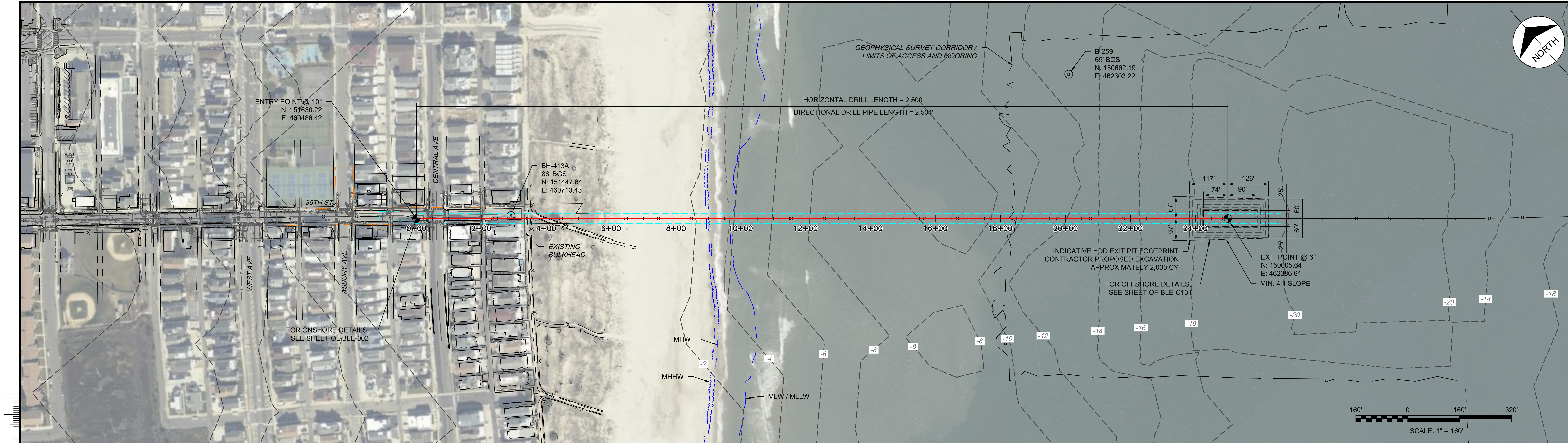

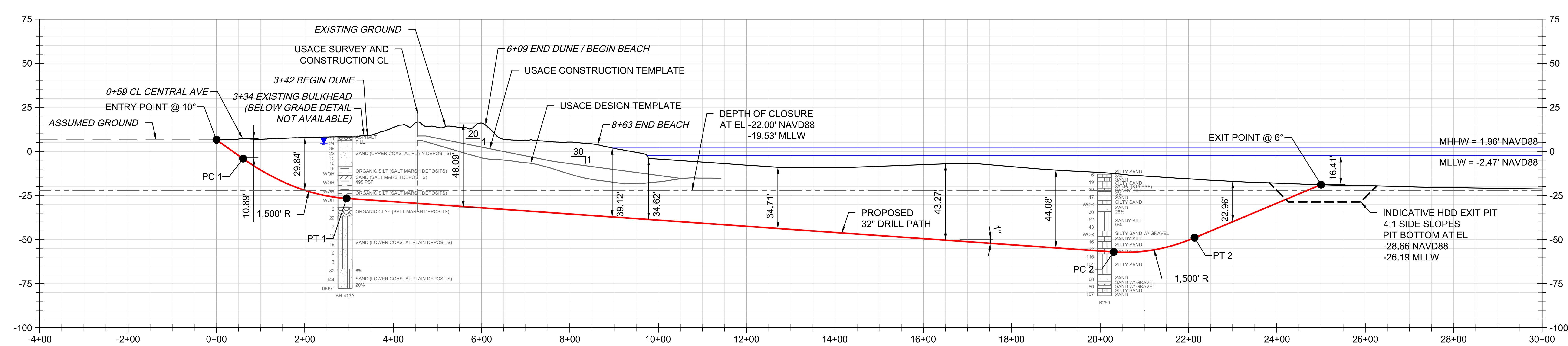

DIRECTIONAL DRILL DATA			
DESCRIPTION	STATION (ft)	ELEVATION (NAVD88 ft)	ELEVATION (MLLW ft)
ENTRY POINT @ 10°	0+00.00	6.52	8.99
PC 1 (1,500' R)	0+60.31	-4.11	-1.64
PT 1 @ 1°	2+94.60	-26.67	-24.20
PC 2 (1,500' R)	20+30.63	-56.97	-54.50
PT 2	22+13.61	-48.98	-46.51
EXIT POINT @ 6°	25+00.00	-18.88	-16.41
HORIZONTAL DISTANCE (ft) = 2,500.00			
DIRECTIONAL DRILL PIPE LENGTH (ft) = 2,504.39			

