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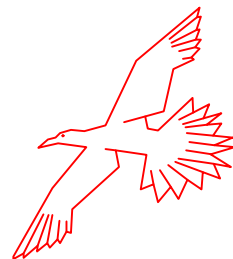
PORT JERSEY SOUTH  
BAYONNE , NEW JERSEY  
CONTRACT No. 410-10-037  
SURVEY No.

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HYDROGRAPHIC SURVEY  
January 15, 2013

PREPARED FOR

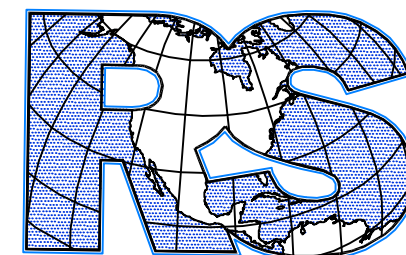
**THE PORT AUTHORITY**  
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- 1. INDEX
- 2. SHEETS 1 – 7



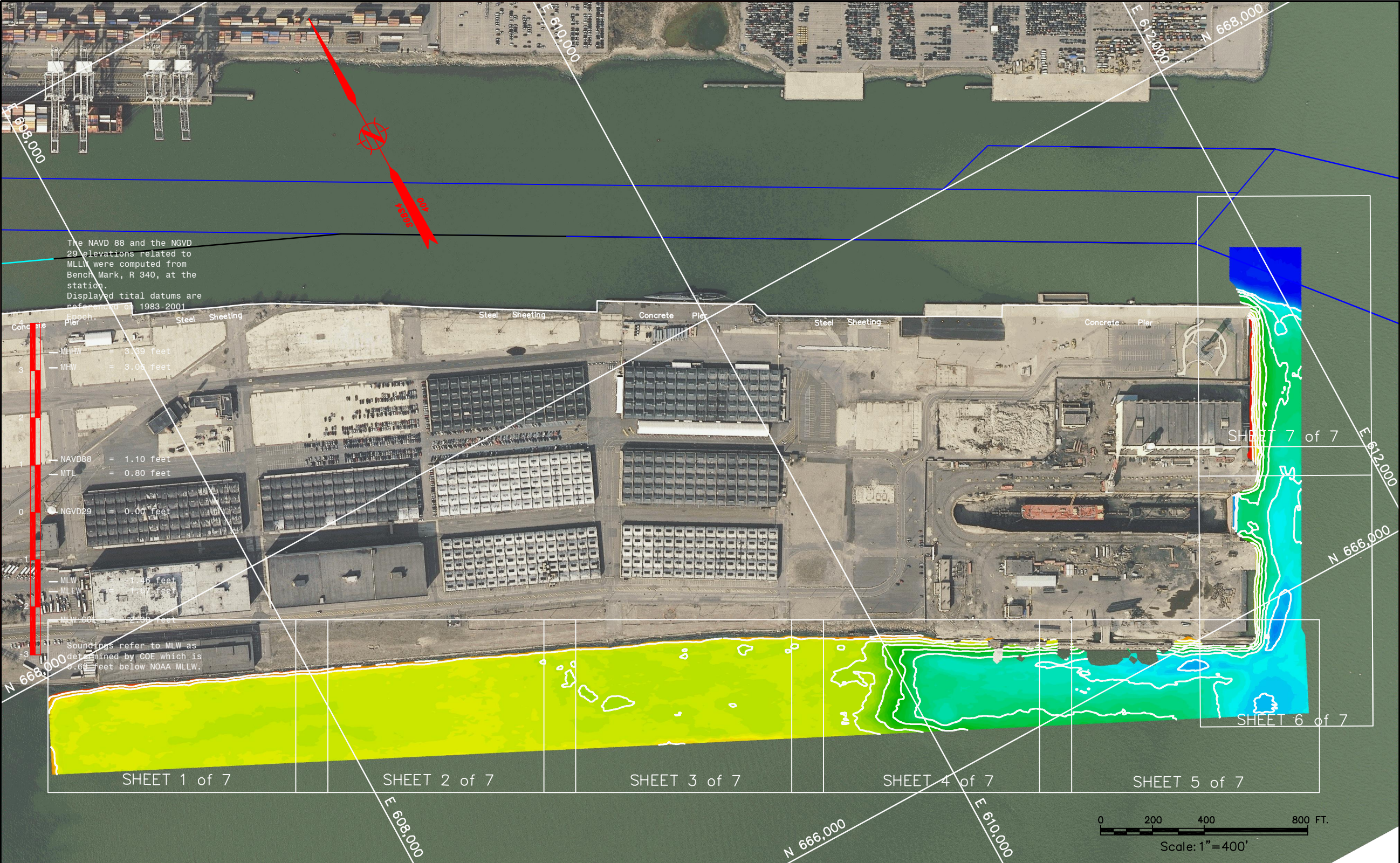
Vicinity Map



ROGERS SURVEYING, PLLC  
1632 Richmond Terrace  
Staten Island, N.Y. 10310  
(718) 447-7311

[www.rogerssurveying.net](http://www.rogerssurveying.net)





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ROGERS SURVEYING, PLLC  
1800 National Avenue  
Rahway, N.J. 07065  
(708) 440-2011  
www.rogerssurveying.net

Title  
**PORT AUTHORITY  
PORT JERSEY  
SOUTH**

**HYDROGRAPHIC  
SURVEY AND BERTH  
VOLUME  
CALCULATIONS**

No.	Date	Revision	Approved

**VERTICAL CONTROL**  
Mean Low Water = 2.33' Below 0.00 NGVD '29

**HORIZONTAL CONTROL**  
ALL COORDINATES, BEARING AND DISTANCES ARE REFERENCED TO THE NEW JERSEY PLANE COORDINATE SYSTEM (N.A.D. 83) AS SET FORTH IN N.J.S.A. 51:3-7

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without it's written consent.

