



**US Army Corps of
Engineers**
Wilmington District

PUBLIC NOTICE

Issue Date: July 1, 2013

Comment Deadline: July 30, 2013

Corps Action ID Number: SAW-2013-01129

The Wilmington District, Corps of Engineers (Corps) received an application from the North Carolina Department of Transportation seeking Department of the Army authorization to hydraulic dredge 1.7 million cubic yards of beach compatible sand from an offshore borrow source located within the Wimble Shoals area or within the Oregon Inlet Federal Navigation Channel and place the material along 2.13 miles of beach adjacent to NC Highway 12 impacting approximately 64 acres of jurisdictional waters below mean high water, associated with an emergency beach repair/nourishment project along NC Highway 12 in Dare County, North Carolina.

Specific plans and location information are described below and shown on the attached plans. This Public Notice and all attached plans are also available on the Wilmington District Web Site at

<http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram.aspx>

Applicant: North Carolina Department of Transportation
Mr. Clay Willis, Division One Environmental Officer
113 Airport Drive, Suite 100
Edenton, North Carolina 27932

AGENT (if applicable):

Authority

The Corps evaluates this application and decides whether to issue, conditionally issue, or deny the proposed work pursuant to applicable procedures of the following Statutory Authorities:

- ☒ Section 404 of the Clean Water Act (33 U.S.C. 1344)
- ☒ Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403)
- ☐ Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413)

Location

Directions to Site: The project area begins in Southern Pea Island approximately 1.5 miles north of the southern Pea Island National Wildlife Refuge border and extends south from that point 2.13 miles, ending within the community of Mirlo Beach in Rodanthe, North Carolina. The project area also includes the proposed offshore borrow source in the Wimble Shoals vicinity that is located approximately 1.5 to 3 miles offshore of the project area and the Oregon Inlet Federal Navigation Channel which is approximately 13-15 miles north of the project area, depending on the source of the borrow material that is ultimately selected.

Project Area (acres): 64 acres (beach nourishment area) 2,937 and 1,359 acres (Wimble Shoals borrow source areas A and B), Nearest Town: Rodanthe, Nearest Waterway: Atlantic Ocean, River Basin: Pasquotank, Latitude and Longitude: Start 35.6289 End 35.5974N, Start -75.469 End -75.4626W

Existing Site Conditions

The majority of the land use in the project area is part of the Pea Island National Wildlife Refuge and can be described as ocean beach and dunes. The refuge was established in 1938 for the protection of wildlife, especially migratory waterfowl. The refuge objectives include: a) providing nesting, resting, and wintering habitat for migratory birds including the greater snow geese and other migratory waterfowl, shorebirds, wading birds, raptors and neotropical migrants b) provide habitat and protection for endangered and threatened species c) provide opportunities for public enjoyment of wildlife and wildlands resources. The southern most part of the project area can also be described as ocean beach lacking any dunes with private residents/property in between the beach and NC Highway 12. The topography in the study area is characterized by man-made beach dunes between NC Highway 12 and the Atlantic Ocean with an average elevation of 10 feet above sea level with a moderately to severely sloping beach face. The “lower beach” is characterized as the exposed portion of beach between the mean high tide line and mean low tide lines and is unvegetated and subject to diurnal tidal flooding. The substrate consists of unconsolidated sand and variable shell fragment content and is considered a dynamic community subject to the effects of tidal swash twice daily. The “upper beach” is the area above the mean high tide line up to the toe-of-slope for the frontal dune or berm and consists of unconsolidated sand and shell fragments and is constantly changing due to wind and tidal surges during storm events. During the week of October 21, 2012, Hurricane Sandy impacted NC Highway 12 along the outer banks within the proposed project area. Severe damage to NC Highway 12 occurred in the project area with the greatest damage occurring in the S-Curves area located on the southern end of the Pea Island National Wildlife Refuge when NC 12 became severed by ocean over wash and direct surf zone energy. The increased erosion along with the loss of beach face width and the protective dune barrier created a increased state of vulnerability to the only highway servicing Hatteras Island. NCDOT has relocated NC 12 within their existing right-of-way to the most western edge and installed protective sandbags and dunes varying in width from 30-50 feet at the base and 8-12 feet in height.

With these efforts taken and measures put in place, NC 12 has continued to experience increased ocean over wash and road closures during storm and high tide events. The emergency response following Hurricane Sandy has been ongoing throughout the winter months of 2013 and currently continues with each storm and high water event. In an effort to reestablish NC 12 highway connectivity and address numerous storm repairs after Hurricane Sandy, Governor Beverly Perdue originally declared a State of Emergency on October 27, 2012. Due to the increased ocean over wash vulnerability, road closures, and detrimental impacts to the well-being and livelihood of Hatteras Island Residents which has occurred since October 2012, Governor Pat McCrory issued a new Declaration of Emergency for the specific area of Southern Pea Island/Mirlo Beach area on March 19, 2013. Actions taken by NCDOT to respond to this state of emergency are to attempt to provide a temporary solution by reducing the level of ocean over wash vulnerability and restoring the reliability of NC 12 until a long term solution can be implemented. The study area is located in the lower Atlantic Coastal Plain physiographic region of North Carolina. The primary water body adjacent to the project area is the Atlantic Ocean. West of the project area is the Pamlico Sound.