GENERAL NOTES

1. NORTHINGS AND EASTINGS ARE IN US SURVEY FEET REFERENCED TO NAD83 (2011), NEW JERSEY STATE PLANE, US FOOT.
2. ALL ELEVATIONS ARE REFERENCED TO NAVD88.
3. AERIAL IMAGERY PROVIDED BY GOOGLE EARTH.
4. EXISTING GROUND AND DUNE LOCATION/ELEVATIONS AND BULKHEAD LOCATION (AS APPLICABLE) DEPICTED ON THE PROFILE IS BASED ON TOPOGRAPHIC SURVEY CONDUCTED BY OCEAN WIND 1.
5. BASE FILE(S) PROVIDED BY ØRSTED.
6. BATHYMETRIC SURVEY DATA PROVIDED BY ØRSTED 2021 AND BASED ON SITE INVESTIGATION HIGH RESOLUTION GEOPHYSICAL FIELD STUDIES CONDUCTED FROM 2019 THROUGH 2021. SUPPLEMENTAL BATHYMETRY FOR BARNEGAT BAY PROVIDED BY NOAA 2014 POST SANDY TOPOBATHY LIDAR.
7. DRILL PATH STATIONING IS IN FEET BY HORIZONTAL MEASUREMENT AND IS REFERENCED TO THE CONTROL POSITION FOR THE CROSSING.
8. DEPICTED WATER LEVEL INFORMATION SOURCED FROM NOAA VDATUM.
9. LOCATION OF HDD RIG, OFFSHORE MARINE EQUIPMENT AND SUPPORT STRUCTURES ARE NOT FIXED BY DESIGNATION OF HDD ENTRY OR EXIT POINT AND ARE LIKELY TO CHANGE DURING CONSTRUCTION.
10. VESSELS, EQUIPMENT, AND SUPPORT STRUCTURES ARE FOR ILLUSTRATION PURPOSES ONLY AND SHALL BE THE CONTRACTORS RESPONSIBILITY FOR SELECTING APPROPRIATELY SIZED AND CAPABLE EQUIPMENT FOR COMPLETING THE WORK.
11. CONTRACTOR MUST REVIEW AND APPROVE ALL IN-WATER STRUCTURES AND COMPONENTS REQUIRED FOR CONSTRUCTION IN ORDER TO CONFIRM WITH SAFETY REQUIREMENTS, WATER DEPTH UNCERTAINTY, POSSIBILITY OF EXTREME WAVES AND ANY OTHER CONCERNS FOR THE SAFE AND SUCCESSFUL INSTALLATION OF CROSSING IN THE OFFSHORE ENVIRONMENT.
12. OFFSHORE CONTRACTOR TO ENSURE CARRIER PIPE STRING IS FREE OF DEBRIS AND SILT-IN PRIOR TO PULLBACK.
13. VERTICAL DIMENSIONS OF EQUIPMENT NOT TO SCALE.
14. GEOTECHNICAL DATA AND INFORMATION IS PRESENTED FOR REFERENCE ONLY. REVIEW THE ASSOCIATED GEOTECHNICAL REPORT FOR ALL INTERPRETATIONS AND DETERMINATIONS REGARDING SUBSURFACE CONDITIONS.
15. USACE BEACH NOURISHMENT CONSTRUCTION/DESIGN TEMPLATE SHOWN PER US ARMY CORPS OF ENGINEERS PHILADELPHIA DISTRICT DRAWING C-305 TYPICAL SECTION - 35TH STREET OCEAN CITY. ISSUED/SUBMITTAL DATE 100% RTA - 13 JUNE 2019. EXISTING GROUND ELEVATIONS AND BULKHEAD LOCATION DEPICTED ON THIS USACE BEACH NOURISHMENT TEMPLATE WERE NOT INCLUDED ON THIS PLAN (SEE GENERAL NOTE 4).
16. CONCRETE MATTRESSES WILL BE USED TO STABILIZE THE PIPE WITHIN THE HDD EXIT PIT UPON INSTALLATION. MATTRESSES WILL BE LEFT IN PLACE AND HDD EXIT PITS WILL BE ALLOWED TO BACKFILL THROUGH NATURAL PROCESSES. OCEAN WIND WILL NOTIFY USACE, USCG AND NJDEP OFFICE OF COASTAL ENGINEERING WITH LOCATIONS OF HDD EXIT PITS FOLLOWING FINAL DESIGN AND CONSTRUCTION.
17. FOLLOWING THE HDD INSTALLATION, A WARNING BUOY WILL BE TETHERED TO THE TAIL END OF THE CONDUIT FOR MARKING THE OFFSHORE EXIT PIT LOCATION AND PROVIDING NAVIGATIONAL SAFETY WITHIN THE ATLANTIC OCEAN.

TIDAL DATUMS	BL ENGLAND ATLANTIC SHORELINE (NAVD88 FT ELEVATIONS)
0' MHHW	1.96'
0' MHW	1.56'
0' MTL	-0.37'
0' MLW	-2.32'
0' MLLW	-2.47'

LEGEND

- PROPOSED DRILL PATH
- PROPOSED WORKSPACE
- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- PROPOSED EXCAVATION
- CABLE ROUTE
- USACE BEACH NOURISHMENT CONSTRUCTION / DESIGN TEMPLATE
- WATER LEVEL
- GEOPHYSICAL SURVEY CORRIDOR / LIMITS OF ACCESS AND MOORING
- WELTAND
- WETLAND TRANSITION AREA
- HDD ENTRY / EXIT POINT
- GEOTECHNICAL BORE LOCATION
- COHESIVE SOILS, UCS, TONS/FT²; BLOWS/FT; MATERIAL GRAPHIC; GRAVEL CONTENT; UNCONFINED COMPRESSIVE STRENGTH (PSF); MATERIAL DESCRIPTION (ORIGIN)
- WATER LEVEL AFTER SAMPLING
- WATER LEVEL DURING SAMPLING

APPROVED
File No.: 0000-21-0008.2
Activity No.: LUP220001 & LUP230001
Date: 04/27/2023
State of New Jersey
Department of Environmental Protection
Division of Land Resource Protection

no.	date	by	ckd	description
A	01/10/23	TV	RS	ISSUED FOR PERMIT

NOTES:

1. HORIZONTAL DATUM: NAD83 NEW JERSEY STATE PLANE, U.S. FOOT
2. VERTICAL DATUM CONVERSION OYSTER CREEK: NGVD29 = NAVD88 + 1.385 FT

   VERTICAL DATA CONVERSION BL ENGLAND: NGVD29 = NAVD88 + 1.263 FT
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4. ALL BATHYMETRIC CONTOURS ARE DEPICTED IN RELATION TO MEAN LOWER LOW WATER (MLLW).
5. SEE HDD SERIES SHEETS FOR DETAILED PLAN AND PROFILE OF CABLE ROUTE.
6. FOR DETAILS ON WETLAND AND WETLAND BUFFER IMPACTS PLEASE SEE ONSHORE PLAN SET.
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8. AREAS OF IMPACTS TO REGULATED FEATURES ARE QUANTIFIED ON E2PM ONSHORE PLAN SHEETS OL-OC002 THROUGH OL-OC010.
9. THESE DRAWINGS SHOW THE APPROXIMATE LOCATION OF CABLE ROUTE. FINAL CABLE ROUTE TO BE PROVIDED BY THE CONTRACTOR.

