NBH – South Terminal

EPA Questions and Comments Following Review of the Commonwealth's
June 18, 2012 Submission

1. Please provide a detailed description of the newly proposed project revisions, including engineering plans and elevations (cross sections) showing the revised project design, including the expanded deep draft quay-side areas, the new 50 foot expansion of the navigational channels, the resultant expansion of CAD cell #3, the reduced northern mooring area, the expanded winter flounder spawning habitat creation area, the expanded OU-3 capping mitigation area, and any other changes or revisions proposed for the project that are not reflected in the current plan sets and figures. Figures 2, 5, 10, 11 and similar figures representing the proposed project should be updated to include all revisions.

2. Please provide information that describes the impacts associated with disposal of dredged material into the CAD cells (referenced on page 14).

3. The last two sentences of the response to Question 4A on page 21are confusing. Please clarify whether the 0.18 acres of salt marsh is or is not included in the 1.94 acre calculation of intertidal area.

4. On page 22, the submission discusses two wetlands on the upland portion of the site. Based on the description and revised Figure 5 (Attachment N) these wetlands appear to be adjacent to (i.e., neighboring) a traditionally navigable water (New Bedford Harbor), rather than isolated, and therefore are likely subject to federal jurisdiction. Please identify the total acreage of these wetlands and provide any other currently available information, including a description of the vegetation, soils and hydrology present and any photographs that depict these areas.

5. According to page 10, the size of the CAD cell is unchanged from the January 18, 2012 submittal. However, page 28 refers to "associated increases in the size of CAD cell #3 to accommodate additional impacted dredge spoils for disposal." Please describe how much larger the CAD cell will be, what additional impacts will result from its expansion, and what additional mitigation is proposed.

6. We have a number of questions related to the turbidity information provided in response to Question 5L, pages 34-36. First, the January 18, 2012 submission referenced the potential use of tackifiers and polymer emulsions to temporarily stabilize construction areas. EPA had asked for more details about their use (see Question 5L on page 34) but the response does not address the question. Please provide a response to this question, as it may have a bearing on potential contamination of stormwater. Second, please explain the basis (i.e., literature-based, water quality standards-based, etc.) for the criteria for permissible turbidity increases mentioned in the response to Question 5L (pages 34-36), and in particular whether these are sufficient to protect existing and designated uses.

Third, please explain the basis for the proposed locations of turbidity monitoring stations at 200 feet up- and down-current from the dredging activity, mentioned in the response to Question 5L (page 34-36). Fourth, when silt curtains are used, the proposal is to locate the monitoring station outside and within 15 feet of the silt curtain. Please state how far from the activity the silt curtain will be placed.

7. The response to Question 7D on page 40 acknowledges that the tern survey planned for Spring/Summer of 2012 has not been completed. Please state when it will be completed.

8. Regarding the flood storage loss issue, the response on page 42 to Question 7F describes the Marsh Island mitigation project and states that "the final volume of material to be removed from the flood storage band of +2 to +6 NGVD29 is unknown at this time...," but later states that the "project has been designed and is the process of being permitted." Since the project has been designed and is in the permit process, please obtain and provide the information necessary to enable an evaluation to be made of the flood storage capacity between +2 and +6 that will result from this mitigation project. Also please identify when the mitigation work will occur.

9. Two additional items need further explanation so that we may evaluate the extent of impacts. First, please identify the size of the intertidal salt marsh at the site that would remain after 0.18 acres of it are filled for the project, and provide a description of any secondary impacts likely to occur to the remaining salt marsh due to erosion or sedimentation from altered wave action, tidal currents, prop wash, etc., from the construction and operation of the facility. Second, please provide an estimate of the volume of water that the international vessels will take in from the harbor for ballast for their return trip. This question is relevant to the potential entrainment of eggs and larvae and associated impacts to aquatic species.

Responses to USEPA's 6/26/12 Questions

1. **Question:** Please provide a detailed description of the newly proposed project revisions, including engineering plans and elevations (cross sections) showing the revised project design, including the expanded deep draft quay-side areas, the new 50 foot expansion of the navigational channels, the resultant expansion of CAD cell #3, the reduced northern mooring area, the expanded winter flounder spawning habitat creation area, the expanded OU-3 capping mitigation area, and any other changes or revisions proposed for the project that are not reflected in the current plan sets and figures. Figures 2, 5, 10, 11 and similar figures representing the proposed project should be updated to include all revisions.

   Response: The revised plans for the project include engineering plans for the expansion of the winter flounder spawning habitat creation area, the expanded OU-3 capping mitigation area, and the reduction in the mooring mitigation dredge area. Updated plans outlining the potential expansions/reductions for these proposed work elements are attached as **Attachment A**. The channel expansion and deep-draft expansion items noted in the plans represent construction elements that are not part of the currently proposed facility plans and currently are not expected to be constructed, but could become contractual alternate add-ons in the future. Updated engineering plans outlining the potential expansions of the proposed work for the possible channel expansion and expansion of the deep-draft area have been created and are also attached in **Attachment A.** These attachments show the proposed outlines of the areas that the Commonwealth would anticipate impacting should the Commonwealth implement any of the optional items that were presented for EPA's consideration within the within the Commonwealth's June 18, 2012 submittal to EPA. The plans include:

   - Alternate plans P-2.1, P-2.2, P-2.3, P-2.5, and P-2.6 which show the draft plans for the Top of Dredge, Intermediate Dredge and Bottom of Dredge, should the Commonwealth decide to pursue both the expanded channel and expansion of the deep-draft area at the terminal to the north and south.
   - Plans P-2.8 and X-2.4, which outline the reduction in the size of the Northern Mooring Mitigation Area.
   - Replacement plans P-5.1, P-5.2 and X-5.1, which reflect the increased mitigation associated with the Winter Flounder Mitigation Area and the OU-3 Capping Mitigation Area, and should replace plans of the same name included within Attachment A of the Commonwealth's June 18, 2012 submission to EPA.
   - Alternate plans P-13, P-14, P-26, and X-4 which outline the largest anticipated configuration for CAD Cell #3. Please note that this largest configuration for CAD Cell #3 was the basis for the Commonwealth's determination that the resource area impacts for CAD Cell #3 would be 8.76 acres. The CAD Cell #3 design included within the Commonwealth's responses to EPA questions submitted on June 18, 2012 contained a smaller configuration for CAD Cell #3, one which did not include the potential increases in size to the channel or

deep-draft berth, and whose impact is approximately 6.3 acres. Please see the answer to EPA's Question 5 below for additional explanation.

- Revised Figures: 2, 3, 6, 8, 10, and 11 from the Commonwealth's January 18, 2012 submittal to EPA.
- An updated General Site Plan previously included as Attachment H of the Commonwealth's June 18, 2012 submittal to EPA.

A revised Figure 5 is awaiting the results of wetland flagging which is currently being completed by the Commonwealth. The revised Figure 5 will accompany the Commonwealth's response to Question 4, which will be submitted as soon as they are complete.

2. **Question:** Please provide information that describes the impacts associated with disposal of dredged material into the CAD cells (referenced on page 14).

   Response: Disposal of dredged material into CAD Cell #2 and CAD Cell #3 involves the deposition, via split-hull scow, of material mechanically dredged into the CAD Cell via gravity. Minor re-suspension of sediment is anticipated to take place associated with disposal of sediment within the CAD Cell. For a detailed analysis of the environmental impacts of re-suspension of sediment due to dredging and disposal of sediment, please review Section 6.4.5.9, Impairment of Water Quality, of the Commonwealth's Essential Fish Habitat Assessment (pages 193 to 198 of the Commonwealth's January 18, 2012 submittal to EPA).

   The Commonwealth also conducted multiple studies associated with potential re-suspension and potential consequential environmental impacts in its Draft and Final Environmental Impact Assessment associated with the Dredge Materials Management Plan for New Bedford Harbor completed in 2003. Please see Appendices D through K of the Commonwealth's Final Environmental Impact Report for New Bedford and Fairhaven's Dredge Materials Management Plan. The link to that document is:

   http://www.mass.gov/czm/dredgereports/2003/feirnb-f.htm

   Finally, the U.S. Army Corps of Engineers document titled "Assessment of Contaminant Loss and Sizing for Proposed Lower Harbor Confined Aquatic Disposal Cell", dated May 2010 assessed re-suspension of sediment associated with a proposed 300,000 cubic yard Confined Aquatic Disposal Cell under design by USEPA. The Commonwealth anticipates that USACE's modeling would likely be similarly representative of the potential re-suspension that would be associated with the Commonwealth's proposed CAD Cell #3.

3. **Question:** The last two sentences of the response to Question 4A on page 21 are confusing. Please clarify whether the 0.18 acres of salt marsh is or is not included in the 1.94 acre calculation of intertidal area.

Response: The 0.18 acres of salt marsh are not included within the 1.94 acre calculation of intertidal area. These are considered two separate resource area impacts by the Commonwealth and the two numbers do not overlap.

4. **Question:** On page 22, the submission discusses two wetlands on the upland portion of the site. Based on the description and revised Figure 5 (Attachment N) these wetlands appear to be adjacent to (i.e., neighboring) a traditionally navigable water (New Bedford Harbor), rather than isolated, and therefore are likely subject to federal jurisdiction. Please identify the total acreage of these wetlands and provide any other currently available information, including a description of the vegetation, soils and hydrology present and any photographs that depict these areas.

   Response: Based on a prior assessment undertaken by Commonwealth and EPA staff last year, the Commonwealth questions whether the areas in question qualify as wetlands. Nevertheless, these areas are currently being re-delineated by the Commonwealth in order to provide the additional information that EPA is requesting. The results of this re-delineation will be submitted as soon as they are completed, as well as an updated Figure 5, which will reflect any changes in the outlines of the updated re-delineation of the wetland areas. In the meantime, the Commonwealth will continue to explore ways to confirm the conclusions reached last year.

5. **Question:** According to page 10, the size of the CAD cell is unchanged from the January 18, 2012 submittal. However, page 28 refers to "associated increases in the size of CAD cell #3 to accommodate additional impacted dredge spoils for disposal." Please describe how much larger the CAD cell will be, what additional impacts will result from its expansion, and what additional mitigation is proposed.

   Response: The 8.76 acre impact area associated with CAD Cell #3 listed on page 10 of the Commonwealth's June 18, 2012 submittal to EPA (8.76 acres) is based upon the anticipated largest CAD Cell that would potentially be constructed in association with the anticipated work. While this larger (8.76 acres) CAD Cell is not part of the current project plans, it is possible that the larger CAD Cell may be needed if other project alternatives become realities, and therefore the design for the larger CAD is being submitted for EPA's consideration. The design for that larger CAD Cell is attached to this document as **Attachment A**, which includes designs for Top of CAD #3, Bottom of CAD #3, Cross Sections, and a CAD #3 disposal plan for the largest CAD Cell anticipated by the Commonwealth, which, again, is correlated with the 8.76 acres of impact.

   The design forwarded to EPA as Attachment A to the Commonwealth's June 18, 2012 response to EPA Questions is a smaller CAD Cell, associated with the 600 foot deep-draft quay-side, 175 foot wide channel, and 100 foot wide tug channel (without dredging in the Federal Channel). That design of CAD Cell #3 correlates to a smaller area of impact (approximately 6.3 acres).

The current proposed mitigation associated with this project assumes that the larger (i.e. 8.76 acre) CAD Cell will be constructed, even though the Commonwealth currently anticipates that only the smaller (i.e. approximately 6.3 acre) CAD Cell will be constructed in association with this project. Therefore, the Commonwealth does not anticipate a larger CAD Cell impact than the 8.76 acres stated on page 10 of the Commonwealths June 18, 2012 submittal and therefore no additional mitigation is proposed.

6. **Question:** We have a number of questions related to the turbidity information provided in response to Question 5L, pages 34-36. First, the January 18, 2012 submission referenced the potential use of tackifiers and polymer emulsions to temporarily stabilize construction areas. EPA had asked for more details about their use (see Question 5L on page 34) but the response does not address the question. Please provide a response to this question, as it may have a bearing on potential contamination of stormwater. Second, please explain the basis (i.e., literature-based, water quality standards-based, etc.) for the criteria for permissible turbidity increases mentioned in the response to Question 5L (pages 34-36), and in particular whether these are sufficient to protect existing and designated uses. Third, please explain the basis for the proposed locations of turbidity monitoring stations at 200 feet up- and down-current from the dredging activity, mentioned in the response to Question 5L (page 34-36). Fourth, when silt curtains are used, the proposal is to locate the monitoring station outside and within 15 feet of the silt curtain. Please state how far from the activity the silt curtain will be placed.

   Response: The Commonwealth has re-evaluated its statements regarding the use of tackifiers and polymer emulsions associated with application of straw mulch for soil stabilization that were contained within its January 18, 2012 submission to EPA. The Commonwealth is also revising the time periods for which the temporary stabilization measures should be implemented. The following temporary measures for stabilization of soil stockpiled onsite and for exposed areas are proposed:

   - For Dredge Material to be Utilized Within the New Bedford Marine Commerce Terminal or the Former Dartmouth Finishing Site: Stockpiles and areas to be left bare for more than 15 days shall be treated with air dried wood chip mulch or seeded with perennial fescue-grass.
   - For "Upper Existing Material": Stockpiles and areas to be left bare for more than 7 days shall be treated with air dried wood chip mulch or seeded with perennial fescue-grass.

   The use of tackifiers and polymer emulsions is hereby rescinded.

   EPA's second, third, and fourth points are associated with the State Enhanced Performance Standards, which were promulgated by MassDEP, and have been utilized within the context of the Navigational Dredging within New Bedford Harbor since 2004, in collaboration and under the oversight of EPA. MassDEP has provided

the following background information regarding the genesis of the SER Performance Standards:

- The provision related to turbidity is a subjective, not a quantitative standard in the Commonwealth of Massachusetts. The Commonwealth of Massachusetts' Surface Water Quality Standard: 314 CMR 4.05(2)(b)(6) provides that "waters shall be free from color and turbidity in concentrations that are aesthetically objectionable or would impair any use assigned to the Class."
- New Bedford Harbor is a Class B water, which requires consistently good aesthetic value.
- MassDEP typically applies a 50 NTU standard, taking background into consideration, as an upper limit for turbidity caused by dredging. If that level is detected in sampling, all dredging must stop until subsequent monitoring shows a level < 50 in the sampling area.
- MassDEP typically uses 25 NTUs as an action level to trigger that additional mitigation measures be introduced to reduce turbidity in order to avoid reaching the exceedance threshold.
- These levels have been historically approved/adopted by the ACOE in the dredging permits that MassDEP has been jointly involved in within the Commonwealth of Massachusetts.
- MassDEP have used its best professional judgment in setting these levels. The basis of the values has been a visual comparison of the relative opacity of water samples at different turbidity as measured via NTUs.
- The action levels proposed in the ARAR are significantly lower, and therefore arguably more protective, than the action levels typically conditioned in other dredge permits.

There is no evidence from the multiple dredging projects approved under the 50NTU level, or the more conservative ARAR level applied in the existing SER Performance Standards associated with prior Harbor navigational dredge projects, that indicates that these standards have resulted in impairment to aquatic life, particularly winter flounder spawning or the alewife fish run, or the impairment to the use of the water for recreational purposes.

7. **Question:** The response to Question 7D on page 40 acknowledges that the tern survey planned for Spring/Summer of 2012 has not been completed. Please state when it will be completed.

Response: EPA's statement is correct. The Commonwealth has agreed to conduct the tern survey as mitigation for the impacts associated with its proposed project, and will proceed with the survey once the Commonwealth is assured that the project may move forward. As terns are migratory birds, the best time to conduct the survey will be in the Spring/Summer, after the project has been approved. At this time, and under the Commonwealth's anticipated schedule for approval of the project, the Commonwealth anticipates conducting the survey during the Spring/Summer of 2013.

8. **Question:** Regarding the flood storage loss issue, the response on page 42 to Question 7F describes the Marsh Island mitigation project and states that "the final volume of material to be removed from the flood storage band of +2 to +6 NGVD29 is unknown at this time...," but later states that the "project has been designed and is the process of being permitted." Please obtain and provide the information necessary to enable an evaluation to be made of the flood storage capacity between +2 and +6 that will result from this mitigation project, or if it is not yet available, state when it will be available. Also please identify when the mitigation work will occur.

   Response: Plans of the Marsh Island mitigation project design have been collected by the Commonwealth and are included in **Attachment B**. The Commonwealth has analyzed the pre-construction elevations, and compared them to the post-construction planned elevations in NGVD 29. Based on the information contained within the plans, the volume of material to be removed from the elevations of +2 to +6 NGVD 29 in association with the Marsh Island mitigation project is approximately 64,000 cubic yards. The increase in flood storage capacity within New Bedford Harbor between +2 and +6 NGVD 29 that will result from this mitigation is 39.67 acre feet. The Marsh Island mitigation project has a projected start date of the Spring of 2014. The construction is proposed to be completed one year from ground breaking.

9. Q**uestion:** Two additional items need further explanation so that we may evaluate the extent of impacts. First, please identify the size of the intertidal salt marsh at the site that would remain after 0.18 acres of it are filled for the project, and provide a description of any secondary impacts likely to occur to the remaining salt marsh due to erosion or sedimentation from altered wave action, tidal currents, prop wash, etc., from the construction and operation of the facility. Second, please provide an estimate of the volume of water that the international vessels will take in from the harbor for ballast for their return trip. This question is relevant to the potential entrainment of eggs and larvae and associated impacts to aquatic species.

   Response: The total area of the salt marsh is 0.95 acres; 0.18 acres will be filled, leaving 0.77 acres remaining. The salt marsh will have protection from wave action, and tidal currents in much the same manner as pre-project state. The New Bedford Hurricane Barrier currently protects the salt marsh from significant wave action and associated erosional forces from the south of New Bedford. Similarly, the existing sand bar that exists immediately to the east of the salt marsh protects the wetland from waves and currents generated within New Bedford Harbor. The existing sand bar will remain intact. The connection to New Bedford Harbor that allows the ebb and flood of water to nourish the wetland is located on the southern end of the wetland, and the new facility should not interrupt the flow of water into and out of the wetland from New Bedford Harbor on the south.

   It is currently anticipated that prop wash from the new facility will not impact areas to the south of the New Bedford Marine Commerce Terminal due to its geometry. Vessels will be located to the east of the facility and the forces from prop wash will

be directed in either a northern or southern direction. The wetland is located to the south of the facility, significantly to the west of the line of the anticipated prop-wash forces. The wetland will be sheltered from forces coming directly from the east by the structure of the facility itself.

The southern face of the New Bedford Marine Commerce Terminal will be covered with rip-rap, which is intended to protect the southern face from erosion that could impact the salt marsh. Additionally, southern face of the terminal is graded away from the edge, toward a stormwater collection interceptor trench which also is designed to collect stormwater that flows toward the south. As a result, stormwater will be collected prior to it being able to discharge off of the southern end of the facility (and will also be re-directed away from that face), which will also protect the salt marsh area from impact associated with operation of the facility.

As stated within the Commonwealth's January 18, 2012 submittal to EPA, the New Bedford Marine Commerce Terminal anticipates that, for the first user of the facility, approximately 26 international vessels will arrive at port for unloading of offshore renewable energy components within a one-year period, which would mean that a vessel would be arriving approximately every two weeks. It is the Commonwealth's understanding that large vessels similar to the size of those anticipated to arrive at the New Bedford Marine Commerce Terminal can take on as much as a million gallon of water depending on their hull design and return transit conditions; however, typical procedure is to utilize less volume (200,000 to 300,000 gallons) when setting out, and adding more volume as needed during transit.

For comparison purposes, the volume of water within which the deep-draft berth and adjacent channel will occupy in front of the New Bedford Marine Commerce Terminal (i.e. the volume of water along the length of the deep-draft section of the bulkhead, extending 275 feet from the eastern edge of the bulkhead, and extending from the water surface to -30 MLLW, which represents the water immediately surrounding a vessel that could be taking on ballast) is approximately 55.5 million gallons. Thus the ballast water utilized by a vessel in port (200,000-300,000 gallons) will represent approximately 0.36%-0.54% of the total deep-draft water adjacent to the terminal (55.5 million gallons).

It is currently the Commonwealth's understanding, based upon discussion held between MassDEP, EPA, and resource agencies over the last year, that the dredged channel areas immediately adjacent to the New Bedford Marine Commerce Terminal will not provide good spawning habitat for aquatic species; and as a result, the Commonwealth is providing mitigation for impacts to winter flounder spawning habitat in this very area on the assumption that the creation of the deep-draft berthing area and the adjacent channel as part of the project will cause those areas to no longer be viable winter flounder spawning habitat due to its post-construction depth. Other species may be more likely to spawn in the deeper water where the vessels will be berthed while collecting ballast; however, it seems likely that this area will have a lower level of spawning activity due to the deeper water and the human activity.

