

PERMIT DRAWINGS

GULF COAST AMMONIA TERMINAL DOCK

GULF COAST AMMONIA (GCA) GALVESTON COUNTY, TEXAS

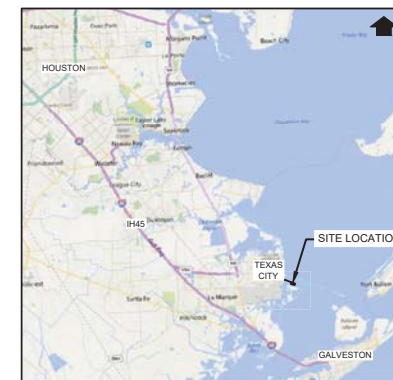
DECEMBER 2018



SOURCE: BING MAPS ONLINE

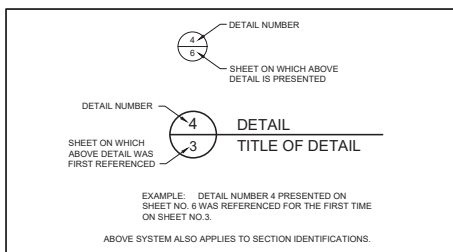
VICINITY MAP
0 2000'
APPROXIMATE SCALE

LIST OF DRAWINGS			
DRAWING NO.	DRAWING TITLE	LATEST REVISION	DATE
1	TITLE SHEET	0	DECEMBER 2018
2	OVERALL PROPOSED SITE PLAN	0	DECEMBER 2018
3	PROPOSED SITE PLAN	0	DECEMBER 2018
4	PROPOSED PIPE BRIDGE CROSSING PLAN	0	DECEMBER 2018
5	DREDGED CHANNEL CROSS SECTIONS	0	DECEMBER 2018
6	OFF SHORE DOCK PLAN AND SECTION	0	DECEMBER 2018
7	OFF SHORE DOCK MOORING PLAN	0	DECEMBER 2018



SOURCE: BING MAP ONLINE

LOCATION MAP
0 5 MILES
APPROXIMATE SCALE



DETAIL IDENTIFICATION LEGEND

PREPARED FOR:



GULF COAST AMMONIA

PREPARED BY:

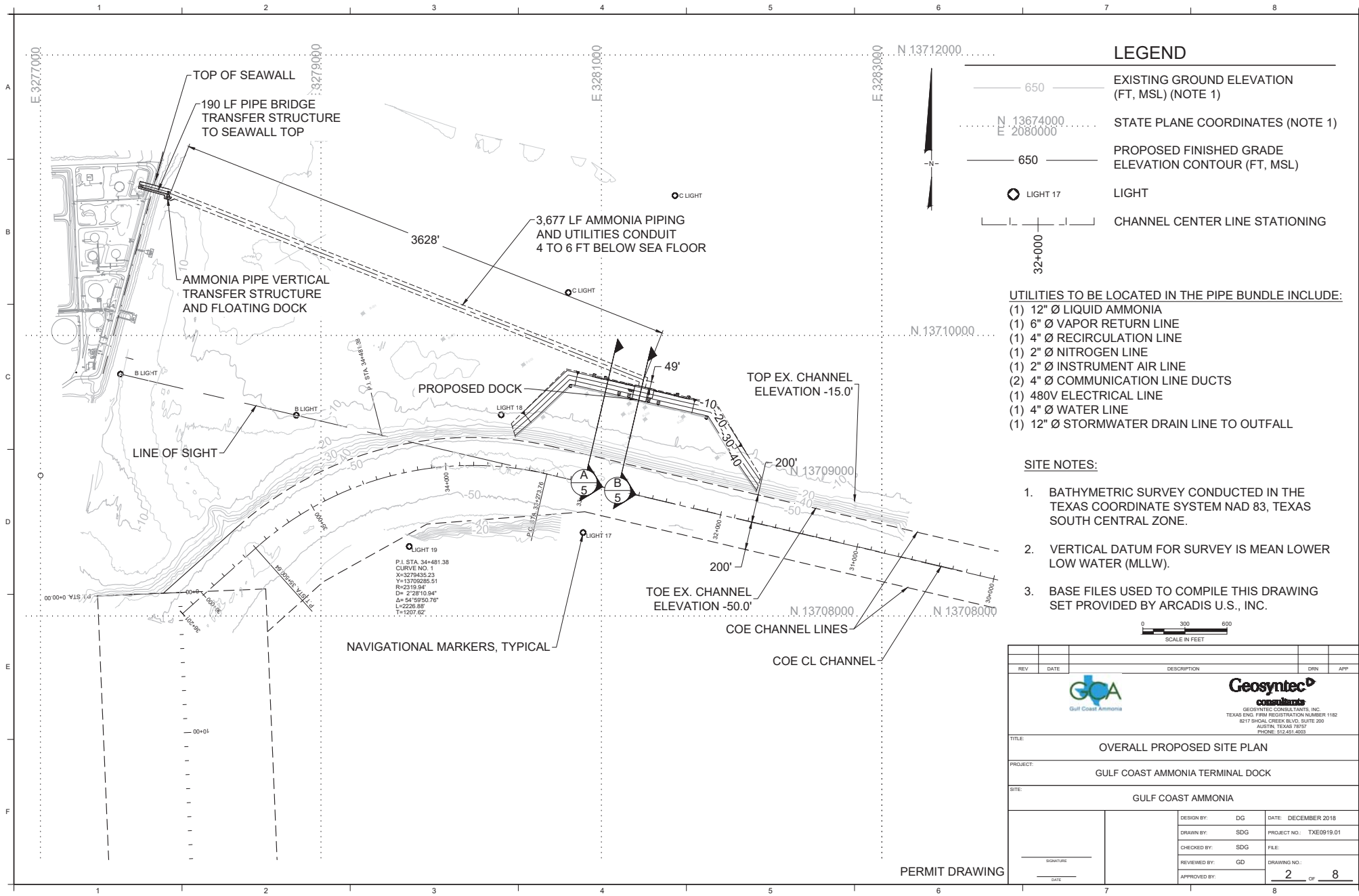


8217 SHOAL CREEK BLVD, SUITE 200
TEXAS FIRM REGISTRATION NUMBER 1182
AUSTIN, TEXAS 78746
TELEPHONE: 512.451.4003

REV	DATE	DESCRIPTION	DRN	APP
TITLE SHEET				
PROJECT: GULF COAST AMMONIA TERMINAL DOCK				
SITE: GULF COAST AMMONIA				
DESIGN BY: -		DATE: DECEMBER 2018		
DRAWN BY: JJV / KH		PROJECT NO.: TXE0919.01		
CHECKED BY: -		FILE: TXE0919P01		
REVIEWED BY: -		DRAWING NO.:		
APPROVED BY: -		1 OF 8		

PERMIT DRAWING

DRAWING: A:\asb\p\GCA\GulfCoastAmmoniaTerminalDock\PERMIT\TXE0919\DRAWINGS\1182_GULF COAST AMMONIA\GCA_TERMINAL DOCK\TXE0919P01.dwg PLOTTED: Dec 19, 2018 - 3:50pm



LEGEND

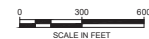
- 650 EXISTING GROUND ELEVATION (FT, MSL) (NOTE 1)
- STATE PLANE COORDINATES (NOTE 1)
- 650 PROPOSED FINISHED GRADE ELEVATION CONTOUR (FT, MSL)
- LIGHT 17 LIGHT
- CHANNEL CENTER LINE STATIONING

UTILITIES TO BE LOCATED IN THE PIPE BUNDLE INCLUDE:

- (1) 12" Ø LIQUID AMMONIA
- (1) 6" Ø VAPOR RETURN LINE
- (1) 4" Ø RECIRCULATION LINE
- (1) 2" Ø NITROGEN LINE
- (1) 2" Ø INSTRUMENT AIR LINE
- (2) 4" Ø COMMUNICATION LINE DUCTS
- (1) 480V ELECTRICAL LINE
- (1) 4" Ø WATER LINE
- (1) 12" Ø STORMWATER DRAIN LINE TO OUTFALL

SITE NOTES:

