APPENDIX 10
SUB-BOTTOM PROFILE IMAGES FOR CORRIDOR 16

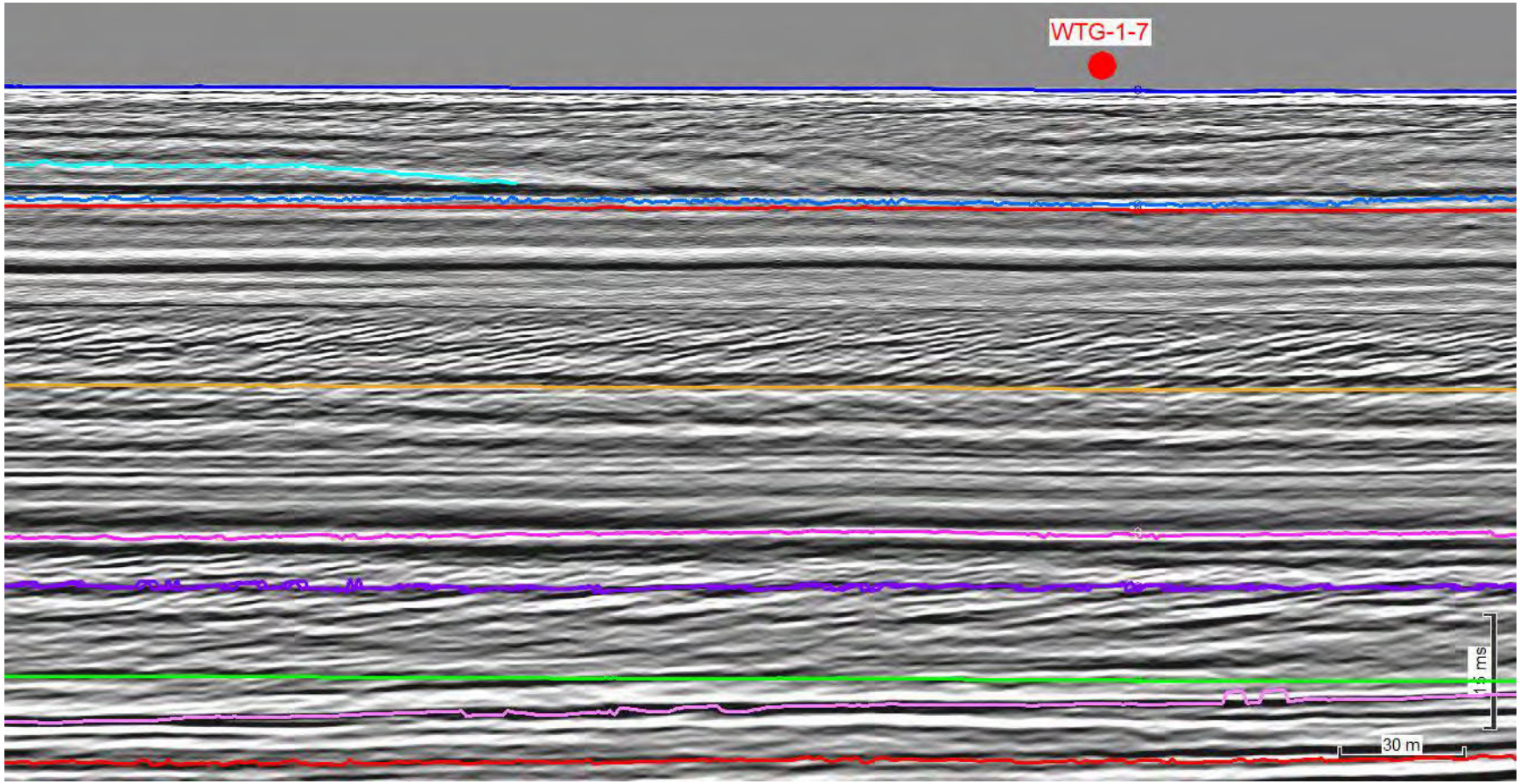


Figure 10-1: Proposed geotechnical locations WTG-1-7 in Corridor 16 along seismic line WTG16MCS16_01_FAST_MIG

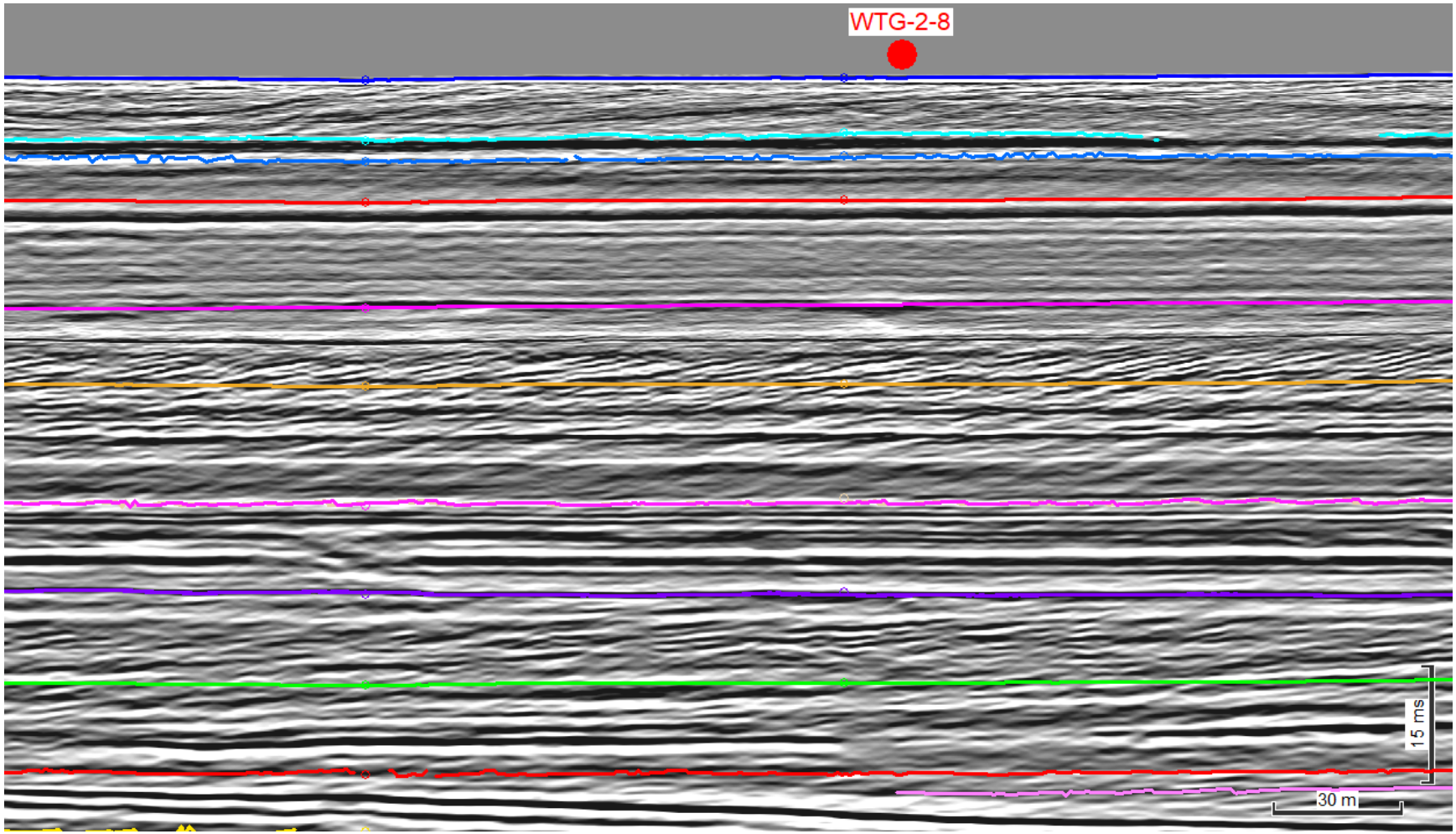


Figure 10-2: Proposed geotechnical locations WTG-2-8 in Corridor 16 along seismic line WTG16MCS16_01_FAST_MIG

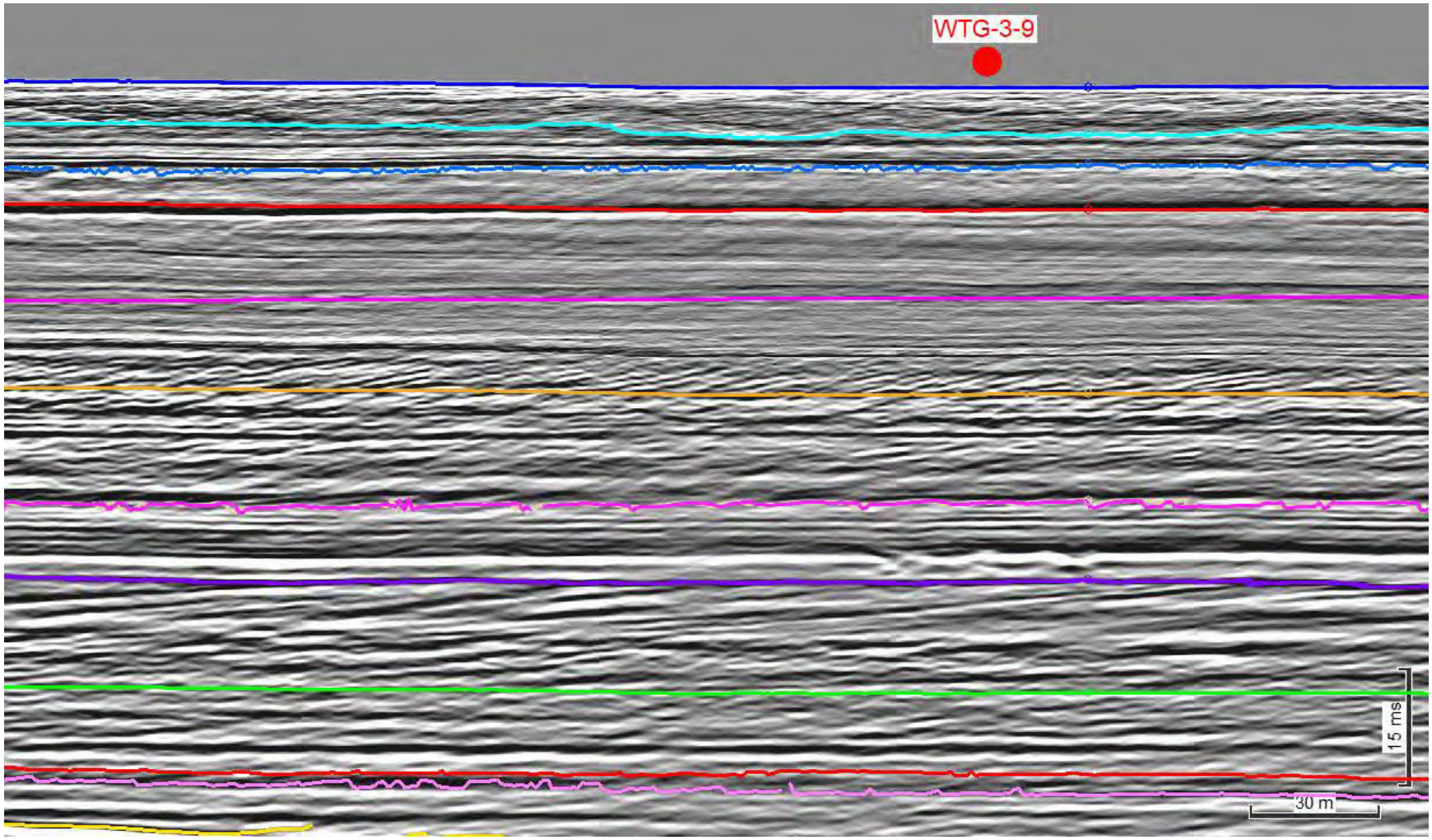


Figure 10-3: Proposed geotechnical locations WTG-3-9 in Corridor 16 along seismic line WTG16MCS16_01_FAST_MIG

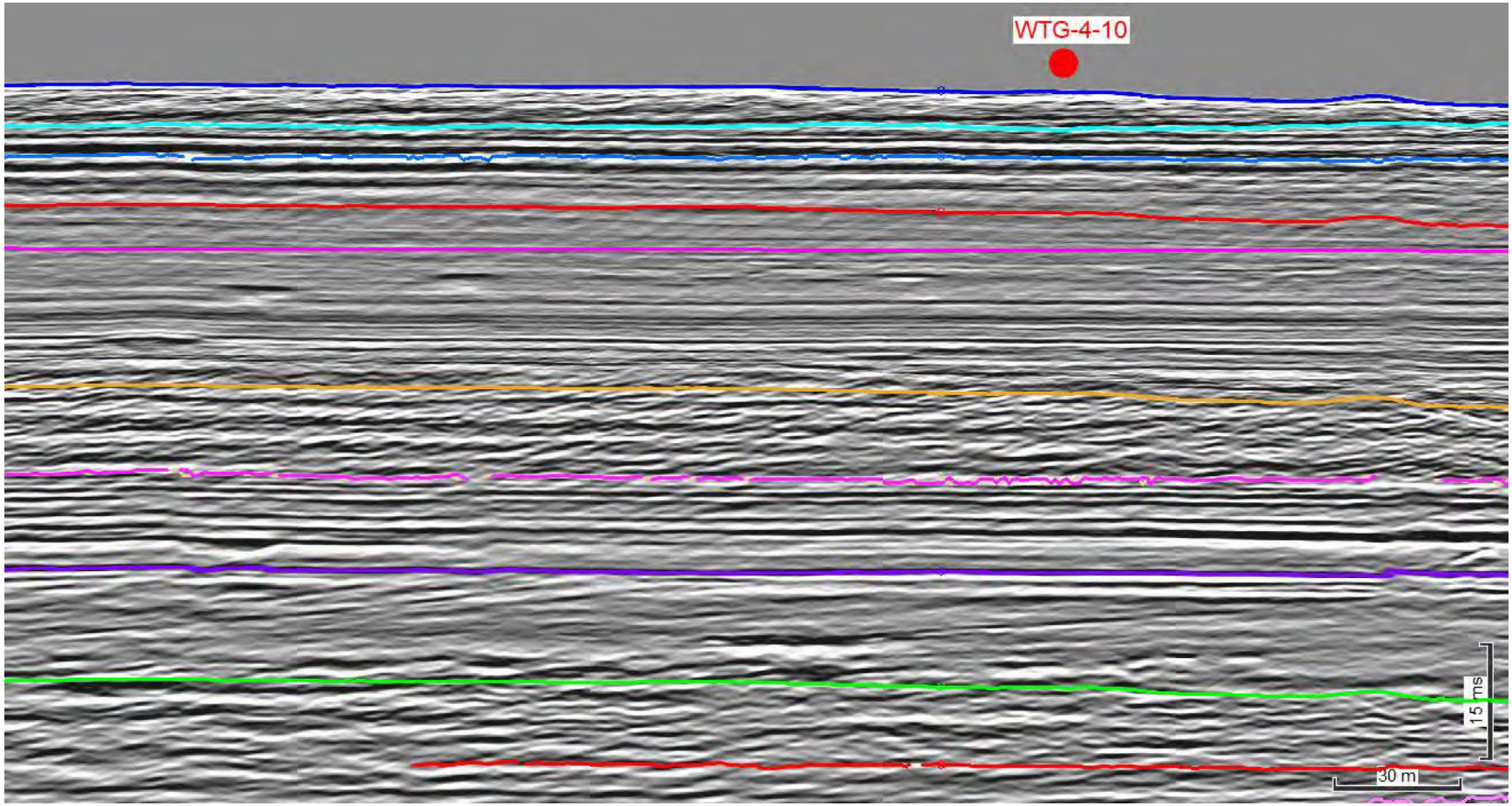


Figure 10-4: Proposed geotechnical locations WTG-4-10 in Corridor 16 along seismic line WTG16MCS16_01_FAST_MIG

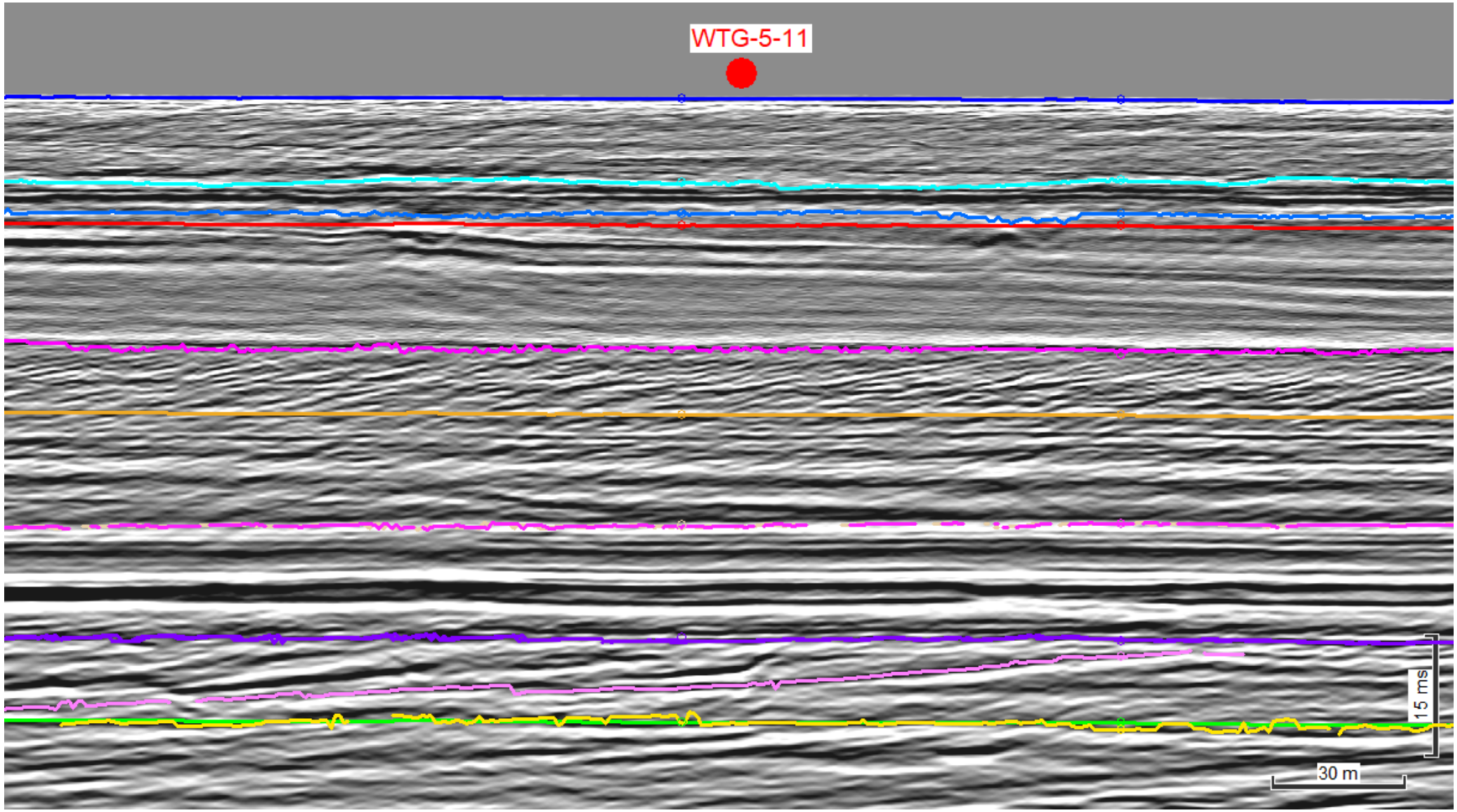


Figure 10-5: Proposed geotechnical locations WTG-5-11 in Corridor 16 along seismic line WTG16MCS16_01_FAST_MIG

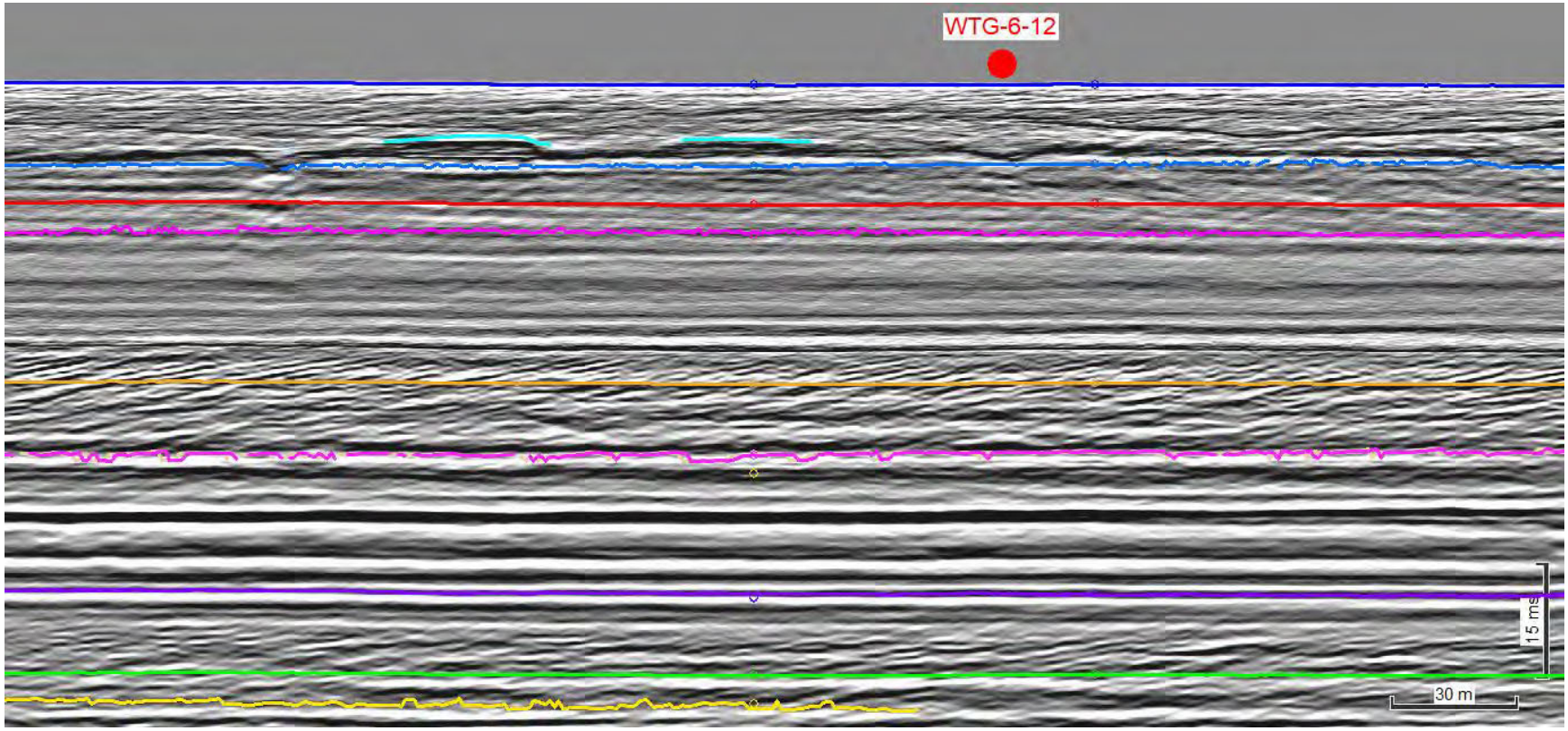


Figure 10-6: Proposed geotechnical locations WTG-6-12 in Corridor 16 along seismic line WTG16MCS16_01_FAST_MIG

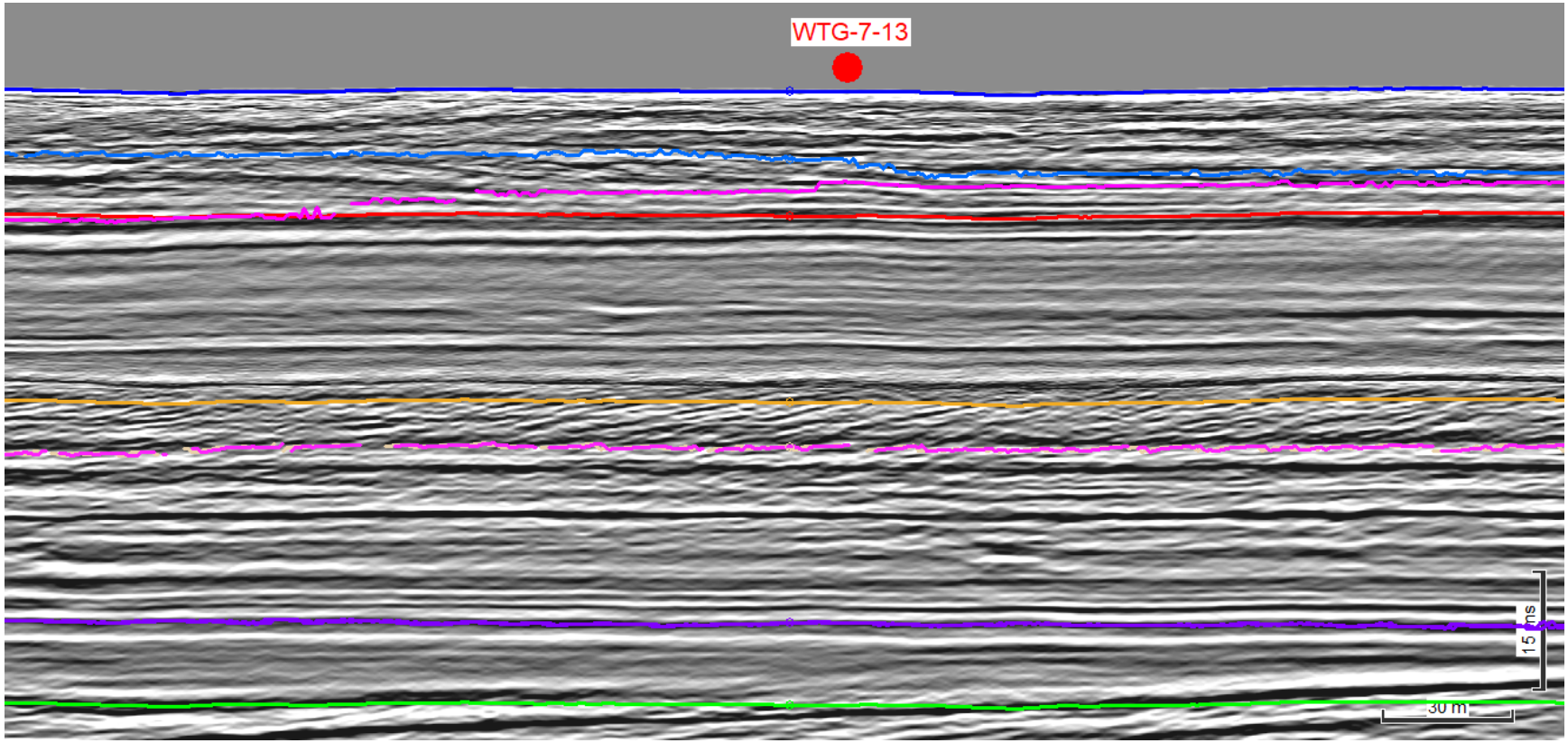


Figure 10-7: Proposed geotechnical locations WTG-7-13 in Corridor 16 along seismic line WTG16MCS16_01_FAST_MIG

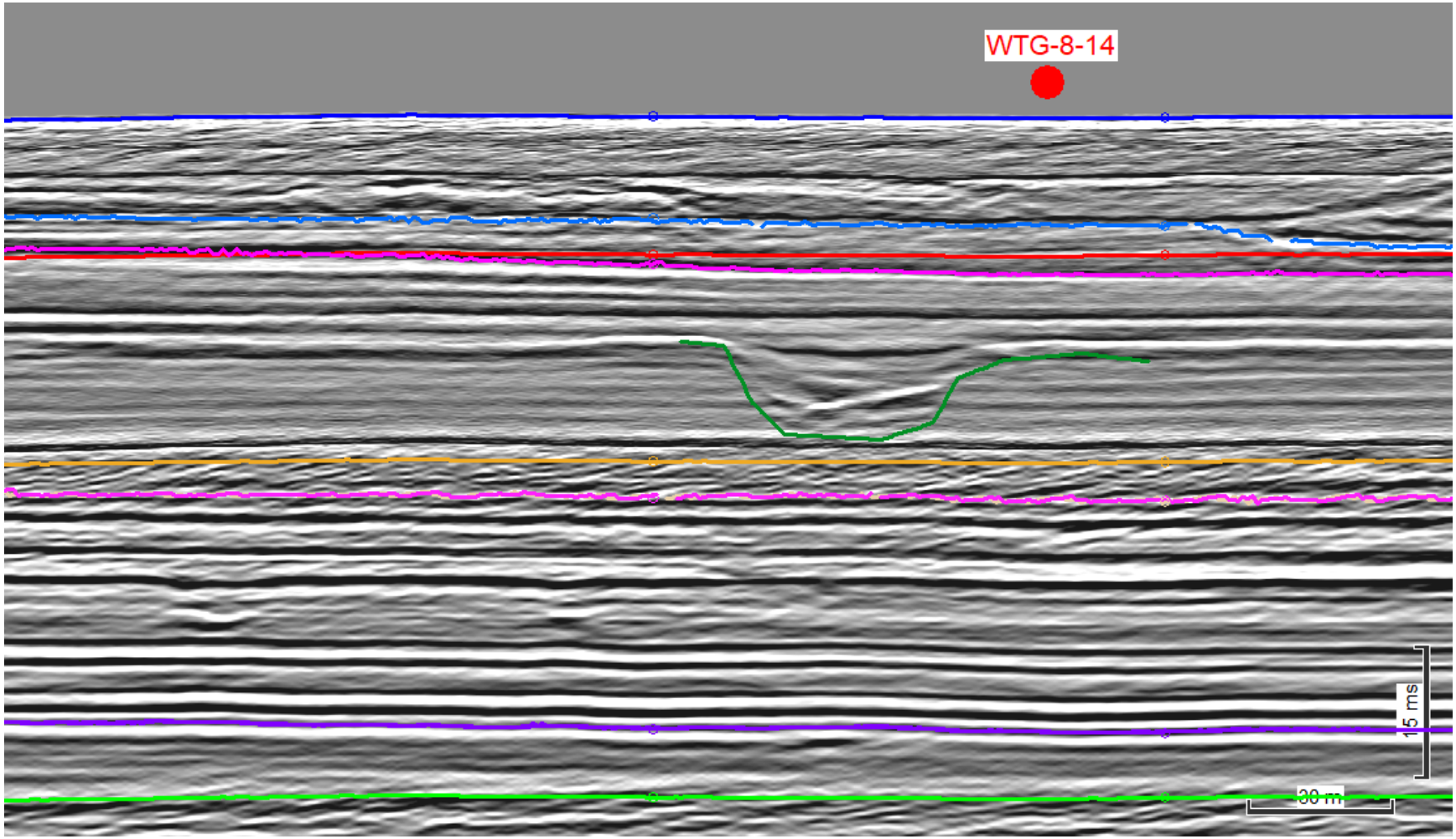


Figure 10-8: Proposed geotechnical locations WTG-8-14 in Corridor 16 along seismic line WTG16MCS16_01_FAST_MIG

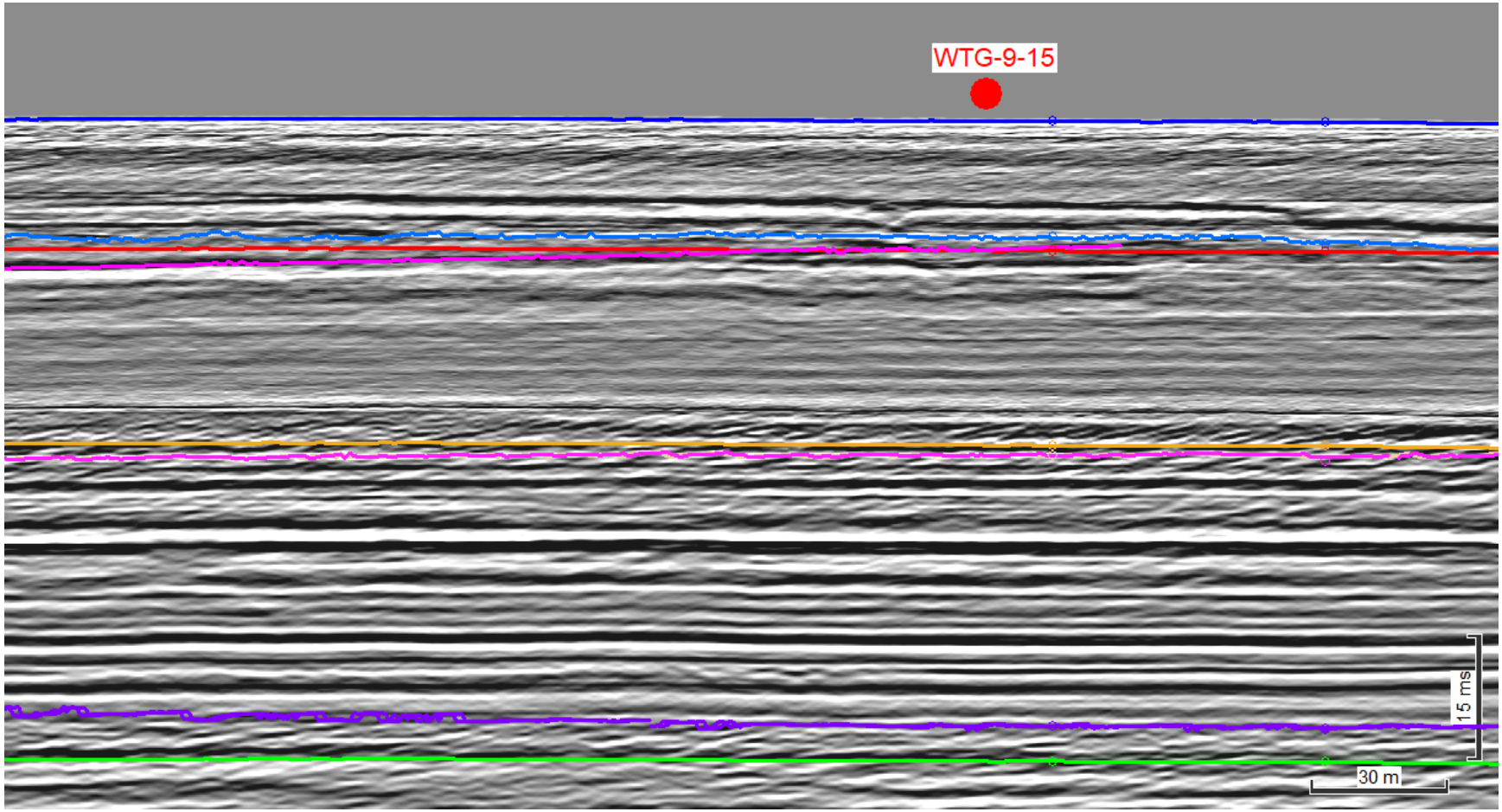


Figure 10-9: Proposed geotechnical locations WTG-9-15 in Corridor 16 along seismic line WTG16MCS16_01_FAST_MIG

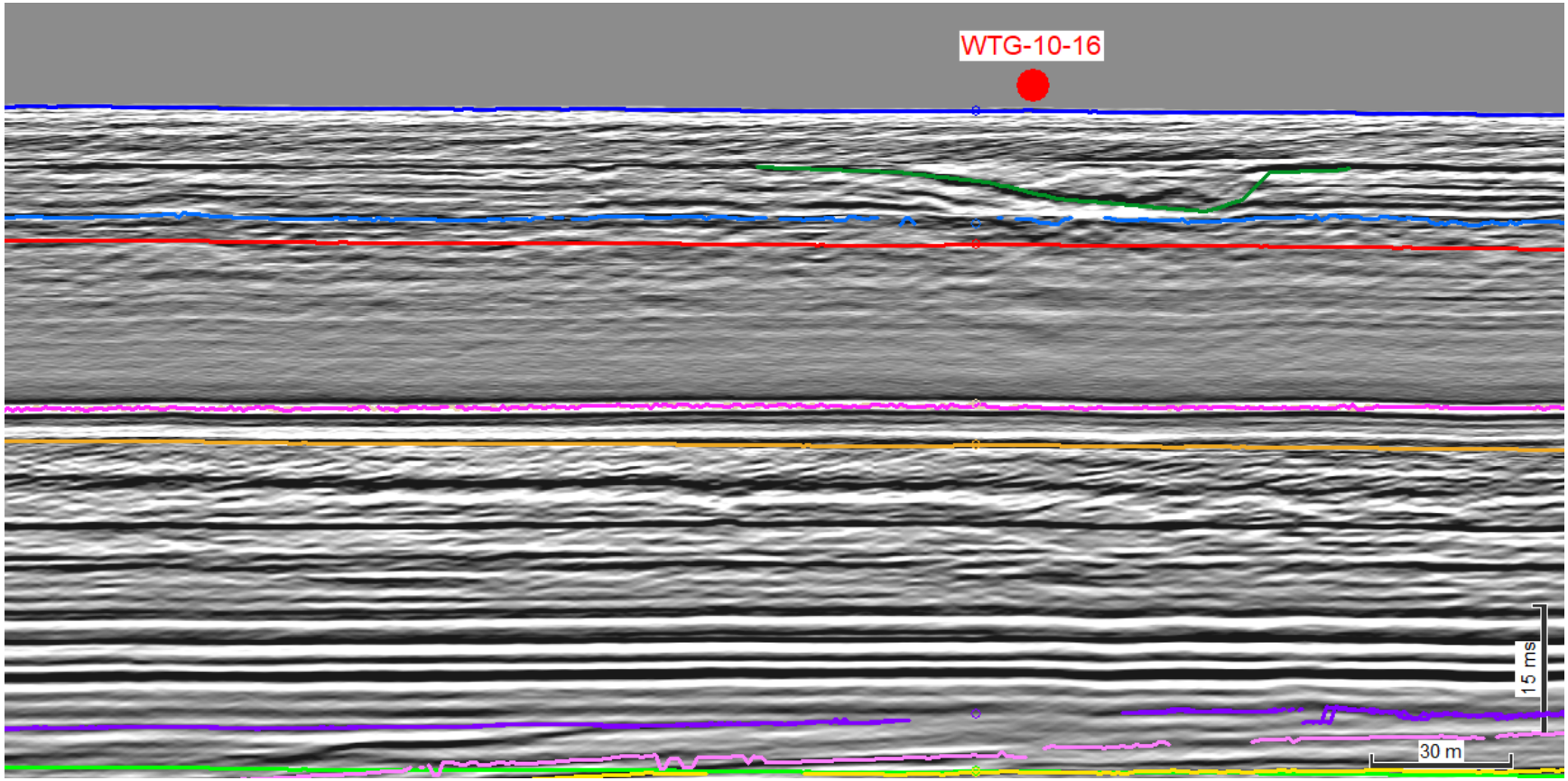


Figure 10-10: Proposed geotechnical locations WTG-10-16 in Corridor 16 along seismic line WTG16MCS16_01_FAST_MIG

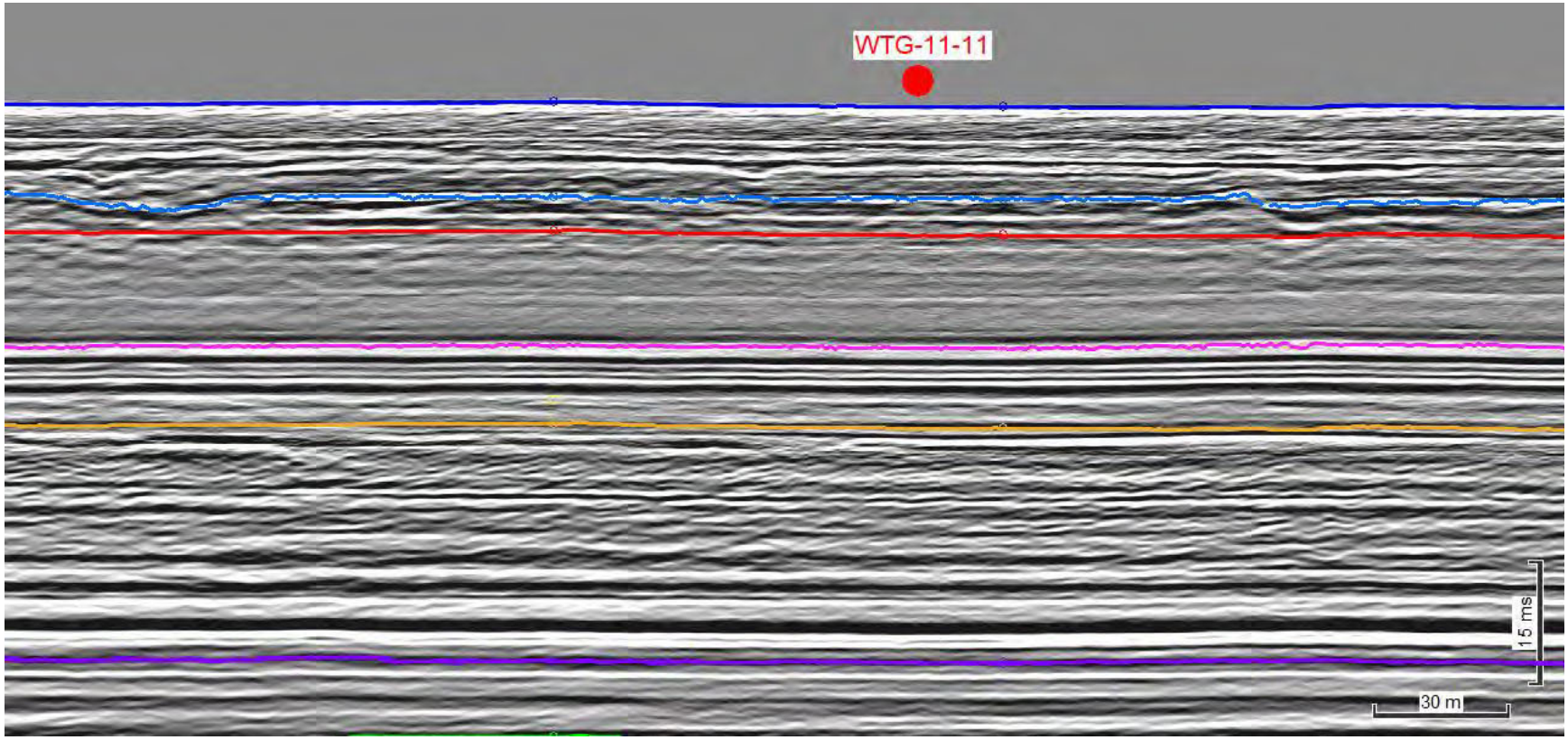


Figure 10-11: Proposed geotechnical locations WTG-11-11 in Corridor 16 along seismic line WTG16MCS16_01_FAST_MIG

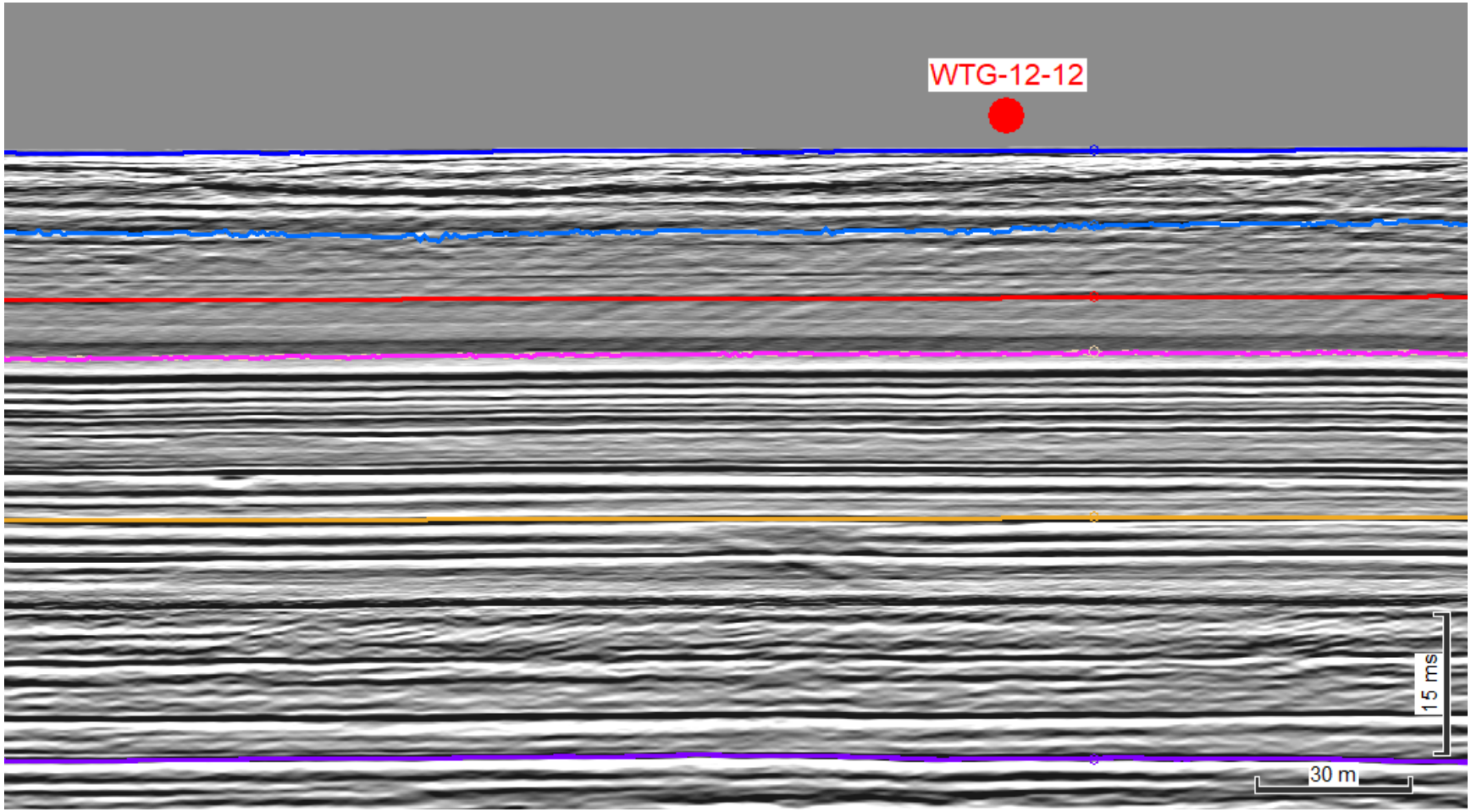


Figure 10-12: Proposed geotechnical locations WTG-12-12 in Corridor 16 along seismic line WTG16MCS16_01_FAST_MIG

APPENDIX 11
SUB-BOTTOM PROFILE IMAGES FOR CORRIDOR 18

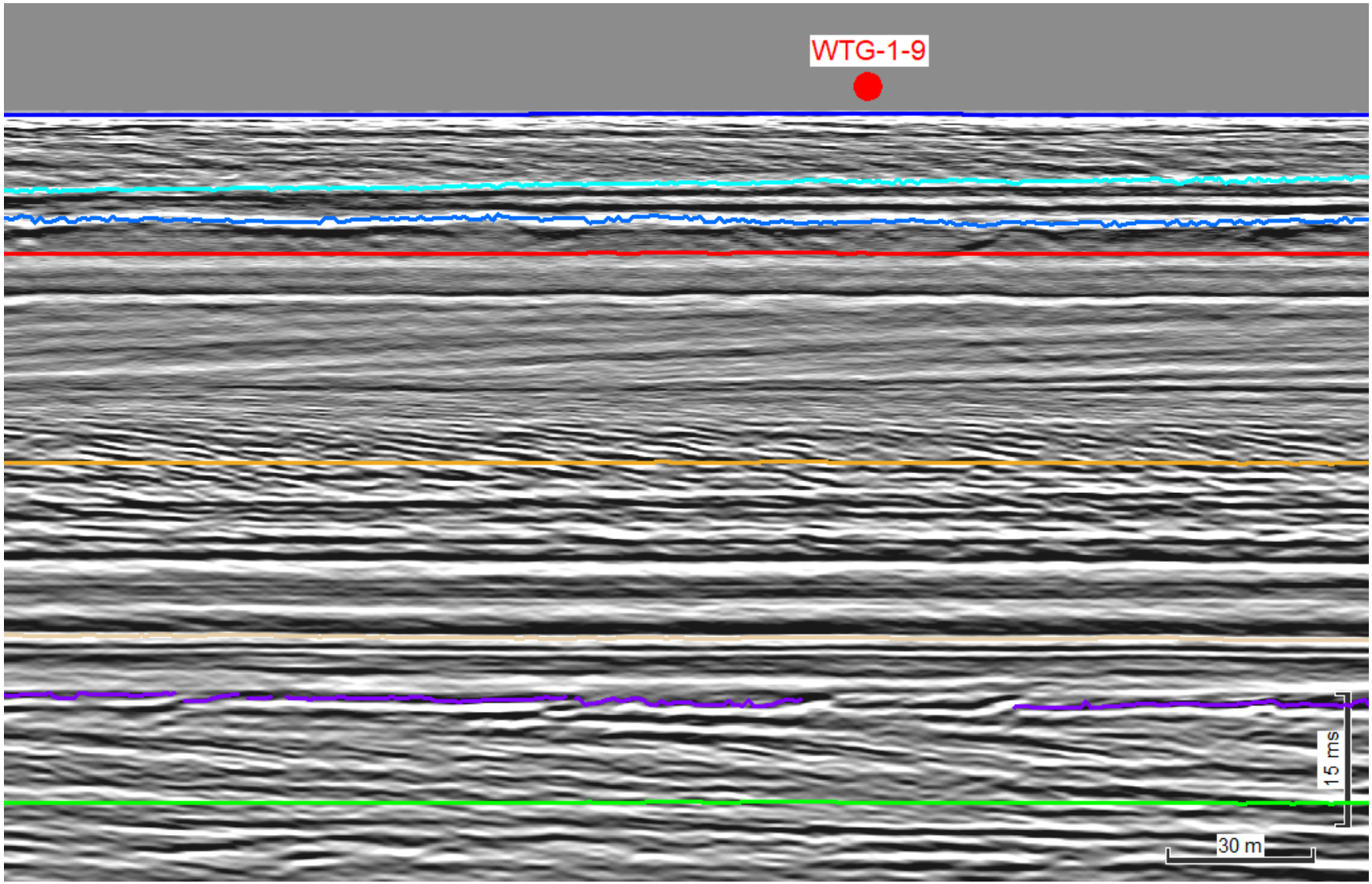


Figure 11-1: Proposed geotechnical locations WTG-1-9 in Corridor 18 along seismic line TLB26_FAST_MIG_PSDEMUL

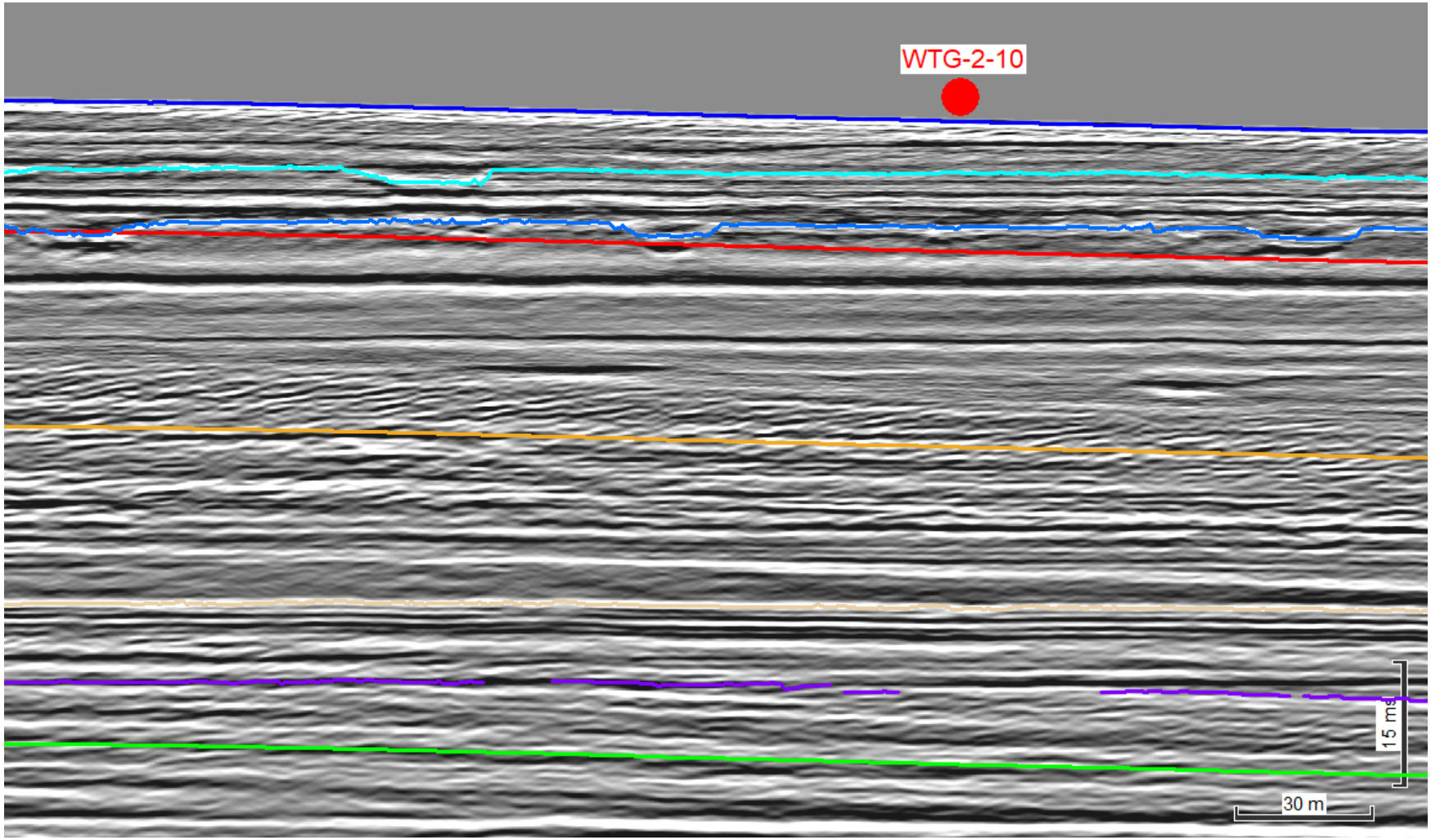


Figure 11-2: Proposed geotechnical locations WTG-2-10 in Corridor 18 along seismic line TLB32_FAST_MIG_PSDEMUL

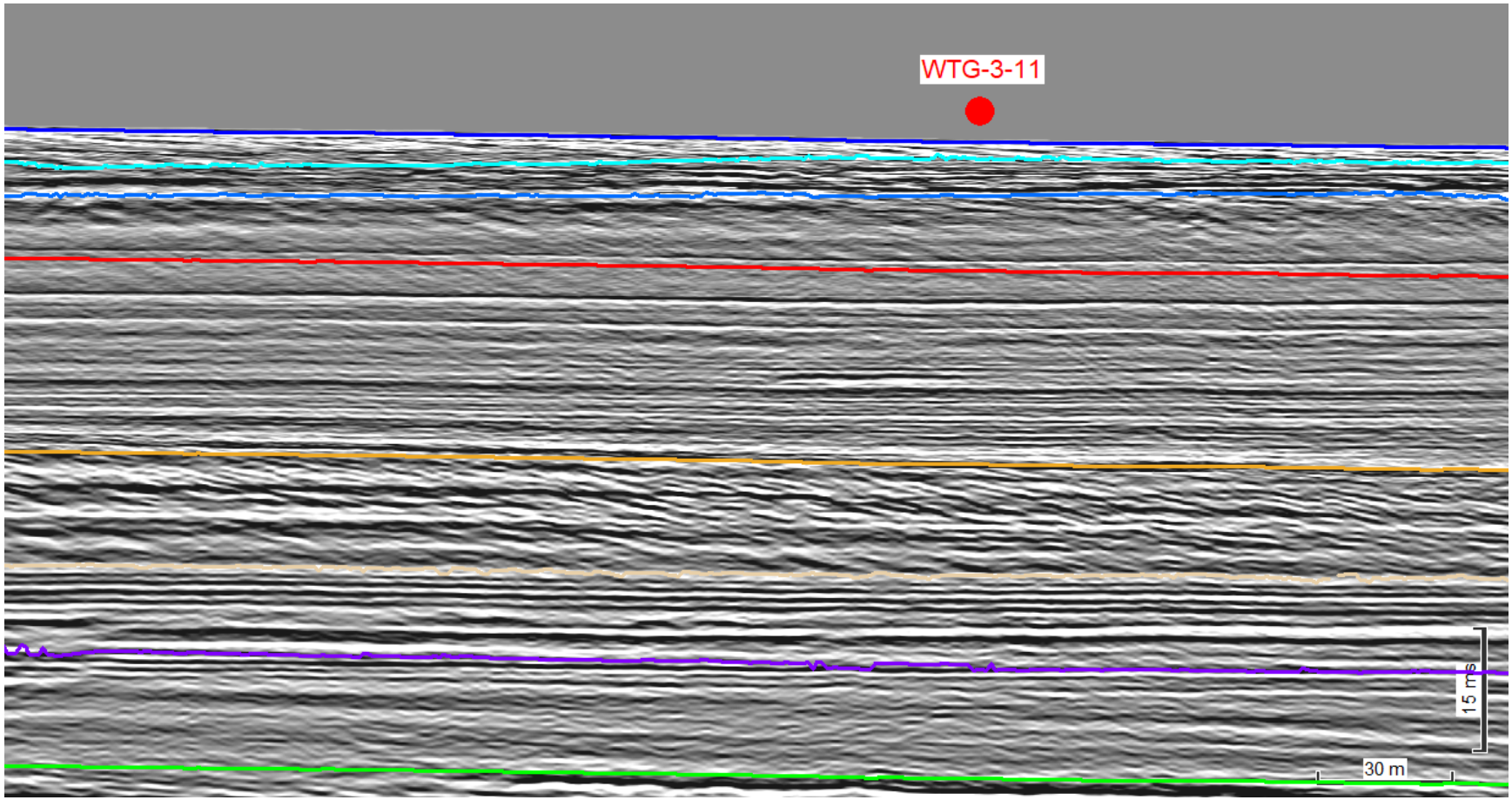


Figure 11-3: Proposed geotechnical locations WTG-3-11 in Corridor 18 along seismic line TLB38_FAST_MIG

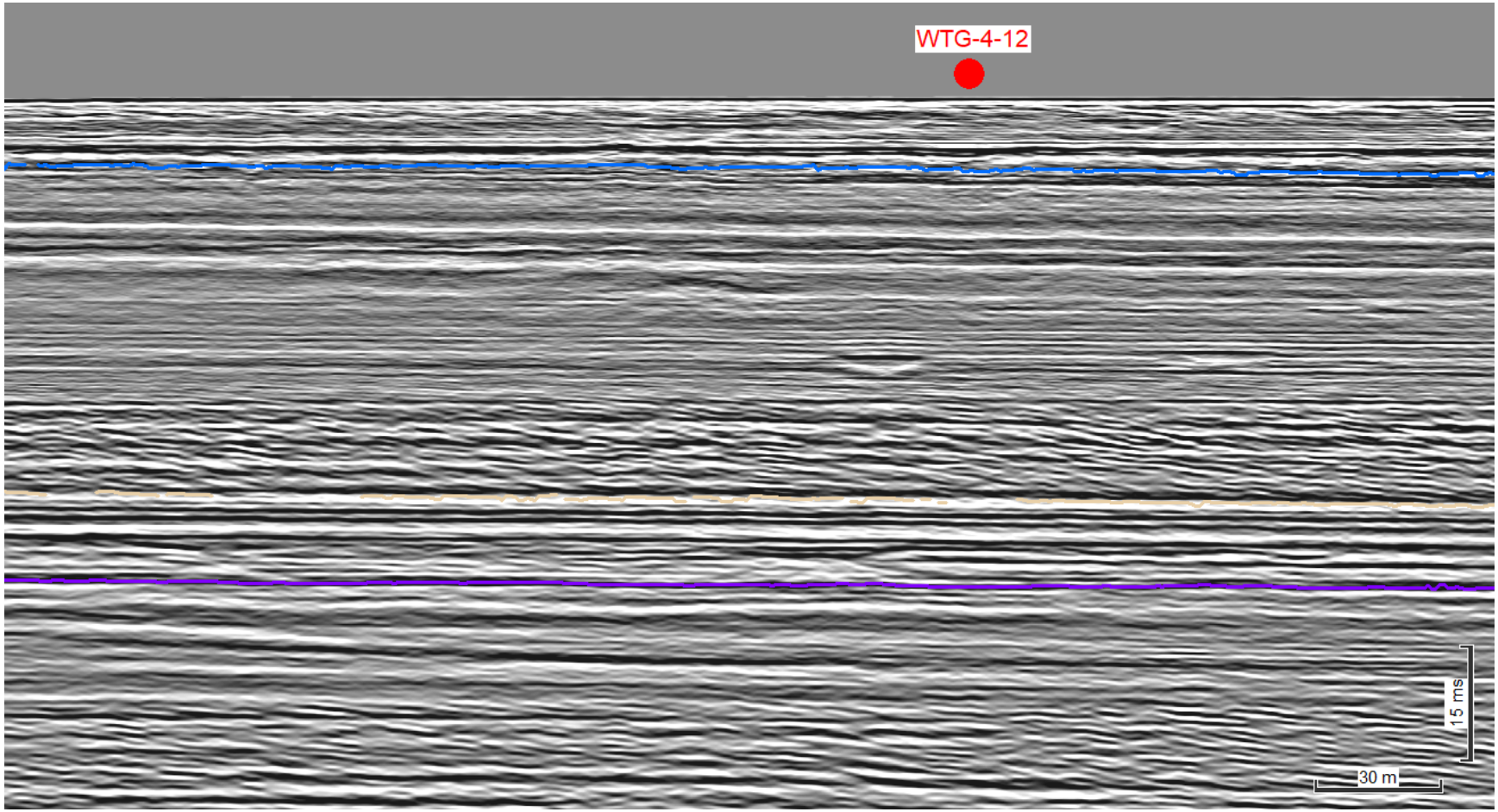


Figure 11-4: Proposed geotechnical locations WTG-4-12 in Corridor 18 along seismic line TLB44_FAST_MIG_PSDEMUL

