Memorandum to USEPA
Commonwealth of Massachusetts
March 7, 2013
Revised (Rev 2) Request for Increase of Channel Width
New Bedford Marine Commerce Terminal (NBMCT)

Introduction

The Commonwealth stipulated within its January 18, 2012 submission to EPA that a 175 foot wide channel would be sufficient to accommodate the design vessel anticipated by the Commonwealth at that time. However, the Commonwealth within its June 18, 2012 submission to EPA indicated that it may be possible that the width of the channel may need to be further expanded if a future vessel's dimensions varied significantly from that of the design vessel. As a result, the Commonwealth requested to add an additional 50 feet of width to the channel associated with the New Bedford Marine Commerce Terminal (NBMCT).

EPA indicated within its Final Determination (issued November 18, 2012) that it did not authorize the proposed expansion of the channel, but that it would consider new or additional information subsequent to its issuance of the Final Determination.

The Commonwealth met with EPA on March 6, 2013 to discuss alteration of EPA's Final Determination to include the expansion of the width of the channel. *As a result of the discussions at that meeting, the Commonwealth is hereby revising its request by expanding the channel 50 feet to the west only, rather than expanding the channel equally (25 feet to the east and 25 feet to the west) as previously stipulated within the Commonwealth's June 18, 2012 submission to EPA.*

Additional research conducted by the Commonwealth indicates that the dimensions of future vessels may indeed vary from what the Commonwealth had initially anticipated (as further outlined below), which will require the additional 50 foot width in the channel for the NBMCT. This memorandum outlines the rationale and analysis supporting expansion of the width of the channel and then outlines the Commonwealth's commitment to funding the expansion, should EPA approve the work. The Commonwealth requests for EPA approval of this modification prior to the commencement of project construction.

Data Supporting Expansion of the Width of the Channel for the Facility

The channel for the facility must be sufficiently wide to accommodate offshore renewable energy international vessels, in order to keep the utilization of the facility at its maximum.

SDMS Doc ID 540350

The Commonwealth previously estimated the appropriate width of the channel to be 175 feet; however, that estimate was based upon the beam and draft of the design vessel, which was assumed to represent a wide class of international vessels that would be bringing components to the new facility. The beam of the proposed design vessel (BBC Mississippi) is 23 meters (75.46 feet). The width of the channel was determined to be sufficient to accommodate the design vessel only because the design vessel at maximum draft (-23.6 MLLW) was significantly shallower in depth than the proposed full design depth of the channel (-30 MLLW), and could therefore take advantage of the effective width of the channel at that depth (which would includes the extra width created by the 1 Vertical: 3 Horizontal side-slopes of the channel at shallower depths). A deeper draft vessel, however, could not take advantage of these side-slope areas and would need to remain within the official boundaries of the channel.

Vessel	Length**	Beam**	Max Draft (meters)**	Max Draft (feet)**
BBC Mississippi	143 meters	23 meters	7.2 meters	23.6 feet
BBC Quebec	138 meters	21 meters	8.5 meters	27.9 feet
BBC Oder	143 meters	22 meters	9.5 meters	31.2 feet
BBC Maine	138 meters	21 meters	7.8 meters	25.6 feet
Kaptan Ergun	148 meters	22 meters	8.0 meters	26.2 feet
Big Lift Tra-Type	100 meters	20.4 meters	8.2 meters	26.9 feet
Big Lift Happy R-Type	138 meters	22.9 meters	9.5 meters	31.2 feet
Nagoya Bay	149 meters	23 meters	7.6 meters	24.9 feet

The Commonwealth has conducted research into newer international vessels that are likely to be utilized to implement current and future offshore renewable energy projects at the Terminal. These vessels are capable of transporting renewable energy components and share a similar length and beam with the design vessel, but the vessels have a deeper draft than the design vessel. The following is a list of these vessels:

** As noted on www.marinetraffic.com, or otherwise included within **Attachment A**.

Please note that some of the vessels listed above are operated by the same shipping company as the design vessel (all BBC vessels), which further indicates their likelihood to be utilized to transport offshore renewable components to the Terminal. Other vessels, such as the Big Lift category of vessels, have been utilized for offshore wind component transfer for other international installations and therefore may also be utilized in the future.

As can be seen from the chart above, the vessels range in beam from 20.4 meters (66.9 feet) to 23 meters (75.46 feet), which are both very similar to the beam of the design vessel; however, the drafts range from 7.6 meters (24.9 feet) to 9.5 meters (31.2 feet), which are all deeper than the draft of the design vessel of 7.2 meters (23.6 feet). It is the depth of these vessels that is driving the Commonwealth's request for the increased channel width.

The Commonwealth's request to increase the channel width to 225 feet (from the existing approved 175 feet) is based on the following information:

- The USACE Coastal Engineering Manual (EM-1110-2-110 (Part V)), dated August 1, 2008, Table V-5-10, recommends a design width of an interior channel (trench-type), with low currents, expressed as a multiplier of the design ship beam at 2.75 (as noted in the table below – noted as "trench" type channel).