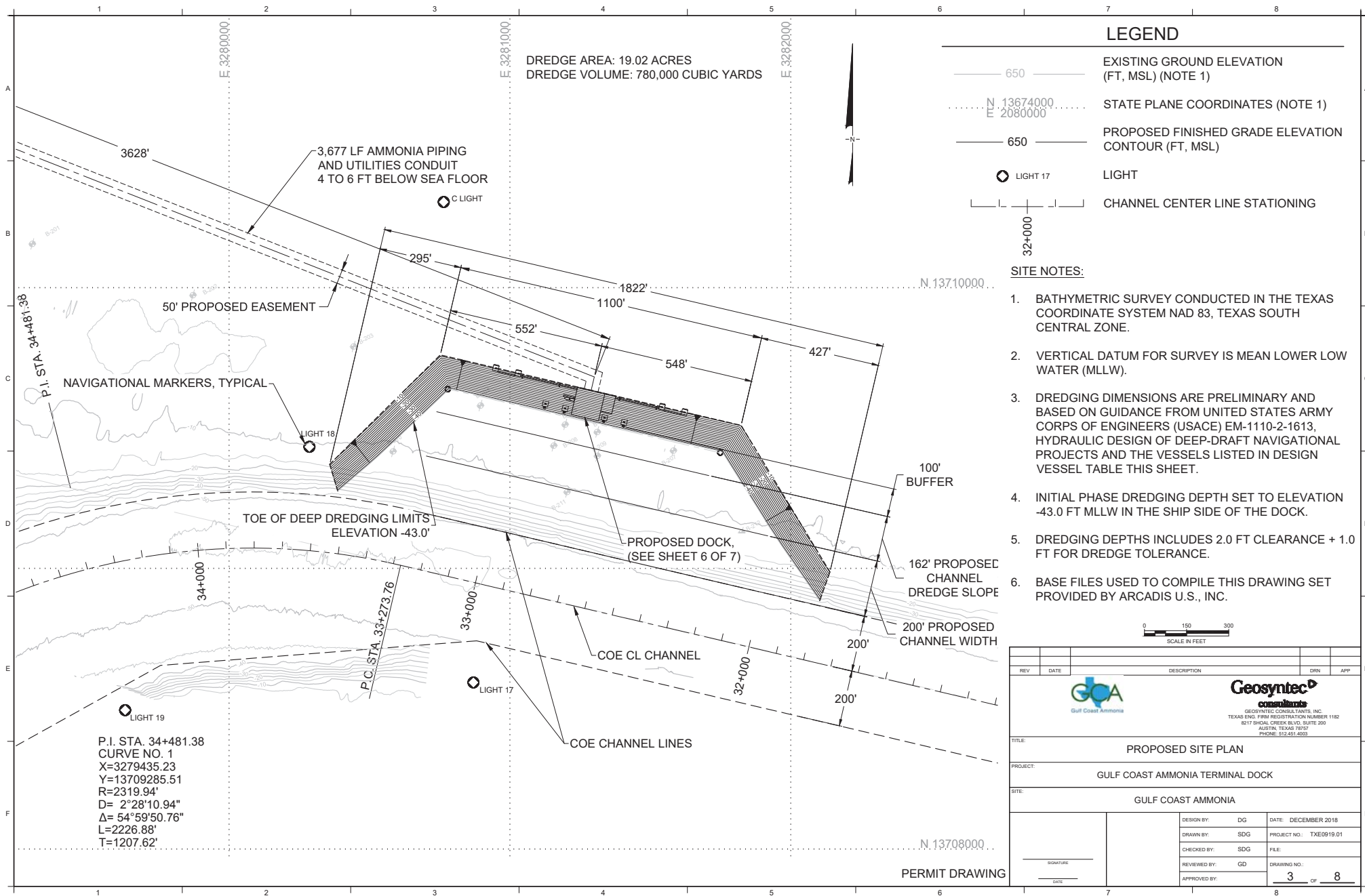
1. BATHYMETRIC SURVEY CONDUCTED IN THE TEXAS COORDINATE SYSTEM NAD 83, TEXAS SOUTH CENTRAL ZONE.
2. VERTICAL DATUM FOR SURVEY IS MEAN LOWER LOW WATER (MLLW).
3. BASE FILES USED TO COMPILE THIS DRAWING SET PROVIDED BY ARCADIS U.S., INC.