Applicant's Stated Purpose

Provide a 3-year short term level of protection to NC Highway 12 against ocean storm events which currently results in frequent closures of the roadway within the S-Curves/Mirlo Beach area until a long-term solution can be implemented for NC Highway 12 in this location.

Background

The applicant (NCDOT) for the proposed project completed and submitted an in depth alternative analysis looking at three different alternatives that could possibly meet the applicants stated purpose. These alternatives include: 1) Maintain NC 12 on its existing alignment with protective sandbags and dunes within the existing NCDOT easement, 2) Install a temporary bridge west of the existing easement on the USFWS Pea Island National Wildlife Refuge and 3) Maintain NC 12 within the existing easement utilizing protective sandbags and dune maintenance supported with an emergency beach nourishment project. The following is a summary of this analysis and the applicants preferred alternative for the proposed project: **Alternative One) Maintain NC 12 on its existing alignment with protective sandbags and dunes within the existing NCDOT easement** - This alternative would continue the current approach of maintaining Highway 12 within the S-Curves/Mirlo Beach Project area, resulting in no new preventative actions taken to address increased frequency of ocean storm over wash on NC 12 and the resulting road closures. Since 2007 NCDOT has installed and had to reconstruct/repair the sand bags and protective dunes in this area a total of four times. Throughout this time period NCDOT engaged in frequent primary dune reestablishment in an effort to maintain coverage of the sandbags and provide protection from high tide storm over wash. The residents of Hatteras Island have experienced the impacts of road closures on NC 12 for many years. The current approach of maintaining NC 12 in its existing alignment with sandbags and dune reconstruction has become less effective and more

costly. Since 2008, NCDOT has spent between eight and nine million dollars maintaining NC 12, at the S-Curves location (2 miles of roadway). Maintaining NC 12 with sand bags and dune reconstruction is less effective without a level of protective beach face to absorb ocean storm energy. The current beach face shows little recovery from erosive storm events, thus leaving the protective sandbags and dune subject to high energy waves. This high level of maintenance cost, along with the continuing increase in road closures is not a desirable alternative for NCDOT or the citizens of Hatteras Island. Restoring a reasonable level of reliability, stability and safety to NC 12 through this area is the primary purpose for this emergency action. The selection of this alternative would result in elevated maintenance expenditures and continued NC 12 over wash roadway severance, thus leading to closures. According to NCDOT's analysis, this alternative does not meet the proposed purpose of this project. **Alternative Two) Install a temporary bridge west of the existing easement on USFWS Pea Island National Wildlife Refuge** - Following storm damage and NC 12 closures caused by Hurricane Sandy in October of 2012, NCDOT reviewed the alternative of placing a temporary bridge to the west of the existing easement. This alignment would be approximately 100-150 feet west of the existing roadway, on the Pea Island National Wildlife Refuge. The temporary bridge was designed to span a total of 300 feet over a portion of an ocean over wash created by Hurricane Sandy, which flowed to the Pamlico Sound through a man-made drainage canal and adjacent marsh. The designed bridge span location and clearance was placed within a probable location for future ocean storm over wash flows. The bridge approach's roadway grade elevates to allow a 4-6 foot bridge clearance for the distance of the 300 foot span. The bridge approach increase in elevation would be accomplished with earthen fill. Total length of the roadway approaches and bridge structure for the western alignment is 2160 feet (0.41 miles). The bridge structure and roadway work is estimated to cost \$3,650,000. Removal of the structure and roadway following the implementation of the long term solution is estimated to cost \$600,000. There would be utility relocation cost associated with this alternative. This cost is calculated based on Cape Hatteras Electric Cooperative's temporary power line realignment, which was estimated to cost \$280,000. The total cost associated with the temporary bridge alignment and utility relocations are estimated to be between 4 and 5 million dollars. The construction time frame is approximately 5 months to complete. NCDOT's review of the project plans revealed problems associated with this alternative meeting the project purpose. NCDOT's proposed alignment of the temporary bridge was established based on the USFWS recommendation that NCDOT could temporarily relocate the structure outside NCDOT easement, if the realignment was considered "minor". Therefore, NCDOT limited the western movement of the proposed road/bridge, so the "minor" requirement could be met. NCDOT also needed to consider constructability requirements with the north and south tie end points to NC 12. Issues with private property boundaries exist at the southern tie in point to NC 12 and constrained NCDOT's ability to extend the western alignment shift into Mirlo Beach. The final alignment was placed directly west of existing Cape Hatteras Electric Transmission Lines. As part of the project, the power transmission lines would then be moved to the west of the new road/bridge. NCDOT could then build a detour route in the alignment of the old electric transmission line corridor, which would be utilized during construction. This detour would be very limited in its ability to carry full service on NC