Thus, it is anticipated that the removal of a relatively small quantity (0.36%-0.54%) of water from this area adjacent to the bulkhead that will be deepened will not result in a significant impact associated with entrainment of eggs and larvae.

10. Q**uestion:** P. 11 of (the Commonwealth's June 18, 2012 response to EPA questions) states that navigational "blasting may be required if necessary channel depths cannot be achieved through conventional means." Although the review discusses the potential impacts of blasting on water quality, it does not discuss potential impacts on paleosols or other historic properties. This omission should be addressed.

    Response: The Commonwealth has compared the scope of its previous cultural resource investigations with the changes proposed within the Commonwealth's June 18, 2012 submittal and has determined that the actions will take place within areas that have previously been investigated and are significantly far from the existing delineated subtidal and/or intertidal paleosol areas that have been delineated as a result of investigations completed to date, and therefore will not adversely effect the subtidal or intertidal paleosol areas.

    The potential expansion of the deep draft area to the north and south, the potential blasting, and the potential expanded width of the navigational channel are all located on the northern portion of the eastern face of the proposed bulkhead. The anticipated maximum radius of impact of blasting will be approximately 50 feet. The nearest paleosol area is located on the southern face of the proposed bulkhead, which is a considerable distance from the proposed additional work.

    The Commonwealth's Contractor will be required to demarcate areas of cultural resource area significance (such as the subtidal and intertidal paleosol areas) prior to the start of construction. No equipment will be allowed within or floating above a paleosol area.

    No dredging or other work activities will take place within 100 feet of a paleosol area without the implementation of Temporary Excavation Support (anticipated to be in the form of sheet piling to support the Paleosol area), which will ensure that that the Cultural Resource will not be disturbed during dredging or other work activities.

    Should unanticipated finds or human remains be discovered during the course of the work, the Commonwealth has included the following procedures within its specifications: "Policy Guidance on the Discovery of Unanticipated Human Remains" and/or "Policy Guidance for the Discovery of Unanticipated Underwater Archaeological Resources", promulgated by the Commonwealth of Massachusetts Board of Underwater Archaeological Resources, Office of Coastal Zone Management. These are attached as **Attachment C**.

NOTES:

1. MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.1 TOP OF DREDGE FOOTPRINT PLAN 1" AND "P-2.2 TOP OF DREDGE FOOTPRINT PLAN 2" SHALL BE DREDGED AND DISPOSED INTO CAD CELL #3.
2. MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.1 TOP OF DREDGE FOOTPRINT PLAN 1" AND "P-2.2 TOP OF DREDGE FOOTPRINT PLAN 2" SHALL BE DREDGED AND DISPOSED INTO CAD CELL #3 BEFORE MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.3 INTERMEDIATE DREDGE FOOTPRINT PLAN 1" AND P-2.4 INTERMEDIATE DREDGE FOOTPRINT PLAN 2" IS DREDGED.
3. MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.3 INTERMEDIATE DREDGE FOOTPRINT PLAN 1" AND "P-2.4 INTERMEDIATE DREDGE FOOTPRINT PLAN 2" SHALL NOT BE DREDGED UNTIL MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.1 TOP OF DREDGE FOOTPRINT PLAN 1" AND "P-2.2 TOP OF DREDGE FOOTPRINT PLAN 2" HAS BEEN DREDGED AND DISPOSED INTO CAD CELL #3.
4. ALSO SEE DRAWINGS P-2.2, P-2.3, P-2.4, P-2.5, AND P-2.6.
5. FOR DREDGE CROSS SECTIONS SEE DRAWINGS X-2.1 AND X-2.2. FOR LOCATIONS OF DREDGE CROSS SECTIONS, SEE DRAWINGS P-2.5 AND P-2.6.

AREA 1
MINIMUM DREDGE DEPTH
-6' MLLW

AREA 2
MINIMUM DREDGE DEPTH
-9' MLLW

AREA 3
MINIMUM DREDGE DEPTH
-12' MLLW

AREA 4
MINIMUM DREDGE DEPTH
-10' MLLW

AREA 5
MINIMUM DREDGE DEPTH
-11' MLLW

AREA 6
MINIMUM DREDGE DEPTH
-10' MLLW

AREA 7
MINIMUM DREDGE DEPTH
-8' MLLW

AREA 8
MINIMUM DREDGE DEPTH
-7' MLLW

AREA 9
MINIMUM DREDGE DEPTH
-6' MLLW

AREA 10
MINIMUM DREDGE DEPTH
-4' MLLW

AREA 11
MINIMUM DREDGE DEPTH
-3' MLLW

AREA 12
MINIMUM DREDGE DEPTH
-1' MLLW

AREA 15
MINIMUM DREDGE DEPTH
-12' MLLW

AREA 16
MINIMUM DREDGE DEPTH
-10' MLLW

AREA 17
MINIMUM DREDGE DEPTH
-7' MLLW

AREA 18
MINIMUM DREDGE DEPTH
-9' MLLW

AREA 19
MINIMUM DREDGE DEPTH
-14' MLLW

AREA 20
MINIMUM DREDGE DEPTH
-17' MLLW

AREA 21
MINIMUM DREDGE DEPTH
-22' MLLW

AREA 23
MINIMUM DREDGE DEPTH
-24' MLLW

DREDGE AREA 8
MINIMUM DREDGE DEPTH
-7' MLLW

DREDGE AREA 13
MINIMUM DREDGE DEPTH
-16' MLLW

DREDGE AREA 14
MINIMUM DREDGE DEPTH
-13' MLLW

LIMIT OF WORK

MATCH LINE TO SHEET P-2.1

MATCH LINE TO SHEET P-2.2

SOUTH TERMINAL

SUBTIDAL PALEOSOL AREA. SEE CULTURAL RESOURCE PROTECTION REQUIREMENTS IN SECTION 02850 CULTURAL RESOURCES OF THE CONTRACT DOCUMENTS.

AREA 1		AREA 4 (CONT.)		AREA 7 (CONT.)		AREA 9 (CONT.)		AREA 12		AREA 14 (CONT.)		AREA 18		AREA 19 (CONT.)		AREA 21	
X=816773.7442	Y=2688088.1407	X=816694.3779	Y=2688399.2312	X=816275.7469	Y=2688485.1896	X=816288.7434	Y=2688433.9722	X=816319.2693	Y=2687429.7574	X=816576.7701	Y=2688559.4657	X=816409.3799	Y=2689932.6904	X=816372.6105	Y=2689837.5853	X=816219.4483	Y=2689706.4166
X=816888.0645	Y=2687641.1172	X=816628.1936	Y=2688427.0031	X=816282.4750	Y=2688457.5426	AREA 10		X=816245.3437	Y=2687487.7646	X=816589.7096	Y=2688573.4387	X=816432.5987	Y=2689936.9676	X=8163409.3799	Y=2689932.6904	X=816423.4126	Y=2688797.2060
X=816570.3589	Y=2687559.8682	X=816676.8886	Y=2688485.4051	X=816327.8275	Y=2688468.1350	X=816285.2639	Y=2688446.6668	X=816194.9543	Y=2687513.2873	X=816617.3632	Y=2688577.7218	X=816439.2483	Y=2689900.8700	X=816375.5426	Y=2690114.7433	X=816302.8296	Y=2688717.3519
X=816564.2935	Y=2687567.573	X=816656.8168	Y=2688584.3035	X=816473.5958	Y=2688478.4339	X=816288.7434	Y=2688433.9722	X=816235.0670	Y=2687582.9300	X=816574.8861	Y=2688814.0044	X=816398.2017	Y=2689836.6597	X=816324.6259	Y=2690102.8711	X=8163330.4094	Y=2688567.0557
X=816718.6368	Y=2687853.021	X=816589.7098	Y=2688573.4388	X=816568.9019	Y=2688191.7202	X=816346.4784	Y=2688423.2605	X=816197.3778	Y=2687803.0498	X=816548.4799	Y=2688809.2850	X=816431.8497	Y=2689653.9996	AREA 20		X=816505.7240	Y=2688599.9336
X=816739.9621	Y=2688037.7404	X=816576.7701	Y=2688559.4657	AREA 8		X=816484.7068	Y=2688098.3319	X=816229.9883	Y=2688261.8401	AREA 15		X=816400.1390	Y=2689529.4198	X=816529.0830	Y=2688818.5483	X=816548.3108	Y=2688669.2648
X=816764.2209	Y=2688089.0541	X=816538.1020	Y=2688552.7275	X=816282.4750	Y=2688457.5426	X=816473.5373	Y=2687716.9369	X=816162.8146	Y=2688522.7544	X=816632.1899	Y=2688580.0183	X=816453.1413	Y=2689436.2051	X=816531.2877	Y=2688806.2124	X=816456.6735	Y=2688917.8271
AREA 2		X=816597.7420	Y=2688326.4731	X=816327.8275	Y=2688468.1350	X=816409.8311	Y=2687449.4289	X=816192.9784	Y=2688530.5202	X=816617.3632	Y=2688577.7218	X=816559.8409	Y=2688885.7625	X=816548.6802	Y=2688809.0964	X=816405.4663	Y=2689207.0160
X=816764.2209	Y=2688089.0541	X=816590.1344	Y=2688083.1296	X=816473.5958	Y=2688478.4339	X=816387.5508	Y=2687426.6966	X=816230.2207	Y=2688385.3352	X=816574.8865	Y=2688814.0044	X=816579.0737	Y=2688833.8913	X=816551.7643	Y=2688790.4976	X=816306.1663	Y=2689661.9534
X=816740.0365	Y=2688183.6216	AREA 5		X=816568.9019	Y=2688191.7202	X=816433.6500	Y=2687628.8726	X=816297.0544	Y=2688402.4275	X=816589.7130	Y=2688816.3008	X=816581.9836	Y=2688815.1037	X=816592.6879	Y=2688679.4939	X=816293.5016	Y=2689979.2904
X=816737.3331	Y=2688185.7028	X=816724.8298	Y=2688108.0709	X=816566.2663	Y=2687967.7480	X=816412.1869	Y=2687815.2495	X=816354.3658	Y=2688179.8199	AREA 16		X=816548.6020	Y=2688809.5683	X=816575.4427	Y=2688655.0499	X=816324.6259	Y=2690102.8711
X=816695.6083	Y=2687926.637	X=816590.1344	Y=2688083.1296	X=816493.3405	Y=2687642.6433	X=816446.9807	Y=2687966.5007	X=816287.1494	Y=2687769.2422	X=816656.8168	Y=2688584.3035	X=816546.2569	Y=2688821.7235	X=816580.0114	Y=2688628.9156	X=816316.1189	Y=2690100.8876
X=816659.8265	Y=2687892.8305	X=816589.8083	Y=2688072.6987	X=816445.0594	Y=2687485.3716	X=816356.2986	Y=2688310.8518	X=816394.9282	Y=2687594.9245	X=816658.822	Y=2688587.4672	AREA 19		X=816533.7748	Y=2688578.7996	AREA 22	
X=816656.3573	Y=2687804.7782	X=816559.5231	Y=2687937.6865	X=816409.8311	Y=2687449.4289	X=816297.0544	Y=2688402.4275	AREA 13		X=816615.8688	Y=2688820.6403	X=816529.0830	Y=2688818.5483	X=816512.3113	Y=2688569.0594	X=816278.4639	Y=2690094.2845
X=816533.9658	Y=2687565.5312	X=816700.0718	Y=2687954.3507	X=816473.5399	Y=2687716.9270	X=816230.2207	Y=2688385.3352	X=816258.5030	Y=2688552.1678	X=816589.713	Y=2688816.3008	X=816531.2877	Y=2688806.2124	X=816505.7240	Y=2688599.9336	X=816216.4751	Y=2690378.8234
X=816534.4138	Y=2687559.8197	AREA 6		X=816489.7040	Y=2687721.5676			X=816330.4094	Y=2688567.0557	X=816632.1899	Y=2688580.0183	X=816548.6802	Y=2688809.0964	X=816548.3108	Y=2688669.2648	X=816006.5722	Y=2690325.0388
X=816534.4138	Y=2687559.8197	X=816700.0718	Y=2687954.3507	X=816507.0269	Y=2687922.9533	AREA 11		X=816505.7240	Y=2688599.9336	AREA 17		X=816546.2569	Y=2688821.7235	X=816500.5075	Y=2688798.9291	X=816123.2940	Y=2689691.1469
X=816564.2935	Y=2687567.573	X=816695.6083	Y=2687926.6370	X=816497.5278	Y=2688105.0489	X=816297.0544	Y=2688402.4275	X=816512.3113	Y=2688569.0594	X=816615.8688	Y=2688820.6403	X=816526.0265	Y=2688876.2850	X=816456.6735	Y=2688917.8271	X=816258.8791	Y=2689712.6784
X=816718.6368	Y=2687853.021	X=816659.8265	Y=2687892.8305	X=816417.0225	Y=2688297.4863	X=816356.2986	Y=2688310.8518	X=816272.6086	Y=2688497.3791	X=816619.0435	Y=2688836.5257	X=816472.7920	Y=2689150.9116			X=816251.9276	Y=2690001.2153
X=816739.9621	Y=2688037.7404	X=816656.3573	Y=2687804.7782	AREA 9		X=816446.9807	Y=2687966.5007	AREA 14		X=816423.5131	Y=2689897.9714	X=816419.5575	Y=2689425.5381			X=816278.4639	Y=2690094.2845
AREA 3		X=816533.9658	Y=2687565.5312	X=816285.2639	Y=2688446.6668	X=816412.1869	Y=2687815.2495	X=816551.7643	Y=2688790.4976	X=816423.5131	Y=2689897.9714	X=816373.7548	Y=2689527.1136			AREA 23	
X=816676.8886	Y=2688485.4051	X=816445.0594	Y=2687485.3716	X=816387.5954	Y=2688441.9398	X=816433.6500	Y=2687628.8726	X=816592.6879	Y=2688679.4939	X=816405.9401	Y=2689866.4097	X=816406.2710	Y=2689654.8578			X=816123.2940	Y=2689691.1469
X=816671.4083	Y=2688469.4631	X=816493.3405	Y=2687642.6433	X=816416.8466	Y=2688297.9067	X=816387.5508	Y=2687426.6966	X=816575.4427	Y=2688655.0499	X=816398.2017	Y=2689836.6597	X=816372.6105	Y=2689837.5853			X=816302.8296	Y=2688717.3519
X=816682.2063	Y=2688410.8454	X=816559.5231	Y=2687937.6865	X=816497.5278	Y=2688105.0489	X=816359.5399	Y=2687398.1583	X=816580.0114	Y=2688628.9156	X=816431.8497	Y=2689653.9996					X=816423.4126	Y=2688797.2060
X=816694.3779	Y=2688399.2312	AREA 7		X=816507.0269	Y=2687922.9533	X=816319.2693	Y=2687429.7574	X=816533.7748	Y=2688578.7996	X=816400.139	Y=2689529.4198					X=816219.4483	Y=2689706.4166
X=816628.1936	Y=2688427.0031	X=816566.2663	Y=2687967.7480	X=816489.7040	Y=2687721.5676	X=816394.9282	Y=2687594.9245	X=816512.3113	Y=2688569.0594	X=816453.1413	Y=2689436.2051					AREA 24	
AREA 4		X=816589.8083	Y=2688072.6987	X=816473.5399	Y=2687716.9275	X=816287.1494	Y=2687769.2422	X=816272.6087	Y=2688497.3788	X=816559.8409	Y=2688885.7625					X=816369.1368	Y=2690150.1320
X=816724.8298	Y=2688108.0709	X=816597.7420	Y=2688326.4731	X=816484.7068	Y=2688098.3319	X=816354.3658	Y=2688179.8199	X=816275.7469	Y=2688485.1896	X=816579.0737	Y=2688833.8913					X=816324.6259	Y=2690102.8711
X=816737.3331	Y=2688185.7028	X=816538.1003	Y=2688552.7339	X=816346.4784	Y=2688423.2605			X=816538.0204	Y=2688552.7133	X=816581.9836	Y=2688815.1037					X=816375.5426	Y=2690114.7433

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

PROJECT
NEW BEDFORD
MARINE COMMERCE
TERMINAL

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

NO.	DATE	DESCRIPTION	BY
1.	12-23-11	FOR CONSTRUCTION	CHM

PROJECT NO.	6690
CADD FILE	B_I_DREDGE
DESIGNED BY	GCD
DRAWN BY	CWM
CHECKED BY	CHM
DATE	8/30/11
DRAWING SCALE	1"=80'

GRAPHIC SCALE
SCALE: 1"=80'
0 40 80 160

SHEET TITLE

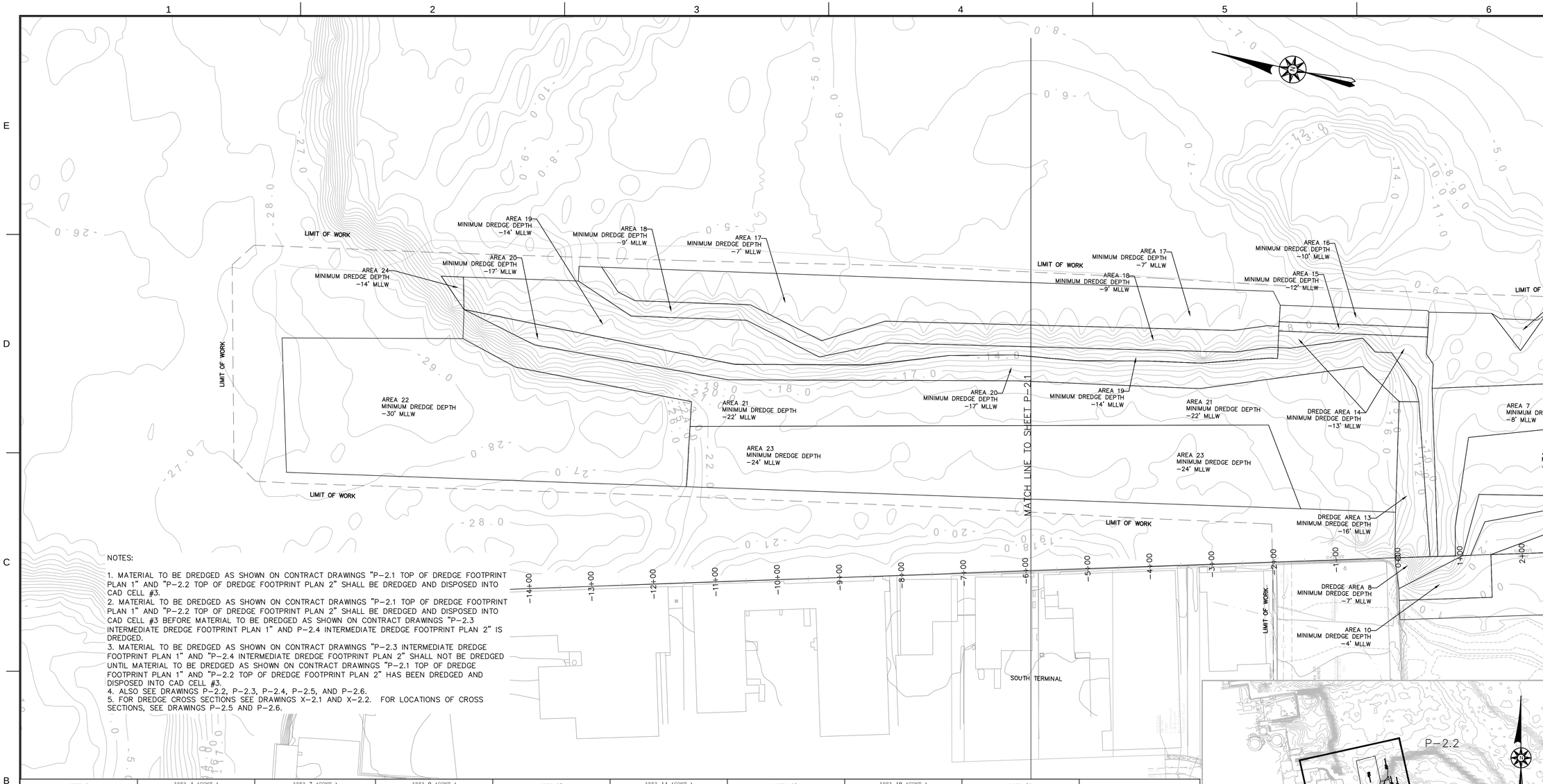
TOP OF DREDGE FOOTPRINT PLAN 1 EXPANDED

DRAWING NO.