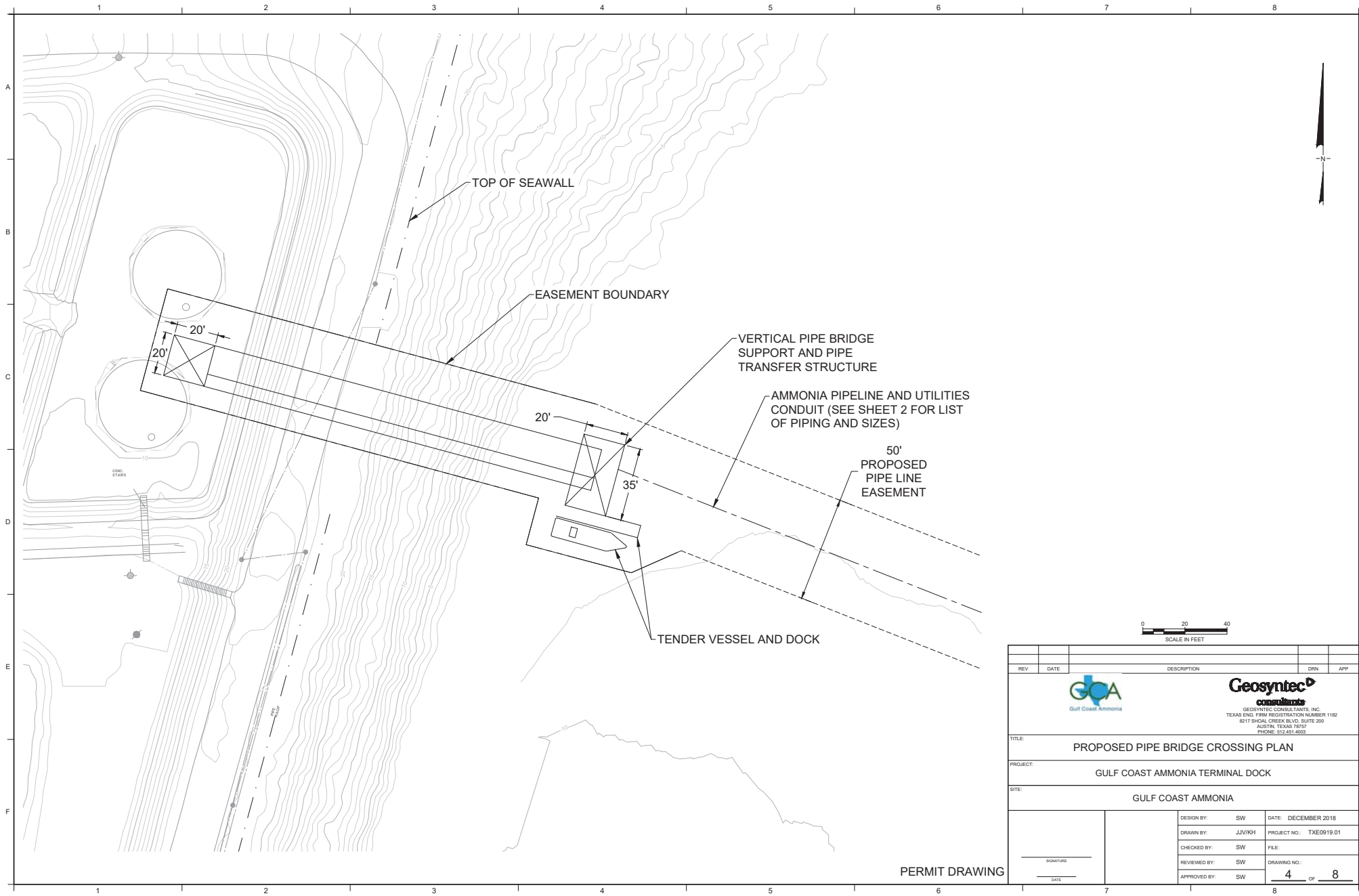


REV	DATE	DESCRIPTION	DRN	APP
<p>GEOSYNTEC CONSULTANTS, INC. TEXAS ENG. FIRM REGISTRATION NUMBER 1182 8217 SHOAL CREEK BLVD, SUITE 200 AUSTIN, TEXAS 78752 PHONE: 817.451.4000</p>				
TITLE: OVERALL PROPOSED SITE PLAN				
PROJECT: GULF COAST AMMONIA TERMINAL DOCK				
SITE: GULF COAST AMMONIA				
DESIGN BY: DG		DATE: DECEMBER 2018		
DRAWN BY: SDG		PROJECT NO.: TXE0919.01		
CHECKED BY: SDG		FILE:		
REVIEWED BY: GD		DRAWING NO.:		
APPROVED BY:		2 OF 8		

PERMIT DRAWING



DRAWING: Austin P:\DC00\Projects\GULF COAST AMMONIA\PERMITS\DC00\DWG\SWG-2017-00096-1182.DWG (12/20/2018) 11:58:10 AM

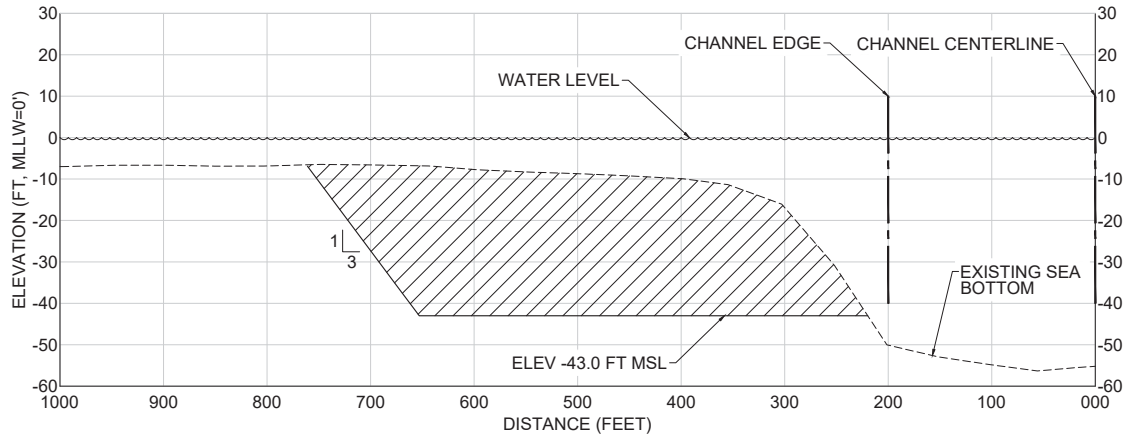




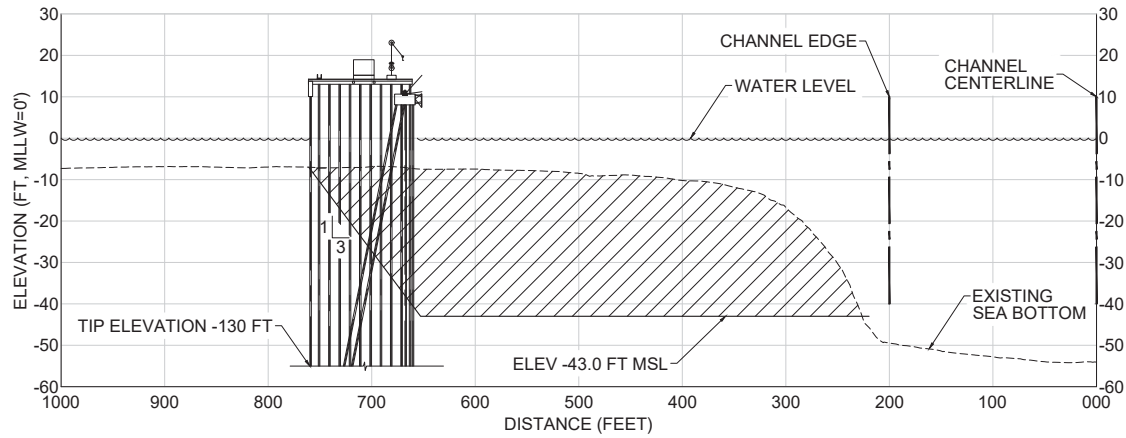
DRAWING: A:\m\p\15000\swg\2017\00096\GULF COAST AMMONIA\PERMITS\SWG-2017-00096.dwg PLOTTED: Dec 19, 2018 3:50pm