12 during the 5 month time period. The detour would experience periods of temporary closure for construction of the roadway/bridge alignment. Ocean over wash would likely continue to cause closures on the detour. The unpredictable nature of storm over wash and the resulting scour around the structure is a concern for NC 12 and the surrounding project area. With the minor western realignment, NCDOT would not be relieved from the need to continue maintaining the existing roadway easement and protective dune line that NC 12 is currently located in. The bridge design approaches would be vulnerable without some level of continued primary dune line to buffer ocean storm energy and over wash. NCDOT also has to consider the long term solution to NC 12 that is currently under review; the long-term study includes an alternative that consists of a bridge within the existing easement. The maintenance of the existing land within the easement would not be placed at the level expected to retain traffic flow; however, it would require enough time and effort to incur significant maintenance cost. Based on previous year maintenance cost, it is reasonable to assume NCDOT could spend well over one million dollars during a 3-4 year time frame, until the long-term solution was implemented. This money would be spent on managing the dune line and protecting the existing easement. This alternative will spend an estimated 4-5 million dollars on the temporary roadway/bridge and utility relocations. In addition, NCDOT will spend a conservative estimate of 1 million dollars or more on maintaining the dune line and existing easement, which will be ongoing until the long-term solution is implemented. The 5 month construction time frame and the restricted service detour, with construction and over wash closures, would cause significant economic and safety concerns. According to NCDOT's analysis, the selection of this alternative would continue to result in unacceptable frequency in road closures that negatively impact Hatteras Island residents and endanger their well-being therefore it would not meet the purpose of the proposed project.

Alternative Three) Maintain NC 12 within the existing easement utilizing protective sandbags and dune maintenance supported with an emergency beach nourishment project - The beach nourishment project would be designed by the United States Army Corps of Engineers (USACE) Civil Works Section to place 1.7 million cubic yards of beach quality sand along 2.13 miles of beach within the project area. The sand placement is to be primarily centered in the S-curves/Mirlo Beach area where damaging ocean over wash frequently occurs. This design is anticipated to provide a 3 year protective measure for NC 12 against the erosive ocean forces which have led to increased frequency in road closures. The USACE Civil Works Section is currently evaluating three potential borrow areas. Two of these locations are in the Wimble Shoals vicinity approximately 1.5 to 3 miles offshore of the project area. The third location is within the Oregon Inlet federal navigation channel, approximately 13-15 miles north of the project area. Dredging of the borrow area would be accomplished using a private contractor approved for hydraulic dredging in the ocean. The USACE Civil Works Section would administer a proposed contract and oversee project operations. The 2.1 mile long beach nourishment project is estimated to cost \$18 million if the borrow area utilized is the Wimble Shoals area. The cost is expected to exceed \$30 million if the Oregon Inlet area is utilized for borrow. These estimated costs could need adjustment once the final borrow source is selected. After review of the available alternatives to provide a 3 year short-term protective measure for NC 12 within the S-Curves/Mirlo beach location, NCDOT concluded that a protective beach nourishment project would

provide for the most probable and practical solution to reestablishing a reasonable level of stability and reliability to NC 12 at this location. Alternative Three gives a broader protective beach along the entire area of concern and provides for natural processes to create a buffering shoreline that adjusts with different storm dynamics. The additional beach width creates a flatter profile to dissipate wave energy prior to contact with the primary dune line and NC 12. This minimizes the chance for significant road damage along NC 12, which often results in frequent and sometimes prolonged road closures. A wider and flatter beach profile would significantly reduce NC 12 maintenance costs over the next 3 to 4 years that could be associated with primary dune reconstruction, sand bag maintenance/replacement and storm damaged road reconstruction. Without the supporting beach nourishment proposal the storm damage maintenance costs as described in alternative 1, above, could be assumed to reflect the previous 4 years, which was approximately \$8 to \$9 million. This is a significant maintenance expenditure, which has had negligible positive impact to NC 12's reliability and stability within the project area. It is reasonable to assume the supporting beach nourishment option will reduce much of the anticipated maintenance cost that would be incurred over the next 3 to 4 years. According to NCDOT's analysis, they conclude that alternative three best meets the project purpose of reestablishing a reasonable level of stability and reliability to NC 12.

According to NCDOT's analysis, they believe the continued vulnerability that would result from alternatives one and two would not meet the project purpose. As described in the alternative descriptions above, NCDOT has clearly defined concerns with alternatives one and two and wishes to eliminate them from further consideration.

Project Description

The applicant proposes to place 1.7 million cubic yards of beach compatible sand obtained from an off-shore borrow site on 2.13 miles of beach just north of Rodanthe, Dare County. Sand placement will be accomplished by means of hydraulic dredging, including hopper and/or cutterhead suction dredging. The discharge pipe will be floated from a seaward station to the project area beach face where heavy equipment (bulldozers, front end loaders) will move and grade the discharged sand into the desired beach profile as depicted on the enclosed cross-section plans. The project is estimated to be completed within 60-90 days from initiation and projected to begin no earlier than September 2013. The work will be conducted 24 hours throughout a 7 day work week. The beach nourishment project design focuses the majority of the sand berm placement within an 8,000 linear foot area located around the vulnerable S-Curves/Mirlo Beach location. The final design beach width berm throughout the 8,000 foot critical zone is 130 feet wide. North and south of this critical zone, the project will begin transitioning with a tapered berm back to the existing shoreline. The northern transition zone will include dune construction that is approximately 1800 feet long as depicted on the enclosed work plans. The sand utilized for this proposed project will come from an approved borrow source that is currently being sampled for compatibility with the native beach sand in the project area. The proposed beach nourishment project will only utilize borrow sand that meets Federal and State compatibility requirements. The offshore borrow areas are currently being sampled for compatibility and the applicant will provide the required sand analysis

to the Corps before a permit decision is made for the proposed project. Note that the acreage of the borrow areas is the overall size of the area and the actual impact area will not be known until the survey results are finalized. Overall plans showing the location of the proposed project and impact sites are included with this public notice. Additional detailed plans and findings for the project may be reviewed at the U. S. Army Corps of Engineers, Washington Regulatory Field Office at 2407 West 5th Street, Washington, North Carolina 27889.

