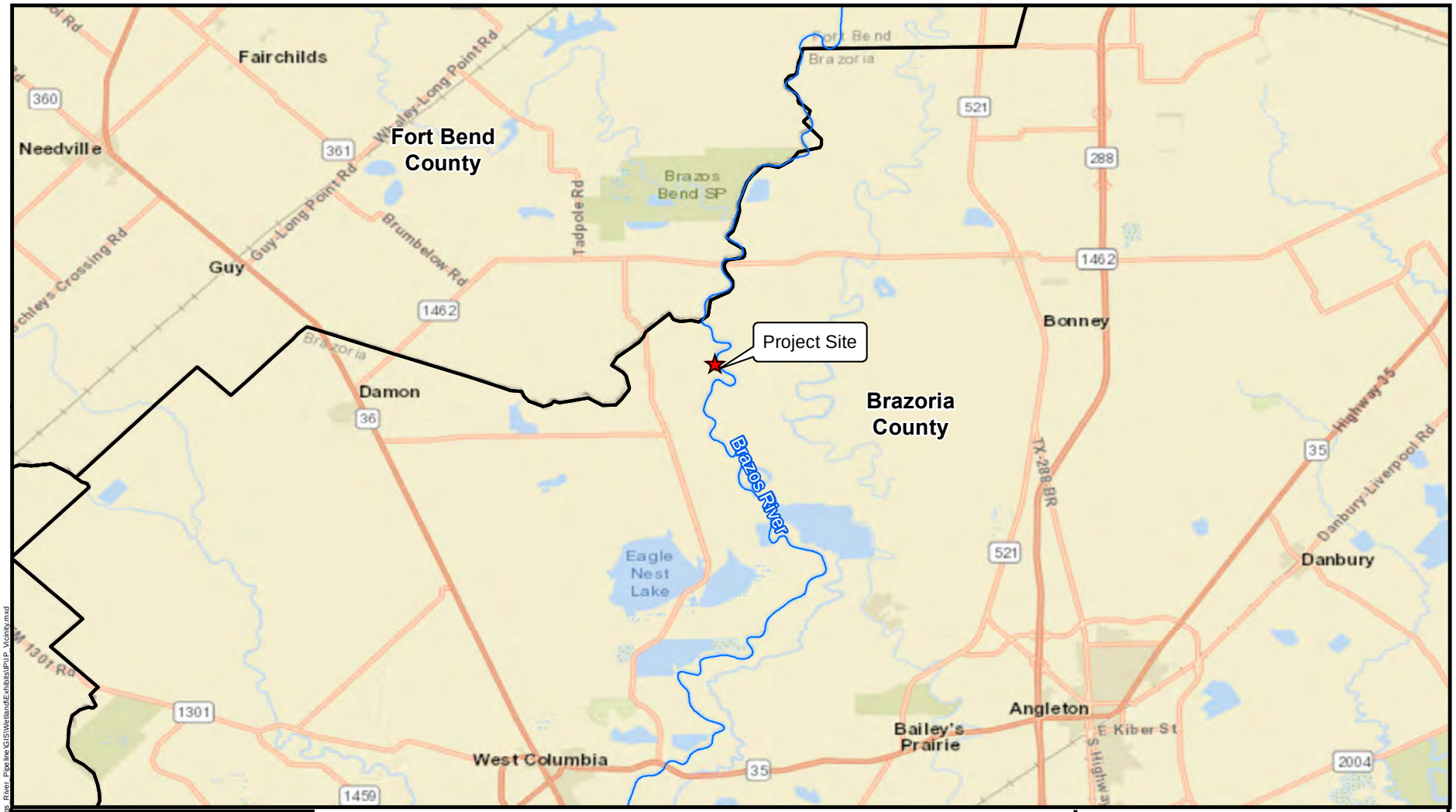


N

Datum: NAD 1983
Projection:Texas State Plane
Zone: 4204
Units: Feet
ESRI Basemap

0 1.5 3 Miles
0 2,800 5,600 Meters

Project Site
Streams (NHD)

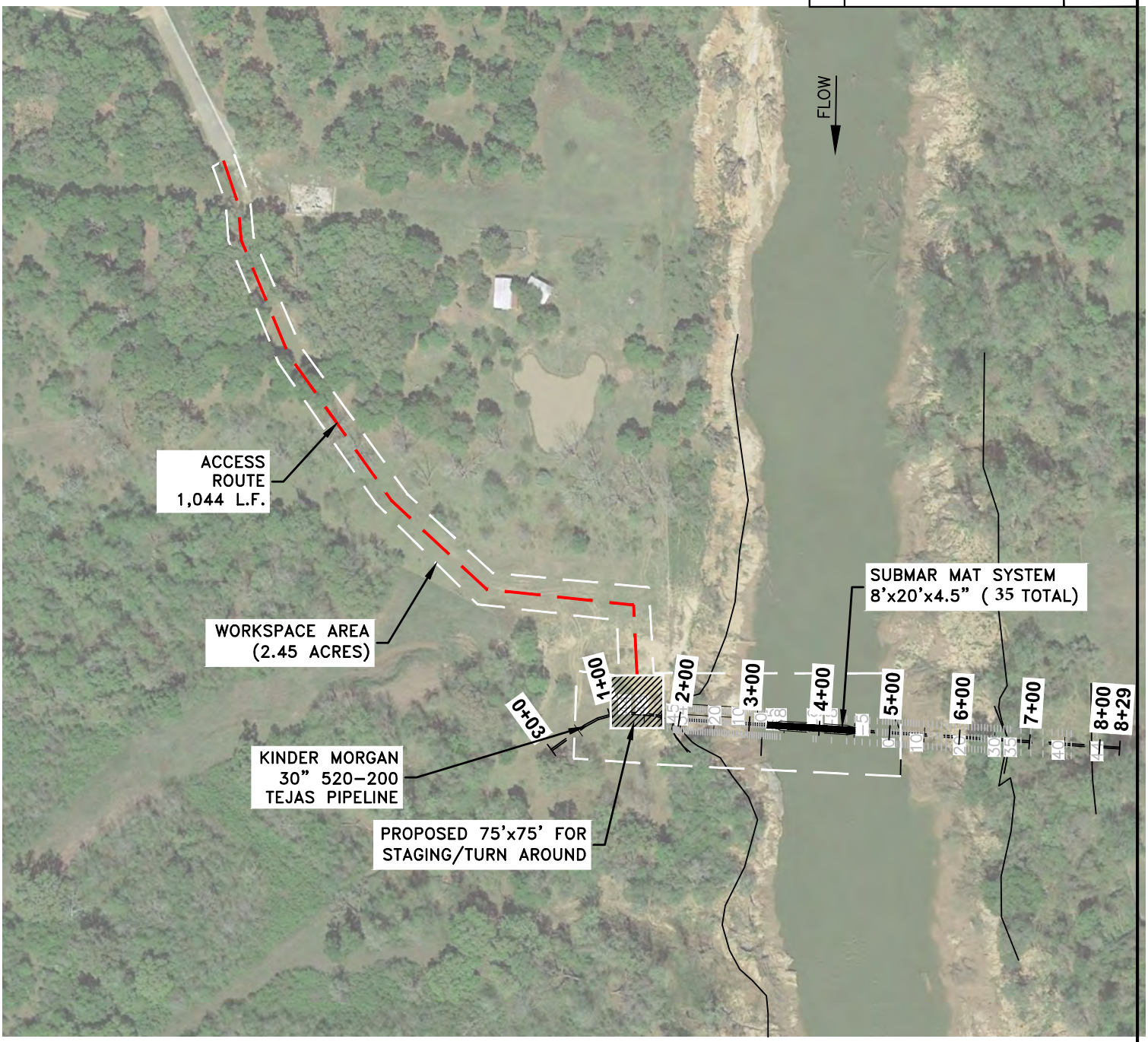
BGE, Inc.
10777 Westheimer, Suite 400, Houston TX 77042
Tel: 281-558-8700 Fax: 281-558-9701