NOTE:  
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME. THE DATA IS REPRESENTATIVE OF A LARGER DATA SET. SOUNDINGS AND CONTOURS SHOWN ARE FROM 8'X16' GRID NEAREST TO CENTER. COORDINATES REFER TO THE NEW JERSEY MERCATOR SYSTEM (NAD 1983) SOUNDINGS REFER TO THE PLANE OF MEAN LOW WATER THE PLANE OF MEAN LOW WATER IS 2.3 FEET BELOW NGVD (1929) THE SOUNDING DATA DEPICTED ON THIS MAP WAS COLLECTED USING CLASS 2 SURVEY STANDARDS IN ACCORDANCE WITH EM 1110.2-1003.  
THIS SURVEY WAS COMPLETED USING THE FOLLOWING EQUIPMENT:  
• Survey Vessel "Red Rogers".  
• Reson 7101 Multibeam.  
• TSS 320 POS/MV.  
• Coastal Oceanographics "HYPACK" software

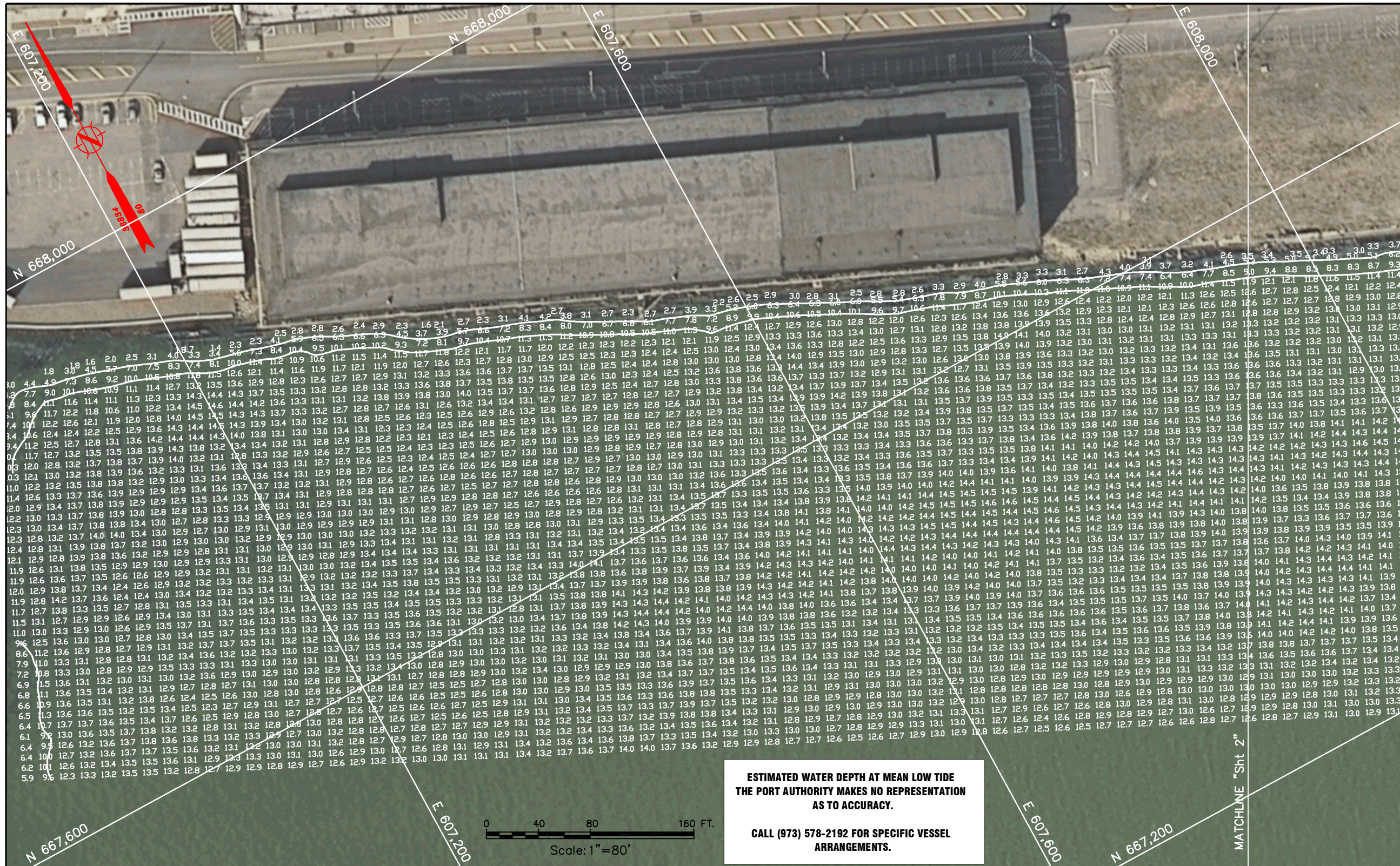
Volume Report			
THE DATA USED FOR VOLUME CALCULATIONS IS REPRESENTATIVE OF A LARGER DATA SET. SOUNDINGS USED FOR VOLUME CALCULATIONS ARE ON A 3'X 3' GRID WITH THE DEPTH NEAREST TO THE CENTER USED.			
Design Depth	Volume to Dredge Template	Volume of 2' Overdredge	Total Volume


