Belaire Environmental, Inc.
Planning Permitting Habitat Creation

JAN 10 2020

January 10, 2020

Mr. Matt Kimmel
U.S. Army Corps of Engineers
Corpus Christi Regulatory Field Office
5151 Flynn Parkway, Suite 306
Corpus Christi, TX 78411

Re: Individual Permit Application, Moda Ingleside Oil Terminal, LLC, Berth Expansion Project, Corpus Christi Ship Channel, Ingleside, San Patricio County, Texas

Dear Mr. Matt Kimmel,

Moda Ingleside Oil Terminal, LLC (Moda) proposes the dredging of approximately 3,900,000 cubic yards to increase the permitted size of the West Ship Basin by approximately 35.28 acres. Moda additionally proposes to implement improvements at their existing East Basin, 2A barge dock, as well as the construction of new West Basin barge dock Berths 7A, 7B, 7C, 8, and 9. The project site is located on the north side of the Corpus Christi Ship Channel (CCSC), more precisely located between Stations 520+07 and 540+08, at 262 Coral Sea Road, Ingleside, San Patricio County, Texas.

Due to the location of the proposed project and proposed impacts associated with the project, Moda is seeking authorization under an individual permit. Belaire Environmental, Inc. (BEI) has been authorized to act as the permitting agent on behalf of Moda. BEI has completed a water of the United States delineation to quantify the proposed impacts to waters of the United States and special aquatic sites.

The enclosed permit application package includes the documents listed below:

1. Project Overview
2. ENG Form 4345
3. Delineation of Special Aquatic Sites and other Waters of the United States
4. Alternatives Analysis
5. Compensatory Mitigation Statement
6. Threatened and Endangered Species Habitat Assessment
7. Section 106 of the National Historical Preservation Act
8. TCEQ Tier II Checklist
9. Consistency with the Texas Coastal Management Program

BEI respectfully requests assignment of a USACE project manager for project review and coordination. We understand the current USACE workload is substantial and thank you in advance for your attention to this project. If you have any questions or require additional information to place this application on Public Notice, please contact me (sflaherty@belaireenv.com or 361-729-1241 ext. 0#) by email or phone.

Sincerely,

Sara Flaherty

Sara Flaherty
Belaire Environmental, Inc.

Cc: Charlie Belaire
Belaire Environmental

Clayton Curtis
Moda Ingleside Oil Terminal, LLC
1000 Louisiana, Suite 7100
Houston, Texas 77002

Shawn Lixey
Edge Engineering & Science
16285 Park Ten Place, Suite 400
Houston, Texas 77084

INDIVIDUAL PERMIT APPLICATION
U.S. ARMY CORPS OF ENGINEERS
SECTION 10 AND SECTION 404
MODA INGLESIDE OIL TERMINAL, LLC
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

Prepared for:

Moda Ingleside Oil Terminal, LLC

Mailing Address:

1000 Louisiana, Suite 7100

Houston, TX 77002

Project Site Address:

262 Coral Sea Road,

Ingleside, Texas 78336

Prepared by:

Belaire Environmental, Inc.

PO Box 741

Rockport, TX 78381

BELAIRE
ENVIRONMENTAL, INC.
Planning - Permitting - Habitat Creation

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Exhibit F – NWI & Floodplain Overview Map and FIRMette Maps

Exhibit G – Table of Survey Coordinates

Exhibit H – Photographic Exhibit

3.2 Delineation of Submerged Aquatic Vegetation

Exhibit A – Survey Overview Map

Exhibit B – Seagrass Overview Map

4.0 Alternatives Analysis

5.0 Compensatory Mitigation Statement

Exhibit A – Preservation Property Overview

Exhibit B – Letter of Mitigation Support

Exhibit C – Seagrass Mitigation Site Typical Plan and Section Views

6.0 Threatened and Endangered Species Habitat Assessment

Attachment A: Figures

Figure 1: Project Vicinity Map

Figure 2: 2013 USGS Topographic Map

Figure 3: 2015 Aerial Photograph Map

Figure 4: USFWS Critical Habitat Map

Figure 5: TPWD NDD Map

Attachment B: Tables

Table 1: Potential Impact to Protected and Other Rare Species/Habitat

Attachment C: Species List

USFWS IPaC Report

TPWD Annotated List of Rare Species

7.0 Section 106 of the National Historical Preservation Act

8.0 TCEQ Tier II Checklist

9.0 Consistency with the Texas Coastal Management Program

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1.0 PROJECT OVERVIEW

1.1 INDIVIDUAL PERMIT APPLICATION OVERVIEW

Name of Applicant: Moda Ingleside Oil Terminal, LLC
Company: Moda Ingleside Oil Terminal, LLC
Company Address: 1000 Louisiana, Suite 7100
City, State, Zip: Houston, TX 77002
Email: clayton.curtis@modamidstream.com

Date: January 10, 2020
Person of Contact: Clayton Curtis
Phone: (832) 930-4838
Fax: (832) 930-4839

Project Title, Number, and Site Location:

Moda Ingleside Oil Terminal, LLC, Berth Expansion Project, Corpus Christi Ship Channel, Ingleside, San Patricio County, Texas

USACE Project No: TBD

NAME AND ADDRESS OF PROSPECTIVE PERMITTEE:

Moda Ingleside Oil Terminal, LLC
1000 Louisiana, Suite 7100
Houston, TX 77002

LOCATION OF THE PROPOSED PROJECT:

The proposed Moda Ingleside Oil Terminal, LLC (Moda) Berth Expansion Project area is located along the north side of Corpus Christi Ship Channel, just southeast of the community of Ingleside on the Bay and west of the Gulf Intracoastal Waterway (GIWW). The proposed project area totals approximately 79.81 acres. Please refer to **Section 1.2, Sheet 1** of this document for the vicinity map.

Directions to the Project Location

From Corpus Christi, proceed north on US 181 towards Portland for approximately 0.4 miles. Continue onto State Highway (SH) 35 for approximately 10 miles then take the exit onto SH 361. Continue north on SH 361 for approximately 5.7 miles, then turn right onto North Main Street. Continue onto North Main Street for approximately 4 miles, then turn right into the Moda Ingleside Oil Terminal, LLC facility.

A DESCRIPTION OF THE PROPOSED PROJECT:

Nature of Activity - Project Summary

Moda proposes to make improvements to Berth 2A within the existing East Basin, increase the permitted width of the West Ship Basin, to allow construction of barge docks at Berth 7, and add a new deep-water ship dock in the West Ship Basin.

Proposed improvements at Berth 2A includes construction of a pile supported 35 foot by 70-foot barge platform. The new platform would require that the existing fenderline be moved approximately 38 feet waterward of its current location. Four breasting dolphins and four protection dolphins would be installed. **Section 1.2, Sheet 5** provides a plan view depicting the proposed work at Berth 2A.

A new Berth 7 barge docking area would be constructed in the West Basin. Berth 7 barge dock construction would allow for up to three double barges, side-by-side, to dock (Berths 7A, B, and C). Berth 7A requires

the construction of a barge loading facility within the adjacent upland facility landward of the existing bulkhead. Berths 7B and C require extending the existing bulkhead approximately 491 linear feet along the shoreline and requires the installation of a new pile supported barge dock that would allow berthing on each side. In total, Berths 7A, B, and C would require the installation of 38 barge dolphins. **Section 1.2, Sheet 5** provides a plan view depicting the proposed work at Berth 7.

Moda also proposes to construct a new deep-water ship dock to accommodate Suezmax vessels. This dock provides docking for up to two Suexmax vessels, one on either side of the structure. The docking areas will be designated as Berths 8 and 9. Berths 8 and 9 consists of a sheetpile causeway, pile supported approach, an 80 foot by 120-foot pile supported loading platform. Twelve breasting dolphins and 9 mooring dolphins would support Berths 8 and 9. **Section 1.2, Sheet 10** provides a plan view depicting the proposed work for the new dock.

Dredging would be required to expand the West Basin and to provide safe access to the newly constructed Berths. The dredge area and proposed depths are depicted in **Section 1.2, Sheet 6**. Within the vicinity of the barge docks, designated as Berth 7, Moda proposes to dredge the existing bay bottom to a depth of -15 feet MLLW with a 2 foot over dredge. For the remainder of the West Basin expansion, the proposed dredge depth is -54 feet MLLW with a 2 foot over dredge and 2 foot of advanced maintenance. The applicant estimates that the proposed dredging activities would result in approximately 3,900,000 cubic yards of dredge material. The proposed dredge footprint is approximately 43 acres including side slopes, creating an additional 32.8 acres of bay bottom dredged to the proposed finished depth. This dredging would allow additional Suezmax vessels and additional barges at the facility. Dredging would be accomplished via mechanical and/or hydraulic dredge equipment and dredged material would be placed into an existing designated dredge material placement area(s) (DMPA). Potential disposal sites include DMPA 6, 7, 8, 9, 10, 13, 14 A/B, 15 A/B, Good Hope, Berry Island, Dagger Island, and Beneficial Use Sites as available.

To stabilize the dredge side slope, and for the minimization of impacts to special aquatic sites, the project proposes to install an approximately 1,350 linear foot of approximate 44-foot wide articulated block mattress. **Section 1.2, Sheet 22** depicts the proposed slope stabilization plan.

APPLICANT'S PROJECT PURPOSE AND NEED:

The purpose of and the need for the proposed project is to provide the maritime infrastructure necessary to accommodate the increasing demand by existing and committed, future customers at the Moda Ingleside Oil Terminal in a logistically safe and efficient manner.

1.2 PLAN AND SECTION VIEW DRAWINGS

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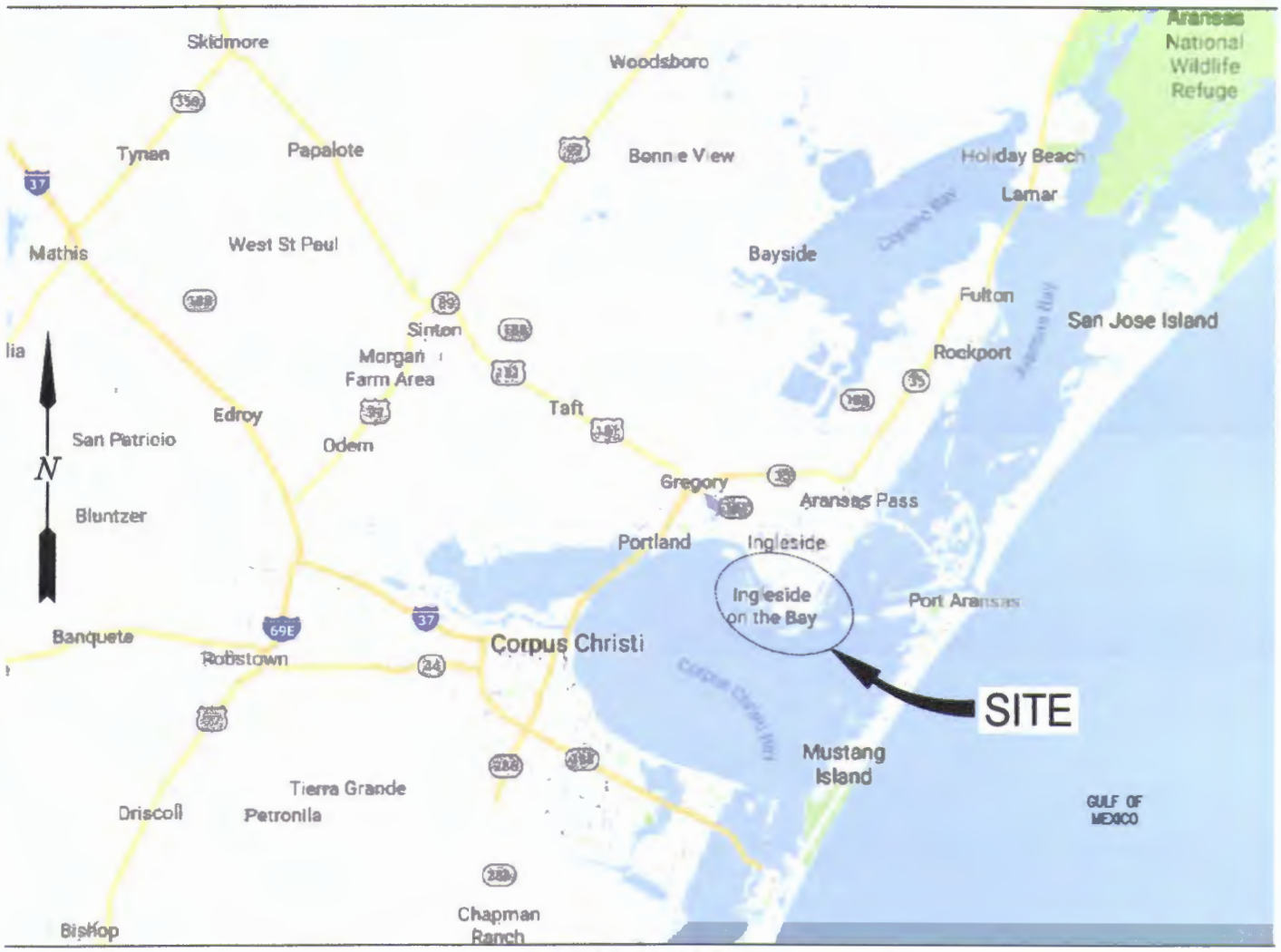

VICINITY MAP

5 0 2.5 5 10

(IN MILES)

SAN PATRICIO COUNTY
LAT. 27° 49' 16.48"
LONG. 97° 12' 40.17"

AREA MAP

GENERAL NOTES:

1. STRUCTURES SHALL BE MARKED IN ACCORDANCE WITH USCG REGULATIONS.
2. ALL ELEVATIONS REFER TO MLLW UNLESS NOTED OTHERWISE.

Applicant: Moda Ingleside Oil Terminal, LLC
Agent: Belaire Environmental, Inc

Albert R. Favalora, III P.E.
TX P.E. Number 131433

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MODA MIDSTREAM, LLC.
INGLESIDE TEXAS

MODA INGLESIDE ENERGY CENTER
BERTH 7/8/9 EXPANSION
VICINITY MAP

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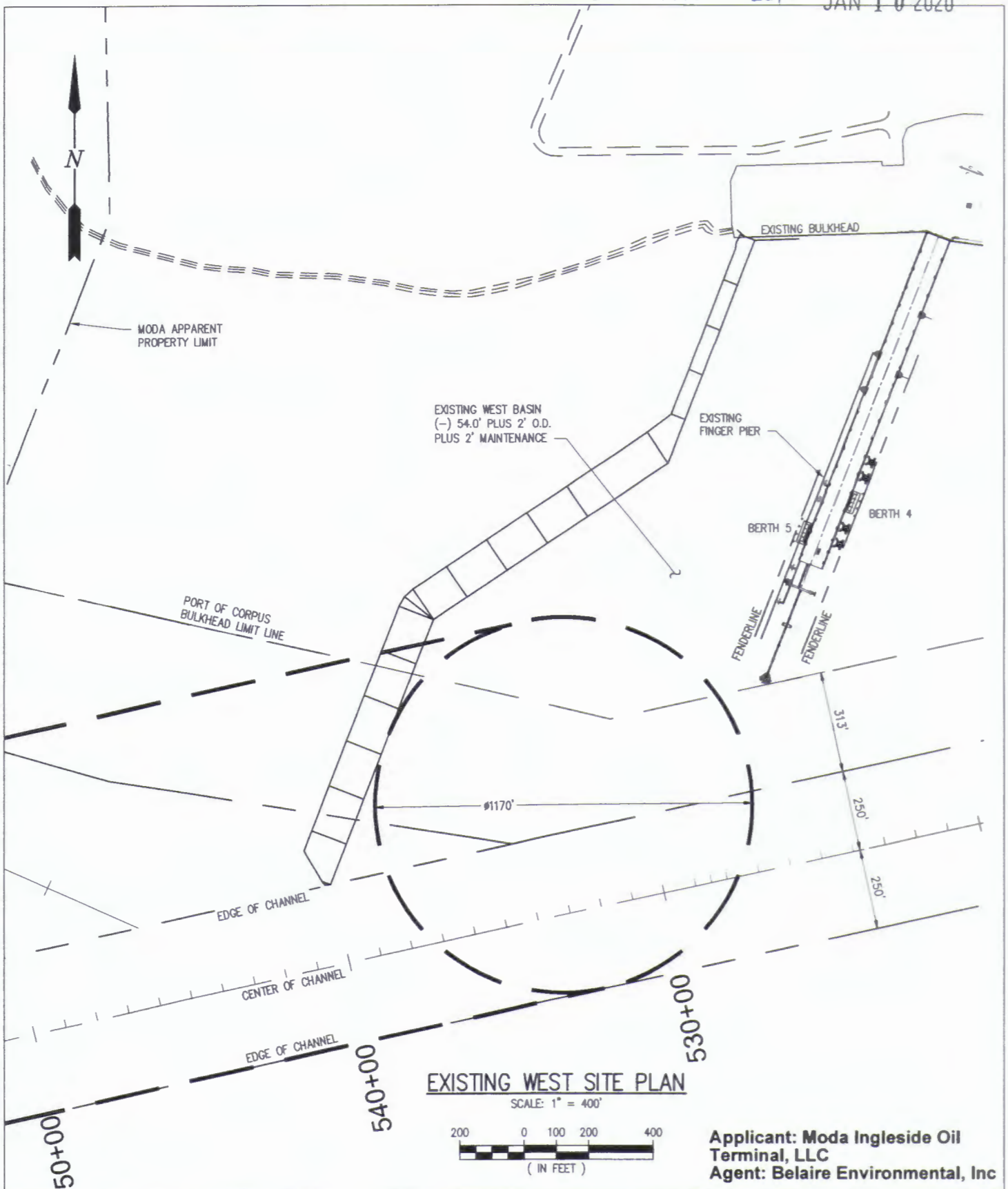

EXISTING WEST SITE PLAN

SCALE: 1" = 400'

200 0 100 200 400

(IN FEET)

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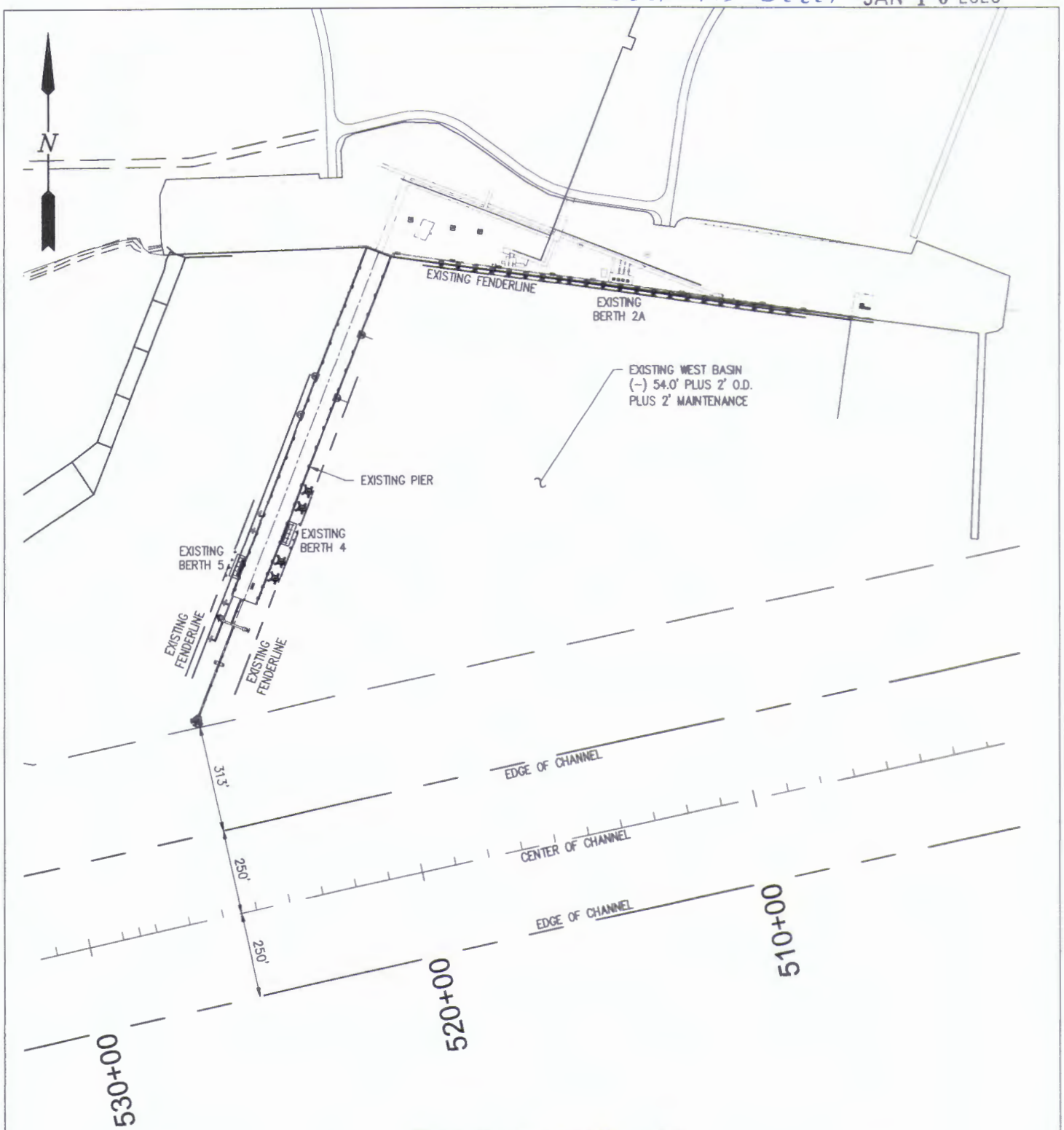

EXISTING EAST SITE PLAN

SCALE: 1" = 400'

200 0 100 200 400

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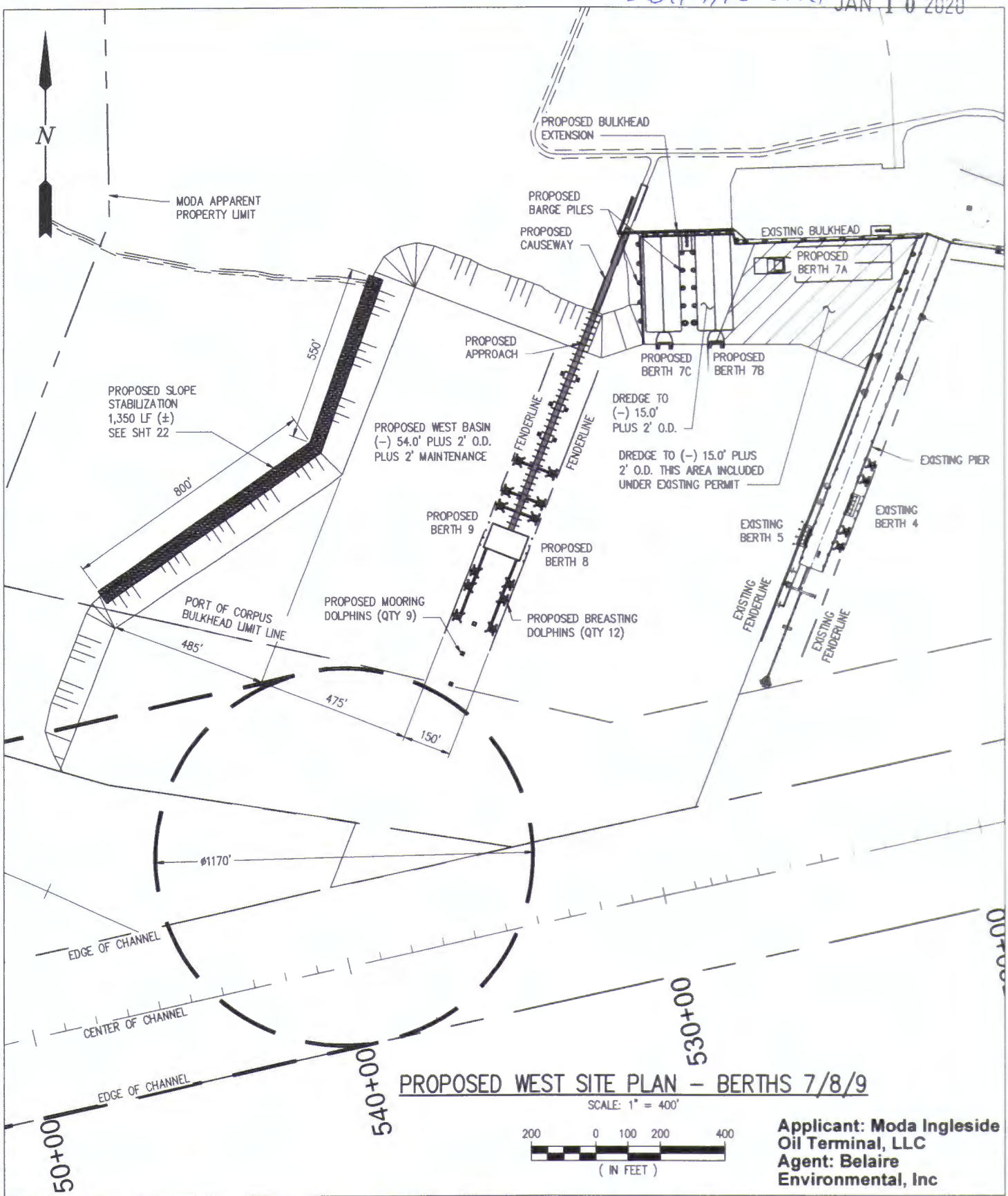

PROPOSED WEST SITE PLAN – BERTHS 7/8/9

SCALE: 1" = 400'

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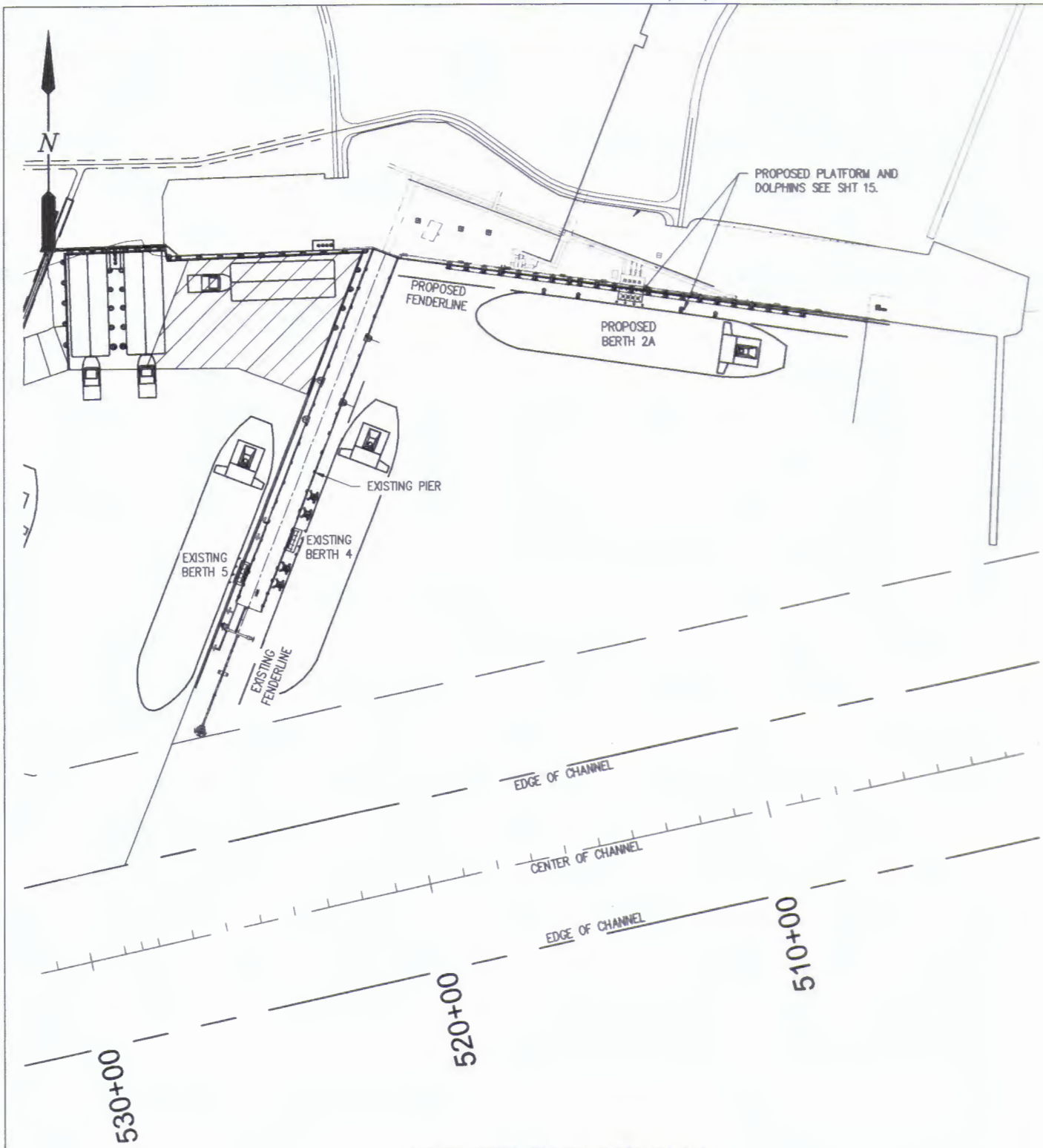

PROPOSED EAST SITE PLAN

SCALE: 1" = 400'

200 0 100 200 400

(IN FEET)

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WEST BASIN CONTROL		
POINT	NORTHING	EASTING
A	17187918.34	1399267.79
B	17187873.62	1399422.56
C	17187750.72	1400185.21
D	17188373.05	1400426.36
E	17188860.13	1401153.46
F	17189328.68	1401335.02
G	17189555.28	1401422.82
H	17189553.06	1401362.75
I	17189583.90	1401356.49
J	17189574.56	1401066.46
K	17189240.81	1401081.18'
L	17189194.47	1400947.33
M	17189418.49	1400369.22
N	17188836.43	1400143.68
O	17188360.30	1399439.05

N

DREDGE TO (–) 15.0' PLUS 2' O.D.

DREDGE THIS AREA INCLUDED IN EXISTING PERMIT

EXISTING BULKHEAD

PROPOSED BERTH 7A

PROPOSED BERTH 7B

PROPOSED BERTH 7C

PROPOSED WEST BASIN (–) 54.0' PLUS 2' O.D. PLUS 2' MAINTENANCE APPROX. 3,900,000 CY'S OF DREDGE MATERIAL

FENDERLINE

FENDERLINE

PROPOSED BERTH 9

PROPOSED BERTH 8

EXISTING BERTH 5

EXISTING BERTH 4

FENDERLINE

FENDERLINE

PORT OF CORPUS BULKHEAD LIMIT LINE

250'

250'

EDGE OF CHANNEL

CENTER OF CHANNEL

EDGE OF CHANNEL

530+00

540+00

550+00

PROPOSED DREDGE PLAN

SCALE: 1" = 400'

200 0 100 200 400

(IN FEET)

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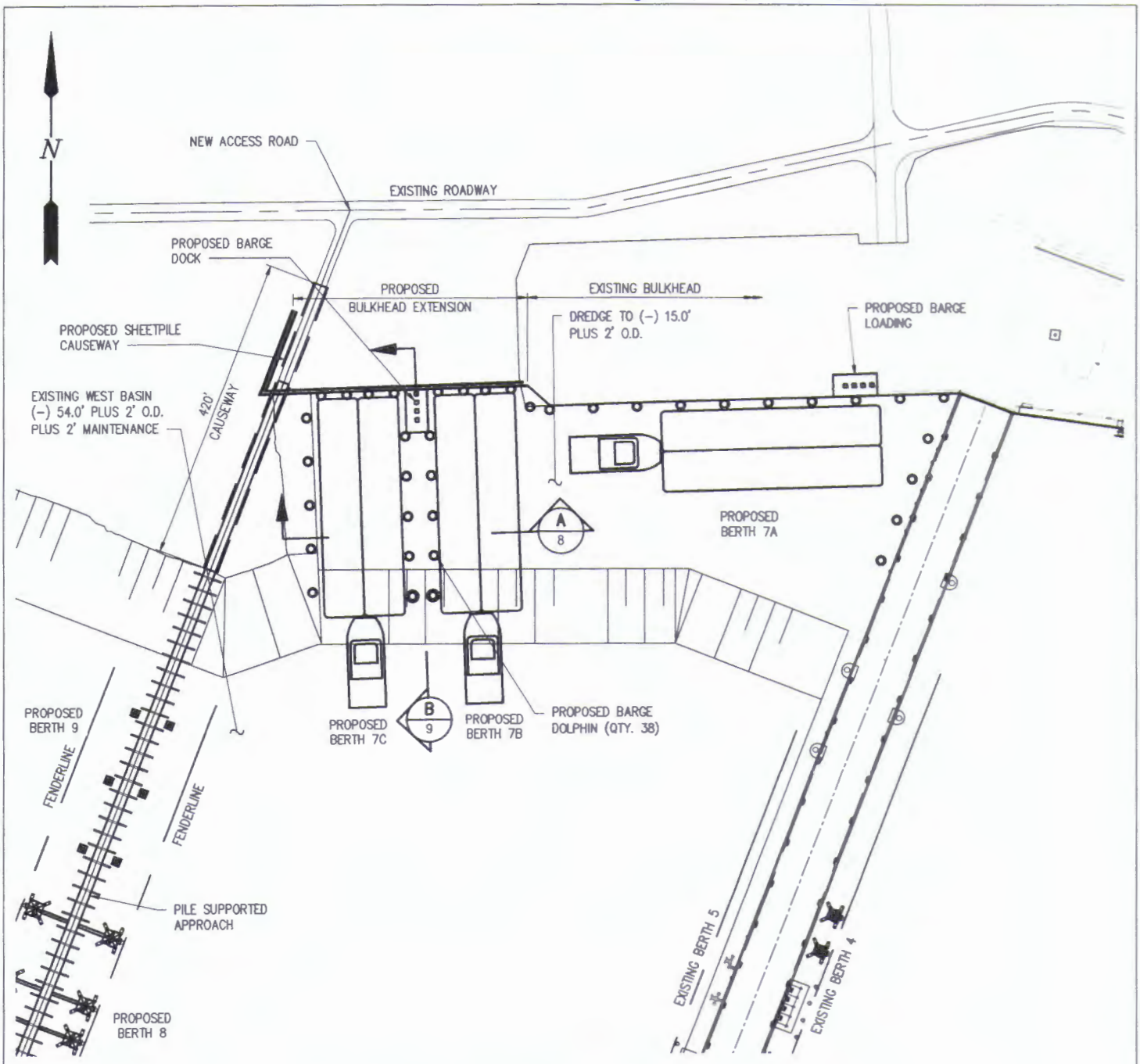

PROPOSED BERTH 7 ENLARGED PLAN

SCALE: 1" = 200'

100 0 50 100 200

(IN FEET)

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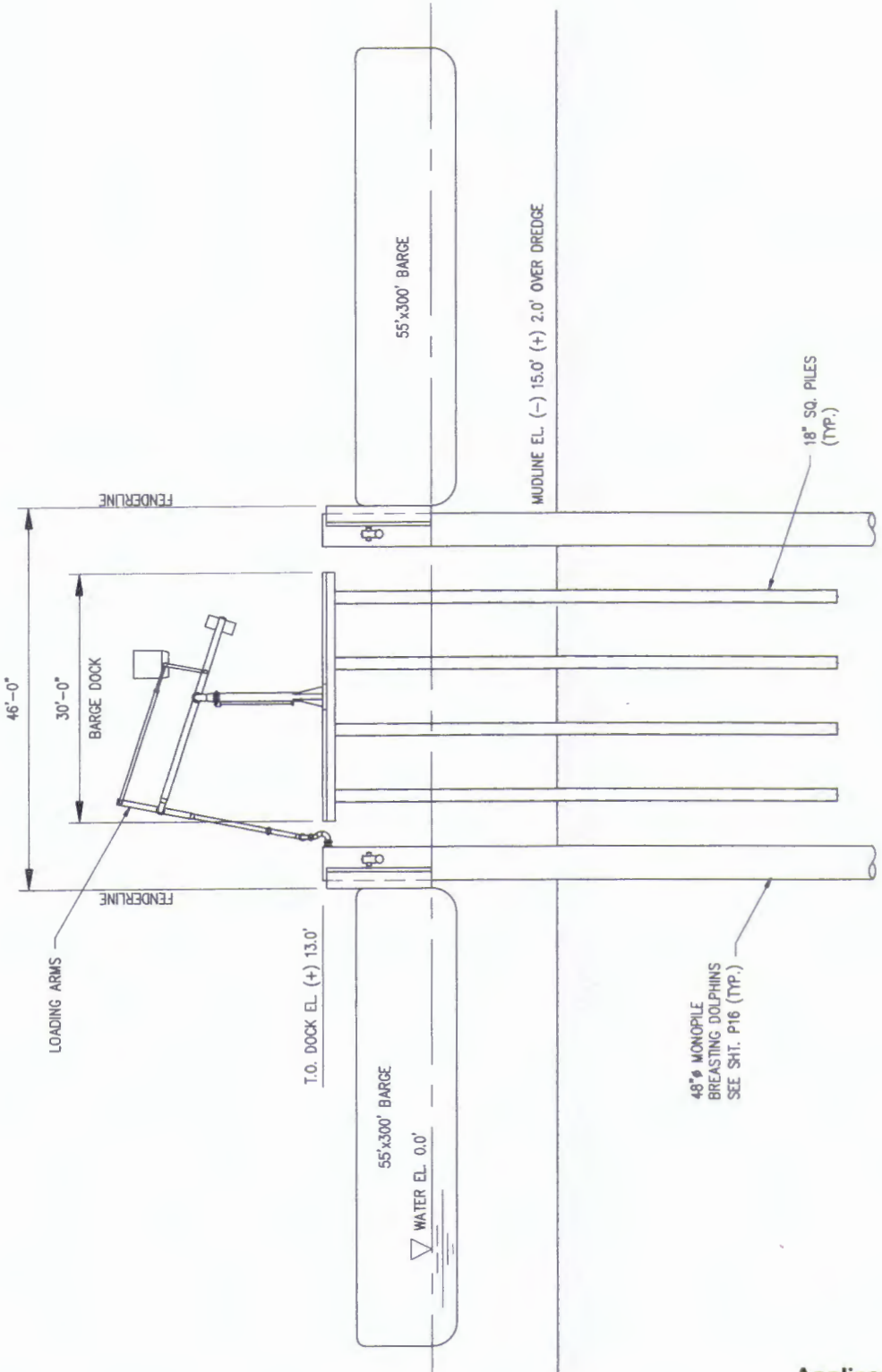

BERTH 7 SECTION (A-B)

SCALE: 1" = 20'

20 10 0 5 10 (IN FEET)

