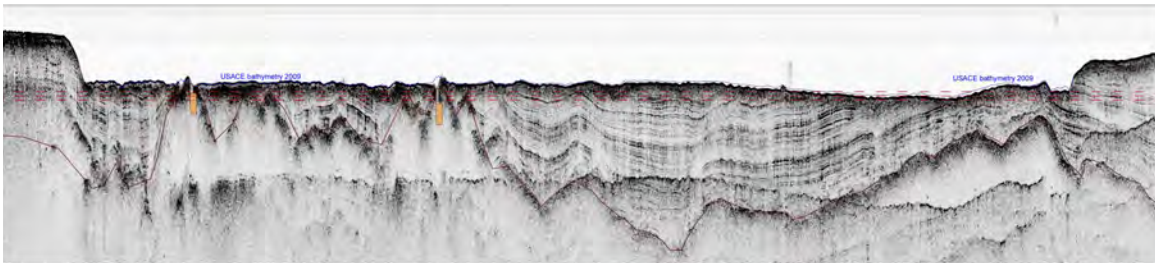
Department Of The Army
US Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742

Contract #W912DS-12-D-0002, DB01
Marine Geophysical and Geological Investigation, Boston Harbor, Boston Massachusetts



Appendix III

June 15, 2015

e4sciences | Earthworks, LLC
27 Glen Road, North Entrance
Sandy Hook, Connecticut 06482
P.O. Box 178, Newtown, CT 06470
(203) 270-8100, Fax (203) 364-0480
www.e4sciences.com

All interpretations are opinions based on inferences from seismic or other measurements. We cannot, and do not, guarantee the accuracy or correctness of any interpretation. We shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretations made by any of our officers, agents or employees.

Appendix III
Reflection seismology

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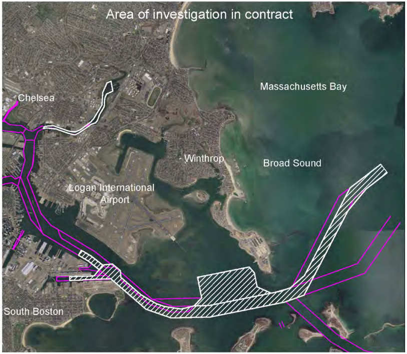
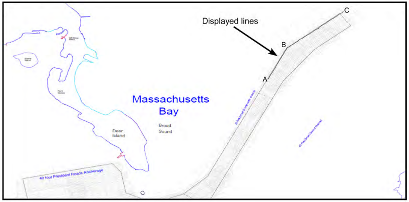
Plate 15: North Channel seismic cross sections

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts

Area of investigation in contract


Area of investigation in contract
Chelsea
Massachusetts Bay
Winthrop
Broad Sound
Logan International Airport
South Boston

Seismic trackline(s).


Displayed lines
A
B
C
Massachusetts Bay
Broad Sound
Deer Island
40 foot President Roads Anchorage

Drawn By:

Approved By:

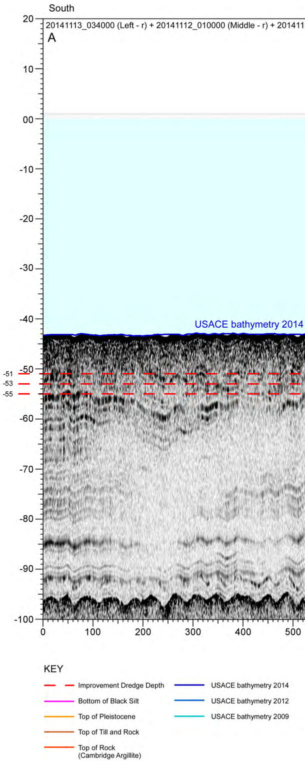
Date: May 7, 2015

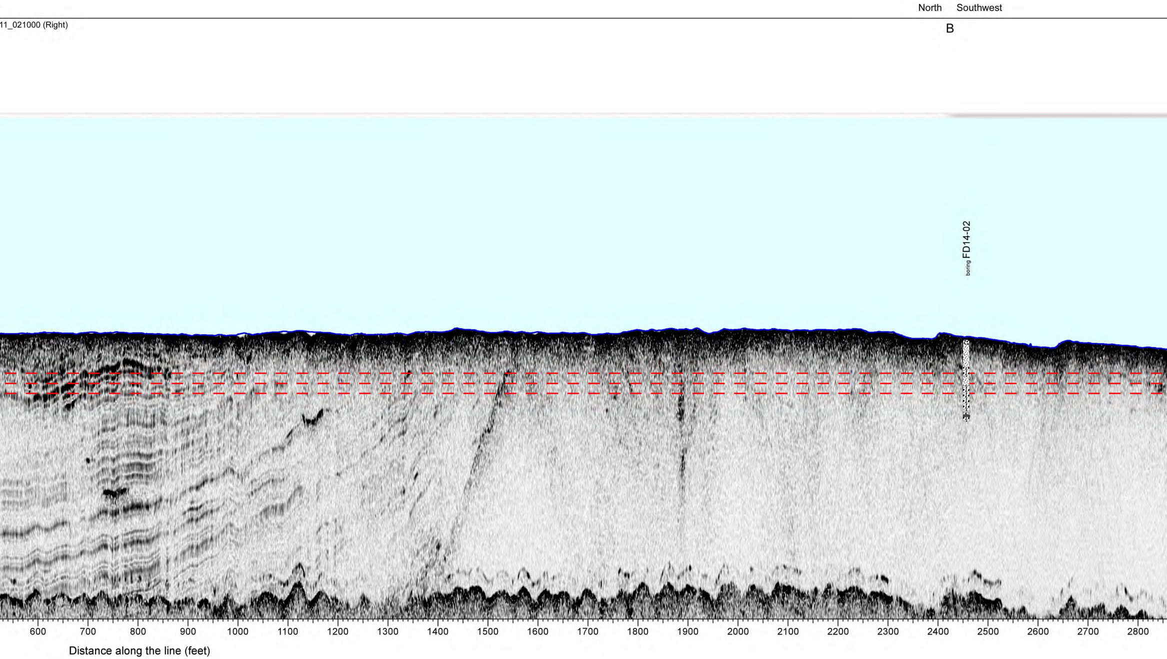
NAVD88 MLLW

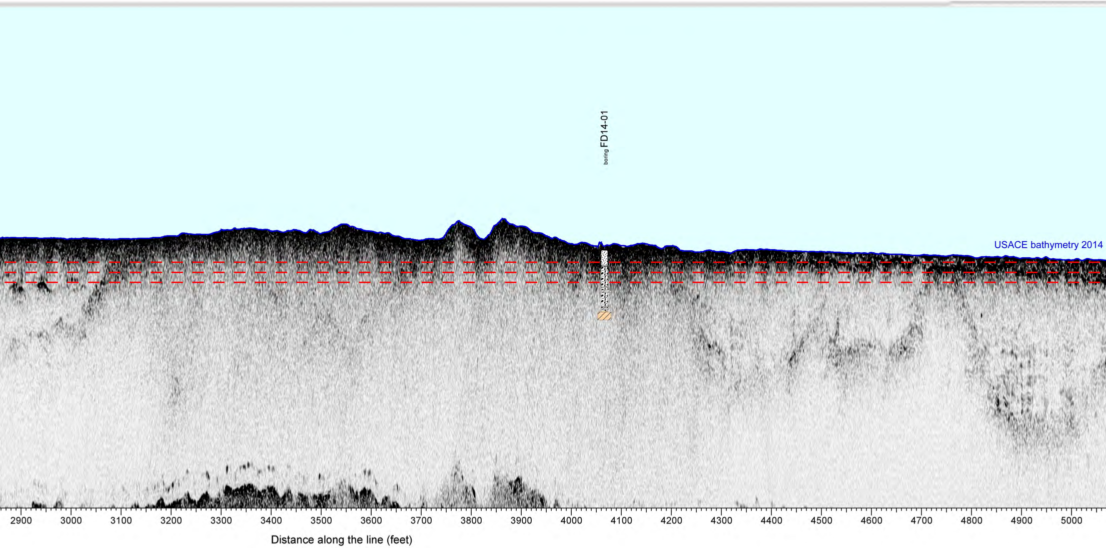
Elevation* (feet)

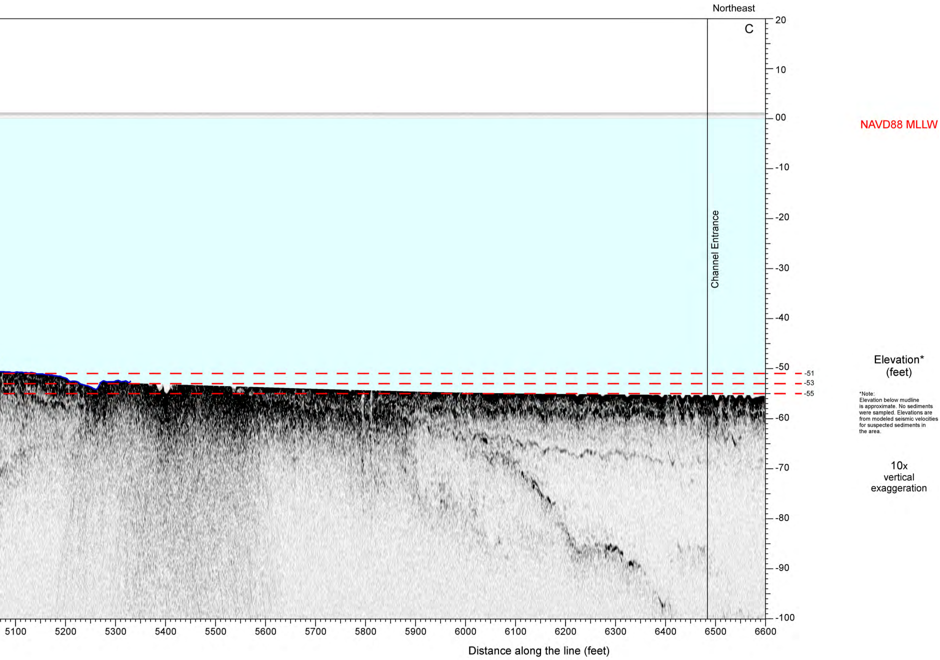
*Note: Elevation below mudline is approximate. No sediments were sampled. Elevations are from modeled seismic velocities for suspected sediments in the area.

10x vertical exaggeration









*Note:
Elevation below mudline is approximate. No sediments were sampled. Elevations are from modeled seismic velocities for suspected sediments in the area.

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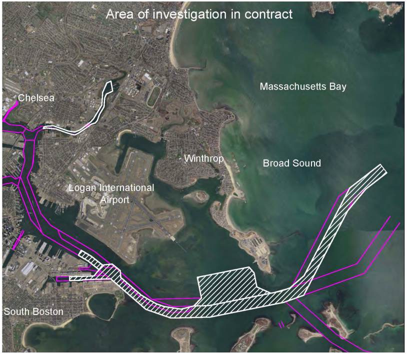
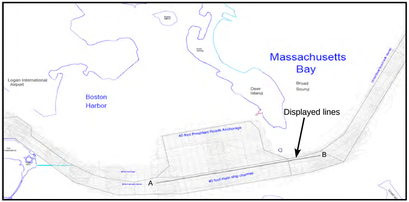
Plate 21: Main Ship Channel in President Roads Anchorage seismic cross sections

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts


Area of investigation in contract
Massachusetts Bay
Chelsea
Winthrop
Broad Sound
Logan International Airport
South Boston

Seismic trackline(s).

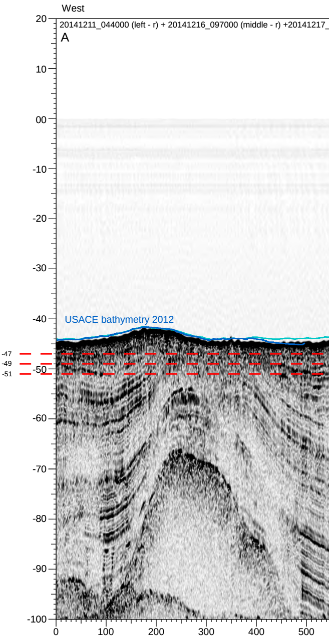

Massachusetts Bay
Logan International Airport
Boston Harbor
Deer Island
Broad Sound
Displayed lines
40 foot President Roads Anchorage
40 foot main ship channel
A
B

Drawn By:

Approved By:

Date: May 7, 2015

NAVD88 MLLW



Elevation*
(feet)

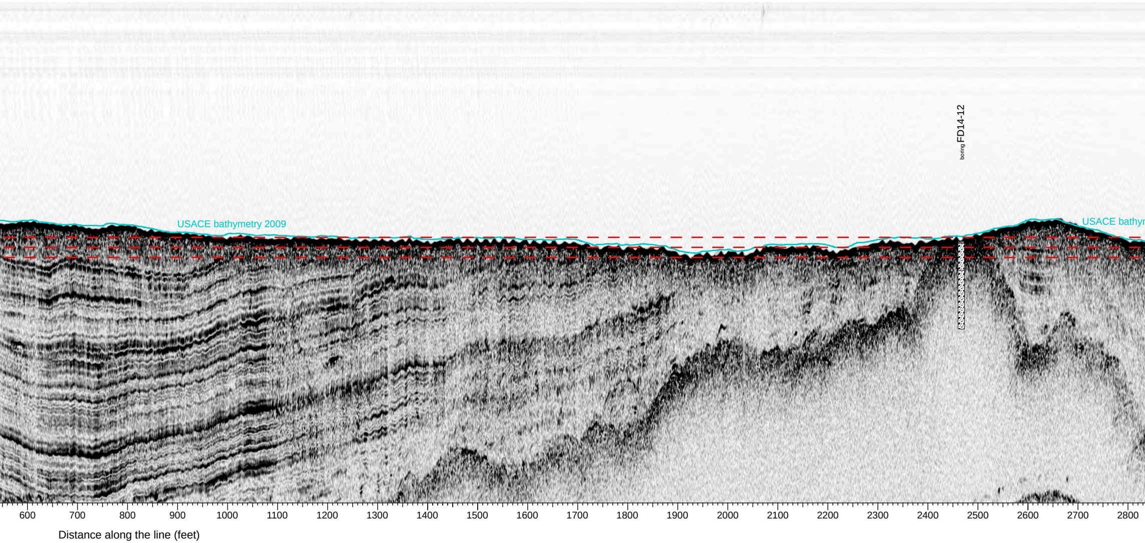
*Note:
Elevation below mudline is approximate. No sediments were sampled. Elevations are from modeled seismic velocities for suspected sediments in the area.