EM 1110-2-1100 (Part V)
1 Aug 08 (Change 2)

Table V-5-10
One-Way Ship Traffic Channel Width Design Criteria[1]

Channel Cross Section	Maximum Current: 0.0 to 0.3 m/sec (0.0 to 0.5 knots)	0.3 to 0.8 m/sec (0.5 to 1.5 knots)	0.8 to 1.5 m/sec (1.5 to 3.0 knots)
Constant Cross Section, Best Aids to Navigation			
Shallow	3.0	4.0	5.0
Canal	2.5	3.0	3.5
Trench	2.75	3.25	4.0
Variable Cross Section, Average Aids to Navigation			
Shallow	3.5	4.5	5.5
Canal	3.0	3.5	4.0
Trench	3.5	4.0	5.0

[1] Criteria expressed as multipliers of the design ship beam; i.e., W = (factor from table) × B

- Based on this criteria, the beam to channel width ratio for the vessels listed above would range from 2.3 (175/75.46) to 2.6 (175/66.9), all of which would be below the USACE criteria.

The Commonwealth must consider the full range of vessels that are anticipated to transit the channel. The anticipated use of these deeper-draft vessels requires the widening of the channel to be able to safely transit the vessels, in accordance with USACE guidelines. An extra 50 feet in width (to 225 feet) would extend the vessel beam to channel width ratio to above 2.75 for even the deepest draft of these vessels.

Although the terminal will be constructed within New Bedford Harbor, which is significantly protected from major sea currents, the full range of weather and sea conditions will also affect the ability of vessels to maneuver within the Harbor. In particular, windy conditions will require additional channel width in order to safely control vessels. Weather conditions can vary dramatically and can have a significant effect on how a vessel handles.

While we fully appreciate the benefits of minimizing the environmental impact of the construction of the proposed channel, we ask for the EPA to also consider operational issues

such as the safety, security, and the potential environmental impacts if, in a worst case scenario, an accident were to occur. We believe the consideration of navigational safety receive equal, if not higher, consideration by the EPA when evaluating the Commwealth's request for a wider channel. In light of the foregoing, the Commonwealth believes that it is crucial to the success of the project to increase the width of the channel by 50 feet. Therefore, the Commonwealth requests that EPA increase the width of the proposed channel, as it believes that the added width is very important for vessel transit and navigational safety.

Environmental Impact Considerations and Sediment Characterization Of the Channel Width Expansion

The Commonwealth's proposal for the expansion of the width of the channel as outlined within its June 18, 2012 submission to EPA was that "the Commonwealth proposes (within this document) to add an additional 50 feet of width (25-feet on each side of the channel)". As the area to the west of the channel is currently dredged to a depth of between -20 to -30 MLLW, and the area to the east of the channel ranges in depth from between -6 and -30 MLLW, the expansion of the channel to the east would incur the loss of additional Winter Flounder Spawning Habitat, whereas increasing the width of the channel to the west would not impact additional Winter Flounder Spawning Habitat. Therefore, it would appear that, given the choice between expanding equally 25 feet to the east and 25 feet to the west, and expanding only 50 feet to the west, that increasing the width of the channel 50 feet to the west would be the Least Environmentally Damaging Practicable Alternative between these two potential expansions.

Additionally, the expansion of the width of the channel 50 feet to the west will result in the removal of additional sediment impacted by PCBs that would not otherwise be addressed by EPA.

The Commonwealth has already committed to increased mitigation to compensate for the loss of Winter Flounder habitat associated with expansion of the channel 25 feet to the east. As the Commonwealth will eliminate its request for expansion of the channel 25 feet to the east, in lieu of its proposal to expand the channel 50 feet to the west instead, the Commonwealth will also commit to completing the additional mitigation as proposed.

A map showing existing bathymetry and the proposed channel width expansion 50 feet to the west is included as **Attachment B**.

The Commonwealth has previously collected sediment samples for chemical analysis from the area of the proposed channel width expansion; therefore, the Commonwealth does not believe that additional characterization of this area will be required in order for EPA to approve the expansion of the width of the channel 50 feet to the west. A map showing the existing results

samples collected and analyzed for PCBs in the vicinity of the proposed channel width expansion 50 feet to the west is included as **Attachment C**.

Commonwealth Commitment to Fund the Increased Channel Width

The Commonwealth is committed to funding and constructing the proposed expansion. The expansion of the channel is not specifically listed as an Optional Bid Item or a Base Bid Item within the plans and specifications promulgated by the Commonwealth dated December 5, 2012. EPA has previously questioned the Commonwealth's commitment to implementing the increased channel width, as it is not, as stated above, outlined as a separate bid item. Upon EPA approval, the Commonwealth would implement the increased channel width 50 feet to the west in the following manner:

- The Commonwealth would issue a no-cost change order to the Awarded Contractor for the New Bedford Marine Commerce Terminal for the channel expansion.
- The expansion of the channel would not result in a significant change to the Commonwealth's unit costs due to the authority granted the Commonwealth via Article 2.07 of the General Conditions, which stipulates that no adjustment in the Contract Unit Prices will be made unless the quantities vary from those estimated in the Bid Form by greater or less than 25 percent.
- The addition of the channel expansion would result in changes to the estimated quantities of Base Bid Item Nos. 5 and 12 and Optional Bid Item No. 1; however, these changes will not be greater than 25% of the estimated value listed within the Bid Form.

The Commonwealth has already committed to increased mitigation to compensate for the impacts associated with a wider channel. Additionally, the expansion of the channel will result in the removal of additional sediment impacted by PCBs that would not otherwise be addressed by EPA.

The Commonwealth has carefully considered the benefit in providing the funding for the proposed expansion of the width of the channel and has determined that it is an important and sound investment. Expansion of the channel width for the new terminal will help to allow the New Bedford Marine Commerce Terminal to be as advanced and flexible as possible for the offshore wind industry.