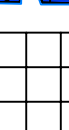
Coordinates are expressed in feet and refer to the NEW JERSEY STATE PLANE (NAD 83) System.  
Soundings refer to Mean Low Water as determined by U.S.A.C.E.  
The Plane of Mean Low Water is 2.3 feet below Mean Sea Level (NGVD 29).  
Note:  
This survey does not guarantee the absence or presence of any underwater obstructions. Diver verification may be required.

NAV88 3.42  
NGVD29 2.30  
MLW (N.O.A.A.) 0.87  
MLW (COE) & SURVEY 0.00  
I hereby certify to The Port Authority of New York and New Jersey that this map indicates the conditions existing as of the date indicated hereon to the best of my professional knowledge.  
*William A. Rogers, Jr.*  
William A. Rogers, Jr., P.E., L.S.  
New Jersey State # 22254  
A.C.S.M. Certified Hydrographer # 151

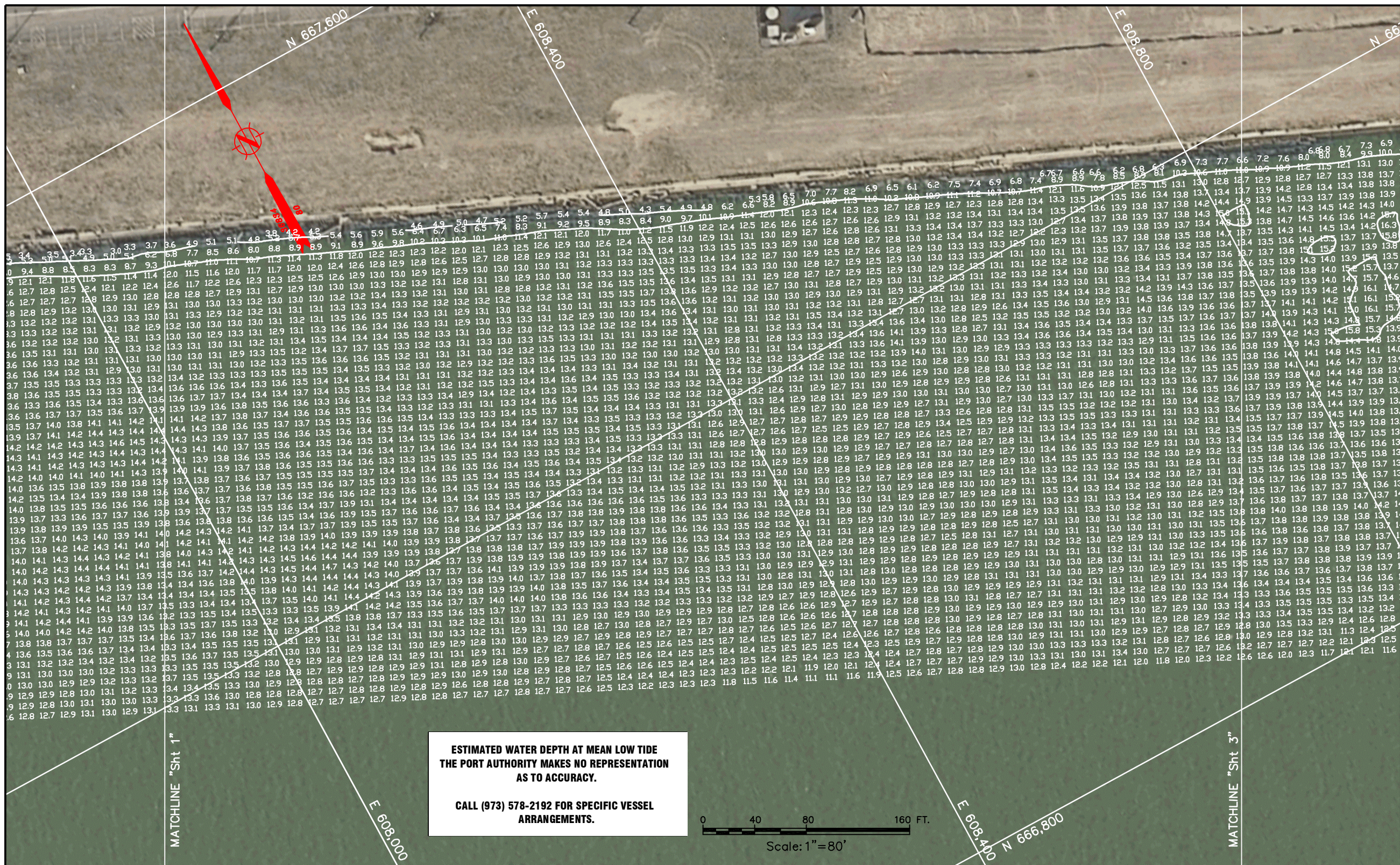
Rogers Surveying BW DWR  
Surveyed by Drawn by Checked by  
Date 01/15/2013 Scale 1"=400'  
Contract Number Drawing Number  
410-10-037 36834