FOR PERMITTING APPROVAL

Ocean Wind 1
An Ørsted & PSEG project

HDR ENGINEERING, INC.
50 TICE BOULEVARD, SUITE 210
WOODCLIFF LAKE, NJ 07677

NJ CERTIFICATE OF AUTHORIZATION 24GA28010700

STATE OF NEW JERSEY
REILLY J. SCHOO
No. 24GE05344300
LICENSED PROFESSIONAL ENGINEER
4-14-2023

Schoo, Reilly J.
Digitally signed by Schoo, Reilly J.
DN: E=Reilly.Schoo@hdrinc.com, CN="Schoo, Reilly J.", OU=Users, OU=OTH-MN, OU=Minnesota, OU=United States, OU=Offices, DC=intranet, DC=hdr
Date: 2023.04.14 11:49:34-05'00'

REILLY J. SCHOO
NJ PROFESSIONAL ENGINEER
No. 24GE05344300

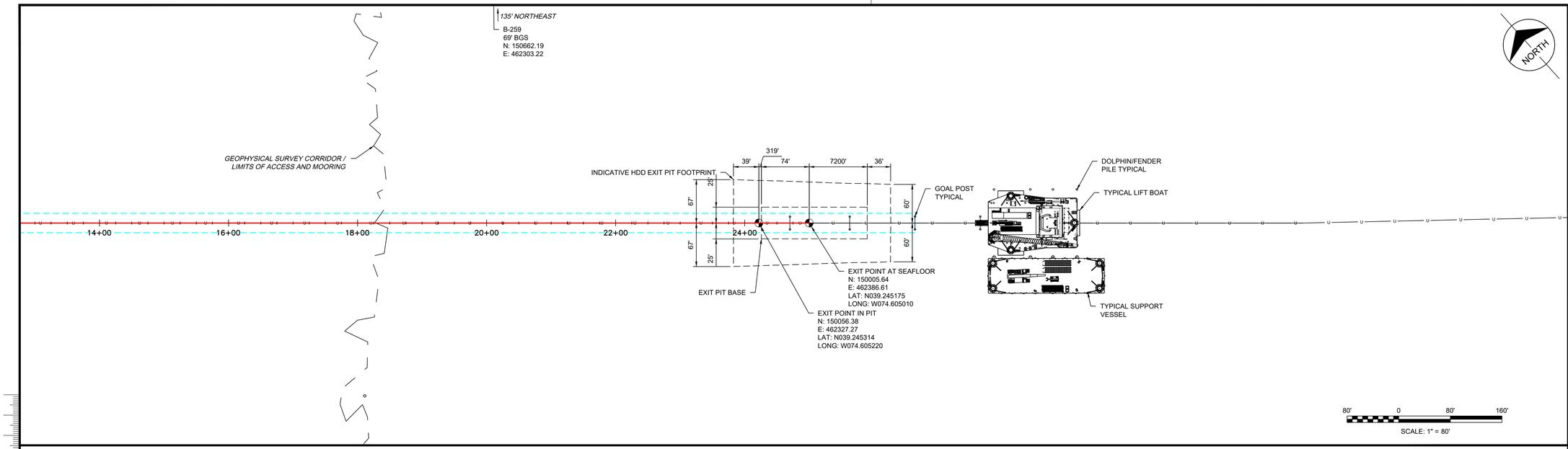
date	detailed
01/10/23	T. VONBERGE
designed	checked
R. SCHOO	D. BEARDEN

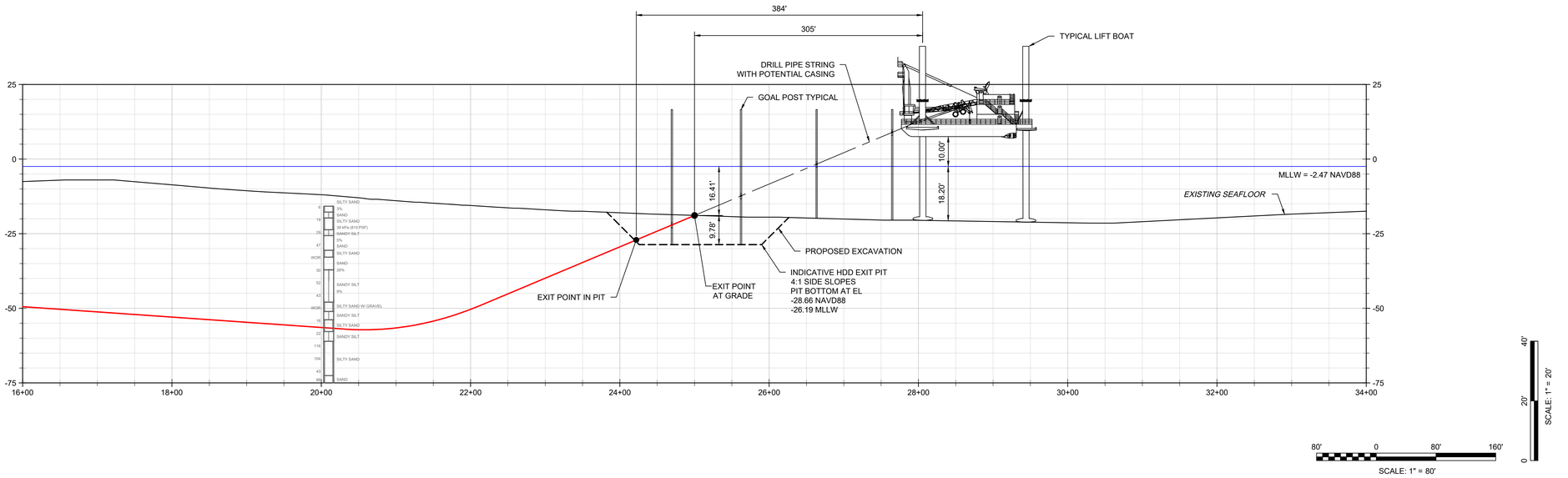
CAPE MAY COUNTY, NEW JERSEY

32" OC3_A CROSSING
BL ENGLAND / 35TH STREET CROSSING
HORIZONTAL DIRECTIONAL DRILL
PLAN AND PROFILE

project	RDS-PP CODE
-	-

drawing: HDD-OF-BLE-01T-5-001 — rev. A
sheet — of — sheets
file HDD-OF-BLE-01T-5-001