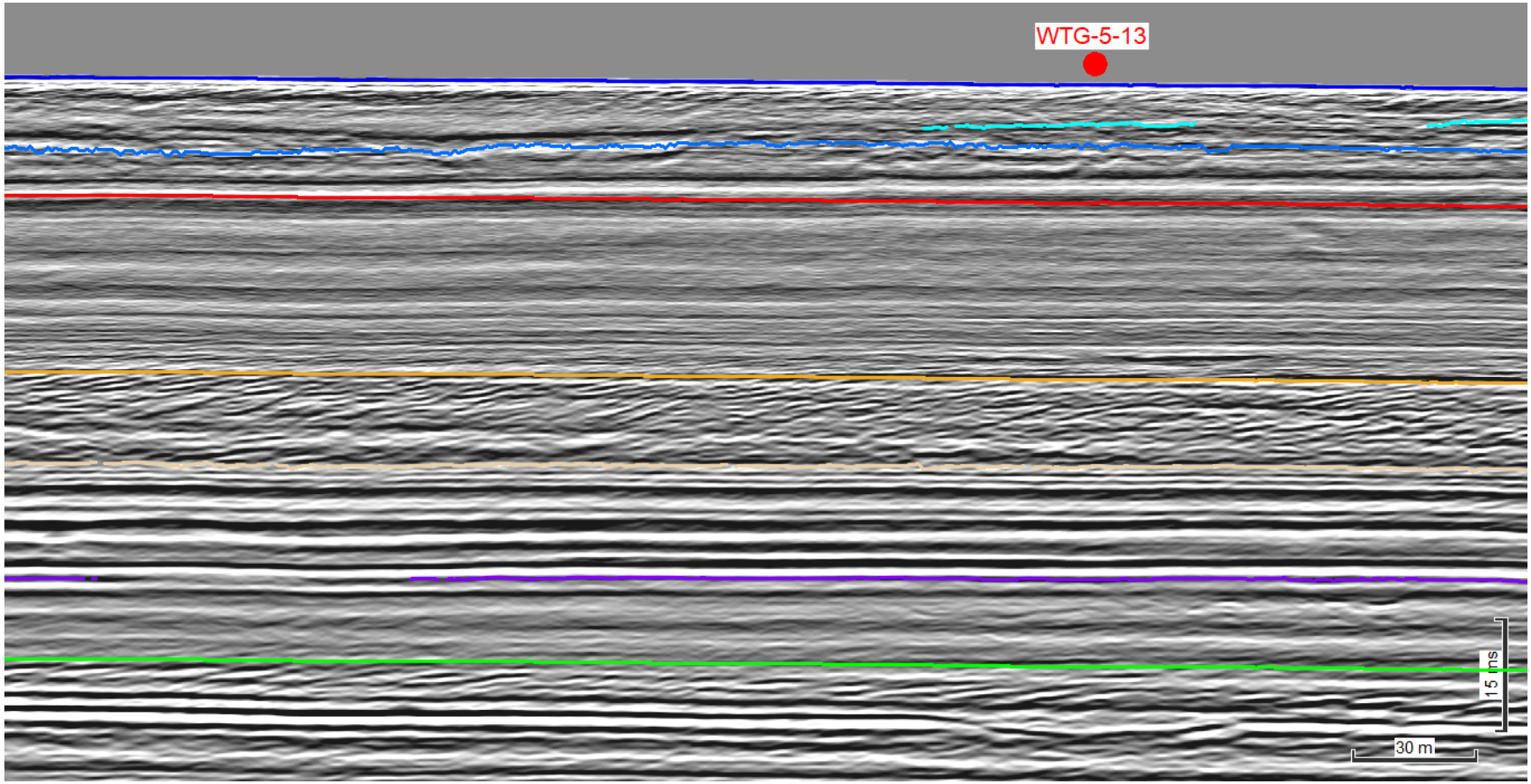


Figure 11-5: Proposed geotechnical locations WTG-5-13 in Corridor 18 along seismic line TLB50_01_FAST_MIG_PSDEMUL

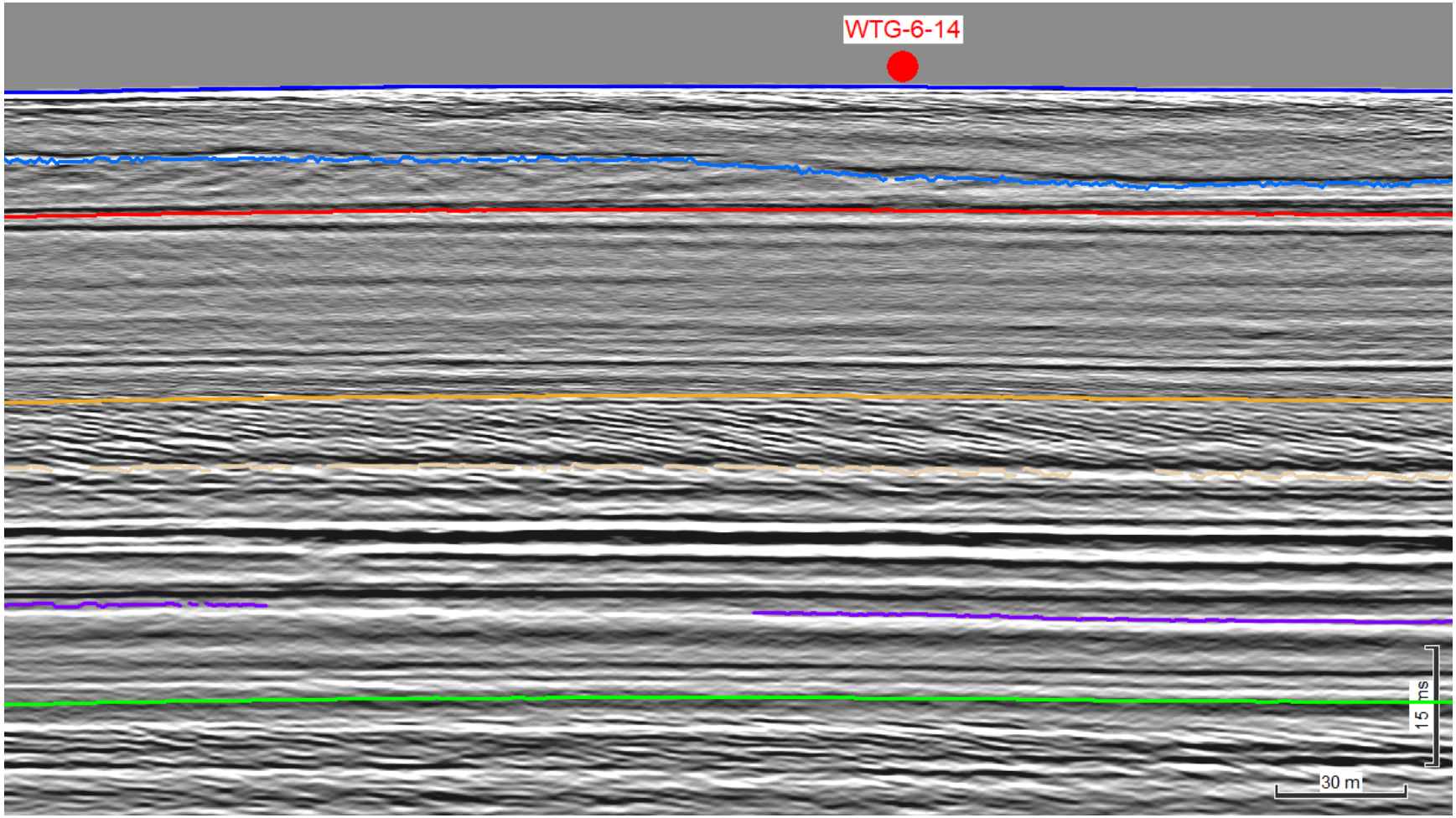


Figure 11-6: Proposed geotechnical locations WTG-6-14 in Corridor 18 along seismic line TLB56_FAST_MIG_PSDEMUL

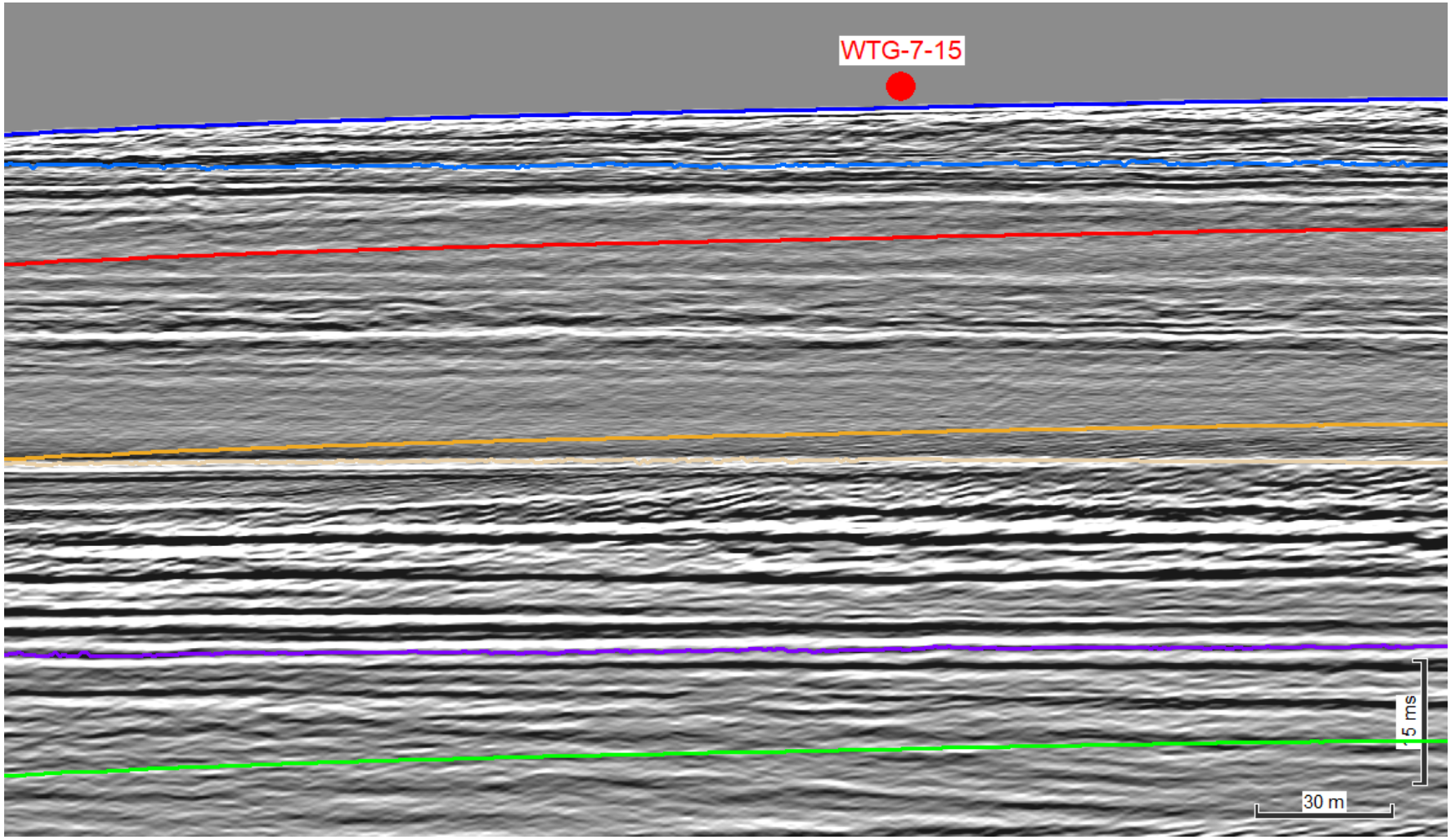


Figure 11-7: Proposed geotechnical locations WTG-7-15 in Corridor 18 along seismic line TLB62_01_FAST_MIG_PSDEMUL

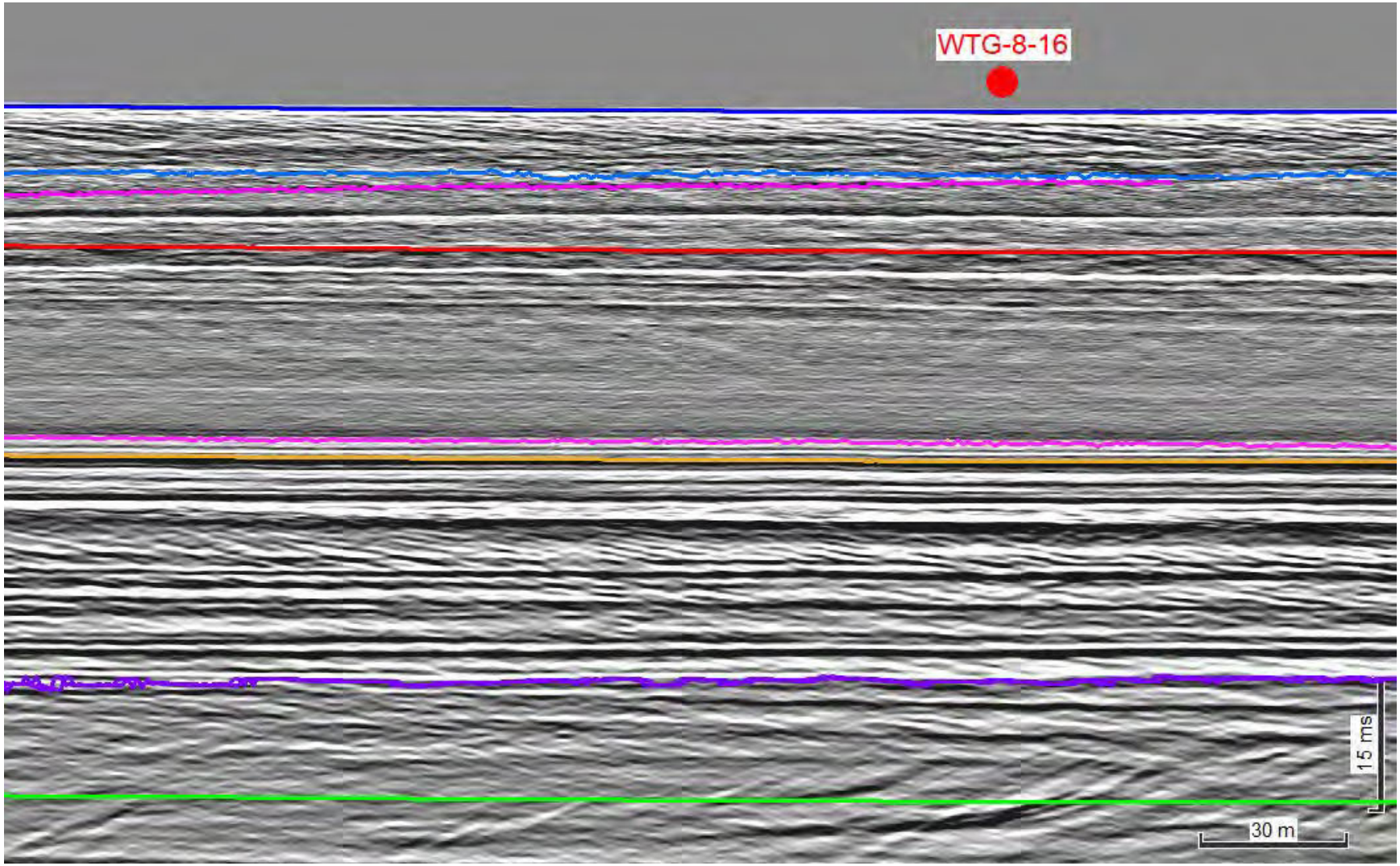


Figure 11-8: Proposed geotechnical locations WTG-8-16 in Corridor 18 along seismic line TLB69_FAST_MIG_PSDEMUL

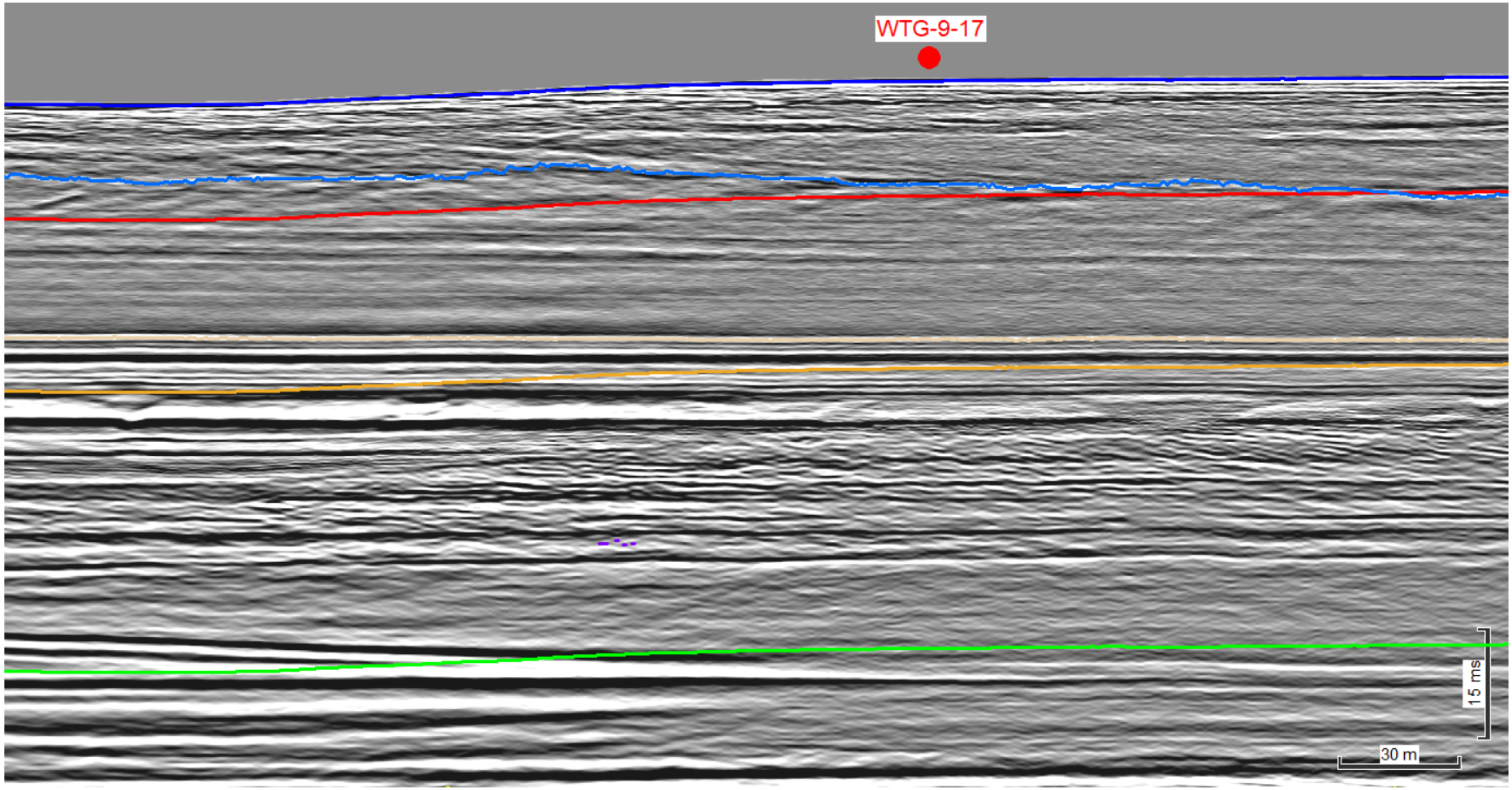


Figure 11-9: Proposed geotechnical locations WTG-9-17 in Corridor 18 along seismic line TLB74A_FAST_MIG_PSDEMUL

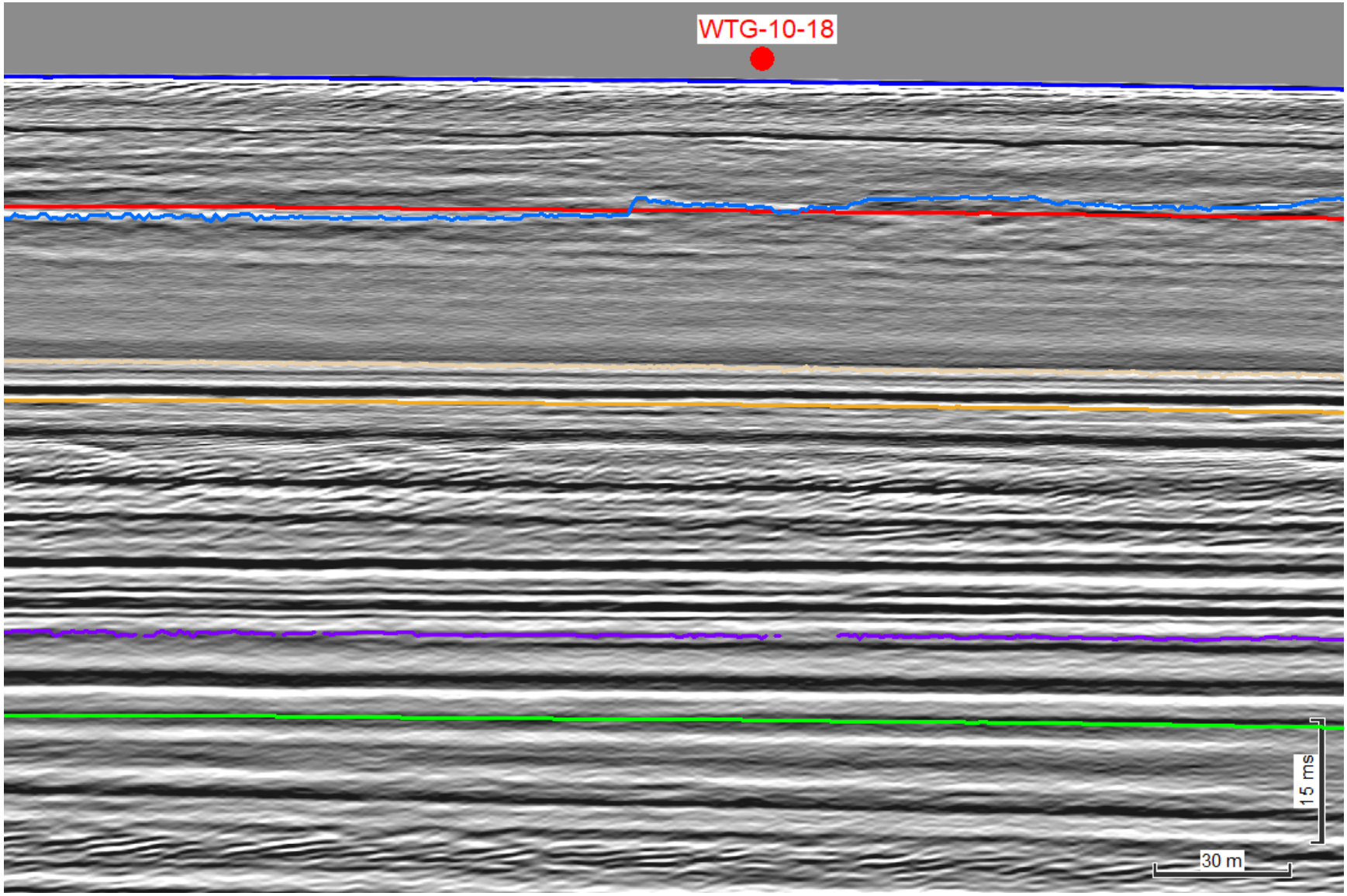


Figure 11-10: Proposed geotechnical locations WTG-10-18 in Corridor 18 along seismic line TLB80_FAST_MIG_PSDEMUL

APPENDIX 12
SUB-BOTTOM PROFILE IMAGES FOR CORRIDOR 22

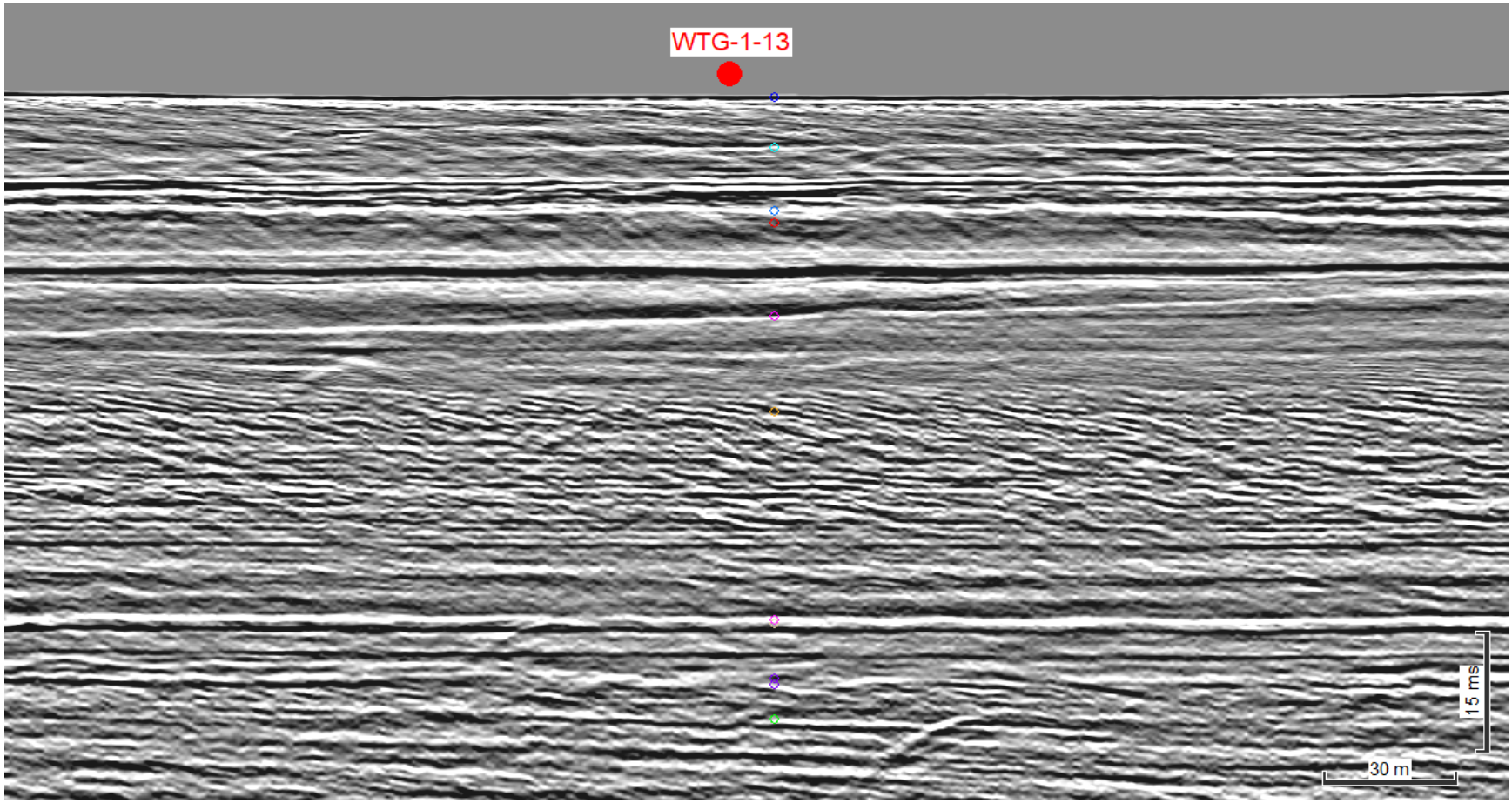


Figure 12-1: Proposed geotechnical locations WTG-1-13 in Corridor 22 along seismic line TLB38_FAST_MIG_PSDEMUL

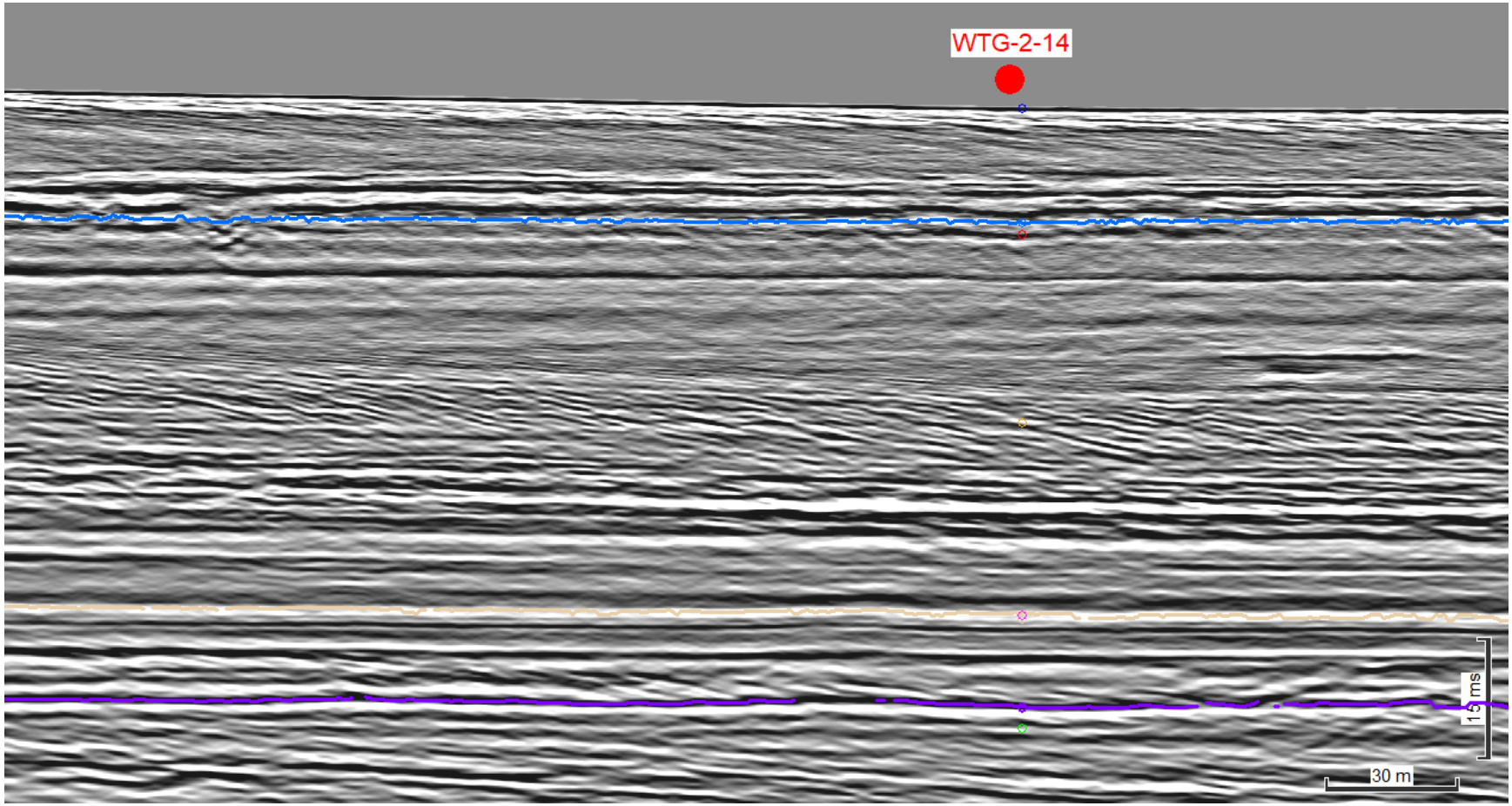


Figure 12-2: Proposed geotechnical locations WTG-2-14 in Corridor 22 along seismic line TLB44_FAST_MIG_PSDEMUL

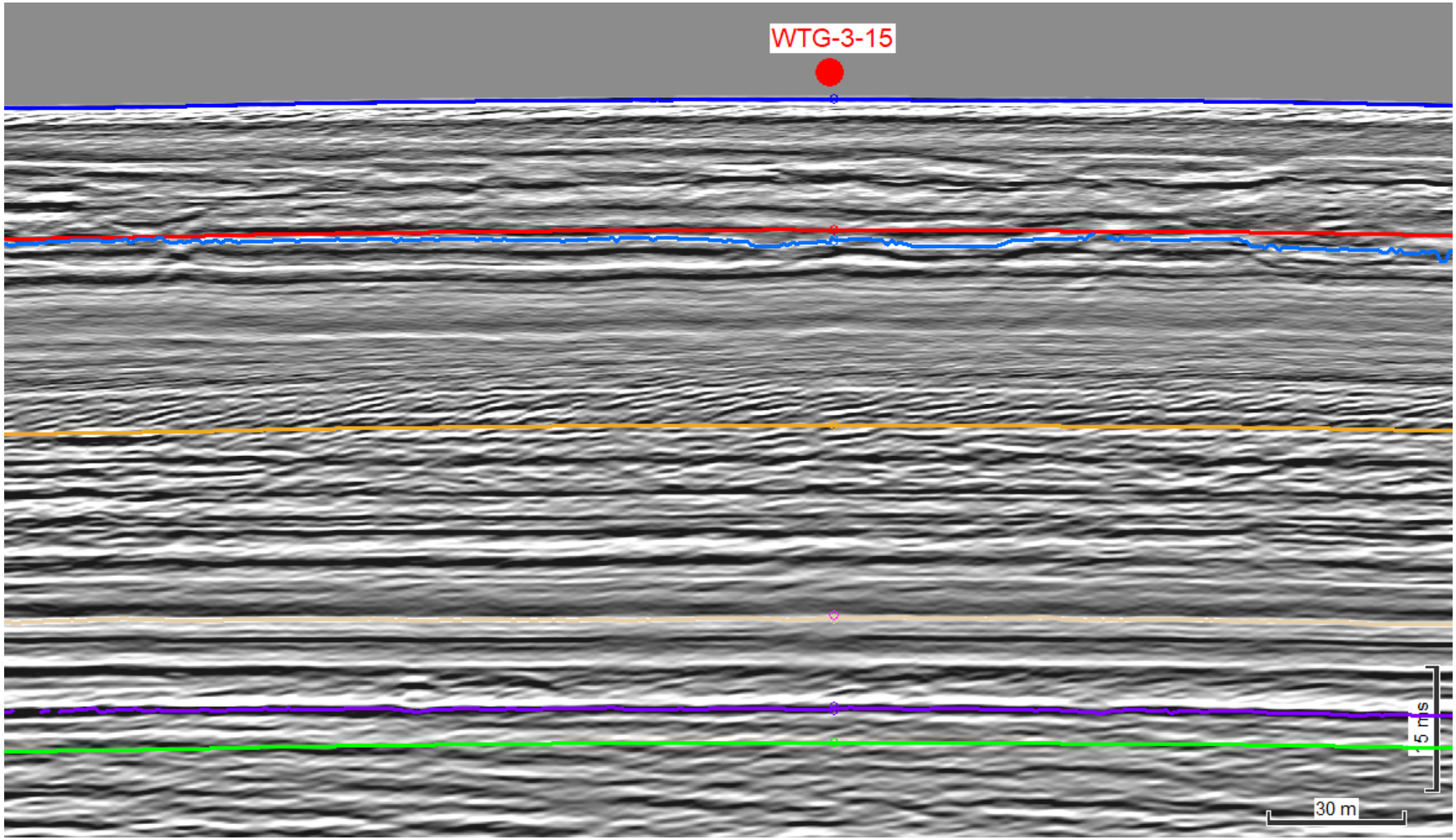


Figure 12-3: Proposed geotechnical locations WTG-3-15 in Corridor 22 along seismic line TLB50_01_FAST_MIG_PSDEMUL

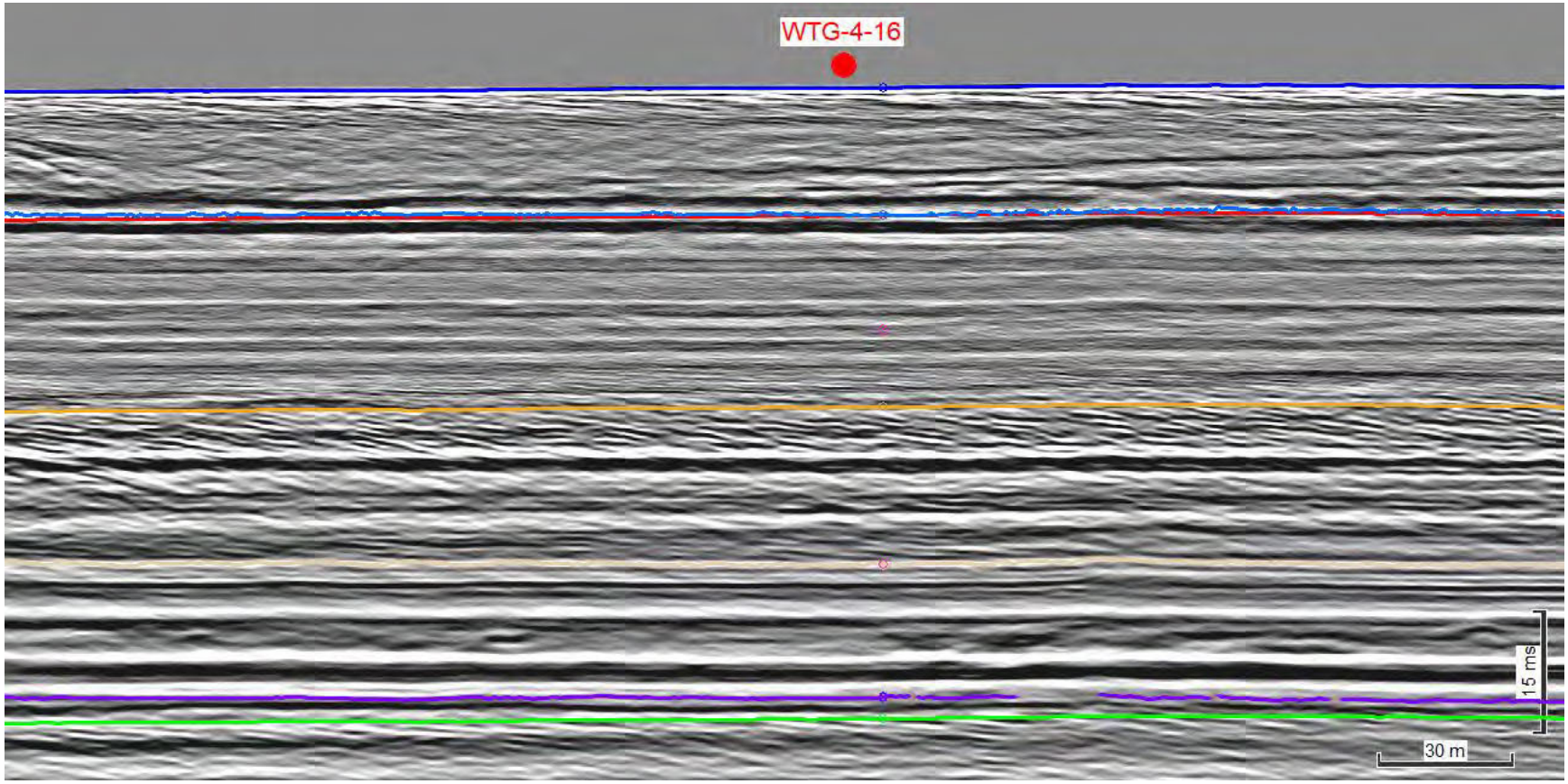


Figure 12-4: Proposed geotechnical locations WTG-4-16 in Corridor 22 along seismic line TLB56_FAST_MIG_PSDEMUL

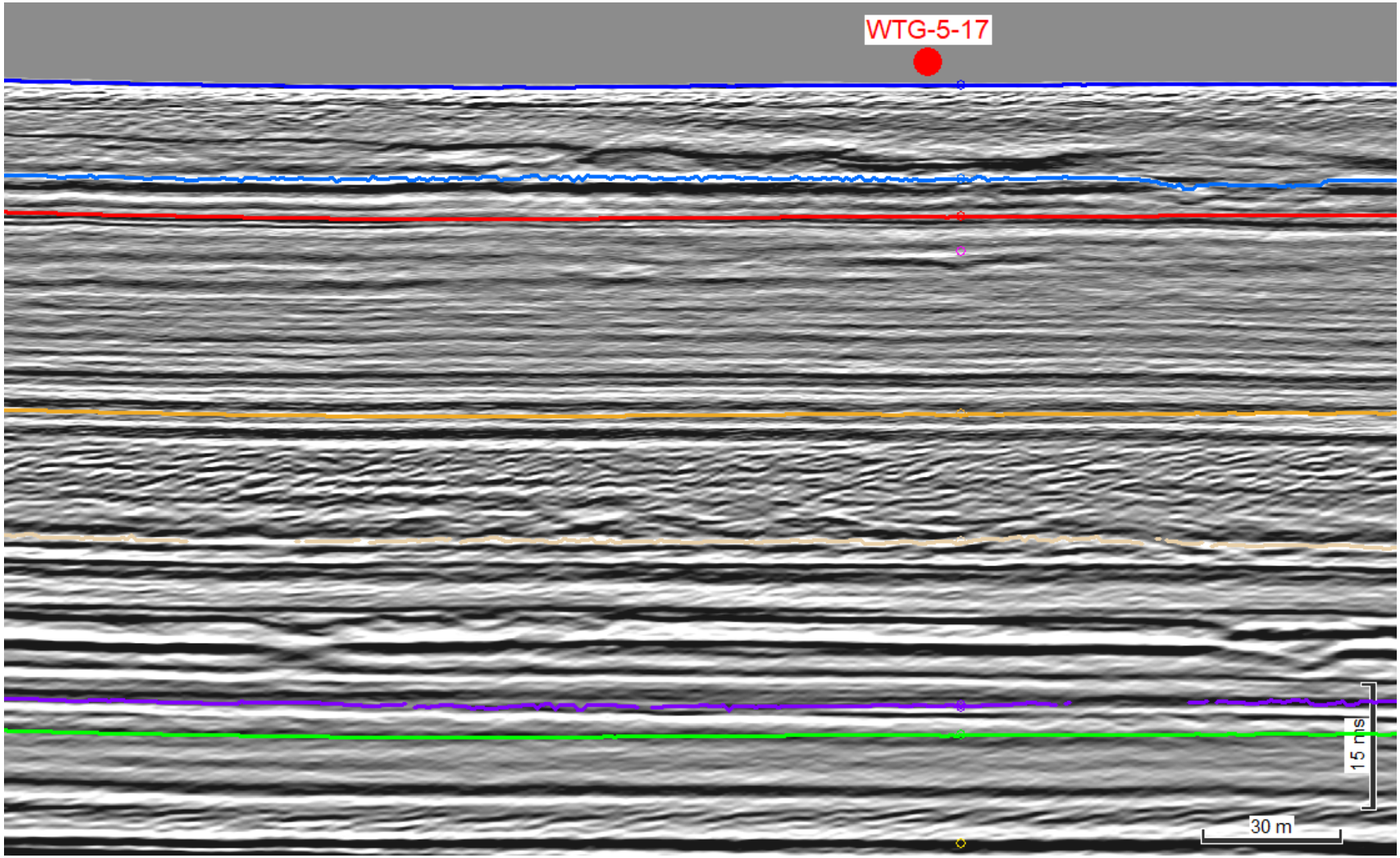


Figure 12-5: Proposed geotechnical locations WTG-5-17 in Corridor 22 along seismic line TLB62_01_FAST_MIG_PSDEMUL

Dominion Energy, Inc.
707 East Main Street
Richmond, VA 23219
dominionenergy.com

December 30, 2020

Mr. James Bennett, Chief
Bureau of Ocean Energy Management
Office of Renewable Energy Programs
45600 Woodland Road, VAM-OREP
Sterling, VA 20166

Dear Mr. Bennett:

RE: Coastal Virginia Offshore Wind Commercial Project - Cultural Resources Clearance for Geotechnical Investigations along the Export Cable Route Block A and Block C Wing Corridors

Virginia Electric and Power Company d/b/a Dominion Energy Virginia (Dominion Energy, the Applicant), is submitting the attached geotechnical clearance reports for the Export Cable Route Block A and Block C Wing Corridors within the Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf (OCS) Offshore Virginia (Lease No. OCS-A-0483) Condition 4.2.2 in support of the Coastal Virginia Offshore Wind Commercial (CVOW) Commercial Project.

This letter and attached report provide the results of Phase I cultural resources analyses of high-resolution geophysical (HRG) survey data collected by TerraSond to support geotechnical investigations. In summary:

- No sonar contacts that represent significant cultural resources were identified within the analytical areas for Block A or Block C.
- No magnetic anomalies that represent significant cultural resources were identified within the analytical areas pertaining to 36 of the 46 proposed geotechnical sampling locations for Block A. Further analysis is required at 10 locations.
- No magnetic anomalies that represent significant cultural resources were identified within the analytical areas pertaining to 37 of the 42 proposed geotechnical sampling locations for Block C. Further analysis is required at five locations.
- Analyses of the seismic data suggest that the geotechnical samples will not impact any submerged and buried landforms that exhibit the potential to contain preserved archaeological resources within Block A or Block C.
- No historic properties, such as shipwrecks, were detected at the proposed sampling locations for Block A or Block C.

Please contact Scott Lawton at scott.lawton@dominionenergy.com or (804) 273-2600 if you have any questions or require additional information.

Sincerely,

Joshua J. Bennett
Vice President – Offshore Wind

Enclosure(s)

Cc: Dominion Env. - Jason Ericson, Darrell Shier, Scott Lawton, Mitchell Jabs
Dominion Offshore Wind – GT Hollett, Will Kinnan
BOEM - Casey Reeves, Algene Byrum, Jen Draher, Willie Hoffman
Tetra Tech - Janelle Lavallee, Alex Cross
McNeilan and Assoc. - Tom McNeilan

December 23, 2020

Mr. Lloyd Eley
Project Manager
Dominion Energy
5000 Dominion Boulevard
Glen Allen, MD 23060

RE: Coastal Virginia Offshore Wind Commercial Project – Cultural Resources Clearance for Geotechnical Investigations along the Block A Wing Corridors

Dear Mr. Eley:

This letter report provides the results of Phase I cultural resources analyses of high-resolution geophysical (HRG) survey data collected by Alpine Ocean Seismic Survey, Inc. to support geotechnical investigations for the Coastal Virginia Offshore Wind Commercial Project. The planned 2020 geotechnical campaign consists of shallow coring (piston or vibracores) and seabed Cone Penetrometer Tests; this memorandum reviews 46 of these locations for gathering geologic information (Tables 1 and 2). The geotechnical investigation will be conducted by Geoquip Marine aboard the vessels, *Geoquip Saentis*, *Dina Polaris*, and *Geoquip Speer*, or a similar type of vessel that is equipped with a dynamic positioning system. Activities at the geotechnical locations will not exceed a targeted depth of five (5) to seven (7) meters (m) below seabed.

The QMA reviewed the HRG survey data within a rectangular analytical area (180 m by 240 m) centered on each of the 46 proposed geotechnical locations located along the Export Cable Route (ECR), Block A. The reviewed data included at minimum six (6) parallel lines of survey data that captured each of the proposed locations. This review focused on identification of any potential submerged cultural resources and buried, preserved landforms through geophysical investigations.

High-resolution side scan sonar imagery was recorded throughout the survey area and viewed as high-resolution mosaicked files (Appendix 1). No sonar contacts that represent significant cultural resources were identified within the analytical areas.

Two marine magnetometers configured into a transverse gradiometer array collected magnetic data along each survey line. Magnetic anomalies were interpreted using magnetic residual field grid data, magnetic contour mapping, and by observing their characteristics in terms of amplitude, duration, magnetic signature, and spatial distribution (Appendix 1). No magnetic anomalies that represent significant cultural resources were identified within the analytical areas pertaining to 36 of the 46 proposed geotechnical sampling locations. Further analysis is required for A8N, A9N, A11N, A15N, A23N/B1N, A3S, A4S, A15S, A17S, and, A22S.

Seismic data were collected and interpreted along each survey line associated with the geotechnical locations (Appendix 2). All seismic data were reviewed to their full vertical extent. The geotechnical locations were also reviewed with respect to the ground model and interpreted horizons. Analyses of the seismic data suggest that the geotechnical samples will not impact any submerged and buried landforms that exhibit the potential to contain preserved archaeological resources.

The analyses considered all portions of the seafloor within the limits of bottom-disturbing activities as they pertain to 36 of the 46 the proposed sampling locations (Tables 1 and 2; Appendices 1 and 2). Based on the current data, if the geotechnical sampling activities are contained within the established analytical areas (Table 1), no potential archaeological resources will be affected by the proposed geotechnical activities. No historic properties, such as shipwrecks, were detected at the proposed sampling locations.

If you have questions, please do not hesitate to contact us.

Best regards,

Ashley Himmelstein, M.A.
Nautical Archaeologist

Table 1. Proposed geotechnical locations for ECR Block A, Northern Wing Corridor

Core ID[1]	Easting (X)[2]	Northing (Y)[2]	Longitude[3]	Latitude[3]
A1N	458273.25	4079162.13	-75.46809381	36.85746523
A2N	457787.08	4079036.67	-75.47354053	36.8563127
A3N	457297.57	4078910.97	-75.47902463	36.85515758
A4N	456815.23	4078787.52	-75.48442816	36.85402287
A5N	456335.18	4078661.76	-75.4898057	36.85286719
A6N	455849.12	4078534.43	-75.49525042	36.85169679
A7N	455367.52	4078407.12	-75.500645	36.85052656
A10N	453917.35	4078028.24	-75.51688793	36.84704157
A12N	452946.05	4077779.47	-75.52776668	36.84475121
A13N	452461.62	4077648.90	-75.53319185	36.84354994
A14N	451977.08	4077525.83	-75.53861843	36.84241606
A16N	451492.90	4077400.51	-75.54404065	36.8412617
A17N	451007.19	4077270.36	-75.54947958	36.84006344
A18N	450528.43	4077146.97	-75.55484081	36.83892627
A19N	450036.31	4077017.24	-75.56035135	36.83773091
A20N	449559.72	4076898.58	-75.56568824	36.83663602
A21N	449070.98	4076768.13	-75.57116052	36.83543391
A22N	448593.23	4076643.90	-75.57650976	36.83428818
A24N/B2N	447239.55	4076290.90	-75.59166549	36.83103162

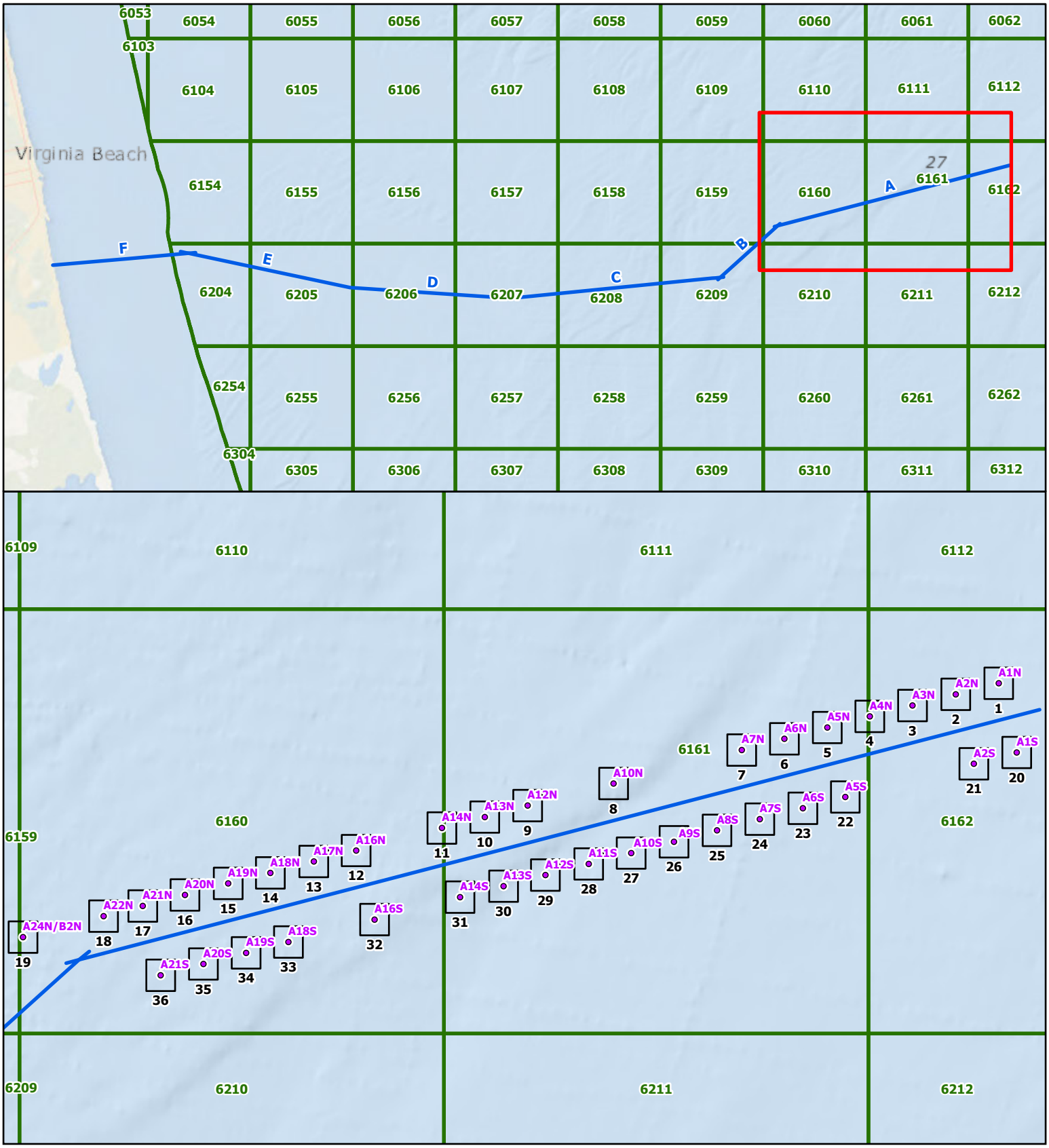
[1] Core IDs may not be sequential; A8N, A9N, A11N, A15N and A23N/B1N are pending additional analyses.
[2] Projected coordinates are referenced to UTM Zone 18N, NAD83 (2011), meters.
[3] Geographical coordinates are referenced to NAD83.

Table 2. Proposed geotechnical locations for ECR Block A, Southern Wing Corridor

Core ID[1]	Easting (X)[2]	Northing (Y)[2]	Longitude[3]	Latitude[3]
A1S	458476.36	4078379.28	-75.46577256	36.85041735
A2S	457991.71	4078252.05	-75.47120178	36.84924898
A5S	456538.08	4077876.12	-75.48748479	36.84579452
A6S	456058.37	4077748.76	-75.49285783	36.8446242
A7S	455571.30	4077625.26	-75.49831353	36.84348814
A8S	455087.38	4077498.90	-75.5037335	36.84232627
A9S	454600.68	4077369.60	-75.50918425	36.84113742
A10S	454117.09	4077241.76	-75.51460015	36.83996167
A11S	453636.79	4077118.96	-75.51997927	36.83883131
A12S	453147.46	4076993.36	-75.5254593	36.83767496
A13S	452673.43	4076867.32	-75.53076755	36.83651524
A14S	452181.97	4076742.96	-75.53627121	36.83536944
A16S	451215.04	4076489.18	-75.54709836	36.83303242
A18S	450240.67	4076236.08	-75.55800845	36.83070016
A19S	449762.63	4076112.75	-75.56336085	36.8295631
A20S	449279.57	4075987.56	-75.56876919	36.82840884
A21S	448795.76	4075859.55	-75.57418571	36.82722887

[1] Core IDs may not be sequential; A3S, A4S, A15S, A17S, and A22S are pending additional analyses.
[2] Projected coordinates are referenced to UTM Zone 18N, NAD83 (2011), meters.
[3] Geographical coordinates are referenced to NAD83.

