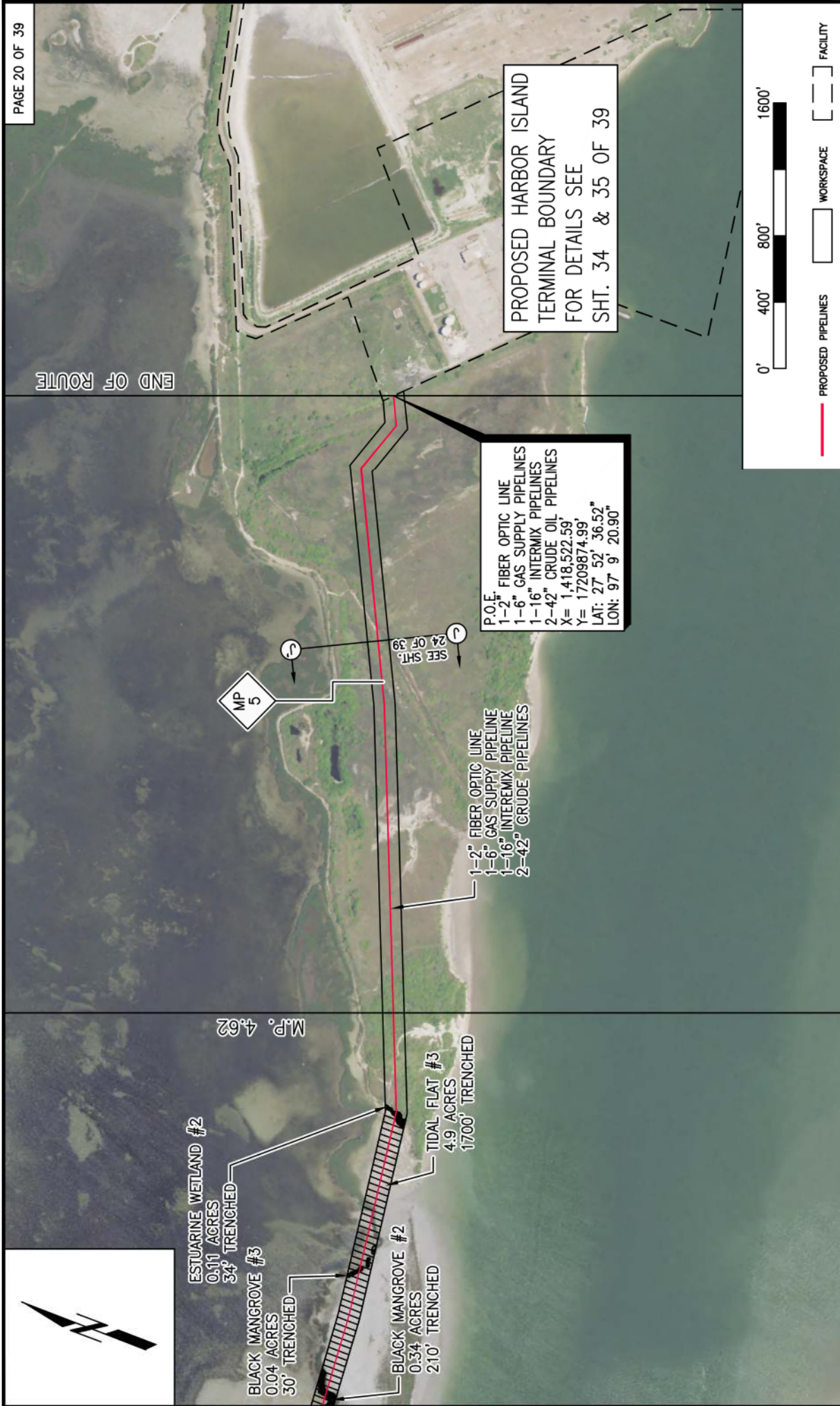
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PLAN VIEW

PLs: Arkansas to Harbor Island




**AXIS MIDSTREAM HOLDINGS, LLC**  
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MIDWAY to HARBOR ISLAND PROJECT  
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AXIS MIDSTREAM

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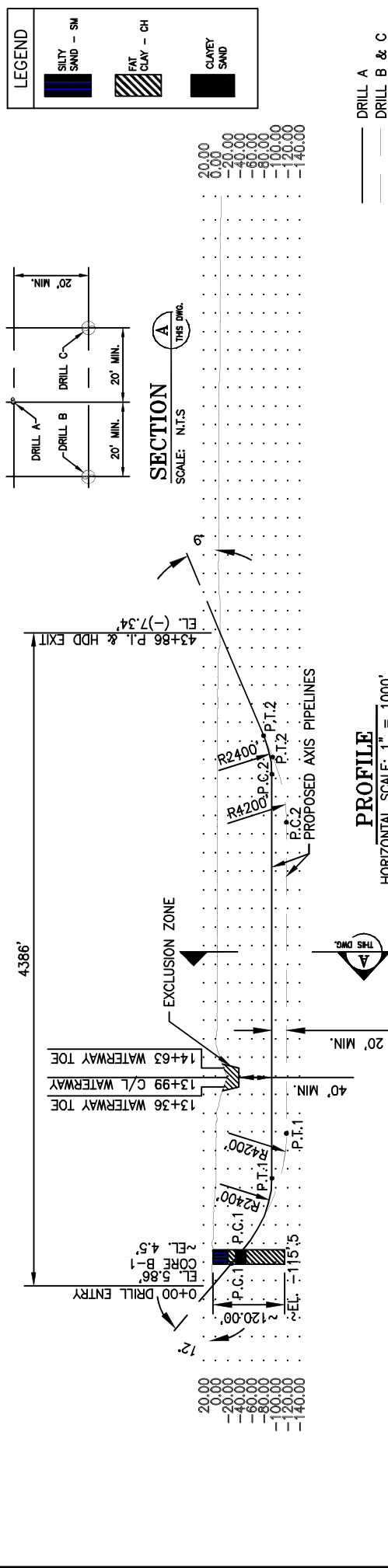
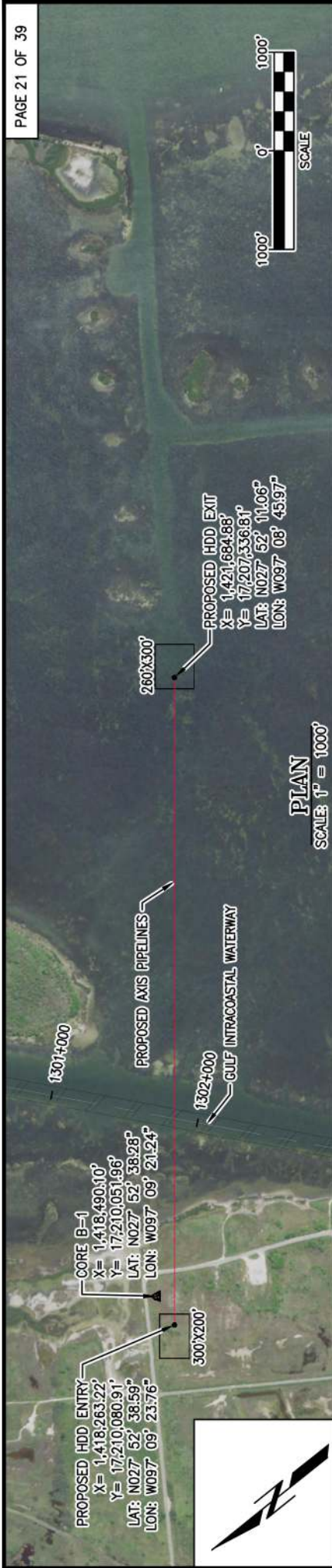
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**SPECIFICATIONS:**  
 CARRIER PIPE:  
 DRILL A BUNDLE 16,000" O.D. \*  
 6,625" O.D. \*  
 2" FIBER OPTIC CABLE  
 DRILL B 42,000" O.D. \*  
 DRILL C 42,000" O.D. \*  
 \* PIPE WALL THICKNESS AND COATING TO BE DETERMINED.

**GENERAL NOTES:**  
 1) GRID PROJECTION BASED UPON TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE (GRID UNITS IN FEET) GEODETIC DATUM: NAD 1983, CLARKE SPHEROID, 1866.  
 2) CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL FOREIGN PIPELINE CROSSINGS AND COVER PRIOR TO CONSTRUCTION.  
 3) 3 PROPOSED HDD WILL BE INSTALLED IN THE EASEMENT; DRILL A WILL CONSIST OF A BUNDLED ON 16,000" O.D., ONE 6,625" O.D. AND 2" O.D.  
 DRILL B WILL BE A 42,000" O.D. PIPELINE AND DRILL C WILL BE A 42,000" O.D. PIPELINE.  
 4) THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING THE ORDER OF THE DRILLS.  
 5) THE ENGINEER'S SEAL AFFIXED TO THIS DRAWING REPRESENTS THE ENGINEERING DESIGN OF THE 3 HDD PROFILES SHOWN ON THIS DRAWING. THE DESIGN IS BASED UPON THE SURVEY INFORMATION PROVIDED BY GUILLETT & ASSOCIATES DISPLAYED HEREIN. THE ISSUANCE OF THIS DRAWING IS NOT INTENDED AS A SURVEYING DOCUMENT AND SHOULD NOT BE USED FOR ESTABLISHMENT OR RECORD OF BOUNDARY, EASEMENTS OR ANY OTHER SURVEYING PURPOSE.