Millimeters
Inches
Scale For Microfilming

APPROVED
File No.: 0000-21-0008.2
Activity No.: LUP220001 & LUP230001
Date: 04/27/2023
State of New Jersey
Department of Environmental Protection
Division of Land Resource Protection

no.	date	by	ckd	description
A	01/10/23	TV	RS	ISSUED FOR PERMIT

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FOR PERMITTING APPROVAL

Ocean Wind 1
An Ørsted & PSEG project

HDR ENGINEERING, INC.
50 TICE BOULEVARD, SUITE 210
WOODCLIFF LAKE, NJ 07677

GENERAL NOTES

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LEGEND

- PROPOSED DRILL PATH
- PROPOSED WORKSPACE
- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- PROPOSED EXCAVATION
- CABLE ROUTE
- USACE BEACH NOURISHMENT CONSTRUCTION / DESIGN TEMPLATE
- WATER LEVEL
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- HDD ENTRY / EXIT POINT
- GEOTECHNICAL BORE LOCATION
- COHESIVE SOILS, UCS, TONS/FT² / BLOWS/FT
- MATERIAL GRAPHIC
- GRAVEL CONTENT
- UNCONFINED COMPRESSIVE STRENGTH (PSF)
- MATERIAL DESCRIPTION (ORIGIN)
- WATER LEVEL AFTER SAMPLING
- WATER LEVEL DURING SAMPLING

NJ CERTIFICATE OF AUTHORIZATION 24GA28010700

REILLY J. SCHOO
NJ PROFESSIONAL ENGINEER
No. 24GE05344300
4-14-2023
Schoo, Reilly J.
Digitally signed by Schoo, Reilly J.
DN: Emailid.Schoo@hdrinc.com, CN=Schoo, Reilly J., OU=Users, OU=OH-MN, OU=Minnesota, OU=United States, DU=Offices, DC=Intranet, DC=hdr
Date: 2023.04.14 11:50:11-05'00'

REILLY J. SCHOO
NJ PROFESSIONAL ENGINEER
No. 24GE05344300

CAPE MAY COUNTY, NEW JERSEY

32" OC3_A CROSSING
BL ENGLAND / 35TH STREET CROSSING
OFFSHORE WORKSPACE
PLAN AND PROFILE

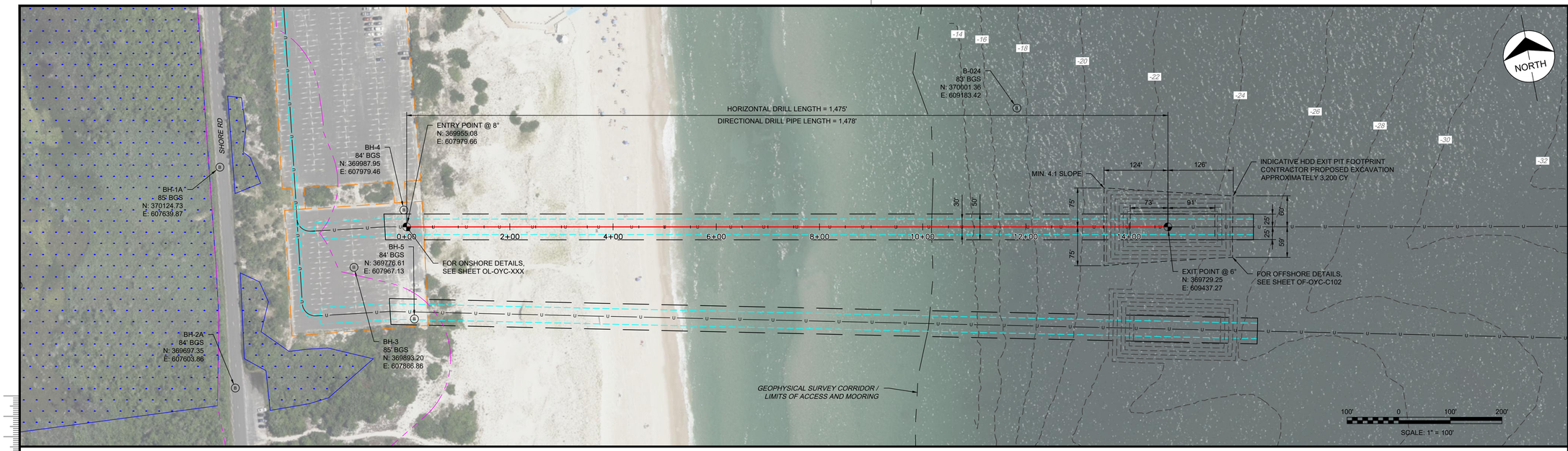
date	detailed
01/10/23	T. VONBERGE
designed	checked
R. SCHOO	D. BEARDEN

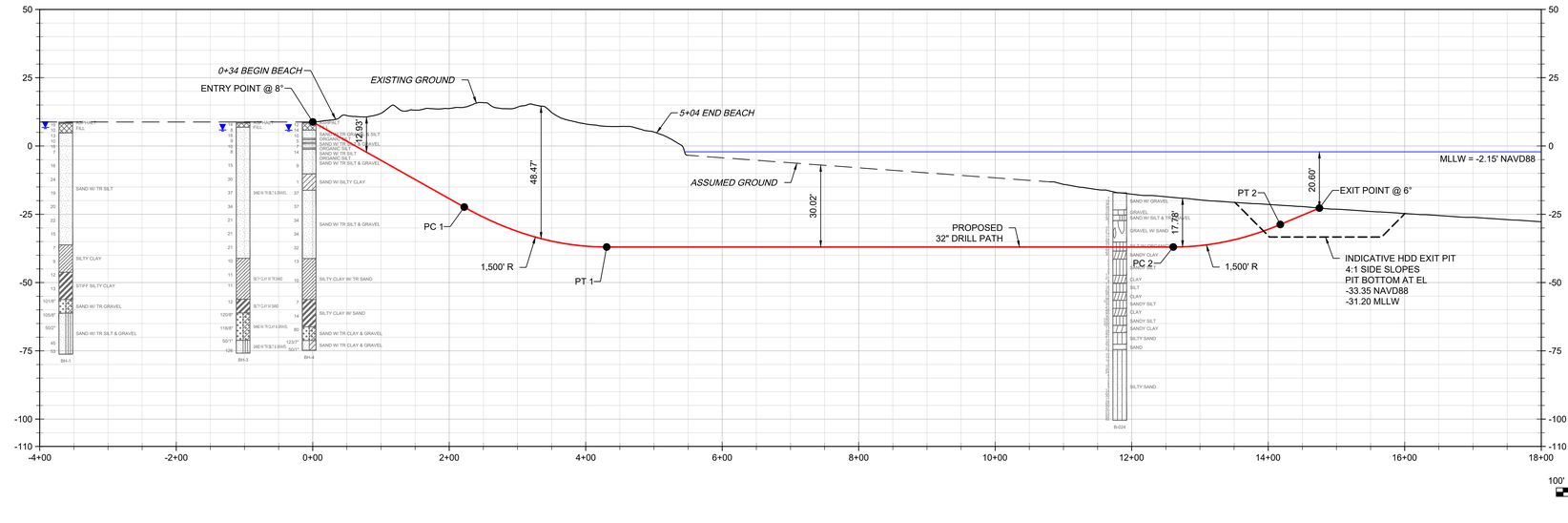
project	RDS-PP CODE
-	-

drawing HDD-OF-BLE-01T-4-002 rev. A

sheet of sheets

file HDD-OF-BLE-01T-4-002





Scale For Microfilming
Millimeters
Inches

no.	date	by	ckd	description
A	01/10/23	TV	RS	ISSUED FOR PERMIT

NOTES:

1. HORIZONTAL DATUM: NAD83 NEW JERSEY STATE PLANE, U.S. FOOT
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9. THESE DRAWINGS SHOW THE APPROXIMATE LOCATION OF CABLE ROUTE. FINAL CABLE ROUTE TO BE PROVIDED BY THE CONTRACTOR.

APPROVED
File No.: 0000-21-0008.2
Activity No.: LUP220001 & LUP230001
Date: 04/27/2023
State of New Jersey
Department of Environmental Protection
Division of Land Resource Protection

FOR PERMITTING APPROVAL

DIRECTIONAL DRILL DATA			
DESCRIPTION	STATION (ft)	ELEVATION (NAVD88 ft)	ELEVATION (MLLW ft)
ENTRY POINT @ 8°	0+00.00	8.79	10.94
PC 1 (1,500' R)	2+21.92	-22.40	-20.25
PT 1	4+30.68	-37.00	-34.85
PC 2 (1,500' R)	12+60.77	-37.00	-34.85
PT 2	14+17.56	-28.78	-26.63
EXIT POINT @ 6°	14+75.00	-22.75	-20.60
HORIZONTAL DISTANCE (ft) = 1,475.00			
DIRECTIONAL DRILL PIPE LENGTH (ft) = 1,478.46			

GENERAL NOTES

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TIDAL DATUMS	IBSP ATLANTIC SHORELINE (NAVD88 FT ELEVATIONS)
0' MHHW	2.17'
0' MHW	1.84'
0' MTL	-0.19'
0' MLW	-2.01'
0' MLLW	-2.15'

LEGEND

- PROPOSED DRILL PATH
- PROPOSED WORKSPACE
- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- PROPOSED EXCAVATION
- CABLE ROUTE
- USACE BEACH NOURISHMENT CONSTRUCTION / DESIGN TEMPLATE
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- GEOTECHNICAL BORE LOCATION
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- UNCONFINED COMPRESSIVE STRENGTH (PSF)
- COHESIVE SOILS, UCS, TONS/FT²
- BLOWS/FT
- WATER LEVEL AFTER SAMPLING
- WATER LEVEL DURING SAMPLING

NJ CERTIFICATE OF AUTHORIZATION 24GA28010700

STATE OF NEW JERSEY REILLY J. SCHOO No. 24GE05344300 PROFESSIONAL ENGINEER
4-14-2023

Schoo, Reilly J.
Digitally signed by Schoo, Reilly J.
DN: E=Reilly.Schoo@hdrinc.com, CN=Schoo, Reilly J., OU=Users, OU=OTH-MN, OU=Minnesota, OU=United States, OU=Offices, DC=Intranet, DC=hdr
Date: 2023.04.14 11:50:42 -05'00'

REILLY J. SCHOO
NJ PROFESSIONAL ENGINEER
No. 24GE05344300

HDR ENGINEERING, INC.
50 TICE BOULEVARD, SUITE 210
WOODCLIFF LAKE, NJ 07677

date	detailed
01/10/23	T. VONBERGE
designed	checked
R. SCHOO	D. BEARDEN

OCEAN COUNTY, NEW JERSEY

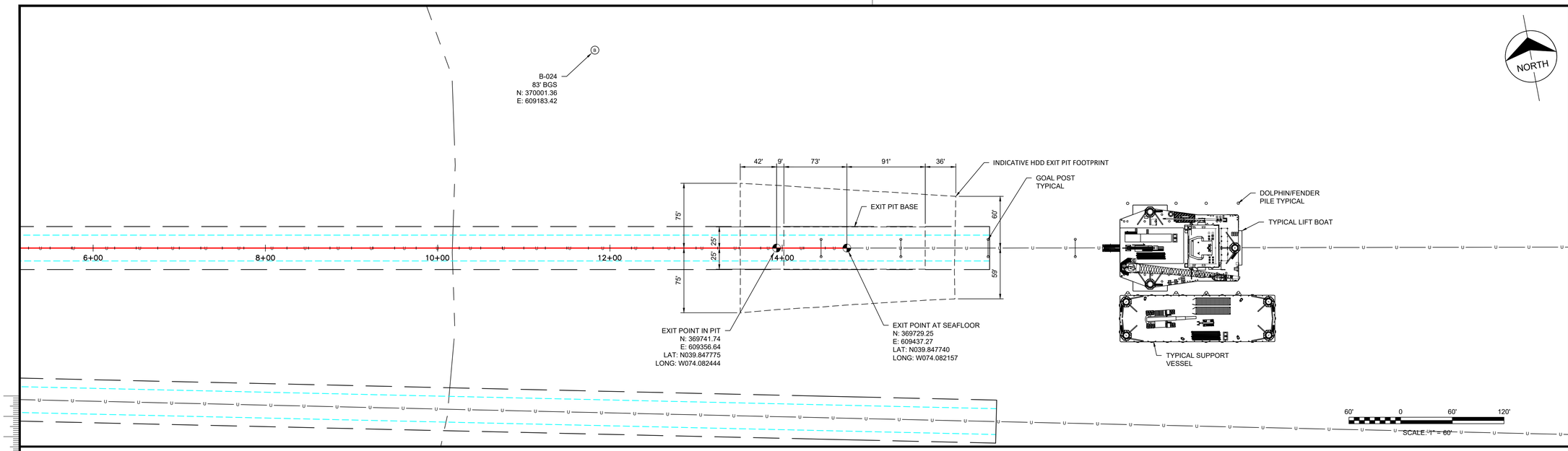
32" OC1_C SHORE APPROACH
IBSP EAST CROSSING (NORTH)
HORIZONTAL DIRECTIONAL DRILL
PLAN AND PROFILE