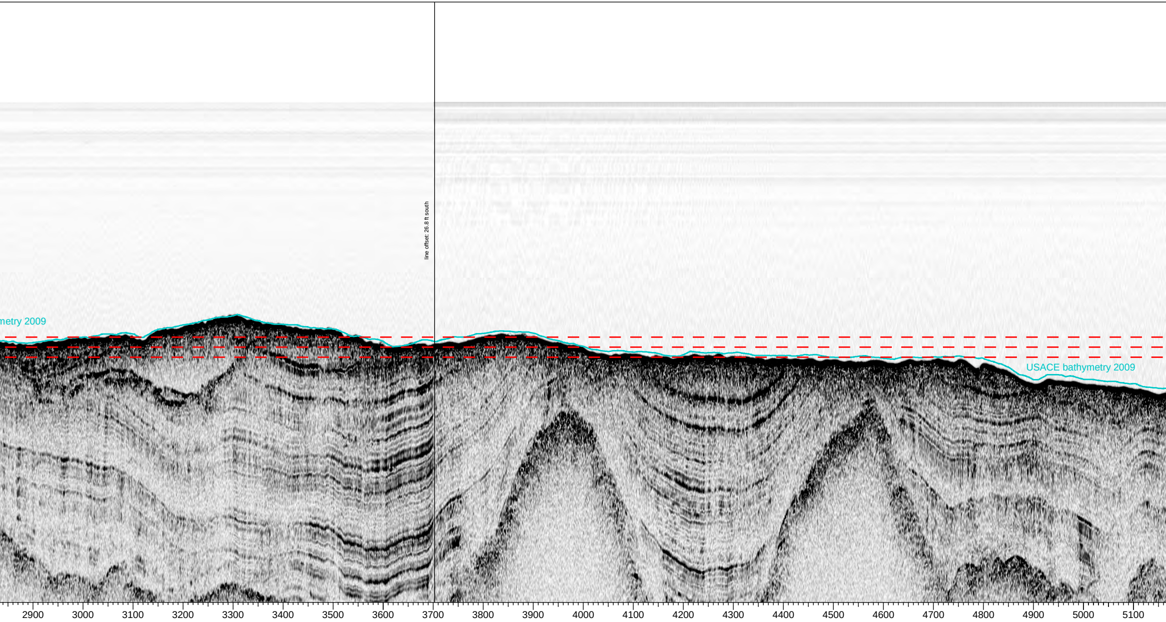
10x
vertical
exaggeration

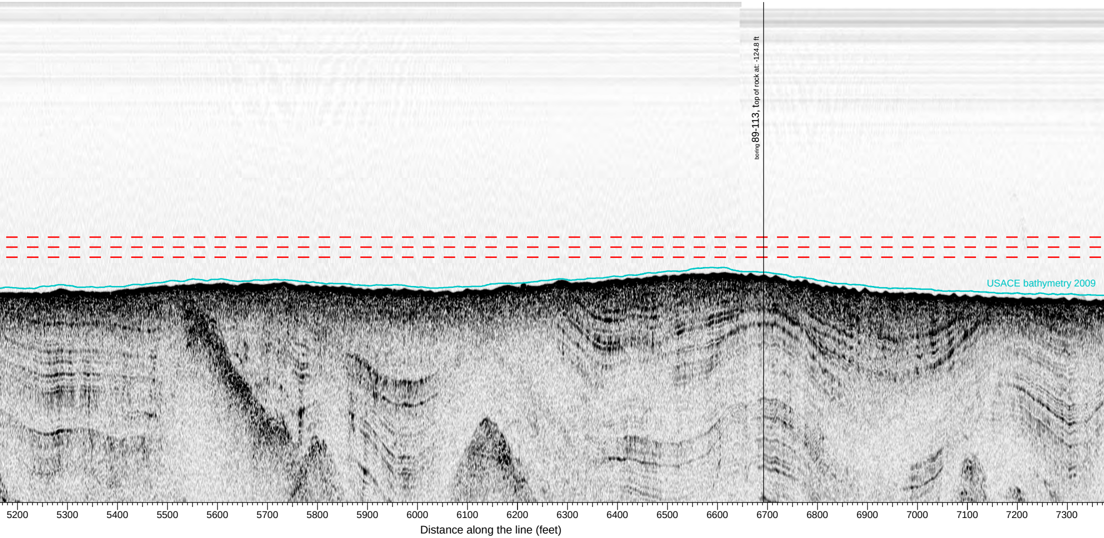
KEY

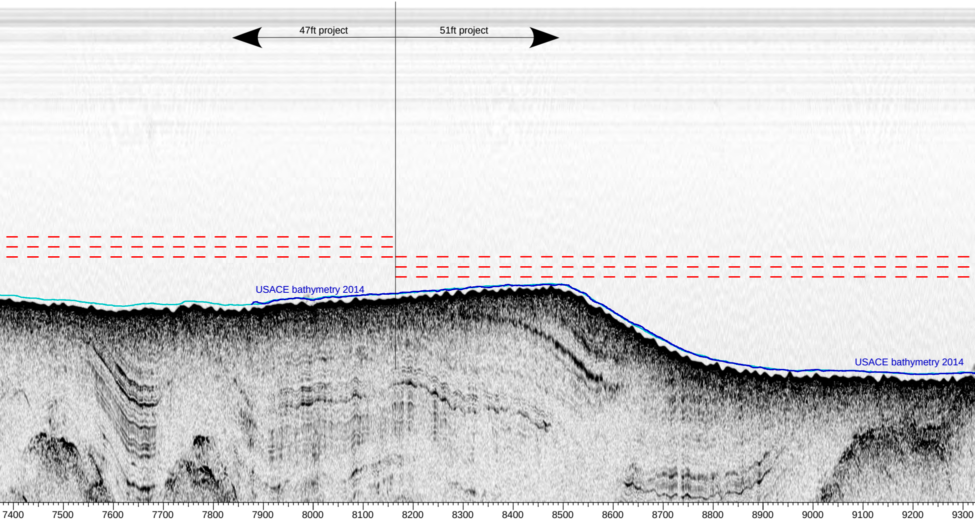
🟥	Improvement Dredge Depth	🟦	USACE bathymetry 2014
🟪	Bottom of Black Silt	🟦	USACE bathymetry 2012
🟧	Top of Pleistocene	🟦	USACE bathymetry 2009
🟫	Top of Till and Rock		
🟧	Top of Rock (Cambridge Argillite)		

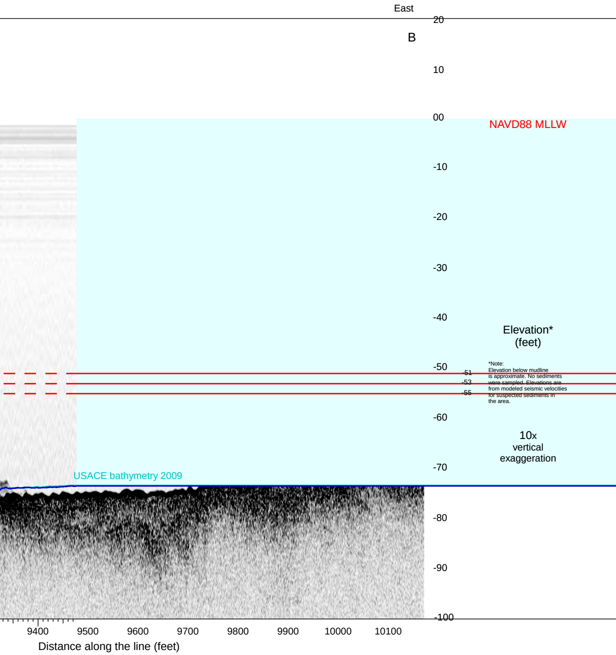
053000 (right)











*Note:
Elevation below mudline is approximate. No sediments were sampled. Elevations are from modeled seismic velocities for suspected sediments in the area.

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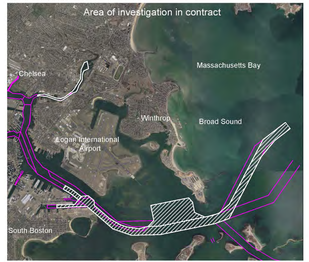
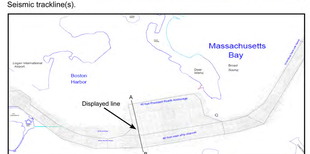
Plate 22: President Roads Anchorage seismic cross section, line 20141205_058000

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts



Seismic trackline(s).



Drawn By:

Approved By:

Date: May 7, 2015

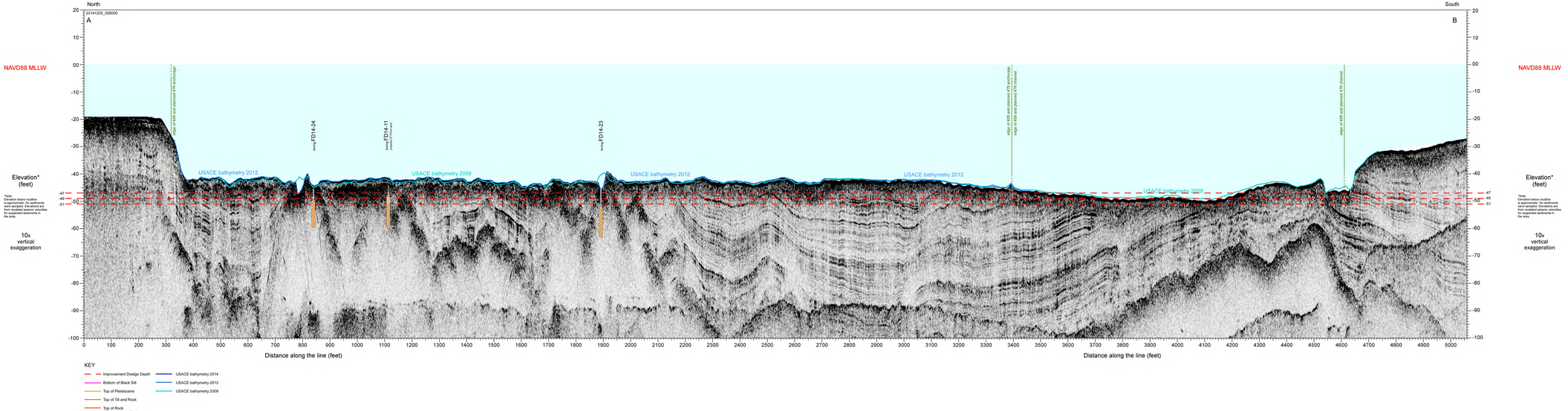


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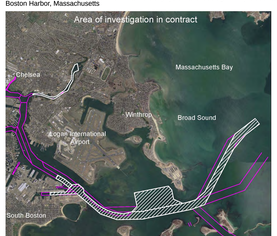
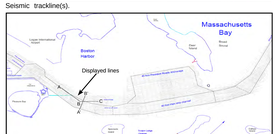
Plate 28: Main Ship Channel in Reserved Channel Area seismic cross sections

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts



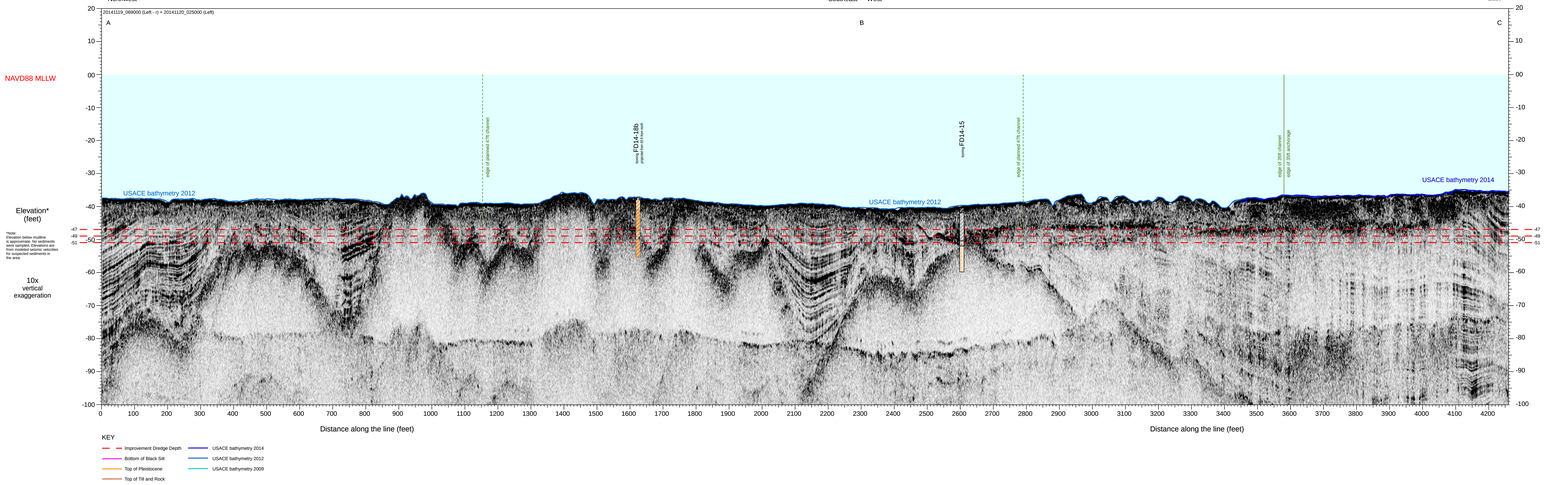
Seismic trackline(s).



