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VINEYARD WIND

Vineyard Wind Connector 2: Analysis to Support Petition Before the Energy Facilities Siting Board

Docket #EFSB 20-01

Volume II: Figures and Attachments

May 28, 2020

Submitted to

**Energy Facilities Siting Board
One South Station
Boston, Massachusetts 02114**

Prepared by

**Epsilon Associates, Inc.
3 Mill & Main Place, Suite 250
Maynard, Massachusetts 01754**

Submitted by

**Vineyard Wind LLC
700 Pleasant Street, Suite 510
New Bedford, Massachusetts 02740**

In Association with

**Foley Hoag LLP
Stantec, Inc.
Gradient
Geo SubSea LLC**

ANALYSIS TO SUPPORT PETITION BEFORE THE ENERGY FACILITIES SITING BOARD

DOCKET #EFSB 20-01

Vineyard Wind Connector 2

VOLUME II: FIGURES AND ATTACHMENTS

Submitted to:

ENERGY FACILITIES SITING BOARD

One South Station
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Submitted by:

VINEYARD WIND LLC

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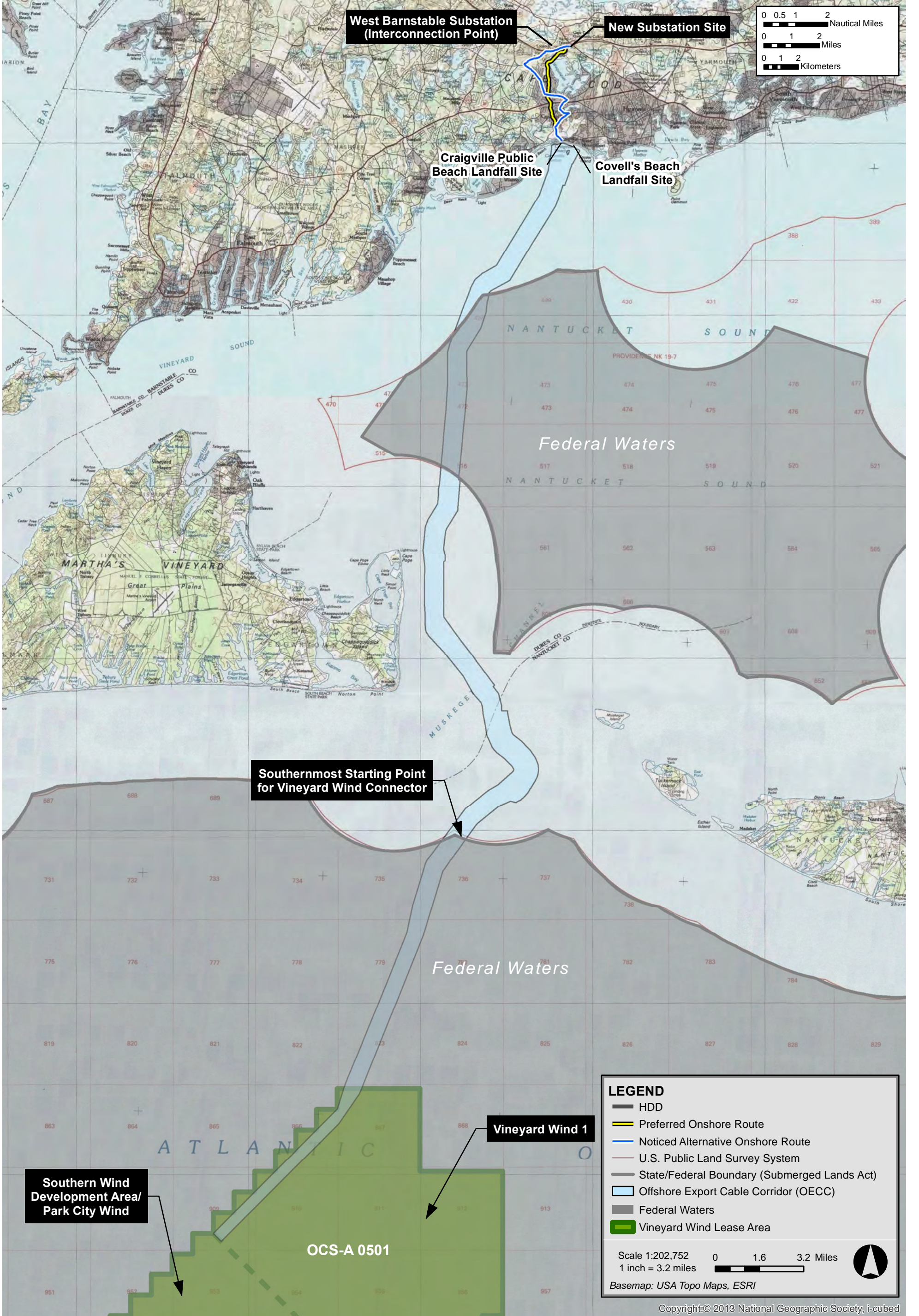
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ATTACHMENTS

- Attachment A PHOTO ARRAY OF TRANSMISSION ROUTE PREFERRED ROUTE
- Attachment B PHOTO ARRAY OF TRANSMISSION ROUTE NOTICED ALTERNATIVE
- Attachment C PHOTO ARRAY OF GRID INTERCONNECTION ROUTE PREFERRED ROUTE
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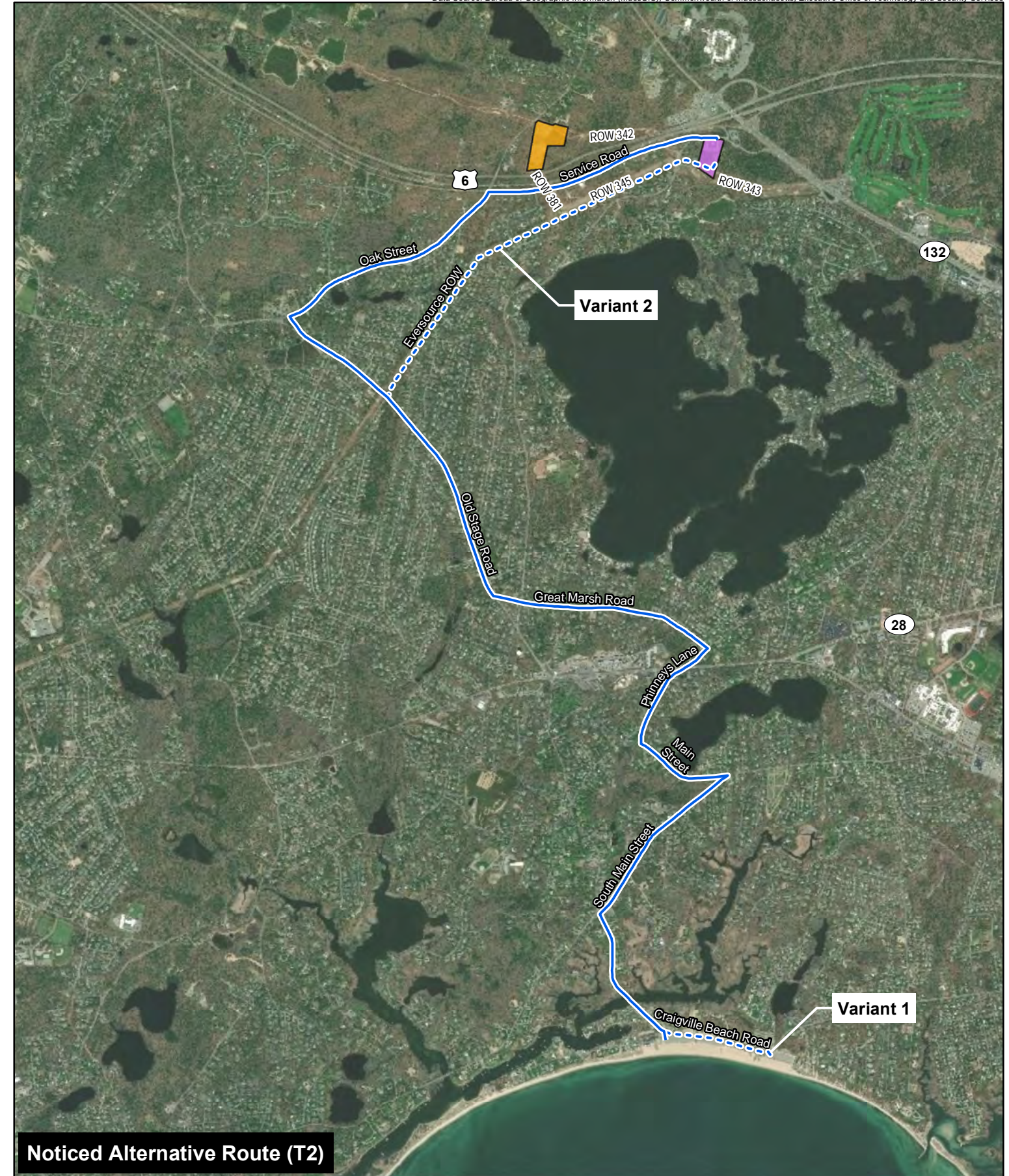
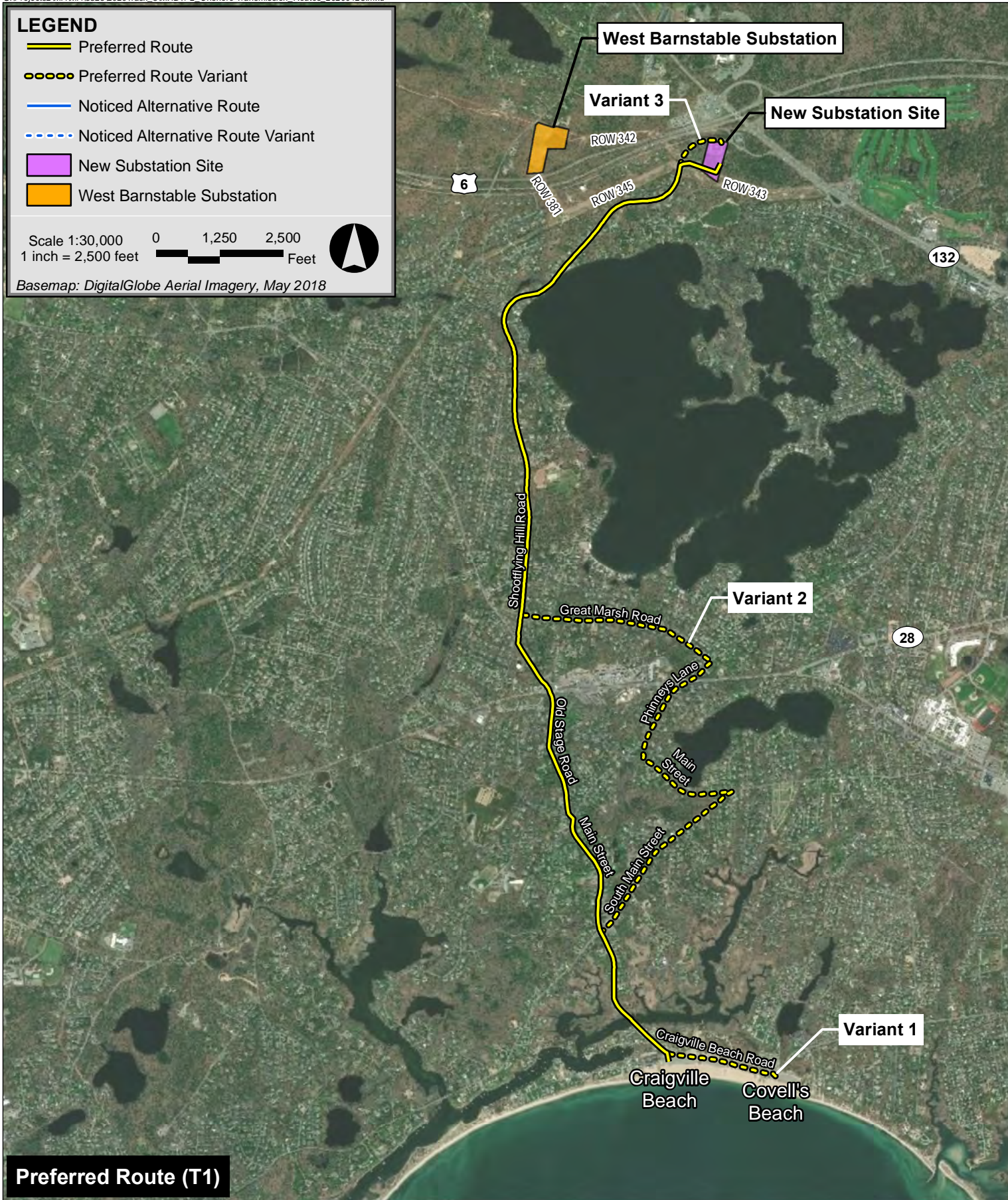
Figures



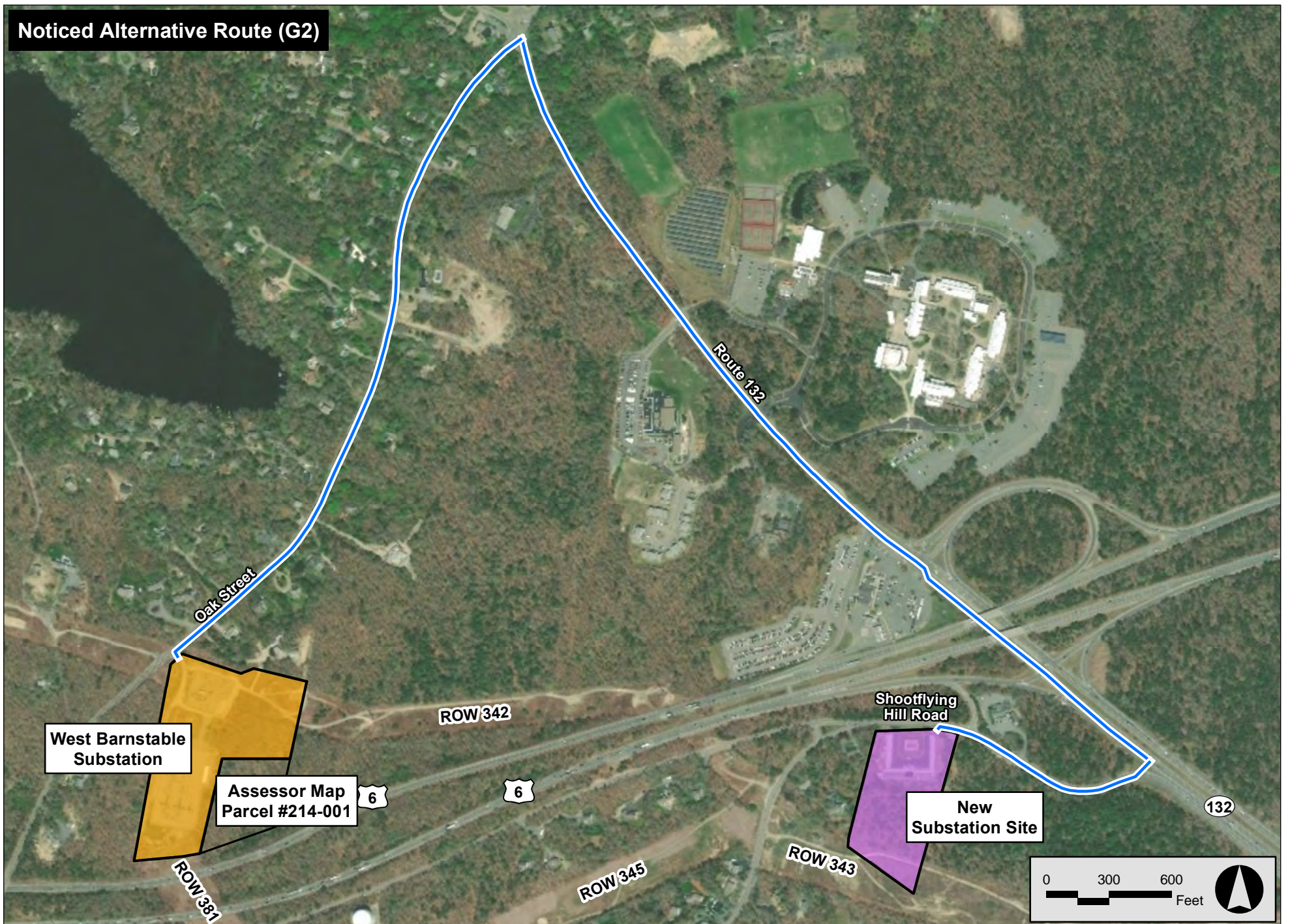
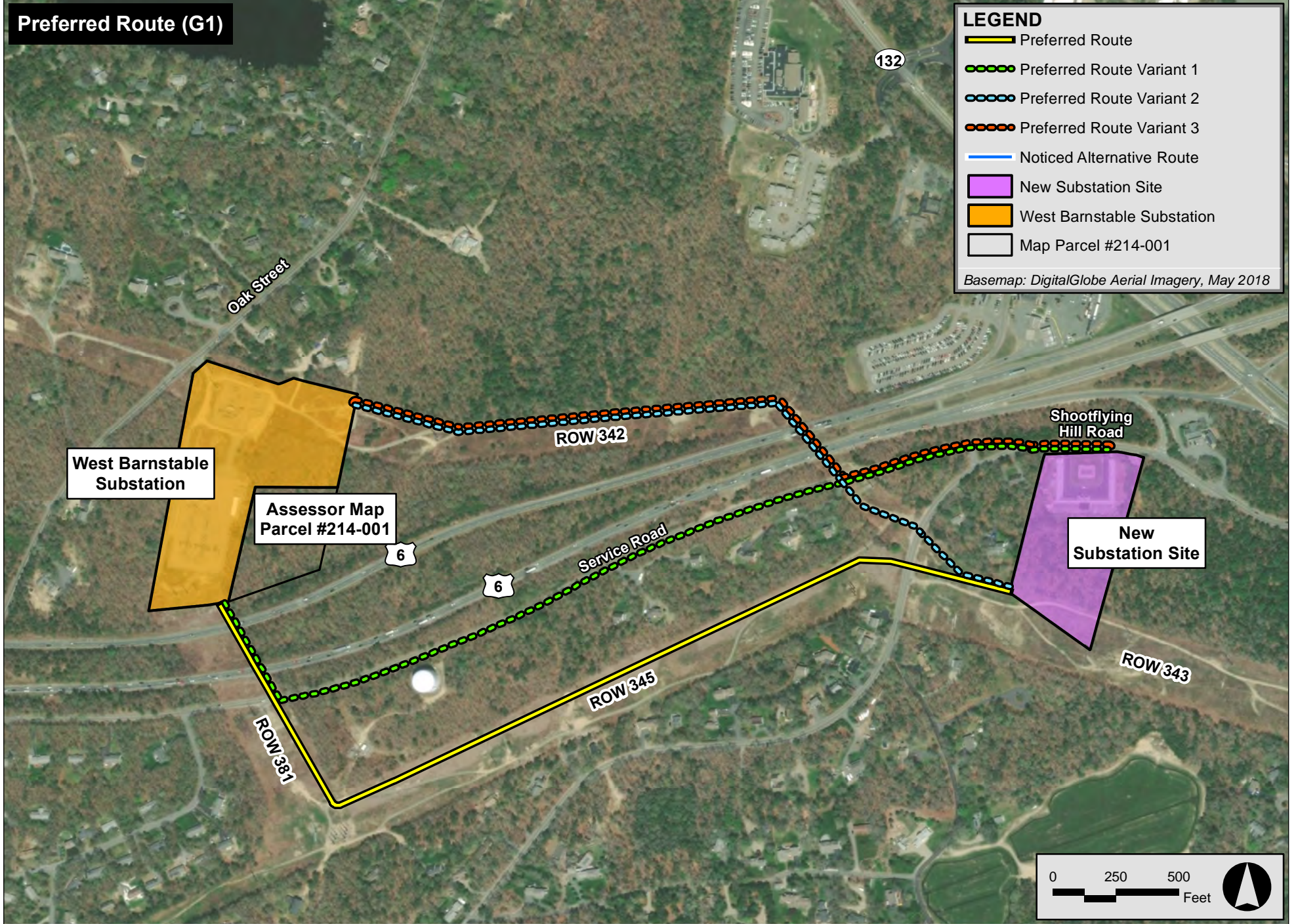
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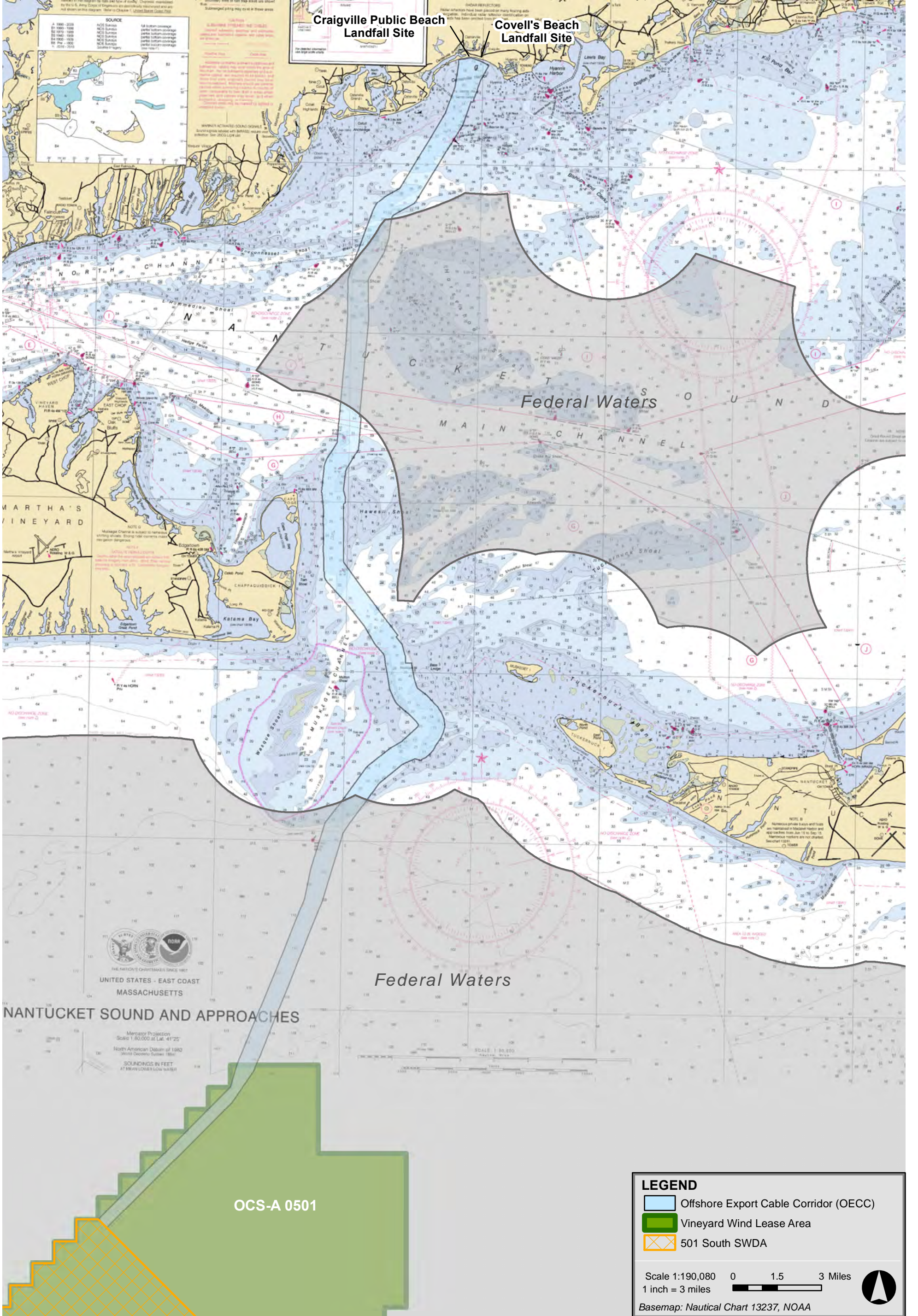