Figure 1. Vicinity Map
Kinder Morgan Tejas 520-200
Pipeline Exposure Project
Brazoria County, Texas

Prepared By: BGE	Scale: 1 " = 20,000 feet
Job No.: 5750-04	Date: August 2019

\\krwongwarnet\Regional\Regions\Texas\Projects\Kinder Morgan\5750-04 Brazos River Pipeline\GIS\Wetland\Exhibits\IPUP_Vicinity.mxd

No.	REVISION DESCRIPTION	DATE
1	REVISED PER COMMENTS	09/16/19
2	REVISED PER COMMENTS	10/22/19



0' 200' 400' 600'

SCALE: 1"=200'

SUBMAR®
1711 DUNN STREET
HOUMA, LA 70360
PH. 985-868-0001
WEBSITE: WWW.SUBMAR.COM

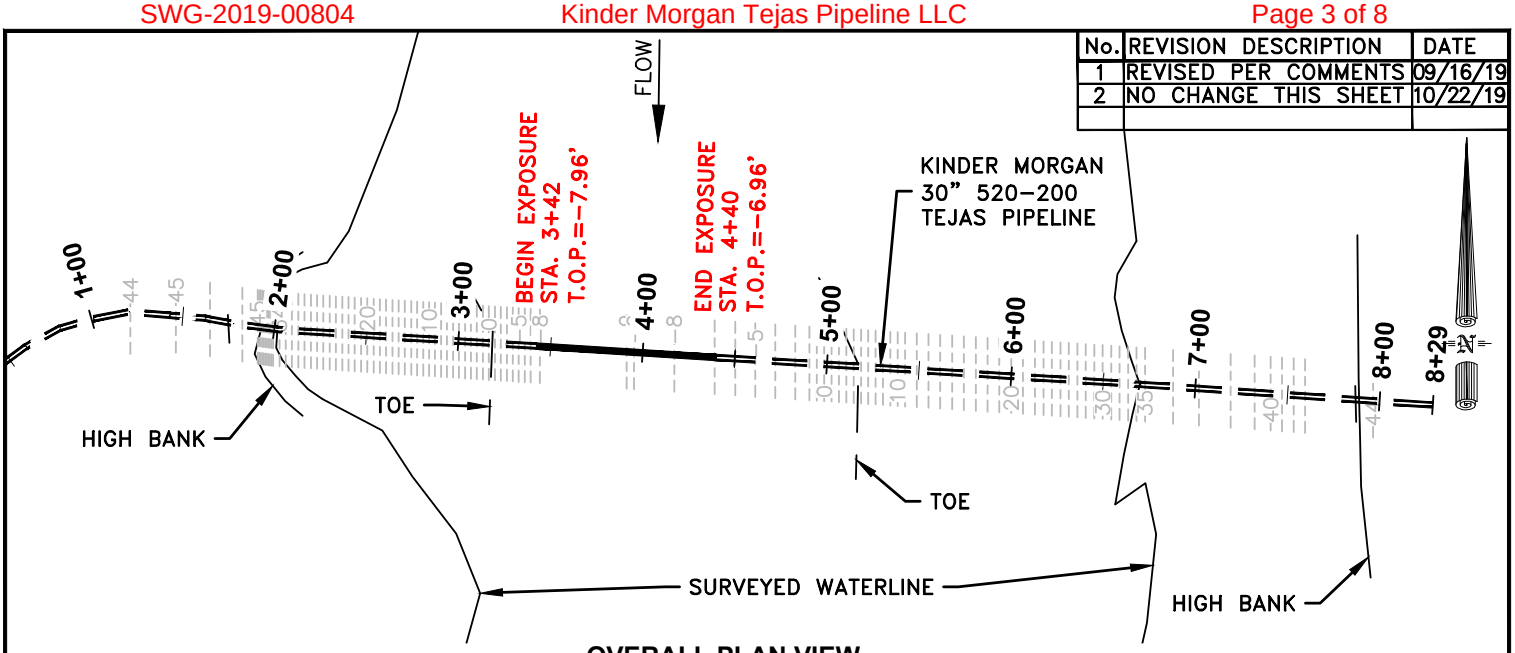
BRAZOS RIVER
BRAZORIA COUNTY
DAMON, TEXAS

KINDER MORGAN ENERGY PARTNERS, L.P.

THESE CONCEPTUAL DRAWINGS ARE PREPARED BY SUBMAR FOR ESTIMATING PURPOSES ONLY AND ARE NOT CONSTRUCTION DRAWINGS. THESE CONFIDENTIAL DRAWINGS MAY NOT BE COPIED UNLESS APPROVED BY SUBMAR, INC. COPYRIGHT © SUBMAR, INC. 2019 ALL RIGHTS RESERVED.