**PLAN PROFILE**  
 PLS: GIWW HDD

Date: 12/27/2018  
 Revised: 3/3/2019

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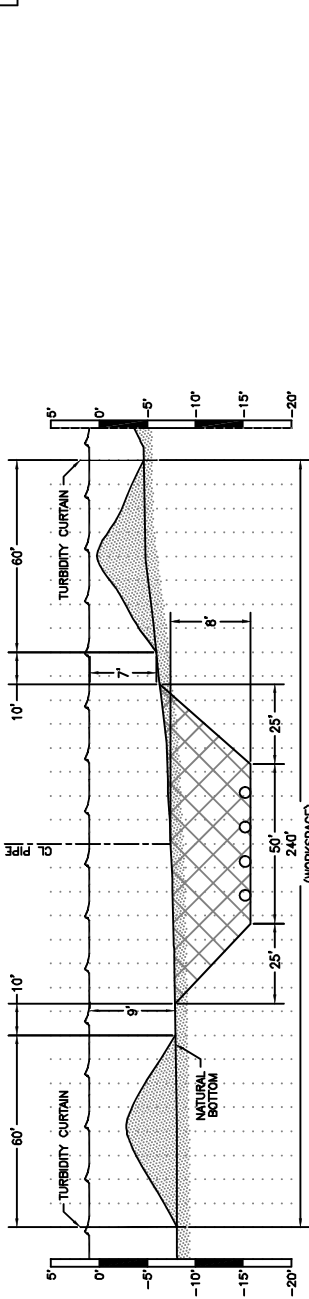
# AXIS MIDSTREAM HOLDINGS, LLC

## Proposed Pipelines & Facilities

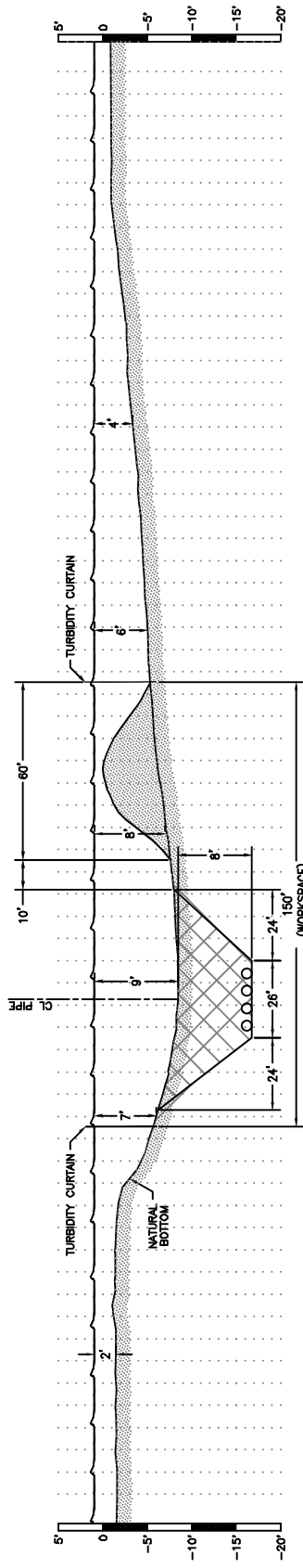
### MIDWAY TO HARBOR ISLAND PROJECT

SAN PATRICIO & NUECES COUNTIES, TEXAS

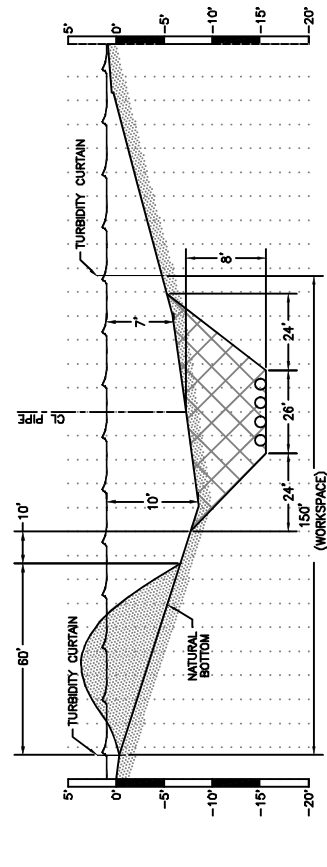
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SECTION A-A' (HDD EXIT SITE)



SECTION B-B'



SECTION C-C'

NOTE:  
TRENCH SIDE SLOPES ARE 3:1.

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**CROSS-SECTIONS**  
PLs: Aransas Fac. to Harbor Island



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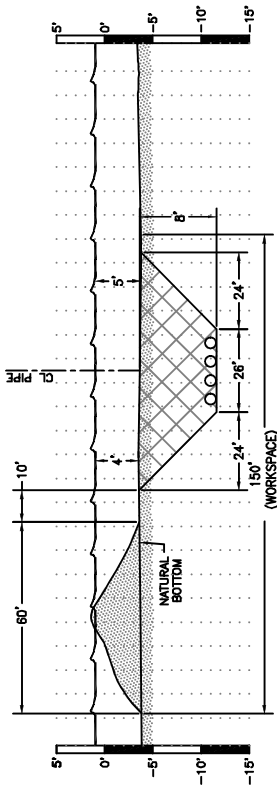
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PROJECT NO.: 19012
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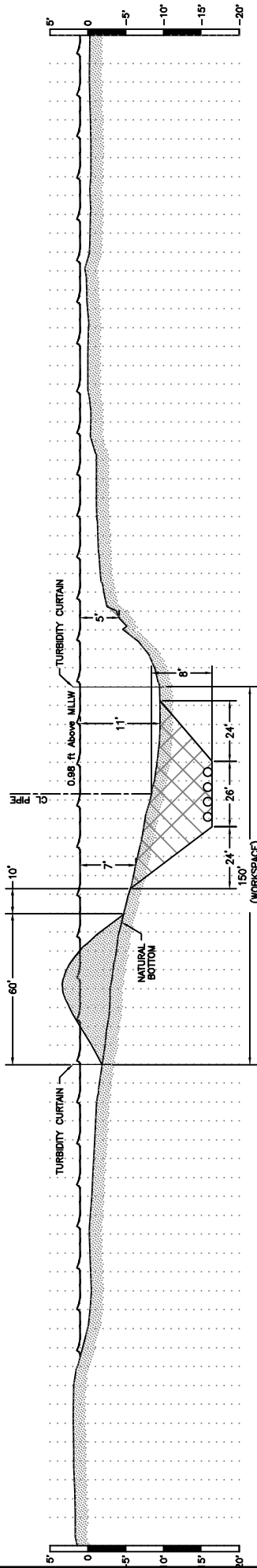
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Proposed Pipelines & Facilities  
MIDWAY TO HARBOR ISLAND PROJECT

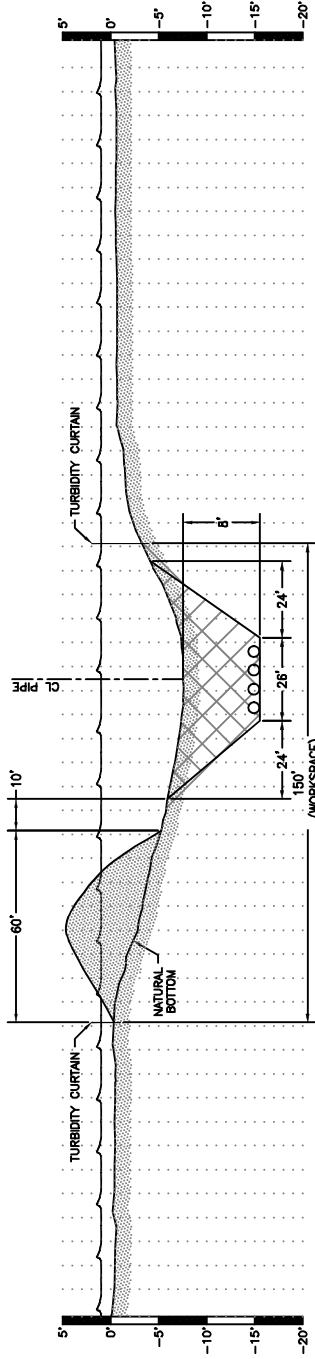
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SECTION D-D'



SECTION E-E'



SECTION F-F'

NOTE:  
TRENCH SIDE SLOPES ARE 3:1.

HORIZONTAL SCALE: 1"=60'  
VERTICAL SCALE: 1"=20'

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CROSS-SECTIONS  
PLs: Aransas Fac. to Harbor Island



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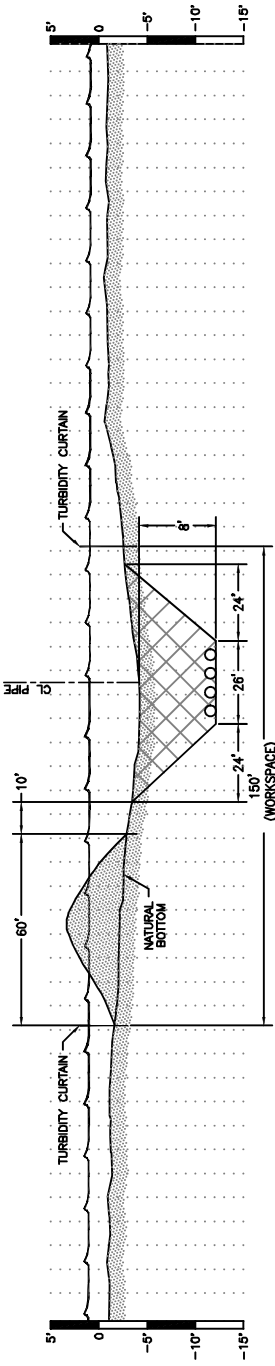


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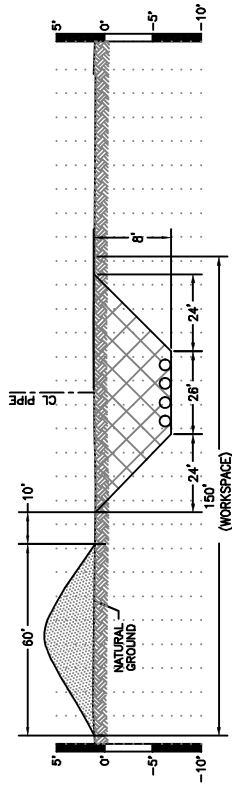
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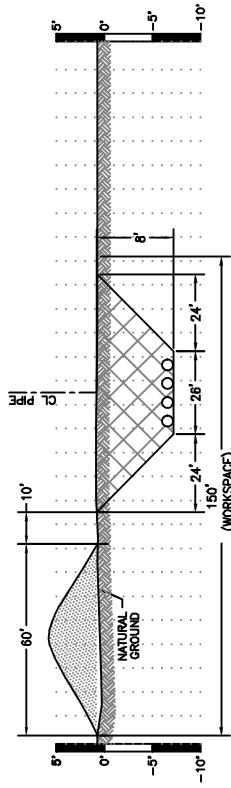




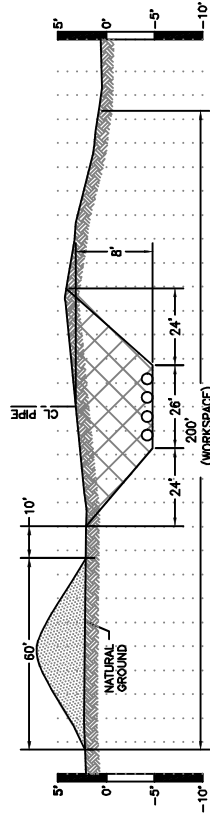
SECTION G-G'



SECTION H-H'



SECTION I-I'



SECTION J-J'

NOTE:  
TRENCH SIDE SLOPES ARE 3:1.