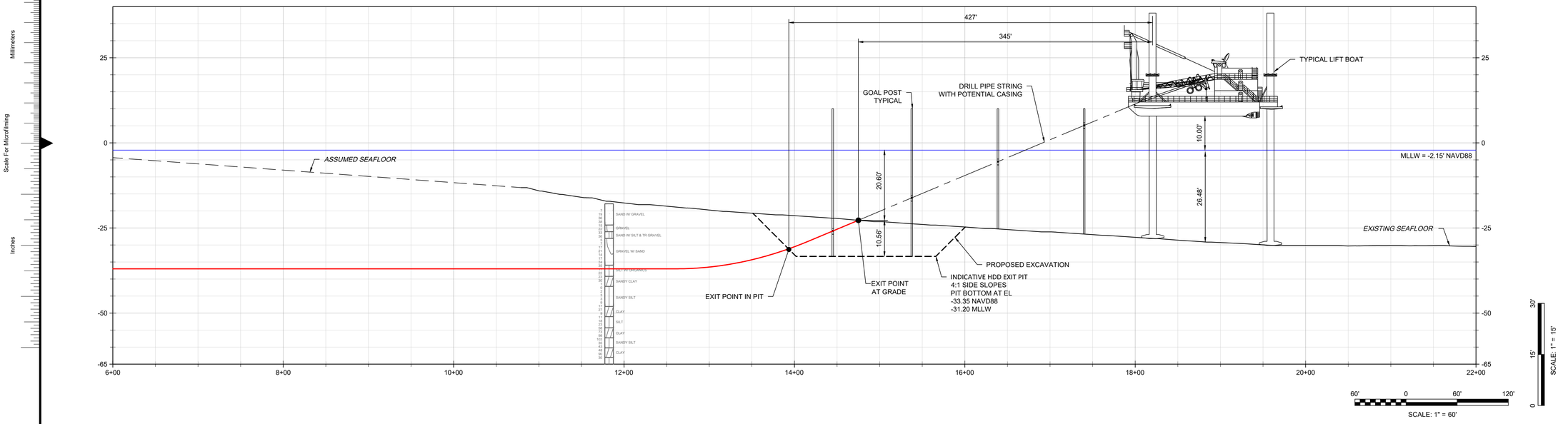
project	RDS-PP CODE
-	-

drawing HDD-OF-OYC-04T-5-001 — rev. A

sheet of sheets

file HDD-OF-OYC-04T-5-001





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LEGEND

- PROPOSED DRILL PATH
- PROPOSED WORKSPACE
- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- PROPOSED EXCAVATION
- CABLE ROUTE
- USACE BEACH NOURISHMENT CONSTRUCTION / DESIGN TEMPLATE
- WATER LEVEL
- GEOPHYSICAL SURVEY CORRIDOR / LIMITS OF ACCESS AND MOORING
- WELTAND
- WETLAND TRANSITION AREA
- HDD ENTRY / EXIT POINT
- GEOTECHNICAL BORE LOCATION
- COHESIVE SOILS, UCS, TONS/FT²
- BLOWS/FT
- MATERIAL GRAPHIC
- GRAVEL CONTENT
- UNCONFINED COMPRESSIVE STRENGTH (PSF)
- MATERIAL DESCRIPTION (ORIGIN)
- WATER LEVEL AFTER SAMPLING
- WATER LEVEL DURING SAMPLING

NJ CERTIFICATE OF AUTHORIZATION 24GA28010700

STATE OF NEW JERSEY
REILLY J. SCHOO
No. 24GE05344300
PROFESSIONAL ENGINEER
4-14-2023

Schoo, Reilly J. — Digitally signed by Schoo, Reilly J. DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=Army, cn=Schoo, Reilly J. Reason: I am the author of this document Location: United States, OU=Offices, OU=Internet, DC=net Date: 2023.04.14 13:51:55-05'00'

REILLY J. SCHOO
NJ PROFESSIONAL ENGINEER
No. 24GE05344300

APPROVED
File No.: 0000-21-0008.2
Activity No.: LUP220001 & LUP230001
Date: 04/27/2023
State of New Jersey
Department of Environmental Protection
Division of Land Resource Protection

no.	date	by	ckd	description
A	01/10/23	TV	RS	ISSUED FOR PERMIT

NOTES:

1. HORIZONTAL DATUM: NAD83 NEW JERSEY STATE PLANE, U.S. FOOT
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4. ALL BATHYMETRIC CONTOURS ARE DEPICTED IN RELATION TO MEAN LOWER LOW WATER (MLLW).
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8. AREAS OF IMPACTS TO REGULATED FEATURES ARE QUANTIFIED ON E2PM ONSHORE PLAN SHEETS OL-OC002 THROUGH OL-OC010.
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FOR PERMITTING APPROVAL