<b>PREPARED FOR</b> <b>THE PORT AUTHORITY</b> <b>OF NY &amp; NJ</b>										
										
		<b>ROGERS SURVEYING, PLLC</b> 1000 Midland Avenue Suite 1000, N.Y. 10119 (718) 462-7001 <a href="http://www.rogerssurveying.com">www.rogerssurveying.com</a>								
<div style="border: 1px solid black; width: 100%; height: 100%; position: relative;"> <div style="position: absolute; top: 0; left: 0; right: 0; bottom: 0; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px); background-size: 20px 20px;"></div> </div>										
<b>Title</b>										
<b>PORT AUTHORITY</b> <b>PORT JERSEY</b> <b>SOUTH</b>										
<b>Sheet 1 of 7</b>										
<b>HYDROGRAPHIC</b> <b>SURVEY AND BERTH</b> <b>VOLUME</b> <b>CALCULATIONS</b>										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; height: 40px;"></td> <td style="width: 25%; height: 40px;"></td> <td style="width: 25%; height: 40px;"></td> <td style="width: 25%; height: 40px;"></td> </tr> <tr> <td style="text-align: center;"><b>No.</b></td> <td style="text-align: center;"><b>Date</b></td> <td style="text-align: center;"><b>Revision</b></td> <td style="text-align: center;"><b>Approved</b></td> </tr> </table>							<b>No.</b>	<b>Date</b>	<b>Revision</b>	<b>Approved</b>
<b>No.</b>	<b>Date</b>	<b>Revision</b>	<b>Approved</b>							
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<table style="width: 100%;"> <tr> <td style="width: 33%;"><u>Rogers Surveying</u></td> <td style="width: 33%;"><u>BW</u></td> <td style="width: 33%;"><u>DWR</u></td> </tr> <tr> <td>Surveyed by</td> <td>Drawn by</td> <td>Checked by</td> </tr> </table>			<u>Rogers Surveying</u>	<u>BW</u>	<u>DWR</u>	Surveyed by	Drawn by	Checked by		
<u>Rogers Surveying</u>	<u>BW</u>	<u>DWR</u>								
Surveyed by	Drawn by	Checked by								
<table style="width: 100%;"> <tr> <td style="width: 50%;">Date 01/15/2013</td> <td style="width: 50%;">Scale 1"=80'</td> </tr> <tr> <td>Contract Number 410-10-037</td> <td>Drawing Number 36834</td> </tr> </table>			Date 01/15/2013	Scale 1"=80'	Contract Number 410-10-037	Drawing Number 36834				
Date 01/15/2013	Scale 1"=80'									
Contract Number 410-10-037	Drawing Number 36834									





PREPARED FOR  
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OF NY & NJ



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Staten Island, N.Y. 10310  
(718) 467-7311  
[www.rogenssurveying.net](http://www.rogenssurveying.net)

Title
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PORT AUTHORITY  
PORT JERSEY  
SOUTH

Sheet 2 of 7

## HYDROGRAPHIC SURVEY AND BERTH VOLUME CALCULATIONS

No.	Date	Revision	Approved
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VERTICAL CONTROL  
Mean Low Water = 2.33' Below 0.00 NGVD '29

## HORIZONTAL CONTROL

ALL COORDINATES, BEARING AND DISTANCES ARE REFERENCED TO THE NEW JERSEY PLANE COORDINATE SYSTEM (N.A.D. 83) AS SET FORTH IN N.J.S.A. 51:3-7

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<u>Rogers Surveying</u>	<u>BW</u>	<u>DWR</u>
Surveyed by	Drawn by	Checked by

Date 01/15/2013 Scale 1"=80'

Contract Number 410-10-037 Drawing Number 36834

NOTE: THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME. THE DATA IS NOT A MATTER OF A LARGER DATA SET. SOUNDINGS AND CONTOURS SHOWN ARE FROM 8"x10" GROUND NEAREST TO COORDINATES REFER TO THE NEW JERSEY REEFER SYSTEM (NAD 1983) SOUNDINGS REFER TO THE PLANE OF MEAN LOW WATER THE PLANE OF MEAN LOW WATER IS 2.3 FEET BELOW NGVD (1929) THE SOUNDING DATA DEPICTED ON THIS MAP WAS COLLECTED USING CLASS 2 SURVEY STANDARDS IN ACCORDANCE WITH EM 1110 2 1003.

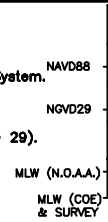
THIS STUDY WAS COMPLETED USING THE FOLLOWING EQUIPMENT:

- \* Survey Vessel "Red Rogers".
- \* Reason 7101 Multibeam.
- \* TSS 320 POS/MV.
- \* Coastal Oceanographics "HYPACK" software

[illegible]

Coordinates are expressed in feet and refer to the NEW JERSEY STATE PLANE (NAD 83) System.  
Soundings refer to Mean Low Water as determined by U.S.A.C.E.  
The Plane of Mean Low Water is 2.3 feet below Mean Sea Level (NGVD 29).

Note:  
This survey does not guarantee the absence or presence of any underwater obstructions. Diver verification may be required.