Drawn By:

Approved By:

Date: May 7, 2015



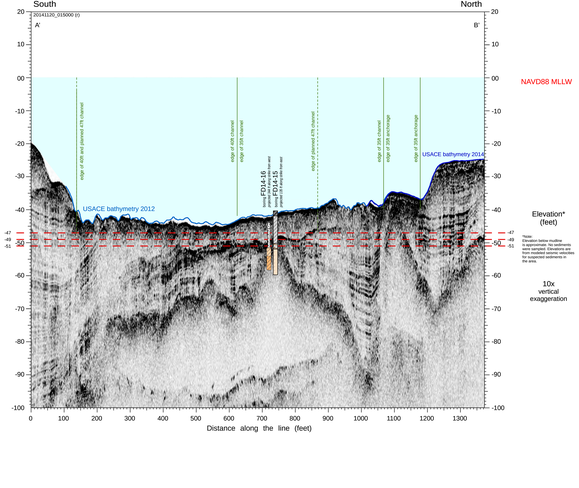


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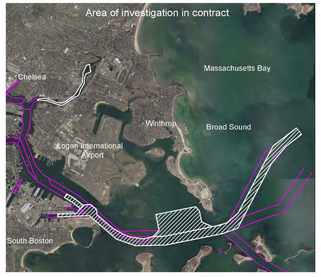
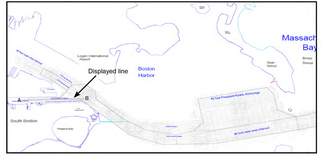
Plate 29: Reserved Channel seismic cross section, line 20141210_011000

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts



Seismic trackline(s).



Drawn By:

Approved By:

Date: May 7, 2015

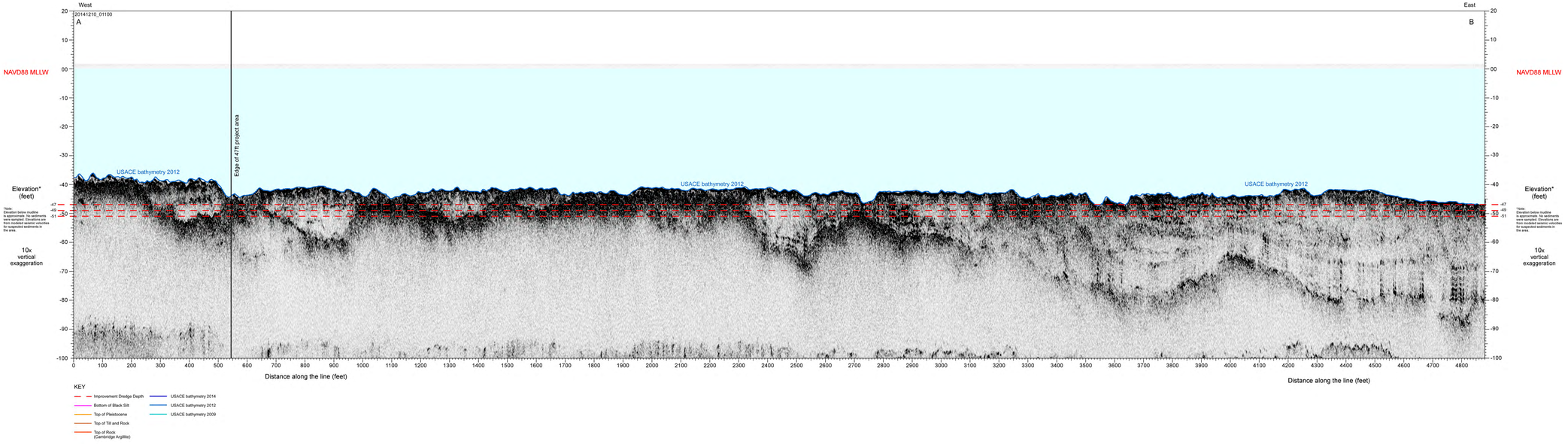


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Plate 30: Main Ship Channel at Massport Maritime Terminal seismic cross sections

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts

Seismic trackline(s).

Drawn By:

Approved By:

Date: May 7, 2015

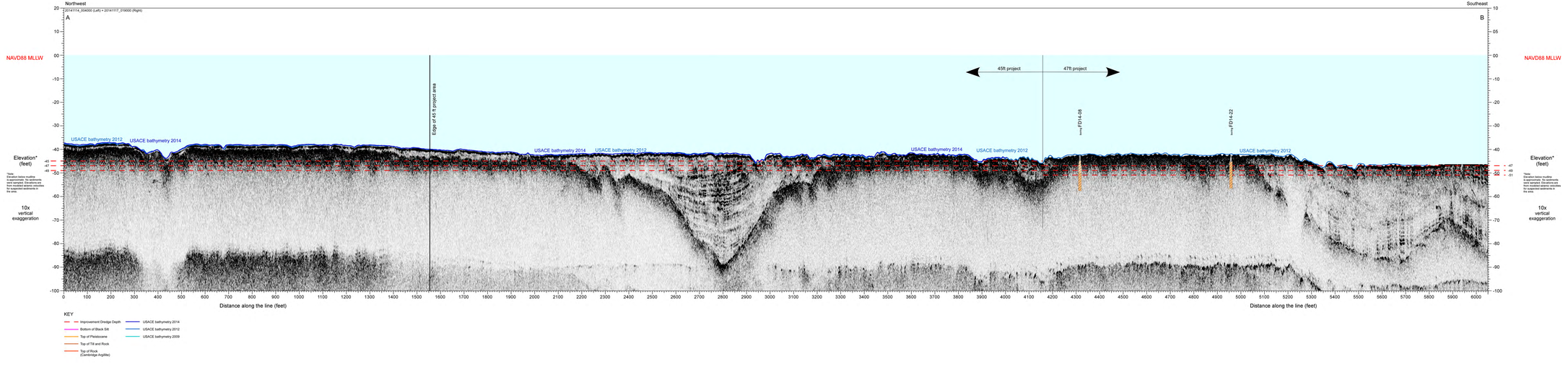

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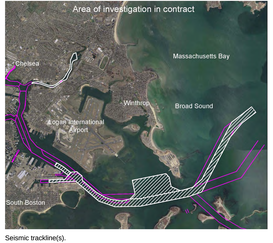
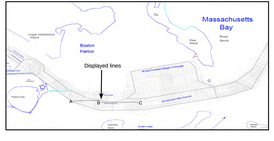
Plate : Seismic cross sections

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts



Seismic trackline(s).



Drawn By:

Approved By:

Date: January 13, 2015

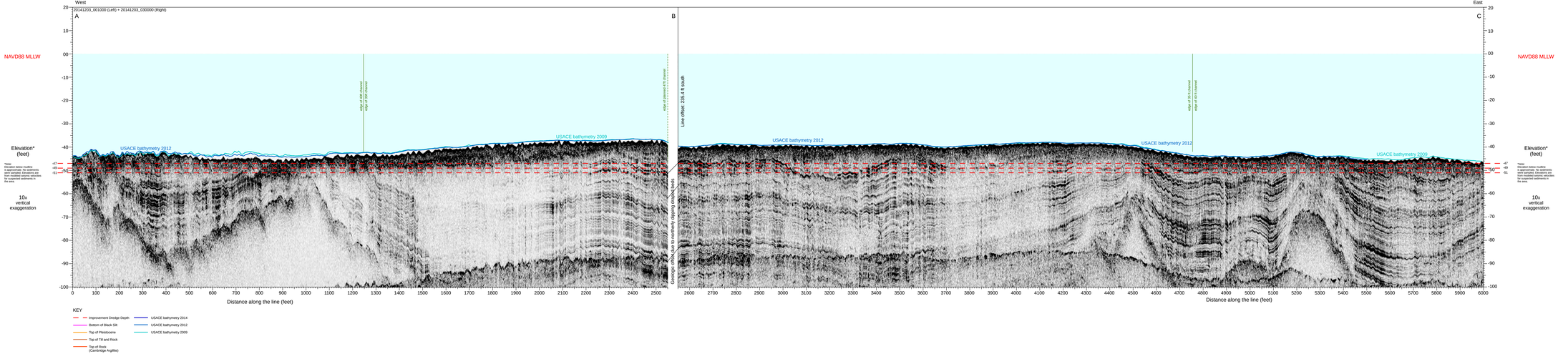


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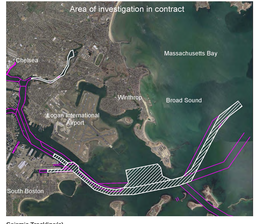
Plate : Seismic cross sections

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts



Seismic Trackline(s).

Drawn By:

Approved By:

Date: January 13, 2015

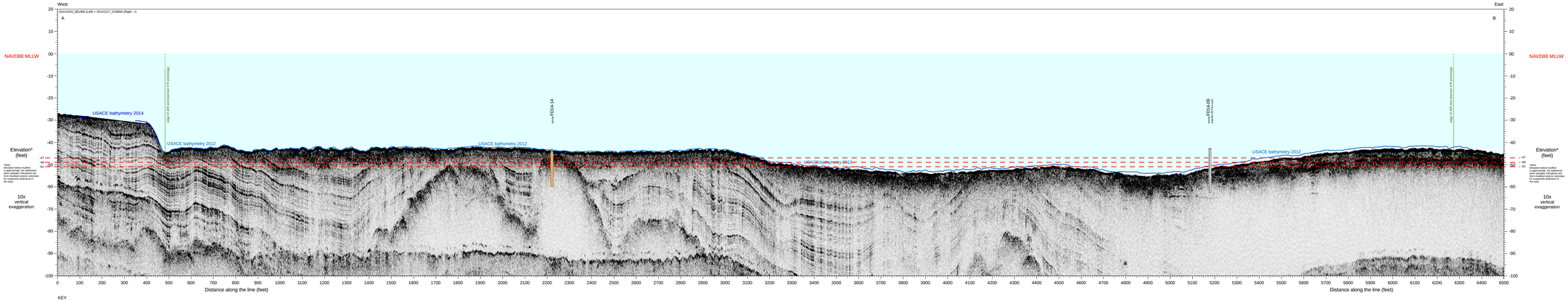


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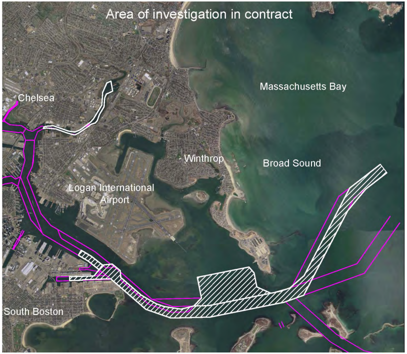
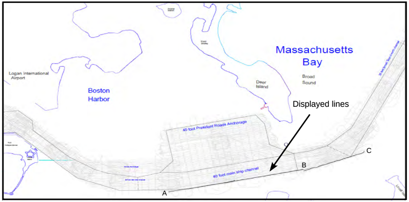
Plate : Seismic cross sections

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts


Area of investigation in contract
Massachusetts Bay
Chelsea
Winthrop
Broad Sound
Logan International Airport
South Boston

Seismic trackline(s).


Massachusetts Bay
Logan International Airport
Boston Harbor
Deer Island
Broad Sound
Displayed lines
40 foot President Roads Anchorage
40 foot main ship channel
A
B
C

Drawn By:

Approved By:

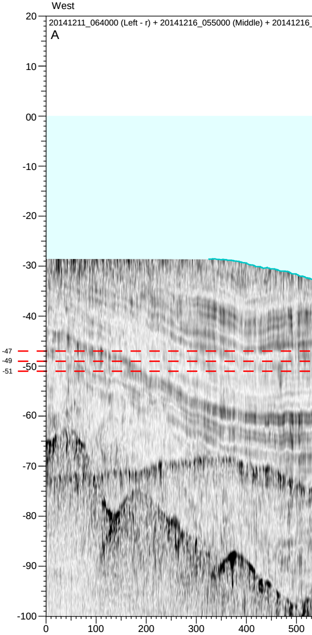
Date: January 13, 2015

NAVD88 MLLW

Elevation*
(feet)

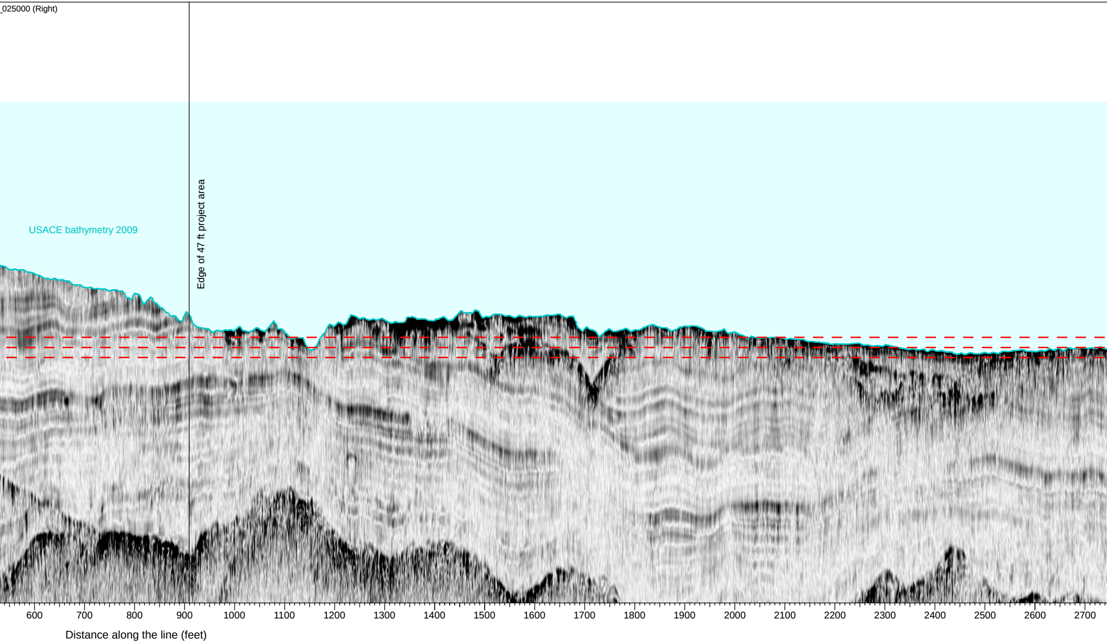
*Note:
Elevation below mudline is approximate. No sediments were sampled. Elevations are from modeled seismic velocities for suspected sediments in the area.