HORIZONTAL SCALE: 1"=60'  
VERTICAL SCALE: 1"=20'

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CROSS-SECTIONS  
Pls: Aransas Fac. to Harbor Island



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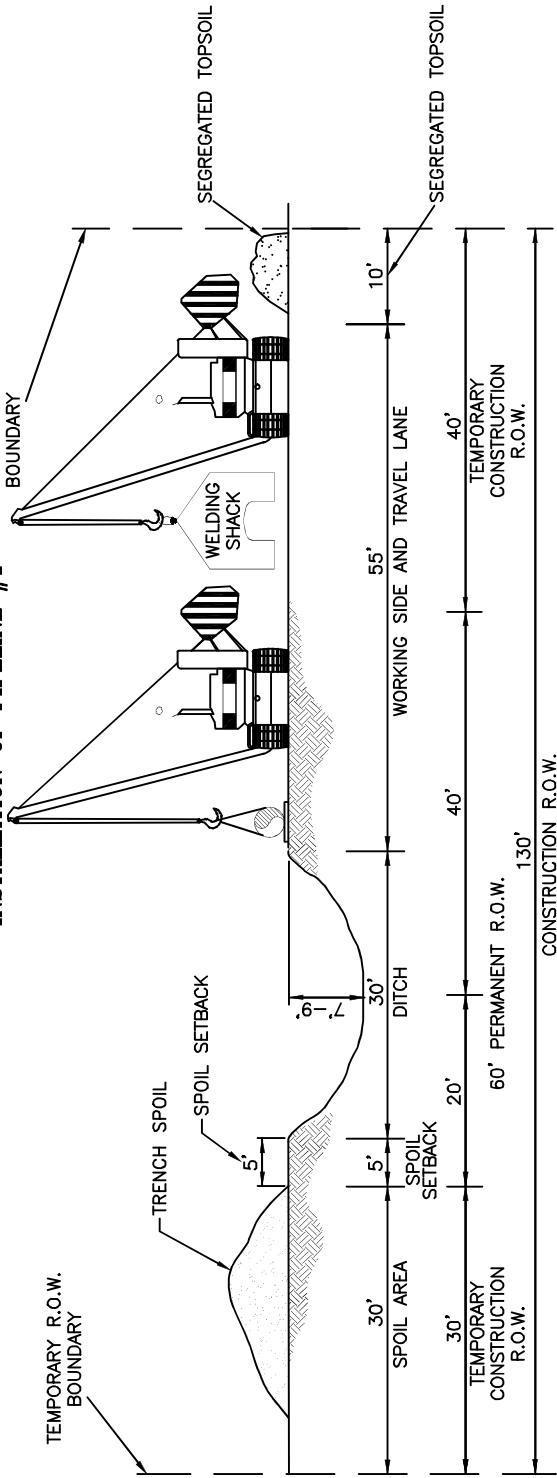
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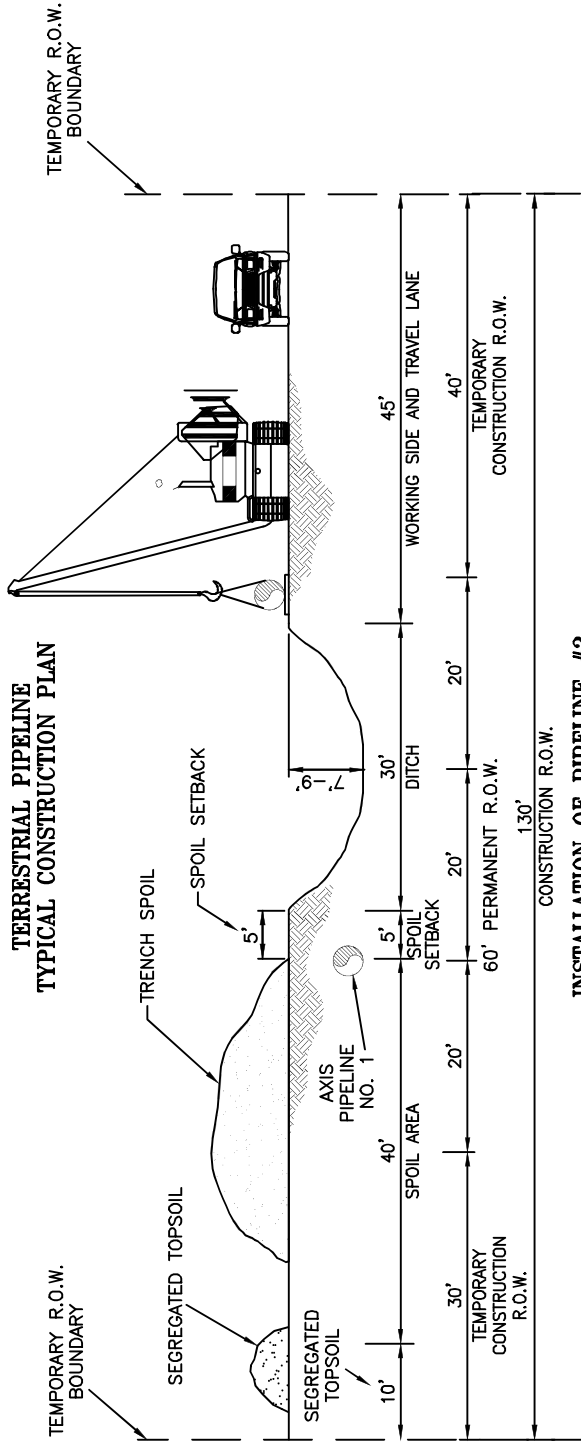
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MIDWAY to HARBOR ISLAND PROJECT  
SAN PATRICIO & NUECES COUNTIES, TEXAS  
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**INSTALLATION OF PIPELINE #1**



**TERRESTRIAL PIPELINE  
TYPICAL CONSTRUCTION PLAN**



**INSTALLATION OF PIPELINE #2**

- NOTES:**
- ALTHOUGH THE DIMENSIONS SHOWN ARE TYPICAL, SOME VARIATIONS MAY EXIST DUE TO SITE SPECIFIC CONDITIONS. UNLESS OTHERWISE INDICATED ON THE ALIGNMENT SHEETS, THE MAXIMUM WIDTH OF THE CONSTRUCTION RIGHT-OF-WAY SHALL BE AS SHOWN IN THE TABLE FOR THE APPROPRIATE PIPE DIAMETER.
  - TOPSOIL AND SUBSOIL SHALL BE SEGREGATED WITHIN WETLAND, RESIDENTIAL, AGRICULTURAL, PASTURES, HAYFIELDS AND OTHER AREAS AT LANDOWNER'S OR LAND MANAGING AGENCY'S REQUEST.
  - 6" PIPELINE (NOT SHOWN) WILL BE PLACED IN DITCH WITH 1 FT WALL TO WALL SEPARATION WITH EITHER 36" PIPELINE #1 OR #2 DEPENDING ON CONTRACTOR SEQUENCE PREFERENCE AT TIME OF INSTALLATION.

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**TYPICAL CROSS-SECTION**  
PLs: Midway T.F. to Arkansas Fac.

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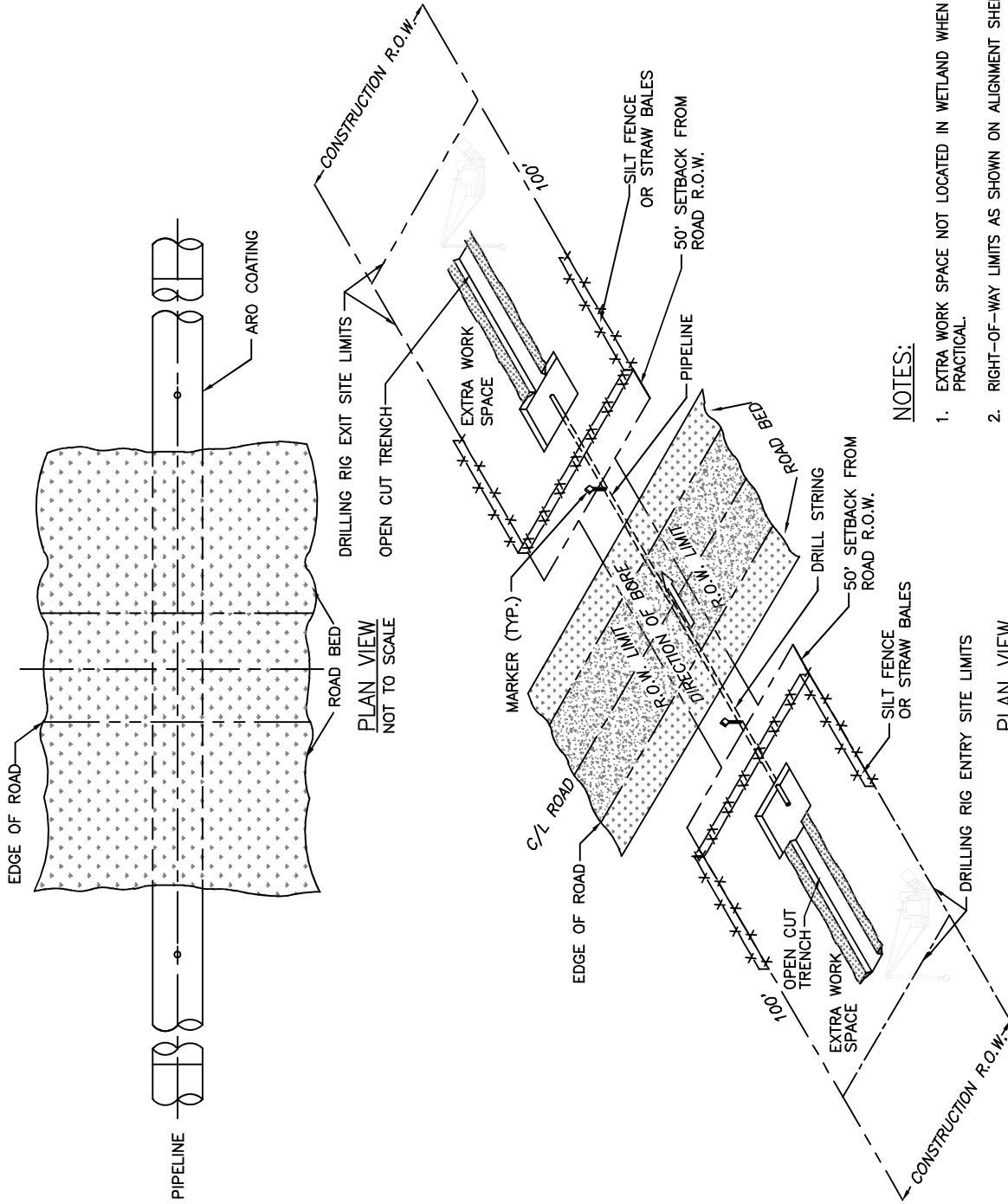


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**NOTES:**

1. EXTRA WORK SPACE NOT LOCATED IN WETLAND WHEN POSSIBLE AND PRACTICAL.
2. RIGHT-OF-WAY LIMITS AS SHOWN ON ALIGNMENT SHEETS.
3. WORK AREA WILL BE TEMPORARILY MAINTED FOR MARSH AREAS.