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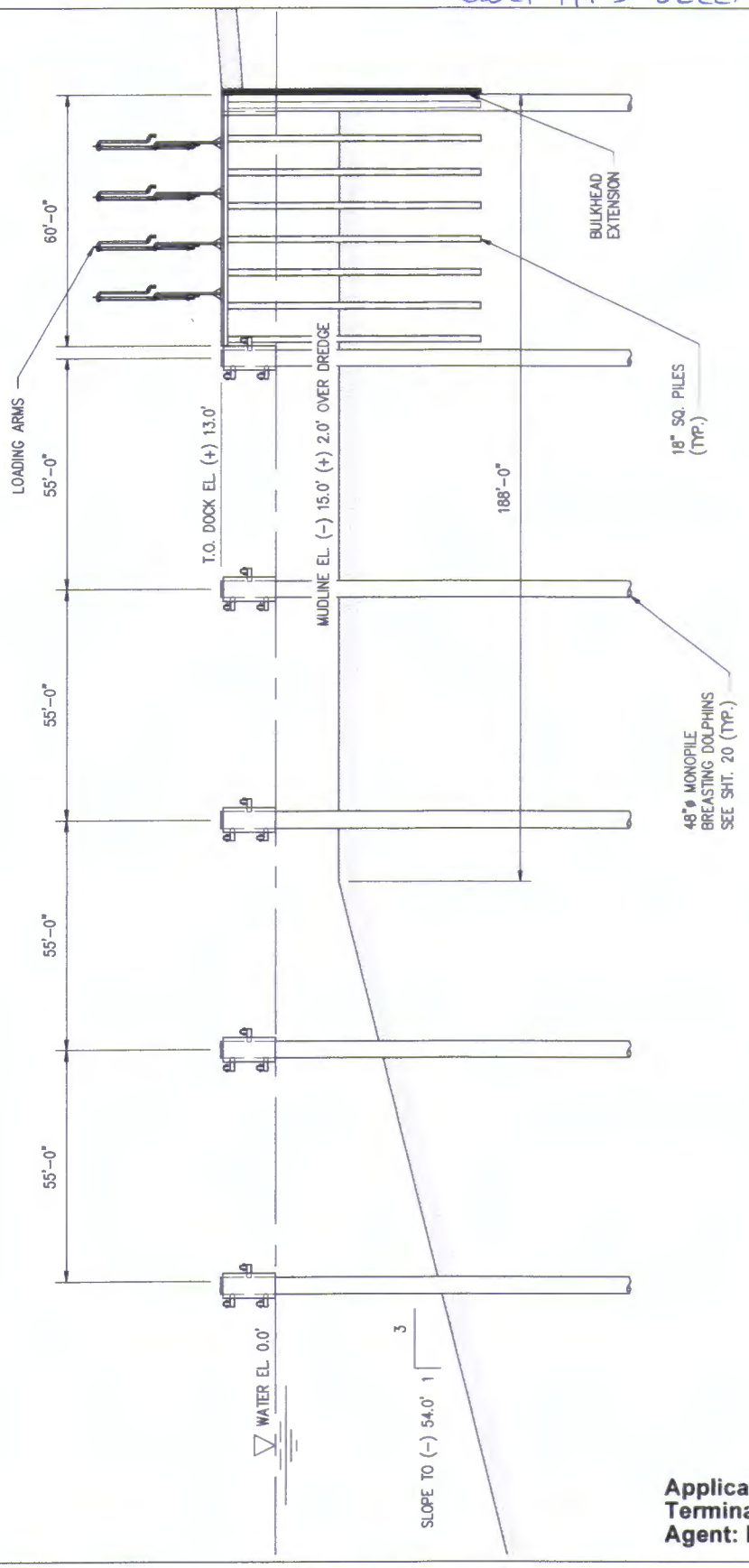

BERTH 7 ELEVATION B 7

SCALE: 1" = 40'

40 20 0 10 20 (IN FEET)

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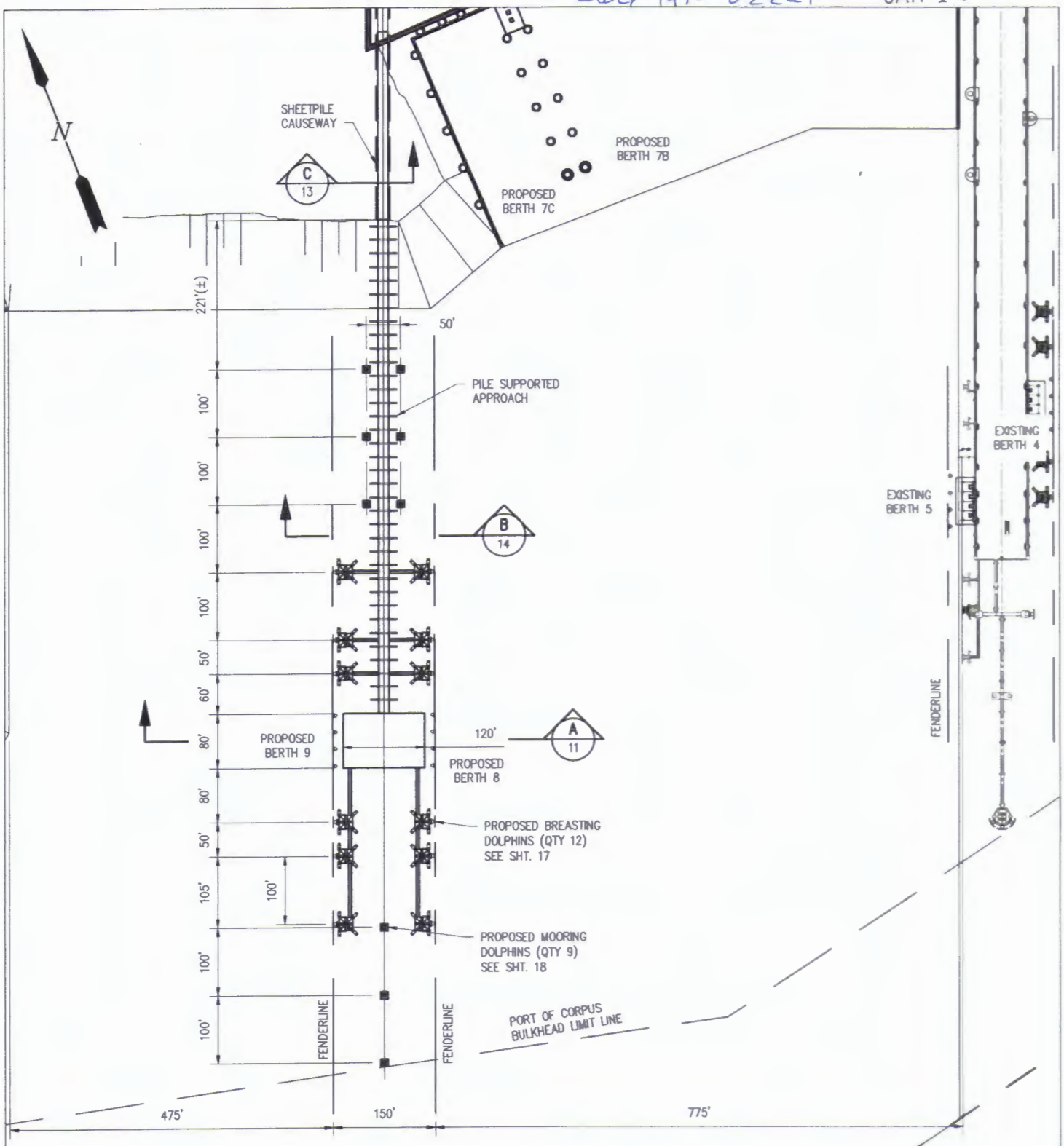

PROPOSED BERTH 8/9 ENLARGED PLAN

SCALE: 1" = 200'

100 0 50 100 200

(IN FEET)

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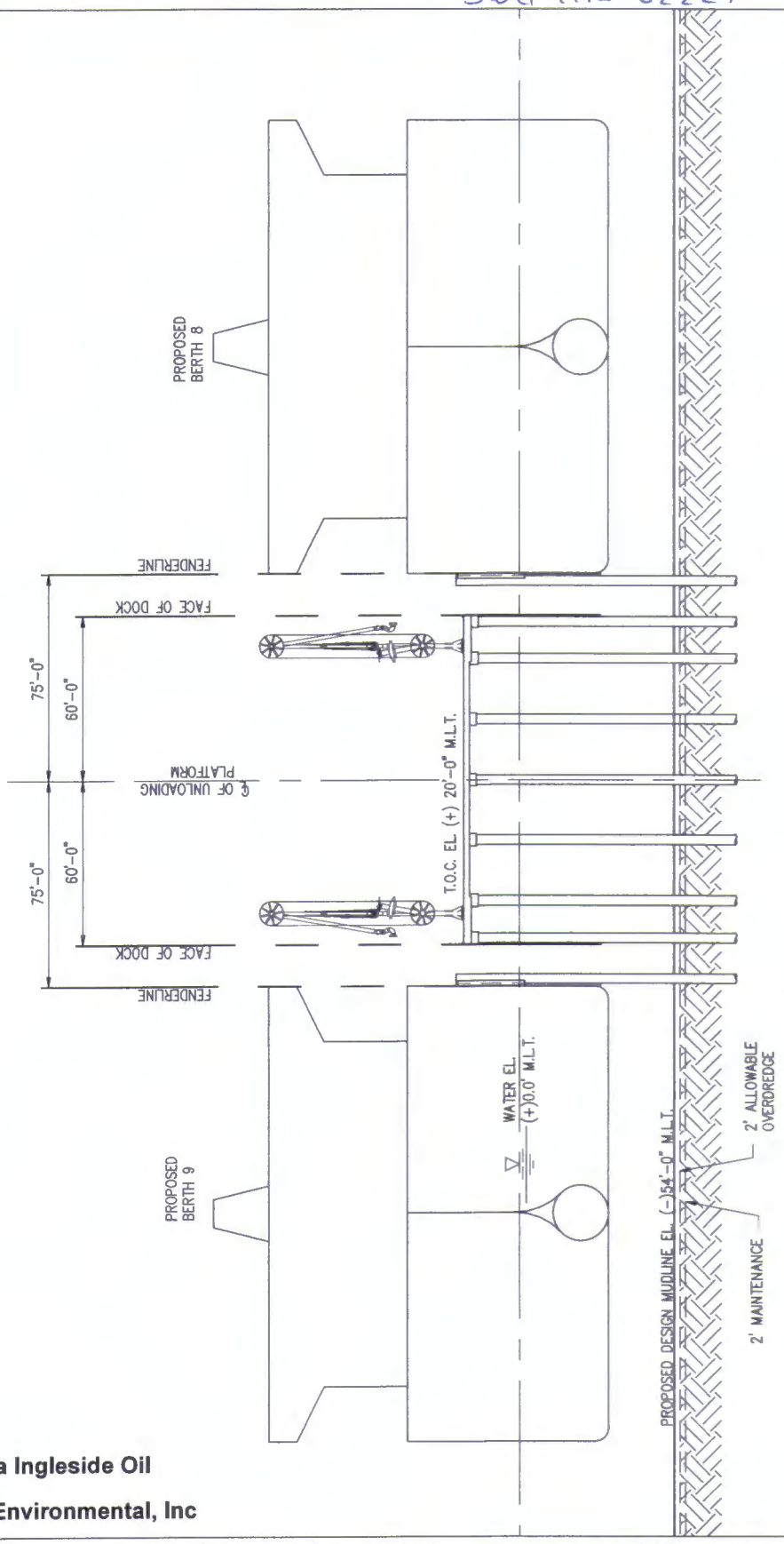

BERTH 8/9 SECTION
SCALE: 1" = 60'

A 10

60 30 0 15 30
(IN FEET)

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BERTH 8/9 SECTION

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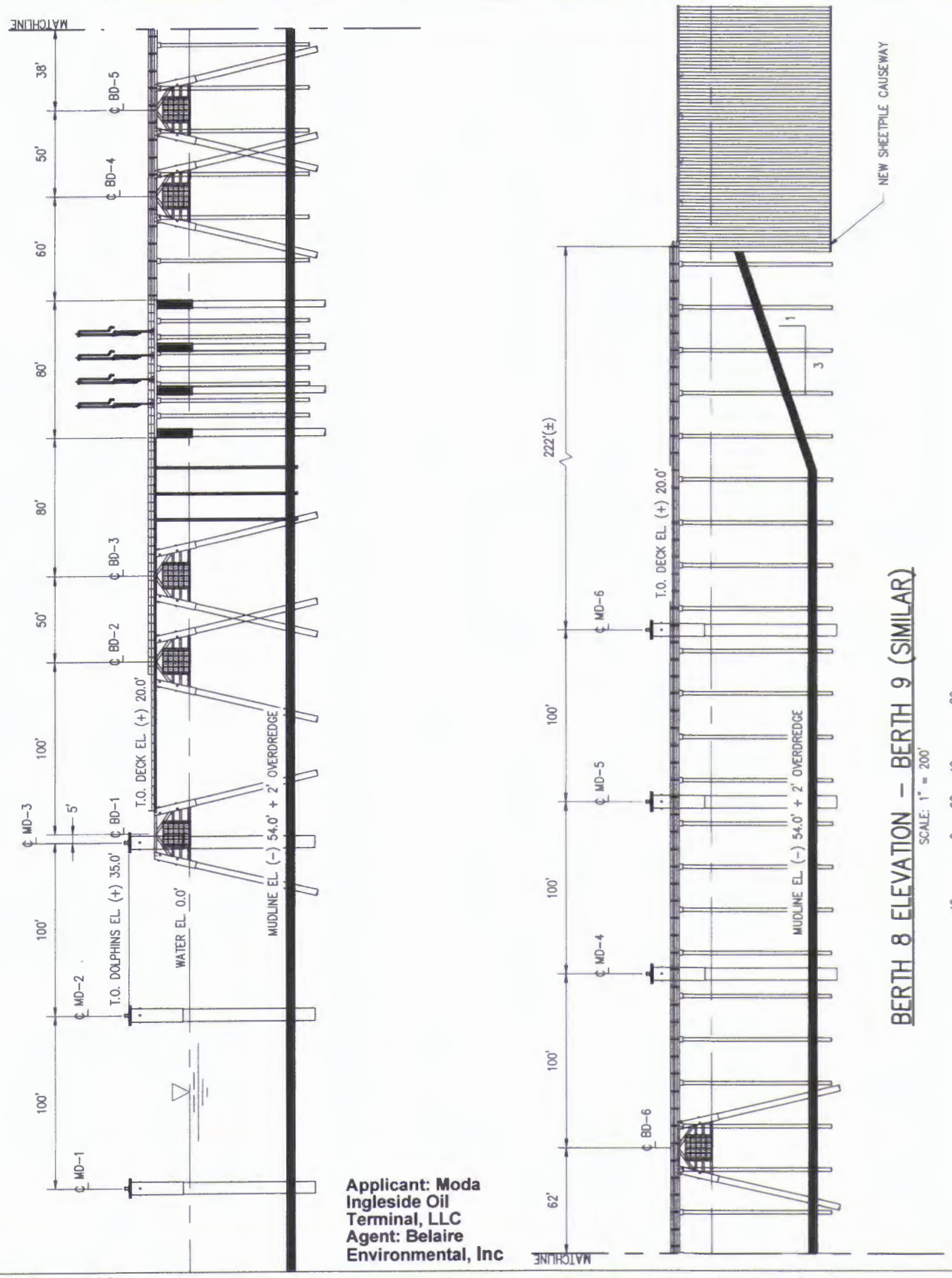

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LA: C-1120 TX: F-2981
NEW ORLEANS, LA • BEAUMONT, TX

MODA MIDSTREAM, LLC.
INGLESIDE TEXAS

MODA INGLESIDE ENERGY CENTER
BERTH 7/8/9 EXPANSION
BERTH 8/9 ELEVATION

DATE SEPT 2019
DESIGN ARF
DRAWN MEW
CHECK JEJ
JOB NO 10870
SHEET No.
12 OF 23

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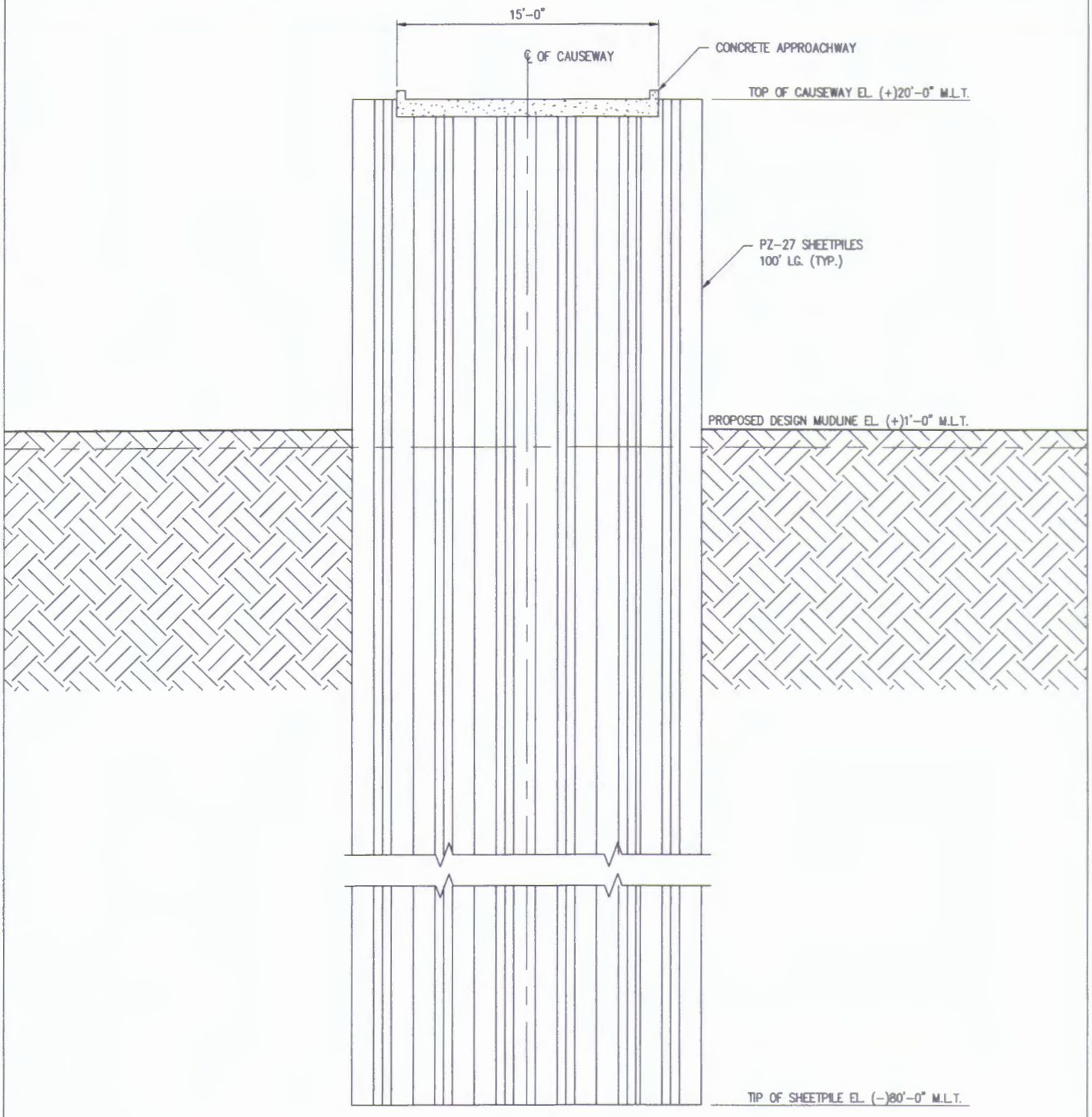
SWG-1995-02221 JAN 10 2020



CAUSEWAY SECTION (C/10)

SCALE: 1/8" = 1'-0"

4 0 2 4 8

(IN FEET)

Applicant: Moda Ingleside Oil Terminal, LLC
Agent: Belaire Environmental, Inc

Albert R. Favalora, III P.E.
TX P.E. Number 131433

PRELIMINARY - FOR PERMIT PURPOSES ONLY

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MODA MIDSTREAM, LLC.
INGLESIDE TEXAS

MODA INGLESIDE ENERGY CENTER
BERTH 7/8/9 EXPANSION
BERTH 8/9 SECTION

DATE SEPT. 2019
DESIGN ARF
DRAWN MEW
CHECK JEJ
JOB NO 10870
SHEET No. 13 OF 23

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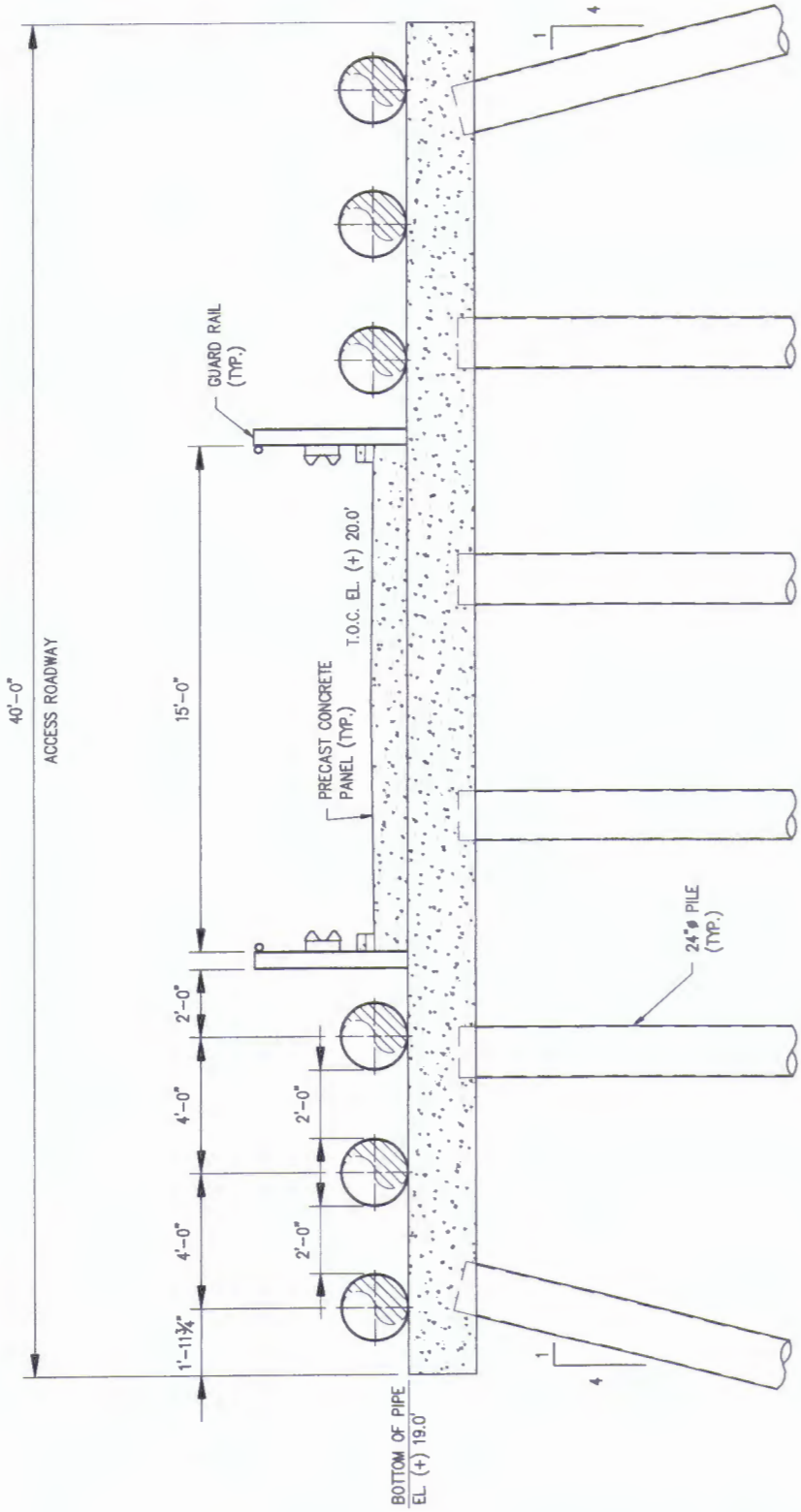
SWG-1995-02221

JAN 10 2020



APPROACHWAY SECTION B/10

SCALE: 1/4" = 1'-0"

0 1 2 4 (IN FEET) 2

Applicant: Moda Ingleside Oil Terminal, LLC
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MODA INGLESIDE ENERGY CENTER
BERTH 7/8/9 EXPANSION
BERTH 8/9 APPROACH SECTION

DATE SEPT. 2019
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14 OF 23

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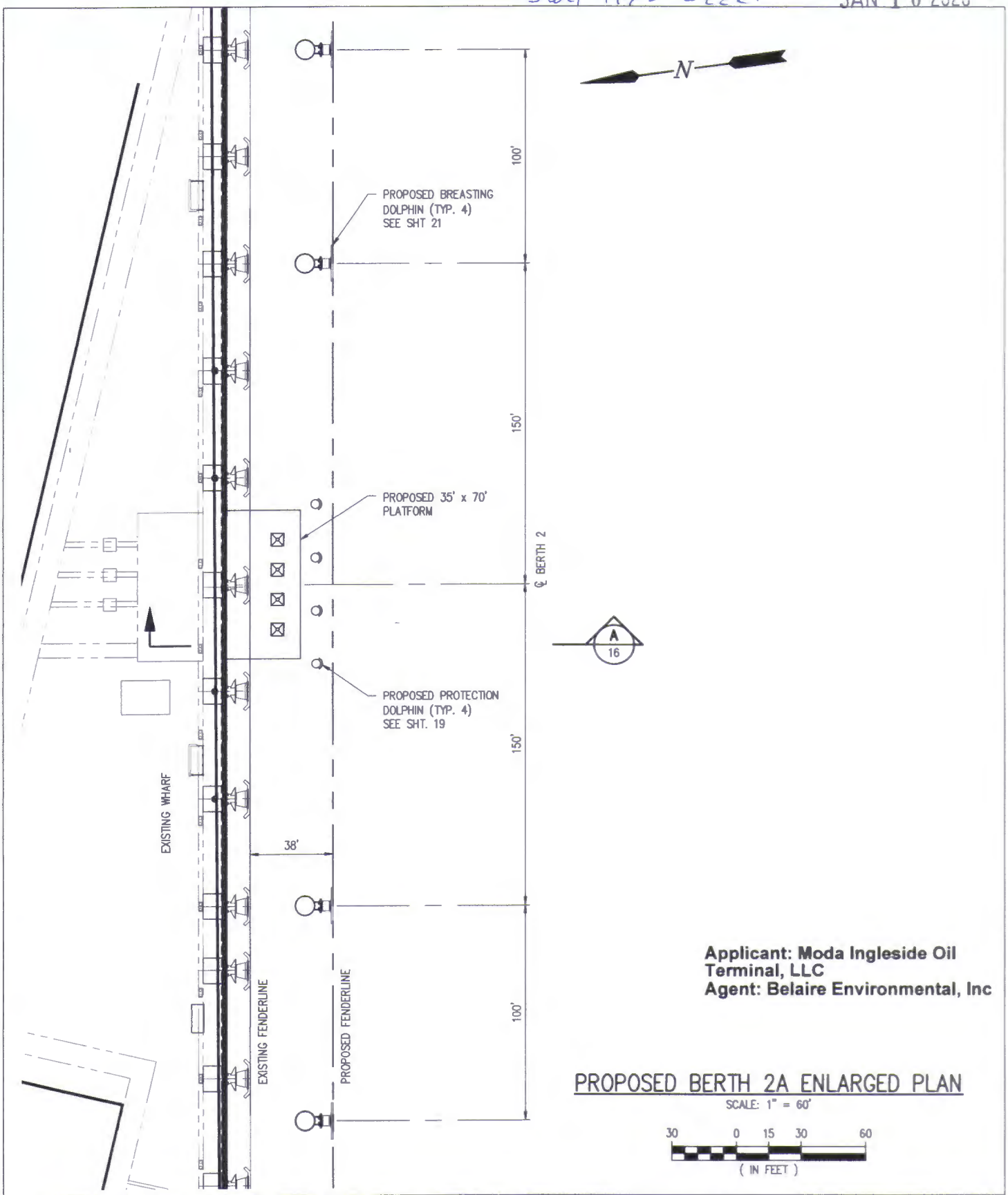
SWG-RGS-02221 JAN 10 2020



Applicant: Moda Ingleside Oil Terminal, LLC
Agent: Belaire Environmental, Inc

PROPOSED BERTH 2A ENLARGED PLAN

SCALE: 1" = 60'

30 0 15 30 60

(IN FEET)

Albert R. Favalora, III P.E.
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INGLESIDE TEXAS

MODA INGLESIDE ENERGY CENTER
BERTHS 7/8/9
PROPOSED BERTH 2A ENLARGED PLAN

DATE SEPT. 2019
DESIGN ARF
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JOB NO 10870
SHEET No. 15 OF 23

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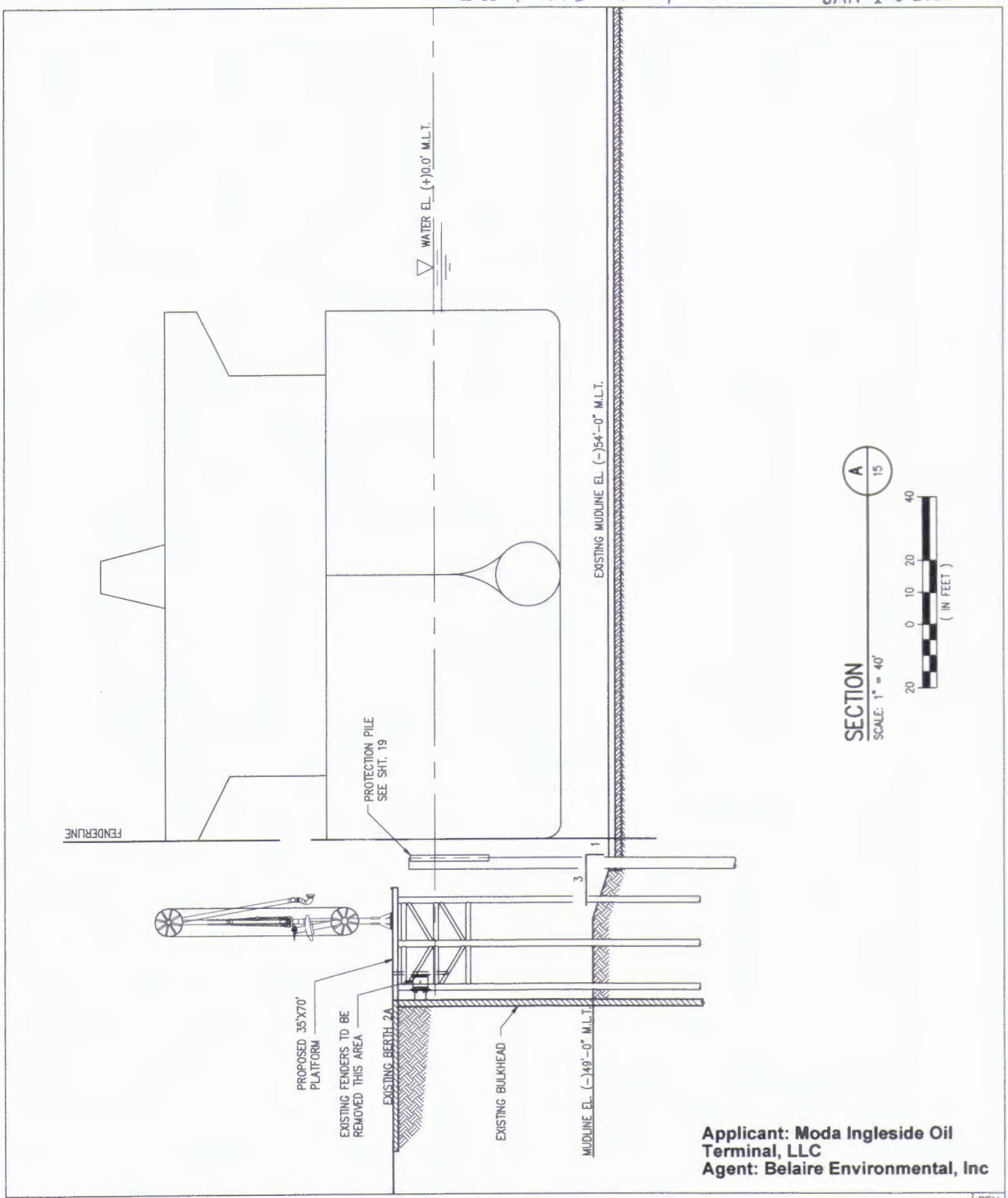
SWG-1995-02221

JAN 10 2020



Applicant: Moda Ingleside Oil Terminal, LLC
Agent: Belaire Environmental, Inc

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INGLESIDE TEXAS

MODA INGLESIDE ENERGY CENTER
BERTH 7/8/9 EXPANSION
BERTH 2A SECTION

DATE SEPT. 2019
DESIGN ARF
DRAWN MEW
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JOB NO 10870
SHEET No.
16 OF 23

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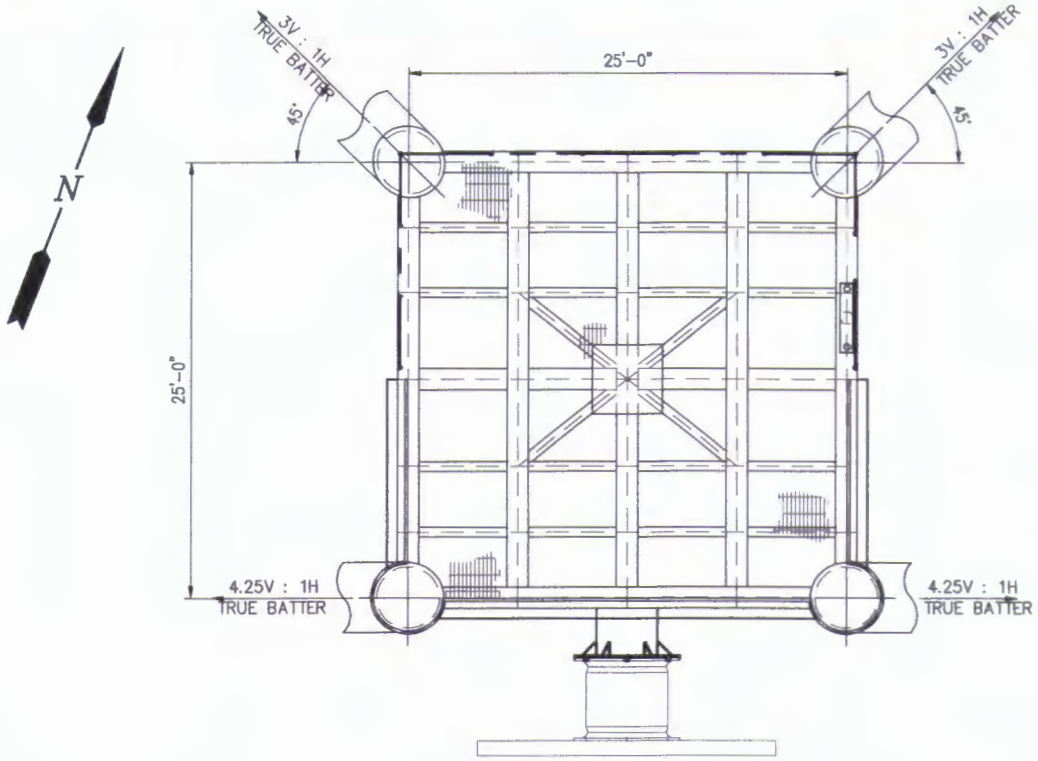
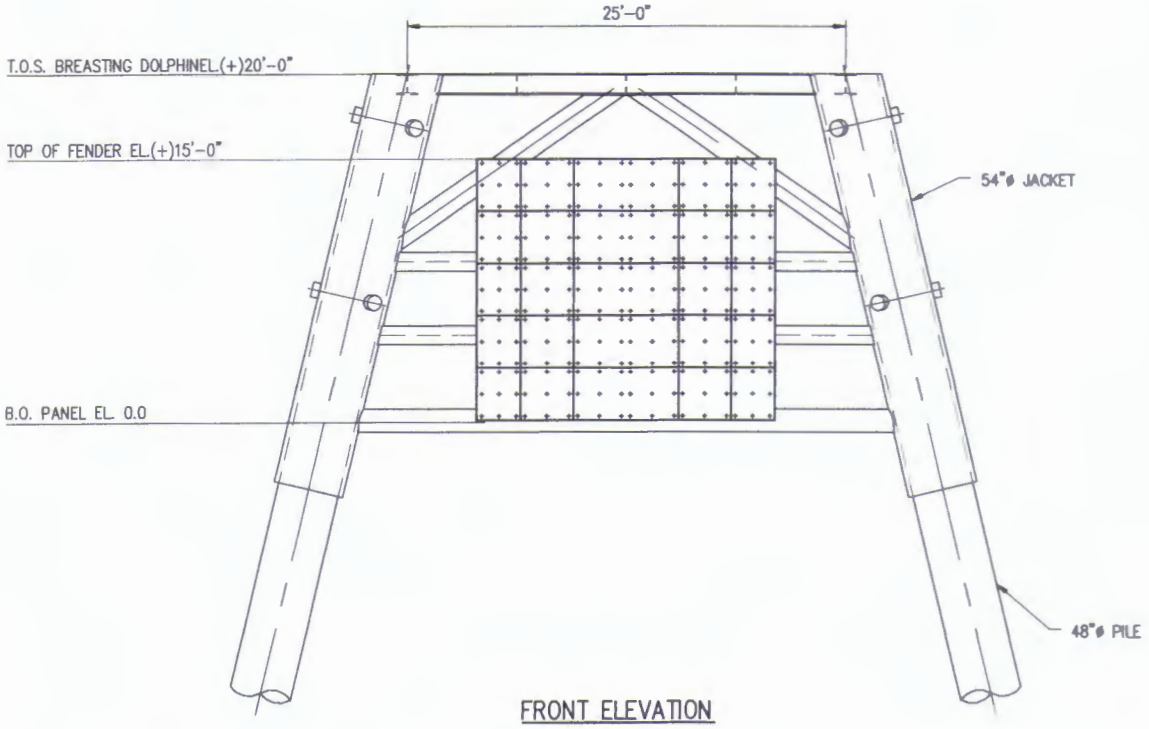
SWG-1995-02221

JAN 10 2020



PLAN



FRONT ELEVATION

Applicant: Moda Ingleside Oil Terminal, LLC
Agent: Belaire Environmental, Inc

BREASTING DOLPHINS

SCALE: 3/32" = 1'-0"

6 0 3 6 12
(IN FEET)

Albert R. Favalora, III P.E.
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INGLESIDE TEXAS

MODA INGLESIDE ENERGY CENTER
BERTH 7/8/9 EXPANSION
BREASTING DOLPHINS

DATE SEPT. 2019
DESIGN ARF
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JOB NO 10870
SHEET No.
17 OF 23