Ocean Wind 1
An Ørsted & PSEG project

HDR ENGINEERING, INC.
50 TICE BOULEVARD, SUITE 210
WOODCLIFF LAKE, NJ 07677

date	detailed
01/10/23	T. VONBERGE
designed	checked
R. SCHOO	D. BEARDEN

OCEAN COUNTY, NEW JERSEY

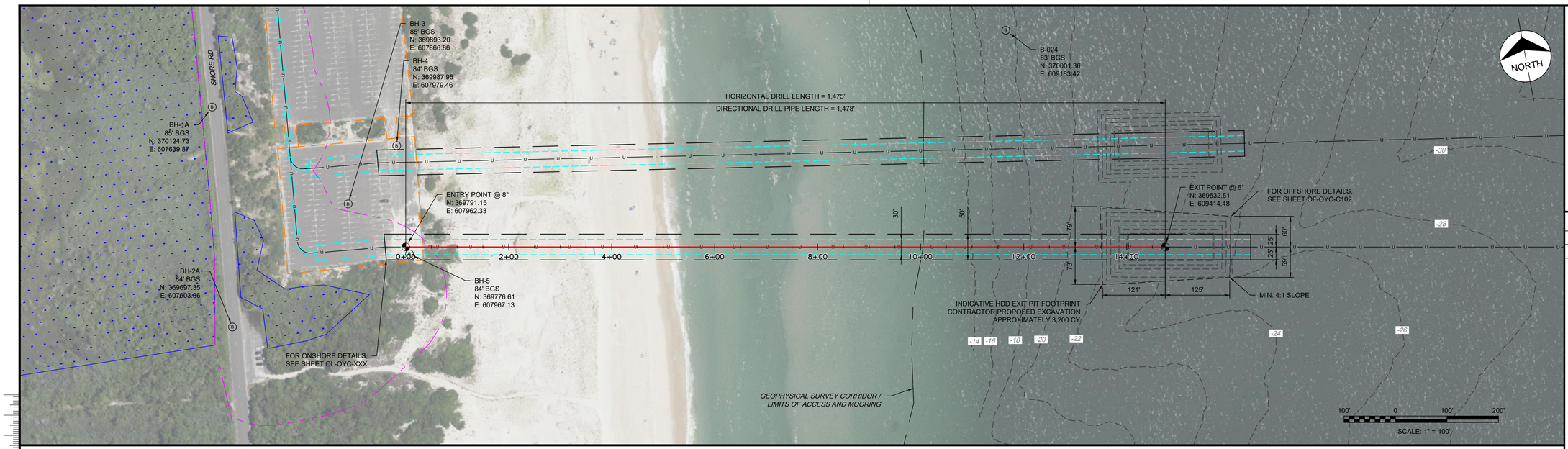
32" OC1_C SHORE APPROACH
IBSP EAST CROSSING (NORTH)
OFFSHORE WORKSPACE
PLAN AND PROFILE

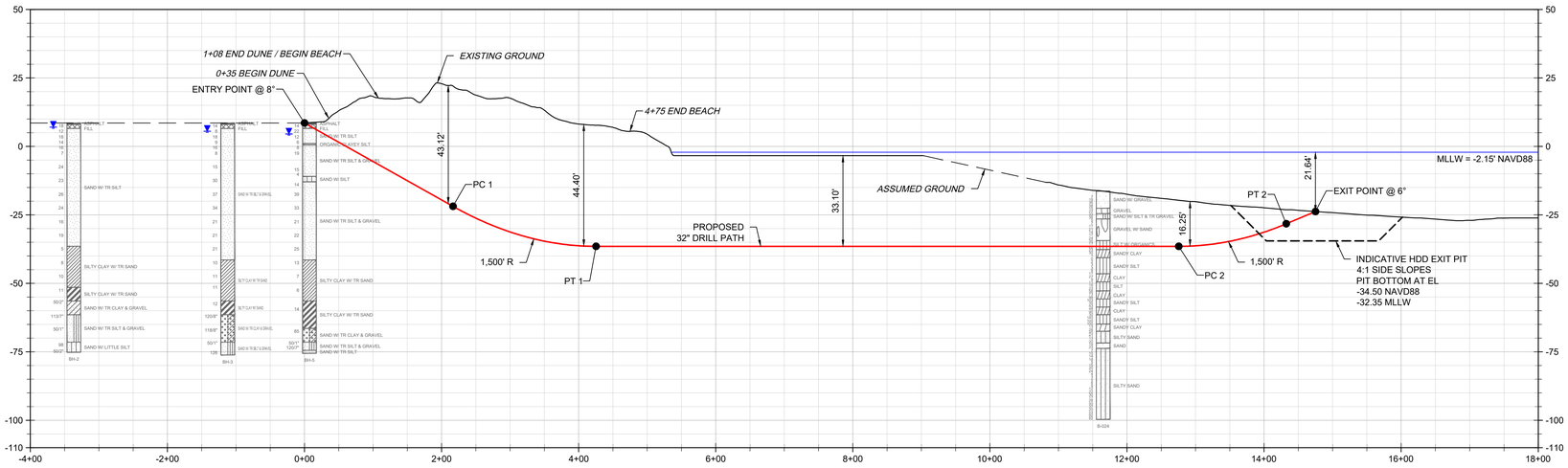
project	RDS-PP CODE
-	-

drawing HDD-OF-OYC-04T-5-002 — rev. A

sheet of sheets

file HDD-OF-OYC-04T-5-002





Scale For Microfilming
Millimeters
Inches

DIRECTIONAL DRILL DATA

DESCRIPTION	STATION (ft)	ELEVATION (NAVD88 ft)	ELEVATION (MLLW ft)
ENTRY POINT @ 8°	0+00.00	8.54	10.69
PC 1 (1,500' R)	2+16.61	-21.90	-19.75
PT 1	4+25.37	-36.50	-34.35
PC 2 (1,500' R)	12+75.51	-36.50	-34.35
PT 2	14+32.30	-28.28	-26.13
EXIT POINT @ 6°	14+75.00	-23.79	-21.64
HORIZONTAL DISTANCE (ft) = 1,475.00			
DIRECTIONAL DRILL PIPE LENGTH (ft) = 1,478.33			

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TIDAL DATUMS	IBSP ATLANTIC SHORELINE (NAVD88 FT ELEVATIONS)
0' MHHW	2.17'
0' MHW	1.84'
0' MTL	-0.19'
0' MLW	-2.01'
0' MLLW	-2.15'

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NJ CERTIFICATE OF AUTHORIZATION 24GA28010700

STATE OF NEW JERSEY REILLY J. SCHOO No. 24GE05344300 PROFESSIONAL ENGINEER
4-14-2023
Schoo, Reilly J. Digitally signed by Schoo, Reilly J. DN: cn=Schoo, Reilly J., ou=Users, ou=OH-MN, DL=Minnesota, OU=United States, DU=Offices, DC=intranet, DC=hdr Date: 2023.04.14 11:51:19-05'00'

REILLY J. SCHOO
NJ PROFESSIONAL ENGINEER
No. 24GE05344300

APPROVED

File No.: 0000-21-0008.2
Activity No.: LUP220001 & LUP230001
Date: 04/27/2023
State of New Jersey
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Ocean Wind 1
An Ørsted & PSEG project