Figure 1-1
Project Overview, USGS Locus

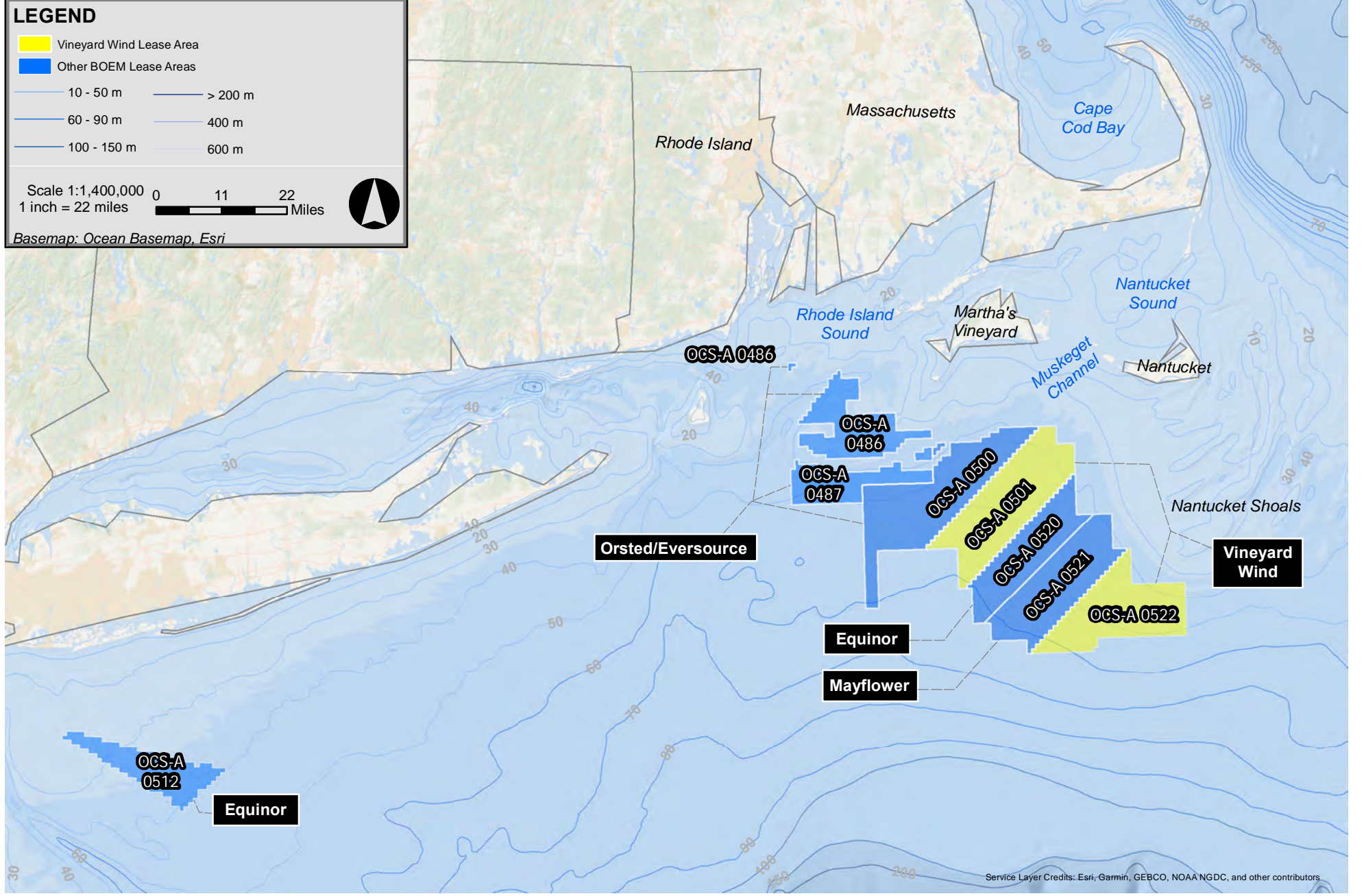


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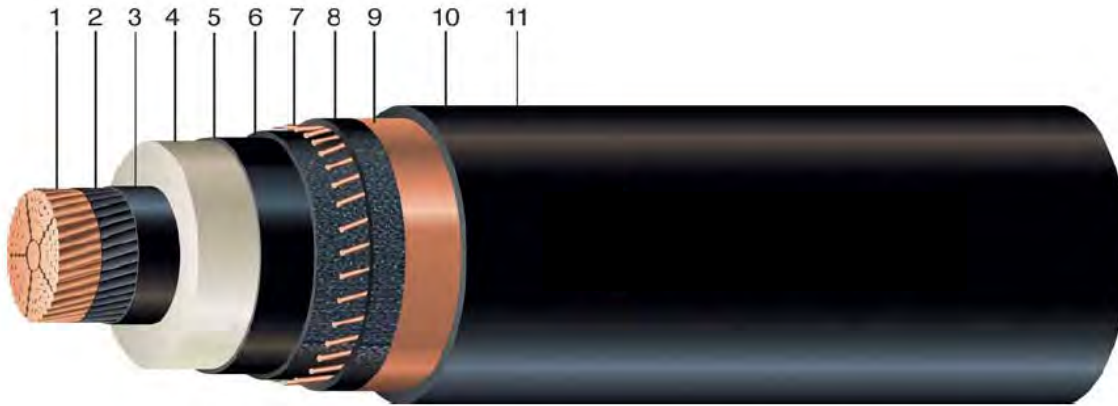
Figure 1-5
BOEM Offshore Wind Lease Areas in the Northeast



Design:

- | | | |
|-------------------------------|---------------------|----------------------|
| 1 Conductor (Al or Cu) | 5 Swellable tape | 9 Filler profiles |
| 2 Inner semi-conducting layer | 6 Lead sheath | 10 Bedding (PP) |
| 3 XLPE insulation | 7 PE oversheath | 11 Armouring |
| 4 Outer semi-conducting layer | 8 Fibre optic cable | 12 Outer sheath (PP) |

Cu conductor with concentric Cu wires and Cu laminate sheath

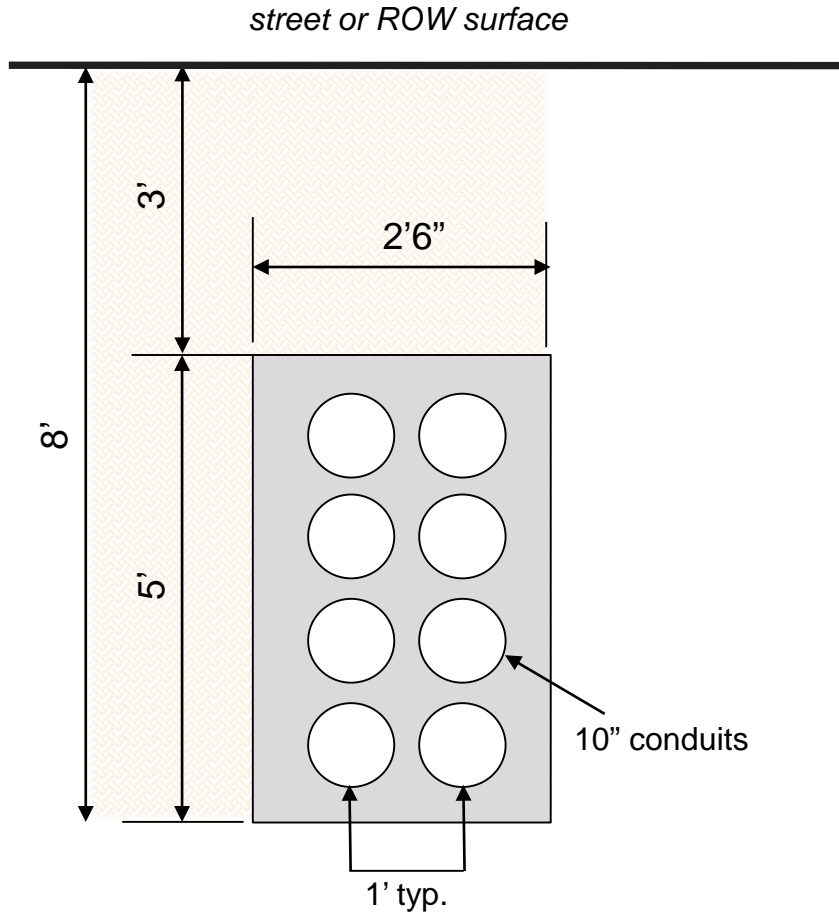


| Component | Description | Material | Thickness (mils) | Thickness (mm) | Diameter (in.) | Diameter (mm) |
|-----------|----------------------------------------------------------------------|----------------------|------------------|----------------|----------------|---------------|
| 1 | 5 Segment Conductor 3000 kcmil (1520 mm ²) — 306 strands | Copper | n / a | n / a | 1.97 | 50.0 |
| 2 | Semi-Conductive Tape | Semi-Conducting Tape | 8 | 0.21 | 2.00 | 50.8 |
| 3 | Conductor Shield | SC-XLPE | 79 | 2.00 | 2.16 | 54.8 |
| 4 | XLPE Insulation | XLPE | 906 | 23.00 | 3.97 | 100.8 |
| 5 | Insulation Shield | SC-XLPE | 59 | 1.50 | 4.09 | 103.8 |
| 6 | Water-Swellable Semi-Conductive Tape | Semi-Conducting Tape | 24 | 0.60 | 4.14 | 105.0 |
| 7 | 40 × AWG 10 Concentric Wires | Copper | 102 | 2.59 | 4.34 | 110.2 |
| 8 | Water-Swellable Semi-Conductive Tape | Semi-Conducting Tape | 24 | 0.60 | 4.39 | 111.4 |
| 9 | Laminate Foil Tape Shield | Copper | 6 | 0.15 | 4.40 | 111.7 |
| 10 | Jacket | LLDPE | 185 | 4.70 | 4.77 | 121.1 |
| 11 | Semi-Conductive Jacket Layer | SC-PE | 8 | 0.20 | 4.78 | 121.5 |

Approximate Finished Cable Weight = 16.4 pounds per foot, 24.4 kilograms per meter

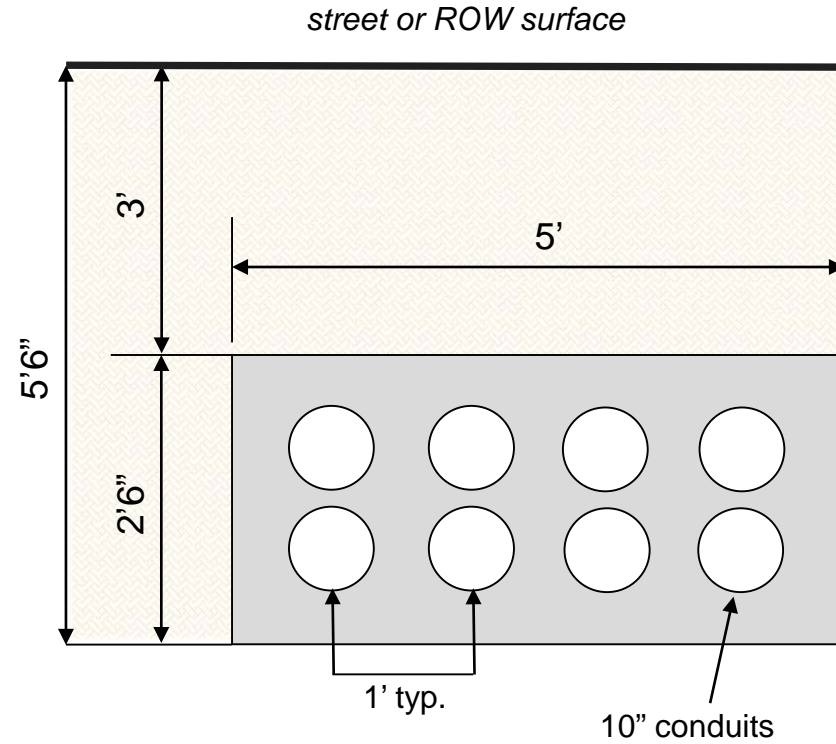
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2x4 layout



Trench width at top = ~11 feet

4x2 layout

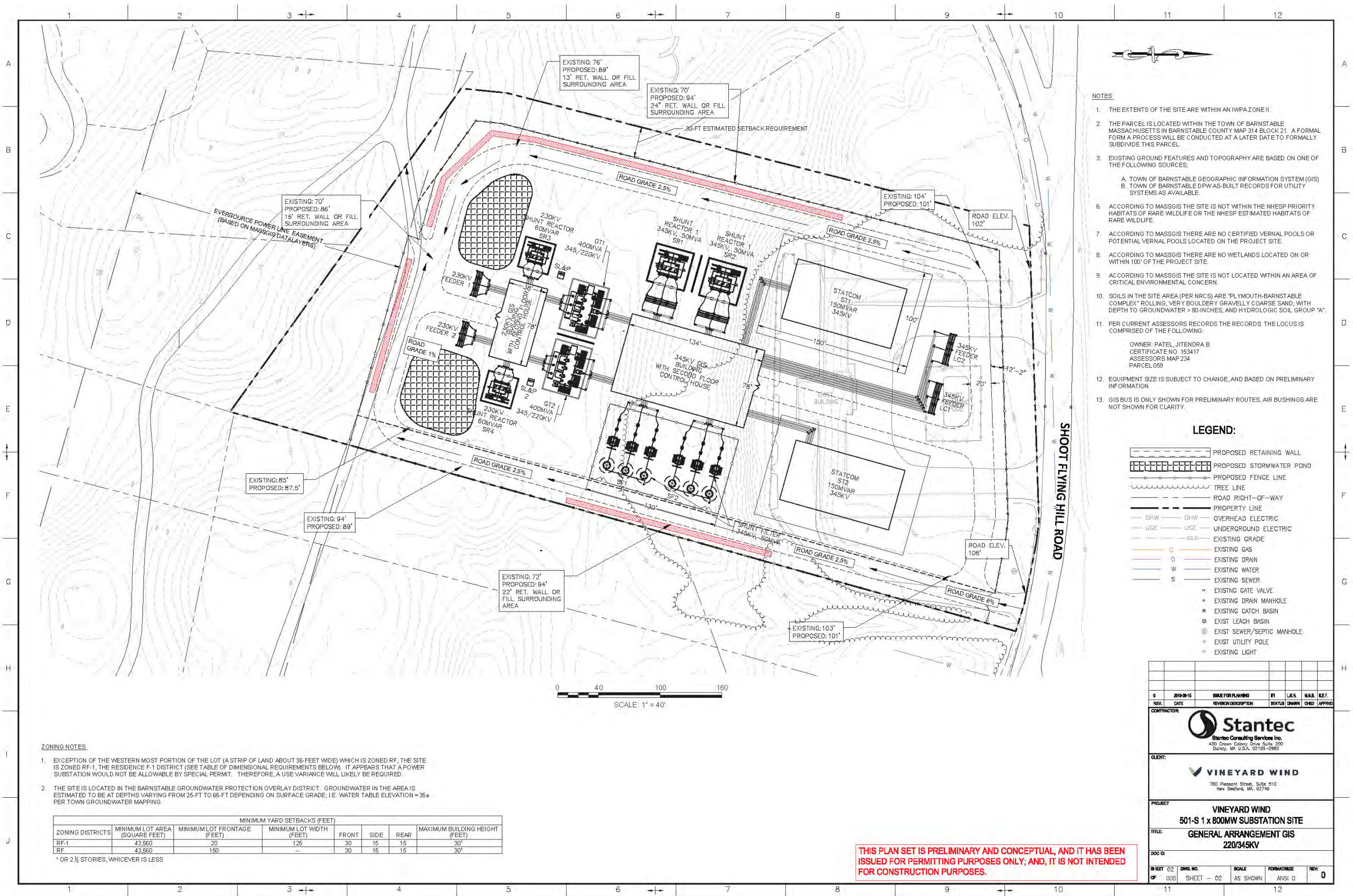


Trench width at top = ~11 feet

For permitting purposes, and not intended for construction.

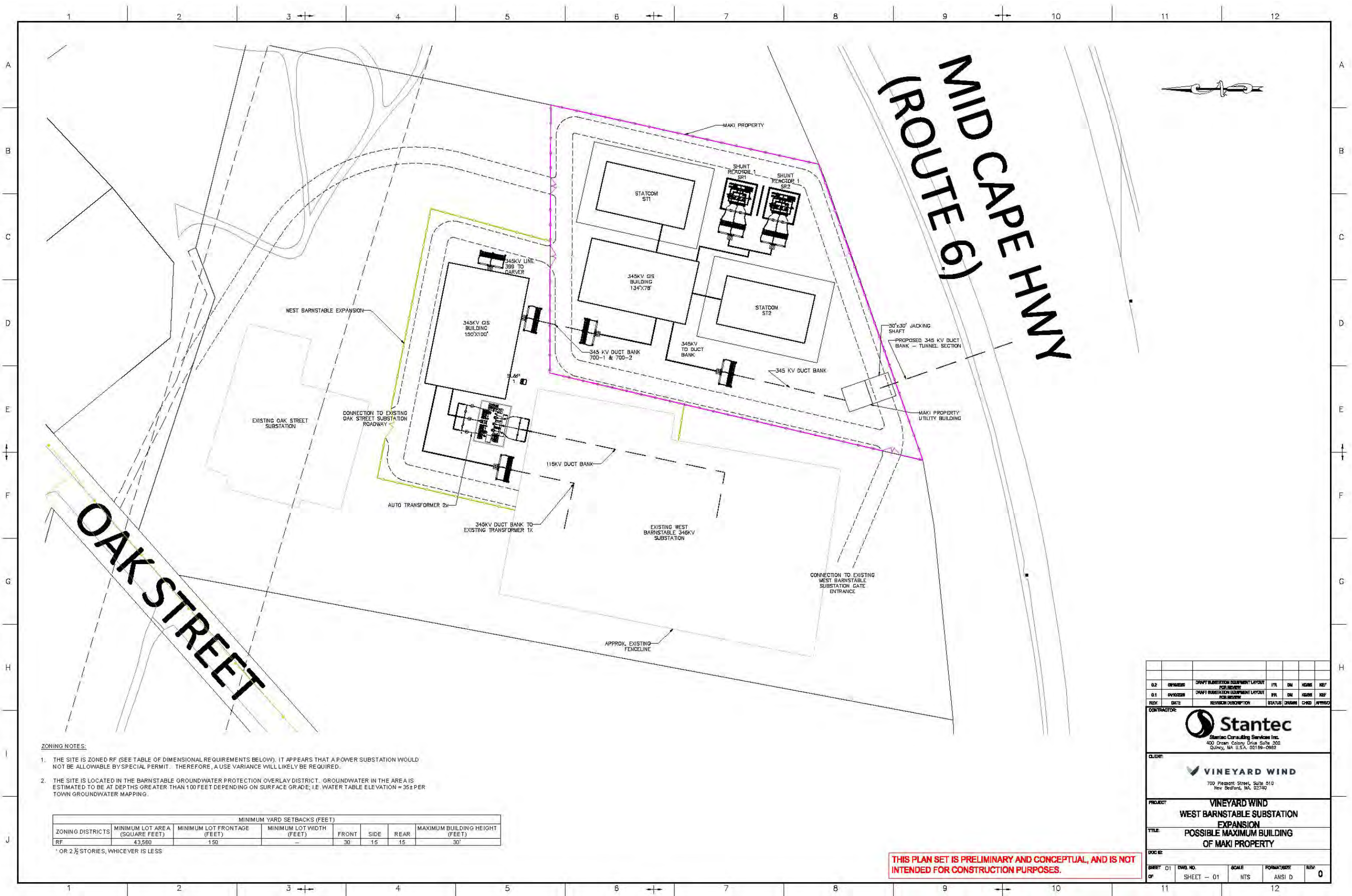


Vineyard Wind Connector 2





Vineyard Wind Connector 2



ZONING NOTES:

1. THE SITE IS ZONED RF (SEE TABLE OF DIMENSIONAL REQUIREMENTS BELOW). IT APPEARS THAT A POWER SUBSTATION WOULD NOT BE ALLOWABLE BY SPECIAL PERMIT. THEREFORE, A USE VARIANCE WILL LIKELY BE REQUIRED.
2. THE SITE IS LOCATED IN THE BARNSTABLE GROUNDWATER PROTECTION OVERLAY DISTRICT. GROUNDWATER IN THE AREA IS ESTIMATED TO BE AT DEPTHS GREATER THAN 100 FEET DEPENDING ON SURFACE GRADE, I.E. WATER TABLE ELEVATION ≈ 35± PER TOWN GROUNDWATER MAPPING.

| ZONING DISTRICTS | MINIMUM LOT AREA (SQUARE FEET) | MINIMUM YARD SETBACKS (FEET) | | | | MAXIMUM BUILDING HEIGHT (FEET) | |
|------------------|--------------------------------|------------------------------|--------------------------|-------|------|--------------------------------|------|
| | | MINIMUM LOT FRONTAGE (FEET) | MINIMUM LOT WIDTH (FEET) | FRONT | SIDE | | REAR |
| RF | 43,560 | 150 | - | 30 | 15 | 15 | 30' |

*OR 2 1/2 STORIES, WHICHEVER IS LESS

THIS PLAN SET IS PRELIMINARY AND CONCEPTUAL, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES.

| REV. | DATE | REVISION DESCRIPTION | STATUS | UNAPP | CHNG | APPROV |
|------|------|----------------------|--------|-------|------|--------|
| 0.2 | | ISSUES | 0 | 0 | 0 | 0 |
| 0.1 | | ISSUES | 0 | 0 | 0 | 0 |

CONTRACTOR: **Stantec**
Stantec Consulting Services Inc.
400 Ocean Colony Drive Suite 300
Quincy, MA, U.S.A. 02169-0982