P-2.1

51 OF 97

P:\Jobs\6690 NBH_ Phase IV\PLANS\FINAL_PLANS\100% Submittal\EPA_EXPANSION_DRAWINGS\P-2.1-P-2.2_TOP_OF_DREDGE_FOOTPRINT_EXPANSION.dwg



NOTES:

1. MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.1 TOP OF DREDGE FOOTPRINT PLAN 1" AND "P-2.2 TOP OF DREDGE FOOTPRINT PLAN 2" SHALL BE DREDGED AND DISPOSED INTO CAD CELL #3.
2. MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.1 TOP OF DREDGE FOOTPRINT PLAN 1" AND "P-2.2 TOP OF DREDGE FOOTPRINT PLAN 2" SHALL BE DREDGED AND DISPOSED INTO CAD CELL #3 BEFORE MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.3 INTERMEDIATE DREDGE FOOTPRINT PLAN 1" AND P-2.4 INTERMEDIATE DREDGE FOOTPRINT PLAN 2" IS DREDGED.
3. MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.3 INTERMEDIATE DREDGE FOOTPRINT PLAN 1" AND "P-2.4 INTERMEDIATE DREDGE FOOTPRINT PLAN 2" SHALL NOT BE DREDGED UNTIL MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.1 TOP OF DREDGE FOOTPRINT PLAN 1" AND "P-2.2 TOP OF DREDGE FOOTPRINT PLAN 2" HAS BEEN DREDGED AND DISPOSED INTO CAD CELL #3.
4. ALSO SEE DRAWINGS P-2.2, P-2.3, P-2.4, P-2.5, AND P-2.6.
5. FOR DREDGE CROSS SECTIONS SEE DRAWINGS X-2.1 AND X-2.2. FOR LOCATIONS OF CROSS SECTIONS, SEE DRAWINGS P-2.5 AND P-2.6.

AREA 1		AREA 4 (CONT.)		AREA 7 (CONT.)		AREA 9 (CONT.)		AREA 12		AREA 14 (CONT.)		AREA 18		AREA 19 (CONT.)		AREA 21	
X=816773.7442	Y=2688088.1407	X=816694.3779	Y=2688399.2312	X=816275.7469	Y=2688485.1896	X=816288.7434	Y=2688433.9722	X=816319.2693	Y=2687429.7574	X=816576.7701	Y=2688559.4657	X=816409.3799	Y=2689932.6904	X=816372.6105	Y=2689837.5853	X=816219.4483	Y=2689706.4166
X=816888.0645	Y=2687641.1172	X=816628.1936	Y=2688427.0031	X=816282.4750	Y=2688457.5426	AREA 10		X=816245.3437	Y=2687487.7646	X=816589.7096	Y=2688573.4387	X=816432.5987	Y=2689936.9676	X=8163409.3799	Y=26989932.6904	X=816423.4126	Y=2688797.2060
X=816570.3589	Y=2687559.8682	X=816676.8886	Y=2688485.4051	X=816327.8275	Y=2688468.1350	X=816285.2639	Y=2688446.6668	X=816194.9543	Y=2687513.2873	X=816617.3632	Y=2688577.7218	X=816439.2483	Y=2689900.8700	X=816375.5426	Y=2690114.7433	X=816302.8296	Y=2688717.3519
X=816564.2935	Y=2687567.573	X=816656.8168	Y=2688584.3035	X=816473.5958	Y=2688478.4339	X=816288.7434	Y=2688433.9722	X=816235.0670	Y=2687582.9300	X=816574.8861	Y=2688814.0044	X=816398.2017	Y=2689836.6597	X=816324.6259	Y=2690102.8711	X=8163330.4094	Y=2688567.0557
X=816718.6368	Y=2687853.021	X=816589.7098	Y=2688573.4388	X=816568.9019	Y=2688191.7202	X=816346.4784	Y=2688423.2605	X=816197.3778	Y=2687803.0498	X=816548.4799	Y=2688809.2850	X=816431.8497	Y=2689653.9996	AREA 20		X=816505.7240	Y=2688599.9336
X=816739.9621	Y=2688037.7404	X=816576.7701	Y=2688559.4657	AREA 8		X=816484.7068	Y=2688098.3319	X=816229.9883	Y=2688261.8401	AREA 15		X=816400.1390	Y=2689529.4198	X=816529.0830	Y=2688818.5483	X=816548.3108	Y=2688669.2648
X=816764.2209	Y=2688089.0541	X=816538.1020	Y=2688552.7275	X=816282.4750	Y=2688457.5426	X=816473.5373	Y=2687716.9369	X=816162.8146	Y=2688522.7544	X=816632.1899	Y=2688580.0183	X=816453.1413	Y=2689436.2051	X=816531.2877	Y=2688806.2124	X=816456.6735	Y=2688917.8271
AREA 2		X=816597.7420	Y=2688326.4731	X=816327.8275	Y=2688468.1350	X=816409.8311	Y=2687449.4289	X=816192.9784	Y=2688530.5202	X=816617.3632	Y=2688577.7218	X=816559.8409	Y=2688885.7625	X=816548.6802	Y=2688809.0964	X=816405.4663	Y=2689207.0160
X=816764.2209	Y=2688089.0541	X=816590.1344	Y=2688083.1296	X=816473.5958	Y=2688478.4339	X=816387.5508	Y=2687426.6966	X=816230.2207	Y=2688385.3352	X=816574.8865	Y=2688814.0044	X=816579.0737	Y=2688833.8913	X=816551.7643	Y=2688790.4976	X=816306.1663	Y=2689661.9534
X=816740.0365	Y=2688183.6216	AREA 5		X=816568.9019	Y=2688191.7202	X=816433.6500	Y=2687628.8726	X=816297.0544	Y=2688402.4275	X=816589.7130	Y=2688816.3008	X=816581.9836	Y=2688815.1037	X=816592.6879	Y=2688679.4939	X=816293.3016	Y=2689979.2904
X=816737.3331	Y=2688185.7028	X=816724.8298	Y=2688108.0709	X=816566.2663	Y=2687967.7480	X=816412.1869	Y=2687815.2495	X=816354.3658	Y=2688179.8199	AREA 16		X=816548.6020	Y=2688809.5683	X=816575.4427	Y=2688655.0499	X=816324.6259	Y=2690102.8711
X=816695.6083	Y=2687926.637	X=816590.1344	Y=2688083.1296	X=816493.3405	Y=2687642.6433	X=816446.9807	Y=2687966.5007	X=816287.1494	Y=2687769.2422	X=816656.8168	Y=2688584.3035	X=816546.2569	Y=2688821.7235	X=816580.0114	Y=2688628.9156	X=816316.1189	Y=2690100.8876
X=816659.8265	Y=2687892.8305	X=816589.8083	Y=2688072.6987	X=816445.0594	Y=2687485.3716	X=816356.2986	Y=2688310.8518	X=816394.9282	Y=2687594.9245	X=816658.822	Y=2688587.4672	AREA 19		X=816533.7748	Y=2688578.7996	AREA 22	
X=816656.3573	Y=2687804.7782	X=816559.5231	Y=2687937.6865	X=816409.8311	Y=2687449.4289	X=816297.0544	Y=2688402.4275	AREA 13		X=816615.8688	Y=2688820.6403	X=816529.0830	Y=2688818.5483	X=816512.3113	Y=2688569.0594	X=816278.4639	Y=2690094.2845
X=816533.9658	Y=2687565.5312	X=816700.0718	Y=2687954.3507	X=816473.5399	Y=2687716.9270	X=816230.2207	Y=2688385.3352	X=816258.5030	Y=2688552.1678	X=816589.713	Y=2688816.3008	X=816531.2877	Y=2688806.2124	X=816505.7240	Y=2688599.9336	X=816216.4751	Y=2690378.8234
X=816534.4138	Y=2687559.8197	AREA 6		X=816489.7040	Y=2687721.5676			X=816330.4094	Y=2688567.0557	X=816632.1899	Y=2688580.0183	X=816548.6802	Y=2688809.0964	X=816548.3108	Y=2688669.2648	X=816006.5722	Y=2690325.0388
X=816534.4138	Y=2687559.8197	X=816700.0718	Y=2687954.3507	X=816507.0269	Y=2687922.9533	AREA 11		X=816505.7240	Y=2688599.9336	AREA 17		X=816546.2569	Y=2688821.7235	X=816500.5075	Y=2688798.9291	X=816123.2940	Y=2689691.1469
X=816564.2935	Y=2687567.573	X=816695.6083	Y=2687926.6370	X=816497.5278	Y=2688105.0489	X=816297.0544	Y=2688402.4275	X=816512.3113	Y=2688569.0594	X=816615.8688	Y=2688820.6403	X=816526.0265	Y=2688876.2850	X=816456.6735	Y=2688917.8271	X=816258.8791	Y=2689712.6784
X=816718.6368	Y=2687853.021	X=816659.8265	Y=2687892.8305	X=816417.0225	Y=2688297.4863	X=816356.2986	Y=2688310.8518	X=816272.6086	Y=2688497.3791	X=816619.0435	Y=2688836.5257	X=816472.7920	Y=2689150.9116			X=816251.9276	Y=2690001.2153
X=816739.9621	Y=2688037.7404	X=816656.3573	Y=2687804.7782	AREA 9		X=816446.9807	Y=2687966.5007	AREA 14		X=816423.5131	Y=2689897.9714	X=816419.5575	Y=2689425.5381			X=816278.4639	Y=2690094.2845
AREA 3		X=816533.9658	Y=2687565.5312	X=816285.2639	Y=2688446.6668	X=816412.1869	Y=2687815.2495	X=816551.7643	Y=2688790.4976	X=816423.5131	Y=2689897.9714	X=816373.7548	Y=2689527.1136			AREA 23	
X=816676.8886	Y=2688485.4051	X=816445.0594	Y=2687485.3716	X=816387.5954	Y=2688441.9398	X=816433.6500	Y=2687628.8726	X=816592.6879	Y=2688679.4939	X=816405.9401	Y=2689866.4097	X=816406.2710	Y=2689764.8578			X=816123.2940	Y=2689691.1469
X=816671.4083	Y=2688469.4631	X=816493.3405	Y=2687642.6433	X=816416.8466	Y=2688297.9067	X=816387.5508	Y=2687426.6966	X=816575.4427	Y=2688655.0499	X=816398.2017	Y=2689836.6597	X=816372.6105	Y=2689837.5853			X=816302.8296	Y=2688717.3519
X=816682.2063	Y=2688410.8454	X=816559.5231	Y=2687937.6865	X=816497.5278	Y=2688105.0489	X=816359.5399	Y=2687398.1583	X=816580.0114	Y=2688628.9156	X=816431.8497	Y=2689653.9996					X=816423.4126	Y=2688797.2060
X=816694.3779	Y=2688399.2312	AREA 7		X=816507.0269	Y=2687922.9533	X=816319.2693	Y=2687429.7574	X=816533.7748	Y=2688578.7996	X=816400.139	Y=2689529.4198					X=816219.4483	Y=2689706.4166
X=816628.1936	Y=2688427.0031	X=816566.2663	Y=2687967.7480	X=816489.7040	Y=2687721.5676	X=816394.9282	Y=2687594.9245	X=816512.3113	Y=2688569.0594	X=816453.1413	Y=2689436.2051					AREA 24	
AREA 4		X=816589.8083	Y=2688072.6987	X=816473.5399	Y=2687716.9275	X=816287.1494	Y=2687769.2422	X=816272.6087	Y=2688497.3788	X=816559.8409	Y=2688885.7625					X=816369.1368	Y=2690150.1320
X=816724.8298	Y=2688108.0709	X=816597.7420	Y=2688326.4731	X=816484.7068	Y=2688098.3319	X=816354.3658	Y=2688179.8199	X=816275.7469	Y=2688485.1896	X=816579.0737	Y=2688833.8913					X=816324.6259	Y=2690102.8711
X=816737.3331	Y=2688185.7028	X=816538.1003	Y=2688552.7339	X=816346.4784	Y=2688423.2605			X=816538.0204	Y=2688552.7133	X=816581.9836	Y=2688815.1037					X=816375.5426	Y=2690114.7433

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

PROJECT
NEW BEDFORD
MARINE COMMERCE
TERMINAL

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

NO.	DATE	DESCRIPTION	BY
1.	12-23-11	FOR CONSTRUCTION	CHM

PROJECT NO.	6690
CADD FILE	B_I_DREDGE
DESIGNED BY	GCD
DRAWN BY	CWM
CHECKED BY	CHM
DATE	8/30/11
DRAWING SCALE	1"=80'

GRAPHIC SCALE
SCALE: 1"=80'
0 40 80 160

SHEET TITLE

TOP OF DREDGE FOOTPRINT PLAN 2 EXPANDED

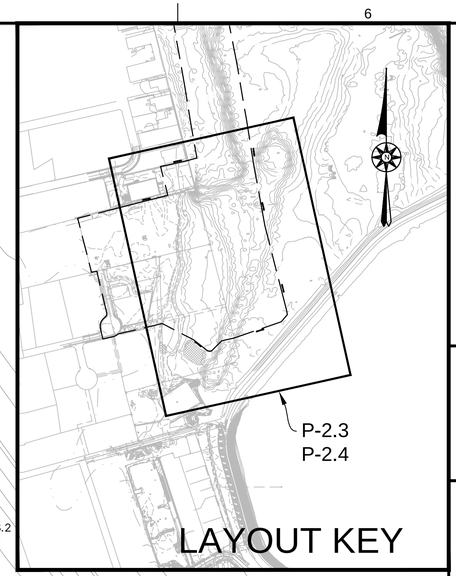
DRAWING NO.

P-2.2

P:\Jobs\6690 NBH_ Phase IV\PLANS\FINAL_PLANS\100% Submittal\EPA_EXPANSION_DRAWINGS\P-2.1-P-2.2_TOP_OF_DREDGE_FOOTPRINT_EXPANSION.dwg

NOTES:

1. MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.3 INTERMEDIATE DREDGE FOOTPRINT PLAN 1" AND "P-2.4 INTERMEDIATE DREDGE FOOTPRINT PLAN 2" SHALL BE DREDGED AND USED TO CAP THE BORROW PIT CAPPING AREA, THE CAD CELL #1 CAPPING AREA AND THE WINTER FLOUNDTER MITIGATION AREA.
2. MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.1 TOP OF DREDGE FOOTPRINT PLAN 1" AND "P-2.2 TOP OF DREDGE FOOTPRINT PLAN 2" SHALL BE DREDGED AND DISPOSED INTO CAD CELL #3 BEFORE MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.3 INTERMEDIATE DREDGE FOOTPRINT PLAN 1" AND "P-2.4 INTERMEDIATE DREDGE FOOTPRINT PLAN 2" IS DREDGED.
3. MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.3 INTERMEDIATE DREDGE FOOTPRINT PLAN 1" AND "P-2.4 INTERMEDIATE DREDGE FOOTPRINT PLAN 2" SHALL NOT BE DREDGED BEFORE MATERIAL SHOWN ON CONTRACT DRAWINGS "P-2.1 TOP OF DREDGE FOOTPRINT PLAN 1" AND "P-2.2 TOP OF DREDGE FOOTPRINT PLAN 2" HAS BEEN DREDGED AND DISPOSED INTO CAD CELL #3.
4. ALSO SEE DRAWINGS P-2.1, P-2.2, P-2.4, P-2.5, AND P-2.6.
5. FOR DREDGE CROSS-SECTIONS SEE DRAWINGS X-2.1 AND X-2.2. FOR LOCATIONS OF DREDGE CROSS-SECTIONS, SEE DRAWINGS P-2.5 AND P-2.6.



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

PROJECT
NEW BEDFORD
MARINE COMMERCE
TERMINAL

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

NO.	DATE	DESCRIPTION	BY
2.	6-28-12	L.O.W. UPDATE	CWM
1.	12-23-11	FOR CONSTRUCTION	CWM

PROJECT NO.	6690
CADD FILE	B_I_DREDGE
DESIGNED BY	GCD
DRAWN BY	CWM
CHECKED BY	CHM
DATE	8/30/11
DRAWING SCALE	1"=60'

GRAPHIC SCALE
SCALE: 1"=60'
0 30 60 90 150 FEET

SHEET TITLE

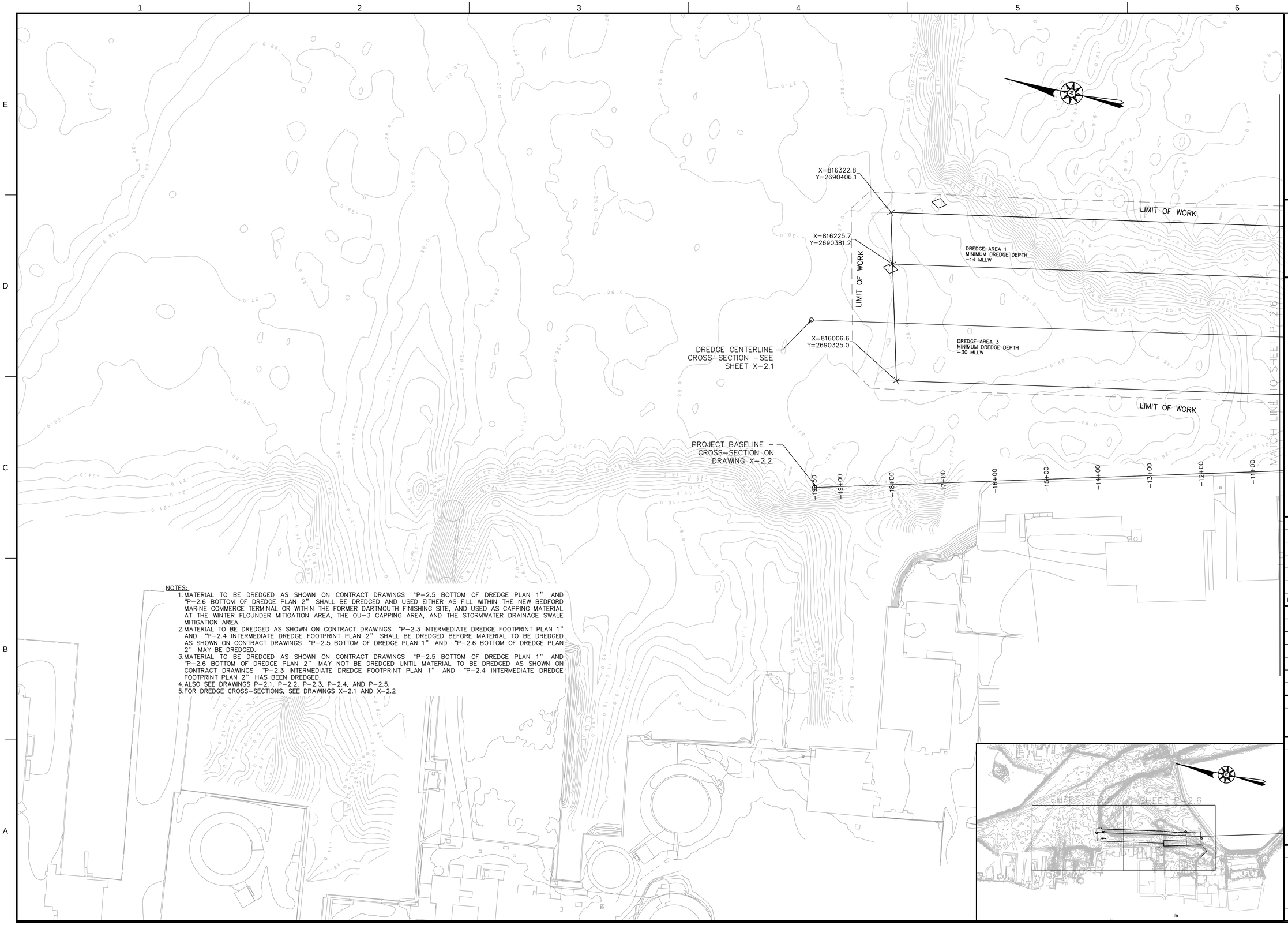
INTERMEDIATE DREDGE FOOTPRINT PLAN 1 (EXPANDED)

DRAWING NO.