Attachment A

BBC MISSISSIPPI

Contribute to this page

Vessel's Details

Ship Type: Cargo
Year Built: 2007
Length x Breadth: 143 m X 23 m
DeadWeight: 14000 t
Speed recorded (Max / Average): 15.5 / 14 knots
Flag: Antigua Barbuda [AG]
Call Sign: V2CG5
IMO: 9347061, **MMSI:** 304164000

Last Position Received

Area: Indian Ocean
Latitude / Longitude: -28.74346° / 32.51878° (Map)
Currently in Port:
Last Known Port: DURBAN
Info Received: 18d 10h 6min ago
Not Currently in Range
Itineraries History

Voyage Related Info (Last Received)

Draught: 6.6 m
Destination: DURBAN
ETA: 2011-11-01 07:00
Info Received: 2011-11-03 01:14 (18d, 15h 25min ago)

Recent Port Calls:

No Records Found

Ex Names History

No Records Found

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Ship Photos: 20
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Vessel's Wiki

Edit this vessel Vessel for Sale? History of changes

Ship Type: DRY CARGO
Owner: Briese Schiffahrts GmbH & Co. KG

Manager: Briese Schiffahrts GmbH & Co. KG
Built (Year/Month): 2007
Builder:
Hull Number:
Class:
Service Status:
Year scrapped/lost:

Tonnage & Dimensions

GT (Gross Tonnage):
NT (Net Tonnage):
DWT (Deadweight): 14000
Displacement:
LOA (Length Overall): 143
Beam: 23
Draft (max): 7.2
Depth:
Height:

Ship's Communication numbers

Sat Telex:
Sat Phone:
Sat Fax:
Mobile:

Capacity

Holds/Tanks:
Hatches:
Gear:
Bale:
Grain:
TEU:
PAX:
Cars:
Trucks:
RoRo Lanes Length:
Liquid Capacity:
Liquid Gas Capacity:
Oil Capacity:
Number of Pumps:
Pumps Cpacity:

Engines

Number of Main Engine(s):
Main Engine builder:
Main Model:
Main RPM:
Main power: /
Main Fuel:

Main Consumption:

Number of Auxiliary Engine(s):
Aux Engine builder:
Aux Model:
Aux RPM:
Aux power: /
Aux Fuel:
Aux Consumption:

Bowthruster:
Propeller(s):

BBC QUEBEC

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Vessel's Details

Ship Type: Heavy load carrier
Year Built: 2007
Length x Breadth: 138 m X 21 m
Gross Tonnage: 9611, **DeadWeight:** 12744 t
Speed recorded (Max / Average): 12.9 / 10.6 knots
Flag: Antigua Barbuda [AG]
Call Sign: V2CQ2
IMO: 9402031, **MMSI:** 305077000

Last Position Received

Area: Australia
Latitude / Longitude: -23.3465° / 151.3523° (Map)
Currently in Port:
Last Known Port: GLADSTONE
Info Received: 0d 3h 59min ago
Not Currently in Range
Itineraries History

Voyage Related Info (Last Received)

Draught: 6.3 m
Destination: MACKAY
ETA: 2012-11-03 13:00
Info Received: 2012-11-02 17:17 (0d, 4h 58min ago)

Recent Port Calls:

No Records Found

Ex Names History

No Records Found

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Ship Photos: 7
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Vessel's Wiki

Edit this vessel Vessel for Sale? History of changes

Ship Type: DRY CARGO
Owner:
Manager:
Built (Year/Month): 0
Builder:
Hull Number:
Class:
Service Status:
Year scrapped/lost:

Tonnage & Dimensions

GT (Gross Tonnage): 9611
NT (Net Tonnage):
DWT (Deadweight):
Displacement:
LOA (Length Overall): 138
Beam: 21

Draft (max): 8.5
Depth:
Height:

Ship's Communication numbers

Sat Telex:
Sat Phone:
Sat Fax:
Mobile:

Capacity

Holds/Tanks:
Hatches:
Gear:
Bale:
Grain:
TEU:
PAX:
Cars:
Trucks:
RoRo Lanes Length:
Liquid Capacity:
Liquid Gas Capacity:
Oil Capacity:
Number of Pumps:
Pumps Cpacity:

Engines

Number of Main Engine(s):
Main Engine builder:
Main Model:
Main RPM:
Main power: /
Main Fuel:
Main Consumption:

Number of Auxiliary Engine(s):
Aux Engine builder:
Aux Model:
Aux RPM:
Aux power: /
Aux Fuel:
Aux Consumption:

Bowthruster:
Propeller(s):

Vessel's Details

Ship Type: Cargo
Year Built: 2010
Length x Breadth: 143 m X 22 m
Gross Tonnage: 12974, **DeadWeight:** 16953 t
Speed recorded (Max / Average): 16.4 / 15 knots
Flag: Antigua Barbuda [AG]
Call Sign: V2EX5
IMO: 9508316, **MMSI:** 305589000

Last Position Received

Area:
Latitude / Longitude: 29.73808° / 32.51813° (Map)
Currently in Port:
Last Known Port: HOUSTON
Info Received: 23d 0h 57min ago
Not Currently in Range
Itineraries History

Voyage Related Info (Last Received)

Draught: 9.5 m
Destination: YANBU
ETA: 2012-10-10 12:00
Info Received: 2012-10-06 13:48 (27d, 8h 29min ago)

Recent Port Calls:

No Records Found

Ex Names History

No Records Found

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Ship Photos: 23
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Vessel's Wiki