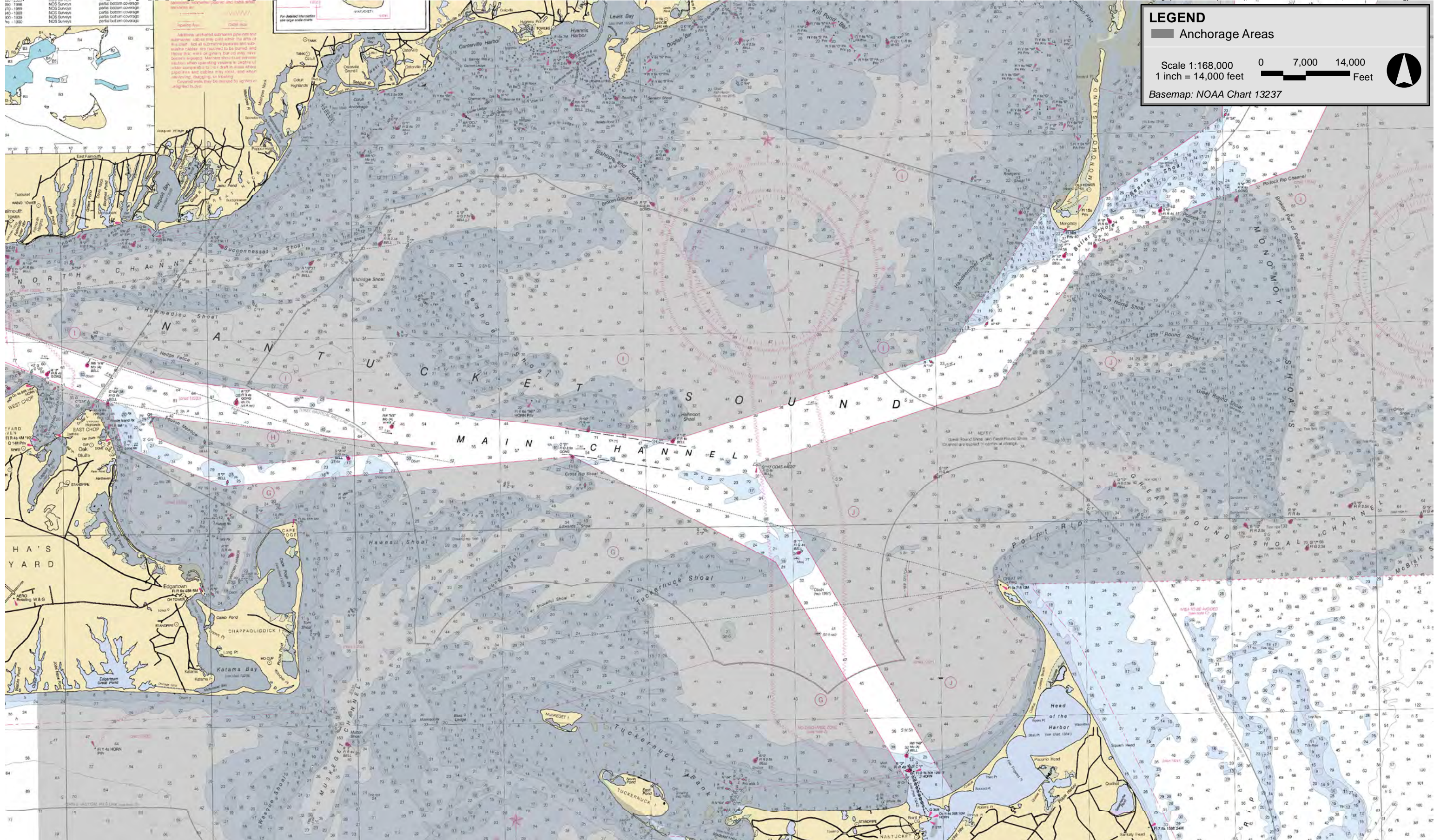
CLIENT: **VINEYARD WIND**
700 Pleasant Street, Suite 510
New Bedford, MA, 02740

PROJECT: **VINEYARD WIND**
WEST BARNSTABLE SUBSTATION
EXPANSION

TITLE: **POSSIBLE MAXIMUM BUILDING**
OF MAKI PROPERTY

DOC NO:

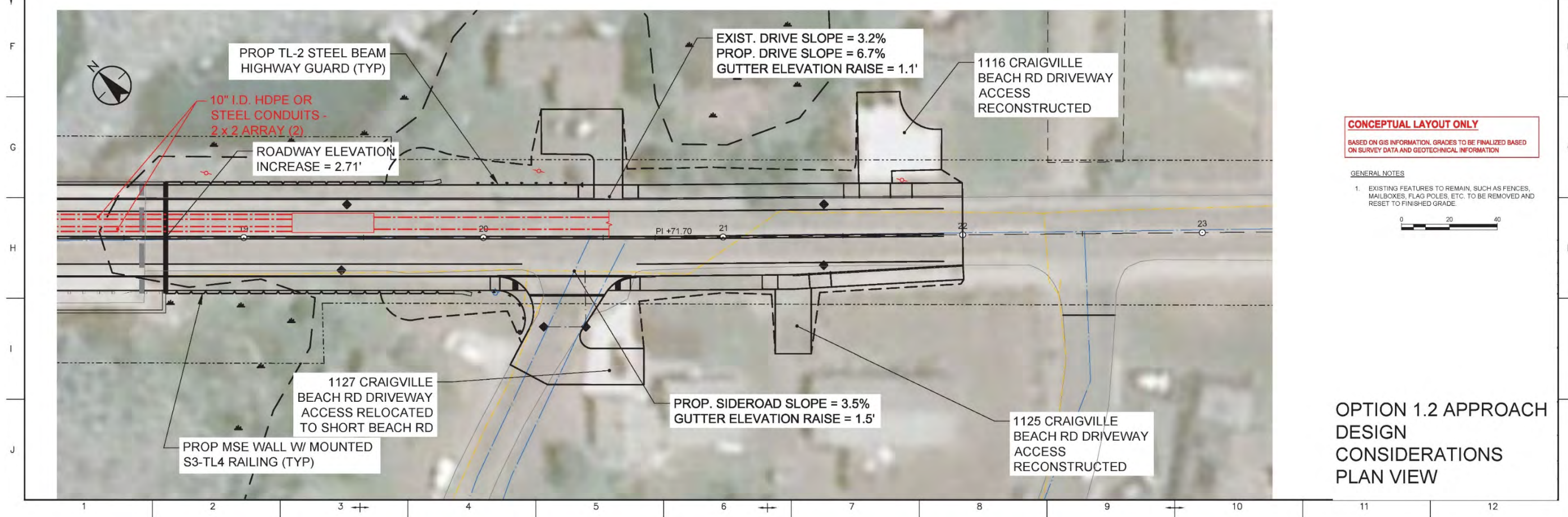
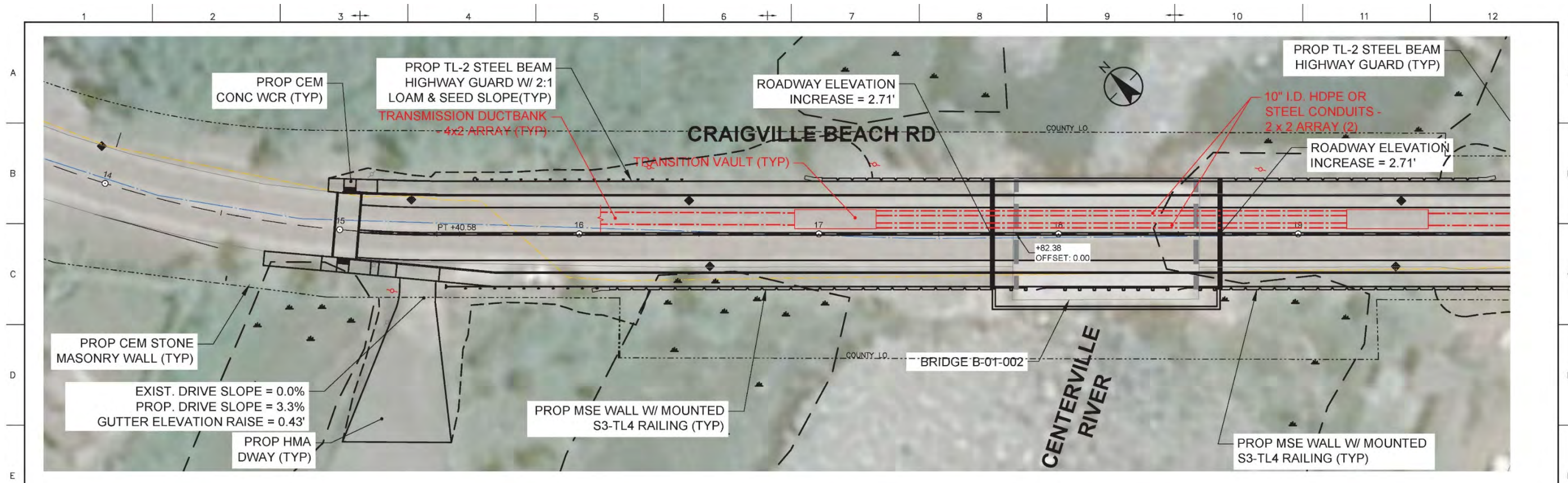
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Figure 1-13
Existing Marine Infrastructure

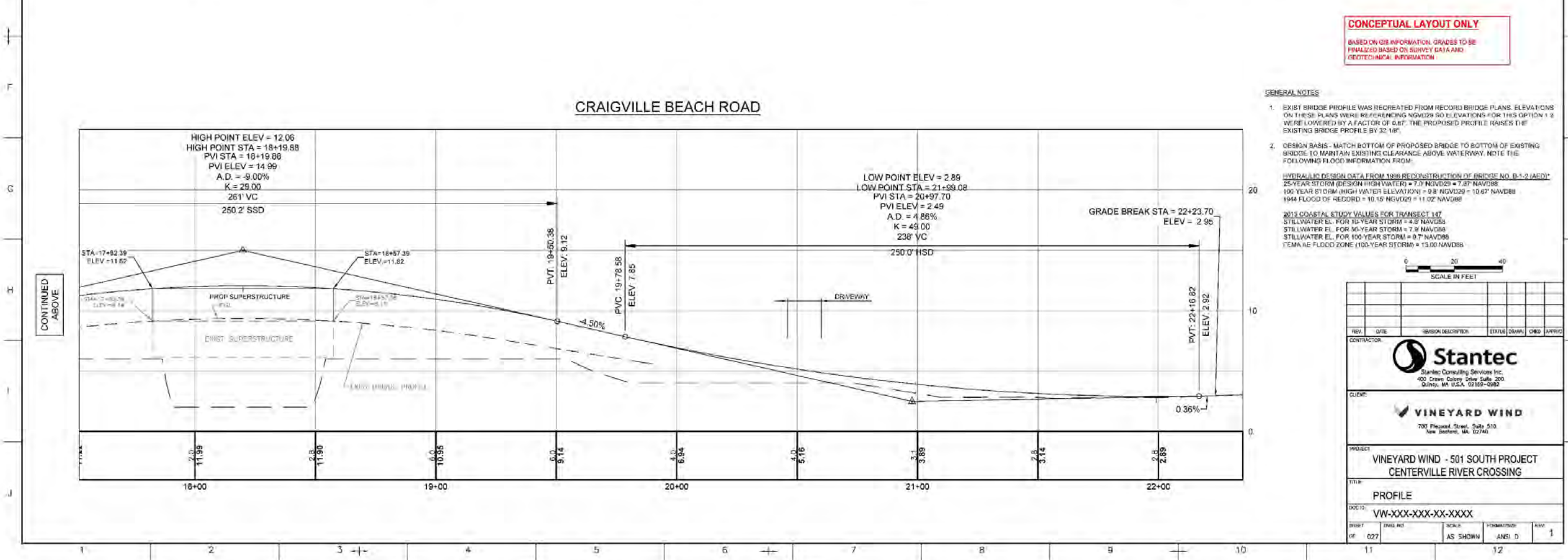
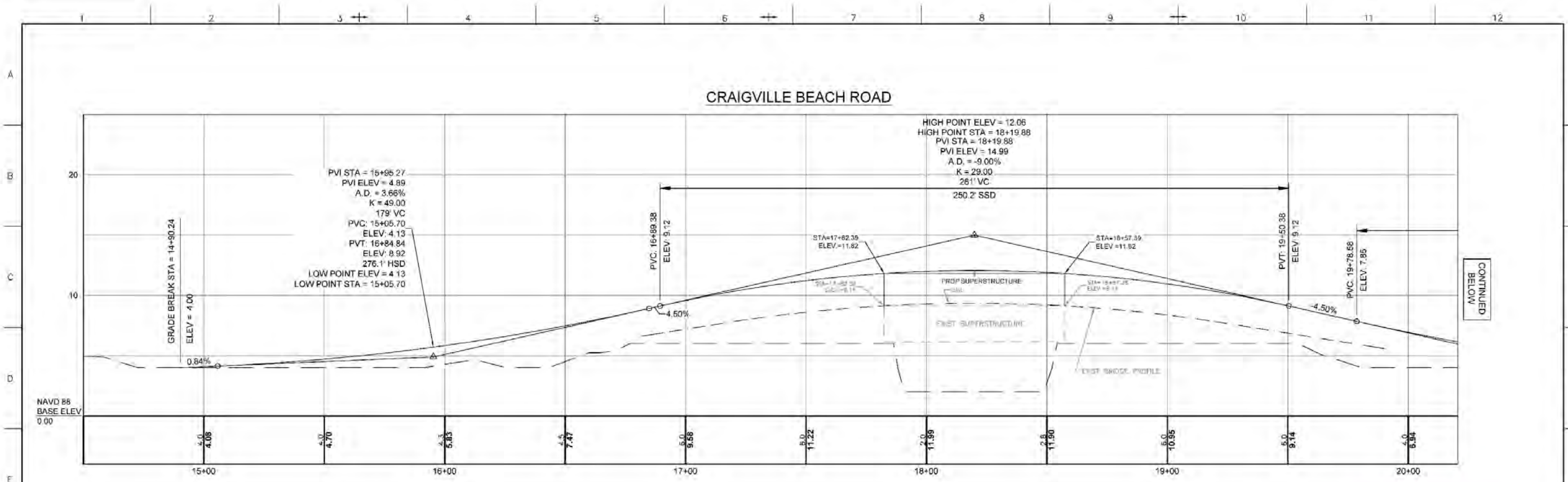


CONCEPTUAL LAYOUT ONLY
 BASED ON GIS INFORMATION, GRADES TO BE FINALIZED BASED ON SURVEY DATA AND GEOTECHNICAL INFORMATION

- GENERAL NOTES**
- EXISTING FEATURES TO REMAIN, SUCH AS FENCES, MAILBOXES, FLAG POLES, ETC. TO BE REMOVED AND RESET TO FINISHED GRADE.



OPTION 1.2 APPROACH DESIGN CONSIDERATIONS PLAN VIEW



CONCEPTUAL LAYOUT ONLY
 BASED ON GIS INFORMATION, GRADES TO BE
 FINALIZED BASED ON SURVEY DATA AND
 GEOTECHNICAL INFORMATION

- GENERAL NOTES**
- EXIST BRIDGE PROFILE WAS RECREATED FROM RECORD BRIDGE PLANS. ELEVATIONS ON THESE PLANS WERE REFERENCING NAVD83 SO ELEVATIONS FOR THIS OPTION 1 & 2 WERE LOWERED BY A FACTOR OF 0.87. THE PROPOSED PROFILE RAISES THE EXISTING BRIDGE PROFILE BY 32.18".
 - DESIGN BASIS - MATCH BOTTOM OF PROPOSED BRIDGE TO BOTTOM OF EXISTING BRIDGE TO MAINTAIN EXISTING CLEARANCE ABOVE WATERWAY. NOTE THE FOLLOWING FLOOD INFORMATION FROM:
 - HYDRAULIC DESIGN DATA FROM 1988 RECONSTRUCTION OF BRIDGE NO. B-1-2 (AED):
 - 25-YEAR STORM (DESIGN HIGH WATER) = 7.0' NAVD83 = 7.87' NAVD88
 - 100-YEAR STORM (HIGH WATER ELEVATION) = 9.8' NAVD83 = 10.67' NAVD88
 - 1944 FLOOD OF RECORD = 10.15' NAVD83 = 11.02' NAVD88
 - 2013 COASTAL STUDY VALUES FOR TRANSECT 147:
 - STILLWATER EL. FOR 10-YEAR STORM = 4.8' NAVD88
 - STILLWATER EL. FOR 50-YEAR STORM = 7.9' NAVD88
 - STILLWATER EL. FOR 100-YEAR STORM = 9.7' NAVD88
 - CEMAA FLOOD ZONE (100-YEAR STORM) = 13.00' NAVD88

SCALE IN FEET: 0 20 40

| REV | DATE | REVISION DESCRIPTION | STATUS | OWNER | APP'D |
|-----|------|----------------------|--------|-------|-------|
| | | | | | |

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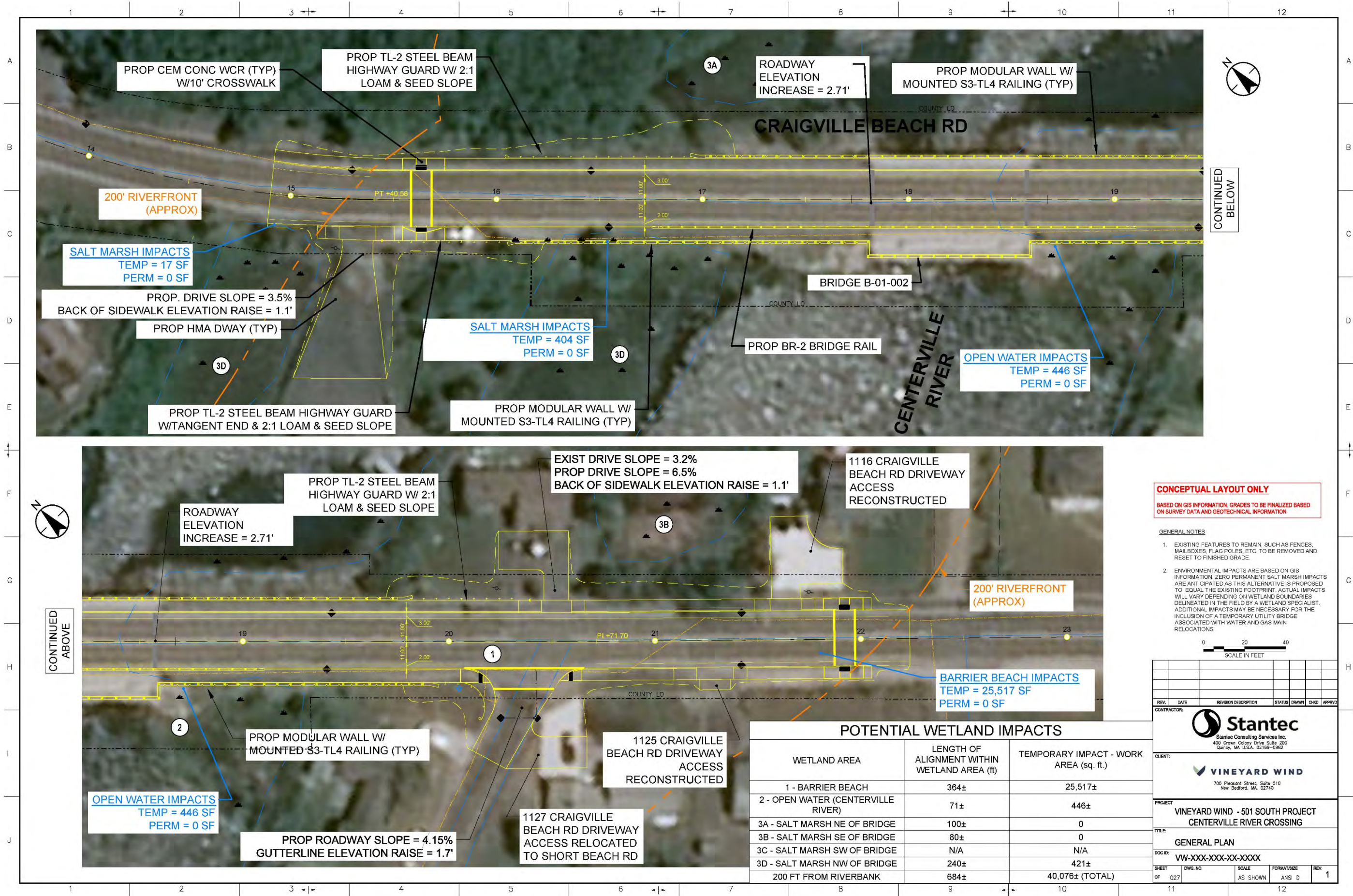
CLIENT
VINEYARD WIND
 700 Pleasant Street, Suite 510
 New Bedford, MA 02740

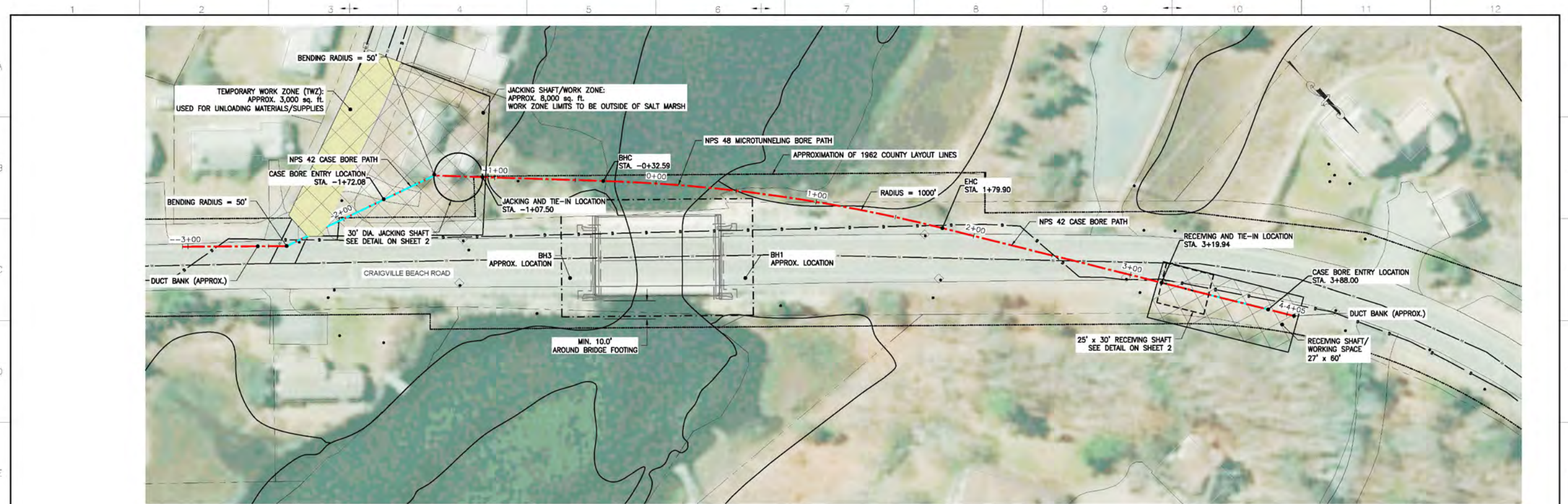
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 VINEYARD WIND - 501 SOUTH PROJECT
 CENTERVILLE RIVER CROSSING

TITLE
 PROFILE

DOC ID
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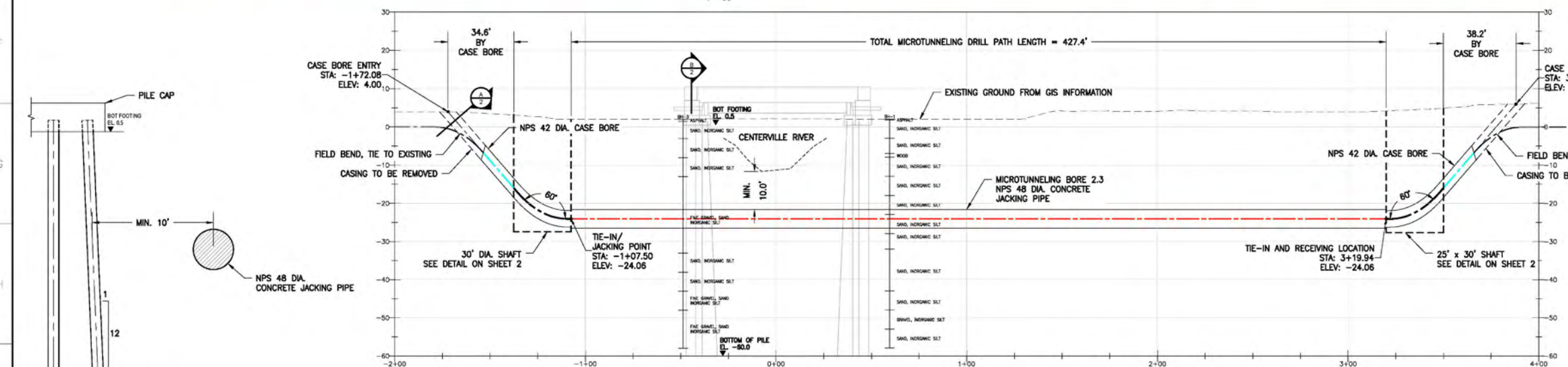
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PLAN-OPTION 2.3.B

1" = 30'



PROFILE-OPTION 2.3.B

H 1" = 30' V 1" = 15'

TYPICAL - BRIDGE SECTION

1" = 5'

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| A | 03-18-20 | ISSUED FOR CONCEPT REVIEW | C.N. | E.A. | K.F. |

CONTRACTOR

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CLIENT:

VINEYARD WIND
700 Pleasant Street, Suite 510
New Bedford, MA, 02740

TITLE:

**VINEYARD WIND - 501 SOUTH PROJECT
CENTERVILLE RIVER CROSSING
OPTION 2.3.B**

CONTRACTOR DOC NO.