P-2.3

53 OF 97

P:\Jobs\6690 NBH_ Phase IV\PLANS\FINAL_PLANS\100% Submittal\EPA_EXPANSION_DRAWINGS\P-2.3-P-2.4_INTER_BOTTOM_DREDGE_EXPANSION.dwg



NOTES:

1. MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.5 BOTTOM OF DREDGE PLAN 1" AND "P-2.6 BOTTOM OF DREDGE PLAN 2" SHALL BE DREDGED AND USED EITHER AS FILL WITHIN THE NEW BEDFORD MARINE COMMERCE TERMINAL OR WITHIN THE FORMER DARTMOUTH FINISHING SITE, AND USED AS CAPPING MATERIAL AT THE WINTER FLOUNDER MITIGATION AREA, THE OU-3 CAPPING AREA, AND THE STORMWATER DRAINAGE SWALE MITIGATION AREA.
2. MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.3 INTERMEDIATE DREDGE FOOTPRINT PLAN 1" AND "P-2.4 INTERMEDIATE DREDGE FOOTPRINT PLAN 2" SHALL BE DREDGED BEFORE MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.5 BOTTOM OF DREDGE PLAN 1" AND "P-2.6 BOTTOM OF DREDGE PLAN 2" MAY BE DREDGED.
3. MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.5 BOTTOM OF DREDGE PLAN 1" AND "P-2.6 BOTTOM OF DREDGE PLAN 2" MAY NOT BE DREDGED UNTIL MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.3 INTERMEDIATE DREDGE FOOTPRINT PLAN 1" AND "P-2.4 INTERMEDIATE DREDGE FOOTPRINT PLAN 2" HAS BEEN DREDGED.
4. ALSO SEE DRAWINGS P-2.1, P-2.2, P-2.3, P-2.4, AND P-2.5.
5. FOR DREDGE CROSS-SECTIONS, SEE DRAWINGS X-2.1 AND X-2.2

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

PROJECT
NEW BEDFORD
MARINE COMMERCE
TERMINAL

OWNER
MASSACHUSETTS CLEAN ENERGY COUNCIL
55 SUMMER STREET, 9TH FLOOR
BOSTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	6690
CADD FILE	P_B_DREDGE_P9_10
DESIGNED BY	GCD
DRAWN BY	CWM
CHECKED BY	CHM
DATE	8/30/11
DRAWING SCALE	1"=80'

GRAPHIC SCALE
SCALE: 1"=80'
0 40 80 160

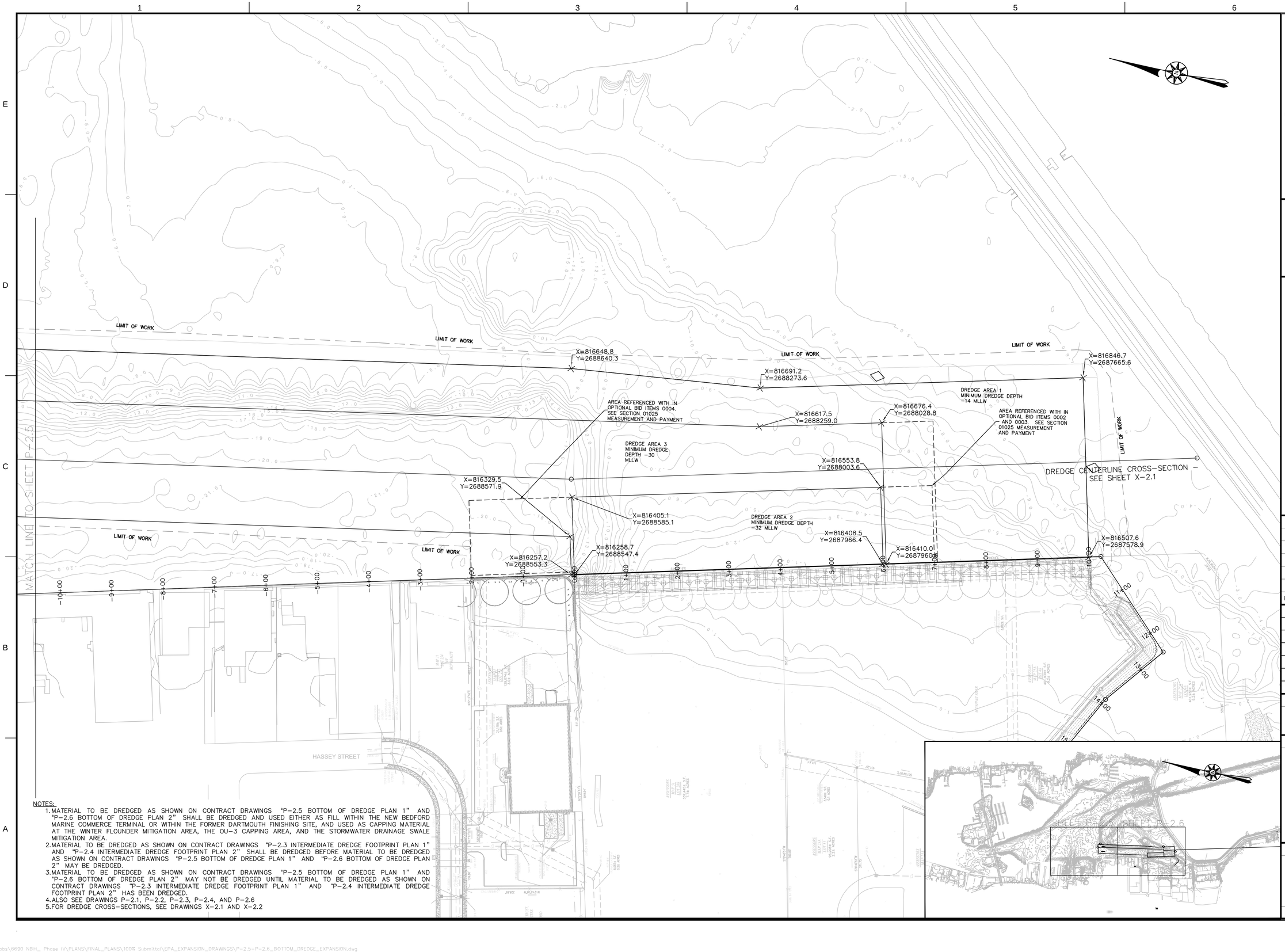
SHEET TITLE

BOTTOM OF
DREDGE
PLAN 1
(EXPANDED)

DRAWING NO.

P-2.5

P:\Jobs\6690 NBH_ Phase IV\PLANS\FINAL_PLANS\100% Submittal\EPA_EXPANSION_DRAWINGS\P-2.5-P-2.6_BOTTOM_DREDGE_EXPANSION.dwg



NOTES:

1. MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.5 BOTTOM OF DREDGE PLAN 1" AND "P-2.6 BOTTOM OF DREDGE PLAN 2" SHALL BE DREDGED AND USED EITHER AS FILL WITHIN THE NEW BEDFORD MARINE COMMERCE TERMINAL OR WITHIN THE FORMER DARTMOUTH FINISHING SITE, AND USED AS CAPPING MATERIAL AT THE WINTER FLOUNDER MITIGATION AREA, THE OU-3 CAPPING AREA, AND THE STORMWATER DRAINAGE SWALE MITIGATION AREA.
2. MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.3 INTERMEDIATE DREDGE FOOTPRINT PLAN 1" AND "P-2.4 INTERMEDIATE DREDGE FOOTPRINT PLAN 2" SHALL BE DREDGED BEFORE MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.5 BOTTOM OF DREDGE PLAN 1" AND "P-2.6 BOTTOM OF DREDGE PLAN 2" MAY BE DREDGED.
3. MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.5 BOTTOM OF DREDGE PLAN 1" AND "P-2.6 BOTTOM OF DREDGE PLAN 2" MAY NOT BE DREDGED UNTIL MATERIAL TO BE DREDGED AS SHOWN ON CONTRACT DRAWINGS "P-2.3 INTERMEDIATE DREDGE FOOTPRINT PLAN 1" AND "P-2.4 INTERMEDIATE DREDGE FOOTPRINT PLAN 2" HAS BEEN DREDGED.
4. ALSO SEE DRAWINGS P-2.1, P-2.2, P-2.3, P-2.4, AND P-2.6
5. FOR DREDGE CROSS-SECTIONS, SEE DRAWINGS X-2.1 AND X-2.2

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

PROJECT
NEW BEDFORD
MARINE COMMERCE
TERMINAL

OWNER
MASSACHUSETTS CLEAN ENERGY COUNCIL
55 SUMMER STREET, 9TH FLOOR
BOSTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	6690
CADD FILE	B_I_DREDGE
DESIGNED BY	GCD
DRAWN BY	CWM
CHECKED BY	CHM
DATE	8/30/11
DRAWING SCALE	1"=80'

GRAPHIC SCALE
SCALE: 1"=80'
0 40 80 160

SHEET TITLE

BOTTOM OF DREDGE PLAN 2 (EXPANDED)

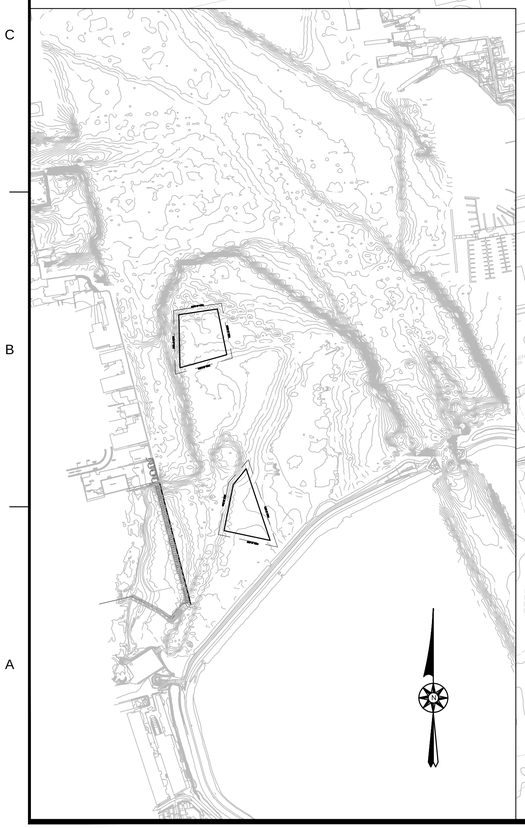
DRAWING NO.

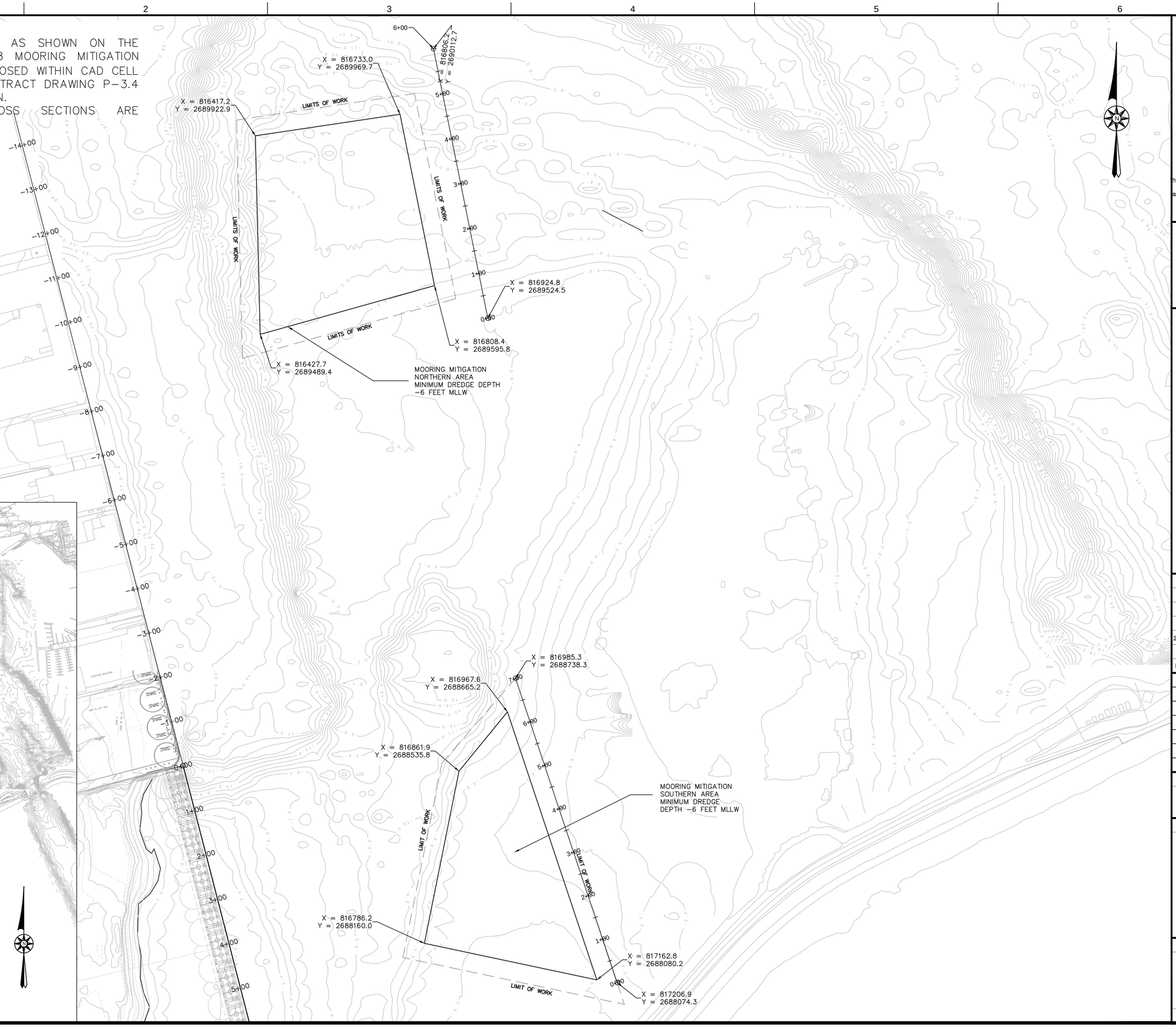
P-2.6

P:\Jobs\6690 NBH_ Phase IV\PLANS\FINAL_PLANS\100% Submittal\EPA_EXPANSION_DRAWINGS\P-2.5-P-2.6_BOTTOM_DREDGE_EXPANSION.dwg

NOTES:

1. MATERIAL TO BE DREDGED AS SHOWN ON THE CONTRACT DRAWINGS P–2.8 MOORING MITIGATION AREA PLAN" SHALL BE DISPOSED WITHIN CAD CELL #3 AS SHOWN ON THE CONTRACT DRAWING P–3.4 CAD CELL #3 DISPOSAL PLAN.
2. MOORING MITIGATION CROSS SECTIONS ARE DEPICTED ON SHEET X–2.4.





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

PROJECT
NEW BEDFORD
MARINE COMMERCE
TERMINAL

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

NO.	DATE	DESCRIPTION	BY
2.	6–8–12	NORTH AREA UPDATE	CWM
1.	12–23–11	FOR CONSTRUCTION	CHM

PROJECT NO.	6690
CADD FILE	MOORING_MIT
DESIGNED BY	CWM
DRAWN BY	CWM
CHECKED BY	CHM
DATE	8-26-11
DRAWING SCALE	1"=100'

GRAPHIC SCALE
SCALE: 1"=100'
0 50 100 200

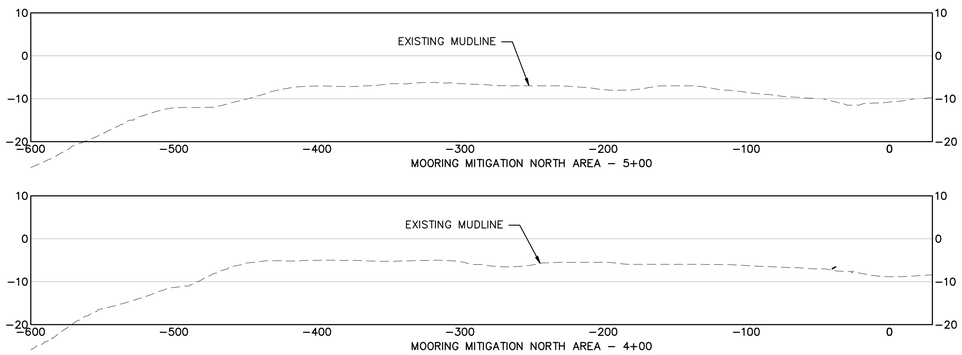
SHEET TITLE

MOORING MITIGATION AREA PLAN

DRAWING NO.

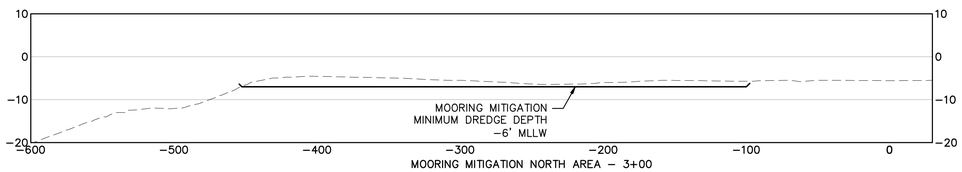
P-2.8
DRAFT

P:\Jobs\6690 NBH_ Phase IV\PLANS\FINAL_PLANS\100% Submittal\P–2.8–X–2.4_MOORING_MITIGATION.dwg