APPENDIX 1
ARCHAEOLOGICAL RESOURCES MAPS FOR BLOCK A WING CORRIDORS



N
W E
S
Grid North

NOAA NGDC, Esri, DeLorme, NaturalVue, NOAA OCS, Esri, DeLorme, Esri, DeLorme, NaturalVue

MSR: 1:58,000
SRS: NAD 1983 2011 UTM Zone 18N Meter

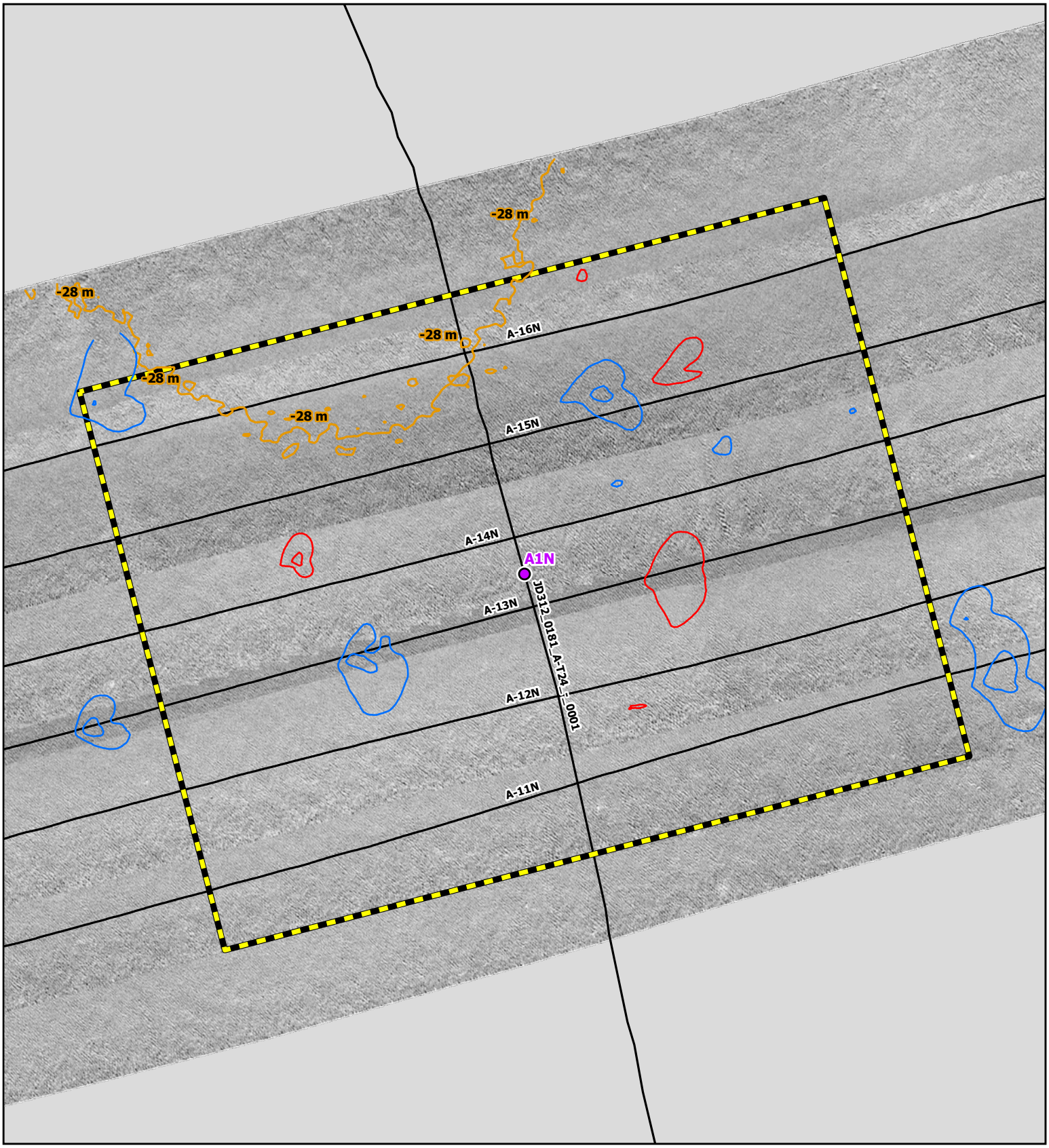
0 0.25 0.5 0.75 1
Miles
0 0.250.50.75 1
Kilometers

- Geotechnical Location
- ECR Centerline
- Map Sheet Boundary
- BOEM Lease Block

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf, Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Index Map

R. Christopher Goodwin & Associates, Inc.
NAUTICAL DIVISION
MARINE ARCHAEOLOGY FROM STEM TO STERN
www.rcgoodwin.com | kmay, 12.23.2020



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 1

A1N

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MARINE ARCHAEOLOGY FROM STEM TO STERN

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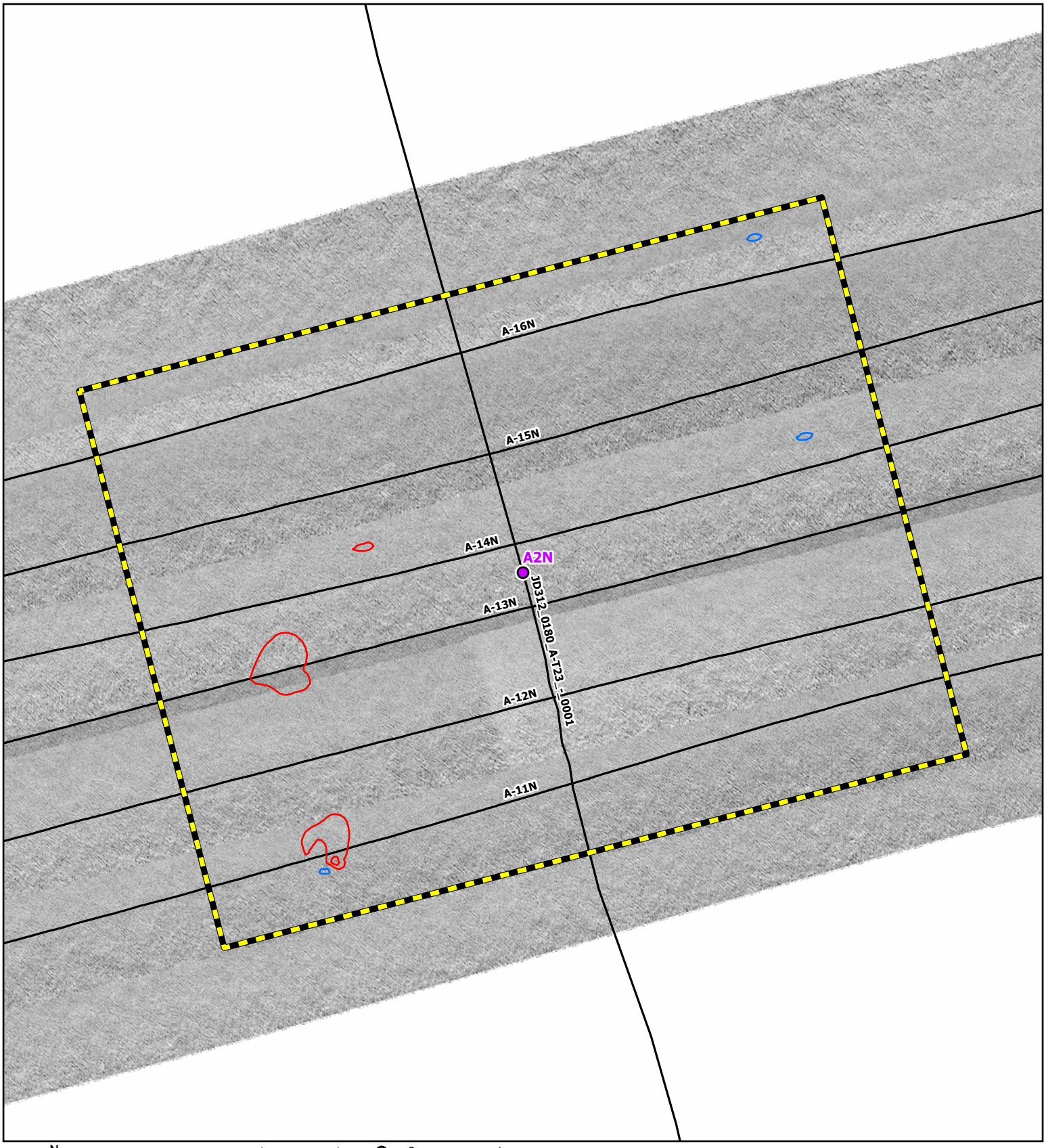

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 2

A2N

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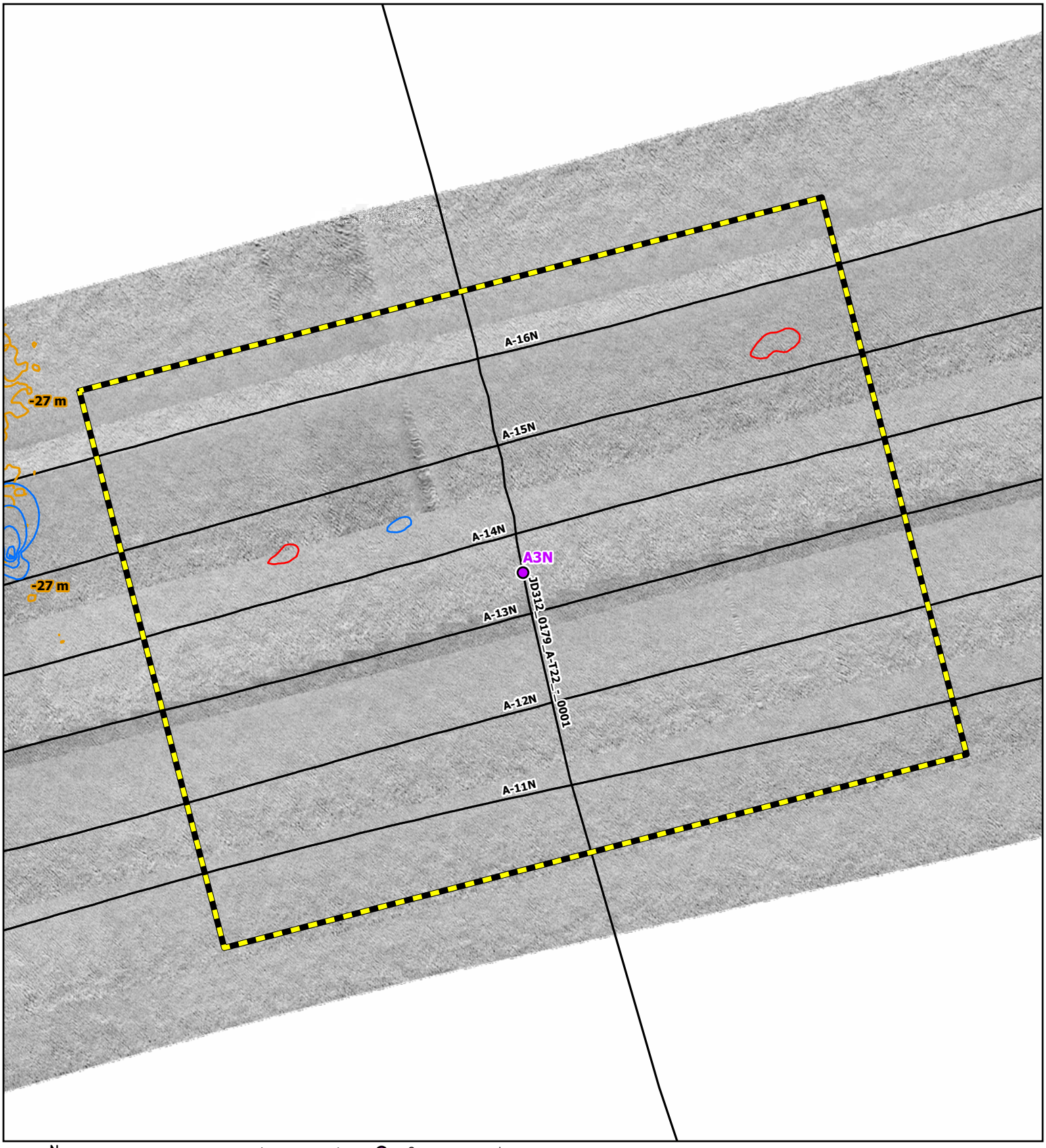

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block A

Map: 3

A3N

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MARINE ARCHAEOLOGY FROM STEM TO STERN

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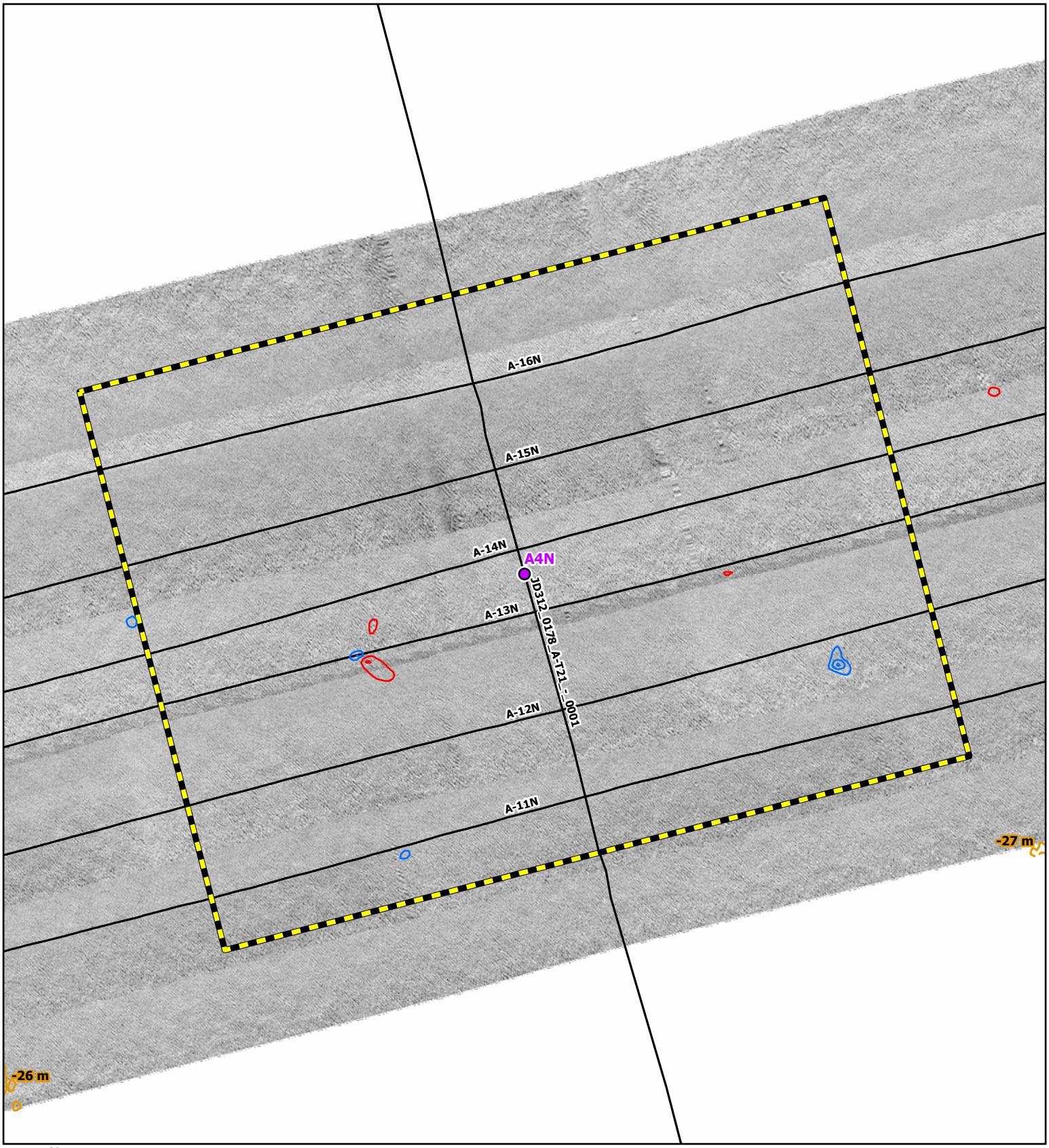

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location
Trackline
Bathymetric Contour (1 m)
Magnetic Contour (5 nT)
Negative
Positive
Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 4

A4N

R. Christopher Goodwin & Associates, Inc.
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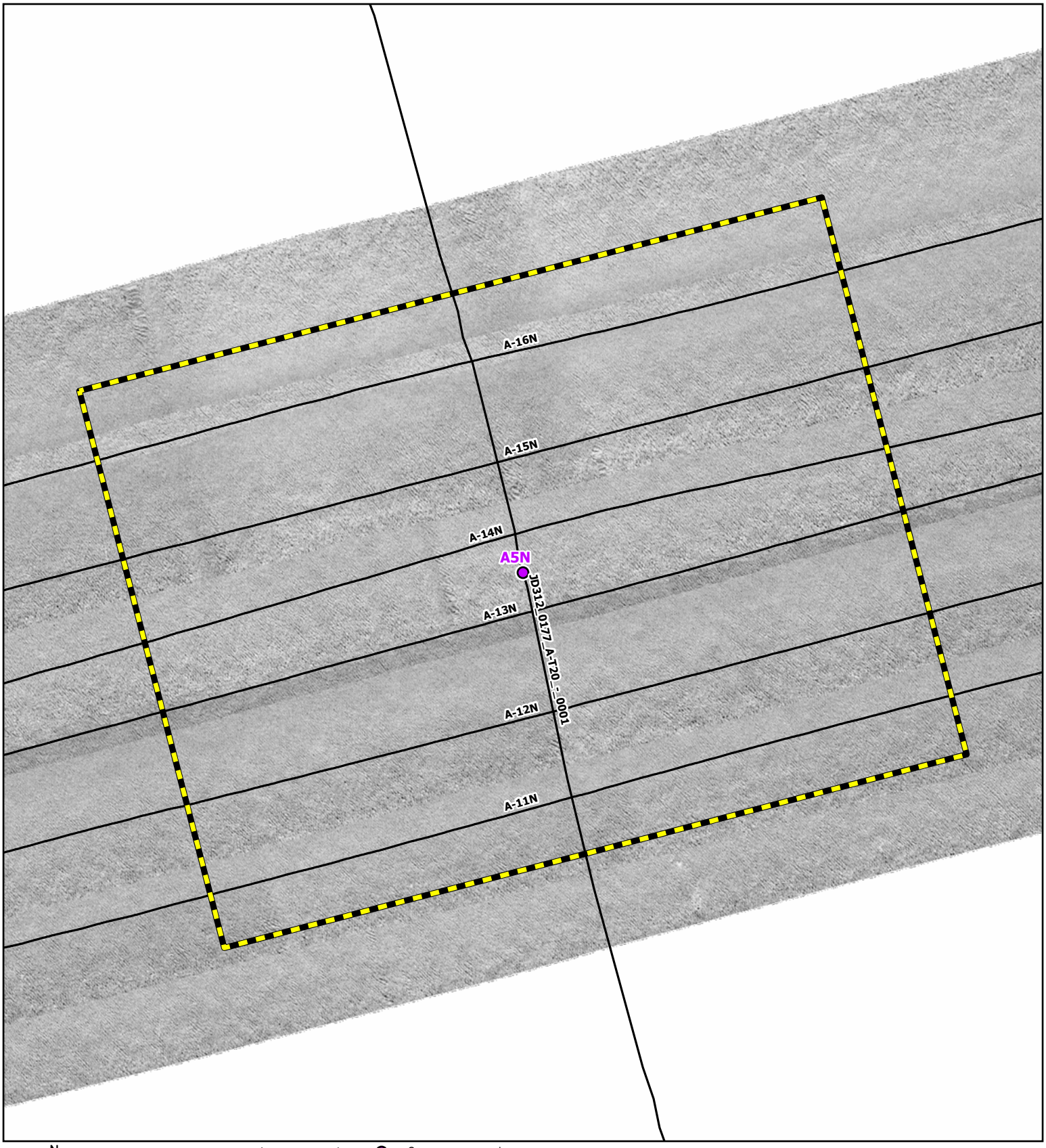

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 5

A5N

R. Christopher Goodwin & Associates, Inc.
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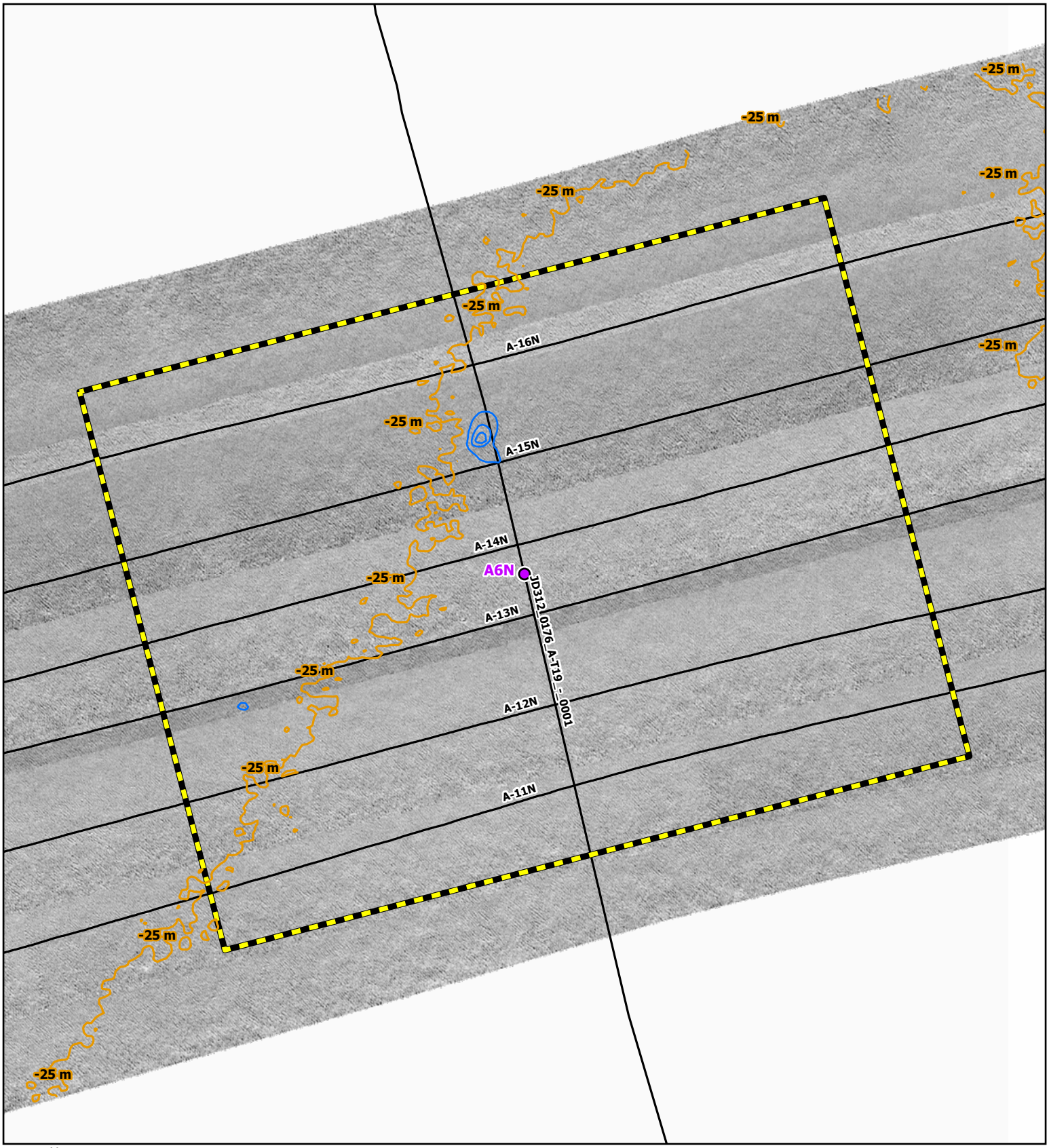
MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block A

Map: 6

A6N

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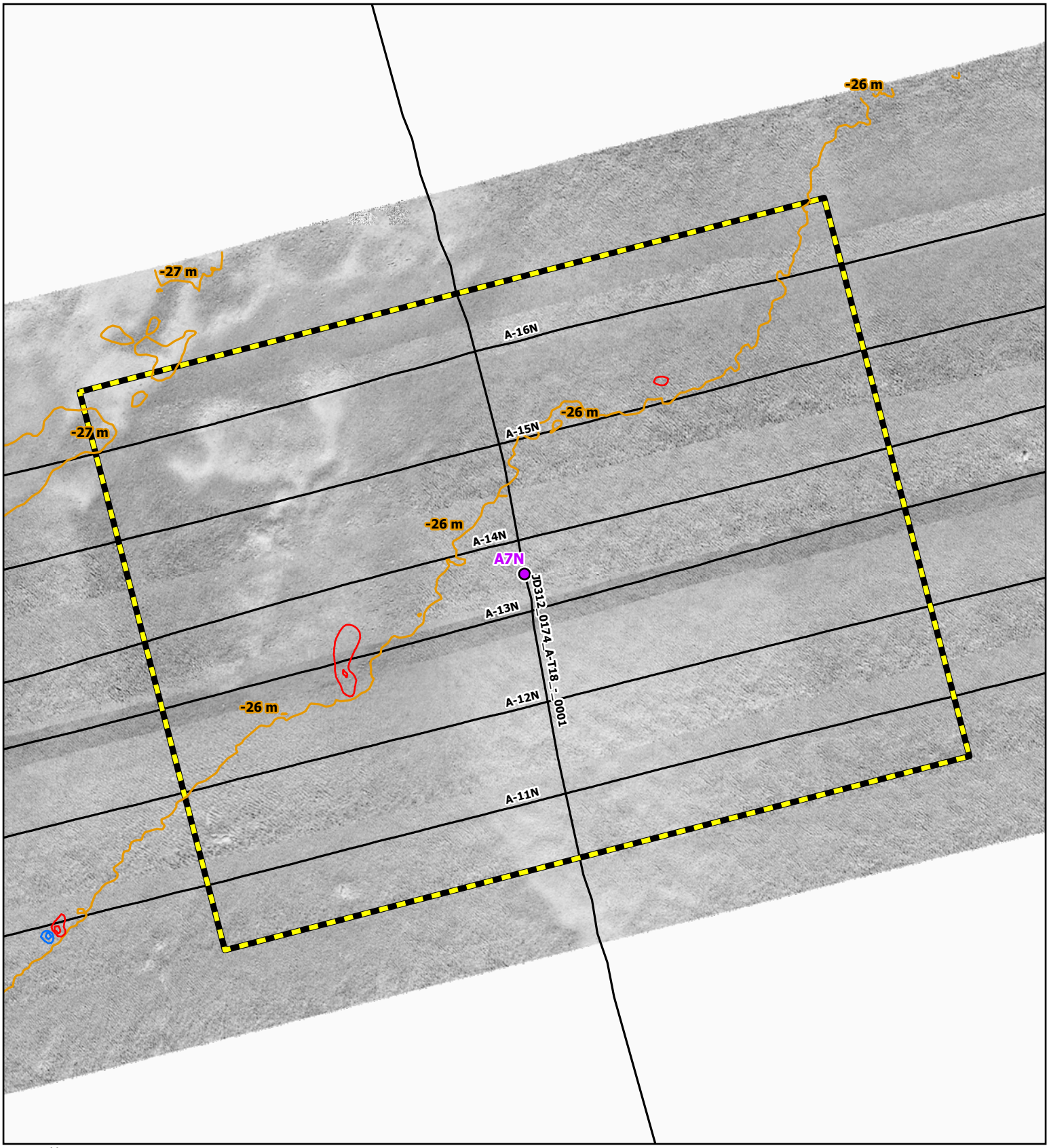

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 7

A7N

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MARINE ARCHAEOLOGY FROM STEM TO STERN

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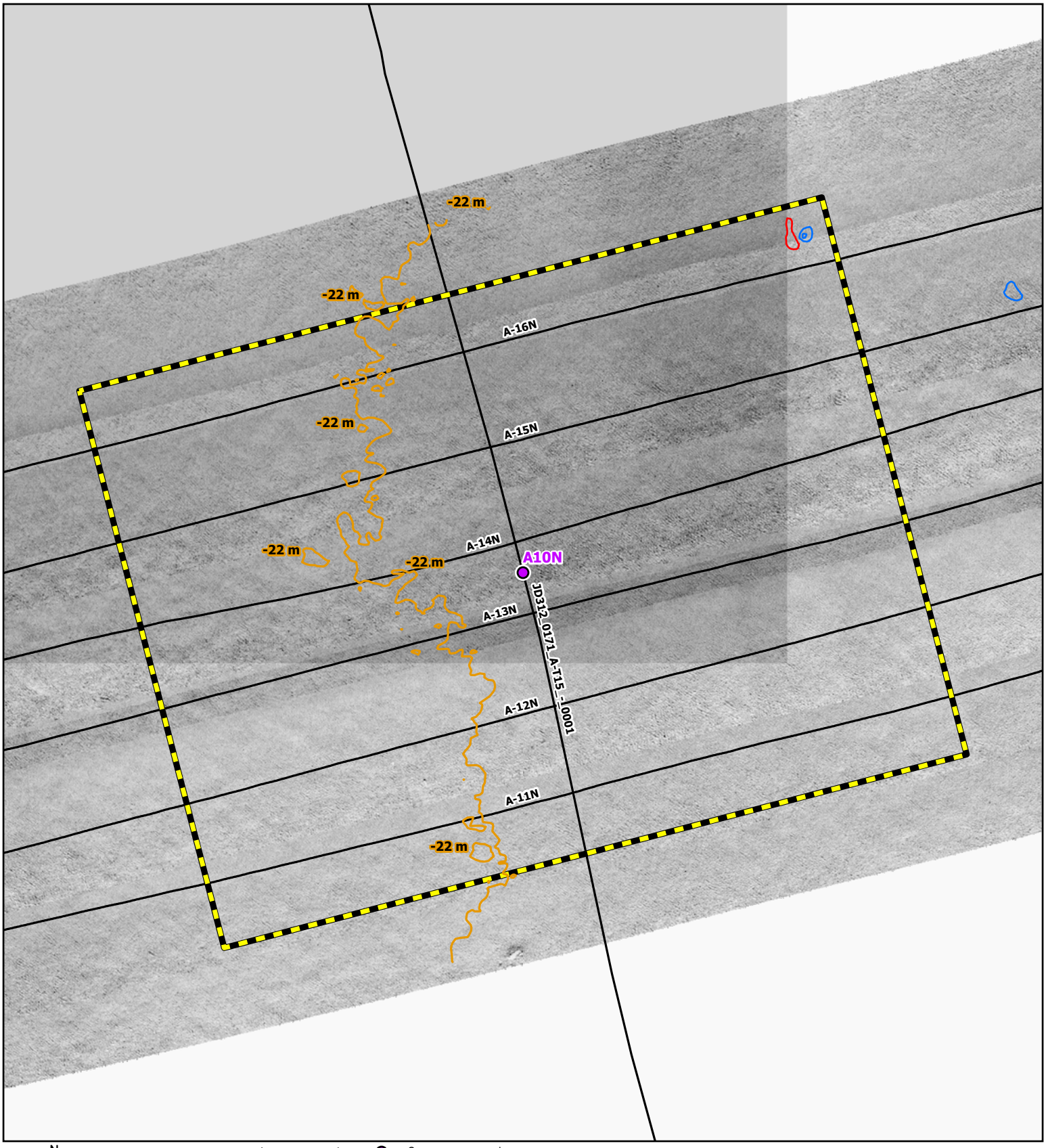

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)
MSR: 1:1,600
SRS: NAD 1983 2011 UTM Zone 18N Meter
0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location
Trackline
Bathymetric Contour (1 m)
Magnetic Contour (5 nT)
Negative
Positive
Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A
Map: 8
A10N

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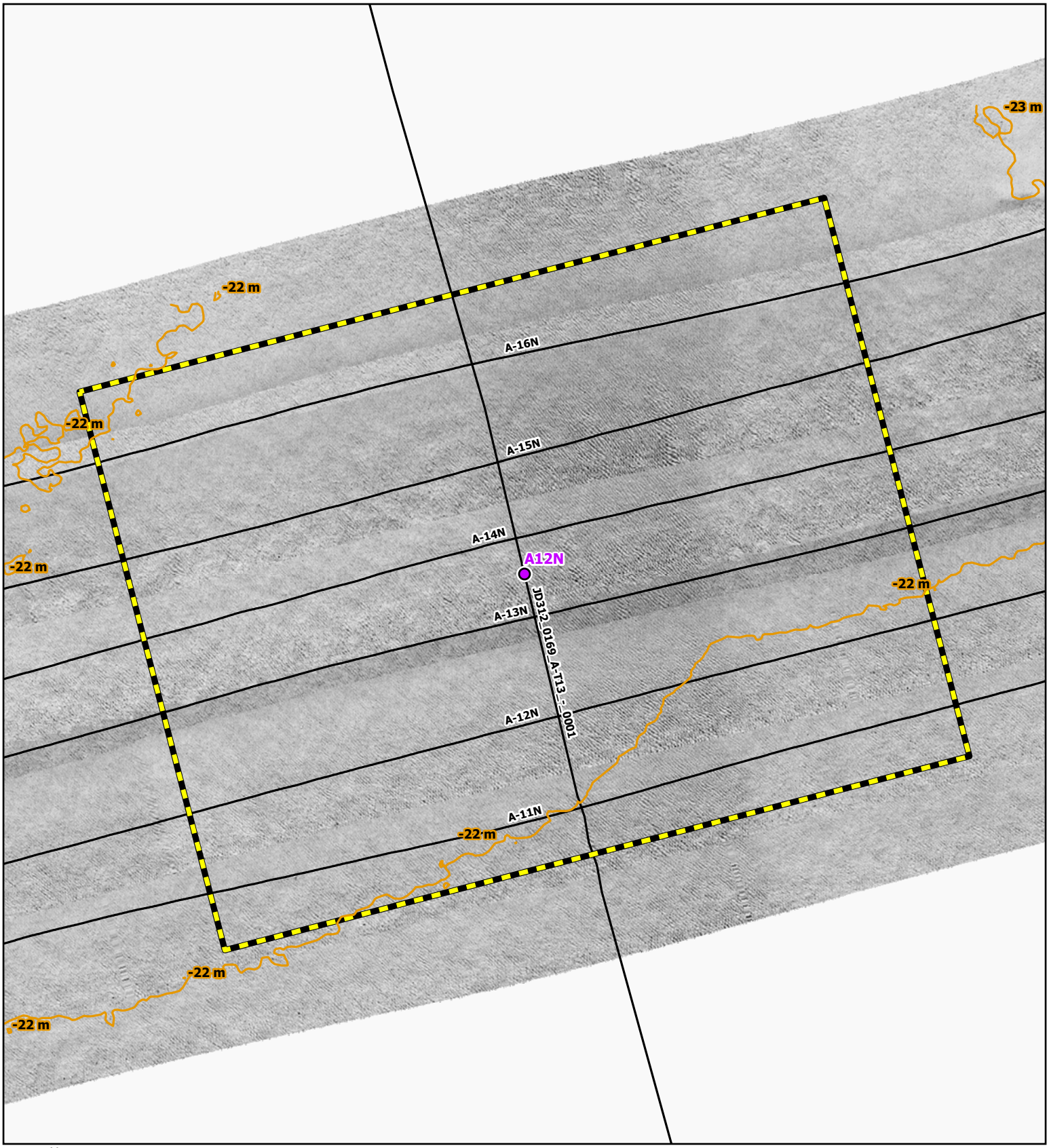

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block A

Map: 9

A12N

R. Christopher Goodwin & Associates, Inc.
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MARINE ARCHAEOLOGY FROM STEM TO STERN

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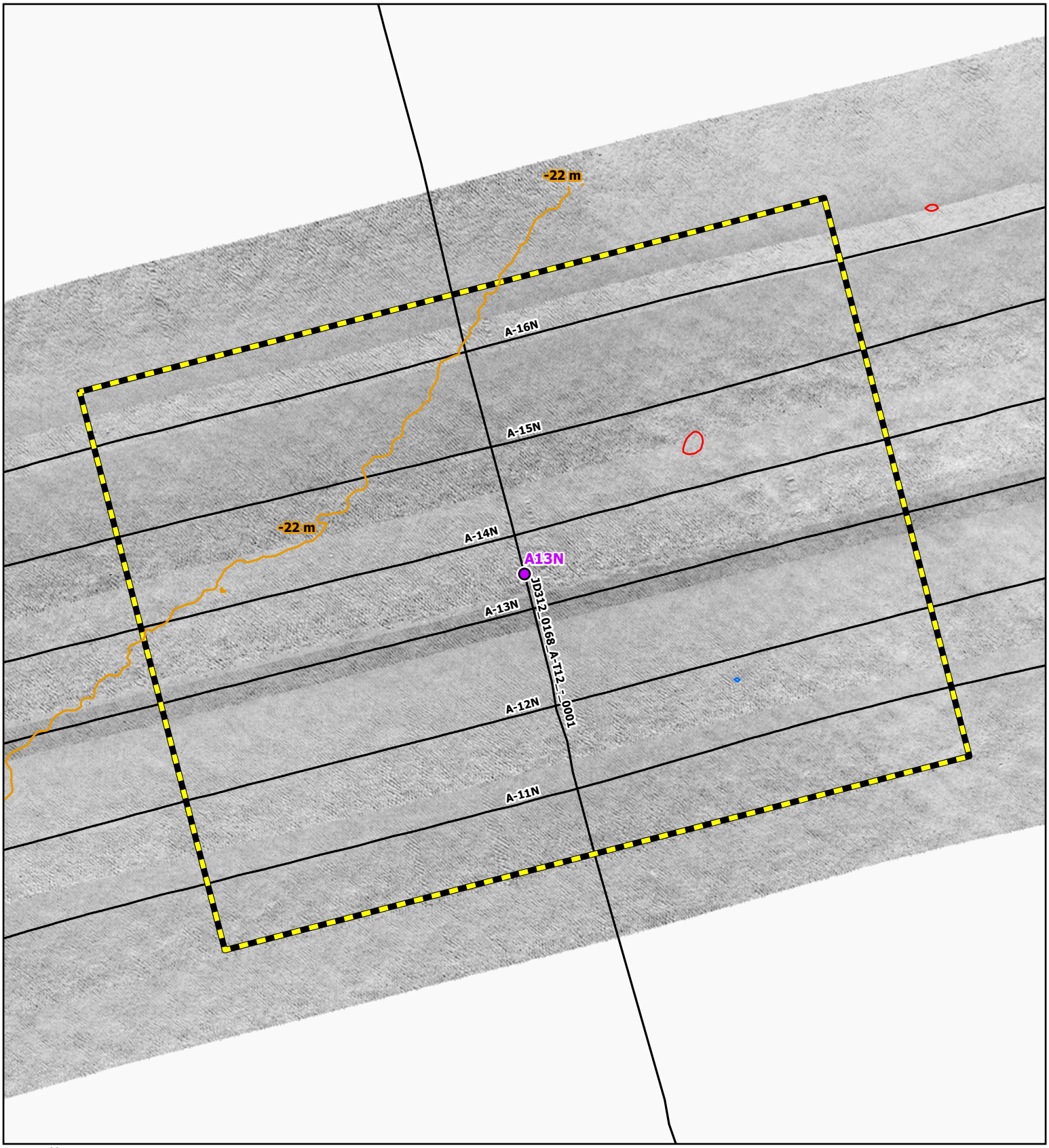

N
W E
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Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

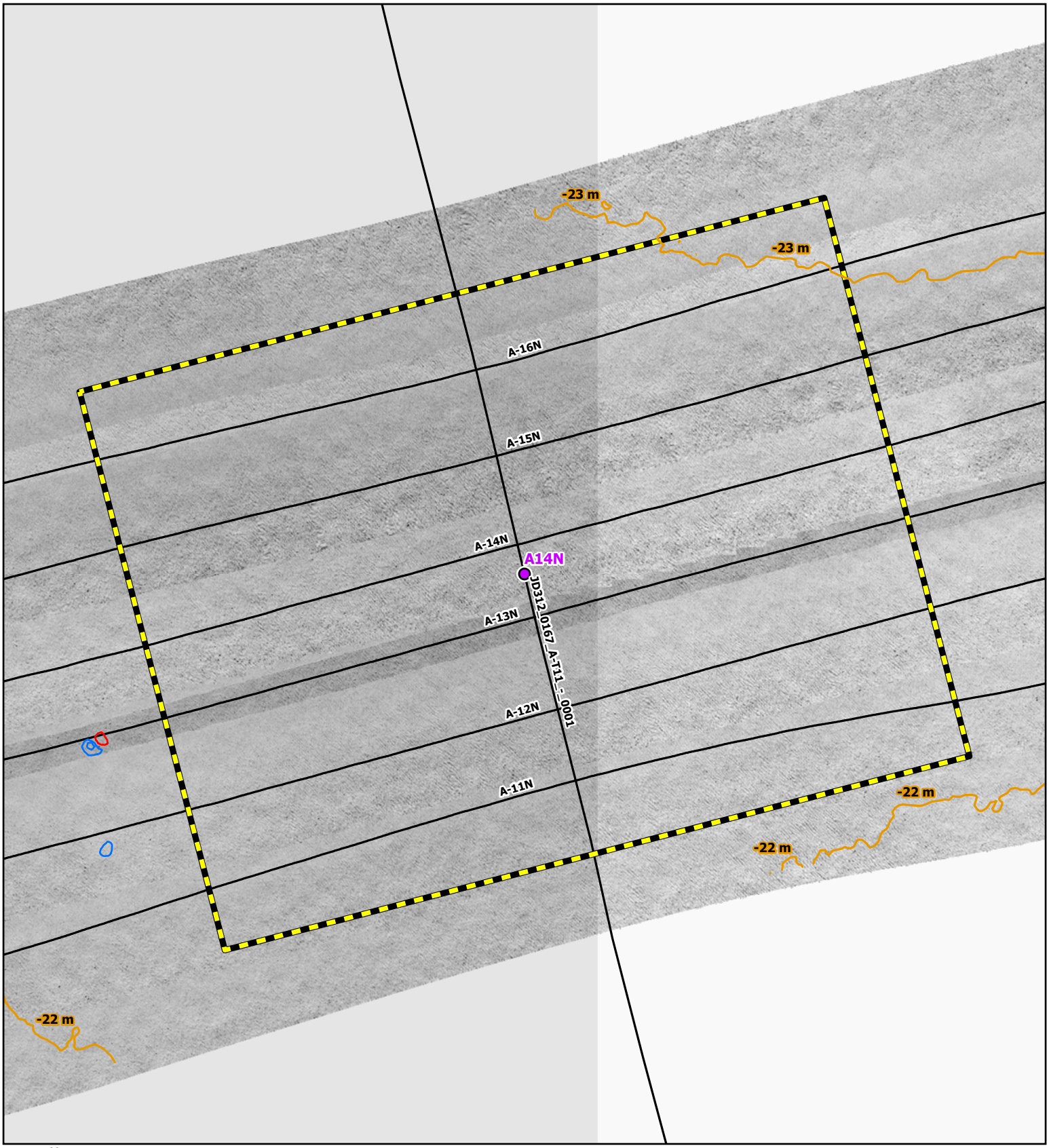
Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 10

A13N

R. Christopher Goodwin & Associates, Inc.
NAUTICAL DIVISION
MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
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Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block A

Map: 11

A14N

R. Christopher Goodwin & Associates, Inc.

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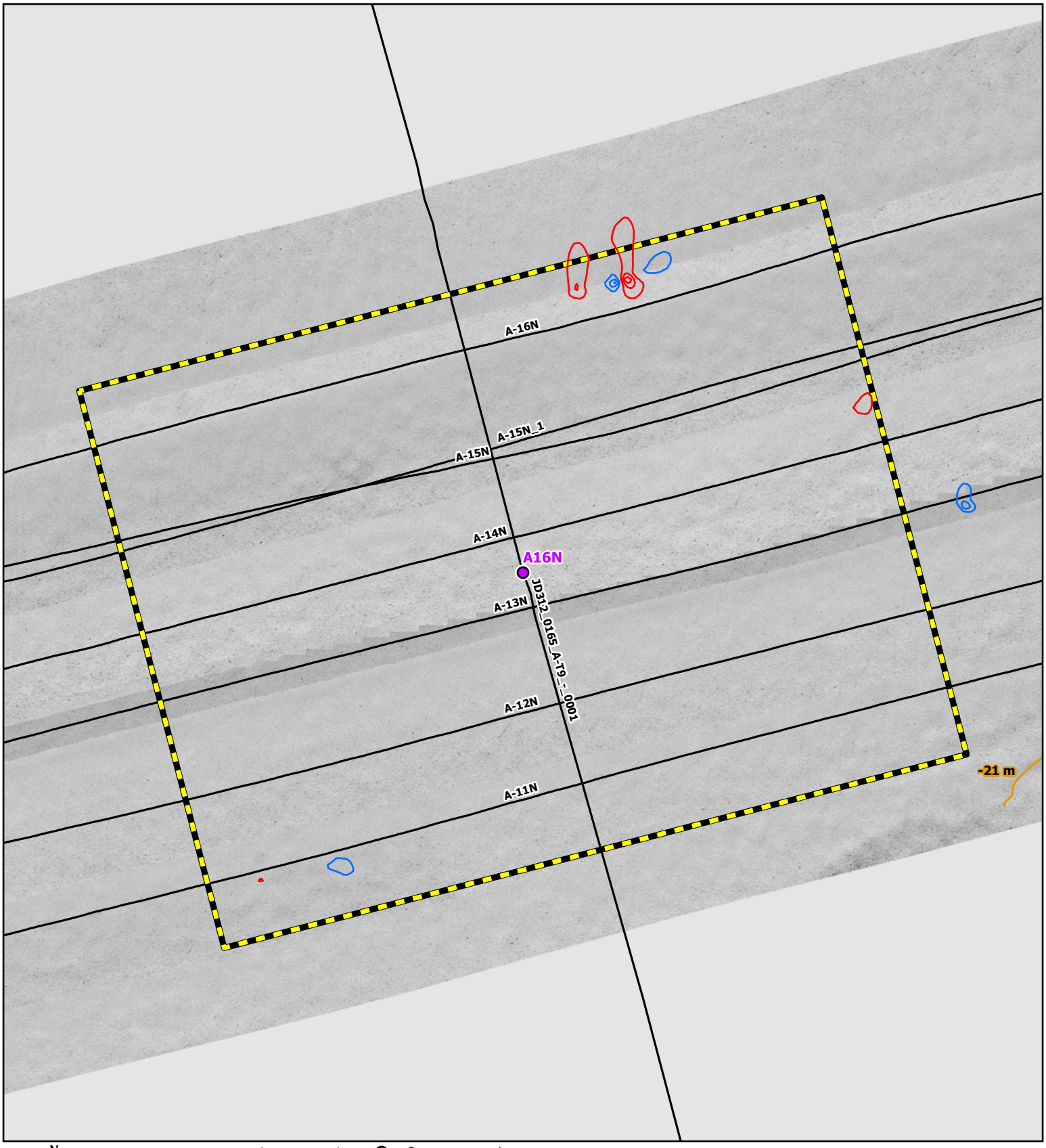
MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
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Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 12

A16N

R. Christopher Goodwin & Associates, Inc.
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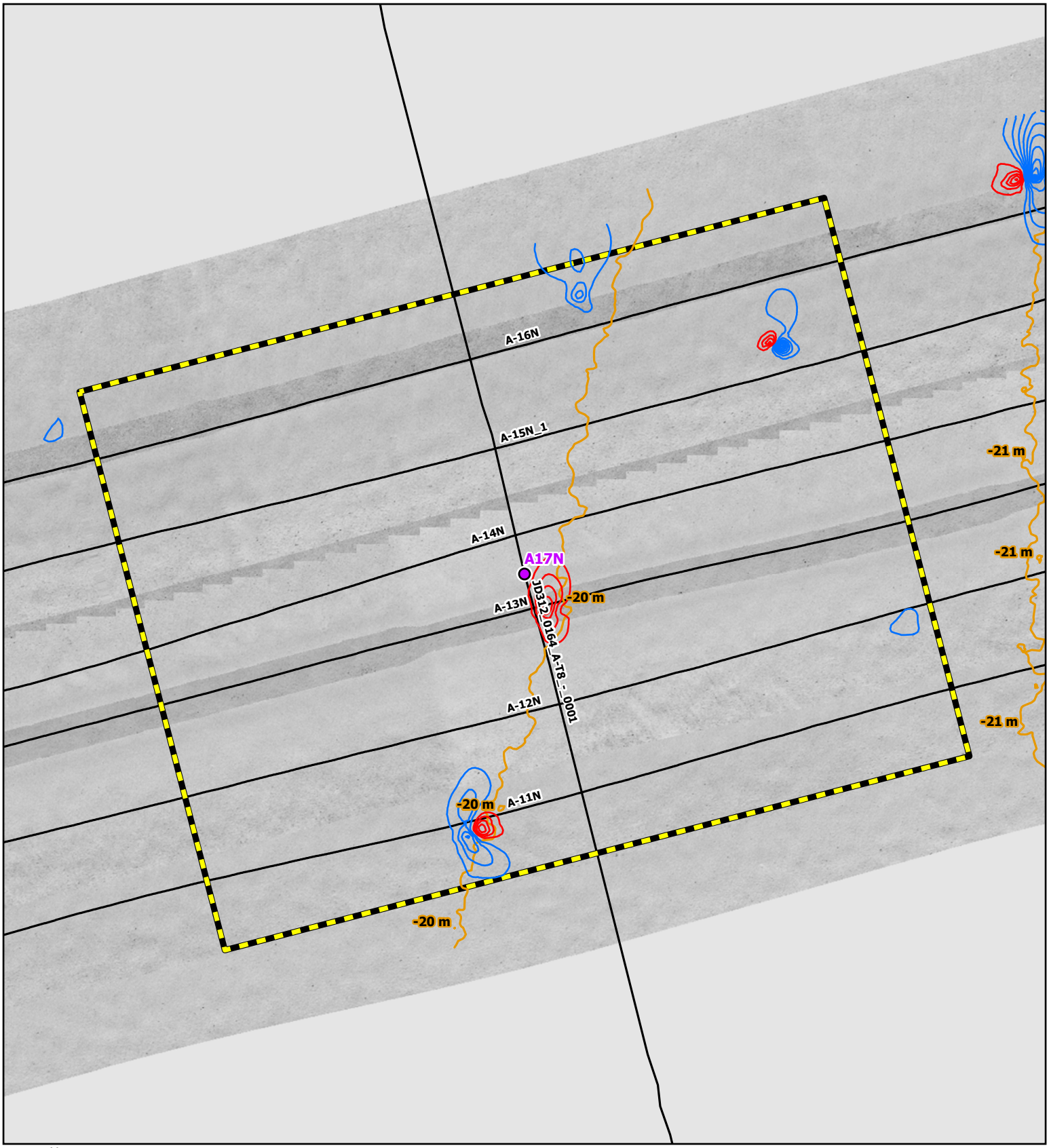
MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location
Trackline
Bathymetric Contour (1 m)
Magnetic Contour (5 nT)
Negative
Positive
Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 13

A17N

R. Christopher Goodwin & Associates, Inc.
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MARINE ARCHAEOLOGY FROM STEM TO STERN

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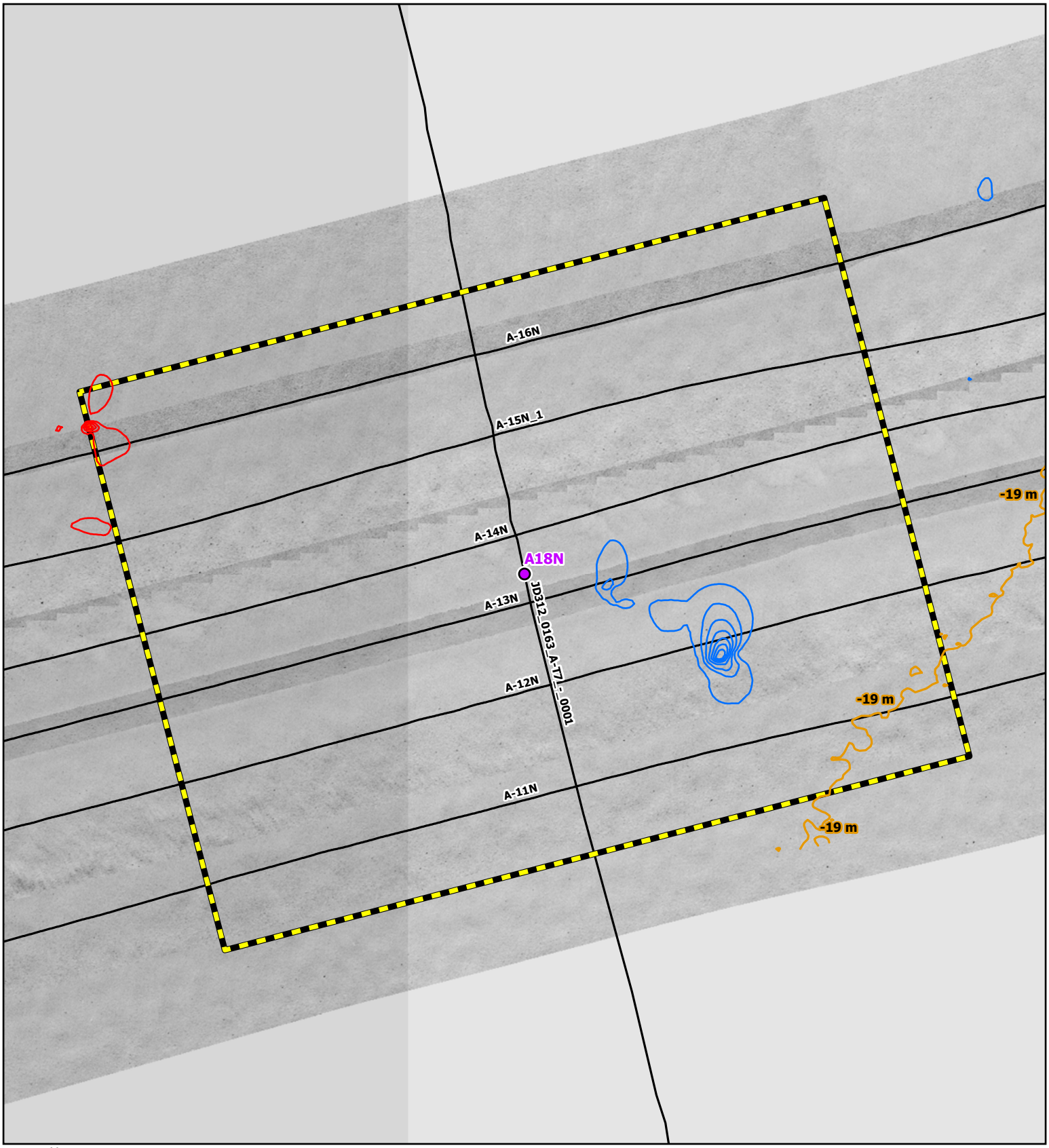

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block A

Map: 14

A18N

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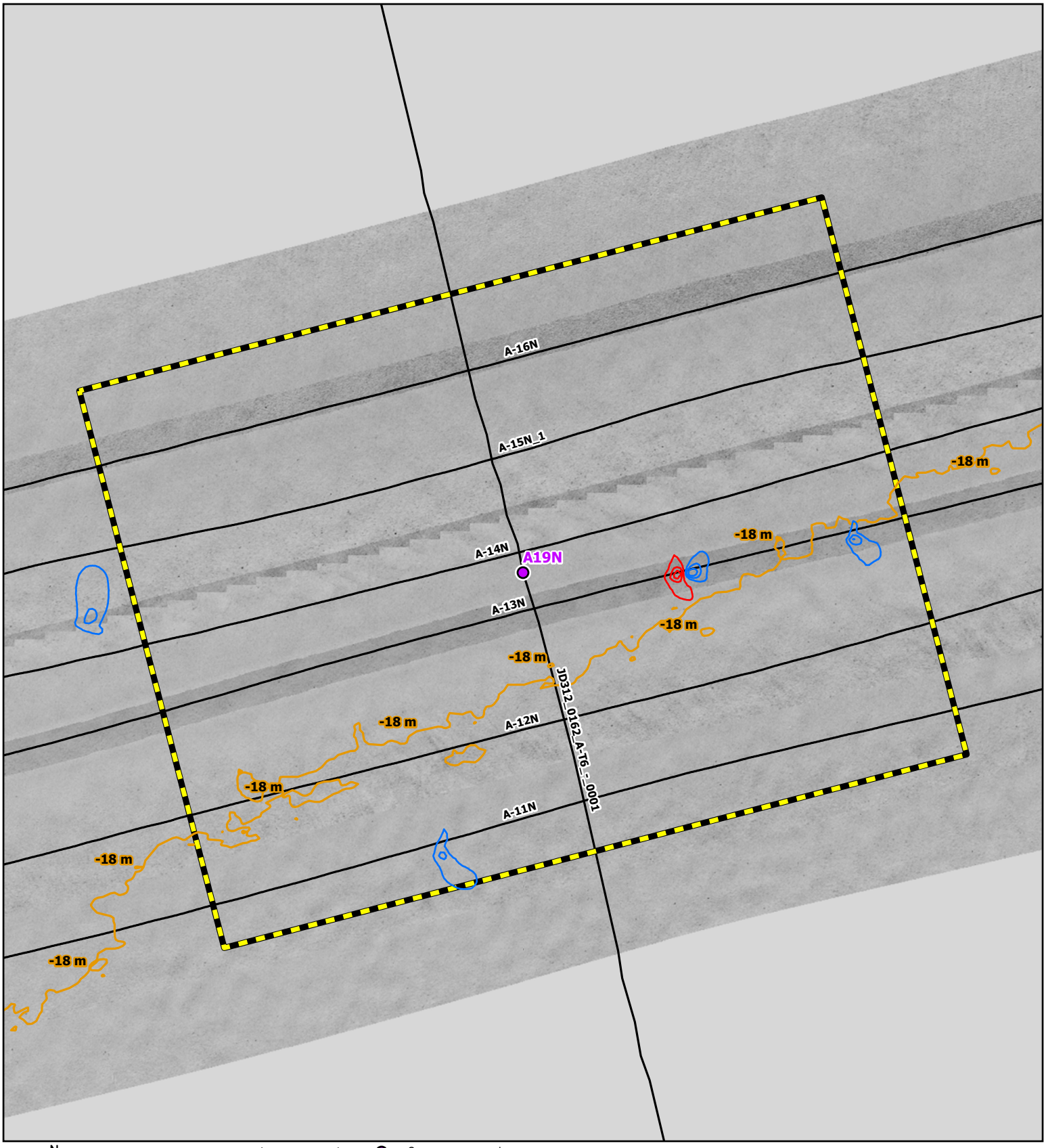
NAUTICAL DIVISION

MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 15

A19N

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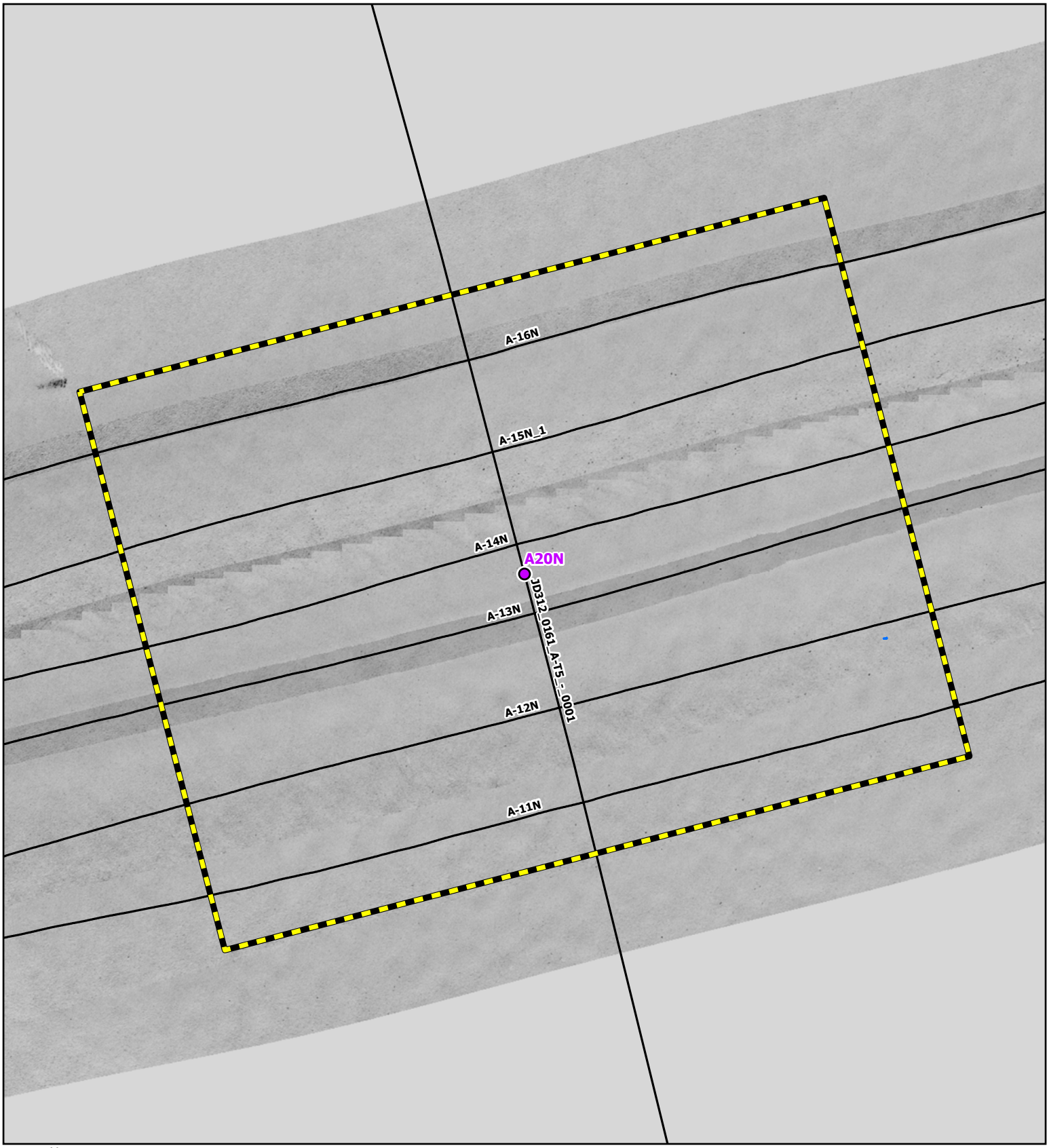
MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block A

Map: 16

A20N

R. Christopher Goodwin & Associates, Inc.

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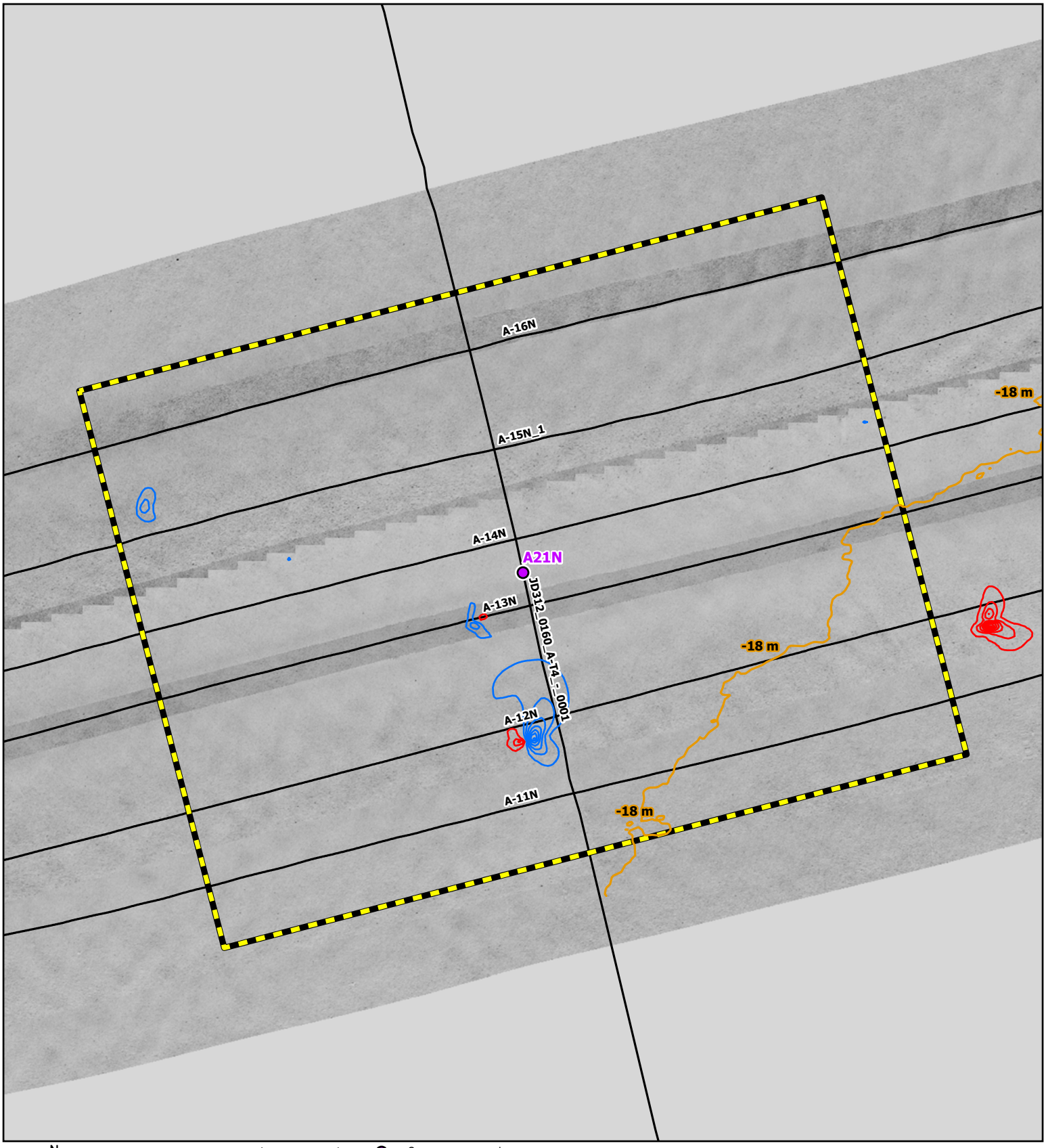
MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 17

A21N

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MARINE ARCHAEOLOGY FROM STEM TO STERN

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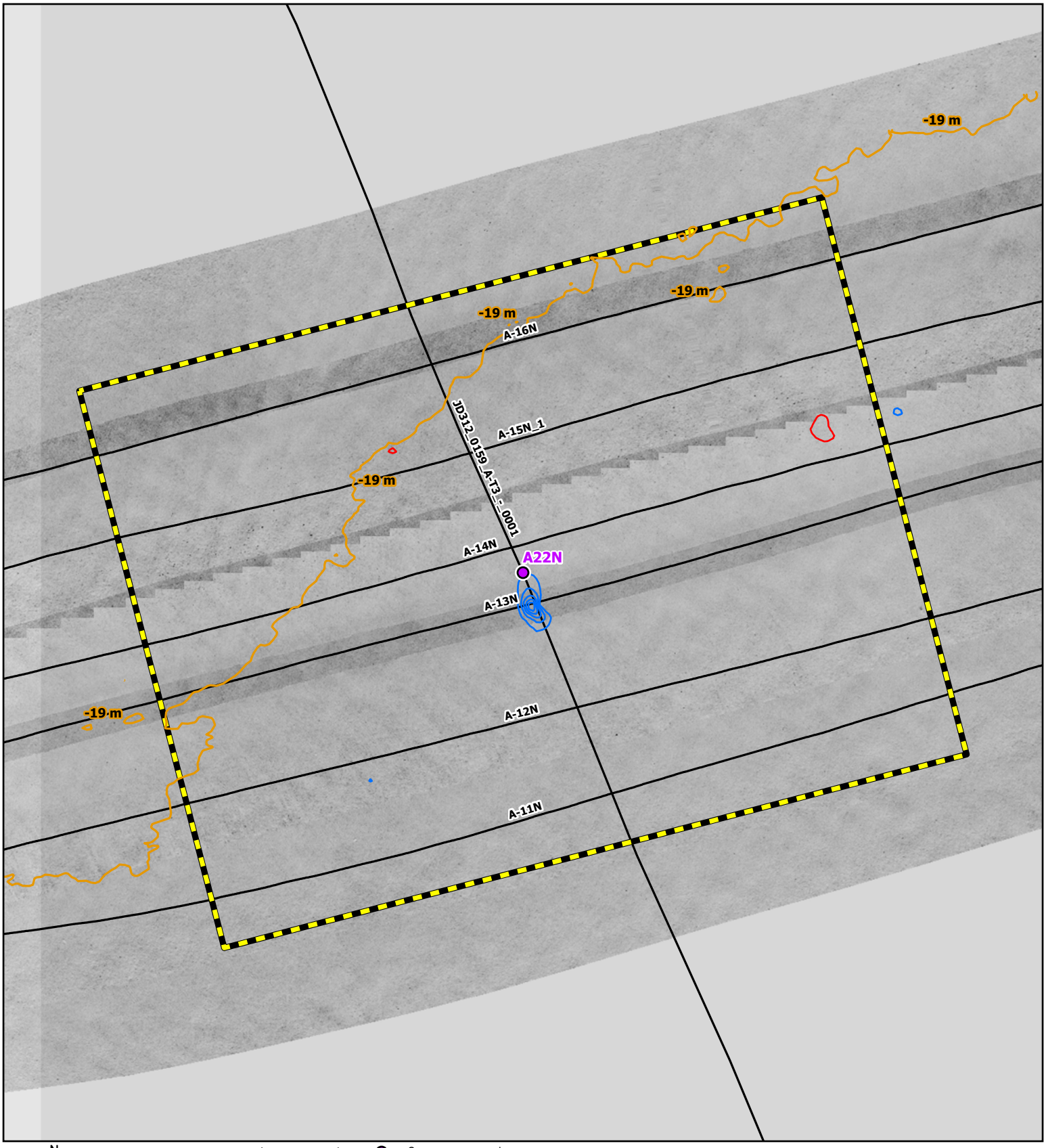

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)
MSR: 1:1,600
SRS: NAD 1983 2011 UTM Zone 18N Meter
0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location
Trackline
Bathymetric Contour (1 m)
Magnetic Contour (5 nT)
Negative
Positive
Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A
Map: 18
A22N

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MARINE ARCHAEOLOGY FROM STEM TO STERN
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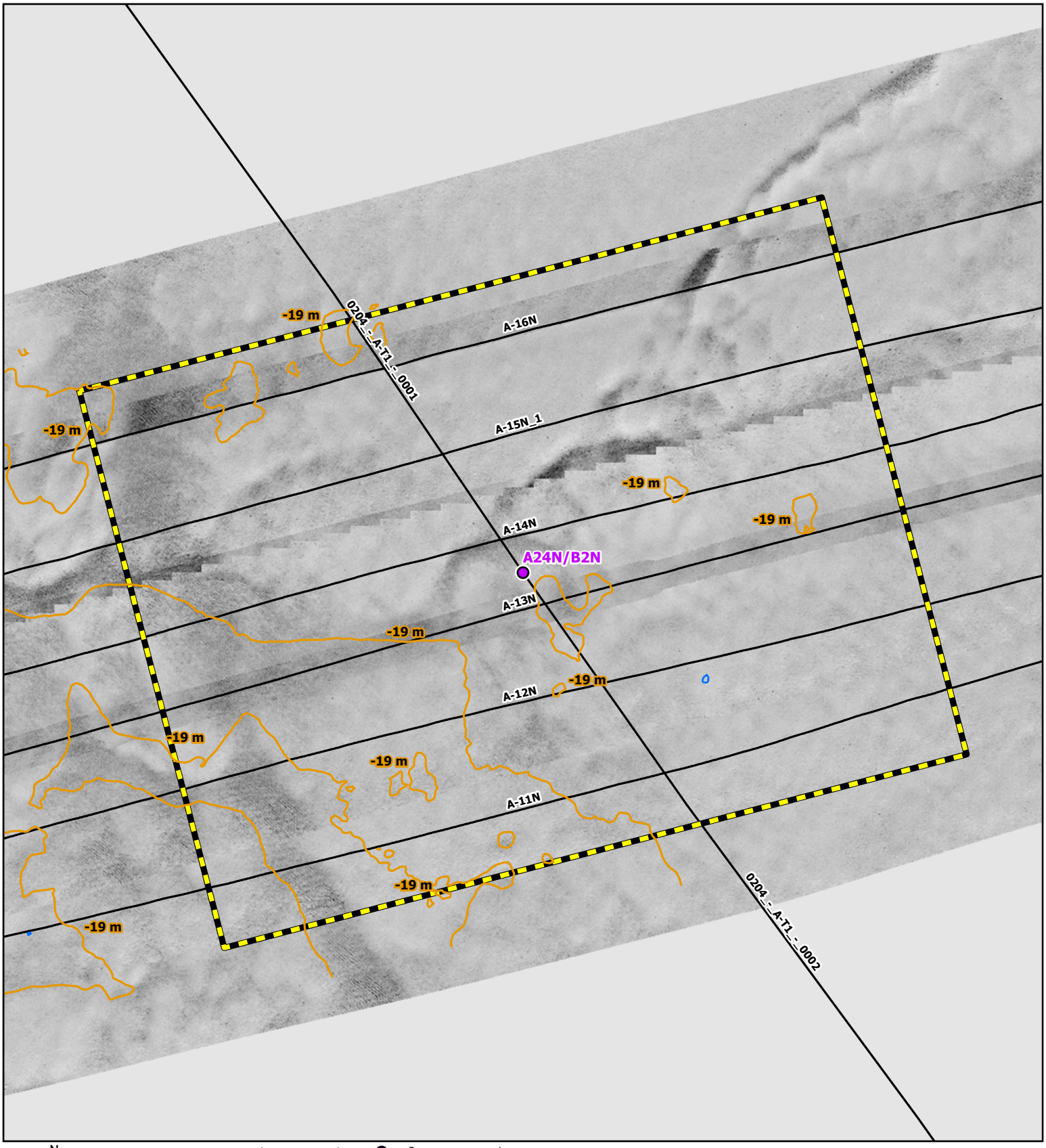