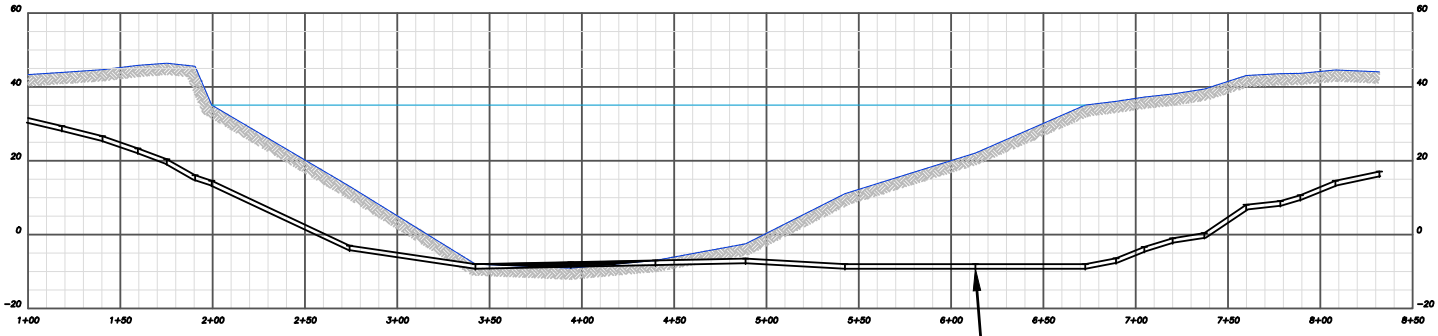
DATE: 09/20/2019	DWN: KJD	SHEET TITLE: ACCESS PLAN/ WORKSPACE	SHEET No: C-105
PROJECT No: 16030.10	CHK: JMF		
CONTACT: CLAYTON THEDINGER	PHONE No: 281-689-4506		

No.	REVISION DESCRIPTION	DATE
1	REVISED PER COMMENTS	09/16/19
2	NO CHANGE THIS SHEET	10/22/19



OVERALL PLAN VIEW

SCALE: 1"=100'



PROFILE VIEW

HORIZONTAL SCALE: 1"=100'

VERTICAL SCALE: 1"=30'

SHEET INDEX:

No.	TITLE
C-100	EXISTING CONDITIONS
C-101	OVERALL PLAN/PROFILE
C-102	PLAN/PROFILE
C-103	PLAN/PROFILE
C-104	CROSS SECTION
C-105	ACCESS PLAN/WORKSPACE
C-106	DETAILS

0' 100' 200' 300'

SCALE: 1"=100'

NOTES:

1. THIS SURVEY IS FOR INFORMATIONAL PURPOSES ONLY AND WAS CONDUCTED ON THE GROUND ON 12/10/2018 BY CENTRAL STATES UNDERWATER CONTRACTING, INC. AND PROVIDED TO SUBMAR BY KINDER MORGAN.
2. ALL LOCATIONS OF UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE.
3. LOCATION OF RIGHT OF WAY SHOWN IS APPROXIMATE, INFORMATION WAS PROVIDED BY OWNER AND IS FOR INFORMATIONAL PURPOSES ONLY.
4. THE WATER ELEVATION WAS SURVEYED AT +35.0'
5. EXISTING CONTOURS DERIVED FROM PROVIDED SURVEY DATA.

SUBMAR®
1711 DUNN STREET
HOUMA, LA 70360
PH. 985-868-0001
WEBSITE: WWW.SUBMAR.COM

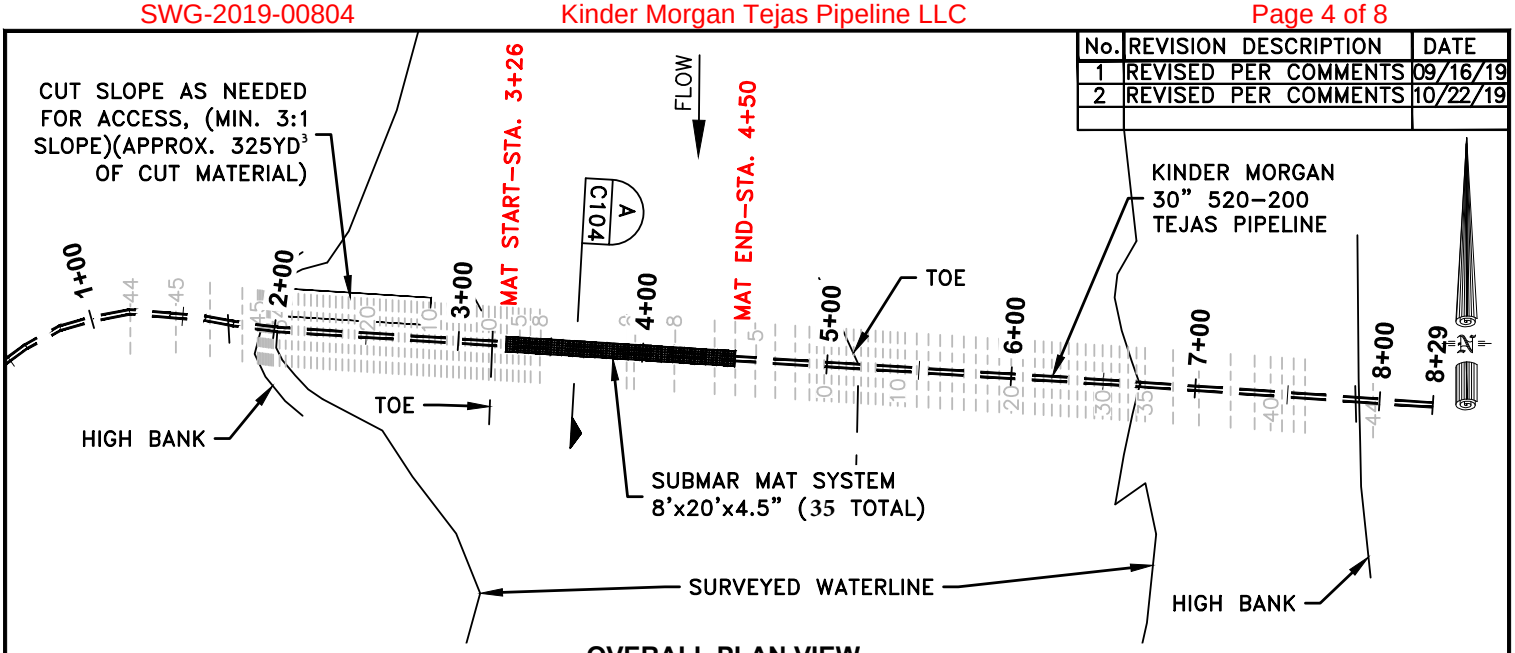
BRAZOS RIVER
BRAZORIA COUNTY
DAMON, TEXAS

KINDER MORGAN ENERGY PARTNERS, L.P.