PERMIT DRAWING

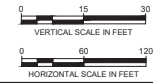
REV	DATE	DESCRIPTION	DRN	APP	
  <p style="font-size: small;"> GEOSYNTEC CONSULTANTS, INC. TEXAS ENG. FIRM REGISTRATION NUMBER 1182 8217 SHOAL CREEK BLVD, SUITE 200 AUSTIN, TEXAS 78752 PHONE: 817.451.4000 </p>					
TITLE: PROPOSED PIPE BRIDGE CROSSING PLAN					
PROJECT: GULF COAST AMMONIA TERMINAL DOCK					
SITE: GULF COAST AMMONIA					
SIGNATURE		DESIGN BY: SW	DATE: DECEMBER 2018		
DATE		DRAWN BY: JVV/KGH	PROJECT NO.: TXE0919.01		
		CHECKED BY: SW	FILE:		
		REVIEWED BY: SW	DRAWING NO.:		
		APPROVED BY: SW	4 OF 8		



A SECTION
CHANNEL CROSS SECTION AT STA 33+000



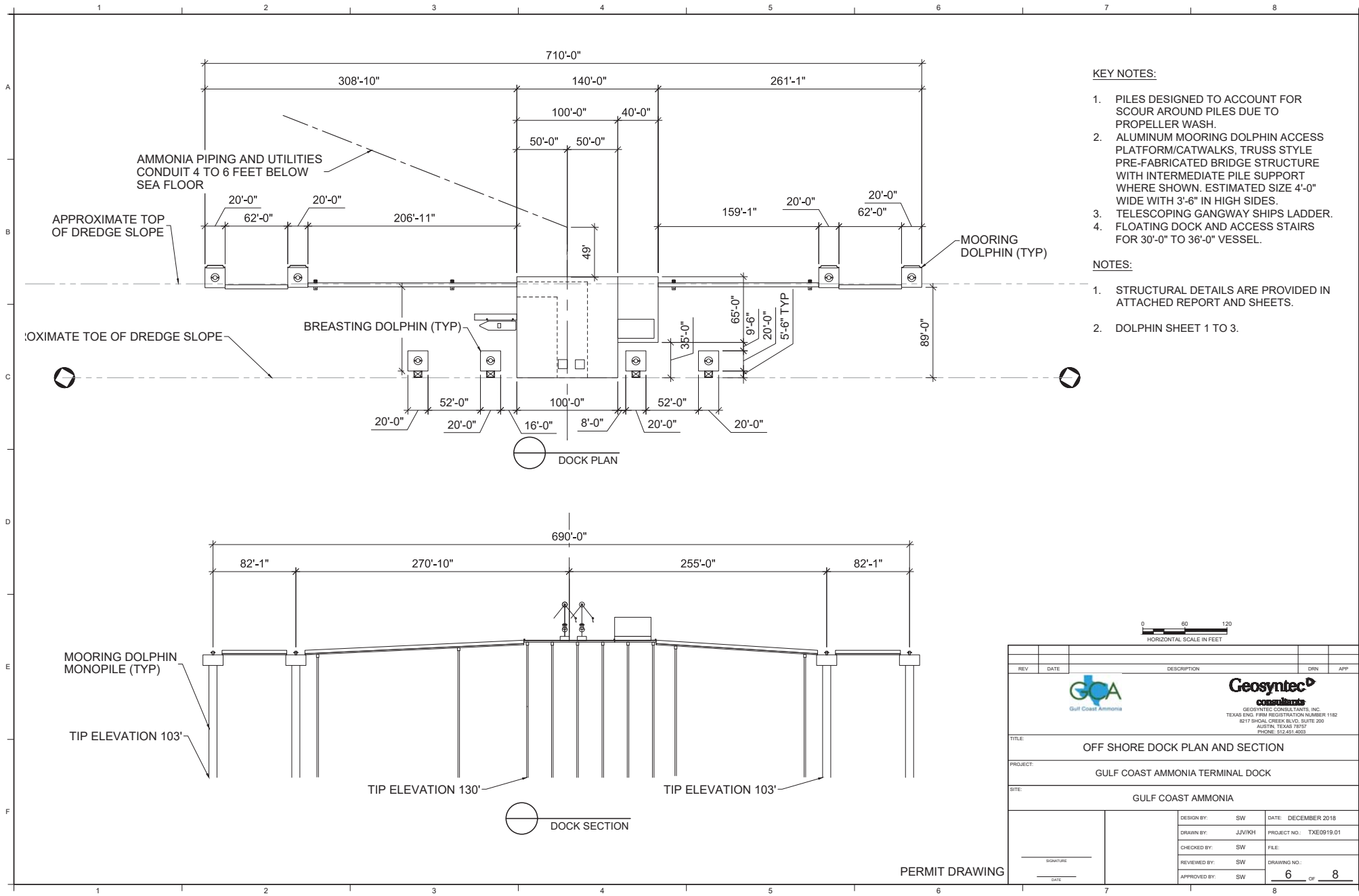
B SECTION
CHANNEL CROSS SECTION AT STA 32+755