HDR ENGINEERING, INC.
50 TICE BOULEVARD, SUITE 210
WOODCLIFF LAKE, NJ 07677

date	detailed
01/04/23	T. VONBERGE
designed	checked
R. SCHOO	D. BEARDEN

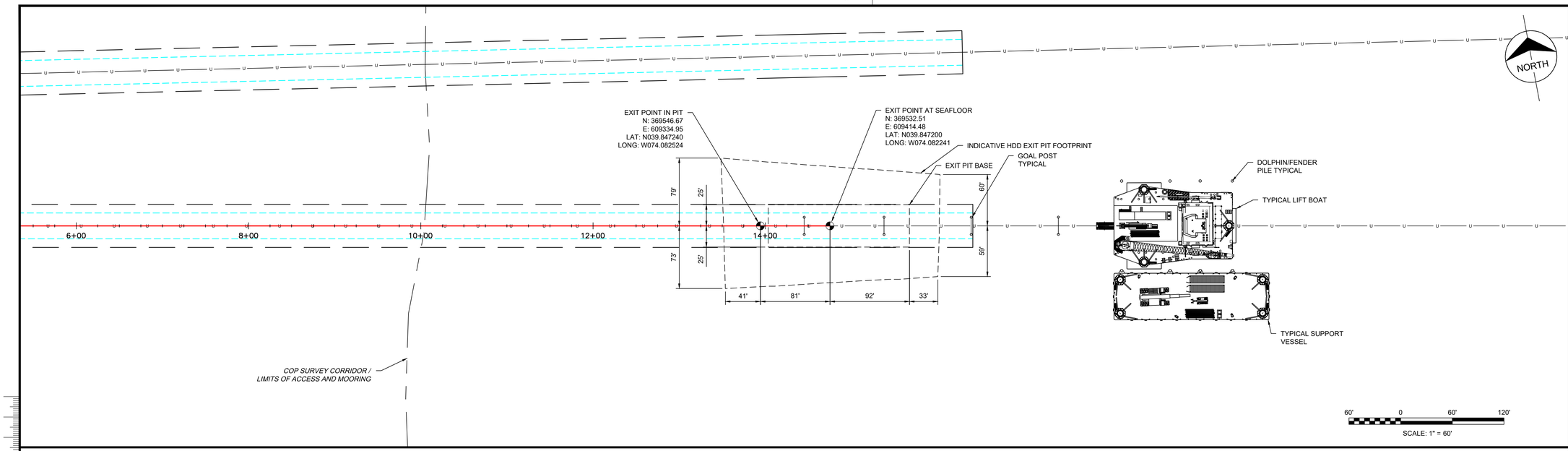
OCEAN COUNTY, NEW JERSEY

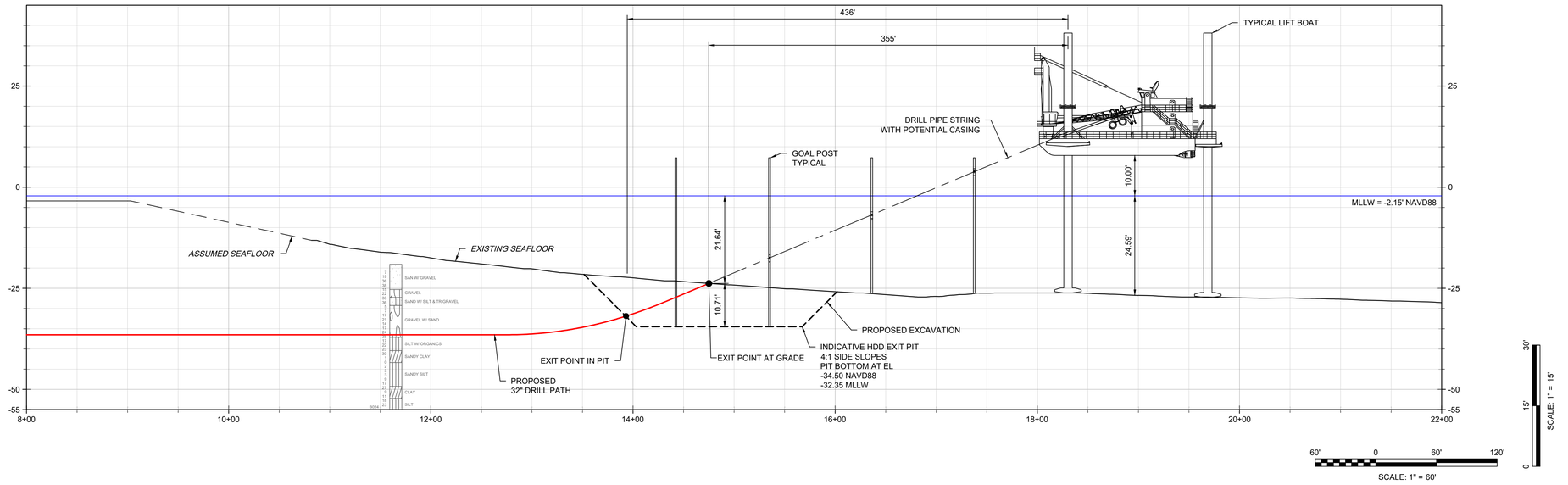
32" OC2_C SHORE APPROACH
IBSP EAST CROSSING (SOUTH)
HORIZONTAL DIRECTIONAL DRILL
PLAN AND PROFILE

project	RDS-PP CODE
-	-

drawing HDD-OF-OYC-05T-5-001 — rev. A

sheet of sheets
file HDD-OF-OYC-05T-5-001





Millimeters
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Inches

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NJ CERTIFICATE OF AUTHORIZATION 24GA28010700

STATE OF NEW JERSEY REILLY J. SCHOO No. 24GE05344300 PROFESSIONAL ENGINEER
4-14-2023

Schoo, Reilly J.
Digitally signed by Schoo, Reilly J.
DN: E=Reilly.Schoo@hdrinc.com, CN="Schoo, Reilly J.", OU=Users, DU=DTH-MN, O=HDR, L=Minneapolis, S=United States, OU=Offices, OU=Illinois, DC=hdr
Date: 2023.04.14 01:51:17-05'00'

REILLY J. SCHOO
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No. 24GE05344300

APPROVED
File No.: 0000-21-0008.2
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Date: 04/27/2023
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OCEAN COUNTY, NEW JERSEY

32" OC2_C SHORE APPROACH
IBSP EAST CROSSING (SOUTH)
OFFSHORE WORKSPACE
PLAN AND PROFILE

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drawing	rev.
HDD-OF-OYC-05T-4-001	A

sheet	of	sheets

file HDD-OF-OYC-05T-4-001