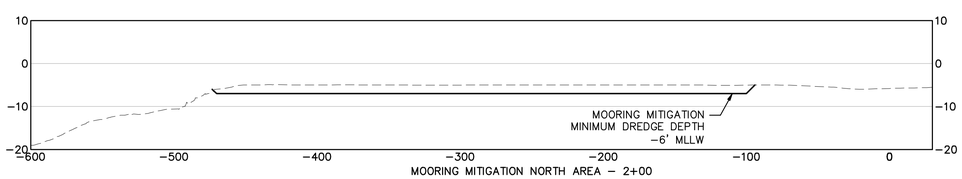


MOORING MITIGATION NORTH AREA – 5+00

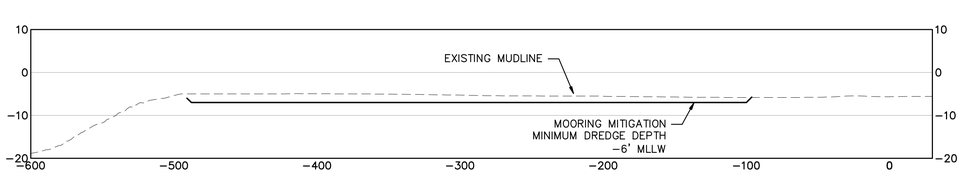
MOORING MITIGATION NORTH AREA – 4+00



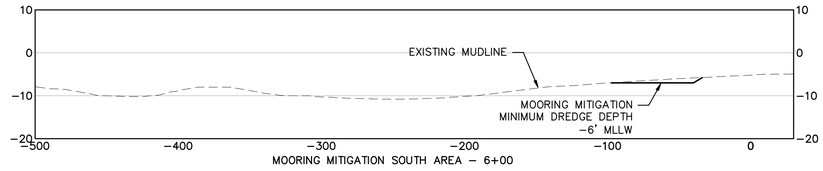
MOORING MITIGATION NORTH AREA – 3+00



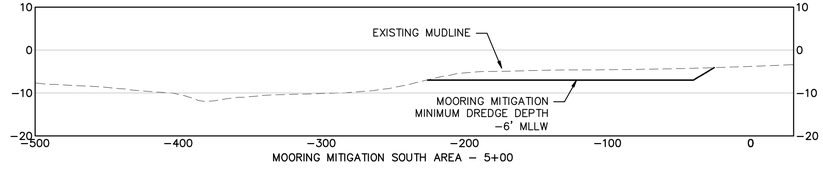
MOORING MITIGATION NORTH AREA – 2+00



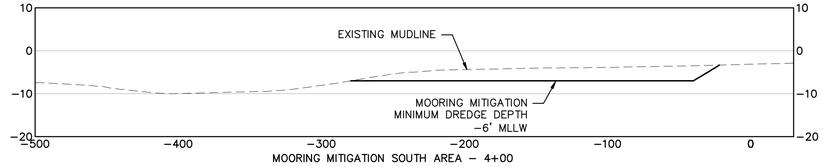
MOORING MITIGATION NORTH AREA – 1+00



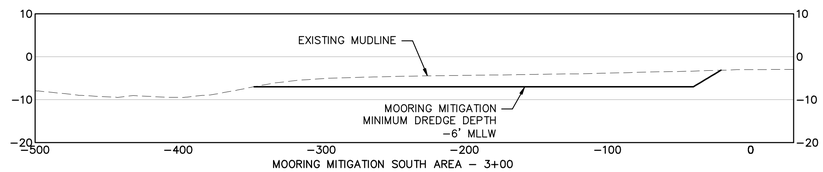
MOORING MITIGATION SOUTH AREA – 6+00



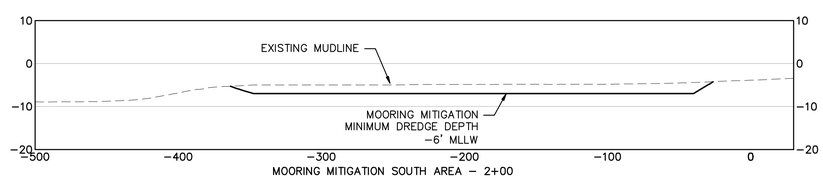
MOORING MITIGATION SOUTH AREA – 5+00



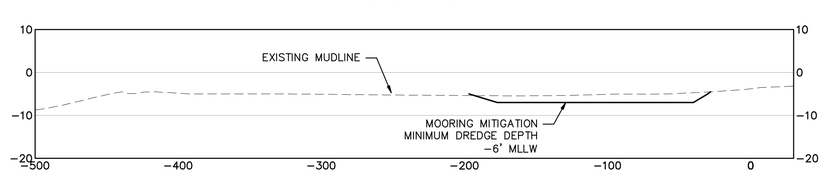
MOORING MITIGATION SOUTH AREA – 4+00



MOORING MITIGATION SOUTH AREA – 3+00



MOORING MITIGATION SOUTH AREA – 2+00



MOORING MITIGATION SOUTH AREA – 1+00

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

PROJECT
NEW BEDFORD
MARINE COMMERCE
TERMINAL

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

NO.	DATE	DESCRIPTION	BY
2.	6–8–12	CROSS SECTION UPDATE	CWM
1.	12–23–11	FOR CONSTRUCTION	CHM

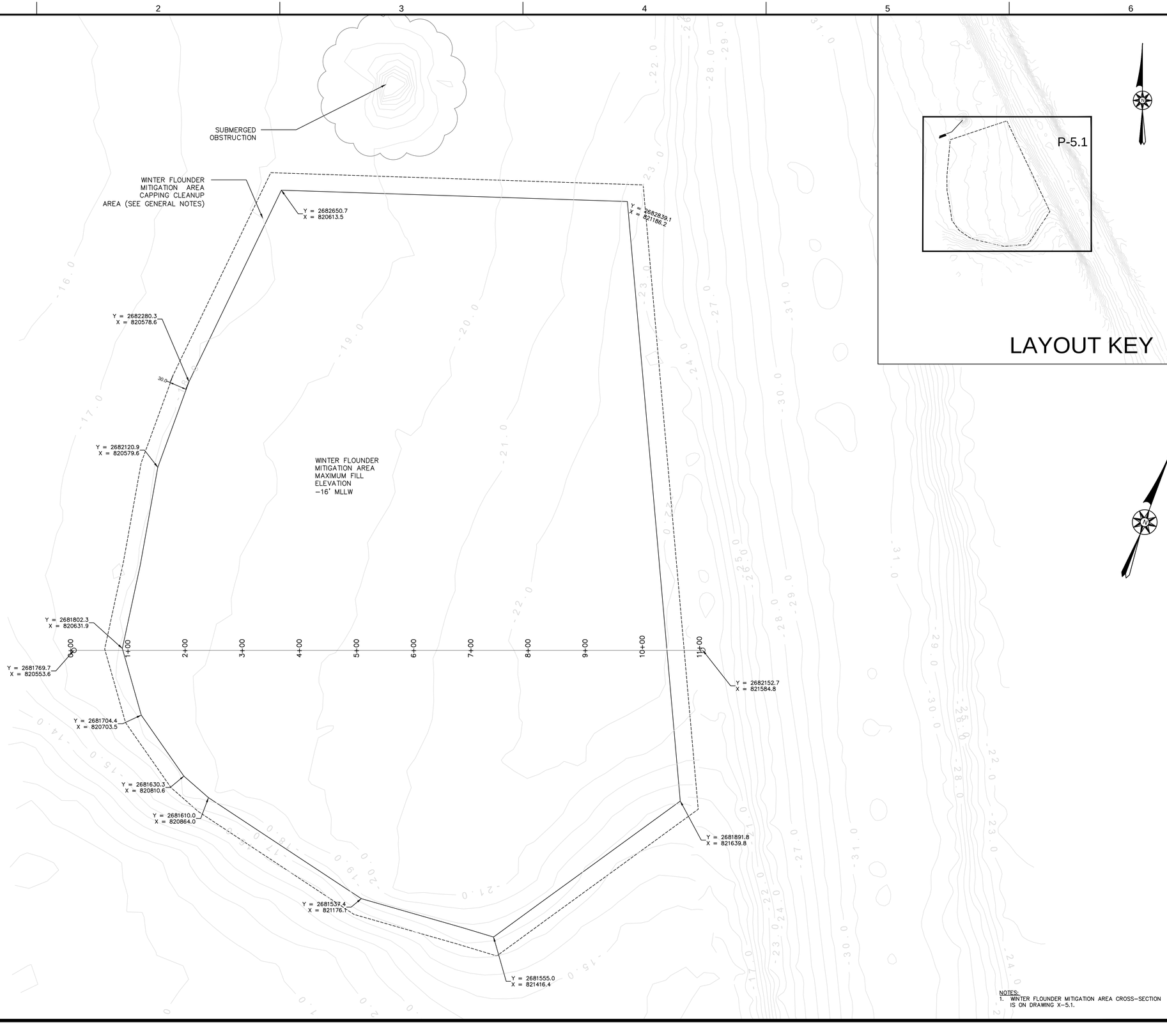
PROJECT NO.	6690
CADD FILE	MOORING_MIT
DESIGNED BY	CWM
DRAWN BY	CWM
CHECKED BY	CHM
DATE	8-26-11
DRAWING SCALE	1"=100'

GRAPHIC SCALE
SCALE: 1"=100'
0 50 100 200

SHEET TITLE
MOORING MITIGATION AREA CROSS-SECTIONS

DRAWING NO.
X-2.4

DRAFT
78 OF 97



LAYOUT KEY

NOTES:
1. WINTER FLOUNDER MITIGATION AREA CROSS-SECTION IS ON DRAWING X-5.1.

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

PROJECT
NEW BEDFORD
MARINE COMMERCE
TERMINAL

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

NO.	DATE	DESCRIPTION	BY
2	6/15/12	AREA UPDATED	CWM
1	12/23/11	FOR CONSTRUCTION	CHM

PROJECT NO.	6690
CADD FILE	MIT_OU3_FLNDR
DESIGNED BY	CWM
DRAWN BY	CWM
CHECKED BY	CHM
DATE	8-8-11
DRAWING SCALE	1"=80'

GRAPHIC SCALE
SCALE: 1"=80'
0 40 80 160

SHEET TITLE

WINTER FLOUNDER MITIGATION AREA PLAN

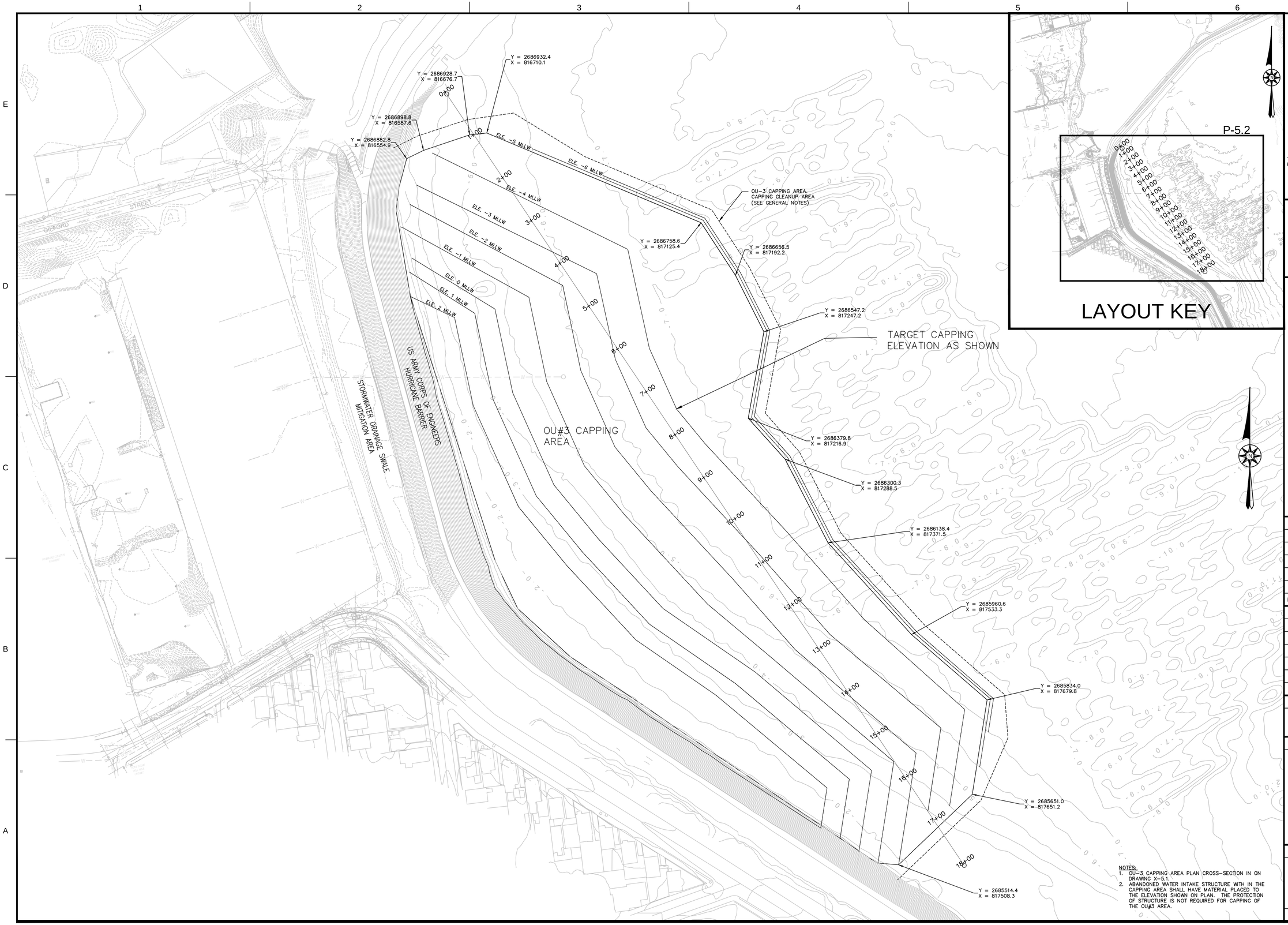
DRAWING NO.

P-5.1

DRAFT

66 OF 97

P:\Jobs\6690 NBH_ Phase IV\PLANS\FINAL_PLANS\100% Submittal\P-5.1-P-5.2_MITIGATION_OU3_REV_FLOUNDER.dwg



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

PROJECT
NEW BEDFORD
MARINE COMMERCE
TERMINAL

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

NO.	DATE	DESCRIPTION	BY
2	03/16/12	EX. COND. UPDATE	CWM
1	12/23/11	FOR CONSTRUCTION	CHM

PROJECT NO.	6690
CADD FILE	MIT_OU3_FLNDR
DESIGNED BY	CWM
DRAWN BY	CWM
CHECKED BY	CHM
DATE	8-8-11
DRAWING SCALE	1"=80'

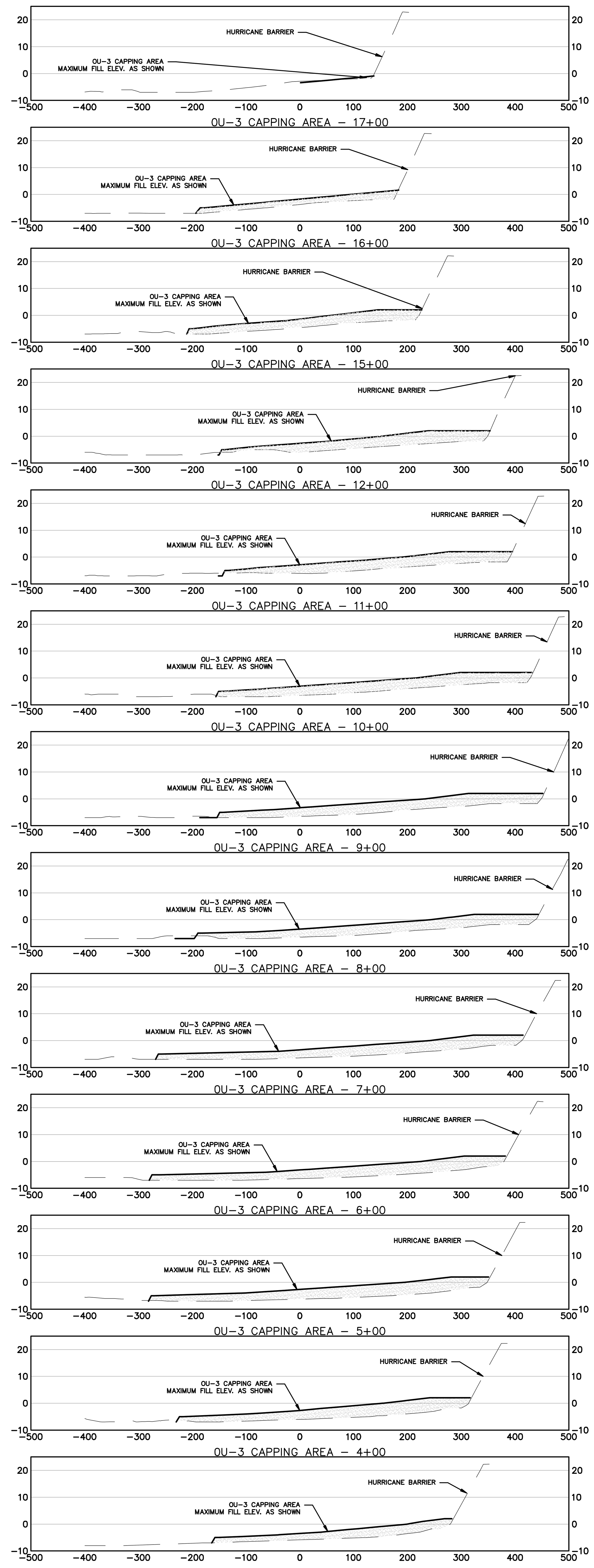
GRAPHIC SCALE
SCALE: 1"=80'
0 40 80 160

SHEET TITLE
OU-3
CAPPING
AREA
PLAN

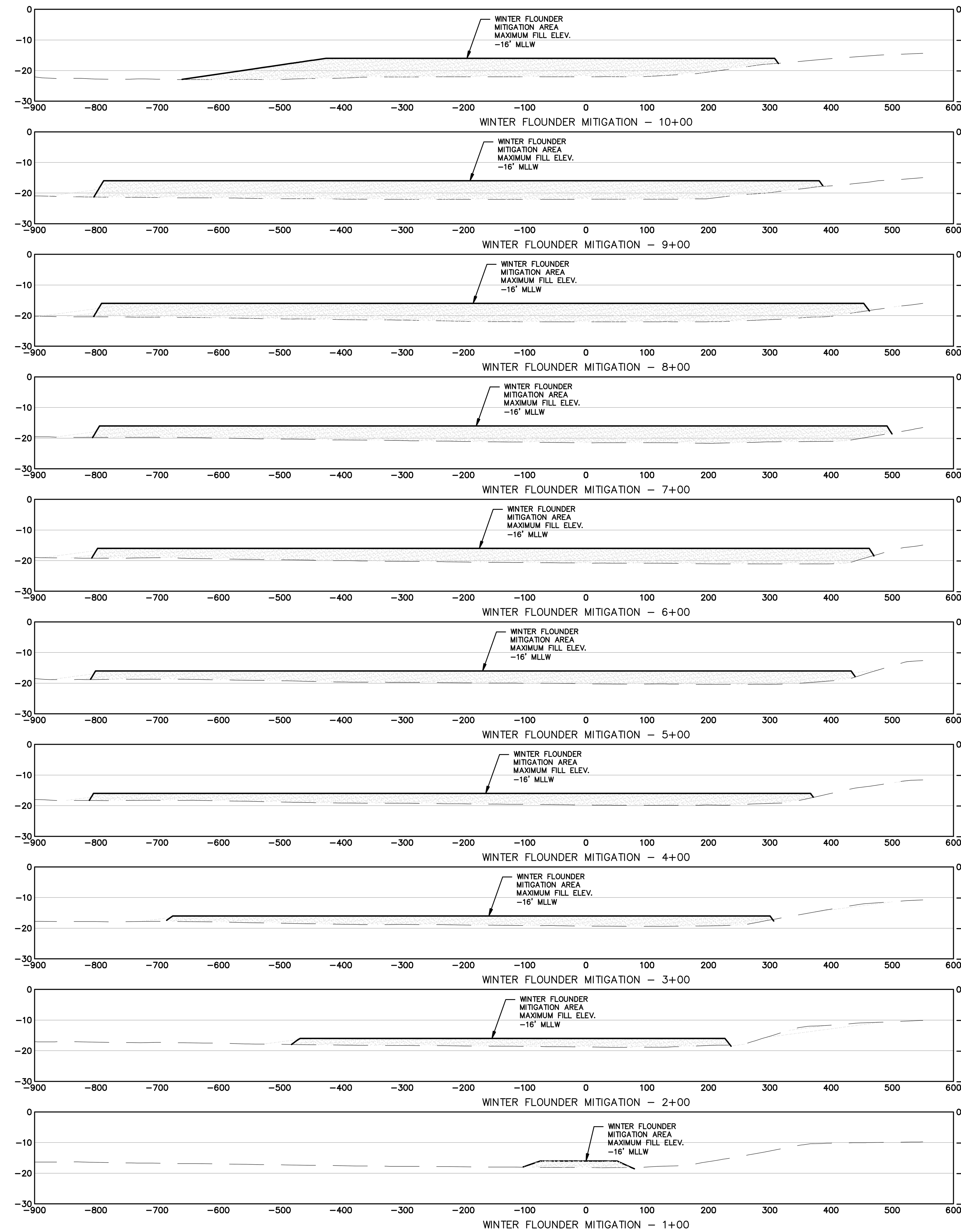
DRAWING NO.
P-5.2
DRAFT

67 OF 97

P:\Jobs\6690 NBH_ Phase IV\PLANS\FINAL_PLANS\100% Submittal\P-5.1-P-5.2_MITIGATION_OU3_REV_FLOUNDER.dwg



NOTE:
1. FOR LOCATION OF OU-3 CAPPING AREA CROSS-SECTION, SEE DRAWING P-5.2.



NOTE:
1. FOR LOCATION OF WINTER FLOUNDER MITIGATION AREA CROSS-SECTION, SEE DRAWING P-5.1.

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

PROJECT: NEW BEDFORD MARINE COMMERCE TERMINAL

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

NO.	DATE	DESCRIPTION	BY
1.	12-23-11	FOR CONSTRUCTION	CHM

PROJECT NO.	6690
CADD FILE	MIT_OU3_FLNDR
DESIGNED BY	CWM
DRAWN BY	CWM
CHECKED BY	CHM
DATE	8-8-11
DRAWING SCALE	NTS

GRAPHIC SCALE

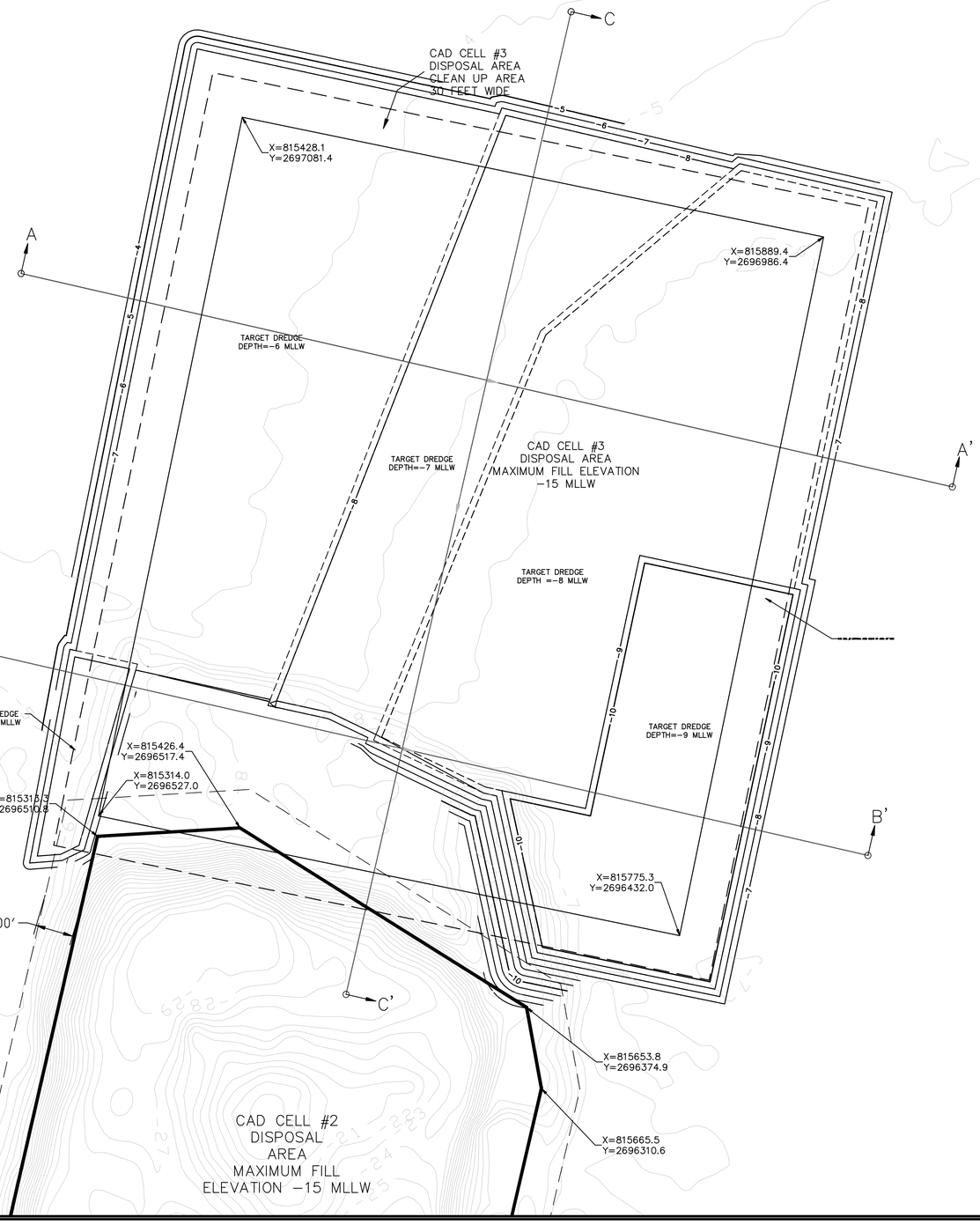
SHEET TITLE

OU-3 AND WINTER FLOUNDER CAPPING AREA CROSS-SECTIONS

DRAWING NO.