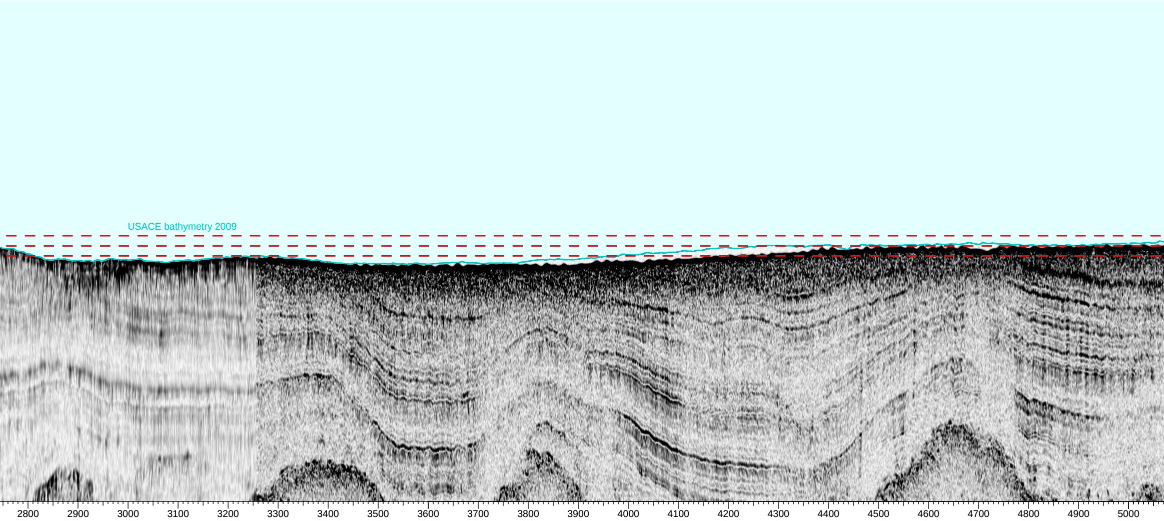
10x
vertical
exaggeration

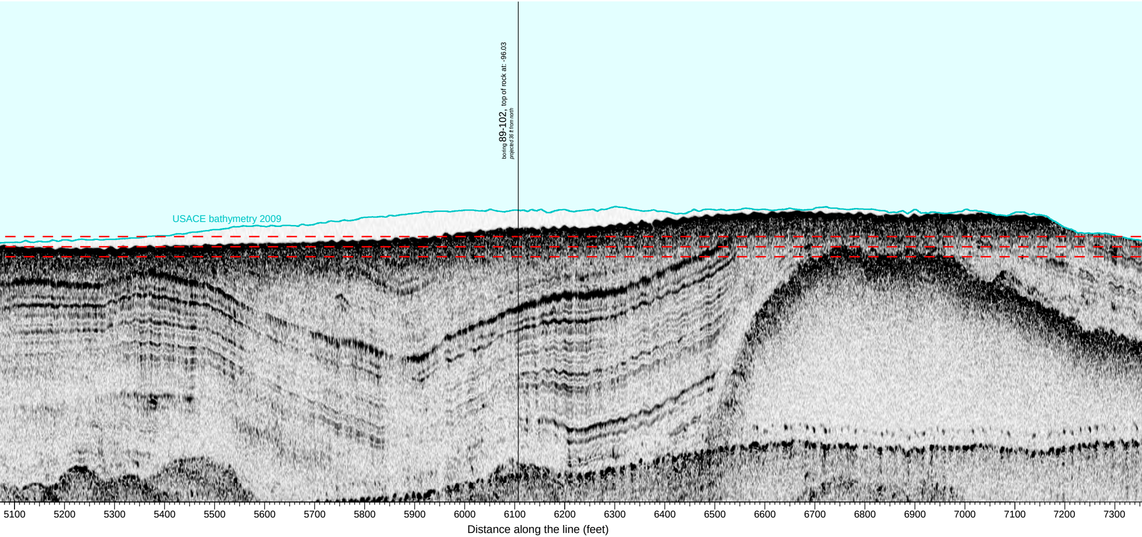


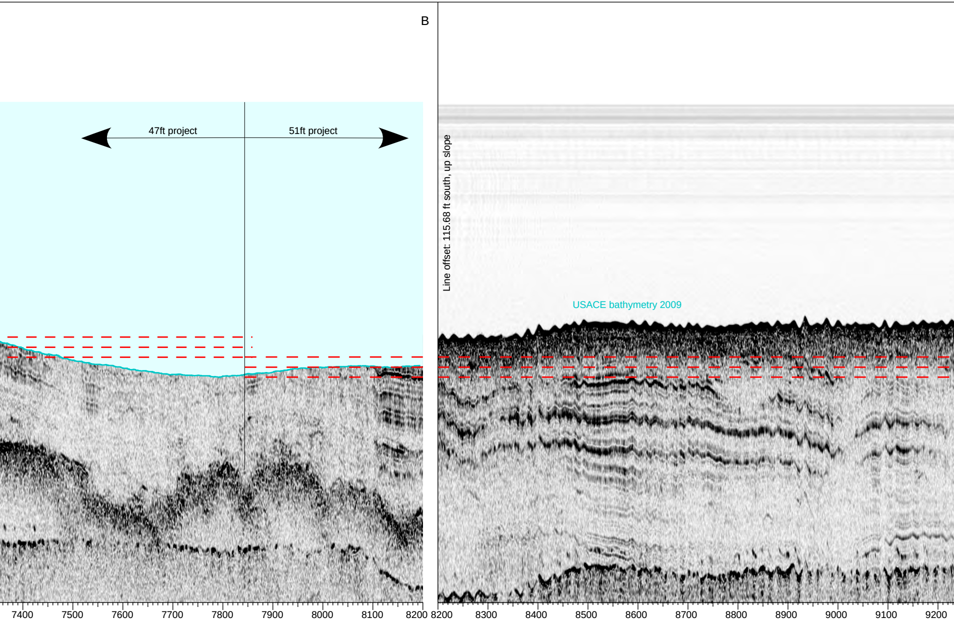
KEY

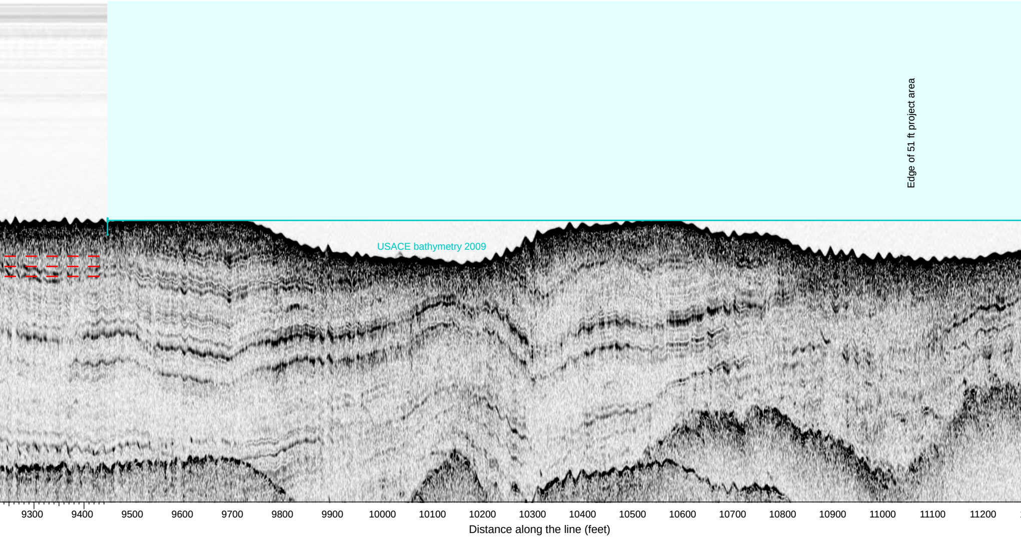
— —	Improvement Dredge Depth	—	USACE bathymetry 2014
—	Bottom of Black Silt	—	USACE bathymetry 2012
—	Top of Pleistocene	—	USACE bathymetry 2009
—	Top of Till and Rock		
—	Top of Rock (Cambridge Argillite)		

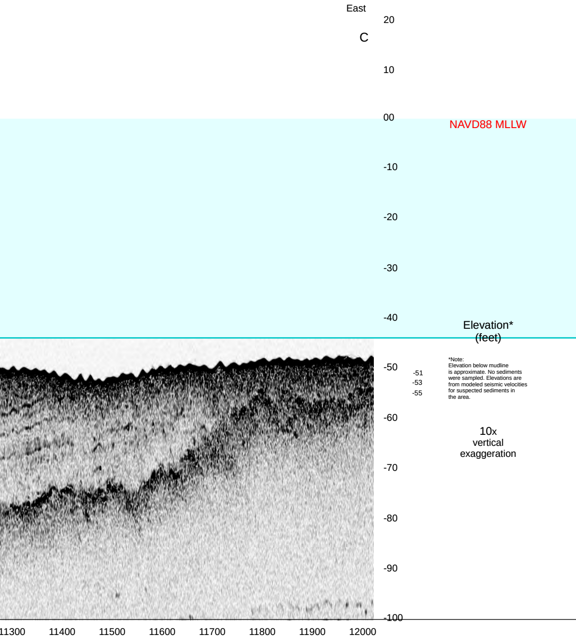












*Note:
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Plate : Seismic cross sections

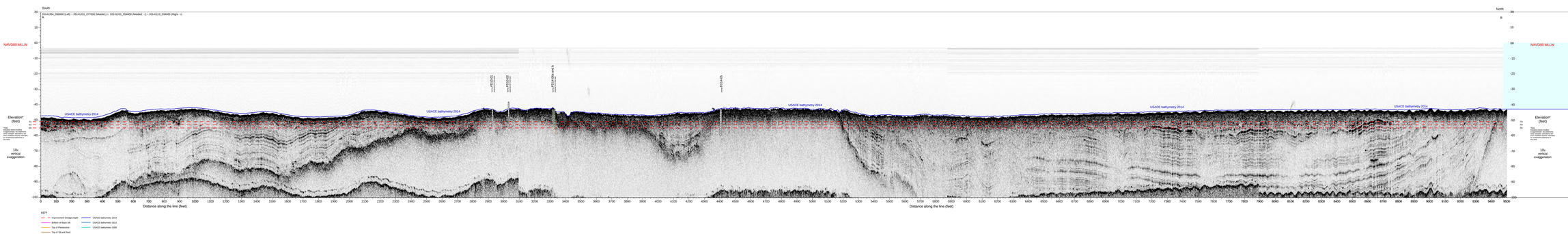
Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts

Seismic trackline(s):

Drawn By:

Approved By:

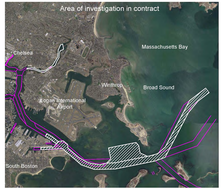
Date: January 13, 2015



GZ Sciences | Earthworks, LLC

Plate : Seismic cross sections

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts



Seismic trackline(s).

Drawn By:

Approved By:

Date: January 13, 2015

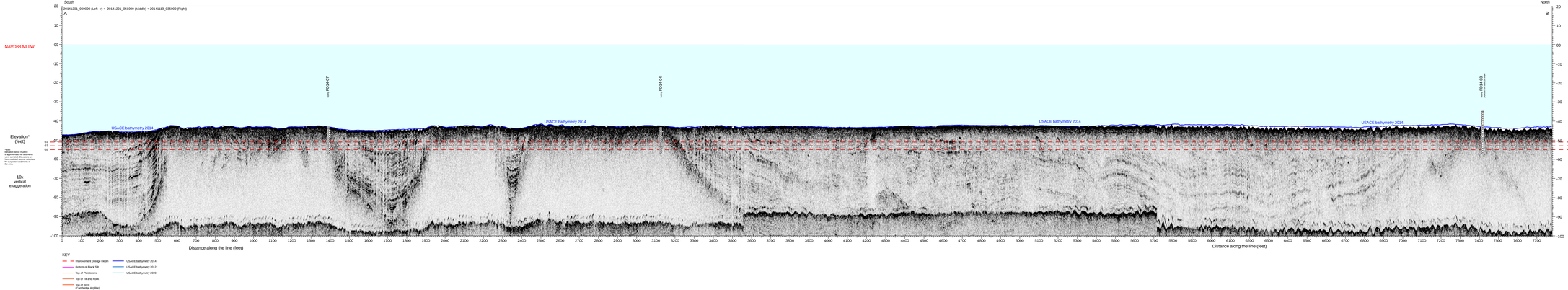


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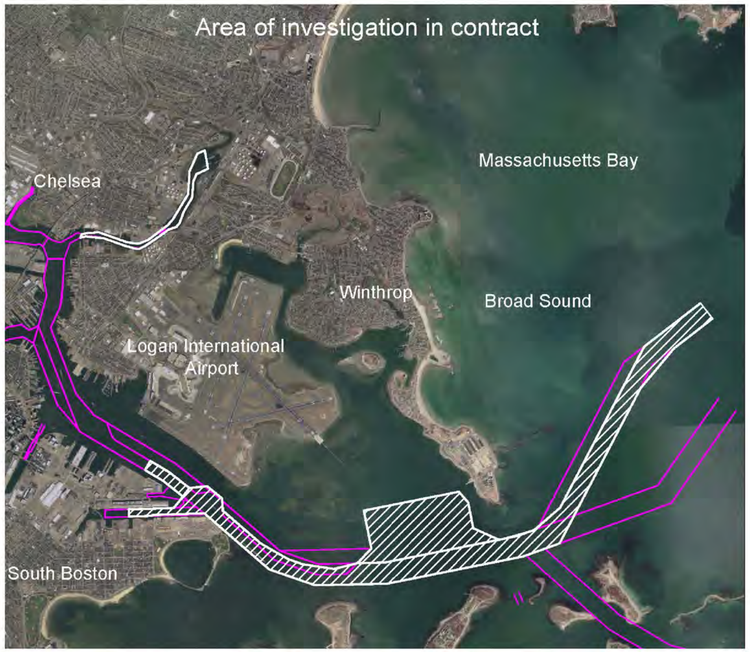
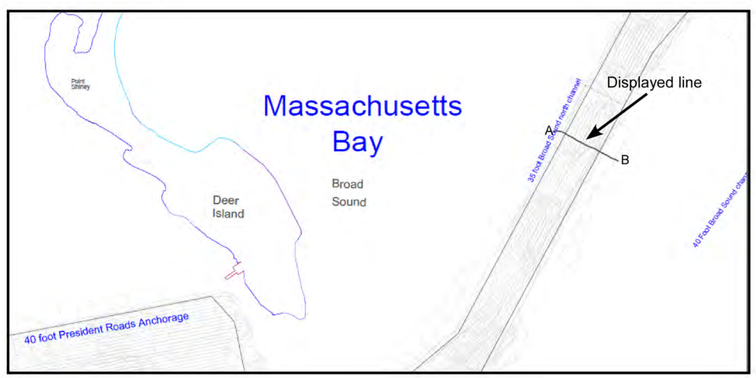
Plate : Seismic cross sections

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts



Seismic trackline(s).