THESE CONCEPTUAL DRAWINGS ARE PREPARED BY SUBMAR FOR ESTIMATING PURPOSES ONLY AND ARE NOT CONSTRUCTION DRAWINGS. THESE CONFIDENTIAL DRAWINGS MAY NOT BE COPIED UNLESS APPROVED BY SUBMAR, INC. COPYRIGHT © SUBMAR, INC. 2019 ALL RIGHTS RESERVED.

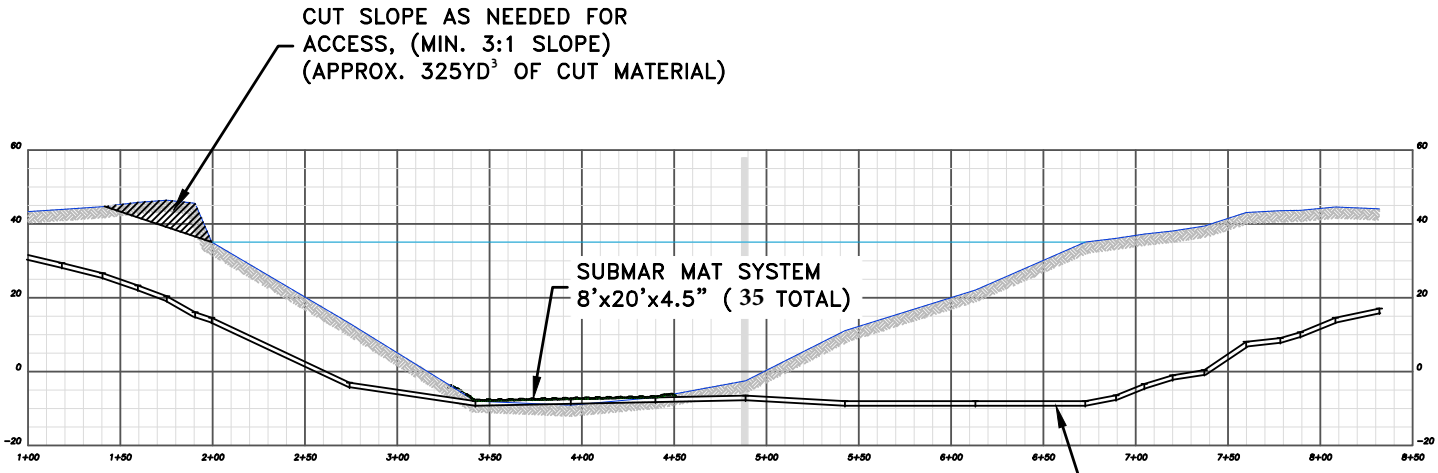
DATE: 09/20/2019	DWN: KJD	SHEET TITLE: EXISTING CONDITIONS	SHEET No: C-100
PROJECT No: 16030.10	CHK: JMF		
CONTACT: CLAYTON THEDINGER	PHONE No: 281-689-4506		

No.	REVISION DESCRIPTION	DATE
1	REVISED PER COMMENTS	09/16/19
2	REVISED PER COMMENTS	10/22/19



OVERALL PLAN VIEW

SCALE: 1"=100'



OVERALL PROFILE VIEW

HORIZONTAL SCALE: 1"=100'
VERTICAL SCALE: 1"=30'

NOTES:
1. THIS SURVEY IS FOR INFORMATIONAL PURPOSES ONLY AND WAS CONDUCTED ON THE GROUND ON 12/10/2018 BY CENTRAL STATES UNDERWATER CONTRACTING, INC. AND PROVIDED TO SUBMAR BY KINDER MORGAN.
2. ALL LOCATIONS OF UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE.
3. LOCATION OF RIGHT OF WAY SHOWN IS APPROXIMATE, INFORMATION WAS PROVIDED BY OWNER AND IS FOR INFORMATIONAL PURPOSES ONLY.
4. THE WATER ELEVATION WAS SURVEYED AT +35.0'

0' 100' 200' 300'

SCALE: 1"=100'

SUBMAR®
1711 DUNN STREET
HOUMA, LA 70360
PH. 985–868–0001
WEBSITE: WWW.SUBMAR.COM

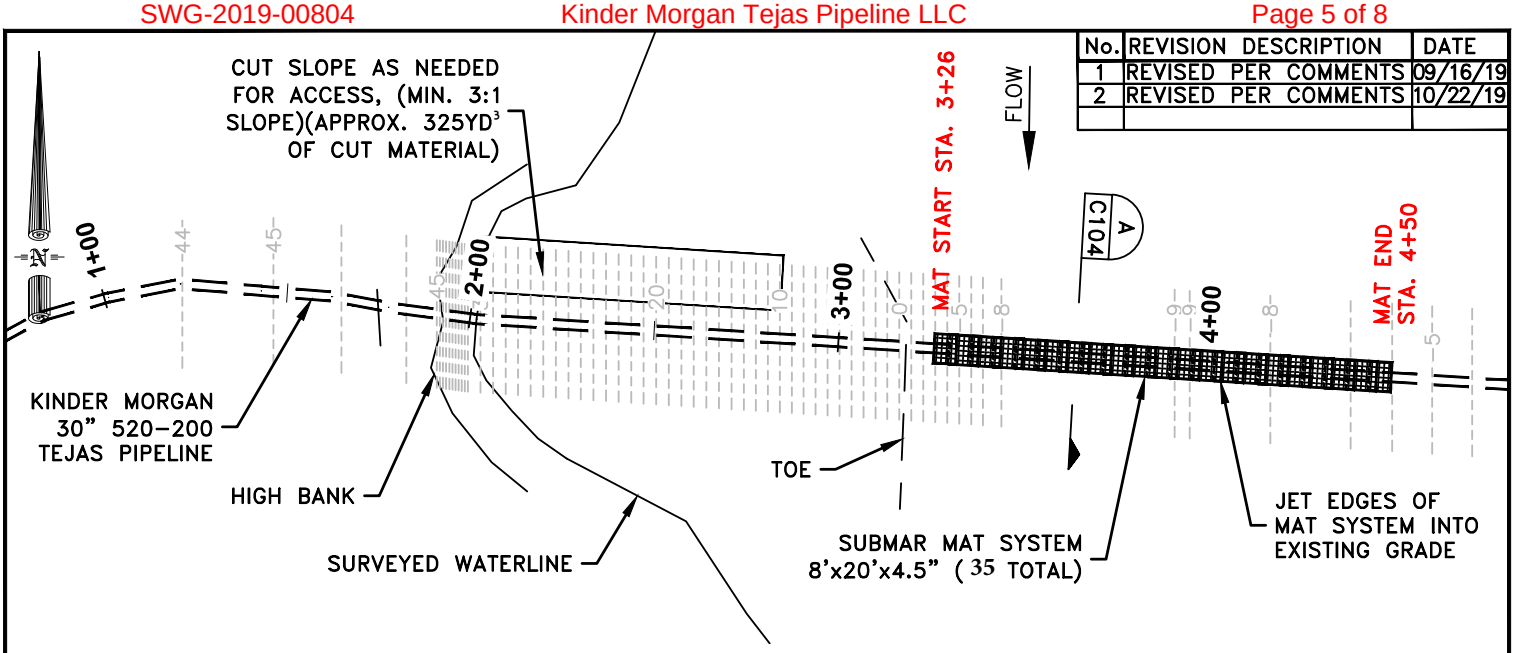
BRAZOS RIVER
BRAZORIA COUNTY
DAMON, TEXAS