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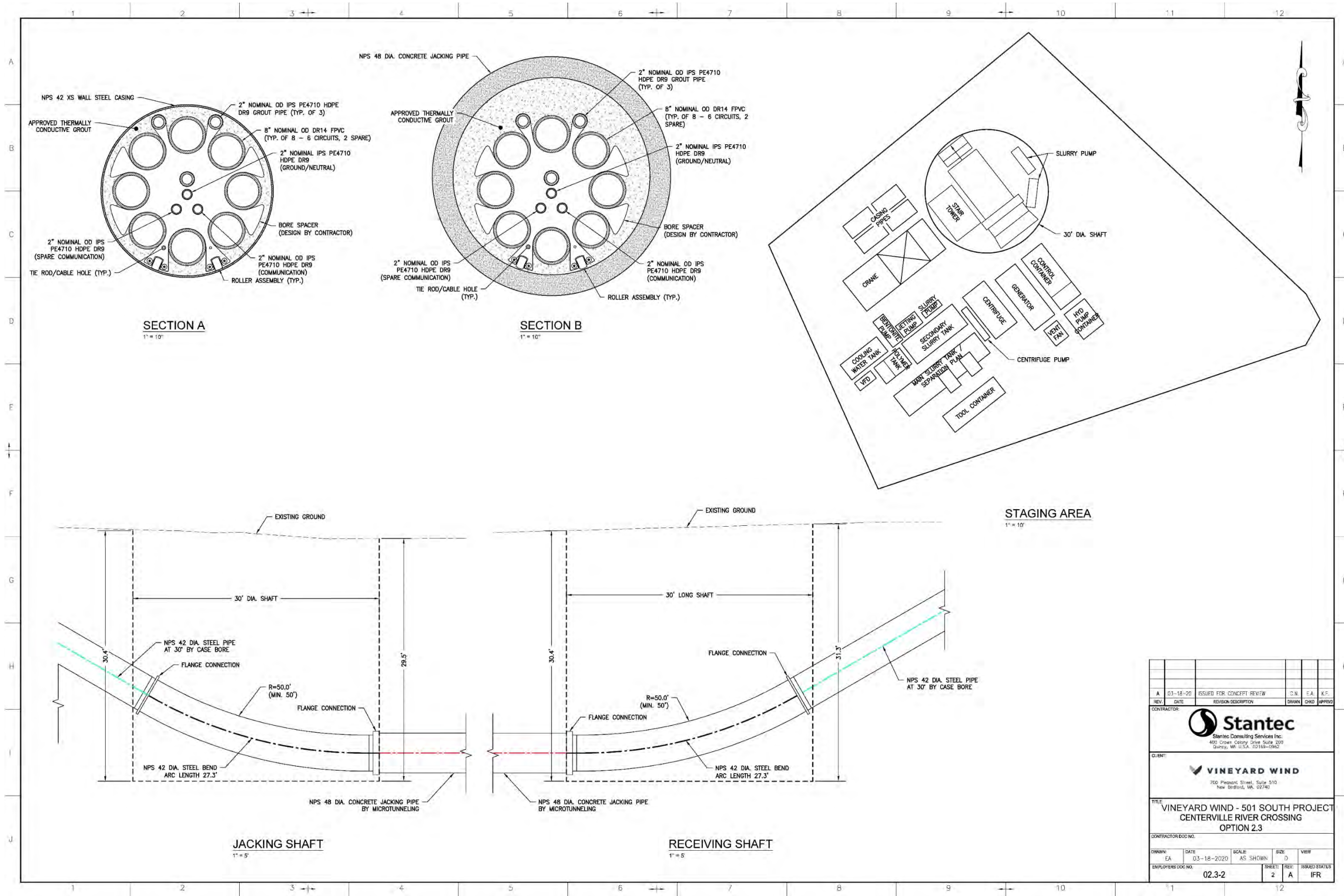
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CONCEPTUAL LAYOUT

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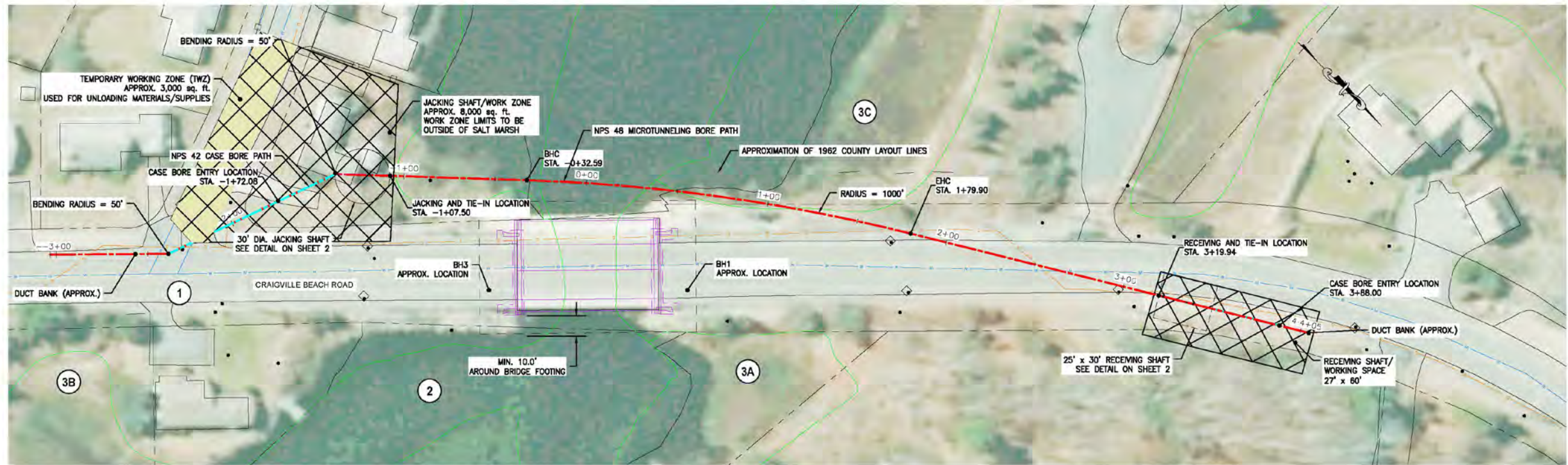
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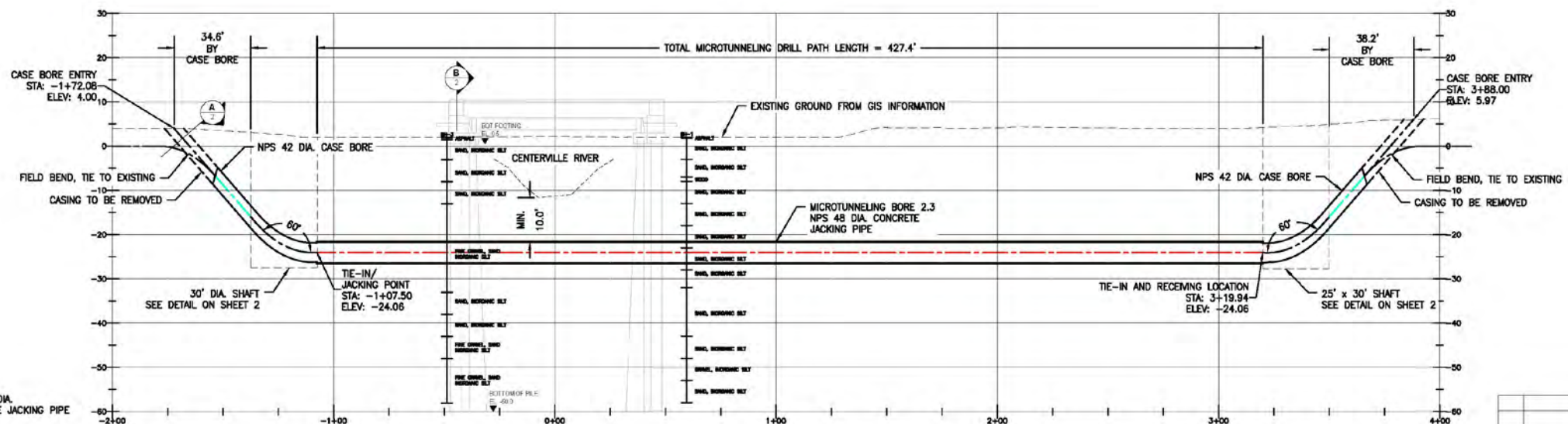


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| CLIENT: | | | | | |
| VINEYARD WIND 700 Pleasant Street, Suite 510 New Bedford, MA, 02740 | | | | | |
| TITLE: | | | | | |
| VINEYARD WIND - 501 SOUTH PROJECT CENTERVILLE RIVER CROSSING OPTION 2.3 | | | | | |
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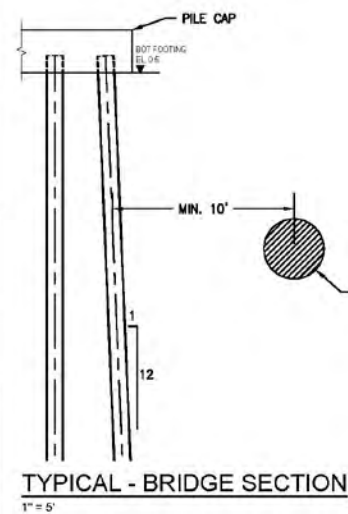
Vineyard Wind Connector 2



PLAN-OPTION 2.3.B
1" = 30'



PROFILE-OPTION 2.3.B
H 1" = 30' V 1" = 15'



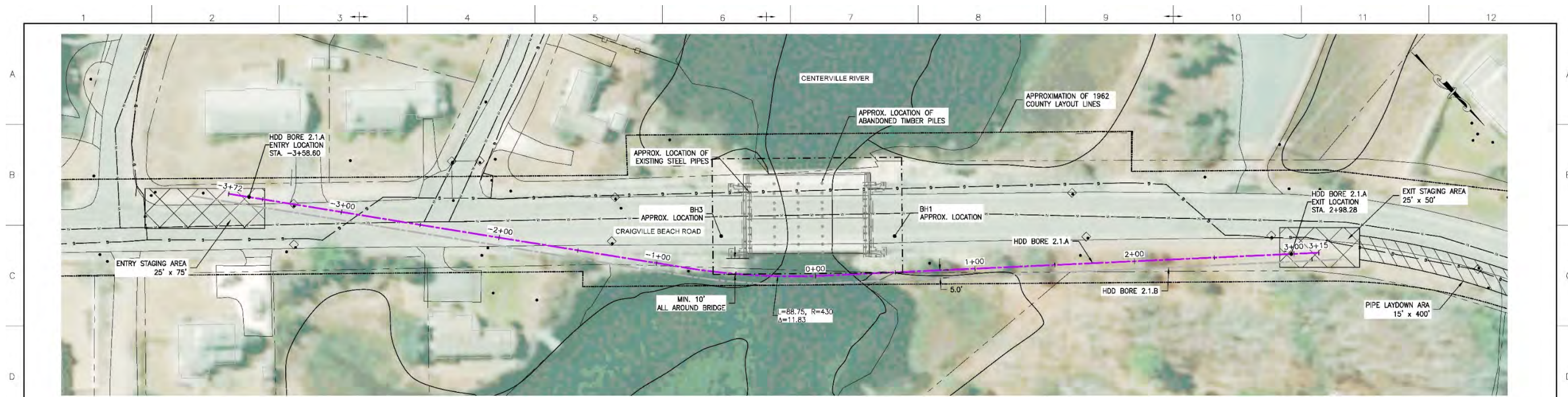
TYPICAL - BRIDGE SECTION
1" = 5'

| POTENTIAL WETLAND IMPACTS | | |
|------------------------------------|----------------------------------------------|-----------------------------------------|
| WETLAND AREA | LENGTH OF ALIGNMENT WITHIN WETLAND AREA (ft) | TEMPORARY IMPACT - WORKS AREA (sq. ft.) |
| 1 - BARRIER BEACH | 200 | 10400 |
| 2 - OPEN WATER (CENTERVILLE RIVER) | 140 | N/A |
| 3A - SALT MARSH NE OF BRIDGE | N/A | N/A |
| 3B - SALT MARSH SE OF BRIDGE | N/A | N/A |
| 3C - SALT MARSH NW OF BRIDGE | 65 | N/A |
| 200 FT FROM RIVERBANK | 615 | 10400 |

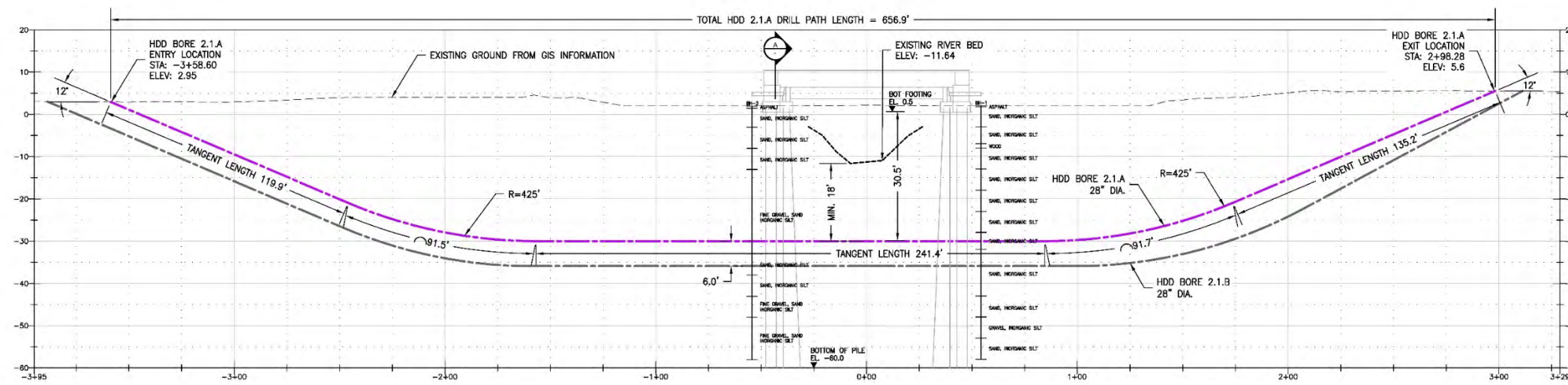
CONCEPTUAL LAYOUT

ALIGNMENT AND PROFILE SHOWN ARE PRELIMINARY AND TO BE CONFIRMED DURING DETAILED DESIGN.
PROFILE TO BE FINALIZED BASED ON SURVEY DATA AND GEOTECHNICAL INFORMATION.
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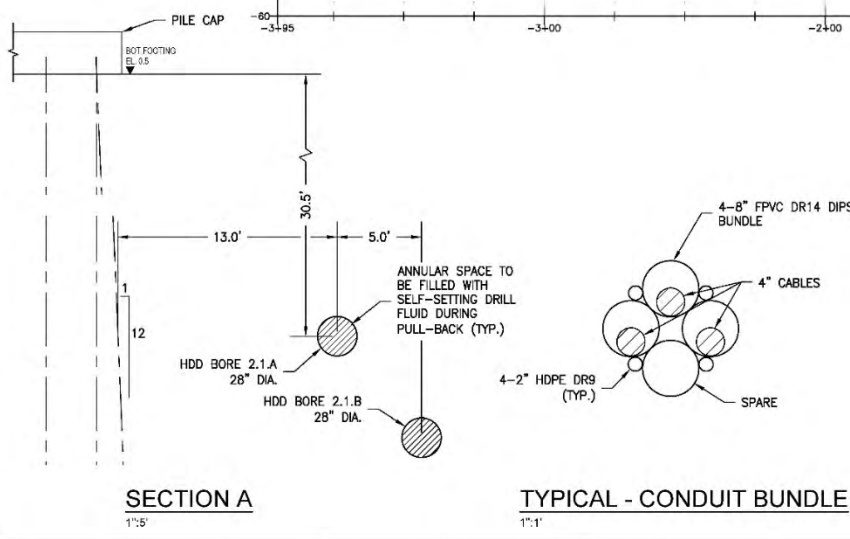
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| CONTRACTOR: Stantec Stantec Consulting Services Inc. 400 Ocean Colony Drive Suite 200 Quincy, MA U.S.A. 02169-0962 | | | | | |
| CLIENT: VINEYARD WIND 700 Pleasant Street, Suite 510 New Bedford, MA 02740 | | | | | |
| TITLE: VINEYARD WIND - 501 SOUTH PROJECT CENTERVILLE RIVER CROSSING OPTION 2.3.B | | | | | |
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PLAN-OPTION BORE 2.1.A
1"=30'



PROFILE-OPTION BORE 2.1.A
H 1"=30' V 1"=15'



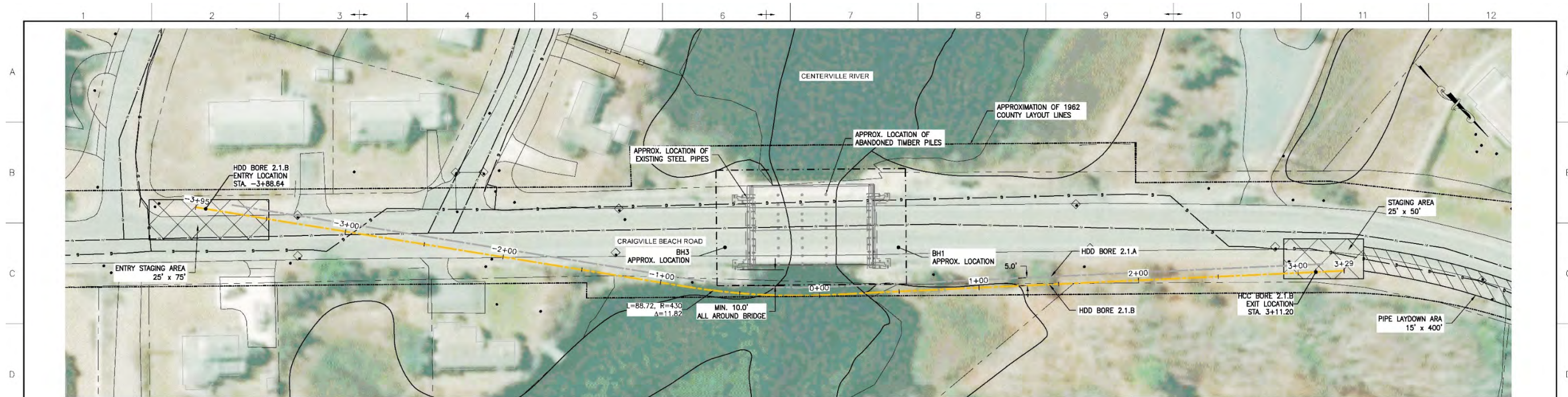
SECTION A
1"=5'

TYPICAL - CONDUIT BUNDLE
1"=1'

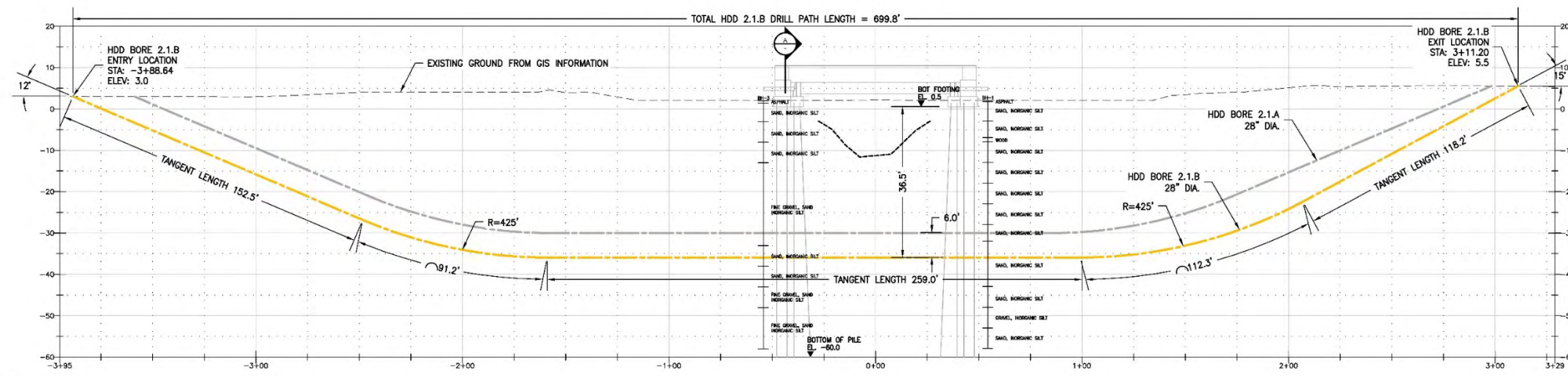
CONCEPTUAL LAYOUT

ALIGNMENT AND PROFILE SHOWN ARE PRELIMINARY AND TO BE CONFIRMED DURING DETAILED DESIGN.
PROFILE TO BE FINALIZED BASED ON SURVEY DATA AND GEOTECHNICAL INFORMATION.
GEOTECHNICAL DATA SHOWN AFTER 'BARNSTABLE - CRAIGVILLE BEACH ROAD OVER CENTERVILLE RIVER, SHEETS 2 & 3, MASS HIGHWAY 1997'