REV	DATE	DESCRIPTION	DRN	APP
<small>GEOSYNTEC CONSULTANTS, INC. TEXAS ENG. FIRM REGISTRATION NUMBER 1182 8217 SHOAL CREEK BLVD, SUITE 200 AUSTIN, TEXAS 78752 PHONE: 817.451.4000</small>				
TITLE: DREDGED CHANNEL CROSS SECTIONS				
PROJECT: GULF COAST AMMONIA TERMINAL DOCK				
SITE: GULF COAST AMMONIA				
DESIGN BY: SW		DATE: DECEMBER 2018		
DRAWN BY: JVV/KGH		PROJECT NO.: TXE0919.01		
CHECKED BY: SW		FILE:		
REVIEWED BY: SW		DRAWING NO.:		
APPROVED BY: SW		5 OF 8		

PERMIT DRAWING

DRAWING: Austin P:\0200\Projects\GULF COAST AMMONIA\PERMITS\00096 - 1182\02019\DWG\05 - 1182-02019\0506.dwg PLOTTED: Dec 19, 2018 3:50pm

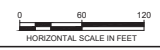




KEY NOTES:

1. PILES DESIGNED TO ACCOUNT FOR SCOUR AROUND PILES DUE TO PROPELLER WASH.
2. ALUMINUM MOORING DOLPHIN ACCESS PLATFORM/CATWALKS, TRUSS STYLE PRE-FABRICATED BRIDGE STRUCTURE WITH INTERMEDIATE PILE SUPPORT WHERE SHOWN. ESTIMATED SIZE 4'-0" WIDE WITH 3'-6" IN HIGH SIDES.
3. TELESCOPING GANGWAY SHIPS LADDER.
4. FLOATING DOCK AND ACCESS STAIRS FOR 30'-0" TO 36'-0" VESSEL.

NOTES:

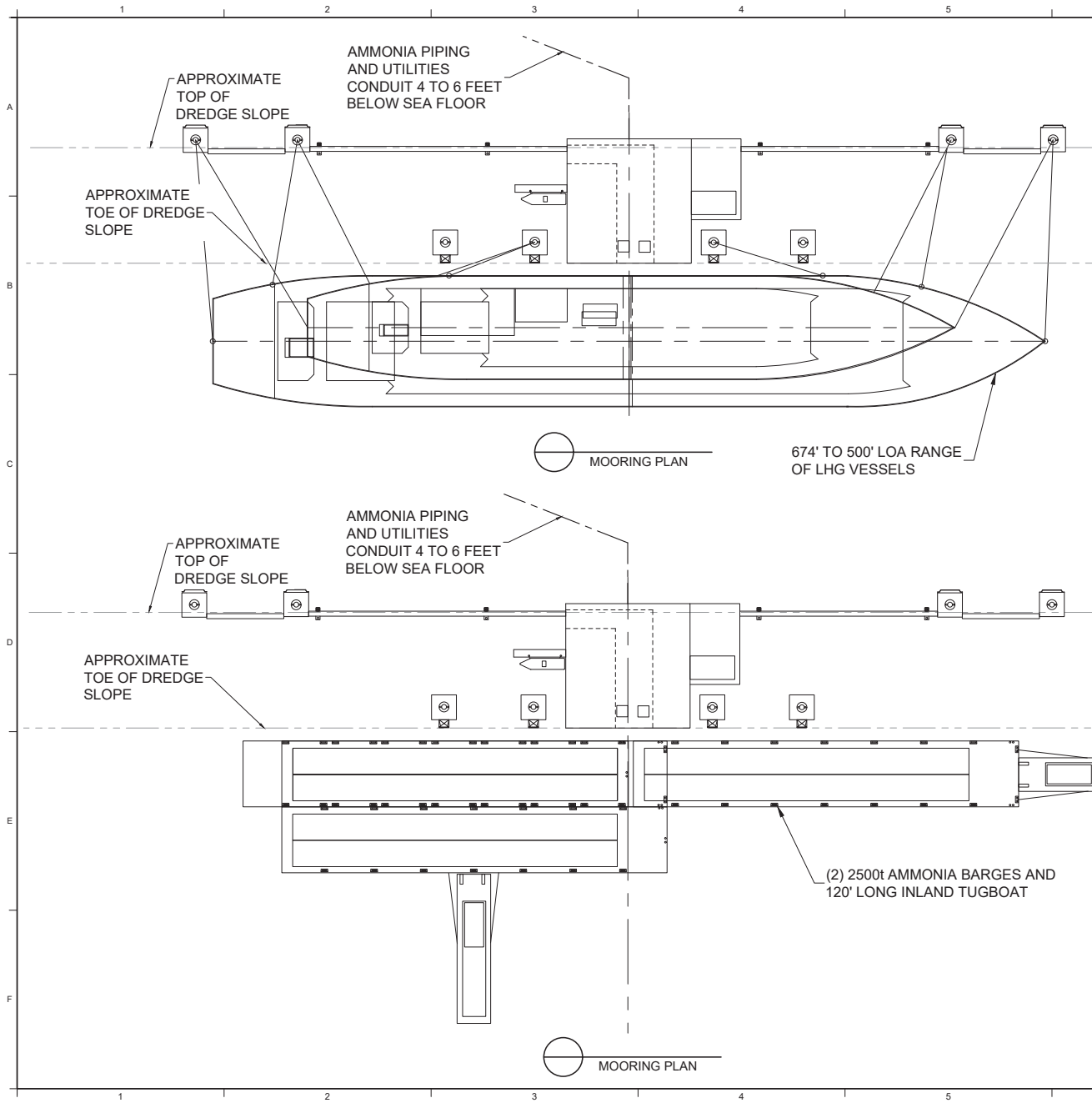
1. STRUCTURAL DETAILS ARE PROVIDED IN ATTACHED REPORT AND SHEETS.
2. DOLPHIN SHEET 1 TO 3.