Drawn By:

Approved By:

Date: January 13, 2015

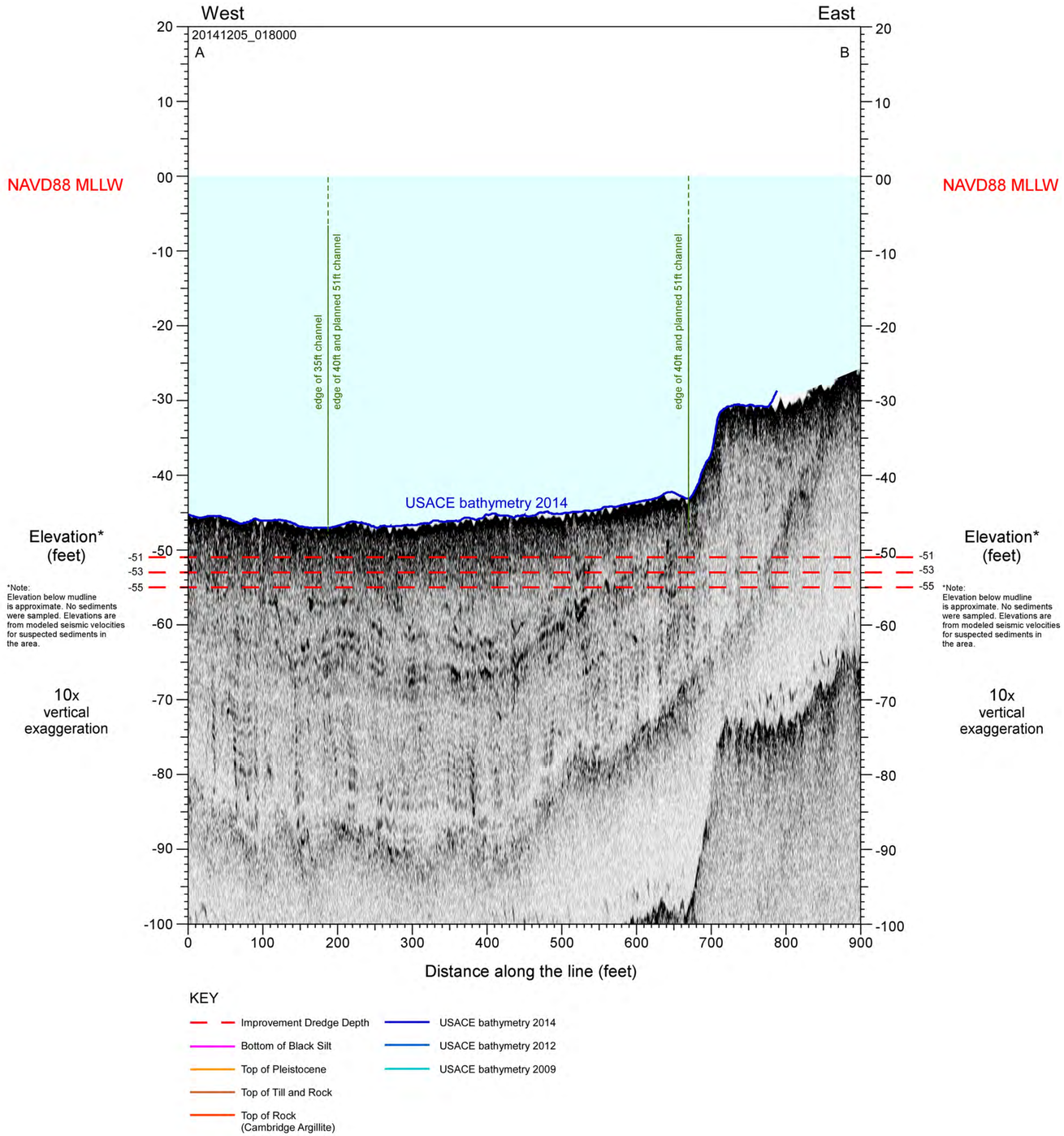


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Plate : Seismic cross sections

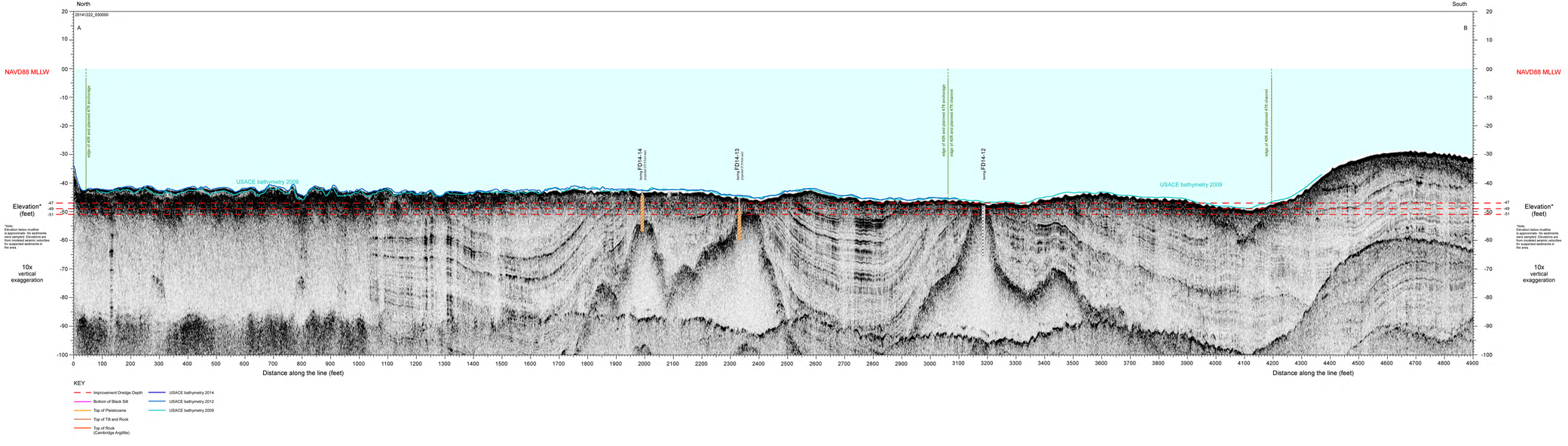
Contract number: W912DS-12-D-0002, Task Order #DB01, Boston Harbor Geophysical and Geotechnical Investigation.

Seismic trackline(s).

Drawn By:

Approved By:

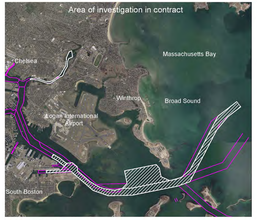
Date: January 13, 2015



GSsciences | Earthworks, LLC

Plate : Seismic cross sections

Contract number: W912DS-12-D-0002, Task Order #DB01, Boston Harbor Geophysical and Geotechnical Investigation



Seismic trackline(s).

Drawn By:

Approved By:

Date: January 13, 2015

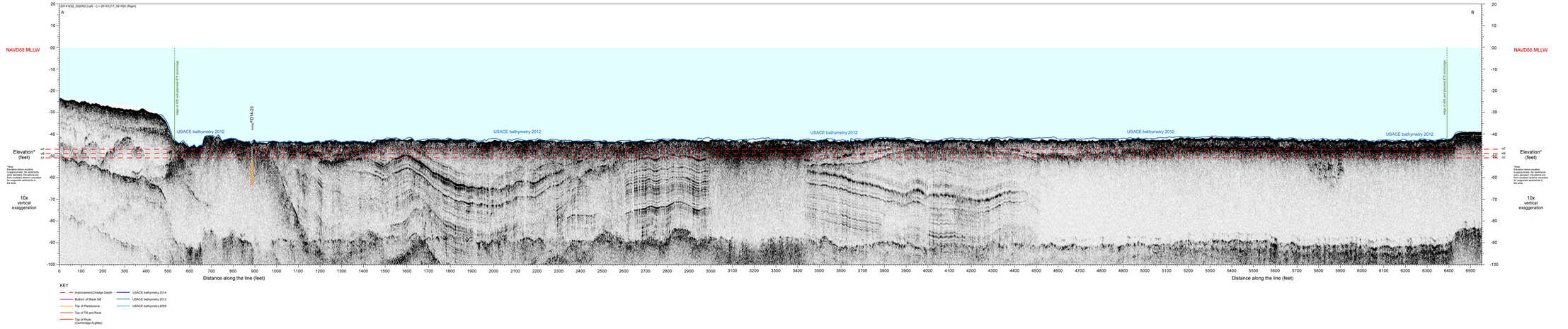


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Plate : Seismic cross sections

Contract number: W912DS-12-D-0002, Task Order #DB01, Boston Harbor Geophysical and Geotechnical Investigation.

Seismic trackline(s).

Drawn By:

Approved By:

Date: January 13, 2015

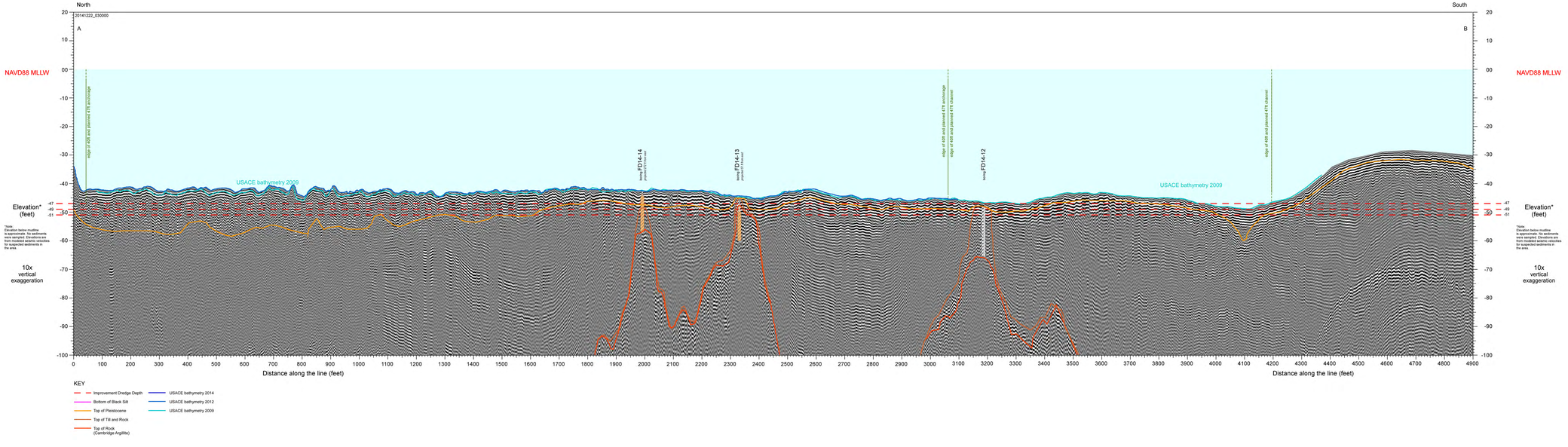

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Plate : Seismic cross sections

Contract number: W912DS-12-D-0002, Task Order #DB01, Boston Harbor Geophysical and Geotechnical Investigation.

Seismic trackline(s).

Drawn By:

Approved By:

Date: January 13, 2015

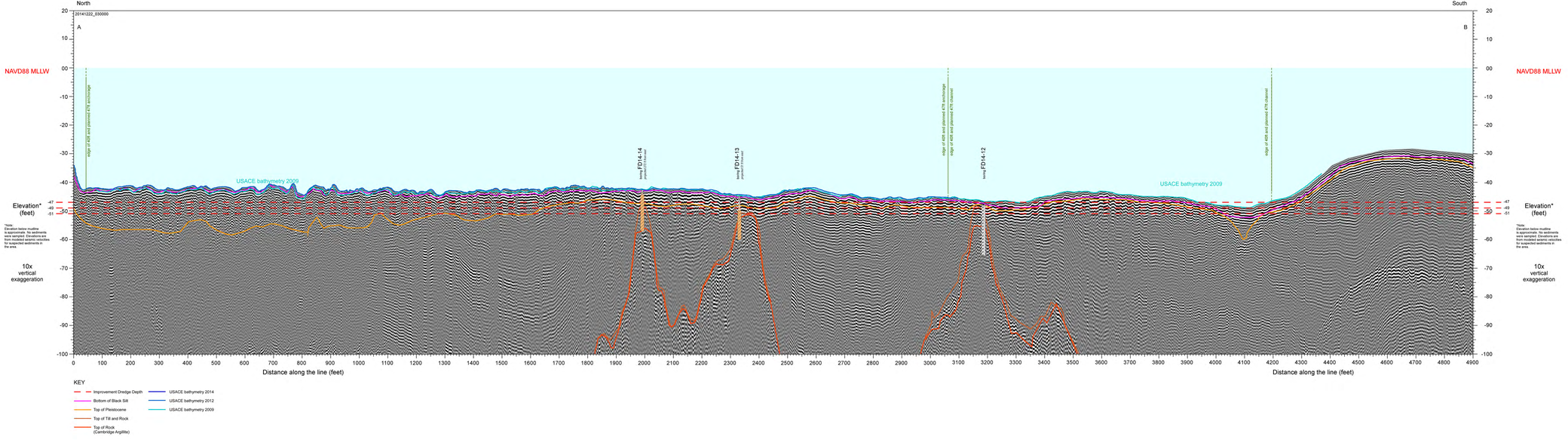

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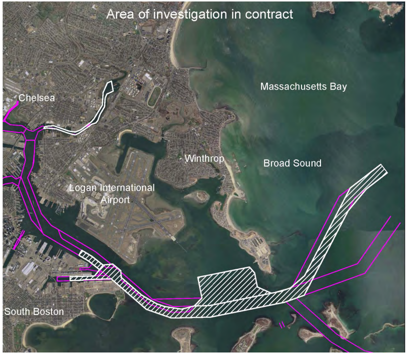
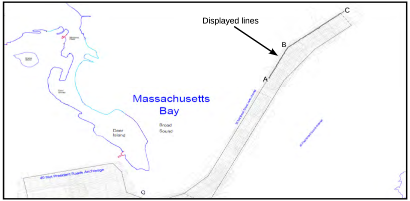
Plate 14 : North Channel seismic cross sections

NAVD88 MLLW

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts


Area of investigation in contract
Chelsea
Massachusetts Bay
Winthrop
Broad Sound
Logan International Airport
South Boston

Seismic trackline(s).