X-5.1

DRAFT



DESIGN

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

184 HIGH STREET, SUITE 502
BOSTON, MA 02210

56H CONNECTICUT AVENUE
SOUTH WINDSOR, CT

100% DESIGN FOR REVIEW SET
NOT FOR CONSTRUCTION

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	GCD
DRAWN BY	GCD
CHECKED BY	CMM
DATE	08/04/2011
DRAWING SCALE	1"=50'

GRAPHIC SCALE

SCALE: 1"=50'

0 25 50 75 125 FEET

SHEET TITLE

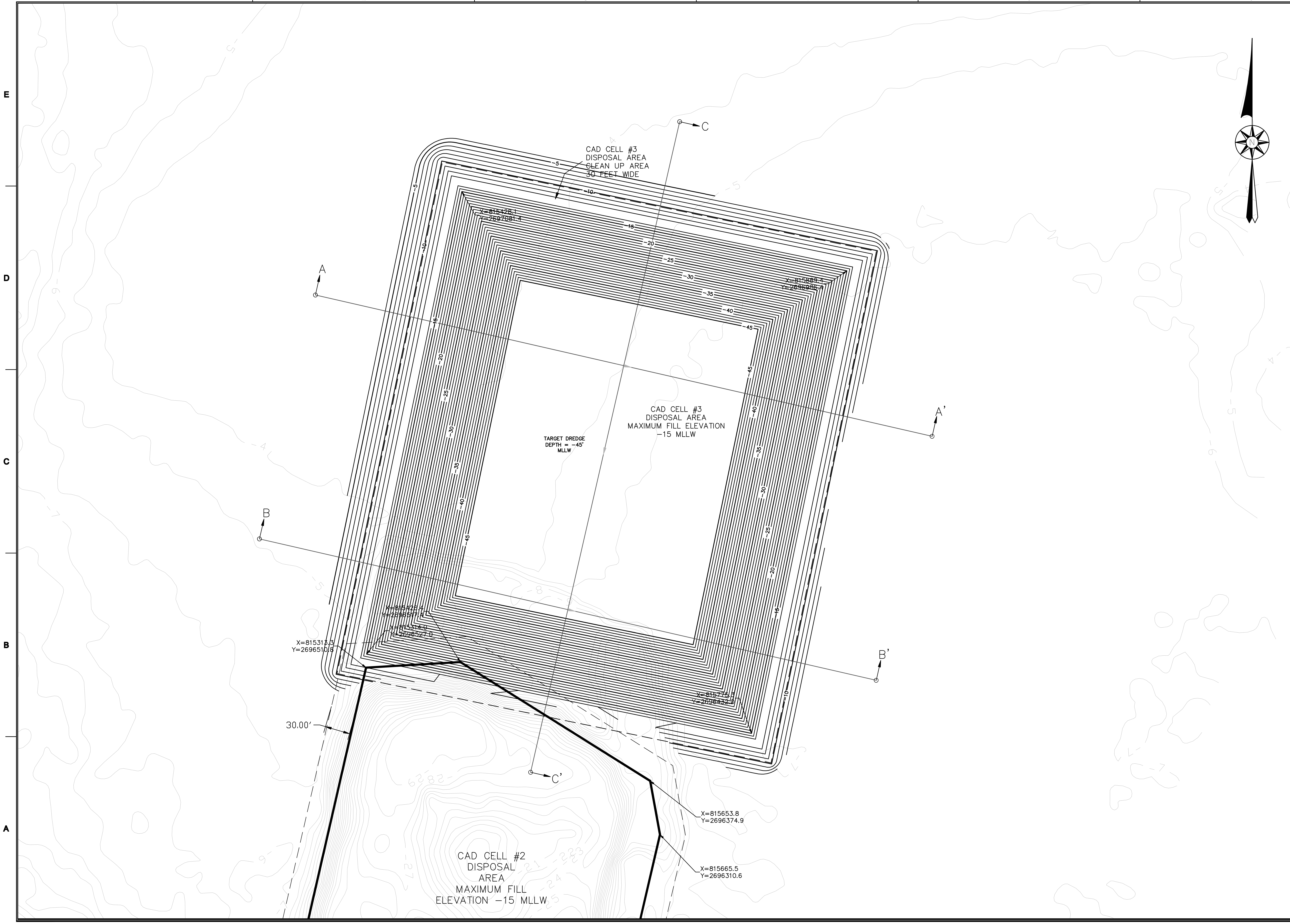
TOP OF CAD #3

DRAWING NO.

P-13

DRAFT

52 OF 79



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

100% DESIGN FOR REVIEW SET
NOT FOR CONSTRUCTION

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	GCD
DRAWN BY	GCD
CHECKED BY	CMM
DATE	08/04/2011
DRAWING SCALE	1"=50'

GRAPHIC SCALE
SCALE: 1"=50'
0 25 50 75 125 FEET

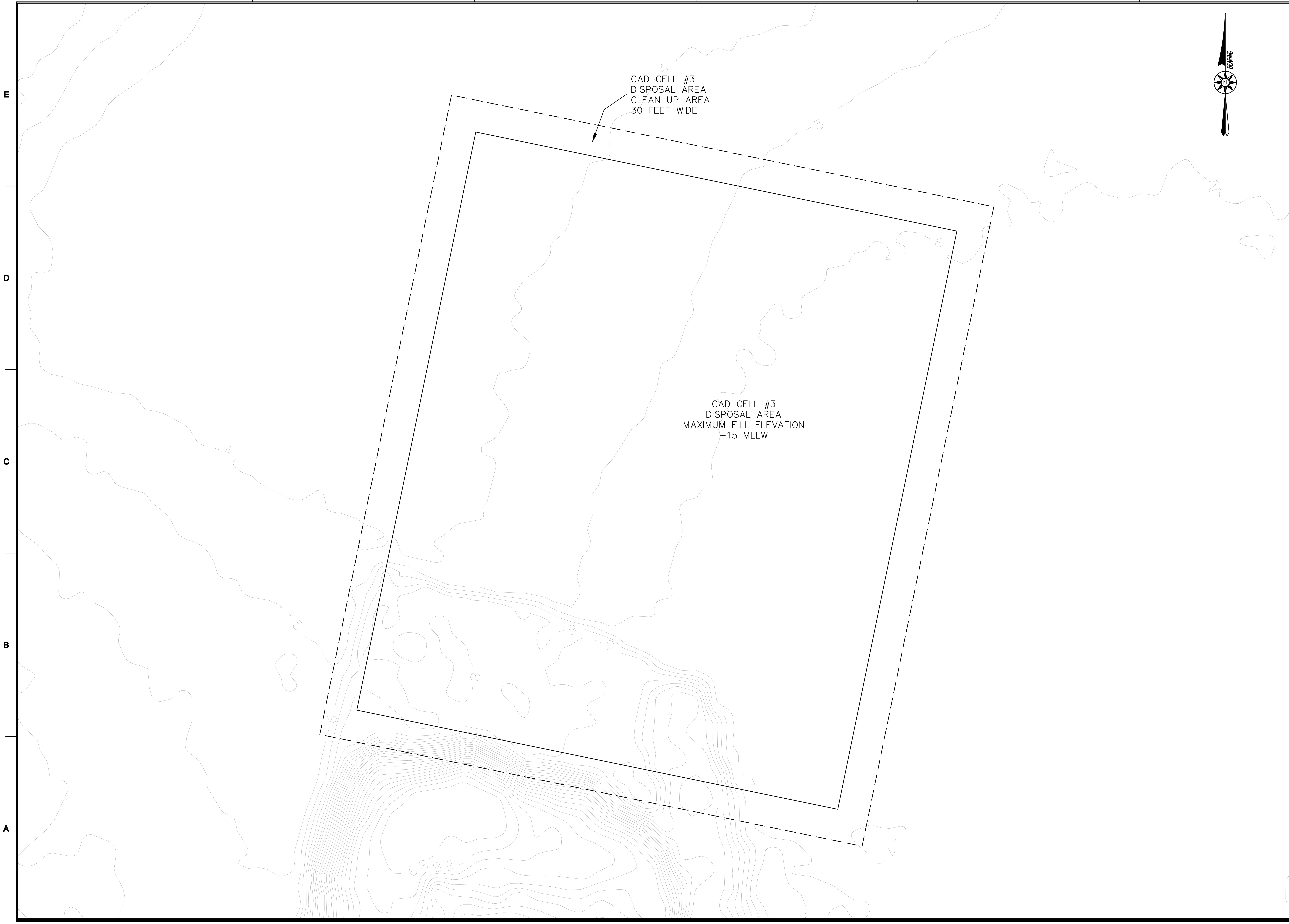
SHEET TITLE

BOTTOM OF CAD #3

DRAWING NO.

P-14

DRAFT



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

100% DESIGN FOR REVIEW SET
NOT FOR CONSTRUCTION

PROJECT
NEW BEDFORD
MARINE COMMERCE
TERMINAL

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

NO.	DATE	DESCRIPTION	BY

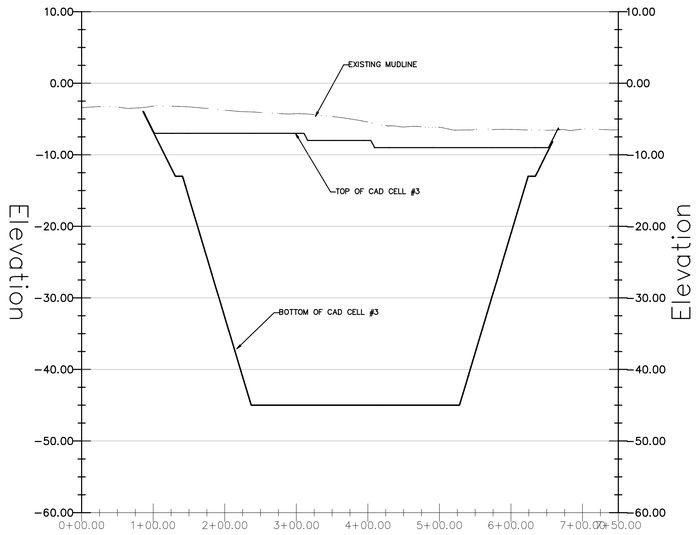
PROJECT NO.	6690
CADD FILE	
DESIGNED BY	GCD
DRAWN BY	GCD
CHECKED BY	CMM
DATE	08/25/2011
DRAWING SCALE	1"=40'

GRAPHIC SCALE
SCALE: 1"=40'
0 20 40 80 160 FEET

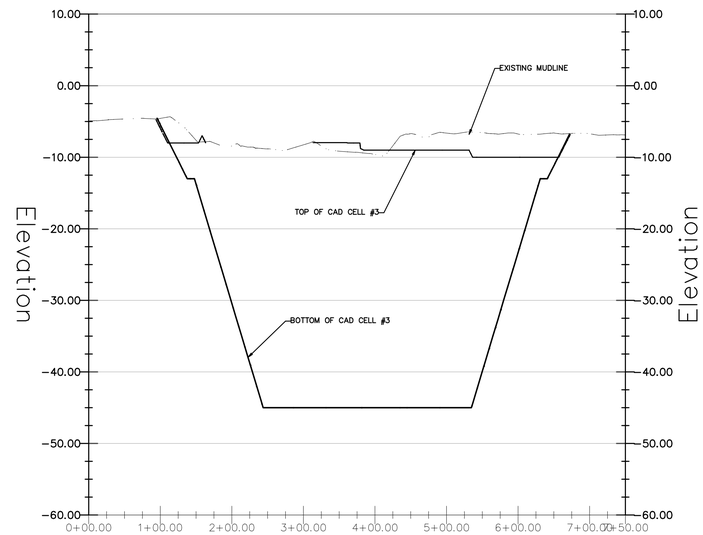
SHEET TITLE
CAD CELL #3
DISPOSAL
PLAN

DRAWING NO.
P-26
DRAFT

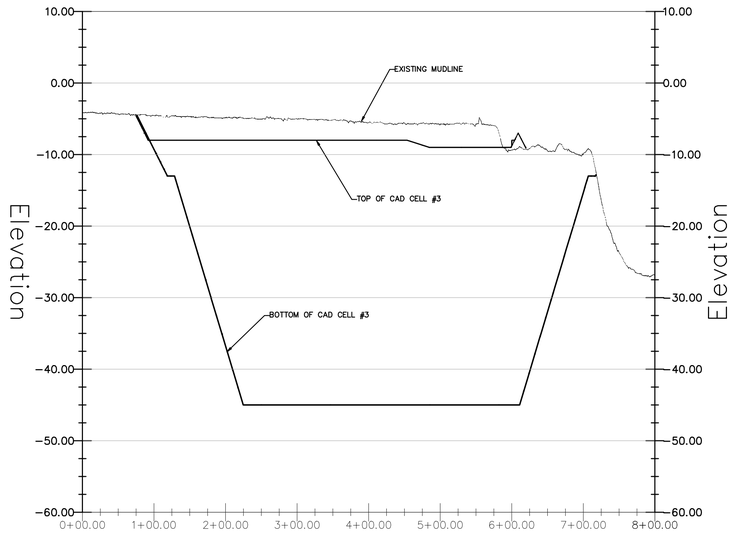
Profile View of A–A'



Profile View of B–B'



Profile View of C–C'



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

184 HIGH STREET, SUITE 502
BOSTON, MA 02210

55H CONNECTICUT AVENUE
SOUTH WINDSOR, CT

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100% DESIGN FOR REVIEW SET
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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	GCD
DRAWN BY	GCD
CHECKED BY	CHM
DATE	08/04/2011
DRAWING SCALE	N.T.S.

GRAPHIC SCALE

SHEET TITLE

CAD CELL #3
CROSS-SECTIONS

DRAWING NO.

X-4

DRAFT

Apex Companies, LLC.

1 WAMSUTTA STREET
SUITE 8
NEW BEDFORD, MA 02740
(508) 996-9828

184 HIGH STREET
SUITE 502
BOSTON MA 02110
(617) 728-0070

REVISIONS

NO.	DATE	DESCRIPTION

PREPARED FOR:

COMMONWEALTH
OF
MASSACHUSETTS

DRAWING TITLE:

NEW BEDFORD MARINE COMMERCE TERMINAL

Scale: 1"=150'

0 75 150 300 450 FEET

Date 7/13/11	Drawing No.
Proj. Mgr. JAB	
Design CWM	
Check CHM	FIG-2
Drawn GCD	
Job. No. 6690	
Last Rev. 6/28/12	

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Apex Companies, LLC.

1 WAMSUTTA STREET
SUITE 8
NEW BEDFORD, MA 02740
(508) 996-9828

184 HIGH STREET
SUITE 502
BOSTON MA 02110
(617) 728-0070

REVISIONS

NO.	DATE	DESCRIPTION

CONWAY ST.
SOUTH ST.
HASSEY ST
WRIGHT ST.
POTOMSKA ST.
SOUTH FRONT ST
JOHN F KENNEDY MEMORIAL HIGHWAY
BLACKMER ST.
SILVA ST.
GIFFORD ST

MAP 31 PARCEL 264
RCP REALTY

MAP 31
PARCEL 265
R C P
REALTY LLC

MAP 31 PARCEL 263
RICHARD SHUSTER

MAP 31 PARCEL 249
BAYSIDE SEAFOOD

MAP 31
PARCEL 264
C P
BRODEUR

PARCEL 267

PARCEL 266

MAP 31 PARCEL 288
RIST LLC

MAP 31 PARCEL 234
N.B. RADIO INC.

CONFIGURATION
A&B
PROPERTY

MAP 31 PORTION OF
PARCEL 234 N.B.
RADIO INC.

MAP 25A PARCEL 53
COMM. OF MA

CONFIGURATION
A
PROPERTY

MAP 25A PARCEL 1
STAVIS/FARGO FISH
PROCESSING

MAP 25A PARCEL 49
COMM. OF MA

MAP 25A
PARCEL 48
NB REDEV.
AUTHORITY

MAP 25A
PARCEL 47
HARBORVIEW

EASEMENTS
FROM MAP
25A
PARCELS
46,45 & 5

MAP 25A
PARCEL
46
ABSECON
FISH
PROC.

MAP 25A
PARCEL 43
FINICKY
PET FOOD

MAP 25A
PARCEL 42
FINICKY
PET FOOD

CONFIGURATION
A
PROPERTY

MAP 25A
PARCEL 62&63
NEW BEDFORD
REDEV. AUTH.

MAP 25A PARCEL
60
NB REDEV.
AUTHORITY

MAP 25A
PARCEL 44
NB REDEV.
AUTHORITY

MAP 25A
PARCEL 45
DMD
DEVELOPMENT

MAP 25A
PARCEL 48
NB REDEV.
AUTHORITY

MAP 25A
PARCEL
7 & 48
CITY OF
NEW
BEDFORD

MAP 25A
PARCEL 6
COMMONWEALTH
OF
MASSACHUSETTS

MAP 25A
PARCEL 32
CITY OF NB

MAP 25A
PARCEL 55
CITY OF NB

CONFIGURATION
B
PROPERTIES

MAP 25A PARCEL 2
SOUTH COAST MILLS

MAP 25A
PARCEL 5
DMD
DEVELOPMENT

MAP 25A
PARCEL 10
SOUTH
COAST
MILLS LLC

MAP 25A
PARCEL 2
SOUTH
COAST
MILLS LLC

MAP 21
PARCEL
47
69
MAIN
ST LLC

MAP 21
PARCEL
46
PALMERS
COVE
MILL LLC

MAP 21
PARCEL
45 CITY
OF NEW
BEDFORD,
AND
EASEMENT
PARCEL
30

MAP 21
PARCEL 30
HATHAWAY
MILLS LLC

MAP 21
PARCEL 29
SOUTH
COAST
MILLS LLC

NEW BEDFORD

PREPARED FOR:

COMMONWEALTH
OF
MASSACHUSETTS

DRAWING TITLE:

NEW BEDFORD MARINE COMMERCE TERMINAL

Scale: 1"=150'

0 75 150 300 450 FEET

Date 7/13/11	Drawing No.
Proj. Mgr. JAB	
Design CWM	
Check CHM	FIG-3
Drawn GCD	
Job. No. 6690	
Last Rev. 6/28/12	

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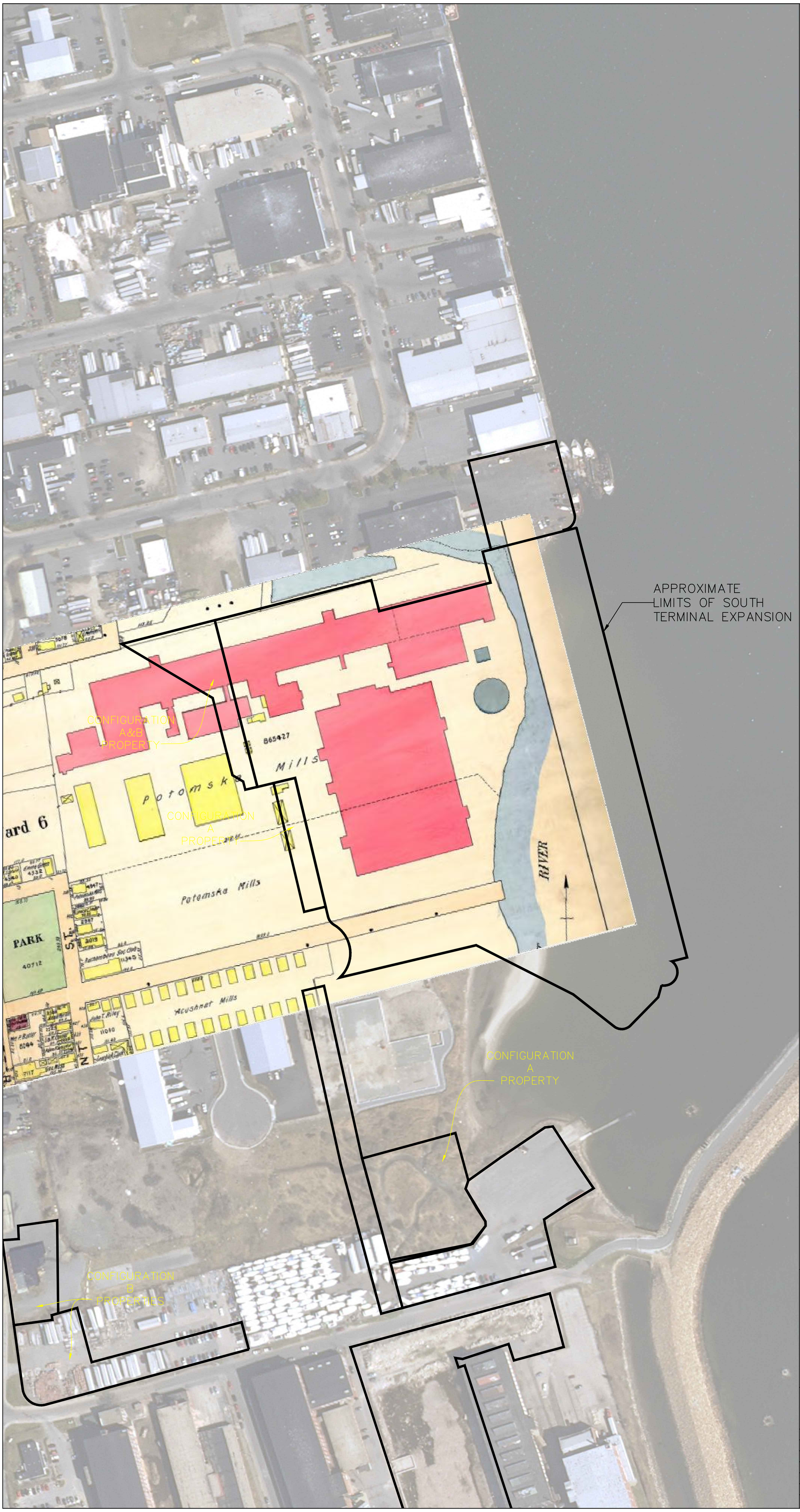


Apex Companies, LLC.