REV	DATE	DESCRIPTION	DRN	APP
 				
TITLE: OFF SHORE DOCK PLAN AND SECTION PROJECT: GULF COAST AMMONIA TERMINAL DOCK SITE: GULF COAST AMMONIA				
DESIGN BY: SW		DATE: DECEMBER 2018		
DRAWN BY: JVV/KGH		PROJECT NO.: TXE0919.01		
CHECKED BY: SW		FILE:		
REVIEWED BY: SW		DRAWING NO.:		
APPROVED BY: SW		6 OF 8		

PERMIT DRAWING

DRAWING: Austin P:\0200\Projects\GULF COAST AMMONIA\PERMITS\046 - PERMIT 12061918\DRAWINGS - 1108.DWG (12/20/2018) PLOT FILED: Dec 19, 2018 3:30pm



DESIGN VESSEL TABLE						
VESSEL NAME	LOA (m)	LOA (ft)	BEAM WIDTH (m)	BEAM WIDTH (ft)	MAX DRAFT (m)	MAX DRAFT (ft)
BAKKEN LADY	179.87	590.12	28.44	93.31	10.42	34.18
NAVIGATOR AURORA	179.97	590.45	29.40	96.46	11.00	36.09
NORDIC GAS	159.50	523.29	25.60	83.99	11.14	35.56
JS INEOS INSIGHT	180.30	591.53	26.60	87.27	9.25	30.35
HERMES GAS	154.90	508.20	22.70	74.47	10.60	34.78
HANDYSIZES (MOST COMMON)	159.97	524.83	25.60	83.99	11.05	36.25
HANDYSIZES (MINIMUM SIZES)	152.20	499.34	24.20	79.40	8.35	27.39
MIDSIZES (MOST COMMON)	174.20	571.52	28.00	91.86	10.40	34.12
MIDSIZES (MINIMUM SIZES)	169.90	557.41	25.50	83.66	8.80	28.87
(2) 2500T CAPACITY BARGES AND ONE TUG	137.16	450.00	15.24	50.00	3.05	10.00
CLIPPER MARS	204.98	672.50	32.20	105.64	12.12	39.76