Displayed lines
A
B
C
Massachusetts Bay
Broad Sound
Deer Island
40 foot President Roads Anchorage
35 foot Broad Sound north channel
40 Foot Broad Sound channel

Drawn By:

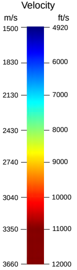
Approved By:

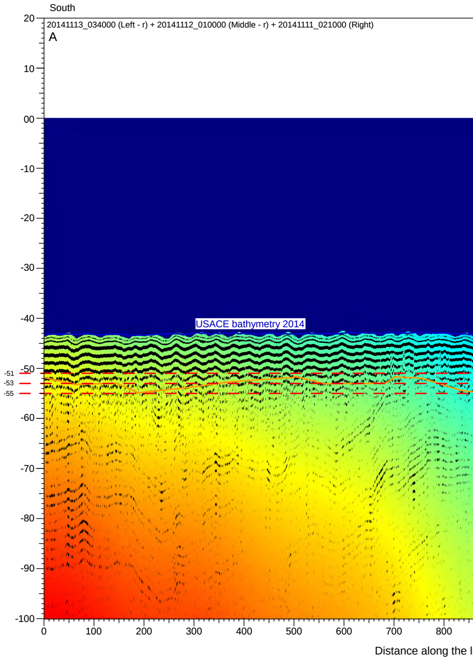
Date: May 6, 2015

Elevation*
(feet)

*Note:
Elevation below mudline is approximate. No sediments were sampled. Elevations are from modeled seismic velocities for suspected sediments in the area.

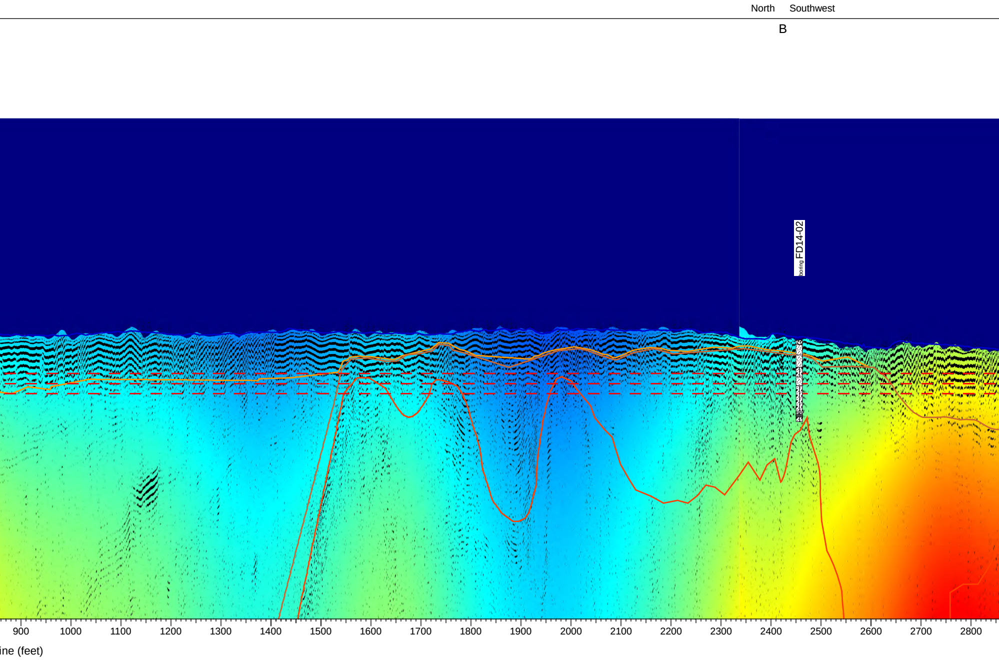
10x
vertical
exaggeration

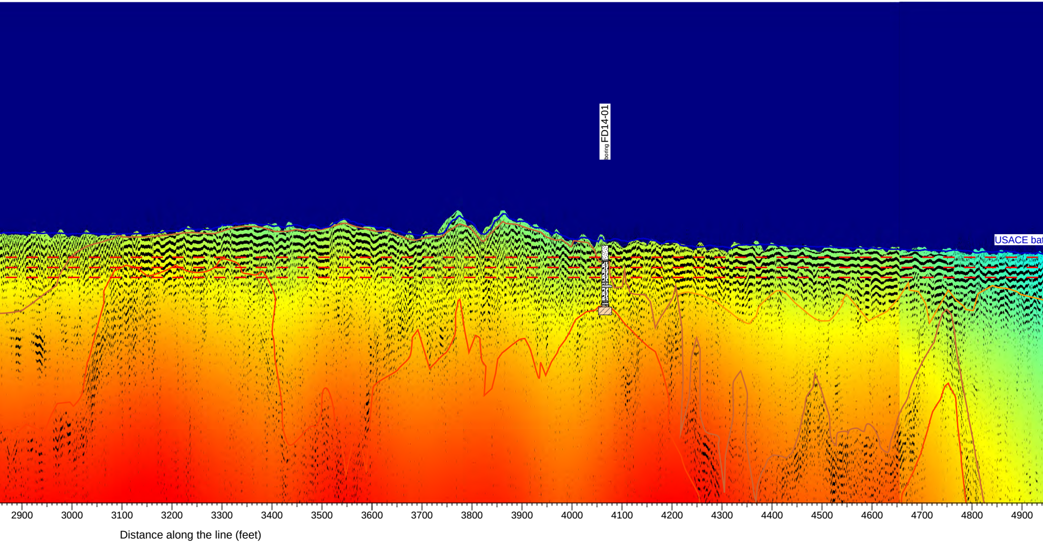


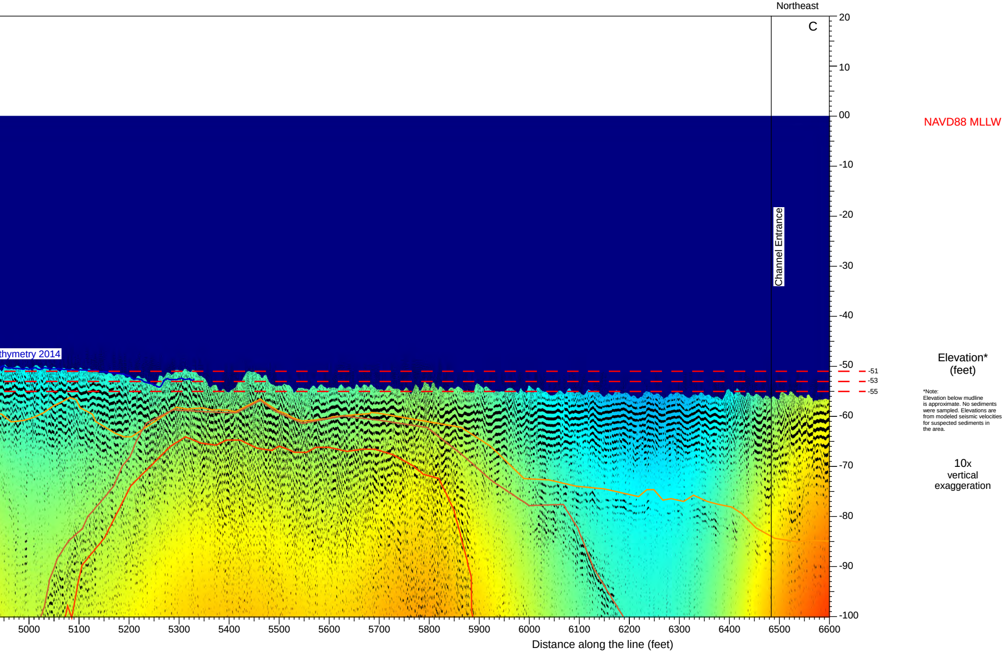


KEY

- Improvement Dredge Depth
- Bottom of Black Silt
- Top of Pleistocene
- Top of Till and Rock
- Top of Rock (Cambridge Argillite)
- USACE bathymetry 2014
- USACE bathymetry 2012
- USACE bathymetry 2009







*Note:
Elevation below mudline
is approximate. No sediments
were sampled. Elevations are
from modeled seismic velocities
for suspected sediments in
the area.

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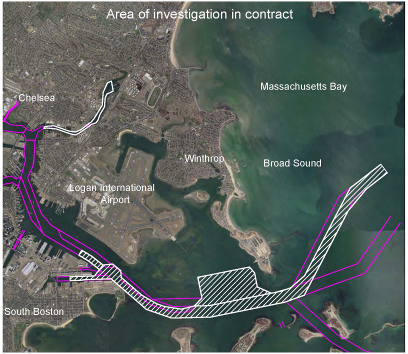
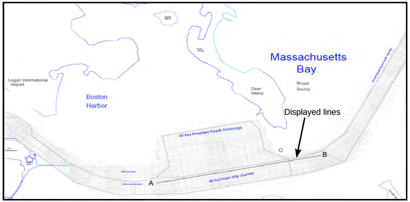
Plate 21: Main Ship Channel in President Roads Anchorage seismic cross sections

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts


Area of investigation in contract
Chelsea
Massachusetts Bay
Winthrop
Broad Sound
Logan International Airport
South Boston

Seismic trackline(s).


Massachusetts Bay
Logan International Airport
Boston Harbor
Deer Island
Broad Sound
Displayed lines
40 foot President Roads Anchorage
40 foot main ship channel
A
B

Drawn By:

Approved By:

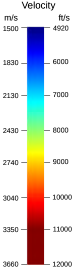
Date: May 7, 2015

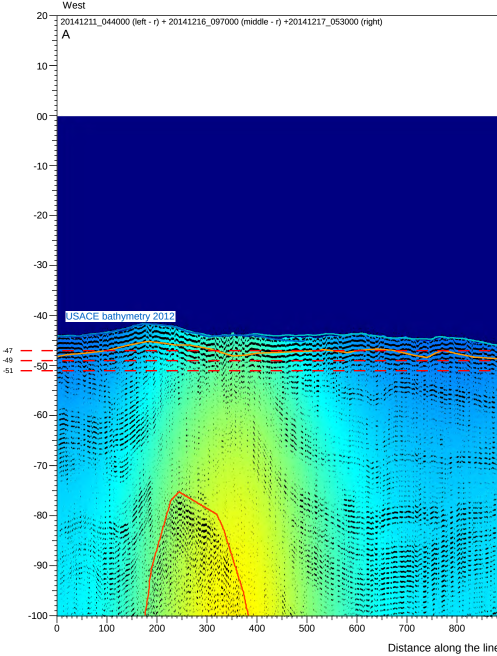
NAVD88 MLLW

Elevation*
(feet)

*Note:
Elevation below mudline is approximate. No sediments were sampled. Elevations are from modeled seismic velocities for suspected sediments in the area.