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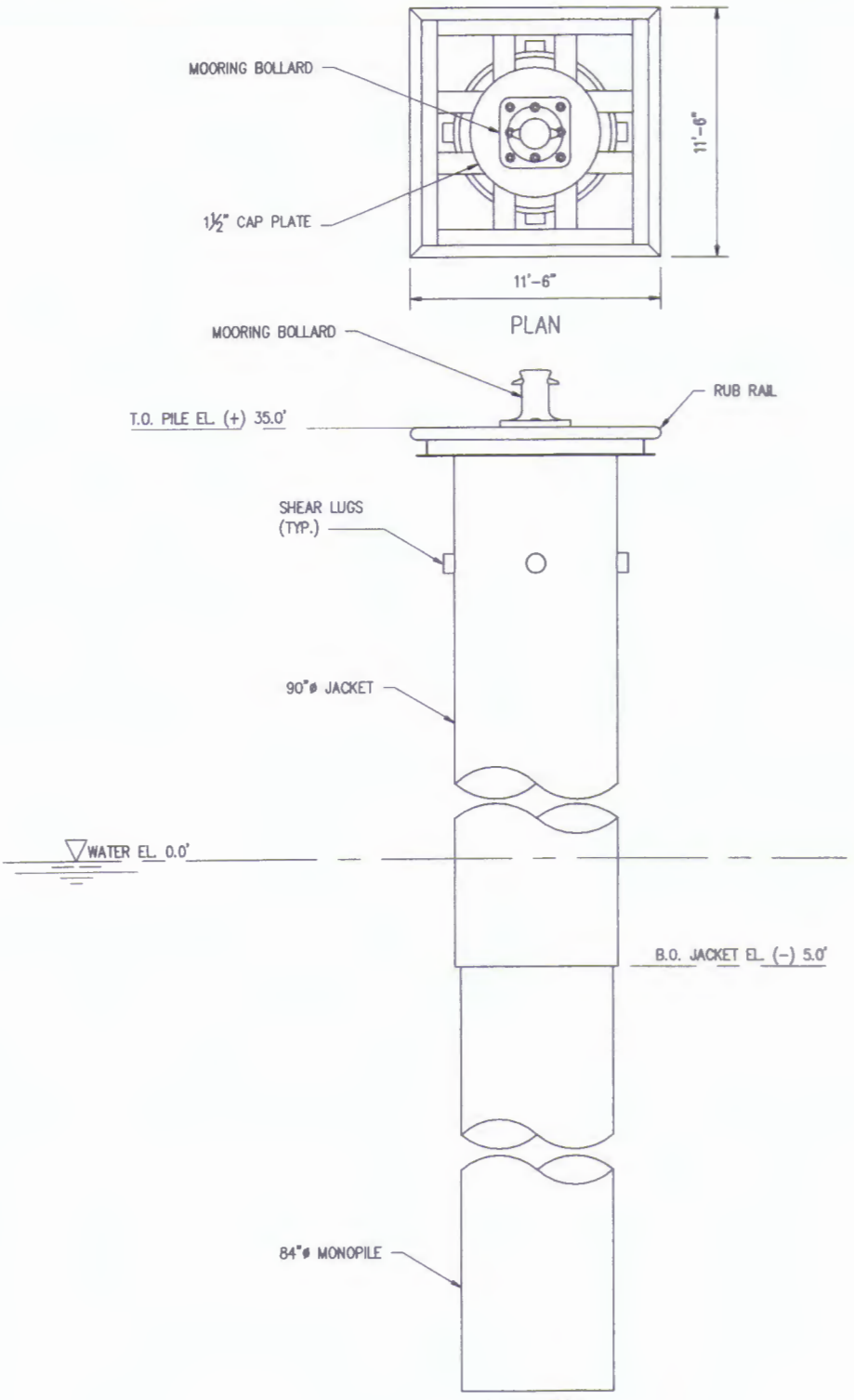
JAN 1 0 2020



MOORING DOLPHIN

SCALE: 1/8" = 1'-0"

4 0 2 4 8

(IN FEET)

Applicant: Moda Ingleside Oil Terminal, LLC
Agent: Belaire Environmental, Inc

Albert R. Favalora, III P.E.
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MODA INGLESIDE ENERGY CENTER
BERTH 7/8/9 EXPANSION
MOORING DOLPHIN

DATE SEPT. 2019
DESIGN ARF
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JOB NO 10870
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18 OF 23

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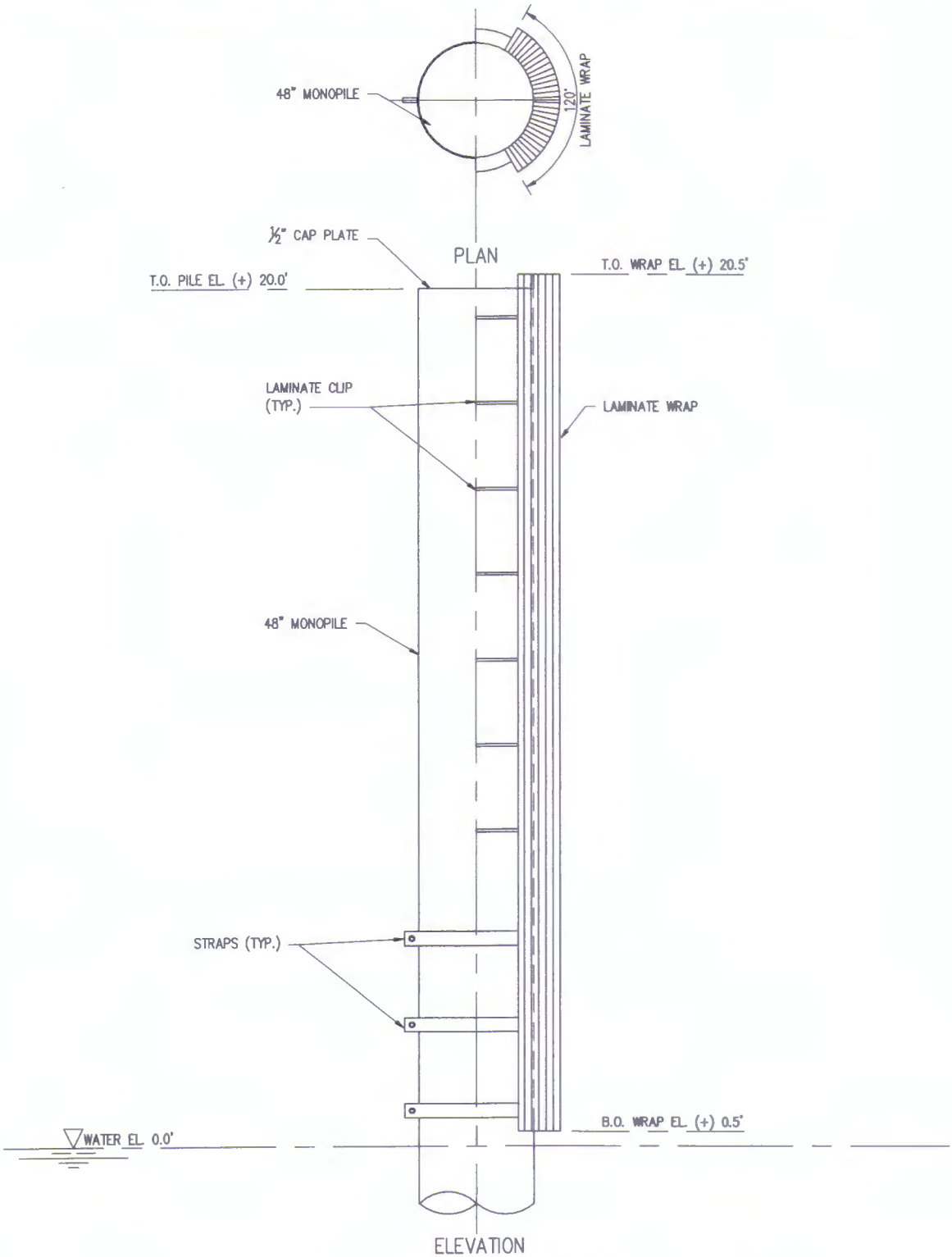
SWG-1995-02221

JAN 1 0 2020



48"ø PROTECTION DOLPHIN

SCALE: 3/16" = 1'-0"

3 0 1.5 3 6

(IN FEET)

Applicant: Moda Ingleside Oil Terminal, LLC
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MODA INGLESIDE ENERGY CENTER
BERTH 7/8/9 EXPANSION
48"Ø PROTECTION DOLPHIN

DATE SEPT. 2019
DESIGN ARF
DRAWN MEW
CHECK JEJ
JOB NO 10870
SHEET No. 19 OF 23

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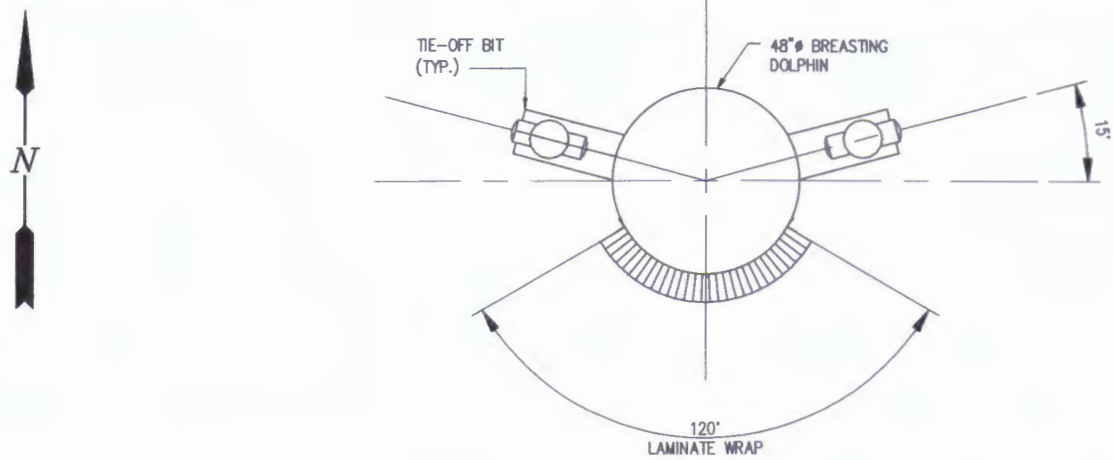

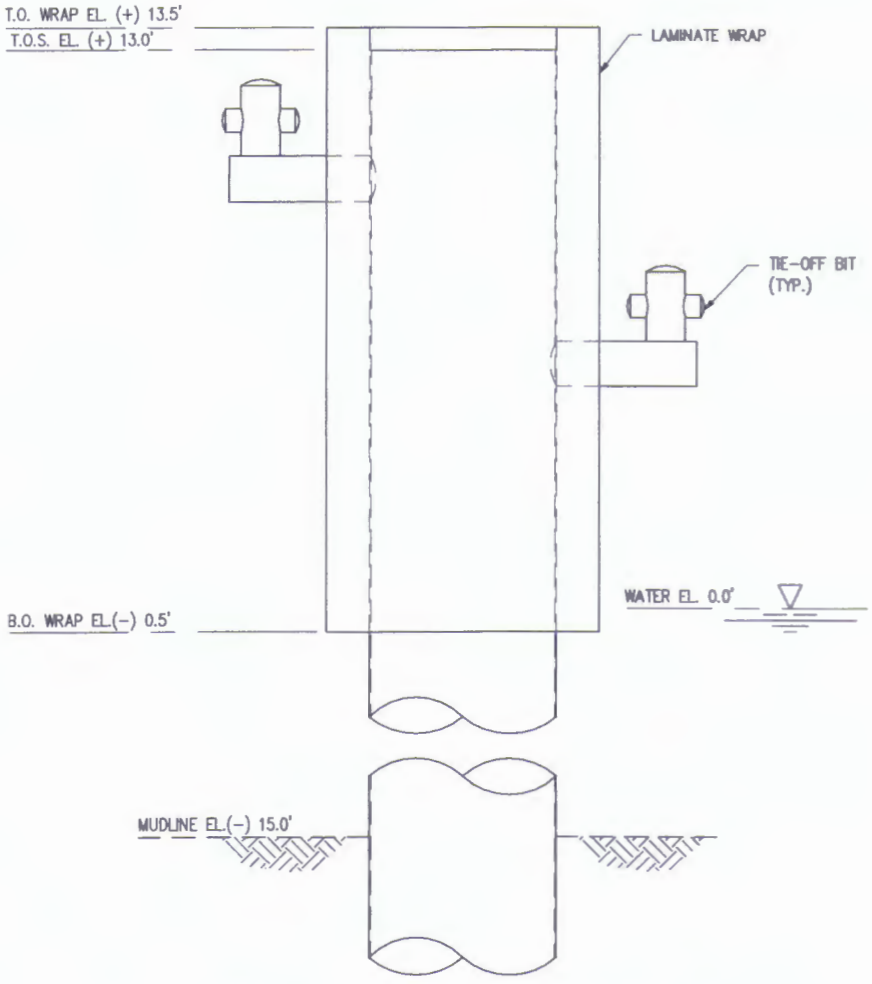

BARGE DOCK BREASTING DOLPHIN

SCALE: 1/4" = 1'-0"

2 0 1 2 4

(IN FEET)

Aplicant: Moda Ingleside Oil Terminal, LLC
Agent: Belaire Environmental, Inc

Albert R. Favalora, III P.E.
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MODA INGLESIDE ENERGY CENTER
BERTH 7/8/9 EXPANSION
BARGE DOCK BREASTING DOLPHINS

DATE SEPT. 2019
DESIGN ARF
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SHEET No. 20 OF 23

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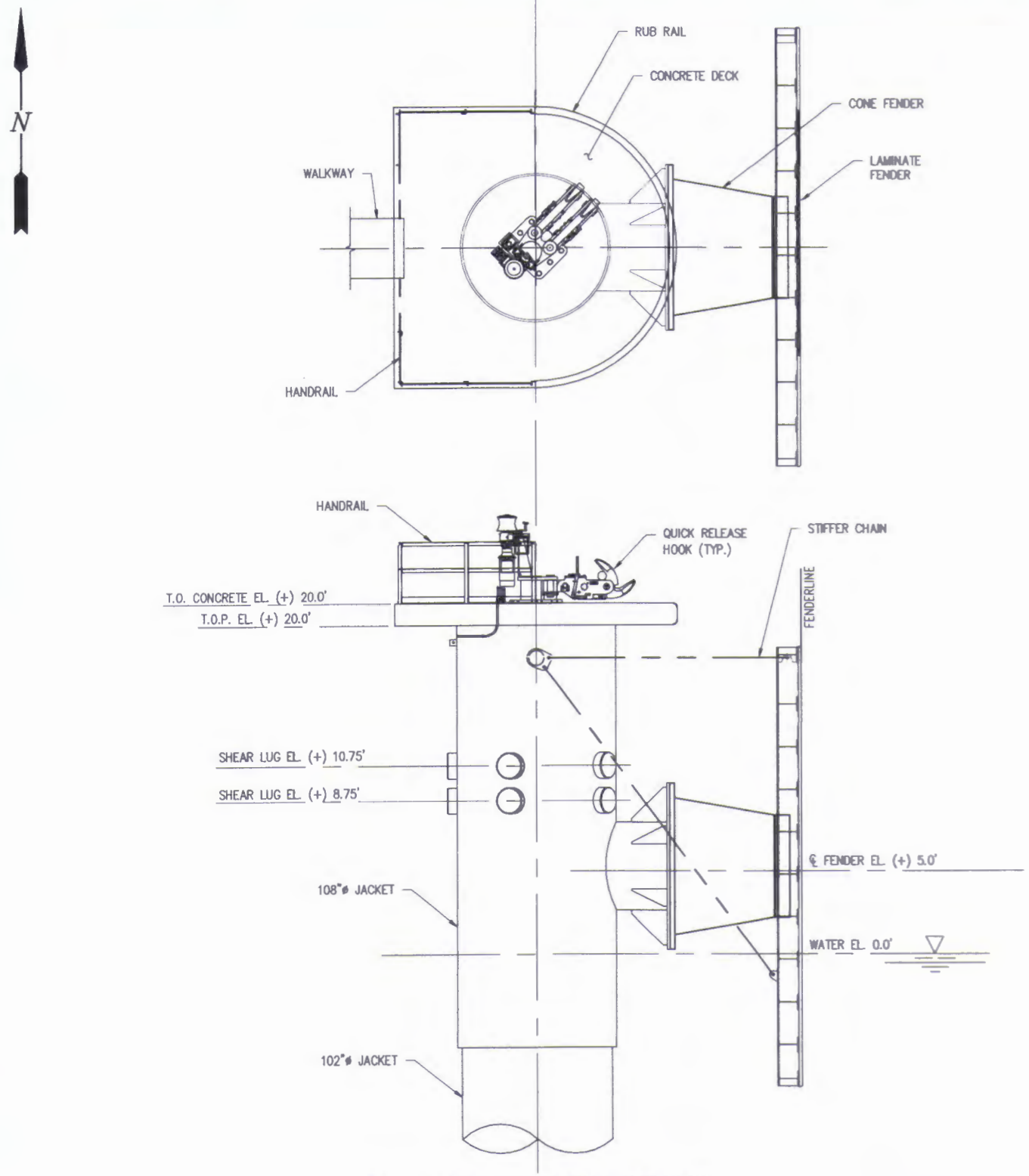
JAN 10 2020



SHIP DOCK BREASTING DOLPHIN

SCALE: 1/8" = 1'-0"

4 0 2 4 8

(IN FEET)

Applicant: Moda Ingleside Oil Terminal, LLC
Agent: Belaire Environmental, Inc

Albert R. Favalora, III P.E.
TX P.E. Number 131433

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INGLESIDE TEXAS

MODA INGLESIDE ENERGY CENTER
BERTH 7/8/9 EXPANSION
BERTH 2A BREASTING DOLPHIN

DATE SEPT. 2019
DESIGN ARF
DRAWN MEW
CHECK JEJ
JOB NO 10870
SHEET No.
21 OF 23

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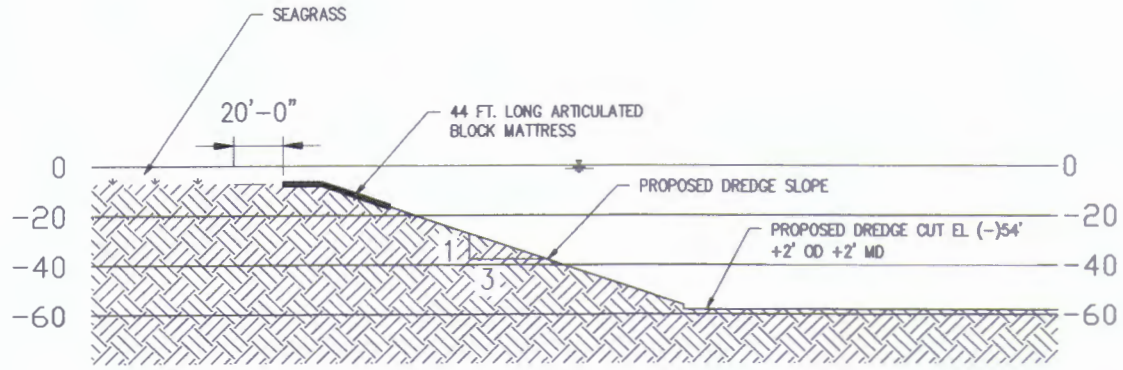
SWG-1995-02221

JAN 10 2020



PROPOSED SLOPE STABILIZATION

SCALE: 1" = 75'

Applicant: Moda Ingleside Oil Terminal, LLC
Agent: Belaire Environmental, Inc

Albert R. Favalora, III P.E.
TX P.E. Number 131433

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INGLESIDE TEXAS

MODA INGLESIDE ENERGY CENTER
BERTHS 7/8/9
PROPOSED SLOPE STABILIZATION

DATE SEPT. 2019
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DRAWN MEW
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JOB NO 10870
SHEET No.
22 OF 23

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SWG-1995-02221 JAN 10 2020

Applicant: Moda Ingleside Oil Terminal, LLC
Agent: Belaire Environmental, Inc

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INCORPORATED
LA: C-1120 TX: F-2981
NEW ORLEANS, LA • BEAUMONT, TX

MODA MIDSTREAM, LLC.
INGLESIDE TEXAS

MODA INGLESIDE ENERGY CENTER
BERTH 7/8/9 EXPANSION
DREDGE PLACEMENT AREA

DATE SEPT. 2019
DESIGN ARF
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JOB NO 10870
SHEET No.
23 OF 23

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1.3 PROPOSED PROJECT IMPACTS

Components of the proposed project resulting in impacts to aquatic resources include the proposed dredge area and the proposed bulkhead extension. **Exhibit A** provides an overview map of the proposed project impacts.

Completion of the approximate 43-acre dredge project will result in direct impacts to approximately 8.86 acres of submerged aquatic vegetation and approximately 0.80 acres of estuarine wetland.

Construction of the new bulkhead extension will result in indirect impacts of approximately 0.15 acres of estuarine wetland. The bulkhead installation is expected to result in the discharge of approximately 59.26 cubic yards of material in a jurisdictional area of approximately 0.03 acres located below the limit of annual high tide. Approximately 0.02 acres of this is area is unvegetated shoreline and approximately 0.01 acres of this area is comprised of the estuarine wetland habitat. Overall, the proposed bulkhead is approximately 491 linear feet with an average jurisdictional discharge of approximately 0.12 cubic yards of material per running foot.

Summary of Proposed Project Impacts			
Impacted Habitat Type	**Direct Impact**	**Indirect Impact**	**Total**
Submerged Aquatic Vegetation	8.86 Acres	0	8.86 Acres
Estuarine Emergent Wetland	0.80 Acres	0.15 Acres	0.95 Acres
		TOTAL PROPOSED IMPACTS	**9.81 Acres**

EXHIBIT A

OVERVIEW OF PROPOSED PROJECT IMPACTS

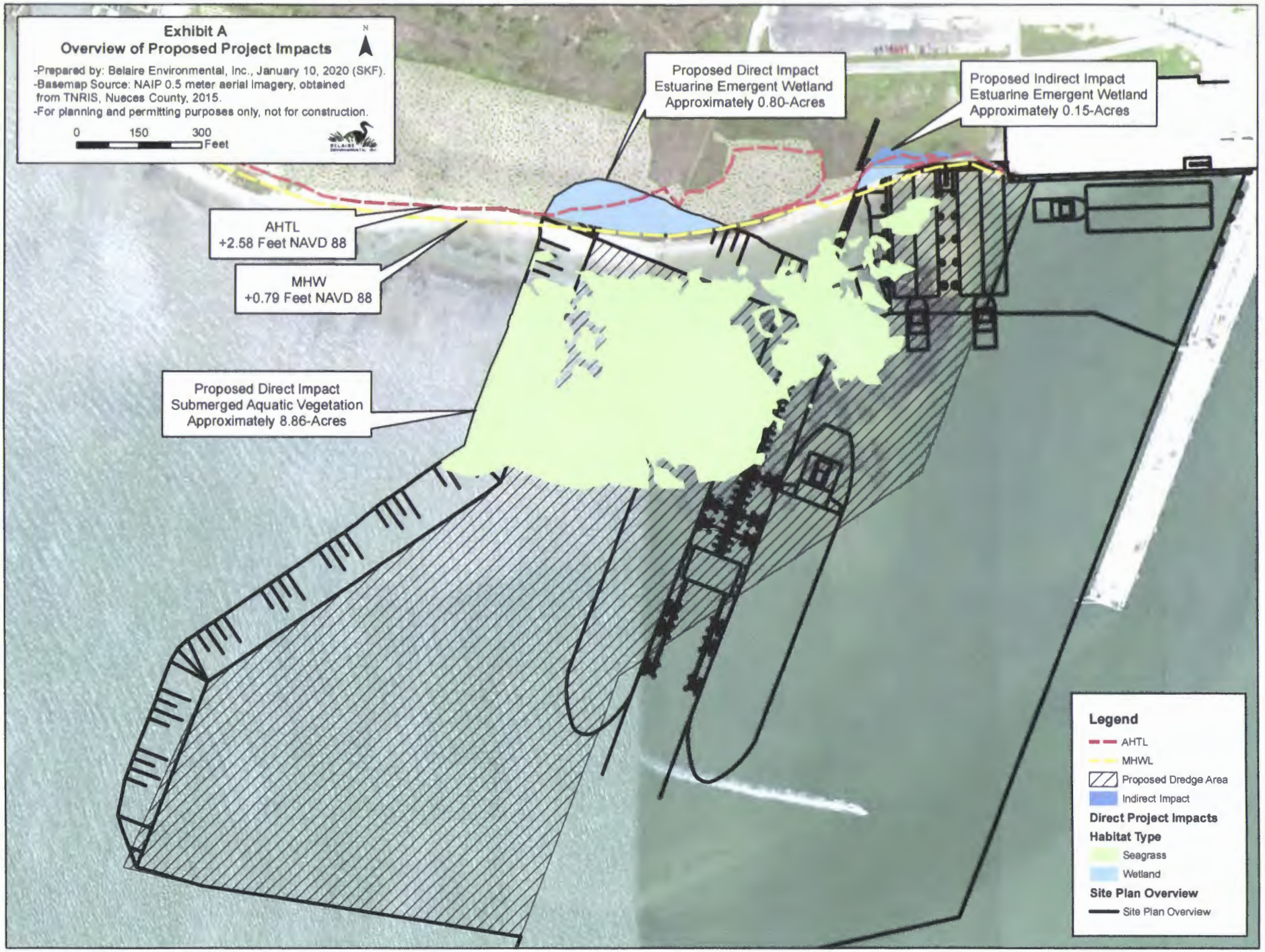
Exhibit A
Overview of Proposed Project Impacts
-Prepared by: Belaire Environmental, Inc., January 10, 2020 (SKF).
-Basemap Source: NAIP 0.5 meter aerial imagery, obtained from TNRIS, Nueces County, 2015.
-For planning and permitting purposes only, not for construction.
0 150 300 Feet
N
Proposed Direct Impact
Estuarine Emergent Wetland
Approximately 0.80-Acres
Proposed Indirect Impact
Estuarine Emergent Wetland
Approximately 0.15-Acres
AHTL
+2.58 Feet NAVD 88
MHW
+0.79 Feet NAVD 88
Proposed Direct Impact
Submerged Aquatic Vegetation
Approximately 8.86-Acres
Legend
AHTL
MHWL
Proposed Dredge Area
Indirect Impact
Direct Project Impacts
Habitat Type
Seagrass
Wetland
Site Plan Overview
Site Plan Overview

2.0 ENG FORM 4345

U.S. Army Corps of Engineers (USACE)

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

Form Approved - OMB No. 0710-0003 Expires: 02-28-2022

The public reporting burden for this collection of information, OMB Control Number 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR APPLICATION TO THE ABOVE EMAIL.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: http://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE
		JAN 10 2020	

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Clayton Middle - Last - Curtis	First - Sara Middle - Last - Flaherty
Company -Moda Ingleside Oil Terminal, LLC	Company - Belaire Environmental, Inc.
E-mail Address - clayton.curtis@modamidstream.com	E-mail Address - sflaherty@belaireenv.com
6. APPLICANT'S ADDRESS:	**9. AGENT'S ADDRESS:**
Address- 1000 Louisiana, Suite 7100	Address- PO Box 741
City - Houston State - TX Zip - 77002-5029 Country - USA	City - Rockport State - TX Zip - 78381 Country - USA
7. APPLICANT'S PHONE NOs. w/AREA CODE	**10 AGENTS PHONE NOs. w/AREA CODE**
a. Residence b. Business 832-930-4838 c. Fax 832-930-4839	a. Residence b. Business 361-729-1241 c. Fax 361-729-1441

STATEMENT OF AUTHORIZATION

11. I hereby authorize, Sara Flaherty to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

SIGNATURE OF APPLICANT — DATE: 1-10-2020

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
Moda Ingleside Oil Terminal, LLC Berth Expansion Project

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
Corpus Christi Bay	Address 262 Coral Sea Road
15. LOCATION OF PROJECT	City - Ingleside State- TX Zip- 78336
Latitude: °N 27.821573° Longitude: °W -97.210092	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

State Tax Parcel ID 67889 Municipality

Section - Township - Range -

17. DIRECTIONS TO THE SITE

From Corpus Christi, proceed north on US 181 towards Portland for approximately 0.4 miles. Continue onto State Highway (SH) 35 for approximately 10 miles then take the exit onto SH 361. Continue north on SH 361 for approximately 5.7 miles, then turn right onto North Main Street. Continue onto North Main Street for approximately 4 miles, then turn right into the Moda Ingleside Oil Terminal, LLC facility.

18. Nature of Activity (Description of project, include all features)

Moda Ingleside Oil Terminal, LLC proposes to make improvements to Berth 2A within the existing East Basin, increase the permitted width of the West Ship Basin, and construct Berths 7, 8, and 9. See Section 1.1, Nature of Activity - Project Summary for a full narrative of project components.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The purpose of and the need for the proposed project is to provide the maritime infrastructure necessary to accommodate the increasing demand by existing and committed, future customers at the Moda Ingleside Oil Terminal in a logistically safe and efficient manner.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

The reasons for discharge include the bulkhead extension required for shoreline stabilization and construction of dock facilities. All dredge material will be placed in an approved dredge material placement area. Therefore, it is not anticipated that the dredge activities would result in the discharge of dredged or fill material into a wetland or other waterbody.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
Concrete (bulkhead) 59.26 cubic yards		

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres 0.03 (bulkhead)

or

Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

The applicant has avoided and minimized to the maximum extent practicable. The dredge area was reduced from the initially proposed 66.04 acre area to the currently proposed 43-acre area, reducing impacts of submerged aquatic vegetation from approximately 20.26 acres to the currently proposed 8.86 acres. Additionally, side slope stabilization features were added to the plan to prevent sloughing and subsequent indirect seagrass impacts. The applicant will utilize all appropriate BMPs to avoid and minimize impacts.

JAN 1 0 2020

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list)

a. Address- Port of Corpus Christi Authority - PO Box 1541

City - Corpus Christi State - TX Zip - 78403

b. Address- Flint Hills Resources - 103 FM 1069

City - Ingleside State - TX Zip - 78362

c. Address- Wild Duck Creek RV - 1233 Bayshore Drive

City - Ingleside State - TX Zip - 78362

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT — 1-10-20 DATE

Sara Flaherty — SIGNATURE OF AGENT — 1-10-20 DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

3.0 DELINEATION OF SPECIAL AQUATIC SITES AND OTHER WATERS OF THE UNITED STATES:

Please see **Section 3.1** for the "Wetland Delineation and Jurisdictional Determination" and **Section 3.2,** for the "Delineation of Submerged Aquatic Vegetation". The wetland delineation is considered preliminary and has not been verified by the USACE. However, the applicant will proceed with a Preliminary Jurisdictional Determination (PJD) with the assumption that all impacted wetlands are jurisdictional, and therefore, subject to USACE permitting.

The wetland delineation and jurisdictional determination was conducted using the routine method for plots greater than five acres in size. The report concluded that the survey area contained 9.89- acres of estuarine emergent wetlands and 0.33-acres of palustrine emergent wetlands. These wetland features were determined to be "adjacent" to a water of the United States (Corpus Christi Bay) and therefore, subject to USACE jurisdiction. The proposed impacts resulting from this project include the direct impact of approximately 0.80 acres of estuarine wetland and the indirect impact of approximately 0.15 acres of estuarine wetland delineated during this survey effort, totaling 0.95 acres of estuarine wetland impacts.

The delineation of submerged aquatic vegetation was conducted using methods previously approved and accepted by the USACE. The report concluded that the survey area contained 20.26-acres of submerged aquatic vegetation. The seagrass delineated within the survey is considered to be a special aquatic site, situated within a water of the United States, and subject to USACE permitting and compensatory mitigation requirements. The proposed impacts resulting from this proposed project include approximately 8.86 acres of submerged aquatic vegetation.

3.1 WETLAND DELINEATION AND JURISDICTIONAL DETERMINATION

INTRODUCTION

At the request of Moda Ingleside Oil Terminal, LLC on October 8-9, 2019, Belaire Environmental, Inc. (BEI) performed a wetland delineation and jurisdictional determination for an approximate 17.0-acre survey area located in San Patricio County, Texas. The approximate 17.0-acre survey area was located east of the community of Ingleside on the Bay, west of the Gulf Intracoastal Waterway (GIWW), and north of the Corpus Christi Ship Channel in Ingleside, San Patricio County, Texas (**Exhibit A**). Within the subject survey area, Moda Ingleside Oil Terminal, LLC requests an Approved Jurisdictional Determination. The methods and findings of BEI's wetland delineation and jurisdictional determination are discussed below.

METHODS

To perform the determination/delineation, BEI used the "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coast Plain Region (Version 2.0)" (USACE, 2010), as well as the "Field Guide for Wetland Delineation: 1987 Corps of Engineers Manual" (Wetland Training Institute, Inc., 1999) and the USACE/U.S. Environmental Protection Agency (EPA) Memorandum of Understanding entitled "Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States and Carabell v. United States" (USACE/EPA, Dec. 2, 2008).

The survey boundary for the completed wetland delineation extended to the southern edge of vegetation, along the Corpus Christi Ship Channel. The portion of the project area located below the vegetation line was also evaluated by BEI personnel and is discussed in the *Seagrass Survey Results* document (Appendix C). As part of the wetland delineation, BEI mapped the annual high tide line (AHTL) and the mean high water line (MHWL) in order to establish all jurisdictional limits within the survey area. The AHTL was mapped at an elevation of +2.58 feet NAVD 88 and the MHWL was mapped at an elevation of +0.79 feet NAVD 88 as indication at National Oceanic Atmospheric Administration (NOAA) station 8775237 (Port Aransas, Tx). While portions of the AHTL and MHWL were located outside of the wetland delineation survey boundary, they were mapped in their entirety at the time of the site investigation. The routine method for plots greater than five acres in size was employed to complete the wetland delineation. The survey area's baseline was parallel to the Corpus Christi Ship Channel, the survey area's major watercourse, and was approximately 1,920 feet in length. BEI established three transects, spaced approximately 480 feet apart and ranging in length from 335 feet to 505 feet, to adequately sample all vegetation communities observed within the survey area (**Exhibit B**). To confirm common names, scientific names and the wetland indicator status of all plants within the survey area, BEI used "The State of Texas 2016 Wetland Plant List" (Lichvar et al, 2016). To determine hydric soils and wetland hydrology, BEI used the Regional Supplement to the USACE Manual along with the 1987 USACE Manual and the NTCHS Field Indicators of Hydric Soils in the U.S. To make an upland or wetland determination, BEI recorded vegetation, soils, and hydrology parameters at each sample point.

To determine the position of various points, BEI used dual frequency RTK Trimble R10 GPS receivers working from the VRS corrections network. The nominal accuracy of the typical dual-frequency RTK system is ± 1 centimeter horizontally and ± 2 centimeters vertically. BEI employed the USACE standard operating procedures for recording jurisdictional delineations with a GPS. Position coordinates were recorded and then plotted in the office with ArcGIS 10.4.

FINDINGS

Background data related to local climate was collected to characterize recent site hydrology. Data from the Natural Resource Conservation Services (NRCS) Applied Climate Information System (ACIS) was reviewed in an effort to determine the wetland hydrologic conditions for the survey area for October

2019 using the Direct Antecedent Rainfall Evaluation Method (DAREM). However, there was not sufficient data available to accurately determine the site's DAREM index score.

The wetland delineation survey area directly abuts Corpus Christi Ship Channel and is significantly influenced by the ebb and flow of daily tides. The two closest NOAA currents and tides data stations were reviewed to determine the recent tidal influence of the survey area. In the days prior to the wetland delineation, tides at station 8775296 (USS Lexington, Corpus Christi Bay, Tx) and station 8775237 (Port Aransas, Tx) indicated that tides were recorded above the AHTL of +2.58 feet NAVD 88. To further evaluate the tidal influence within the survey area, BEI recorded the tides while on-site during the wetland delineation. Tidal readings recording at the survey area were +2.35 feet NAVD 88 on October 8, 2019, and +2.5 feet NAVD 88 on October 9, 2019.

As noted above, BEI utilized three transects to collect field data. Consistent with the delineation manual, sample points were recorded to characterize the different vegetation communities encountered. Sample points were collected in wetland and non-wetland areas to establish the various communities within the survey area as shown on **Exhibit B**. BEI examined all land features within the approximate 17.0-acre survey area and identified three distinct vegetation communities (**Exhibit C**). Vegetation communities identified included uplands (Upland Vegetation Community A), estuarine emergent wetlands (Wetland Vegetation Community B), and palustrine emergent wetlands (Wetland Vegetation Community C). **Exhibit D** contains copies of the wetland data sheets completed for each sample point. Additional resources reviewed by BEI personnel to assist with wetland determinations/delineations include NRCS soil classification data (**Exhibit E**) and National Wetland Inventory (NWI and FEMA floodplain data (**Exhibit F**)

The following discussion provides a general summary of each of the vegetation communities observed within the survey area. For communities associated with the wetland areas, a discussion of the hydric soil indicators and wetland hydrology indicators observed is included.

Upland Vegetation Community A (Approximately 6.78-acres)

Upland Vegetation Community A was approximately 6.78-acres in size and was represented by Sample Points T1 SP01, T1 SP02, T2 SP01, T2 SP02, T3 SP03, T3 SP04, T3 SP05 and T3 SP06. Upland Vegetation Community A was comprised of prairie grassland with some shrub vegetation scattered throughout. Herbaceous vegetation within this vegetation community was dominated by coastal marsh pennywort (*Hydrocotyle bonariensis*, FACW), annual ragweed (*Ambrosia artemisiifolia*, FACU), browns yellow tops (*Flaveria brownii*, FACW) bushy bluestem (*Andropogon glomeratus*, FACW), gulf dune crown grass (*Paspalum monostachyum*, FACW), blue mist flower (*Conoclinium coelestinum*, FAC), salt-meadow cord grass (*Spartina patens*, FACW), three-square (*Schoenoplectus pungens*, OBL), and turkey-tangle (*Phyla nodiflora*, FAC). Shrub vegetation was dominated by Brazilian peppertree (*Schinus terebinthifolia*, FAC) and honey mesquite (*Prosopis glandulosa*, UPL). Woody vine vegetation was dominated by wild cow-pea (*Vigna luteola*, FACW), mustang grape vine (*Vitis mustangensis*, UPL), gulf coast twinevine (*Funastrum angustifolium*, FACW), and fringed greenbrier (*Smilax bona-nox*, FAC). No wetland hydrology indicators were observed within this vegetation community. Sample Point T2 SP01 provides an accurate representation of soils observed within Upland Vegetation Community A. Soils present at T2 SP01 were sand in texture. The soil matrix color was 10 YR 3/2 from 0 to 12 inches, 10 YR 2/1 from 12 to 13 inches, and 10 YR 10 3/2 with shell hash present from 13 to 18 inches. No redoximorphic features were observed at T2 SP01. While redoximorphic features were observed at T1 SP01, T1 SP02, and T3 SP06, these soils did not meet the criteria of any hydric soil indicator. Based on the lack of wetland hydrology and the lack of hydric soils, the sample points located with this vegetation community were determined to be located within uplands.

Wetland Vegetation Community B (Approximately 9.89-acres)

Wetland Vegetation Community B was approximately 9.89-acres in size, contained an estuarine emergent wetland (Wetland 1), and was represented by Sample Point T1 SP03, T1 SP04, T2 SP03, T2 SP04, T3 SP07 and T3 SP08. Wetland 1 contains persistent emergent wetland vegetation with portions of the wetland that are regularly influenced by daily tides and portions that are only tidally influenced during high tide events. Herbaceous vegetation within this vegetation community was dominated by coastal marsh-pennywort, three-square, salt-meadow cord grass, narrow-leaf carpet grass, gulf dune crown grass, coastal saltgrass (*Distichlis spicata*, OBL), and marsh fimbry (*Fimbristylis castanea*, OBL). Woody vine vegetation was dominated by wild cow-pea and gulf coast twinevine. Non-dominant species consisted of bushy seaside-tansy (*Borrichia frutescens*, OBL), prairie false foxglove (*Agalinis heterophylla*, FACU), and bushy bluestem. Note that broad-leaf cattail (*Typha latifolia*, OBL) was also observed as a dominant species within this vegetation community; however, this species was not documented on any Wetland Vegetation Community B data sheets as it was not located in the vicinity of the established transect. Primary wetland hydrology indicators observed within this vegetation community included Surface Water (A1), High Water Table (A2), Saturation (A3), Aquatic Fauna (B13), and Oxidized Rhizospheres along Living Roots (C3). Sample Point T2 SP04 provides an accurate representation of the soils observed within Wetland Vegetation Community B. Soils present at T2 SP04 were sand in texture. From 0 to 12 inches, and soil matrix color was 10 YR 4/2 at 95% with 5% 10 YR 5/6 redox concentrations observed in the matrix and pore linings. From 12 to 18 inches, the soil matrix color was 2.5 Y 6/1 at 98% with 2% 10 YR 6/6 redox concentration observed in the matrix. Soils present at T2 SP04 met the criteria of hydric soil indicator Sandy Redox (S5). All other soils within this vegetation community also met the criteria of hydric soil indicator Sandy Redox (S5). Based on the dominance of hydrophytic vegetation, the presence of wetland hydrology, and the presence of hydric soils, the sample points located within this vegetation community were determined to be located within wetlands.