**TYPICAL CONST. LAYOUT**  
 PLs: Road Crossing Bore

PLAN VIEW  
 NOT TO SCALE

Date: 12/27/2018  
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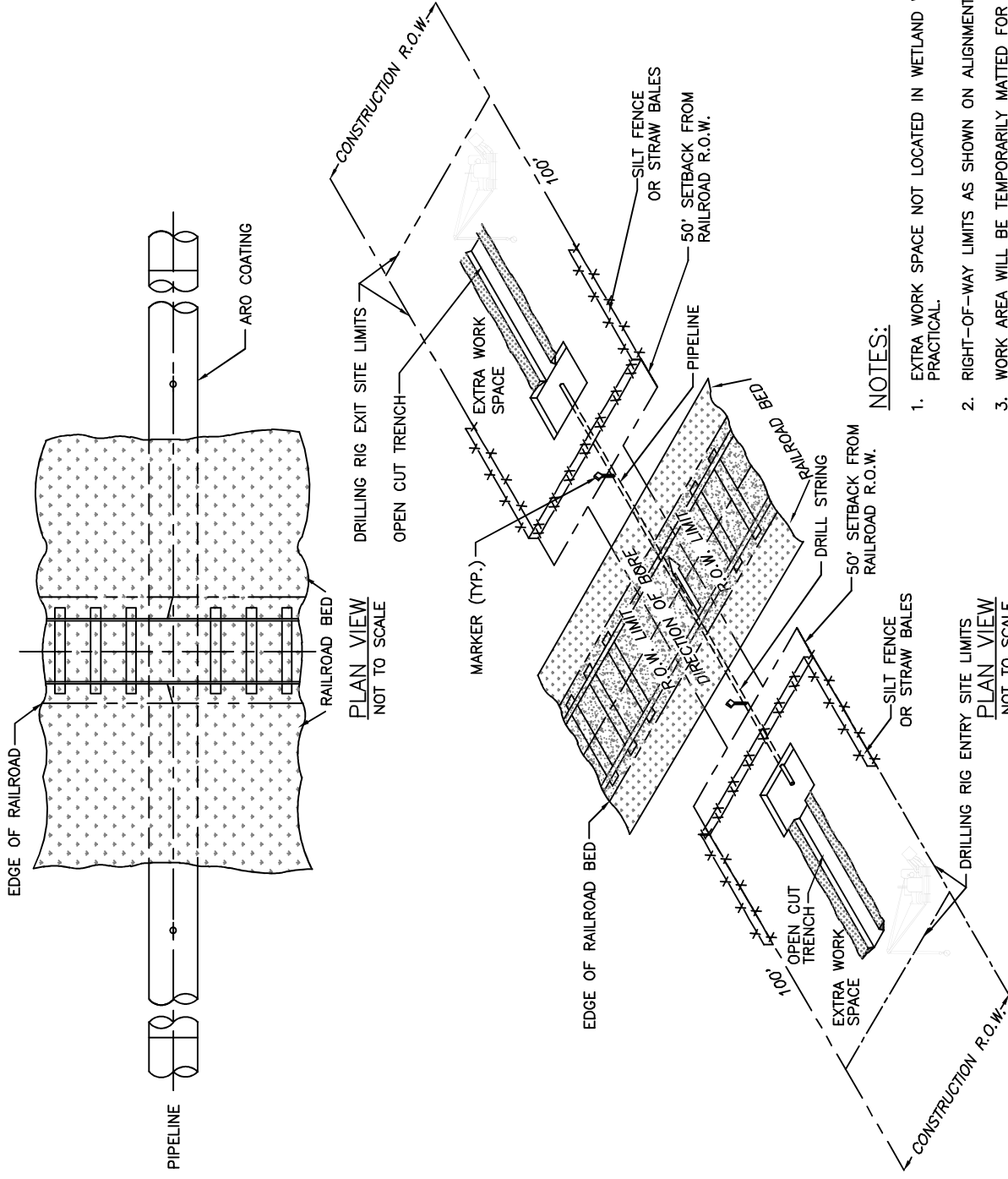
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**NOTES:**

1. EXTRA WORK SPACE NOT LOCATED IN WETLAND WHEN POSSIBLE AND PRACTICAL.
2. RIGHT-OF-WAY LIMITS AS SHOWN ON ALIGNMENT SHEETS.
3. WORK AREA WILL BE TEMPORARILY MATTED FOR MARSH AREAS.

**TYPICAL CONST. LAYOUT**  
 PLS: Railroad Crossing Bore

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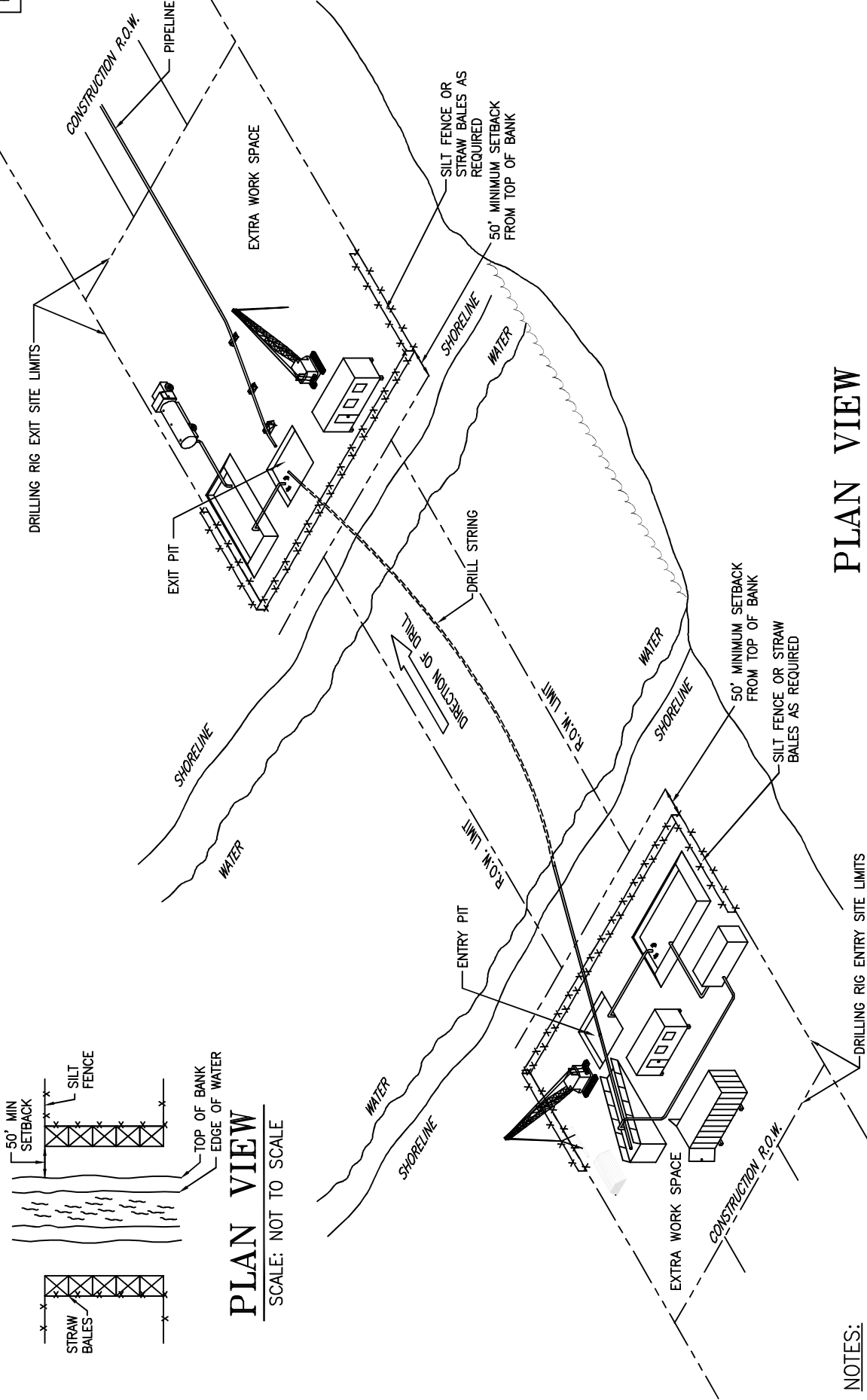
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**PLAN VIEW**

NOT TO SCALE

**TYPICAL CONST. LAYOUT**  
 PLs: Waterbody Crossing

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 SAN PATRICIO & NUECES COUNTIES, TEXAS  
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**AXIS MIDSTREAM**