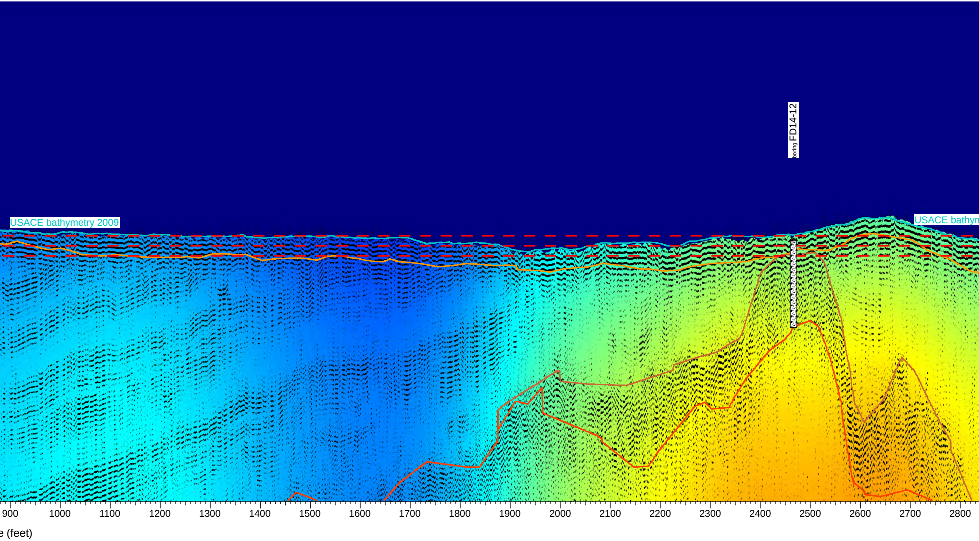
10x
vertical
exaggeration

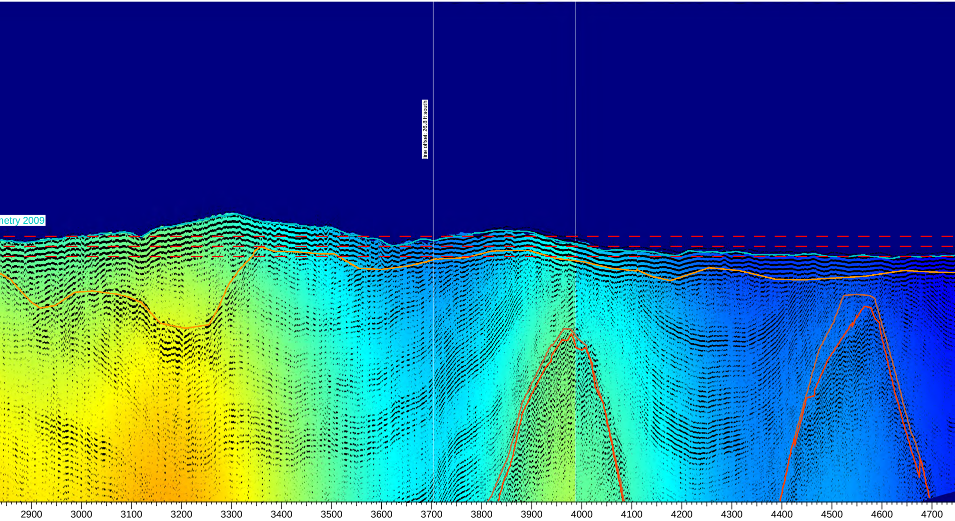


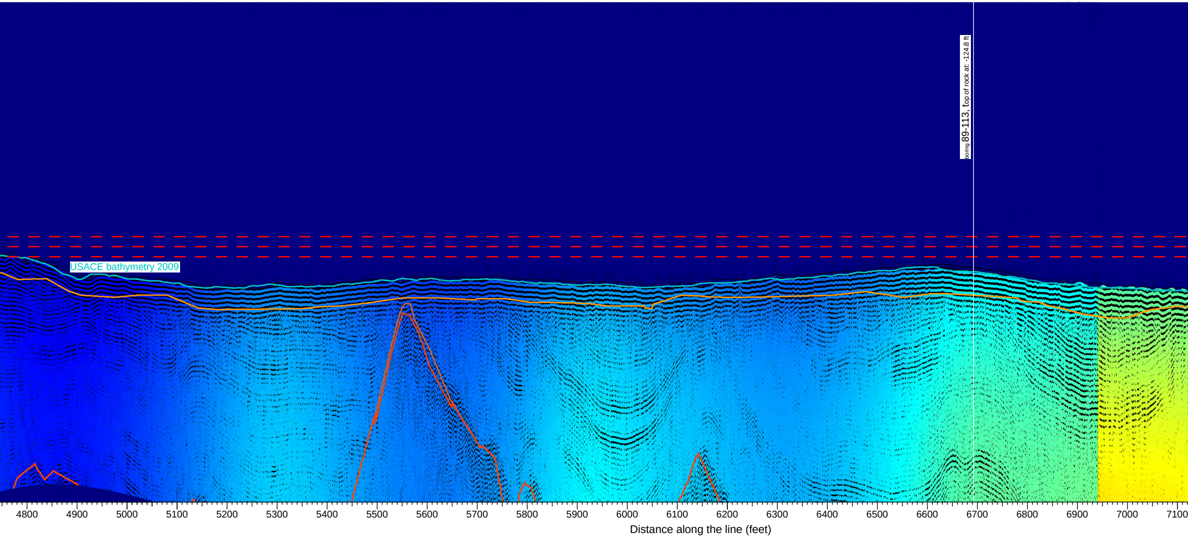


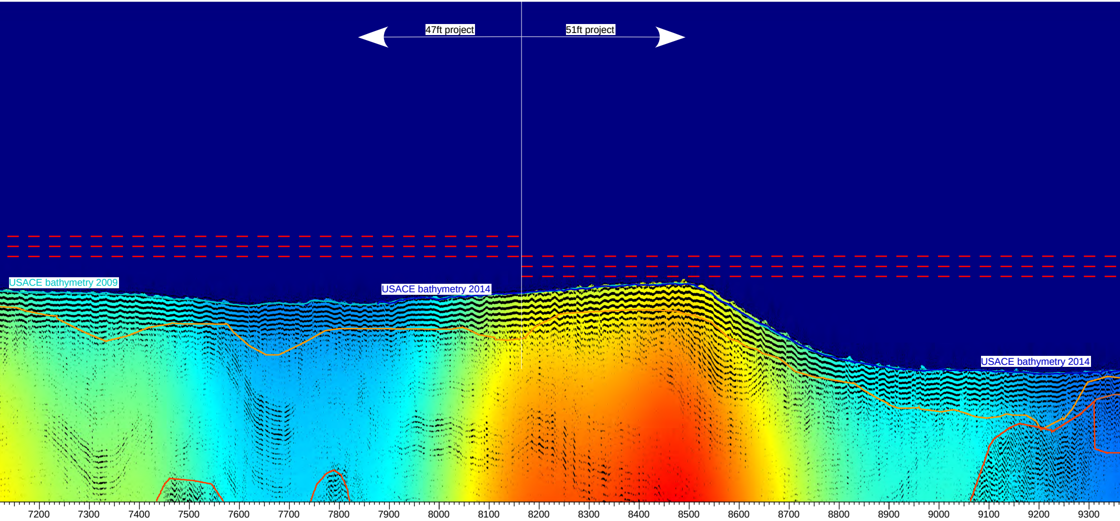
KEY

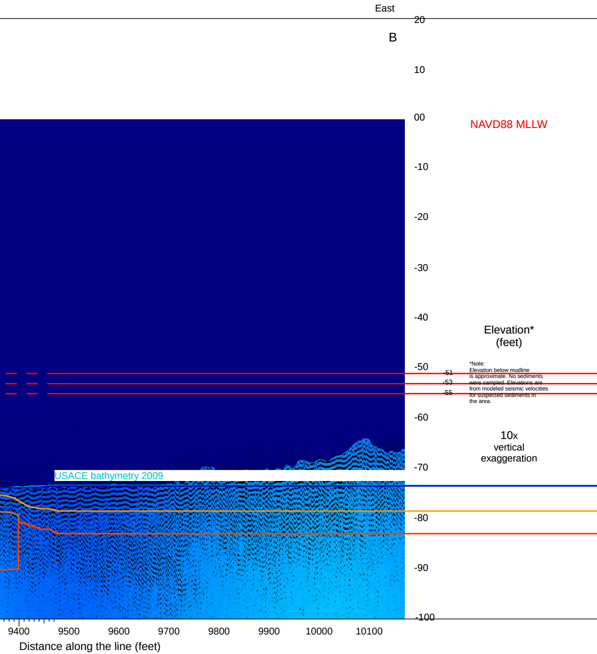
- 🟥 Improvement Dredge Depth
- Bottom of Black Silt
- Top of Pleistocene
- Top of Till and Rock
- Top of Rock (Cambridge Argillite)
- USACE bathymetry 2014
- USACE bathymetry 2012
- USACE bathymetry 2009











*Note:
Elevation below mudline is approximate. No sediments were sampled. Elevations are from modeled seismic velocities for suspected sediments in the area.

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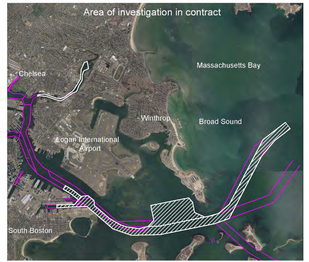
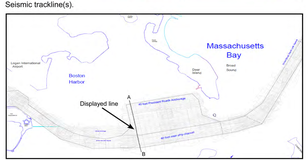
Plate 22: President Roads Anchorage seismic cross section, line 20141205_058000

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts



Seismic trackline(s).



Drawn By:

Approved By:

Date: May 7, 2015

NAVD88 MLLW

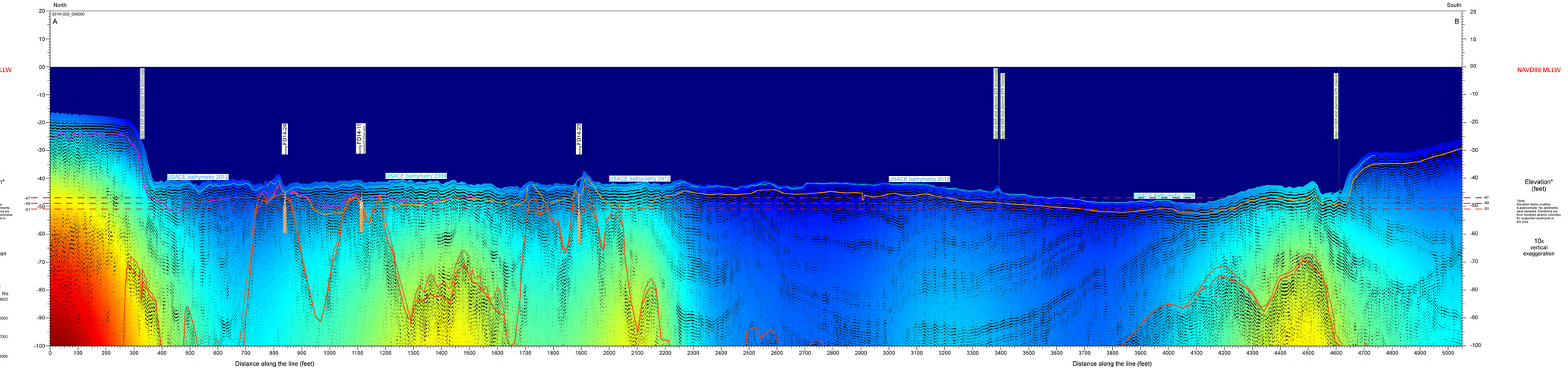
Elevation* (feet)

*Note:
Elevation below mudline is estimated where sediments were sampled. Elevations are from modeled seismic velocities for expected sediments in the area.

10x vertical exaggeration

Velocity

m/s	ft/s
1500	4920
1830	6000
2130	7000
2430	8000
2740	9000
3040	10000
3350	11000
3660	12000



NAVD88 MLLW

Elevation* (feet)

*Note:
Elevation below mudline is estimated where sediments were sampled. Elevations are from modeled seismic velocities for expected sediments in the area.

10x vertical exaggeration

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Plate : Seismic cross sections

Contract number: W912DS-12-D-0002, Task Order #DB01, Boston Harbor Geophysical and Geotechnical Investigation.

Seismic trackline(s).

Drawn By:

Approved By:

Date: January 13, 2015

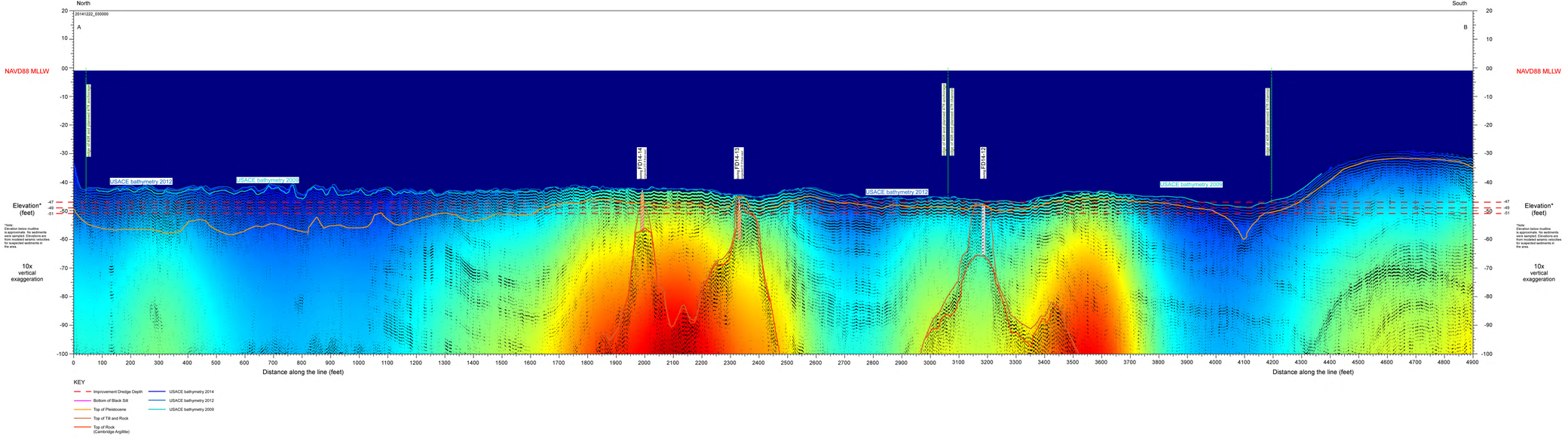

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Plate : Seismic cross sections

Contract number: W912DS-12-D-0002, Task Order #DB01, Boston Harbor Geophysical and Geotechnical Investigation.

Seismic trackline(s).

Drawn By:

Approved By:

Date: January 13, 2015

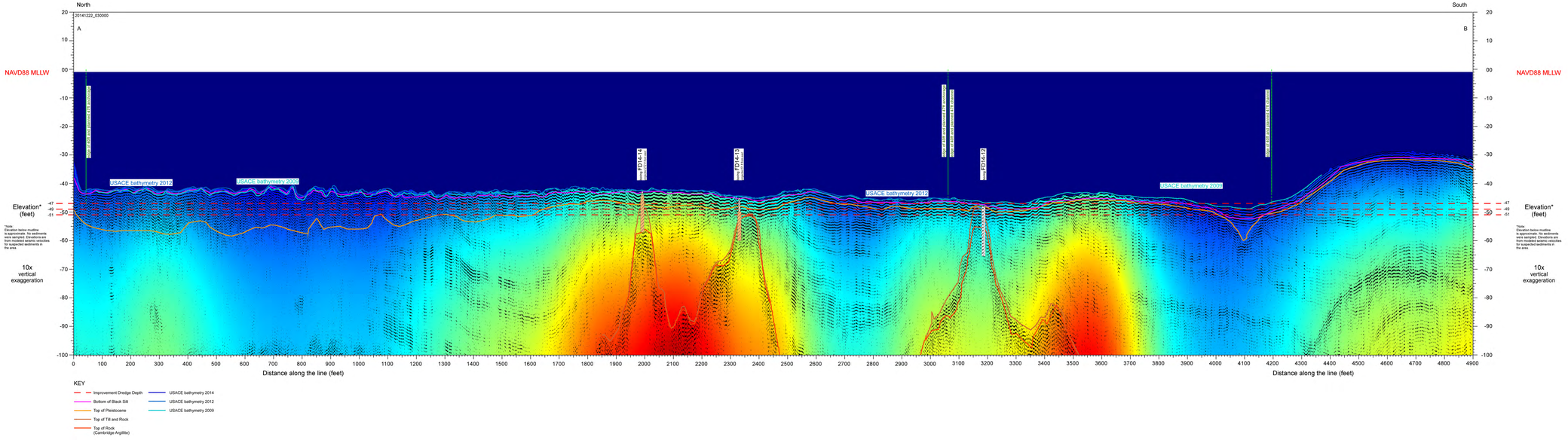

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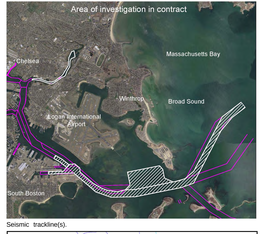
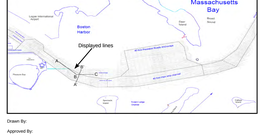
Plate 28: Main Ship Channel in Reserved Channel Area seismic cross sections

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts



Seismic trackline(s).