KINDER MORGAN ENERGY PARTNERS, L.P.

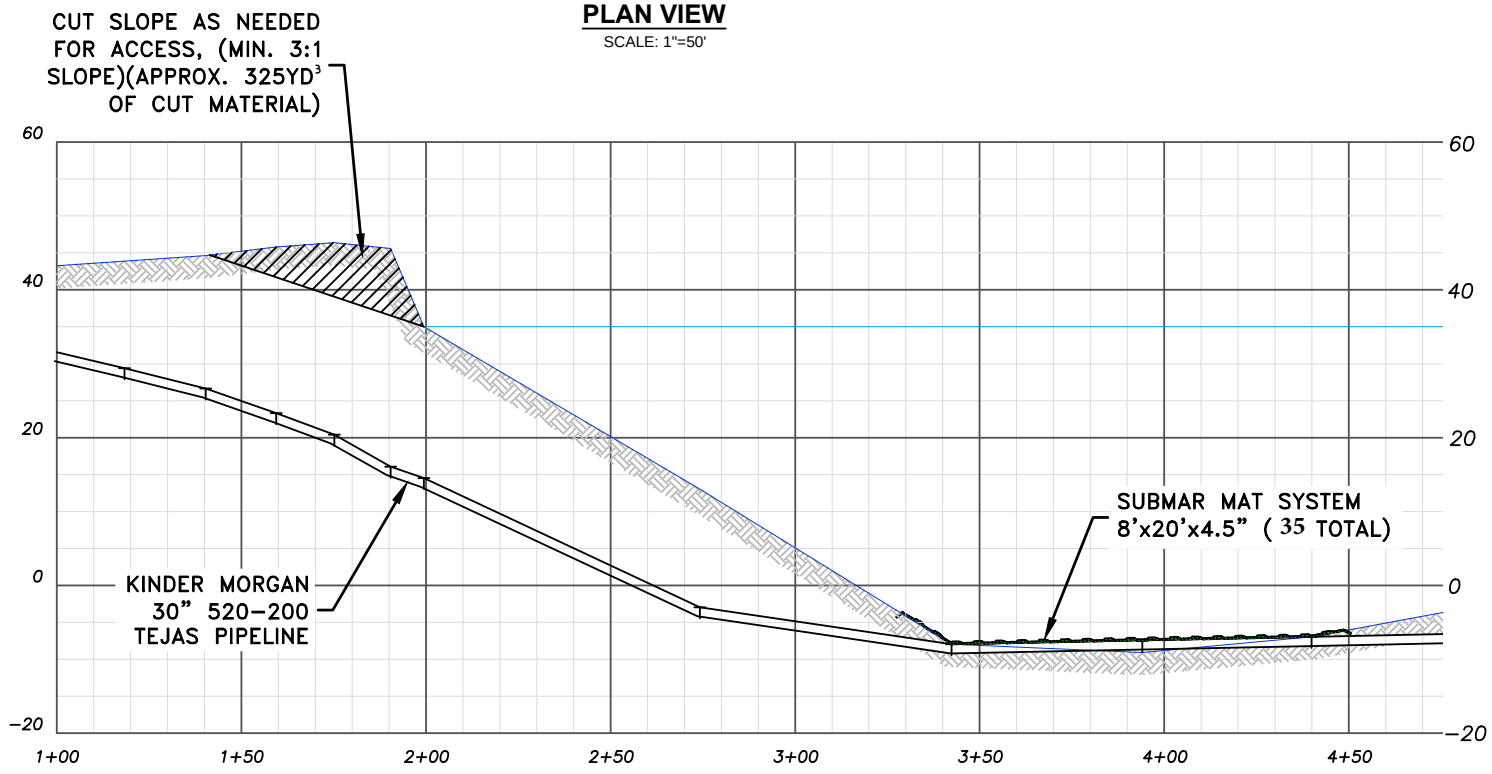
THESE CONCEPTUAL DRAWINGS ARE PREPARED BY SUBMAR FOR ESTIMATING PURPOSES ONLY AND ARE NOT CONSTRUCTION DRAWINGS. THESE CONFIDENTIAL DRAWINGS MAY NOT BE COPIED UNLESS APPROVED BY SUBMAR, INC. COPYRIGHT © SUBMAR, INC. 2019 ALL RIGHTS RESERVED.

DATE: 09/20/2019	DWN: KJD	SHEET TITLE: OVERALL PLAN/PROFILE	SHEET No: C-101
PROJECT No: 16030.10	CHK: JMF		
CONTACT: CLAYTON THEDINGER	PHONE No: 281–689–4506		

No.	REVISION DESCRIPTION	DATE
1	REVISED PER COMMENTS	09/16/19
2	REVISED PER COMMENTS	10/22/19



PLAN VIEW
SCALE: 1"=50'



PROFILE VIEW
HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=25'

0' 50' 100' 150'
SCALE: 1"=50'