Wetland Vegetation Community C (Approximately 0.33-acres)

Wetland Vegetation Community C was approximately 0.33-acres in size, contained a palustrine emergent wetland (Wetland 2), and was represented by T3 SP01 and T3 SP02. Wetland 2 contains persistent wetland vegetation and is seasonally flooded due to low topography. Herbaceous vegetation within this vegetation community was dominated by broad-leaf cattail, three-square, gulf dune crown grass, and salt-meadow cord grass. Non-dominant species included of bushy bluestem, poison-bean, narrow leaf carpet grass, and coastal marsh pennywort. Primary wetland hydrology indicators observed within this vegetation community included High Water Table (A2) and Saturation (A3). Secondary wetland hydrology indicators observed within this vegetation community included Saturation Visible on Aerial Imagery (C9) and Geomorphic Position (D2). Sample point T3 SP02 provides an accurate representation of the soils observed within Wetland Vegetation Community C. From 0 to 2 inches, soils were loam in texture and had a matrix color of 10 YR 3/2 at 100% with no redoximorphic concentrations observed. From 2 to 4 inches, soils were sands in texture and had a soil matrix color of 10 YR 4/2 with 2% 10 YR 4/6 redox concentrations observed in the matrix. From 4 to 18 inches, soils were sand in texture and had a soil matrix color of 10 YR 5/2 with 5% 10 YR 6/6 redox concentrations observed in the matrix. Soils present at T3 SP02 met the criteria of hydric soil indicator Sandy Redox (S5). Soils present at T3 SP01 were assumed to be hydric based on all dominant species having a wetland indicator status of OBL or FACW and the presence of an abrupt wetland boundary, consistent with the 1987 manual. Based on the dominance of hydrophytic vegetation, the presence of wetland hydrology, and the presence of hydric soils, the sample points located within this vegetation community were determined to be located within wetlands.

CONCLUSIONS

It is BEI's best professional judgment that Wetland Vegetation Community B/Wetland 1 (approximately 9.89-acres) and Wetland Vegetation Community C/Wetland 2 (approximately 0.33-acres) are subject to the USACE jurisdiction because they are located within the 100 year floodplain and are located adjacent to

Corpus Christi Bay, a Traditionally Navigable Water (TNW). Any work or fill within Wetland Vegetation Community A and B within the survey area would require authorization from the USACE. A map depicting the jurisdictional limits of Wetlands 1 and 2 is provided in **Exhibit G** along with tables of boundary coordinates.

Upland Vegetation Community A (approximately 6.78-acres) is located above the AHTL and is not within any other jurisdictional areas, therefore, it is BEI's best professional judgment that this vegetation community is not subject to the USACE jurisdiction. Photographic documentation is provided as **Exhibit H**.

LIST OF EXHIBITS

Exhibit A - Vicinity Map
Exhibit B - Wetland Delineation Overview Maps
Exhibit C - Vegetation Community Map
Exhibit D - USACE Wetland Determination Data Forms, Atlantic and Gulf Coastal Plain Region
Exhibit E - NRCS Soil Classification Overview Map; Soil Classification Data
Exhibit F - NWI & Floodplain Overview Map and FEMA FIRMette Maps
Exhibit G - Wetland Boundary Map and Table of Boundary Coordinates
Exhibit H - Photographic Exhibit

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Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X

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U.S. Army Corps of Engineers/U.S. Environmental Protection Agency. Dec. 2, 2008. Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States and Carabell v. United States. B.H. Grumbles and J.P. Woodley, Jr. Memorandum of Agreement between U.S. Army Corps of Engineers and U.S. Environmental Protection Agency.

U.S. Department of Agriculture, Natural Resource Conservation Service. In cooperation with Web Soil Survey. 2014. General Soil Map of Nueces County, TX. http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

U.S. Department of Agriculture, Natural Resource Conservation Service. In cooperation with the National Technical Committee for Hydric Soils. Field Indicators of Hydric Soils in the Unites States. Version 8.1. 2017. http://soils.usda.gov/use/hydric

Exhibit A
Vicinity Map

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Exhibit A: Vicinity Map
Moda Midstream Operating, LLC
Ingelside, San Patricio County, Texas

Notes:
- Prepared by: Belaire Environmental, Inc., November 1, 2019 (CRB).
- Basemap Source: Copyright:© 2013 National Geographic Society, i-cubed
- For planning and permitting purposes only, not for construction.

0 2 4 Miles

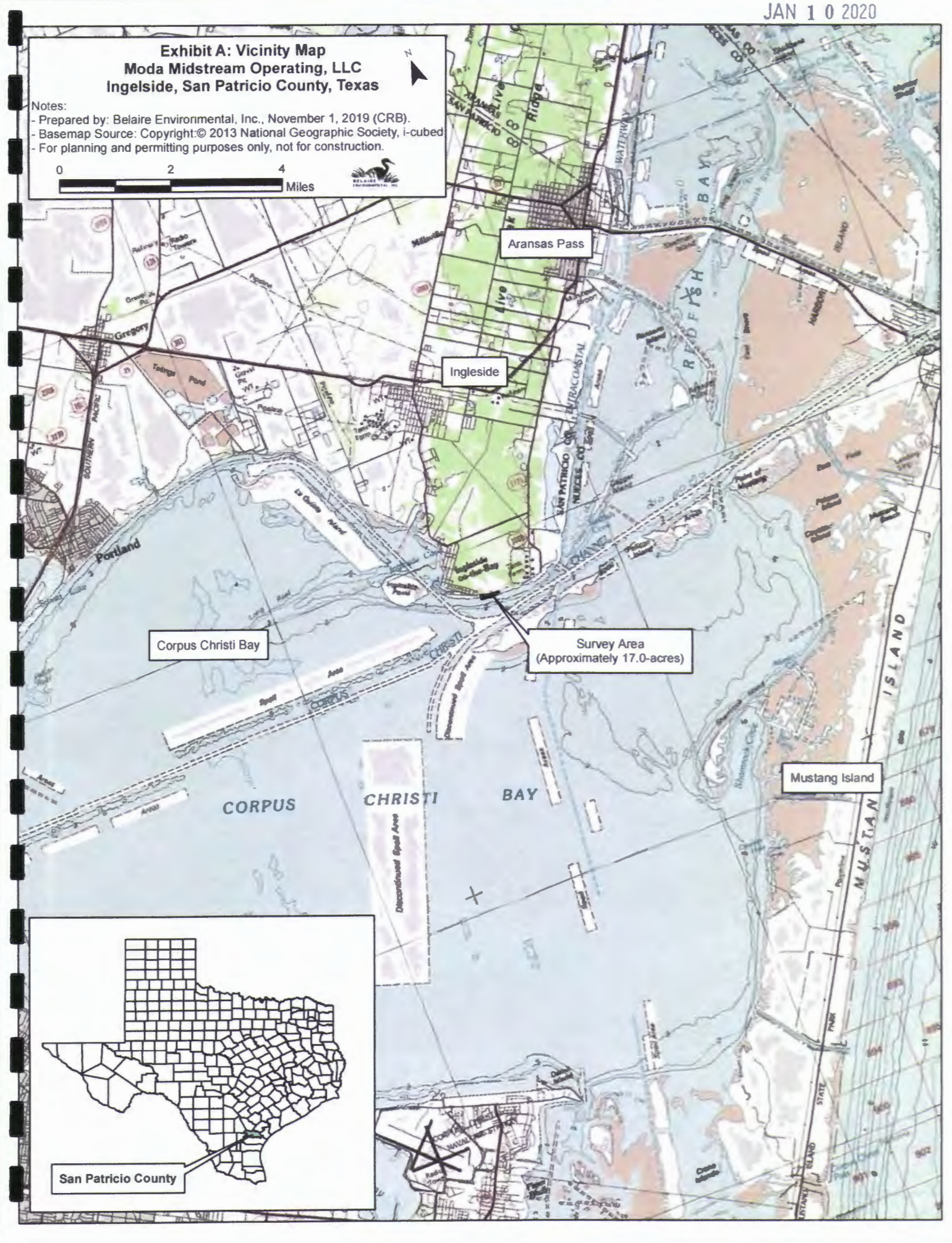

Exhibit B
Wetland Delineation Overview Map

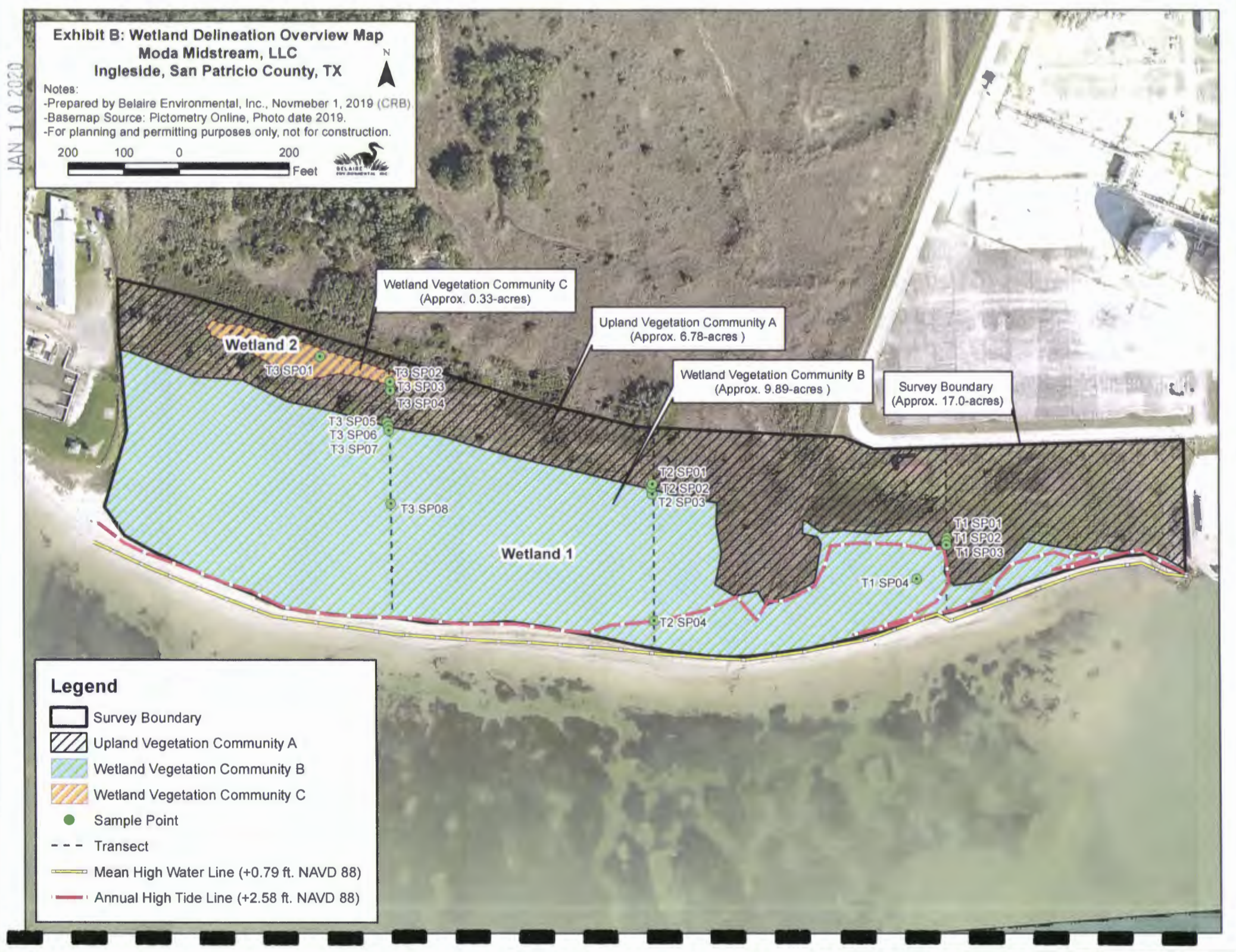
Exhibit B: Wetland Delineation Overview Map
Moda Midstream, LLC
Ingleside, San Patricio County, TX
N
Notes:
-Prepared by Belaire Environmental, Inc., Novmeber 1, 2019 (CRB).
-Basemap Source: Pictometry Online, Photo date 2019.
-For planning and permitting purposes only, not for construction.
200 100 0 200
Feet
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Wetland Vegetation Community C
(Approx. 0.33-acres)
Upland Vegetation Community A
(Approx. 6.78-acres)
Wetland Vegetation Community B
(Approx. 9.89-acres)
Survey Boundary
(Approx. 17.0-acres)
Wetland 2
T3 SP01
T3 SP02
T3 SP03
T3 SP04
T3 SP05
T3 SP06
T3 SP07
T3 SP08
T2 SP01
T2 SP02
T2 SP03
T2 SP04
Wetland 1
T1 SP01
T1 SP02
T1 SP03
T1 SP04
Legend
Survey Boundary
Upland Vegetation Community A
Wetland Vegetation Community B
Wetland Vegetation Community C
Sample Point
Transect
Mean High Water Line (+0.79 ft. NAVD 88)
Annual High Tide Line (+2.58 ft. NAVD 88)

Exhibit C
Vegetation Community Map

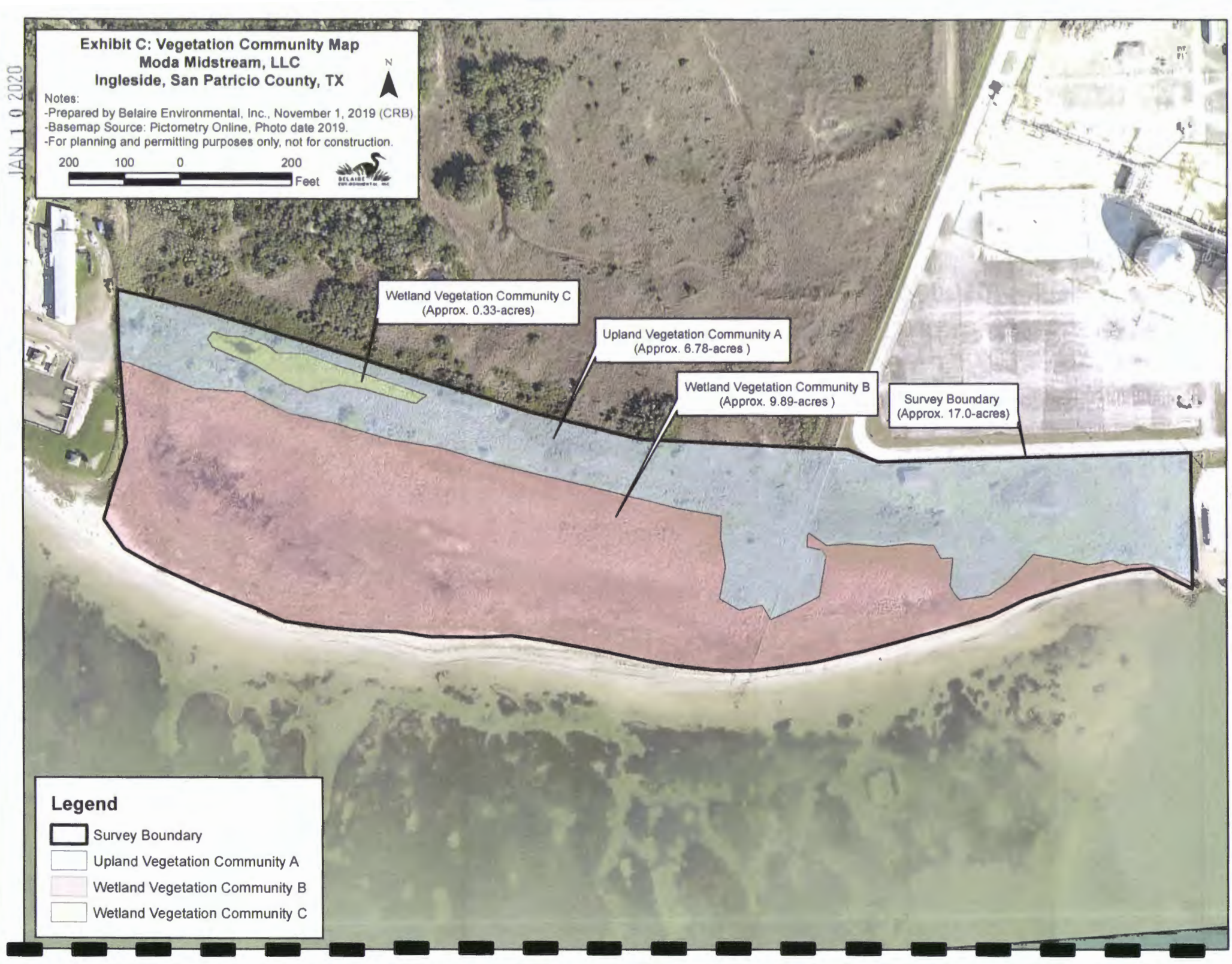
JAN 10 2020

Exhibit C: Vegetation Community Map
Moda Midstream, LLC
Ingleside, San Patricio County, TX

N

Notes:
-Prepared by Belaire Environmental, Inc., November 1, 2019 (CRB)
-Basemap Source: Pictometry Online, Photo date 2019.
-For planning and permitting purposes only, not for construction.

200 100 0 200 Feet



Legend

- Survey Boundary
- Upland Vegetation Community A
- Wetland Vegetation Community B
- Wetland Vegetation Community C

Exhibit D
USACE Wetland Determination Data Forms.
Atlantic and Gulf Coast Plain Region

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

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Project/Site: Moda Berth | City/County: San Patricio | Sampling Date: 10/8/19

Applicant/Owner: Moda Midstream Operating, LLC | State: TX | Sampling Point: T1 SP01

Investigator(s): Jessica Malone and Alex Pauley | Section, Township, Range: None

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): None | Slope (%): 5-8%

Subregion (LRR or MLRA): MLRA 150B in LRRT | Lat: 27.821675 | Long: -97.210941 | Datum: NAD 83

Soil Map Unit Name: Ga:Galveston fine sand | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?**	Yes [ ]	No [✓]
Hydric Soil Present?	Yes [ ]	No [✓]			
Wetland Hydrology Present?	Yes [ ]	No [✓]			

Remarks:

T1 SP01 was determined to be located within an upland due to the lack of hydric soil and lack of wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches):	None
Water Table Present?	Yes [ ]	No [✓]	Depth (inches):	None
Saturation Present? (includes capillary fringe)	Yes [✓]	No [ ]	Depth (inches):	18 in.

Wetland Hydrology Present? Yes [ ] No [✓]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Low-altitude aerial photography obtained from Pictometry International Inc., Photo date January 24, 2019.

Remarks:

Wetland hydrology was not present at T1 SP01.

Survey area is abutting Corpus Christi Ship Channel and was influenced by a high tide of +2.35 feet NAVD 88 on the day of the survey.

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VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: T1 SP01

Tree Stratum (Plot size: 15 ft. x 15 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 15 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 15 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 15 ft. x 15 ft.)			
1. Ambrosia artemisiifolia	40%	Yes	FACU
2. Flaveria brownii	35%	Yes	FACW
3. Hydrocotyle bonariensis	20%	Yes	FACW
4. Andropogon glomeratus	5%	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		

50% of total cover: 50% 20% of total cover: 20%

Woody Vine Stratum (Plot size: 15 ft. x 15 ft.)			
1. Smilax bona-nox	40%	Yes	FAC
2. Vigna luteola	20%	Yes	FACW
3.			
4.			
5.			
	60% = Total Cover		

50% of total cover: 30% 20% of total cover: 12%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation was dominant at T1SP01.

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SOIL

Sampling Point: T1 SP01

Profile Description: (Describe to the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3 in.	10 YR 2/2	100%					Sandy loam	
3-18 in.	10 YR 6/2	99%	10 YR 5/6	1%	C	M	Sand	Organic matter present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ☐ No ☑

Remarks:

Hydric soil was not present at T1 SP01.

JAN 1 0 2020

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Moda Berth City/County: San Patricio Sampling Date: 10/8/19

Applicant/Owner: Moda Midstream Operating, LLC State: TX Sampling Point: T1 SP02

Investigator(s): Jessica Malone and Alex Pauley Section, Township, Range: None

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5-10%

Subregion (LRR or MLRA): MLRA 150B in LRRT Lat: 27.821656 Long: -97.210946 Datum: NAD 83

Soil Map Unit Name: Ga: Galveston fine sand NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?**	Yes [ ]	No [✓]
Hydric Soil Present?	Yes [ ]	No [✓]			
Wetland Hydrology Present?	Yes [ ]	No [✓]			

Remarks:

T1 SP02 was determined to be located within an upland due to the lack of hydric soil and the lack of wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches): None	
Water Table Present?	Yes [✓]	No [ ]	Depth (inches): 18 in.	
Saturation Present? (includes capillary fringe)	Yes [✓]	No [ ]	Depth (inches): 18 in.	**Wetland Hydrology Present?** Yes [ ] No [✓]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Low-altitude aerial photography obtained from Pictometry International Inc., Photo date January 24, 2019.

Remarks:

Water table and saturation were present at T1 SP02, however, per the Regional Supplement to the USACE Wetland Delineation Manual, a high water table is considered present when the high water table is observed within the upper 12 inches of the soil surface. Furthermore, in order for saturation to be considered a wetland hydrology indicator, the saturation must be observed within the upper 12 inches of the soil surface and be associated with a high water table. The observed water table and the observed saturation do not meet the requirements of the wetland hydrology indicators A1 or A2; therefore, wetland hydrology was not present at T1 SP02.

Survey area is abutting Corpus Christi Ship Channel and was influenced by a high tide of +2.35 feet NAVD 88 on the day of the survey.

JAN 10 2020

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: T1 SP02

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 15 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling Stratum (Plot size: 15 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Shrub Stratum (Plot size: 15 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 15 ft. x 15 ft.)			
1. Ambrosia artemisiifolia	40%	Yes	FACU
2. Flaveria brownii	40%	Yes	FACW
3. Hydrocotyle bonariensis	20%	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		
50% of total cover: 50%	20% of total cover: 20%		
Woody Vine Stratum (Plot size: 15 ft. x 15 ft.)			
1. Smilax bona-nox	30%	Yes	FAC
2. Vigna luteola	30%	Yes	FACW
3.			
4.			
5.			
	60% = Total Cover		
50% of total cover: 30%	20% of total cover: 12%		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation was dominant at T1 SP02.

JAN 1 0 2020

SOIL

Sampling Point: T1 SP02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8 in.	10 YR 3/2	90%					Clayey sand	
0-8 in.	10 YR 6/4	8%	10 YR 3/8	2%	C	PL	Clayey sand	
8-18 in.	10 YR 5/3	100%					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ☐ No ☑

Remarks:

Redox was observed only in the lighter color soil and did not meet any of the hydric soil indicators. Therefore, hydric soil was not present at T1 SP02.

JAN 1 0 2020

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Moda Berth | City/County: San Patricio | Sampling Date: 10/8/19

Applicant/Owner: Moda Midstream Operating, LLC | State: TX | Sampling Point: T1 SP03

Investigator(s): Jessica Malone and Alex Pauley | Section, Township, Range: None

Landform (hillslope, terrace, etc.): Toe of slope | Local relief (concave, convex, none): None | Slope (%): 3-5%

Subregion (LRR or MLRA): MLRA 150B in LRRT | Lat: 27.821636 | Long: -97.210944 | Datum: NAD 83

Soil Map Unit Name: Ga: Galveston fine sand | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [✓] No [ ]
Hydric Soil Present?	Yes [✓]	No [ ]	
Wetland Hydrology Present?	Yes [✓]	No [ ]	

Remarks:

T1 SP03 was determined to be located within a wetland due to the dominance of hydrophytic vegetation, the presence of hydric soil, and the presence of wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [✓] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches): None
Water Table Present?	Yes [✓]	No [ ]	Depth (inches): 8 in.
Saturation Present? (includes capillary fringe)	Yes [✓]	No [ ]	Depth (inches): 8-18 in.

Wetland Hydrology Present? Yes [✓] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Low-altitude aerial photography obtained from Pictometry International Inc., Photo date January 24, 2019.

Remarks:

Wetland hydrology was present at T1 SP03.

Survey area is abutting Corpus Christi Ship Channel and was influenced by a high tide of +2.35 feet NAVD on the day of the survey.

JAN 1 0 2020

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: T1 SP03

Tree Stratum (Plot size: 15 ft. x 15 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 15 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 15 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 15 ft. x 15 ft.)			
1. Hydrocotyle bonariensis	80%	Yes	FACW
2. Schoenoplectus pungens	20%	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		

50% of total cover: 50% 20% of total cover: 20%

Woody Vine Stratum (Plot size: 15 ft. x 15 ft.)			
1. Vigna luteola	20%	Yes	FACW
2.			
3.			
4.			
5.			
	20% = Total Cover		

50% of total cover: 10% 20% of total cover: 4%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation was dominant at T1 SP03.

JAN 1 0 2020

SOIL

Sampling Point: T1 SP03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2 in.	10 YR 3/2	100%					Loam	
2-10 in.	10 YR 6/1	88%	10 YR 5/8	2%	C	PL	Sand	
2-10 in.	10 YR 3/2	10%					Sand	
10-18 in.	2.5 YR 6/1	100%					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☑ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ☑ No ☐

Remarks:

Hydric soil was present at T1 SP03.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

JAN 1 0 2020

Project/Site: Moda Berth | City/County: San Patricio | Sampling Date: 10/8/19

Applicant/Owner: Moda Midstream Operating, LLC | State: TX | Sampling Point: T1 SP04

Investigator(s): Jessica Malone and Alex Pauley | Section, Township, Range: None

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0-1%

Subregion (LRR or MLRA): MLRA 150B in LRRT | Lat: 27.821469 | Long: -97.211112 | Datum: NAD 83

Soil Map Unit Name: W: Water | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [✓] No [ ]
Hydric Soil Present?	Yes [✓]	No [ ]	
Wetland Hydrology Present?	Yes [✓]	No [ ]	

Remarks:

T1 SP04 was determined to be located within a wetland due to the dominance of hydrophytic vegetation, the presence of hydric soil, and the presence of wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [✓] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes [✓]	No [ ]	Depth (inches): 2 in.
Water Table Present?	Yes [✓]	No [ ]	Depth (inches): Surface
Saturation Present? (includes capillary fringe)	Yes [✓]	No [ ]	Depth (inches): 0-18 in.

Wetland Hydrology Present? Yes [✓] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

0.5 meter NAIP imagery, obtained from TNRIS Online, 2015, San Patricio County.

Remarks:

Wetland hydrology was present at T1 SP04.

Survey area is abutting Corpus Christi Ship Channel and was influenced by a high tide of +2.35 feet NAVD 88 on the day of the survey.

JAN 10 2020

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: T1 SP04

Tree Stratum (Plot size: 30 ft. x 30 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 30 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 30 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 30 ft. x 30 ft.)			
1. Spartina patens	90%	Yes	FACW
2. Schoenoplectus pungens	10%	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		

50% of total cover: 50% 20% of total cover: 20%

Woody Vine Stratum (Plot size: 30 ft. x 30 ft.)			
1. Vigna luteola	5%	Yes	FACW
2.			
3.			
4.			
5.			
	5% = Total Cover		

50% of total cover: 2.5% 20% of total cover: 1%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation was dominant at T1 SP04.

JAN 1 0 2020

SOIL

Sampling Point: T1 SP04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-1 in.	10 YR 2/1	100%					Loam	Organic matter present
1-8 in.	10 YR 6/1	98%	10 YR 5/8	2%	C	M	Sand	
8-18 in.	10 YR 6/1	100%					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☑ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ☑ No ☐

Remarks: Hydric soils were present at T1 SP04.

JAN 1 0 2020

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Moda Berth | City/County: San Patricio | Sampling Date: 10/8/19

Applicant/Owner: Moda Midstream Operating, LLC | State: TX | Sampling Point: T2 SP01

Investigator(s): Jessica Malone and Alex Pauley | Section, Township, Range: None

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): None | Slope (%): 3-5%

Subregion (LRR or MLRA): MLRA 150B in LRRT | Lat: 27.821952 | Long: -97.212579 | Datum: NAD 83

Soil Map Unit Name: Ds: Dianola soils | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?**	Yes [ ]	No [✓]
Hydric Soil Present?	Yes [ ]	No [✓]			
Wetland Hydrology Present?	Yes [ ]	No [✓]			

Remarks:

T2 SP01 was determined to be located within an upland due to the lack of hydric soil and the lack of wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches):	None
Water Table Present?	Yes [ ]	No [✓]	Depth (inches):	None
Saturation Present? (includes capillary fringe)	Yes [ ]	No [✓]	Depth (inches):	None

Wetland Hydrology Present? Yes [ ] No [✓]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Low-altitude aerial photography obtained from Pictometry International Inc., Photo date January 24, 2019.

Remarks:

Wetland hydrology was not present at T2 SP01.

Survey area is abutting Corpus Christi Ship Channel and was influenced by a high tide of +2.35 feet NAVD 88 on the day of the survey.

JAN 1 0 2020

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: T2 SP01

Tree Stratum (Plot size: 15 ft. x 5 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 15 ft. x 5 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 15 ft. x 5 ft.)			
1. Schinus terebinthifolia	10%	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	10% = Total Cover		

50% of total cover: 5% 20% of total cover: 2%

Herb Stratum (Plot size: 15 ft. x 5 ft.)			
1. Paspalum monostachyum	40%	Yes	FACW
2. Conoclinium coelestinum	30%	Yes	FAC
3. Andropogon glomeratus	10%	No	FACW
4. Hydrocotyle bonariensis	10%	No	FACW
5. Flaveria brownii	5%	No	FACW
6. Helianthus annuus	5%	No	FAC
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		

50% of total cover: 50% 20% of total cover: 20%

Woody Vine Stratum (Plot size: 15 ft. x 5 ft.)			
1. Vigna luteola	10%	Yes	FAC
2. Vitis mustangensis	10%	Yes	UPL
3.			
4.			
5.			
	20% = Total Cover		

50% of total cover: 10% 20% of total cover: 4%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below.) Hydrophytic vegetation was dominant at T2 SP01.

JAN 1 0 2020

SOIL

Sampling Point: T2 SP01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12 in.	10 YR 3/2	100%					Sand	
12-13 in.	10YR 2/1	100%					Sand	
13-18 in.	10 YR 3/2	100%					Sand	Shell hash present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ☐ No ☑

Remarks:

Hydric soil was not present at T2 SP01.

JAN 1 0 2020

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Moda Berth City/County: San Patricio Sampling Date: 10/8/19

Applicant/Owner: Moda Midstream Operating, LLC State: TX Sampling Point: T2 SP02

Investigator(s): Jessica Malone and Alex Pauley Section, Township, Range: None

Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): None Slope (%): 3-5%

Subregion (LRR or MLRA): MLRA 150B in LRRT Lat: 27.821935 Long: -97.212588 Datum: NAD 83

Soil Map Unit Name: Ds: Dianola soils NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [ ] No [✓]
Hydric Soil Present?	Yes [ ]	No [✓]	
Wetland Hydrology Present?	Yes [ ]	No [✓]	

Remarks:

T2 SP02 was determined to be located uplands due to the lack of hydric soils and the lack of wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches): None	
Water Table Present?	Yes [✓]	No [ ]	Depth (inches): 16-18 in.	
Saturation Present? (includes capillary fringe)	Yes [✓]	No [ ]	Depth (inches): 14-18 in.	**Wetland Hydrology Present?** Yes [ ] No [✓]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Low-altitude aerial photography obtained from Pictometry International Inc., Photo date January 24, 2019.

Remarks:

Water table and saturation were present at T2 SP02, however, per the Regional Supplement to the USACE Wetland Delineation Manual, a high water table is considered present when the high water table is observed within the upper 12 inches of the soil surface. Furthermore, in order for saturation to be considered a wetland hydrology indicator, the saturation must be observed within the upper 12 inches of the soil surface and be associated with a high water table. The observed water table and the observed saturation do not meet the requirements of the wetland hydrology indicators A1 or A2; therefore, wetland hydrology was not present at T2 SP02.

Survey area is abutting Corpus Christi Ship Channel and was influenced by a high tide of +2.35 feet NAVD 88 on the day of the survey.

JAN 1 0 2020

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: T2 SP02

Tree Stratum (Plot size: 10 ft. x 15 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 10 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 10 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 10 ft. x 15 ft.)			
1. Hydrocotyle bonariensis	60%	Yes	FACW
2. Paspalum monostachyum	20%	Yes	FACW
3. Andropogon glomeratus	10%	No	FACW
4. Axonopus fissifolius	10%	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		

50% of total cover: 50% 20% of total cover: 20%

Woody Vine Stratum (Plot size: 10 ft. x 15 ft.)			
1. Vigna luteola	30%	Yes	FACW
2. Funastrum angustifolium	20%	Yes	FACW
3.			
4.			
5.			
	50% = Total Cover		

50% of total cover: 25% 20% of total cover: 10%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation was dominant at T2 SP02.

JAN 1 0 2020

SOIL

Sampling Point: T2 SP02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9 in.	10 YR 3/2	100%					Sandy loam	
9-18 in.	10 YR 4/2	100%					Sand	Shell hash present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ☐ No ☑

Remarks:

Hydric soil was not present at T2 SP02.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region JAN 10 2020

Project/Site: Moda Berth City/County: San Patricio Sampling Date: 10/8/19

Applicant/Owner: Moda Midstream Operating, LLC State: TX Sampling Point: T2 SP03

Investigator(s): Jessica Malone and Alex Pauley Section, Township, Range: None

Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): None Slope (%): 0-1%

Subregion (LRR or MLRA): MLRA 150B in LRRT Lat: 27.821903 Long: -97.212581 Datum: NAD 83

Soil Map Unit Name: Ds: Dianola soils NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [✓] No [ ]
Hydric Soil Present?	Yes [✓]	No [ ]	
Wetland Hydrology Present?	Yes [✓]	No [ ]	

Remarks:

T2 SP03 was determined to be located within a wetland due to the dominance of hydrophytic vegetation, the presence of hydric soil, and the presence of wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches): None
Water Table Present?	Yes [✓]	No [ ]	Depth (inches): 12 in.
Saturation Present? (includes capillary fringe)	Yes [✓]	No [ ]	Depth (inches): 10-18 in.

Wetland Hydrology Present? Yes [✓] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Low-altitude aerial photography obtained from Pictometry International Inc., Photo date January 24, 2019.

Remarks:

Wetland hydrology was present at T2 SP03.

Survey area is abutting Corpus Christi Ship Channel and was influenced by a high tide of +2.35 feet NAVD 88 on the day of the survey.

JAN 10 2020

Sampling Point: T2 SP03

VEGETATION (Five Strata) – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft. x 15 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 30 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 30 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 30 ft. x 15 ft.)			
1. Hydrocotyle bonariensis	35%	Yes	FACW
2. Paspalum monostachyum	35%	Yes	FACW
3. Axonopus fissifolius	30%	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		

50% of total cover: 50% 20% of total cover: 20%

Woody Vine Stratum (Plot size: 30 ft. x 15 ft.)			
1. Vigna luteola	30%	Yes	FACW
2. Funastrum angustifolium	10%	Yes	FACW
3.			
4.			
5.			
	40% = Total Cover		

50% of total cover: 20% 20% of total cover: 8%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is dominant at T2 SP03.

JAN 1 0 2020

SOIL

Sampling Point: T2 SP03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2 in.	10 YR 2/2	100%					Sandy loam	
2-7 in.	10 YR 6/1	96%	10 YR 6/6	4%	C	M	Sand	
7-18 in.	10 YR 4/2	100%					Sand	Shell hash present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☑ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ☑ No ☐

Remarks:

Hydric soil was present at T2 SP03.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

JAN 10 2020

Project/Site: Moda Berth | City/County: San Patricio | Sampling Date: 10/8/19

Applicant/Owner: Moda Midstream Operating, LLC | State: TX | Sampling Point: T2 SP04

Investigator(s): Jessica Malone and Alex Pauley | Section, Township, Range: None

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0-1%

Subregion (LRR or MLRA): MLRA 150B in LRRT | Lat: 27.821278 | Long: -97.212581 | Datum: NAD 83

Soil Map Unit Name: W: Water | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [✓] No [ ]
Hydric Soil Present?	Yes [✓]	No [ ]	
Wetland Hydrology Present?	Yes [✓]	No [ ]	

Remarks:

T2 SP04 was determined to be located within a wetland due to the dominance of hydrophytic vegetation, the presence of wetland hydrology, and the presence of hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [✓] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [✓] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches): None	
Water Table Present?	Yes [✓]	No [ ]	Depth (inches): 4-18 in.	
Saturation Present? (includes capillary fringe)	Yes [✓]	No [ ]	Depth (inches): 8-18 in.	**Wetland Hydrology Present?** Yes [✓] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Low-altitude aerial photography obtained from Pictometry International Inc., Photo date January 24, 2019.

Remarks:

Wetland hydrology was present at T2 SP04.

Survey area is abutting Corpus Christi Ship Channel and was influenced by a high tide of +2.35 feet NAVD 88 on the day of the survey.

Aquatic fauna observed at this sample point were small fiddler crabs.

JAN 10 2020

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: T2 SP04

Tree Stratum (Plot size: 30 ft. x 30 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 30 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 30 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 30 ft. x 30 ft.)			
1. Distichlis spicata	30%	Yes	OBL
2. Spartina patens	20%	Yes	FACW
3. Schoenoplectus pungens	20%	Yes	OBL
4. Fimbristylis castanea	20%	Yes	OBL
5. Borrichia frutescens	5%	No	OBL
6. Agalinis heterophylla	5%	No	FACU
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		

50% of total cover: 50% 20% of total cover: 20%

Woody Vine Stratum (Plot size: 30 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is dominant at T2 SP04.

JAN 1 0 2020

SOIL

Sampling Point: T2 SP04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12 in.	10 YR 4/2	95%	10 YR 5/6	5%	C	PL/M	Sand	
12-18 in.	10 YR 6/1	98%	10 YR 6/6	2%	C	M	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☑ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ☑ No ☐

Remarks:

Hydric soil was present at T2 SP04.

JAN 1 0 2020

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Moda Berth | City/County: San Patricio | Sampling Date: 10/9/19

Applicant/Owner: Moda Midstream Operating, LLC | State: TX | Sampling Point: T3 SP01

Investigator(s): Jessica Malone and Alex Pauley | Section, Township, Range: None

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0-1%

Subregion (LRR or MLRA): MLRA 150B in LRRT | Lat: 27.822602 | Long: -97.214436 | Datum: NAD 83

Soil Map Unit Name: Ds: Dianola soils | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [✓] No [ ]
Hydric Soil Present?	Yes [✓]	No [ ]	
Wetland Hydrology Present?	Yes [✓]	No [ ]	

Remarks:

T3 SP01 was determined to be located within a wetland due to the dominance of hydrophytic vegetation, the presence of wetland hydrology, and the presence of hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [✓] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches): None
Water Table Present?	Yes [✓]	No [ ]	Depth (inches): 8-18 in.
Saturation Present? (includes capillary fringe)	Yes [✓]	No [ ]	Depth (inches): 6-18 in.

Wetland Hydrology Present? Yes [✓] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Low-altitude aerial photography obtained from Pictometry International Inc., Photo date January 24, 2019.

Remarks:

Wetland hydrology was present at T3 SP01.

Survey area is abutting Corpus Christi Ship Channel and was influenced by a high tide of +2.5 feet NAVD 88 on the day of the survey.

JAN 10 2020

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: T3 SP01

Tree Stratum (Plot size: 30 ft. x 30 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 30 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 30 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 30 ft. x 30 ft.)			
1. Typha latifolia	40%	Yes	OBL
2. Schoenoplectus pungens	40%	Yes	OBL
3. Spartina patens	20%	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		

50% of total cover: 50% 20% of total cover: 20%

Woody Vine Stratum (Plot size: 30 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation is dominant at T3 SP01.