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block A

Map: 19

A24N/B2N

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MARINE ARCHAEOLOGY FROM STEM TO STERN

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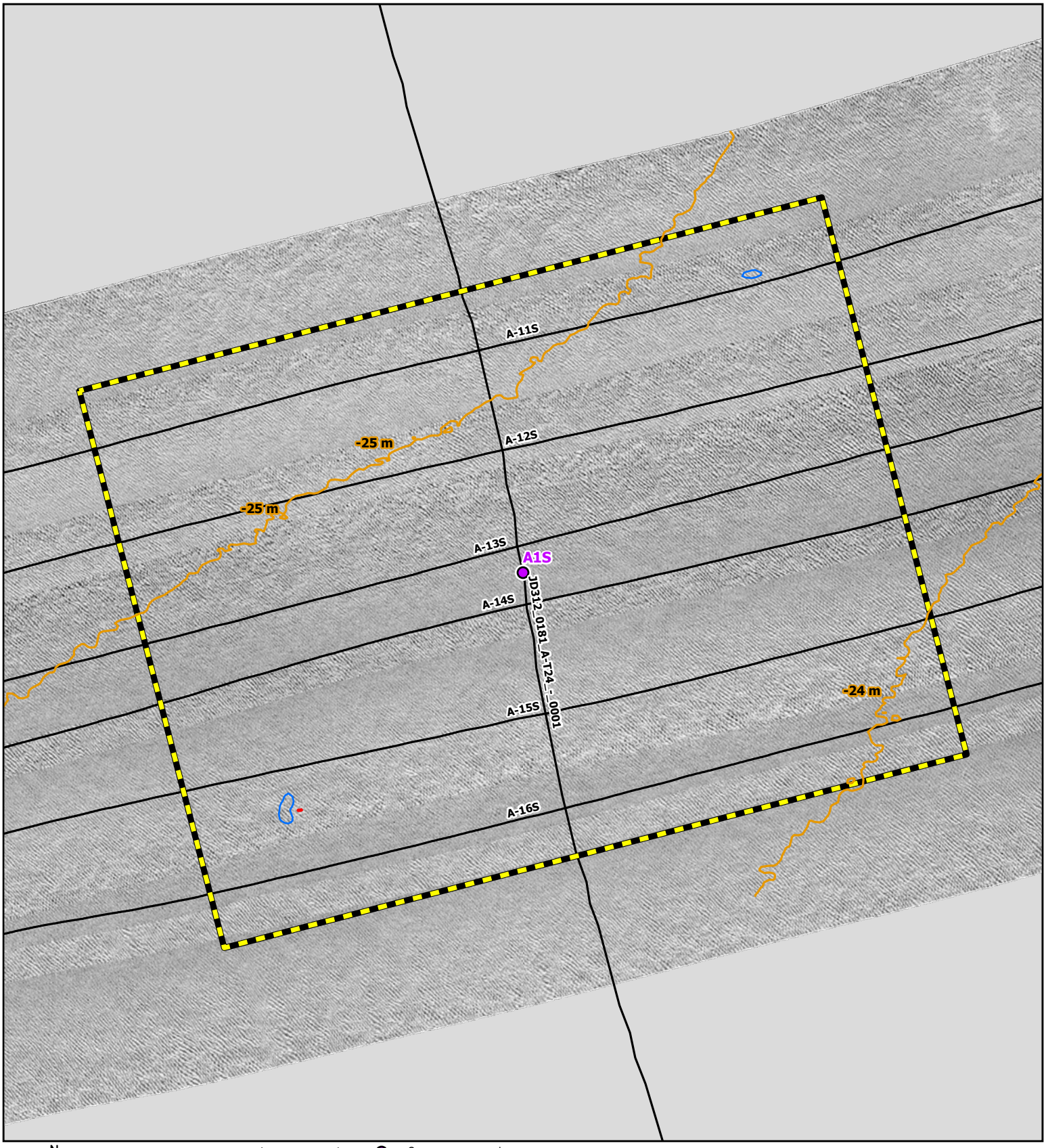

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 20

A1S

R. Christopher Goodwin & Associates, Inc.
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MARINE ARCHAEOLOGY FROM STEM TO STERN

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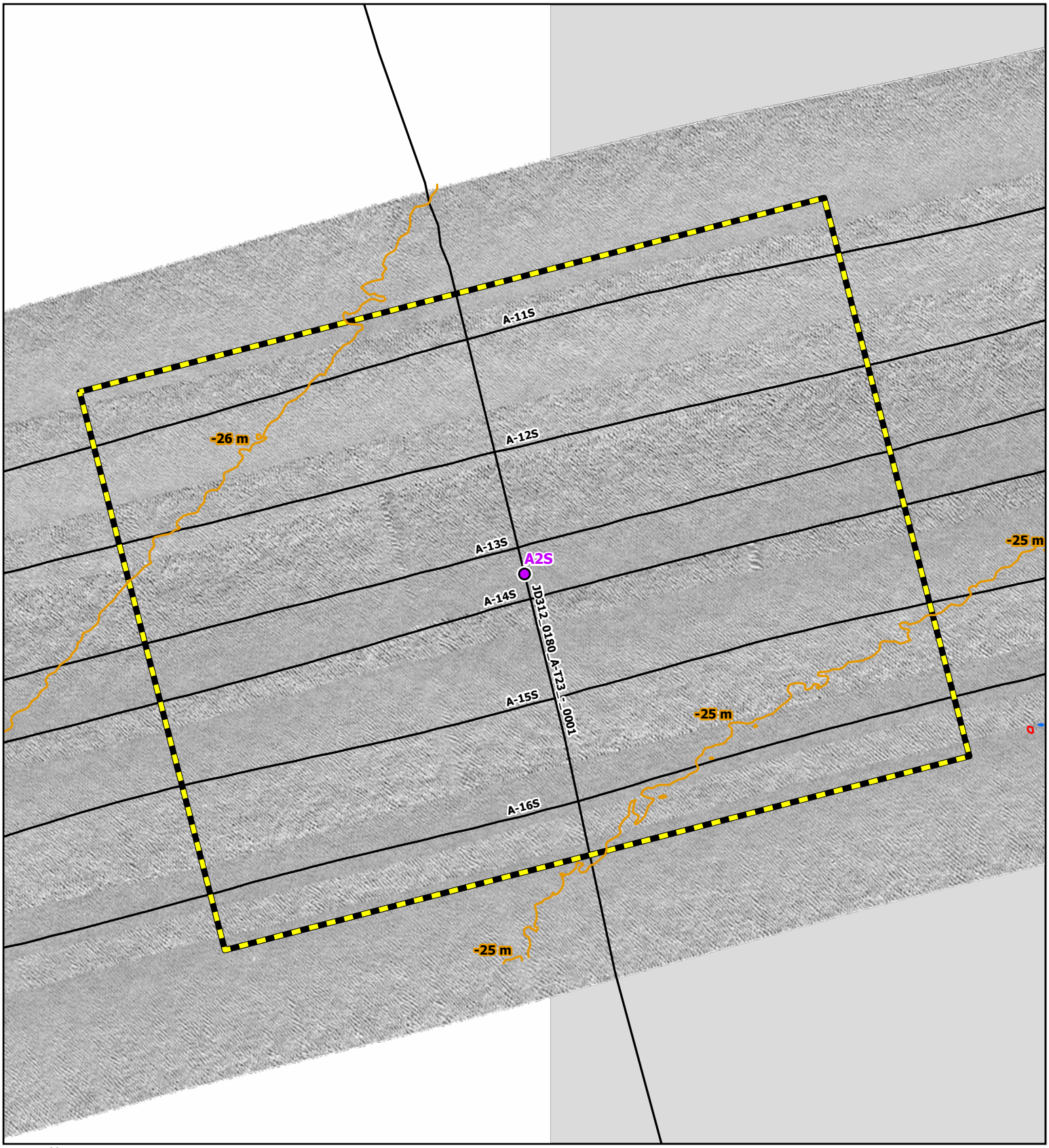

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 21

A2S

R. Christopher Goodwin & Associates, Inc.
NAUTICAL DIVISION
MARINE ARCHAEOLOGY FROM STEM TO STERN

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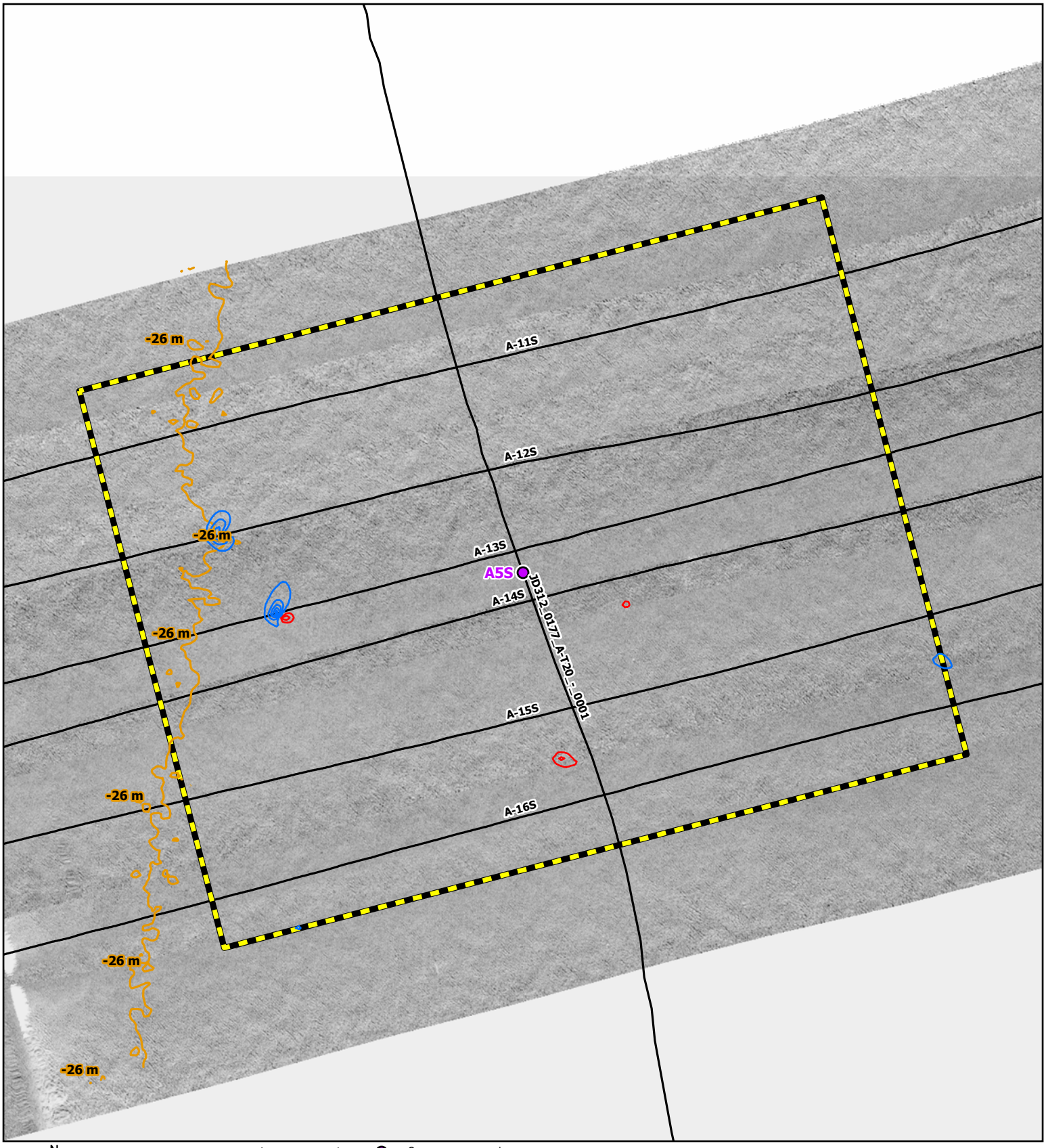


N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block A

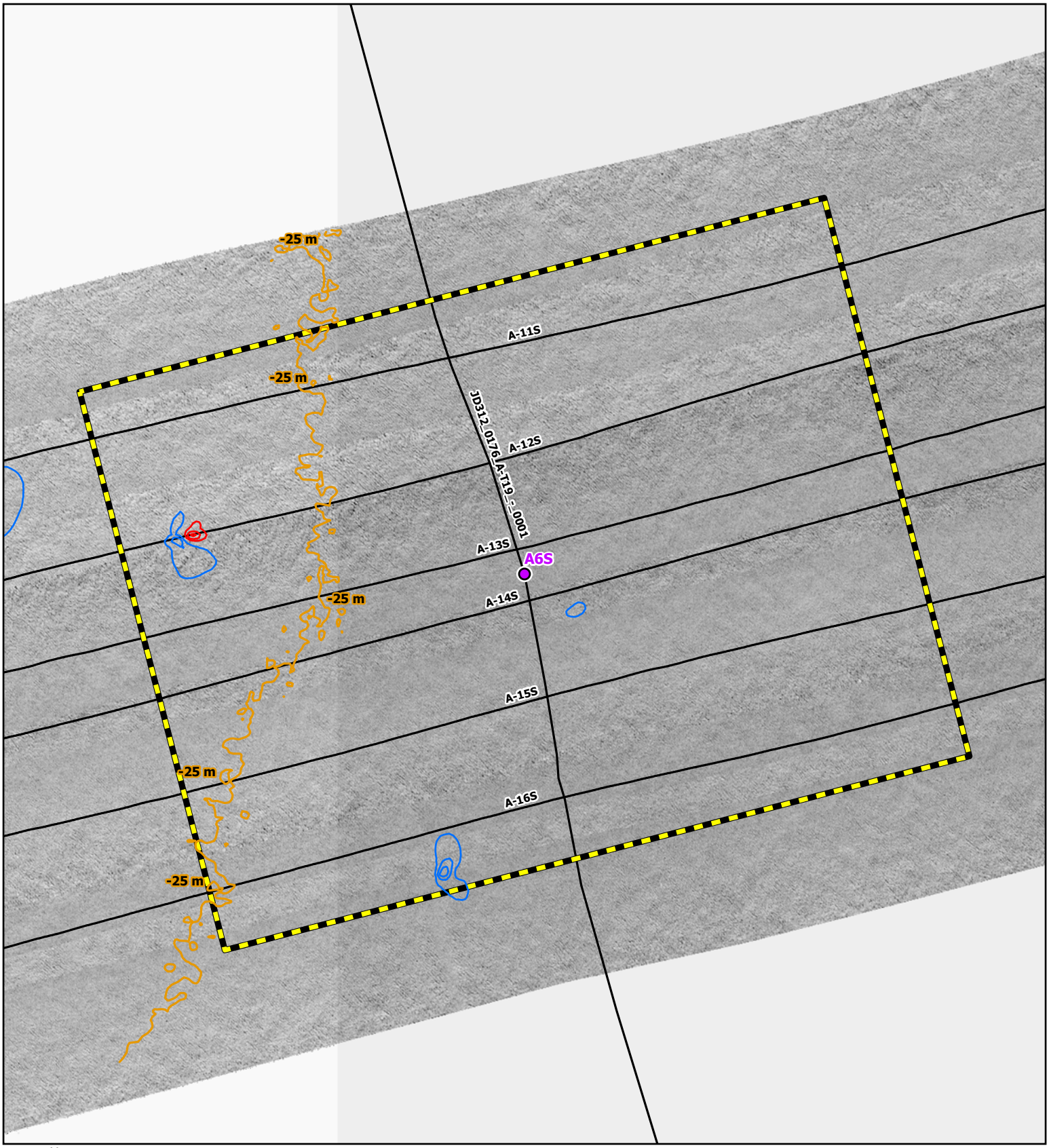
Map: 22

A5S

R. Christopher Goodwin & Associates, Inc.

NAUTICAL DIVISION

MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

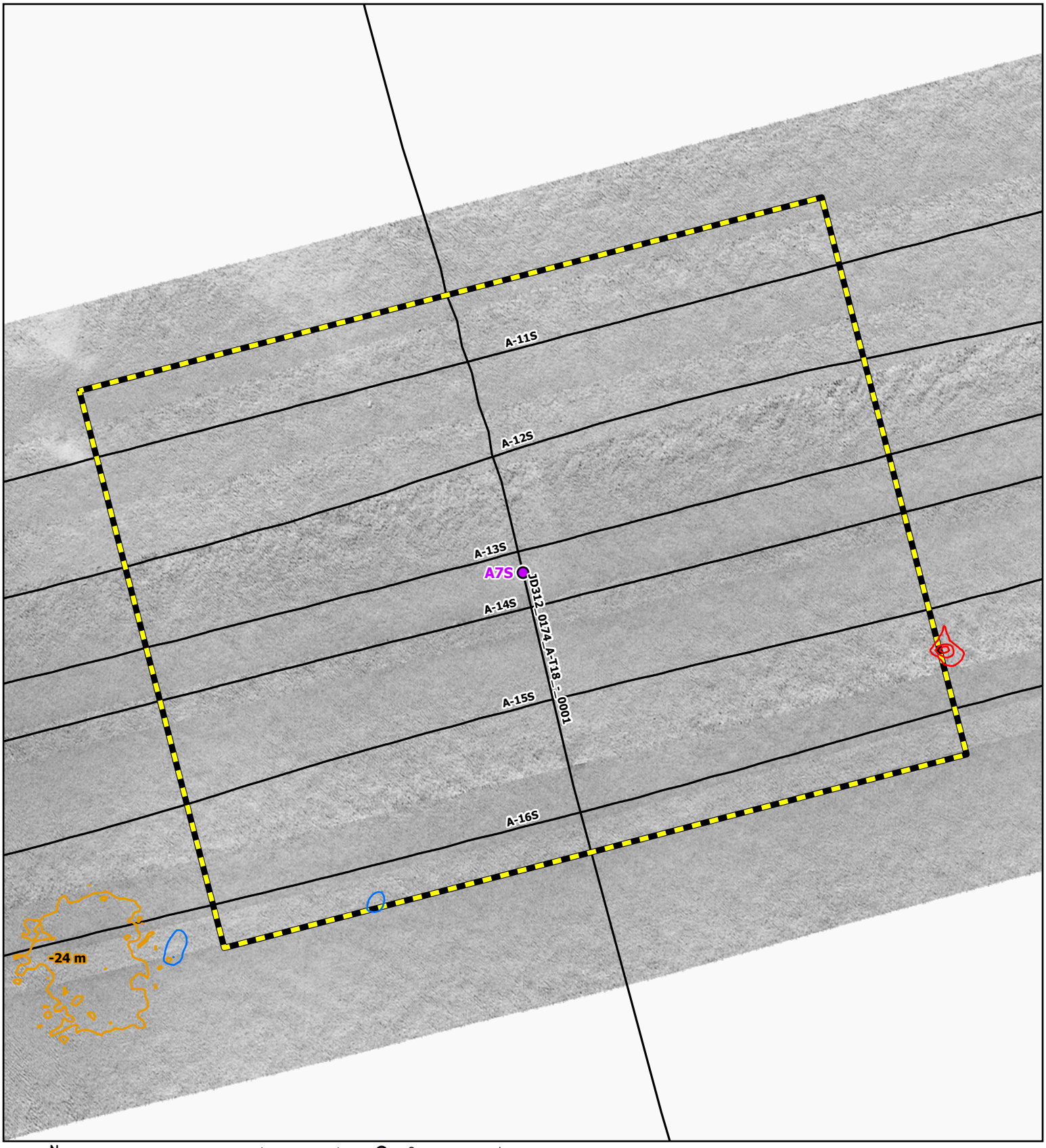
Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 23

A6S

R. Christopher Goodwin & Associates, Inc.
NAUTICAL DIVISION
MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 24

A7S

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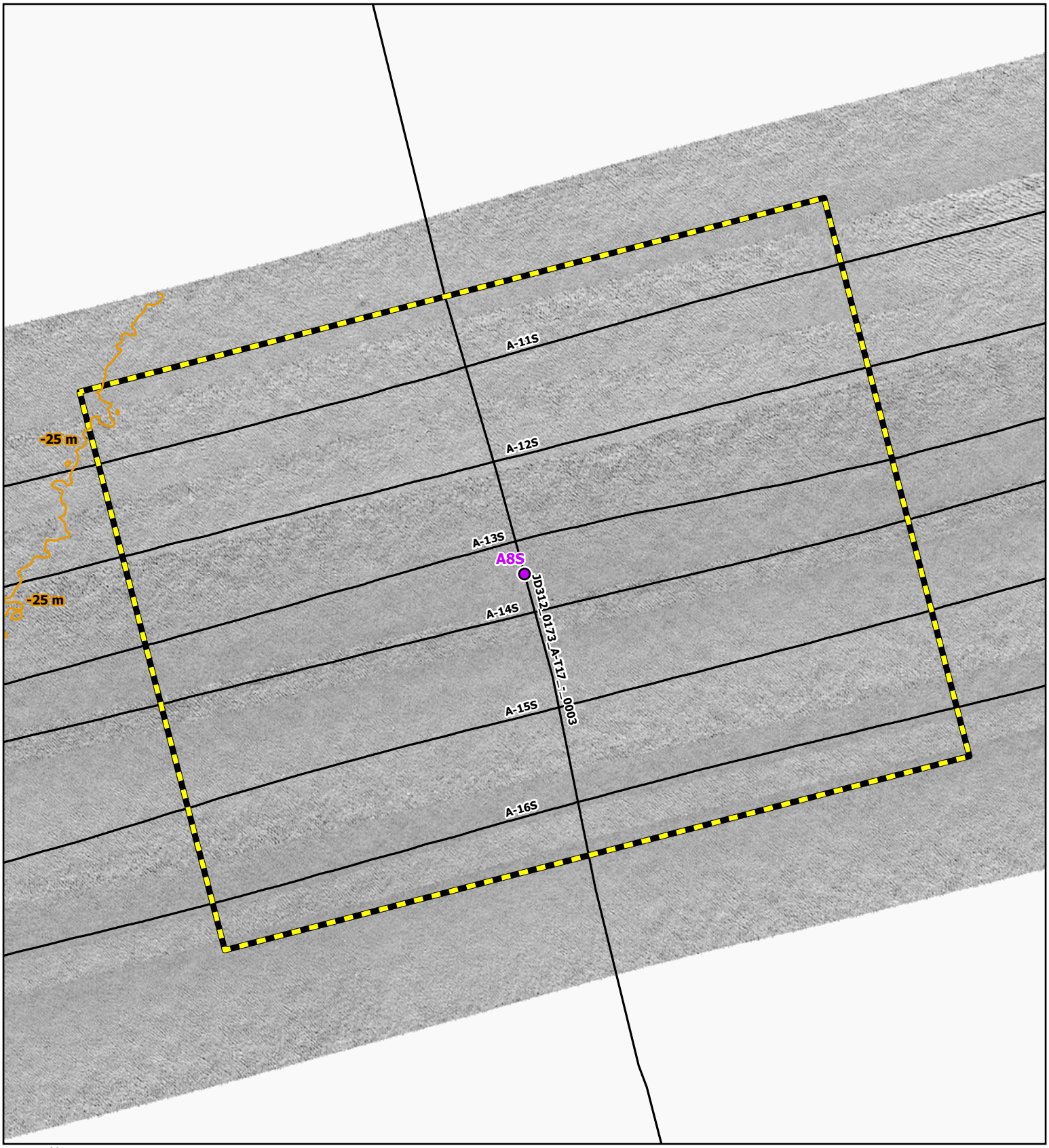
NAUTICAL DIVISION
MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 25

A8S

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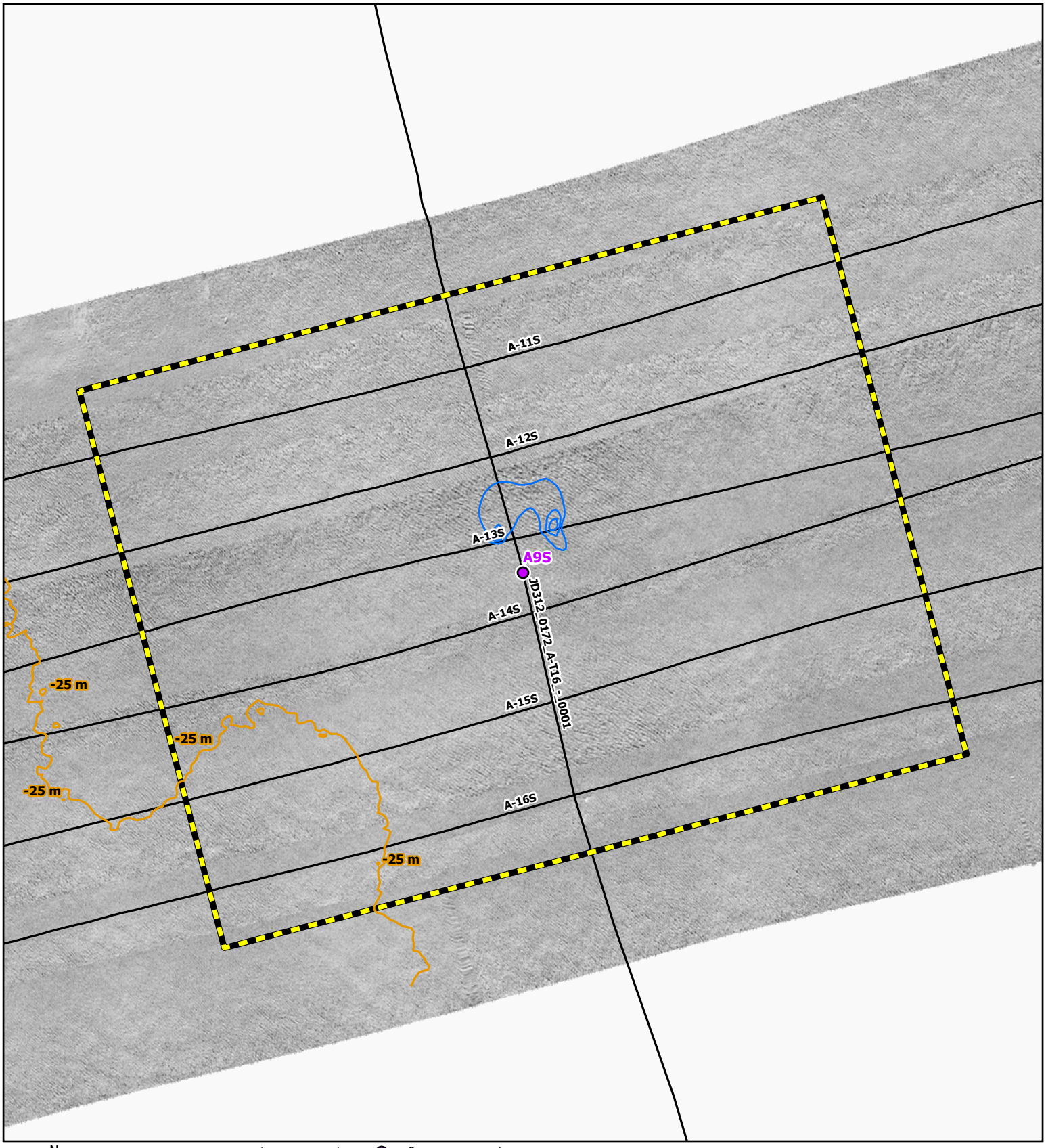

N
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Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 26

A9S

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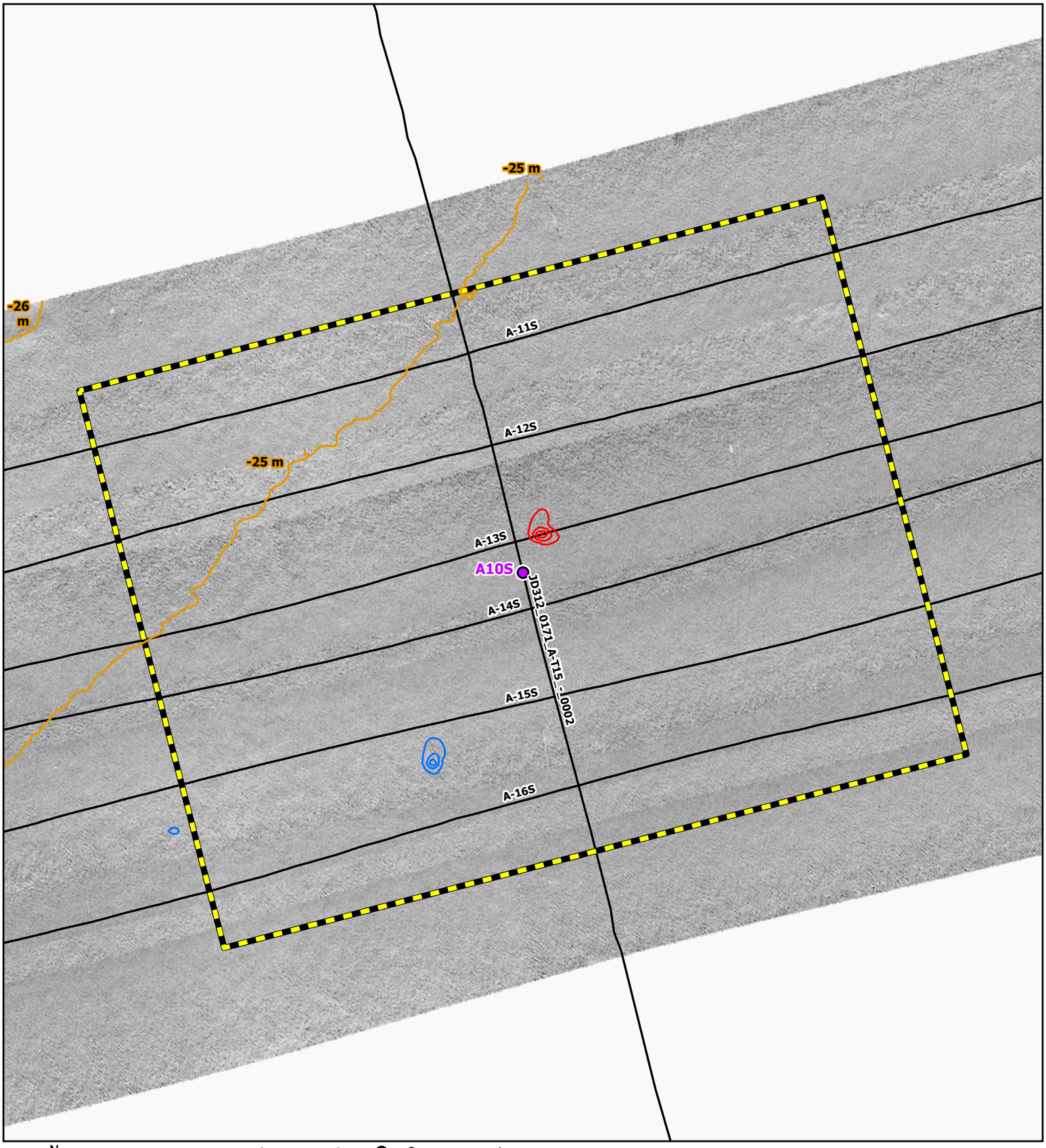
MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block A

Map: 27

A10S

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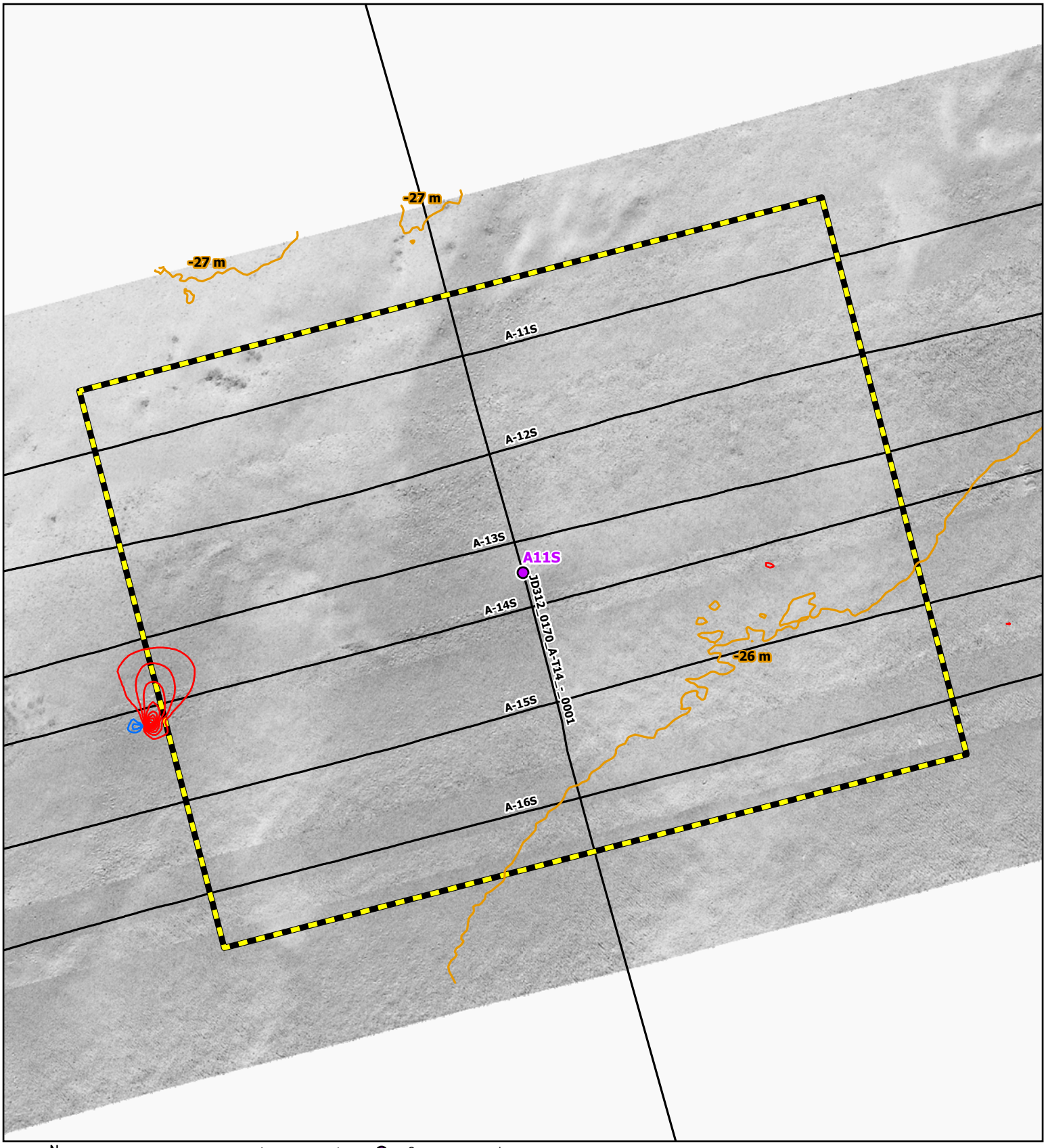
NAUTICAL DIVISION

MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 28

A11S

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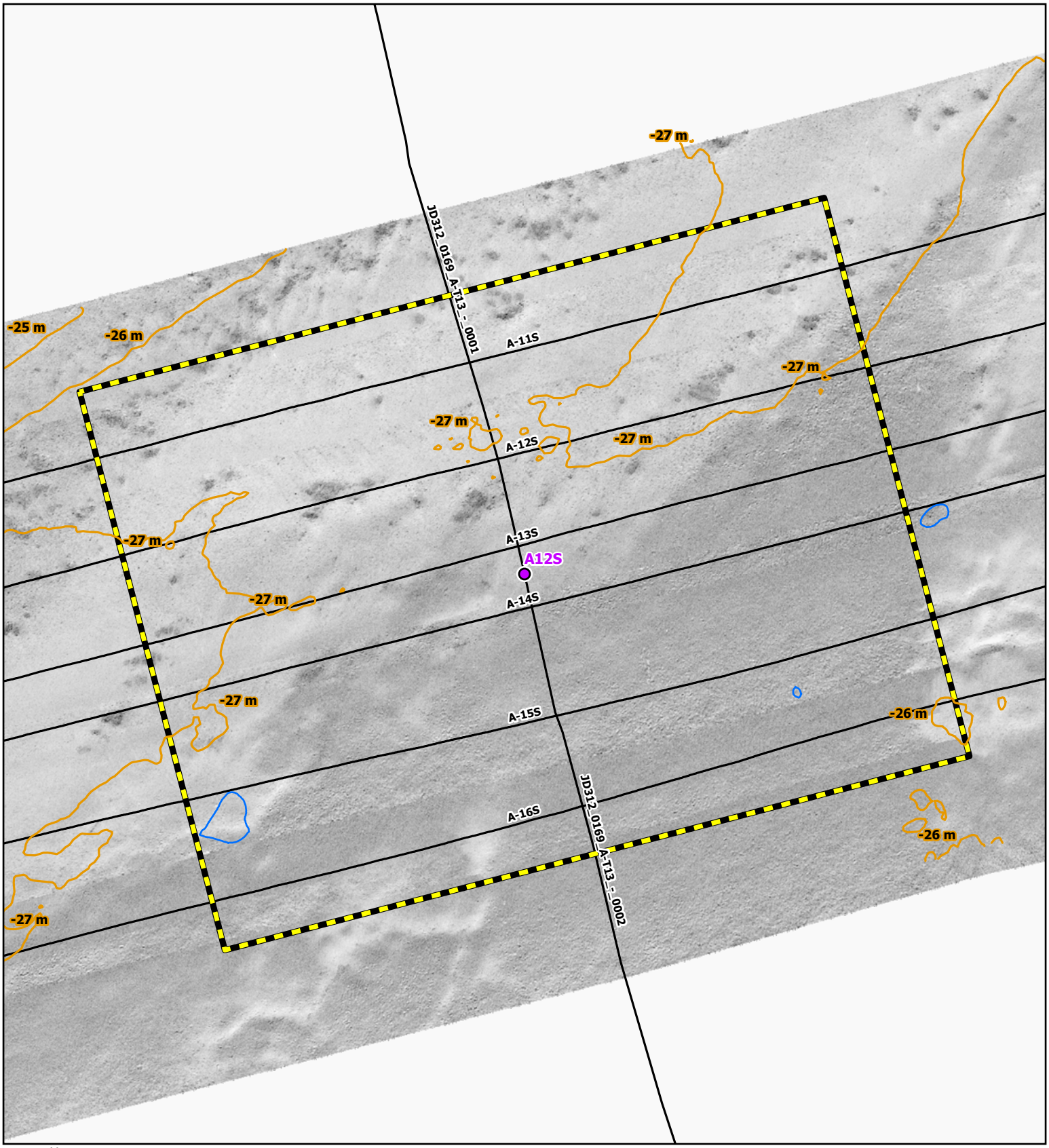
MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)
MSR: 1:1,600
SRS: NAD 1983 2011 UTM Zone 18N Meter
0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location
Trackline
Bathymetric Contour (1 m)
Magnetic Contour (5 nT)
Negative
Positive
Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 29
A12S

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MARINE ARCHAEOLOGY FROM STEM TO STERN

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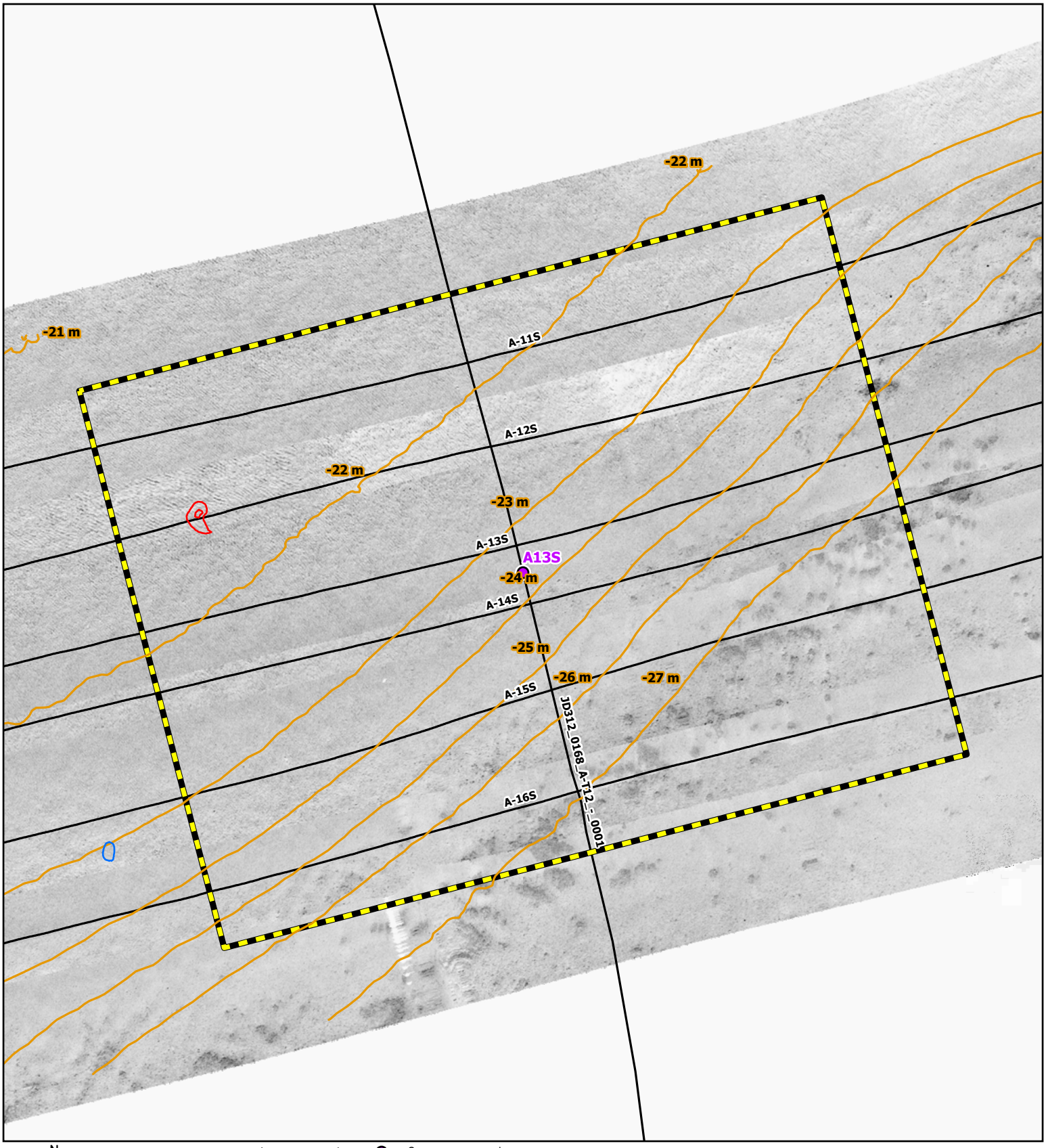

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block A

Map: 30

A13S

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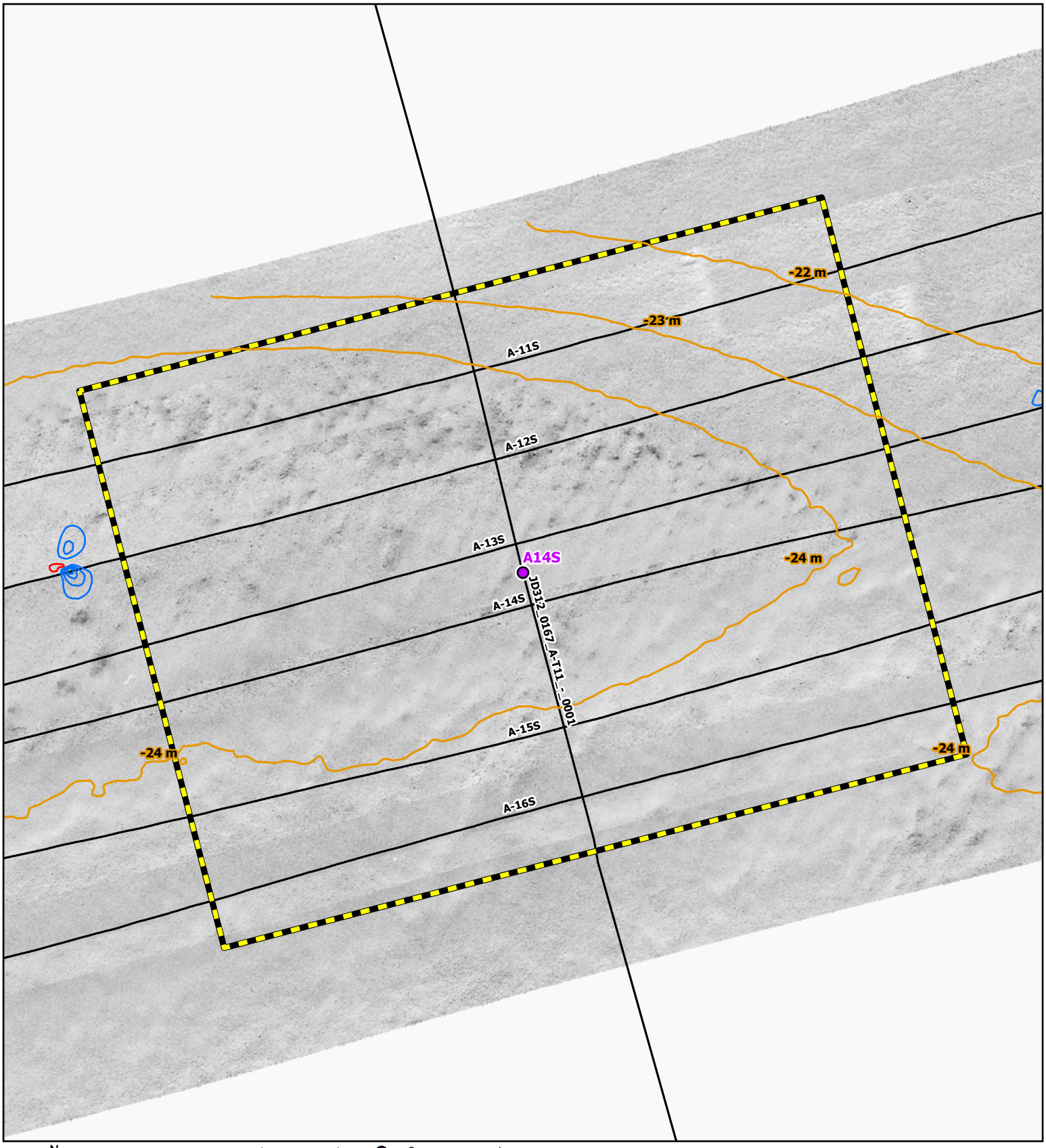
NAUTICAL DIVISION

MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block A

Map: 31

A14S

R. Christopher Goodwin & Associates, Inc.

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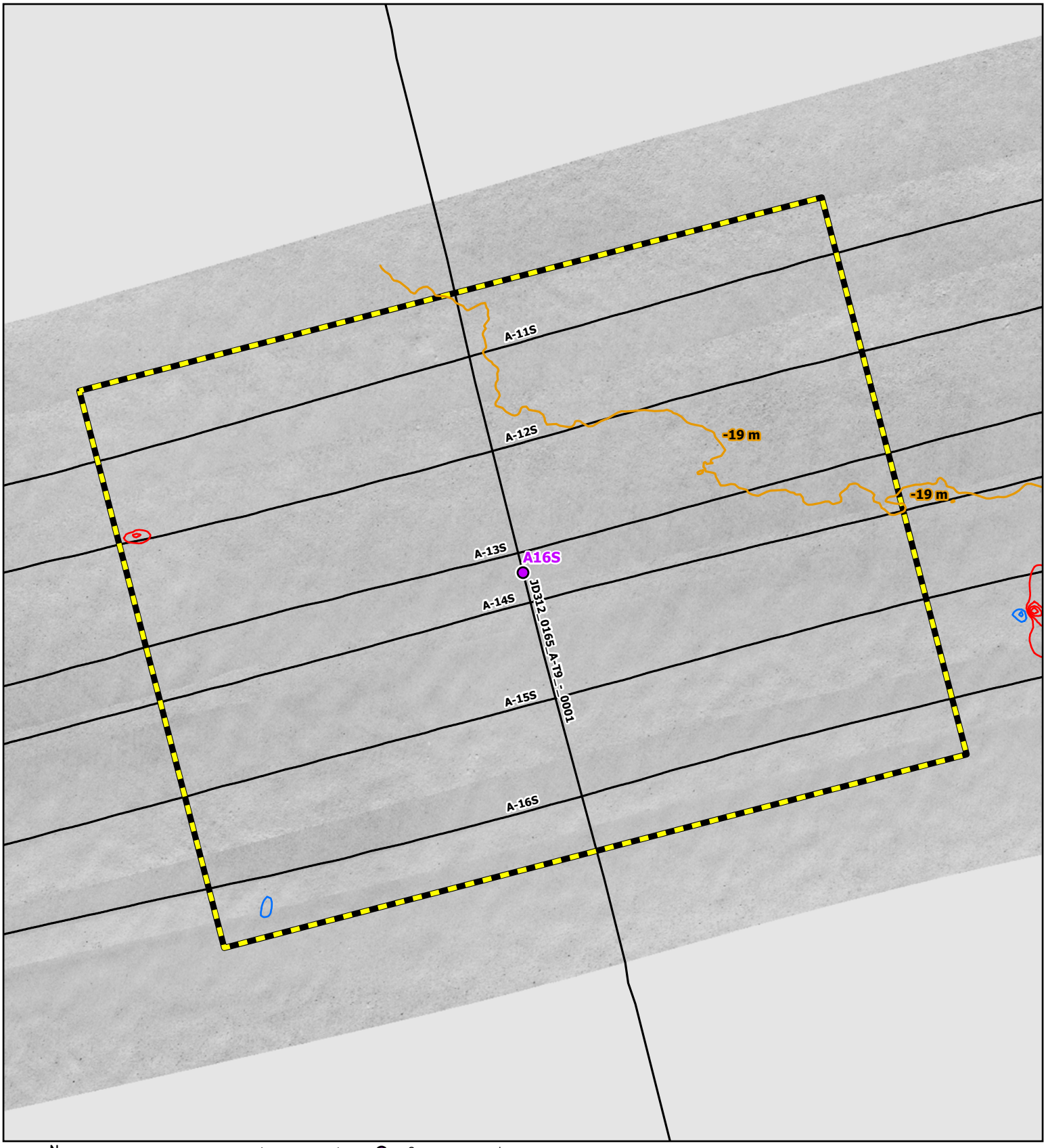
MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)
MSR: 1:1,600
SRS: NAD 1983 2011 UTM Zone 18N Meter
0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location
Trackline
Bathymetric Contour (1 m)
Magnetic Contour (5 nT)
Negative
Positive
Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A
Map: 32
A16S

R. Christopher Goodwin & Associates, Inc.
NAUTICAL DIVISION
MARINE ARCHAEOLOGY FROM STEM TO STERN

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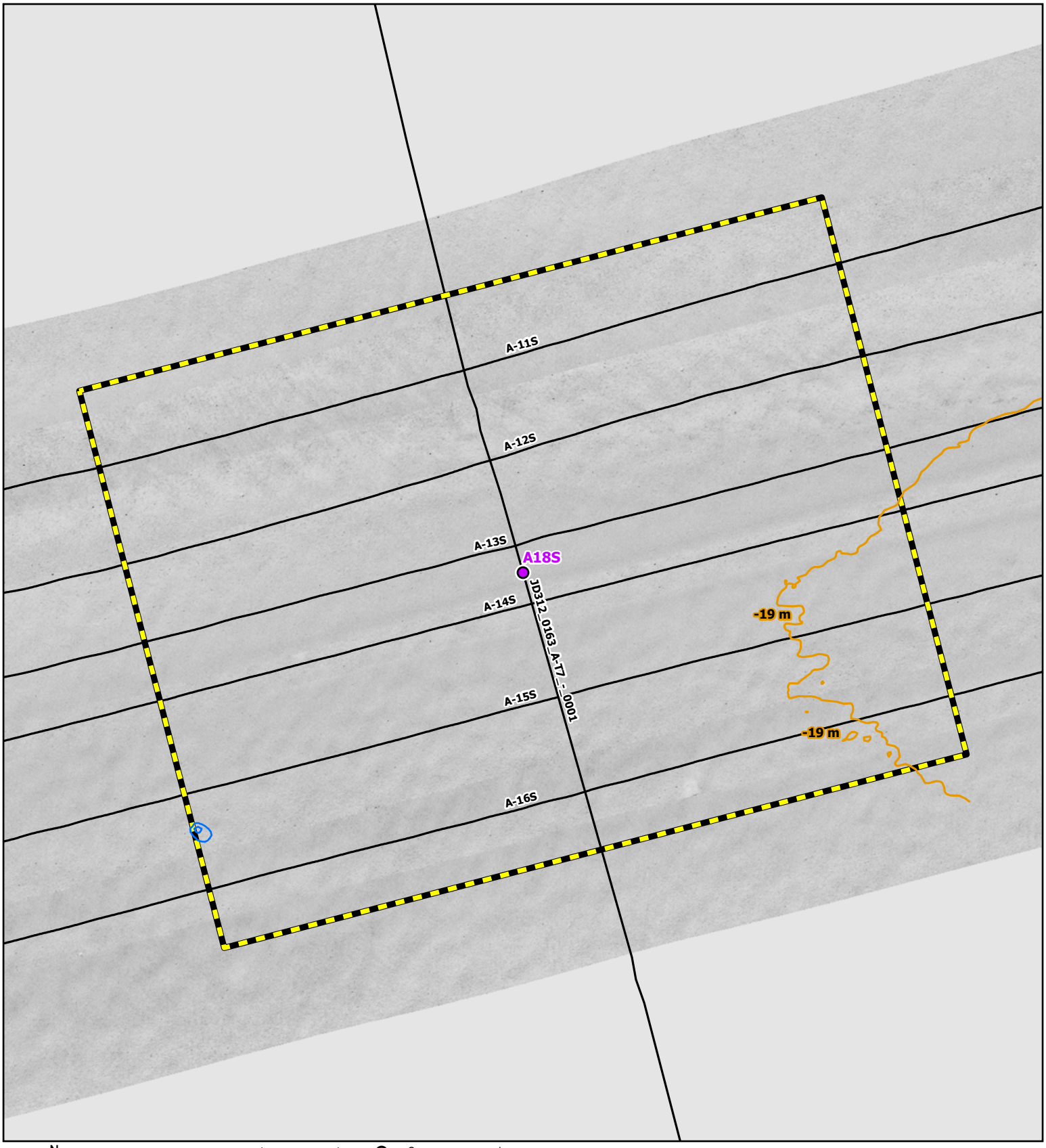


N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block A

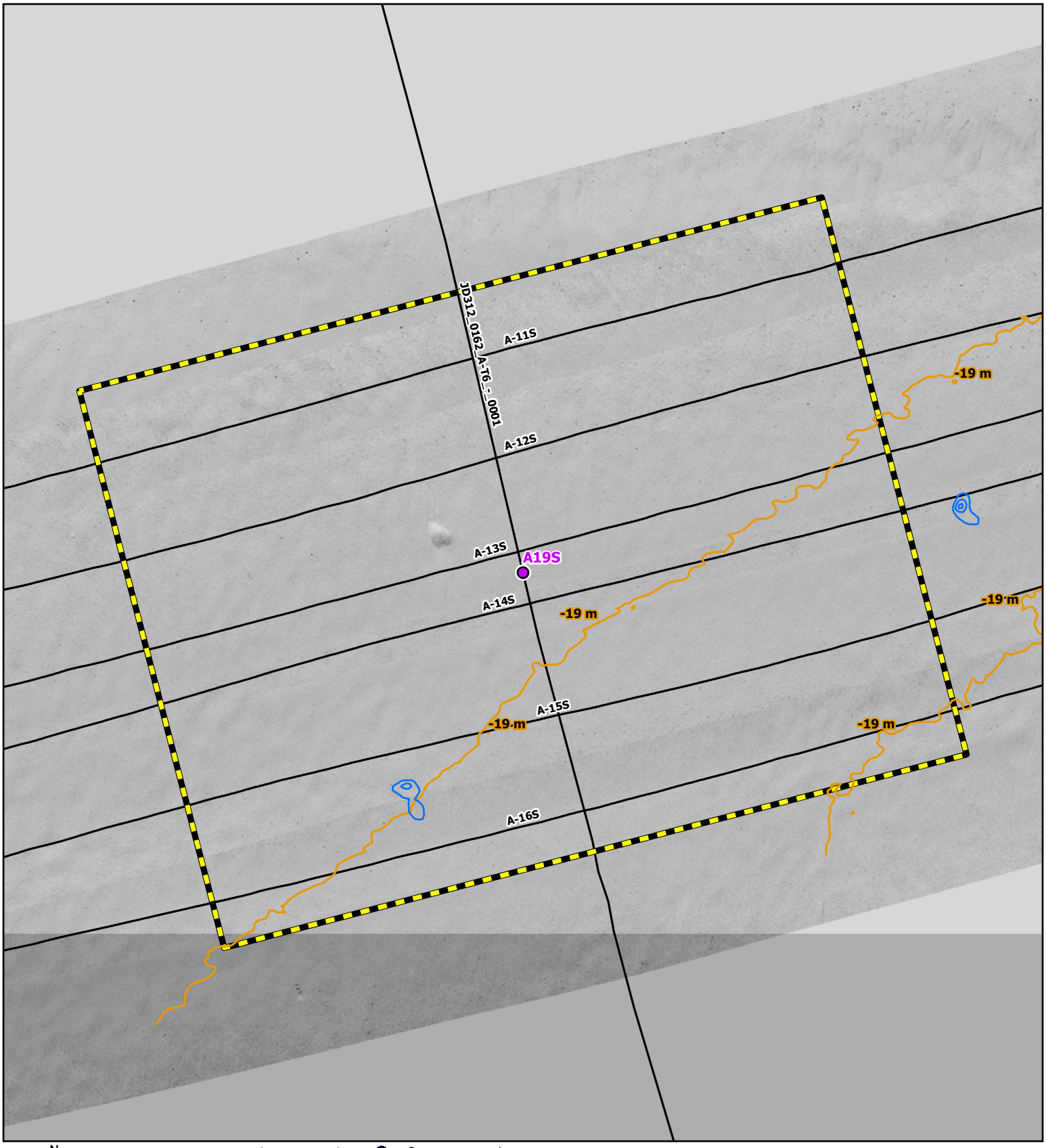
Map: 33

A18S

R. Christopher Goodwin & Associates, Inc.

NAUTICAL DIVISION

MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

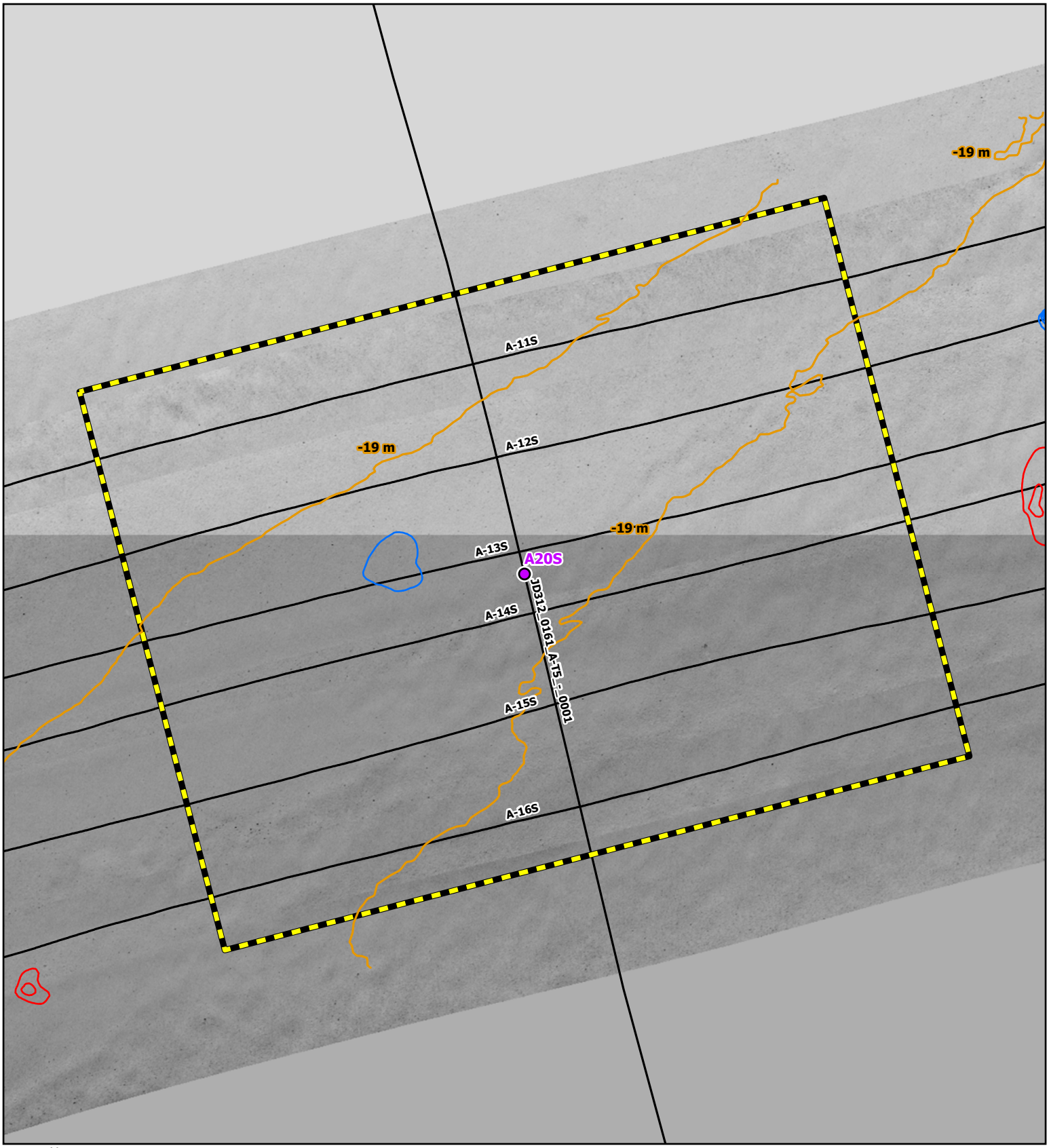
Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 34