SUBMAR®
1711 DUNN STREET
HOUMA, LA 70360
PH. 985-868-0001
WEBSITE: WWW.SUBMAR.COM

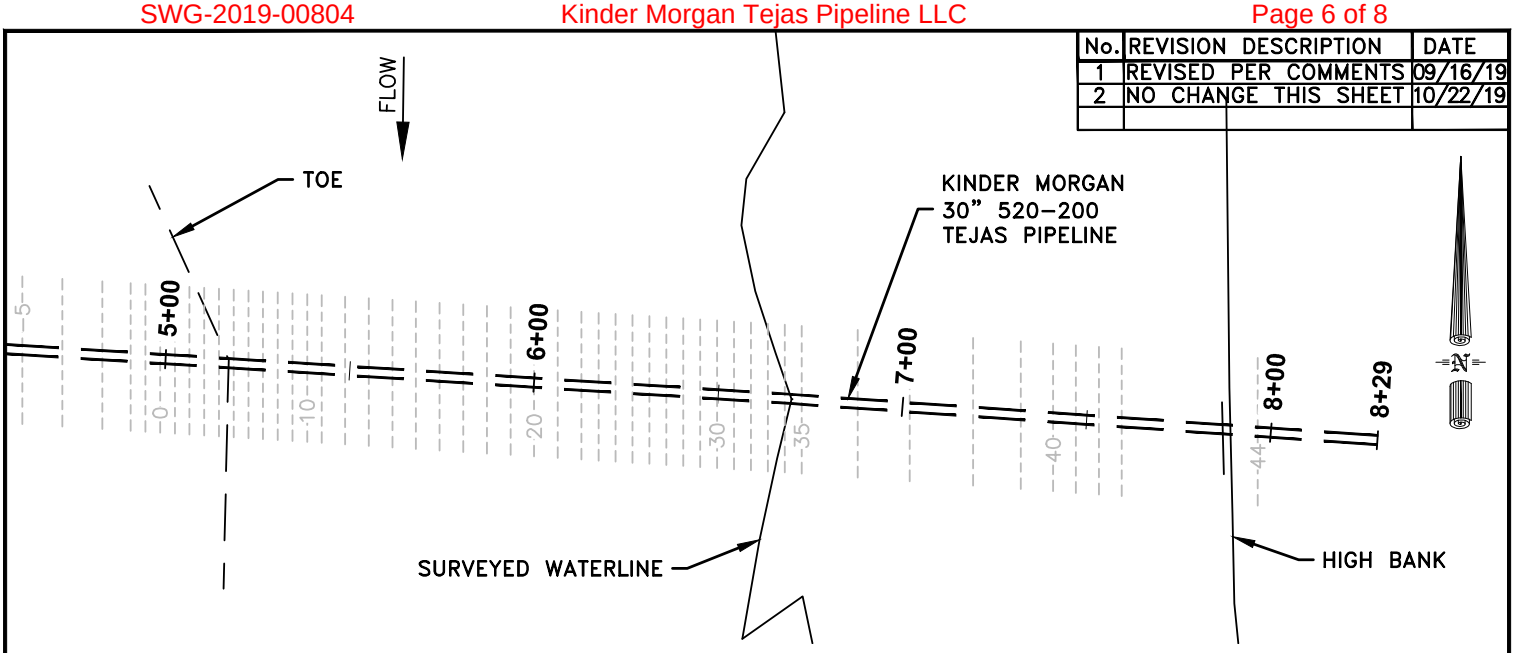
BRAZOS RIVER
BRAZORIA COUNTY
DAMON, TEXAS

KINDER MORGAN ENERGY PARTNERS, L.P.

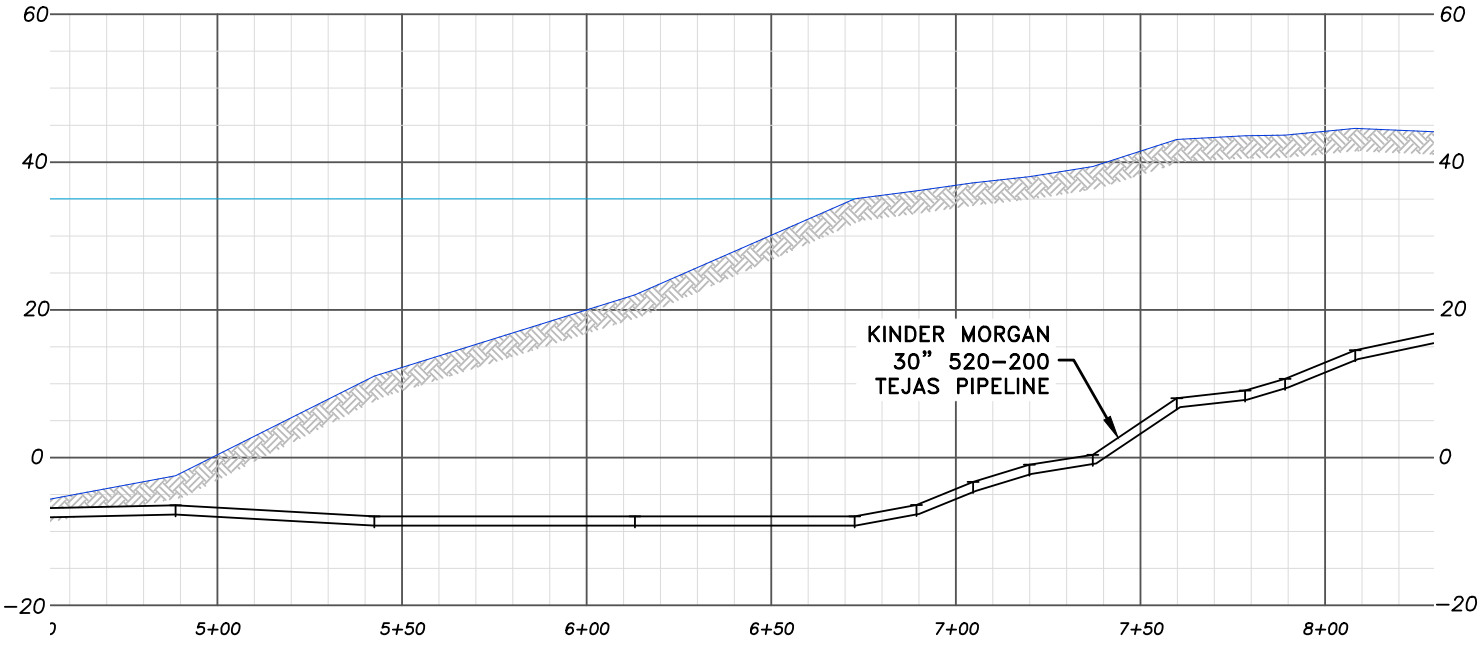
THESE CONCEPTUAL DRAWINGS ARE PREPARED BY SUBMAR FOR ESTIMATING PURPOSES ONLY AND ARE NOT CONSTRUCTION DRAWINGS. THESE CONFIDENTIAL DRAWINGS MAY NOT BE COPIED UNLESS APPROVED BY SUBMAR, INC. COPYRIGHT © SUBMAR, INC. 2019 ALL RIGHTS RESERVED.