**NOTES:**  
 1. EXTRA WORK SPACE NOT LOCATED IN WETLANDS WHEN POSSIBLE.

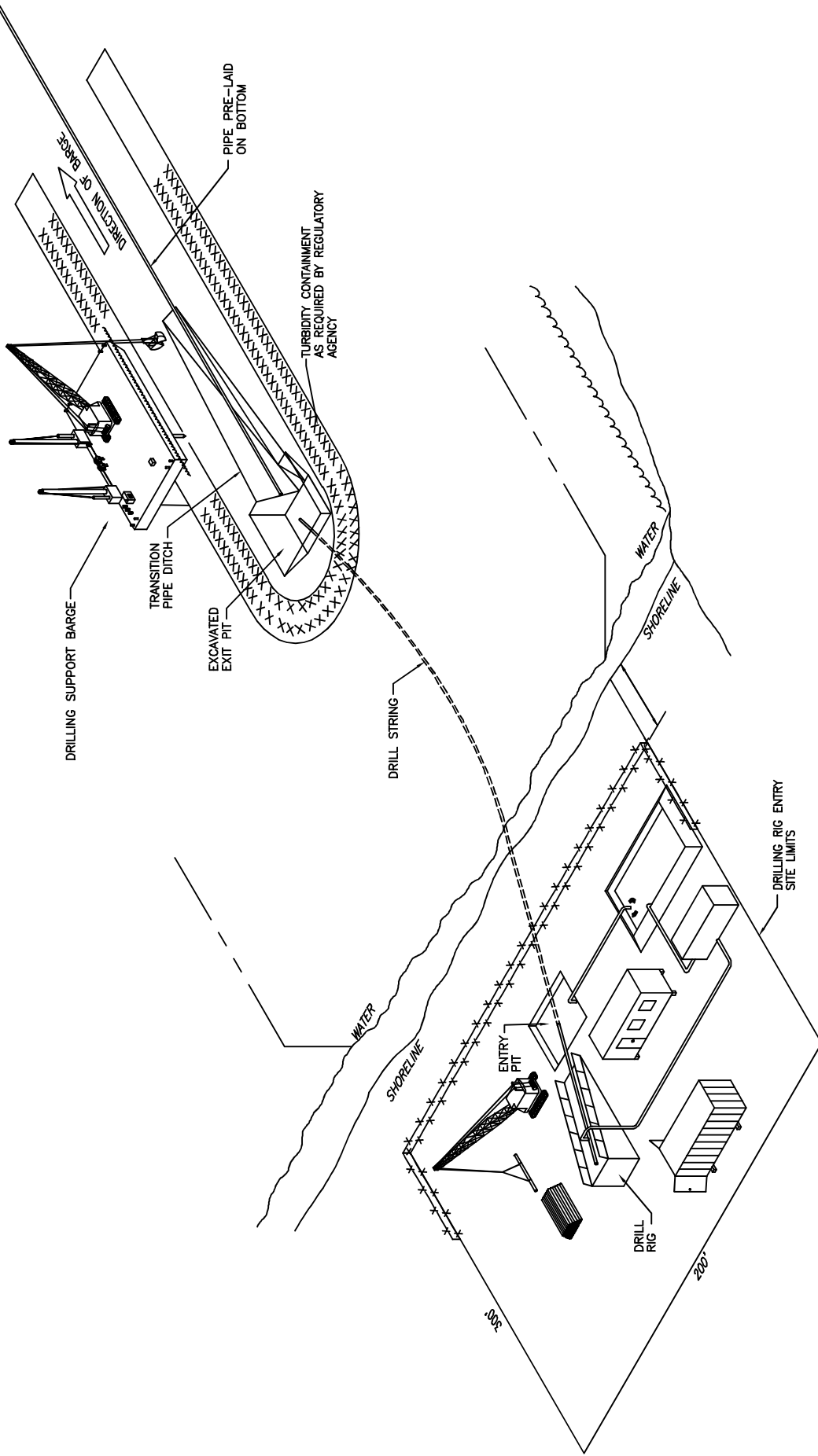
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# HORIZONTAL DIRECTIONAL DRILLING LAND TO WATER

SCALE: N.T.S.  
CONDENSED FOR ILLUSTRATIVE PURPOSES

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TYPICAL CONST. LAYOUT  
PLs: Land to Water



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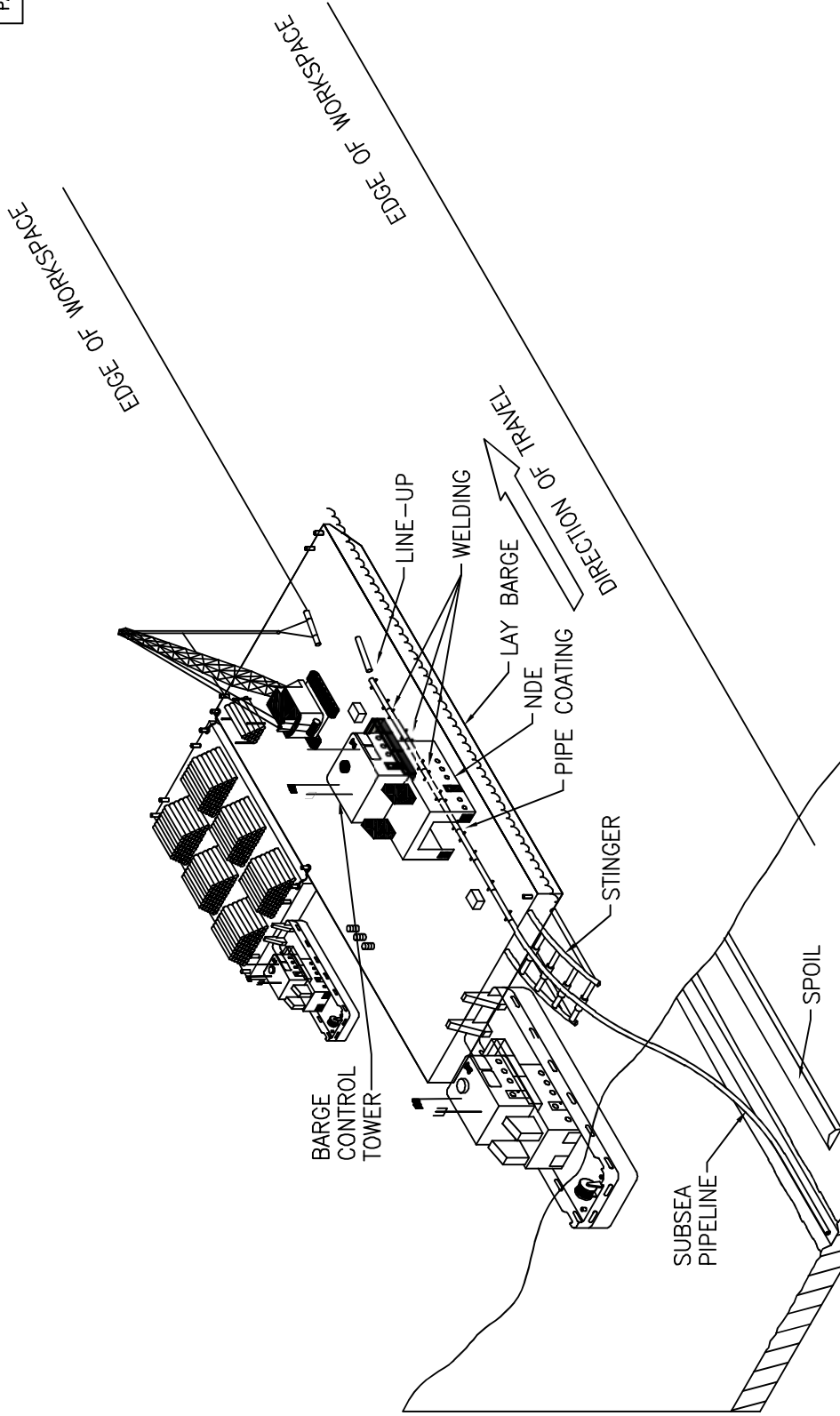


AXIS MIDSTREAM

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MIDWAY to HARBOR ISLAND PROJECT

SAN PATRICIO & NUECES COUNTIES, TEXAS

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**TYPICAL PIPELINE LAY BARGE SPREAD**

SCALE  
CONDENSED FOR ILLUSTRATIVE PURPOSES

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**TYPICAL CONST. LAYOUT**  
PLs: Shallow Water Lay Barge



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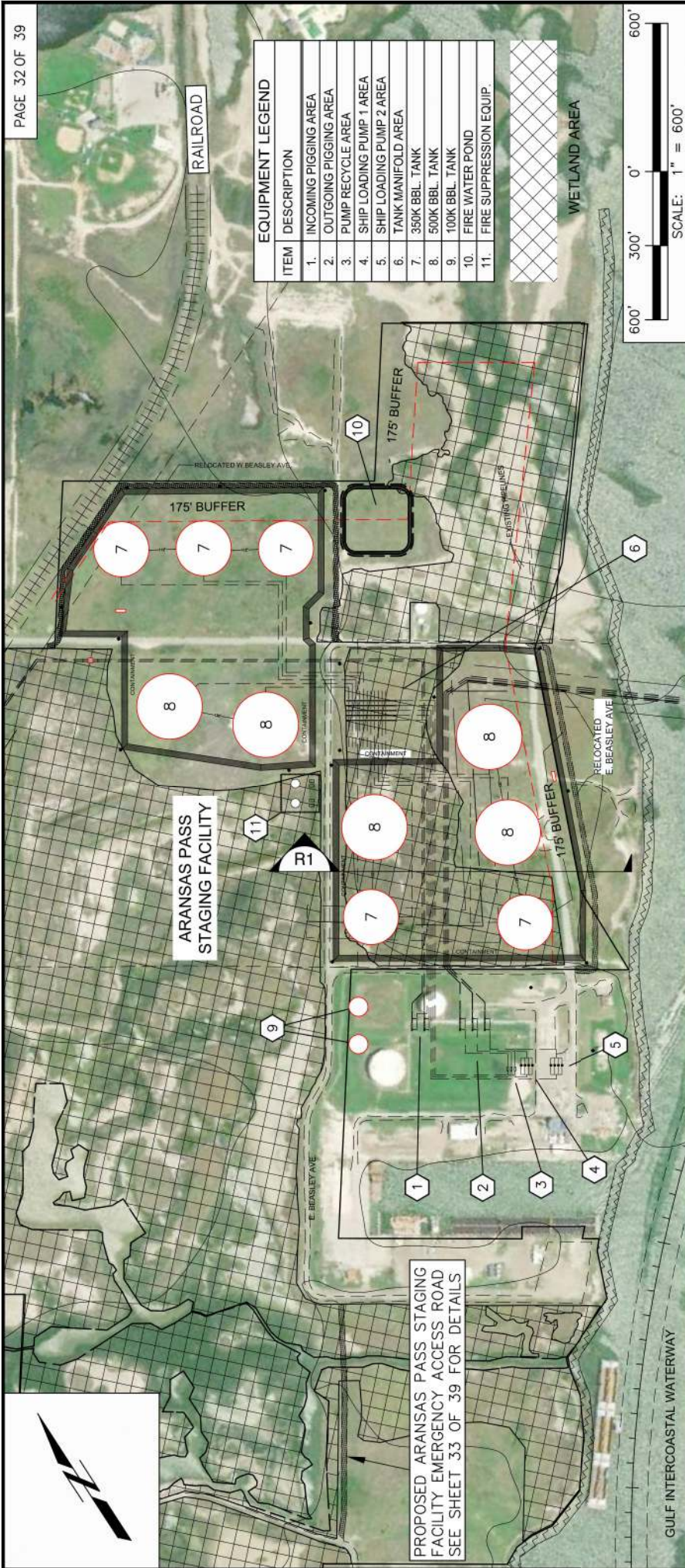
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SAN PATRICIO & NUECES COUNTIES, TEXAS

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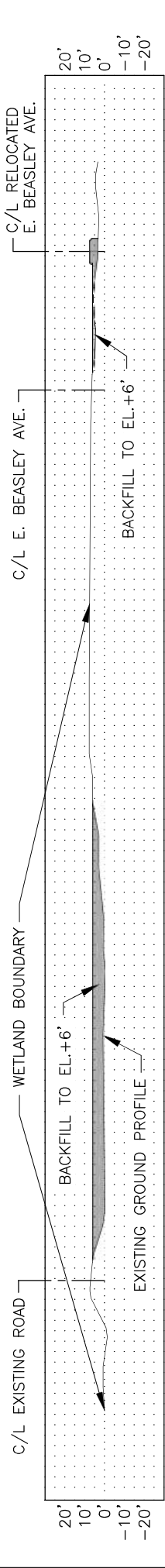




ITEM	DESCRIPTION
1.	INCOMING PIGGING AREA
2.	OUTGOING PIGGING AREA
3.	PUMP RECYCLE AREA
4.	SHIP LOADING PUMP 1 AREA
5.	SHIP LOADING PUMP 2 AREA
6.	TANK MANIFOLD AREA
7.	350K BBL TANK
8.	500K BBL TANK
9.	100K BBL TANK
10.	FIRE WATER POND
11.	FIRE SUPPRESSION EQUIP.