Edit this vessel Vessel for Sale? History of changes

Ship Type:
Owner:
Manager:
Built (Year/Month): /
Builder:
Hull Number:
Class:
Service Status:
Year scrapped/lost:

Tonnage & Dimensions

GT (Gross Tonnage): 12936
NT (Net Tonnage):
DWT (Deadweight):
Displacement:

LOA (Length Overall): 160
Beam: 19
Draft (max): 0
Depth:
Height:

Ship's Communication numbers

Sat Telex:
Sat Phone:
Sat Fax:
Mobile:

Capacity

Holds/Tanks:
Hatches:
Gear:
Bale:
Grain:
TEU:
PAX:
Cars:
Trucks:
RoRo Lanes Length:
Liquid Capacity:
Liquid Gas Capacity:
Oil Capacity:
Number of Pumps:
Pumps Cpacity:

Engines

Number of Main Engine(s):
Main Engine builder:
Main Model:
Main RPM:
Main power: /
Main Fuel:
Main Consumption:

Number of Auxiliary Engine(s):
Aux Engine builder:
Aux Model:
Aux RPM:
Aux power: /
Aux Fuel:
Aux Consumption:

Bowthruster:
Propeller(s):

BBC MAINE

Contribute to this page Add to My Fleet

Vessel's Details

Ship Type: Cargo
Year Built: 2007
Length x Breadth: 138 m X 21 m
Gross Tonnage: 9625, **DeadWeight:** 12793 t
Speed recorded (Max / Average): 15.3 / 13.6 knots
Flag: Antigua Barbuda [AG]
Call Sign: V2CN8
IMO: 9357200, **MMSI:** 305056000

Last Position Received

Area: Atlantic North
Latitude / Longitude: 43.60592° / -9.71315° (Map)
Currently in Port:
Last Known Port: LAS PALMAS
Info Received: 0d 0h 5min ago

Current Vessel's Track

Wind: 28 knots, 249°, 16°C

Itineraries History

Voyage Related Info (Last Received)

Draught: 6.5 m
Destination: TO ORDER ANTWERP
ETA: 2012-05-11 20:00
Info Received: 2012-11-02 18:01 (0d, 4h 13min ago)

Recent Port Calls:

Port	Arrival (LT)	Departure (LT)
LAS PALMAS		2012-10-29 13:47
LAS PALMAS	2012-10-29 08:27	

More...

Ex Names History

No Records Found

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Ship Photos: 13
Upload a photo

Vessel's Wiki

Edit this vessel Vessel for Sale? History of changes

Ship Type: DRY CARGO
Owner:
Manager:
Built (Year/Month): 2007/
Builder:
Hull Number:
Class:
Service Status:
Year scrapped/lost:

Tonnage & Dimensions

GT (Gross Tonnage): 9625
NT (Net Tonnage):
DWT (Deadweight): 12000
Displacement:
LOA (Length Overall): 139
Beam: 21

Draft (max): 7.8
Depth:
Height:

Ship's Communication numbers

Sat Telex:
Sat Phone:
Sat Fax:
Mobile:

Capacity

Holds/Tanks:
Hatches:
Gear:
Bale:
Grain:
TEU:
PAX:
Cars:
Trucks:
RoRo Lanes Length:
Liquid Capacity:
Liquid Gas Capacity:
Oil Capacity:
Number of Pumps:
Pumps Cpacity:

Engines

Number of Main Engine(s):
Main Engine builder:
Main Model:
Main RPM:
Main power: /
Main Fuel:
Main Consumption:

Number of Auxiliary Engine(s):
Aux Engine builder:
Aux Model:
Aux RPM:
Aux power: /
Aux Fuel:
Aux Consumption:

Bowthruster:
Propeller(s):

KAPTAN ERGUN

Contribute to this page

Vessel's Details

Ship Type: Cargo - Hazard A (Major)
Year Built: 2007
Length x Breadth: 148 m X 22 m
DeadWeight: 12500 t
Speed recorded (Max / Average): 17.6 / 11.6 knots
Flag: Marshall Is [MH]
Call Sign: V7OQ6
IMO: 9366445, **MMSI:** 538090343

Last Position Received

Area: Atlantic North
Latitude / Longitude: 31.9892° / -80.64172° (Map)
Currently in Port:
Last Known Port: NORFOLK
Info Received: 0d 0h 0min ago

Current Vessel's Track

Wind: 1 knots, 216°, 22°C

Itineraries History

Voyage Related Info (Last Received)

Draught: 6.5 m
Destination: SAVANNAH
ETA: 2011-11-21 16:30
Info Received: 2011-11-21 17:27 (0d, 0h 52min ago)

Recent Port Calls:

No Records Found

Ex Names History

Vessel's Name	Flag	Call Sign	Last Reported
KAPTAN ERGUN	Marshall Is	V7OQ6	2011-11-20 13:36
KAPTAN ERGUN	Turkey	TCSN4	2011-02-13 16:21

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Ship Photos: 14

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Vessel's Wiki

Edit this vessel Vessel for Sale? History of changes

Ship Type: DRY CARGO

Owner:

Manager:
Built (Year/Month): 2007/
Builder:
Hull Number:
Class:
Service Status:
Year scrapped/lost:

Tonnage & Dimensions

GT (Gross Tonnage):
NT (Net Tonnage):
DWT (Deadweight): 12500
Displacement:
LOA (Length Overall): 150
Beam: 22
Draft (max): 8
Depth:
Height:

Ship's Communication numbers

Sat Telex:
Sat Phone:
Sat Fax:
Mobile:

Capacity

Holds/Tanks:
Hatches:
Gear:
Bale:
Grain:
TEU:
PAX:
Cars:
Trucks:
RoRo Lanes Length:
Liquid Capacity:
Liquid Gas Capacity:
Oil Capacity:
Number of Pumps:
Pumps Cpacity:

Engines

Number of Main Engine(s):
Main Engine builder:
Main Model:
Main RPM:
Main power: /
Main Fuel:

Main Consumption:

Number of Auxiliary Engine(s):
Aux Engine builder:
Aux Model:
Aux RPM:
Aux power: /
Aux Fuel:
Aux Consumption:

Bowthruster:
Propeller(s):

TRA-TYPE

CLASS				BV 1 3/3 E General Cargo Carrier, Container Carrier Ice Class IC, E0, W1-0C, Grain, LCS (SIG), DG-P, DG-B, Great lakes fitted.
Principal Dimensions	Length overall	100.50	m	
	Length p.p.	96.50	m	
	Breadth moulded	20.40	m	
	Summer draft	8.20	m	
Deadweight	Summer (sea water)	8,600	mton	at T=8.2 m
Tonnage		International	Panama	
	GT	6,714	23,362 cbm	
	NT	2,893	pc/ums 6,108	
Capacity	Grain	10,530	m^3	tween deck not installed
	Bale	9,720	m^3	tween deck not installed
Floor space	Weather deck	1,330	m^2	
	Tween deck	974	m^2	
	Tank top	850	m^2	
Hatch openings	Weather deck	64.4 x 15.3	m	
	Tween deck	64.4 x 15.3	m	
Heights in hold	most tween deck covers adjustable in height.			
	Total height	11.75	m	tween deck not installed
Allowable loads	Weather deck hatch covers	3.0	t/m^2	
	Tween deck hatch covers	3.0	t/m^2	
	Tank top	15.0	t/m^2	
Cranes	Combinable	to 500	mt	SWL
	Forward crane on starboard side	275	mt	SWL
	Aft crane on port side	275	mt	SWL
	both fitted with auxiliary hoist			
	auxiliary hoist	6.0	mt	SWL
Main engine	Wärtsilä 8L46B	7800	kW	
	Bowthruster	500	kW	
	Service speed	16.0	kn	
Container Capacity		621	TEU	

TRA-TYPES

Tramper	Amsterdam	The Netherlands	1999
Tracer	Amsterdam	The Netherlands	1999
Transporter	Amsterdam	The Netherlands	1999
Traveller	Amsterdam	The Netherlands	2000

These particulars are believed to be correct, but without guarantee, and they must not be used as basis for Charter Parties or contracts without Owners' explicit written authority.

BIGLIFT

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1042 AA Amsterdam

P.O. Box 2599
1000 CN Amsterdam

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HAPPY R-TYPE

CLASS				Lloyd's X100 A1 X LMC-UMS LA LNC AA Ice class Finnish/Swedish 1A Great lakes fitted.
Principal Dimensions	Length overall	138.00	m	
	Length p.p.	127.90	m	
	Breadth moulded	22.88	m	
	Summer draft	9.50	m	
Deadweight	Summer (sea water)	15,634	mt	
Tonnage		International	Panama	
	GT	10,990	-	
	NT	5,041	9,255	
Capacity	Grain = bale	17,863	m^3	if tweendeck installed, 16,338 m^3
Floor space	Weather deck	2,450	m^2	
	Tween deck	1.525	m^2	
	Tank top	1.386	m^2	
Hatch openings	Weather deck	91.0 x 17.7	m	
	Tween deck	87.5 x 17.6	m	
Heights	heights adjustable in 13 steps of 50 cm. minimum lower hold	3.425	m	maximum 8.925 m
Allowable loads	Weather deck hatch covers	4.0	t/m^2	
	with pillars	12.5	t/m^2	
	Tween deck hatch covers	3.5	t/m^2	
	with pillars	10.5	t/m^2	
	Tank top	20.0	t/m^2	
Cranes	Combinable	800	mt	SWL
	Situated on starboard side Fitted with trolley	2 x 400	mt	SWL
	Trolley capacity	25.0	mt	SWL
Main engine	Wärtsilä 9L46B	8775	kW	
	Bowthruster	850	kW	
	Service speed	16.4	kn	at draft 7.00 m
Container capacity		1039	TEU	

HAPPY R-TYPES

Happy Ranger	Amsterdam	The Netherlands	1998
Happy River	Amsterdam	The Netherlands	1997
Happy Rover	Amsterdam	The Netherlands	1997

These particulars are believed to be correct, but without guarantee, and they must not be used as basis for Charter Parties or contracts without Owners' explicit written authority.