JAN 1 0 2020

SOIL

Sampling Point: T3 SP01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1 in.	10 YR 2/2	100%					Loam	
1-8 in.	10 YR 5/2	100%					Sand	
8-18 in.	10 YR 5/2	60%					Sand	
8-18 in.	10 YR 4/2	40%					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ☑ No ☐

Remarks:

Hydric soil were assumed due to the dominance of OBL and FACW species and abrupt wetland boundary per the 1987 USACE Manual.

JAN 1 0 2020

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Moda Berth City/County: San Patricio Sampling Date: 10/9/19

Applicant/Owner: Moda Midstream Operating, LLC State: TX Sampling Point: T3 SP02

Investigator(s): Jessica Malone and Alex Pauley Section, Township, Range: None

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion (LRR or MLRA): MLRA 150B in LRRT Lat: 27.822473 Long: -97.214045 Datum: NAD 83

Soil Map Unit Name: Ds: Dianola soils NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [✓] No [ ]
Hydric Soil Present?	Yes [✓]	No [ ]	
Wetland Hydrology Present?	Yes [✓]	No [ ]	

Remarks:

T3 SP02 was determined to be located in a wetland due to the dominance of hydrophytic vegetation, the presence of hydric soil, and the presence of wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [✓] Saturation Visible on Aerial Imagery (C9)
- [✓] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches): None
Water Table Present?	Yes [✓]	No [ ]	Depth (inches): 11-18 in.
Saturation Present? (includes capillary fringe)	Yes [✓]	No [ ]	Depth (inches): 10-18 in.

Wetland Hydrology Present? Yes [✓] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Low-altitude aerial photography obtained from Pictometry International Inc., Photo date January 24, 2019.

Remarks:

Wetland hydrology was present at T3 SP02.

Survey area is abutting Corpus Christi Ship Channel and was influenced by a high tide of +2.5 feet NAVD 88 on the day of the survey.

JAN 1 0 2020

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: T3 SP02

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 15 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling Stratum (Plot size: 15 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Shrub Stratum (Plot size: 15 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 15 ft. x 30 ft.)			
1. Paspalum monostachyum	25%	Yes	FACW
2. Schoenoplectus pungens	25%	Yes	OBL
3. Spartina patens	20%	Yes	FACW
4. Axonopus fissifolius	15%	No	FACW
5. Sesbania drummondii	5%	No	FACW
6. Hydrocotyle bonariensis	5%	No	FACW
7. Andropogon glomeratus	5%	No	FACW
8.			
9.			
10.			
11.			
	100% = Total Cover		
50% of total cover: 50%	20% of total cover: 20%		
Woody Vine Stratum (Plot size: 15 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation was dominant at T3 SP02.

JAN 1 0 2020

SOIL

Sampling Point: T3 SP02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2 in.	10 YR 2/2	100%					Loam	
2-4 in.	10 YR 4/2	98%	10 YR 4/6	2%	C	M	Sand	
4-18 in.	10 YR 5/2	95%	10 YR 6/6	5%	C	M	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☑ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ☑ No ☐

Remarks:

Hydric soil was present at T3 SP02.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

JAN 1 0 2020

Project/Site: Moda Berth | City/County: San Patricio | Sampling Date: 10/9/19

Applicant/Owner: Moda Midstream Operating, LLC | State: TX | Sampling Point: T3 SP03

Investigator(s): Jessica Malone and Alex Pauley | Section, Township, Range: None

Landform (hillslope, terrace, etc.): Slope | Local relief (concave, convex, none): None | Slope (%): 3-5%

Subregion (LRR or MLRA): MLRA 150B in LRRT | Lat: 27.822454 | Long: -97.214045 | Datum: NAD 83

Soil Map Unit Name: Ds: Dianola soils | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [ ] No [✓]
Hydric Soil Present?	Yes [ ]	No [✓]	
Wetland Hydrology Present?	Yes [ ]	No [✓]	

Remarks:

T3 SP03 was determined to be located within an upland due to the lack of wetland hydrology and lack of hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches): None
Water Table Present?	Yes [ ]	No [✓]	Depth (inches): None
Saturation Present? (includes capillary fringe)	Yes [ ]	No [✓]	Depth (inches): None

Wetland Hydrology Present? Yes [ ] No [✓]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Low-altitude aerial photography obtained from Pictometry International Inc., Photo date January 24, 2019.

Remarks:

Wetland hydrology was not present at T3 SP03.

Survey area is abutting Corpus Christi Ship Channel and was influenced by a high tide of +2.5 feet NAVD 88 on the day of the survey.

JAN 10 2020

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: T3 SP03

Tree Stratum (Plot size: 10 ft. x 30 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 10 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 10 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 10 ft. x 30 ft.)			
1. Paspalum monostachyum	35%	Yes	FACW
2. Spartina patens	35%	Yes	FACW
3. Flaveria brownii	10%	No	FACW
4. Andropogon glomeratus	10%	No	FACW
5. Hydrocotyle bonariensis	5%	No	FACW
6. Schoenoplectus pungens	5%	No	OBL
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		

50% of total cover: 50% 20% of total cover: 20%

Woody Vine Stratum (Plot size: 10 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation was dominant at T3 SP03.

JAN 1 0 2020

SOIL

Sampling Point: T3 SP03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2 in.	10 YR 2/2	100%					Loam	
2-18 in.	10 YR 4/2	100%					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ☐ No ☑

Remarks: Hydric soil was not present at T3 SP03.

JAN 1 0 2020

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Moda Berth City/County: San Patricio Sampling Date: 10/9/19

Applicant/Owner: Moda Midstream Operating, LLC State: TX Sampling Point: T3 SP04

Investigator(s): Jessica Malone and Alex Pauley Section, Township, Range: None

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): None Slope (%): 2-3%

Subregion (LRR or MLRA): MLRA 150B in LRRT Lat: 27.822429 Long: -97.214045 Datum: NAD 83

Soil Map Unit Name: Ds: Dianola soils NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [ ] No [✓]
Hydric Soil Present?	Yes [ ]	No [✓]	
Wetland Hydrology Present?	Yes [ ]	No [✓]	

Remarks:

T3 SP04 was determined to be located within an upland due to lack of hydric soils and lack of wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches): None	
Water Table Present?	Yes [ ]	No [✓]	Depth (inches): None	
Saturation Present? (includes capillary fringe)	Yes [ ]	No [✓]	Depth (inches): None	**Wetland Hydrology Present?** Yes [ ] No [✓]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Low-altitude aerial photography obtained from Pictometry International Inc., Photo date January 24, 2019.

Remarks:

Wetland hydrology was not present at T3 SP04.

Survey area is abutting Corpus Christi Ship Channel and was influenced by a high tide of +2.5 feet NAVD 88 on the day of the survey.

JAN 1 0 2020

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: T3 SP04

Tree Stratum (Plot size: 30 ft. x 30 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 30 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 30 ft. x 30 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 30 ft. x 30 ft.)			
1. Schoenoplectus pungens	20%	Yes	OBL
2. Andropogon glomeratus	15%	Yes	FACW
3. Flaveria brownii	15%	Yes	FACW
4. Spartina patens	15%	Yes	FACW
5. Paspalum monostachyum	15%	Yes	FACW
6. Conoclinium betonicifolium	10%	No	FACW
7. Baccharis halimifolia	5%	No	FAC
8. Sesbania drummondii	5%	No	FACW
9.			
10.			
11.			
	100% = Total Cover		

50% of total cover: 50% 20% of total cover: 20%

Woody Vine Stratum (Plot size: 30 ft. x 30 ft.)			
1. Vitus mustangensis	10%	Yes	UPL
2.			
3.			
4.			
5.			
	10% = Total Cover		

50% of total cover: 5% 20% of total cover: 2%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below). Hydrophytic vegetation was dominant T3 SP04.

JAN 1 0 2020

SOIL

Sampling Point: T3 SP04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2 in.	10 YR 2/2	100%					Loam	
2-8 in.	10 YR 5/2	100%					Sand	
8-18 in.	10 YR 6/2	100%					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ☐ No ☑

Remarks:

Hydric soil was not present at T3 SP04.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

JAN 1 0 2020

Project/Site: Moda Berth | City/County: San Patricio | Sampling Date: 10/8/19

Applicant/Owner: Moda Midstream Operating, LLC | State: TX | Sampling Point: T3 SP05

Investigator(s): Jessica Malone and Alex Pauley | Section, Township, Range: None

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0

Subregion (LRR or MLRA): MLRA 150B in LRRT | Lat: 27.822271 | Long: -97.214065 | Datum: NAD 83

Soil Map Unit Name: Ds: Dianola soils | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?**	Yes [ ]	No [✓]
Hydric Soil Present?	Yes [ ]	No [✓]			
Wetland Hydrology Present?	Yes [ ]	No [✓]			

Remarks:

T3 SP05 was determined to be located within an upland due to the lack of hydric soil and lack of wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches): None	
Water Table Present?	Yes [ ]	No [✓]	Depth (inches): None	
Saturation Present? (includes capillary fringe)	Yes [ ]	No [✓]	Depth (inches): None	**Wetland Hydrology Present?** Yes [ ] No [✓]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Low-altitude aerial photography obtained from Pictometry International Inc., Photo date January 24, 2019.

Remarks:

Wetland hydrology was not present at T3 SP05.

Survey area is abutting Corpus Christi Ship Channel and was influenced by a high tide of +2.35 feet NAVD 88 on the day of the survey.

JAN 1 0 2020

Sampling Point: T3 SP05

VEGETATION (Five Strata) – Use scientific names of plants.

Tree Stratum (Plot size: 15 ft. x 15 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 15 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 15 ft. x 15 ft.)			
1. Schinus terebinthifolia	60%	Yes	FAC
2. Prosopis glandulosa	20%	Yes	UPL
3.			
4.			
5.			
6.			
	80% = Total Cover		

50% of total cover: 40% 20% of total cover: 16%

Herb Stratum (Plot size: 15 ft. x 15 ft.)			
1. Flaveria brownii	20%	Yes	FACW
2. Phyla nodiflora	15%	Yes	FAC
3. Conoclinium coelestinum	10%	Yes	FACW
4. Andropogon virginicus	5%	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50% = Total Cover		

50% of total cover: 25% 20% of total cover: 10%

Woody Vine Stratum (Plot size: 15 ft. x 15 ft.)			
1. Vigna luteola	40%	Yes	FACW
2. Vitus mustangensis	40%	Yes	UPL
3.			
4.			
5.			
	80% = Total Cover		

50% of total cover: 40% 20% of total cover: 16%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation was dominant at T3 SP05.

JAN 1 0 2020

SOIL

Sampling Point: T3 SP05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3 in.	10 YR 3/3	100%					Sandy loam	
3-18 in.	10 YR 4/2	100%					Sand	Shell hash present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ☐ No ☑

Remarks:

Hydric soil was not present at T3 SP05.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

JAN 10 2020

Project/Site: Moda Berth | City/County: San Patricio | Sampling Date: 10/8/19

Applicant/Owner: Moda Midstream Operating, LLC | State: TX | Sampling Point: T3 SP06

Investigator(s): Jessica Malone and Alex Pauley | Section, Township, Range: None

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0-1%

Subregion (LRR or MLRA): MLRA 150B in LRRT | Lat: 27.822253 | Long: -97.214057 | Datum: NAD 83

Soil Map Unit Name: Dianola soils | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [ ] No [✓]
Hydric Soil Present?	Yes [ ]	No [✓]	
Wetland Hydrology Present?	Yes [ ]	No [✓]	

Remarks:

T3 SP06 was determined to be located within an upland due to the lack hydric soils and lack of wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches):	None
Water Table Present?	Yes [✓]	No [ ]	Depth (inches):	14-18 in.
Saturation Present? (includes capillary fringe)	Yes [✓]	No [ ]	Depth (inches):	17-18 in.

Wetland Hydrology Present? Yes [ ] No [✓]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Low-altitude aerial photography obtained from Pictometry International Inc., Photo date January 24, 2019.

Remarks:

Water table and saturation were present at T3 SP06, however, per the Regional Supplement to the USACE Wetland Delineation Manual, a high water table is considered present when the high water table is observed within the upper 12 inches of the soil surface. Furthermore, in order for saturation to be considered a wetland hydrology indicator, the saturation must be observed within the upper 12 inches of the soil surface and be associated with a high water table. The observed water table and the observed saturation do not meet the requirements of the wetland hydrology indicators A1 or A2; therefore, wetland hydrology was not present at T3 SP06.

Survey area is abutting Corpus Christi Ship Channel and was influenced by a high tide of +2.35 feet NAVD 88 on the day of the survey.

JAN 10 2020

Sampling Point: T3 SP06

VEGETATION (Five Strata) – Use scientific names of plants.

Tree Stratum (Plot size: 10 ft. x 15 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 10 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 10 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 10 ft. x 15 ft.)			
1. Phyla nodiflora	40%	Yes	FAC
2. Spartina patens	20%	Yes	FACW
3. Hydrocotyle bonariensis	15%	No	FACW
4. Andropogon glomeratus	15%	No	FACW
5. Ambrosia artemisiifolia	10%	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		

50% of total cover: 50% 20% of total cover: 20%

Woody Vine Stratum (Plot size: 10 ft. x 15 ft.)			
1. Vigna luteola	20%	Yes	FACW
2.			
3.			
4.			
5.			
	20% = Total Cover		

50% of total cover: 10% 20% of total cover: 4%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation was dominant at T3 SP06.

JAN 1 0 2020

SOIL

Sampling Point: T3 SP06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6 in.	10 YR 3/5	95%	10 YR 5/6	5%	C	M	Sandy loam	
6-18 in.	10 YR 3/5	98%	10 YR 6/6	2%	C	M	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ☐ No ☑

Remarks:

Redox was observed within the soil sample. However, the color matrix does not meet any hydric soil indicators under the associated soil texture. Therefore, hydric soil was not present at T3 SP06.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

JAN 10 2020

Project/Site: Moda Berth | City/County: San Patricio | Sampling Date: 10/8/19

Applicant/Owner: Moda Midstream Operating, LLC | State: TX | Sampling Point: T3 SP07

Investigator(s): Jessica Malone and Alex Pauley | Section, Township, Range: None

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0-1%

Subregion (LRR or MLRA): MLRA 150B in LRRT | Lat: 27.822233 | Long: -97.214055 | Datum: NAD 83

Soil Map Unit Name: Ds: Dianola soils | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	**Is the Sampled Area within a Wetland?** Yes [✓] No [ ]
Hydric Soil Present?	Yes [✓]	No [ ]	
Wetland Hydrology Present?	Yes [✓]	No [ ]	

Remarks:

T3 SP07 was determined to be located within a wetland due to the dominance of hydrophytic vegetation, the presence of hydric soil, and the presence of wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches): None
Water Table Present?	Yes [✓]	No [ ]	Depth (inches): 11-18 in.
Saturation Present? (includes capillary fringe)	Yes [✓]	No [ ]	Depth (inches): 10 -18 in.

Wetland Hydrology Present? Yes [✓] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Low-altitude aerial photography obtained from Pictometry International Inc., Photo date January 24, 2019.

Remarks:

Wetland hydrology was present at T3 SP07.

Survey area is abutting Corpus Christi Ship Channel and was influenced by a high tide of +2.35 feet NAVD 88 on the day of the survey.

JAN 1 0 2020

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: T3 SP07

Tree Stratum (Plot size: 15 ft. x 15 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 15 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 15 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 15 ft. x 15 ft.)			
1. Spartina patens	85%	Yes	FACW
2. Hydrocotyle bonariensis	5%	No	FACW
3. Andropogon glomeratus	5%	No	FACW
4. Schoenoplectus pungens	5%	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		

50% of total cover: 50% 20% of total cover: 20%

Woody Vine Stratum (Plot size: 15 ft. x 15 ft.)			
1. Vigna luteola	80%	Yes	FACW
2.			
3.			
4.			
5.			
	80% = Total Cover		

50% of total cover: 40% 20% of total cover: 16%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation was dominant at T3 SP07.

JAN 1 0 2020

SOIL

Sampling Point: T3 SP07

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3 in.	10 YR 2/2	100%					Sandy loam	
0-9 in.	10 YR 6/1	96%	10 YR 6/5	4%	C	M	Sand	
9-18 in.	10 YR 6/1	100%					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☑ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ☑ No ☐

Remarks:

Hydric soil was present at T3 SP07.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

JAN 1 0 2020

Project/Site: Moda Berth | City/County: San Patricio | Sampling Date: 10/8/19

Applicant/Owner: Moda Midstream Operating, LLC | State: TX | Sampling Point: T3 SP08

Investigator(s): Jessica Malone and Alex Pauley | Section, Township, Range: None

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None | Slope (%): 0-1%

Subregion (LRR or MLRA): MLRA 150B in LRRT | Lat: 27.821870 | Long: -97.214049 | Datum: NAD 83

Soil Map Unit Name: Ds: Dianola soils | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes [✓] No [ ] (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes [✓] No [ ]

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes [✓]	No [ ]	Is the Sampled Area within a Wetland? Yes [✓] No [ ]
Hydric Soil Present?	Yes [✓]	No [ ]	
Wetland Hydrology Present?	Yes [✓]	No [ ]	

Remarks:

T3 SP08 was determined to be located in a wetland due to the dominance of hydrophytic vegetation, the presence of hydric soil, and the presence of wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [ ] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) (LRR U)
- [ ] Hydrogen Sulfide Odor (C1)
- [✓] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes [ ]	No [✓]	Depth (inches): None
Water Table Present?	Yes [✓]	No [ ]	Depth (inches): 8-18 in.
Saturation Present? (includes capillary fringe)	Yes [✓]	No [ ]	Depth (inches): 4-18 in.

Wetland Hydrology Present? Yes [✓] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Low-altitude aerial photography obtained from Pictometry International Inc., Photo date January 24, 2019.

Remarks:

Wetland hydrology was present at T3 SP08.

Survey area is abutting Corpus Christi Ship Channel and was influence by a high tide of +2.35 feet NAVD 88 on the day of the survey.

JAN 1 0 2020

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: T3 SP08

Tree Stratum (Plot size: 15 ft. x 15 ft.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 15 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 15 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 15 ft. x 15 ft.)			
1. Spartina patens	30%	Yes	FACW
2. Schoenoplectus pungens	30%	Yes	OBL
3. Fimbristylis castanea	20%	Yes	OBL
4. Distichlis spicata	20%	Yes	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		

50% of total cover: 50% 20% of total cover: 20%

Woody Vine Stratum (Plot size: 15 ft. x 15 ft.)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Hydrophytic vegetation was dominant at T3 SP08.

JAN 1 0 2020

SOIL

Sampling Point: T3 SP08

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2 in.	10 YR 4/1						Sandy loam	
2-18 in.	10 YR 7/1	96%	10 YR 6/6	4%	C	M/PL	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☑ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A, B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): None

Hydric Soil Present? Yes ☑ No ☐

Remarks:

Hydric soil was present at T3 SP08.

Exhibit E
NRCS Soil Classification Overview Map and
Soil Classification Data

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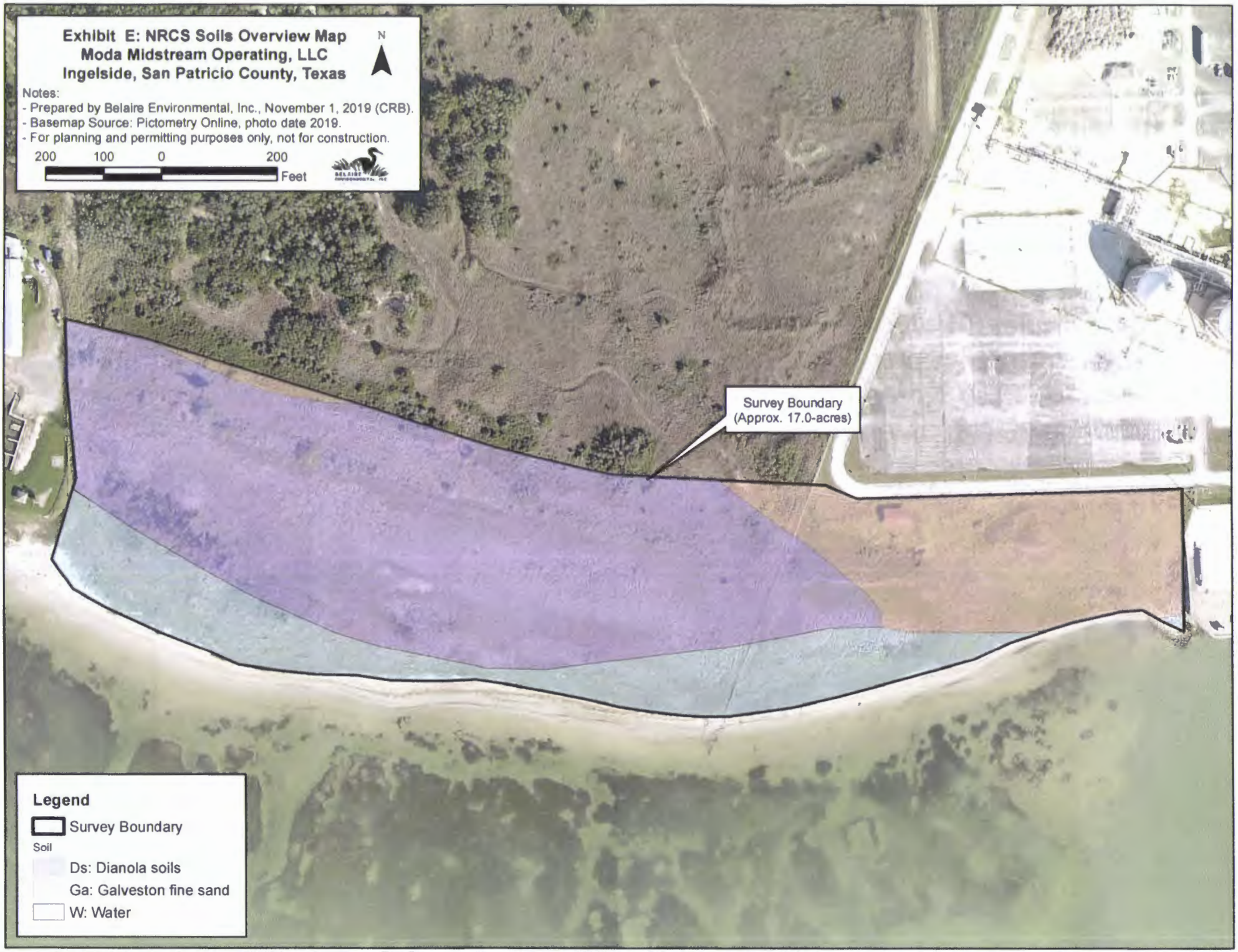
Exhibit E: NRCS Soils Overview Map
Moda Midstream Operating, LLC
Ingelside, San Patricio County, Texas
N
Notes:
- Prepared by Belaire Environmental, Inc., November 1, 2019 (CRB).
- Basemap Source: Pictometry Online, photo date 2019.
- For planning and permitting purposes only, not for construction.
200 100 0 200
Feet
Survey Boundary
(Approx. 17.0-acres)
Legend
Survey Boundary
Soil
Ds: Dianola soils
Ga: Galveston fine sand
W: Water

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Nueces County, Texas, and San Patricio and Aransas Counties, Texas

October 26, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

JAN 1 0 2020

Map Scale: 1:3,320 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Nueces County, Texas
Survey Area Data: Version 18, Sep 12, 2019

Soil Survey Area: San Patricio and Aransas Counties, Texas
Survey Area Data: Version 16, Sep 12, 2019

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

MAP LEGEND

MAP INFORMATION

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Nov 5, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
W	Water	5.5	28.8%
Subtotals for Soil Survey Area		**5.5**	**28.8%**
Totals for Area of Interest		**19.1**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ds	Dianola soils	10.1	53.0%
GA	Galveston fine sand, 0 to 3 percent slopes, occasionally flooded	3.5	18.2%
Subtotals for Soil Survey Area		**13.6**	**71.2%**
Totals for Area of Interest		**19.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Nueces County, Texas

W—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

San Patricio and Aransas Counties, Texas

Ds—Dianola soils

Map Unit Setting

National map unit symbol: dky4
Elevation: 0 to 10 feet
Mean annual precipitation: 33 to 39 inches
Mean annual air temperature: 70 to 72 degrees F
Frost-free period: 300 to 315 days
Farmland classification: Not prime farmland

Map Unit Composition

Dianola and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dianola

Setting

Landform: Strand plains
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy fluviomarine deposits of quaternary age

Typical profile

H1 - 0 to 6 inches: loamy fine sand
H2 - 6 to 60 inches: loamy fine sand
H3 - 60 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Strongly saline (16.0 to 32.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 40.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: Salt Flat (R150BY651TX)
Hydric soil rating: Yes

Minor Components

Mustang
Percent of map unit: 3 percent
Landform: Salt marshes
Hydric soil rating: Yes

Tatton
Percent of map unit: 3 percent
Landform: Tidal flats
Hydric soil rating: Yes

Dietrich
Percent of map unit: 3 percent
Landform: Tidal flats
Hydric soil rating: Yes

Aransas
Percent of map unit: 3 percent
Landform: Flood plains
Hydric soil rating: Yes

Barrada
Percent of map unit: 3 percent
Landform: Tidal flats
Hydric soil rating: Yes

GA—Galveston fine sand, 0 to 3 percent slopes, occasionally flooded

Map Unit Setting
National map unit symbol: 2v3dc
Elevation: 0 to 30 feet
Mean annual precipitation: 25 to 43 inches
Mean annual air temperature: 69 to 71 degrees F
Frost-free period: 275 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition
Galveston and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Galveston

Setting
Landform: Dune fields, foredunes
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy eolian deposits derived from igneous, metamorphic and sedimentary rock

Typical profile

A - 0 to 6 inches: fine sand
C1 - 6 to 30 inches: fine sand
C2 - 30 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 7.0
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Northern Coastal Sand (R150BY530TX)
Hydric soil rating: No

Minor Components

Mustang

Percent of map unit: 3 percent
Landform: Depressions on barrier flats
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave
Ecological site: VOID - LOW COASTAL SAND 42+ (R150BY548TX)
Hydric soil rating: Yes

Barrada

Percent of map unit: 2 percent
Landform: Wind-tidal flats
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: Wind Tidal Flat (R150BY716TX)
Hydric soil rating: Yes

Tatton

Percent of map unit: 2 percent
Landform: Wind-tidal flats, wind-tidal flats
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: Wind Tidal Flat (R150BY716TX)
Hydric soil rating: Yes

Sabine

Percent of map unit: 1 percent
Landform: Beach ridges
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: Northern Coastal Sand (R150BY530TX)
Hydric soil rating: No

Veston

Percent of map unit: 1 percent
Landform: Barrier flats
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: VOID - SALT FLAT 42+ (R150BY549TX)
Hydric soil rating: Yes

Nass

Percent of map unit: 1 percent
Landform: Depressions on barrier flats
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: VOID - COASTAL SWALE 42+ (R150BY545TX)
Hydric soil rating: Yes

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United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Exhibit F

NWI & Floodplain Overview Map and

FEMA FIRMette Maps

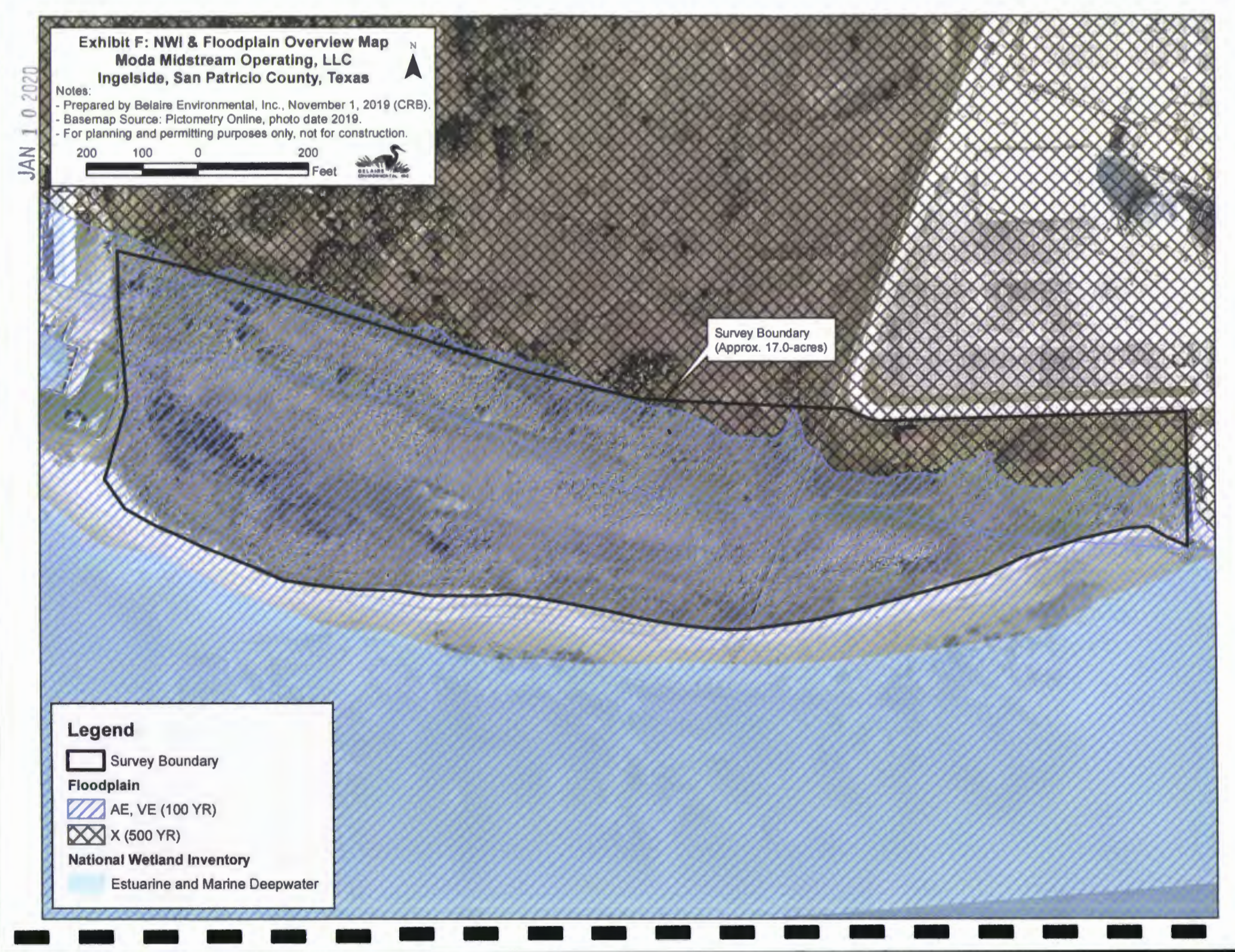
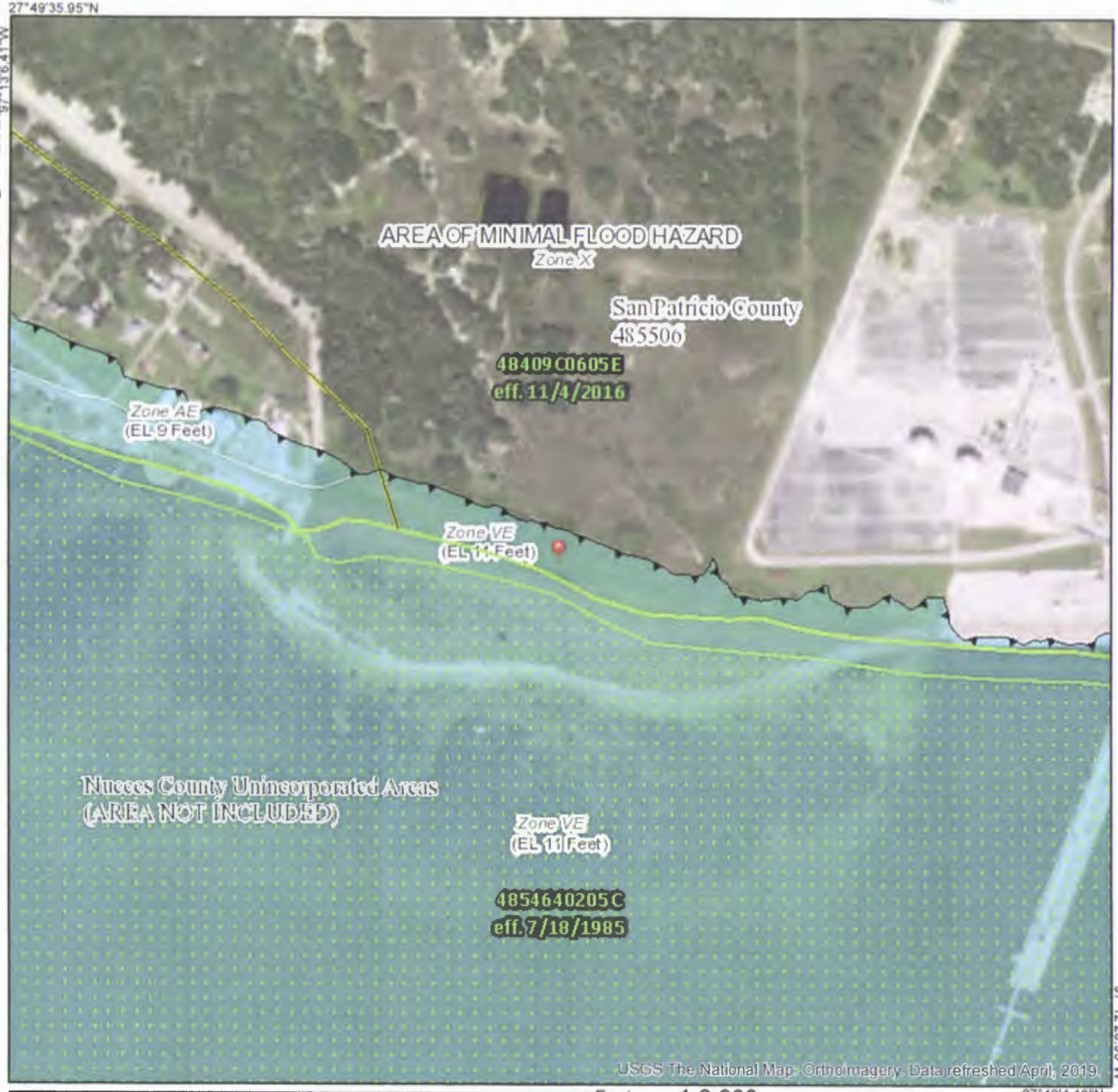


Exhibit F: NWI & Floodplain Overview Map
Moda Midstream Operating, LLC
Ingelside, San Patricio County, Texas
N
Notes:
- Prepared by Belaire Environmental, Inc., November 1, 2019 (CRB).
- Basemap Source: Pictometry Online, photo date 2019.
- For planning and permitting purposes only, not for construction.
200 100 0 200
Feet
JAN 10 2020
Survey Boundary
(Approx. 17.0-acres)
Legend
Survey Boundary
Floodplain
AE, VE (100 YR)
X (500 YR)
National Wetland Inventory
Estuarine and Marine Deepwater

National Flood Hazard Layer FIRMette

FEMA



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/26/2019 at 12:33:58 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Exhibit G
Wetland Boundary Map and
Tables of Boundary Coordinates

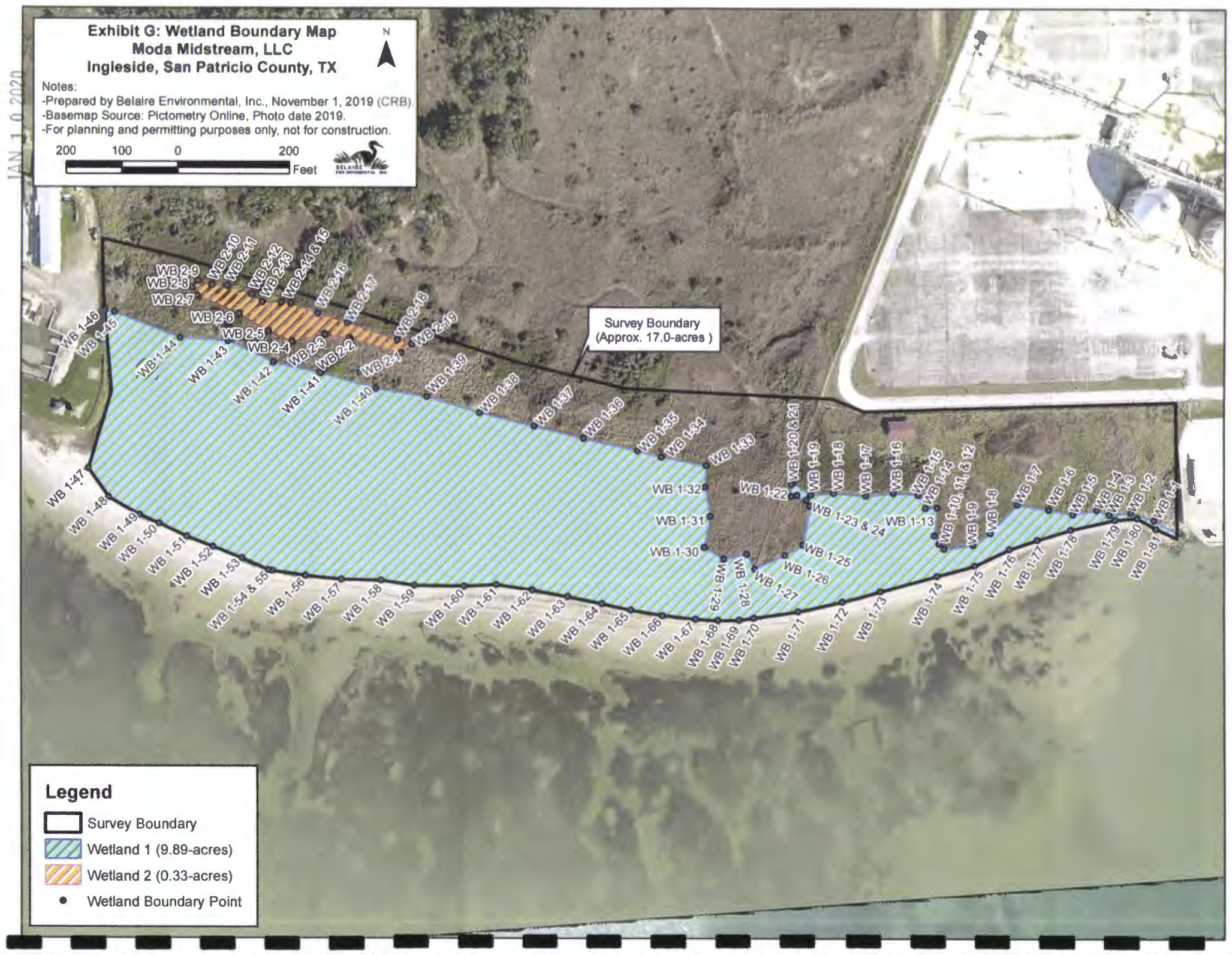


Exhibit G: Wetland Boundary Map
Moda Midstream, LLC
Ingleside, San Patricio County, TX
N
Notes:
-Prepared by Belaire Environmental, Inc., November 1, 2019 (CRB).
-Basemap Source: Pictometry Online, Photo date 2019.
-For planning and permitting purposes only, not for construction.
200 100 0 200
Feet
JAN 1 0 2020
Survey Boundary
(Approx. 17.0-acres)
WB 2-9
WB 2-8
WB 2-7
WB 2-6
WB 2-5
WB 2-4
WB 2-3
WB 2-2
WB 2-1
WB 2-10
WB 2-11
WB 2-12
WB 2-13
WB 2-14 & 15
WB 2-16
WB 2-17
WB 2-18
WB 2-19
WB 1-46
WB 1-45
WB 1-44
WB 1-43
WB 1-42
WB 1-41
WB 1-40
WB 1-39
WB 1-38
WB 1-37
WB 1-36
WB 1-35
WB 1-34
WB 1-33
WB 1-32
WB 1-31
WB 1-30
WB 1-29
WB 1-28
WB 1-27
WB 1-26
WB 1-25
WB 1-22
WB 1-20 & 21
WB 1-19
WB 1-18
WB 1-17
WB 1-16
WB 1-15
WB 1-14
WB 1-10, 11, & 12
WB 1-23 & 24
WB 1-13
WB 1-9
WB 1-8
WB 1-7
WB 1-6
WB 1-5
WB 1-4
WB 1-3
WB 1-2
WB 1-1
WB 1-47
WB 1-48
WB 1-49
WB 1-50
WB 1-51
WB 1-52
WB 1-53
WB 1-54 & 55
WB 1-56
WB 1-57
WB 1-58
WB 1-59
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WB 1-62
WB 1-63
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WB 1-65
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WB 1-72
WB 1-73
WB 1-74
WB 1-75
WB 1-76
WB 1-77
WB 1-78
WB 1-79
WB 1-80
WB 1-81
Legend
Survey Boundary
Wetland 1 (9.89-acres)
Wetland 2 (0.33-acres)
Wetland Boundary Point