I hereby certify to The Port Authority  
of New York and New Jersey that this  
map indicates the conditions existing  
as of the date indicated hereon to the  
best of my professional knowledge.

William A. Rogers, Jr., P.E., L.S.  
New Jersey State # 22254  
A.C.S.M. Certified Hydrographer # 151





PREPARED FOR  
**THE PORT AUTHORITY**  
OF NY & NJ



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Title	Author	Year	Journal	Volume	Page
...	...	...	...	...	...

PORT AUTHORITY  
PORT JERSEY  
SOUTH

Sheet 3 of 7

# HYDROGRAPHIC SURVEY AND BERTH VOLUME CALCULATIONS

No.	Date	Revision	Approved
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VERTICAL CONTROL  
Mean Low Water = 2.33' Below 0.00 NGVD '29

### HORIZONTAL CONTROL

ALL COORDINATES, BEARING AND DISTANCES ARE REFERENCED TO THE NEW JERSEY PLANE COORDINATE SYSTEM (N.A.D. 83) AS SET FORTH IN N.J.S.A. 51:3-7

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may not be used without it's written consent.

<u>Rogers Surveying</u>	<u>BW</u>	<u>DWR</u>
Surveyed by	Drawn by	Checked by
Date 01/15/2013		
Scale 1"=80'		
Contract Number	Drawing Number	
410-10-037	36834	

NOTE: THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME. THE DATA REPRESENTED ON THIS MAP IS BASED ON A LATEST DATA SET. SOUNDINGS AND CONTOURS SHOWN ARE FROM 8"x18" GRID NEAREST TO CENTER. COORDINATES REFER TO THE NEW JERSEY MERCATOR SYSTEM (NAD 1983) SOUNDINGS REFER TO THE PLANE OF MEAN LOW WATER THE PLANE OF MEAN LOW WATER IS 2.3 FEET BELOW NGVD (1929) THE SOUNDING DATA DEPICTED ON THIS MAP WAS COLLECTED USING CLASS 2 SURVEY STANDARDS IN ACCORDANCE WITH THE SURVEYING ACT OF 1903.

THIS SURVEY WAS COMPLETED USING THE FOLLOWING EQUIPMENT:

- Survey Vessel "Red Rogers".
- Reson 701 Multibeam.
- TSS 320 POS/MV.
- Coastal Oceanographics "HYPACK" software

## Volume Report

THE DATA USED FOR VOLUME CALCULATIONS IS REPRESENTATIVE OF A LARGER DATA SET. SOUNDINGS USED FOR VOLUME CALCULATIONS ARE ON A 3' X 3' GRID WITH THE DEPTH NEAREST TO THE CENTER USED.

<i>Design Depth</i>	<i>Volume to Dredge Template</i>	<i>Volume of 2' Overdredge</i>	<i>Total Volume</i>

Coordinates are expressed in feet and refer to the NEW JERSEY STATE PLANE (NAD 83) System.  
Soundings refer to Mean Low Water as determined by U.S.A.C.E.  
The Plane of Mean Low Water is 2.3 feet below Mean Sea Level (NGVD 29).

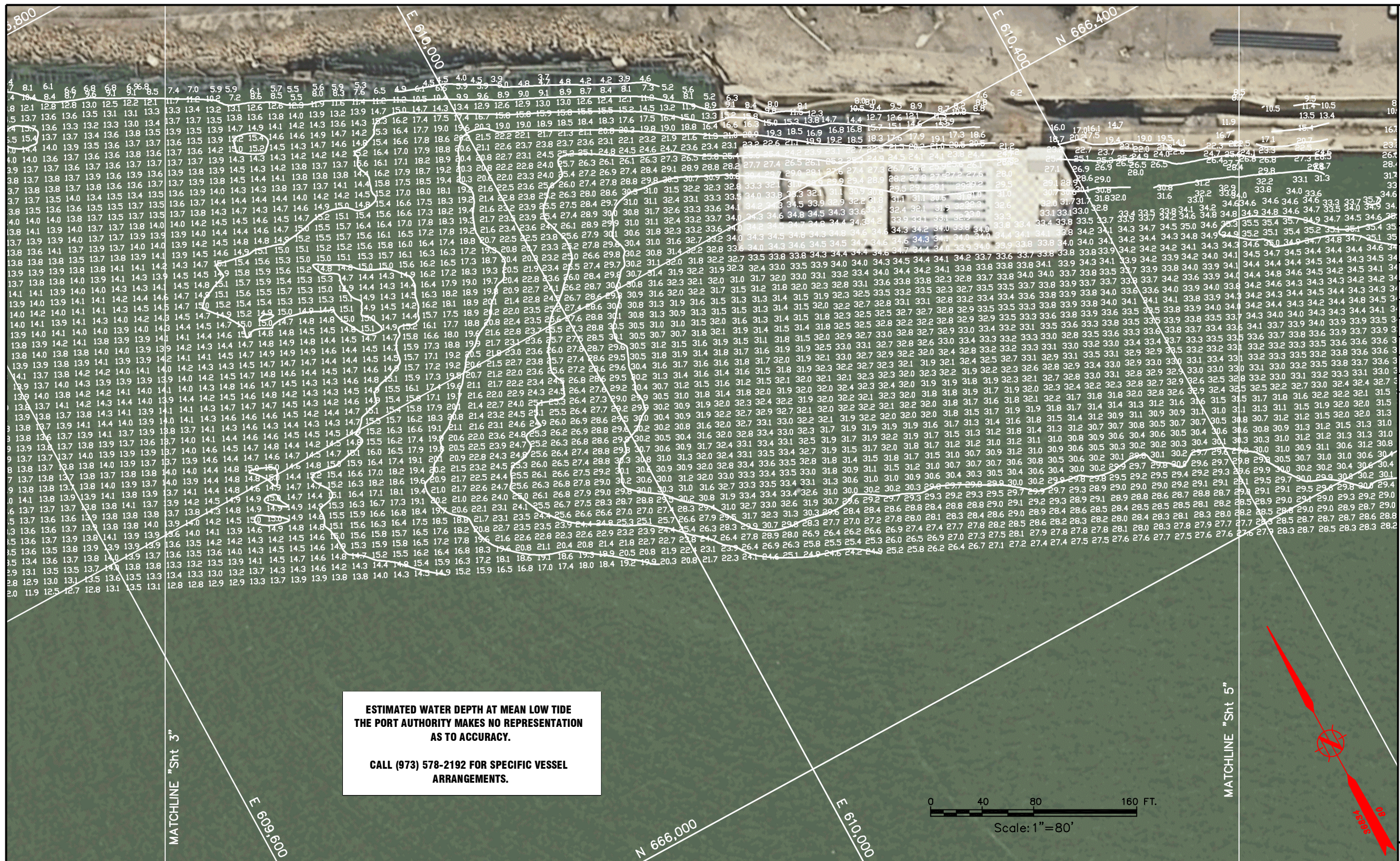
Note:  
This survey does not guarantee the absence or presence of any underwater obstructions. Diver verification may be required.