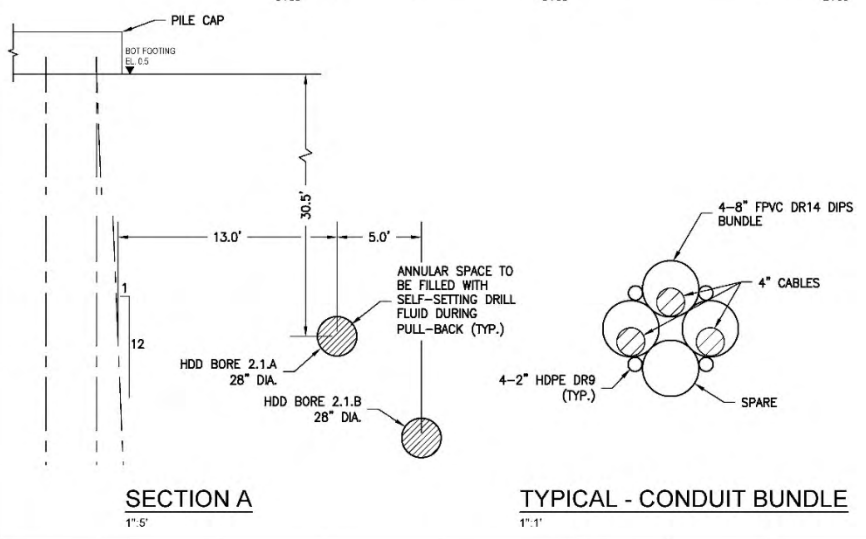
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| REV | DATE | REVISION DESCRIPTION | DESIGN | CHKD | APPROV |
| A | 03-18-20 | ISSUED FOR CONCEPT REVIEW | C.N. | EA | K.F. |
| CONTRACTOR: Stantec Stantec Consulting Services Inc. 400 Crown Colony Drive, Suite 300 Quincy, MA, U.S.A. 02169-0982 | | | | | |
| CLIENT: VINEYARD WIND 700 Pleasant Street, Suite 510 New Bedford, MA, 02740 | | | | | |
| TITLE: VINEYARD WIND - 501 SOUTH PROJECT CENTERVILLE RIVER CROSSING OPTION 2.1 | | | | | |
| CONTRACTOR DOC NO.: | | | | | |
| DRAWN: | EA | DATE: | 03-18-20 | SCALE: | AS SHOWN |
| EMPLOYER DOC NO.: | 02.1-1 | | SHEET: | 1 | REV.: |
| | | | ISSUED STATUS: | A | IFR |



PLAN-OPTION BORE 2.1.B
1"=30'



PROFILE-OPTION BORE 2.1.B
H 1"=30' V 1"=15'



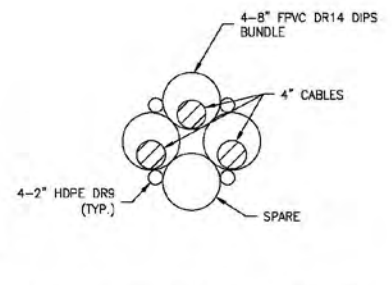
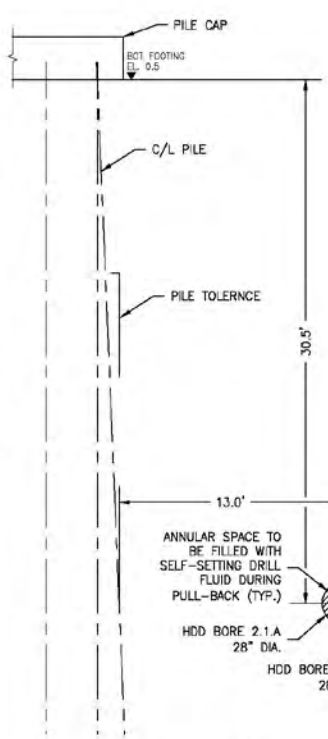
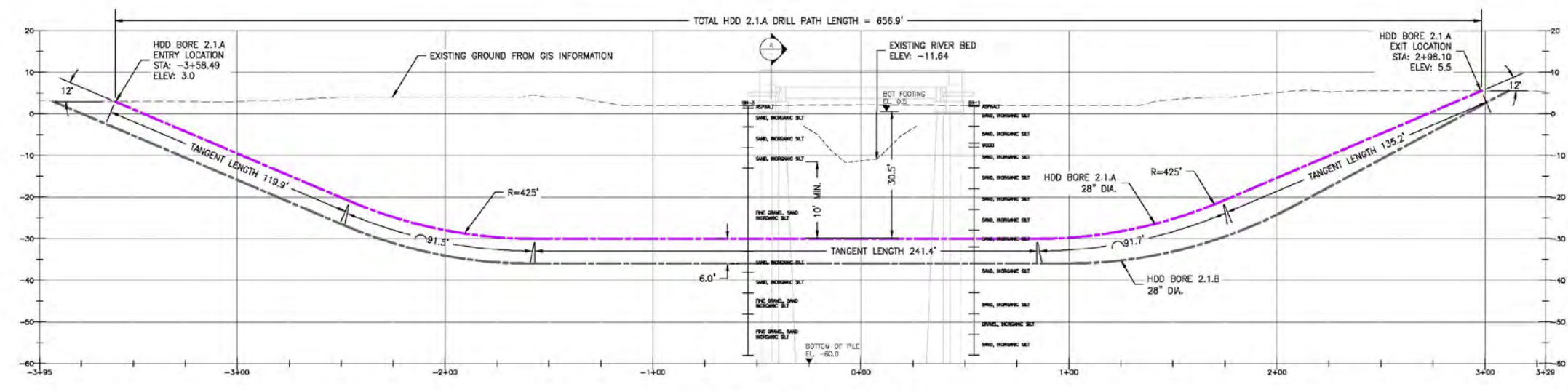
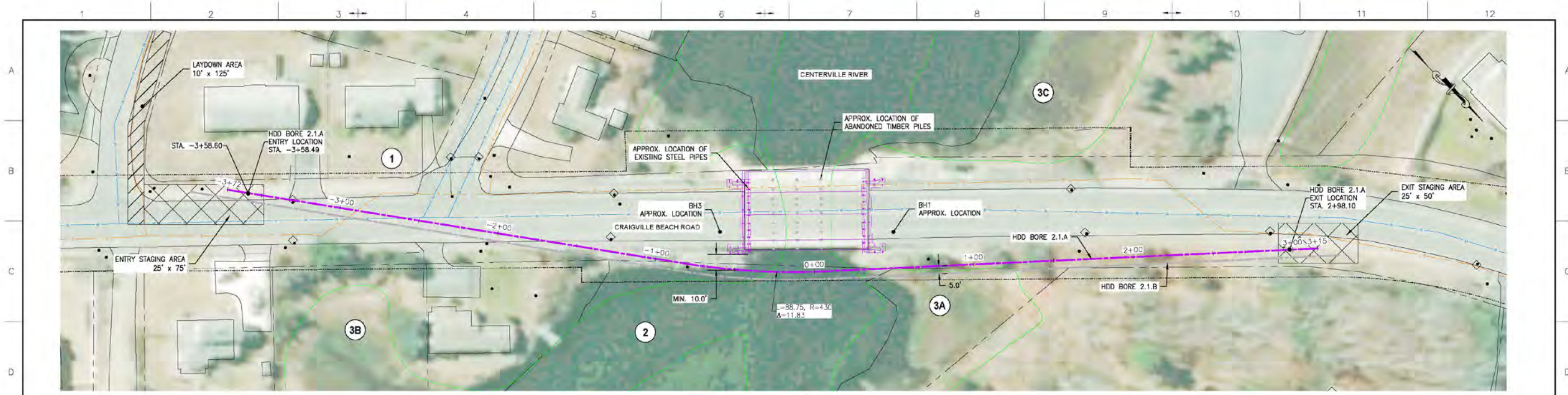
SECTION A
1"=5'

TYPICAL - CONDUIT BUNDLE
1"=1'

CONCEPTUAL LAYOUT

ALIGNMENT AND PROFILE SHOWN ARE PRELIMINARY AND TO BE CONFIRMED DURING DETAILED DESIGN.
PROFILE TO BE FINALIZED BASED ON SURVEY DATA AND GEOTECHNICAL INFORMATION.
GEOTECHNICAL DATA SHOWN AFTER 'BARNSTABLE - CRAIGVILLE BEACH ROAD OVER CENTERVILLE RIVER, SHEETS 2 & 3, MASS HIGHWAY 199'

| | | | | | |
|-----------------------------------------------------------------------------------------------------------|----------|---------------------------|------|------|---------------|
| REV | DATE | ISSUED FOR CONCEPT REVIEW | C.N. | EA | K.F. |
| A | 03-18-20 | | | | |
| CONTRACTOR: | | | | | |
| Stantec Consulting Services Inc. 400 Crown Colony Drive, Suite 300 Quincy, MA U.S.A. 02169-0982 | | | | | |
| CLIENT: | | | | | |
| VINEYARD WIND 700 Pleasant Street, Suite 510 New Bedford, MA 02740 | | | | | |
| TITLE: | | | | | |
| VINEYARD WIND - 501 SOUTH PROJECT CENTERVILLE RIVER CROSSING OPTION 2.1 | | | | | |
| CONTRACTOR DOC NO: | | | | | |
| DRAWN | DATE | SCALE | SIZE | D | VIEW |
| EA | 03-18-20 | AS SHOWN | D | | |
| EMPLOYERS DOC NO: | | SHEET: | | REV: | ISSUED STATUS |
| 02.1-2 | | 2 | | A | IFR |



| POTENTIAL WETLAND IMPACTS | | |
|------------------------------------|----------------------------------------------|-----------------------------------------|
| WETLAND AREA | LENGTH OF ALIGNMENT WITHIN WETLAND AREA (ft) | TEMPORARY IMPACT - WORKS AREA (sq. ft.) |
| 1 - BARRIER BEACH | 350 | 3100 |
| 2 - OPEN WATER (CENTERVILLE RIVER) | 50 | N/A |
| 3A - SALT MARSH NE OF BRIDGE | 10 | N/A |
| 3B - SALT MARSH SE OF BRIDGE | N/A | N/A |
| 3C - SALT MARSH NW OF BRIDGE | N/A | N/A |
| 200 FT FROM RIVERBANK | 670 | 1220 |

CONCEPTUAL LAYOUT
PROFILE TO BE FINALIZED BASED ON SURVEY DATA AND GEOTECHNICAL INFORMATION
GEOTECHNICAL DATA SHOWN AFTER "BARNSTABLE - CRAIGVILLE BEACH ROAD OVER CENTERVILLE RIVER, SHEETS 2 & 3, MASS HIGHWAY 1997"

| | | | | | |
|------|----------|---------------------------|------|------|------|
| REV. | DATE | ISSUED FOR CONCEPT REVIEW | C.N. | E.A. | K.F. |
| A | 05-09-19 | ISSUED FOR CONCEPT REVIEW | | | |

CONTRACTOR:
Stantec
Stantec Consulting Services Inc.
400 Green Gateway Drive Suite 200
Quincy, MA U.S.A. 02169-0952

CLIENT:
VINEYARD WIND
700 Pleasant Street, Suite 310
New Bedford, MA 02740

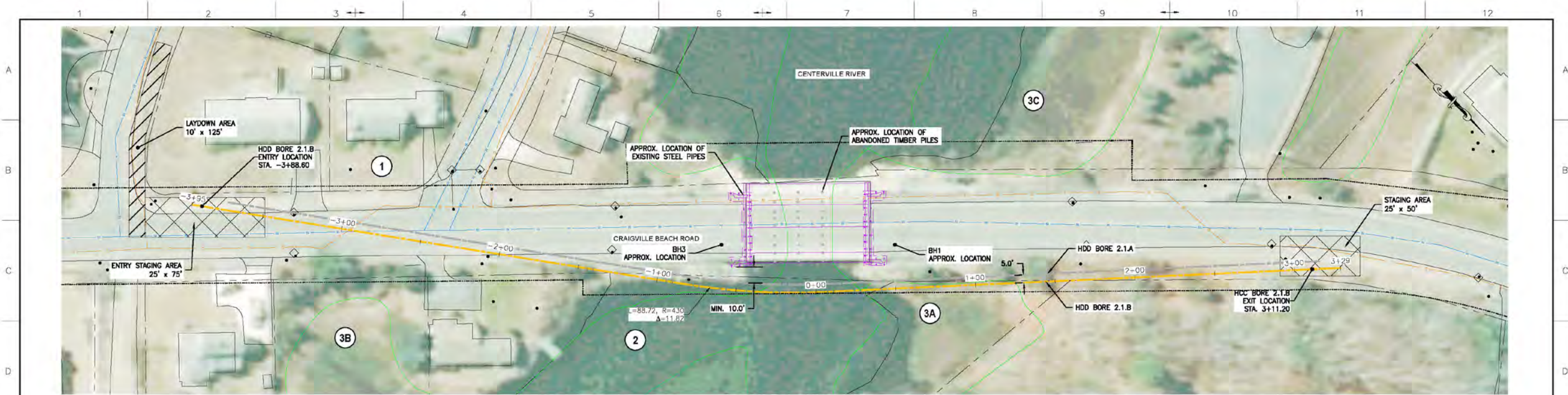
TITLE:
**VINEYARD WIND - 501 SOUTH PROJECT
CENTERVILLE RIVER CROSSING
OPTION 2.1 - BORE 2.1.A**

CONTRACTOR DOC NO.:

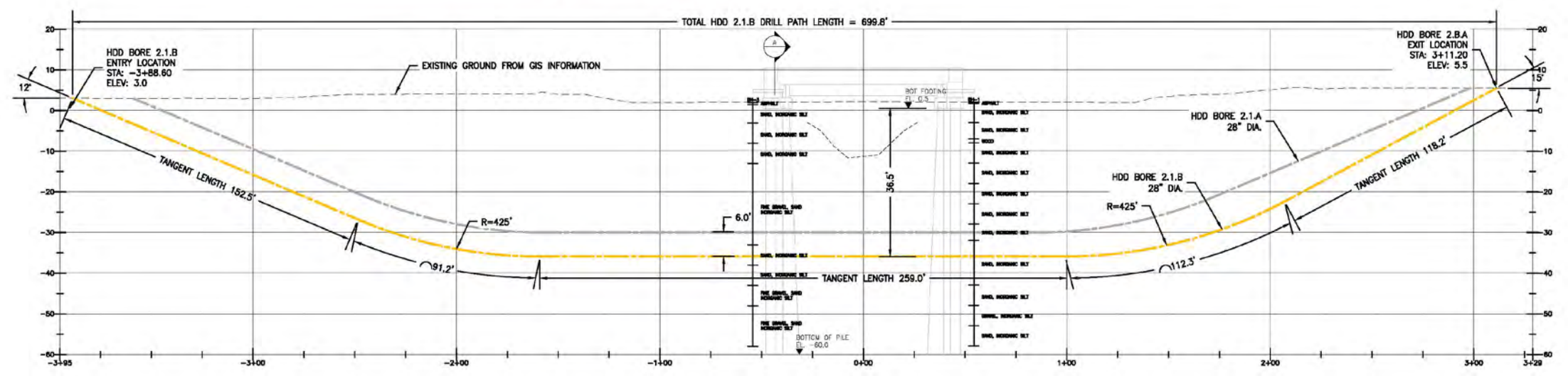
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| DRAWN: | DATE: | SCALE: | SIZE: | VIEW: |
| EA | 05-09-19 | AS SHOWN | D | |

EMPLOYER'S DOC NO.:

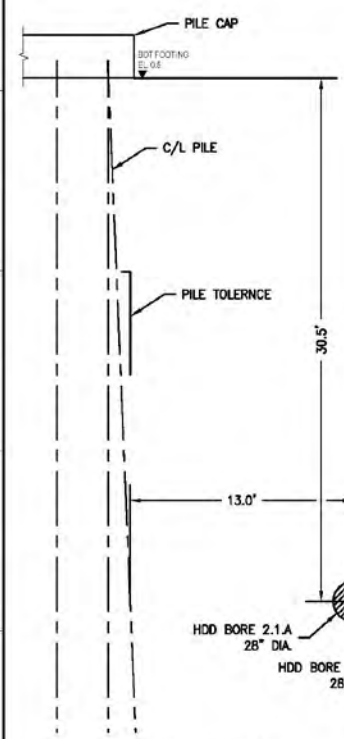
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| 02.1A | SHEETS: | REV: | ISSUED STATUS: |
| | 1 | A | IFR |



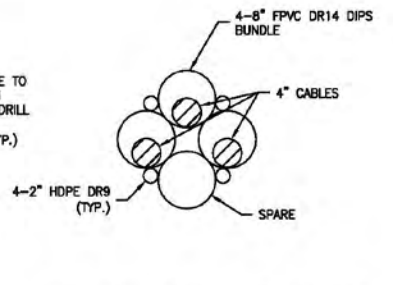
PLAN-OPTION BORE 2.1.B
1"=30'



PROFILE-OPTION BORE 2.1.B
H 1"=30' V 1"=15'



SECTION A
1"=5'



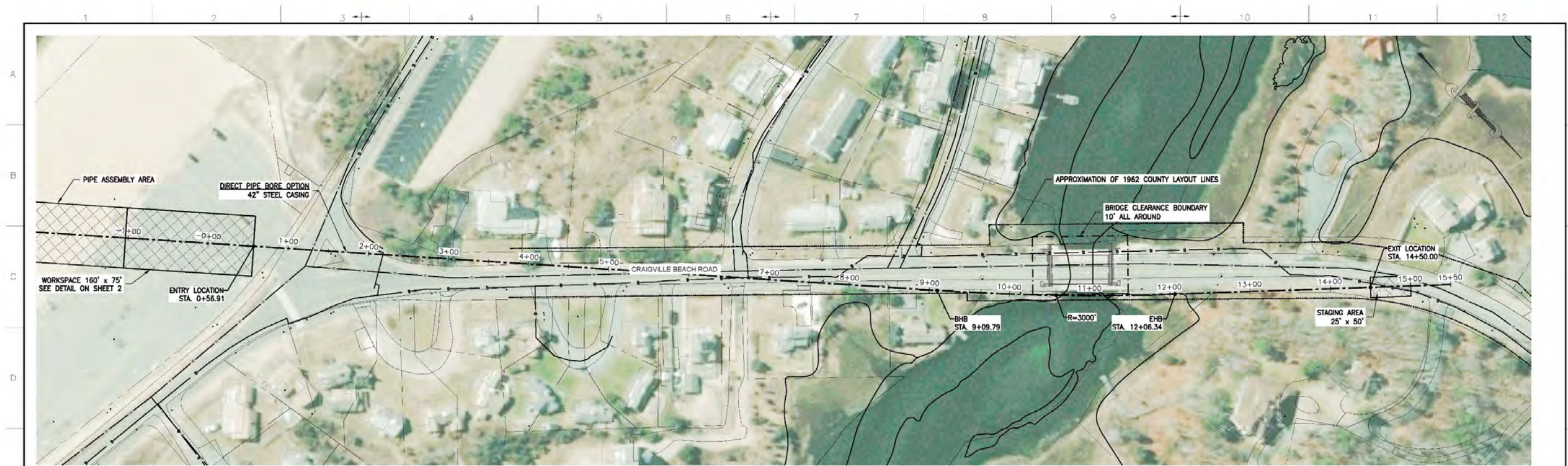
TYPICAL - CONDUIT BUNDLE
1"=1'

| POTENTIAL WETLAND IMPACTS | | |
|------------------------------------|----------------------------------------------|-----------------------------------------|
| WETLAND AREA | LENGTH OF ALIGNMENT WITHIN WETLAND AREA (ft) | TEMPORARY IMPACT - WORKS AREA (sq. ft.) |
| 1 - BARRIER BEACH | 345 | 3100 |
| 2 - OPEN WATER (CENTERVILLE RIVER) | 65 | N/A |
| 3A - SALT MARSH NE OF BRIDGE | 100 | N/A |
| 3B - SALT MARSH SE OF BRIDGE | N/A | N/A |
| 3C - SALT MARSH NW OF BRIDGE | N/A | N/A |
| 200 FT FROM RIVERBANK | 670 | 1220 |

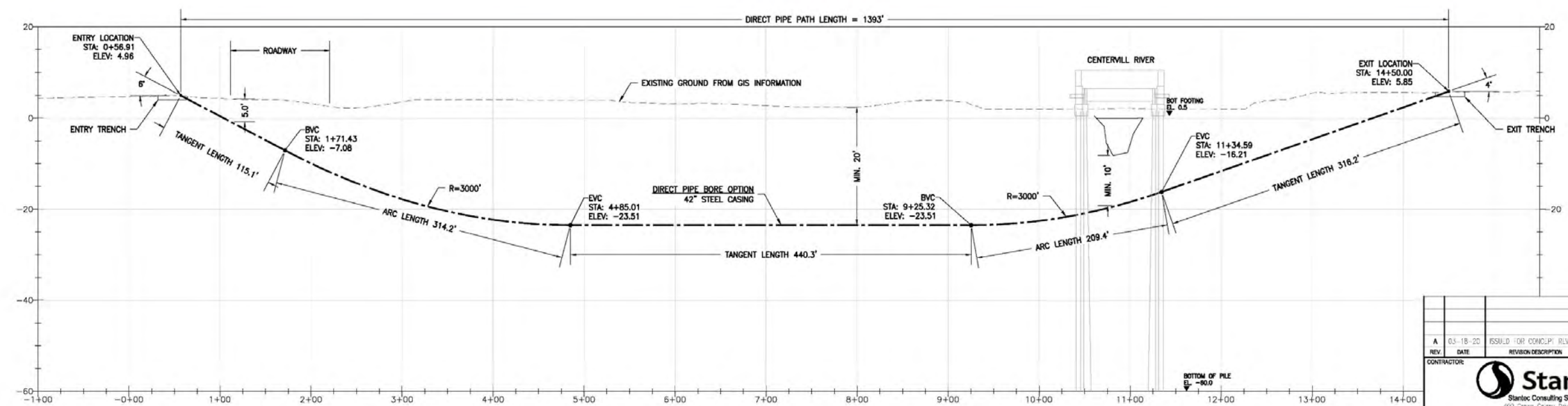
CONCEPTUAL LAYOUT

PROFILE TO BE FINALIZED BASED ON SURVEY DATA AND GEOTECHNICAL INFORMATION
 GEOTECHNICAL DATA SHOWN AFTER 'BARNSTABLE - CRAIGVILLE BEACH ROAD OVER CENTERVILLE RIVER, SHEETS 2 & 3, MASS HIGHWAY 199'

| | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------|-------|----------------|------|
| REV. | DATE | ISSUED FOR CONCEPT REVIEW | C.N. | E.A. | K.F. |
| A | 05-05-19 | ISSUED FOR CONCEPT REVIEW | | | |
| CONTRACTOR: Stantec Stantec Consulting Services Inc. 400 Crown Colony Drive, Suite 200 Quincy, MA 01906, USA 01-857-3952 | | | | | |
| CLIENT: VINEYARD WIND 700 Pleasant Street, Suite 310 New Bedford, MA 02740 | | | | | |
| TITLE: VINEYARD WIND - 501 SOUTH PROJECT CENTERVILLE RIVER CROSSING OPTION 2.1 - BORE 2.1.B | | | | | |
| CONTRACTOR DOC NO.: | | | | | |
| DRAWN: | DATE: | SCALE: | SIZE: | VIEW: | |
| EA | 05-05-19 | AS SHOWN | D | | |
| EMPLOYERS DOC NO.: | 02.1B | SHEET: | REV: | ISSUED STATUS: | |
| | | 2 | A | IFR | |