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f. +31 (0) 20 - 448 83 33

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www. bigliftshipping.com

NAGOYA BAY

Contribute to this page

Vessel's Details

Ship Type: Cargo
Year Built: 1983
Length x Breadth: 149 m X 23 m
DeadWeight: 12181 t
Speed recorded (Max / Average): 13.4 / 12.4 knots
Flag: Panama [PA]
Call Sign: 3EDJ4
IMO: 8217611, **MMSI:** 371588000

Last Position Received

Area: Mexico Gulf
Latitude / Longitude: 29.35523° / -89.51545° (Map)
Currently in Port:
Last Known Port: NEW ORLEANS
Info Received: 0d 0h 45min ago

Current Vessel's Track

Wind: 7 knots, 140°, 25°C

Itineraries History

Voyage Related Info (Last Received)

Draught: 8.8 m
Destination: AO LAD
ETA: 2011-12-11 20:00
Info Received: 2011-11-21 17:26 (0d, 0h 42min ago)

Recent Port Calls:

No Records Found

Ex Names History

No Records Found

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A

Ship Photos: 17
Upload a photo

Vessel's Wiki

Edit this vessel Vessel for Sale? History of changes

Ship Type: DRY CARGO
Owner:

Manager:
Built (Year/Month): 1983/
Builder:
Hull Number:
Class:
Service Status:
Year scrapped/lost:

Tonnage & Dimensions

GT (Gross Tonnage):
NT (Net Tonnage):
DWT (Deadweight): 12181
Displacement:
LOA (Length Overall): 149
Beam: 23
Draft (max): 7.6
Depth:
Height:

Ship's Communication numbers

Sat Telex:
Sat Phone:
Sat Fax:
Mobile:

Capacity

Holds/Tanks:
Hatches:
Gear:
Bale:
Grain:
TEU:
PAX:
Cars:
Trucks:
RoRo Lanes Length:
Liquid Capacity:
Liquid Gas Capacity:
Oil Capacity:
Number of Pumps:
Pumps Cpacity:

Engines

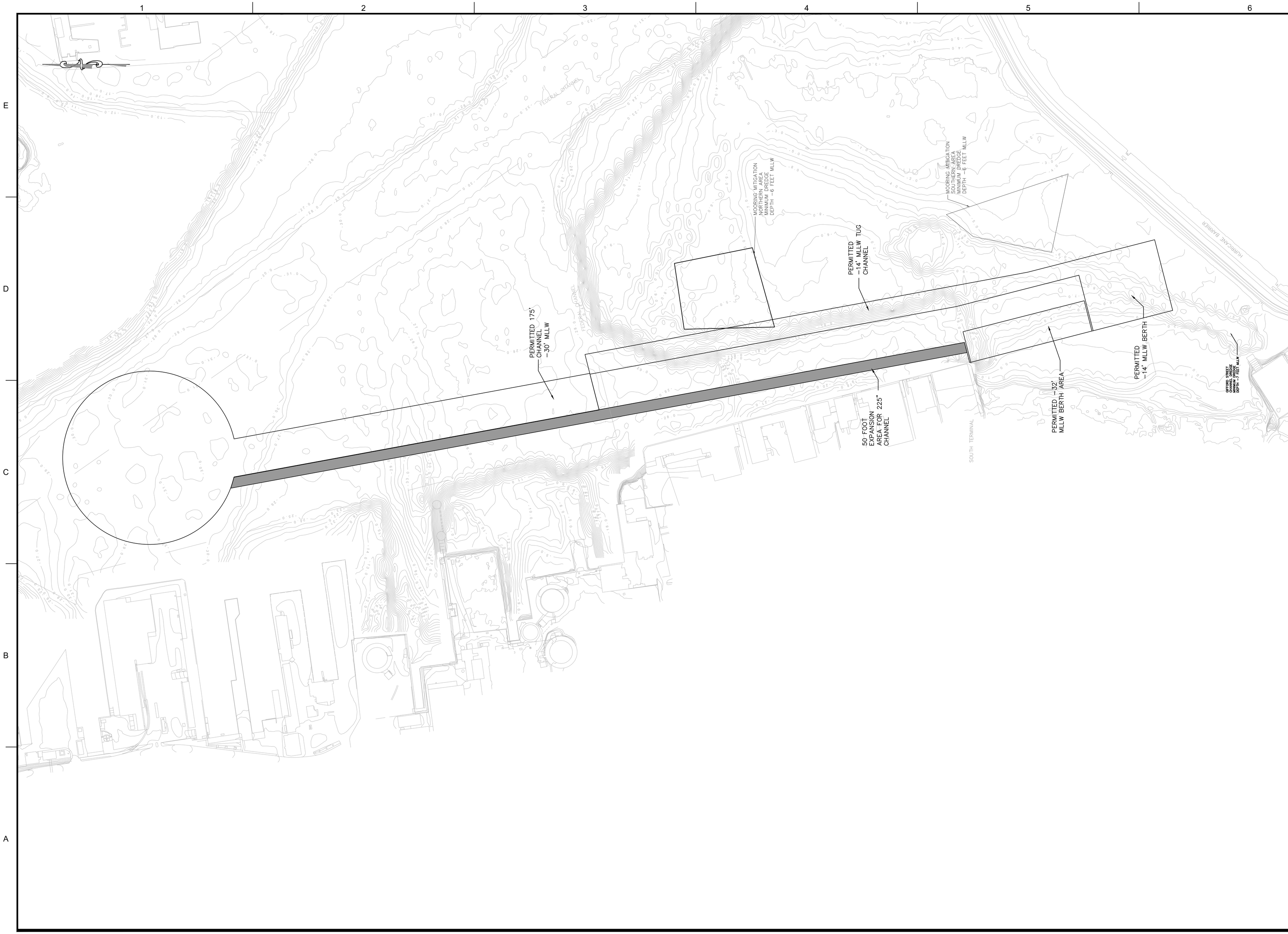
Number of Main Engine(s):
Main Engine builder:
Main Model:
Main RPM:
Main power: /
Main Fuel:

Main Consumption:

Number of Auxiliary Engine(s):
Aux Engine builder:
Aux Model:
Aux RPM:
Aux power: /
Aux Fuel:
Aux Consumption:

Bowthruster:
Propeller(s):