Datum System	Number of Stations
NAVD88	35
NGVD29	25
MLW (N.O.A.A.)	10
MLW (COE) & SURVEY	5

I hereby certify to The Port Authority  
of New York and New Jersey that this  
map indicates the conditions existing  
as of the date indicated hereon to the  
best of my professional knowledge.

William A. Rogers, Jr., P.E., L.S.  
New Jersey State # 22254  
A.C.S.M. Certified Hydrographer # 151





PREPARED FOR  
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Staten Island, N.Y. 10310  
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Title

PORT AUTHORITY  
PORT JERSEY  
SOUTH

Sheet 4 of 7

## HYDROGRAPHIC SURVEY AND BERTH VOLUME CALCULATIONS

No.	Date	Revision	Approved

VERTICAL CONTROL  
Mean Low Water = 2.33' Below 0.00 NGVD '29

### HORIZONTAL CONTROL

ALL COORDINATES, BEARING AND  
DISTANCES ARE REFERENCED TO THE  
NEW JERSEY PLANE COORDINATE SYSTEM  
(N.A.D. 83) AS SET FORTH IN  
N.J.S.A. 51:3-7

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<u>Rogers Surveying</u>	<u>BW</u>	<u>DWR</u>
Surveyed by	Drawn by	Checked by

Date 01/15/2013 Scale 1"=80'

410-10-037	36834
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THIS SURVEY WAS COMPLETED USING THE FOLLOWING EQUIPMENT:

- Survey Vessel "Red Rogers".
- Reson 7101 Multibeam.
- TSS 320 POS/MV.
- Coastal Oceanographics "HYPACK" software

## Volume Report

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<i>Design Depth</i>	<i>Volume to Dredge Template</i>	<i>Volume of 2' Overdredge</i>	<i>Total Volume</i>

Coordinates are expressed in feet and refer to the NEW JERSEY STATE PLANE (NAD 83) System.

Soundings refer to Mean Low Water as determined by U.S.A.C.E.

The Plane of Mean Low Water is 2.3 feet below Mean Sea Level (NGVD 29).

Note:  
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NAVDS8  
System.  
NGVD29  
29).  
MLW (N.O.A.A.)  
MLW (COE)  
& SURVEY

I hereby certify to The Port Authority  
of New York and New Jersey that this  
map indicates the conditions existing  
as of the date indicated hereon to the  
best of my professional knowledge.

William A. Rogers, Jr., P.E., L.S.  
New Jersey State # 22254  
A.C.S.M. Certified Hydrographer # 151

<b>Rogers Surveying</b>	<b>BW</b>	<b>DWR</b>
Surveyed by	Drawn by	Checked by
Date Scale 1"=80'		
01/15/2013		
Contract Number	Drawing Number	
410-10-037	36834	





A blank grid for drawing a picture. The grid is 10 squares wide and 10 squares high. The rightmost column is shaded light gray. The top row is also shaded light gray. The intersection of the top row and the rightmost column is a darker gray square.