PLAN - DIRECT PIPE OPTION
1" = 60'



PROFILE - DIRECT PIPE OPTION
H 1"=60' V 1"=12'

CONCEPTUAL LAYOUT

ALIGNMENT AND PROFILE SHOWN ARE PRELIMINARY AND TO BE CONFIRMED DURING DETAILED DESIGN.
PROFILE TO BE FINALIZED BASED ON SURVEY DATA AND GEOTECHNICAL INFORMATION.
GEOTECHNICAL DATA SHOWN AFTER "BARNSTABLE - CRAIGVILLE BEACH ROAD OVER CENTERVILLE RIVER, SHEETS 2 & 3, MASS HIGHWAY 1997"

| REV. | DATE | REVISION DESCRIPTION | DRAWN | CHKD | APPROV |
|------|----------|---------------------------|-------|------|--------|
| A | 03-18-20 | ISSUED FOR CONCEPT REVIEW | E.N. | L.A. | K.J. |

CONTRACTOR:
Stantec
Stantec Consulting Services Inc.
403 Crown Colony Drive, Suite 200
Grafton, MA 01519, USA, 603-881-0927

CLIENT:
VINEYARD WIND
700 Pleasant Street, Suite 510
New Bedford, MA 01940

TITLE:
**VINEYARD WIND - 501 SOUTH PROJECT
CENTERVILLE RIVER CROSSING
OPTION 3.2**

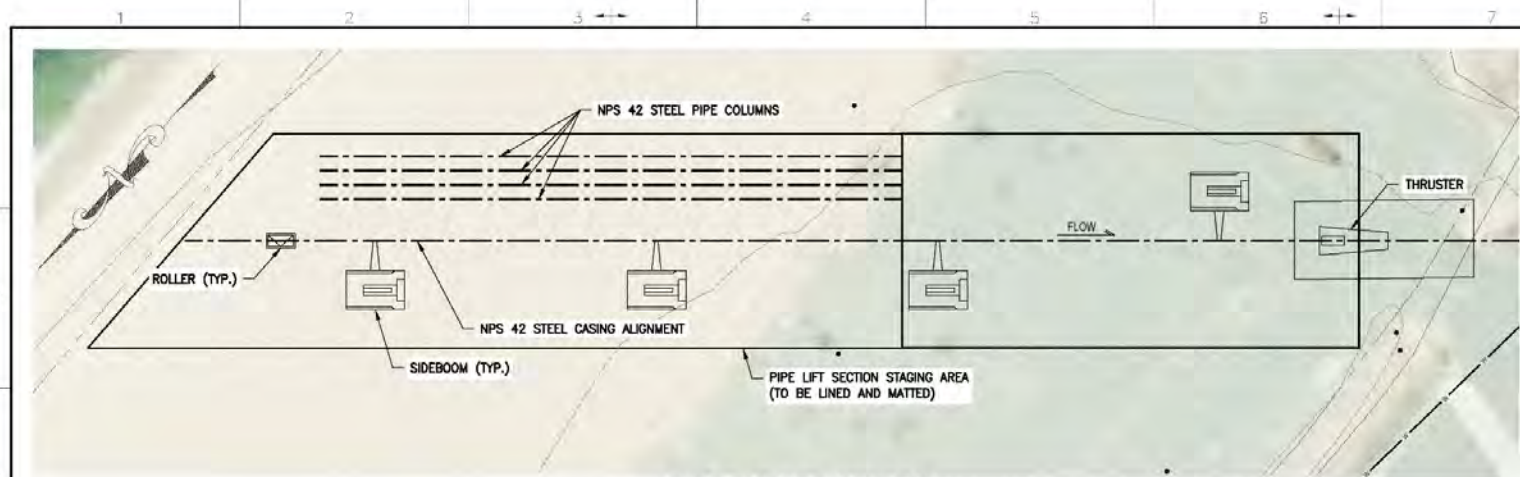
CONTRACTOR DOC NO.:

| DRAWN | DATE | SCALE | SHEET | VIEW |
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| FA | 03-18-2020 | AS SHOWN | 1 | A |

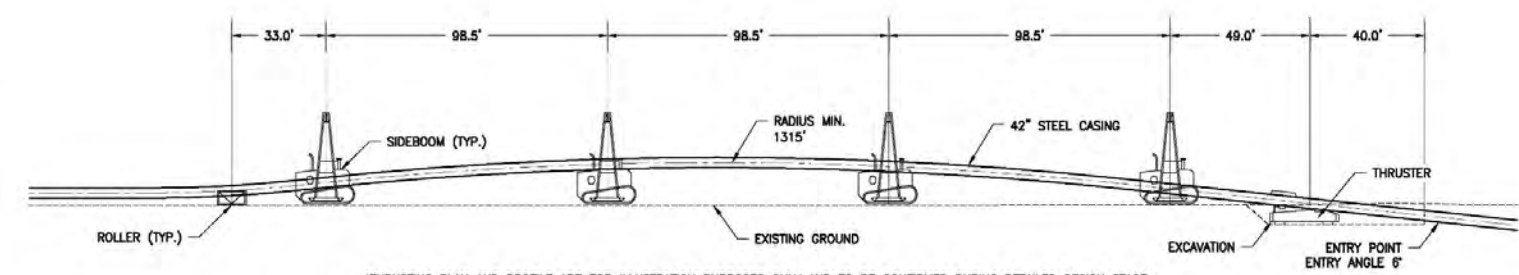
EMPLOYERS DOC NO. 03.2-1

SHEET 1 OF 1

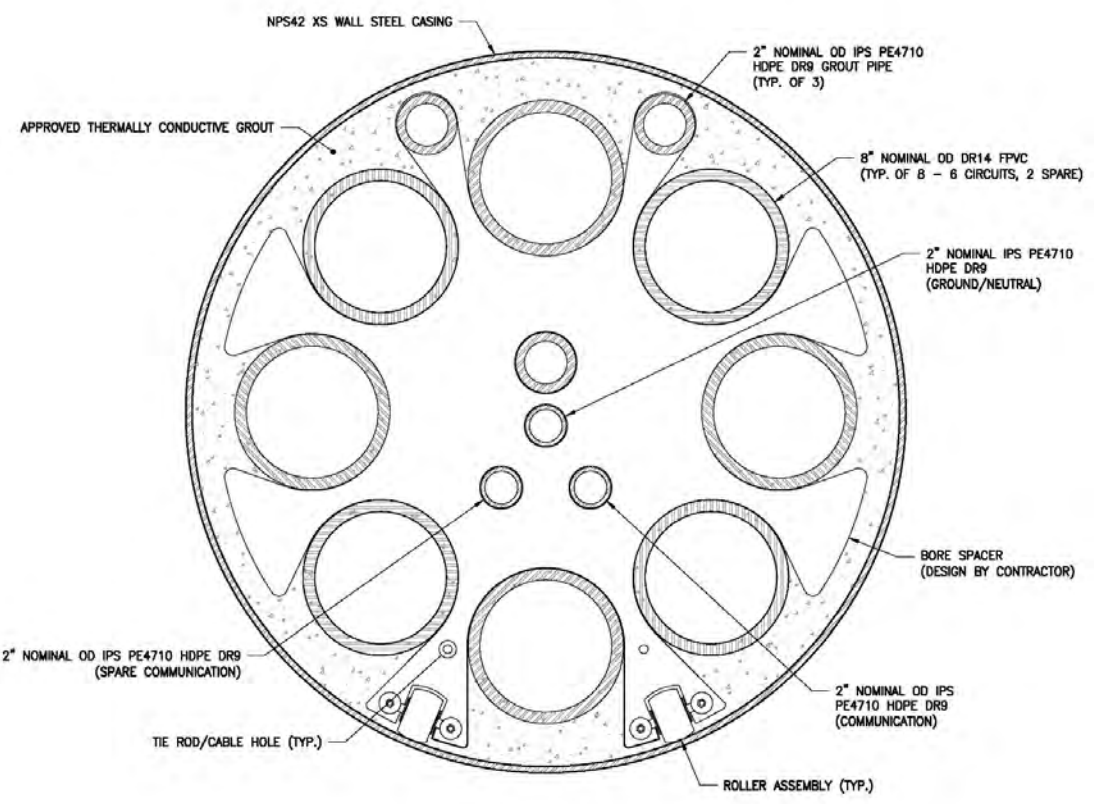
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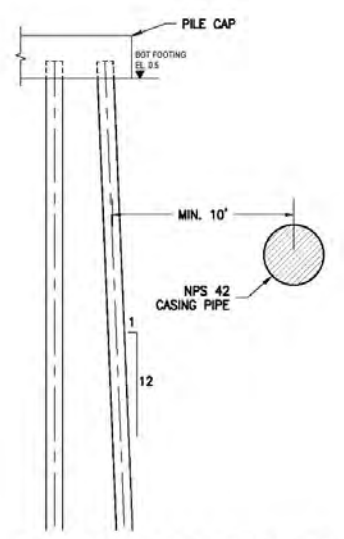
PIPE THRUSTING PLAN
1" = 30'



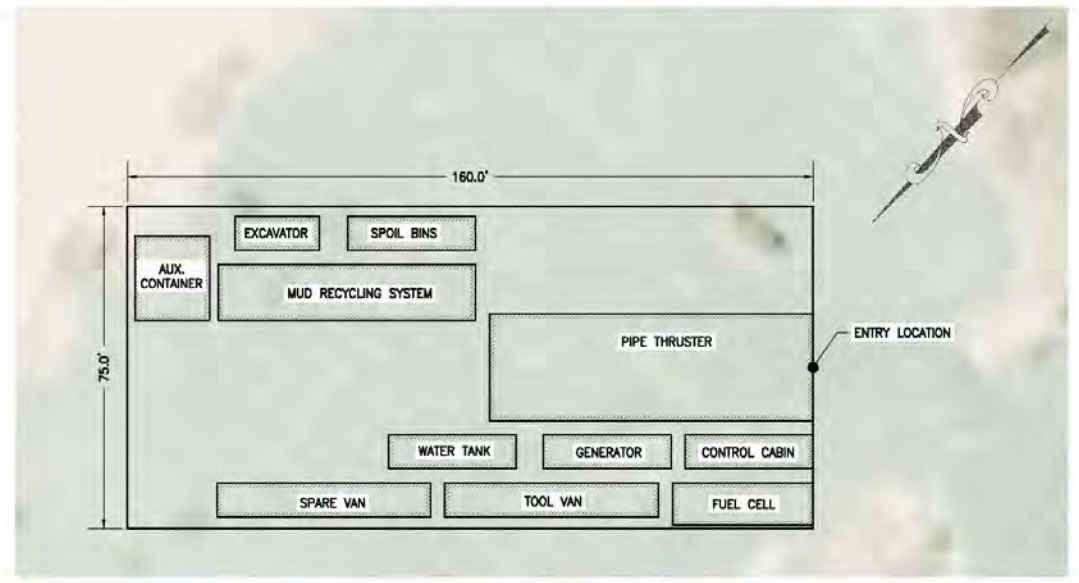
PIPE THRUSTING PROFILE
1" = 30'



TYPICAL - CROSS-SECTION
1" = 5'

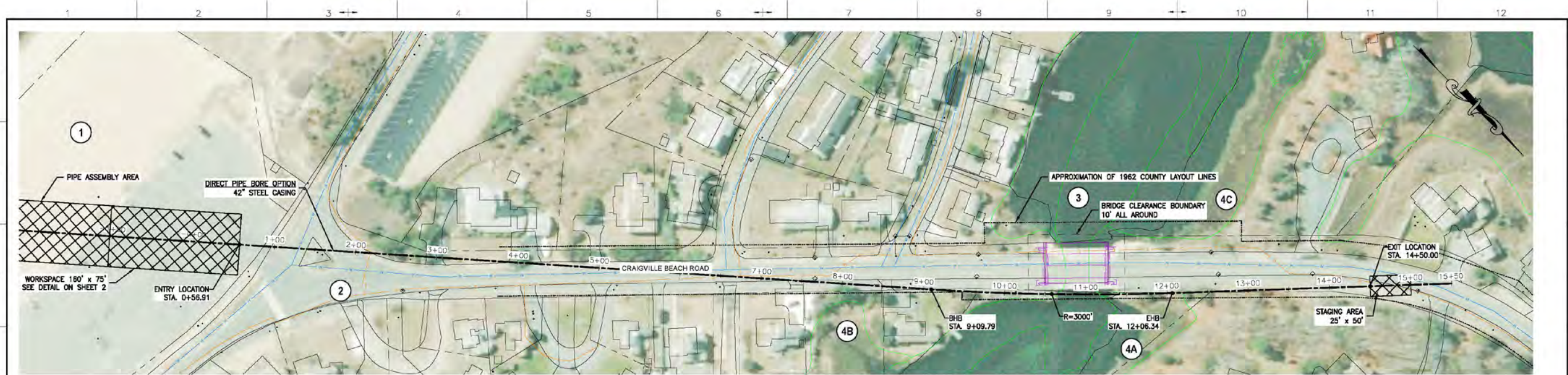


TYPICAL - BRIDGE SECTION
1" = 5'

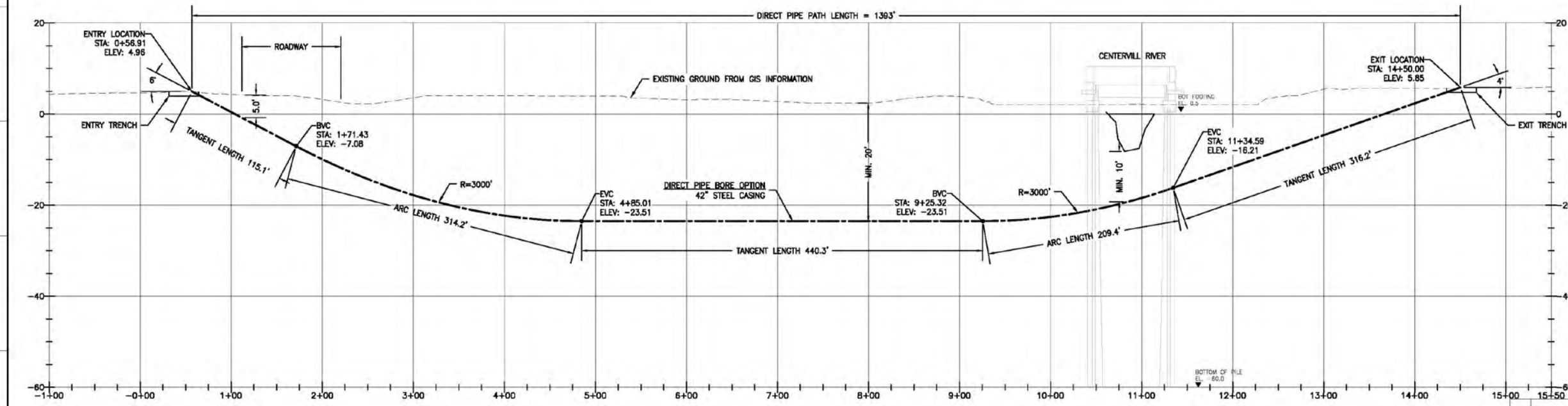


DETAIL - EQUIPMENT LAYOUT
1" = 20'

| | | | | | |
|---------------------------------------------------------------------------------------------------------------------|----------|---------------------------|-------|---------------|------|
| REV. | DATE | ISSUED FOR CONCEPT REVIEW | D.N. | E.A. | K.F. |
| A | 03-19-20 | | | | |
| CONTRACTOR | | | | | |
| Stantec Stantec Consulting Services Inc. 400 Crown Colony Drive Suite 200 Quincy, MA 01913-0987 | | | | | |
| CLIENT | | | | | |
| VINEYARD WIND 700 Pleasant Street, Suite 810 New Bedford, MA 02740 | | | | | |
| TITLE | | | | | |
| VINEYARD WIND - 501 SOUTH PROJECT CENTERVILLE RIVER CROSSING OPTION 3.2 | | | | | |
| CONTRACTOR DOC NO. | | | | | |
| DRAWN | | | | | |
| EA | DATE | 03-18-2020 | SCALE | AS SHOWN | SIDE |
| EMPLOYER DOC NO. | 03.2-2 | SHEET | 2 | REV | A |
| | | | | ISSUED STATUS | IFR |



PLAN - DIRECT PIPE OPTION
1" = 60'



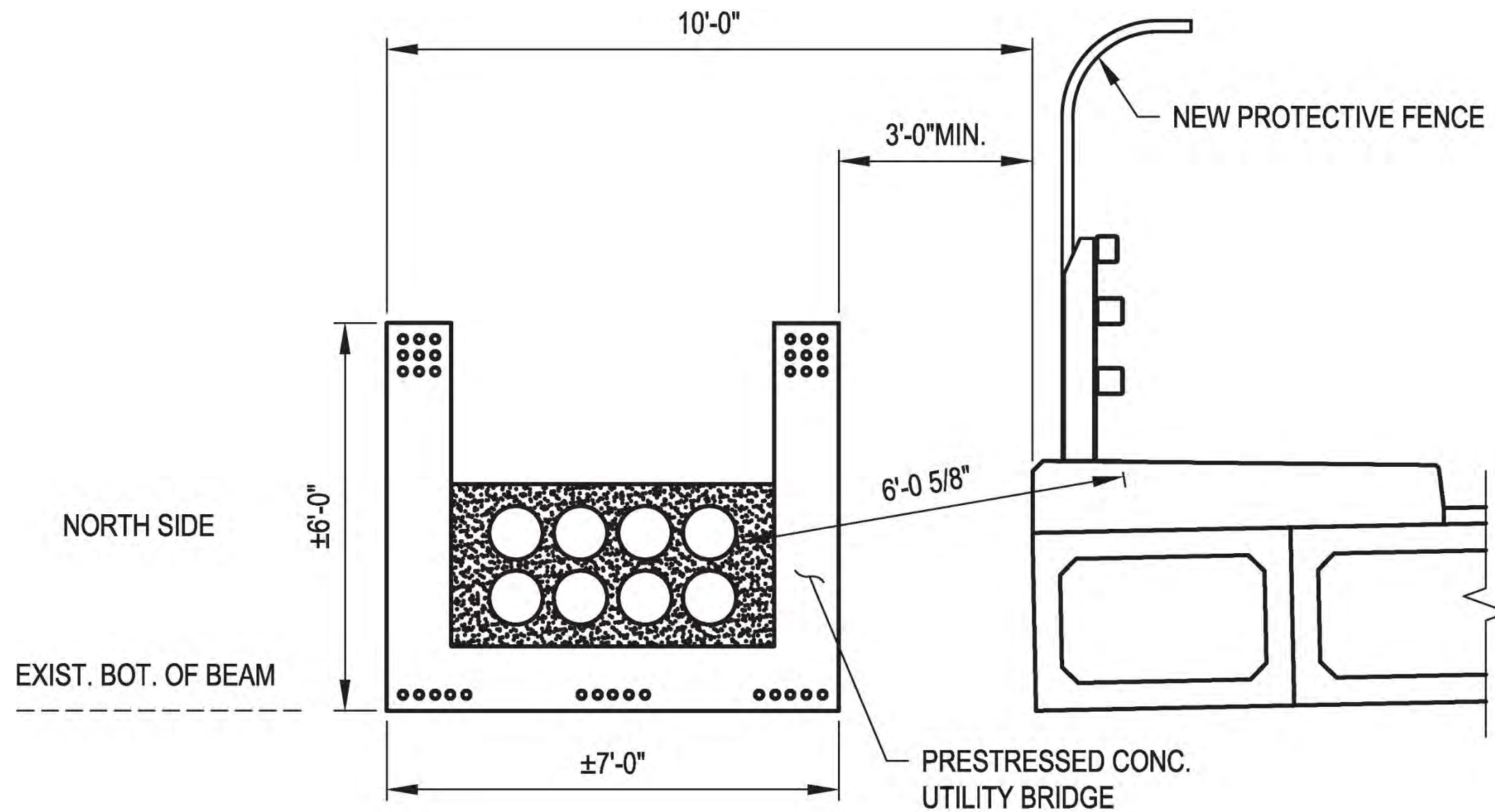
PROFILE - DIRECT PIPE OPTION
H 1" = 60' V 1" = 12'

| POTENTIAL WETLAND IMPACTS | | |
|------------------------------------|----------------------------------------------|-----------------------------------------|
| WETLAND AREA | LENGTH OF ALIGNMENT WITHIN WETLAND AREA (ft) | TEMPORARY IMPACT - WORKS AREA (sq. ft.) |
| 1 - BARRIER BEACH - COASTAL BEACH | N/A | 17100 |
| 2 - BARRIER BEACH SYSTEM | 1008 | 13800 |
| 3 - OPEN WATER (CENTERVILLE RIVER) | 53 | N/A |
| 4A - SALT MARSH NE OF BRIDGE | 98 | N/A |
| 4B - SALT MARSH SE OF BRIDGE | N/A | N/A |
| 4C - SALT MARSH NW OF BRIDGE | N/A | N/A |
| 200 FT FROM RIVERBANK | 698 | N/A |

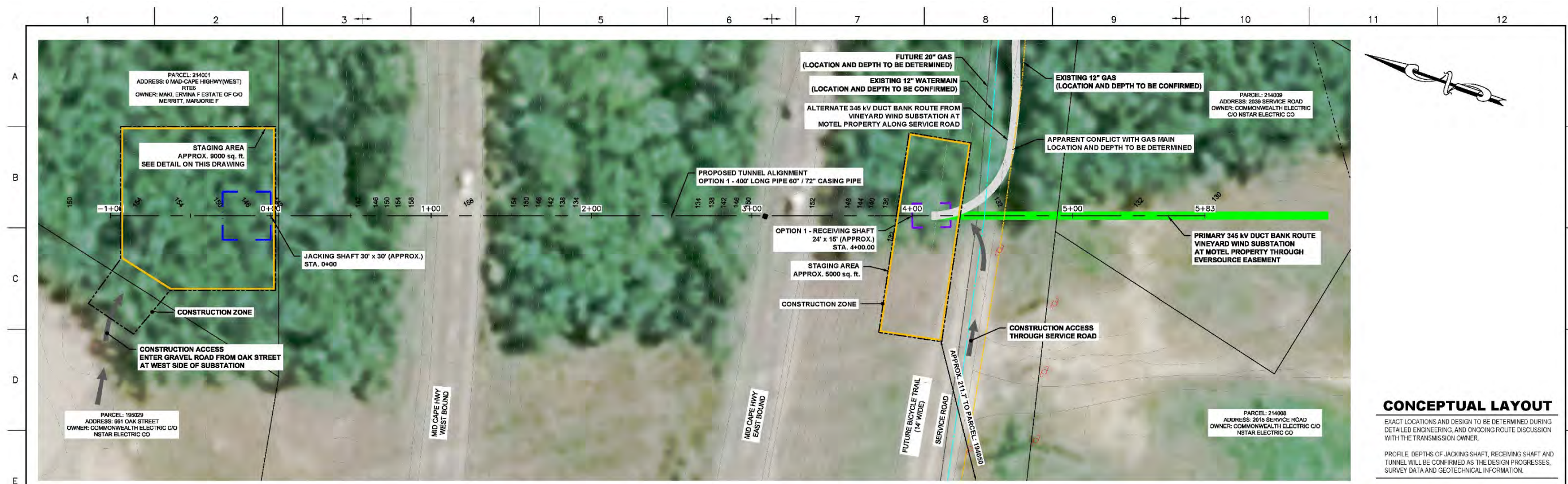
CONCEPTUAL LAYOUT

ALIGNMENT AND PROFILE SHOWN ARE PRELIMINARY AND TO BE CONFIRMED DURING DETAILED DESIGN.
PROFILE TO BE FINALIZED BASED ON SURVEY DATA AND GEOTECHNICAL INFORMATION.
GEOTECHNICAL DATA SHOWN AFTER "BARNSTABLE - CRAIGVILLE BEACH ROAD OVER CENTERVILLE RIVER, SHEETS 2 & 3, MASS HIGHWAY 1967"