ATTACHMENT B



APEX

ROCKVILLE, MD
SOUTH WINDSOR, CT - BOSTON, MA - NEW BEDFORD, MA - HOLYOKE, MA

184 HIGH STREET, SUITE 502
BOSTON, MA 02210

58H CONNECTICUT AVENUE
SOUTH WINDSOR, CT

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DRAFT

PROJECT

NEW BEDFORD
MARINE COMMERCE
TERMINAL

OWNER

MASSACHUSETTS CLEAN ENERGY CENTER
55 SUMMER STREET, 9TH FLOOR
BOSTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	6690
CADD FILE	
DESIGNED BY	JER
DRAWN BY	JER
CHECKED BY	
DATE	06/5/2012
DRAWING SCALE	1"=200'

GRAPHIC SCALE

SCALE: 1"=200'

0 100 200 400

SHEET TITLE

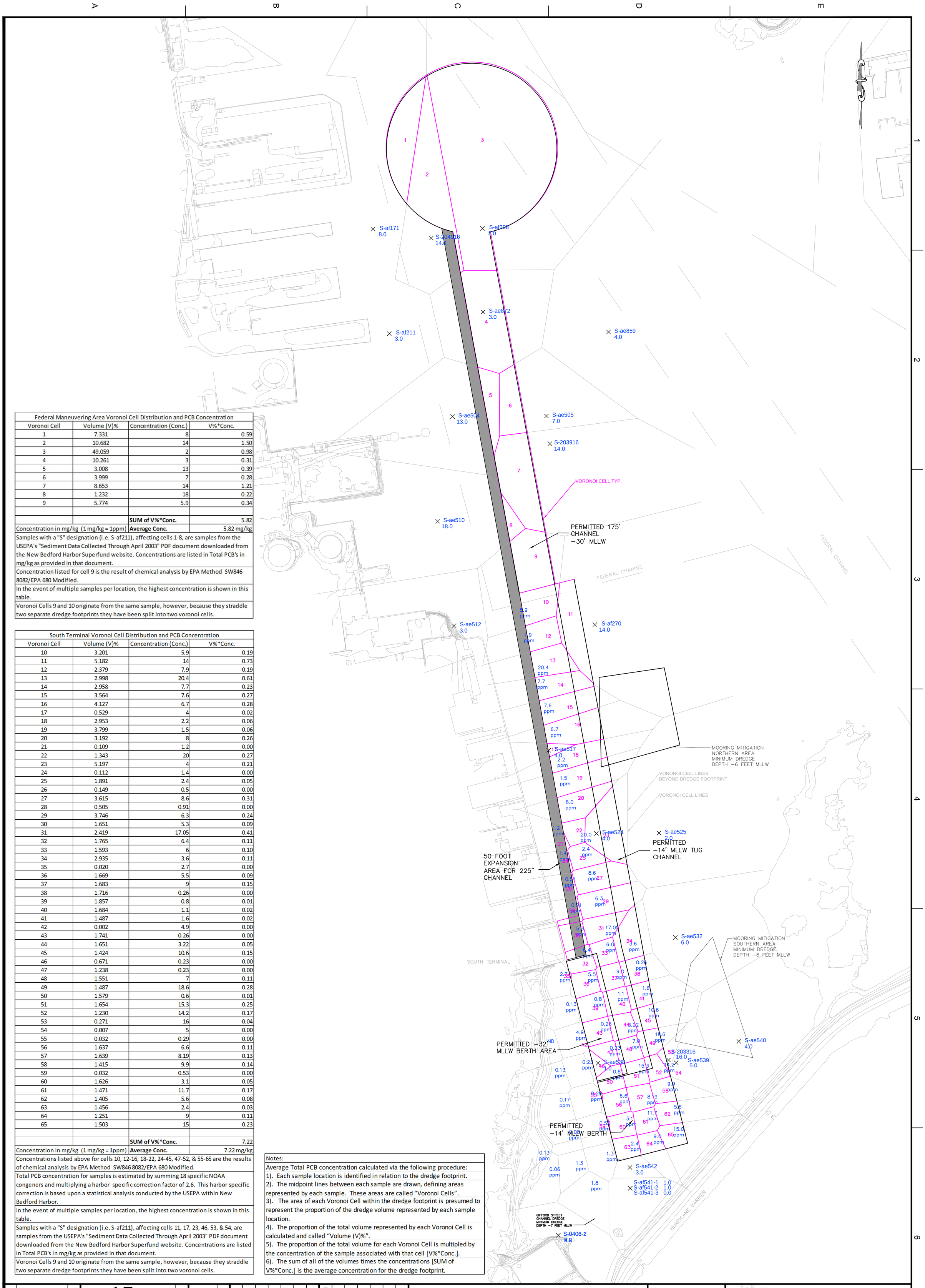
SOUTH TERMINAL AND FEDERAL MANUEVERING AREA BATHYMETRY WITH 225 FT CHANNEL

DRAWING NO.

V-5.4

1 OF 1

ATTACHMENT C



Federal Maneuvering Area Voronoi Cell Distribution and PCB Concentration			
Voronoi Cell	Volume (V)%	Concentration (Conc.)	V%*Conc.
1	7.331	8	0.59
2	10.682	14	1.50
3	49.059	2	0.98
4	10.261	3	0.31
5	3.008	13	0.39
6	3.999	7	0.28
7	8.653	14	1.21
8	1.232	18	0.22
9	5.774	5.9	0.34
		SUM of V%*Conc.	5.82
Concentration in mg/kg (1 mg/kg = 1ppm)		**Average Conc.**	5.82 mg/kg

Samples with a "S" designation (i.e. S-af211), affecting cells 1-8, are samples from the USEPA's "Sediment Data Collected Through April 2003" PDF document downloaded from the New Bedford Harbor Superfund website. Concentrations are listed in Total PCB's in mg/kg as provided in that document.