Avoidance and Minimization

The applicant provided the following information in support of efforts to avoid and/or minimize impacts to the aquatic environment: NCDOT will take measures to minimize impacts during the dredging operation by adjusting the dredge passes to allow for quicker recovery times for the benthic community. The placement of sand on the beach will utilize berms to maximize sand settlement on the beach and minimize slurry runoff into the lower intertidal zone. NCDOT has coordinated with federal and state fisheries agencies for consultation on impact minimization. A component of this minimization was early EFH consultation with these agencies to include dredging minimization measures which are identified in an EFH assessment which is being forwarded to NOAA fisheries. To avoid and minimize impacts to nesting Sea Turtles, NCDOT initiated a monitoring program which started on May 1st and will continue until the proposed project is completed. NCDOT has coordinated this monitoring program with the North Carolina Wildlife Resources Commission N.E.S.T. program and the USFWS Pea Island National Wildlife staff to relocate any turtle nests to a safe location outside the proposed project area on Pea Island.

Compensatory Mitigation

The applicant offered the following compensatory mitigation plan to offset unavoidable functional loss to the aquatic environment: No compensatory mitigation is being proposed; however NCDOT has committed to coordinate with the appropriate state and federal agencies to insure environmental compliance by avoiding and reducing risk to protected species and natural resources. This is being done through the above mentioned Sea Turtle monitoring program and nest relocation, by putting only beach compatible sand on the receiving beach, by the FWS requiring the applicant to comply with conditions included in their required Special Use Permit, and the EFH assessment mentioned above .

Essential Fish Habitat

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, this Public Notice initiates the Essential Fish Habitat (EFH) consultation requirements. The Corps' initial determination is that the proposed project may affect, but not likely to adversely affect EFH or associated fisheries managed by the South Atlantic or Mid Atlantic Fishery Management Councils or the National Marine Fisheries Service. An EFH assessment is being forwarded to the National Marine Fisheries Service.

EFH considerations are included in the EFH assessment based on NCDMF and NOAA Fisheries input.

Cultural Resources

Pursuant to Section 106 of the National Historic Preservation Act of 1966, the Corps consulted the latest published version of the National Register of Historic Places and initially determines that designated historic properties, or properties listed as being eligible for inclusion therein are neither located within the project area nor would be affected by the proposed work. Survey data is being gathered to identify any potential historical resources in the proposed offshore borrow areas. A determination has been made that the proposed project would not effect any resources present in the proposed beach nourishment area. Presently, unknown archeological, scientific, prehistoric, or historical data may also be located within the project area and/or could be affected by the proposed work.

Endangered Species

Pursuant to the Endangered Species Act of 1973, the Corps reviewed the project area, examined all information provided by the applicant and consulted the latest North Carolina Natural Heritage Database. Based on available information:

- ☐ The Corps determines that the proposed project would not affect federally listed endangered or threatened species or their formally designated critical habitat.
- ☒ The Corps determines that the proposed project may affect, not likely to adversely affect federally listed endangered or threatened species or their formally designated critical habitat. Based on coordination with the USFWS, it is the Corps understanding that if the project does not commence prior to September, 2013, that the USFWS would concur with this determination. The Corps initiates consultation under Section 7 of the ESA and will not make a permit decision until the consultation process is complete.
- ☐ The Corps is not aware of the presence of species listed as threatened or endangered or their critical habitat formally designated pursuant to the Endangered Species Act of 1973 (ESA) within the project area. The Corps will make a final determination on the effects of the proposed project upon additional review of the project and completion of any necessary biological assessment and/or consultation with the U. S. Fish and Wildlife Service and/or National Marine Fisheries Service.

Other Required Authorizations

The Corps forwards this notice and all applicable application materials to the appropriate State agencies for review.

North Carolina Division of Water Quality (NCDWQ): The Corps will generally not make a final permit decision until the NCDWQ issues, denies, or waives State Certification required by Section 401 of the Clean Water Act (PL 92-500). The receipt of the application and this public notice combined with appropriate application fee at the North Carolina Division of Water Quality Central Office in Raleigh constitutes initial receipt of an application for a 401 Water Quality Certification. A waiver will be deemed to occur if the NCDWQ fails to act on this request for certification within sixty days of the date of the receipt of this notice in the NCDWQ Central Office. Additional information regarding the Clean Water Act Certification may be reviewed at the NCDWQ Central Office, Transportation Permitting Unit, 512 North Salisbury Street, Raleigh, North Carolina 27604-2260. All persons desiring to make comments regarding the application for certification under Section 401 of the Clean Water Act should do so, in writing, by July 30, 2013 to:

NCDWQ Central Office
Attention: Ms. Amy Chapman
(USPS mailing address): 1650 Mail Service Center, Raleigh, NC 27699-1650

Or,

(physical address): 512 North Salisbury Street, Raleigh, North Carolina 27604

North Carolina Division of Coastal Management (NCDCM): The application included a certification that the proposed work complies with and would be conducted in a manner that is consistent with the approved North Carolina Coastal Zone Management Program. Pursuant to 33 CFR 325.2 (b)(2) the Corps cannot issue a Department of Army (DA) permit for the proposed work until the applicant submits such a certification to the Corps and the NCDCM, and the NCDCM notifies the Corps that it concurs with the applicant's consistency certification. As the application included the consistency certification, the Corps requests, via this Public Notice, concurrence or objection from the NCDCM.