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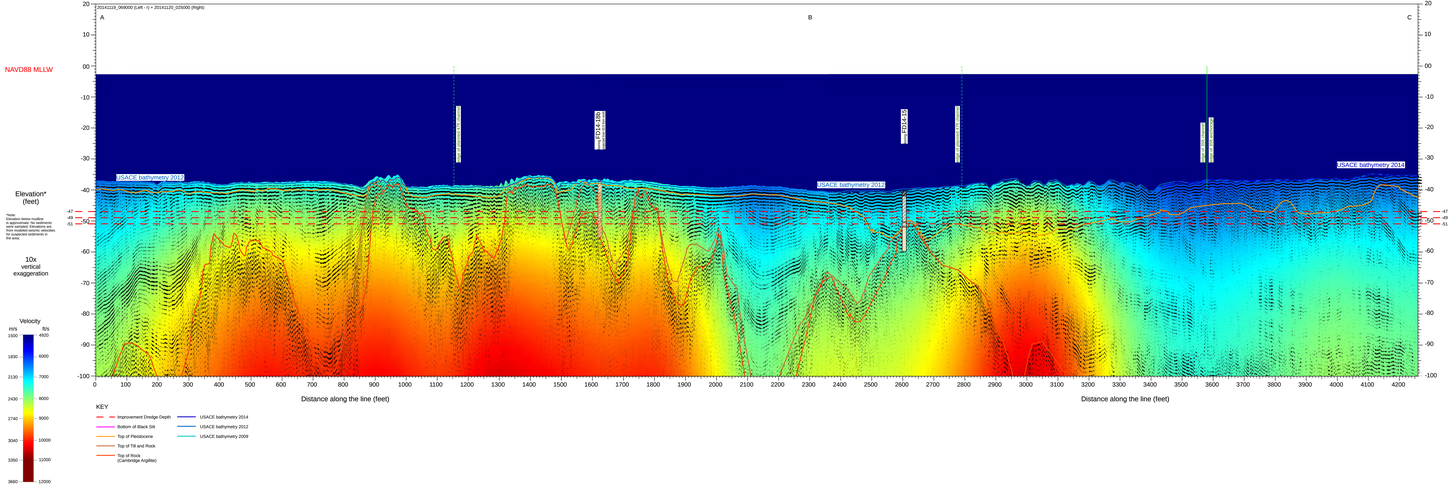
Approved By:

Date: May 6, 2015



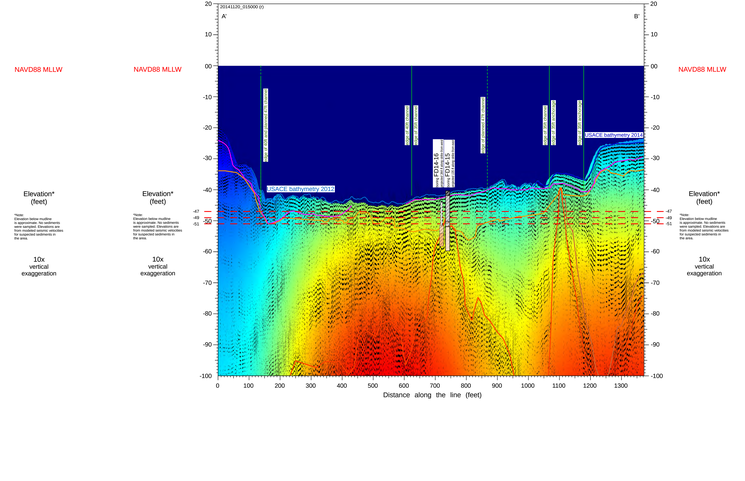


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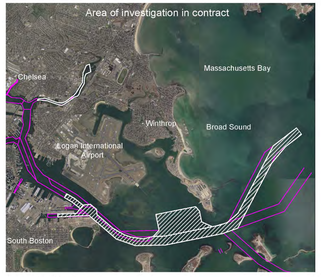
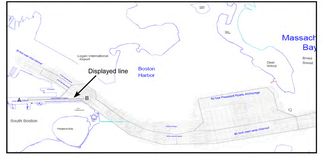
Figure 9X: Reserved Channel velocity cross section, line 20141210_011000

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts



Seismic trackline(s).



Drawn By:

Approved By:

Date: May 6, 2015

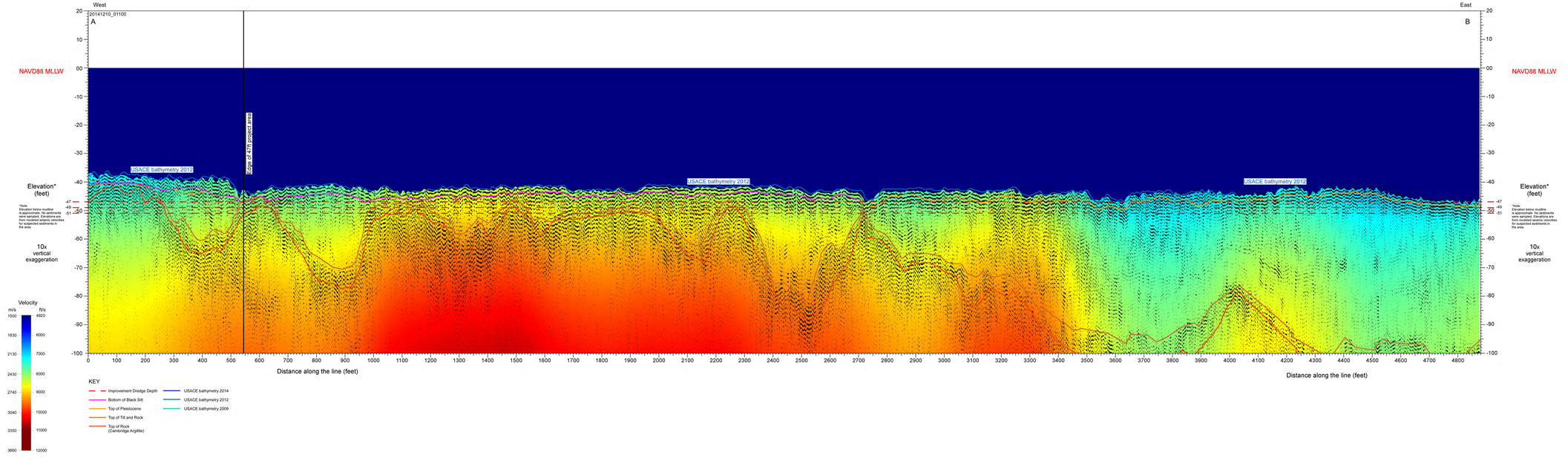


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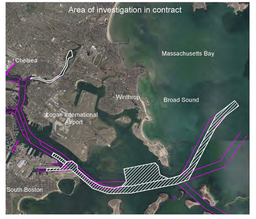
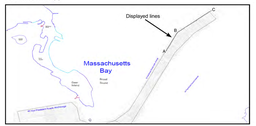
Plate : Seismic cross sections

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts



Seismic trackline(s).



Drawn By:

Approved By:

Date: January 13, 2015

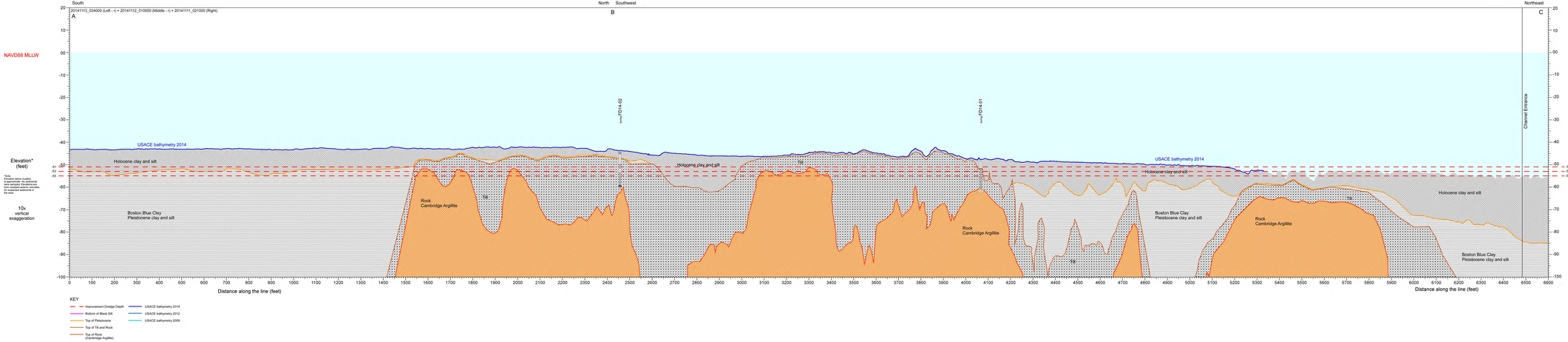


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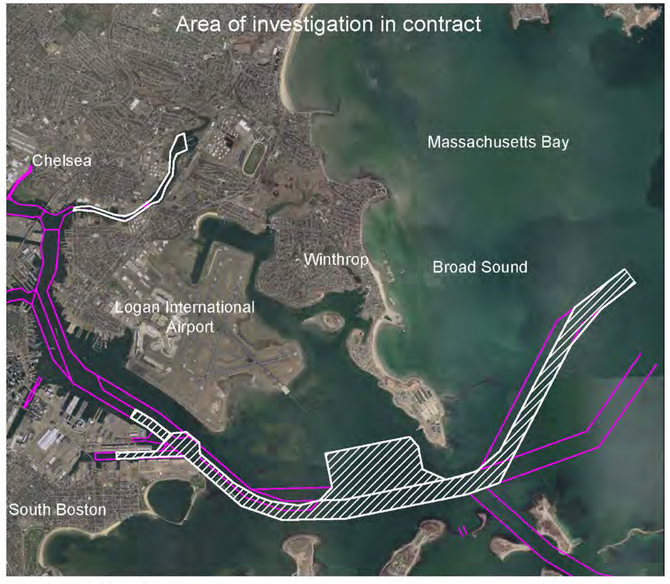
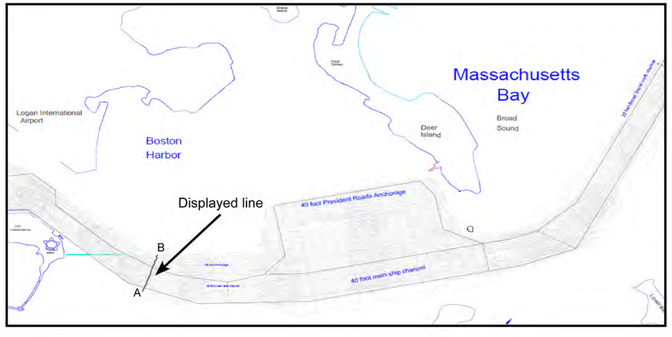
Plate : Seismic cross sections

Contract #W912DS-12-D-0002, DB01: Marine Geophysical and Geological Explorations, Boston Harbor, Massachusetts



Seismic trackline(s).



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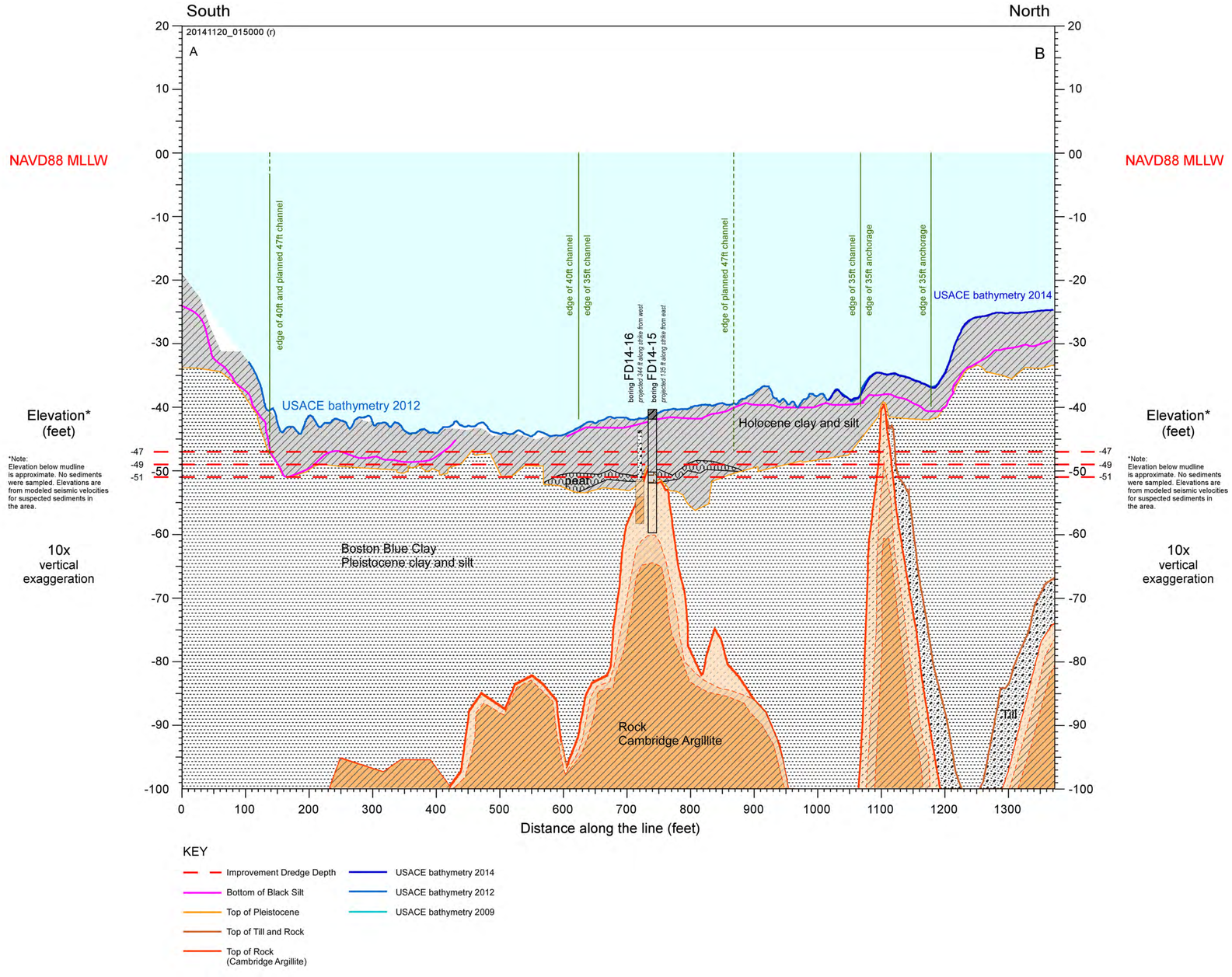
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