WETLAND AREA



**R1** CROSS SECTION  
SCALE: 1"=150'  
VERT. SCALE: 1"=75'

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**PLAN VIEW/CROSS-SECTION**  
Arkansas Pass Staging Facility



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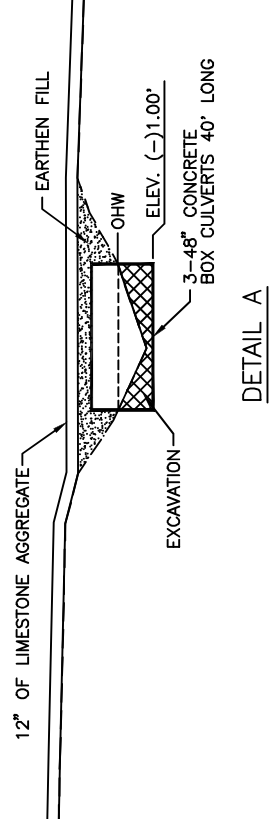
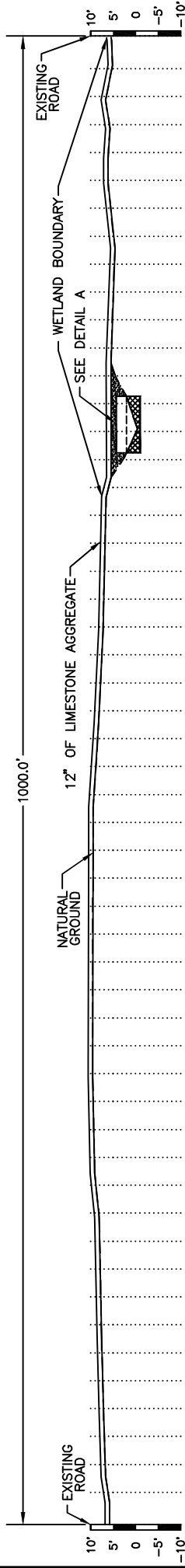
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**AXIS MIDSTREAM**

**AXIS MIDSTREAM HOLDINGS, LLC**  
Proposed Pipelines & Facilities  
MIDWAY TO HARBOR ISLAND PROJECT  
SAN PATRICIO & NUECES COUNTIES, TEXAS  
Prepared BY: Project Consulting Services, Inc.



**NOTES:**

LIMESTONE AGGREGATE (EAST SIDE)	195 CU. YDS.
LIMESTONE AGGREGATE (IN WETLANDS)	540 CU. YDS.
EARTHEN FILL FOR ROAD	163 CU. YDS.
RIP-RAP	17 CU. YDS.
EXCAVATION FOR CULVERTS	102 CU. YDS.

**PLAN VIEW/CROSS SECTION**  
ACCESS ROAD - ARANSAS FAC.

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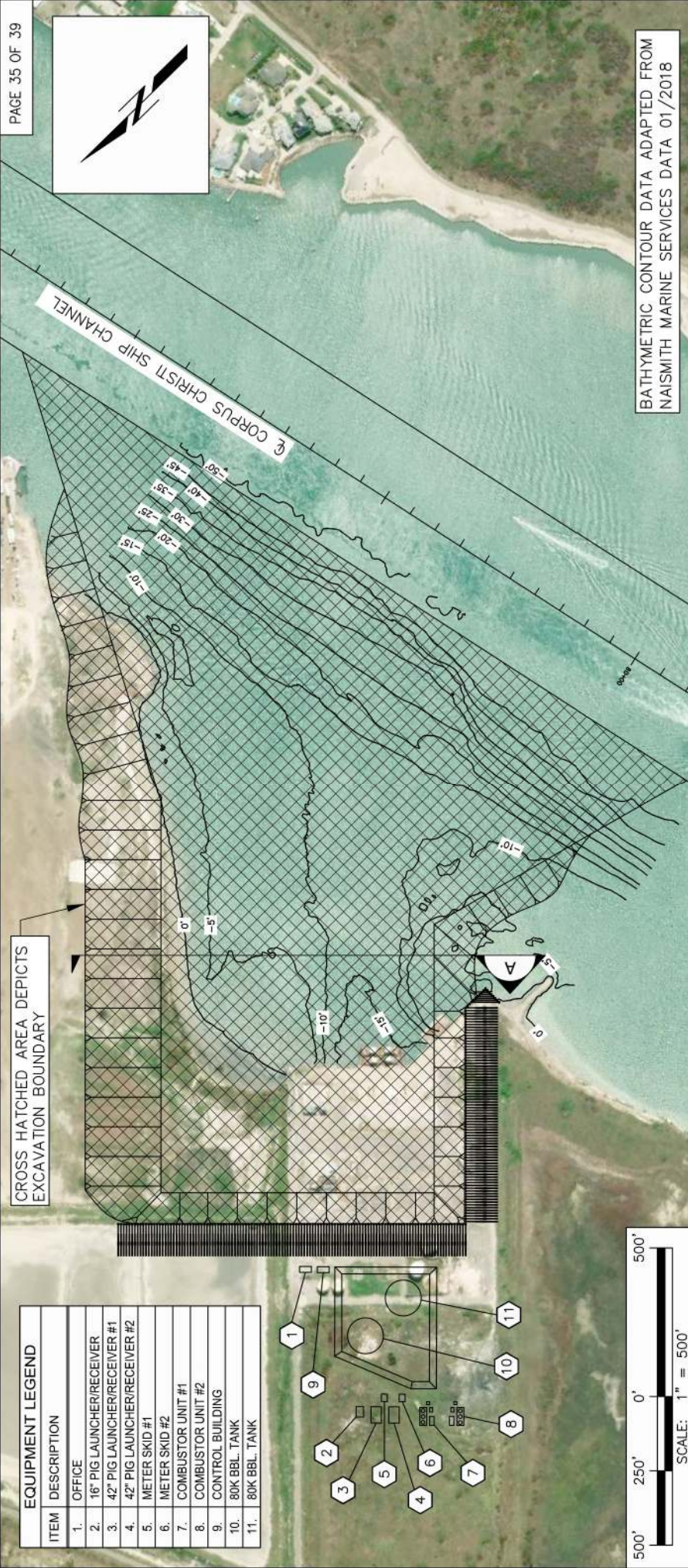
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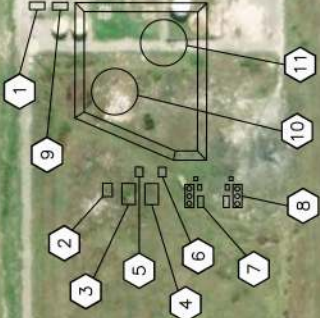


BATHYMETRIC CONTOUR DATA ADAPTED FROM  
NAISMITH MARINE SERVICES DATA 01/2018

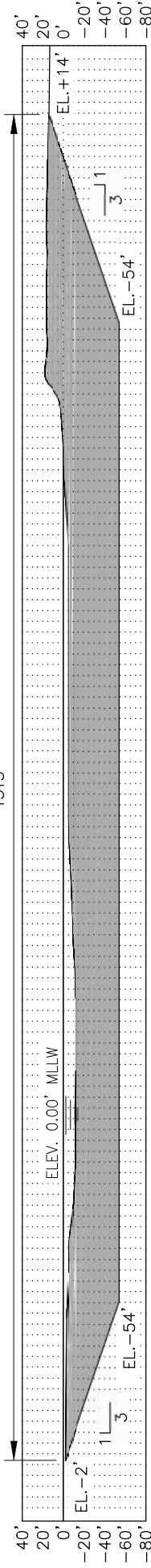


CROSS HATCHED AREA DEPICTS  
EXCAVATION BOUNDARY

ITEM	DESCRIPTION
1.	OFFICE
2.	16" PIG LAUNCHER/RECEIVER
3.	42" PIG LAUNCHER/RECEIVER #1
4.	42" PIG LAUNCHER/RECEIVER #2
5.	METER SKID #1
6.	METER SKID #2
7.	COMBUSTOR UNIT #1
8.	COMBUSTOR UNIT #2
9.	CONTROL BUILDING
10.	80K BBL. TANK
11.	80K BBL. TANK



1313'



**A** CROSS SECTION  
SCALE: 1"=150'

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PLAN VIEW/CROSS SECTION  
Harbor Island Marine Terminal