Evaluation

The decision whether to issue a permit will be based on an evaluation of the probable impacts including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values (in accordance with Executive Order 11988), land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving

the discharge of dredged or fill materials in waters of the United States, the evaluation of the impact of the activity on the public interest will include application of the Environmental Protection Agency's 404(b)(1) guidelines.

Commenting Information

The Corps of Engineers is soliciting comments from the public; Federal, State and local agencies and officials, including any consolidated State Viewpoint or written position of the Governor; Indian Tribes and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment (EA) and/or an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA). Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. Requests for a public hearing shall be granted, unless the District Engineer determines that the issues raised are insubstantial or there is otherwise no valid interest to be served by a hearing.

The Corps of Engineers, Wilmington District will receive written comments pertinent to the proposed work, as outlined above, until 5pm, July 30, 2013. Comments should be submitted to Mr. Bill Biddlecome, Washington Regulatory Field Office, 2407 West Fifth Street, Washington, North Carolina 27889, at (910) 251-4558.



Fill Volume
1,700,000 cubic Yard
Borrow Area Volume

Length of Fill
Including Transitions
11,250 feet

Dune Section

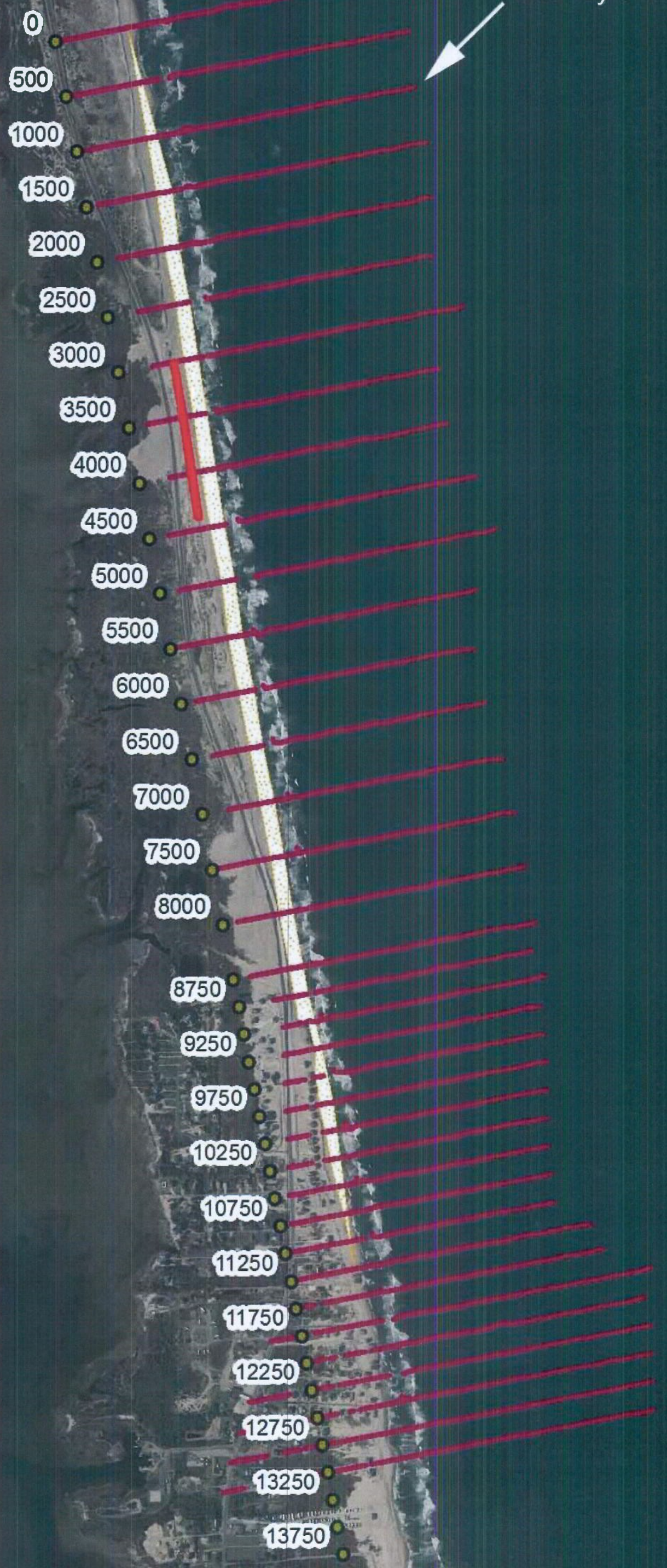
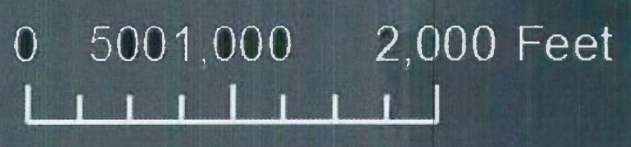
Beach Fill
Berm

X	Y	Sta
3,048,292	703,011	0+00
3,048,575	701,538	15+00
3,048,954	699,574	35+00
3,049,238	698,101	50+00
3,049,805	695,155	80+00
3,049,994	694,173	90+00
3,050,136	693,437	97+50
3,050,420	691,964	112+50