DATE: 09/20/2019	DWN: KJD	SHEET TITLE: PLAN/PROFILE	SHEET No: C-102
PROJECT No: 16030.10	CHK: JMF		
CONTACT: CLAYTON THEDINGER	PHONE No: 281-689-4506		

No.	REVISION DESCRIPTION	DATE
1	REVISED PER COMMENTS	09/16/19
2	NO CHANGE THIS SHEET	10/22/19



PLAN VIEW
SCALE: 1"=50'



PROFILE VIEW
HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=25'

0' 50' 100' 150'
SCALE: 1"=50'

SUBMAR®
1711 DUNN STREET
HOUMA, LA 70360
PH. 985-868-0001
WEBSITE: WWW.SUBMAR.COM

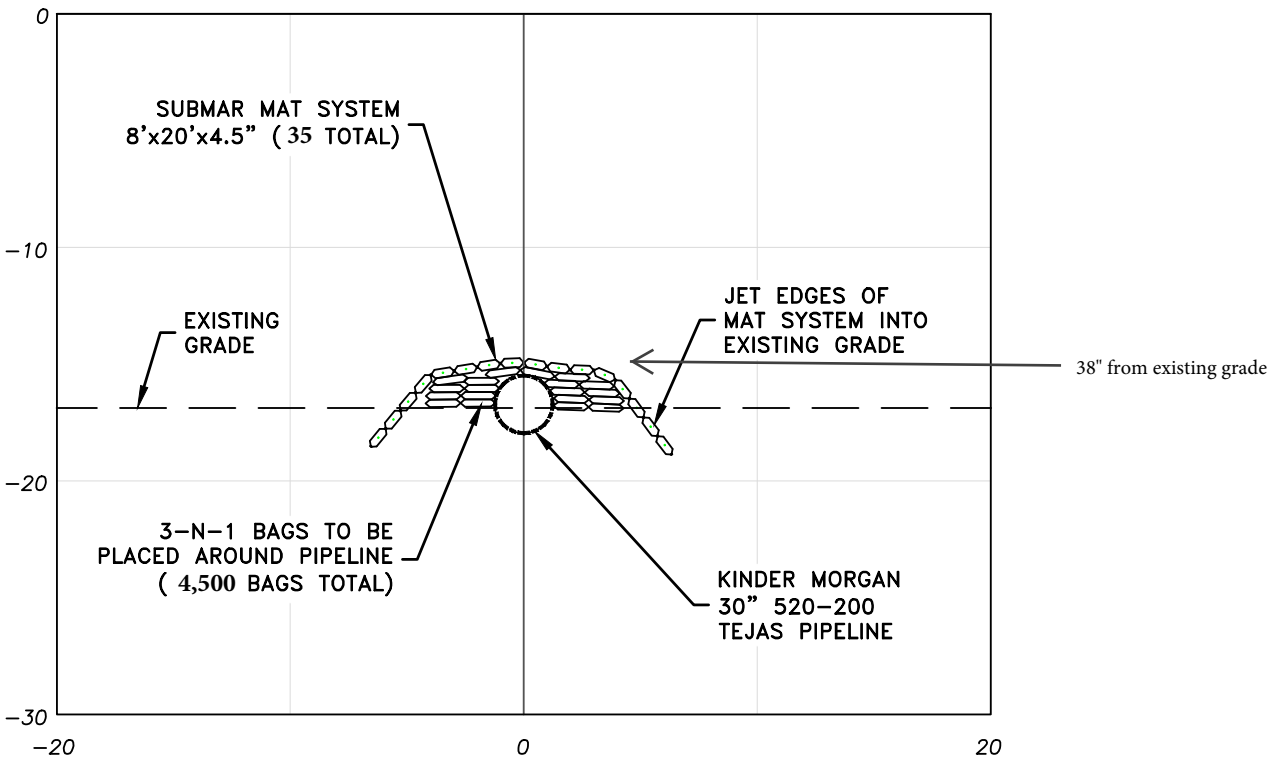
BRAZOS RIVER
BRAZORIA COUNTY
DAMON, TEXAS

KINDER MORGAN ENERGY PARTNERS, L.P.

THESE CONCEPTUAL DRAWINGS ARE PREPARED BY SUBMAR FOR ESTIMATING PURPOSES ONLY AND ARE NOT CONSTRUCTION DRAWINGS. THESE CONFIDENTIAL DRAWINGS MAY NOT BE COPIED UNLESS APPROVED BY SUBMAR, INC. COPYRIGHT © SUBMAR, INC. 2019 ALL RIGHTS RESERVED.

DATE: 09/20/2019	DWN: KJD	SHEET TITLE: PLAN/PROFILE	SHEET No: C-103
PROJECT No: 16030.10	CHK: JMF		
CONTACT: CLAYTON THEDINGER	PHONE No: 281-689-4506		

No.	REVISION DESCRIPTION	DATE
1	REVISED PER COMMENTS	09/16/19
2	REVISED PER COMMENTS	10/22/19



A
C100
SCALE: N.T.S.

SUBMAR®
1711 DUNN STREET
HOUMA, LA 70360
PH. 985−868−0001
WEBSITE: WWW.SUBMAR.COM

BRAZOS RIVER
BRAZORIA COUNTY
DAMON, TEXAS

KINDER MORGAN ENERGY PARTNERS, L.P.