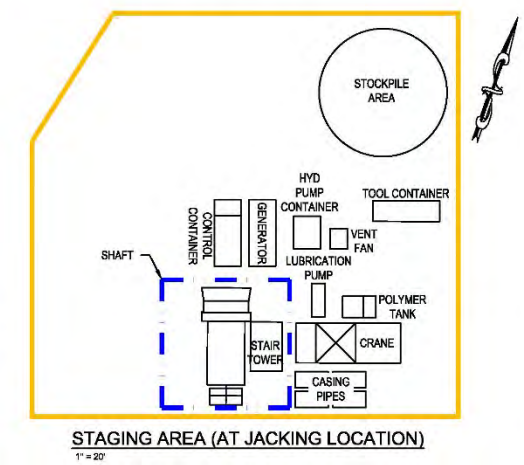
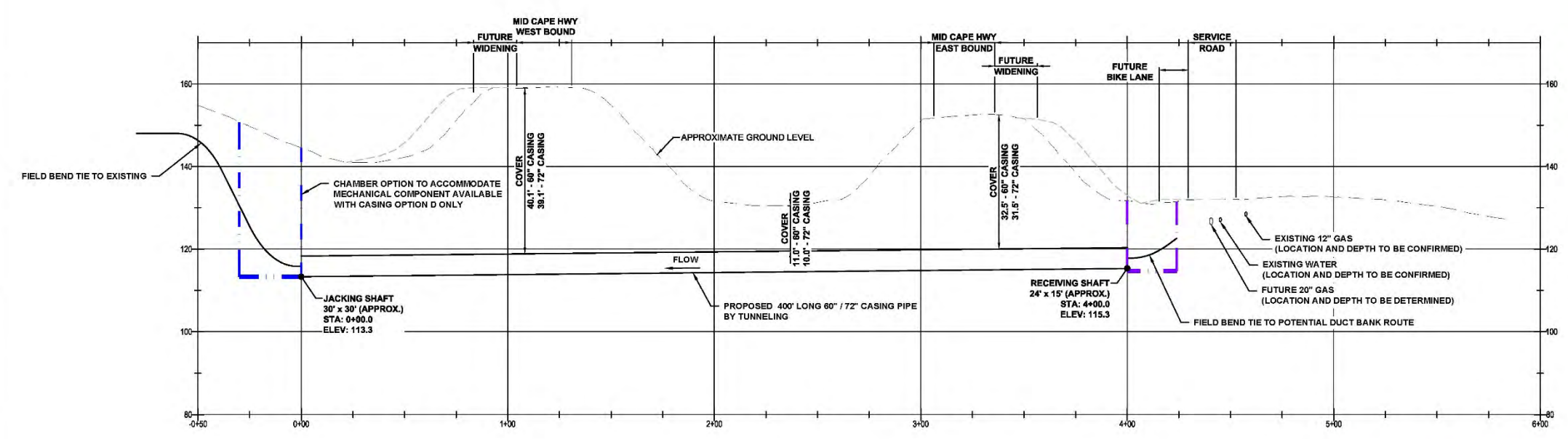
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| REV. | DATE | REVISION DESCRIPTION | DRAWN | CHKD | APPROV |
| A | 03-18-20 | ISSUED FOR CONCEPT REVIEW | C.N. | E.A. | K.J.F. |
| CONTRACTOR: | | | | | |
| Stantec Stantec Consulting Services Inc. 400 Crown Colony Drive, Suite 200 Dunlop, MA, U.S.A. 02158-0982 | | | | | |
| CLIENT: | | | | | |
| VINEYARD WIND 700 Pleasant Street, Suite 510 New Bedford, MA, 02740 | | | | | |
| TITLE: | | | | | |
| VINEYARD WIND - 501 SOUTH PROJECT CENTERVILLE RIVER CROSSING OPTION 3.2 | | | | | |
| CONTRACTOR DOC NO.: | | | | | |
| DRAWN: EA DATE: 03-18-2020 SCALE: AS SHOWN SIZE: D VIEW: | | | | | |
| EMPLOYERS DOC NO.: | | | | | |
| SHEET: 1 REV: A ISSUED STATUS: IFR | | | | | |



OPTION 4.1 - PROP. UTILITY BRIDGE - HORIZ. ARRAY
(LOOKING EAST)



PLAN
 1" = 30'



| REV. | DATE | REVISION DESCRIPTION | STATUS | DRAWN | CHKD | APPROV |
|------|------------|--------------------------|--------|-------|------|--------|
| 0.2 | 2020-05-01 | ISSUED FOR CLIENT REVIEW | IFR | CN | NG | KEF |
| 0.1 | 2020-04-10 | ISSUED FOR CLIENT REVIEW | IFR | CN | NG | KEF |
| 0.0 | 2020-01-31 | ISSUED FOR REVIEW | IFR | CN | NG | KEF |

CONTRACTOR: **Stantec**
 Stantec Consulting Services Inc.
 400 Crown Colony Drive Suite 200
 Quincy, MA, U.S.A. 02269-0882

CLIENT: **VINEYARD WIND**
 700 Pleasant Street, Suite 510
 New Bedford, MA 02740

PROJECT: **VINEYARD WIND CONNECTOR 2
 DUCT BANK**

TITLE: **ROUTE 6 CROSSING - HDD DRILL PATH
 OPTION 1 - PLAN AND PROFILE**

DOC ID: **PCW-OCF-STC-DW-0017**

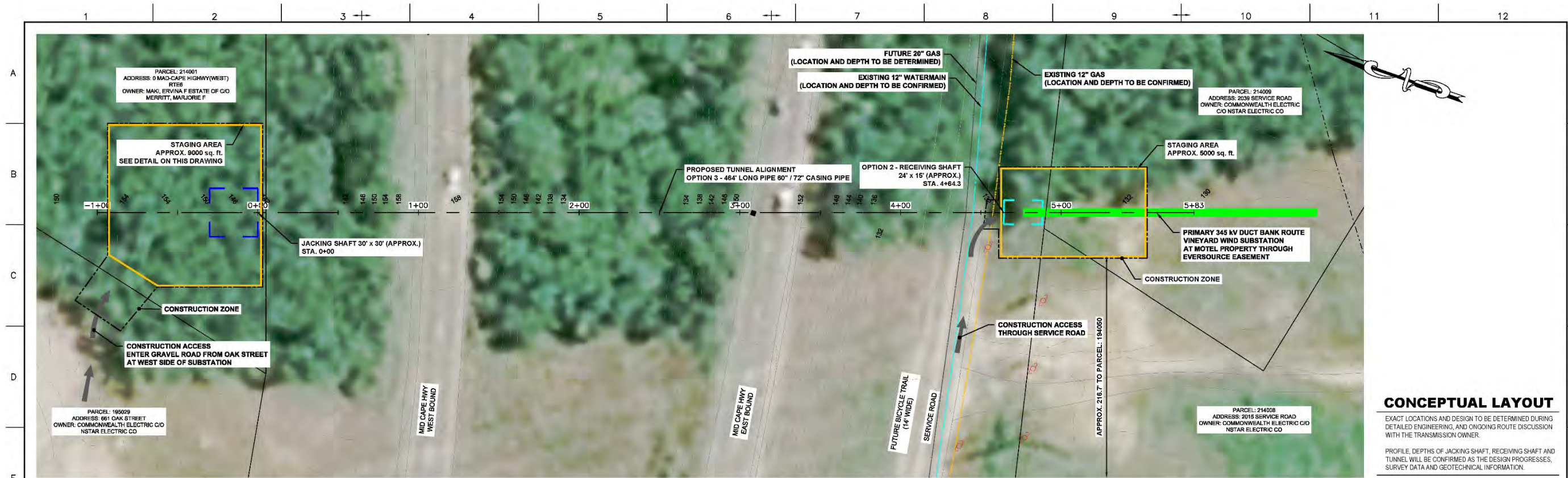
SHEET OF: 31 OF 31

SCALE: AS SHOWN

FORMAT/SIZE: ANSI D

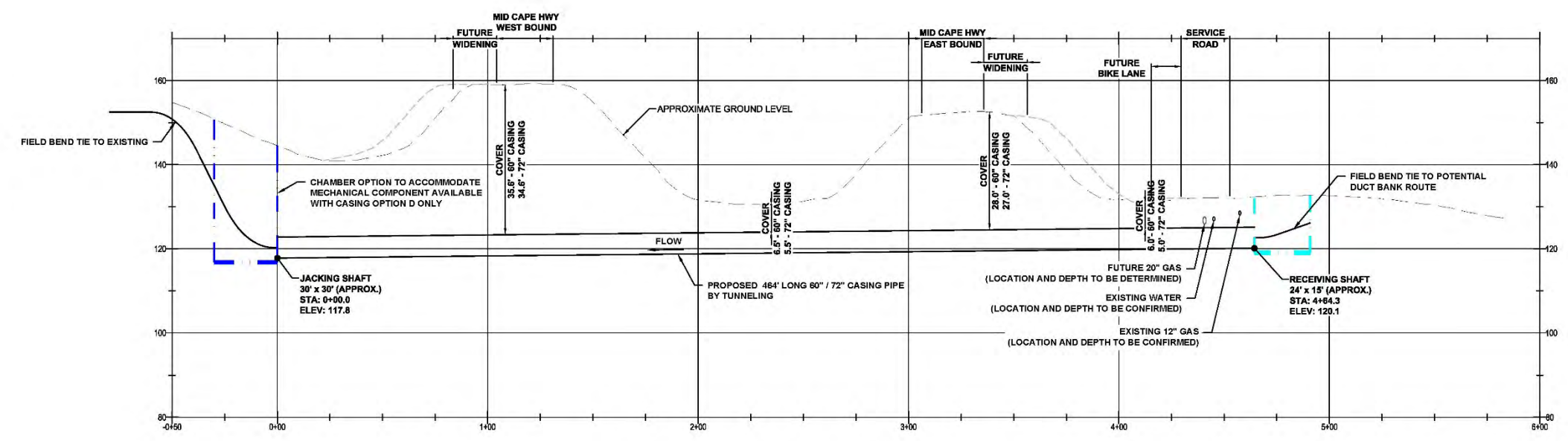
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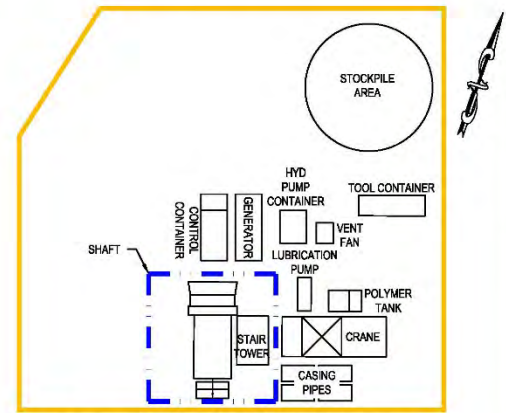


CONCEPTUAL LAYOUT
 EXACT LOCATIONS AND DESIGN TO BE DETERMINED DURING DETAILED ENGINEERING, AND ONGOING ROUTE DISCUSSION WITH THE TRANSMISSION OWNER.
 PROFILE, DEPTHS OF JACKING SHAFT, RECEIVING SHAFT AND TUNNEL WILL BE CONFIRMED AS THE DESIGN PROGRESSES, SURVEY DATA AND GEOTECHNICAL INFORMATION.

PLAN
 1" = 30'



PROFILES
 H 1" = 30'
 V 1" = 15'



STAGING AREA (AT JACKING LOCATION)
 1" = 20'

| REV | DATE | REVISION DESCRIPTION | STATUS | DRAWN | CHKD | APPROV |
|-----|------------|--------------------------|--------|-------|------|--------|
| 0.2 | 2020-05-01 | ISSUED FOR CLIENT REVIEW | IFR | CN | NG | KEF |
| 0.1 | 2020-04-10 | ISSUED FOR CLIENT REVIEW | IFR | CN | NG | KEF |
| 0.0 | 2020-01-31 | ISSUED FOR REVIEW | IFR | CN | NG | KEF |

CONTRACTOR: **Stantec**
 Stantec Consulting Services Inc.
 400 Crown Colony Drive Suite 200
 Quincy, MA, U.S.A. 02268-0962

CLIENT: **VINEYARD WIND**
 700 Pleasant Street, Suite 510
 New Bedford, MA, 02740

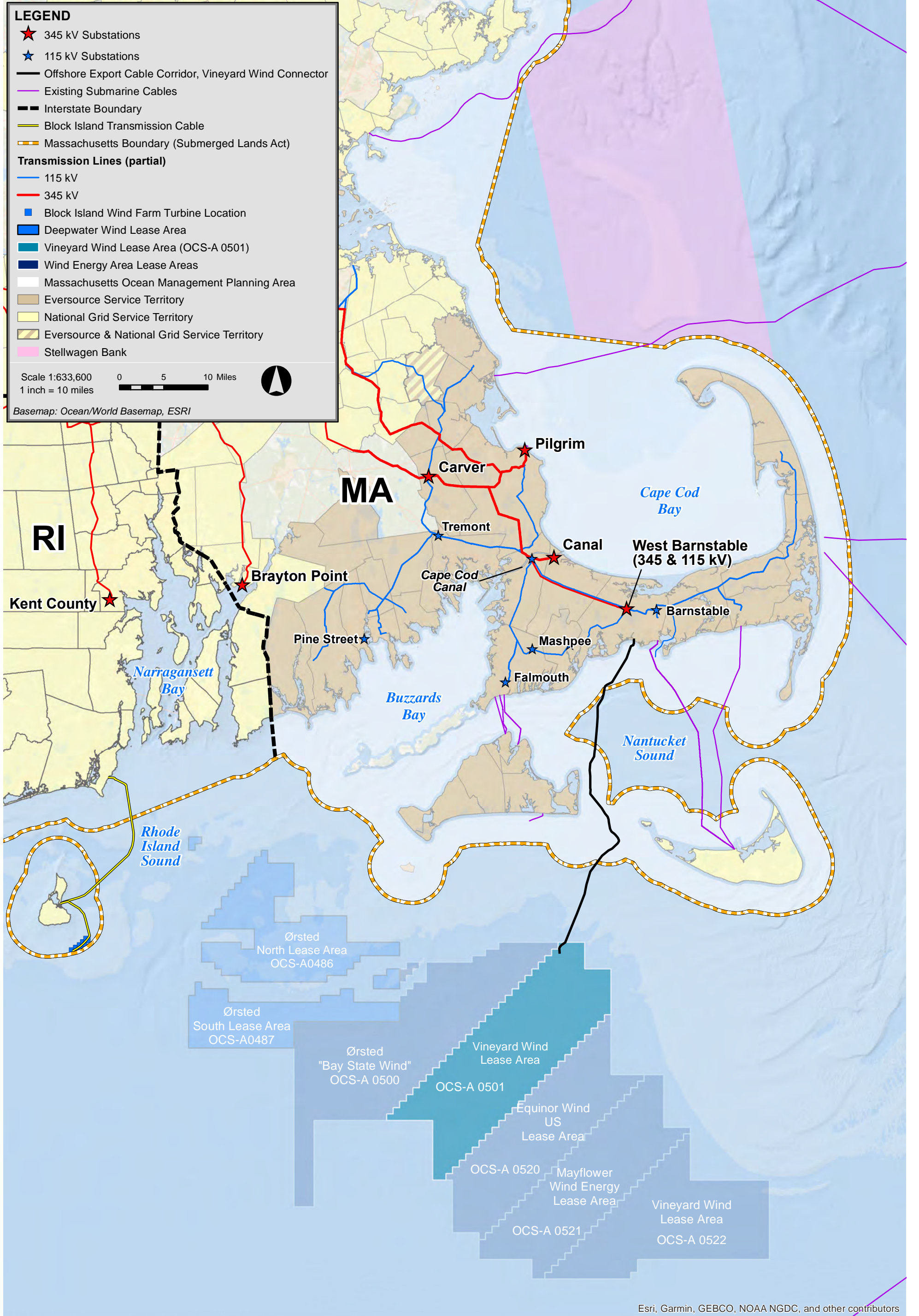
PROJECT: **VINEYARD WIND CONNECTOR 2
 DUCT BANK**

TITLE: **ROUTE 6 CROSSING - HDD DRILL PATH
 OPTION 2 - PLAN AND PROFILE**

DOCID: **PCW-OCP-STC-DW-0018**

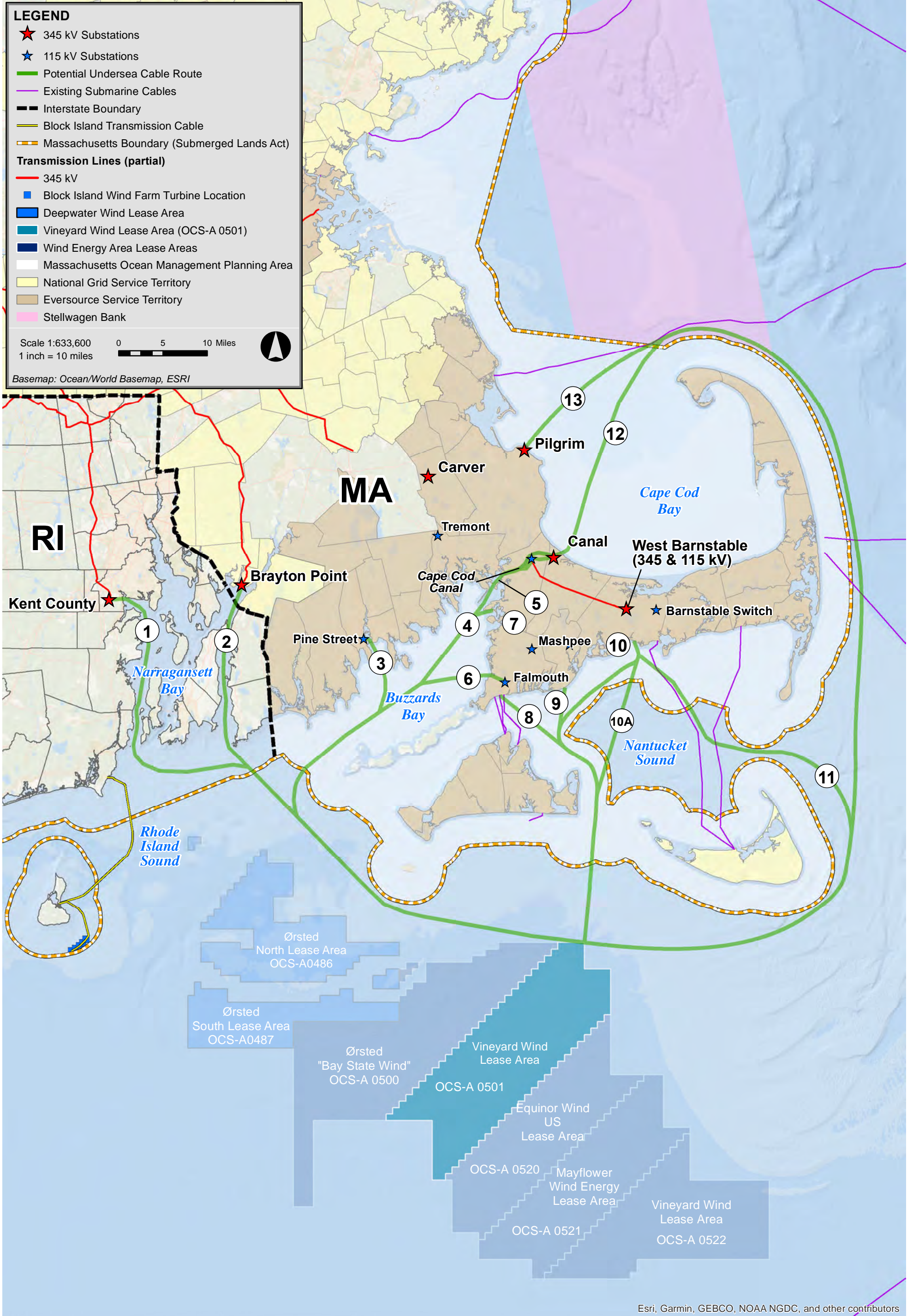
SHEET: 31 OF 31
 DWG. NO.:
 SCALE: AS SHOWN
 FORMAT/SIZE: ANSI D
 REV: 0.2

THIS PLAN SET IS CONCEPTUAL AND HAVE BEEN ISSUED FOR PERMITTING PURPOSES ONLY; AND, ARE NOT INTENDED FOR CONSTRUCTION PURPOSES.



Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

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Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

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Vineyard Wind Connector 2



Figure 4-2
Routing Universe



This product is for informational purposes and may not be suitable for legal, engineering, or surveying purposes.