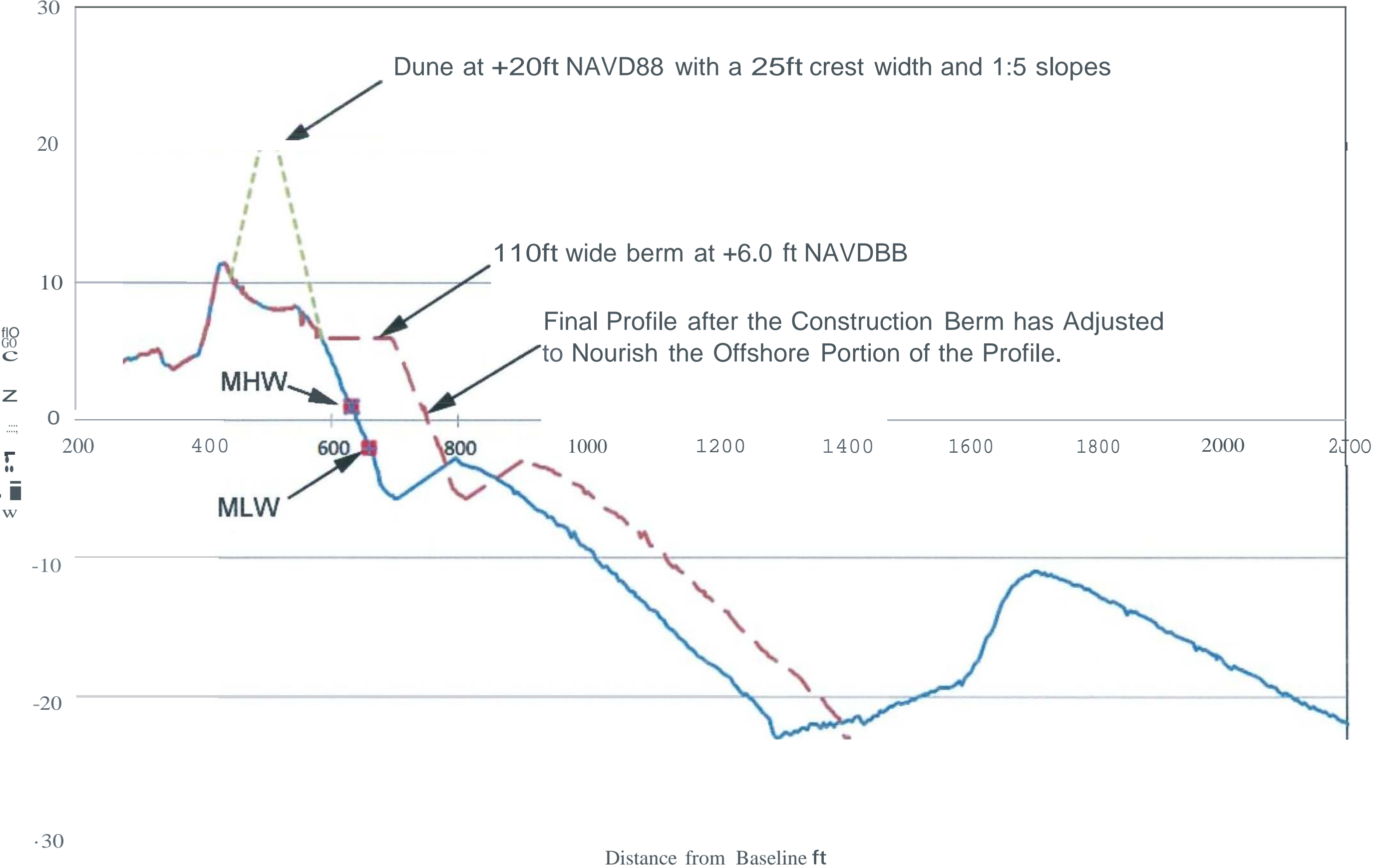


Survey Points



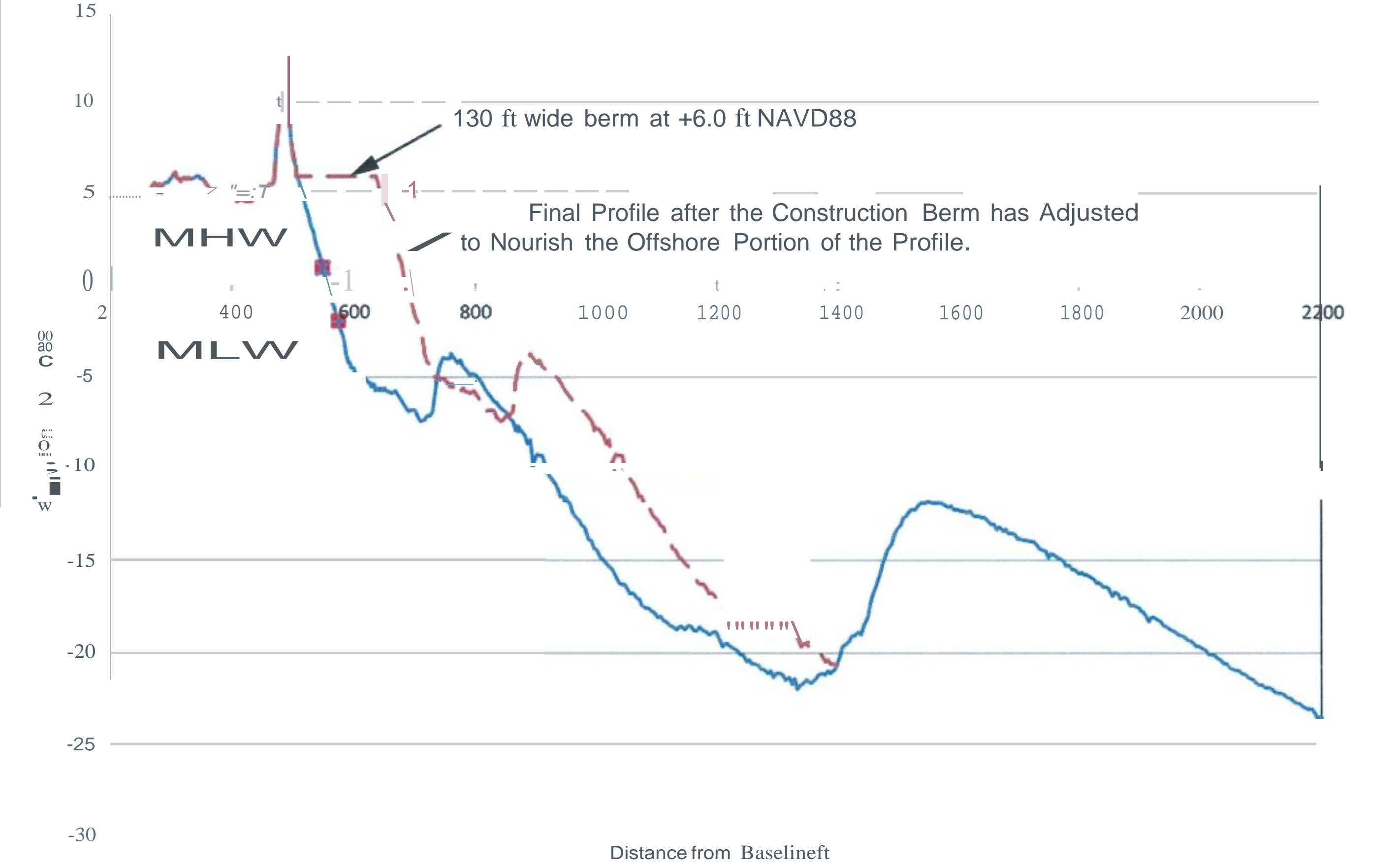
Station 35+00 Dune and Berm Cross Section