A19S

R. Christopher Goodwin & Associates, Inc.
NAUTICAL DIVISION
MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)
MSR: 1:1,600
SRS: NAD 1983 2011 UTM Zone 18N Meter
0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location
Trackline
Bathymetric Contour (1 m)
Magnetic Contour (5 nT)
Negative
Positive
Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 35
A20S

R. Christopher Goodwin & Associates, Inc.
NAUTICAL DIVISION
MARINE ARCHAEOLOGY FROM STEM TO STERN

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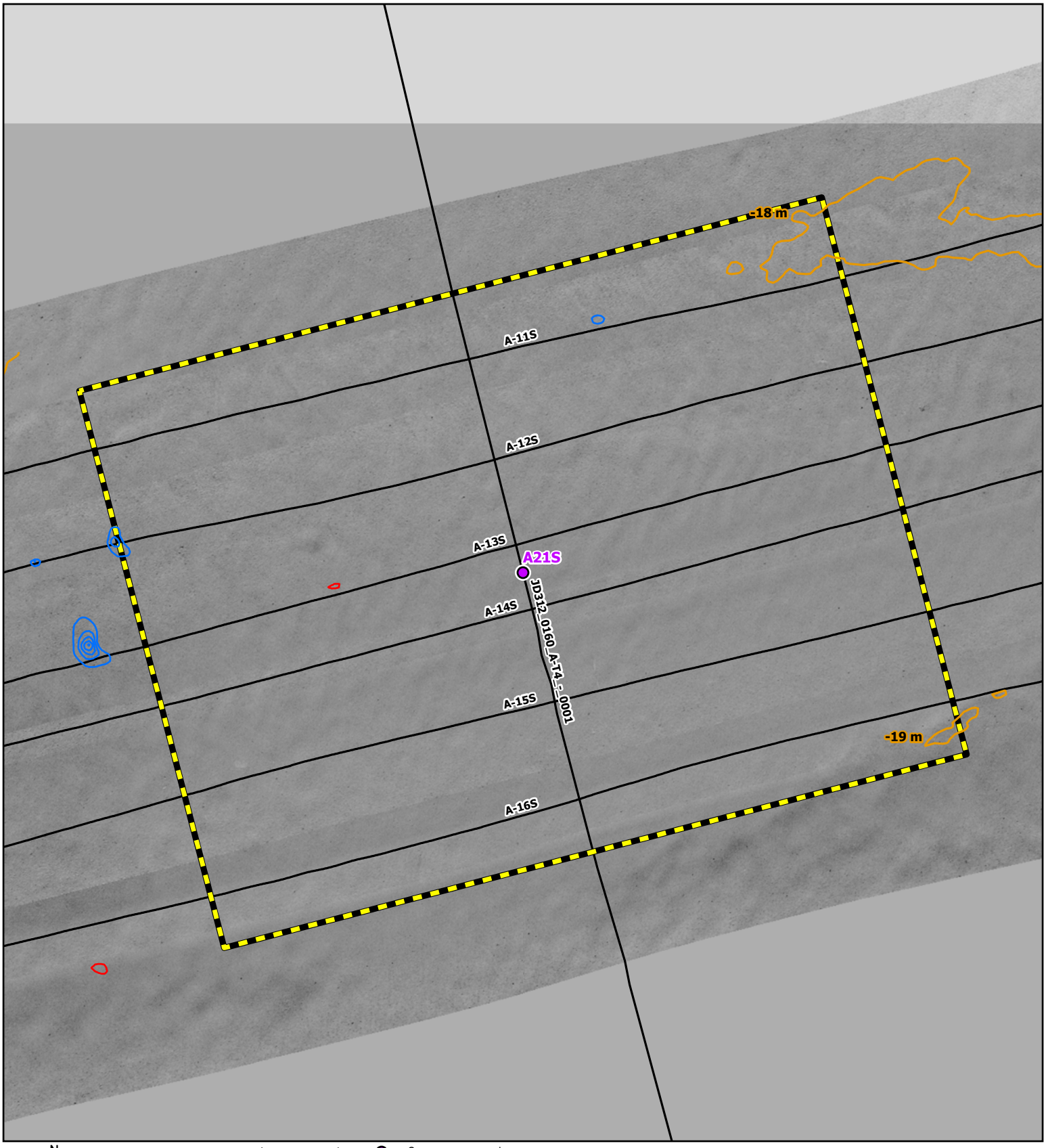

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block A

Map: 36

A21S

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NAUTICAL DIVISION
MARINE ARCHAEOLOGY FROM STEM TO STERN

APPENDIX 2
SUB-BOTTOM PROFILE IMAGES

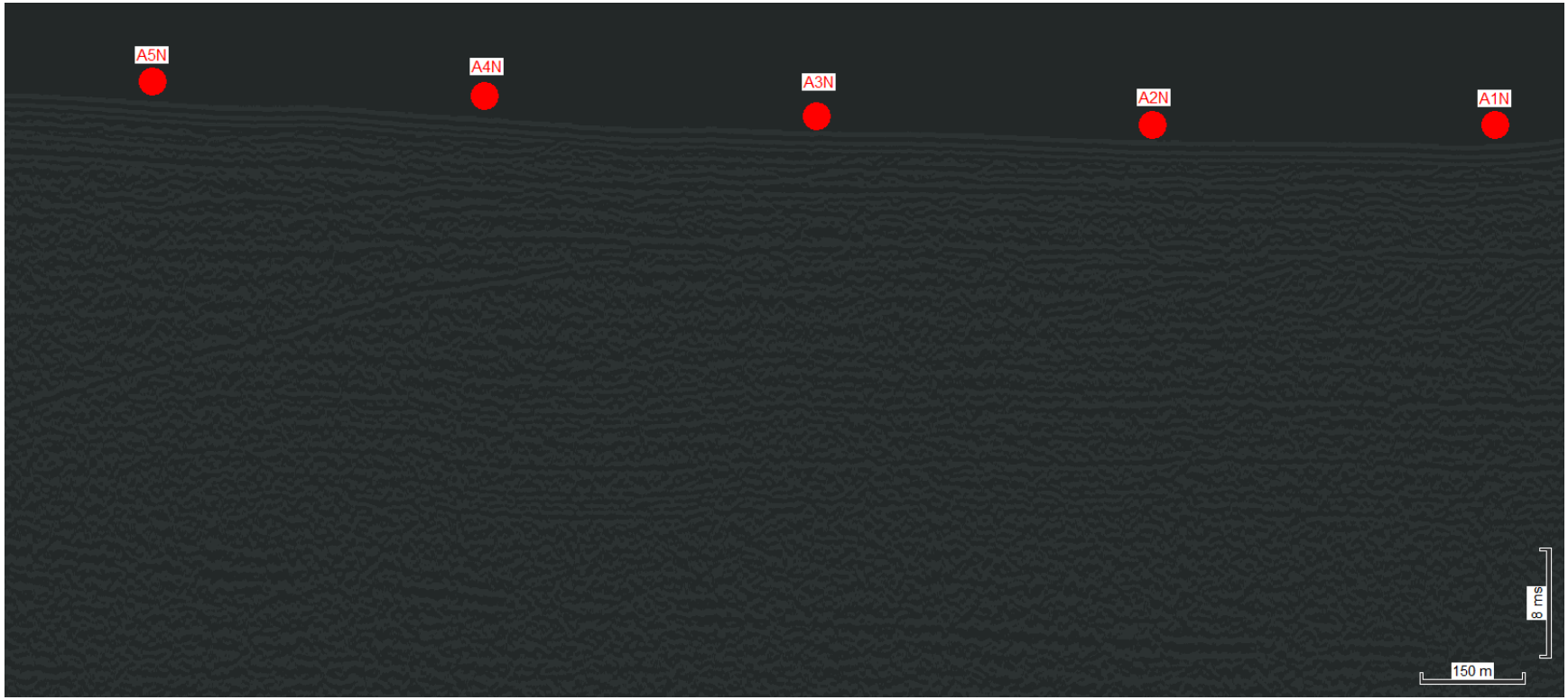


Figure 1: Proposed geotechnical locations A1N, A2N, A3N, A4N, and A5N in ECR Block A, Northern Wing Corridor along sub-bottom line JD309_Seq0123_A-16N_A

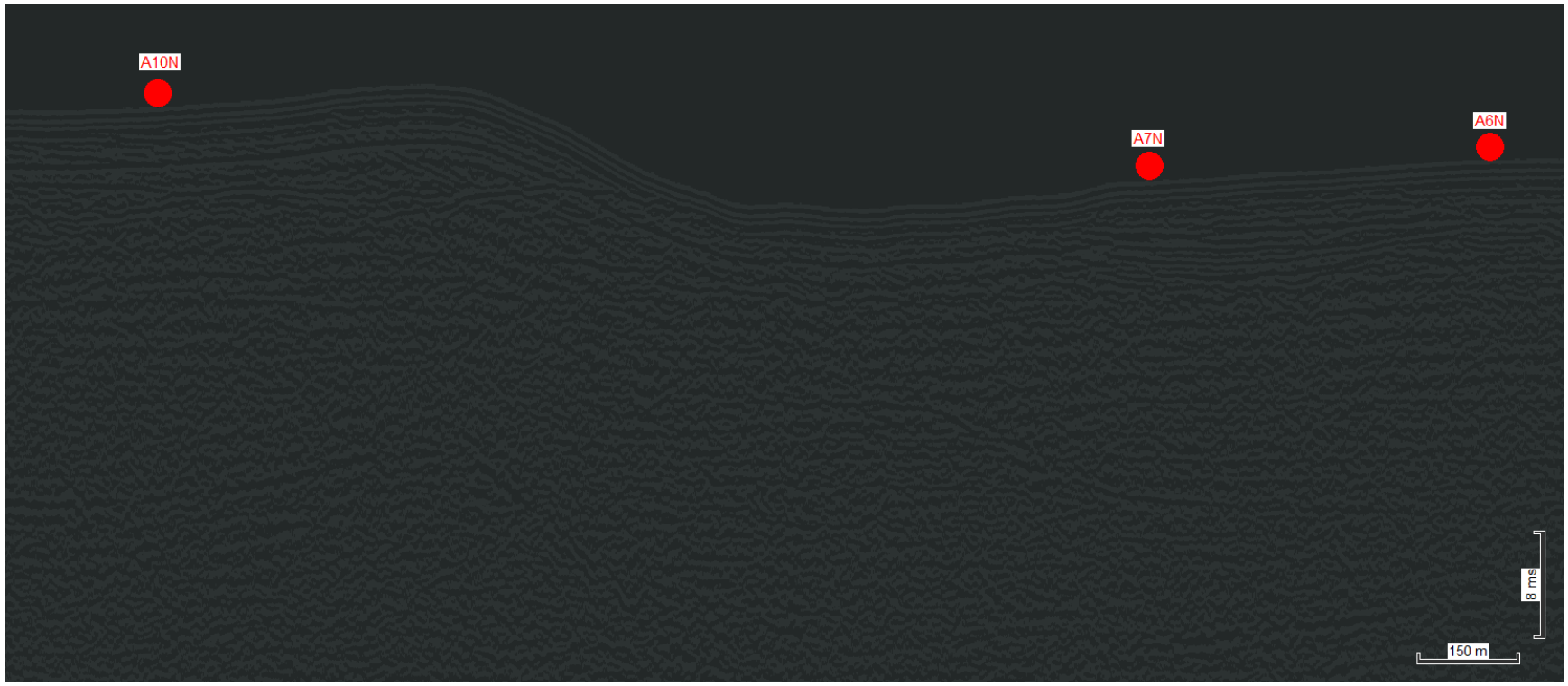


Figure 2: Proposed geotechnical locations A6N, A7N, and A10N in ECR Block A, Northern Wing Corridor along sub-bottom line JD309_Seq0123_A-16N_A

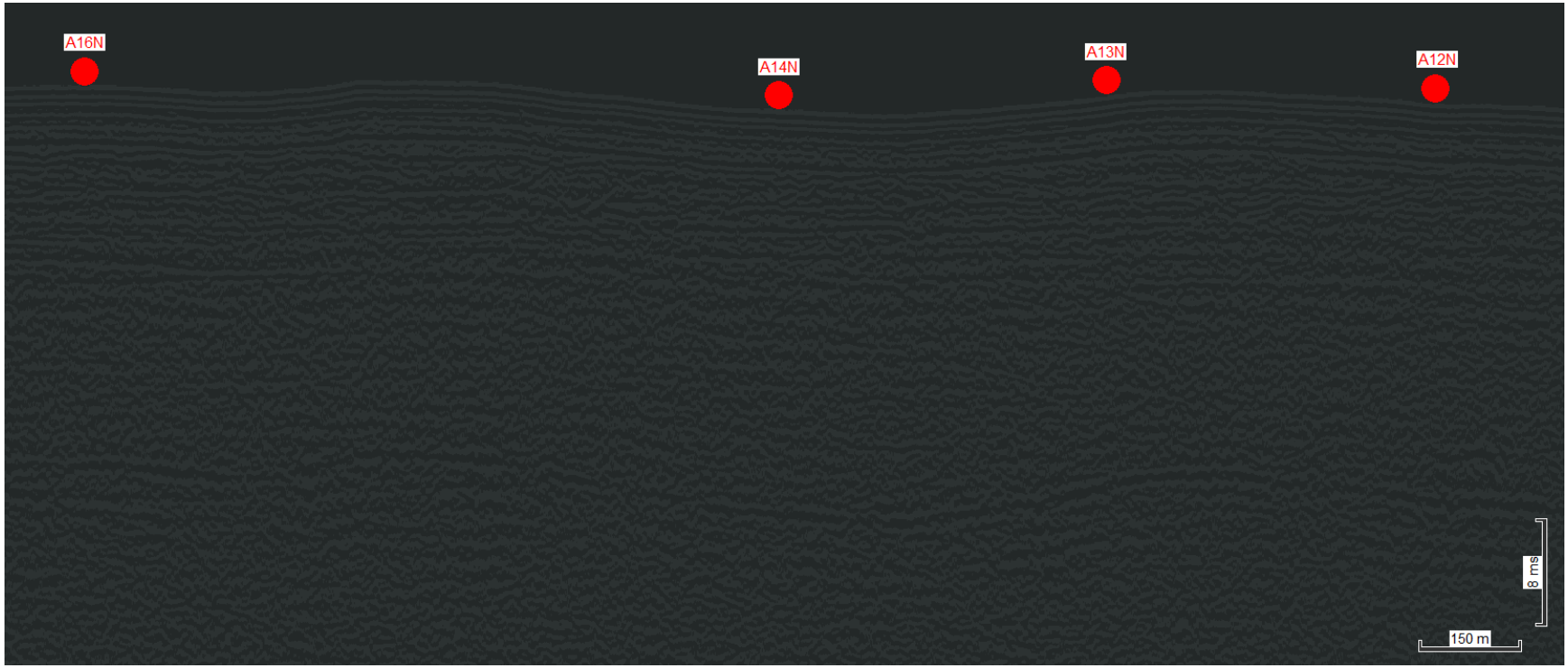


Figure 3: Proposed geotechnical locations A12N, A13N, A14N, and A16N in ECR Block A, Northern Wing Corridor along sub-bottom line JD309_Seq0123_A-16N_A

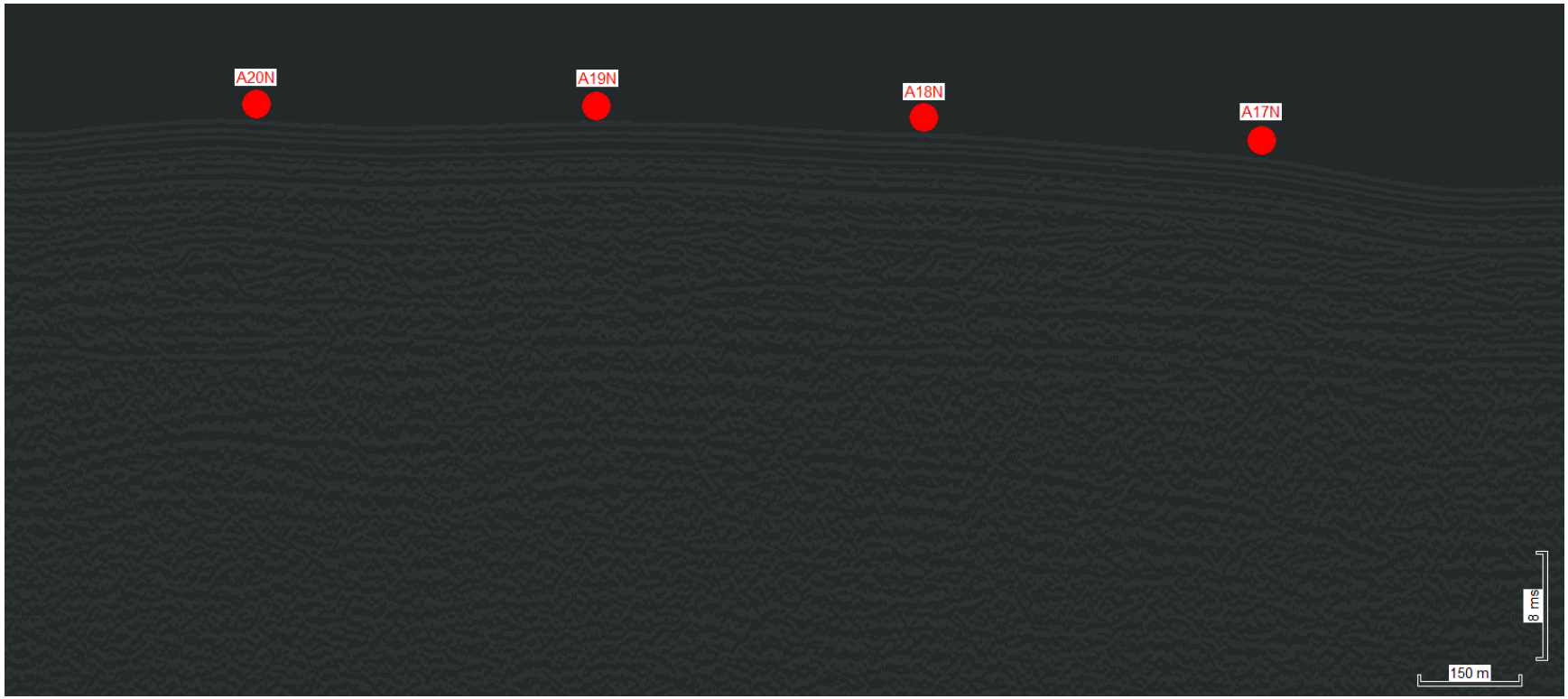


Figure 4: Proposed geotechnical locations A17N, A18N, A19N, and A20N in ECR Block A, Northern Wing Corridor along sub-bottom line JD309_Seq0123_A-16N_A

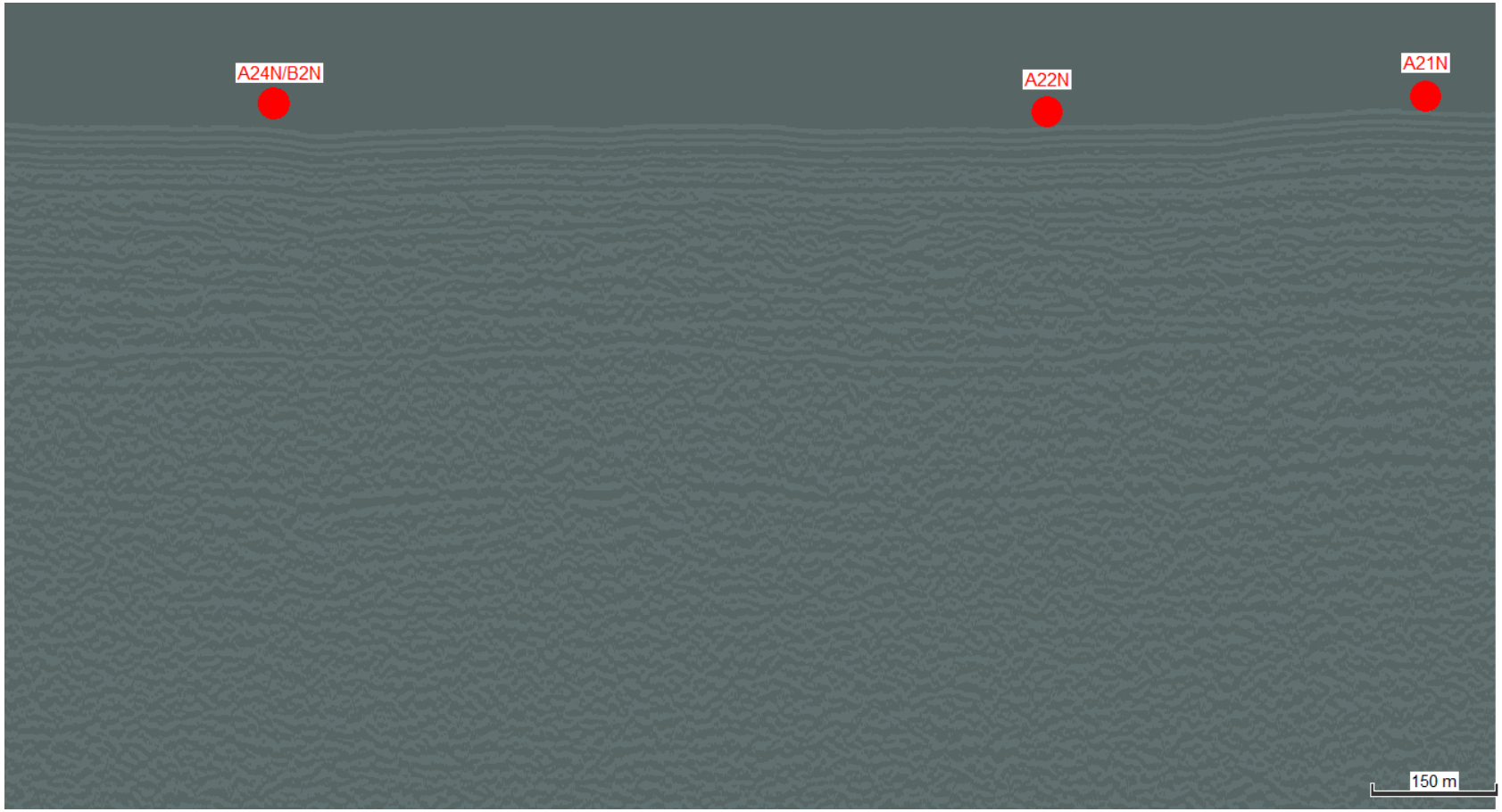


Figure 5: Proposed geotechnical locations A21N, A22N, and A24N/B2N in ECR Block A, Northern Wing Corridor along sub-bottom line JD309_Seq0123_A-16N_B

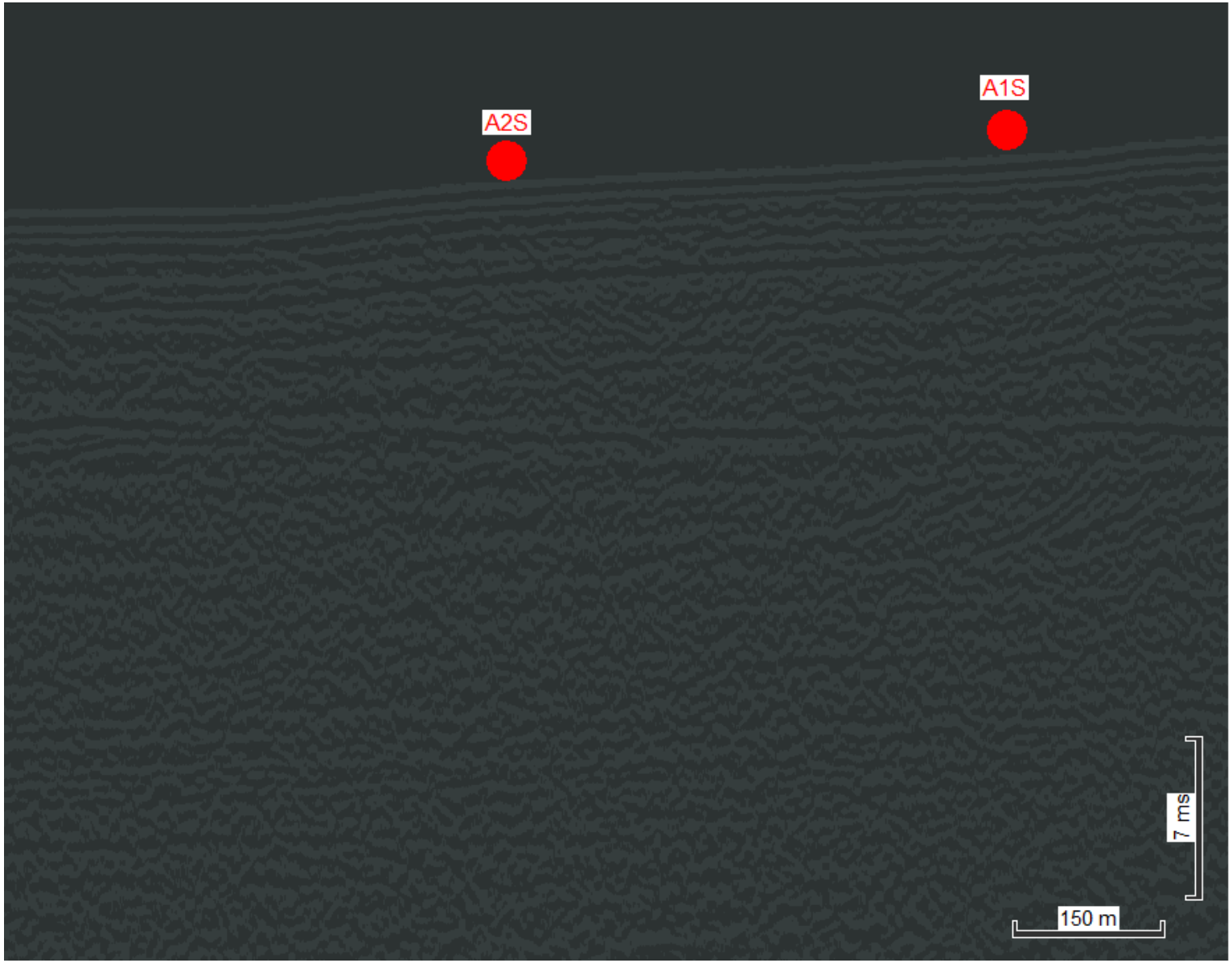


Figure 6: Proposed geotechnical locations A1S and A2S in ECR Block A, Southern Wing Corridor along sub-bottom line JD309_Seq0129_A-14S_A

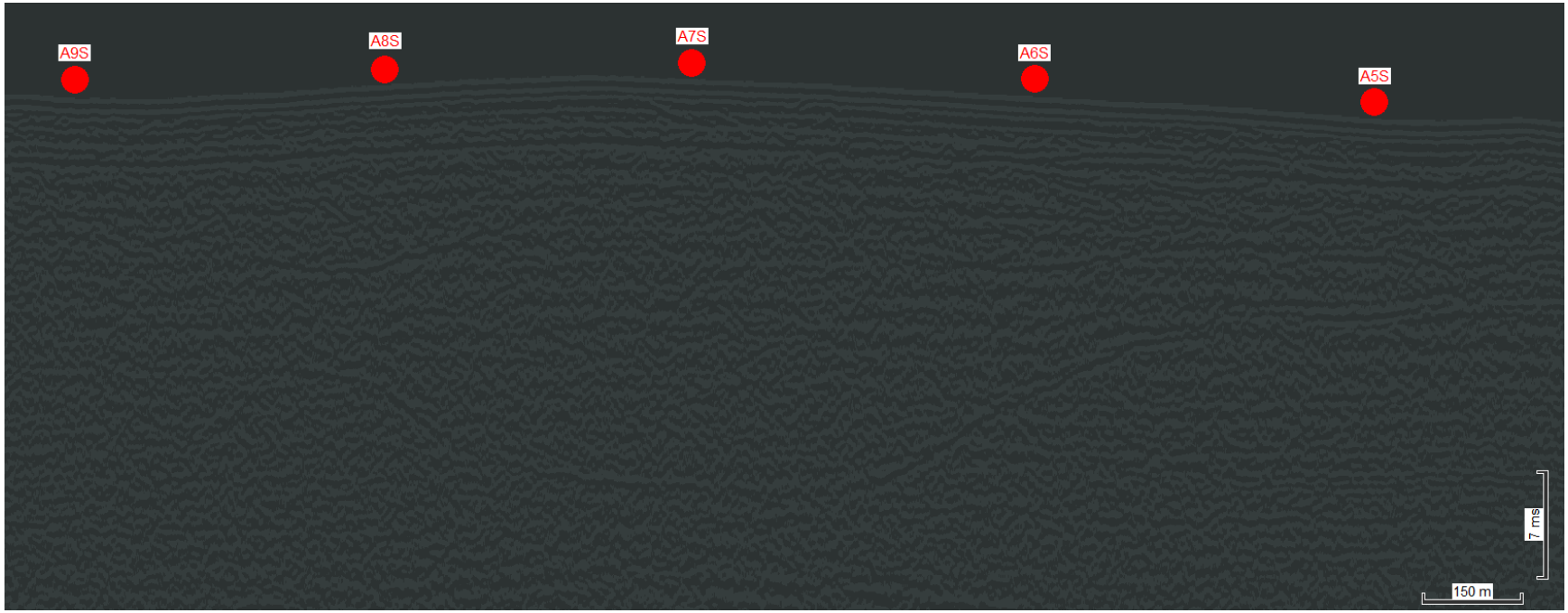


Figure 7: Proposed geotechnical locations A5S, A6S, A7S, A8S and A9S in ECR Block A, Southern Wing Corridor along sub-bottom line JD309_Seq0129_A-14S_A

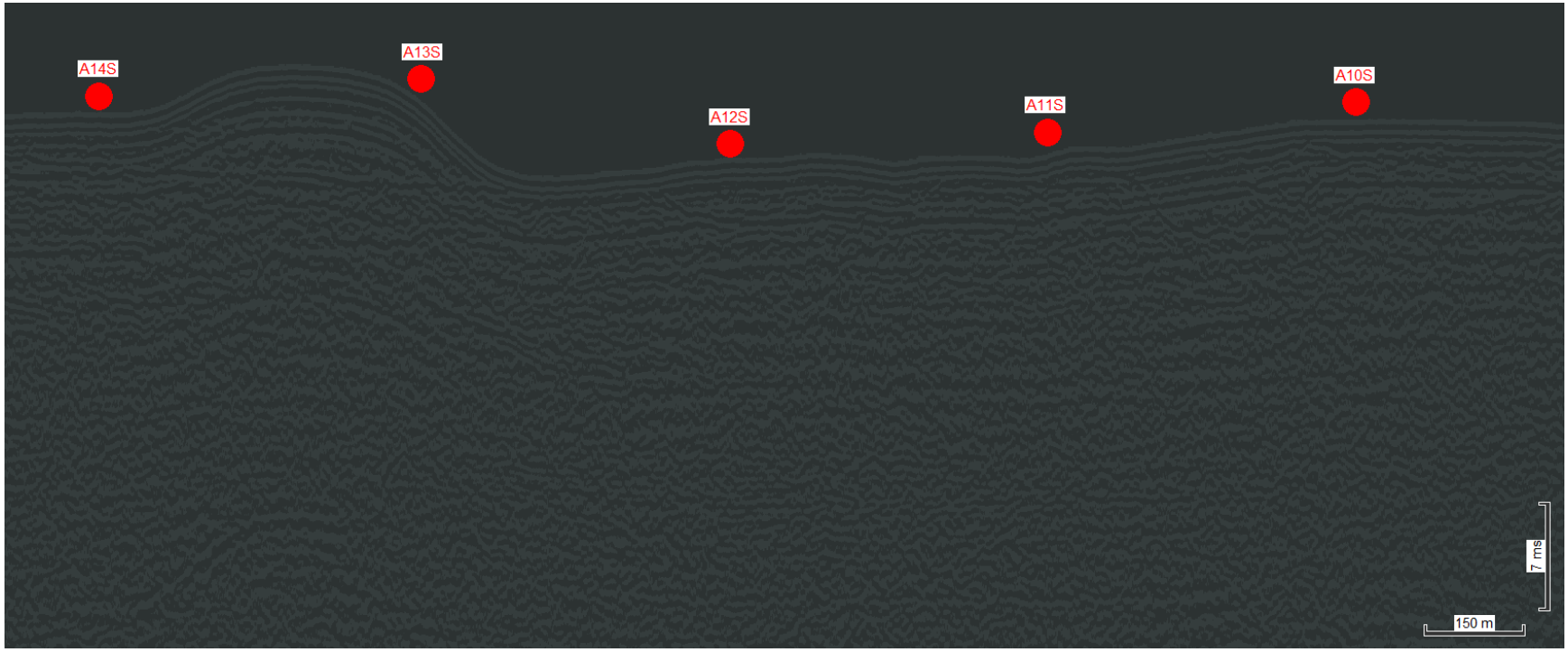


Figure 8: Proposed geotechnical locations A10S, A11S, A12S, A13S and A14S in ECR Block A, Southern Wing Corridor along sub-bottom line JD309_Seq0129_A-14S_A

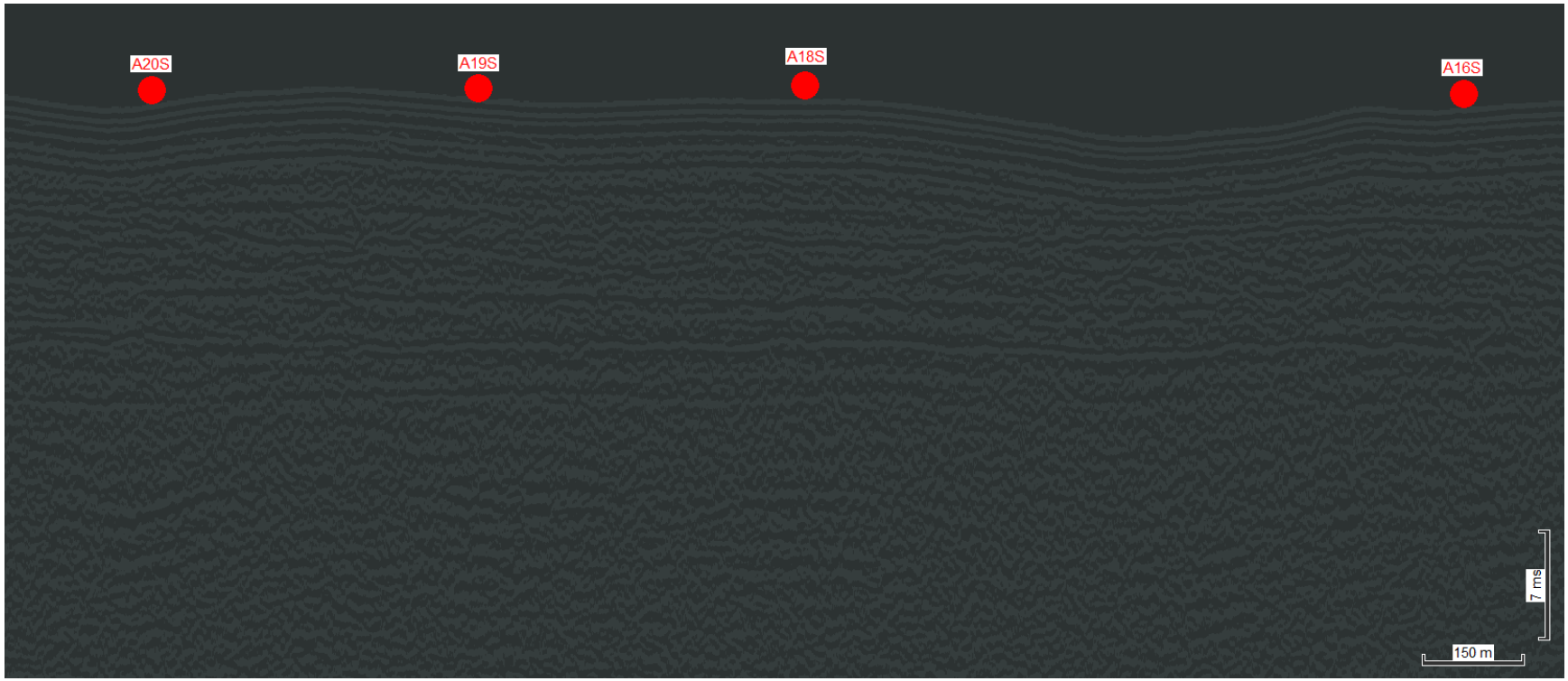


Figure 9: Proposed geotechnical locations A16S, A18S, A19S and A20S in ECR Block A, Southern Wing Corridor along sub-bottom line JD309_Seq0129_A-14S_A

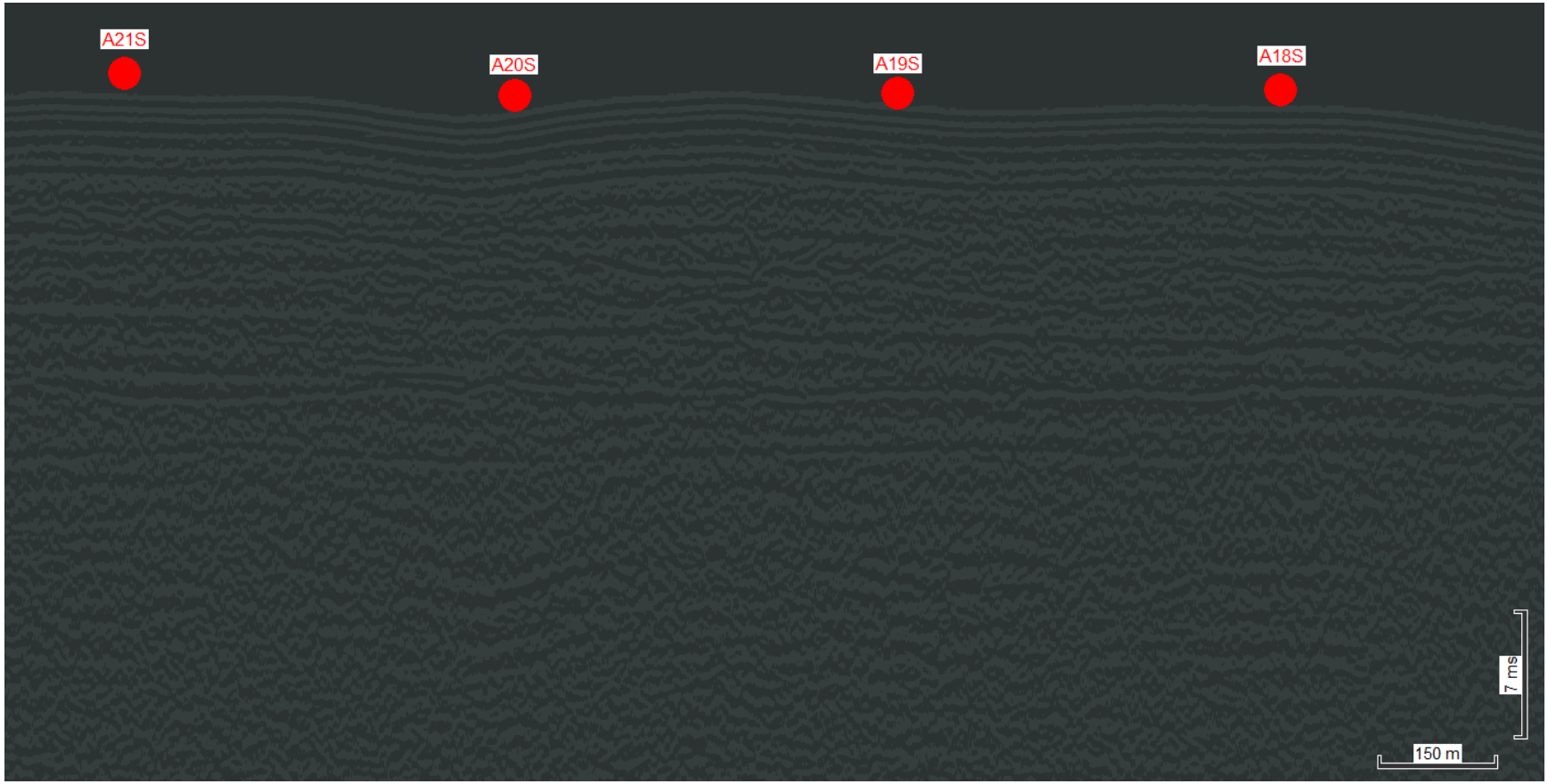


Figure 10: Proposed geotechnical locations A18S, A19S, A20S, and A21S in ECR Block A, Southern Wing Corridor along sub-bottom line JD309_Seq0129_A-14S_A

December 23, 2020

Mr. Lloyd Eley
Project Manager
Dominion Energy
5000 Dominion Boulevard
Glen Allen, MD 23060

RE: Coastal Virginia Offshore Wind Commercial Project – Cultural Resources Clearance for Geotechnical Investigations along the Block C Wing Corridors

Dear Mr. Eley:

This letter report provides the results of Phase I cultural resources analyses of high-resolution geophysical (HRG) survey data collected by Alpine Ocean Seismic Survey, Inc. to support geotechnical investigations for the Coastal Virginia Offshore Wind Commercial Project. The planned 2020 geotechnical campaign consists of shallow coring (piston or vibracores) and seabed Cone Penetrometer Tests; this memorandum reviews 42 of these locations for gathering geologic information (Tables 1 and 2). The geotechnical investigation will be conducted by Geoquip Marine aboard the vessels, *Geoquip Saentis*, *Dina Polaris*, and *Geoquip Speer*, or a similar type of vessel that is equipped with a dynamic positioning system. Activities at the geotechnical locations will not exceed a targeted depth of five (5) to seven (7) meters (m) below seabed.

The QMA reviewed the HRG survey data within a rectangular analytical area (180 m by 240 m) centered on each of the 42 proposed geotechnical locations located along the Export Cable Route (ECR), Block C. The reviewed data included at minimum six (6) parallel lines of survey data that captured each of the proposed locations. This review focused on identification of any potential submerged cultural resources and buried, preserved landforms through geophysical investigations.

High-resolution side scan sonar imagery was recorded throughout the survey area and viewed as high-resolution mosaicked files (Appendix 1). No sonar contacts that represent significant cultural resources were identified within the analytical areas.

Two marine magnetometers configured into a transverse gradiometer array collected magnetic data along each survey line. Magnetic anomalies were interpreted using magnetic residual field grid data, magnetic contour mapping, and by observing their characteristics in terms of amplitude, duration, magnetic signature, and spatial distribution (Appendix 1). No magnetic anomalies that represent significant cultural resources were identified within the analytical areas pertaining to 37 of the 42 proposed geotechnical sampling locations. Further analysis is required for C3N, C7N, C15N, C16S and C19S.

Seismic data were collected and interpreted along each survey line associated with the geotechnical locations (Appendix 2). All seismic data were reviewed to their full vertical extent. The geotechnical

locations were also reviewed with respect to the ground model and interpreted horizons. Analyses of the seismic data suggest that the geotechnical samples will not impact any submerged and buried landforms that exhibit the potential to contain preserved archaeological resources.

The analyses considered all portions of the seafloor within the limits of bottom-disturbing activities as they pertain to 37 of the 42 the proposed sampling locations (Tables 1 and 2; Appendices 1 and 2). Based on the current data, if the geotechnical sampling activities are contained within the established analytical areas (Table 1), no potential archaeological resources will be affected by the proposed geotechnical activities. No historic properties, such as shipwrecks, were detected at the proposed sampling locations.

If you have questions, please do not hesitate to contact us.

Best regards,

Ashley Himmelstein, M.A.
Nautical Archaeologist

Table 1. Proposed geotechnical locations for ECR Block C, Northern Wing Corridor

Core ID[1]	Easting (X)[2]	Northing (Y)[2]	Longitude[3]	Latitude[3]
C1N	444795.39	4073993.70	-75.61890648	36.8101847
C2N	444481.67	4073956.48	-75.62242075	36.80983078
C4N	443708.16	4073877.15	-75.63108626	36.80906999
C5N	443208.04	4073823.47	-75.63668884	36.80855622
C6N	442708.68	4073776.89	-75.64228319	36.80810629
C8N	441717.08	4073682.97	-75.65339201	36.80719908
C9N	441212.59	4073629.86	-75.65904328	36.80668919
C10N	440722.70	4073580.69	-75.66453109	36.80621537
C11N	440220.26	4073532.77	-75.67015956	36.80575185
C12N	439723.86	4073484.49	-75.67572021	36.80528512
C13N	439226.10	4073429.80	-75.68129556	36.80476029
C14N	438726.46	4073384.48	-75.68689265	36.8043196
C16N	437730.70	4073281.54	-75.69804625	36.80332668
C17N	437237.19	4073236.35	-75.70357446	36.80288669
C18N	436741.05	4073187.62	-75.70913169	36.80241446
C19N	436245.75	4073136.08	-75.71467928	36.80191663
C20N	435742.17	4073071.06	-75.72031855	36.80129647
C21N/D1N	435379.52	4073041.69	-75.72438099	36.80100701

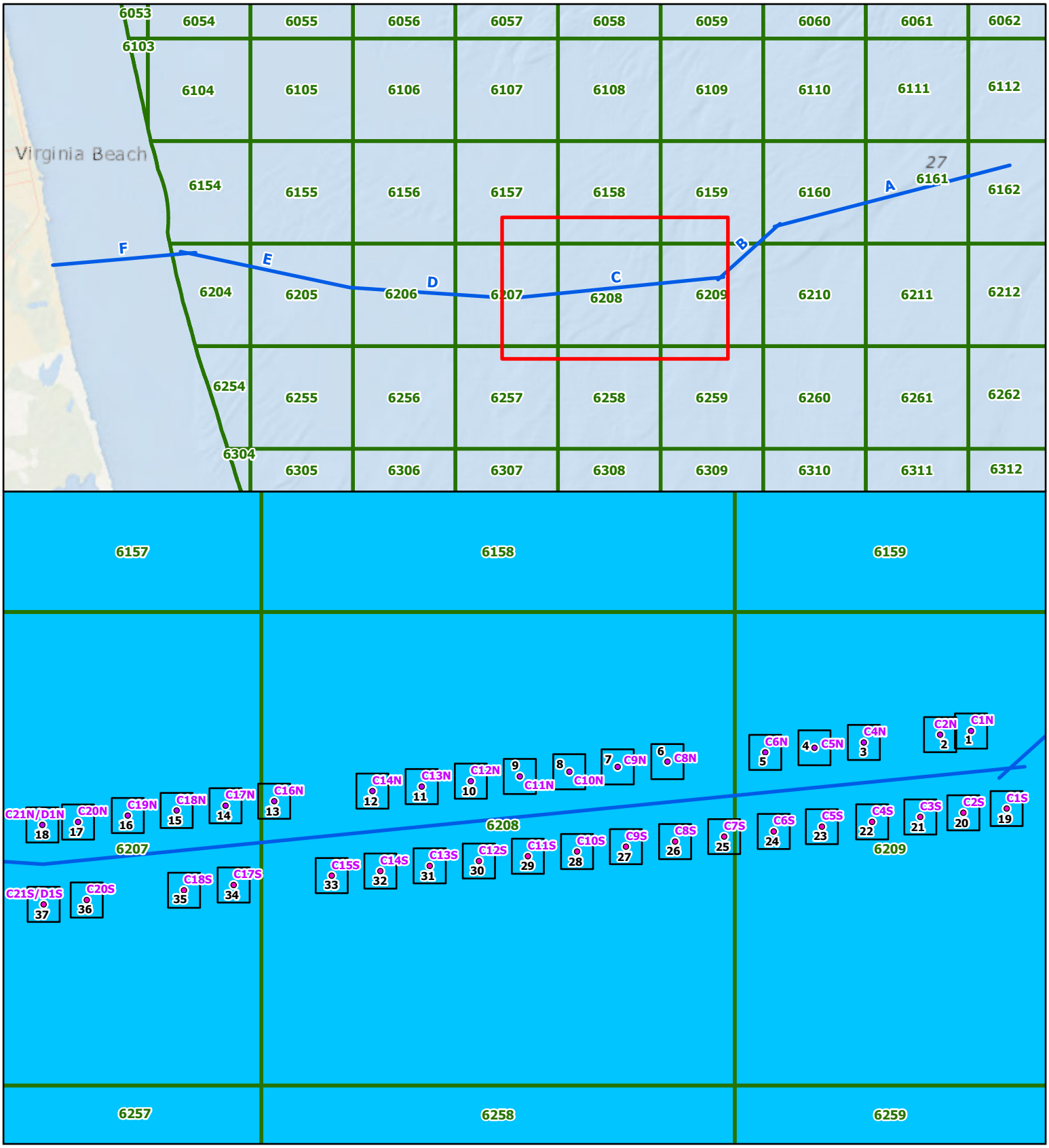
[1] Core IDs may not be sequential; C3N, C7N and C15N are pending additional analyses.
[2] Projected coordinates are referenced to UTM Zone 18N, NAD83 (2011), meters.
[3] Geographical coordinates are referenced to NAD83.

Table 2. Proposed geotechnical locations for ECR Block C, Southern Wing Corridor

Core ID[1]	Easting (X)[2]	Northing (Y)[2]	Longitude[3]	Latitude[3]
C1S	445156.41	4073207.28	-75.61480258	36.80311674
C2S	444716.93	4073164.50	-75.61972589	36.80270555
C3S	444280.51	4073122.51	-75.62461478	36.80230138
C4S	443792.45	4073072.55	-75.63008199	36.8018222
C5S	443283.56	4073023.61	-75.63578261	36.80135066
C6S	442794.76	4072974.79	-75.64125799	36.80088121
C7S	442292.61	4072922.93	-75.64688269	36.80038323
C8S	441794.85	4072872.69	-75.65245823	36.79989988
C9S	441296.46	4072820.99	-75.65804064	36.79940307
C10S	440800.92	4072771.52	-75.66359131	36.7989263
C11S	440302.14	4072723.91	-75.66917819	36.79846578
C12S	439805.71	4072675.27	-75.67473869	36.79799594
C13S	439306.89	4072625.91	-75.68032593	36.79751916
C14S	438806.35	4072572.90	-75.68593195	36.79700905
C15S	438313.51	4072526.82	-75.69145214	36.79656176
C17S	437319.33	4072432.07	-75.70258744	36.79564238
C18S	436815.75	4072378.33	-75.70822723	36.79512442
C20S	435830.05	4072279.94	-75.71926677	36.79417125
C21S/D1S	435392.85	4072235.33	-75.72416313	36.79373939

[1] Core IDs may not be sequential; C16S and C19S are pending additional analyses.
[2] Projected coordinates are referenced to UTM Zone 18N, NAD83 (2011), meters.
[3] Geographical coordinates are referenced to NAD83.

APPENDIX 1
ARCHAEOLOGICAL RESOURCES MAPS FOR BLOCK C WING CORRIDORS



N
W E
S
Grid North

NOAA OCS, Esri, DeLorme, Esri, DeLorme, NaturalVue

MSR: 1:52,000
SRS: NAD 1983 2011 UTM Zone 18N Meter

0 0.25 0.5 0.75 | Miles
0 0.25 0.5 0.75 | Kilometers

- Geotechnical Location
- ECR Centerline
- Map Sheet Boundary
- BOEM Lease Block

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf, Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block C

Index Map

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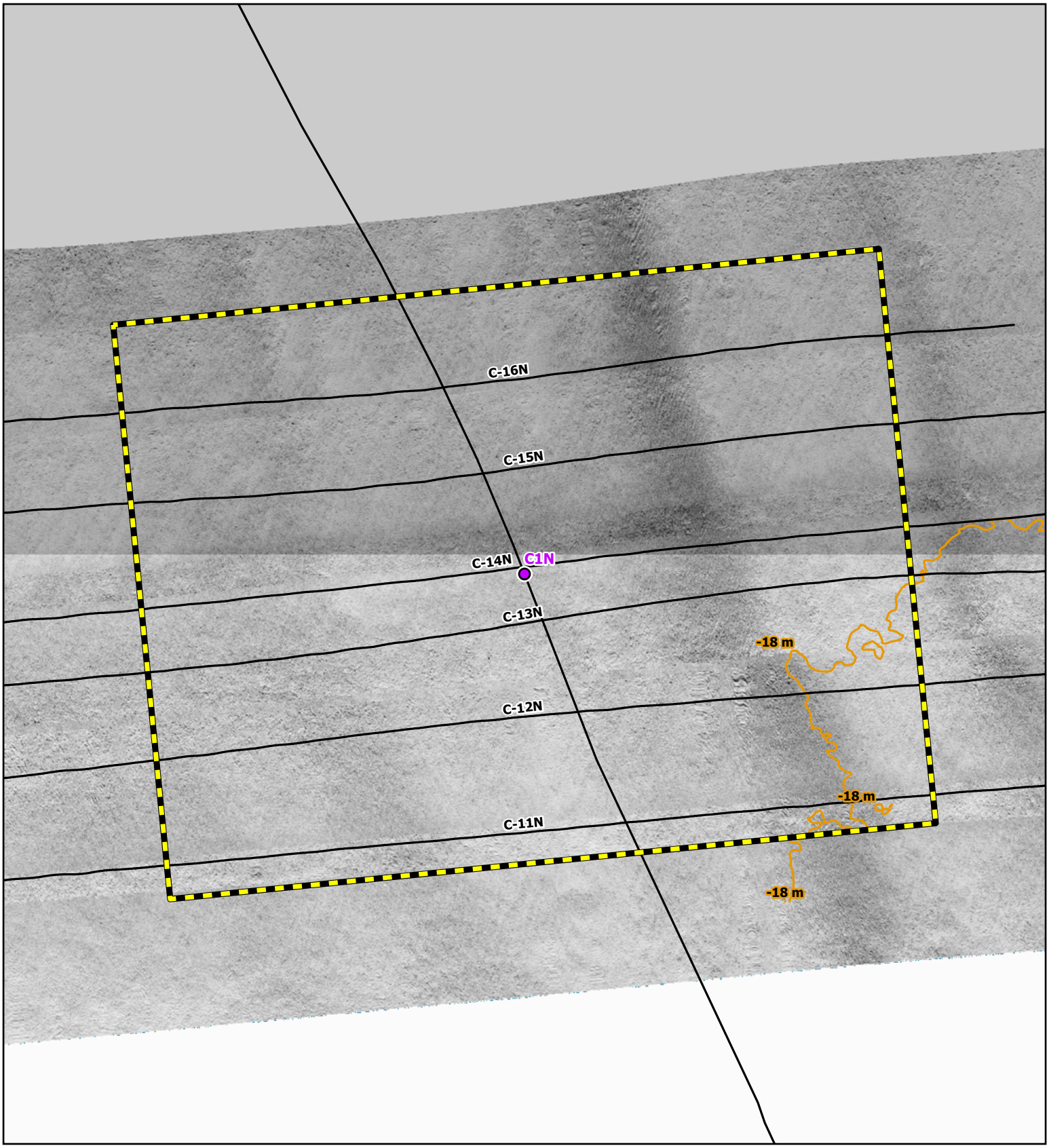

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

tracklines_s2_vessel_crosslines_mu_block_b_no_z

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block C

Map: 1

C1N

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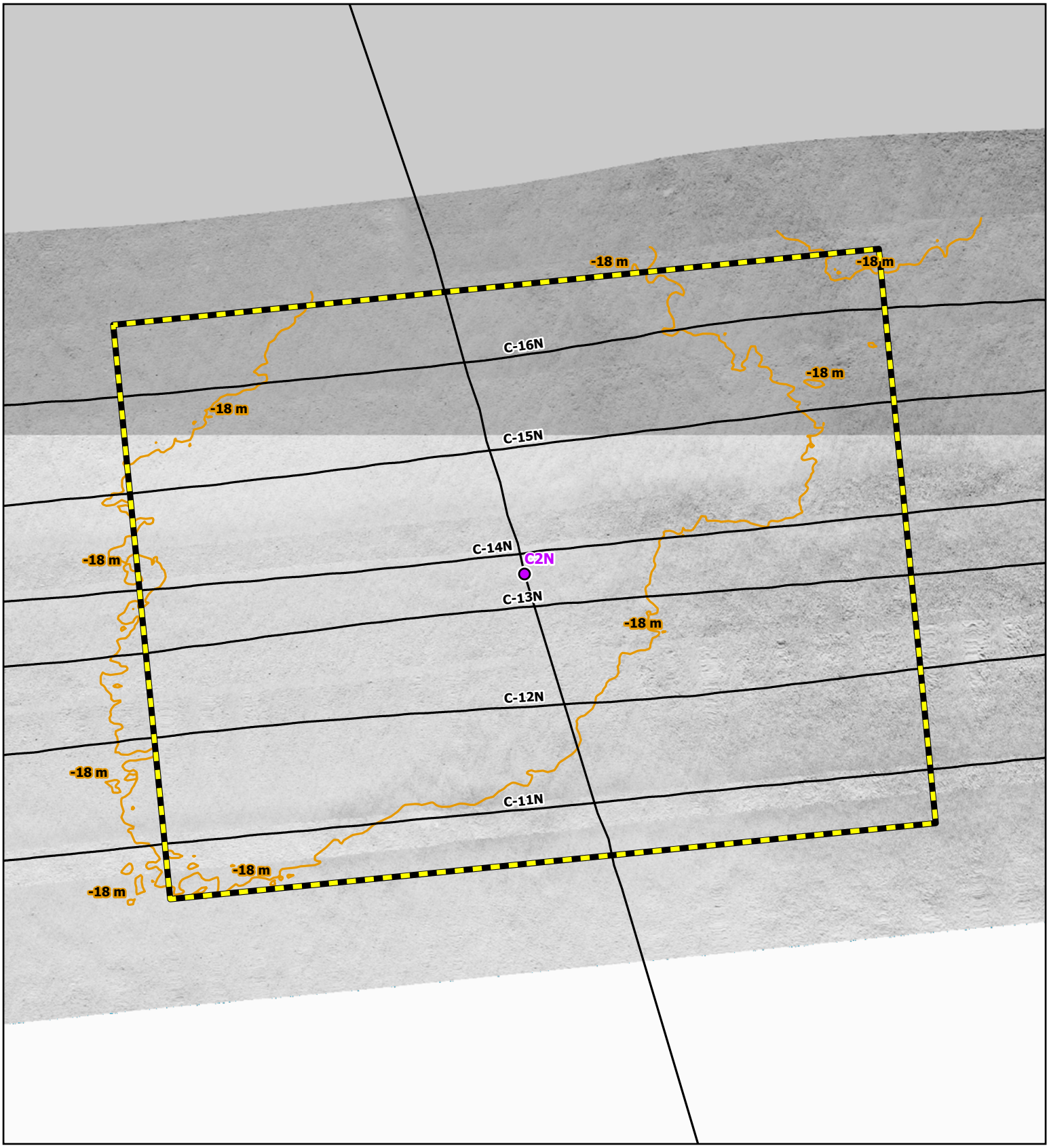

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

tracklines_s2_vessel_crosslines_mu_block_b_no_z

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block C

Map: 2

C2N

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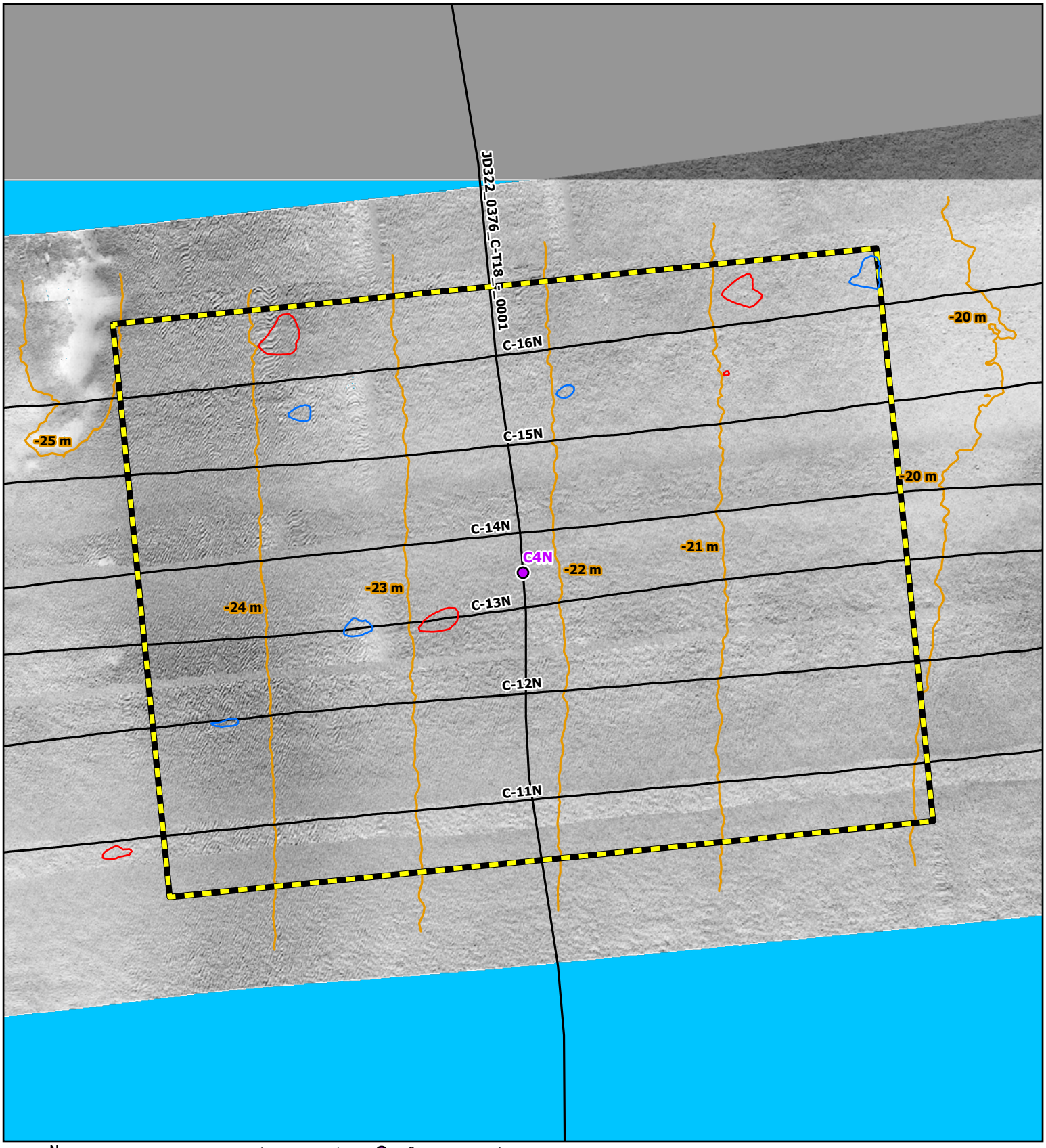