# HYDROGRAPHIC SURVEY AND BERTH VOLUME CALCULATIONS

VERTICAL CONTROL  
Mean Low Water = 2.33' Below 0.00 NGVD '29

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Date 01/15/2013 Scale 1"=80'

Contract Number 410-10-037 Drawing Number 36834

**ESTIMATED WATER DEPTH AT MEAN LOW TIDE  
THE PORT AUTHORITY MAKES NO REPRESENTATION  
AS TO ACCURACY.**

**CALL (973) 578-2192 FOR SPECIFIC VESSEL  
ARRANGEMENTS.**

[illegible]

Note:  
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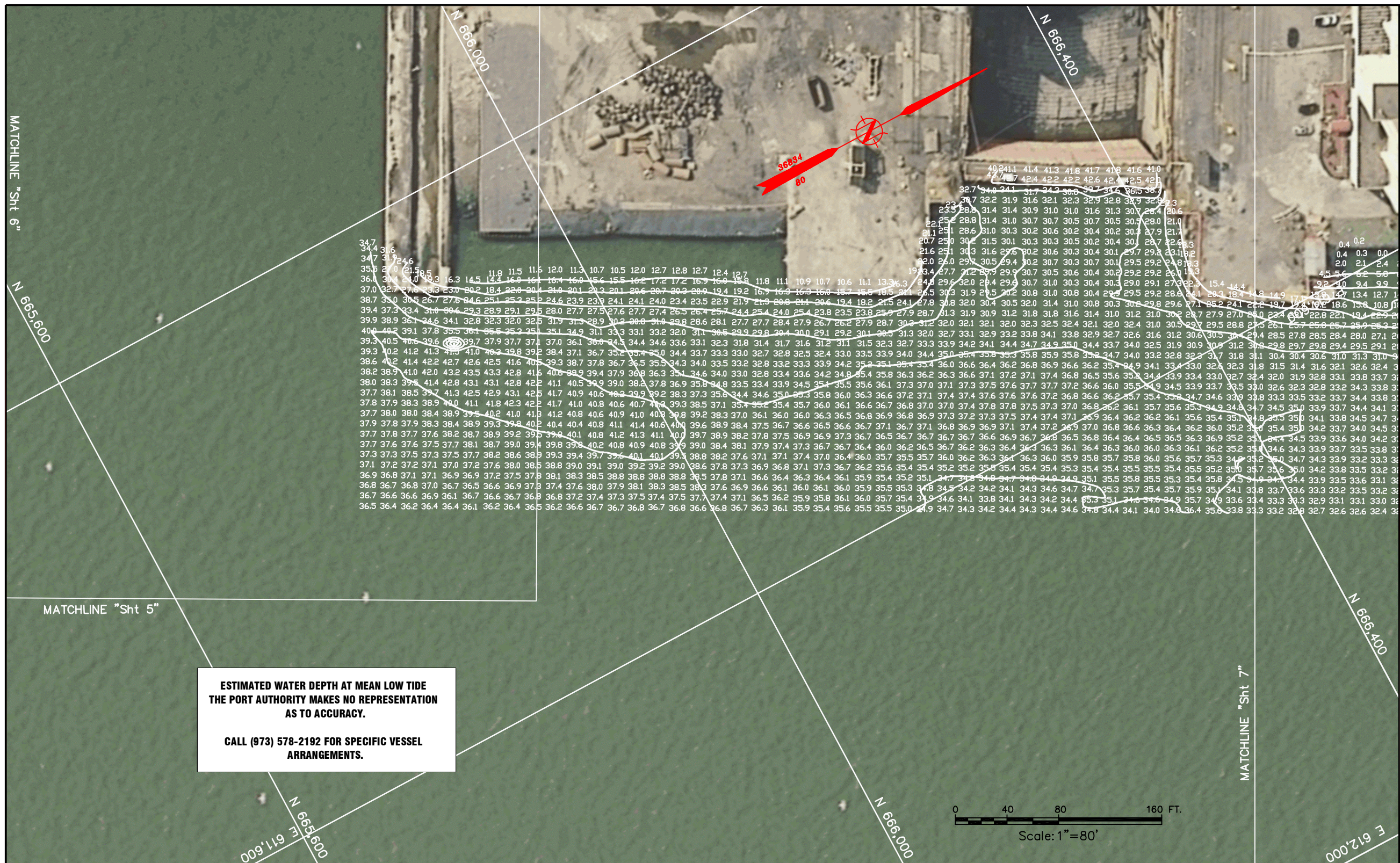
System	MLW (COE)	MLW (N.O.A.A.)	NGVD29	NAVD88
29)	0.00	0.87	2.30	3.42

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*William A. Rogers*

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**Title**

PORT AUTHORITY  
PORT JERSEY  
SOUTH

Sheet 6 of 7

## HYDROGRAPHIC SURVEY AND BERTH VOLUME CALCULATIONS

No.	Date	Revision	Approved
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**VERTICAL CONTROL**  
Mean Low Water = 2.33' Below 0.00 NGVD '29

### HORIZONTAL CONTROL

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<u>Loggers Surveying</u>	<u>BW</u>	<u>DWR</u>
Surveyed by	Drawn by	Checked by

Scale 1"=80'

410-10-037 36834

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- TSS 320 POS/MV.
- Coastal Oceanographic "HYPACK" software

## Volume Report

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<i>Design Depth</i>	<i>Volume to Dredge Template</i>	<i>Volume of 2' Overdredge</i>	<i>Total Volume</i>