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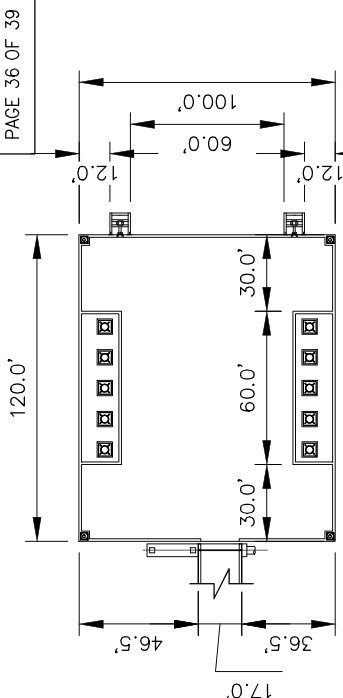
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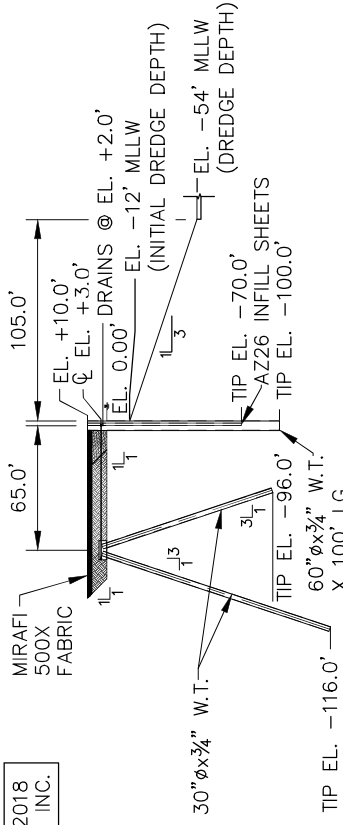
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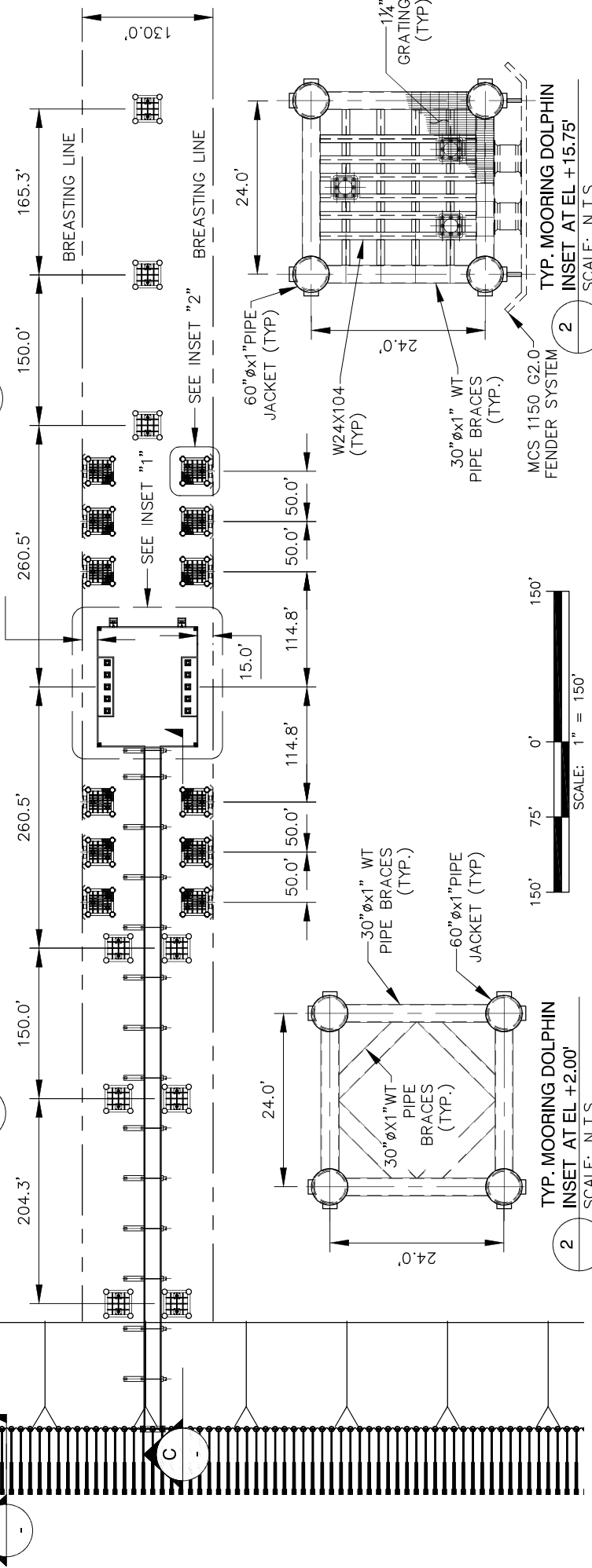
DOCKING DETAILS ADAPTED FROM 12/2018 DATA PROVIDED BY LLOYD ENGINEERS, INC.



1 SHIP DOCK INSET  
SCALE: 1"=75'



B TYPICAL OVERALL BULKHEAD SECTION  
SCALE: 1"=100'




2 TYP. MOORING DOLPHIN INSET AT EL. +15.75'  
SCALE: N.T.S.

PLAN VIEW/CROSS SECTIONS  
Harbor Island Marine Terminal

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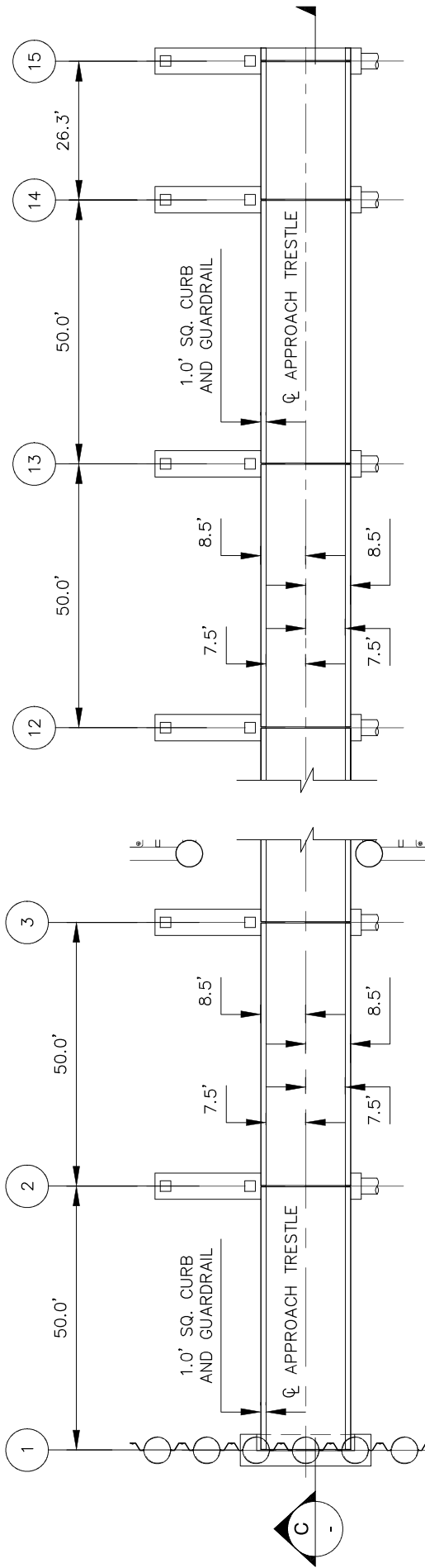
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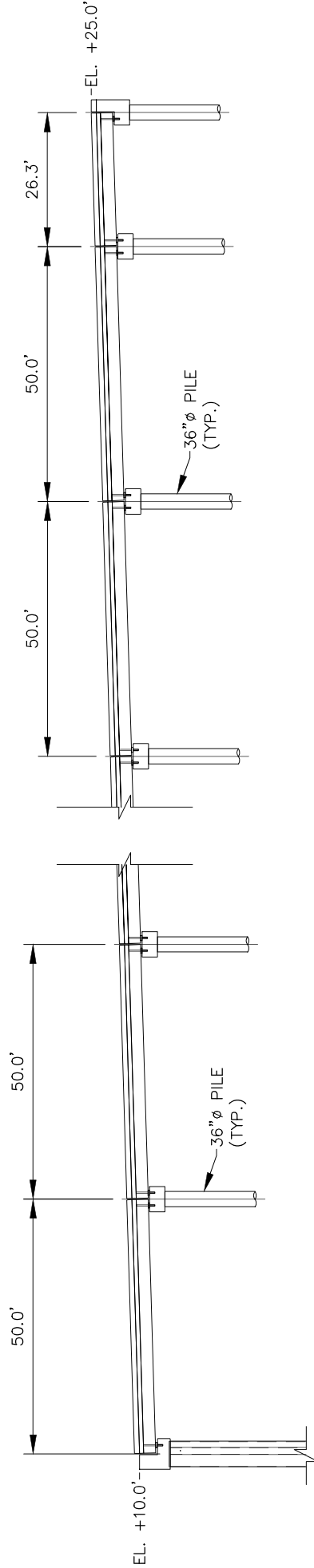
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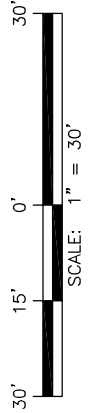
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SAN PATRICIO & NUECES COUNTIES, TEXAS  
Prepared BY: Project Consulting Services, Inc.



1 APPROACH AND PIPE TRESTLE ENLARGED PLAN  
SCALE: 1"=30'-0"



C APPROACH TRESTLE SECTION  
SCALE: 1"=30'-0"



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PLAN VIEW/CROSS SECTIONS  
Harbor Island Marine Terminal



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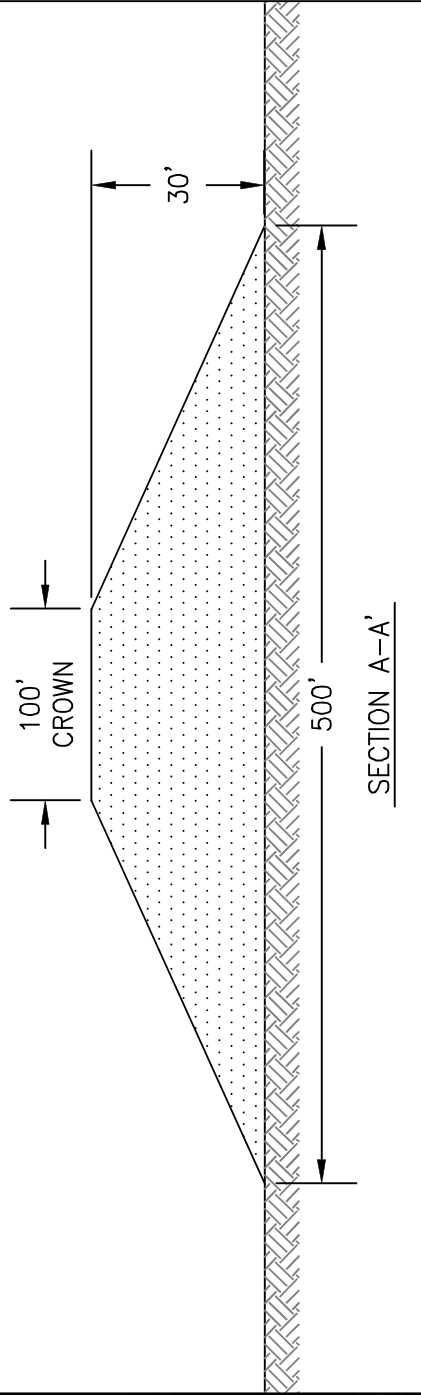
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**NOTE:**

THE DISPOSAL SITE FOR THE EXCAVATED MATERIAL FROM THE PROPOSED HARBOR ISLAND MARINE TERMINAL WILL BE STRATEGICALLY PLACED ALONG THE NORTHERN BANKLINE OF THE CORPUS CHRISTI SHIP CHANNEL (CCSC), AS DETAILED. UPON PLACEMENT OF EXCAVATED MATERIAL, THE FILL MATERIAL WILL BE PLANTED WITH APPROPRIATE VEGETATION TO STABILIZE IT AND TO ENHANCE THE ECOLOGICAL DIVERSITY WITHIN THE AREA. AS A CONCEPTUAL COMPENSATORY MITIGATION PLAN, THE MATERIAL IS BEING POSITIONED ALONG THE SHORELINE TO PROTECT THE REDFISH BAY STATE SCIENTIFIC AREA (RBSSA), MORE SPECIFICALLY THE SENSITIVE SEAGRASS BEDS, FROM FURTHER IMPACTS RESULTING FROM THE FAILING SHORELINE BETWEEN THE RBSSA AND THE CCSC.