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 3

C4N

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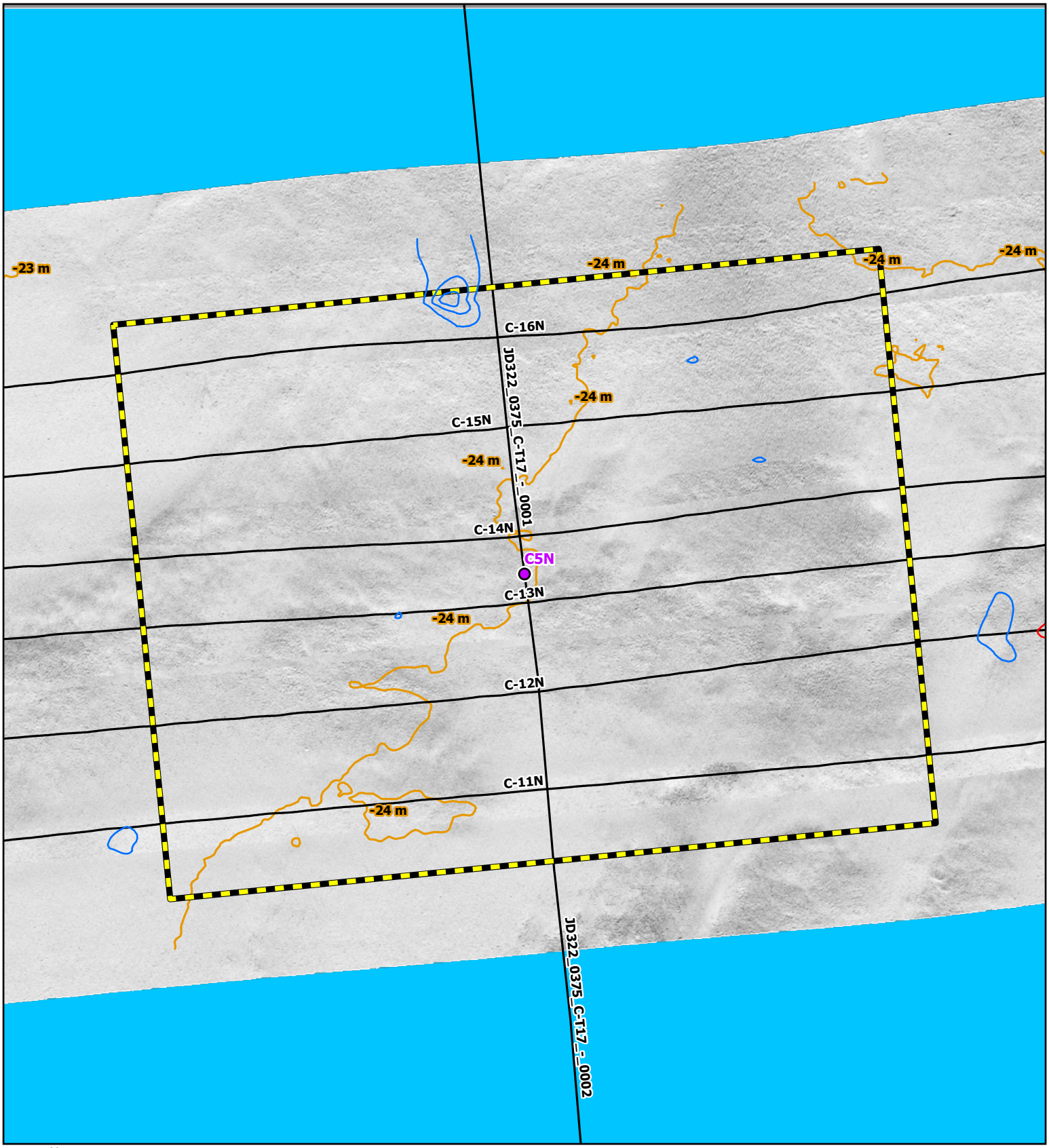

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 4

C5N

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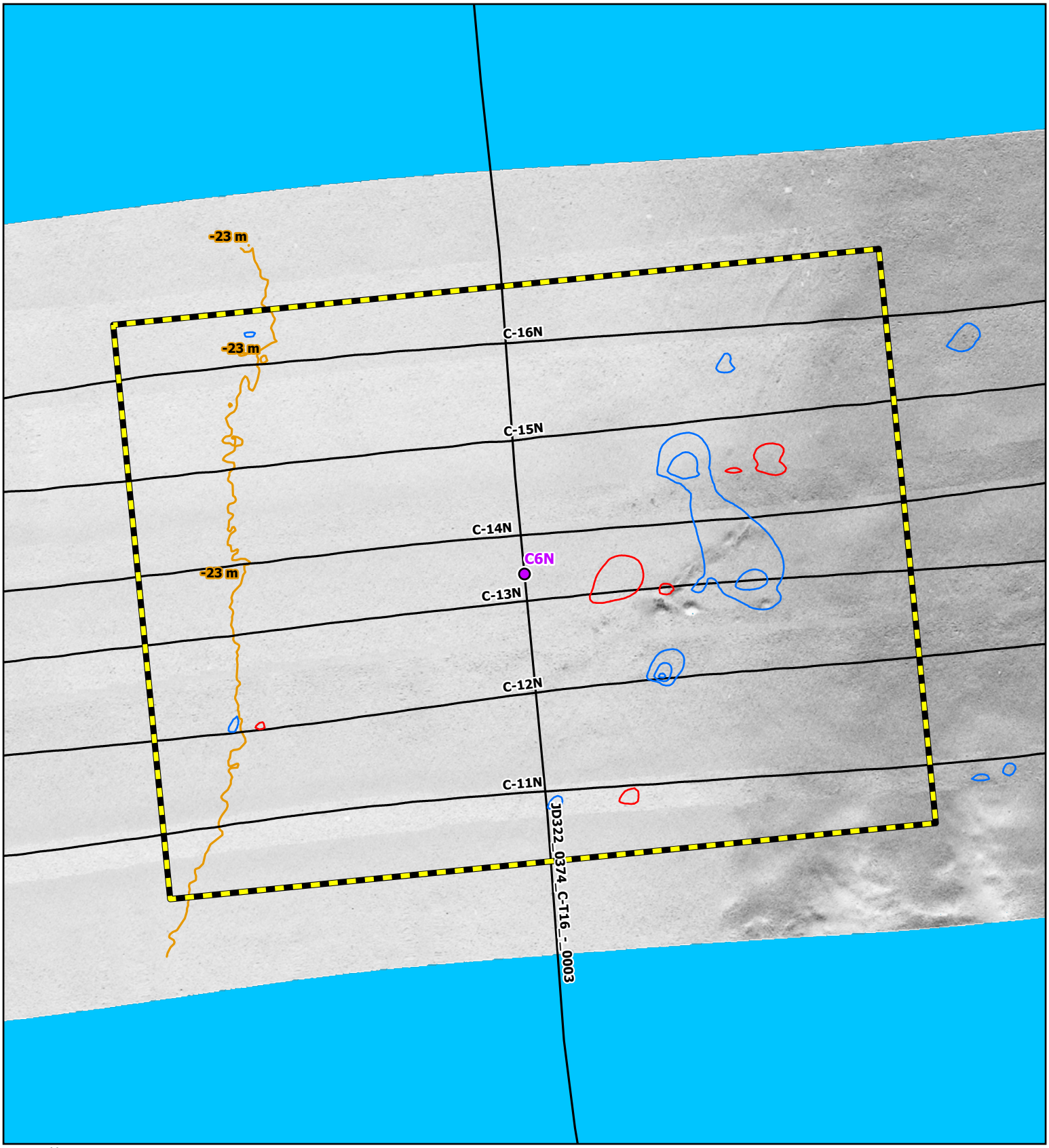

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 5

C6N

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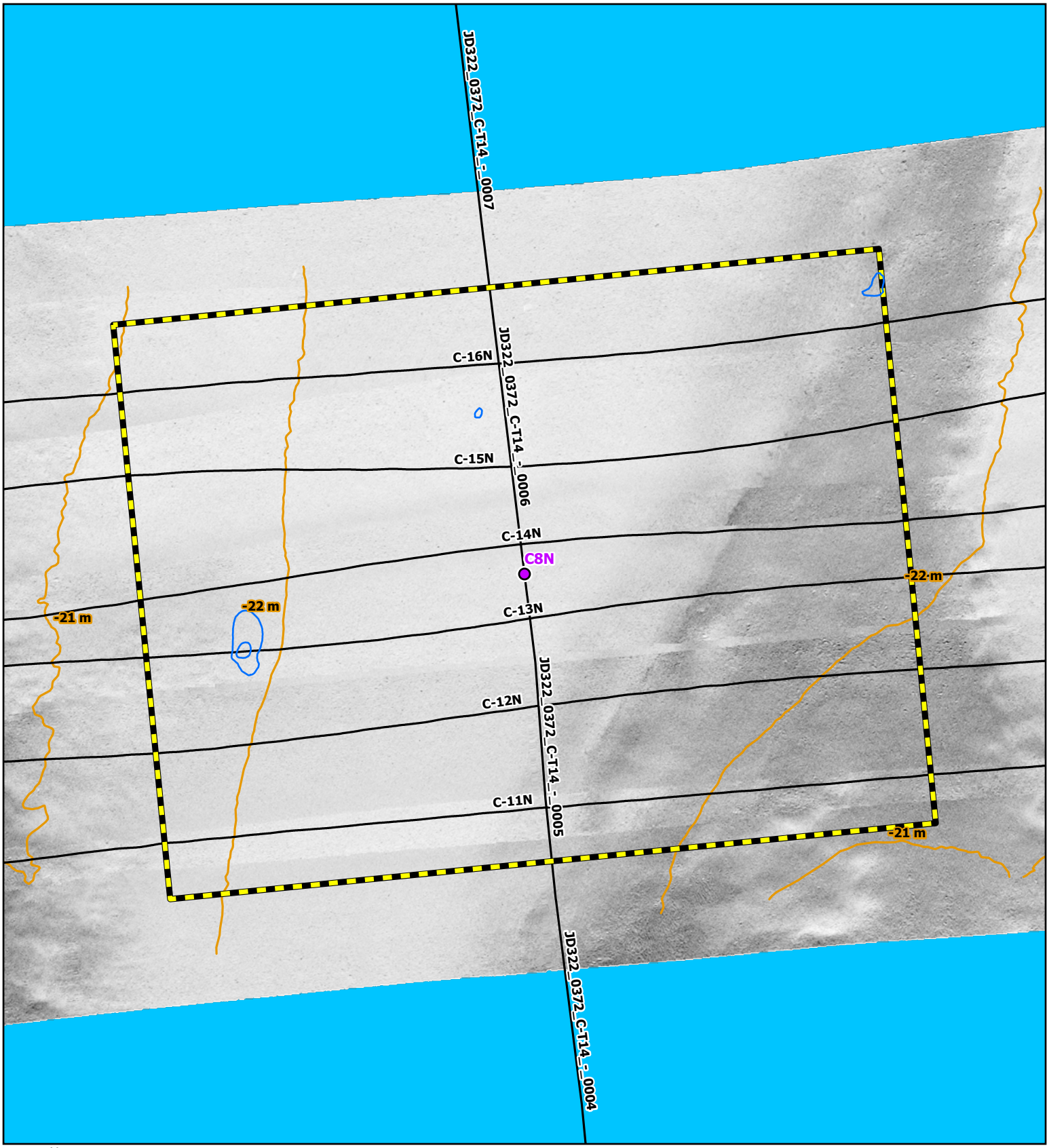

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block C

Map: 6

C8N

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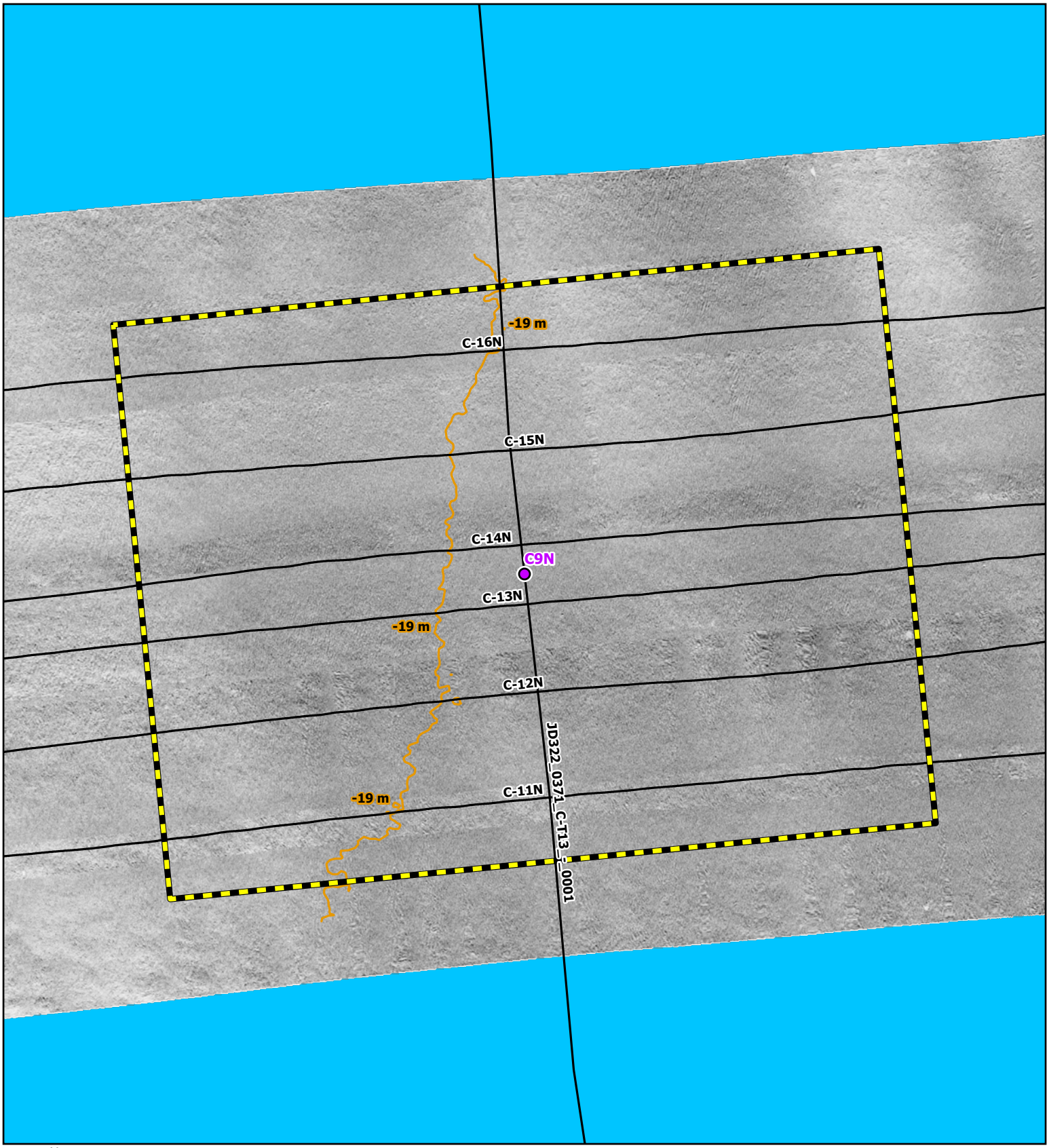

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 7

C9N

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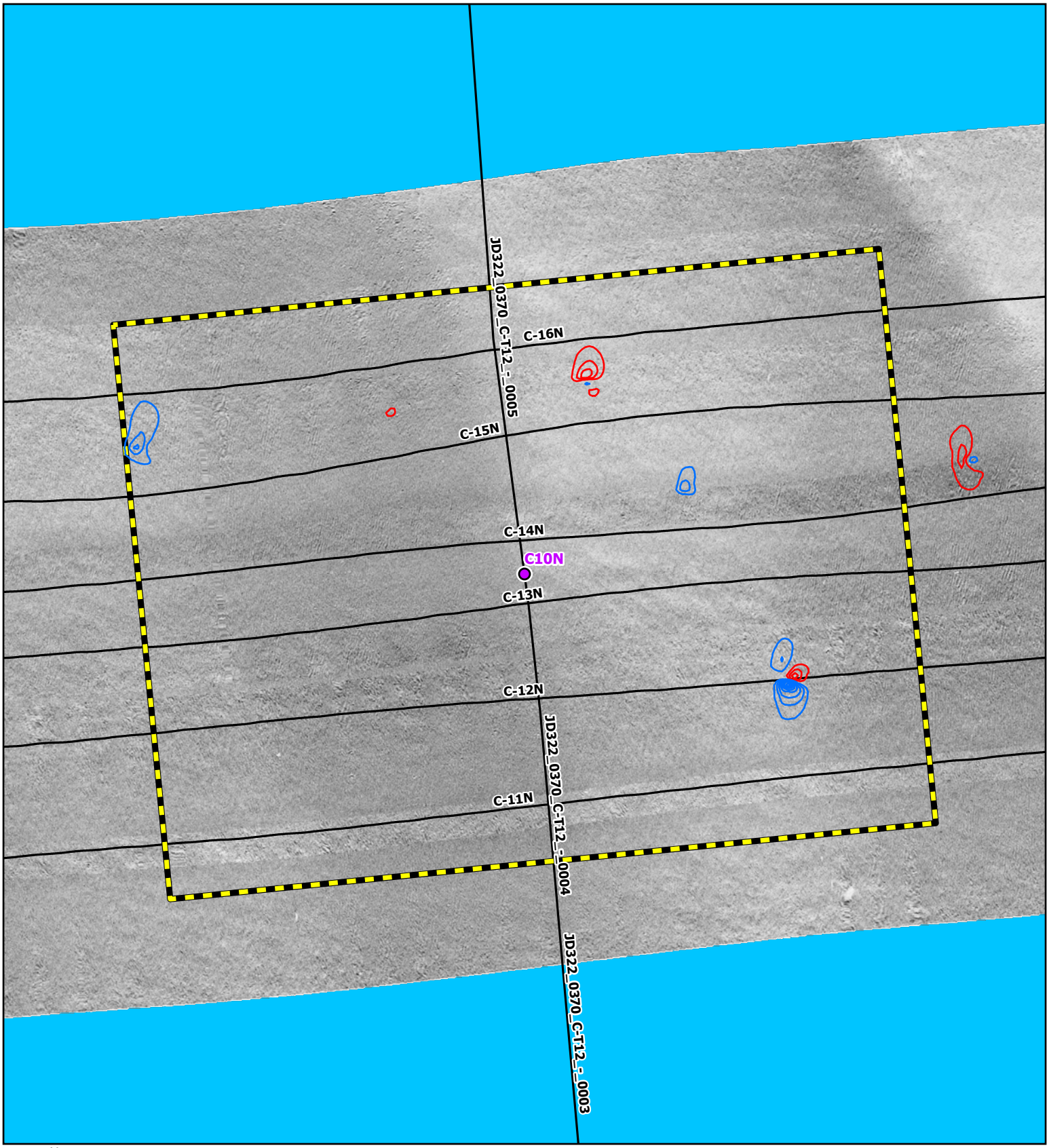
MARINE ARCHAEOLOGY FROM STEM TO STERN



N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 8

C10N

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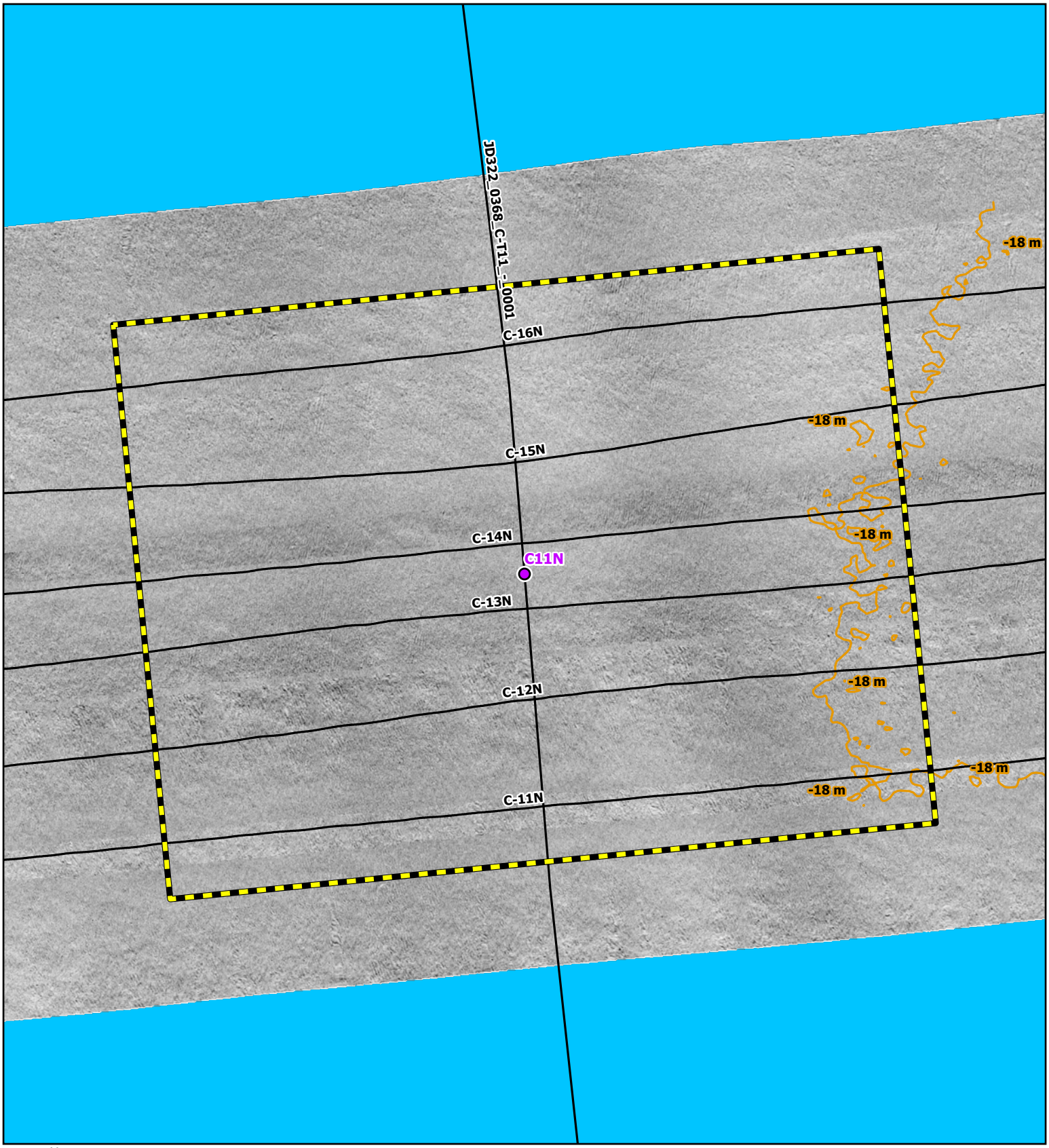

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 9

C11N

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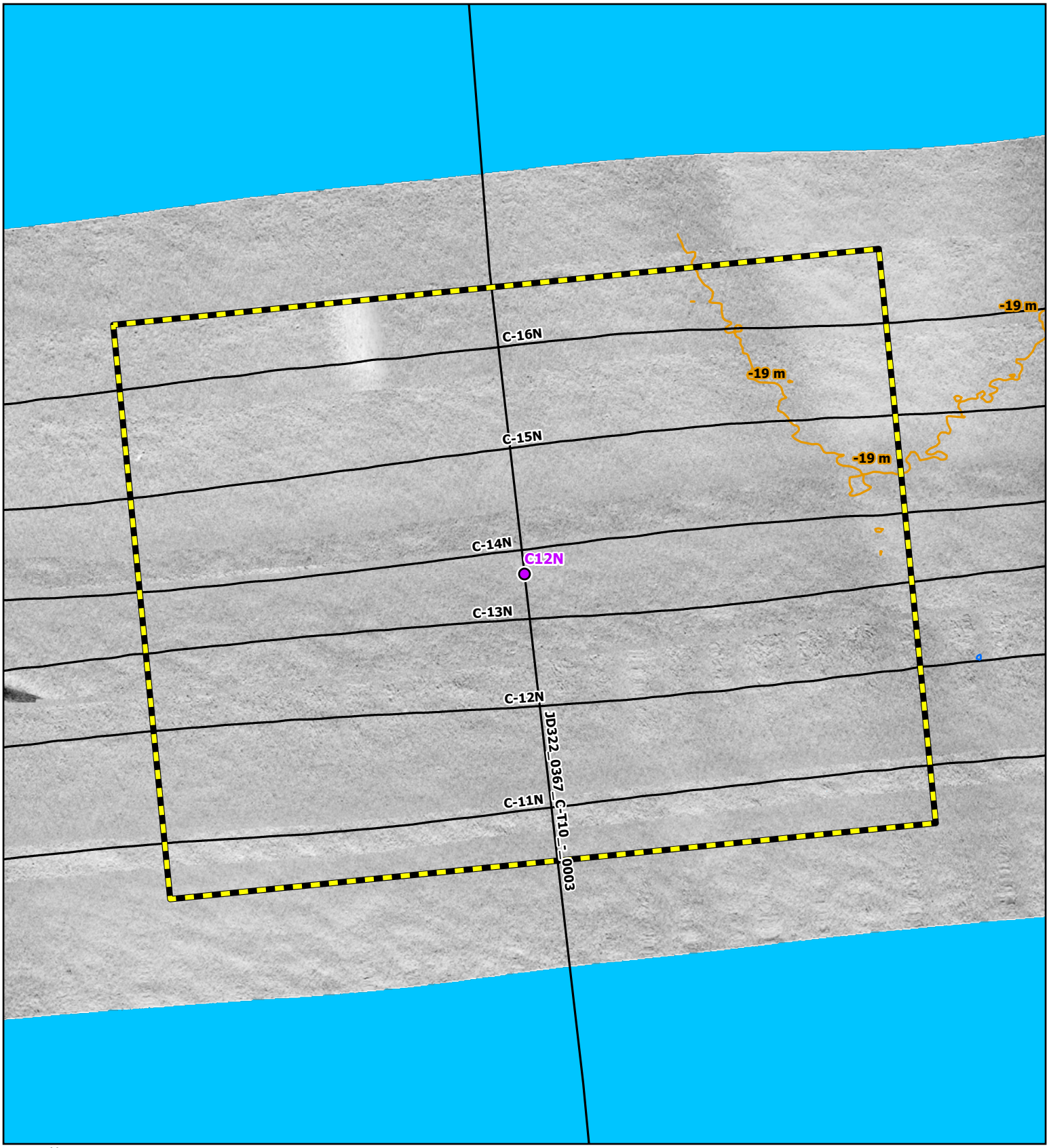

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 10

C12N

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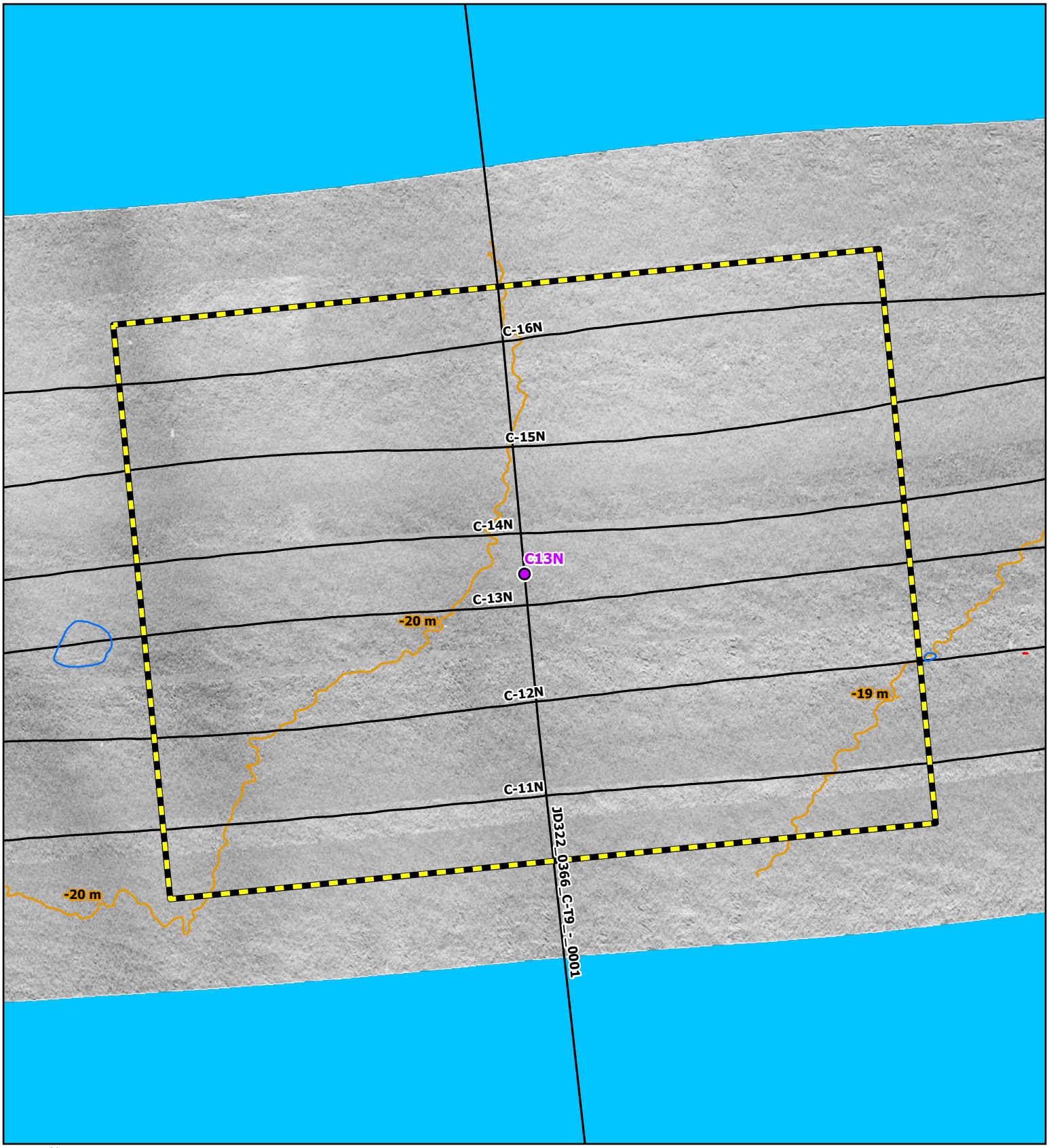

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 11

C13N

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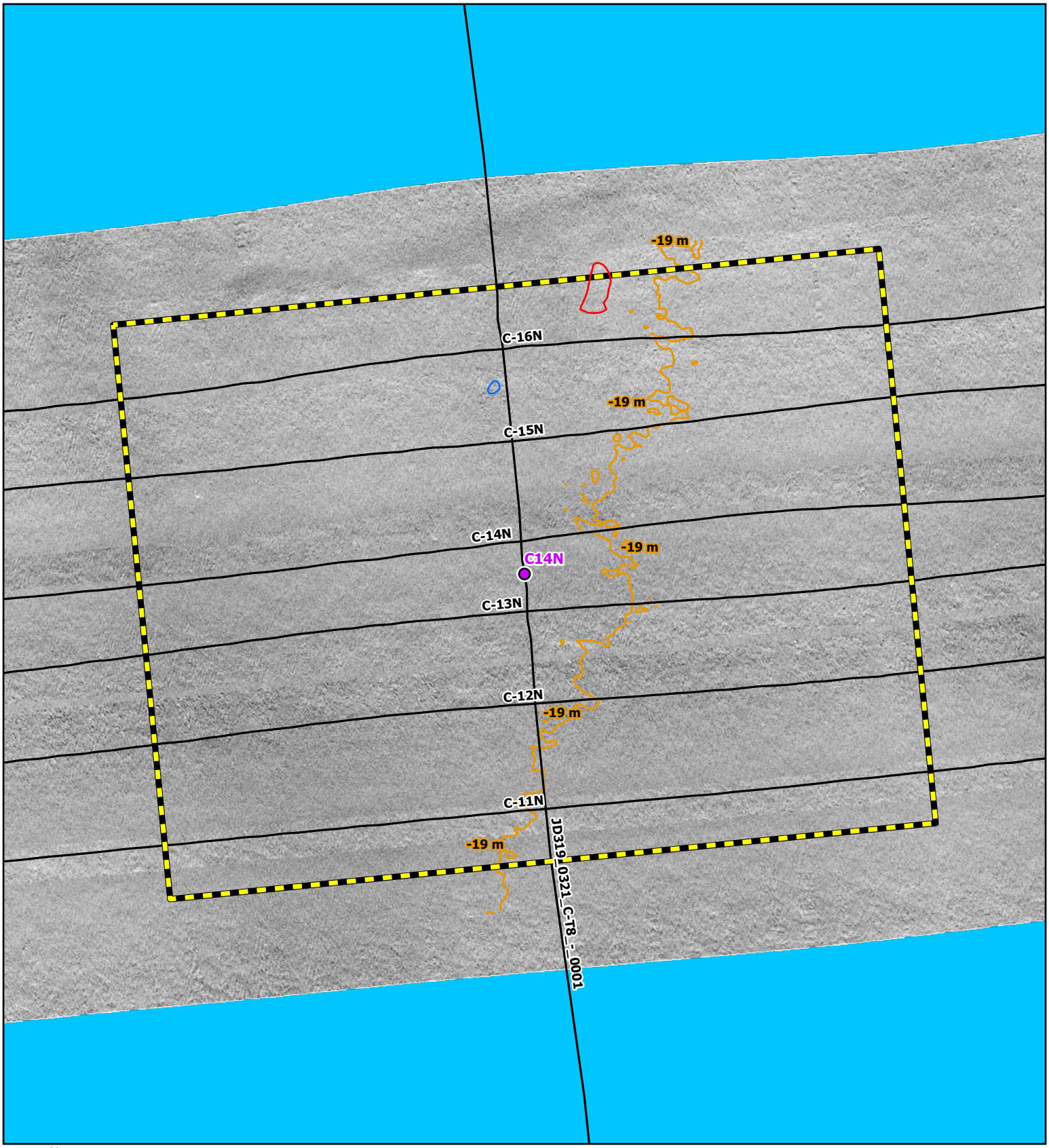

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 12

C14N

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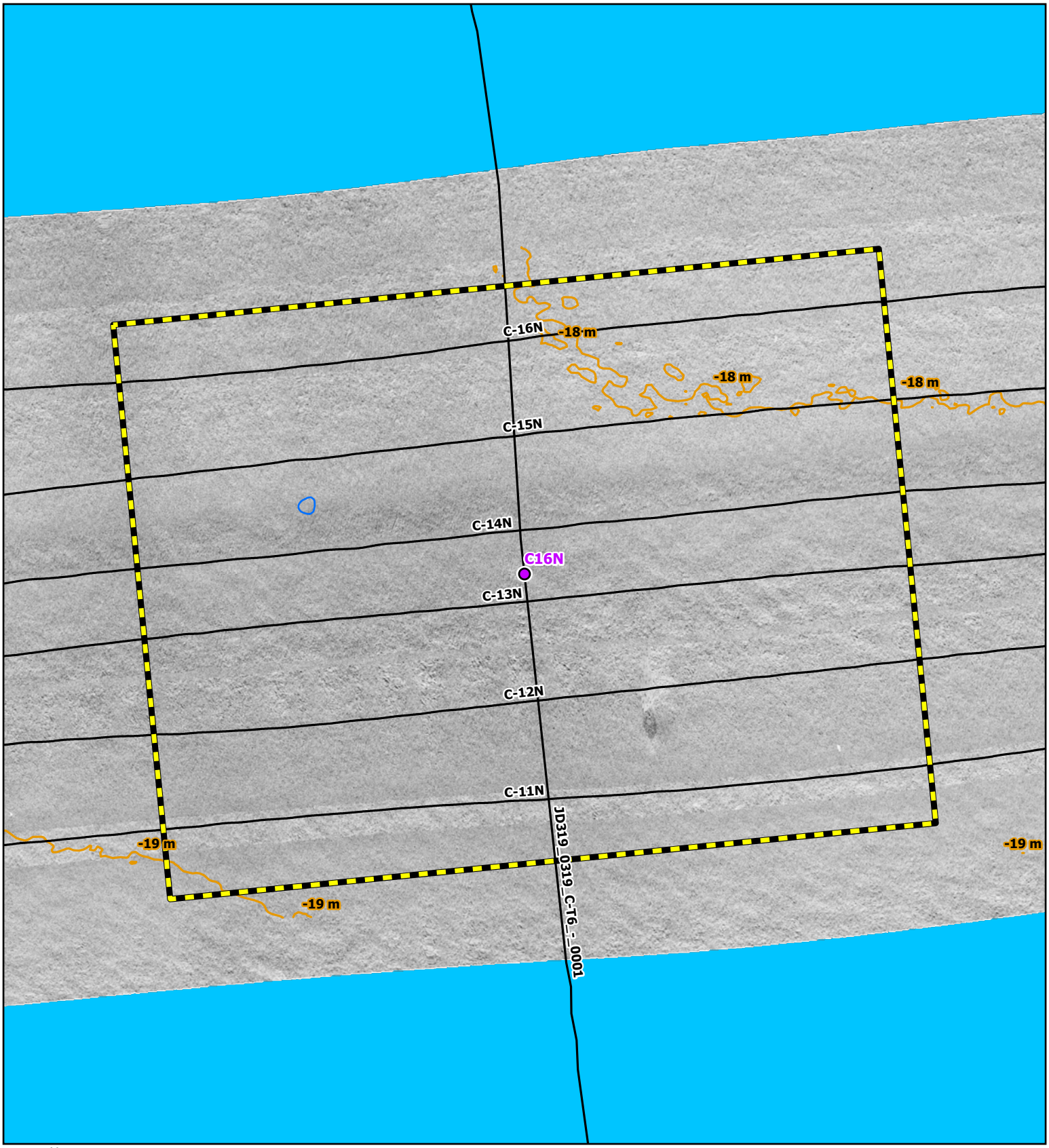

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block C

Map: 13

C16N

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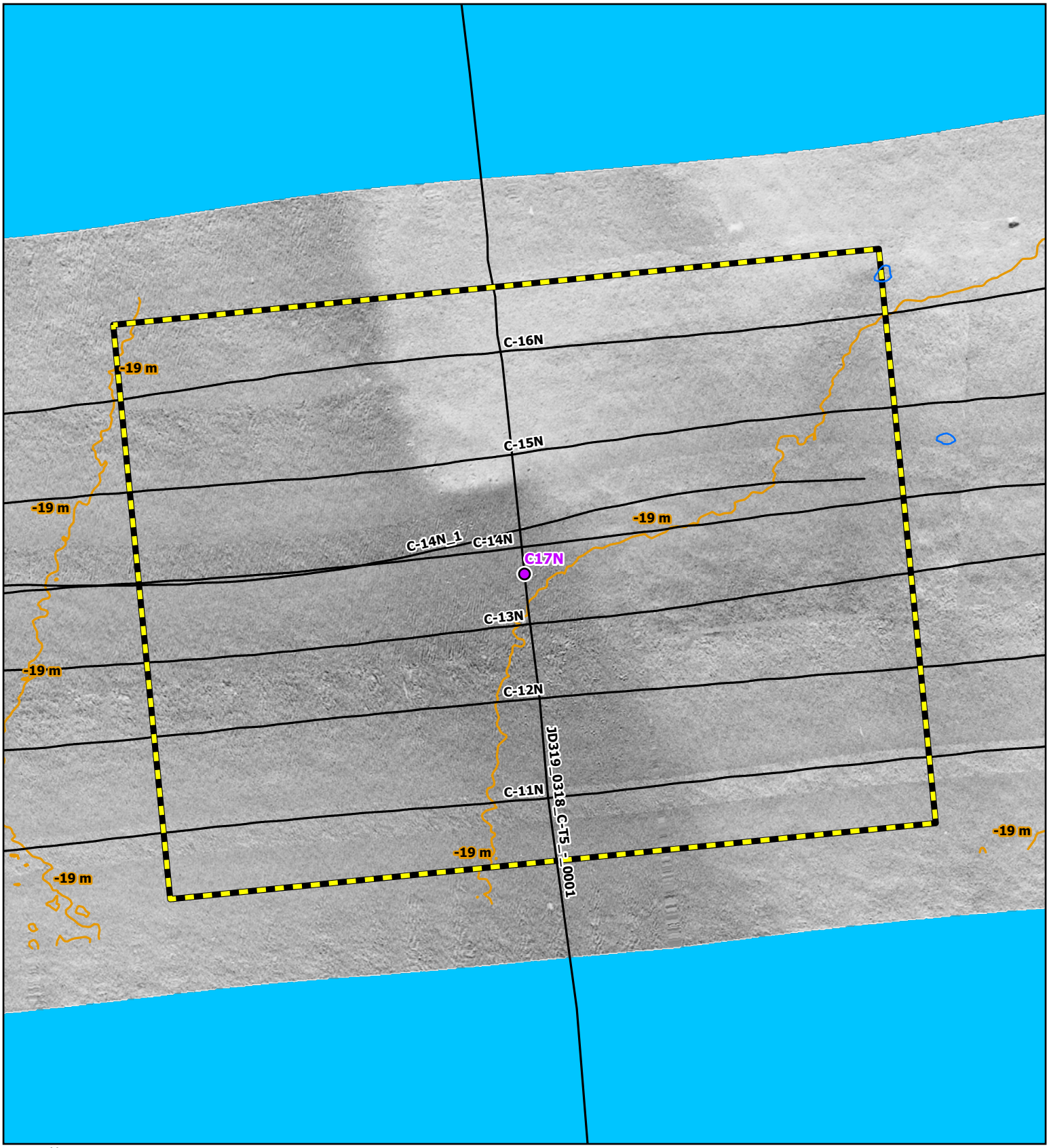

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 14

C17N

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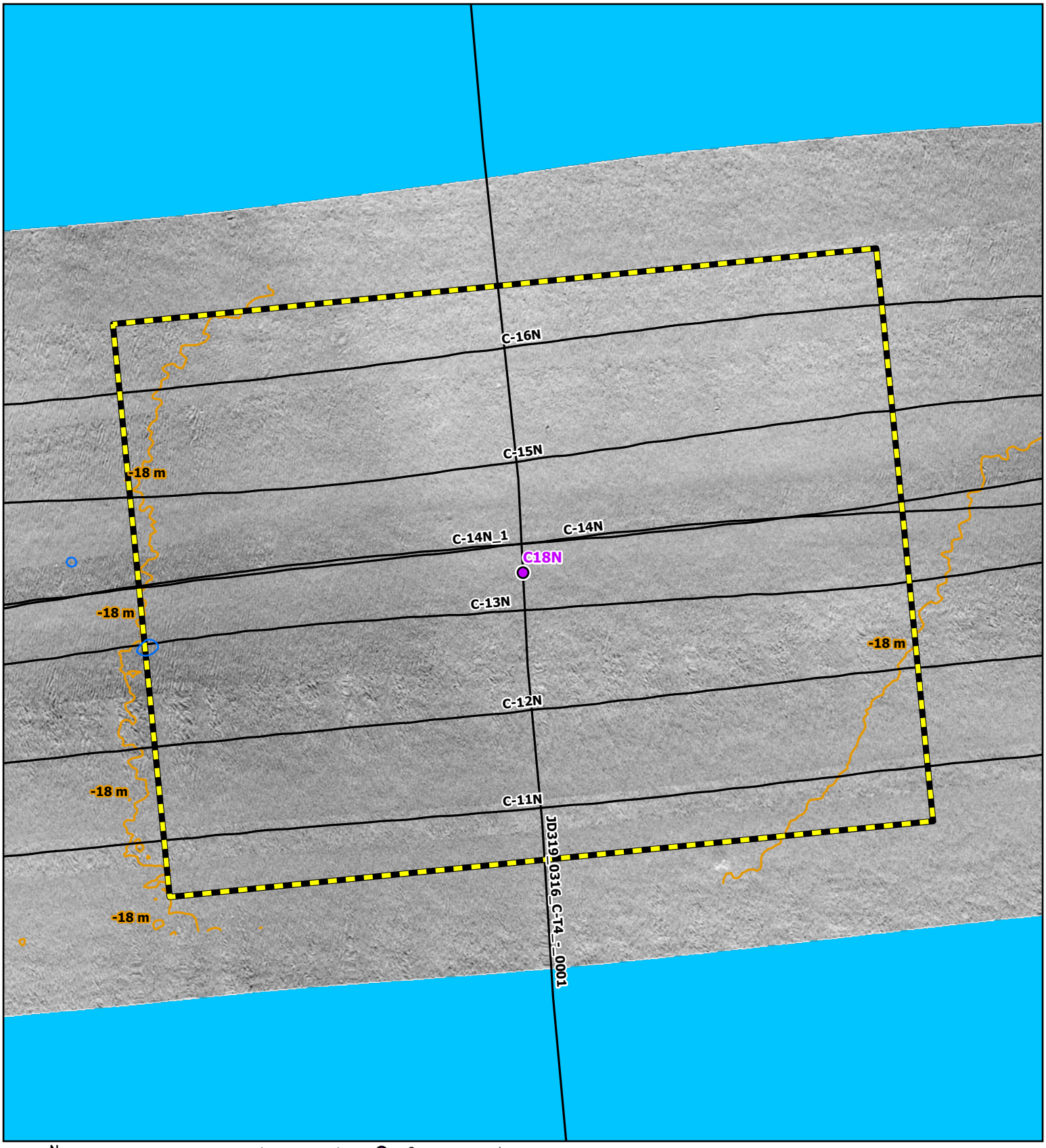

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 15

C18N

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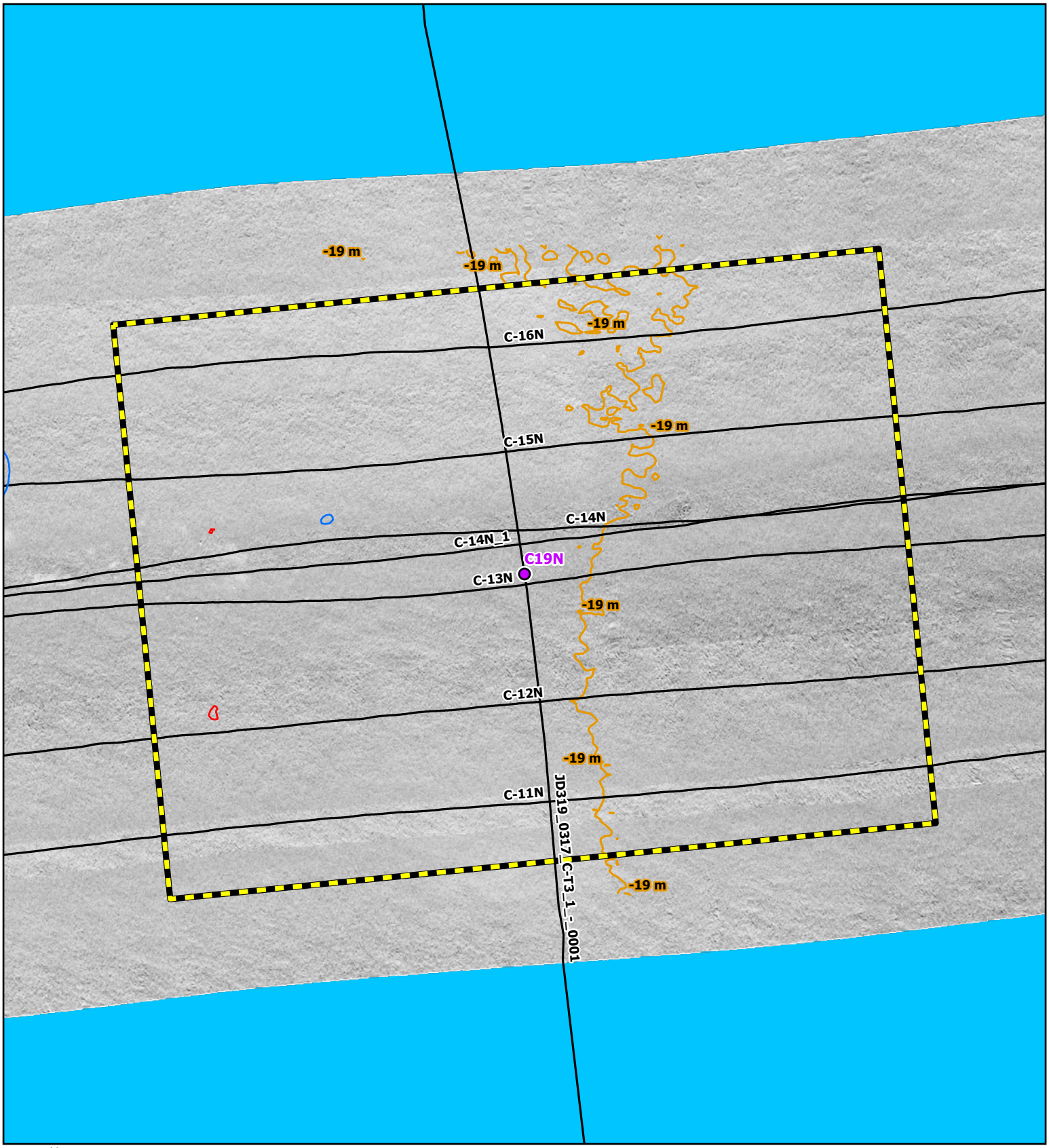

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 16

C19N

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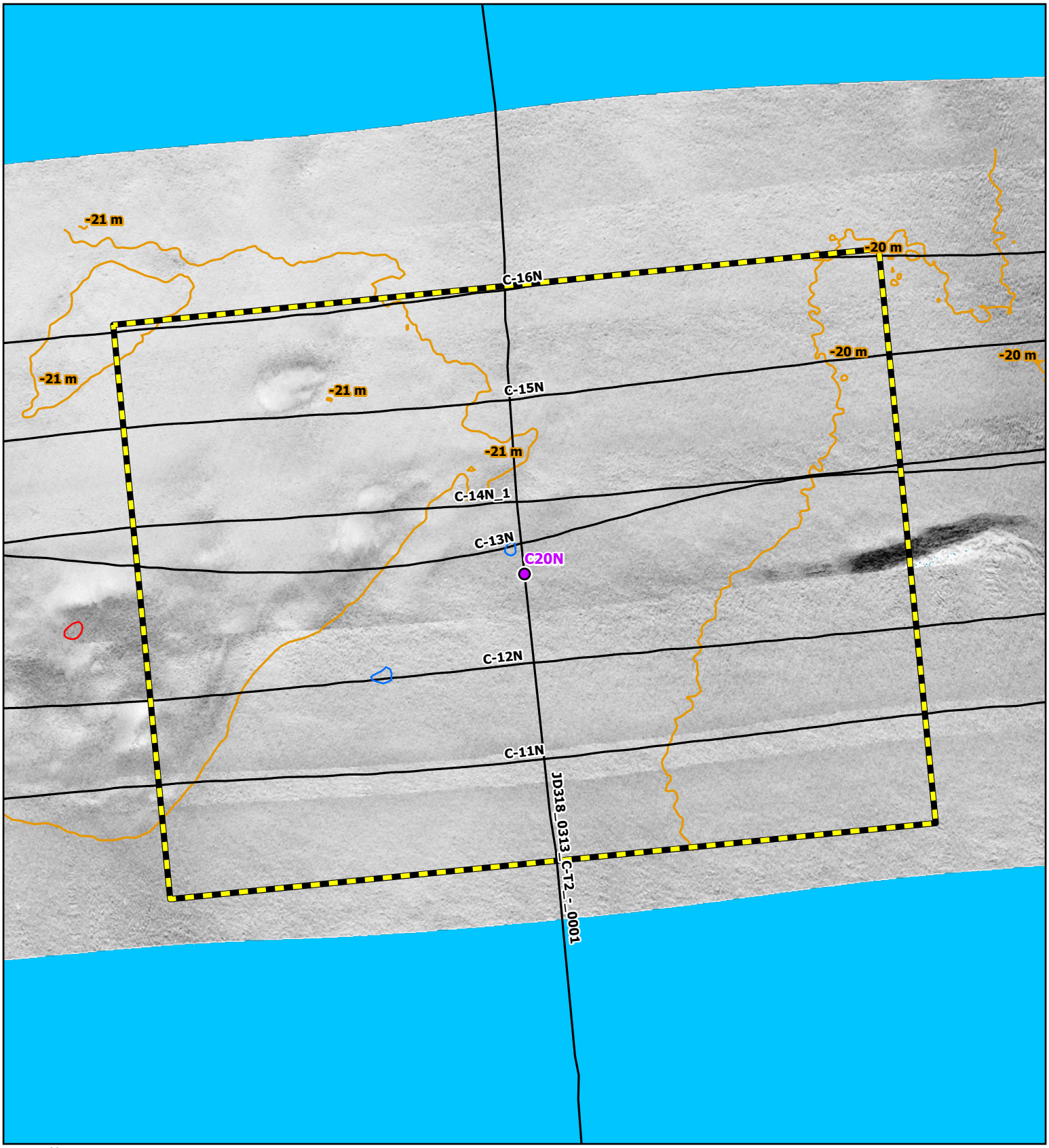

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 17

C20N

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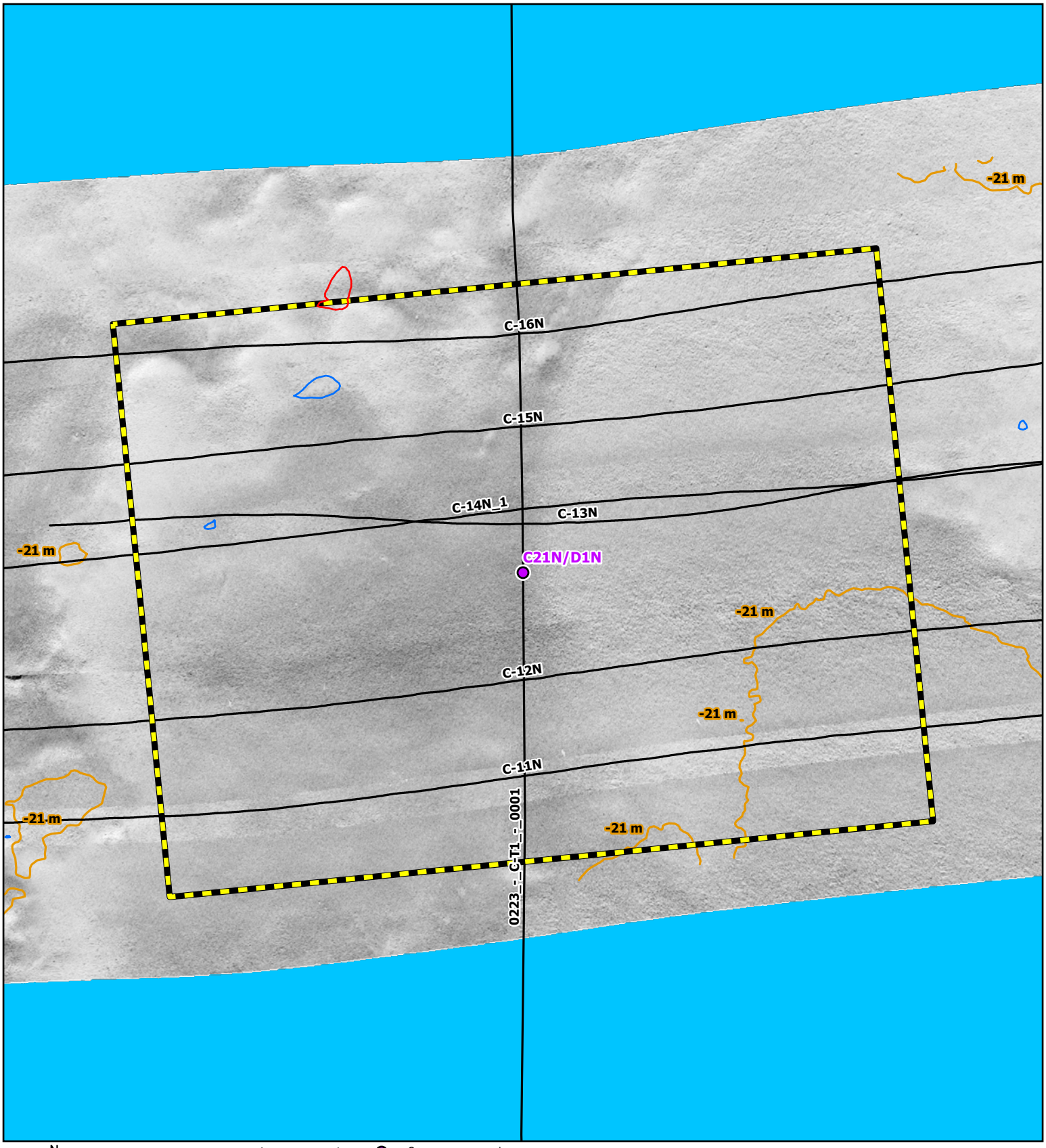

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 18

C21N/D1N

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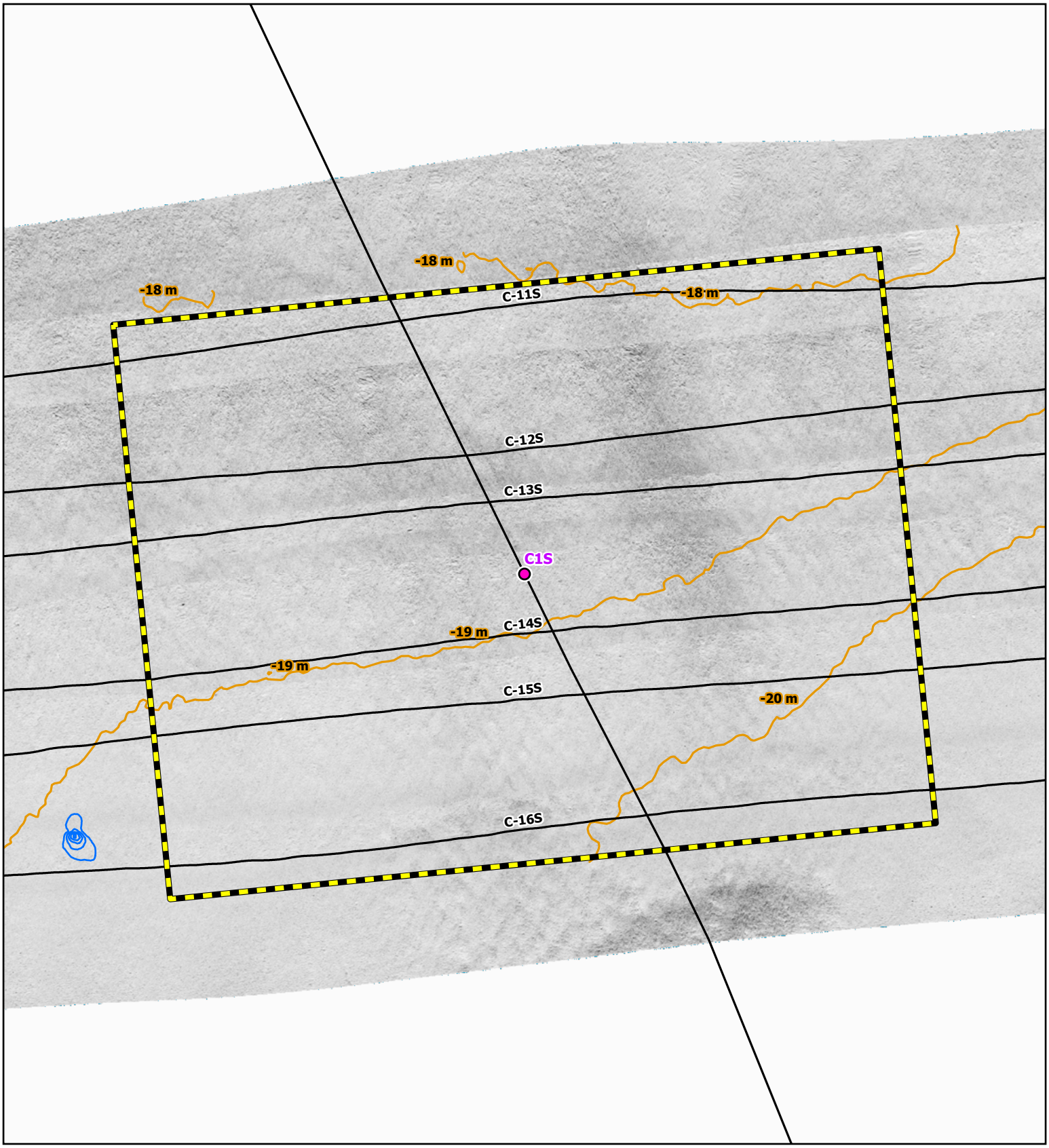

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

tracklines_s2_vessel_crosslines_mu_block_b_no_z

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 19

C1S

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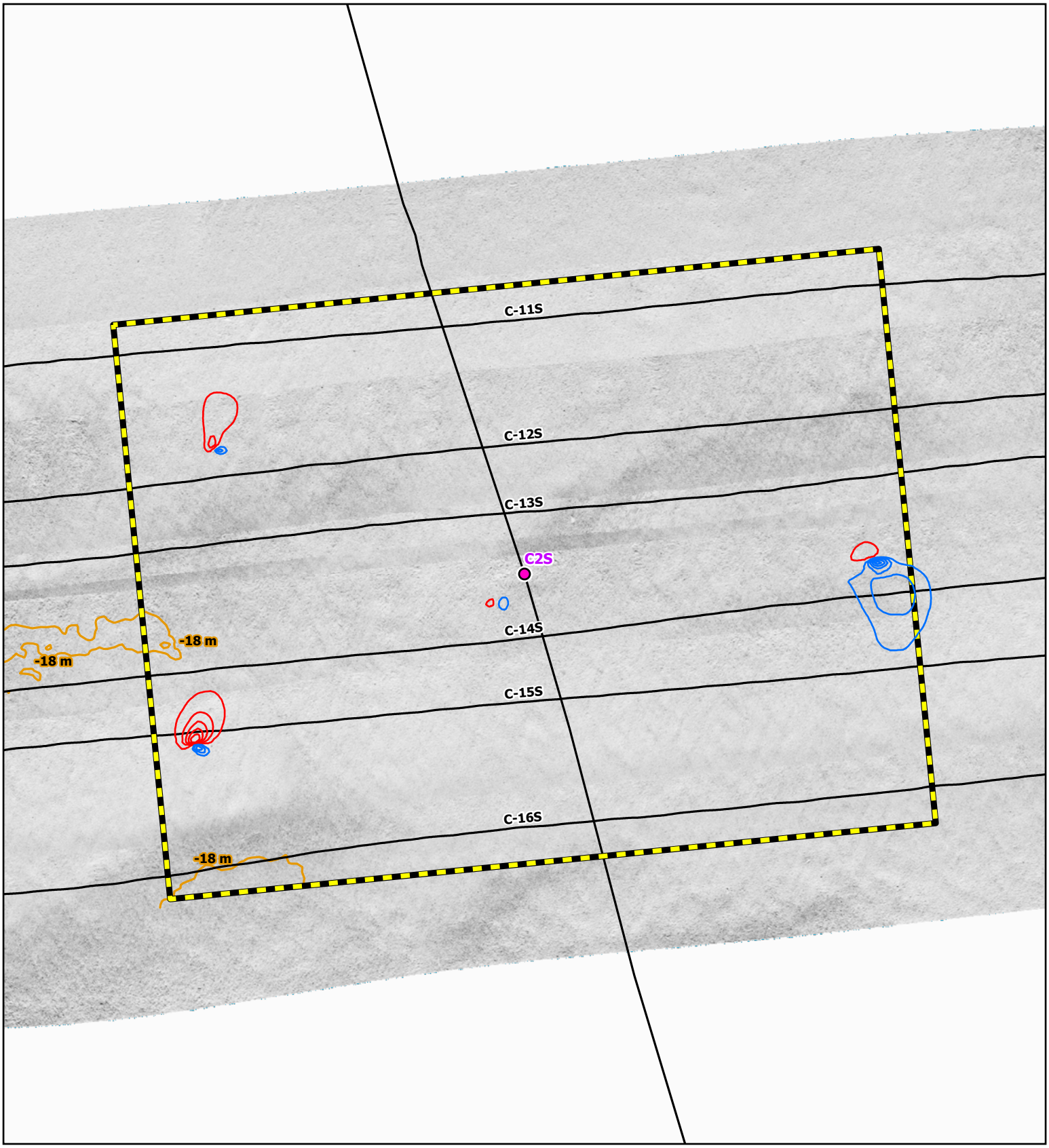