Concentration listed for cell 9 is the result of chemical analysis by EPA Method SW846 8082/EPA 680 Modified.

In the event of multiple samples per location, the highest concentration is shown in this table.

Voronoi Cells 9 and 10 originate from the same sample, however, because they straddle two separate dredge footprints they have been split into two voronoi cells.

South Terminal Voronoi Cell Distribution and PCB Concentration			
Voronoi Cell	Volume (V)%	Concentration (Conc.)	V%*Conc.
10	3.201	5.9	0.19
11	5.182	14	0.73
12	2.379	7.9	0.19
13	2.998	20.4	0.61
14	2.958	7.7	0.23
15	3.564	7.6	0.27
16	4.127	6.7	0.28
17	0.529	4	0.02
18	2.953	2.2	0.06
19	3.799	1.5	0.06
20	3.192	8	0.26
21	0.109	1.2	0.00
22	1.343	20	0.27
23	5.197	4	0.21
24	0.112	1.4	0.00
25	1.891	2.4	0.05
26	0.149	0.5	0.00
27	3.615	8.6	0.31
28	0.505	0.91	0.00
29	3.746	6.3	0.24
30	1.651	5.3	0.09
31	2.419	17.05	0.41
32	1.765	6.4	0.11
33	1.593	6	0.10
34	2.935	3.6	0.11
35	0.020	2.7	0.00
36	1.669	5.5	0.09
37	1.683	9	0.15
38	1.716	0.26	0.00
39	1.857	0.8	0.01
40	1.684	1.1	0.02
41	1.487	1.6	0.02
42	0.002	4.9	0.00
43	1.741	0.26	0.00
44	1.651	3.22	0.05
45	1.424	10.6	0.15
46	0.671	0.23	0.00
47	1.238	0.23	0.00
48	1.551	7	0.11
49	1.487	18.6	0.28
50	1.579	0.6	0.01
51	1.654	15.3	0.25
52	1.230	14.2	0.17
53	0.271	16	0.04
54	0.007	5	0.00
55	0.032	0.29	0.00
56	1.637	6.6	0.11
57	1.639	8.19	0.13
58	1.415	9.9	0.14
59	0.032	0.53	0.00
60	1.626	3.1	0.05
61	1.471	11.7	0.17
62	1.405	5.6	0.08
63	1.456	2.4	0.03
64	1.251	9	0.11
65	1.503	15	0.23
		SUM of V%*Conc.	7.22
Concentration in mg/kg (1 mg/kg = 1ppm)		**Average Conc.**	7.22 mg/kg

Concentrations listed above for cells 10, 12-16, 18-22, 24-45, 47-52, & 55-65 are the results of chemical analysis by EPA Method SW846 8082/EPA 680 Modified.

Total PCB concentration for samples is estimated by summing 18 specific NOAA congeners and multiplying a harbor specific correction factor of 2.6. This harbor specific correction is based upon a statistical analysis conducted by the USEPA within New Bedford Harbor.

In the event of multiple samples per location, the highest concentration is shown in this table.

Samples with a "S" designation (i.e. S-af211), affecting cells 11, 17, 23, 46, 53, & 54, are samples from the USEPA's "Sediment Data Collected Through April 2003" PDF document downloaded from the New Bedford Harbor Superfund website. Concentrations are listed in Total PCB's in mg/kg as provided in that document.

Voronoi Cells 9 and 10 originate from the same sample, however, because they straddle two separate dredge footprints they have been split into two voronoi cells.

Notes:

Average Total PCB concentration calculated via the following procedure:

1). Each sample location is identified in relation to the dredge footprint.

2). The midpoint lines between each sample are drawn, defining areas represented by each sample. These areas are called "Voronoi Cells".

3). The area of each Voronoi Cell within the dredge footprint is presumed to represent the proportion of the dredge volume represented by each sample location.

4). The proportion of the total volume represented by each Voronoi Cell is calculated and called "Volume (V)%".

5). The proportion of the total volume for each Voronoi Cell is multiplied by the concentration of the sample associated with that cell [V%*Conc.].

6). The sum of all of the volumes times the concentrations [SUM of V%*Conc.] is the average concentration for the dredge footprint.

SOUTH TERMINAL AND FEDERAL MANUEVERING AREA VORONOI CELL WITH 225 FT CHANNEL

DRAWING NO.

V-5.4

1 OF 1

SHEET TITLE

SOUTH TERMINAL AND FEDERAL MANUEVERING AREA VORONOI CELL WITH 225 FT CHANNEL

GRAPHIC SCALE

SCALE: 1"=200'

0 100 200 400

DRAWING SCALE 1"=200'

DATE 06/5/2012

CHECKED BY

DRAWN BY JER

DESIGNED BY JER

CADD FILE

PROJECT NO. 6690

NO.	DATE	DESCRIPTION	BY

PROJECT

NEW BEDFORD MARINE COMMERCE TERMINAL

OWNER

MASSACHUSETTS CLEAN ENERGY CENTER
55 SUMMER STREET, 9TH FLOOR
BOSTON, MASSACHUSETTS

DRAFT

APEX
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