- Profile 5-15-13
- Dune
- MLW
- Berm
- MHW



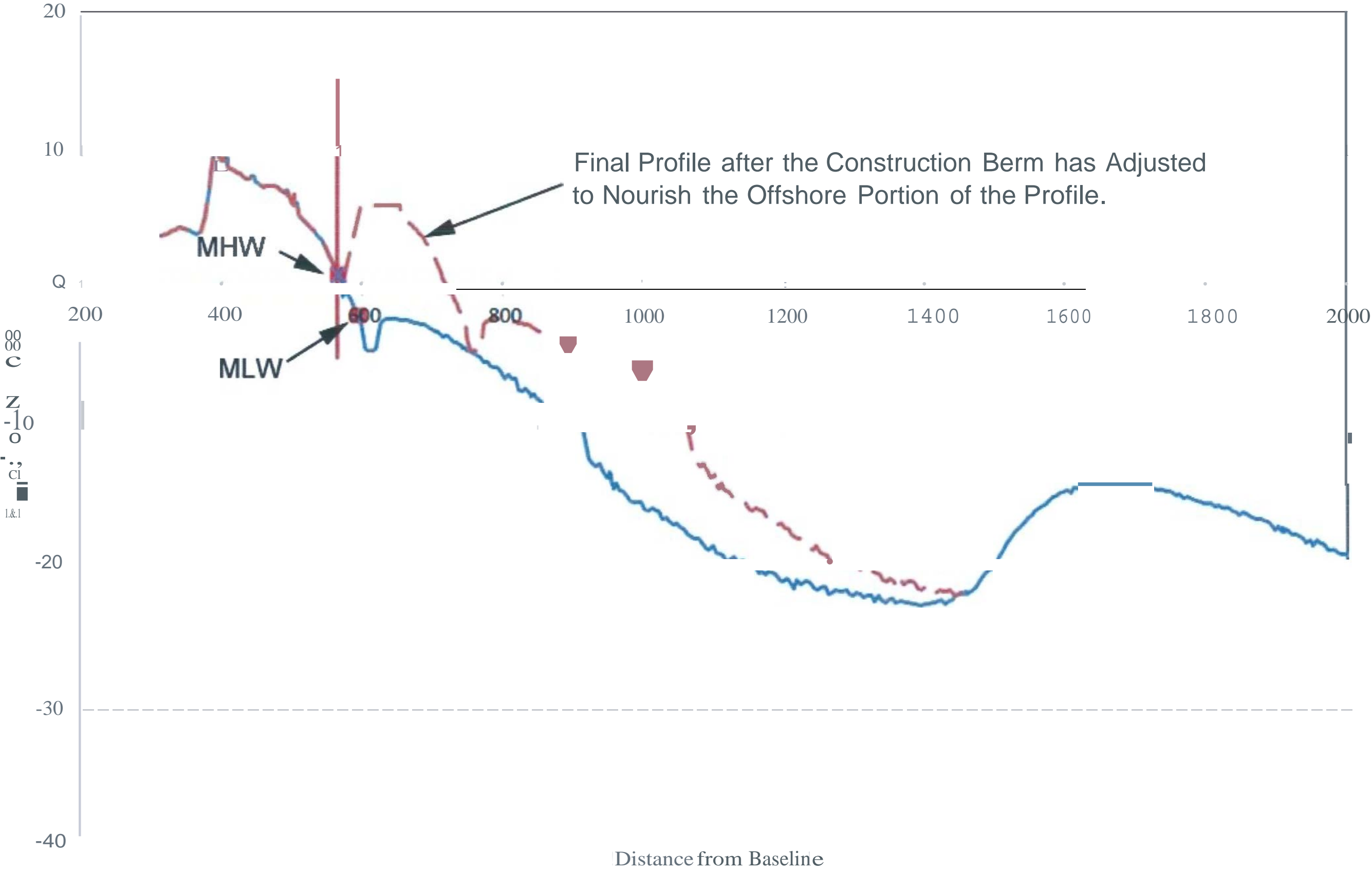
Profile 80+00 Berm Cross Section

- Profile 5-10-13
- Berm
- MHW
- MLW

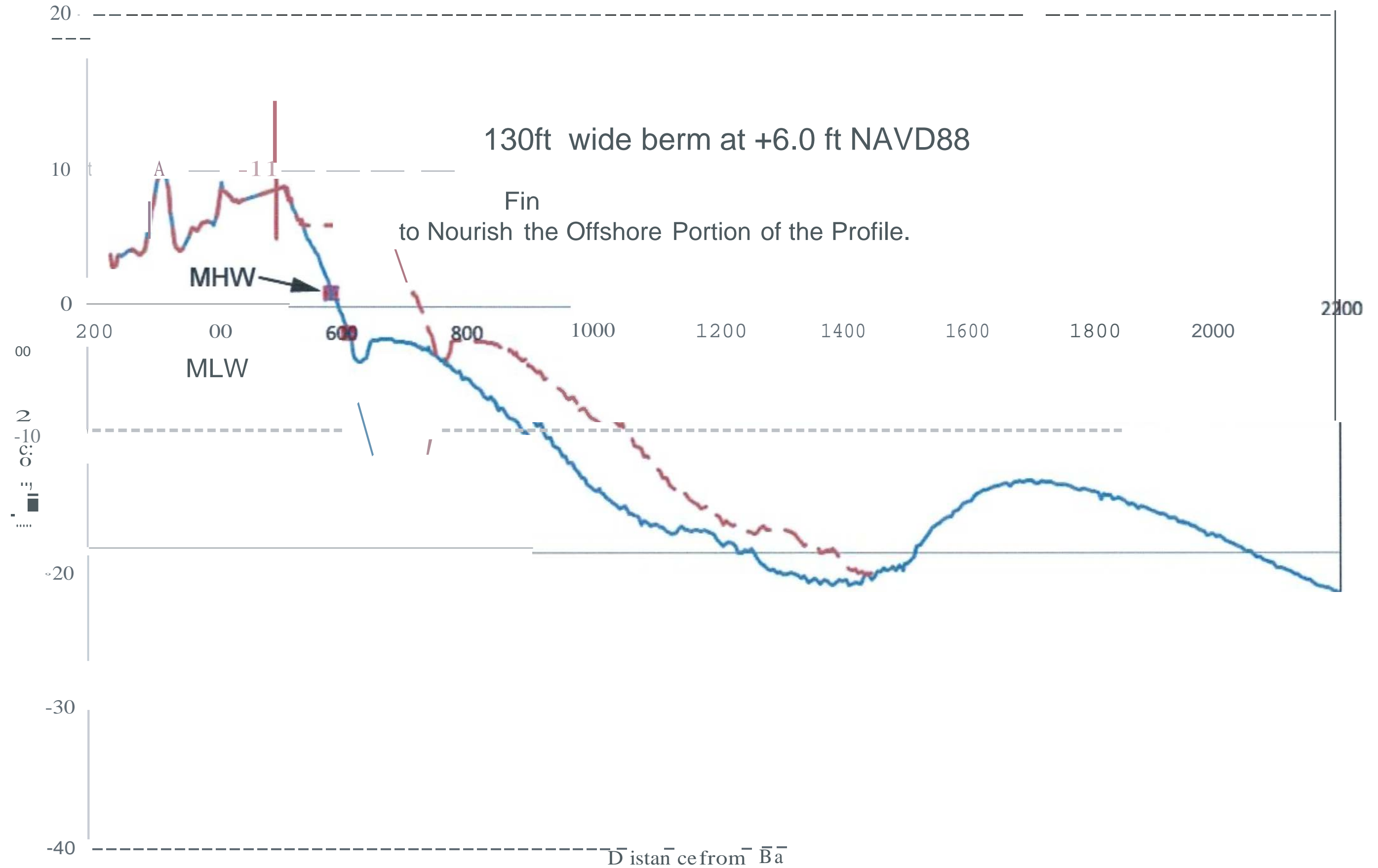


Station 92+50 Berm Cross Section

- Profile 5-15-13
- Berm
- House
- MHW
- MLW



— Profile 5-10-13 — House
— FiU Profile = MHW
..... MLW



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