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location
Trackline
Bathymetric Contour (1 m)
Magnetic Contour (5 nT)
Negative
Positive
Analytical Area
tracklines_s2_vessel_crosslines_mu_block_b_no_z

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block C

Map: 20

C2S

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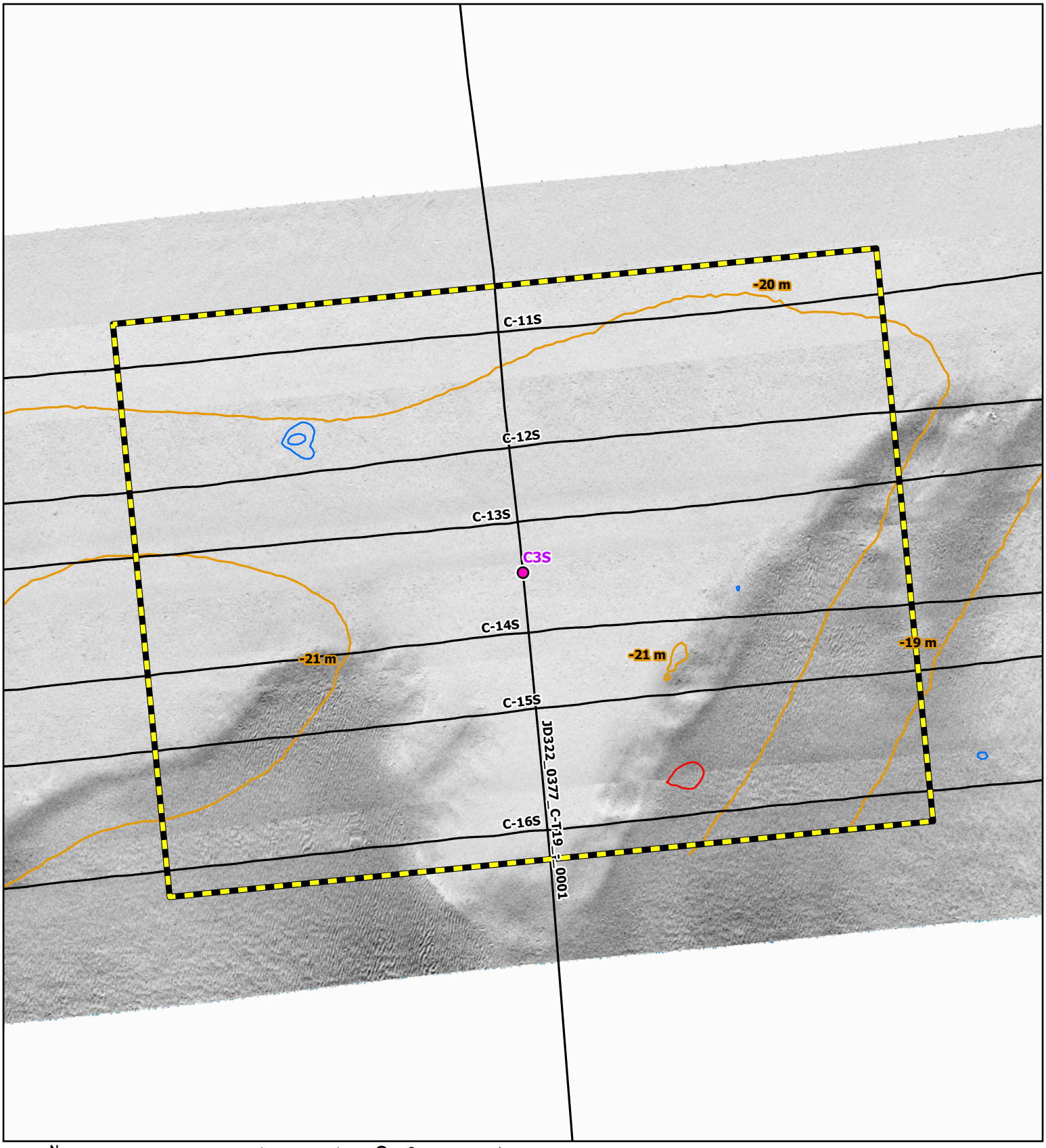

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 21

C3S

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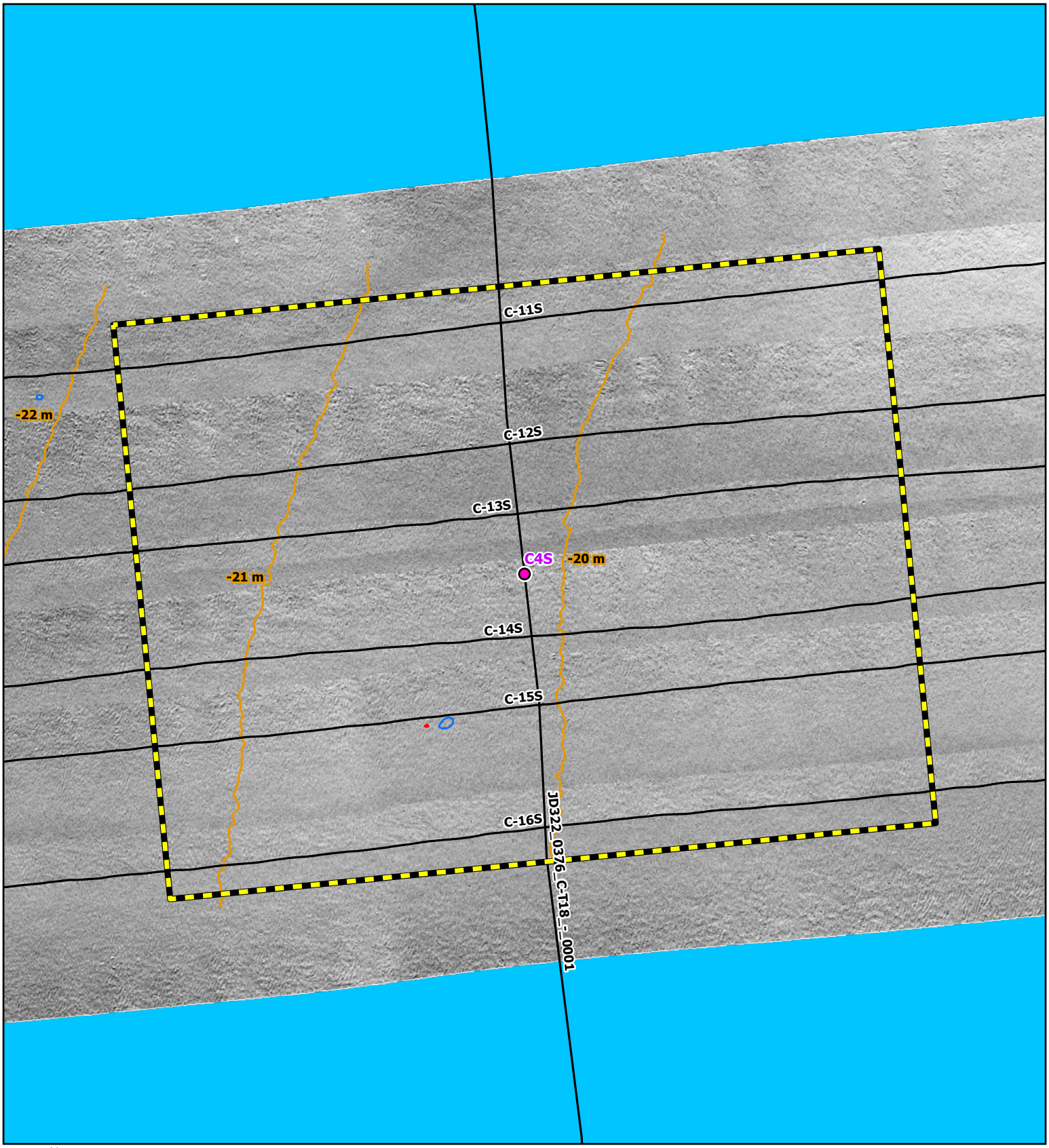

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 22

C4S

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MARINE ARCHAEOLOGY FROM STEM TO STERN

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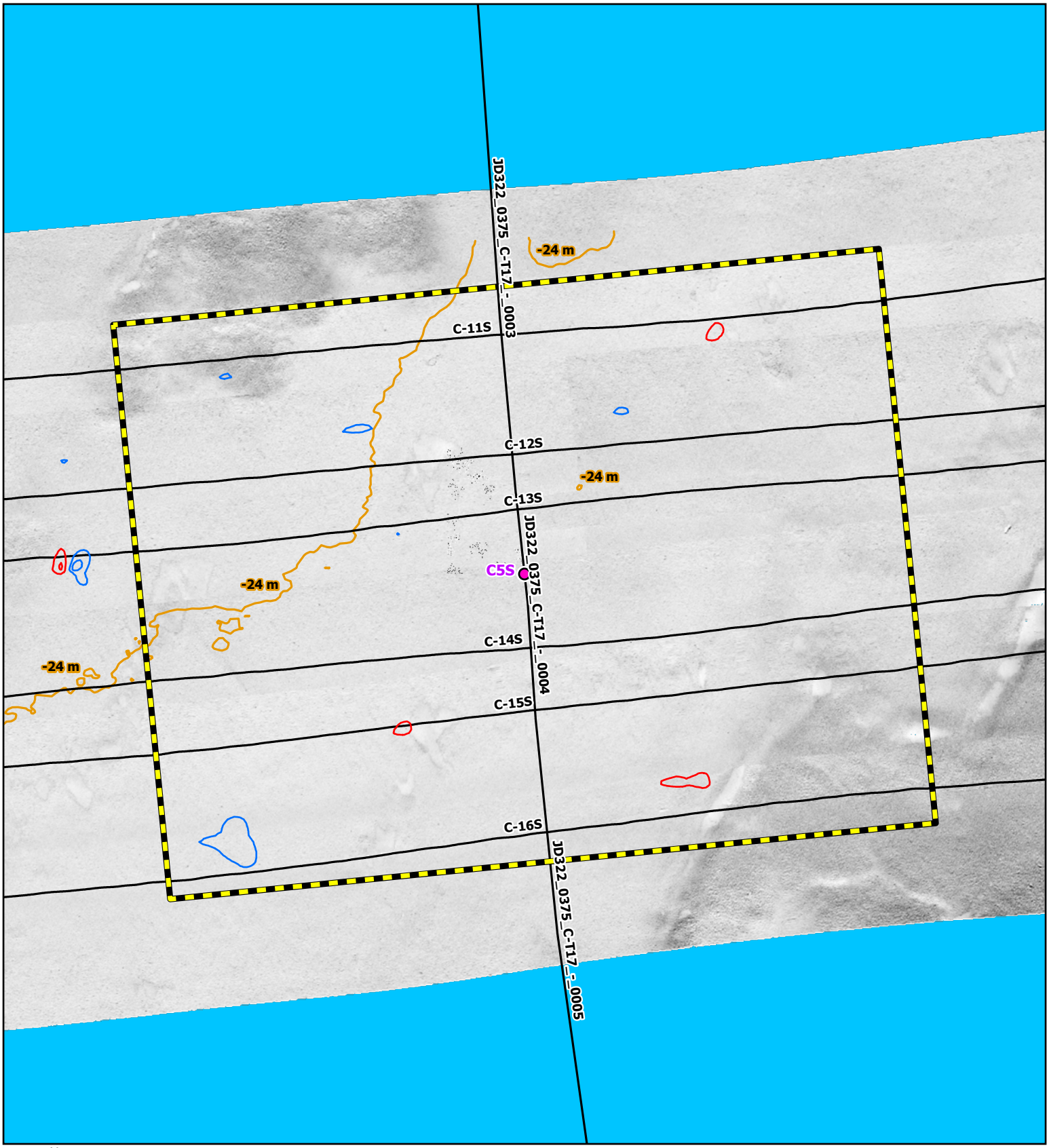

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Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

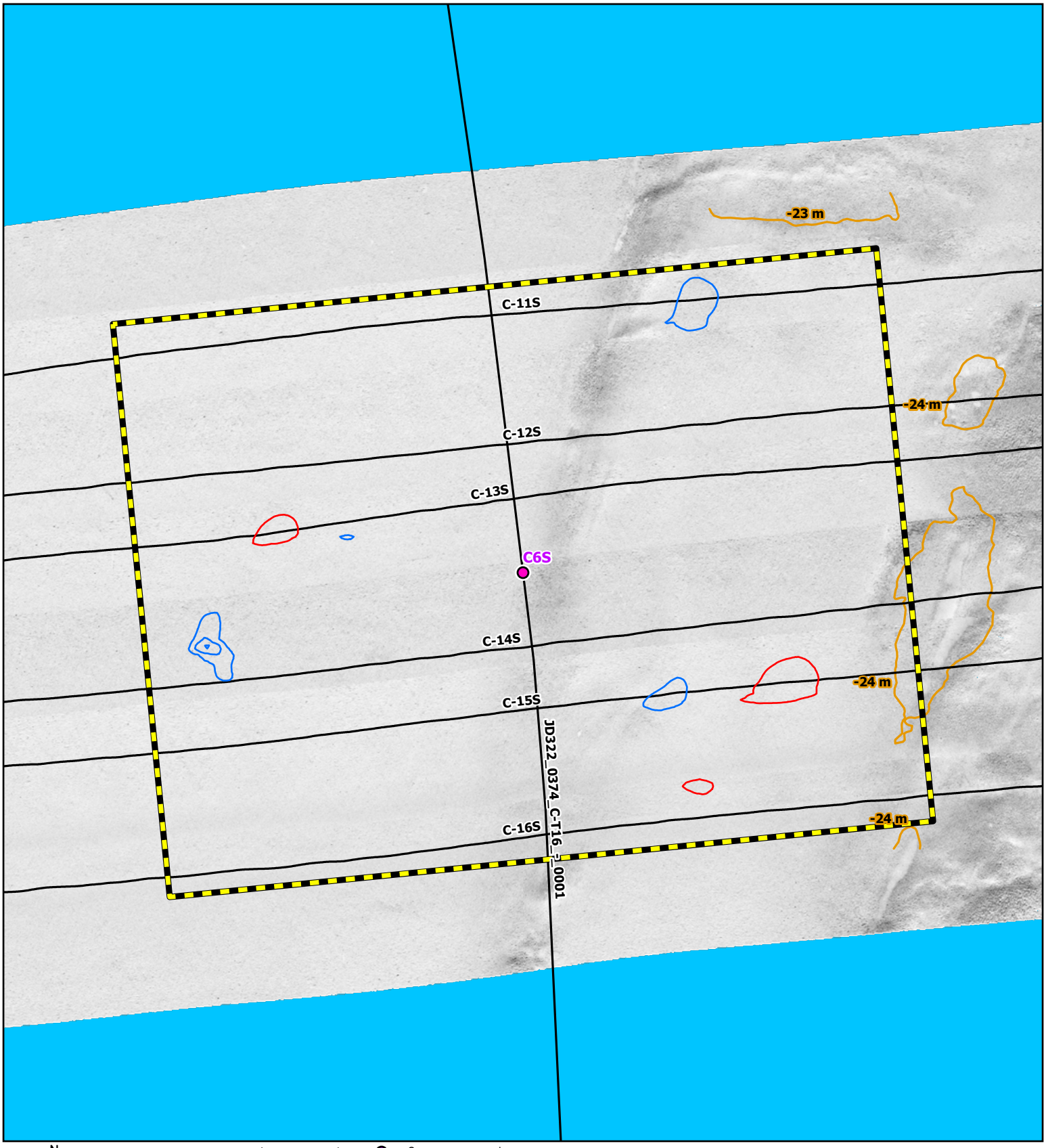
Map: 23

C5S

R. Christopher Goodwin & Associates, Inc.

NAUTICAL DIVISION

MARINE ARCHAEOLOGY FROM STEM TO STERN



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Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 24

C6S

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MARINE ARCHAEOLOGY FROM STEM TO STERN

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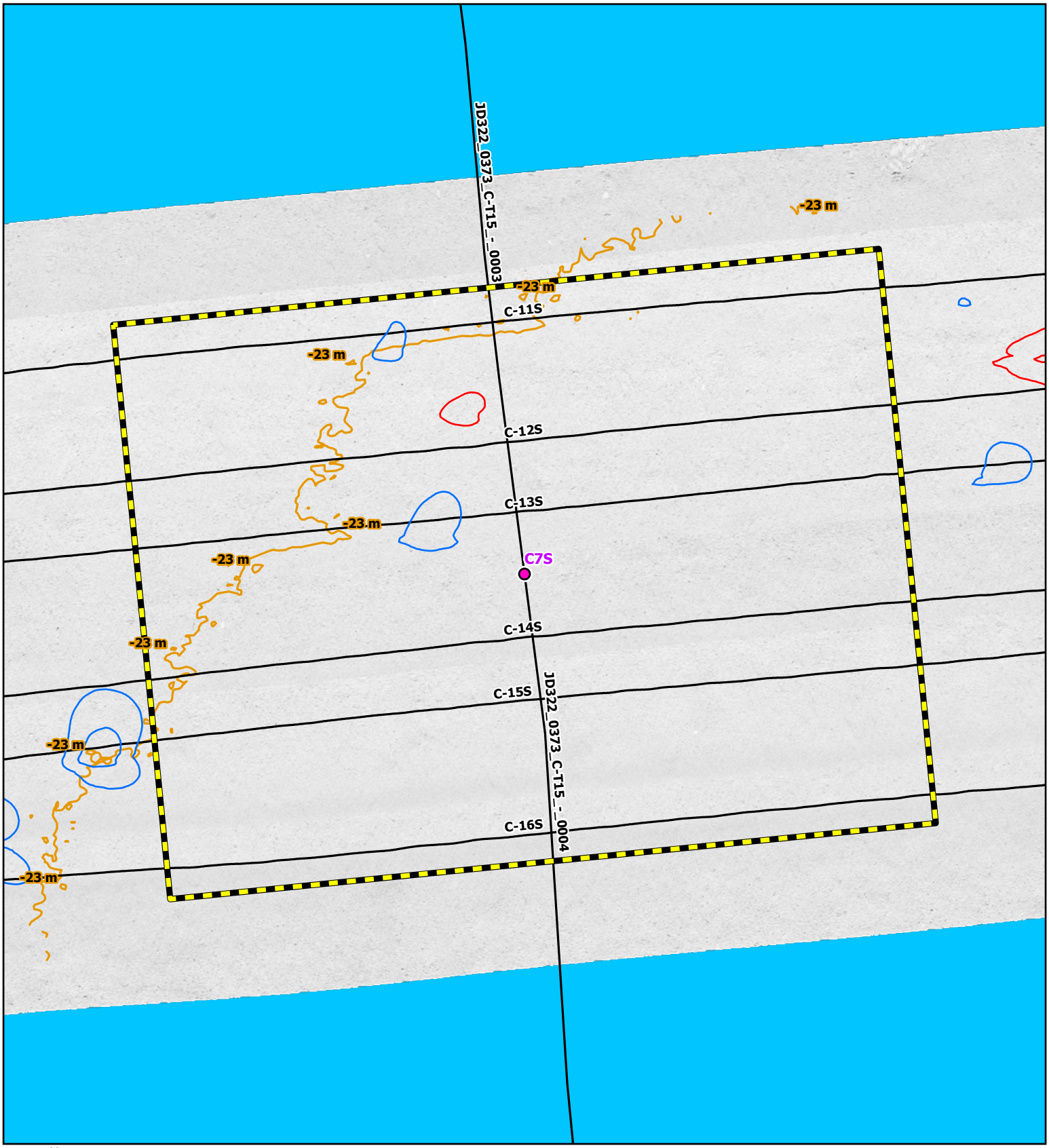

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Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 25

C7S

R. Christopher Goodwin & Associates, Inc.

NAUTICAL DIVISION

MARINE ARCHAEOLOGY FROM STEM TO STERN

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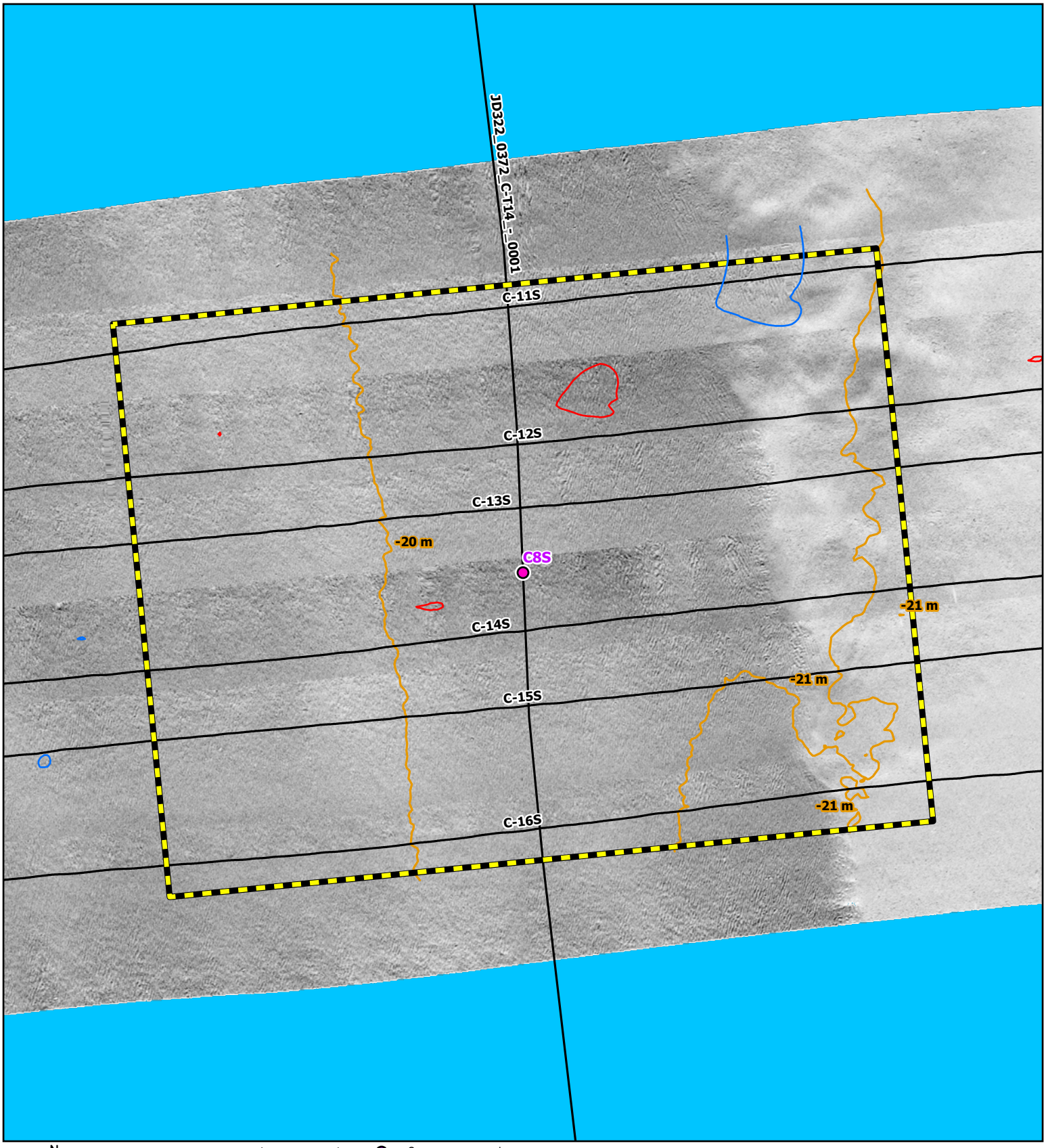

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Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 26

C8S

R. Christopher Goodwin & Associates, Inc.

NAUTICAL DIVISION

MARINE ARCHAEOLOGY FROM STEM TO STERN

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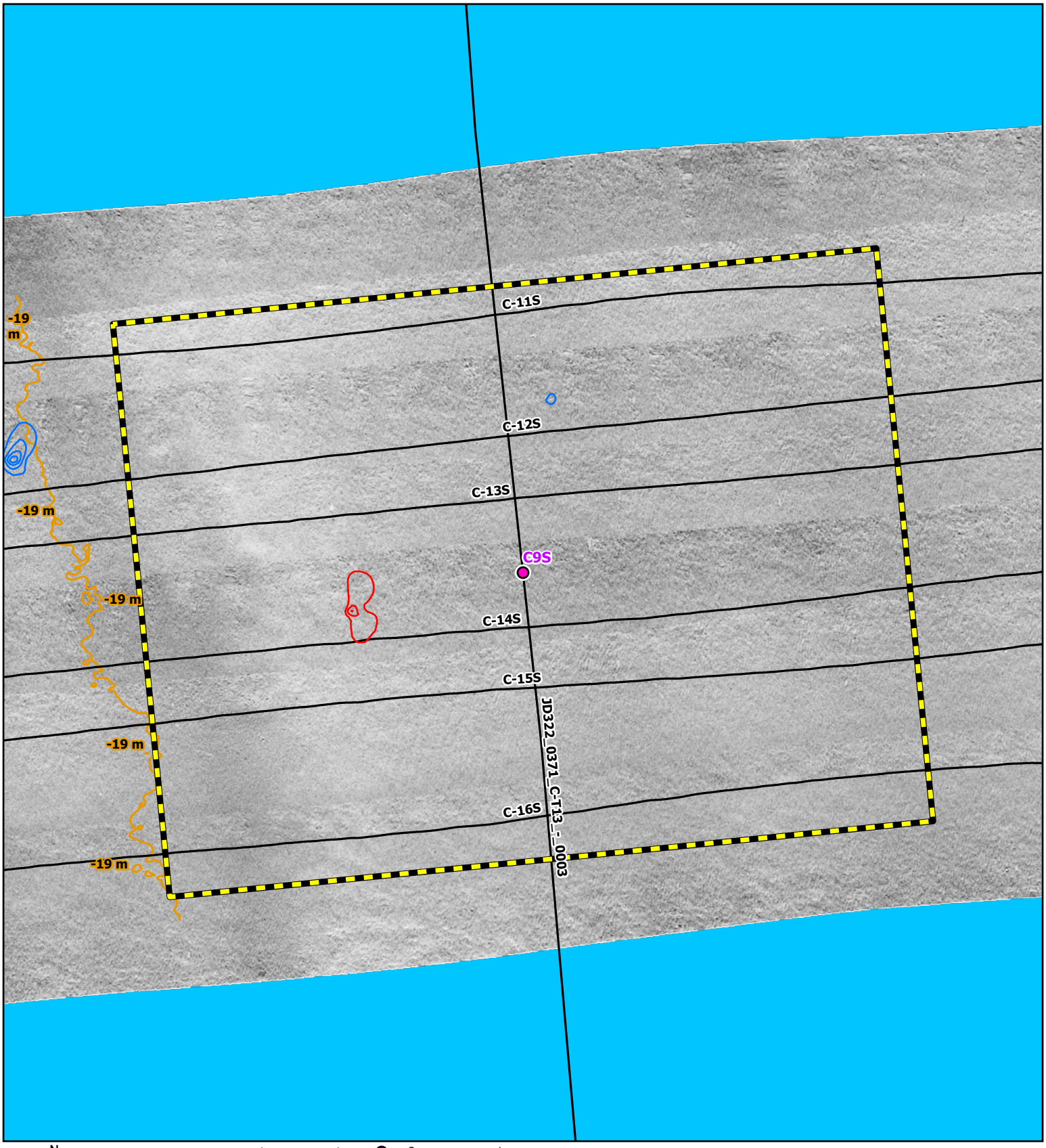

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Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 27

C9S

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NAUTICAL DIVISION

MARINE ARCHAEOLOGY FROM STEM TO STERN

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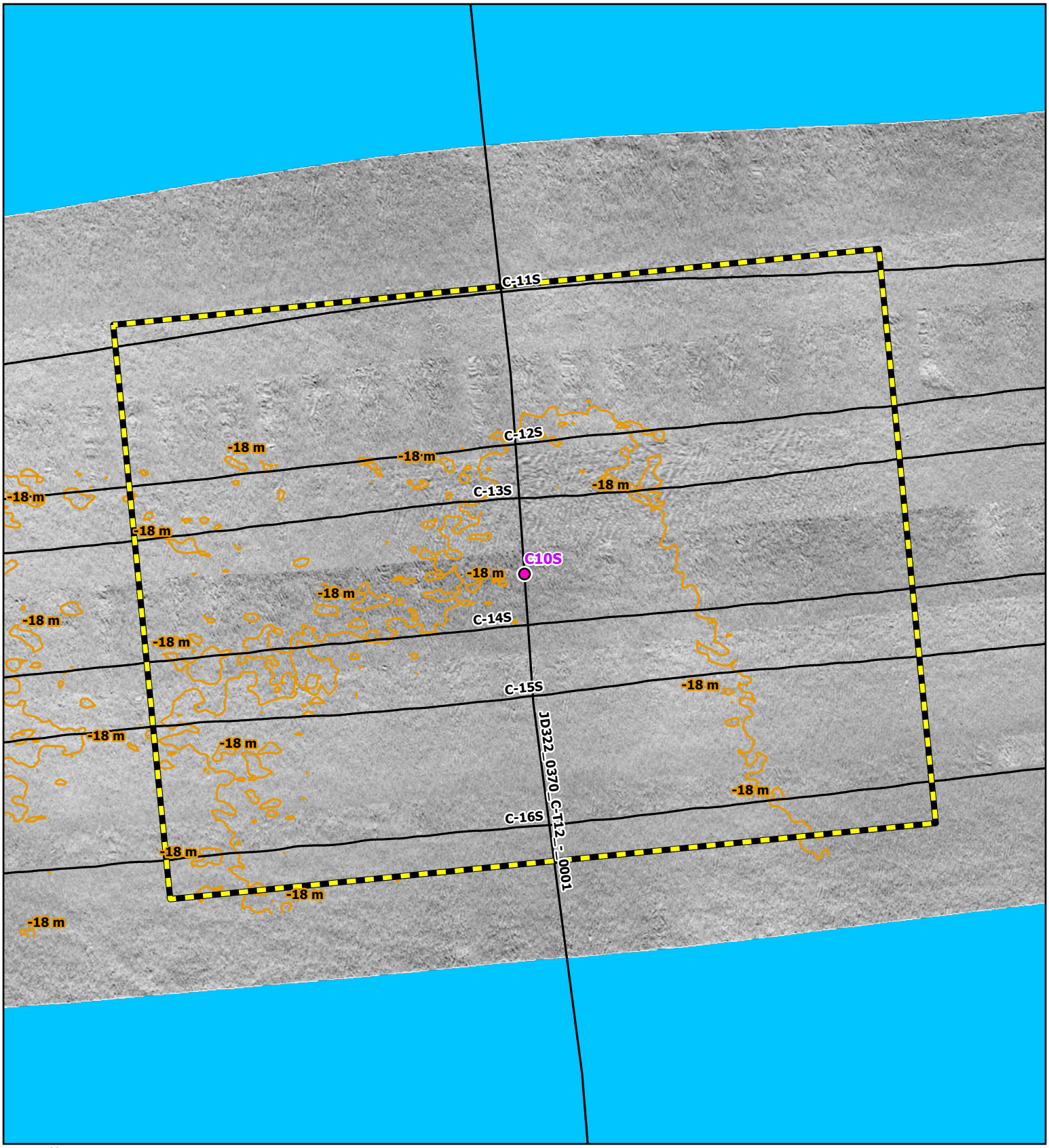

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Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

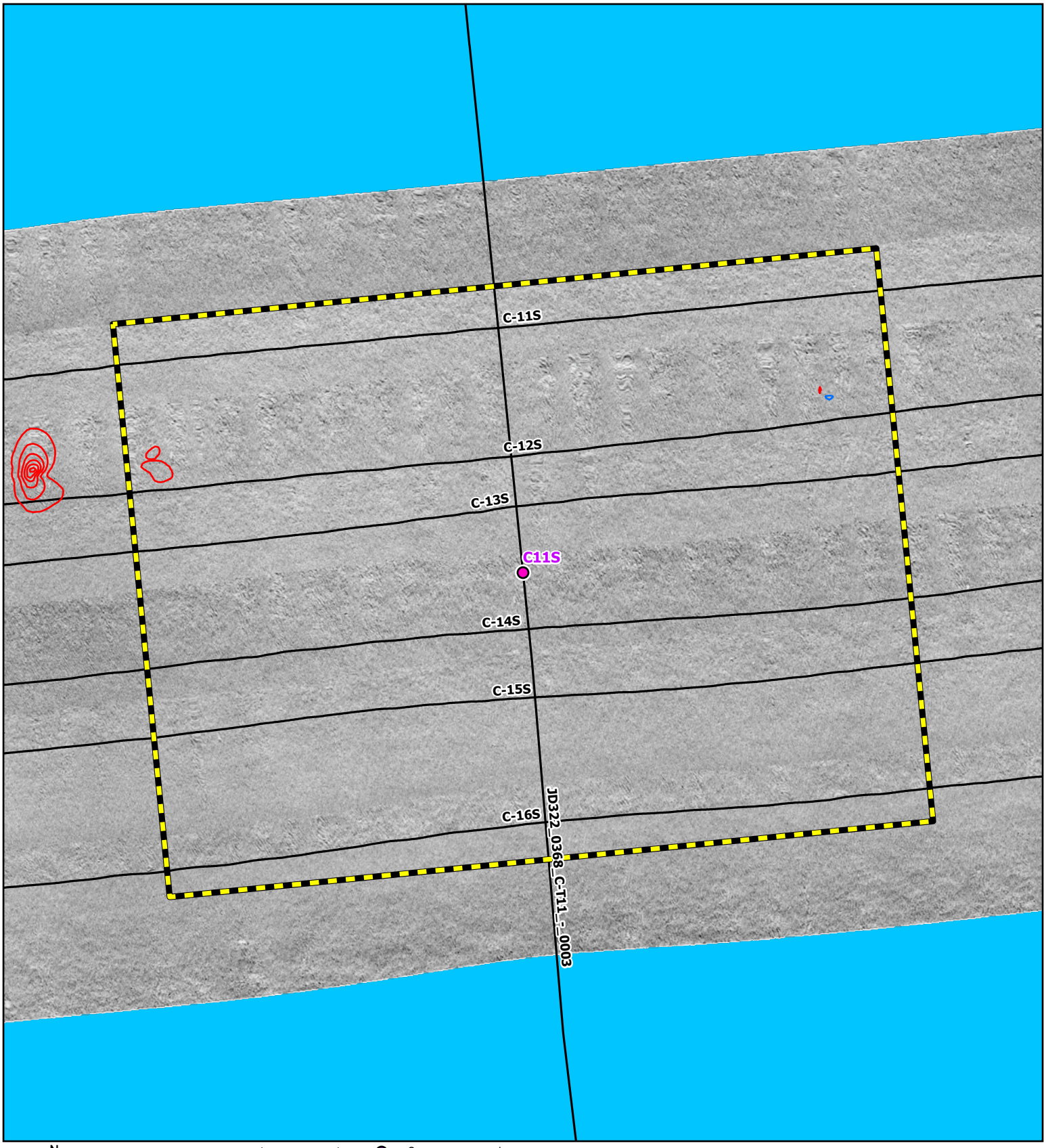
Map: 28

C10S

R. Christopher Goodwin & Associates, Inc.

NAUTICAL DIVISION

MARINE ARCHAEOLOGY FROM STEM TO STERN



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Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

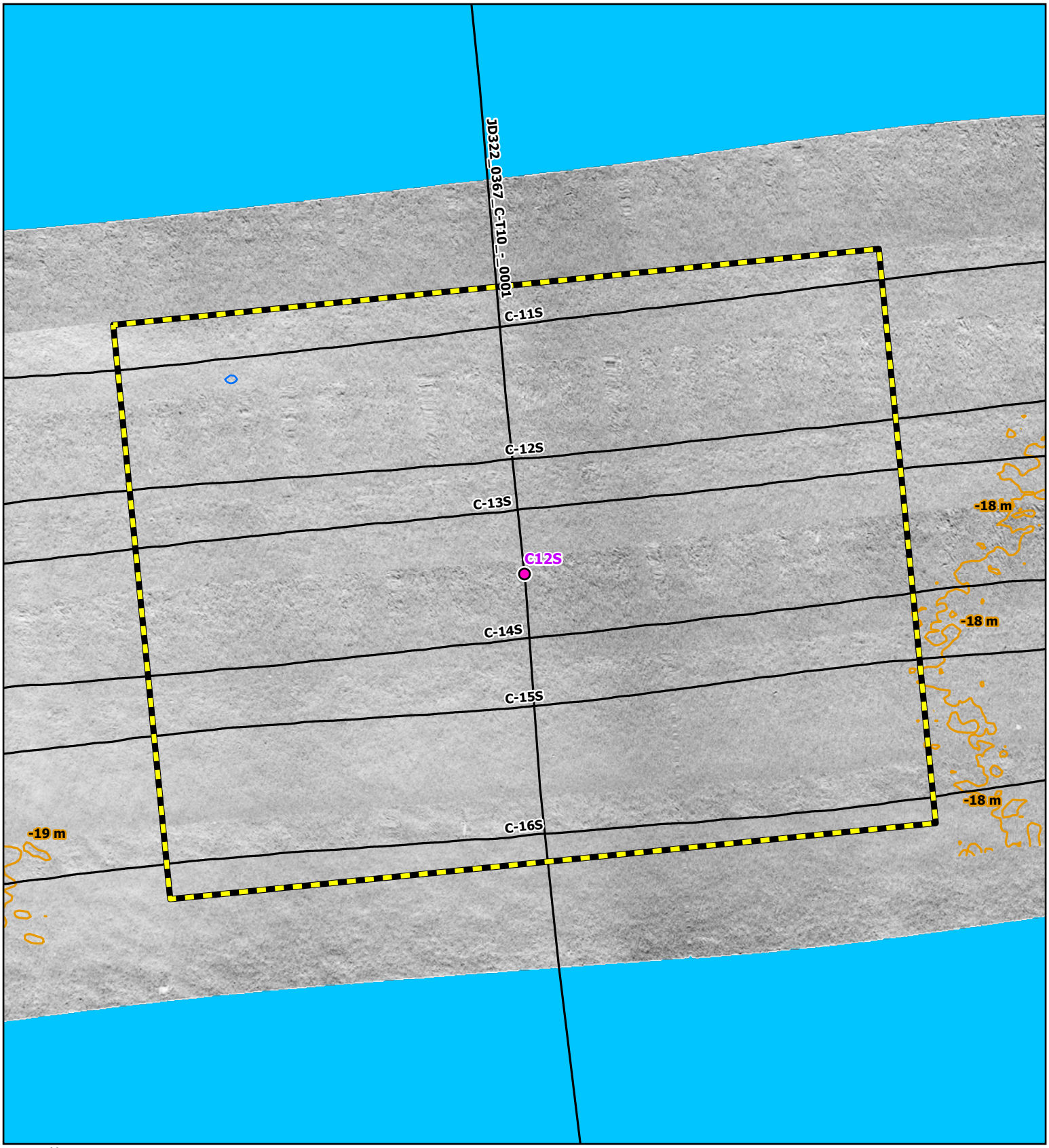
Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block C

Map: 29

C11S

R. Christopher Goodwin & Associates, Inc.
NAUTICAL DIVISION
MARINE ARCHAEOLOGY FROM STEM TO STERN



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Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 30

C12S

R. Christopher Goodwin & Associates, Inc.
NAUTICAL DIVISION
MARINE ARCHAEOLOGY FROM STEM TO STERN

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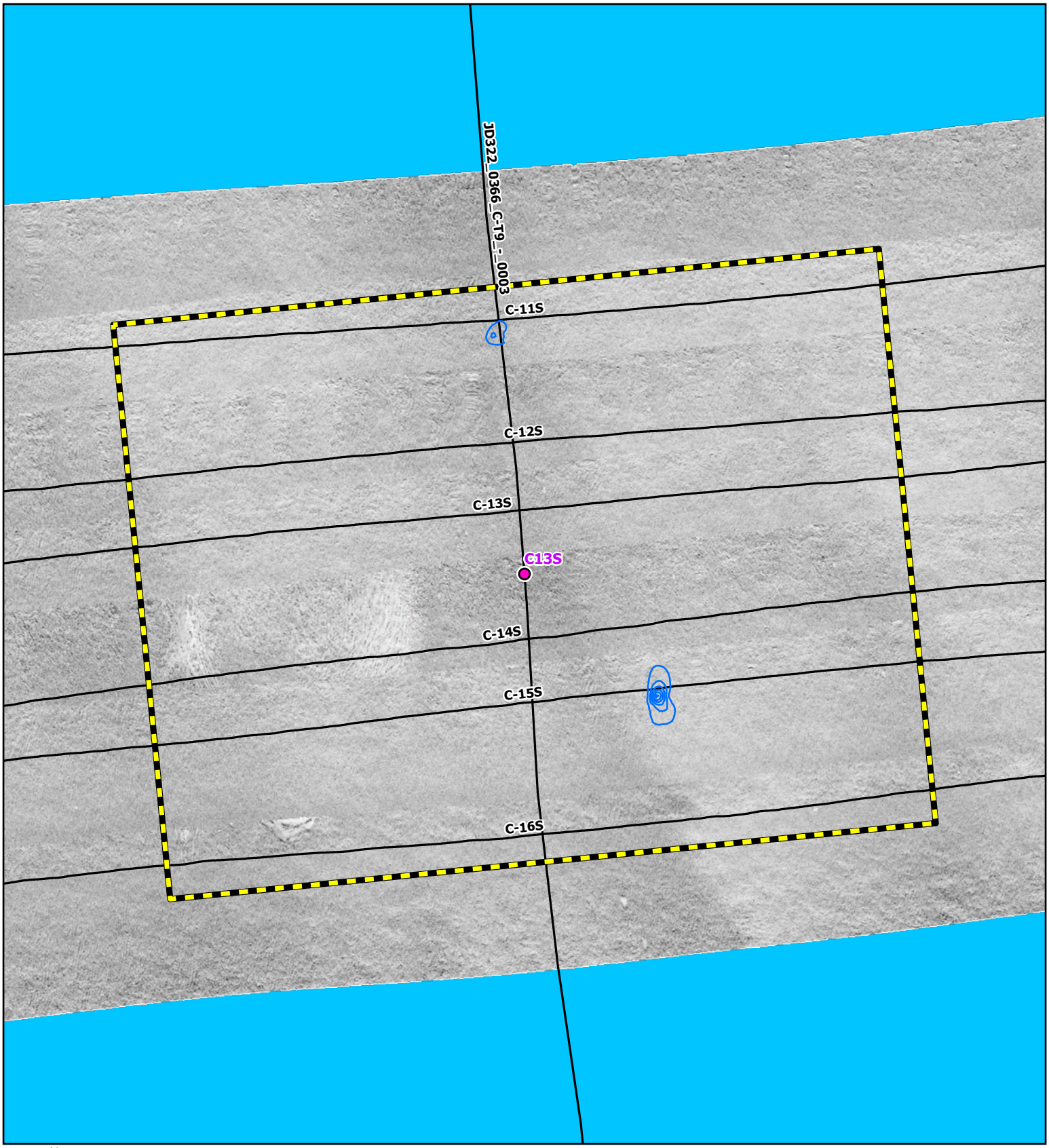

N
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Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

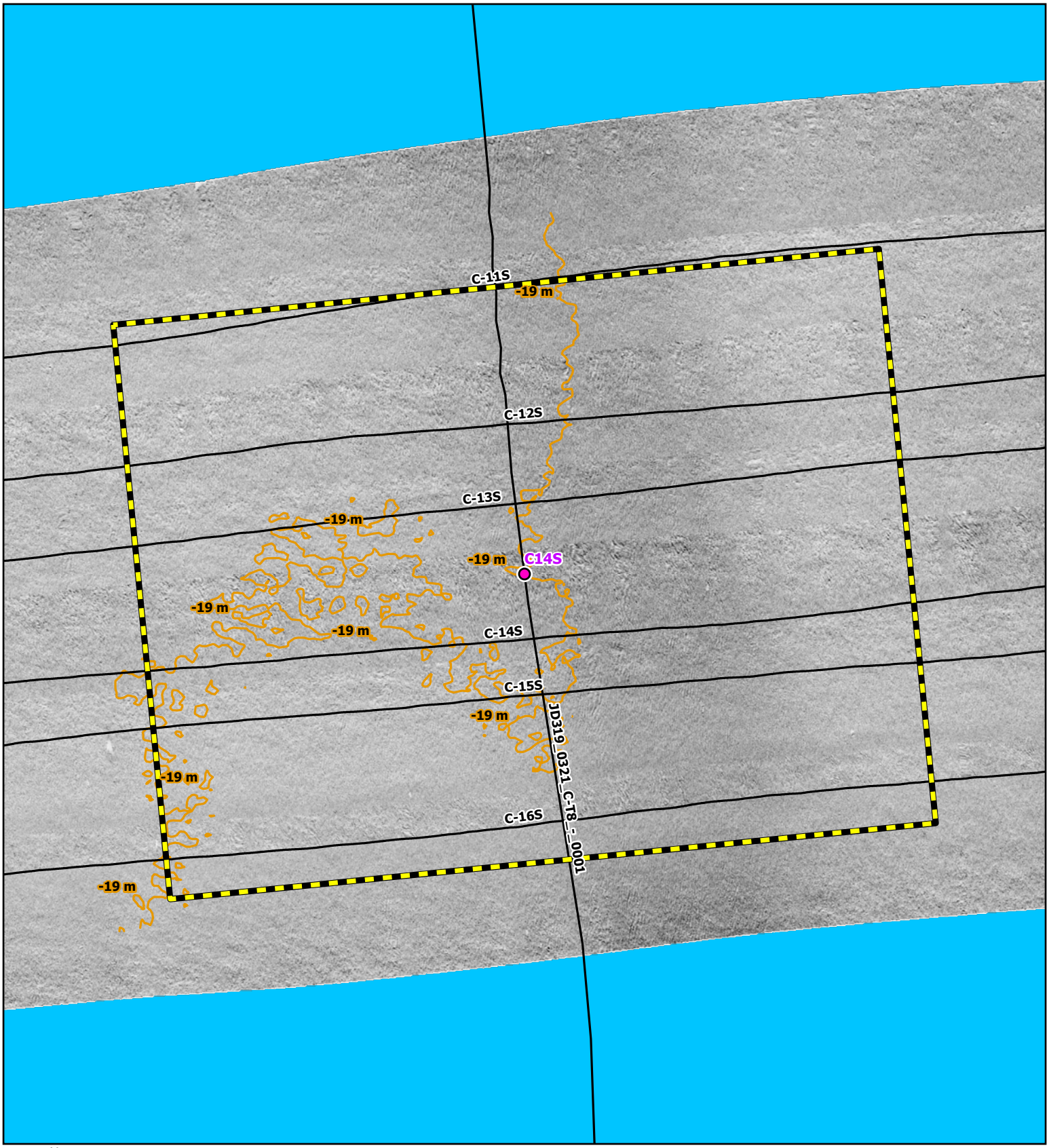
Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf,
Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block C

Map: 31

C13S

R. Christopher Goodwin & Associates, Inc.
NAUTICAL DIVISION
MARINE ARCHAEOLOGY FROM STEM TO STERN



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Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

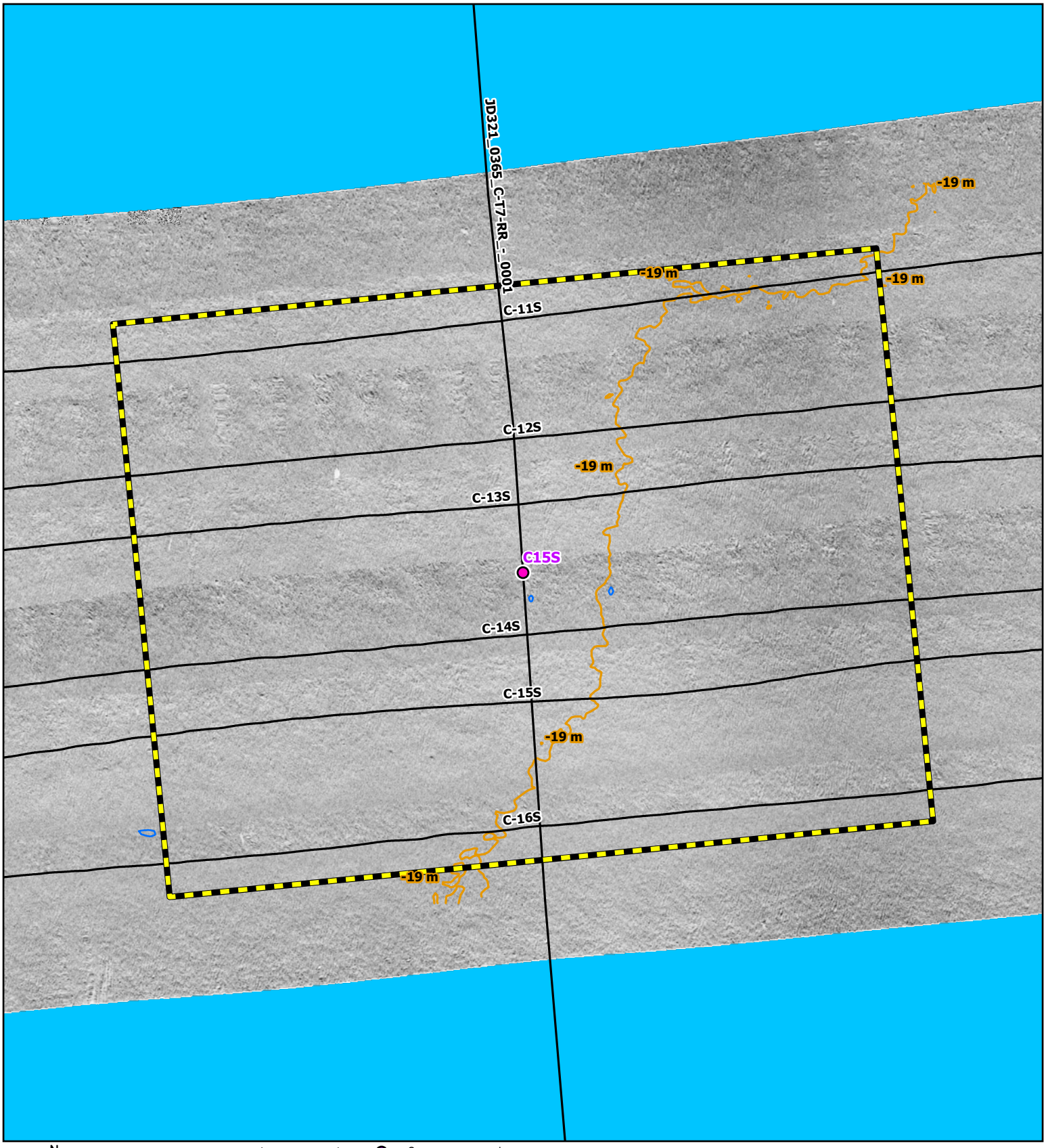
Map: 32

C14S

R. Christopher Goodwin & Associates, Inc.

NAUTICAL DIVISION

MARINE ARCHAEOLOGY FROM STEM TO STERN



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Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

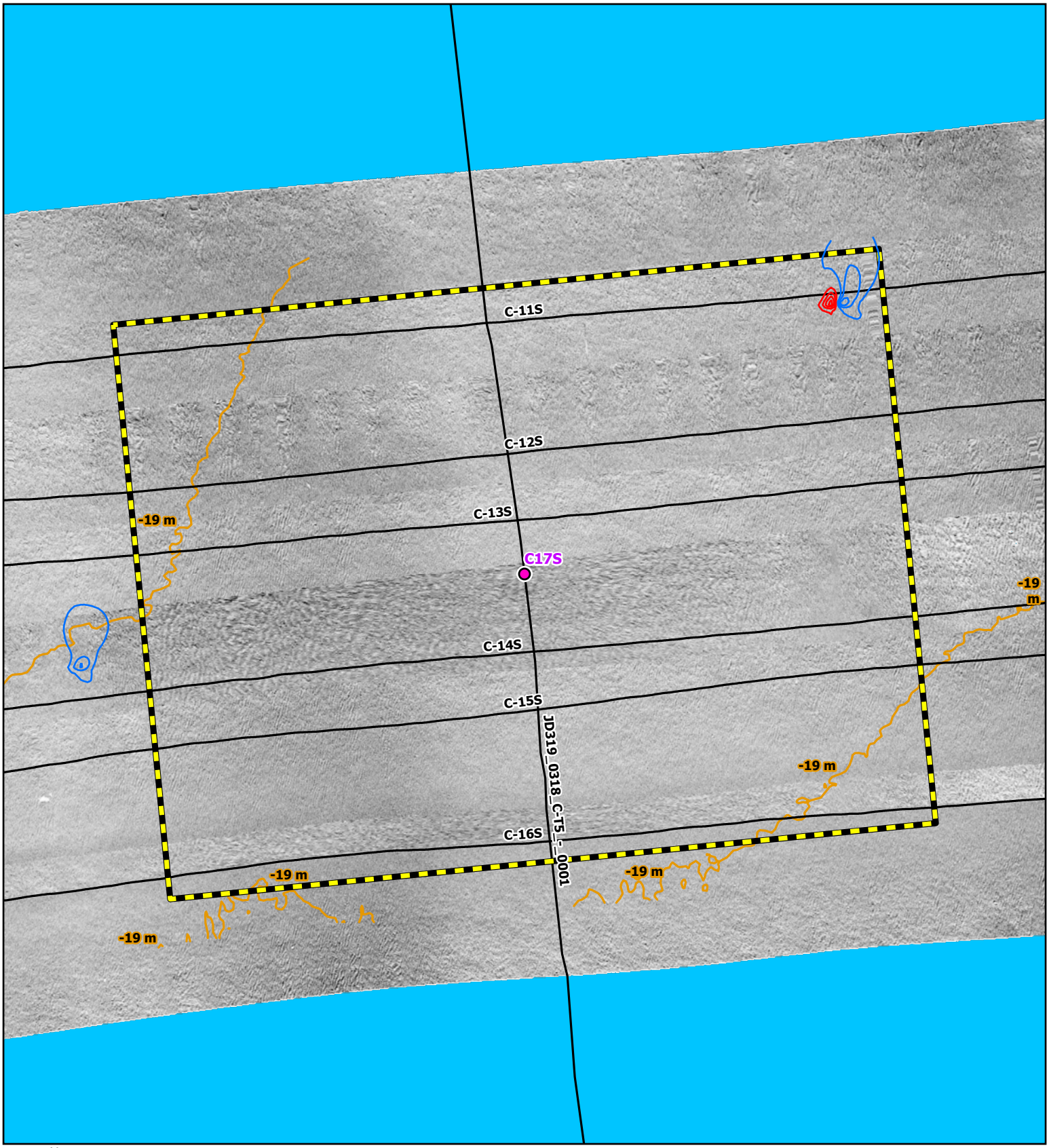
Map: 33

C15S

R. Christopher Goodwin & Associates, Inc.

NAUTICAL DIVISION

MARINE ARCHAEOLOGY FROM STEM TO STERN



N
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Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 34

C17S

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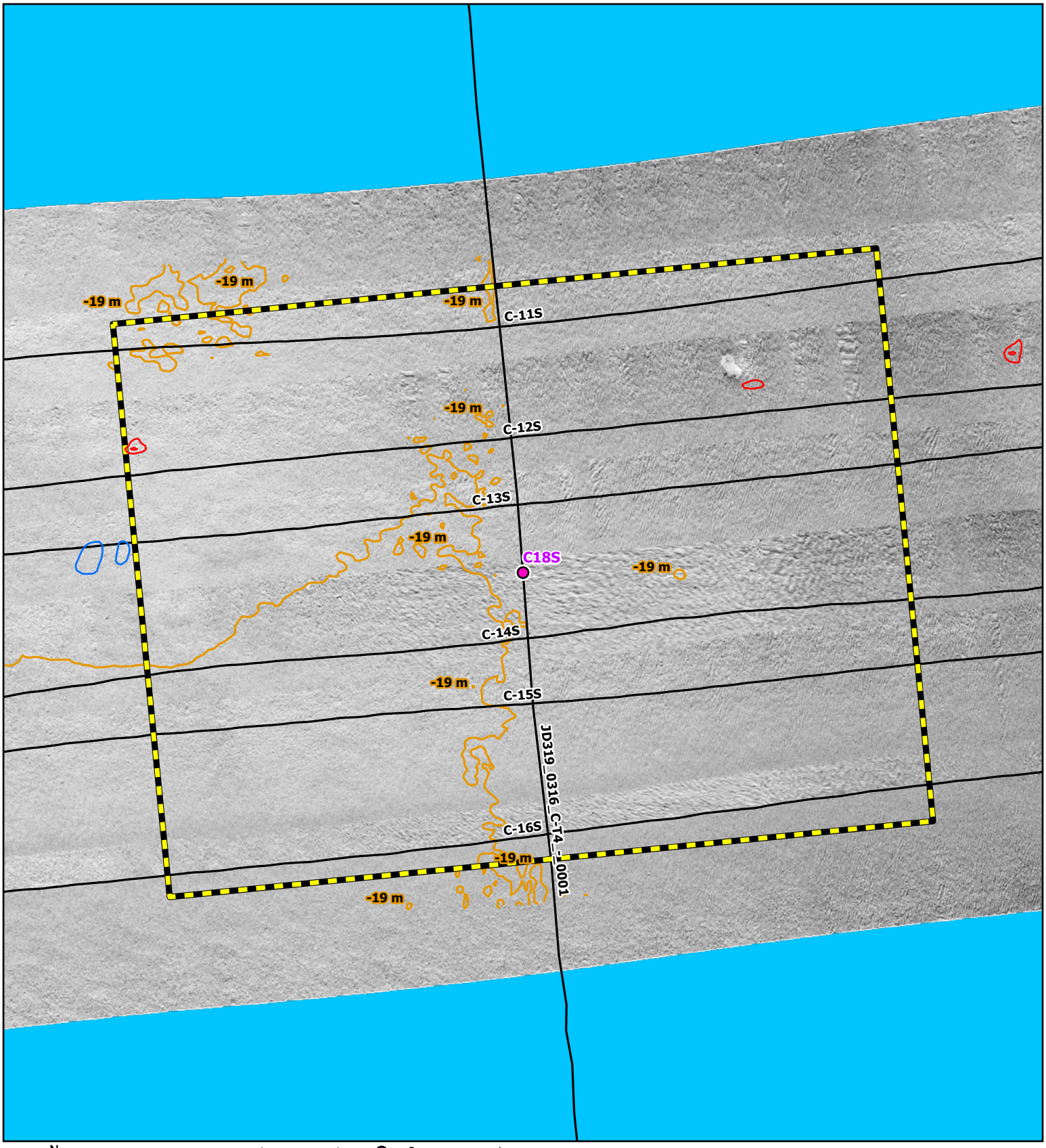
NAUTICAL DIVISION

MARINE ARCHAEOLOGY FROM STEM TO STERN



N
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Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

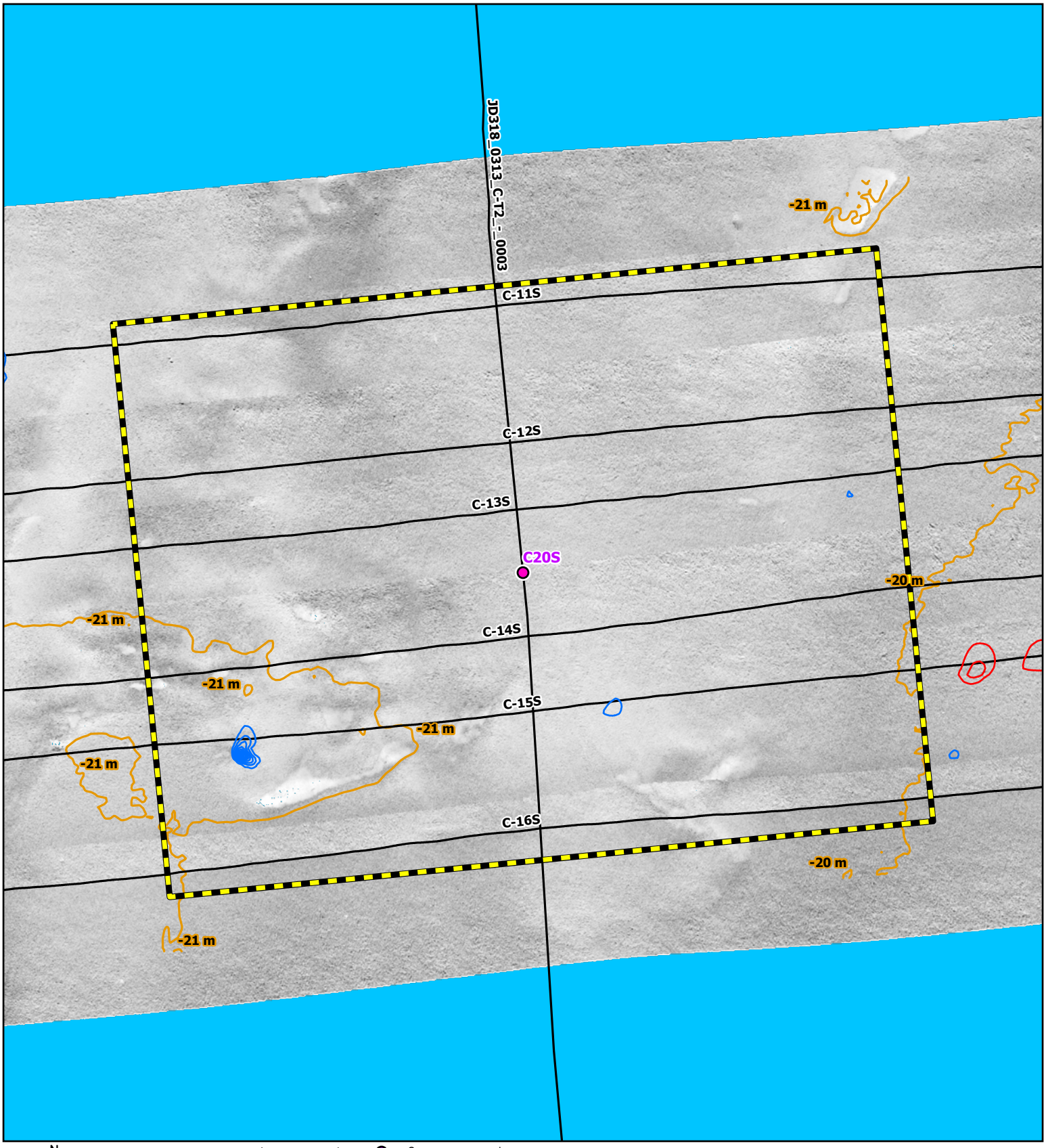
Map: 35

C18S

R. Christopher Goodwin & Associates, Inc.

NAUTICAL DIVISION

MARINE ARCHAEOLOGY FROM STEM TO STERN



N
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Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