1 WAMSUTTA STREET
SUITE 8
NEW BEDFORD, MA 02740
(508) 996-9828

184 HIGH STREET
SUITE 502
BOSTON MA 02110
(617) 728-0070

REVISIONS

NO.	DATE	DESCRIPTION

PREPARED FOR:

COMMONWEALTH
OF
MASSACHUSETTS

DRAWING TITLE:

NEW BEDFORD MARINE COMMERCE TERMINAL 1911 POTOMSKA MILLS OVERLAY

Scale: 1"=100'

0 50 100 200 300 FEET

Date	6/5/10
Proj. Mgr.	JAB
Design	GCD
Check	CM
Drawn	GCD
Job. No.	6690.002
Last Rev.	6/29/12

Drawing No.

P:\Jobs\6690 NBH_ Phase IV\PLANS\Archeology\SOUTHTERMINAL_ARCH)OVERLAY.dwg

APEX

184 HIGH STREET
SUITE 502
BOSTON MA 02110
(617) 728-0070

REVISIONS

NO.	DATE	DESCRIPTION
1.	2/11/10	PRELIMINARY LAYOUT
2.	4/09/10	PRELIMINARY ASSESSMENT
3.	4/15/10	FIELD LOCATION
4.	7/07/10	ADD. FED. RESOURCE

SUB-TIDAL
(0 TO -16 FT MLLW)

INTERTIDAL

PREPARED FOR:

COMMONWEALTH
OF
MASSACHUSETTS

DRAWING TITLE:

NEW BEDFORD MARINE COMMERCE TERMINAL SIMILAR HABITATS WITHIN NEW BEDFORD HARBOR

Scale: 1"=500'

0 250 500 1000 1500 FEET

Date 3/24/10	Drawing No.
Proj. Mgr.	
Design	
Check CM	
Drawn GCD	
Job. No. 6690	
Last Rev. 8/19/11	

P:\Jobs\6690 NBH_ Phase IV\PLANS\PERMITTING\FIGURE_8_DUPLICATIVE_RESOURCES.dwg

APEX
1 WAMSUTTA STREET, SUITE 8
NEW BEDFORD, MA 02740
(617) 728-0070
184 HIGH STREET, SUITE 502
BOSTON MA 02110
(617) 728-0070

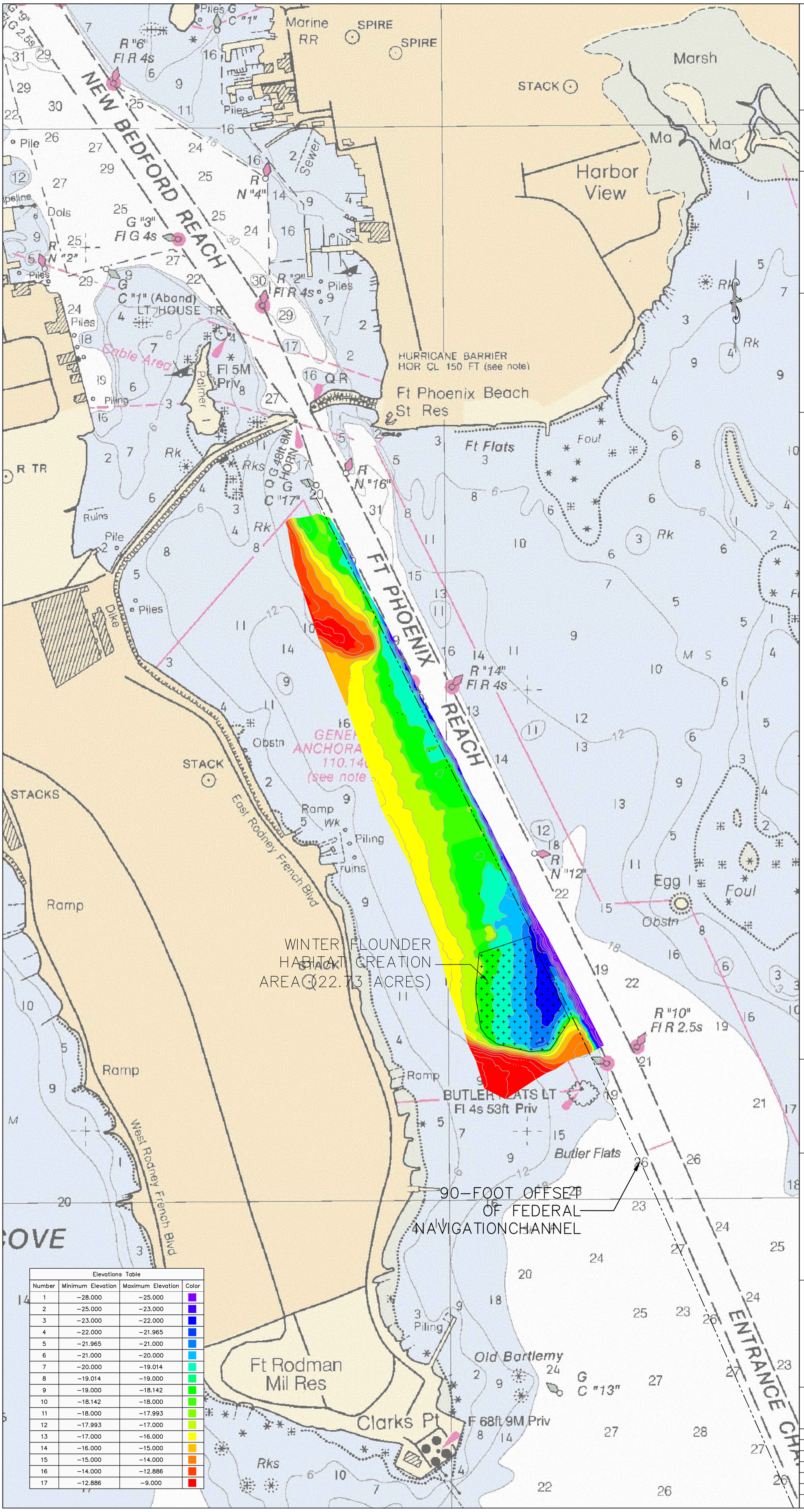
Mitigation Areas Locus Map

NEW BEDFORD MARINE COMMERCE TERMINAL
NEW BEDFORD, MA

Scale: 1"=1500'

0 750 1500 2250

P:\Jobs\6690 NBH_ Phase IV\PLANS\PERMITTING\SOUTHTERMINAL_MITIGATION_FIGURE_10.dwg



Elevations Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	−28.000	−25.000	
2	−25.000	−23.000	
3	−23.000	−22.000	
4	−22.000	−21.965	
5	−21.965	−21.000	
6	−21.000	−20.000	
7	−20.000	−19.014	
8	−19.014	−19.000	
9	−19.000	−18.142	
10	−18.142	−18.000	
11	−18.000	−17.993	
12	−17.993	−17.000	
13	−17.000	−16.000	
14	−16.000	−15.000	
15	−15.000	−14.000	
16	−14.000	−12.886	
17	−12.886	−9.000	

APEX

184 HIGH STREET
SUITE 502
BOSTON MA 02110
(617) 728-0070

REVISIONS

NO.	DATE	DESCRIPTION
1.	11/22/10	MITIGATION AREAS
2.	12/15/10	BATHY UPDATED

PREPARED FOR:

COMMONWEALTH OF MASSACHUSETTS

DRAWING TITLE:

NEW BEDFORD MARINE COMMERCE TERMINAL WINTER FLOUNDER MITIGATION AREA

Scale: 1"=500'

0 250 500 1000 1500 FEET

Date	6/5/10
Proj. Mgr.	JAB
Design	GCD
Check	CM
Drawn	GCD
Job. No.	6690.002
Last Rev.	9/20/11

Drawing No.

P:\Jobs\6690 NBH_ Phase IV\PLANS\PERMITTING\FLOUNDER_MITIGATION_AREAS_FIGURE_11.dwg

CAD CELL#3
DREDGE AND
DISPOSAL AREA

CAD CELL#1
CAPPING AREA

CAD CELL#2
DISPOSAL AREA

BORROW PIT
CAD CELL
CAPPING AREA

NEW BEDFORD
FEDERAL MANEUVERING
AREA DREDGE AREA

NEW BEDFORD
MARINE COMMERCE
TERMINAL CHANNEL
DREDGE AREA

NORTH MOORING
MITIGATION AREA

SOUTH MOORING
MITIGATION AREA

NEW BEDFORD MARINE
COMMERCE TERMINAL

ANCILLARY
PROPERTIES

GIFFORD STREET
CHANNEL DREDGE
AREA

OU#3 MITIGATION SITE

FORMER DARTMOUTH
MILLS FINISHING SITE

DRAINAGE SWALE
MITIGATION AREA

WINTER FLOUNDER
MITIGATION SITE

NO.	DATE	DESCRIPTION	BY

PROJECT

NEW BEDFORD
MARINE COMMERCE
TERMINAL

OWNER

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

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

PROJECT NO.	6690
CADD FILE	SITE FIGURE
DESIGNED BY	GCD
DRAWN BY	GCD
CHECKED BY	
DATE	5/30/2012
DRAWING SCALE	1 INCH = 600 FEET

GRAPHIC SCALE
SCALE: 1"=600'
0 300 600 1200

SHEET TITLE

NEW BEDFORD
MARINE COMMERCE
TERMINAL
GENERAL SITE
PLAN

DRAWING NO.

1

1 OF 1

P:\Jobs\6690 NBH_ Phase IV\PLANS\EPA_SITE_FIGURE.dwg

LEGEND

EXISTING	DESC.	PROPOSED
80	CONTOURS	80
x 2.8	G.A.F. SPOT GRADES	80x50 / 80.0
+ 2.8	EASTERN TOPOGRAPHICS SPOT GRADES	
	WETLANDS	
	F.E.M.A. FLOOD ZONE	
	DITCH/SWALE	
D	DRAIN LINE	D
	CATCH BASIN (CB)	
D	DRAIN MANHOLE (DMH)	D
S	SEWER LINE	S
S	SEWER MANHOLE (SMH)	S
E	ELECTRIC LINE	E
E	ELECTRIC MANHOLE (EMH)	E
T	TELEPHONE LINE	T
T	TELEPHONE MANHOLE (TMH)	T
OHW	OVERHEAD WIRES	OHW
	UTILITY POLE	
	GUY POLE	
	WATER GATE/VALVE	
	WATER SHUTOFF/CURB STOP	
	HYDRANT	
	GAS GATE/VALVE	
	GAS SHUTOFF	
	GAS METER	
W	WATER LINE	W
G	GAS LINE	G
U	UNDERGROUND UTILITIES	U
	FENCE	
	STONEWALL	
	TREELINE	
	HAYBALE	

NOTES:

1.) TOPOGRAPGHICAL BASE MAP WAS PROVIDED TO G.A.F. ENGINEERING, INC. BY LOUIS BERGER GROUP, INC. BY ELECTRONIC FILE. FILE PLAN ENTITLED "TOPOGRAPHICAL WORKSHEET OF THE WINSEGANSET RESERVE MARSHES, FAIRHAVEN, MA FOR TETRA TECH EM, INC. CAMBRIDGE, MA" BY EASTERN TOPOGRAPHICS WOLFEBORO, NH, SCALE 1"=200', CONTOUR INTERVAL: 1', PLAN PHOTO DATE: 19 MAR. 03 (1:3600), COMPILATION DATE 13 MAY 03, GROUND CONTROL BY: NORDE-DIST SURBEY QUINCY, MA.

2.) SUPPLIMENTAL SPOT GRADES, WETLANDS LOCATIONS, SANITARY SEWER LOCATION, SOUNDINGS AND DETAILED LOCATIONS AT RIVER AVE. ARE FROM A FIELD SURVEY CONDUCTED BY G.A.F. ENGINEERING, INC. OCTOBER 2007, NOVEMBER 2004 AND JUNE 2003.

3.) PROPERTY BOUNDARIES ARE COMPILED FROM PLANS AND DEEDS OF RECORD AND TOWN TAX ASSESSMENT RECORDS.

4.) SITE ELEVATION DATUM PER PLAN/ELECTONIC FILE REFERRENCED IN NOTE 1.

I:\DATDWG\03-5799\MARSH ISLAND\\03579\Marshisland 07.dwg

DESCRIPTION	BY	APP'D	DATE	REV.

DATE: OCT. 9, 2007
DRAWN BY: GDA
CHECKED BY: GDA
JOB NO.: 03-5799
SCALE: 1" = 50'

APPROVED BY:

APPROVED BY:

PROGRESS PRINT
OCTOBER 10, 2007

G.A.F. ENGINEERING, INC.
PROFESSIONAL ENGINEERS & LAND SURVEYORS
266 MAIN STREET - WAREHAM, MA 02571
TEL: (508) 295-6600 FAX: (508) 295-6634
E-MAIL: gaf.eng@verizon.net

PLAN OF TO ACCOMPANY NOTICE OF INTENT
MARSH ISLAND FAIRHAVEN, MA

PREPARED FOR:
LOUIS BERGER GROUP, INC.

JOB NO.: 03-5799

DWG. 1 OF 2

P:\Jobs\6690 NRH_ Phase IV\PLANS\from_louisberger\Grading-Plan for Volume Calcs\BASE\X-Baseplan_CM1677_1.dwg

:\H/DATDWG/03-5799\MARSH ISLAND\\
035799\Marshisland 07.dwg

REV.	DATE	BY	APP'D	DESCRIPTION

DATE: OCT. 9, 2007
DRAWN BY: GDA
CHECKED BY: GDA
JOB NO.: 03-5799
SCALE: 1" =50'

APPROVED BY:

APPROVED BY:

PROGRESS PRINT
OCTOBER 10, 2007

G.A.F. ENGINEERING, INC.
PROFESSIONAL ENGINEERS & LAND SURVEYORS
266 MAIN STREET - WAREHAM, MA 02571
TEL: (508) 295-6600 FAX: (508) 295-6634
E-MAIL: gaf.eng@verizon.net

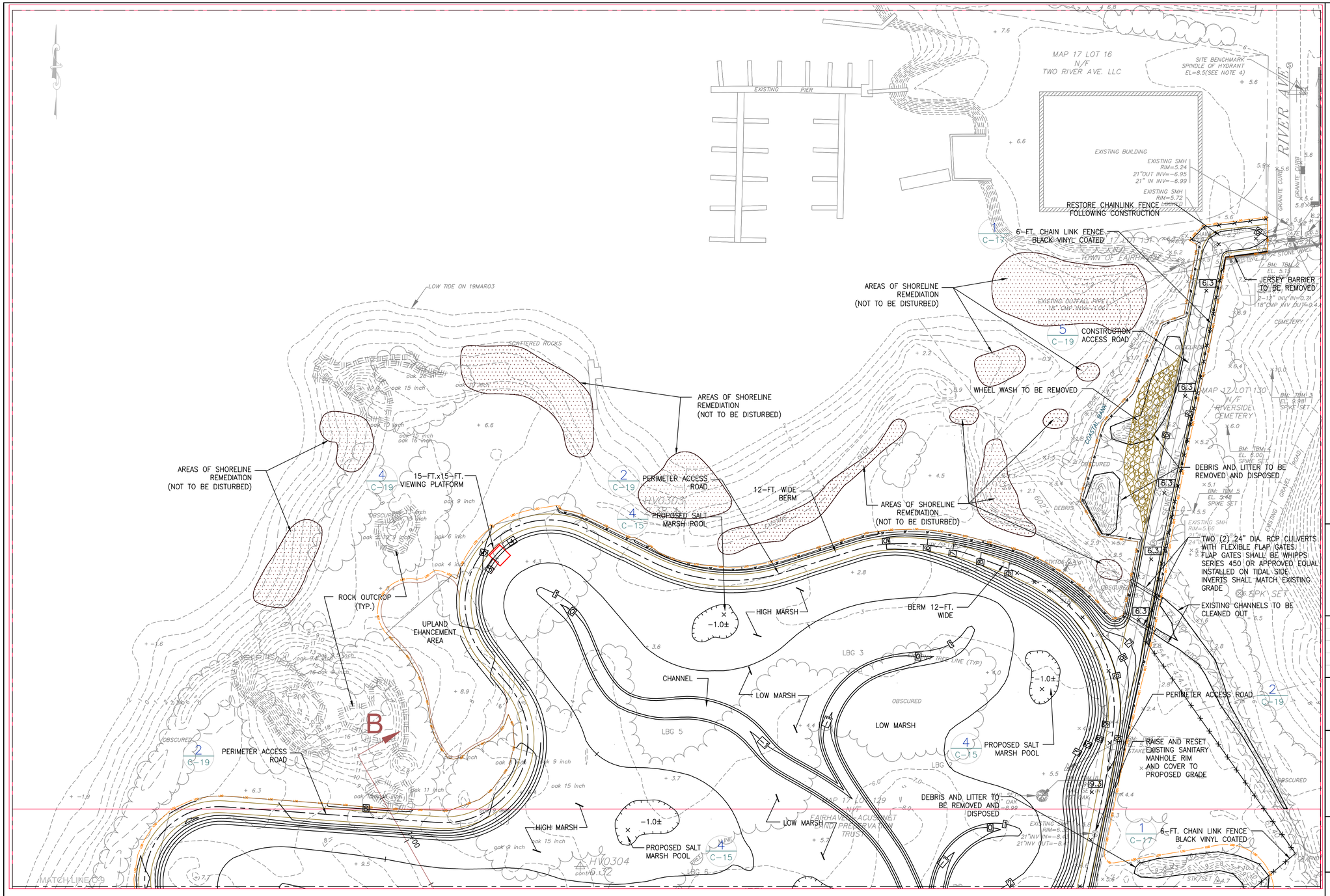
PLAN OF TO ACCOMPANY
NOTICE OF INTENT
MARSH ISLAND FAIRHAVEN, MA

PREPARED FOR:
LOUIS BERGER GROUP, INC.