Table of Boundary Coordinates
Moda Midstream, LLC
Approximate 17.0-Ac. Wetland Delineation,
Ingleside, San Patricio County, Texas

Wetland Boundary Points	Latitude	Longitude
WB 1-1	27.821567	-97.209739
WB 1-2	27.821605	-97.209867
WB 1-3	27.821597	-97.209985
WB 1-4	27.821619	-97.210055
WB 1-5	27.821600	-97.210187
WB 1-6	27.821622	-97.210320
WB 1-7	27.821651	-97.210493
WB 1-8	27.821511	-97.210645
WB 1-9	27.821454	-97.210743
WB 1-10	27.821436	-97.210906
WB 1-11	27.821461	-97.210932
WB 1-12	27.821502	-97.210959
WB 1-13	27.821639	-97.210940
WB 1-14	27.821635	-97.211006
WB 1-15	27.821702	-97.211046
WB 1-16	27.821712	-97.211182
WB 1-17	27.821699	-97.211334
WB 1-18	27.821714	-97.211511
WB 1-19	27.821706	-97.211637
WB 1-20	27.821768	-97.211735
WB 1-21	27.821759	-97.211743
WB 1-22	27.821701	-97.211746
WB 1-23	27.821682	-97.211662
WB 1-24	27.821652	-97.211642
WB 1-25	27.821460	-97.211681
WB 1-26	27.821411	-97.211786
WB 1-27	27.821347	-97.211953
WB 1-28	27.821419	-97.211998
WB 1-29	27.821396	-97.212126
WB 1-30	27.821453	-97.212235
WB 1-31	27.821605	-97.212199
WB 1-32	27.821750	-97.212226
WB 1-33	27.821856	-97.212218
WB 1-34	27.821899	-97.212466
WB 1-35	27.821930	-97.212596
WB 1-36	27.821995	-97.212896
WB 1-37	27.822055	-97.213171
WB 1-38	27.822125	-97.213477
WB 1-39	27.822205	-97.213767
WB 1-40	27.822248	-97.214048

Table of Coordinates
Moda Midstream, LLC
Approximate 17.0-Ac. Wetland Delineation,
Ingleside, San Patricio County, Texas

Wetland Boundary Points	Latitude	Longitude
WB 1-41	27.822328	-97.214355
WB 1-42	27.822381	-97.214619
WB 1-43	27.822489	-97.214870
WB 1-44	27.822505	-97.215136
WB 1-45	27.822634	-97.215499
WB 1-46	27.822645	-97.215554
WB 1-47	27.821869	-97.215651
WB 1-48	27.821725	-97.215540
WB 1-49	27.821639	-97.215370
WB 1-50	27.821595	-97.215262
WB 1-51	27.821530	-97.215108
WB 1-52	27.821479	-97.214965
WB 1-53	27.821421	-97.214804
WB 1-54	27.821361	-97.214659
WB 1-55	27.821358	-97.214636
WB 1-56	27.821332	-97.214450
WB 1-57	27.821311	-97.214252
WB 1-58	27.821306	-97.214031
WB 1-59	27.821279	-97.213848
WB 1-60	27.821273	-97.213572
WB 1-61	27.821279	-97.213394
WB 1-62	27.821252	-97.213193
WB 1-63	27.821218	-97.212993
WB 1-64	27.821182	-97.212802
WB 1-65	27.821149	-97.212643
WB 1-66	27.821121	-97.212468
WB 1-67	27.821101	-97.212285
WB 1-68	27.821095	-97.212163
WB 1-69	27.821096	-97.212043
WB 1-70	27.821105	-97.211962
WB 1-71	27.821133	-97.211713
WB 1-72	27.821180	-97.211471
WB 1-73	27.821228	-97.211261
WB 1-74	27.821301	-97.210948
WB 1-75	27.821352	-97.210732
WB 1-76	27.821431	-97.210541
WB 1-77	27.821475	-97.210385
WB 1-78	27.821525	-97.210200
WB 1-79	27.821572	-97.209953
WB 1-80	27.821579	-97.209831
WB 1-81	27.821526	-97.209728

Table of Coordinates
Moda Midstream, LLC
Approximate 17.0-Ac. Wetland Delineation,
Ingleside, San Patricio County, Texas

Wetland Boundary Points	Latitude	Longitude
WB 2-1	27.822423	-97.213909
WB 2-2	27.822494	-97.214190
WB 2-3	27.822518	-97.214330
WB 2-4	27.822482	-97.214515
WB 2-5	27.822534	-97.214645
WB 2-6	27.822620	-97.214808
WB 2-7	27.822711	-97.215039
WB 2-8	27.822752	-97.215067
WB 2-9	27.822786	-97.215036
WB 2-10	27.822764	-97.214959
WB 2-11	27.822761	-97.214874
WB 2-12	27.822717	-97.214738
WB 2-13	27.822677	-97.214680
WB 2-14	27.822676	-97.214573
WB 2-15	27.822670	-97.214521
WB 2-16	27.822620	-97.214368
WB 2-17	27.822572	-97.214203
WB 2-18	27.822487	-97.213930
WB 2-19	27.822465	-97.213850

Exhibit H
Photographic Documentation

Exhibit H: Photographic Documentation
Moda Midstream Operation, LLC
Approximate 17.0-Acre Wetland Delineation

Photo 1. Wetland overview looking north.

Photo 2. Wetland overview looking east.

Exhibit H: Photographic Documentation
Moda Midstream Operation, LLC
Approximate 17.0-Acre Wetland Delineation

Photo 3. Wetland overview looking south.

Photo 4. Wetland overview looking west.

Exhibit H: Photographic Documentation
Moda Midstream Operation, LLC
Approximate 17.0-Acre Wetland Delineation

Photo 5. Wetland/upland boundary looking west.

Photo 6. Wetland/upland boundary looking northeast.

Exhibit H: Photographic Documentation
Moda Midstream Operation, LLC
Approximate 17.0-Acre Wetland Delineation

Photo 7. Soil pit T2 SP04, located in emergent wetlands.

Photo 8. Soil pit T3 SP01, located in palustrine emergent wetlands.

3.2 DELINEATION OF SUBMERGED AQUATIC VEGETATION

INTRODUCTION

At the request of Moda Midstream Operating, LLC (Moda), on May 16, 20, and 22-23, 2019, Belaire Environmental, Inc. (BEI) performed a seagrass and sounding survey within an approximately 120-acre survey area located adjacent to Moda property and north of the Corpus Christi Ship Channel in Ingleside, San Patricio County, Texas. The methods and preliminary findings of BEI's survey are discussed below.

METHODS

BEI used the techniques previously coordinated with and approved by the USACE and other agencies. Transects were developed at 100-foot intervals spanning the survey area. Observation points were situated approximately 30-foot intervals along each transect in areas where the bay bottom elevation was less than -6 feet NAVD 88. To determine the presence or absence of seagrass at each observation point, BEI utilized the grab method to determine seagrass presence and to estimate seagrass coverage. At each sample point BEI made three hand grabs or three six-inch diameter core samples from the bay bottom. One sample was taken on the transect line, one approximately 18 inches to the left, and one approximately 18 inches to the right of the transect line. If seagrass was present within the grab sample, the species type and abundance was recorded for the observation point. The type of species at each grab sample is depicted by three letters, one for each grab. The letter X represents no vegetation, the letter H represents shoal grass (*Halodule beaudettei)*, the letter M represents manatee grass (*Cymodocea filiformis*), the letter T represents turtle grass (*Thalassia testudinum*), and the letter C represents clover grass (*Halophilla engelmanii*). A lowercase letter signifies that vegetation was sparse at the grab (<33% coverage), an uppercase letter signifies that vegetation was moderately dense (33% to 67% coverage), and an uppercase letter with a plus sign signifies that vegetation was dense (>67% coverage). In addition to the transect sampling, BEI evaluated the aerial imagery with ground truthing to determine the edge of seagrass for the entire seagrass bed. To determine position of various points, BEI used a sub-meter Trimble GEO 7X. All data was post-processed and mapped in office using ArcMaps 10.4.

RESULTS

BEI completed the survey efforts on May 16, 20, 22-23, 2019. An overview map of the approximately 120-acre survey area depicting survey transect locations and sample points is provided as Exhibit A. BEI sampled along each transects until the deepest edge of seagrass was determined and/or the bay bottom elevation became too deep for seagrass. The deepest average elevation for seagrass growth in this area is approximately -4.5 feet NAVD 88.

During these survey efforts, BEI mapped an approximately 20.26-acres of seagrass within the survey area (Exhibit B). Seagrass communities documented consisted of manatee grass, turtle grass, shoal grass, and clover grass species.

LIST OF EXHIBITS

Exhibit A – Survey Overview Map
Exhibit B – Seagrass Overview Map

Exhibit A
Survey Overview Map

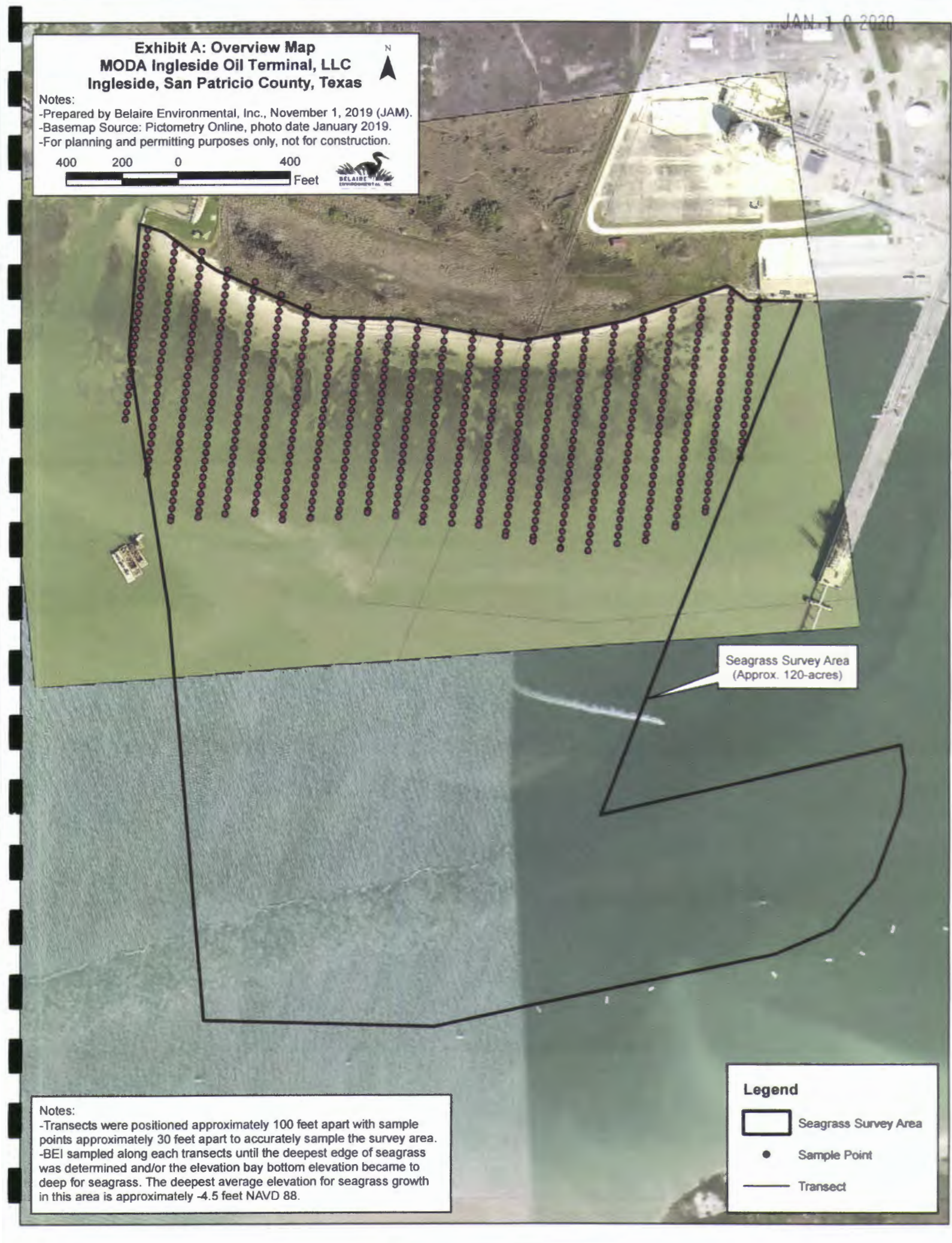


Exhibit A: Overview Map
MODA Ingleside Oil Terminal, LLC
Ingleside, San Patricio County, Texas
N
Notes:
-Prepared by Belaire Environmental, Inc., November 1, 2019 (JAM).
-Basemap Source: Pictometry Online, photo date January 2019.
-For planning and permitting purposes only, not for construction.
400 200 0 400
Feet
Seagrass Survey Area
(Approx. 120-acres)
Notes:
-Transects were positioned approximately 100 feet apart with sample points approximately 30 feet apart to accurately sample the survey area.
-BEI sampled along each transects until the deepest edge of seagrass was determined and/or the elevation bay bottom elevation became to deep for seagrass. The deepest average elevation for seagrass growth in this area is approximately -4.5 feet NAVD 88.
Legend
Seagrass Survey Area
Sample Point
Transect

Exhibit B
Seagrass Overview Map

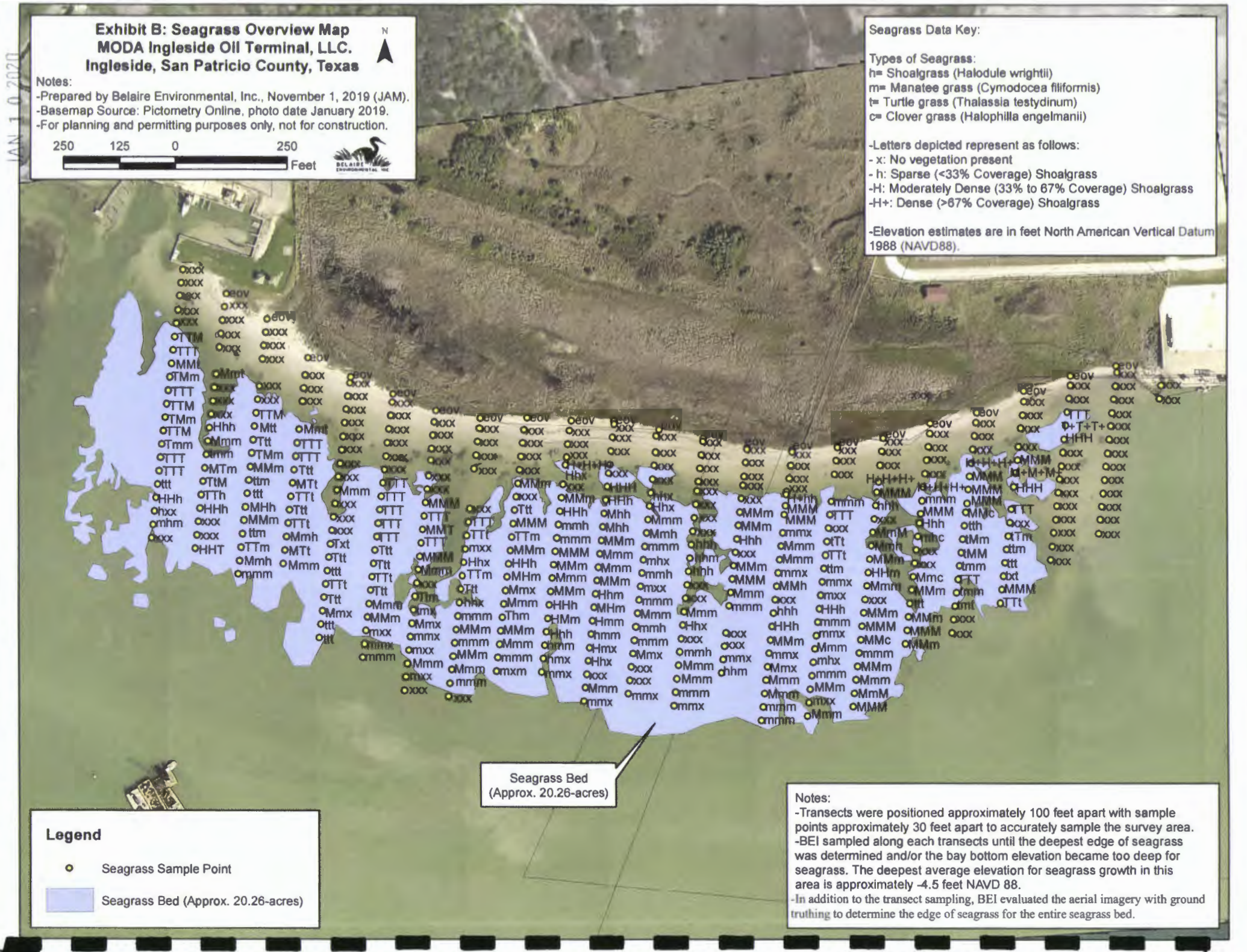


Exhibit B: Seagrass Overview Map
MODA Ingleside Oil Terminal, LLC.
Ingleside, San Patricio County, Texas
N
Notes:
-Prepared by Belaire Environmental, Inc., November 1, 2019 (JAM).
-Basemap Source: Pictometry Online, photo date January 2019.
-For planning and permitting purposes only, not for construction.
250 125 0 250
Feet
Seagrass Data Key:
Types of Seagrass:
h= Shoalgrass (Halodule wrightii)
m= Manatee grass (Cymodocea filiformis)
t= Turtle grass (Thalassia testydinum)
c= Clover grass (Halophilla engelmanii)
-Letters depicted represent as follows:
- x: No vegetation present
- h: Sparse (<33% Coverage) Shoalgrass
-H: Moderately Dense (33% to 67% Coverage) Shoalgrass
-H+: Dense (>67% Coverage) Shoalgrass
-Elevation estimates are in feet North American Vertical Datum 1988 (NAVD88).
Seagrass Bed
(Approx. 20.26-acres)
Legend
Seagrass Sample Point
Seagrass Bed (Approx. 20.26-acres)
Notes:
-Transects were positioned approximately 100 feet apart with sample points approximately 30 feet apart to accurately sample the survey area.
-BEI sampled along each transects until the deepest edge of seagrass was determined and/or the bay bottom elevation became too deep for seagrass. The deepest average elevation for seagrass growth in this area is approximately -4.5 feet NAVD 88.
-In addition to the transect sampling, BEI evaluated the aerial imagery with ground truthing to determine the edge of seagrass for the entire seagrass bed.

4.0 ALTERNATIVES ANALYSIS

Applicant's Purpose and Need

The purpose of and the need for the proposed project is to provide the maritime infrastructure necessary to accommodate the increasing demand by existing and committed, future customers at the Moda Ingleside Oil Terminal in a logistically safe and efficient manner.

Background

The Section 404(b)(1) Guidelines state that if an activity associated with the discharge proposed for a special aquatic site does not require access or proximity to, or siting within, a special aquatic site (e.g. wetlands) to fulfill its basic purpose, the activity is not water-dependent. As defined, the project proposes to construct maritime infrastructure including barge docks and a deep-water dock and is therefore, inherently water dependent.

According to the U.S. Energy Information Administration (EIA), the U.S. is projected to become a net exporter of petroleum liquids in 2020 in response to production increases. Further, production of crude oil is projected to increase through 2025, with production remaining high for approximately 40 years (EIA 2019). Moda is situated directly on the Corpus Christi Ship Channel, near the Gulf of Mexico, and near the entrance of the Port of Corpus Christi. Their close proximity to existing deep water channels allows for relatively short vessel travel times and their existing onshore facility allows for the use of existing infrastructure to accommodate the increased export demands in a safe and efficient manner. The proposed expansion of the West Basin will assist in safe berthing activities to accommodate the additional and larger vessels beginning to call at U.S. ports, including their current and committed future customers.

While the above purpose and need statement is designed to capture concisely the purpose for this application, the satisfaction of this need requires consideration of numerous additional facts and circumstances. Thus, the Alternatives Analysis below is based on seven siting criteria essential to meet the applicant's purpose and need for the project.

Siting Criteria

The following siting criteria was utilized when considering project alternatives:

a) Allow optimal use of existing onshore infrastructure in a safe and efficient manner.
b) Close proximity to Corpus Christi Ship Channel.
c) Minimize required new dredging.
d) Minimize impacts to special aquatic sites.
e) Add at least one new dock capable of berthing two Suezmax vessels.
f) Provide dedicated barge facilities.
g) Provide practicable construction access such that the project can be constructed in a safe and efficient manner.

Alternatives Considered

The following alternatives were considered for this project:

1. No Action Alternative
2. Offsite Alternative
3. Onsite Alternative 1
4. Onsite Alternative 2 (Preferred Alternative)

Table 1. Alternative Analysis Evaluation				
	No Action Alternative	**Offsite Alternative**	**Onsite Alternative 1**	**Onsite Alternative 2 (Preferred Alternative)**
Meets Project Purpose and Need	1	2	3	3
Siting Criteria a (uses existing infrastructure)	1	2	3	3
Siting Criteria b (close to CCSC)	1	2	3	3
Siting Criteria c (minimizes dredging)	3	1	1	2
Siting Criteria d (minimizes impacts)	3	1	1	2
Siting Criteria e (two Suezmax berths)	1	2	3	3
Siting Criteria f (dedicated barge facility)	1	2	3	3
Siting Criteria g (practicable construction)	3	1	3	3
TOTAL SCORE	**14**	**13**	**20**	**22**
Note: Each alternative was ranked 1 – 3 based upon how adequately it met each category. A score of 1 indicates that it did not meet the criteria, 2 it partially met the criteria, and 3 the criteria were fully met.				

1. No Action Alternative Evaluation:

The No Action Alternative does not result in impacts to waters of the United States and does not impact special aquatic sites. However, the No Action Alternative also does not achieve the applicant's purpose and need for the project. The No Action Alternative does not provide Moda the opportunity to provide the required maritime infrastructure and capacity to meet the increasing demands of their existing and committed future customer base.

2. Offsite Alternative:

Moda is unable to locate an offsite location with appropriate zoning, sufficient waterfront footage, and adjacent water depths to accommodate the proposed project components. If an offsite parcel were located, it is likely that to develop an existing property dredging and other shoreline modifications for berthing platforms would likely be necessary. Coupled with the necessary installation of pipelines and other inland infrastructure that would be needed to tie a remote berthing facility to Moda's existing onshore terminal, it is likely that an offsite terminal would result in greater impacts than those currently proposed. Further, the Offsite Alternative likely would not meet siting criteria's a, b, c, d, or g.

3. Onsite Alternative 1:

Onsite Alternative 1 was comprised of dredging a basin adjacent to Moda's entire waterfront, totaling an approximate 66.04-acre dredge area. The result of Onsite Alternative 1 included impacts to approximately 20.26 acres of submerged aquatic vegetation and approximately 4.05 acres of estuarine emergent wetland. Onsite Alternative 1 project components included a larger turning basin, separate barge docking areas, additional bulkhead shoreline armoring, and the use of additional adjacent upland areas to expand the existing onshore facility.

Onsite Alternative 1 was excluded as it was determined that the dedicated barge docking area could be safely placed to the east of the proposed deepwater dock and achieve a smaller overall project footprint. The turning basin could then be reduced to the minimum required dimensions to safely accommodate vessels berthing at the new deepwater dock. Further evaluations concluded that the current and future committed customer demand could be accommodated with existing onshore infrastructure so additional upland development would not be required to meet the project's purpose and need. Therefore, Alternative 1 was determined to be unsuitable as it did not meet siting criteria's c or d, did not represent the most conservative project required to support the purpose and need, nor meet the goal of minimization and avoidance to create the least environmentally damaging practicable alternative.

4. Onsite Alternative 2 (Preferred Alternative):

Onsite Alternative 2 is the currently proposed project and Preferred Alternative. Onsite Alternative 2 allows Moda to build the required maritime infrastructure needed to increase capacity and meet the growing demand of its current and committed future customer base while minimizing the environmental impacts. The associated impacts include the loss of approximately 8.86 acres of submerged aquatic vegetation and approximately 0.95 acres of estuarine emergent wetland. Therefore, Onsite Alternative 2 was determined to minimize impacts to the maximum extent practicable while still serving the applicant's purpose and need for the project.

As demonstrated above, alternatives to address the project need and purpose are geographically limited, and additional avoidance measures onsite are not practicable. The No Build Alternative does not address the project need. The preferred alternative was deemed a practicable alternative and is also the least environmentally damaging practicable alternative.

Literature Cited:

U.S. Energy Information Administration. 2019. Annual Energy Outlook 2019, with Projections to 2050. Available online at: https://www.eia.gov/outlooks/aeo/. Accessed November 2019.

5.0 COMPENSATORY MITIGATION STATEMENT

Construction of the proposed project would result in the loss of 8.86 acres of submerged aquatic vegetation and 0.80 acres of direct impacts and 0.15 acres of indirect impact to emergent estuarine wetland, totaling 0.95 acres of wetland impact.

The first priority of the proposed project was avoidance and minimization. The applicant has avoided and minimized project impacts to the maximum extent practicable. Minimization and avoidance efforts include project alterations, design changes, the addition of stabilization features to protect nearby resources, and the implementation of Best Management Practices (BMPs) into the project construction requirements. Section 4.0 outlines the alternatives analysis.

The Clean Water Act 404(b)(1) guidelines (40 CFR 230) are regulations that constitute the substantive environmental criteria used in evaluating activities regulated under Section 404. Within 40 CFR 230, compensatory mitigation for losses of aquatic resources is described under Subpart J. Additional regulations for general compensatory mitigation requirements are described in 33 CFR 332, finalized in 2008. This rule states that compensatory mitigation requirements must be commensurate with the amount and type of aquatic resources impacts associated with permit actions.

"There are three mechanisms for providing compensatory mitigation: permittee-responsible compensatory mitigation, mitigation banks and in-lieu fee mitigation" (40 CFR 230). Purchase of credits from a mitigation bank is the preferred method of compensatory mitigation. However, no mitigation banks are available the serve the project area. The next preferred method of compensatory mitigation is the purchase of in-lieu fee program credits; the project area is not located within the service area of an in-lieu free program. The next preferred method of permittee responsible mitigation (PRM). "Compensatory mitigation can be carried out through four methods: the restoration of a previously-existing wetland or other aquatic site, the enhancement of an existing aquatic site's functions, the establishment (i.e., creation) of a new aquatic site, or the preservation of an existing aquatic site" (40 CFR 230).

The applicant proposes to mitigate for losses of jurisdictional waters of the United States with a combination of preservation and establishment (creation) of a new aquatic site.

Preservation:

For impacts to aquatic resources totaling 9.81 acres (8.86 acres of submerged aquatic vegetation and 0.95 acres of estuarine wetland), the applicant proposes the preservation of 50 acres (5.09:1) of forested land that includes a mosaic of pothole wetlands. Pothole wetlands are a valuable habitat being lost across Texas due to urbanization, agriculture, and other development activities. Of the few remaining undeveloped tracts with these land features in the Ingleside area, there is significant threat for development since most lands with pothole wetlands are typically isolated and non-jurisdictional under existing federal regulations. For example, the 592-acre tract situated immediately to the north of the applicant's property, has an unexpired Approved Jurisdictional Determination (AJD) that states that the property is non-jurisdictional. That property, in combination with the applicant's property constitutes the majority of the contiguous undeveloped land in this region where this habitat type can still be found. In a 2014 permit comment letter for SWG-2014-00381, the Texas Parks and Wildlife Department (TPWD) emphasized the extremely high value of this undeveloped habitat, stating that the pothole wetlands are threatened in much of their known range by drainage alterations associated with both development and grazing pressures and further stating that for that project TPWD may consider a preservation alternative to preserve this valuable habitat type.

The applicant will obtain the appropriate conservation easements and land management plans to preserve the acreages appropriately and in perpetuity. **Exhibit A** includes an overview map depicting the property proposed for preservation.

Creation:

In addition to preservation, the applicant will compensate for the loss of 8.86 acres of submerged aquatic vegetation by creating not less than 9.3 acres of submerged aquatic vegetation. The applicant will develop a plan that includes the planting of 13.3 acres of seagrass species. The plan will include an ultimate success criterion to achieve not less than 70% seagrass coverage (13.3 acres planted X 70% coverage = 9.3 acres of seagrass creation).

The applicant is working with the Port of Corpus Christi Authority (PCCA) to determine the precise location of the proposed mitigation site within submerged PCCA property. PCCA has approved approximately 1,600 acres along the shoreline of Indian Point for habitat creation and enhancement projects that will address the needs of the watershed and provide shoreline protection. PCCA supports the applicant's intent to complete mitigation within their submerged land and has agreed to provide sufficient acreage to meet the project's needs. The applicant intends to propose a site-specific mitigation project that will consist of a breakwater constructed on bay bottom, situated such that wind and wave reduction will be sufficient to successfully establish seagrass shoreward of the breakwater. Following breakwater installation, the applicant would harvest and transplant appropriate seagrass species. The breakwater will be situated so that approximately 13.3 acres of seagrass can be planted shoreward of the breakwater. The breakwater would be installed at the approximate -4.0 to -4.5-foot NAVD 88 contour. Seagrass would be planted shoreward of the breakwater on three-foot centers. The applicant's proposed plan meets the stated goal of achieving no net loss of aquatic resources. A letter of support from PCCA, and an overview of the 1,600-acre area is included in **Exhibit B**.

A plan and section view are provided in **Exhibit C** as a visual demonstration of a typical seagrass site with breakwater protection. However, as stated above the precise location of the breakwater and planting area is still being coordinated with PCCA. Once the applicant and PCCA have determined the precise location of the mitigation site within PCCA's 1,600-acre dedicated habitat enhancement/creation area, a 12-Step Mitigation Plan will be provided with the above details and will conform with all regulatory guidance and regulations.

EXHIBIT A

PRESERVATION PROPERTY OVERVIEW


Exhibit A
Preservation Property Overview
-Prepared by: Belaire Environmental, Inc., January 10, 2020 (SKF).
-Basemap Source: NAIP 0.5 meter aerial imagery, obtained from TNRIS, Nueces County, 2015.
-For planning and permitting purposes only, not for construction.
0 400 800 1,200 1,600
Feet
N
50-Acre Area Proposed for Preservation
Legend
Preservation Consideration Area

JAN 10 2020

EXHIBIT B

LETTER OF MITIGATION SUPPORT

PORT CORPUS CHRISTI

JAN 1 0 2020

December 19, 2019

Corpus Christi Field Office
Regulatory Division, CEWSG-RD-R
U.S. Army Corps of Engineers
5151 Flynn Parkway, Suite 306
Corpus Christi, Texas 78411-4318

Subject: Mitigation for Moda Oil Terminal, LLC Berth Expansion Project

To Whom It May Concern:

On behalf of the Port Corpus Christi Authority (PCCA), this letter is to notify you that PCCA has conceptually agreed to enter into an agreement with Moda Oil Terminal, LLC (Moda) for utilization of Port owned submerged property for a permittee responsible mitigation project to compensate for unavoidable impacts that will result from the construction of Moda's proposed Berth Expansion Project (the Moda Dock Project) which is the subject of a pending Corps of Engineers permit application.

PCCA recognizes the need for habitat creation in the Corpus Christi Bay System as is evidenced by our Environmental Policy approved by the Port Commission. To that end the PCCA has recently identified approximately 1,600-acres of PCCA owned submerged property that appears suitable for the creation, restoration or enhancement of habitat and has begun progressing studies to identify current conditions. In October 2019, PCCA approved a Task Order under a Master Research Agreement with Texas A&M University – Corpus Christi to evaluate this area to determine its suitability for the creation, restoration or enhancement of oyster reefs. This is just one of several studies needed to fully evaluate the habitat potential of this area. Additionally, once the area has been adequately characterized, coordination with adjacent stakeholders will also be necessary for alignment on intended adjacent property uses. Exhibit A depicting the 1,600-acres of Port owned land is attached for reference.

PCCA understands that the Moda Dock Project will impact approximately nine (9) acres of seagrass. PCCA believes that within the approximately 1,600-acres along the northwest shoreline of Corpus Christi Bay from Indian Point to LaQuinta, there is acreage to accommodate the necessary mitigation for this project and that it will align with PCCA's intended habitat creation project. Since PCCA has only recently begun evaluating the area and the prioritizing of creation, enhancement, and restoration areas is yet to be developed, PCCA doesn't have a specific location within the 1,600-acres for the permittee responsible mitigation project at this time. However, we anticipate it being identified in early spring.

PCCA is committed to actively assisting Moda with identification and development of a permittee responsible project for the Moda Dock Project as will be required by the U.S. Army Corps of Engineers (USACE) permit for this project. PCCA understands that this commitment will require USACE's approval of the final mitigation plan and issuance of a USACE permit to Moda for the project including the mitigation area, unless the mitigation area is separately permitted by PCCA.

In the meantime, it is PCCA's intention to work with Moda and its environmental consultants to assist with the development of a 12-point mitigation plan as required by the USACE regulations and to develop a supporting mitigation agreement for the property for this purpose.

If you have any questions, please contact me by phone at (316) 885-6163 or email at sarah@pocca.com.

Sincerely,
PORT OF CORPUS CHRISTI AUTHORITY

Sarah L. Gaza
Director of Environmental
Planning & Compliance

cc: Sean Strawbridge, Chief Executive Officer
Clark Robertson, Chief Operating Officer
Omar Garcia, Chief External Affairs Officer
Beatriz Rivera, Environmental Engineer
Robert Schulz, Senior Environmental Specialist
Yvonne Dives-Gomez, Environmental Permitting Specialist

JAN 1 0 2020

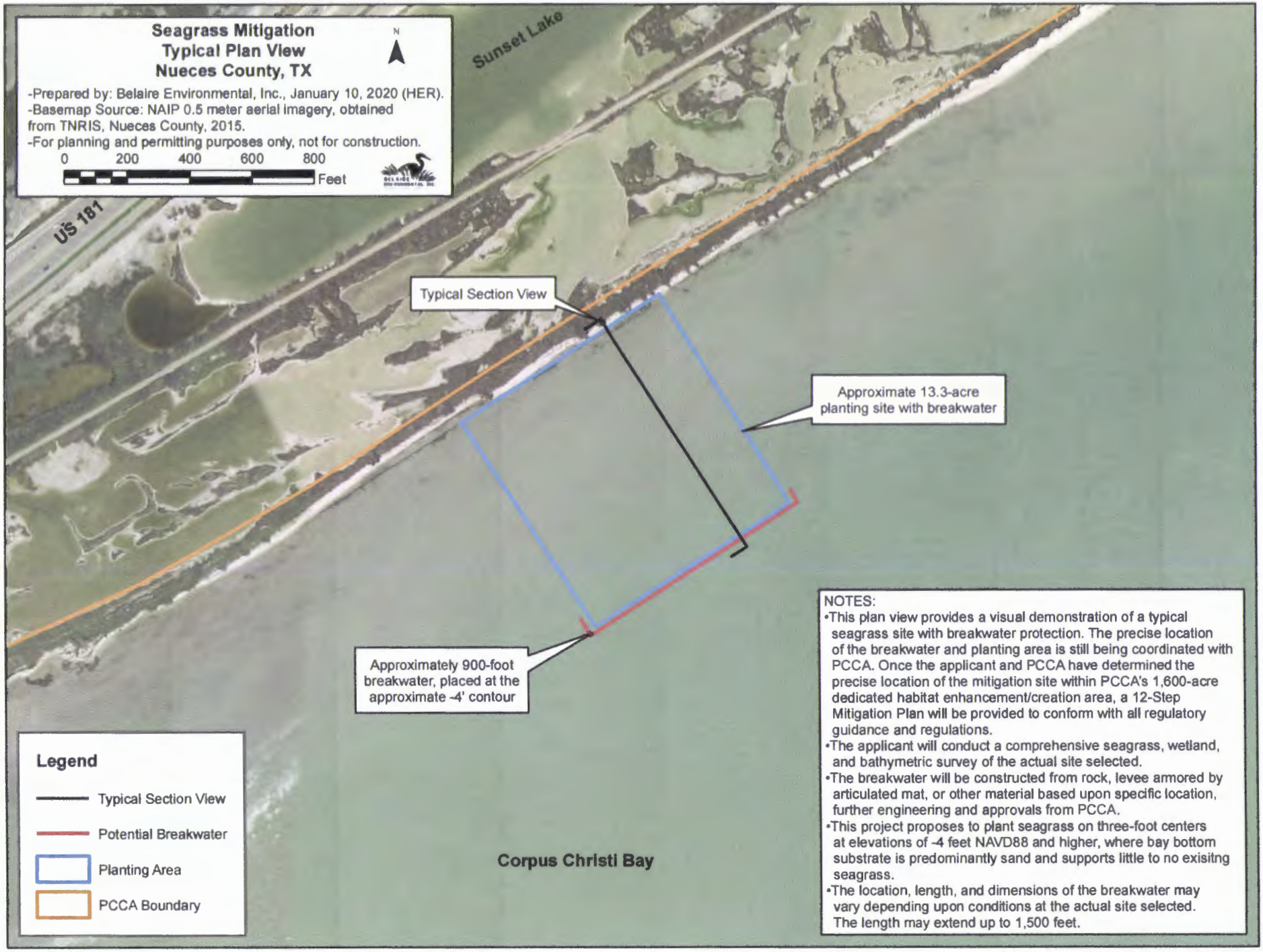
alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Port Owned Submerged Properties

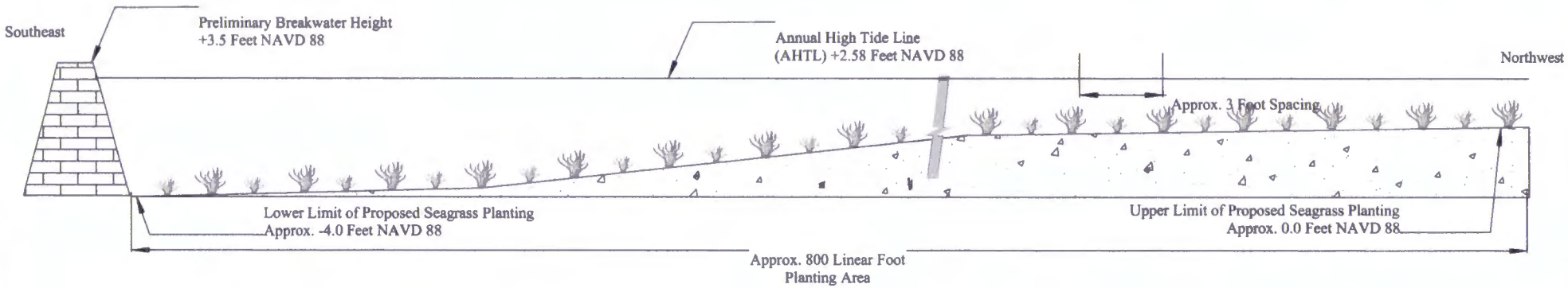
Proposed use for development of permittee responsible mitigation projects, for tenant and port use.