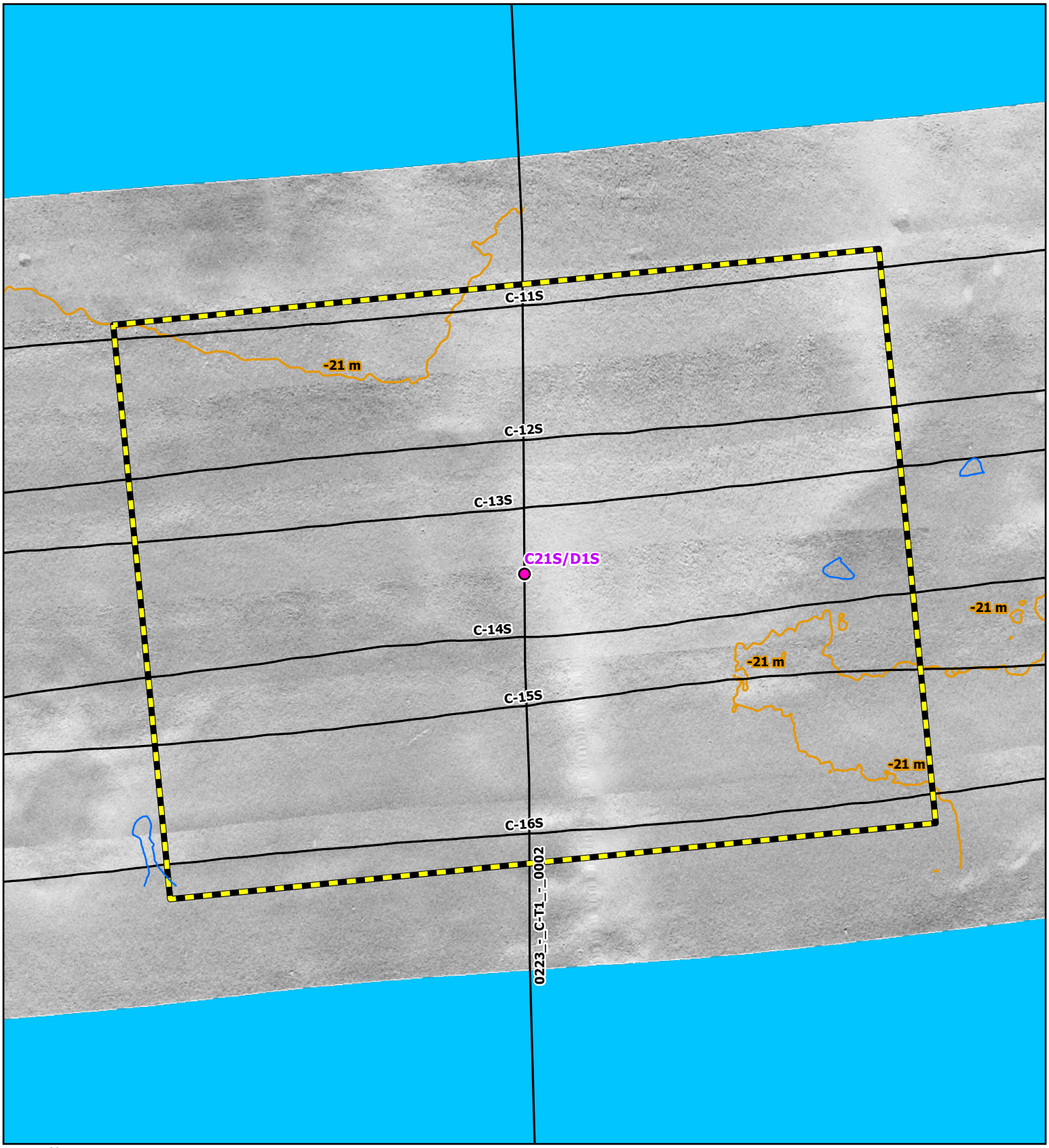
Map: 36

C20S

R. Christopher Goodwin & Associates, Inc.

NAUTICAL DIVISION

MARINE ARCHAEOLOGY FROM STEM TO STERN



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Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 UTM Zone 18N Meter

0 25 50 75 100
Feet
0 10 20 30 40
Meters

Geotechnical Location

Trackline

Bathymetric Contour (1 m)

Magnetic Contour (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project

Outer Continental Shelf,

Offshore Virginia (Lease No. OCS-A-0483)

Geotechnical Clearance: Block C

Map: 37

C21S/D1S

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APPENDIX 2
SUB-BOTTOM PROFILE IMAGES

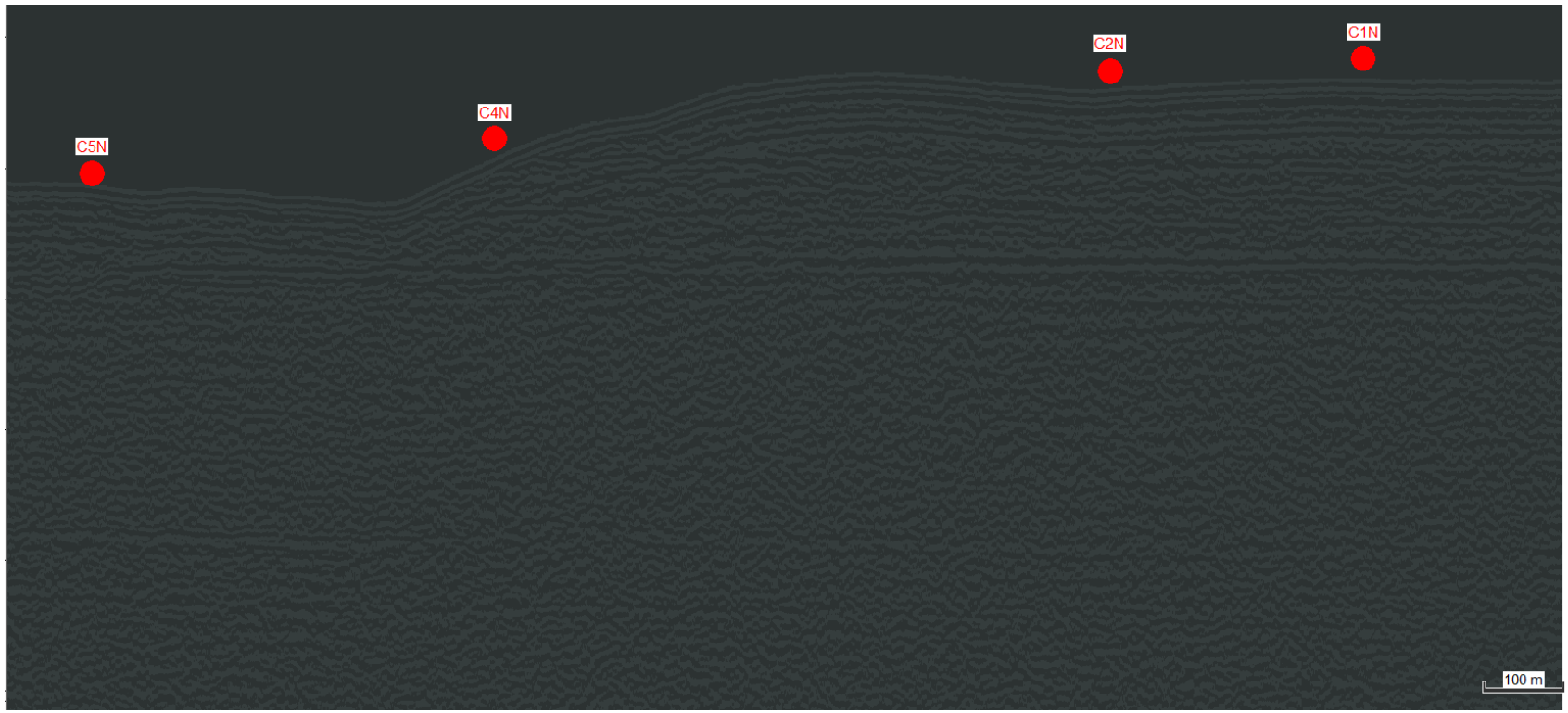


Figure 1: Proposed geotechnical locations C1N, C2N, C4N, and C5N in ECR Block C, Northern Wing Corridor along sub-bottom line JD302_Seq0062_C-15N

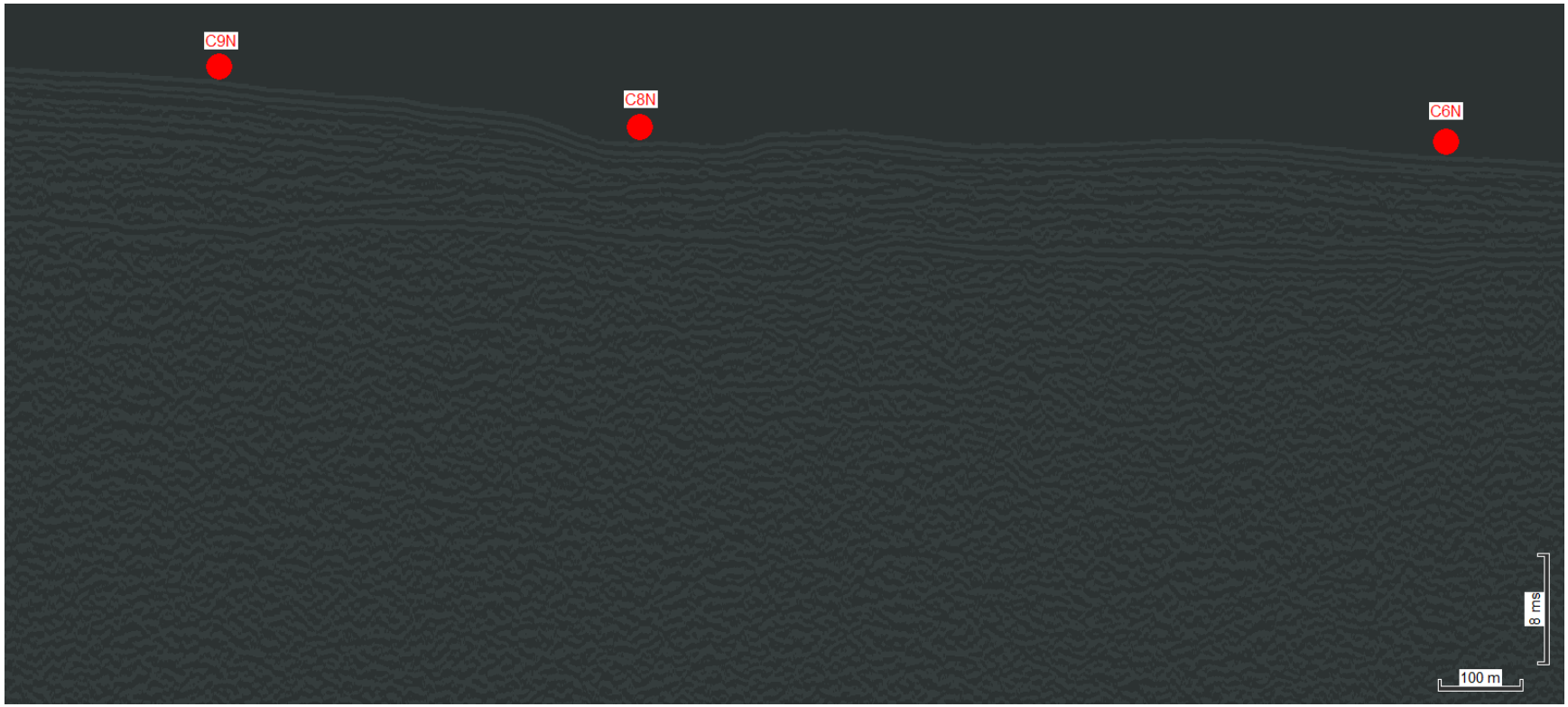


Figure 2: Proposed geotechnical locations C6N, C8N, and C9N in ECR Block C, Northern Wing Corridor along sub-bottom line JD302_Seq0062_C-15N

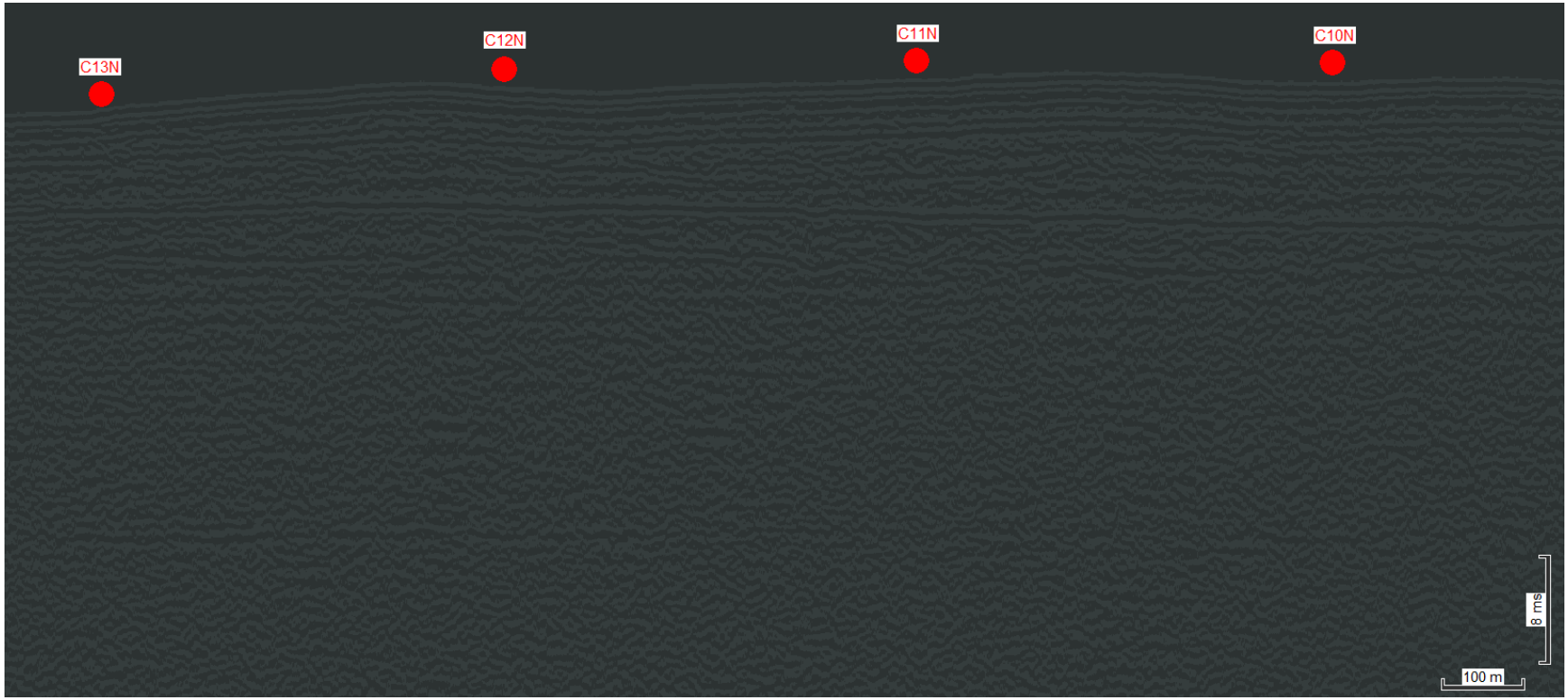


Figure 3: Proposed geotechnical locations C10N, C11N, C12N, and C13N in ECR Block C, Northern Wing Corridor along sub-bottom line JD302_Seq0062_C-15N

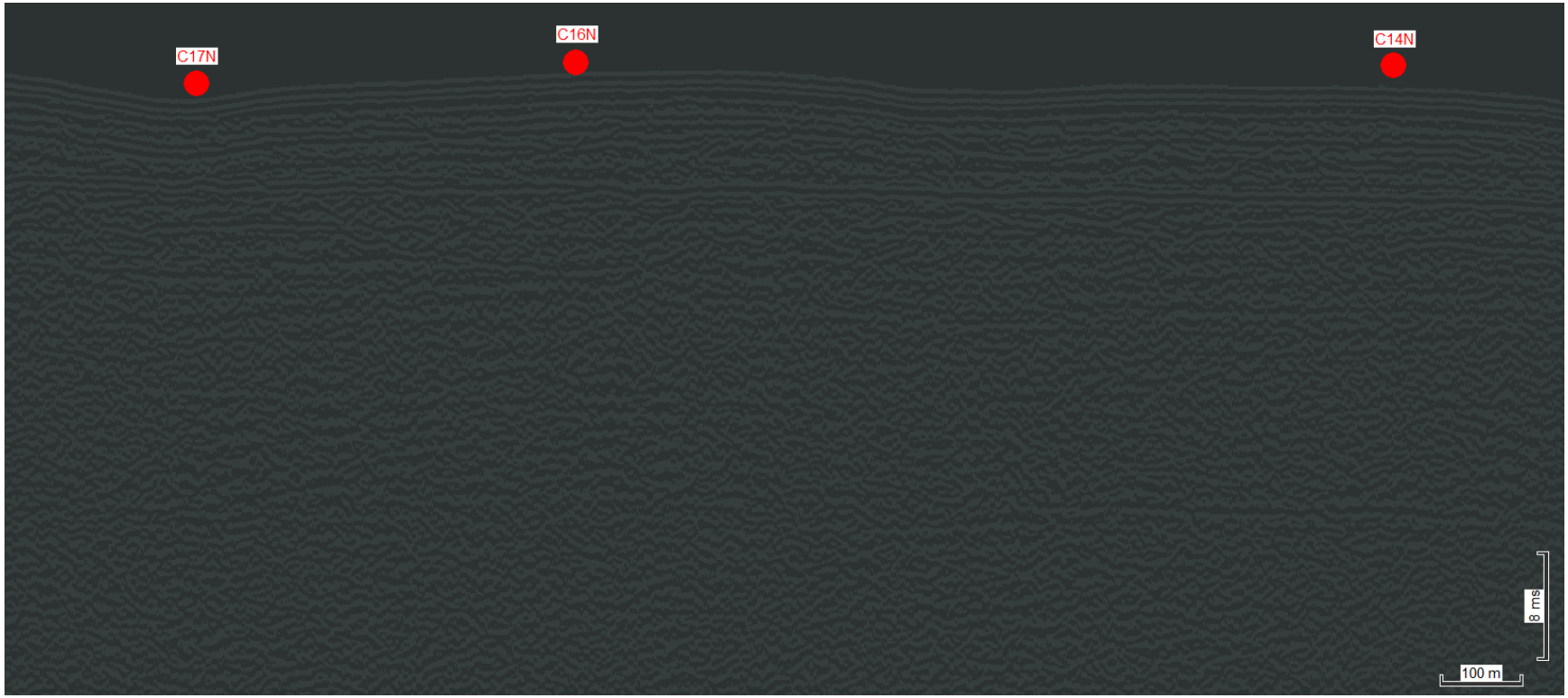


Figure 4:Proposed geotechnical locations C14N, C16N, and C17N in ECR Block C, Northern Wing Corridor along sub-bottom line JD302_Seq0062_C-15N

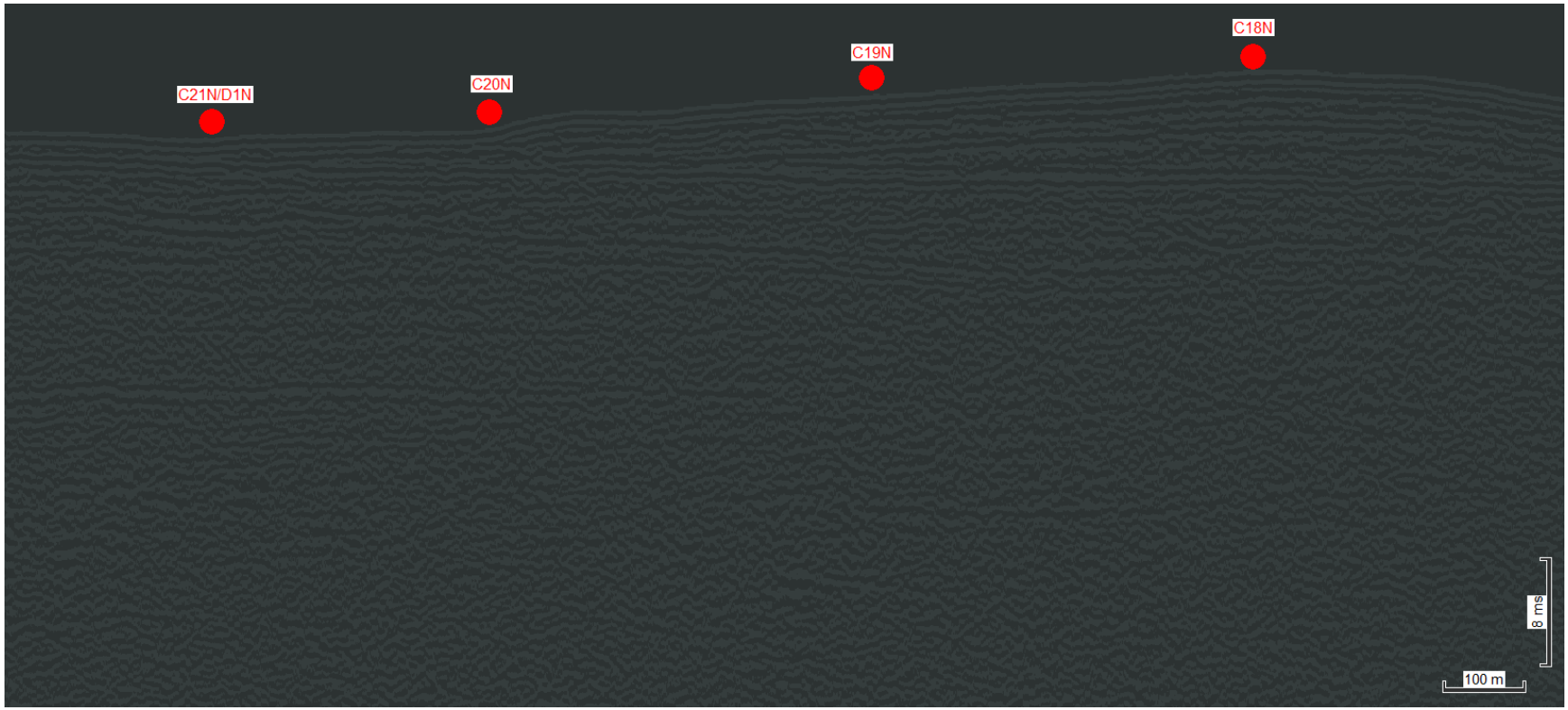


Figure 5: Proposed geotechnical locations C18N, C19N, C20N, and C21N/D1N in ECR Block C, Northern Wing Corridor along sub-bottom line JD302_Seq0062_C-15N

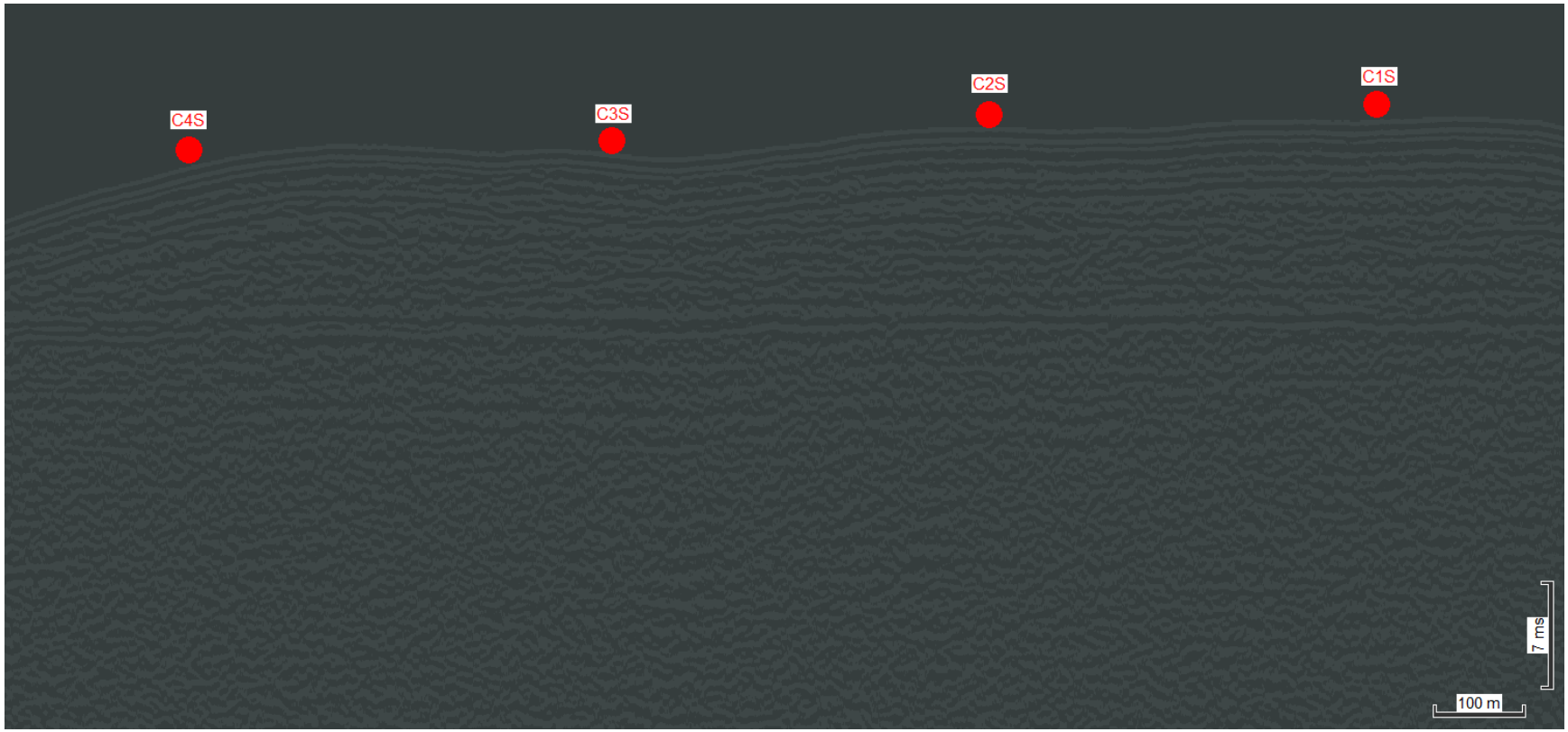


Figure 6: Proposed geotechnical locations C1S, C2S, C3S, and C4S in ECR Block C, Southern Wing Corridor along sub-bottom line JD302_Seq0059_C-11S_A

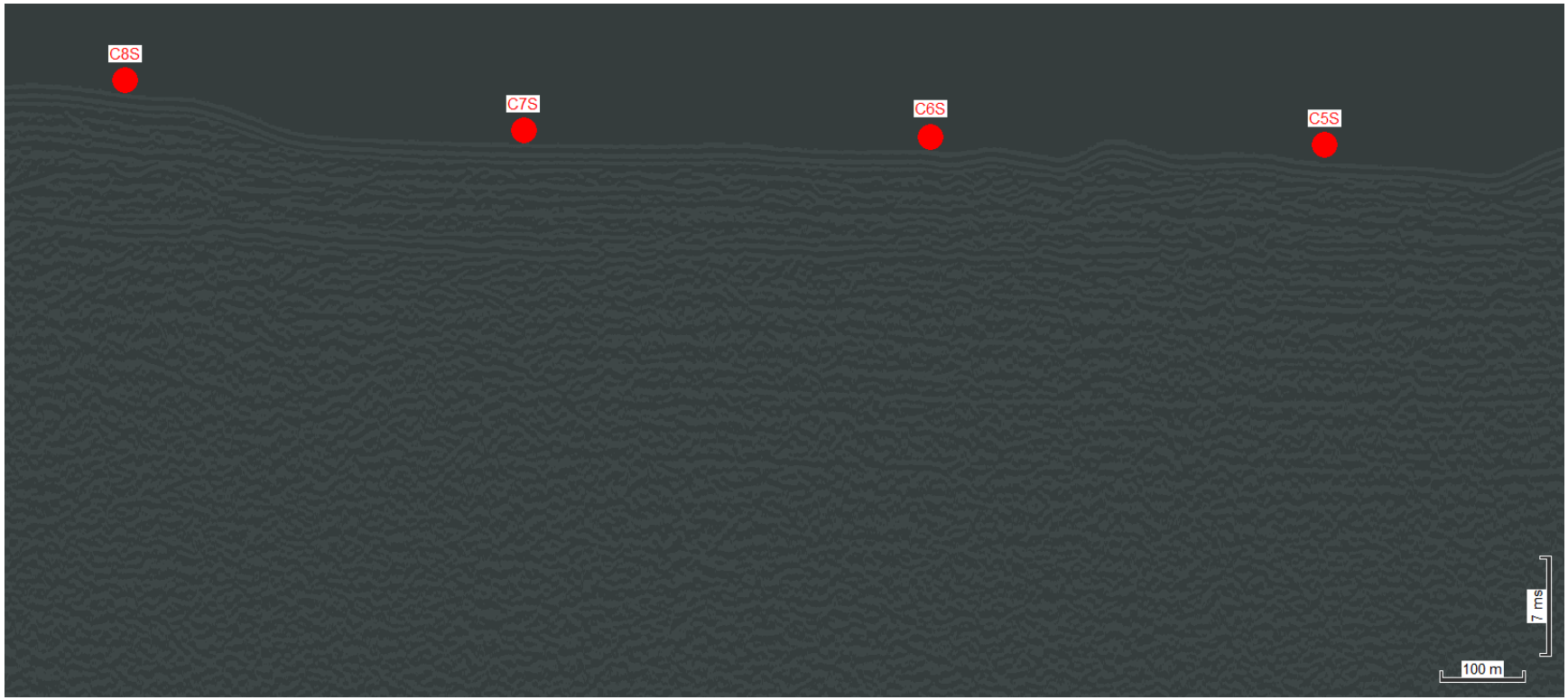


Figure 7: Proposed geotechnical locations C5S, C6S, C7S, and C8S in ECR Block C, Southern Wing Corridor along sub-bottom line JD302_Seq0059_C-11S_A

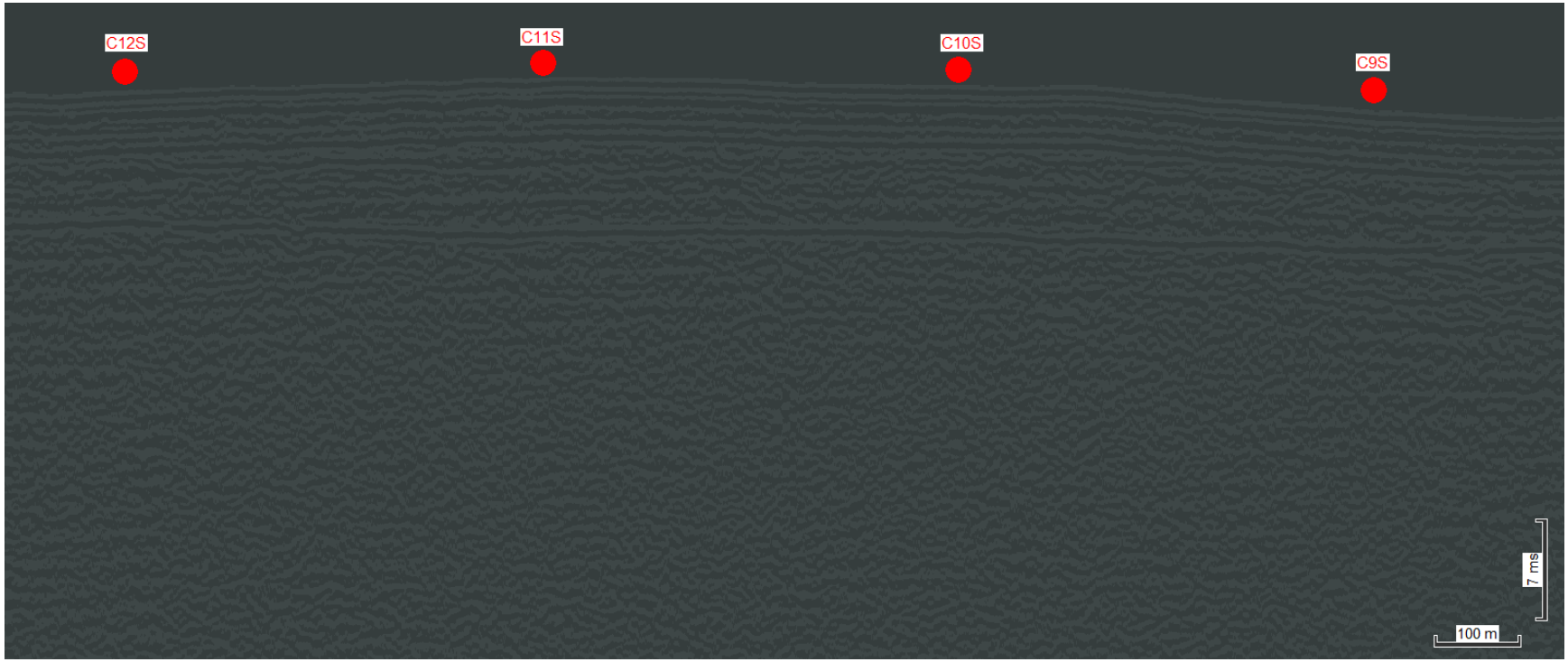


Figure 8: Proposed geotechnical locations C9S, C10S, C11S, and C12S in ECR Block C, Southern Wing Corridor along sub-bottom line JD302_Seq0059_C-11S_A

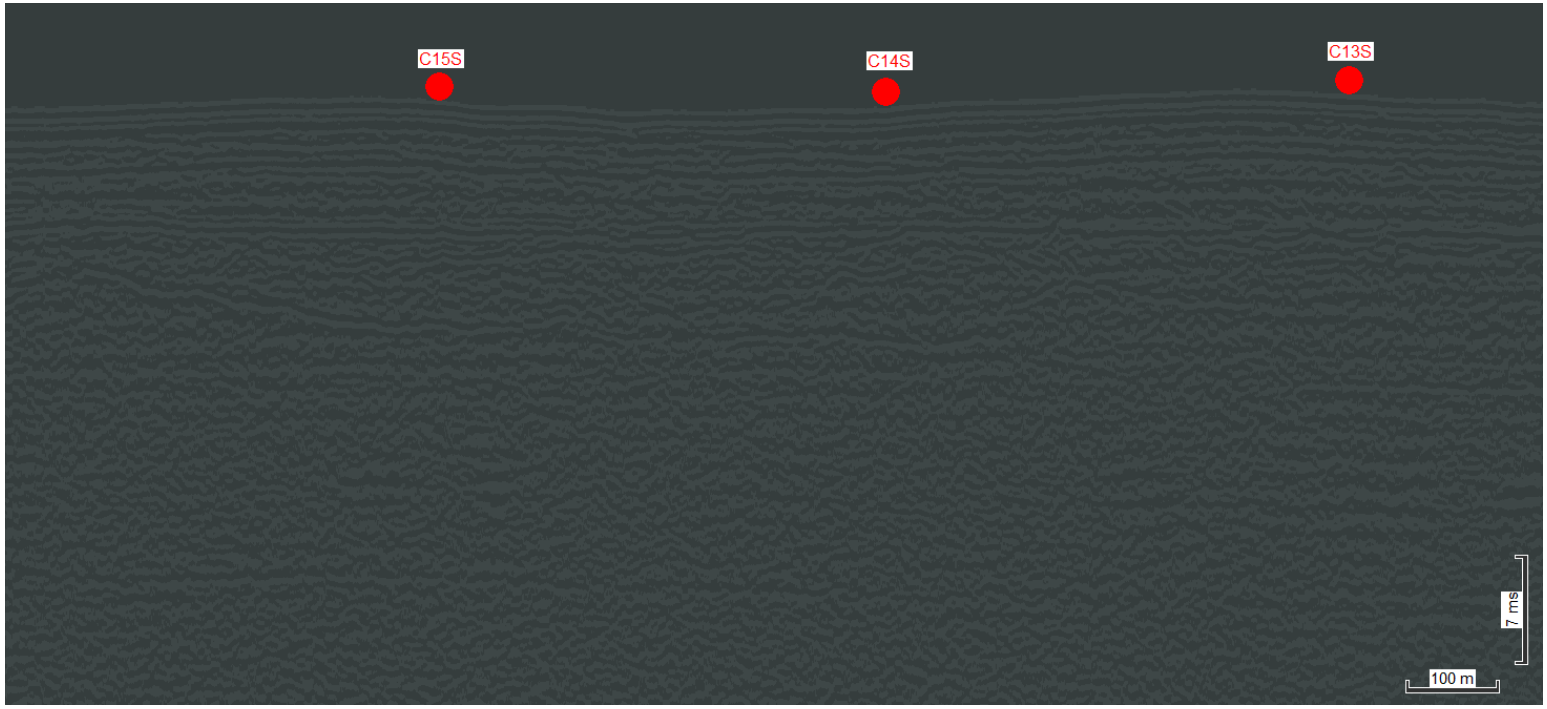


Figure 9: Proposed geotechnical locations C13S, C14S, and C15S in ECR Block C, Southern Wing Corridor along sub-bottom line JD302_Seq0059_C-11S_A

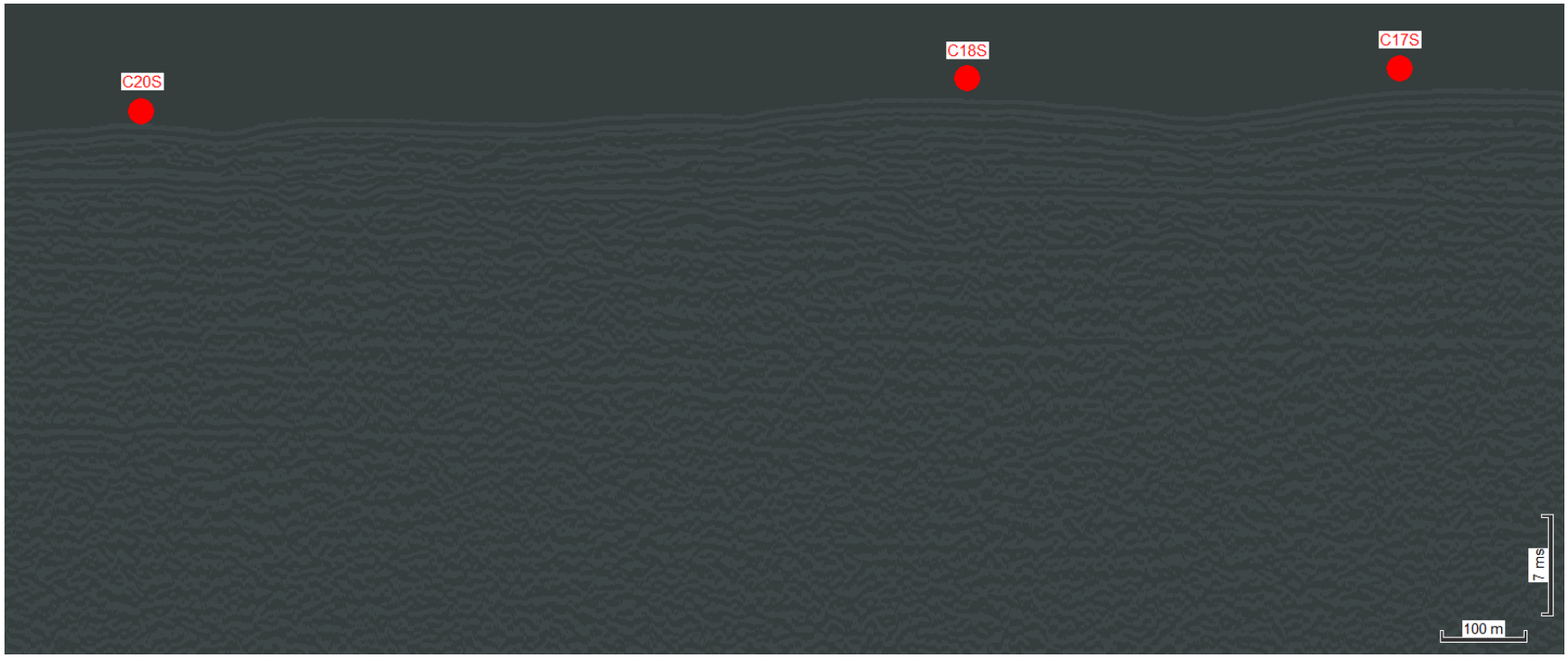


Figure 10: Proposed geotechnical locations C17S, C18S, and C20S in ECR Block C, Southern Wing Corridor along sub-bottom line JD302_Seq0059_C-11S_A

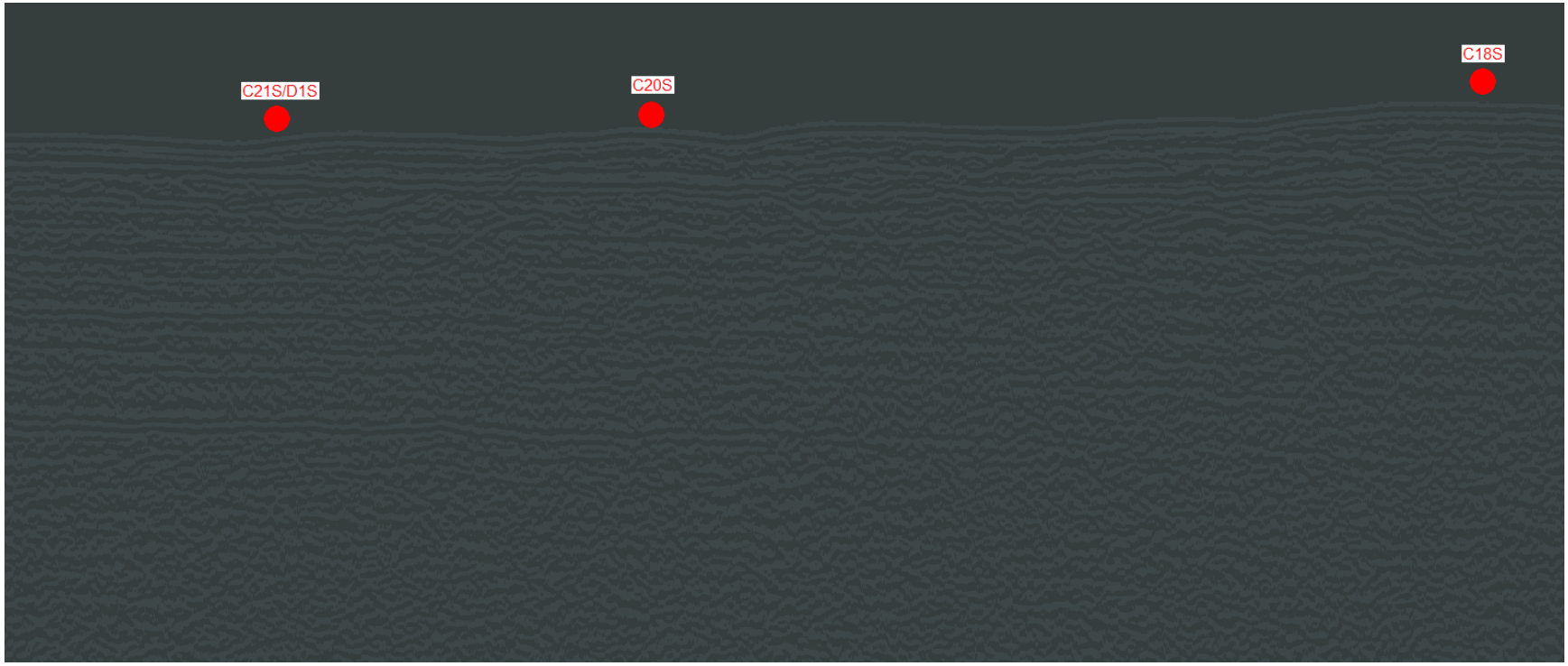


Figure 11: Proposed geotechnical locations C18S, C20S, and C21S/D1S in ECR Block C, Southern Wing Corridor along sub-bottom line JD302_Seq0059_C-11S_A

Dominion Energy, Inc.
707 East Main Street
Richmond, VA 23219
dominionenergy.com

February 5, 2021

Mr. James Bennett, Chief
Bureau of Ocean Energy Management
Office of Renewable Energy Programs
45600 Woodland Road, VAM-OREP
Sterling, VA 20166

Dear Mr. Bennett:

RE: Coastal Virginia Offshore Wind Commercial Project - Cultural Resources Clearance for Geotechnical Investigations along the Export Cable Route Block B Wing Corridors

Virginia Electric and Power Company d/b/a Dominion Energy Virginia (Dominion Energy, the Applicant), is submitting the attached geotechnical clearance reports for the Export Cable Route Block B Wing Corridors within the Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf (OCS) Offshore Virginia (Lease No. OCS-A-0483) Condition 4.2.2 in support of the Coastal Virginia Offshore Wind Commercial (CVOW) Commercial Project.

This letter and attached report provide the results of Phase I cultural resources analyses of high-resolution geophysical (HRG) survey data collected by Alpine to support geotechnical investigations. In summary:

- No sonar contacts that represent significant cultural resources were identified within the analytical areas.
- No magnetic anomalies that represent significant cultural resources were identified within the analytical areas pertaining to 15 of the 33 proposed geotechnical sampling locations. Further analysis is required at 18 locations.
- Analyses of the seismic data suggest that 32 of the 33 geotechnical samples will not impact any submerged and buried landforms that exhibit the potential to contain preserved archaeological resources. Additional seismic data and further analysis is required at one location.
- No historic properties, such as shipwrecks, were detected at the proposed sampling locations.

Please contact Scott Lawton at scott.lawton@dominionenergy.com or (804) 273-2600 if you have any questions or require additional information.

Sincerely,

Joshua J. Bennett
Vice President – Offshore Wind

Enclosure(s)

Cc: Dominion Env. - Jason Ericson, Darrell Shier, Scott Lawton, Mitchell Jabs
Dominion Offshore Wind – GT Hollett, Will Kinnan, Ed Buchanan
BOEM - Casey Reeves, Algene Byrum, Jen Draher, Willie Hoffman
Tetra Tech - Janelle Lavallee, Alex Cross
McNeilan and Assoc. - Tom McNeilan

R. CHRISTOPHER GOODWIN & ASSOCIATES, INC.
cultural resource management and preservation planning

January 27, 2021

Mr. Lloyd Eley
Project Manager
Dominion Energy
5000 Dominion Boulevard
Glen Allen, MD 23060

RE: Coastal Virginia Offshore Wind Commercial Project – Cultural Resources Clearance for Geotechnical Investigations along the Block B Wing Corridors

Dear Mr. Eley:

This letter report provides the results of Phase I cultural resources analyses of high-resolution geophysical (HRG) survey data collected by Alpine Ocean Seismic Survey, Inc. to support geotechnical investigations for the Coastal Virginia Offshore Wind Commercial Project. The planned 2020 geotechnical campaign consists of shallow coring (piston or vibracores) and seabed Cone Penetrometer Tests; this memorandum reviews 33 of these locations for gathering geologic information (Tables 1 and 2). The geotechnical investigation will be conducted by Geoquip Marine aboard the vessels, *Geoquip Saentis*, *Dina Polaris*, and *Geoquip Speer*, or a similar type of vessel that is equipped with a dynamic positioning system. Activities at the geotechnical locations will not exceed a targeted depth of five (5) to seven (7) meters (m) below seabed.

The QMA reviewed the HRG survey data within a rectangular analytical area (180 m by 240 m) centered on each of the 33 proposed geotechnical locations located along the Export Cable Route (ECR), Block B Wing Corridors. The reviewed data included at minimum six (6) parallel lines of survey data that captured each of the proposed locations. This review focused on identification of any potential submerged cultural resources and buried, preserved landforms through geophysical investigations.

High-resolution side scan sonar imagery was recorded throughout the survey area and viewed as high-resolution mosaicked files (Appendix 1). No sonar contacts that represent significant cultural resources were identified within the analytical areas.

Two marine magnetometers configured into a transverse gradiometer array collected magnetic data along each survey line. Magnetic anomalies were interpreted using magnetic residual field grid data, magnetic contour mapping, and by observing their characteristics in terms of amplitude, duration, magnetic signature, and spatial distribution (Appendix 1). No magnetic anomalies that represent significant cultural resources were identified within the analytical areas pertaining to 15 of the 33 proposed geotechnical sampling locations. Further analysis is required for B9Na, B8Na, B6Na, B4Na, B7Nb, B6nb, B4Nb, B9Sa, B6Sa, B4Sa, B3Sa, B2Sa, B1Sa, B9Sb, B8Sb, B6Sb, B3Sb, and B2Sb.

Seismic data were collected and interpreted along each survey line associated with the geotechnical locations (Appendix 2). All seismic data were reviewed to their full vertical extent. The geotechnical locations were also reviewed with respect to the ground model and interpreted horizons. Analyses of the seismic data suggest that 32 of the 33 proposed geotechnical samples will not impact any submerged and buried landforms that exhibit the potential to contain preserved archaeological resources. Additional seismic data and further analysis is required for B9Sb.

The analyses considered all portions of the seafloor within the limits of bottom-disturbing activities as they pertain to 15 of the 33 the proposed sampling locations (Tables 1 and 2; Appendices 1 and 2). Based on the current data, if the geotechnical sampling activities are contained within the established analytical areas (Table 1), no potential archaeological resources will be affected by the proposed geotechnical activities. No historic properties, such as shipwrecks, were detected at the proposed sampling locations.

If you have questions, please do not hesitate to contact us.

Best regards,

Ashley Himmelstein, M.A.
Nautical Archaeologist

Table 1. Proposed geotechnical locations for ECR Block B, Northern Wing Corridor

Core ID[1]	Easting (X)[2]	Northing (Y)[2]	Longitude[3]	Latitude[3]
B7Na	445497.83	4074543.70	-75.61107118	36.81518324
B5Na	446244.62	4075212.12	-75.60274593	36.82125117
B3Na	446984.85	4075884.60	-75.59449325	36.82735484
B2Na	447300.69	4076204.89	-75.59097396	36.83025966
B3Nb	446644.31	4076259.44	-75.59833814	36.83071457
B5Nb	445906.60	4075584.57	-75.6065624	36.82458931
B8Nb	444973.61	4074743.07	-75.61696278	36.81695004
B9Nb	444790.92	4074574.92	-75.61899885	36.8154236

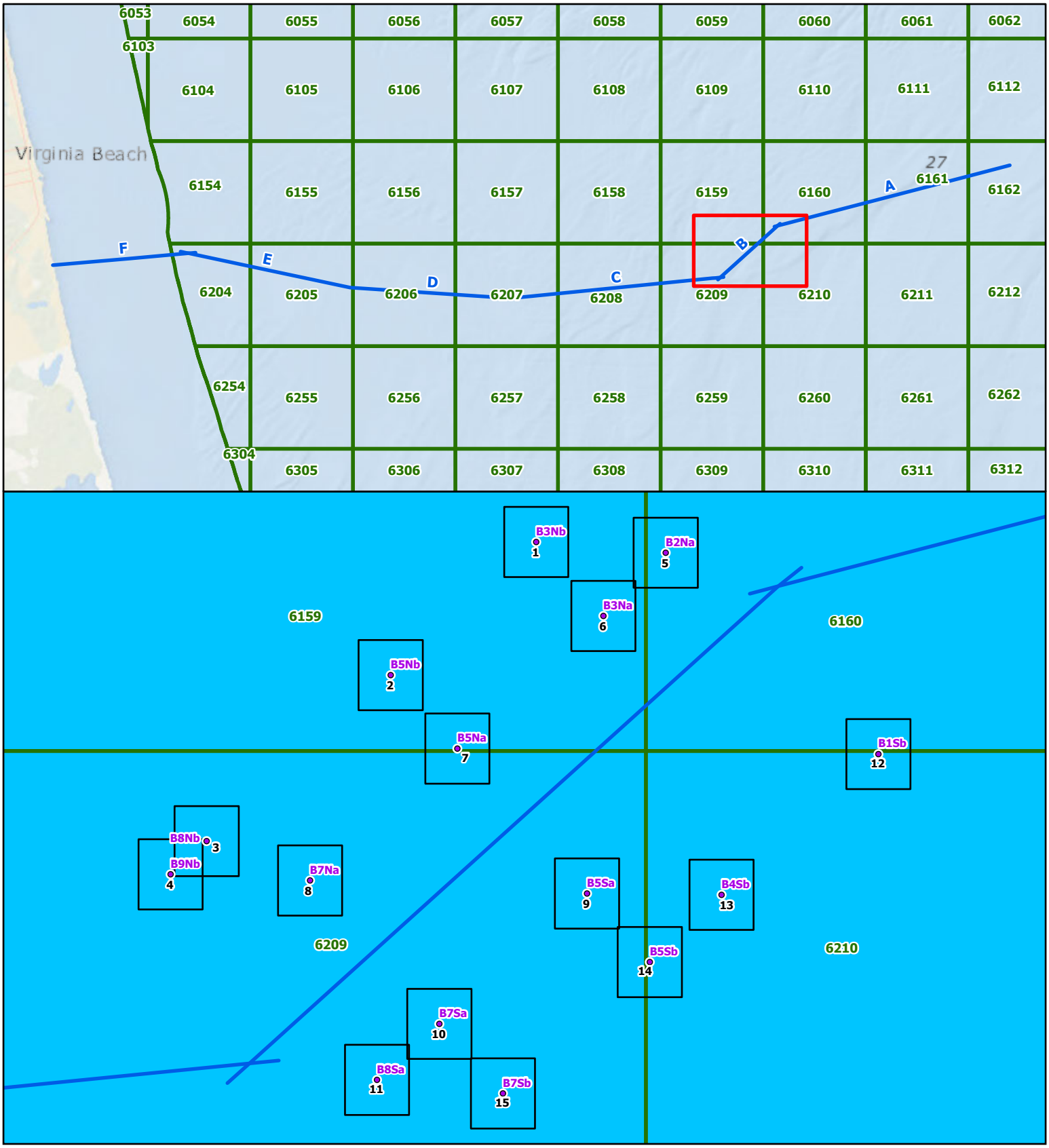
[1] Core IDs may not be sequential; B9Na, B8Na, B6Na, B4Na, B7Nb, B6nb, and B4Nb are pending additional analyses.
[2] Projected coordinates are referenced to UTM Zone 18N, NAD83 (2011), meters.
[3] Geographical coordinates are referenced to NAD83.

Table 2. Proposed geotechnical locations for ECR Block B, Southern Wing Corridor

Core ID[1]	Easting (X)[2]	Northing (Y)[2]	Longitude[3]	Latitude[3]
B8Sa	445837.16	4073532.75	-75.60719493	36.80608977
B7Sa	446153.21	4073816.59	-75.60367211	36.80866637
B5Sa	446901.93	4074477.44	-75.59532485	36.81466574
B1Sb	448378.93	4075184.09	-75.57881377	36.82111741
B4Sb	447583.91	4074470.68	-75.58767851	36.81464284
B5Sb	447220.13	4074130.05	-75.59173328	36.81155215
B7Sb	446475.65	4073464.01	-75.60003265	36.80550649

[1] Core IDs may not be sequential B9Sa, B6Sa, B4Sa, B3Sa, B2Sa, B1Sa, B9Sb, B8Sb, B6Sb, B3Sb, and B2Sb. are pending additional analyses.
[2] Projected coordinates are referenced to UTM Zone 18N, NAD83 (2011), meters.
[3] Geographical coordinates are referenced to NAD83.

APPENDIX 1
ARCHAEOLOGICAL RESOURCES MAPS FOR BLOCK B WING CORRIDORS



N
W E
S
Grid North

NOAA OCS, Esri, DeLorme, Esri, DeLorme, NaturalVue

MSR: 1:26,000
SRS: NAD 1983 2011 UTM Zone 18N Meter

0 500 1,000 1,500 2,000
Feet
0 200 400 600 800
Meters

- Geotechnical Location
- ECR Centerline
- Map Sheet Boundary
- BOEM Lease Block

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf, Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block B

Index Map

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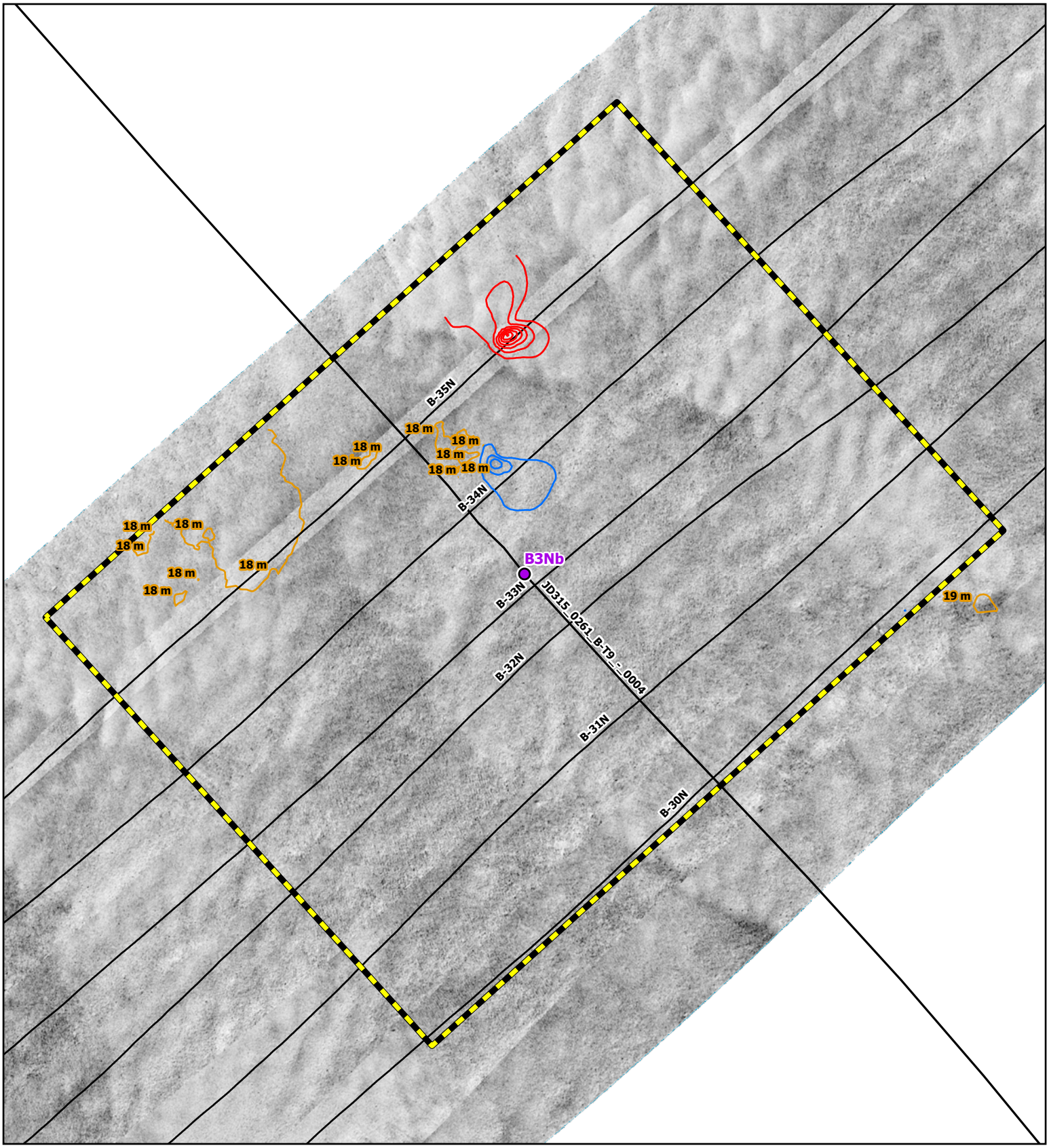

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

ECR Centerline

Trackline

Bathymetric Contour (1 m interval)

Magnetic Contours (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf, Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block B

Map: 1

B3Nb

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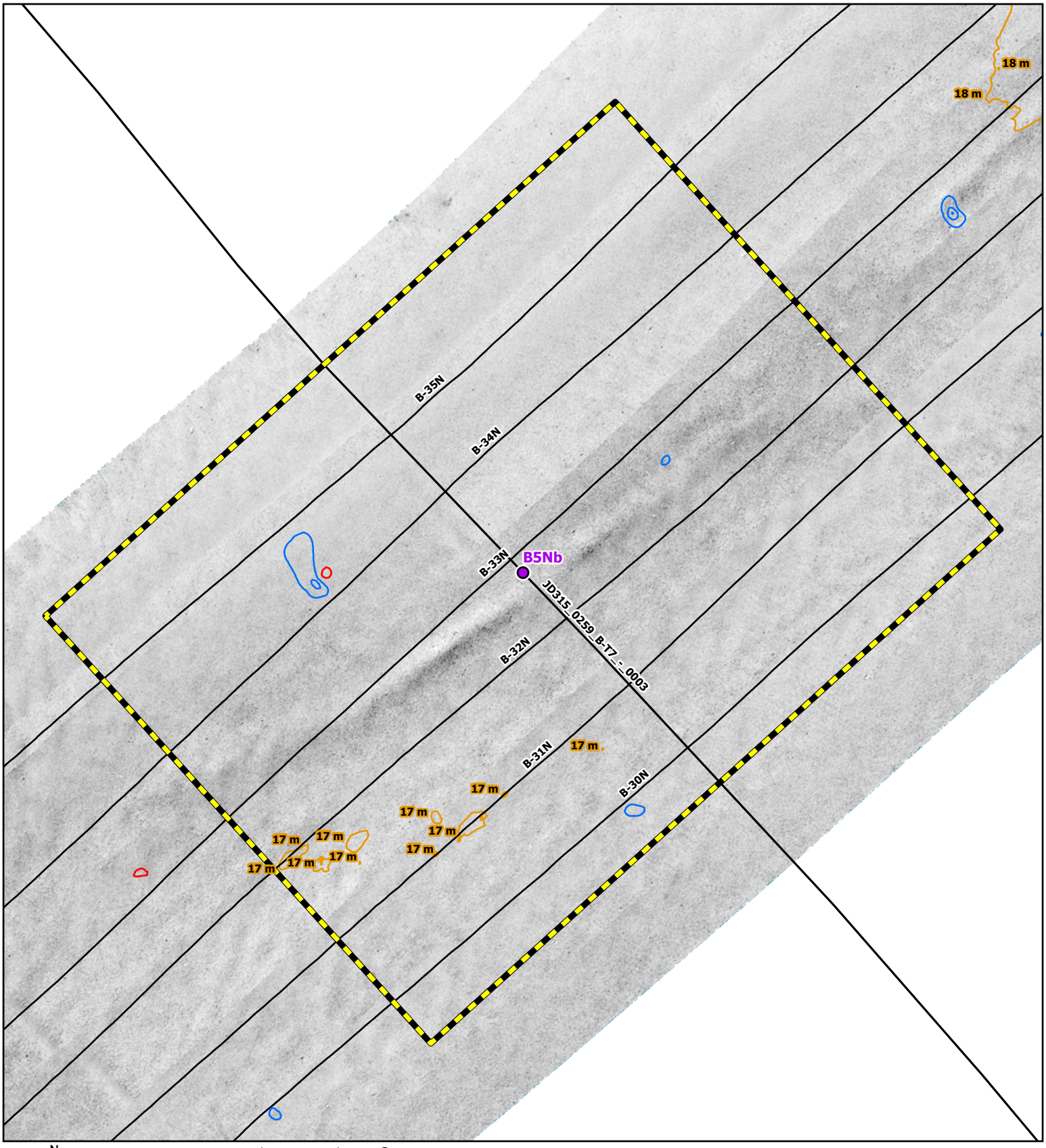

N
W E
S
Grid North

Side Scan Sonar Mosaic (2020, 0.25 m)

MSR: 1:1,600

SRS: NAD 1983 2011 UTM Zone 18N Meter

0 25 50 75 100
Feet

0 10 20 30 40
Meters

Geotechnical Location

ECR Centerline

Trackline

Bathymetric Contour (1 m interval)

Magnetic Contours (5 nT)

Negative

Positive

Analytical Area

Coastal Virginia Offshore Wind Commercial Project
Outer Continental Shelf, Offshore Virginia (Lease No. OCS-A-0483)
Geotechnical Clearance: Block B

Map: 2

B5Nb

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