JOB NO.: 03-5799

DWG.
2 OF 2

P:\Jobs\6690 NRH_ Phase IV\PLANS\from_louisberger\Grading-Plan for Volume Calcs\BASE\X-Baseplan_CM1677_1.dwg



LOD — LIMIT OF DISTURBANCE

SF — SILT FENCE

6-FOOT CHAIN LINK FENCE

TIMBER GUARDRAIL

ADA COMPLIANT WALKING TRAIL

RESOURCE AREA IMPACT SUMMARY

WETLAND TYPE	AREA (SQUARE FEET) OR LENGTH (LINEAR FEET)	
	PERMANENT	TEMPORARY
BVW	73,826 S.F.	911 S.F.
SALT MARSH	26,386 S.F.	1,820 S.F.
COASTAL BANK	40 L.F.	30 L.F.
COASTAL BEACH	0	1,175 S.F.
LAND SUBJECT TO COASTAL STORM FLOWAGE*	14,342 S.F.	2,970 S.F.
	*398,722 S.F. (9.1 AC) NET-STORAGE GAIN	
RIVERFRONT AREA (DISTURBED)	174,850 S.F.	31,950 S.F.

NOTES:

1. ALL AREAS SHALL BE GRADED WITHIN THE PROPOSED SALT MARSH TO PROMOTE POSITIVE DRAINAGE.
2. AREAS TO BE STABILIZED WITH COIR LOGS ARE AS SHOWN ON THE PLANTING PLAN FOR CLARITY.

50 25 0 50 100

SCALE IN FEET

THE Louis Berger Group, INC.
ENGINEERS • PLANNERS
SCIENTISTS • ECONOMISTS
MANCHESTER, NH (603) 644-5200
NEEDHAM, MA (781) 444-3330
PROVIDENCE, RI (401) 521-5980

REV.	DESCRIPTION	DATE

NOT FOR CONSTRUCTION

National Oceanic and Atmospheric Administration - Restoration Center
55 GREAT REPUBLIC DRIVE
GLOUCESTER, MA 01930

MARSH ISLAND
SALT MARSH RESTORATION
FAIRHAVEN, MASSACHUSETTS

FINAL GRADING PLAN
(1 OF 2)

SHEET TITLE:

SCALE:	1"=50'	DATE:	JUNE 2012
PROJECT MANAGER:	CAW		
PROJECT ENGINEER:	CF		
CHECKED BY:	CC	SHEET No.	C-8
DRAWN BY:	CL		
JOB NUMBER:	10182.22		

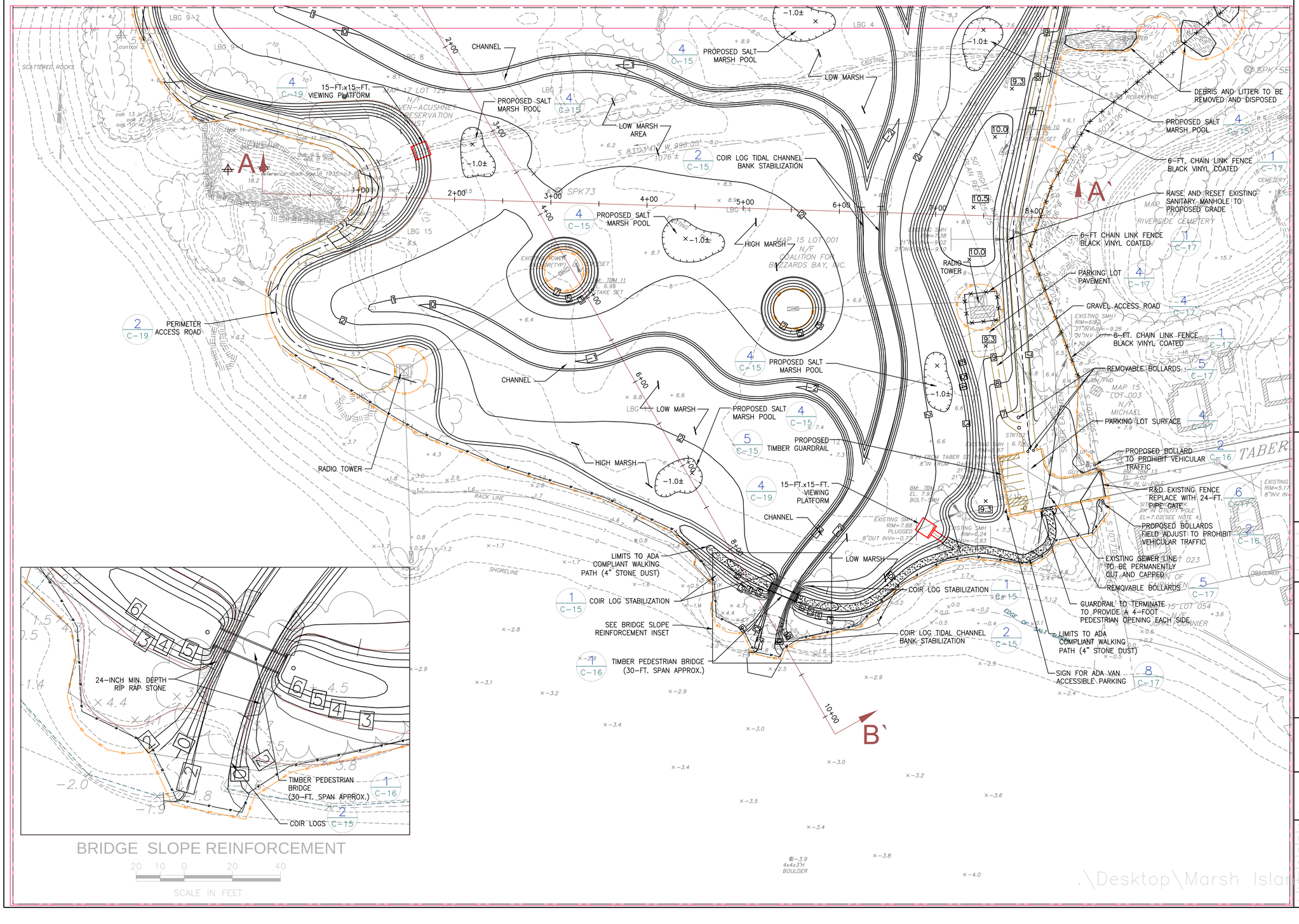
Jun 27, 2012 - 12:37pm P:\Jobs\6690 NBH_ Phase IV\PLANS\from_louisberger\Grading-Plan for Volume Calcs\Grading-Plan.dwg

.\Desktop\Marsh Island Stamp.jpg

P:\Jobs\6690 NBH_ Phase IV\PLANS\from_louisberger\Grading-Plan for Volume Calcs\Grading-Plan.dwg

MATCH LINE C-8

CONTINUED ON SHEET C-8



BRIDGE SLOPE REINFORCEMENT

SCALE IN FEET

LIMIT OF DISTURBANCE
SILT FENCE
6-FOOT CHAIN LINK FENCE
TIMBER GUARDRAIL
ADA COMPLIANT WALKING TRAIL

RESOURCE AREA IMPACT SUMMARY

WETLAND TYPE	AREA (SQUARE FEET) OR LENGTH (LINEAR FEET)	
	PERMANENT	TEMPORARY
BVW	73,826 S.F.	911 S.F.
SALT MARSH	26,386 S.F.	1,820 S.F.
COASTAL BANK	40 L.F.	30 L.F.
COASTAL BEACH	0	1,175 S.F.
LAND SUBJECT TO COASTAL STORM FLOWAGE*	14,342 S.F.	2,970 S.F.
	*398,722 S.F. (9.1 AC) NET-STORAGE GAIN	
RIVERFRONT AREA (DISTURBED)	174,850 S.F.	31,950 S.F.

NOTES:

1. ALL AREAS EXCEPT POOLS SHALL BE GRADED WITHIN THE PROPOSED SALT MARSH TO PROMOTE POSITIVE DRAINAGE.
2. AREAS TO BE STABILIZED WITH COIR LOGS ARE AS SHOWN ON THIS PLAN AND PLANTING PLAN FOR CLARITY.
3. TIDAL INLET FROM RIPRAP STABILIZED AREA TO L.O.D SHALL BE STABILIZED WITH COIR LOGS.

50 25 0 50 100

SCALE IN FEET

THE Louis Berger Group, INC.
ENGINEERS • PLANNERS
SCIENTISTS • ECONOMISTS
MANCHESTER, NH (603) 644-5200
NEEDHAM, MA (781) 444-3330
PROVIDENCE, RI (401) 521-5980

REV.	DESCRIPTION	DATE

NOT FOR CONSTRUCTION

National Oceanic and Atmospheric Administration - Restoration Center
55 GREAT REPUBLIC DRIVE
GLOUCESTER, MA 01930

MARSH ISLAND
SALT MARSH RESTORATION
FAIRHAVEN, MASSACHUSETTS

FINAL GRADING PLAN
(2 OF 2)

SHEET TITLE:

SCALE:	AS SHOWN	DATE:	JUNE 2012
PROJECT MANAGER:	CAW		
PROJECT ENGINEER:	CF		
CHECKED BY:	CC	SHEET No.	C-9
DRAWN BY:	PL		
JOB NUMBER:	66900.JU822		

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The COMMONWEALTH OF MASSACHUSETTS
BOARD OF UNDERWATER ARCHAEOLOGICAL RESOURCES
OFFICE OF COASTAL ZONE MANAGEMENT
251 Causeway Street, Suite 800, Boston, MA 02114-2136
Tel. (617) 626-1200 Fax (617) 626-1240 Web Site: www.mass.gov/czm/buar/index.htm

POLICY GUIDANCE FOR THE DISCOVERY OF UNANTICIPATED UNDERWATER ARCHAEOLOGICAL RESOURCES

Introduction

The Massachusetts Board of Underwater Archaeological Resources (MBUAR) is the state agency charged with the identification, preservation and protection of the Commonwealth's underwater archaeological resources. The purpose of archaeological investigations during the planning process for a project is to determine the presence or absence of culturally related materials and resources within a project area and determine or assess eligibility for listing in the National Register of Historic Places (National Register). This work will be undertaken pursuant to the applicable laws and regulations pertaining to the cultural resources of Massachusetts. Generally, these archaeological investigations are conducted to comply with the National Environmental Policy Act of 1969 (NEPA) and Section 106 of the National Historic Preservation Act of 1966, as amended (1976, 1980, 1992, 1999), and implementing regulations of the Advisory Council on Historic Preservation (Advisory Council) as well as pursuant to Massachusetts General Laws concerning the MBUAR and the Massachusetts Historical Commission (MHC).

The MBUAR recognizes that despite intensive background research, remote sensing surveys, and field investigations, it is always possible that cultural resource deposits such as shipwrecks may still be discovered during the course of construction activities on or below state bottomlands, particularly during excavation. MBUAR procedures that should be followed in the event that unanticipated underwater archaeological resources are inadvertently discovered during the non-MBUAR permitted activities are outlined below. NOTE: MBUAR permittees must also adhere to any general and special conditions placed on their permit.

In the event suspected human remains are encountered, you are directed to follow the MBUAR Policy Guidance on the Discovery of Unanticipated Human Remains as well.

Procedures

Below are steps that should be followed in the event that unrecorded shipwreck sites and/or other underwater archaeological resources are discovered during the project.

1. In the event that a suspected shipwreck or other site is uncovered during construction activity, that activity shall immediately be halted in the area of the find until it can be determined whether the object is a shipwreck or other underwater archaeological resource and if it represents a potentially significant feature or site.

2. The project field staff will immediately notify the project proponent upon the suspension of work activities in the area of the find. Notification will include the specific location in which the potential feature or site is located.

3. The project proponent will immediately contact its cultural resource management consultant to review the information. On-site personnel will provide information on the location and any discernable characteristics of the potential cultural resource (the target), and any survey data depicting the find. This information will be forwarded for review by the project archaeologist for the cultural resource management consultant.

4. If the project archaeologist determines that the site, feature, or target is not potentially cultural, the project field staff through the project proponent will be notified by the project archaeologist that work may resume. The project archaeologist will also notify MBUAR of this determination.

5. If, based upon both previously acquired and current remote sensing survey data, or other indications (e.g., timbers, etc.), it is determined that the new target is possibly a shipwreck or other potential cultural resource, the project archaeologist will inform the project proponent, who will inform the project field staff that work may not resume at the given location until notified in writing by the proponent. The cognizant federal and state review agencies, MBUAR, SHPO (State Historic Preservation Officer), and Advisory Council (if applicable) will be notified of this determination within 2 working days.

6. A visual inspection by archaeological divers or remotely operated vehicle (ROV) will be conducted to determine if the site is potentially eligible for listing in the National Register. The results of the survey will be formally submitted to cognizant federal and state review agencies, SHPO, MBUAR and the Advisory Council (if applicable) for final review and comment. The SHPO and MBUAR will endeavor to respond within 2 working days of receiving the inspection results and recommendations.

7. a. If it is determined that the target, feature, or site does not represent a potentially significant resource, and project proponent is in receipt of written comment from the review agency(s), work may resume in that area.

   b. If a National Register determination cannot be made in accordance with Step 6, the project proponent may either undertake additional research to satisfy Step 6 or exercise Step 8 (avoidance).

8. If agency review concurs or concludes that the site may be important and is potentially National Register eligible, the project proponent will develop avoidance measures to eliminate the site from the Area of Potential Effects. Any proposed avoidance measures will be made available to the cognizant federal and state review agencies, SHPO, MBUAR, and Advisory Council for review and comment.

9. If avoidance measures cannot be developed and executed, the resource may be excavated and/or removed only under a memorandum of agreement with all interested parties including the State Archaeologist/Deputy SHPO, MBUAR Director, MBUAR permittee and/or project proponent, and, if applicable, the Advisory Council subject to appropriate state permits. This memorandum will outline an adequate data recovery plan that specifies a qualified research team and an appropriate research design. The appropriate permits must also be secured from MBUAR (if not already a permittee of MBUAR) and the MHC prior to conducting any further disturbance to the site. In the event that human remains are associated with other cultural resources, see MBUAR's Policy Guidance on the Discovery of Unanticipated Human Remains for required procedures.

Applicable State and Federal Laws

MGL Chapter 9, § 26-27C - MHC review of state projects, State Archaeologist's Permits

MGL Chapter 91, §63 – Underwater Archaeological Resources Permits

312 CMR 2.00: Board of Underwater Archaeological Resources

950 CMR 70.00: Massachusetts Historical Commission

Section 106 of the National Historic Preservation Act of 1966 (16 USC 470f), as amended (1976, 1980, 1992, 1999)

National Environmental Policy Act of 1969 ("NEPA")

List of Contacts

Federal

To be named based on applicable federal jurisdiction

State

State Archaeologist/Massachusetts Historical Commission/SHPO
220 Morrissey Boulevard
Boston, Massachusetts 02125
Contact: Brona Simon, State Archaeologist/Acting Executive Director
(617) 727-8470; FAX: (617) 727-5128
mhc@sec.state.ma.us; Brona.simon@state.ma.us

Massachusetts Board of Underwater Archaeological Resources
Executive Office of Environmental Affairs
251 Causeway Street, Suite 800
Boston, Massachusetts 02114
Contact: Victor Mastone, Director and Chief Archaeologist
(617) 626-1141; FAX (617) 626-1240
Victor.mastone@state.ma.us

Others to be named based on applicable state jurisdiction, such as Commission on Indian Affairs and Tribal Historic Preservation Officers

Short list of potential federal and state agencies with applicable jurisdiction (not comprehensive):

Advisory Council on Historic Preservation
Army Corps of Engineers
Coast Guard
Commission on Indian Affairs
Department of Conservation and Recreation
Federal Energy Regulatory Commission
Fish and Wildlife Service
National Park Service
Tribal Historic Preservation Officer

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POLICY GUIDANCE ON THE DISCOVERY OF UNANTICIPATED HUMAN REMAINS

Introduction

The Massachusetts Board of Underwater Archaeological Resources (MBUAR) is the state agency charged with the identification, preservation and protection of underwater archaeological resources. MBUAR recognizes that despite intensive background research, remote sensing research, and field investigations, it is possible that human remains may still be discovered during the course of permitted and non-permitted activities on or below state bottom lands, particularly during excavation. For a concise description of your responsibilities under state law, you should visit the Massachusetts Historical Commission (MHC) website and read the following link regarding the treatment of human remains when accidentally discovered: http://www.sec.state.ma.us/mhc/mhcpdf/kn4.pdf. MBUAR procedures that should be followed in the event that suspected human remains are inadvertently discovered during the permitted and non-permitted activities are outlined below (in accordance with the applicable sections of Massachusetts General laws listed in this policy guidance).

Procedures

Generally, the possibility of encountering human remains is not anticipated when conducting background research, remote sensing surveys, or field investigations of shipwrecks or other underwater archaeological resources. However, passengers and crew often die in shipwrecks and for each shipwreck identified there are possibly human remains associated.

If suspected human remains are located within the waters of the Commonwealth of Massachusetts, the following procedures should be followed by MBUAR permittees and/or project proponents:

1. In the event that suspected human remains are encountered, any activity that might affect those remains shall be immediately halted.

2. The Project Director and, if applicable, the Project Archaeologist will be informed and notified of the exact location of the remains. *

3. The Project Archaeologist and the Project Director will be responsible for **immediately** notifying the State Police Detectives at the local District Attorney's Office, the Chief Medical Examiner, the State Archaeologist, the MBUAR, and the Environmental Police

(contact information provided below).

4. If the Chief Medical Examiner determines that the human remains are less than 100 years old, a criminal investigation may be warranted. If the remains are determined to be older than 100 years, the Chief Medical Examiner will notify the State Archaeologist at the Massachusetts Historical Commission.

5. The State Archaeologist, assisted by MBUAR staff, will conduct an examination to determine the age, cultural affiliation, and identity of the remains. If it is determined that the remains are those of a Native American, the State Archaeologist will notify the Commission on Indian Affairs. The State Archaeologist and MBUAR Director will consult to determine whether any prudent and feasible alternatives exist to avoid, minimize, or mitigate impacts to the site. The results of this consultation will be made available in writing.

   If it is not possible to protect the remains in situ, they may be excavated and/or removed only under a memorandum of agreement with all interested parties including the State Archaeologist/Deputy SHPO (State Historic Preservation Officer), MBUAR Director, MBUAR permittee and/or project proponent, and, if applicable, the Commission on Indian Affairs. This memorandum will outline an adequate data recovery plan that specifies a qualified research team and an appropriate research design (including a proposal for disposition of the remains). Any excavation of said human remains **must** be conducted under a Special Permit (950 CMR 70.20) issued by the State Archaeologist. In the event the human remains are associated with other cultural resources, such as a shipwreck, the appropriate permit must also be secured from MBUAR (if not already a permittee of MBUAR).

NOTE: * Under state law, the finder is responsible to insure that the proper authority is notified when suspected human remains are encountered.

Applicable Massachusetts General Laws (M.G.L.):

- M.G.L. Chapter 38, §6, as amended – Discovery of Unmarked Human Skeletal Remains
- M.G.L. Chapter 9, §26A – State Archaeologist's duties
- M.G.L. Chapter 9, §27C – Cessation of Activities
- M.G.L. Chapter 7, §38A – Preservation, Excavation and Analysis of Native American Human Remains
- M.G.L. Chapter 114, §17 – Preservation of Ancient Burial Places
- M.G.L. Chapter 272, §71 – Crimes and Punishment: Disinterring Bodies
- M.G.L. Chapter 272, §73, as amended – Crimes and Punishment: Injuring or Removal of Burial Markers
- M.G.L. Chapter 91, §63 – Salvage, Recovery, etc. of Underwater Archaeological Resources; Permits

List of Contacts

State

District Attorney's Office State Police Detectives Unit
Contact: State Police Communications Section
(who will contact detectives at local district attorney's office)
(508) 820-2121

Massachusetts Environmental Police
251 Causeway Street, Suite 100
Boston, Massachusetts 02114
Contact: Communications Center (who will contact local EPO)
(800) 632-8075 or (617) 626-1665

State Office of the Chief Medical Examiner
720 Albany Street
Boston, Massachusetts 02118
Contact: Dr. Ann Marie Mires, Forensic Anthropologist
(617) 267-6767; Fax (617) 266-6763
AnnMarie.Mires@state.ma.us

State Archaeologist/Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125
Contact: Brona Simon, State Archaeologist/Acting Executive Director
(617) 727-8470; FAX: (617) 727-5128
mhc@sec.state.ma.us; Brona.simon@state.ma.us

Massachusetts Board of Underwater Archaeological Resources
251 Causeway Street, Suite 800
Boston, Massachusetts 02114
Contact: Victor Mastone, Director
(617) 626-1141; FAX (617) 626-1240
Victor.mastone@state.ma.us

Commission on Indian Affairs
100 Cambridge Street, Suite 300
Boston, MA 02114
Contact: Jim Peters, Executive Director
(617) 573-1291; FAX: (617) 573-1515
Indian_Affairs@hotmail.com