EXHIBIT C

SEAGRASS MITIGATION SITE TYPICAL PLAN AND SECTION VIEWS


Seagrass Mitigation
Typical Plan View
Nueces County, TX
-Prepared by: Belaire Environmental, Inc., January 10, 2020 (HER).
-Basemap Source: NAIP 0.5 meter aerial imagery, obtained from TNRIS, Nueces County, 2015.
-For planning and permitting purposes only, not for construction.
0 200 400 600 800
Feet
N
Sunset Lake
US 181
Typical Section View
Approximate 13.3-acre planting site with breakwater
Approximately 900-foot breakwater, placed at the approximate -4' contour
Corpus Christi Bay
Legend
Typical Section View
Potential Breakwater
Planting Area
PCCA Boundary
NOTES:
•This plan view provides a visual demonstration of a typical seagrass site with breakwater protection. The precise location of the breakwater and planting area is still being coordinated with PCCA. Once the applicant and PCCA have determined the precise location of the mitigation site within PCCA's 1,600-acre dedicated habitat enhancement/creation area, a 12-Step Mitigation Plan will be provided to conform with all regulatory guidance and regulations.
•The applicant will conduct a comprehensive seagrass, wetland, and bathymetric survey of the actual site selected.
•The breakwater will be constructed from rock, levee armored by articulated mat, or other material based upon specific location, further engineering and approvals from PCCA.
•This project proposes to plant seagrass on three-foot centers at elevations of -4 feet NAVD88 and higher, where bay bottom substrate is predominantly sand and supports little to no exisitng seagrass.
•The location, length, and dimensions of the breakwater may vary depending upon conditions at the actual site selected. The length may extend up to 1,500 feet.

Typical Section View
Seagrass Mitigation
Nueces County, Texas



NOTES:

-Cross section represents typical cross section for seagrass planting adjacent to breakwater and will be refined when a precise location is determined.

-Seagrass will be planted where bay bottom substrate is predominately sand with little to no existing seagrass.

-13.3-acre site will be planted on three-foot centers from approximately -4.0 to 0.0 feet NAVD 88. Planting elevations will be refined based upon specific location and/or nearby reference bed.

-Breakwater height represented is typical but will be refined based upon specific location and further engineering analysis.

-Breakwater to be constructed from rock, levee armored by articulated mat, or other material based upon specific location, further engineering and approvals from PCCA.

-Prepared by Belaire Environmental, Inc. on January 10, 2020 (JAM).

Not To Scale

6.0 THREATENED AND ENDANGERED SPECIES HABITAT ASSESSMENT

BACKGROUND INFORMATION

Belaire Environmental, Inc. (BEI) conducted an evaluation of federally-listed threatened and endangered species in November 2019 for the above referenced project. The assessment area is located along the north side of the Corpus Christi Ship Channel, just southeast of the community of Ingleside on the Bay and west of the Gulf Intracoastal Waterway (GIWW) (see **Attachment A, Figure 1**). This evaluation includes a review of current species list from the United States Fish and Wildlife Service (USFWS) for San Patricio County. The purpose of this literature review and document search is to determine if preferred habitat or designated critical habitat for any listed species is present within the assessment area and whether any listed species is likely to occur in the assessment area. Also used in this review were Geographic Information System (GIS) data, including United States Geological Survey (USGS) digital topographic quadrangle maps (see **Attachment A, Figure 2**), 2015 aerial photography (see **Attachment A, Figure 3**), additional historic aerial photographs, and USFWS-designated critical habitat boundaries (**Attachment A, Figure 4**), and the Texas Parks and Wildlife Department (TPWD) Natural Diversity Database (TxNDD) (**Attachment A, Figure 5**).

POLICY AND DATABASE REVIEW

The USFWS has authority under the Endangered Species Act (ESA) to list and monitor the status of species whose populations are considered imperiled. USFWS regulations that implemented the ESA are codified and regularly updated in 50 CFR Part 17. The federal ESA process identified potential candidates based upon the species' biological vulnerability. The vulnerability decision is based upon many factors affecting the species within its range and is linked to the best scientific data available to the USFWS at the time. Species listed as threatened or endangered by the USFWS are provided full protection under the ESA including a prohibition of indirect take such as destruction of known critical habitat (i.e. areas formally designated by USFWS in the Federal Register).

The USFWS IPaC (Information for Planning and Conservation) (**Attachment C**) report identifies fifteen species that are listed as threatened or endangered and that may occur within San Patricio County (**Attachment B, Table 1**). Two additional federally-listed species are include in **Table 1** as listed by the *TPWD Annotated County List of Rare Species*, which is generally an over-inclusive list of species whose historic range may have included Nueces County. While delisted in 2007, the bald eagle was also included in **Table 1** since it is protected by the Bald and Golden Eagle Protection Act. It should be noted that a species' listing does not imply that a species is known to occur in the assessment area but only acknowledges the potential for occurrence within San Patricio County; the estimated likelihood of the species to occur within the assessment area is based on a desktop analysis of potential habitat using the aforementioned GIS data and the known habitat preferences for this species as well as observations recorded during site investigation conducted in May and October 2019. According digital data published by the USFWS, the assessment area is not located within designated critical habitat for any federally-listed species. The closest USFWS designated critical habitat is associated with the piping plover (*Charadrius melodus*) and is located approximately 4.2 miles southeast and 6.2 mile east of the project area (**Attachment A, Figure 4**). According to a review of the TxNDD, no occurrence records were identified within the assessment area. Review of the TxNDD indicated six element of occurrences within 1.5 miles of the project area. Element of occurrences included occurrence records for the sand Brazos-mint (*Brazoria arenaria*), tree dodder (*Cuscuta exaltata*), Texas scarlet snake (*Cemphora coccinea lineri*), and two occurrences for rookeries. While the occurrence records for the two rookeries could provide habitat for federally-listed avian species, these areas will not be affected by the proposed project.

HABITAT ASSESSMENT

Currently the assessment area is a mix of deepwater marine habitat and shallow vegetated and unvegetated bay bottom, with minor components of adjacent upland and wetland prairie habitat. Most of the assessment area consists of the Corpus Christi Ship Channel and the adjacent vegetated/unvegetated shallow bay bottom. The vegetated shallow bay bottom contains approximately 20.26 acres of seagrass beds consisting of shoal grass (*Halodule beaudettei*), manatee grass (*Cymodocea filiformis*), turtle grass (*Thalassia testudinum*), and clover grass (*Halophilla engelmanii*). The small portion of the assessment area which contains prairie habitat is dominated by coastal marsh pennywort (*Hydrocotyle bonariensis*), annual ragweed (*Ambrosia artemisiifolia*), browns yellow tops (*Flaveria brownii*), bushy bluestem (*Andropogon glomeratus*), gulf dune crown grass (*Paspalum monostachyum*), blue mist flower (*Conoclinium coelestinum*), salt-meadow cord grass (*Spartina patens*), coastal saltgrass (*Distichlis spicata*), three-square (*Schoenoplectus pungens*), marsh fimbry (*Fimbristylis castanea*), turkey-tangle (*Phyla nodiflora*), Brazilian peppertree (*Schinus terebinthifolia*), honey mesquite (*Prosopis glandulosa*), wild cow-pea (*Vigna luteola*), mustang grape vine (*Vitis mustangensis*), gulf coast twinevine (*Funastrum angustifolium*), and fringed greenbrier (*Smilax bona-nox*) plant species. Soils within the prairie habitat assessment area were predominantly sand and appeared to be poorly to moderately well drained.

SUMMARY

As shown in **Table 1**, the assessment area was determined to have no potential habitat for nine federally-listed species listed for San Patricio County. Note that according to the IPaC report the least tern (*Sterna antillarum*) should only be considered for wind related projects located within the species' migratory path. The proposed project does not include any wind related components, so affects to this species were discounted. The remaining nine species were determined to have potential habitat present within the assessment area; however, a determination call of "no effect" was concluded for four species and a determination call of "may affect, not likely to adversely affect" was concluded for five species. Species with a "may affect, unlikely to adversely affect" determination included the green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricate*), Kemp's Ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*), and loggerhead sea turtle (*Caretta caretta*). The "may affect, unlikely to adversely affect" determination was also concluded for these species due to the presence of high ship traffic and deeply dredged bay bottom which is unlikely to be utilized by these species. Furthermore, no occurrence records for these species were identified in the review of the TxNDD.

The humpback whale (*Megaptera novaeranglia*) and the west Indian manatee (*Trichechus manatus*) are federally-listed species for Nueces County. While a determination of "No Effect", consistent with the ESA, was concluded for these species, the humpback whale and the west Indian manatee are also protected under the Marine Mammal Protection Act (MMPA). The MMPA prohibits the take of marine mammals; however, based on the proposed project components, this species is not expected to be affected by the proposed project, and as such, the project would be in compliance with the MMPA.

The proposed project is not expected to adversely affect any federally-listed threatened or endangered species for San Patricio County. In order to avoid impacts, or minimize any unavoidable impacts, to federally-listed species, best management practices (BMPs) should be implemented during all design, construction, and maintenance activities. Additionally, construction and operations employees will (a) be advised that manatees may approach the proposed project area (b) be provided materials, such as a poster, to assist in identifying the mammal, (c) be instructed not to feed or water the animal, and (d) contact the U.S. Fish and Wildlife Service (Service) and the Texas Marine Mammal Stranding Network (TMMSN) if a manatee is sighted, and take appropriate measures to cease work if a manatee is sighted within the project area. Construction and operations employees will also (a) be advised that sea turtles may approach the proposed project area (b) be provided materials, such as a poster, to assist in identifying the sea turtle, (c) be instructed not to feed or water the animal, and (d) take appropriate measures to cease work when

necessary. It should be noted that the determination and recommendations herein are based on the best available data and are subject to modification based on further field verification and the publication of revised data from the USFWS.

LIST OF ATTACHMENTS

Attachment A: Figures

- Figure 1: Project Vicinity Map
- Figure 2: 2013 USGS Topographic Map
- Figure 3: 2015 Aerial Photograph Map
- Figure 4: USFWS Critical Habitat Map
- Figure 5: TPWD NDD Map

Attachment B: Tables

- Table 1: Potential Impact to Protected and Other Rare Species/Habitat

Attachment C: Species List

- USFWS IPaC Report
- TPWD Annotated List of Rare Species

Attachment A
Figures

Figure 1: Project Vicinity Map
Moda Ingleside Oil Terminal, LLC
Nueces County, TX

-Prepared by: Belaire Environmental, Inc., November 12, 2019 (CRB).
-Basemap Source: ESRI, HERE, Garmin, INtermap, incremet P Corp., GEBVO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community.
-For planning and permitting purposes only, not for construction.

0 2 4 Miles

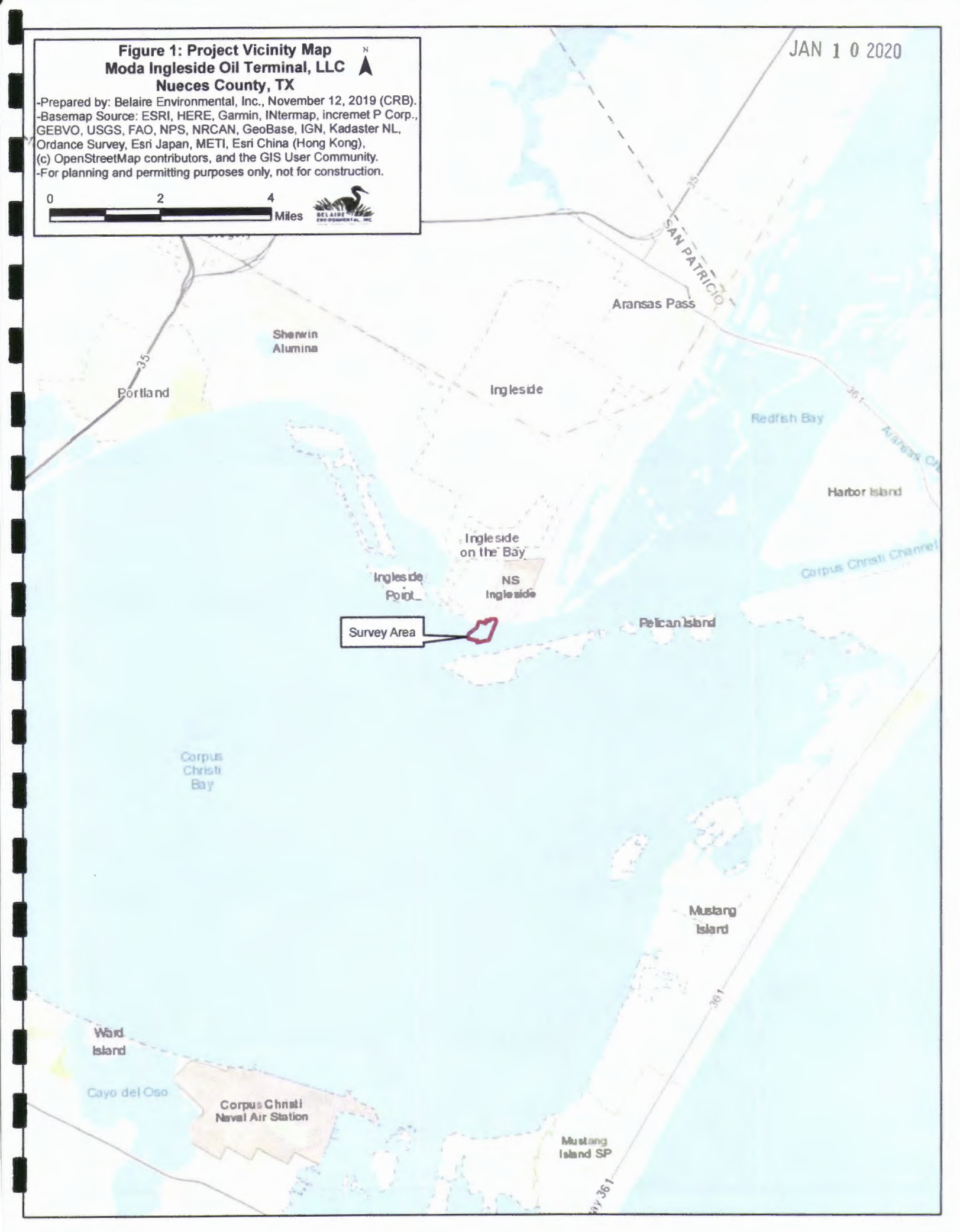


Figure 2: 2013 USGS Topographic Map
Moda Ingleside Oil Terminal, LLC
Nueces County, TX

-Prepared by: Belaire Environmental, Inc., November 12, 2019 (CRB).
-Basemap Source: USGS Topographic Map, Port Ingleside Quad, 2013.
-For planning and permitting purposes only, not for construction.

0 2,000 4,000 Feet


Figure 3: 2015 Aerial Photograph Map
Moda Ingleside Oil Terminal, LLC
Nueces County, TX
-Prepared by: Belaire Environmental, Inc., November 12, 2019 (CRB).
-Basemap Source: NAIP 0.5 meter aerial imagery, obtained from TNRIS, Nueces County, 2015.
-For planning and permitting purposes only, not for construction.
N
0
500
1,000
Feet
Survey Area


Figure 4: USFWS Critical Habitat Map
Moda Ingleside Oil Terminal, LLC
Nueces County, TX
-Prepared by: Belaire Environmental, Inc., November 12, 2019 (CRB).
-Basemap Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGrid, IGN, and the GIS User Community.
-For planning and permitting purposes only, not for construction.
N
0
2
4
Miles
Survey Area
Legend
Survey Area
USFWS-designated Critical Habitat

Figure 5: TPWD NDD Map
Moda Ingleside Oil Terminal, LLC
Nueces County, TX

-Prepared by: Belaire Environmental, Inc., November 12, 2019 (CRB).
-Basemap Source: NAIP 0.5 meter aerial imagery, obtained from TNRIS, Nueces County, 2015.
-For planning and permitting purposes only, not for construction.

0 0.5 1 Miles

Legend

- Survey Area
- 1.5-Mile Buffer

TxNDD Element of Occurence

- Coastal Live Oak-Redbay Series
- Rookery
- Sand Brazos-Mint
- Texas Scarlet Snake
- Tree Dodder

Attachment B
Tables

Table 1: Potential Impact to Protected and Other Rare Species/Habitat

Species	Federal Status	Description of Suitable Habitat	Habitat Present	Species Effect	Justification
Birds					
Bald Eagle (*Haliaeetus leucocephalus*)	DL	Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter, hunts live pray, scavenges, or pirates food from other birds.	No	No Effect	The project area is confined to open water, apart from approximately 1 acre along the shoreline. While this species has potential to forage in the small area of prairie habitat, the survey area lacks the tall trees/cliffs preferred by this species.
Eskimo Curlew (*Numenius borealis*)	E*	Historically, shortgrass plains and prairies, but more recently (1960s) on old fields, closely grazed pastures, burned prairies, and marshes; beaches and sand flats. Nonbreeding: grasslands, pastures, plowed fields, and less frequently, marshes and mudflats.	No	No Effect	The project area is confined to open water, apart from approximately 1 acre along the shoreline.
Least Tern *Sterna antillarum*	E	Nests along sand and gravel bars within braided streams and rivers. Also known to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc.). Eats small fish and crustaceans, when breeding forages within a few hundred feet of colony.	No	No Effect	This species only needs to be considered for wind related projects within this species' migratory route. The proposed project does not contain any wind related components.
Northern Aplomado Falcon *Falco femoralis septentrionalis*	E	Open country, especially savanna and open woodland, and sometimes in very barren areas; grassy plains and valleys with scattered mesquite, yucca, and cactus; nests in old stick nests of other bird species.	No	No Effect	The project area is confined to open water, apart from approximately 1 acre along the shoreline.
Piping Plover *Charadrius melodus*	T	This species is a wintering migrant along the Texas Gulf Coast. Inhabits beaches and bayside mud or salt flats.	Yes	No Effect	The project area is not located within USFWS-designated critical habitat for this species. A majority of the project's construction activities will occur in open water, apart from a 1-acre area, nearest to existing structures. Preferred habitat including beaches and bayside mudflats are located in the vicinity are more likely to be used by this species.

Red Knot *Caladris canutus rufa*	T	Habitat for this species primarily consists of seacoasts on tidal flats and beaches, herbaceous wetland, and tidal flats and shoreline. Red knots migrate long distances in flocks northward through the contiguous U.S. mainly April-June and southward July-October. The red knot prefers the shoreline of the coast and bays, and also uses mudflats during rare inland encounters.	Yes	No Effect	While the project area contains a 1-acre portion of a shoreline, a majority of construction activities will occur in open water. Although the project area contains herbaceous wetlands and shoreline, preferred habitat including tidal flats, beaches, vast herbaceous wetlands, and shorelines is located in the vicinity are more likely to be used by this species. Due to the high shipping traffic and human disturbance, it is unlikely that this species will occur in the project area.
Whooping Crane *Grus americana*	E	Small ponds, marshes, and flooded grain fields for both roosting and foraging. Potential migrant via plains throughout most of state to the coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.	Yes	No Effect	The project's location near Redfish Bay provides significant preferred habitat in the vicinity which is much more likely to be used by this species. Furthermore, this project area is not located in Aransas, Calhoun or Refugio counties.
Mammals					
Gulf Coast Jaguarundi *Herpailurus (=Felis) yagouaroundi cacomitli*	E	Dense, thorny shrublands or woodlands and bunchgrass pastures adjacent to dense brush or woody cover.	No	No Effect	The project area does not contain any dense, thorny shrublands or woodlands that could provide habitat for this species.
Humpback Whale (*Megaptera novaeangliae)*	E*	Open ocean and coastal waters, sometimes including inshore areas such as bays; summer distribution is in temperate and subpolar waters; in winter, most are in tropical/subtropical waters near islands or coasts.	Yes	No Effect	While the project area contains suitable coastal waters, only one occurrence has been document along the Texas Gulf Coast. As such, it is highly unlikely that this species will occur in the project area.
Ocelot *Leopardus (=Felis) pardalis*	E	Restricted to mesquite-thorn scrub and live-oak mottes; avoids open areas. Dense mixed brush below four feet; thorny scrublands; dense chaparral thickets; breeds and raises young June-November.	No	No Effect	The project area does not contain any mesquite-thorn scrub or live-oak mottes that could provide habitat for this species.
West Indian Manatee *Trichechus manatus*	T	This species prefers shallow, slow-moving waters or river estuaries, saltwater bays, canals, and coastal areas.	No	No Effect	The project area is located in a saltwater bay system on the Corpus Christi Ship Channel. Due to the high ship traffic causing swift currents, it is unlikely that this species will occur in the project area.

Reptiles					
Green Sea Turtle *Chelonia mydas*	T	Gulf and bay system; shallow water seagrass beds, open water between feeding and nesting areas, barrier island beaches; adults are herbivorous feeding on seagrass and seaweed; juveniles are omnivorous feeding initially on marine invertebrates, then increasingly on seagrass and seaweeds; nesting behavior extends from March-October, with peak activity in May and June.	Yes	May Affect, Unlikely to Adversely Affect	The project area contains shallow water seagrass beds and open waters; however, due to high ship traffic and deeply dredged bay bottom, it is unlikely that this species will occur in the project area.
Hawksbill Sea Turtle *Eretmochelys imbricate*	E	Gulf and bay system, warm shallow waters especially in rocky marine environments, such as coral reeds and jetties, juveniles in floating mats of sea plants; feed on sponges, jellyfish, sea urchins, mollusks, and crustaceans, nests April through November.	Yes	May Affect, Unlikely to Adversely Affect	The project area contains warm shallow water; however, no rocky marine environments were observed. Furthermore, due to high ship traffic and deeply dredged bay bottom, it is unlikely that this species will occur in the project area.
Kemp's Ridley Sea Turtle *Lepidochelys kempii*	E	Gulf and bay systems, adults stay within the shallow waters of the Gulf of Mexico; feed primarily on crabs, but also snails, clams, other crustaceans and plants, juveniles feed on sargassum and its associated fauna; nests April-August.	Yes	May Affect, Unlikely to Adversely Affect	The project area is located in the bay system which could provide habitat for this species; however, due to high ship traffic and deeply dredged bay bottom, it is unlikely that this species will be impacted.
Leatherback Sea Turtle *Dermochelys coriacea*	E	Pelagic. Gulf and bay systems, and widest ranging open water reptile; omnivorous, shows a preference for jellyfish; in the US portion of their western Atlantic nesting territories, nesting season range from March to August.	Yes	May Affect, Unlikely to Adversely Affect	The project area is located in the bay system which could provide habitat for this species; however, due to high ship traffic and deeply dredged bay bottom, it is unlikely that this species will be impacted.
Loggerhead Sea Turtle *Caretta caretta*	T	Gulf and bay system primarily for juveniles, adults are most pelagic of the sea turtles; omnivorous, shows a preference for mollusks, crustaceans, and coral; nests from April through November.	Yes	May Affect, Unlikely to Adversely Affect	The project area is located in the bay system which could provide habitat for this species; however, due to high ship traffic and deeply dredged bay bottom, it is unlikely that this species will be impacted.
Flowering Plants					
Slender Rush-Pea *Hoffmannseggia tenella*	E	Coastal prairie grasslands on level uplands and on gentle slopes along drainages, usually in areas of shorter or sparse vegetation; soils often described as Blackland clay, but some of these sites soils are coarser textured and lighter in color than the typical heavy clay or the coastal prairies; flowering April-November.	No	No Effect	The project area is comprised of open water and a small 1-acre portion of estuarine wetlands. Soils in this area do not consist of the clay textures preferred by this species.

South Texas Ambrosia *Ambrosia cheiranthifolia*	E	Grasslands and mesquite-dominated shrublands on various soils ranging from heavy clays to lighter textured sandy loams, mostly over the Beaumont Formation on the Coastal Plain; in modified unplowed sites such as railroad and highway right-of-ways, cemeteries, mowed fields, and erosional areas along small creeks; Perennial; Flowering July-November.	No	No Effect	The project area is comprised of open water and a small 1-acre portion of estuarine wetlands. While the project area is located atop the Beaumont Formation, this plant is not adapted to life in wetland conditions and is unlikely to occur the project area.

Key to Species Status Abbreviations Used:
E = Federally-listed Endangered
T = Federally-listed Threatened
DL = Federally Delisted

"*" *TPWD Annotated List of Rare Species* indicated a Federal listing for this species; however, the USFWS T&E species list does not indicate a listing status for this species in San Patricio County.

No Effect = No adverse effect on federally listed species.
May Affect, Unlikely to Adversely Affect = This species and/or critical habitat for this species may be affected; however, the effects are expected to be discountable, insignificant, or completely beneficial.

Sources: U.S. Fish and Wildlife Service IPaC (October 28, 2019)

Attachment C
Species List

JAN 1 0 2020

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Texas Coastal Ecological Services Field Office
17629 El Camino Real #211
Houston, TX 77058
Phone: (281) 286-8282 Fax: (281) 488-5882
http://www.fws.gov/southwest/es/TexasCoastal/
http://www.fws.gov/southwest/es/ES_Lists_Main2.html

In Reply Refer To: November 11, 2019
Consultation Code: 02ETTX00-2020-SLI-0265
Event Code: 02ETTX00-2020-E-00544
Project Name: Moda Ingleside Oil Terminal, LLC. Berth Expansion Project
Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The U.S. Fish and Wildlife Service (Service) field offices in Clear Lake, Tx, and Corpus Christi, Tx, have combined administratively to form the Texas Coastal Ecological Services Field Office. A map of the Texas Coastal Ecological Services Field Office area of responsibility can be found at: http://www.fws.gov/southwest/es/TexasCoastal/Map.html. All project related correspondence should be sent to the field office responsible for the area in which your project occurs. For projects located in southeast Texas please write to: Field Supervisor; U.S. Fish and Wildlife Service; 17629 El Camino Real Ste. 211; Houston, Texas 77058. For projects located in southern Texas please write to: Field Supervisor; U.S. Fish and Wildlife Service; P.O. Box 81468; Corpus Christi, Texas 78468-1468. For projects located in six counties in southern Texas (Cameron, Hidalgo, Starr, Webb, Willacy, and Zapata) please write: Santa Ana NWR, ATTN: Ecological Services Sub Office, 3325 Green Jay Road, Alamo, Texas 78516.

The enclosed species list identifies federally threatened, endangered, and proposed to be listed species; designated critical habitat; and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project.

New information from updated surveys, changes in the abundance and distribution of species, changes in habitat conditions, or other factors could change the list. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS-IPaC website http://ecos.fws.gov/ipac/ at regular intervals during project planning and implementation for updates to species list and information. An updated list may be

requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Candidate species have no protection under the Act but are included for consideration because they could be listed prior to the completion of your project. The other species information should help you determine if suitable habitat for these listed species exists in any of the proposed project areas or if project activities may affect species on-site, off-site, and/or result in "take" of a federally listed species.

"Take" is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. In addition to the direct take of an individual animal, habitat destruction or modification can be considered take, regardless of whether it has been formally designated as critical habitat, if the activity results in the death or injury of wildlife by removing essential habitat components or significantly alters essential behavior patterns, including breeding, feeding, or sheltering.

Section 7

Section 7 of the Act requires that all Federal agencies consult with the Service to ensure that actions authorized, funded or carried out by such agencies do not jeopardize the continued existence of any listed threatened or endangered species or adversely modify or destroy critical habitat of such species. It is the responsibility of the Federal action agency to determine if the proposed project may affect threatened or endangered species. If a "may affect" determination is made, the Federal agency shall initiate the section 7 consultation process by writing to the office that has responsibility for the area in which your project occurs.

Is not likely to adversely affect - the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effects. The Federal agency or the designated non-Federal representative should seek written concurrence from the Service that adverse effects have been eliminated. Be sure to include all of the information and documentation used to reach your decision with your request for concurrence. The Service must have this documentation before issuing a concurrence.

Is likely to adversely affect - adverse effects to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial. If the overall effect of the proposed action is beneficial to the listed species but also is likely to cause some adverse effects to individuals of that species, then the proposed action "is likely to adversely affect" the listed species. An "is likely to adversely affect" determination requires the Federal action agency to initiate formal section 7 consultation with this office.

No effect - the proposed action will not affect federally listed species or critical habitat (i.e., suitable habitat for the species occurring in the project county is not present in or adjacent to the action area). No further coordination or contact with the Service is necessary. However, if the

project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.

Regardless of your determination, the Service recommends that you maintain a complete record of the evaluation, including steps leading to the determination of affect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related articles.

Please be advised that while a Federal agency may designate a non-Federal representative to conduct informal consultations with the Service, assess project effects, or prepare a biological assessment, the Federal agency must notify the Service in writing of such a designation. The Federal agency shall also independently review and evaluate the scope and contents of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

The Service's Consultation Handbook is available online to assist you with further information on definitions, process, and fulfilling Act requirements for your projects at: http://www.fws.gov/endangered/esa-library/pdf/esa_section7_handbook.pdf

Section 10

If there is no federal involvement and the proposed project is being funded or carried out by private interests and/or non-federal government agencies, and the project as proposed may affect listed species, a section 10(a)(1)(B) permit is recommended. The Habitat Conservation Planning Handbook is available at: http://www.fws.gov/endangered/esa-library/pdf/HCP_Handbook.pdf

Service Response

Please note that the Service strives to respond to requests for project review within 30 days of receipt, however, this time period is not mandated by regulation. Responses may be delayed due to workload and lack of staff. Failure to meet the 30-day timeframe does not constitute a concurrence from the Service that the proposed project will not have impacts to threatened and endangered species.

Proposed Species and/or Proposed Critical Habitat

While consultations are required when the proposed action may affect listed species, section 7(a)(4) was added to the ESA to provide a mechanism for identifying and resolving potential conflicts between a proposed action and proposed species or proposed critical habitat at an early planning stage. The action agency should seek conference from the Service to assist the action agency in determining effects and to advise the agency on ways to avoid or minimize adverse effect to proposed species or proposed critical habitat.

Candidate Species

Candidate species are species that are being considered for possible addition to the threatened and endangered species list. They currently have no legal protection under the ESA. If you find you have potential project impacts to these species the Service would like to provide technical

assistance to help avoid or minimize adverse effects. Addressing potential impacts to these species at this stage could better provide for overall ecosystem healh in the local area and ay avert potential future listing.

Several species of freshwater mussels occur in Texas and four are candidates for listing under the ESA. The Service is also reviewing the status of six other species for potential listing under the ESA. One of the main contributors to mussel die offs is sedimentation, which smothers and suffocates mussels. To reduce sedimentation within rivers, streams, and tributaries crossed by a project, the Service recommends that that you implement the best management practices found at: http://www.fws.gov/southwest/es/TexasCoastal/FreshwaterMussels.html.

Candidate Conservation Agreements (CCAs) or Candidate Conservation Agreements with Assurances (CCAAs) are voluntary agreements between the Service and public or private entities to implement conservation measures to address threats to candidate species. Implementing conservation efforts before species are listed increases the likelihood that simpler, flexible, and more cost-effective conservation options are available. A CCAA can provide participants with assurances that if they engage in conservation actions, they will not be required to implement additional conservation measures beyond those in the agreement. For additional information on CCAs/CCAAs please visit the Service's website at http://www.fws.gov/endangered/what-we-do/cca.html.

Migratory Birds

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions for the protection of migratory birds. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. Many may nest in trees, brush areas or other suitable habitat. The Service recommends activities requiring vegetation removal or disturbance avoid the peak nesting period of March through August to avoid destruction of individuals or eggs. If project activities must be conducted during this time, we recommend surveying for active nests prior to commencing work. A list of migratory birds may be viewed at http://www.fws.gov/migratorybirds/regulationspolicies/mbta/mbtandx.html.

The bald eagle (*Haliaeetus leucocephalus*) was delisted under the Act on August 9, 2007. Both the bald eagle and the goden eagle (*Aquila chrysaetos*) are still protected under the MBTA and BGEPA. The BGEPA affords both eagles protection in addition to that provided by the MBTA, in particular, by making it unlawful to "disturb" eagles. Under the BGEPA, the Service may issue limited permits to incidentally "take" eagles (e.g., injury, interfering with normal breeding, feeding, or sheltering behavior nest abandonment). For more information on bald and golden eagle management guidlines, we recommend you review information provided at http://www.fws.gov/midwest/eagle/pdf/NationalBaldEagleManagementGuidelines.pdf.

The construction of overhead power lines creates threats of avian collision and electrocution. The Service recommends the installation of underground rather than overhead power lines whenever possible. For new overhead lines or retrofitting of old lines, we recommend that project

developers implement, to the maximum extent practicable, the Avian Power Line Interaction Committee guidelines found at http://www.aplic.org/.

Meteorological and communication towers are estimated to kill millions of birds per year. We recommend following the guidance set forth in the Service Interim Guidelines for Recommendations on Communications Tower Siting, Constructions, Operation and Decommissioning, found online at: http://www.fws.gov/habitatconservation/communicationtowers.html, to minimize the threat of avian mortality at these towers. Monitoring at these towers would provide insight into the effectiveness of the minimization measures. We request the results of any wildlife mortality monitoring at towers associated with this project.

We request that you provide us with the final location and specifications of your proposed towers, as well as the recommendations implemented. A Tower Site Evaluation Form is also available via the above website; we recommend you complete this form and keep it in your files. If meteorological towers are to be constructed, please forward this completed form to our office.

More information concerning sections 7 and 10 of the Act, migratory birds, candidate species, and landowner tools can be found on our website at: http://www.fws.gov/southwest/es/TexasCoastal/ProjectReviews.html.

Wetlands and Wildlife Habitat

Wetlands and riparian zones provide valuable fish and wildlife habitat as well as contribute to flood control, water quality enhancement, and groundwater recharge. Wetland and riparian vegetation provides food and cover for wildlife, stabilizes banks and decreases soil erosion. These areas are inherently dynamic and very sensitive to changes caused by such activities as overgrazing, logging, major construction, or earth disturbance. Executive Order 11990 asserts that each agency shall provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial value of wetlands in carrying out the agency's responsibilities. Construction activities near riparian zones should be carefully designed to minimize impacts. If vegetation clearing is needed in these riparian areas, they should be re-vegetated with native wetland and riparian vegetation to prevent erosion or loss of habitat. We recommend minimizing the area of soil scarification and initiating incremental re-establishment of herbaceous vegetation at the proposed work sites. Denuded and/or disturbed areas should be re-vegetated with a mixture of native legumes and grasses. Species commonly used for soil stabilization are listed in the Texas Department of Agriculture's (TDA) Native Tree and Plant Directory, available from TDA at P.O. Box 12847, Austin, Texas 78711. The Service also urges taking precautions to ensure sediment loading does not occur to any receiving streams in the proposed project area. To prevent and/or minimize soil erosion and compaction associated with construction activities, avoid any unnecessary clearing of vegetation, and follow established rights-of-way whenever possible. All machinery and petroleum products should be stored outside the floodplain and/or wetland area during construction to prevent possible contamination of water and soils.

Wetlands and riparian areas are high priority fish and wildlife habitat, serving as important sources of food, cover, and shelter for numerous species of resident and migratory wildlife. Waterfowl and other migratory birds use wetlands and riparian corridors as stopover, feeding, and nesting areas. We strongly recommend that the selected project site not impact wetlands and riparian areas, and be located as far as practical from these areas. Migratory birds tend to concentrate in or near wetlands and riparian areas and use these areas as migratory flyways or corridors. After every effort has been made to avoid impacting wetlands, you anticipate unavoidable wetland impacts will occur; you should contact the appropriate U.S. Army Corps of Engineers office to determine if a permit is necessary prior to commencement of construction activities.

If your project will involve filling, dredging, or trenching of a wetland or riparian area it may require a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers (COE). For permitting requirements please contact the U.S. Corps of Engineers, District Engineer, P.O. Box 1229, Galveston, Texas 77553-1229, (409) 766-3002.

Beneficial Landscaping

In accordance with Executive Order 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping (42 C.F.R. 26961), where possible, any landscaping associated with project plans should be limited to seeding and replanting with native species. A mixture of grasses and forbs appropriate to address potential erosion problems and long-term cover should be planted when seed is reasonably available. Although Bermuda grass is listed in seed mixtures, this species and other introduced species should be avoided as much as possible. The Service also recommends the use of native trees, shrubs, and herbaceous species that are adaptable, drought tolerant and conserve water.

State Listed Species

The State of Texas protects certain species. Please contact the Texas Parks and Wildlife Department (Endangered Resources Branch), 4200 Smith School Road, Austin, Texas 78744 (telephone 512/389-8021) for information concerning fish, wildlife, and plants of State concern or visit their website at: http://www.tpwd.state.tx.us/huntwild/wild/wildlife_diversity/texas_rare_species/listed_species/.

If we can be of further assistance, or if you have any questions about these comments, please contact 281/286-8282 if your project is in southeast Texas, or 361/994-9005, ext. 246, if your project is in southern Texas. Please refer to the Service consultation number listed above in any future correspondence regarding this project.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Texas Coastal Ecological Services Field Office
17629 El Camino Real #211
Houston, TX 77058
(281) 286-8282

Project Summary

Consultation Code: 02ETTX00-2020-SLI-0265

Event Code: 02ETTX00-2020-E-00544

Project Name: Moda Ingleside Oil Terminal, LLC. Berth

Project Type: Expansion Project DREDGE / EXCAVATION

Project Description: Moda Ingleside Oil Terminal, LLC (Moda) proposes the dredging of approximately 3,900,000 cubic yards to increase the permitted size of the West Ship Basin by approximately 35.28 acres. Moda additionally proposes to implement improvements at their existing East Basin, 2A barge dock, as well as the construction of new West Basin barge dock Berths 7A, 7B, 7C, 8, and 9.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/27.819011119999494N97.21182423237242W

Counties: Nueces, TX | San Patricio, TX

Endangered Species Act Species

There is a total of 15 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gulf Coast Jaguarundi *Herpailurus (=Felis) yagouaroundi cacomitli* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3945	Endangered
Ocelot *Leopardus (=Felis) pardalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4474	Endangered
West Indian Manatee *Trichechus manatus* There is **final** critical habitat for this species. Your location is outside the critical habitat. ***This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.*** Species profile: https://ecos.fws.gov/ecp/species/4469	Threatened

Birds

NAME	STATUS
Least Tern *Sterna antillarum* Population: interior pop. No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Wind Related Projects Within Migratory Route Species profile: https://ecos.fws.gov/ecp/species/8505	Endangered
Northern Aplomado Falcon *Falco femoralis septentrionalis* Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1923	Endangered
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane *Grus americana* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

Reptiles

NAME	STATUS
Green Sea Turtle *Chelonia mydas* Population: North Atlantic DPS There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
Hawksbill Sea Turtle *Eretmochelys imbricata* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3656	Endangered
Kemp's Ridley Sea Turtle *Lepidochelys kempii* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5523	Endangered
Leatherback Sea Turtle *Dermochelys coriacea* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1493	Endangered
Loggerhead Sea Turtle *Caretta caretta* Population: Northwest Atlantic Ocean DPS There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1110	Threatened

Flowering Plants

NAME	STATUS
Slender Rush-pea *Hoffmannseggia tenella* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5298	Endangered
South Texas Ambrosia *Ambrosia cheiranthifolia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3331	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Last Update: 7/17/2019

SAN PATRICIO COUNTY

AMPHIBIANS

black-spotted newt *Notophthalmus meridionalis*

May be found in resacas and bodies of water with firm bottoms and little or no vegetation. Can be found in wet or sometimes wet areas, such as arroyos, canals, ditches, or even shallow depressions; the absence of predatory fish is probably important. Aestivates in the ground during dry periods; Gulf Coastal Plain south of the San Antonio River.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S3

sheep frog *Hypopachus variolosus*

Predominantly grassland and savanna; largely fossorial in areas with moist microclimates.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2

South Texas siren (Large Form) *Siren sp. 1*

Mainly found in bodies of quiet water, permanent or temporary, with or without submergent vegetation. Wet or sometimes wet areas, such as arroyos, canals, ditches, or even shallow depressions; aestivates in the ground during dry periods, but does require some moisture to remain; southern Texas south of Balcones Escarpment; breeds February-June.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: GNRQ	State Rank: S1

Strecker's chorus frog *Pseudacris streckeri*

Wooded floodplains and flats, prairies, cultivated fields and marshes. Likes sandy substrates.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

BIRDS

bald eagle *Haliaeetus leucocephalus*

Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3B,S3N

black rail *Laterallus jamaicensis*

Salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps; nests in or along edge of marsh, sometimes on damp ground, but usually on mat of previous years dead grasses; nest usually hidden in marsh grass or at base of Salicornia

Federal Status: PT	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S2

SAN PATRICIO COUNTY

BIRDS

Botteri's sparrow *Peucaea botterii*

Habitat description is not available at this time.