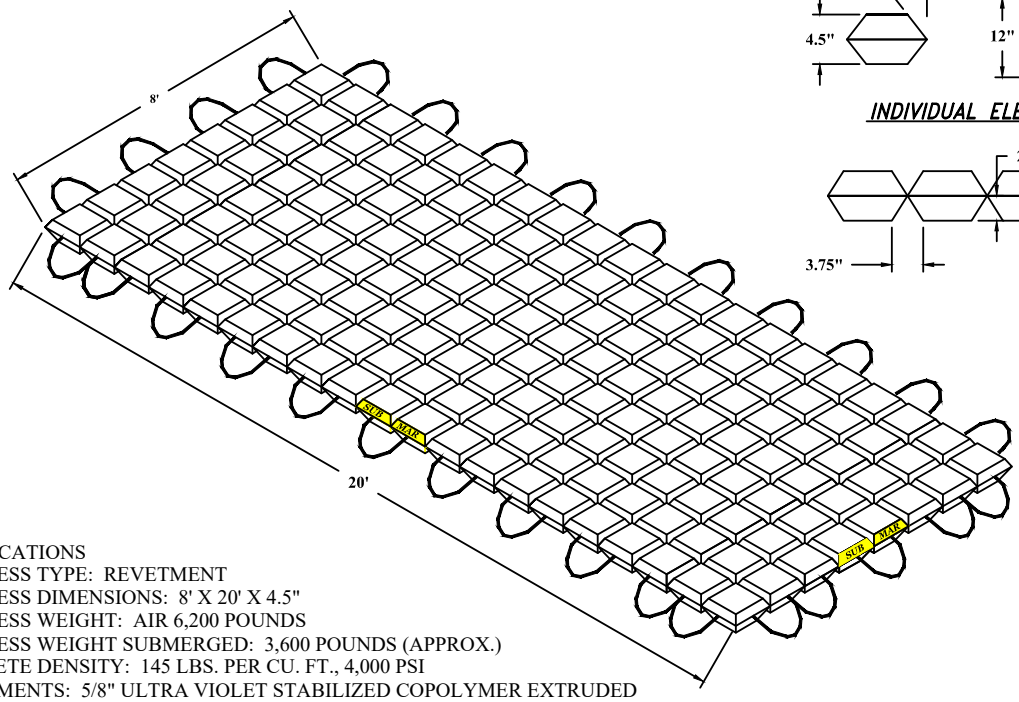
THESE CONCEPTUAL DRAWINGS ARE PREPARED BY SUBMAR FOR ESTIMATING PURPOSES ONLY AND ARE NOT CONSTRUCTION DRAWINGS. THESE CONFIDENTIAL DRAWINGS MAY NOT BE COPIED UNLESS APPROVED BY SUBMAR, INC. COPYRIGHT © SUBMAR, INC. 2019 ALL RIGHTS RESERVED.

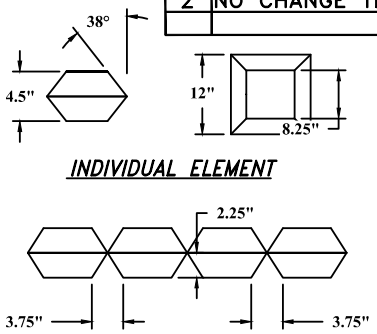
DATE: 09/20/2019	DWN: KJD
PROJECT No: 16030.10	CHK: JMF
CONTACT: CLAYTON THEDINGER	PHONE No: 281−689−4506

SHEET TITLE: CROSS SECTION

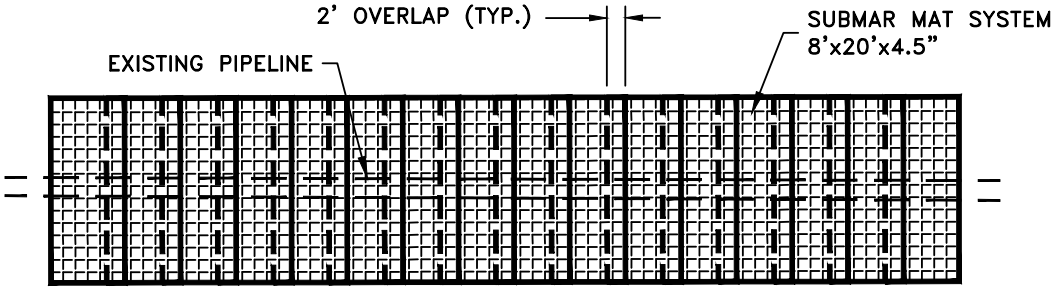
SHEET No: C-104

No.	REVISION DESCRIPTION	DATE
1	REVISED PER COMMENTS	09/16/19
2	NO CHANGE THIS SHEET	10/22/19

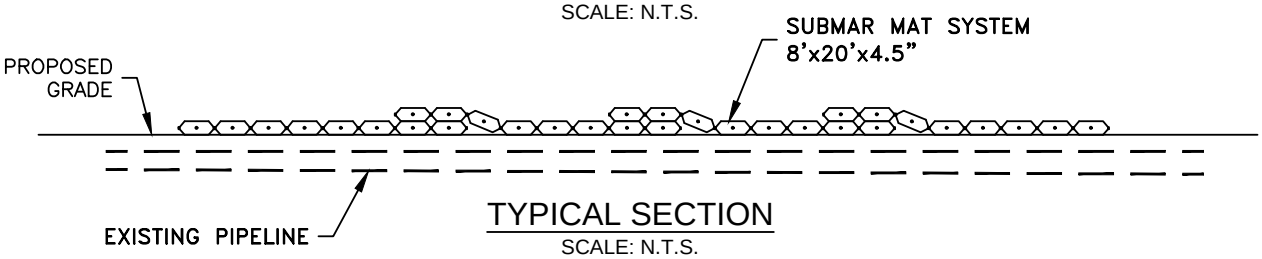




SPECIFICATIONS
MATTRESS TYPE: REVETMENT
MATTRESS DIMENSIONS: 8' X 20' X 4.5"
MATTRESS WEIGHT: AIR 6,200 POUNDS
MATTRESS WEIGHT SUBMERGED: 3,600 POUNDS (APPROX.)
CONCRETE DENSITY: 145 LBS. PER CU. FT., 4,000 PSI
160 ELEMENTS: 5/8" ULTRA VIOLET STABILIZED COPOLYMER EXTRUDED FIBER ROPE, MINIMUM TENSILE STRENGTH 9,500 POUNDS



MAT LAYOUT
SCALE: N.T.S.



TYPICAL SECTION
SCALE: N.T.S.

SUBMAR®
1711 DUNN STREET
HOUMA, LA 70360
PH. 985-868-0001
WEBSITE: WWW.SUBMAR.COM

BRAZOS RIVER
BRAZORIA COUNTY
DAMON, TEXAS

KINDER MORGAN ENERGY PARTNERS, L.P.

THESE CONCEPTUAL DRAWINGS ARE PREPARED BY SUBMAR FOR ESTIMATING PURPOSES ONLY AND ARE NOT CONSTRUCTION DRAWINGS. THESE CONFIDENTIAL DRAWINGS MAY NOT BE COPIED UNLESS APPROVED BY SUBMAR, INC. COPYRIGHT © SUBMAR, INC. 2019 ALL RIGHTS RESERVED.

DATE: 09/20/2019	DWN: KJD
PROJECT No: 16030.10	CHK: JMF
CONTACT: CLAYTON THEDINGER	PHONE No: 281-689-4506

SHEET TITLE: TYPICAL DETAIL

SHEET No: C-106