674' TO 500' LOA RANGE OF LHG VESSELS

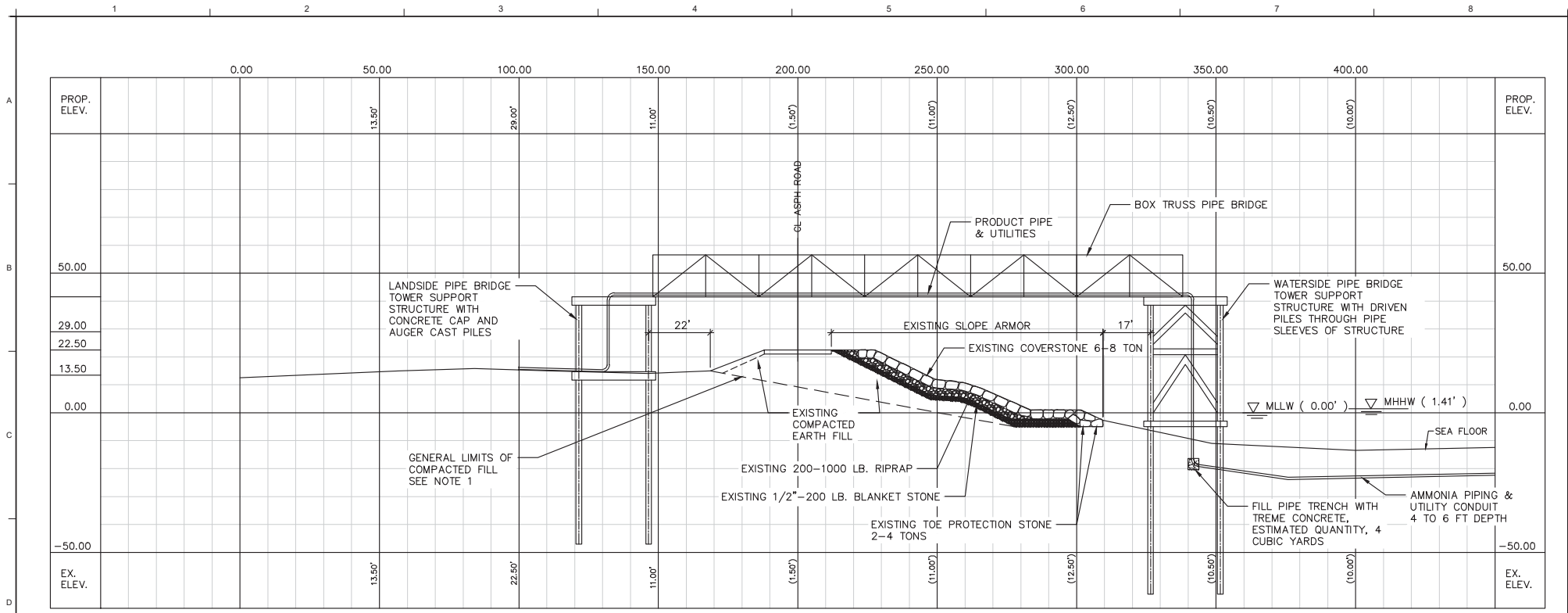
(2) 2500t AMMONIA BARGES AND 120' LONG INLAND TUGBOAT



REV	DATE	DESCRIPTION	DRN	APP
<small>GEOSYNTEC CONSULTANTS, INC. TEXAS ENG. FIRM REGISTRATION NUMBER 1182 8217 SHOAL CREEK BLVD, SUITE 200 AUSTIN, TEXAS 78752 PHONE: 817.451.4000</small>				
TITLE: OFF SHORE DOCK MOORING PLAN				
PROJECT: GULF COAST AMMONIA TERMINAL DOCK				
SITE: GULF COAST AMMONIA				
DESIGN BY: SW		DATE: DECEMBER 2018		
DRAWN BY: JVV/KGH		PROJECT NO.: TXE0919.01		
CHECKED BY: SW		FILE:		
REVIEWED BY: SW		DRAWING NO.:		
APPROVED BY: SW		7 OF 8		

PERMIT DRAWING

DRAWING: Austin P:\DC\Projects\GULF COAST AMMONIA\PERMITS\DC\170818\00096 - 1182\00096.MXD PLOT FILED: Dec 19, 2018 3:30pm



NOTE:

1. LEVEE STATIONING, GENERAL LIMITS OF COMPACTED FILL AND EXISTING MATERIALS OF THE LEVEE SHOWN ARE BASED ON U.S. ARMY CORPS OF ENGINEERS' TEXAS CITY, TEXAS LEVEE STA. 446+10 TO STA. 477+27 AS-BUILT DRAWINGS DATED JANUARY 1967.



1 SEAWALL PIPE BRIDGE SECTION
C-04

SCALE:
1" = 20'



- * UTILITIES TO BE LOCATED ON THE PIPE BRIDGE INCLUDE:
- (1) 12"Ø LIQUID AMMONIA
 - (1) 6"Ø VAPOR RETURN LINE
 - (1) 4"Ø RECIRCULATION LINE
 - (1) 2"Ø NITROGEN LINE
 - (1) 2"Ø INSTRUMENT AIR LINE
 - (2) 4"Ø COMMUNICATION LINE DUCTS
 - (1) 480V ELECTRICAL LINE
 - (1) 4"Ø WATER LINE
 - (1) 12"Ø STORMWATER DRAIN LINE TO OUTFALL

PERMIT DRAWING

REV	DATE	DESCRIPTION	DRN	APP
 				
TITLE: PIPE BRIDGE SECTION PROJECT: GULF COAST AMMONIA TERMINAL DOCK SITE: GULF COAST AMMONIA				
DESIGN BY: SW		DATE: DECEMBER 2018		
DRAWN BY: JJV/KGH		PROJECT NO.: TXE0919.01		
CHECKED BY: SW		FILE:		
REVIEWED BY: SW		DRAWING NO.:		
APPROVED BY: SW		8 OF 8		

DRAWING: A:\p1\2017\00096\GULF COAST AMMONIA\PERMIT\SW\17081918\00096\TXE0919\08.dwg PLOTTED: Dec 20, 2018 1:23pm



Dredge Placement Areas All Options	
Galveston Bay, Texas City, TX	
Geosyntec consultants	
Austin, TX	December 2018
Figure 3	