Vineyard Wind Connector 2

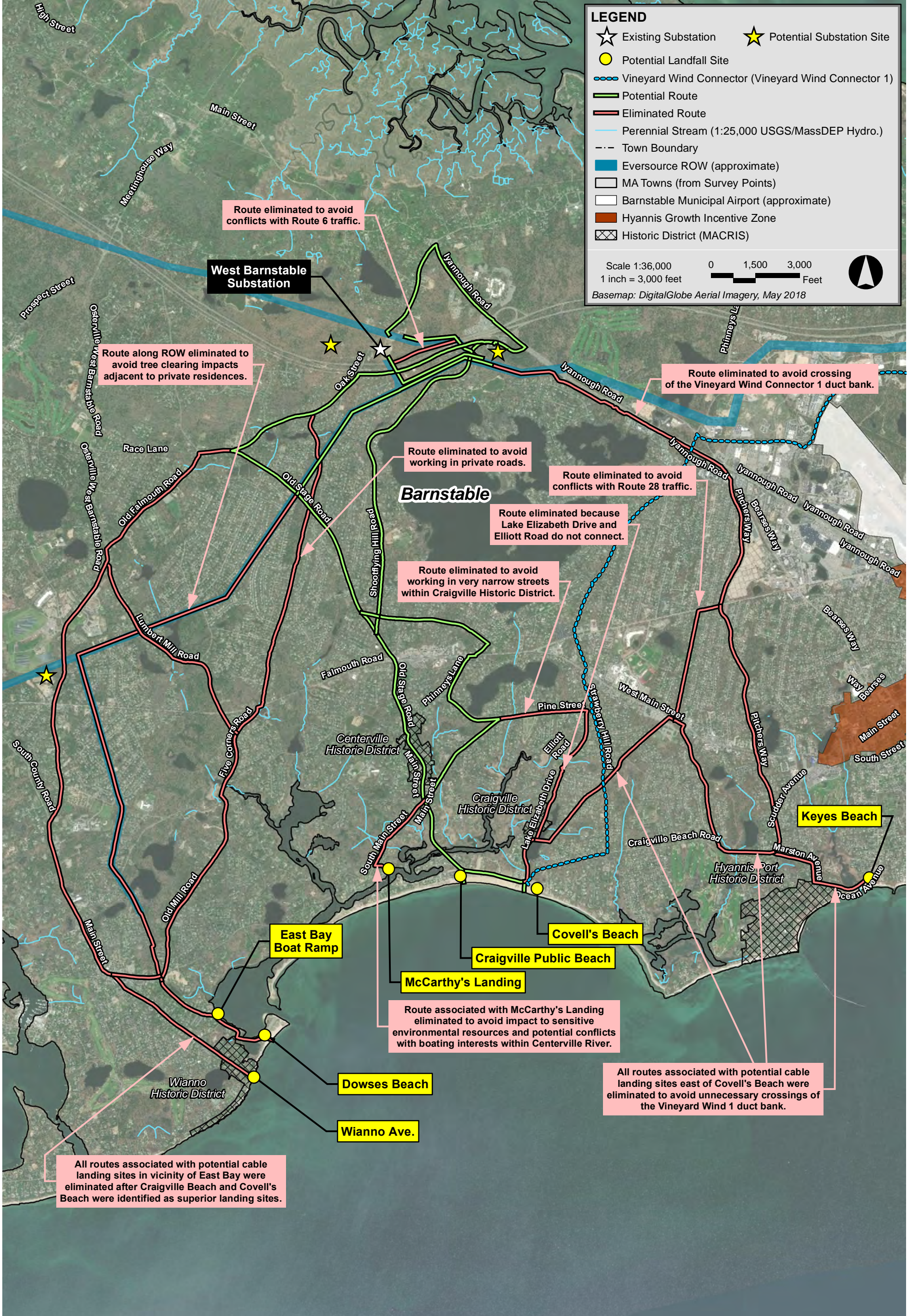


Figure 4-3
Initial Landfall Site Screening

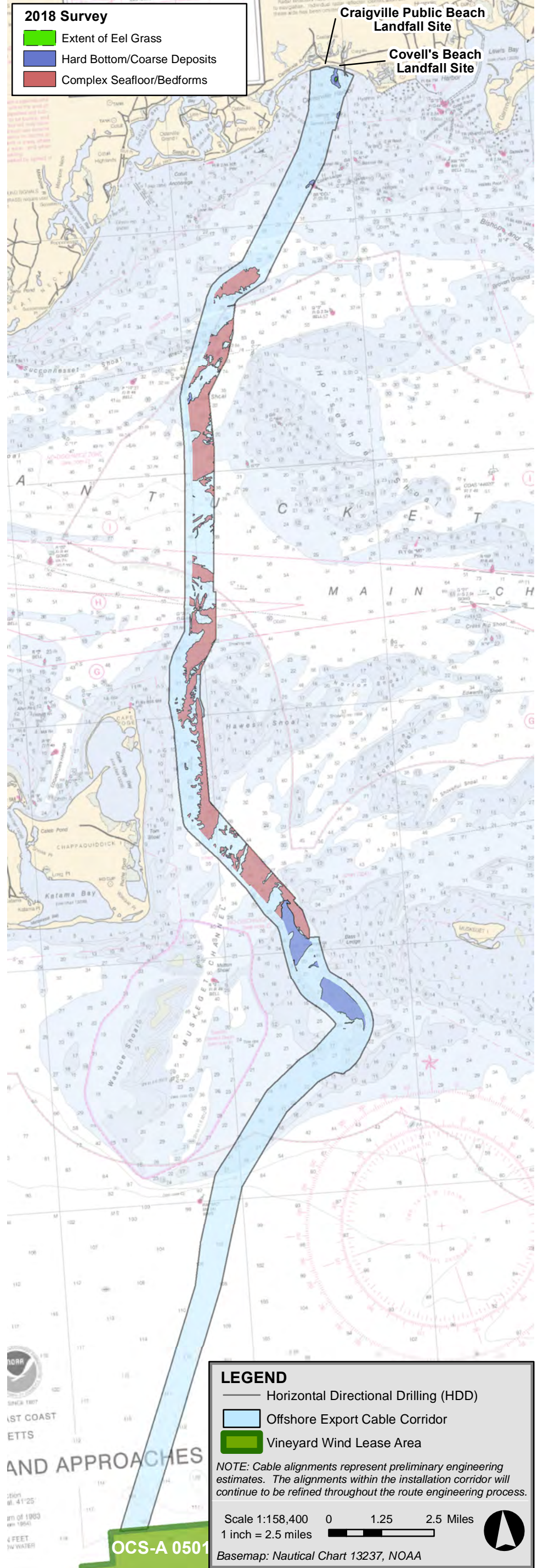
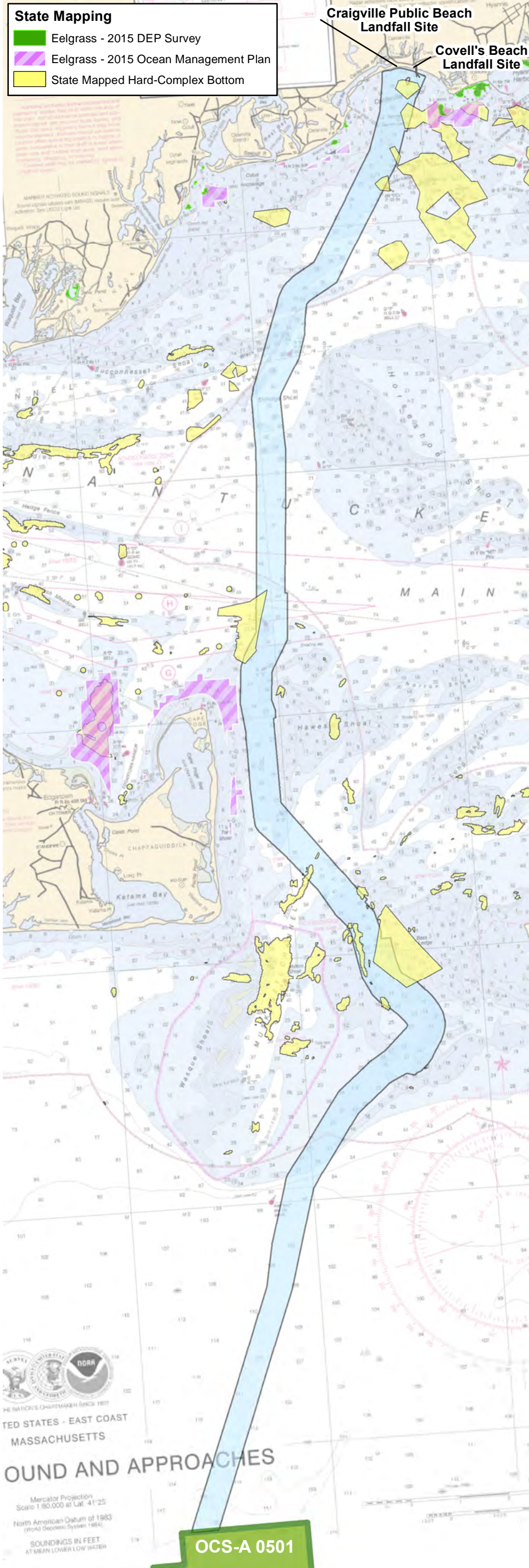


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

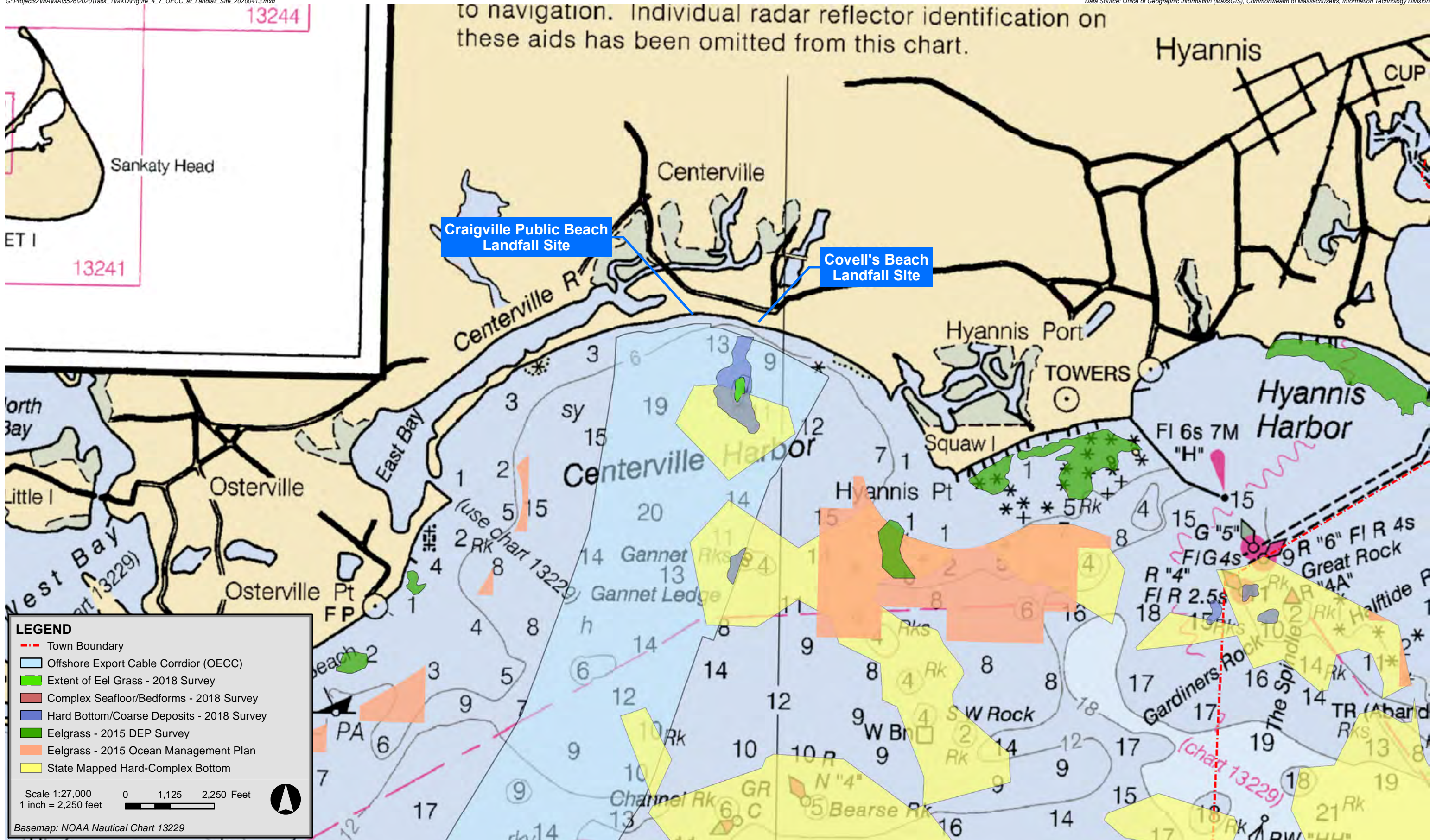
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Vineyard Wind Connector 2



This product is for informational purposes and may not be suitable for legal, engineering, or surveying purposes.



to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

Craigville Public Beach Landfall Site

Covell's Beach Landfall Site

- LEGEND**
- Town Boundary
 - Offshore Export Cable Corridor (OECC)
 - Extent of Eel Grass - 2018 Survey
 - Complex Seafloor/Bedforms - 2018 Survey
 - Hard Bottom/Coarse Deposits - 2018 Survey
 - Eelgrass - 2015 DEP Survey
 - Eelgrass - 2015 Ocean Management Plan
 - State Mapped Hard-Complex Bottom

Scale 1:27,000 0 1,125 2,250 Feet
1 inch = 2,250 feet

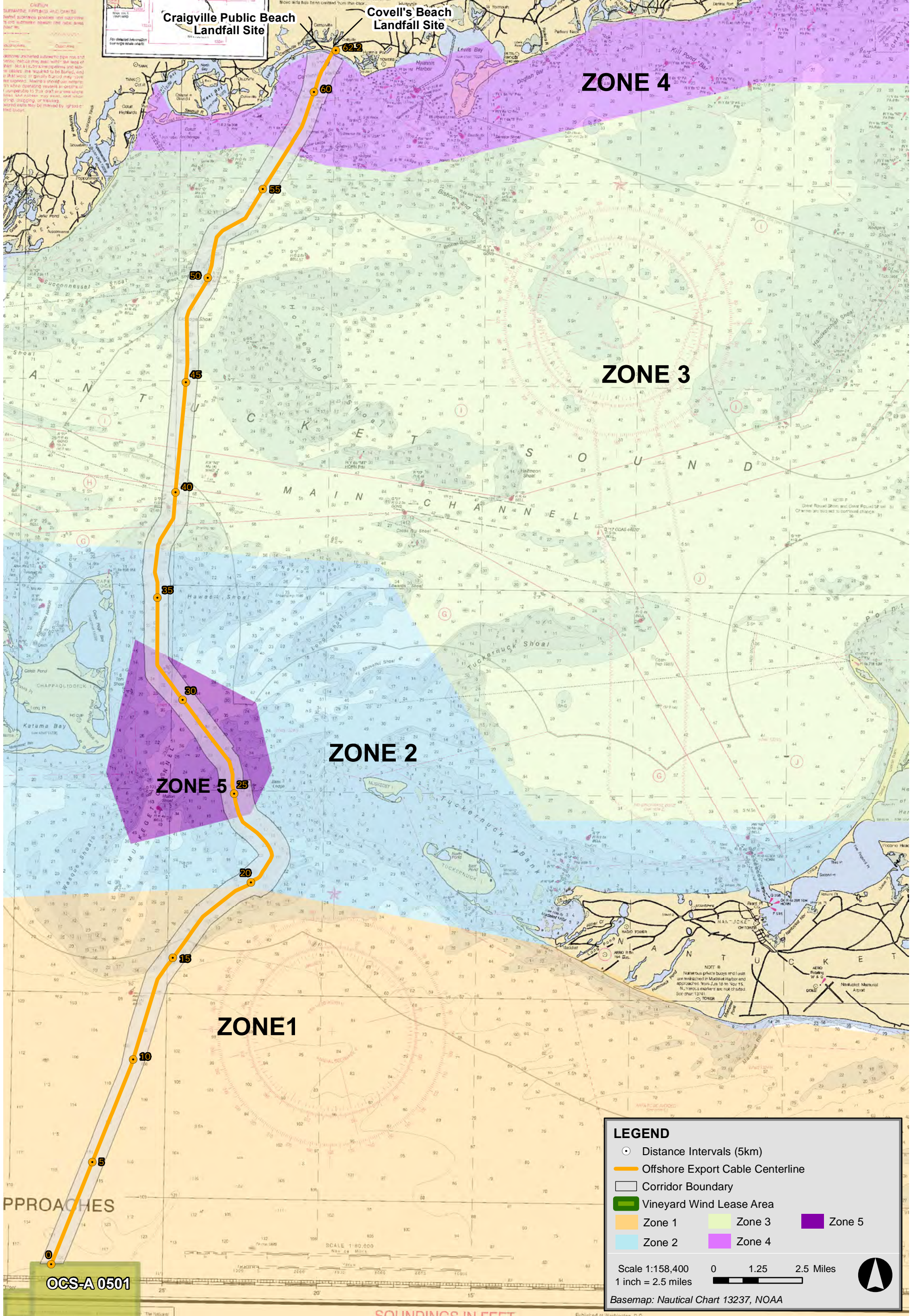
Basemap: NOAA Nautical Chart 13229

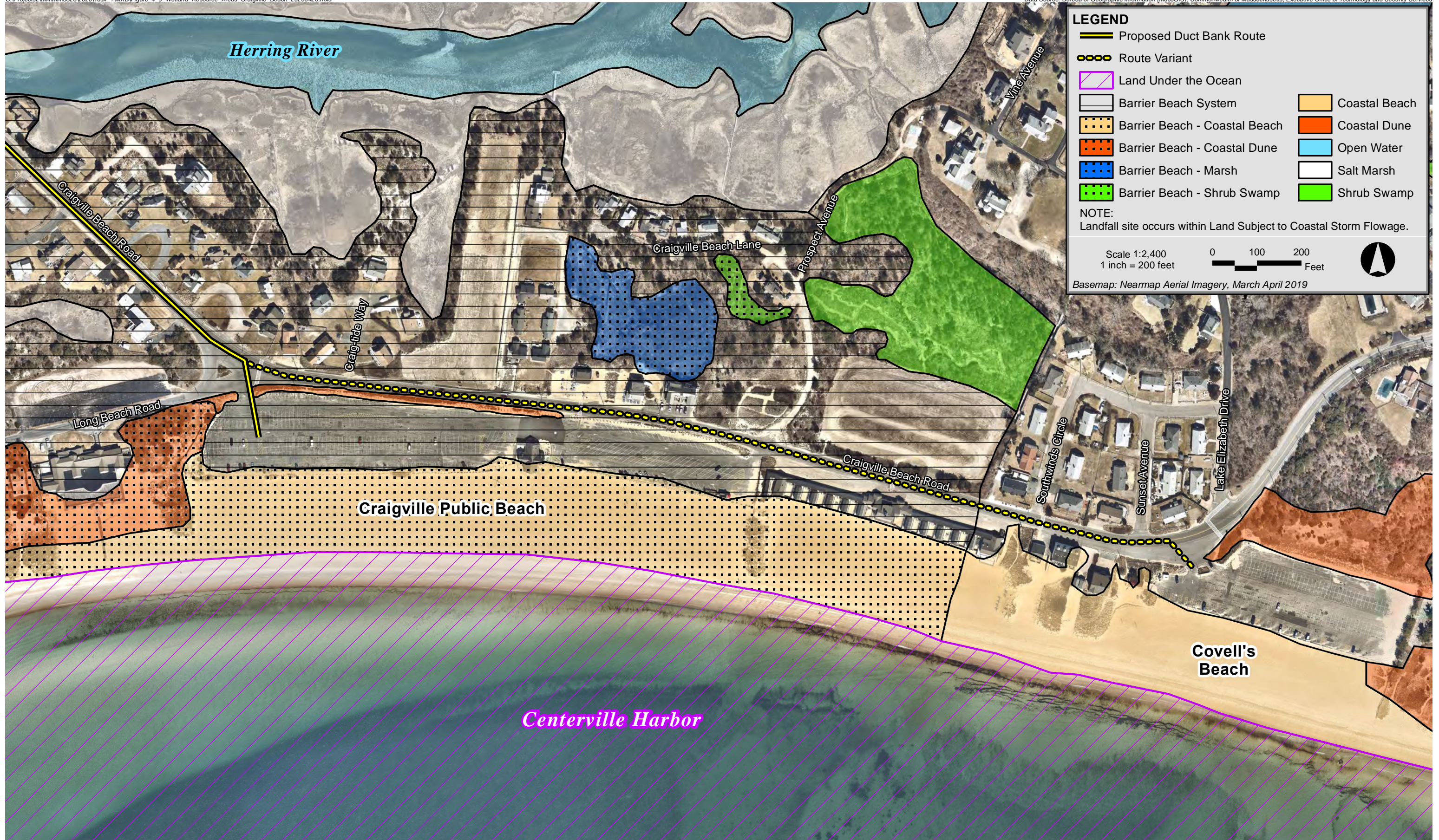
This product is for informational purposes and may not be suitable for legal, engineering, or surveying purposes.

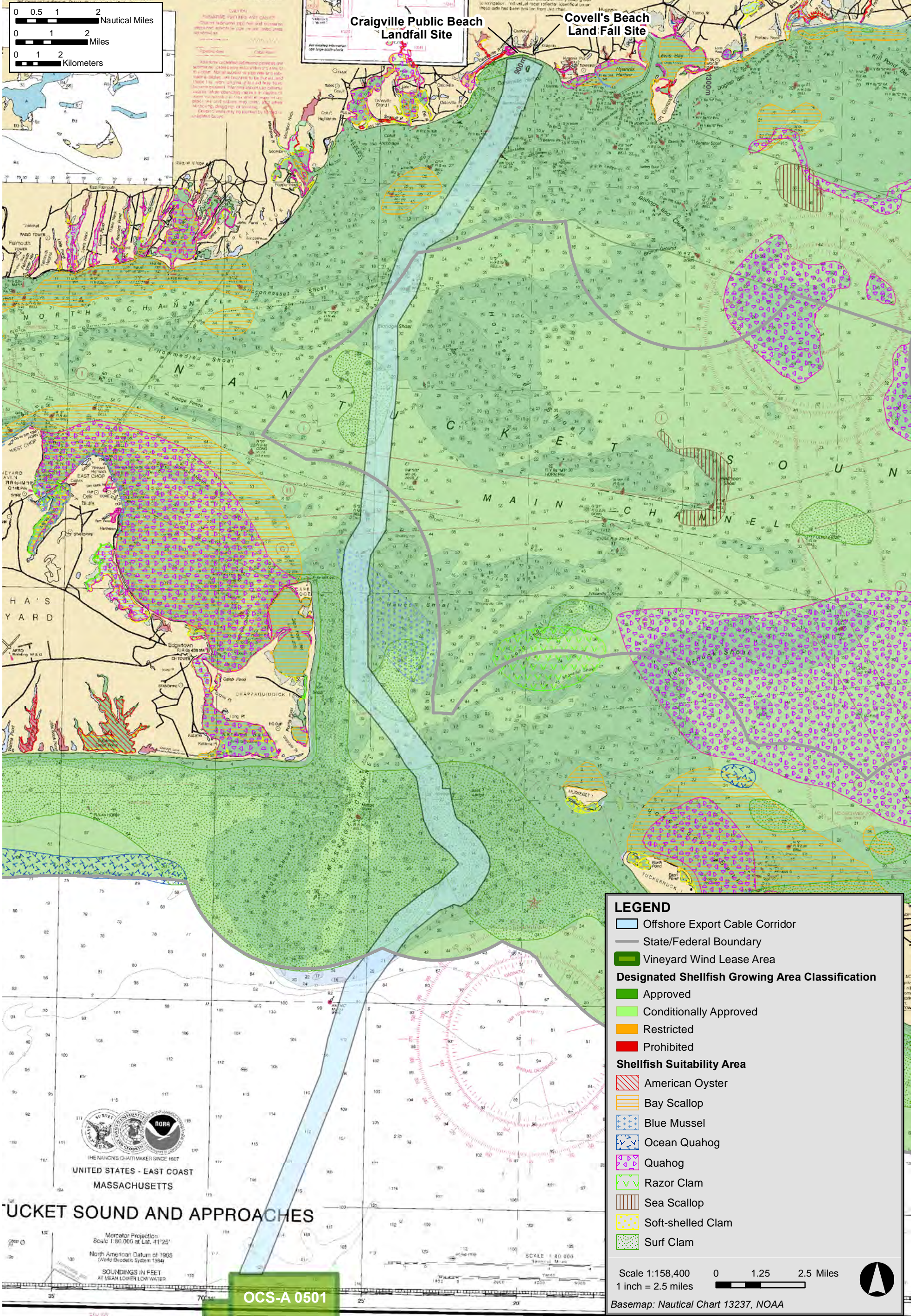
Vineyard Wind Connector 2



Figure 4-7
OECC at Landfall Site







BUCKET SOUND AND APPROACHES



Mercator Projection
Scale 1:50,000 at Lat. 41°25'
North American Datum of 1983
(World Geodetic System 1984)
SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER

OCS-A 0501