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**CONCEPTUAL MITIGATION**  
PLs & Fac: Midway T.F. to Harbor Island



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**Type(s) and Volumes of the Material being Discharged**

Excavation/Fill for Pipeline Installation	Volume (yd <sup>3</sup> )	Material Type
<b>Action</b>		
Terrestrial excavation/fill in freshwater wetlands	68,112	Native freshwater marsh
Terrestrial excavation/fill in waterbodies	4,585	Freshwater ponds/drainages
Excavation/fill in seagrass & oyster bed	90,351	Vegetated bay bottoms
Excavation/fill in estuarine wetlands & tidal flats	60,393	Native estuarine marsh
Excavation/fill for pipeline burial in oil & gas canals	52,770	Canal bottom material
Excavation/fill for pipeline burial in Redfish Bay	87,925	Unvegetated bay bottoms
<b>Excavation/Fill at Facilities</b>		
<b>Action</b>	<b>Volume (yd<sup>3</sup>)</b>	<b>Material Type</b>
Fill for Redfish Facility	106,076	Earthen fill
Fill for Emergency Access Road (Earthen)	163	Earthen fill
Fill for Emergency Access Road (Aggregate)	735	Limestone aggregate
Fill for Emergency Access Road (Rip-Rap)	17	Rock rip-rap
Excavation for Emergency Access Road	102	Water bottom (tidal)
Excavation at Harbor Island (Uplands)	2,802,849	Uplands
Excavation at Harbor Island (Water Bottoms)	2,785,450	Water bottom (tidal)



**Surface Area in Acres of Wetlands or Other Waters Filled**

Midway to Redfish Pipeline Installation		Impact Type
Resource Type	Affected Acres	Impact Type
Wetlands (Freshwater)	13.08	Temporary
Wetlands (Estuarine/Tidal)	0.45	Temporary
Waterbodies	0.27	Temporary
Redfish to Harbor Island Pipeline Installation		Impact Type
Resource Type	Affected Acres	Impact Type
Black Mangrove	0.41	Temporary
Oyster Shell	0.01	Permanent
Seagrass Beds	2.30	Permanent
Seagrass Beds	5.46	Temporary
Tidal Flats	10.56	Temporary
Water Bottoms (O&G canal)	21.96	Temporary
Water Bottoms (Redfish Bay)	23.84	Temporary
Wetlands (Estuarine/Marsh)	0.11	Temporary
Redfish Facility/Emergency Access Road		Impact Type
Resource Type	Affected Acres	Impact Type
Wetlands (Freshwater)	15.92	Permanent
Wetlands (Estuarine/Tidal)	0.75	Permanent
Water Bottom (Tidal)	0.03	Temporary

NOTES FOR TERRESTRIAL CROSS SECTIONS:

- 1.) PRIOR TO COMMENCEMENT OF EXCAVATION ACTIVITIES THE APPLICANT OR THEIR CONTRACTOR SHALL NOTIFY TEXAS811.
- 2.) SPOIL WILL BE TEMPORARILY STOCKPILED ADJACENT TO THE PIPELINE TRENCH AND USED AS BACKFILL UPON COMPLETION.

NOTES ON MARINE CROSS SECTIONS:

- 1.) PRIOR TO COMMENCEMENT OF EXCAVATION ACTIVITIES THE APPLICANT OR THEIR CONTRACTOR SHALL NOTIFY TEXAS811.
- 2.) SPOIL WILL BE TEMPORARILY STOCKPILED ADJACENT TO THE PIPELINE TRENCH AND USED AS BACKFILL UPON COMPLETION.
- 3.) PILE SUPPORTED SIGNS WILL BE DEPLOYED ADJACENT TO THE TEMPORARY SPOIL AREAS TO NOTIFY MARINERS OF THE POTENTIAL SUBMERGED HAZARD

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AXIS MIDSTREAM

**IMPACT TABLES & NOTES**  
PLs & Fac: Midway T.F. to Harbor Island

**AXIS MIDSTREAM HOLDINGS, LLC**

Proposed Pipelines & Facilities  
MIDWAY to HARBOR ISLAND PROJECT

SAN PATRICIO & NUECES COUNTIES, TEXAS

Prepared BY: Project Consulting Services, Inc.



# **ATTACHMENT 3.0**

## **PURPOSE & NEED**



**Permit Application SWG-2018-00789**  
**Axis Midstream Holdings, LLC – Midway to Harbor Island Pipelines & Terminal**  
**PURPOSE & NEED**

**1. Introduction**

Axis Midstream Holdings, LLC proposes to construct a series of facilities and pipelines to store, transport, and load crude oil into marine transport vessels. The project consists of three facilities interconnected by pipelines. The project components are the proposed Midway Tank Farm (Midway) south of the City of Taft, Texas which will be connected to the Aransas Pass Staging Facility (Aransas Facility), west of the City of Aransas Pass, by a pipeline bundle (1-2” fiber optic, 1-6” gas supply (last mile) and 2-36” oil pipelines). From the Aransas Facility the project continues easterly with a bundle of pipelines (1-2” fiber optic, 1-6” gas supply, 1-16” intermix return and 2-42” crude pipelines) terminating at the proposed Harbor Island Loading Terminal (Harbor Island).

The Project consists of the following components:

- **Midway Tank Farm:** The approximately 52-acre Midway site will be located south of the intersection of FM 72 and FM 893 in San Patricio County, Texas. The facility will consist of 4-500K, 2-350K, 5-250K and 1-100K barrel above-ground storage tanks. The site is currently in agriculture. There are no ecological or culturally sensitive features involved with this site.

Project viability required approximately 285,000 barrel/day throughput commitments. Current commercial efforts have yielded interconnection agreements and volume commitments from four (4) major crude suppliers exceeding 500,000 barrels/day. Commercial negotiations with crude suppliers are ongoing and these volumes are anticipated to increase. Midway was selected as the bulk storage site due to the growing nexus of crude oil pipeline infrastructure being planned or built in this area for redelivery to the San Patricio County markets.

- **Midway to Aransas Facility Pipelines:** The Midway to Aransas Facility connection will consist of the installation of approximately 19.5 miles of 1-2” fiber optic line and 2-36” crude oil pipelines. Each of the 36” pipelines lines are sized to move 80,000 barrels of crude per hour to Aransas Pass. From Midway to FM 1069 (N. Main St.), the pipeline will be installed primarily within agricultural fields. From FM 1069 to Aransas Pass the pipeline will parallel an existing Boardwalk Pipeline corridor adjacent to a residential area located on Live Oak Ridge, north of the Town of Ingleside. A 6” gas supply pipeline will be installed and co-located with the 2-36” lines from a tie-in point on the Boardwalk pipeline to the Aransas Facility, approximately 1-mile.

- **Aransas Pass Staging Facility:** The approximately 60-acre Aransas Facility site is located south of the intersection of Hwy. 361 and FM 2725 adjacent to the Gulf Intracoastal Waterway (GIWW). Aransas Facility is proposed to include 5-500K and 5-350K barrel above-ground storage tanks with associated piping, tank manifolds, incoming and outgoing pigging areas, two (2) ship loading pumps and a recycle pump area. Of the 60-acre site, approximately 16.67 acres are jurisdictional wetlands and the remainder is non-wetlands.



• **Aransas Facility to Harbor Island Pipelines:** The Aransas Facility to Harbor Island segment of the project will consist of the installation of 1-2” fiber optic line, 1-6” gas supply line, 1-16” intermix return line and 2-42” crude pipelines approximately 5.5 miles in length. The 42” pipelines are designed to allow the loading of two marine vessels at a maximum rate of 80,000 barrels/hour. The 6-inch gas supply line will serve as a fuel source for the vapor destruction equipment. The 16” intermix return line will move product from the remix tanks at Harbor Island back to the Aransas Facility. The fiber optic lines will be installed to facilitate operational communications. Field instrumentation for automated valves, tank levels, etc., will be monitored and operated from within a centralized control room.

The lines will be installed from Aransas Facility across the GIWW and Redfish Bay and terminate at Harbor Island. The pipelines will be horizontally directionally drilled (HDD) from the mainland, passing below the GIWW and a portion of Redfish Bay. From the HDD point of exit to Harbor Island the lines will be trenched and backfilled within an existing oil and gas canal system and within the open waters of the bay at a minimum depth of cover of 3 feet.

• **Harbor Island Loading Terminal:** Harbor Island is located 0.5 miles west of the intersection of Hwy 361 and the Corpus Christi Navigational Channel approximately 1.5-miles northwest of the Town of Port Aransas. An approximately 20-acre site will contain the necessary infrastructure behind the berthing facilities (i.e., piping, loading equipment, 2-80K bbl above ground remix tanks, etc.). A bulkhead will be constructed on the northwest and southwest sections of the tanker slip. The berthing area will contain the approach trestle, ship dock platform and mooring dolphins. Ship berths will be approximately 730-ft. in length and 1164-ft. in width. Berths are sized to accommodate two vessels. The berthing area and access from the Corpus Christi Channel will be dredged to a depth of  $\pm$  54-ft. MLLW to match the ship channel project depth.

More detailed plan drawings are included within the Corps of Engineers §10/404 permit application.

## 2. Purpose and Need

The purpose of the project is to construct facilities and pipelines to transport crude oil for loading into oil tankers. The project will facilitate the transport of crude oil produced from the Permian Basin and other crude producing areas to a terminal for transfer and export. The project is consistent with national, state and local strategic initiatives for the development of crude oil export to meet growing market needs.

Currently the U.S. Army Corps of Engineers (USACE) and the Port of Corpus Christi (POCC) are preparing to dredge the existing Corpus Christi Ship Channel to a width of 530-feet and a depth of 54-foot Mean Lower Low Water (MLLW) to allow for safe passage of marine vessels. The project is of critical importance for the energy sector within the State of Texas and consistent with US regulations for crude export. The ship channel deepening project was initially authorized by Congress under the Water Resources Development Act (WRDA) of 2007. The Congress re-authorized the Project again in WRDA 2014 and reaffirmed its commitment under the Water Infrastructure Improvements for the Nation Act of 2016 (WIIN). Funds for the Project have been appropriated by the USACE. The Midway to Harbor Island Pipelines and Facilities Project is exactly the type of water dependent use that the ship channel project is intended to foster.