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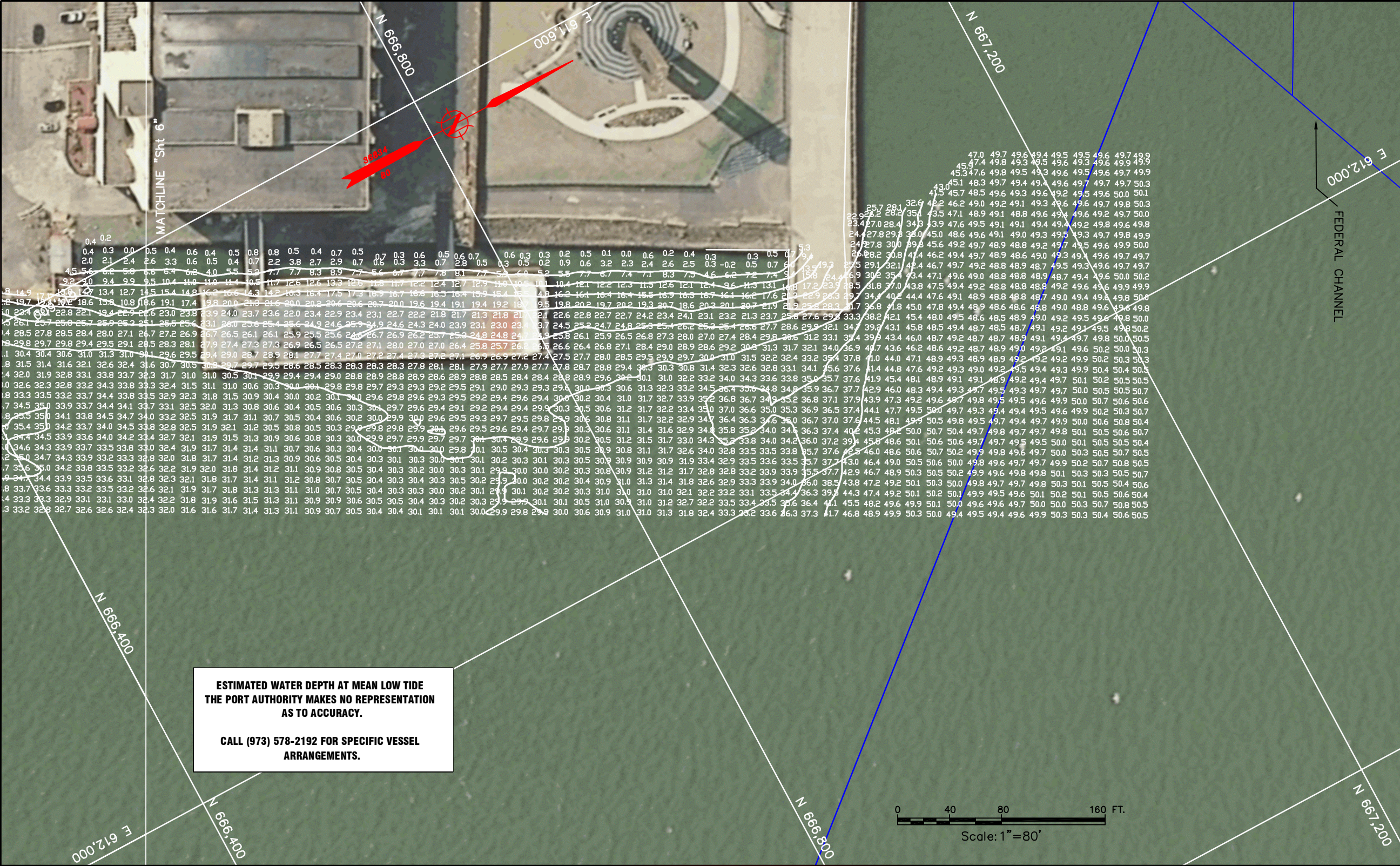
Note:  
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Vertical Datum System	Percentage of Survey
NAVD88	~45%
NGVD29	~35%
MLW (N.O.A.A.)	~15%
MLW (COE) & SURVEY	~5%

I hereby certify to The Port Authority  
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map indicates the conditions existing  
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*William A. Rogers*  
William A. Rogers, Jr., P.E., L.S.  
New Jersey State # 22254  
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PREPARED FOR  
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www.rogerssurveying.com

**PORT AUTHORITY**  
**PORT JERSEY**  
**SOUTH**

Sheet 7 of 7

**HYDROGRAPHIC**  
**SURVEY AND BERTH**  
**VOLUME**  
**CALCULATIONS**

No.	Date	Revision	Approved

**VERTICAL CONTROL**  
Mean Low Water = 2.33' Below 0.00 NGVD '29

**HORIZONTAL CONTROL**  
ALL COORDINATES, BEARING AND DISTANCES ARE REFERENCED TO THE NEW JERSEY PLANE COORDINATE SYSTEM (N.A.D. 83) AS SET FORTH IN N.J.S.A. 51:3-7

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Rogers Surveying BW DWR  
Surveyed by Drawn by Checked by

Date 01/15/2013 Scale 1"=80'  
Contract Number 410-10-037 Drawing Number 36834

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Volume Report			
Design Depth	Volume to Dredge Template	Volume of 2' Overdredge	Total Volume

Coordinates are expressed in feet and refer to the NEW JERSEY STATE PLANE (NAD 83) System.  
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NAVD88 3.42  
NGVD29 2.30  
MLW (N.O.A.A.) 0.87  
MLW (COE) & SURVEY 0.00  
I hereby certify to The Port Authority of New York and New Jersey that this map indicates the conditions existing as of the date indicated hereon to the best of my professional knowledge.  
William A. Rogers, Jr., P.E., L.S.  
New Jersey State # 22254  
A.C.S.M. Certified Hydrographer # 151