Federal Status:	State Status: T	SGCN: Y
Endemic:	Global Rank: G4	State Rank: S3B

Eskimo curlew *Numenius borealis*

Historically, shortgrass plains and prairies, but more recently (1960s) in old fields, closely grazed pastures, burned prairies, and marshes; beaches and sand flats. Nonbreeding: grasslands, pastures, plowed fields, and less frequently, marshes and mudflats

Federal Status: LE	State Status: E	SGCN: N
Endemic: N	Global Rank: GH	State Rank: SHN

Franklin's gull *Leucophaeus pipixcan*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S2N

mountain plover *Charadrius montanus*

Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2

northern aplomado falcon *Falco femoralis septentrionalis*

Open country, especially savanna and open woodland, and sometimes in very barren areas; grassy plains and valleys with scattered mesquite, yucca, and cactus; nests in old stick nests of other bird species

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G4T2	State Rank: S1

piping plover *Charadrius melodus*

Beaches, sandflats, and dunes along Gulf Coast beaches and adjacent offshore islands. Also spoil islands in the Intracoastal Waterway. Based on the November 30, 1992 Section 6 Job No. 9.1, Piping Plover and Snowy Plover Winter Habitat Status Survey, algal flats appear to be the highest quality habitat. Some of the most important aspects of algal flats are their relative inaccessibility and their continuous availability throughout all tidal conditions. Sand flats often appear to be preferred over algal flats when both are available, but large portions of sand flats along the Texas coast are available only during low-very low tides and are often completely unavailable during extreme high tides or strong north winds. Beaches appear to serve as a secondary habitat to the flats associated with the primary bays, lagoons, and inter-island passes. Beaches are rarely used on the southern Texas coast, where bayside habitat is always available, and are abandoned as bayside habitats become available on the central and northern coast. However, beaches are probably a vital habitat along the central and northern coast (i.e. north of Padre Island) during periods of extreme high tides that cover the flats. Optimal site characteristics appear to be large in area, sparsely vegetated, continuously available or in close proximity to secondary habitat, and with limited human disturbance.

Federal Status: LT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2N

SAN PATRICIO COUNTY

BIRDS

red knot *Calidris canutus rufa*

Red knots migrate long distances in flocks northward through the contiguous United States mainly April-June, southward July-October. A small plump-bodied, short-necked shorebird that in breeding plumage, typically held from May through August, is a distinctive and unique pottery orange color. Its bill is dark, straight and, relative to other shorebirds, short-to-medium in length. After molting in late summer, this species is in a drab gray-and-white non-breeding plumage, typically held from September through April. In the non-breeding plumage, the knot might be confused with the omnipresent Sanderling. During this plumage, look for the knot's prominent pale eyebrow and whitish flanks with dark barring. The Red Knot prefers the shoreline of coast and bays and also uses mudflats during rare inland encounters. Primary prey items include coquina clam (Donax spp.) on beaches and dwarf surf clam (Mulinia lateralis) in bays, at least in the Laguna Madre. Wintering Range includes- Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kennedy, Kleberg, Matagorda, Nueces, San Patricio, and Willacy. Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore.

Federal Status: LT	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T2	State Rank: SNRN

reddish egret *Egretta rufescens*

Resident of the Texas Gulf Coast; brackish marshes and shallow salt ponds and tidal flats; nests on ground or in trees or bushes, on dry coastal islands in brushy thickets of yucca and prickly pear

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3B

swallow-tailed kite *Elanoides forficatus*

Lowland forested regions, especially swampy areas, ranging into open woodland; marshes, along rivers, lakes, and ponds; nests high in tall tree in clearing or on forest woodland edge, usually in pine, cypress, or various deciduous trees

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2B

Texas Botteri's sparrow *Peucaea botterii texana*

Grassland and short-grass plains with scattered bushes or shrubs, sagebrush, mesquite, or yucca; nests on ground of low clump of grasses

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4T4	State Rank: S3B

tropical kingbird *Tyrannus melancholicus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G5	State Rank: S1B,S2N

tropical parula *Setophaga pitiayumi*

Semi-tropical evergreen woodland along rivers and resacas. Texas ebony, anacua and other trees with epiphytic plants hanging from them. Dense or open woods, undergrowth, brush, and trees along edges of rivers and resacas; breeding April to July.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3B

western burrowing owl *Athene cunicularia hypugaea*

SAN PATRICIO COUNTY

BIRDS

Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T4	State Rank: S2

white-faced ibis *Plegadis chihi*

Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4B

white-tailed hawk *Buteo albicaudatus*

Near coast on prairies, cordgrass flats, and scrub-live oak; further inland on prairies, mesquite and oak savannas, and mixed savanna-chaparral; breeding March-May

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S4B

whooping crane *Grus americana*

Small ponds, marshes, and flooded grain fields for both roosting and foraging. Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1N

wood stork *Mycteria americana*

Prefers to nest in large tracts of baldcypress (Taxodium distichum) or red mangrove (Rhizophora mangle); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: SHB,S2N

FISH

opossum pipefish *Microphis brachyurus*

Brooding adults found in fresh or low salinity waters and young move or are carried into more saline waters after birth; southern coastal areas

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S1N

SAN PATRICIO COUNTY

FISH

snook *Centropomus undecimalis*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3?

southern flounder *Paralichthys lethostigma*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

INSECTS

American bumblebee *Bombus pensylvanicus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G3G4	State Rank: SNR

Manfreda giant-skipper *Stallingsia maculosus*

Most skippers are small and stout-bodied; name derives from fast, erratic flight; at rest most skippers hold front and hind wings at different angles; skipper larvae are smooth, with the head and neck constricted; skipper larvae usually feed inside a leaf shelter and pupate in a cocoon made of leaves fastened together with silk

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1

No accepted common name *Disonycha stenosticha*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

No accepted common name *Dacoderus steineri*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

No accepted common name *Cryptocephalus downiei*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G1	State Rank: SH

SAN PATRICIO COUNTY

INSECTS

No accepted common name *Ormiscus albofasciatus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

No accepted common name *Cenophengus pallidus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

MAMMALS

American badger *Taxidea taxus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

big free-tailed bat *Nyctinomops macrotis*

Habitat data sparse but records indicate that species prefers to roost in crevices and cracks in high canyon walls, but will use buildings, as well; reproduction data sparse, gives birth to single offspring late June-early July; females gather in nursery colonies; winter habits undetermined, but may hibernate in the Trans-Pecos; opportunistic insectivore

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G5	State Rank: S3

cave myotis bat *Myotis velifer*

Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S4

eastern red bat *Lasiurus borealis*

Found in a variety of habitats in Texas. Usually associated with wooded areas. Found in towns especially during migration.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S4

SAN PATRICIO COUNTY

MAMMALS

eastern spotted skunk *Spilogale putorius*

Catholic; open fields prairies, croplands, fence rows, farmyards, forest edges & woodlands. Prefer wooded, brushy areas & tallgrass prairies. S.p. ssp. interrupta found in wooded areas and tallgrass prairies, preferring rocky canyons and outcrops when such sites are available.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S1S3

hoary bat *Lasiurus cinereus*

Known from montane and riparian woodland in Trans-Pecos, forests and woods in east and central Texas.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S4

humpback whale *Megaptera novaeangliae*

Open ocean and coastal waters, sometimes including inshore areas such as bays; summer distribution is in temperate and subpolar waters; in winter, most are in tropical/subtropical waters near islands or coasts

Federal Status: LE	State Status: E	SGCN: N
Endemic: N	Global Rank: G4	State Rank: SNR

long-tailed weasel *Mustela frenata*

Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges & rocky desert scrub. Usually live close to water.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

maritime pocket gopher *Geomys personatus maritimus*

Fossorial, in deep sandy soils; feeds mostly from within burrow on roots and other plant parts, especially grasses; ecologically important as prey species and in influencing soils, microtopography, habitat heterogeneity, and plant diversity

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G4T2	State Rank: S2

Mexican free-tailed bat *Tadarida brasiliensis*

Roosts in buildings in east Texas. Largest maternity roosts are in limestone caves on the Edwards Plateau. Found in all habitats, forest to desert.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

mountain lion *Puma concolor*

Rugged mountains & riparian zones.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2S3

SAN PATRICIO COUNTY

MAMMALS

ocelot *Leopardus pardalis*

Restricted to mesquite-thorn scrub and live-oak mottes; avoids open areas. Dense mixed brush below four feet; thorny shrublands; dense chaparral thickets; breeds and raises young June-November.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S1

plains spotted skunk *Spilogale putorius interrupta*

Catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G4T4	State Rank: S1S3

southern yellow bat *Lasiurus ega*

Relict palm grove is only known Texas habitat. Neotropical species roosting in palms, forages over water; insectivorous; breeding in late winter

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S1

swamp rabbit *Sylvilagus aquaticus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

tricolored bat *Perimyotis subflavus*

Forest, woodland and riparian areas are important. Caves are very important to this species.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S3S4

western hog-nosed skunk *Conepatus leuconotus*

Habitats include woodlands, grasslands & deserts, to 7200 feet, most common in rugged, rocky canyon country; little is known about the habitat of the ssp. telmalestes

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

white-nosed coati *Nasua narica*

Woodlands, riparian corridors and canyons.Most individuals in Texas probably transients from Mexico; diurnal and crepuscular; very sociable; forages on ground and in trees; omnivorous; may be susceptible to hunting, trapping, and pet trade

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S1

SAN PATRICIO COUNTY

MOLLUSKS

golden orb *Quadrula aurea*

Sand and gravel in some locations and mud at others; found in lentic and lotic; Guadalupe, San Antonio, Lower San Marcos, and Nueces River basins

Federal Status: C	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S2

No accepted common name *Praticolella candida*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

REPTILES

American alligator *Alligator mississippiensis*

Coastal marshes; inland natural rivers, swamps and marshes; manmade impoundments.

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G5	State Rank: S4

Atlantic hawksbill sea turtle *Eretmochelys imbricata*

Gulf and bay system, warm shallow waters especially in rocky marine environments, such as coral reefs and jetties, juveniles found in floating mats of sea plants; feed on sponges, jellyfish, sea urchins, molluscs, and crustaceans, nests April through November

Federal Status: LE	State Status: E	SGCN: Y
Endemic:	Global Rank: G3	State Rank: S2

common garter snake *Thamnophis sirtalis*

Irrigation canals and riparian-corridor farmlands in west; marshy, flooded pastureland, grassy or brushy borders of permanent bodies of water; coastal salt marshes.

Federal Status:	State Status:	SGCN: N
Endemic:	Global Rank: G5	State Rank: S2

eastern box turtle *Terrapene carolina*

Eastern box turtles inhabit forests, fields, forest-brush, and forest-field ecotones. In some areas they move seasonally from fields in spring to forest in summer. They commonly enters pools of shallow water in summer. For shelter, they burrow into loose soil, debris, mud, old stump holes, or under leaf litter. They can successfully hibernate in sites that may experience subfreezing temperatures. In Maryland bottomland forest, some hibernated in pits or depressions in forest floor (usually about 30 cm deep) usually within summer range; individuals tended to hibernate in same area in different years (Stickel 1989). Also attracted to farms, old fields and cut-over woodlands, as well as creek bottoms and dense woodlands. Egg laying sites often are sandy or loamy soils in open areas; females may move from bottomlands to warmer and drier sites to nest. In Maryland, females used the same nesting area in different years (Stickel 1989).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

SAN PATRICIO COUNTY

REPTILES

green sea turtle *Chelonia mydas*

Gulf and bay system; shallow water seagrass beds, open water between feeding and nesting areas, barrier island beaches; adults are herbivorous feeding on sea grass and seaweed; juveniles are omnivorous feeding initially on marine invertebrates, then increasingly on sea grasses and seaweeds; nesting behavior extends from March to October, with peak activity in May and June

Federal Status: LT	State Status: T	SGCN: Y
Endemic:	Global Rank: G3	State Rank: S4

keeled earless lizard *Holbrookia propinqua*

Coastal dunes, barrier islands, and other sandy areas; eats insects and likely other small invertebrates; eggs laid underground March-September (most May-August)

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3

loggerhead sea turtle *Caretta caretta*

Gulf and bay system primarily for juveniles, adults are most pelagic of the sea turtles; omnivorous, shows a preference for mollusks, crustaceans. and coral; nests from April through November

Federal Status: LT	State Status: T	SGCN: Y
Endemic:	Global Rank: G3	State Rank: S4

massasauga *Sistrurus tergeminus*

Quite common in gently rolling prairie occasionally broken by creek valley or rocky hillside.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S3S4

northern scarlet snake *Cemophora coccinea copei*

Along Gulf Coast, known from mixed hardwood scrub on sandy soils. Mixed hardwood scrub on sandy soils; feeds on reptile eggs; semi-fossorial; active April-September.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5T5	State Rank: S3

slender glass lizard *Ophisaurus attenuatus*

Prefers relatively dry microhabitats, usually associated with grassy areas. Habitats include open grassland, prairie, woodland edge, open woodland, oak savannas, longleaf pine flatwoods, scrubby areas, fallow fields, and areas near streams and ponds, often in habitats with sandy soil. This species often appears on roads in spring. During inactivity, it occurs in underground burrows. In Kansas, slender glass lizards were scarce in heavily grazed pastures, increased as grass increased with removal of grazing, and declined as brush and trees replaced grass (Fitch 1989). Eggs are laid underground, under cover, or under grass clumps (Ashton and Ashton 1985); in cavities beneath flat rocks or in abandoned tunnels of small mammals (Scalopus, Microtus) (Fitch 1989).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

SAN PATRICIO COUNTY

REPTILES

southern spot-tailed earless lizard *Holbrookia lacerata subcaudalis*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G3G4TNR	State Rank: S2

spot-tailed earless lizard *Holbrookia lacerata*

Central and southern Texas and adjacent Mexico; moderately open prairie-brushland; fairly flat areas free of vegetation or other obstructions, including disturbed areas; eats small invertebrates; eggs laid underground

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S2

Texas diamondback terrapin *Malaclemys terrapin littoralis*

Coastal marshes, tidal flats, coves, estuaries, and lagoons behind barrier beaches; brackish and salt water; burrows into mud when inactive; may venture into lowlands at high tide

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G4T3Q	State Rank: S2

Texas horned lizard *Phrynosoma cornutum*

Occurs to 6000 feet, but largely limited below the pinyon-juniper zone on mountains in the Big Bend area. Open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S3

Texas indigo snake *Drymarchon melanurus erebennus*

Thornbush-chaparral woodland of south Texas, in particular dense riparian corridors.Can do well in suburban and irrigated croplands if not molested or indirectly poisoned. Requires moist microhabitats, such as rodent burrows, for shelter; Texas south of the Guadalupe River and Balcones Escarpment.

Federal Status:	State Status: T	SGCN: Y
Endemic:	Global Rank: G5T4	State Rank: S4

Texas scarlet snake *Cemophora coccinea lineri*

Along Gulf Coast, known from mixed hardwood scrub on sandy soils. Mixed hardwood scrub on sandy soils; feeds on reptile eggs; semi-fossorial; active April-September.

Federal Status:	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G5T2	State Rank: S1S2

SAN PATRICIO COUNTY

REPTILES

Texas tortoise *Gopherus berlandieri*

Open brush with a grass understory is preferred; open grass and bare ground are avoided. Seasonally flooded tidal flats are not utilized. When inactive occupies shallow depressions at base of bush or cactus, sometimes in underground burrows or under objects; longevity greater than 50 years; active March-November; breeds April-November

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S2

timber (canebrake) rattlesnake *Crotalus horridus*

Swamps, floodplains, upland pine and deciduous woodland, riparian zones, abandoned farmland. Limestone bluffs, sandy soil or black clay. Prefers dense ground cover, i.e. grapevines, palmetto.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

western box turtle *Terrapene ornata*

Ornate or western box trutles inhabit prairie grassland, pasture, fields, sandhills, and open woodland. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca) (Converse et al. 2002) or enter burrows made by other species; winter burrow depth was 0.5-1.8 meters in Wisconsin (Doroff and Keith 1990), 7-120 cm (average depth 54 cm) in Nebraska (Converse et al. 2002). Eggs are laid in nests dug in soft well-drained soil in open area (Legler 1960, Converse et al. 2002). Very partial to sandy soil.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

PLANTS

arrowleaf milkvine *Matelea sagittifolia*

Most consistently encountered in thornscrub in South Texas; Perennial; Flowering March-July; Fruiting April-July and Dec?

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

Billie's bitterweed *Tetraneuris turneri*

Grasslands on shallow sandy soils and caliche outcrops (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

coastal gay-feather *Liatris bracteata*

Coastal prairie grasslands of various types, from salty prairie on low- lying somewhat saline clay loams to upland prairie on nonsaline clayey to sandy loams; flowering in fall

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2S3

SAN PATRICIO COUNTY

PLANTS

crestless onion *Allium canadense var. ecristatum*

Occurs on poorly drained sites on sandy substrates within coastal prairies of the Coastal Bend area (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G5T3	State Rank: S3

Croft's bluet *Houstonia croftiae*

Occurs in sparsely vegetated areas in grasslands or among shrubs (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Drummond's rushpea *Caesalpinia drummondii*

Open areas on sandy clay; Perennial

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

Elmendorf's onion *Allium elmendorfii*

Grassland openings in oak woodlands on deep, loose, well-drained sands; in Coastal Bend, on Pleistocene barrier island ridges and Holocene Sand Sheet that support live oak woodlands; to the north it occurs in post oak-black hickory-live oak woodlands over Queen City and similar Eocene formations; one anomalous specimen found on Llano Uplift in wet pockets of granitic loam; Perennial; Flowering March-April, May

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

Greenman's bluet *Houstonia parviflora*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Indianola beakrush *Rhynchospora indianolensis*

Locally abundant in cattle pastures in some areas (at least during wet years), possibly becoming a management problem in such sites; Perennial; Flowering/Fruiting April-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3Q	State Rank: S3

Jones's rainlilly *Cooperia jonesii*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3Q	State Rank: S3

SAN PATRICIO COUNTY

PLANTS

large selenia *Selenia grandis*

Occurs in seasonally wet clayey soils in open areas; Annual; Flowering Jan-April; Fruiting Feb-April

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

lila de los llanos *Echeandia chandleri*

Most commonly encountered among shrubs or in grassy openings in subtropical thorn shrublands on somewhat saline clays of lomas along Gulf Coast near mouth of Rio Grande; also observed in a few upland coastal prairie remnants on clay soils over the Beaumont Formation at inland sites well to the north and along railroad right-of-ways and cemeteries; flowering (May-) September-December, fruiting October-December

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S2S3

low spurge *Euphorbia peplidion*

Occurs in a variety of vernally-moist situations in a number of natural regions; Annual; Flowering Feb-April; Fruiting March-April

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

net-leaf bundleflower *Desmanthus reticulatus*

Mostly on clay prairies of the coastal plain of central and south Texas; Perennial; Flowering April-July; Fruiting April-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

plains gumweed *Grindelia oolepis*

Coastal prairies on heavy clay (blackland) soils, often in depressional areas, sometimes persisting in areas where management (mowing) may maintain or mimic natural prairie disturbance regimes; crawfish lands; on nearly level Victoria clay, Edroy clay, claypan, possibly Greta within Orelia fine sandy loam over the Beaumont Formation, and Harlingen clay; roadsides, railroad rights-of-ways, vacant lots in urban areas, cemeteries; flowering April-December

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2

Refugio rainlily *Zephyranthes refugiensis*

Occurs on deep heavy black clay soils or sandy loams in swales or drainages on herbaceous grasslands or shrublands on level to rolling landscapes underlain by the Lissie Formation.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2S3

sand Brazos mint *Brazoria arenaria*

Sandy areas in South Texas; Annual; Flowering/Fruiting March-April

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

SAN PATRICIO COUNTY

PLANTS

seaside beebalm *Monarda maritima*

Occurs in grasslands and pastures on sandy soil near the coast (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2Q	State Rank: S2

South Texas false cudweed *Pseudognaphalium austrotexanum*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

South Texas spikesedge *Eleocharis austrotexana*

Occurring in miscellaneous wetlands at scattered locations on the coastal plain; Perennial; Flowering/Fruiting Sept

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

South Texas yellow clammyweed *Polanisia erosa ssp. breviglandulosa*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G5T3T4	State Rank: S3S4

Texas peachbush *Prunus texana*

Occurs at scattered sites in various well drained sandy situations; deep sand, plains and sand hills, grasslands, oak woods, 0-200 m elevation; Perennial; Flowering Feb-Mar; Fruiting Apr-Jun

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

Texas stonecrop *Lenophyllum texanum*

Found in shrublands on clay dunes (lomas) at the mouth of the Rio Grande and on xeric calcareous rock outcrops at scattered inland sites; Perennial; Flowering/Fruiting Nov-Feb

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

Texas willkommia *Willkommia texana var. texana*

Mostly in sparsely vegetated shortgrass patches within taller prairies on alkaline or saline soils on the Coastal Plain (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4T3	State Rank: S3

SAN PATRICIO COUNTY

PLANTS

Texas windmill grass *Chloris texensis*

Sandy to sandy loam soils in relatively bare areas in coastal prairie grassland remnants, often on roadsides where regular mowing may mimic natural prairie fire regimes; flowering in fall

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

Tharp's dropseed *Sporobolus tharpii*

Occurs on barrier islands, shores of lagoons and bays protected by the barrier islands, and on shores of a few near-coastal ponds. Plants occur at the bases of dunes, in interdune swales and sandflats, and on upper beaches. The substrate is of Holocene age.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

threeflower broomweed *Thurovia triflora*

Near coast in sparse, low vegetation on a veneer of light colored silt or fine sand over saline clay along drier upper margins of ecotone between between salty prairies and tidal flats; further inland associated with vegetated slick spots on prairie mima mounds; flowering September-November

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2S3

tree dodder *Cuscuta exaltata*

Parasitic on various Quercus, Juglans, Rhus, Vitis, Ulmus, and Diospyros species as well as Acacia berlandieri and other woody plants; Annual; Flowering May-Oct; Fruiting July-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

velvet spurge *Euphorbia innocua*

Open or brushy areas on coastal sands and the South Texas Sand Sheet; Perennial; Flowering Sept-April; Fruiting Nov-July

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Welder machaeranthera *Psilactis heterocarpa*

Grasslands , varying from midgrass coastal prairies, and open mesquite-huisache woodlands on nearly level, gray to dark gray clayey to silty soils; known locations mapped on Victoria clay, Edroy clay, Dacosta sandy clay loam over Beaumont and Lissie formations; flowering September-November

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2S3

SAN PATRICIO COUNTY

PLANTS

Wright's trichocoronis *Trichocoronis wrightii var. wrightii*

Most records from Texas are historical, perhaps indicating a decline as a result of alteration of wetland habitats; Annual; Flowering Feb-Oct; Fruiting Feb-Sept

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T3	State Rank: S2

7.0 SECTION 106 OF THE NATIONAL HISTORICAL PRESERVATION ACT:

To comply with Section 106 of the National Historical Preservation Act, a request for review has been submitted to the State Historic Preservation Office (SHPO). The review has been assigned Tracking Number, 202002556. Upon receipt of the results, the applicant will furnish the USACE the SHPO letter. However, the applicant does not anticipate concerns related to cultural resources. The proposed project is within an industrial area, adjacent to numerous heavily developed dock areas, and adjacent to a federal shipping channel.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Tier II

E. What are the consequences of not building the project?

The consequences of not building the project would result in potential loss of economic growth within the surrounding area and would not meet the needs of Moda's existing and committed future client base.

II. Comparison of alternatives

A. How do the costs compare for the alternatives considered above?

Not applicable. There were no practicable alternative offsite locations available that reduced the proposed impacts.

B. Are there logistical (location, access, transportation, etc.) reasons that limit the alternatives considered?

Potential alternative sites which meet the intended goal of Moda are limited by several factors which include the availability of waterfront footage, existing adjacent deep water, the ability to practicably install maritime and inland infrastructure such as pipelines and other components necessary to tie a remote facility to Moda's existing onshore terminal.

C. Are there technological limitations for the alternatives considered?

Yes, as stated above the ability to build at an offsite location and create pipelines and other infrastructure to tie into the existing onshore terminal would create technological limitations dependent upon the location of the offsite alternative.

D. Are there other reasons certain alternatives are not feasible?

N/A

III. If you have not chosen an alternative which would avoid impacts to surface water in the State, please explain:

A. Why your alternative was selected, and

The applicant has selected its alternative because it is the only feasible alternative that minimizes impacts to the maximum extent practicable while still meeting the purpose and need of the project.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Tier II

B. What do you plan to do to minimize adverse effects on the surface water in the State impacted?

The project site selected is adjacent to Moda's existing upland and marine facility with extensive infrastructure and readily available transportation access reducing the need for additional support to be added for project implementation. Moda has proposed to stabilize the dredge side slope to prevent further erosion and impacts to nearby sensitive resources. Further, Moda will require that all contractors utilize all appropriate Best Management Practices (BMPs) during construction.

IV. Please provide a comparison of each criteria (from Part II) for each site evaluation in the alternative analysis.

Moda did not locate any feasible offsite tracts available for consideration.

V. Please provide a comparison of each criteria (from Part II) for each site evaluation in the alternative analysis.

Moda did not locate any feasible offsite tracts available for consideration.

8.0 TCEQ TIER II CHECKLIST:

401 Certification Questionnaire

The following questions seek to determine how adverse impacts will be avoided during construction or upon completion of the project. If any of the following questions are not applicable to your project, write NA ("not applicable") and continue.

Please include the applicant's name as it appears on the Corps of Engineers' permit application (and permit number, if known) on all material submitted.

Permit No. TBD
Moda Ingleside Oil Terminal, LLC
1000 Louisiana, Suite 7100
Houston, TX 77002

The material should be sent to:

Texas Commission on Environmental
Quality Attn: 401 Coordinator (MC-150)
P.O. Box 13087 Austin, TX 78711-
3087

I. Impacts to surface water in the State, including wetlands

A. What is the area of surface water in the State, including wetlands, that will be disturbed, altered or destroyed by the proposed activity?

An approximate 43-acre area (including side slopes) is proposed for dredging. Of the 43 acres approximately 42.2 acres are submerged bay bottom and approximately 0.80 acres are considered estuarine emergent wetland. An additional 0.15 acres of estuarine emergent wetland will be lost due to indirect impacts resulting from the project.

B. Is compensatory mitigation proposed? If yes, submit a copy of the mitigation plan. If no, explain why not.

Yes, compensatory mitigation is proposed.

C. Please complete the attached Alternatives Analysis Checklist.

II. Disposal of waste materials

A. Describe the methods for disposing of materials recovered from the removal or destruction of existing structures.

No existing structures will require removal or demolition work to support proposed construction activity. There will be no structures or debris requiring disposal.

B. Describe the methods for disposing of sewage generated during construction. If the proposed work establishes a business or a subdivision, describe the method for disposing of sewage after completing the project.

Construction activity related sewage will be collected and disposed by a state approved contracting service, i.e. Waste Management Service or approved equal.

C. For marinas, describe plans for collecting and disposing of sewage from marine sanitation devices. Also, discuss provisions for the disposing of sewage generated from day-to-day activities.

N/A

III. Water quality impacts

A. Describe the methods to minimize the short-term and long-term turbidity and suspended solids in the waters being dredged and/or filled. Also, describe the type of sediment (sand, clay, etc.) that will be dredged or used for fill.

Dredging will result in temporary and localized increase in total suspended solids (TSS) concentrations, which will temporarily increase turbidity in the water column. To minimize impacts resulting from this increase, the applicant will require that the contractor utilize turbidity curtains during dredging activities. To aid in the long-term minimization of increased turbidity resulting from erosion, the applicant proposes to stabilize the dredge side slope utilizing an articulated block mattress.

The dredge area is comprised predominately of sandy substrate with some areas containing clayey sand.

B. Describe measures that will be used to stabilize disturbed soil areas, including: dredge material mounds, new levees or berms, building sites, and construction work areas. The description should address both short-term (construction related) and long-term (normal operation or maintenance) measures. Typical measures might include containment structures, drainage modifications, sediment fences, or vegetative cover. Special construction techniques intended to minimize soil or sediment disruption should also be described.

The applicant proposes to utilize existing dredge material placement areas (DMPAs) with sufficient available capacity. These DMPAs include DMPAs 6, 7, 8, 9, 10, 13, 14 A/B, 15 A/B, Good Hope, Berry Island, Dagger Island, and Beneficial Use Sites as available. The final selection of DMPAs will be coordinated with the appropriate agencies and owners to ensure that the infrastructure including levees and berms are good repair and that sufficient capacity is available for the placement of material.

C. Discuss how hydraulically dredged materials will be handled to ensure maximum settling of solids before discharging the decant water. Plans should include a calculation of minimum settling times with supporting data (Reference: Technical Report, DS- 7810, Dredge Material Research Program, GUIDELINES FOR

DESIGNING, OPERATING, AND MAINTAINING DREDGED MATERIAL CONTAINMENT AREAS). If future maintenance dredging will be required, the disposal site should be designed to accommodate additional dredged materials. If not, please include plans for periodically removing the dried sediments from the disposal area.

The applicant will complete the dredging via mechanical or hydraulic methods. Hydraulically dredged material will be placed in a currently permitted confined upland placement area(s) as indicated above and will comply with all permit conditions. If hydraulic dredging is conducted and once the precise site(s) are selected the applicant will provide settling calculations.

D. Describe any methods used to test the sediments for contamination, especially when dredging in an area known or likely to be contaminated, such as downstream of municipal or industrial wastewater discharges.

The need for a Sampling and Analysis Plan (SAP) will be coordinated as appropriate prior to undertaking any dredging efforts.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Tier II
Alternatives Analysis Checklist

I. Alternatives

A. How could you satisfy your needs in ways which do not affect surface water in the State?

The proposed project cannot be constructed without impacting surface waters. The applicant is committed to using existing DMPAs to avoid additional impacts to surface waters.

B. How could the project be re-designed to fit the site without affecting surface water in the State?

The proposed project cannot be re-designed to fit the site without affecting surface water in the state. Every effort has been made to reduce the size of the project and minimize impacts.

C. How could the project be made smaller and still meet your needs?

The footprint of the proposed project has been optimized to the smallest extent practicable. Added water depth is a requirement to support the increasing draft requirements of vessels entering the berths.

D. What other sites were considered?

1. What geographical area was searched for alternative sites?

All tracts within San Patricio County were considered for alternatives. Moda was unable to locate alternative offsite tracts that were available with water access.

2. How did you determine whether other non-wetland sites are available for development in the area?

No potential alternative sites were available that meet the goals of the project and resulted in reduced impacts.

3. In recent years, have you sold or leased any lands located within the vicinity of the project? If so, why were they unsuitable for the project?

No.

9.0 Consistency with the Texas Coastal Management Program

CONSISTENCY WITH THE TEXAS COASTAL MANAGEMENT PROGRAM

JAN 1 0 2020

THE APPLICANT SHOULD SIGN THIS STATEMENT AND RETURN WITH APPLICATION PACKET TO:

COASTAL PERMIT SERVICE CENTER
602 N. STAPLES STREET, SUITE 240
CORPUS CHRISTI, TX 78401
FAX: (361) 888-9305

FOR USACE USE ONLY:

PERMIT #:_____

PROJECT MGR:_____

APPLICANT'S NAME AND ADDRESS (PLEASE PRINT):

Title | First: Moda Ingleside Oil Terminal, LLC | Last | Suffix

Mailing Address: 1000 Louisiana, Suite 7100

Home | Work: (832) 930-4838 | Mobile | Fax: (832 930-4839

City: Houston | State: Texas | Zip Code: 77002

Country: USA | Email: clayton.curtis@modamidstream.com

The Texas Coastal Management Program (CMP) coordinates state, local, and federal programs for the management of Texas coastal resources. Activities within the CMP boundary must comply with the enforceable policies of the Texas Coastal Management Program and be conducted in a manner consistent with those policies. The boundary definition is contained in the CMP rules (31 TAC §503.1).

- To determine whether your proposed activity lies within the CMP boundary, please contact the Permit Service Center at permitting.assistance@glo.texas.gov

PROJECT DESCRIPTION:

Is the proposed activity at a waterfront site or within coastal, tidal, or navigable waters? ☑ Yes ☐ No

If Yes, name affected coastal, tidal, or navigable waters: Corpus Christi Bay

Is the proposed activity water dependent? ☑ Yes ☐ No (31 TAC §501.3(a)(14))

http://tinyurl.com/CMPdefinitions

Please briefly describe the project and all possible effects on coastal resources:

See Section 1.1, Nature of Activity - Project Summary. The proposed project area totals approximately 79.81 acres and includes estuarine emergent wetlands, submerged aquatic vegetation, and unvegetated bay bottom.

Indicate area of impact: 79.81 ☑ acres or ☐ square feet

ADDITIONAL PERMITS/ AUTHORIZATIONS REQUIRED:

☐ Coastal Easement - Date application submitted: _____

☐ Coastal Lease - Date application submitted: _____

☐ Stormwater Permit- Date application submitted: _____

☑ Water Quality Certification - Date application submitted: TBD

☑ Other state/federal/local permits/authorizations required:

U.S. Army Corps of Engineers Sections 404 and 10 permit.

The proposed activity must not adversely affect coastal natural resource areas (CNRAs). JAN 1 0 2020

PLEASE CHECK ALL COASTAL NATURAL RESOURCE AREAS THAT MAY BE AFFECTED:

- ☐ Coastal Barriers
- ☐ Coastal Historic Areas
- ☐ Coastal Preserves
- ☐ Coastal Shore Areas
- ☑ Coastal Wetlands
- ☐ Critical Dune Areas
- ☐ Critical Erosion Areas
- ☐ Gulf Beaches
- ☐ Hard Substrate Reefs
- ☐ Oyster Reefs
- ☐ Special Hazard Areas
- ☑ Submerged Lands
- ☑ Submerged Aquatic Vegetation
- ☐ Tidal Sand or Mud Flats
- ☐ Waters of Gulf of Mexico
- ☑ Waters Under Tidal Influence

The applicant affirms that the proposed activity, its associated facilities, and their probable effects comply with the relevant enforceable policies of the CMP, and that the proposed activity will be conducted in a manner consistent with such policies.

PLEASE CHECK ALL APPLICABLE ENFORCEABLE POLICIES:

http://tinyurl.com/CMPpolicies

☐	§501.15 Policy for Major Actions
☐	§501.16 Policies for Construction of Electric Generating and Transmission Facilities
☐	§501.17 Policies for Construction, Operation, and Maintenance of Oil and Gas Exploration and Production Facilities
☐	§501.18 Policies for Discharges of Wastewater and Disposal of Waste from Oil and Gas Exploration and Production Activities
☐	§501.19 Policies for Construction and Operation of Solid Waste Treatment, Storage, and Disposal Facilities
☐	§501.20 Policies for Prevention, Response and Remediation of Oil Spills
☐	§501.21 Policies for Discharge of Municipal and Industrial Wastewater to Coastal Waters
☐	§501.22 Policies for Nonpoint Source (NPS) Water Pollution
☑	§501.23 Policies for Development in Critical Areas
☑	§501.24 Policies for Construction of Waterfront Facilities and Other Structures on Submerged Lands
☑	§501.25 Policies for Dredging and Dredged Material Disposal and Placement
☐	§501.26 Policies for Construction in the Beach/Dune System
☐	§501.27 Policies for Development in Coastal Hazard Areas
☐	§501.28 Policies for Development Within Coastal Barrier Resource System Units and Otherwise Protected Areas on Coastal Barriers
☐	§501.29 Policies for Development in State Parks, Wildlife Management Areas or Preserves
☐	§501.30 Policies for Alteration of Coastal Historic Areas
☐	§501.31 Policies for Transportation Projects
☐	§501.32 Policies for Emission of Air Pollutants
☐	§501.33 Policies for Appropriations of Water
☐	§501.34 Policies for Levee and Flood Control Projects

JAN 1 0 2020

Please explain how the proposed project is consistent with the applicable enforceable policies identified above. Please use additional sheets if necessary. *For example: If you are constructing a pier with a covered boathouse, then the applicable enforceable policy is: §501.24 Policies for Construction of Waterfront Facilities and Other Structures on Submerged Lands. The project is consistent because it will not interfere with navigation, natural coastal processes, and avoids/minimizes shading.*

§501.23 Policies for Development in Critical Areas:
The project is consistent because all impacts to critical areas has been avoided to the greatest extent practicable. Compensatory mitigation for unavoidable impacts to estuarine emergent wetlands and submerged aquatic vegetation (i.e. critical areas) will be mitigated for with a combination of preservation and creation. Preservation proposed by the applicant includes obtaining the appropriate conservation easements and land management plans to preserve approximately 50-acres of forested land that includes a mosaic of pothole wetlands (5.90:1 mitigation ration). Creation proposed by the applicant is currently under development. However, the creation of a 13.3-acre submerged aquatic vegetation habitat is proposed within the Port of Corpus Christi's (PCCA) 1,600-acre dedicated habitat enhancement/creation area along the shoreline of Indian Point. Once the applicant and PCCA determine the precise location of the mitigation site, a 12-Step Mitigation Plan will be provided to conform with all regulatory guidance and regulations.

§501.24 Policies for Construction of Waterfront Facilities and Other Structures on Submerged Lands:
The project is consistent because the project components have been minimized to the maximum extent practicable and compensatory mitigation will occur for all wetland and submerged aquatic vegetation impacts.

§501.25 Policies for Dredging and Dredged Material Disposal and Placement:
The project is consistent because dredging and dredge material disposal and placement will not interfere with navigation. The dredge placement plan includes only previously approved dredge material placement areas. Compensatory mitigation will occur for all wetland and submerged aquatic vegetation impacts.

BY SIGNING THIS STATEMENT, THE APPLICANT IS STATING THAT THE PROPOSED ACTIVITY COMPLIES WITH THE TEXAS COASTAL MANAGEMENT PROGRAM AND WILL BE CONDUCTED IN A MANNER CONSISTENT WITH SUCH PROGRAM

Signature of Applicant/Agent

1-10-2020
Date

Any questions regarding the Texas Coastal Management Program should be referred to:

Jesse Solis
Texas General Land Office
602 N. Staples St., Suite 240
Corpus Christi, Texas 78401
Phone: (361) 886-1630
Fax: (361) 888-9305
permitting.assistance@glo.texas.gov

Texas General Land Office
Coastal Protection Division
1700 North Congress Avenue, Room 330
Austin, Texas 78701-1495
Toll Free: 1-800-998-4GLO
federal.consistency@glo.texas.gov

Print Form